



NAUTIČKI GODIŠNJAK

— ZA —
2012
— GODINU —

HIDROMETEOROLOŠKI ZAVOD CRNE GORE
SEKTOR ZA HIDROGRAFIJU I OKEANOGRAFIJU
PODGORICA – CRNA GORA

UKUPNA POPRAVKA VISINE

| PRVA POPRAVKA VISINE ZA SUNCE, ZVJEZDE I PLANETE | | |
|---|--|-------------|
| Opažena visina | ☉ | ★ i planeta |
| | refrakcija paralaksa radijus = 16' | refrakcija |
| 6 30 | + 8.2 | - 7.9 |
| 6 40 | 8.4 | 7.7 |
| 6 50 | 8.6 | 7.6 |
| 7 00 | 8.7 | 7.4 |
| 7 10 | 8.9 | 7.2 |
| 7 20 | + 9.0 | - 7.1 |
| 7 30 | 9.2 | 7.0 |
| 7 40 | 9.3 | 6.8 |
| 7 50 | 9.5 | 6.7 |
| 8 00 | 9.6 | 6.6 |
| 8 10 | + 9.7 | - 6.4 |
| 8 20 | 9.8 | 6.3 |
| 8 30 | 10.0 | 6.2 |
| 8 40 | 10.1 | 6.1 |
| 8 50 | 10.2 | 6.0 |
| 9 00 | + 10.3 | - 5.9 |
| 9 20 | 10.5 | 5.7 |
| 9 40 | 10.6 | 5.5 |
| 10 00 | 10.8 | 5.3 |
| 10 20 | 11.0 | 5.2 |
| 10 40 | + 11.2 | - 5.0 |
| 11 00 | 11.3 | 4.9 |
| 11 30 | 11.5 | 4.7 |
| 12 00 | 11.7 | 4.5 |
| 12 30 | 11.9 | 4.3 |
| 13 00 | + 12.0 | - 4.1 |
| 13 30 | 12.2 | 4.0 |
| 14 00 | 12.3 | 3.8 |
| 15 00 | 12.6 | 3.6 |
| 16 00 | 12.8 | 3.4 |
| 17 00 | + 13.0 | - 3.2 |
| 18 00 | 13.2 | 3.0 |
| 19 00 | 13.3 | 2.8 |
| 20 00 | 13.5 | 2.6 |
| 22 00 | 13.7 | 2.4 |
| 24 00 | + 14.0 | - 2.2 |
| 26 00 | 14.1 | 2.0 |
| 28 00 | 14.3 | 1.8 |
| 30 00 | 14.4 | 1.7 |
| 32 00 | 14.6 | 1.6 |
| 34 00 | + 14.7 | - 1.4 |
| 36 00 | 14.8 | 1.3 |
| 38 00 | 14.9 | 1.3 |
| 40 00 | 15.0 | 1.2 |
| 50 00 | 15.3 | 0.8 |
| 60 00 | + 15.5 | - 0.6 |
| 70 00 | 15.7 | 0.4 |
| 80 00 | 15.8 | 0.2 |
| 90 00 | 16.0 | 0.0 |

| DRUGA POPRAVKA VISINE ZA VISINU OKA | | | |
|--|-----------|------------|-----------|
| Visina oka | depresija | Visina oka | depresija |
| metara | ' | metara | ' |
| 0.5 | - 1.3 | 18 | - 7.5 |
| 1.0 | 1.8 | 19 | 7.7 |
| 1.5 | 2.2 | 20 | 7.9 |
| 2.0 | 2.5 | 21 | 8.1 |
| 2.5 | 2.8 | 22 | 8.3 |
| 3.0 | - 3.1 | 23 | - 8.5 |
| 3.5 | 3.3 | 24 | 8.7 |
| 4.0 | 3.5 | 25 | 8.9 |
| 4.5 | 3.8 | 26 | 9.0 |
| 5.0 | 3.9 | 27 | 9.2 |
| 5.5 | - 4.1 | 28 | - 9.4 |
| 6.0 | 4.3 | 29 | 9.6 |
| 6.5 | 4.5 | 30 | 9.7 |
| 7.0 | 4.7 | 50 | 12.6 |
| 7.5 | 4.9 | 75 | 15.4 |
| 8.0 | - 5.0 | 100 | - 17.7 |
| 8.5 | 5.2 | 125 | 19.9 |
| 9.0 | 5.3 | 150 | 21.8 |
| 9.5 | 5.4 | 175 | 23.5 |
| 10.0 | 5.6 | 200 | 25.1 |
| 11.0 | - 5.9 | 250 | - 28.1 |
| 12.0 | 6.1 | 300 | 30.8 |
| 13.0 | 6.4 | 350 | 33.2 |
| 14.0 | 6.5 | 400 | 35.5 |
| 15.0 | 6.9 | 450 | 37.7 |
| 16.0 | - 7.1 | 500 | - 39.7 |
| 17.0 | 7.3 | 600 | 43.5 |

| TREĆA POPRAVKA VISINE ZA VISINU PLANETE S OBZIROM NA PARALAKSU | | | | | | |
|---|------------------------|-----|-----|-----|-----|-----|
| Opažena visina planete | Horizontalna paralaksa | | | | | |
| | ' | ' | ' | ' | ' | ' |
| 0 | 0.1 | 0.2 | 0.3 | 0.4 | 0.5 | 0.6 |
| 10 | 0.1 | 0.2 | 0.3 | 0.4 | 0.5 | 0.6 |
| 30 | 0.1 | 0.2 | 0.3 | 0.3 | 0.4 | 0.5 |
| 50 | 0.1 | 0.1 | 0.2 | 0.3 | 0.3 | 0.4 |
| 70 | 0.0 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 |

| TREĆA POPRAVKA VISINE ZBOG PARALAKSE I PROMJENE RADIJUSA SUNCA | | | | | | | | | | | | |
|---|------|------|------|------|------|------|------|------|------|------|------|------|
| | Jan. | Feb. | Mart | Apr. | Maj | Jun | Jul | Avg. | Sep. | Okt. | Nov. | Dec. |
| od 1. do 15. | +0.3 | +0.2 | +0.1 | 0.0 | -0.1 | -0.2 | -0.2 | -0.2 | -0.1 | +0.1 | +0.2 | +0.3 |
| od 16. do kraja | +0.3 | +0.2 | +0.1 | -0.1 | -0.2 | -0.2 | -0.2 | -0.2 | 0.0 | +0.1 | +0.2 | +0.3 |

☉ Za gornji rub Sunca korekcija = tablična vrijednost manje dvostruki radijus (2r)



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IZDAVAČ.

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IV PROLETERSKE BRIGADE 19, 81000 PODGORICA**



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var = promjenljivi deo Nautičkog godišnjaka
const = stalni deo Nautičkog godišnjaka

PREDGOVOR

Hidrometeorološki zavod Crne Gore izdaje svoj drugi broj NAUTIČKOG GODIŠNJAKA, koji je devetnaesti u prethodnom nizu i sedamdeseti u ukupnom nizu izdanja ove publikacije na našim prostorima.

Za sedamdeset brojeva Nautičkog godišnjaka, do sada, možemo zahvaliti jednoj maloj armiji ljudi, entuzijasta i naučnika, koji su dali svoj nesebični doprinos da ova publikacija bude prisutna među pomorcima Kraljevine Jugoslavije, Socijalističke Jugoslavije, Saveza Republika Srbije i Crne Gore, a sada i samo Crne Gore.

Put je išao preko preuzimanja ruskih Nautičkih godišnjaka, koji su prevedeni na naš jezik i ručno ukucavane brojevne vrednosti efemerida, tablica popravki i svih ostalih tablica, do današnje skoro sasvim automatizovane računarske obrade podataka.

Od 1983. godine, zahvaljujući prof. dr Stevi Šeganu, počelo se sa računarskom obradom Nautičkog godišnjaka.

Algoritme i softver za potrebna izračunavanja, kao i računarsku pripremu za štampu i za ovaj broj, kao i za prethodnih dvadeset šest, izvršio je prof. dr Stevo Šegan sa Katedre za astronomiju Univerziteta u Beogradu.

Svi podaci potrebni za navigaciju izračunati su polazeći od heliocentričnih pravougljih koordinata nebeskih tjela za standardnu epohu J2000.0, a izračunavanja su usklađena sa preporukama i rješenjima Međunarodne astronomske unije (IAU 1976–1983 i XXIV GA 2000). Takvim postupkom osigurana je maksimalna tačnost u današnje vrijeme.

Podaci u Nautičkom godišnjaku izračunati su i priređeni isključivo za potrebe astronomske navigacije.

Godišnjak se sastoji iz dva djela—*efemeridskog* (*var*) i *stalnog* (*const*). Efemeridski dio sadrži za tekuću godinu efemeride Sunca, Mjeseca, četiri velike planete (Venere, Marsa, Jupitera i Saturna) i pedeset četiri najsajnije (nautičke) zvijezde kao i tablice za određivanje geografske širine pomoću visine i azimuta Sjevernjače. Stalni dio Godišnjaka sadrži interpolacione i pomoćne tablice.

Svi vremenski podaci u Nautičkom godišnjaku odnose se na Grinički meridijan. Prema tome, argument u svim efemeridama je univerzalno, odnosno svjetsko vrijeme, koje se računa od ponoći (00^h.00) na meridijanu Griniča.

Tačnost astronomskih podataka data je u ugaonoj mjeri od jedne desetine minuta, u vremenskoj skali od jedne sekunde, odnosno, gdje je to bilo potrebno, do jedne desetine sekunde. Podaci izračunati u interpolacionim tablicama imaju približno istu tačnost.

Izbor i sastav efemerida ostao je neizmjenjen i u ovom izdanju. Raspored efemerida je, kao i ranije, po datumima, po dva na svakoj stranici. Efemeride zvijezda i tablice za izračunavanje geografske širine pomoću visine i azimuta Sjevernjače izdvojene su posebno. Interpolacione tablice, zajedničke za ispravke časovnog ugla i deklinacije, takođe su date posebno.

Ukoliko postoje opravdane primjedbe i potreba za izmjenama i ispravkama molimo da nam ih proslijedite, a mi ćemo ih, sa punim uvažavanjem, razmotriti.

Podgorica, Decembar 2011.

ZA HIDROMETEOROLOŠKI ZAVOD CRNE GORE

DIREKTOR
Mr. LUKA MITROVIĆ

ASTRONOMSKI ZNACI, SKRAĆENICE I KONSTANTE

| NAŠI I ENGLISKI NAZIVI ZA ZNAKOVE Domestic and English Names for Symbols | |
|---|----------------------|
| ☉ ... Sunce | The Sun |
| ☾ ... Mjesec | The Moon |
| ★ ... Zvjezda | A Star |
| ♀ ... Venera | Venus |
| ♂ ... Mars | Mars |
| ♃ ... Jupiter | Jupiter |
| ♄ ... Saturn | Saturn |
| ♈ ... Prolječna tačka | First Point of Aries |
| ● ... Mlad Mjesec | New Moon |
| ◐ ... Prva četvrt | First Quarter |
| ◑ ... Pun Mjesec | Full Moon |
| ◓ ... Poslednja četvrt | Last Quarter |
| ° ... Stepen | Degree |
| ' ... Minut (luka) | Minute of Arc |
| " ... Sekunda (luka) | Second of Arc |

| ZODIJAČKI ZNACI I SAZVEŽĐA | |
|----------------------------|-------------|
| ♈ ... Ovan | Aries |
| ♉ ... Bik | Taurus |
| ♊ ... Blizanci | Gemini |
| ♋ ... Rak | Cancer |
| ♌ ... Lav | Leo |
| ♍ ... Djevojka | Virgo |
| ♎ ... Vaga | Libra |
| ♏ ... Škorpija | Scorpius |
| ♐ ... Strelac | Sagittarius |
| ♑ ... Jarac | Capricornus |
| ♒ ... Vodolija | Aquarius |
| ♓ ... Ribe | Pisces |
| ♈ ... Prolječna tačka | |
| ♎ ... Jesenja tačka | |

| OPŠTI ASTRONOMSKI ZNACI | |
|-------------------------|------------------------|
| ☉ ... Sunce | ♁ ... Uran |
| ☾ ... Mjesec | ♃ ... Neptun |
| ☿ ... Merkur | ♅ ... Pluton |
| ♀ ... Venera | ♁ ... Kometa |
| ♁ ... Zemlja | ● ... Mlad Mjesec |
| ♂ ... Mars | ◐ ... Prva četvrt |
| ♃ ... Jupiter | ◑ ... Pun Mjesec |
| ♄ ... Saturn | ◓ ... Poslednja četvrt |

| OSNOVNE ASTRONOMSKE KONSTANTE IAU(1976) XXIV(2000) | |
|--|---|
| DEFINICIONE KONSTANTE | |
| Gausova gravitaciona konstanta | $k = 0.017\ 202\ 098\ 95$ |
| Brzina svjetlosti | $c = 299\ 792\ 458\ m/s$ |
| OSNOVNE KONSTANTE | |
| Svjetlosno vrijeme | $\tau_A = 499.004\ 786\ s$ |
| Ekvatorski poluprečnik Zemlje | $a_e = 6\ 378\ 137\ m$ |
| Dinamički faktor oblika Zemlje | $J_2 = 0.001\ 082\ 64$ |
| Geocentrična gravitaciona konstanta | $GE = 3.986\ 004 \times 10^{14}\ m^3/s^2$ |
| Konstanta gravitacije | $G = 6.673 \times 10^{-11}\ m^3/kg\ s^2$ |
| Masa Mjeseca u jedinic. mase Zemlje | $\mu = 0.012\ 300\ 04$ |
| Opšta precesija u longitudi, za Julijansko stoljeće | $p = 5029''.7970$ |
| Nagib ekliptike | $\epsilon = 23^\circ 26' 21''.448$ |
| IZVEDENE KONSTANTE | |
| Konstanta nutacije | $N = 9''.2052$ |
| Jedinica rastojanja (astronomska jed.) | $ct_A = A = 1.495\ 978\ 71 \times 10^{11}\ m$ |
| Paralaksa Sunca | $\arcsin(a_e/A) = \pi_0 = 8''.794\ 143$ |
| Konstanta aberacije | $x = 20''.495\ 51$ |
| Faktor Zemljine spljoštenosti | $f = 0.003\ 352\ 82 = 1/298,256$ |
| Heliocentrična gravitaciona konstanta | $GS = 1.327\ 124\ 42 \times 10^{20}\ m^3/s^2$ |
| Masa Sunca u jedinicama mase Zemlje | $GS/GE = S/E = 332\ 946.0$ |
| Masa Sunca | $GS/G = S = 1.9884 \times 10^{30}\ kg$ |
| Relativne mase planeta: | |
| Merkur | 6 023 600 |
| Venera | 408 523.7 |
| Zemlja + Mjesec | 328 900.6 |
| Mars | 3 098 708 |
| Jupiter | 1 047.349 |
| Saturn | 3 497.9 |
| Uran | 22 903 |
| Neptun | 19 412 |
| Pluton | 135 200 000 |

| SKRAĆENICE | |
|---------------|--|
| d ... dan | } vremena |
| h ... čas | |
| min ... minut | |
| s ... sekunda | } ugla |
| ° ... stepen | |
| ' ... minut | |
| " ... sekunda | |
| + | { sjeverne geografske širine i deklinacije; istočne geografske dužine |
| - | { južne geografske širine i deklinacije; zapadne geografske dužine |

NAŠE I ENGESKE SKRAĆENICE I KLJUČNE RIJEČI

Domestic and English Abbreviations and Key Words

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|------------------------|--------------------------|----------------------------------|-----------------------------------|------------------------------|------------------|--|-----------------------------------|--------------------------------|-------------------------------------|----------------|------------|---|---------------------------------|------------------------------|----------------------|--------------------|-----------|------------------------|-------------------|-----------------|-------|-------------------|------------|----------------------|-------------|-----------------------|----------|---------------|---------|--------------|--------|
| <p>UT Univerzalno (svjetsko) vrijeme T_p Griničko pravo vrijeme T_z Griničko zvjezdano vrijeme T_m Srednje vrijeme gornjeg prolaza kroz meridijan u Griniču T_m Srednje vrijeme donjeg prolaza kroz meridijan u Griniču t_s Mjesno srednje vrijeme t_p Mjesno pravo vrijeme t_z Mjesno zvjezdano vrijeme t_r Zonsko vrijeme t_{zv} Zvanično vrijeme e Vremensko izjednačenje</p> <p>S Grinički časovni ugao s Mjesni časovni ugao</p> <p>δ Deklinacija α Rektascenzija (360° - α) Surektascenzija ♈ Proljećna tačka π Horizontska paralaksa φ Geografska širina λ Geografska dužina r Poluprečnik</p> <p>Pl. Planete Br. Broj Vel. Veličina d Dan h Čas min Minut s Sekunda</p> | <p>UT Universal Time GAT Greenwich Apparent Time GST Greenwich Sidereal Time T_T Greenwich Mean Time of the Upper Transit on the Meridian of Greenwich T_L Greenwich Mean Time of the Lower Transit on the Meridian of Greenwich LMT Local Mean Time LAT Local Apparent Time LST Local Sidereal Time ZT Zone Time LCT Local Civil Time Eq.T. Equation of Time (App.-Mean)</p> <p>GHA Greenwich Hour Angle LHA Local Hour Angle, Meridian Angle</p> <p>Dec. Declination RA Right Ascension SHA Sidereal Hour Angle ♈ First Point of Aries H.P. Horizontal Parallax Lat. Latitude Long. Longitude SD Semidiameter</p> <p>Pl. Planets No. Number Mag. Magnitude d Day h Hour min Minute of Time s Second of Time</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table style="width: 100%; border-collapse: collapse;"> <tbody> <tr> <td style="width: 50%;">Pregled zvijezda</td> <td style="width: 50%;">Review of Selected Stars</td> </tr> <tr> <td>Prividni položaji zvijezda</td> <td>Apparent Places of Selected Stars</td> </tr> <tr> <td>Popravka časovnog ugla</td> <td>Increment to GHA</td> </tr> <tr> <td>Druga popravka za časovni ugao i deklinaciju</td> <td>Correction to GHA and Declination</td> </tr> <tr> <td>Vrijeme prolaza zvijezda</td> <td>Upper Transit of Stars at Greenwich</td> </tr> <tr> <td>Popravka</td> <td>Correction</td> </tr> <tr> <td>Tablice za određivanje geografske širine i azimuta pomoću Sjevernjače</td> <td>Latitude and Azimuth by Polaris</td> </tr> <tr> <td>Interpolacione tablice</td> <td>Interpolation Tables</td> </tr> <tr> <td>Izlaz, zalaz</td> <td>Rise, Set</td> </tr> <tr> <td>Trajanje sumraka</td> <td>Twilight Duration</td> </tr> <tr> <td>Građanski</td> <td>Civil</td> </tr> <tr> <td>Astronomski</td> <td>Astronomic</td> </tr> <tr> <td>Mjesečeve mene</td> <td>Moon Phases</td> </tr> <tr> <td>Starost Mjeseca</td> <td>Moon Age</td> </tr> <tr> <td>Perigej</td> <td>Perigee</td> </tr> <tr> <td>Apogej</td> <td>Apogee</td> </tr> </tbody> </table> | | Pregled zvijezda | Review of Selected Stars | Prividni položaji zvijezda | Apparent Places of Selected Stars | Popravka časovnog ugla | Increment to GHA | Druga popravka za časovni ugao i deklinaciju | Correction to GHA and Declination | Vrijeme prolaza zvijezda | Upper Transit of Stars at Greenwich | Popravka | Correction | Tablice za određivanje geografske širine i azimuta pomoću Sjevernjače | Latitude and Azimuth by Polaris | Interpolacione tablice | Interpolation Tables | Izlaz, zalaz | Rise, Set | Trajanje sumraka | Twilight Duration | Građanski | Civil | Astronomski | Astronomic | Mjesečeve mene | Moon Phases | Starost Mjeseca | Moon Age | Perigej | Perigee | Apogej | Apogee |
| Pregled zvijezda | Review of Selected Stars | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Prividni položaji zvijezda | Apparent Places of Selected Stars | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Popravka časovnog ugla | Increment to GHA | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Druga popravka za časovni ugao i deklinaciju | Correction to GHA and Declination | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Vrijeme prolaza zvijezda | Upper Transit of Stars at Greenwich | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Popravka | Correction | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Tablice za određivanje geografske širine i azimuta pomoću Sjevernjače | Latitude and Azimuth by Polaris | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Interpolacione tablice | Interpolation Tables | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Izlaz, zalaz | Rise, Set | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Trajanje sumraka | Twilight Duration | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Građanski | Civil | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Astronomski | Astronomic | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Mjesečeve mene | Moon Phases | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Starost Mjeseca | Moon Age | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Perigej | Perigee | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Apogej | Apogee | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

PODACI O MJESECU I POČETKU GODIŠNJIH DOBA

| MJESEČEVE MJENE | | | | | | | | | | | | | |
|-----------------|-------------|-----------|-------------|-----------|------------|-----------|------------------|-----------|--------|-------|----|-------|------------|
| mjesec | MLAD MJESEC | | PRVA ČETVRT | | PUN MJESEC | | POSLEDNJA ČETVRT | | mjesec | | | | |
| | ● | ● | ● | ● | ○ | ○ | ● | ● | | | | | |
| | dan h min | dan h min | dan h min | dan h min | dan h min | dan h min | dan h min | dan h min | | | | | |
| Januar | 23 | 7 39 | | | 1 | 6 15 | 31 | 4 10 | 9 | 7 30 | 16 | 9 8 | Januar |
| Februar | 21 | 22 35 | | | | | | | 7 | 21 54 | 14 | 17 4 | Februar |
| Mart | 22 | 14 37 | | | 1 | 1 21 | 30 | 19 41 | 8 | 9 39 | 15 | 1 25 | Mart |
| April | 21 | 7 18 | | | | | 29 | 9 57 | 6 | 19 19 | 13 | 10 50 | April |
| Maj | 20 | 23 47 | | | | | 28 | 20 16 | 6 | 3 35 | 12 | 21 47 | Maj |
| Jun | 19 | 15 2 | | | | | 27 | 3 30 | 4 | 11 12 | 11 | 10 41 | Jun |
| Jul | 19 | 4 24 | | | | | 26 | 8 56 | 3 | 18 52 | 11 | 1 48 | Jul |
| Av gust | 17 | 15 54 | | | | | 24 | 13 54 | 2 | 3 27 | 31 | 13 58 | Av gust |
| Septem bar | 16 | 2 11 | | | | | 22 | 19 41 | 30 | 3 19 | 8 | 13 15 | Septem bar |
| Okto bar | 15 | 12 3 | | | | | 22 | 3 32 | 29 | 19 49 | 8 | 7 33 | Okto bar |
| Novem bar | 13 | 22 8 | | | | | 20 | 14 31 | 28 | 14 46 | 7 | 0 36 | Novem bar |
| Decem bar | 13 | 8 42 | | | | | 20 | 5 19 | 28 | 10 21 | 6 | 15 31 | Decem bar |

| PERIGEJ I APOGEJ MJESECA | | | | | | | | |
|--------------------------|-----------|-----------|----|-----------|-----------|--------|---------|------------|
| mjesec | PERIGEJ | | | APOGEJ | | mjesec | | |
| | dan h min | dan h min | | dan h min | dan h min | | | |
| Januar | 17 | 21 29.0 | | 2 | 20 20.0 | 30 | 17 43.0 | Januar |
| Februar | 11 | 18 33.0 | | | | 27 | 14 3.0 | Februar |
| Mart | 10 | 10 3.0 | | | | 26 | 6 5.0 | Mart |
| April | 7 | 17 0.0 | | | | 22 | 13 50.0 | April |
| Maj | 6 | 3 34.0 | | | | 19 | 16 14.0 | Maj |
| Jun | 3 | 13 21.0 | | | | 16 | 1 25.0 | Jun |
| Jul | 1 | 18 2.0 | 29 | 8 31.0 | | 13 | 16 48.0 | Jul |
| Av gust | | | 23 | 19 40.0 | | 10 | 10 53.0 | Av gust |
| Septem bar | | | 19 | 2 53.0 | | 7 | 6 1.0 | Septem bar |
| Okto bar | | | 17 | 1 3.0 | | 5 | 0 44.0 | Okto bar |
| Novem bar | | | 14 | 10 23.0 | | 1 | 15 31.0 | Novem bar |
| Decem bar | | | 12 | 23 15.0 | | 28 | 19 36.0 | Decem bar |
| | | | | | | 25 | 21 21.0 | Decem bar |

| VIDLJIVOST PLANETA | | | | | | | | | | | | |
|---|------|------|------|-------|------|-------|-----|------|------|------|------|-------|
| Osjenčeni dio dijagrama pokazuje kada je planeta nevidljiva | | | | | | | | | | | | |
| Planeta | Jan. | Feb. | Mart | Apr. | Maj | Jun | Jul | Avg. | Sep. | Okt. | Nov. | Dec. |
| ♀ Venera | | | | | 30.V | 13.VI | | | | | | |
| ♂ Mars | | | | | | | | | | | | |
| ♃ Jupiter | | | | 29.IV | | 28.V | | | | | | |
| ♄ Saturn | | | | | | | | | 8.X | | | 12.XI |

| POČECI GODIŠNJIH DOBA | | | |
|---|--|---|--|
| PROLJEĆE | LJETO | JESEN | ZIMA |
| 20. mart u 5 ^h 14 ^m 0 | 20. jun u 23 ^h 9 ^m 0 | 22. septembar u 14 ^h 49 ^m 0 | 21. decembar u 11 ^h 12 ^m 0 |

POMRAČENJA SUNCA I MJESECA u 2012. godini

DESIĆE SE UKUPNO ČETRI POMRAČENJA:
JEDNO PRSTENASTO I JEDNO POTPUNO POMRAČENJE SUNCA
JEDNO DELIMIČNO I JEDNO POMRAČENJE MJESECA POLUSENKOM

| | | | |
|-----|-------------|---|---|
| 1. | 20./21. MAJ | ☉ PRSTENASTO POMRAČENJE SUNCA | univerzalno (svjetsko) vrijeme dan h min |
| • | → | POČETAK POMRAČENJA | 20 20 56.1 |
| ••• | ↔ | SREDINA POMRAČENJA | 20 23 59.2 |
| • | ← | KRAJ POMRAČENJA | 21 2 49.4 |
| | | VIDLJIVOST: RUSIJA, KINA, JUGOISTO(Č)NA AZIJA, DEO ARKTIKA I SEVERNE AMERIKE | |

| | | | |
|-----|--------|--------------------------------|---|
| 2. | 4. JUN | ☾ DELIMIČNO POMRAČENJE MJESECA | univerzalno (svjetsko) vrijeme dan h min |
| • | → | ULAZAK MJESECA U POLUSENKU | 4 8 46.5 |
| ••• | ↔ | SREDINA POMRAČENJA | 4 11 3.2 |
| • | ← | IZLAZAK MJESECA IZ POLUSENKE | 4 13 19.9 |

| | | | |
|------|------------------|--|---|
| 3. | 13./14. NOVEMBAR | ☉ POTPUNO POMRAČENJE SUNCA | univerzalno (svjetsko) vrijeme dan h min |
| • | → | POČETAK POMRAČENJA | 13 19 38.0 |
| ••• | ↔ | POČETAK POTPUNOG POMRAČENJA | 13 20 36.1 |
| •••• | ↔ | SREDINA POMRAČENJA | 13 22 18.1 |
| ••• | → | KRAJ POTPUNOG POMRAČENJA | 13 23 47.4 |
| • | ← | KRAJ POMRAČENJA | 14 0 45.6 |
| | | VIDLJIVOST: AUSTRALIJA, POLINEZIJA, JUŽNI PACIFIK | |

| | | | |
|-----|--------------|---------------------------------|---|
| 4. | 28. NOVEMBAR | ☾ POMRAČENJE MJESECA POLUSENKOM | univerzalno (svjetsko) vrijeme dan h min |
| • | → | ULAZAK MJESECA U POLUSENKU | 28 12 12.6 |
| ••• | ↔ | SREDINA POMRAČENJA | 28 14 33.0 |
| • | ← | IZLAZAK MJESECA IZ POLUSENKE | 28 16 53.4 |

X

★ ★ ★ ★ ★

Efemeride

*SUNCA, MJESECA, VENERE,
MARSA, JUPITERA I SATURNA*

1. JANUAR

2012.

NEDJELJA

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_sun), VENERA (S_ven, delta_ven), MARS (S_mar, delta_mar). Rows show hourly data from 0 to 24 hours.

Table with columns: SUNCE (IZLAZ, ZALAZ), TRAJANJE SUMRAKA (GRAB., ASTR.), MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows show hourly data from 0 to 24 hours.

Table with columns: UT, MJESEC (S_mj, delta_mj), JUPITER (S_jup, delta_jup), SATURN (S_sat, delta_sat). Rows show hourly data from 0 to 24 hours.

Summary table for SUNCE, MJESEC, and PLANETE. Includes parameters like Tm, pi, 360-alpha, Vel., and planetary positions.

2. JANUAR

PONEDJELJAK

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_sun), VENERA (S_ven, delta_ven), MARS (S_mar, delta_mar). Rows show hourly data from 0 to 24 hours.

Table with columns: SUNCE (IZLAZ, ZALAZ), TRAJANJE SUMRAKA (GRAB., ASTR.), MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows show hourly data from 0 to 24 hours.

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Summary table for SUNCE, MJESEC, and PLANETE. Includes parameters like Tm, pi, 360-alpha, Vel., and planetary positions.

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_gamma), VENERA (S_venus, delta_venus), MARS (S_mars, delta_mars). Rows include time intervals from 0 to 24 hours.

Table with columns: SUNCE (IZLAZ, ZALAZ), TRAJANJE SUMRAKA (GRAB., ASTR.), MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows include time intervals from 0 to 24 hours.

Table with columns: UT, MJESEC (S_moon, delta_moon), JUPITER (S_jupiter, delta_jupiter), SATURN (S_saturn, delta_saturn). Rows include time intervals from 0 to 24 hours.

Table with columns: SUNCE (UT, e=gamma-UT, delta/24, tau, Prolaz, delta/24, pi_c, tau), PLANETE (Pl., T_m, pi, beta-2, Vel.). Rows include time intervals from 0 to 24 hours.

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_gamma), VENERA (S_venus, delta_venus), MARS (S_mars, delta_mars). Rows include time intervals from 0 to 24 hours.

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Table with columns: UT, MJESEC (S_moon, delta_moon), JUPITER (S_jupiter, delta_jupiter), SATURN (S_saturn, delta_saturn). Rows include time intervals from 0 to 24 hours.

Table with columns: SUNCE (UT, e=gamma-UT, delta/24, tau, Prolaz, delta/24, pi_c, tau), PLANETE (Pl., T_m, pi, beta-2, Vel.). Rows include time intervals from 0 to 24 hours.

Table with columns for UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_sun), VENERA (S_ven, delta_ven), and MARS (S_mar, delta_mar). Rows show hourly data from 0 to 24 hours.

Table with columns for SUNCE, TRAJANJE SUMRAKA (GRAB., ASTR.), and MJESEC (IZLAZ, ZALAZ, delta/24). Rows show hourly data for sunrise, sunset, and moon phases.

Table with columns for UT, MJESEC (S_mj, delta_mj), JUPITER (S_jup, delta_jup), and SATURN (S_sat, delta_sat). Rows show hourly data for the moon, Jupiter, and Saturn.

Summary table for SUNCE and MJESEC with columns for UT, e=TP-UT, and Prolaz. Includes PLANETE table with columns for Pl., T_m, pi, 360-alpha, Vel., and Planetary parameters.

Table with columns for UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_sun), VENERA (S_ven, delta_ven), and MARS (S_mar, delta_mar). Rows show hourly data from 0 to 24 hours.

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Summary table for SUNCE and MJESEC with columns for UT, e=TP-UT, and Prolaz. Includes PLANETE table with columns for Pl., T_m, pi, 360-alpha, Vel., and Planetary parameters.

Table with columns for SUNCE, VENERA, MARS and rows for UT, S, h, m, s, etc.

Table with columns for SUNCE, TRAJANJE SUMRAKA, MJESEC and rows for UT, S, h, m, s, etc.

Table with columns for MJESEC, JUPITER, SATURN and rows for UT, S, h, m, s, etc.

Table with columns for SUNCE, MJESEC, PLANETE and rows for UT, S, h, m, s, etc.

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Table with columns for MJESEC, JUPITER, SATURN and rows for UT, S, h, m, s, etc.

Table with columns for SUNCE, MJESEC, PLANETE and rows for UT, S, h, m, s, etc.

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLI TAČKA (S_gamma), VENERA (S_venus, delta_venus), MARS (S_mars, delta_mars). Rows include time intervals from 0 to 22 hours and a delta row.

Table with columns: SUNCE (IZLAZ, ZALAZ), TRAJANJE SUMRAKA (GRAB., ASTR.), MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows include time intervals from 0 to 22 hours and a delta row.

Table with columns: UT, MJESEC (S_moon, delta, delta_moon), JUPITER (S_jupiter, delta_jupiter), SATURN (S_saturn, delta_saturn). Rows include time intervals from 0 to 22 hours and a delta row.

Summary table for SUNCE, MJESEC, and PLANETE with various astronomical parameters like T_moon, pi, beta, and velocity.

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLI TAČKA (S_gamma), VENERA (S_venus, delta_venus), MARS (S_mars, delta_mars). Rows include time intervals from 0 to 22 hours and a delta row.

Table with columns: SUNCE (IZLAZ, ZALAZ), TRAJANJE SUMRAKA (GRAB., ASTR.), MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows include time intervals from 0 to 22 hours and a delta row.

Table with columns: UT, MJESEC (S_moon, delta, delta_moon), JUPITER (S_jupiter, delta_jupiter), SATURN (S_saturn, delta_saturn). Rows include time intervals from 0 to 22 hours and a delta row.

Summary table for SUNCE, MJESEC, and PLANETE with various astronomical parameters like T_moon, pi, beta, and velocity.

21. JANUAR

2012.

SUBOTA

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_gamma), VENERA (S_venus, delta_venus), MARS (S_mars, delta_mars). Rows show astronomical data for the 24 hours of January 21, 2012.

Table with columns: SUNCE (IZLAZ, ZALAZ), TRAJANJE SUMRAKA (GRAB., ASTR.), MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows show sunrise, sunset, twilight, and moon phase data for January 21, 2012.

Table with columns: UT, MJESEC (S_moon, delta, delta_sun), JUPITER (S_jupiter, delta_jupiter), SATURN (S_saturn, delta_saturn). Rows show moon position and Jupiter/Saturn coordinates for January 21, 2012.

Summary tables for SUNCE, MJESEC, and PLANETE. Includes moon phase (Faza) and planetary data (PL, T_m, pi, 360-alpha, Vel.).

22. JANUAR

NEDJELJA

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_gamma), VENERA (S_venus, delta_venus), MARS (S_mars, delta_mars). Rows show astronomical data for the 24 hours of January 22, 2012.

Table with columns: SUNCE (IZLAZ, ZALAZ), TRAJANJE SUMRAKA (GRAB., ASTR.), MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows show sunrise, sunset, twilight, and moon phase data for January 22, 2012.

Table with columns: UT, MJESEC (S_moon, delta, delta_sun), JUPITER (S_jupiter, delta_jupiter), SATURN (S_saturn, delta_saturn). Rows show moon position and Jupiter/Saturn coordinates for January 22, 2012.

Summary tables for SUNCE, MJESEC, and PLANETE. Includes moon phase (Faza) and planetary data (PL, T_m, pi, 360-alpha, Vel.).

| UT | SUNCE | | PROJ. TAČKA S _↑ | VENERA | | MARS | |
|----|----------------|----------------|-------------------------------|----------------|----------------|----------------|----------------|
| | S _☉ | δ _☉ | | S _♀ | δ _♀ | S _♂ | δ _♂ |
| h | ° | ' | ° | ' | ' | ' | ' |
| 0 | 177 | 6.1 | -19 | 37.8 | 121 | 44.4 | |
| 2 | 207 | 5.8 | -19 | 36.6 | 151 | 49.3 | |
| 4 | 237 | 5.5 | -19 | 35.5 | 181 | 54.3 | |
| 6 | 267 | 5.1 | -19 | 34.3 | 211 | 59.2 | |
| 8 | 297 | 4.8 | -19 | 33.1 | 242 | 4.1 | |
| 10 | 327 | 4.5 | -19 | 32.0 | 272 | 9.1 | |
| 12 | 357 | 4.1 | -19 | 30.8 | 302 | 14.0 | |
| 14 | 27 | 3.8 | -19 | 29.7 | 332 | 18.9 | |
| 16 | 57 | 3.5 | -19 | 28.5 | 2 | 23.8 | |
| 18 | 87 | 3.2 | -19 | 27.3 | 32 | 28.8 | |
| 20 | 117 | 2.9 | -19 | 26.1 | 62 | 33.7 | |
| 22 | 147 | 2.5 | -19 | 25.0 | 92 | 38.6 | |
| Δ | | -2 | | 6 | | -3 | 12 |

| UT | MJESEC | | | | JUPITER | | SATURN | |
|----|----------------|------|----------------|-----|----------------|----------------|----------------|----------------|
| | S _♃ | Δ | δ _♃ | Δ | S _♃ | δ _♃ | S _♄ | δ _♄ |
| h | ° | ' | ° | ' | ° | ' | ° | ' |
| 0 | 182 | 1.6 | 92 | -16 | 55.8 | 89 | 91 | 49.2 |
| 2 | 210 | 58.0 | 94 | -16 | 38.0 | 91 | 121 | 53.7 |
| 4 | 239 | 54.8 | 96 | -16 | 19.9 | 92 | 151 | 58.2 |
| 6 | 268 | 51.9 | 97 | -16 | 1.4 | 94 | 182 | 2.7 |
| 8 | 297 | 49.3 | 99 | -15 | 42.7 | 95 | 212 | 7.2 |
| 10 | 326 | 47.1 | 100 | -15 | 23.6 | 97 | 242 | 11.7 |
| 12 | 355 | 45.1 | 102 | -15 | 4.2 | 98 | 272 | 16.1 |
| 14 | 24 | 43.5 | 104 | -14 | 44.5 | 100 | 302 | 20.6 |
| 16 | 53 | 42.3 | 105 | -14 | 24.6 | 101 | 332 | 25.1 |
| 18 | 82 | 41.3 | 107 | -14 | 4.4 | 102 | 2 | 29.6 |
| 20 | 111 | 40.6 | 108 | -13 | 43.9 | 104 | 32 | 34.1 |
| 22 | 140 | 40.3 | 110 | -13 | 23.2 | 105 | 62 | 38.6 |
| Δ | | | | | | | 22 | 1 |

| UT | SUNCE | | TRAJANJE SUMRAKA | | MJESEC | | |
|----|-------|-------|------------------|-------|--------|------|-------|
| | IZLAZ | ZALAZ | GRAB. | ASTR. | IZLAZ | Δ/24 | ZALAZ |
| N | h min | h min | h min | h min | h min | min | h min |
| 60 | 8 35 | 15 49 | 0 50 | 2 32 | 8 7 | .6 | 16 40 |
| 55 | 8 6 | 16 18 | 0 42 | 2 10 | 7 44 | .9 | 17 1 |
| 50 | 7 46 | 16 38 | 0 36 | 1 54 | 7 27 | 1.1 | 17 17 |
| 45 | 7 30 | 16 54 | 0 32 | 1 43 | 7 14 | 1.3 | 17 29 |
| 40 | 7 16 | 17 8 | 0 29 | 1 34 | 7 3 | 1.4 | 17 39 |
| 35 | 7 5 | 17 19 | 0 27 | 1 28 | 6 53 | 1.5 | 17 48 |
| 30 | 6 55 | 17 29 | 0 26 | 1 23 | 6 45 | 1.6 | 17 55 |
| 20 | 6 38 | 17 46 | 0 23 | 1 17 | 6 30 | 1.8 | 18 8 |
| 10 | 6 22 | 18 1 | 0 22 | 1 13 | 6 17 | 2.0 | 18 19 |
| 0 | 6 8 | 18 15 | 0 22 | 1 13 | 6 5 | 2.1 | 18 30 |
| 10 | 5 54 | 18 30 | 0 22 | 1 15 | 5 53 | 2.2 | 18 40 |
| 20 | 5 38 | 18 45 | 0 24 | 1 21 | 5 40 | 2.4 | 18 51 |
| 30 | 5 20 | 19 3 | 0 26 | 1 31 | 5 26 | 2.5 | 19 4 |
| 35 | 5 9 | 19 14 | 0 28 | 1 40 | 5 17 | 2.6 | 19 11 |
| 40 | 4 57 | 19 26 | 0 31 | 1 52 | 5 7 | 2.8 | 19 19 |
| 45 | 4 43 | 19 40 | 0 35 | 2 11 | 4 56 | 2.9 | 19 28 |
| 50 | 4 25 | 19 57 | 0 40 | 2 48 | 4 42 | 3.1 | 19 40 |
| 55 | 4 2 | 20 20 | 0 48 | ::: | 4 24 | 3.3 | 19 54 |
| 60 | 3 30 | 20 52 | 1 6 | ::: | 3 60 | 3.6 | 20 12 |

| SUNCE | | | | MJESEC | | | |
|-------|-------------------------|------|------------------------------|----------------|--------|----------------|------|
| UT | e = T _p - UT | Δ/24 | τ | Prolaz | Δ/24 | π _♃ | τ |
| h | min | s | s | h min | min | ' | ' |
| 00 | -11 | 35.3 | -7 | 16.3 | 12 18 | 2.0 | 57.8 |
| 12 | -11 | 43.2 | T _m 12 h 11.7 min | Starost 29.2 d | Faza ● | | |

| PLANETE | | | | | | | | | |
|---------|----------------|----|-------------------|------|-------|----------------|----|-------------------|------|
| Pl. | T _m | π | β ₆₀₋₂ | Vel. | Pl. | T _m | π | β ₆₀₋₂ | Vel. |
| h | min | ' | ° | | h min | ' | ° | | |
| ♃ | 14 44 | .1 | 17 | -3.7 | ♄ | 17 50 | .0 | 330 | -2.0 |
| ♅ | 3 33 | .1 | 185 | -.6 | ♆ | 5 45 | .0 | 152 | .8 |

| UT | SUNCE | | PROJ. TAČKA S _↑ | VENERA | | MARS | |
|----|----------------|----------------|-------------------------------|----------------|----------------|----------------|----------------|
| | S _☉ | δ _☉ | | S _♀ | δ _♀ | S _♂ | δ _♂ |
| h | ° | ' | ° | ' | ' | ' | ' |
| 0 | 177 | 2.2 | -19 | 23.8 | 122 | 43.6 | |
| 2 | 207 | 1.9 | -19 | 22.6 | 152 | 48.5 | |
| 4 | 237 | 1.6 | -19 | 21.4 | 182 | 53.4 | |
| 6 | 267 | 1.3 | -19 | 20.2 | 212 | 58.3 | |
| 8 | 297 | .9 | -19 | 19.0 | 243 | 3.3 | |
| 10 | 327 | .6 | -19 | 17.8 | 273 | 8.2 | |
| 12 | 357 | .3 | -19 | 16.7 | 303 | 13.1 | |
| 14 | 27 | .0 | -19 | 15.5 | 333 | 18.1 | |
| 16 | 56 | 59.7 | -19 | 14.3 | 3 | 23.0 | |
| 18 | 86 | 59.4 | -19 | 13.1 | 33 | 27.9 | |
| 20 | 116 | 59.1 | -19 | 11.8 | 63 | 32.8 | |
| 22 | 146 | 58.8 | -19 | 10.6 | 93 | 37.8 | |
| Δ | | -2 | | 6 | | -3 | 12 |

| UT | MJESEC | | | | JUPITER | | SATURN | |
|----|----------------|------|----------------|-----|----------------|----------------|----------------|----------------|
| | S _♃ | Δ | δ _♃ | Δ | S _♃ | δ _♃ | S _♄ | δ _♄ |
| h | ° | ' | ° | ' | ° | ' | ° | ' |
| 0 | 169 | 40.3 | 111 | -13 | 2.2 | 106 | 92 | 43.1 |
| 2 | 198 | 40.5 | 113 | -12 | 41.0 | 107 | 122 | 47.5 |
| 4 | 227 | 41.1 | 114 | -12 | 19.6 | 108 | 152 | 52.0 |
| 6 | 256 | 42.0 | 116 | -11 | 58.0 | 109 | 182 | 56.5 |
| 8 | 285 | 43.1 | 117 | -11 | 36.2 | 110 | 213 | 1.0 |
| 10 | 314 | 44.6 | 119 | -11 | 14.2 | 111 | 243 | 5.5 |
| 12 | 343 | 46.3 | 120 | -10 | 52.0 | 112 | 273 | 9.9 |
| 14 | 12 | 48.4 | 122 | -10 | 29.7 | 113 | 303 | 14.4 |
| 16 | 41 | 50.7 | 123 | -10 | 7.2 | 114 | 333 | 18.9 |
| 18 | 70 | 53.2 | 124 | -9 | 44.5 | 114 | 3 | 23.3 |
| 20 | 99 | 56.1 | 125 | -9 | 21.7 | 115 | 33 | 27.8 |
| 22 | 128 | 59.2 | 127 | -8 | 58.8 | 115 | 63 | 32.3 |
| Δ | | | | | | | 22 | 1 |

| UT | SUNCE | | TRAJANJE SUMRAKA | | MJESEC | | |
|----|-------|-------|------------------|-------|--------|------|-------|
| | IZLAZ | ZALAZ | GRAB. | ASTR. | IZLAZ | Δ/24 | ZALAZ |
| N | h min | h min | h min | h min | h min | min | h min |
| 60 | 8 33 | 15 52 | 0 50 | 2 32 | 8 22 | .5 | 18 6 |
| 55 | 8 5 | 16 20 | 0 41 | 2 9 | 8 6 | .8 | 18 20 |
| 50 | 7 45 | 16 40 | 0 36 | 1 54 | 7 55 | 1.0 | 18 30 |
| 45 | 7 29 | 16 56 | 0 32 | 1 43 | 7 45 | 1.1 | 18 38 |
| 40 | 7 16 | 17 9 | 0 29 | 1 34 | 7 37 | 1.3 | 18 44 |
| 35 | 7 4 | 17 20 | 0 27 | 1 28 | 7 30 | 1.4 | 18 50 |
| 30 | 6 55 | 17 30 | 0 25 | 1 23 | 7 24 | 1.5 | 18 55 |
| 20 | 6 37 | 17 47 | 0 23 | 1 17 | 7 14 | 1.7 | 19 4 |
| 10 | 6 23 | 18 2 | 0 22 | 1 13 | 7 4 | 1.8 | 19 11 |
| 0 | 6 8 | 18 16 | 0 22 | 1 13 | 6 56 | 2.0 | 19 18 |
| 10 | 5 54 | 18 30 | 0 22 | 1 15 | 6 47 | 2.1 | 19 25 |
| 20 | 5 39 | 18 45 | 0 24 | 1 20 | 6 37 | 2.3 | 19 33 |
| 30 | 5 21 | 19 3 | 0 26 | 1 31 | 6 27 | 2.5 | 19 41 |
| 35 | 5 11 | 19 13 | 0 28 | 1 39 | 6 21 | 2.6 | 19 46 |
| 40 | 4 59 | 19 25 | 0 31 | 1 51 | 6 14 | 2.7 | 19 51 |
| 45 | 4 44 | 19 39 | 0 34 | 2 10 | 6 5 | 2.8 | 19 57 |
| 50 | 4 27 | 19 56 | 0 40 | 2 46 | 5 55 | 3.0 | 20 5 |
| 55 | 4 4 | 20 18 | 0 48 | ::: | 5 43 | 3.2 | 20 14 |
| 60 | 3 33 | 20 49 | 1 5 | ::: | 5 27 | 3.5 | 20 25 |

| SUNCE | | | | MJESEC | | | |
|-------|-------------------------|------|------------------------------|--------------|---------------------|----------------|------|
| UT | e = T _p - UT | Δ/24 | τ | Prolaz | Δ/24 | π _♃ | τ |
| h | min | s | s | h min | min | ' | ' |
| 00 | -11 | 51.0 | -6 | 16.3 | T _m 13 7 | 2.0 | 57.2 |
| 12 | -11 | 58.5 | T _m 12 h 12.0 min | Starost .7 d | Faza ● | | |

| PLANETE | | | | | | | | | |
|---------|----------------|----|-------------------|------|-------|----------------|----|-------------------|------|
| Pl. | T _m | π | β ₆₀₋₂ | Vel. | Pl. | T _m | π | β ₆₀₋₂ | Vel. |
| h | min | ' | ° | | h min | ' | ° | | |
| ♃ | 14 44 | .1 | 16 | -3.7 | ♄ | 17 46 | .0 | 330 | -2.0 |
| ♅ | 3 29 | .1 | 185 | -.6 | ♆ | 5 41 | .0 | 152 | .8 |

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_gamma), VENERA (S_venus, delta_venus), MARS (S_mars, delta_mars). Rows 0-24.

Table with columns: SUNCE (IZLAZ, ZALAZ, GRAB., ASTR.), TRAJANJE SUMRAKA, MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows 0-24.

Table with columns: UT, MJESEC (S_moon, delta_moon), JUPITER (S_jupiter, delta_jupiter), SATURN (S_saturn, delta_saturn). Rows 0-24.

Summary table for SUNCE, MJESEC, and PLANETE with various astronomical parameters like T_sun, T_moon, etc.

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_gamma), VENERA (S_venus, delta_venus), MARS (S_mars, delta_mars). Rows 0-24.

Table with columns: SUNCE (IZLAZ, ZALAZ, GRAB., ASTR.), TRAJANJE SUMRAKA, MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows 0-24.

Table with columns: UT, MJESEC (S_moon, delta_moon), JUPITER (S_jupiter, delta_jupiter), SATURN (S_saturn, delta_saturn). Rows 0-24.

Summary table for SUNCE, MJESEC, and PLANETE with various astronomical parameters like T_sun, T_moon, etc.

Table with columns for UT, SUNCE, PROLJ. TAČKA, VENERA, MARS. Includes astronomical data for the Sun, Venus, and Mars for January 27th.

Table with columns for SUNCE, TRAJANJE SUMRAKA, MJESEC. Includes astronomical data for the Sun, twilight, and Moon for January 27th.

Table with columns for MJESEC, JUPITER, SATURN. Includes astronomical data for the Moon, Jupiter, and Saturn for January 27th.

Summary table for SUNCE, MJESEC, and PLANETE. Includes key astronomical parameters for the Sun, Moon, and planets.

Table with columns for UT, SUNCE, PROLJ. TAČKA, VENERA, MARS. Includes astronomical data for the Sun, Venus, and Mars for January 28th.

Table with columns for SUNCE, TRAJANJE SUMRAKA, MJESEC. Includes astronomical data for the Sun, twilight, and Moon for January 28th.

Table with columns for MJESEC, JUPITER, SATURN. Includes astronomical data for the Moon, Jupiter, and Saturn for January 28th.

Summary table for SUNCE, MJESEC, and PLANETE. Includes key astronomical parameters for the Sun, Moon, and planets.

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_gamma), VENERA (S_venus, delta_venus), MARS (S_mars, delta_mars). Rows include hourly data from 0 to 24 hours.

Table with columns: SUNCE (IZLAZ, ZALAZ), TRAJANJE SUMRAKA (GRAB., ASTR.), MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows include hourly data from 0 to 24 hours.

Table with columns: UT, MJESEC (S_m, delta_m), JUPITER (S_j, delta_j), SATURN (S_s, delta_s). Rows include hourly data from 0 to 24 hours.

Summary tables for SUNCE, MJESEC, and PLANETE. Includes parameters like T_m, pi, 360-alpha, Vel., and phase information.

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_gamma), VENERA (S_venus, delta_venus), MARS (S_mars, delta_mars). Rows include hourly data from 0 to 24 hours.

Table with columns: SUNCE (IZLAZ, ZALAZ), TRAJANJE SUMRAKA (GRAB., ASTR.), MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows include hourly data from 0 to 24 hours.

Table with columns: UT, MJESEC (S_m, delta_m), JUPITER (S_j, delta_j), SATURN (S_s, delta_s). Rows include hourly data from 0 to 24 hours.

Summary tables for SUNCE, MJESEC, and PLANETE. Includes parameters like T_m, pi, 360-alpha, Vel., and phase information.

Table with columns for UT, SUNCE (S_0, delta_0), PROLJ. TAČKA (S_T), VENERA (S_2, delta_2), and MARS (S_M, delta_M). Rows show astronomical data for hours 0-24.

Table with columns for UT, MJSESEC (S_G, Delta, delta_G, Delta), JUPITER (S_J, delta_J), and SATURN (S_H, delta_H). Rows show astronomical data for hours 0-24.

Table with columns for SUNCE (IZLAZ, ZALAZ), TRAJANJE SUMRAKA (GRAB, ASTR.), and MJSESEC (IZLAZ, Delta/24, ZALAZ, Delta/24). Rows show astronomical data for hours 0-24.

Summary tables for SUNCE and MJSESEC with parameters like UT, e=TP-UT, Delta/24, Prolaz, T_m, and Planete (Pl., T_m, pi, 360-alpha, Vel.).

1. FEBRUAR

SRIJEDA

Table with columns for UT, SUNCE (S_0, delta_0), PROLJ. TAČKA (S_T), VENERA (S_2, delta_2), and MARS (S_M, delta_M). Rows show astronomical data for hours 0-24.

Table with columns for UT, MJSESEC (S_G, Delta, delta_G, Delta), JUPITER (S_J, delta_J), and SATURN (S_H, delta_H). Rows show astronomical data for hours 0-24.

Table with columns for SUNCE (IZLAZ, ZALAZ), TRAJANJE SUMRAKA (GRAB, ASTR.), and MJSESEC (IZLAZ, Delta/24, ZALAZ, Delta/24). Rows show astronomical data for hours 0-24.

Summary tables for SUNCE and MJSESEC with parameters like UT, e=TP-UT, Delta/24, Prolaz, T_m, and Planete (Pl., T_m, pi, 360-alpha, Vel.).

Table with columns for UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_gamma), VENERA (S_venus, delta_venus), and MARS (S_mars, delta_mars). Rows show hourly data for UT 0 to 24.

Table with columns for SUNCE (IZLAZ, ZALAZ, GRAB., ASTR.), TRAJANJE SUMRAKA, and MJESEC (IZLAZ, ZALAZ, delta/24). Rows show hourly data for UT 0 to 24.

Table with columns for UT, MJESEC (S_m, delta_m), JUPITER (S_j, delta_j), and SATURN (S_s, delta_s). Rows show hourly data for UT 0 to 24.

Summary tables for SUNCE, MJESEC, and PLANETE. Includes sunrise/sunset times, moon phase (Faza), and planetary data (PL, T_m, pi, 360-zeta, Vel.).

Table with columns for UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_gamma), VENERA (S_venus, delta_venus), and MARS (S_mars, delta_mars). Rows show hourly data for UT 0 to 24.

Table with columns for SUNCE (IZLAZ, ZALAZ, GRAB., ASTR.), TRAJANJE SUMRAKA, and MJESEC (IZLAZ, ZALAZ, delta/24). Rows show hourly data for UT 0 to 24.

Table with columns for UT, MJESEC (S_m, delta_m), JUPITER (S_j, delta_j), and SATURN (S_s, delta_s). Rows show hourly data for UT 0 to 24.

Summary tables for SUNCE, MJESEC, and PLANETE. Includes sunrise/sunset times, moon phase (Faza), and planetary data (PL, T_m, pi, 360-zeta, Vel.).

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_sun), VENERA (S_ven, delta_ven), MARS (S_mar, delta_mar). Rows include times from 0 to 22 and a delta row.

Table with columns: SUNCE (IZLAZ, ZALAZ), TRAJANJE SUMRAKA (GRAB., ASTR.), MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows include times from 0 to 60 and a delta row.

Table with columns: UT, MJESEC (S_mj, delta, delta_sun, delta_sun), JUPITER (S_jup, delta_jup), SATURN (S_sat, delta_sat). Rows include times from 0 to 22 and a delta row.

Table with columns: SUNCE (UT, e, T_p, UT, delta/24, tau, Prolaz, delta/24, pi_sun, tau), MJESEC (UT, h, min, s, s, tau, h, min, min, tau, pi_sun, tau), PLANETE (Pl, T_m, pi, beta-2, Vel., Pl, T_m, pi, beta-2, Vel.). Rows include times from 0 to 60 and a delta row.

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_sun), VENERA (S_ven, delta_ven), MARS (S_mar, delta_mar). Rows include times from 0 to 22 and a delta row.

Table with columns: SUNCE (IZLAZ, ZALAZ), TRAJANJE SUMRAKA (GRAB., ASTR.), MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows include times from 0 to 60 and a delta row.

Table with columns: UT, MJESEC (S_mj, delta, delta_sun, delta_sun), JUPITER (S_jup, delta_jup), SATURN (S_sat, delta_sat). Rows include times from 0 to 22 and a delta row.

Table with columns: SUNCE (UT, e, T_p, UT, delta/24, tau, Prolaz, delta/24, pi_sun, tau), MJESEC (UT, h, min, s, s, tau, h, min, min, tau, pi_sun, tau), PLANETE (Pl, T_m, pi, beta-2, Vel., Pl, T_m, pi, beta-2, Vel.). Rows include times from 0 to 60 and a delta row.

Table for 6. FEBRUAR showing astronomical data for SUNCE, VENERA, and MARS. Columns include UT, Suncé (S☉, δ☉), Prolje tačka (S☉), Venera (S♀, δ♀), and Mars (S♂, δ♂).

Table for 6. FEBRUAR showing astronomical data for SUNCE and MJESEC. Columns include Suncé (IZLAZ, ZALAZ, GRAB., ASTR.) and Mjeseć (IZLAZ, Δ/24, ZALAZ, Δ/24).

Table for 6. FEBRUAR showing astronomical data for MJESEC, JUPITER, and SATURN. Columns include Mjeseć (S☾, Δ, δ☾, Δ), Jupiter (S♃, δ♃), and Saturn (S♄, δ♄).

Summary tables for 6. FEBRUAR: SUNCE, MJESEC, and PLANETE. Includes sunrise/sunset times, moon phases, and planetary positions.

7. FEBRUAR

UTORAK

Table for 7. FEBRUAR showing astronomical data for SUNCE, VENERA, and MARS. Columns include UT, Suncé, Prolje tačka, Venera, and Mars.

Table for 7. FEBRUAR showing astronomical data for SUNCE and MJESEC. Columns include Suncé and Mjeseć.

Table for 7. FEBRUAR showing astronomical data for MJESEC, JUPITER, and SATURN. Columns include Mjeseć, Jupiter, and Saturn.

Summary tables for 7. FEBRUAR: SUNCE, MJESEC, and PLANETE. Includes sunrise/sunset times, moon phases, and planetary positions.

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_p), VENERA (S_v, delta_v), MARS (S_m, delta_m). Rows include times from 0 to 22 and a delta row.

Table with columns: UT, MJESEC (S_c, delta_c), JUPITER (S_j, delta_j), SATURN (S_s, delta_s). Rows include times from 0 to 22 and a delta row.

Table with columns: SUNCE (IZLAZ, ZALAZ, TRAJANJE SUMRAKA: GRAB., ASTR.), MJESEC (IZLAZ, ZALAZ, delta/24). Rows include times from 60 to 6 and a delta row.

Summary table with columns: SUNCE (e, delta, T_m, T_sun), MJESEC (Prolaz, delta/24, pi_c, r_c), PLANETE (Pl, T_m, pi, 360-alpha, Vel.).

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_p), VENERA (S_v, delta_v), MARS (S_m, delta_m). Rows include times from 0 to 22 and a delta row.

Table with columns: UT, MJESEC (S_c, delta_c), JUPITER (S_j, delta_j), SATURN (S_s, delta_s). Rows include times from 0 to 22 and a delta row.

Table with columns: SUNCE (IZLAZ, ZALAZ, TRAJANJE SUMRAKA: GRAB., ASTR.), MJESEC (IZLAZ, ZALAZ, delta/24). Rows include times from 60 to 6 and a delta row.

Summary table with columns: SUNCE (e, delta, T_m, T_sun), MJESEC (Prolaz, delta/24, pi_c, r_c), PLANETE (Pl, T_m, pi, 360-alpha, Vel.).

Table with columns: UT, SUNCE, PROLI TAČKA, VENERA, MARS. Rows include time intervals and astronomical data.

Table with columns: SUNCE, TRAJANJE SUMRAKA, MJESEC. Rows include time intervals and astronomical data.

Table with columns: UT, MJESEC, JUPITER, SATURN. Rows include time intervals and astronomical data.

Table with columns: SUNCE, MJESEC, PLANETE. Rows include astronomical data and planet positions.

Table with columns: UT, SUNCE, PROLI TAČKA, VENERA, MARS. Rows include time intervals and astronomical data.

Table with columns: SUNCE, TRAJANJE SUMRAKA, MJESEC. Rows include time intervals and astronomical data.

Table with columns: UT, MJESEC, JUPITER, SATURN. Rows include time intervals and astronomical data.

Table with columns: SUNCE, MJESEC, PLANETE. Rows include astronomical data and planet positions.

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_sun), VENERA (S_ven, delta_ven), MARS (S_mar, delta_mar). Rows show hourly data from 0 to 24 hours.

Table with columns: SUNCE (IZLAZ, ZALAZ, GRAB., ASTR.), TRAJANJE SUMRAKA, MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows show hourly data from 0 to 24 hours.

Table with columns: UT, MJESEC (S_mj, delta_mj), JUPITER (S_jup, delta_jup), SATURN (S_sat, delta_sat). Rows show hourly data from 0 to 24 hours.

Summary tables for SUNCE (UT, e, T_p, T_m, T_sun, T_moon), MJESEC (Prolaz, delta/24, pi, r), and PLANETE (Pl, T_m, pi, 360-alpha, Vel.).

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_sun), VENERA (S_ven, delta_ven), MARS (S_mar, delta_mar). Rows show hourly data from 0 to 24 hours.

Table with columns: SUNCE (IZLAZ, ZALAZ, GRAB., ASTR.), TRAJANJE SUMRAKA, MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows show hourly data from 0 to 24 hours.

Table with columns: UT, MJESEC (S_mj, delta_mj), JUPITER (S_jup, delta_jup), SATURN (S_sat, delta_sat). Rows show hourly data from 0 to 24 hours.

Summary tables for SUNCE (UT, e, T_p, T_m, T_sun, T_moon), MJESEC (Prolaz, delta/24, pi, r), and PLANETE (Pl, T_m, pi, 360-alpha, Vel.).

Astronomical table for Feb 22 showing Sun, Venus, Mars, Jupiter, and Saturn data (Right Ascension, Declination, etc.).

Astronomical table for Feb 22 showing Moon, Jupiter, and Saturn data (Elongation, Opposition, etc.).

Astronomical table for Feb 22 showing Sun, Moon, and Planet data (Rise/Set, Transits, etc.).

Summary astronomical table for Feb 22 showing Sun, Moon, and Planet data in a condensed format.

23. FEBRUAR

ČETVRTAK

Astronomical table for Feb 23 showing Sun, Venus, Mars, Jupiter, and Saturn data (Right Ascension, Declination, etc.).

Astronomical table for Feb 23 showing Moon, Jupiter, and Saturn data (Elongation, Opposition, etc.).

Astronomical table for Feb 23 showing Sun, Moon, and Planet data (Rise/Set, Transits, etc.).

Summary astronomical table for Feb 23 showing Sun, Moon, and Planet data in a condensed format.

Table with columns for UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_gamma), VENERA (S_venus, delta_venus), and MARS (S_mars, delta_mars). Rows show hourly data from 0 to 24 hours.

Table with columns for SUNCE (IZLAZ, ZALAZ), TRAJANJE SUMRAKA (GRAB., ASTR.), and MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows show hourly data from 0 to 24 hours.

Table with columns for UT, MJESEC (S_m, delta_m), JUPITER (S_j, delta_j), and SATURN (S_s, delta_s). Rows show hourly data from 0 to 24 hours.

Summary tables for SUNCE, MJESEC, and PLANETE. Includes sunrise/sunset times, moon phase, and planetary positions (PL, T_m, pi, beta-delta, Vel.).

Table with columns for UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_gamma), VENERA (S_venus, delta_venus), and MARS (S_mars, delta_mars). Rows show hourly data from 0 to 24 hours.

Table with columns for SUNCE (IZLAZ, ZALAZ), TRAJANJE SUMRAKA (GRAB., ASTR.), and MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows show hourly data from 0 to 24 hours.

Table with columns for UT, MJESEC (S_m, delta_m), JUPITER (S_j, delta_j), and SATURN (S_s, delta_s). Rows show hourly data from 0 to 24 hours.

Summary tables for SUNCE, MJESEC, and PLANETE. Includes sunrise/sunset times, moon phase, and planetary positions (PL, T_m, pi, beta-delta, Vel.).

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_gamma), VENERA (S_venus, delta_venus), MARS (S_mars, delta_mars). Rows show hourly data for Sun, Venus, and Mars.

Table with columns: SUNCE (IZLAZ, ZALAZ, GRAB., ASTR.), TRAJANJE SUMRAKA, MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows show hourly data for Sun, twilight, and Moon.

Table with columns: UT, MJESEC (S_moon, delta_moon, delta_moon), JUPITER (S_jupiter, delta_jupiter), SATURN (S_saturn, delta_saturn). Rows show hourly data for Moon, Jupiter, and Saturn.

Summary tables for SUNCE, MJESEC, and PLANETE. Includes parameters like e, Tm, pi, 360-alpha, Vel., and phase information.

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_gamma), VENERA (S_venus, delta_venus), MARS (S_mars, delta_mars). Rows show hourly data for Sun, Venus, and Mars.

Table with columns: SUNCE (IZLAZ, ZALAZ, GRAB., ASTR.), TRAJANJE SUMRAKA, MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows show hourly data for Sun, twilight, and Moon.

Table with columns: UT, MJESEC (S_moon, delta_moon, delta_moon), JUPITER (S_jupiter, delta_jupiter), SATURN (S_saturn, delta_saturn). Rows show hourly data for Moon, Jupiter, and Saturn.

Summary tables for SUNCE, MJESEC, and PLANETE. Includes parameters like e, Tm, pi, 360-alpha, Vel., and phase information.

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_gamma), VENERA (S_venus, delta_venus), MARS (S_mars, delta_mars). Rows show hourly data from 0 to 24 hours.

Table with columns: SUNCE (IZLAZ, ZALAZ, GRAB., ASTR.), TRAJANJE SUMRAKA, MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows show hourly data from 0 to 24 hours.

Table with columns: UT, MJESEC (S_m, delta, delta_c, delta_d), JUPITER (S_j, delta_j), SATURN (S_s, delta_s). Rows show hourly data from 0 to 24 hours.

Summary tables for SUNCE, MJESEC, and PLANETE. Includes parameters like e, T_p, T_m, T_s, and planet positions.

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_gamma), VENERA (S_venus, delta_venus), MARS (S_mars, delta_mars). Rows show hourly data from 0 to 24 hours.

Table with columns: SUNCE (IZLAZ, ZALAZ, GRAB., ASTR.), TRAJANJE SUMRAKA, MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows show hourly data from 0 to 24 hours.

Table with columns: UT, MJESEC (S_m, delta, delta_c, delta_d), JUPITER (S_j, delta_j), SATURN (S_s, delta_s). Rows show hourly data from 0 to 24 hours.

Summary tables for SUNCE, MJESEC, and PLANETE. Includes parameters like e, T_p, T_m, T_s, and planet positions.

3. MART

2012.

SUBOTA

Table with columns UT, SUNCE (S_sun, delta_sun), PROLJ. TACKA (S_sun), VENERA (S_ven, delta_ven), MARS (S_mar, delta_mar) containing astronomical data for March 3rd.

Table with columns UT, MJESEC (S_jup, delta_jup, delta), JUPITER (S_jup, delta_jup), SATURN (S_sat, delta_sat) containing astronomical data for March 3rd.

Table with columns SUNCE (IZLAZ, ZALAZ, GRAB., ASTR.), MJESEC (IZLAZ, delta/24, ZALAZ, delta/24) containing astronomical data for March 3rd.

Summary table with columns SUNCE, MJESEC, PLANETE containing astronomical data for March 3rd.

4. MART

NEDJELJA

Table with columns UT, SUNCE (S_sun, delta_sun), PROLJ. TACKA (S_sun), VENERA (S_ven, delta_ven), MARS (S_mar, delta_mar) containing astronomical data for March 4th.

Table with columns UT, MJESEC (S_jup, delta_jup, delta), JUPITER (S_jup, delta_jup), SATURN (S_sat, delta_sat) containing astronomical data for March 4th.

Table with columns SUNCE (IZLAZ, ZALAZ, GRAB., ASTR.), MJESEC (IZLAZ, delta/24, ZALAZ, delta/24) containing astronomical data for March 4th.

Summary table with columns SUNCE, MJESEC, PLANETE containing astronomical data for March 4th.

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_gamma), VENERA (S_venus, delta_venus), MARS (S_mars, delta_mars). Rows include times from 0 to 22h and summary row Delta.

Table with columns: UT, MJESEC (S_moon, delta_moon, phase), JUPITER (S_jup, delta_jup), SATURN (S_sat, delta_sat). Rows include times from 0 to 22h and summary row Delta.

Table with columns: SUNCE (IZLAZ, ZALAZ, GRAB., ASTR.), TRAJANJE SUMRAKA, MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows include times from 60 to 6h and summary row S.

Table with columns: SUNCE (e, T_p, UT, delta/24, tau), MJESEC (Prolaz, delta/24, tau). Rows include times from 00 to 12h.

Table with columns: PLANETE (Pl., T_m, pi, beta-gamma, Vel.). Rows include times from 14 57 to 23 2 and summary row S.

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_gamma), VENERA (S_venus, delta_venus), MARS (S_mars, delta_mars). Rows include times from 0 to 22h and summary row Delta.

Table with columns: UT, MJESEC (S_moon, delta_moon, phase), JUPITER (S_jup, delta_jup), SATURN (S_sat, delta_sat). Rows include times from 0 to 22h and summary row Delta.

Table with columns: SUNCE (IZLAZ, ZALAZ, GRAB., ASTR.), TRAJANJE SUMRAKA, MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows include times from 60 to 6h and summary row S.

Table with columns: SUNCE (e, T_p, UT, delta/24, tau), MJESEC (Prolaz, delta/24, tau). Rows include times from 00 to 12h.

Table with columns: PLANETE (Pl., T_m, pi, beta-gamma, Vel.). Rows include times from 14 58 to 22 57 and summary row S.

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_sun), VENERA (S_ven, delta_ven), MARS (S_mar, delta_mar). Rows include time intervals from 0 to 24 hours.

Table with columns: SUNCE (IZLAZ, ZALAZ), TRAJANJE SUMRAKA (GRAB., ASTR.), MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Includes rows for Moon phases and planet positions.

Table with columns: UT, MJESEC (S_m, delta_m), JUPITER (S_jup, delta_jup), SATURN (S_sat, delta_sat). Rows include time intervals from 0 to 24 hours.

Summary tables for SUNCE, MJESEC, and PLANETE with specific parameters like Tm, pi, 360-z, Vel. for various celestial bodies.

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_sun), VENERA (S_ven, delta_ven), MARS (S_mar, delta_mar). Rows include time intervals from 0 to 24 hours.

Table with columns: SUNCE (IZLAZ, ZALAZ), TRAJANJE SUMRAKA (GRAB., ASTR.), MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Includes rows for Moon phases and planet positions.

Table with columns: UT, MJESEC (S_m, delta_m), JUPITER (S_jup, delta_jup), SATURN (S_sat, delta_sat). Rows include time intervals from 0 to 24 hours.

Summary tables for SUNCE, MJESEC, and PLANETE with specific parameters like Tm, pi, 360-z, Vel. for various celestial bodies.

Table with 4 main columns: SUNCE, PROLIJ TAČKA, VENERA, MARS. Sub-columns include coordinates (S, δ) and altitudes (S_σ, δ_σ). Rows show hourly data for UT from 0 to 22.

Table with 3 main columns: SUNCE, TRAJANJE SUMRAKA, MJESEC. Sub-columns include times for sunrise/sunset (IZLAZ, ZALAZ), twilight (GRAB., ASTR.), and moon phases (IZLAZ, ZALAZ, Δ/24). Rows show hourly data for UT from 0 to 22.

Table with 3 main columns: MJESEC, JUPITER, SATURN. Sub-columns include moon phase (S_☾, Δ, δ_☾, Δ), Jupiter (S_J, δ_J), and Saturn (S_S, δ_S). Rows show hourly data for UT from 0 to 22.

Summary table for SUNCE, MJESEC, and PLANETE. Includes moon phase details (T_m, T_m, Starost) and planet data (PI, T_m, π, β60-z, Vel.).

Table with 4 main columns: SUNCE, PROLIJ TAČKA, VENERA, MARS. Sub-columns include coordinates (S, δ) and altitudes (S_σ, δ_σ). Rows show hourly data for UT from 0 to 22.

Table with 3 main columns: SUNCE, TRAJANJE SUMRAKA, MJESEC. Sub-columns include times for sunrise/sunset (IZLAZ, ZALAZ), twilight (GRAB., ASTR.), and moon phases (IZLAZ, ZALAZ, Δ/24). Rows show hourly data for UT from 0 to 22.

Table with 3 main columns: MJESEC, JUPITER, SATURN. Sub-columns include moon phase (S_☾, Δ, δ_☾, Δ), Jupiter (S_J, δ_J), and Saturn (S_S, δ_S). Rows show hourly data for UT from 0 to 22.

Summary table for SUNCE, MJESEC, and PLANETE. Includes moon phase details (T_m, T_m, Starost) and planet data (PI, T_m, π, β60-z, Vel.).

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_tau), VENERA (S_ven, delta_ven), MARS (S_mar, delta_mar). Rows show hourly data for the sun and planets.

Table with columns: SUNCE (IZLAZ, ZALAZ, GRAB., ASTR.), TRAJANJE SUMRAKA, MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows show sunrise, sunset, twilight, and moon data.

Table with columns: UT, MJESEC (S_mj, delta, delta_c, delta_d), JUPITER (S_jup, delta_jup), SATURN (S_sat, delta_sat). Rows show moon, Jupiter, and Saturn data.

Summary tables for SUNCE, MJESEC, and PLANETE. Includes parameters like T_m, pi, beta0-z, Vel., and phase information.

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_tau), VENERA (S_ven, delta_ven), MARS (S_mar, delta_mar). Rows show hourly data for the sun and planets.

Table with columns: SUNCE (IZLAZ, ZALAZ, GRAB., ASTR.), TRAJANJE SUMRAKA, MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows show sunrise, sunset, twilight, and moon data.

Table with columns: UT, MJESEC (S_mj, delta, delta_c, delta_d), JUPITER (S_jup, delta_jup), SATURN (S_sat, delta_sat). Rows show moon, Jupiter, and Saturn data.

Summary tables for SUNCE, MJESEC, and PLANETE. Includes parameters like T_m, pi, beta0-z, Vel., and phase information.

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_gamma), VENERA (S_venus, delta_venus), MARS (S_mars, delta_mars). Rows include times from 0 to 22 and a delta row.

Table with columns: SUNCE (IZLAZ, ZALAZ), TRAJANJE SUMRAKA (GRAB., ASTR.), MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows include times from 0 to 22 and a delta row.

Table with columns: UT, MJESEC (S_m, delta_m), JUPITER (S_j, delta_j), SATURN (S_s, delta_s). Rows include times from 0 to 22 and a delta row.

Summary table for SUNCE and MJESEC with parameters like T_m, T_sun, T_moon, and PLANETE with parameters like T_m, pi, 360-alpha, Vel.

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_gamma), VENERA (S_venus, delta_venus), MARS (S_mars, delta_mars). Rows include times from 0 to 22 and a delta row.

Table with columns: SUNCE (IZLAZ, ZALAZ), TRAJANJE SUMRAKA (GRAB., ASTR.), MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows include times from 0 to 22 and a delta row.

Table with columns: UT, MJESEC (S_m, delta_m), JUPITER (S_j, delta_j), SATURN (S_s, delta_s). Rows include times from 0 to 22 and a delta row.

Summary table for SUNCE and MJESEC with parameters like T_m, T_sun, T_moon, and PLANETE with parameters like T_m, pi, 360-alpha, Vel.

Table with columns: UT, SUNCE (S_sun, delta_sun), PROJ. TAČKA (S_gamma), VENERA (S_venus, delta_venus), MARS (S_mars, delta_mars). Rows include time intervals from 0 to 22 hours and a delta row.

Table with columns: SUNCE (IZLAZ, ZALAZ), TRAJANJE SUMRAKA (GRAB, ASTR.), MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows include time intervals from 0 to 22 hours and a delta row.

Table with columns: UT, MJESEC (S_m, delta_m), JUPITER (S_j, delta_j), SATURN (S_s, delta_s). Rows include time intervals from 0 to 22 hours and a delta row.

Table with columns: SUNCE (e = T_p - UT, delta/24, tau), MJESEC (Prolaz, delta/24, tau), PLANETE (Pl, T_m, pi, 360-alpha, Vel.). Rows include time intervals from 0 to 22 hours and a delta row.

1. APRIL

NEDJELJA

Table with columns: UT, SUNCE (S_sun, delta_sun), PROJ. TAČKA (S_gamma), VENERA (S_venus, delta_venus), MARS (S_mars, delta_mars). Rows include time intervals from 0 to 22 hours and a delta row.

Table with columns: SUNCE (IZLAZ, ZALAZ), TRAJANJE SUMRAKA (GRAB, ASTR.), MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows include time intervals from 0 to 22 hours and a delta row.

Table with columns: UT, MJESEC (S_m, delta_m), JUPITER (S_j, delta_j), SATURN (S_s, delta_s). Rows include time intervals from 0 to 22 hours and a delta row.

Table with columns: SUNCE (e = T_p - UT, delta/24, tau), MJESEC (Prolaz, delta/24, tau), PLANETE (Pl, T_m, pi, 360-alpha, Vel.). Rows include time intervals from 0 to 22 hours and a delta row.

Table with columns for UT, SUNCE, PROLIJTAČKA, VENERA, MARS. Includes rows for hours from 0 to 22 and a daily summary row with values like 2, 10, 1, 6, 28, 0.

Table with columns for SUNCE, TRAJANJE SUMRAKA, MJESEC. Includes a section for 'PLANETE' with columns for PL, Tm, pi, 360-z, Vel. and a summary row with values like 14 58, 1, 303, -5.0, etc.

Table with columns for UT, MJESEC, JUPITER, SATURN. Includes rows for hours from 0 to 22 and a daily summary row with values like 19, 2, 26, 1.

Table with columns for UT, SUNCE, PROLIJTAČKA, VENERA, MARS. Includes rows for hours from 0 to 22 and a daily summary row with values like 2, 9, 1, 6, 28, 0.

Table with columns for SUNCE, TRAJANJE SUMRAKA, MJESEC. Includes a section for 'PLANETE' with columns for PL, Tm, pi, 360-z, Vel. and a summary row with values like 14 58, 1, 303, -5.0, etc.

Table with columns for UT, MJESEC, JUPITER, SATURN. Includes rows for hours from 0 to 22 and a daily summary row with values like 19, 2, 26, 1.

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_gamma), VENERA (S_venus, delta_venus), MARS (S_mars, delta_mars). Rows show hourly data for UT 0 to 22.

Table with columns: SUNCE (IZLAZ, ZALAZ, GRAB., ASTR.), TRAJANJE SUMRAKA, MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows show hourly data for UT 0 to 22.

Table with columns: UT, MJESEC (S_m, delta, delta_c, delta), JUPITER (S_j, delta_j), SATURN (S_s, delta_s). Rows show hourly data for UT 0 to 22.

Table with columns: SUNCE (e=gamma-UT, delta/24, tau), MJESEC (Prolaz, delta/24, pi_c, tau), PLANETE (Pl, T_m, pi, beta-gamma, Vel.). Rows show planetary data for UT 0 to 22.

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_gamma), VENERA (S_venus, delta_venus), MARS (S_mars, delta_mars). Rows show hourly data for UT 0 to 22.

Table with columns: SUNCE (IZLAZ, ZALAZ, GRAB., ASTR.), TRAJANJE SUMRAKA, MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows show hourly data for UT 0 to 22.

Table with columns: UT, MJESEC (S_m, delta, delta_c, delta), JUPITER (S_j, delta_j), SATURN (S_s, delta_s). Rows show hourly data for UT 0 to 22.

Table with columns: SUNCE (e=gamma-UT, delta/24, tau), MJESEC (Prolaz, delta/24, pi_c, tau), PLANETE (Pl, T_m, pi, beta-gamma, Vel.). Rows show planetary data for UT 0 to 22.

Table for April 10th showing astronomical data for Sun, Venus, and Mars. Includes columns for UT, Sun position (S_sun, delta_sun), Prograde/Retrade points (S_p, S_r), Venus position (S_ven, delta_ven), and Mars position (S_mar, delta_mar).

Main table for April 10th showing Sun, Moon, and Planets. Includes columns for Sun (IZLAZ, ZALAZ, GRAB., ASTR.), Moon (IZLAZ, ZALAZ, delta/24), and Planets (PL, T_m, pi, 360-z, Vel.).

Table for April 10th showing Moon, Jupiter, and Saturn data. Includes columns for Moon (S_m, delta_m, Delta), Jupiter (S_jup, delta_jup), and Saturn (S_sat, delta_sat).

Table for April 10th showing Moon and Planets. Includes columns for Sun (IZLAZ, ZALAZ, delta/24), Moon (Prolaz, delta/24, T_m, r), and Planets (PL, T_m, pi, 360-z, Vel.).

Table for April 11th showing astronomical data for Sun, Venus, and Mars. Includes columns for UT, Sun position (S_sun, delta_sun), Prograde/Retrade points (S_p, S_r), Venus position (S_ven, delta_ven), and Mars position (S_mar, delta_mar).

Main table for April 11th showing Sun, Moon, and Planets. Includes columns for Sun (IZLAZ, ZALAZ, GRAB., ASTR.), Moon (IZLAZ, ZALAZ, delta/24), and Planets (PL, T_m, pi, 360-z, Vel.).

Table for April 11th showing Moon, Jupiter, and Saturn data. Includes columns for Moon (S_m, delta_m, Delta), Jupiter (S_jup, delta_jup), and Saturn (S_sat, delta_sat).

Table for April 11th showing Moon and Planets. Includes columns for Sun (IZLAZ, ZALAZ, delta/24), Moon (Prolaz, delta/24, T_m, r), and Planets (PL, T_m, pi, 360-z, Vel.).

Table with columns for UT, SUNCE, PROLJ. TAČKA, VENERA, and MARS. Rows include time intervals from 0 to 24 hours with associated astronomical data.

Table with columns for SUNCE, TRAJANJE SUMRAKA, and MJESEC. Rows include time intervals from 0 to 24 hours with astronomical data.

Table with columns for UT, MJESEC, JUPITER, and SATURN. Rows include time intervals from 0 to 24 hours with astronomical data.

Table with columns for SUNCE, MJESEC, and PLANETE. Includes sunrise/sunset times, moon phase, and planetary data.

Table with columns for UT, SUNCE, PROLJ. TAČKA, VENERA, and MARS. Rows include time intervals from 0 to 24 hours with astronomical data.

Table with columns for SUNCE, TRAJANJE SUMRAKA, and MJESEC. Rows include time intervals from 0 to 24 hours with astronomical data.

Table with columns for UT, MJESEC, JUPITER, and SATURN. Rows include time intervals from 0 to 24 hours with astronomical data.

Table with columns for SUNCE, MJESEC, and PLANETE. Includes sunrise/sunset times, moon phase, and planetary data.

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_T), VENERA (S_ven, delta_ven), MARS (S_mar, delta_mar). Rows include hours from 0 to 24 and a delta row.

Table with columns: SUNCE (IZLAZ, ZALAZ), TRAJANJE SUMRAKA (GRAB, ASTR.), MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows include hours from 0 to 24 and a delta row.

Table with columns: UT, MJESEC (S_mj, delta, delta_sun, delta_sun), JUPITER (S_jup, delta_jup), SATURN (S_sat, delta_sat). Rows include hours from 0 to 24 and a delta row.

Table with columns: SUNCE (e = T_p - UT, delta/24, tau, Prolaz, delta/24, tau_sun, tau_sun), MJESEC (h min, s, s, tau, h min, min, tau, tau_sun), PLANETE (Pl, T_m, pi, 360-alpha, Vel., Pl, T_m, pi, 360-alpha, Vel.).

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_T), VENERA (S_ven, delta_ven), MARS (S_mar, delta_mar). Rows include hours from 0 to 24 and a delta row.

Table with columns: SUNCE (IZLAZ, ZALAZ), TRAJANJE SUMRAKA (GRAB, ASTR.), MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows include hours from 0 to 24 and a delta row.

Table with columns: UT, MJESEC (S_mj, delta, delta_sun, delta_sun), JUPITER (S_jup, delta_jup), SATURN (S_sat, delta_sat). Rows include hours from 0 to 24 and a delta row.

Table with columns: SUNCE (e = T_p - UT, delta/24, tau, Prolaz, delta/24, tau_sun, tau_sun), MJESEC (h min, s, s, tau, h min, min, tau, tau_sun), PLANETE (Pl, T_m, pi, 360-alpha, Vel., Pl, T_m, pi, 360-alpha, Vel.).

Table with columns: UT, SUNCE (S_sun, delta_sun), PROJ. TAČKA (S_gamma), VENERA (S_venus, delta_venus), MARS (S_mars, delta_mars). Rows show celestial coordinates for various times of day.

Table with columns: SUNCE (IZLAZ, ZALAZ), TRAJANJE SUMRAKA (GRAB., ASTR.), MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows show sunrise, sunset, twilight, and moon data.

Table with columns: UT, MJESEC (S_moon, delta, delta_sun), JUPITER (S_jup, delta_jup), SATURN (S_sat, delta_sat). Rows show coordinates for the Moon, Jupiter, and Saturn.

Table with columns: SUNCE (UT, e=TP-UT, delta/24, tau, Prolaz, delta/24, pi_sun, tau), PLANETE (Pl., T_m, pi, beta-gamma, Vel., Pl., T_m, pi, beta-gamma, Vel.). Rows show moon phases and planetary data.

Table with columns: UT, SUNCE (S_sun, delta_sun), PROJ. TAČKA (S_gamma), VENERA (S_venus, delta_venus), MARS (S_mars, delta_mars). Rows show celestial coordinates for various times of day.

Table with columns: SUNCE (IZLAZ, ZALAZ), TRAJANJE SUMRAKA (GRAB., ASTR.), MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows show sunrise, sunset, twilight, and moon data.

Table with columns: UT, MJESEC (S_moon, delta, delta_sun), JUPITER (S_jup, delta_jup), SATURN (S_sat, delta_sat). Rows show coordinates for the Moon, Jupiter, and Saturn.

Table with columns: SUNCE (UT, e=TP-UT, delta/24, tau, Prolaz, delta/24, pi_sun, tau), PLANETE (Pl., T_m, pi, beta-gamma, Vel., Pl., T_m, pi, beta-gamma, Vel.). Rows show moon phases and planetary data.

Table with columns for UT, SUNCE, PROLJ. TAČKA, VENERA, MARS. Rows show astronomical data for various times of day.

Table with columns for SUNCE, TRAJANJE SUMRAKA, MJESEC. Rows show sunrise/sunset times and moon phases.

Table with columns for MJESEC, JUPITER, SATURN. Rows show moon phases and planetary positions.

Summary tables for SUNCE, MJESEC, and PLANETE. Includes moon phase details and planetary data.

Table with columns for UT, SUNCE, PROLJ. TAČKA, VENERA, MARS. Rows show astronomical data for various times of day.

Table with columns for SUNCE, TRAJANJE SUMRAKA, MJESEC. Rows show sunrise/sunset times and moon phases.

Table with columns for MJESEC, JUPITER, SATURN. Rows show moon phases and planetary positions.

Summary tables for SUNCE, MJESEC, and PLANETE. Includes moon phase details and planetary data.

Table with columns for UT, SUNCE, PROLJ. TAČKA, VENERA, MARS, containing astronomical data for May 14th.

Table with columns for SUNCE, TRAJANJE SUMRAKA, MJESEC, containing sunrise, twilight, and moon data for May 14th.

Table with columns for UT, MJESEC, JUPITER, SATURN, containing moon, Jupiter, and Saturn data for May 14th.

Table with columns for SUNCE, MJESEC, PLANETE, containing moon, moon phases, and planet data for May 14th.

Table with columns for UT, SUNCE, PROLJ. TAČKA, VENERA, MARS, containing astronomical data for May 15th.

Table with columns for SUNCE, TRAJANJE SUMRAKA, MJESEC, containing sunrise, twilight, and moon data for May 15th.

Table with columns for UT, MJESEC, JUPITER, SATURN, containing moon, Jupiter, and Saturn data for May 15th.

Table with columns for SUNCE, MJESEC, PLANETE, containing moon, moon phases, and planet data for May 15th.

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_sun), VENERA (S_venus, delta_venus), MARS (S_mars, delta_mars). Rows include times from 0 to 22 and a delta row.

Table with columns: SUNCE (IZLAZ, ZALAZ), TRAJANJE SUMRAKA (GRAB., ASTR.), MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows include times from 0 to 22 and a delta row.

Table with columns: UT, MJESEC (S_moon, delta_moon), JUPITER (S_jup, delta_jup), SATURN (S_sat, delta_sat). Rows include times from 0 to 22 and a delta row.

Summary table for SUNCE and MJESEC with parameters like e=TP-UT, Prolaz, T_moon, Starost, and PLANETE with orbital parameters (Pl., T_m, pi, 360-alpha, Vel.).

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_sun), VENERA (S_venus, delta_venus), MARS (S_mars, delta_mars). Rows include times from 0 to 22 and a delta row.

Table with columns: SUNCE (IZLAZ, ZALAZ), TRAJANJE SUMRAKA (GRAB., ASTR.), MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows include times from 0 to 22 and a delta row.

Table with columns: UT, MJESEC (S_moon, delta_moon), JUPITER (S_jup, delta_jup), SATURN (S_sat, delta_sat). Rows include times from 0 to 22 and a delta row.

Summary table for SUNCE and MJESEC with parameters like e=TP-UT, Prolaz, T_moon, Starost, and PLANETE with orbital parameters (Pl., T_m, pi, 360-alpha, Vel.).

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_sun), VENERA (S_ven, delta_ven), MARS (S_mar, delta_mar). Rows show data for hours 0 to 22.

Table with columns: SUNCE (IZLAZ, ZALAZ), TRAJANJE SUMRAKA (GRAB., ASTR.), MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows show data for hours 0 to 22.

Table with columns: UT, MJESEC (S_mj, delta_mj), JUPITER (S_jup, delta_jup), SATURN (S_sat, delta_sat). Rows show data for hours 0 to 22.

Summary table for SUNCE and MJESEC with columns: UT, e=TP-UT, delta/24, Prolaz, delta/24, pi, r. Includes PLANETE section with columns: Pl., T_m, pi, 360-alpha, Vel.

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_sun), VENERA (S_ven, delta_ven), MARS (S_mar, delta_mar). Rows show data for hours 0 to 22.

Table with columns: SUNCE (IZLAZ, ZALAZ), TRAJANJE SUMRAKA (GRAB., ASTR.), MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows show data for hours 0 to 22.

Table with columns: UT, MJESEC (S_mj, delta_mj), JUPITER (S_jup, delta_jup), SATURN (S_sat, delta_sat). Rows show data for hours 0 to 22.

Summary table for SUNCE and MJESEC with columns: UT, e=TP-UT, delta/24, Prolaz, delta/24, pi, r. Includes PLANETE section with columns: Pl., T_m, pi, 360-alpha, Vel.

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_gamma), VENERA (S_venus, delta_venus), MARS (S_mars, delta_mars). Rows include hourly data from 0 to 22h and a daily summary row (delta).

Table with columns: SUNCE (IZLAZ, ZALAZ, GRAB., ASTR.), TRAJANJE SUMRAKA, MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows include hourly data from 0 to 22h and a daily summary row (S).

Table with columns: UT, MJESEC (S_c, delta_c, delta), JUPITER (S_j, delta_j), SATURN (S_h, delta_h). Rows include hourly data from 0 to 22h and a daily summary row (delta).

Table with columns: SUNCE (e=TP-UT, delta/24, Prolaz, delta/24, pi_c, r), PLANETE (PI, T_m, pi, 360-z, Vel.). Rows include hourly data from 0 to 22h and a daily summary row (delta).

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_gamma), VENERA (S_venus, delta_venus), MARS (S_mars, delta_mars). Rows include hourly data from 0 to 22h and a daily summary row (delta).

Table with columns: SUNCE (IZLAZ, ZALAZ, GRAB., ASTR.), TRAJANJE SUMRAKA, MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows include hourly data from 0 to 22h and a daily summary row (S).

Table with columns: UT, MJESEC (S_c, delta_c, delta), JUPITER (S_j, delta_j), SATURN (S_h, delta_h). Rows include hourly data from 0 to 22h and a daily summary row (delta).

Table with columns: SUNCE (e=TP-UT, delta/24, Prolaz, delta/24, pi_c, r), PLANETE (PI, T_m, pi, 360-z, Vel.). Rows include hourly data from 0 to 22h and a daily summary row (delta).

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_sun), VENERA (S_ven, delta_ven), MARS (S_mar, delta_mar). Rows show data for hours 0 to 22 and a delta row.

Table with columns: SUNCE (IZLAZ, ZALAZ), TRAJANJE SUMRAKA (GRAB., ASTR.), MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows show data for hours 0 to 22 and a delta row.

Table with columns: UT, MJESEC (S_mj, delta, delta_sun, delta_sun), JUPITER (S_jup, delta_jup), SATURN (S_sat, delta_sat). Rows show data for hours 0 to 22 and a delta row.

Table with columns: SUNCE (e=TP-UT, delta/24, tau), MJESEC (Prolaz, delta/24, pi_sun, tau). Rows show data for hours 0 to 22 and a delta row.

Table with columns: PLANETE (Pl., T_m, pi, beta-2, Vel., Pl., T_m, pi, beta-2, Vel.). Rows show data for planets like Jupiter and Saturn.

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_sun), VENERA (S_ven, delta_ven), MARS (S_mar, delta_mar). Rows show data for hours 0 to 22 and a delta row.

Table with columns: SUNCE (IZLAZ, ZALAZ), TRAJANJE SUMRAKA (GRAB., ASTR.), MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows show data for hours 0 to 22 and a delta row.

Table with columns: UT, MJESEC (S_mj, delta, delta_sun, delta_sun), JUPITER (S_jup, delta_jup), SATURN (S_sat, delta_sat). Rows show data for hours 0 to 22 and a delta row.

Table with columns: SUNCE (e=TP-UT, delta/24, tau), MJESEC (Prolaz, delta/24, pi_sun, tau). Rows show data for hours 0 to 22 and a delta row.

Table with columns: PLANETE (Pl., T_m, pi, beta-2, Vel., Pl., T_m, pi, beta-2, Vel.). Rows show data for planets like Jupiter and Saturn.

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLIJ TAČKA (S_tau), VENERA (S_ven, delta_ven), MARS (S_mar, delta_mar). Rows show hourly data from 0 to 24 hours.

Table with columns: SUNCE (IZLAZ, ZALAZ), TRAJANJE SUMRAKA (GRAB, ASTR.), MJESEC (IZLAZ, ZALAZ). Rows show hourly data from 0 to 24 hours.

Table with columns: UT, MJESEC (S_mj, delta_mj), JUPITER (S_jup, delta_jup), SATURN (S_sat, delta_sat). Rows show hourly data from 0 to 24 hours.

Summary table for SUNCE and MJESEC with sub-tables for sunrise/sunset times and planetary data (PLANETE).

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLIJ TAČKA (S_tau), VENERA (S_ven, delta_ven), MARS (S_mar, delta_mar). Rows show hourly data from 0 to 24 hours.

Table with columns: SUNCE (IZLAZ, ZALAZ), TRAJANJE SUMRAKA (GRAB, ASTR.), MJESEC (IZLAZ, ZALAZ). Rows show hourly data from 0 to 24 hours.

Table with columns: UT, MJESEC (S_mj, delta_mj), JUPITER (S_jup, delta_jup), SATURN (S_sat, delta_sat). Rows show hourly data from 0 to 24 hours.

Summary table for SUNCE and MJESEC with sub-tables for sunrise/sunset times and planetary data (PLANETE).

Table with columns for UT, SUNCE (S_sun, delta_sun), PROLI TAČKA (S_tau), VENERA (S_ven, delta_ven), and MARS (S_mar, delta_mar). It contains astronomical data for the sun, Venus, and Mars over the course of June 9th.

Table with columns for UT, MJESEC (S_m, delta_m), JUPITER (S_jup, delta_jup), and SATURN (S_sat, delta_sat). It contains astronomical data for the moon, Jupiter, and Saturn over the course of June 9th.

Table with columns for SUNCE (IZLAZ, ZALAZ), TRAJANJE SUMRAKA (GRAB, ASTR.), and MJESEC (IZLAZ, ZALAZ). It contains data for sunrise, sunset, twilight, and moon phases throughout June 9th.

Summary table for SUNCE and MJESEC providing specific values for sunrise, sunset, twilight, and moon phases.

Table for PLANETE (PLANETS) listing parameters for Venus (Ven), Jupiter (Jup), and Saturn (Sat) including phase (Pl), magnitude (Tm), distance (pi), elongation (beta-alpha), and velocity (Vel).

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Table with columns for UT, SUNCE (S_sun, delta_sun), PROLI TAČKA (S_tau), VENERA (S_ven, delta_ven), and MARS (S_mar, delta_mar). It contains astronomical data for the sun, Venus, and Mars over the course of June 10th.

Table with columns for UT, MJESEC (S_m, delta_m), JUPITER (S_jup, delta_jup), and SATURN (S_sat, delta_sat). It contains astronomical data for the moon, Jupiter, and Saturn over the course of June 10th.

Table with columns for SUNCE (IZLAZ, ZALAZ), TRAJANJE SUMRAKA (GRAB, ASTR.), and MJESEC (IZLAZ, ZALAZ). It contains data for sunrise, sunset, twilight, and moon phases throughout June 10th.

Summary table for SUNCE and MJESEC providing specific values for sunrise, sunset, twilight, and moon phases.

Table for PLANETE (PLANETS) listing parameters for Venus (Ven), Jupiter (Jup), and Saturn (Sat) including phase (Pl), magnitude (Tm), distance (pi), elongation (beta-alpha), and velocity (Vel).

Table with columns: UT, SUNCE, PROLJ. TAČKA, VENERA, MARS. Rows include time intervals and celestial coordinates.

Table with columns: SUNCE, TRAJANJE SUMRAKA, MJESEC. Includes sub-tables for sunrise/sunset, moon phases, and planetary data.

Table with columns: UT, MJESEC, JUPITER, SATURN. Rows include time intervals and celestial coordinates.

Table with columns: SUNCE, MJESEC, PLANETE. Includes sub-tables for sunrise/sunset, moon phases, and planetary data.

Table with columns: UT, SUNCE, PROLJ. TAČKA, VENERA, MARS. Rows include time intervals and celestial coordinates.

Table with columns: SUNCE, TRAJANJE SUMRAKA, MJESEC. Includes sub-tables for sunrise/sunset, moon phases, and planetary data.

Table with columns: UT, MJESEC, JUPITER, SATURN. Rows include time intervals and celestial coordinates.

Table with columns: SUNCE, MJESEC, PLANETE. Includes sub-tables for sunrise/sunset, moon phases, and planetary data.

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_sun), VENERA (S_ven, delta_ven), MARS (S_mar, delta_mar). Rows include hourly data from 0 to 24 hours.

Table with columns: SUNCE (IZLAZ, ZALAZ, GRAB., ASTR.), TRAJANJE SUMRAKA, MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows include hourly data from 0 to 24 hours.

Table with columns: UT, MJESEC (S_mj, delta_mj, delta), JUPITER (S_jup, delta_jup), SATURN (S_sat, delta_sat). Rows include hourly data from 0 to 24 hours.

Summary tables for SUNCE, MJESEC, and PLANETE. Includes parameters like e = Tp - UT, Prolaz, Tm, Starost, and planetary data for PL, Tm, pi, beta - z, Vel.

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_sun), VENERA (S_ven, delta_ven), MARS (S_mar, delta_mar). Rows include hourly data from 0 to 24 hours.

Table with columns: SUNCE (IZLAZ, ZALAZ, GRAB., ASTR.), TRAJANJE SUMRAKA, MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows include hourly data from 0 to 24 hours.

Table with columns: UT, MJESEC (S_mj, delta_mj, delta), JUPITER (S_jup, delta_jup), SATURN (S_sat, delta_sat). Rows include hourly data from 0 to 24 hours.

Summary tables for SUNCE, MJESEC, and PLANETE. Includes parameters like e = Tp - UT, Prolaz, Tm, Starost, and planetary data for PL, Tm, pi, beta - z, Vel.

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_gamma), VENERA (S_venus, delta_venus), MARS (S_mars, delta_mars). Rows include times from 0 to 22 and a delta row.

Table with columns: UT, MJESEC (S_moon, delta_moon), JUPITER (S_jupiter, delta_jupiter), SATURN (S_saturn, delta_saturn). Rows include times from 0 to 22 and a delta row.

Table with columns: SUNCE (IZLAZ, ZALAZ, GRAB., ASTR.), MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows include times from 0 to 60 and a delta row.

Table with columns: SUNCE (e=TP-UT, delta/24, tau), MJESEC (Prolaz, delta/24, pi, tau). Rows include times from 00 to 12.

Table with columns: PLANETE (Pl., T_m, pi, beta-2, Vel.). Rows include data for Mercury (☿), Venus (♀), Earth (♁), Mars (♂).

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_gamma), VENERA (S_venus, delta_venus), MARS (S_mars, delta_mars). Rows include times from 0 to 22 and a delta row.

Table with columns: UT, MJESEC (S_moon, delta_moon), JUPITER (S_jupiter, delta_jupiter), SATURN (S_saturn, delta_saturn). Rows include times from 0 to 22 and a delta row.

Table with columns: SUNCE (IZLAZ, ZALAZ, GRAB., ASTR.), MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows include times from 0 to 60 and a delta row.

Table with columns: SUNCE (e=TP-UT, delta/24, tau), MJESEC (Prolaz, delta/24, pi, tau). Rows include times from 00 to 12.

Table with columns: PLANETE (Pl., T_m, pi, beta-2, Vel.). Rows include data for Mercury (☿), Venus (♀), Earth (♁), Mars (♂).

Table with columns for UT, SUNCE (S_sun, delta_sun), PROLI TAČKA (S_gamma), VENERA (S_ven, delta_ven), and MARS (S_mar, delta_mar). Rows include time intervals and coordinates.

Table with columns for SUNCE (IZLAZ, ZALAZ, GRAB., ASTR.), TRAJANJE SUMRAKA, and MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Includes a detailed table for the solar eclipse with parameters like e, TP, UT, and various time intervals.

Table with columns for UT, MJESEC (S_mj, delta, delta_sun, delta), JUPITER (S_jup, delta_jup), and SATURN (S_sat, delta_sat). Rows include time intervals and coordinates.

Summary tables for SUNCE and MJESEC parameters, followed by PLANETE data including PL, Tm, pi, 360-alpha, Vel., and other orbital parameters.

Table with columns for UT, SUNCE (S_sun, delta_sun), PROLI TAČKA (S_gamma), VENERA (S_ven, delta_ven), and MARS (S_mar, delta_mar). Rows include time intervals and coordinates.

Table with columns for SUNCE (IZLAZ, ZALAZ, GRAB., ASTR.), TRAJANJE SUMRAKA, and MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Includes a detailed table for the solar eclipse with parameters like e, TP, UT, and various time intervals.

Table with columns for UT, MJESEC (S_mj, delta, delta_sun, delta), JUPITER (S_jup, delta_jup), and SATURN (S_sat, delta_sat). Rows include time intervals and coordinates.

Summary tables for SUNCE and MJESEC parameters, followed by PLANETE data including PL, Tm, pi, 360-alpha, Vel., and other orbital parameters.

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_gamma), VENERA (S_ven, delta_ven), MARS (S_mar, delta_mar). Rows show astronomical data for the 24th of June.

Table with columns: SUNCE (IZLAZ, ZALAZ, GRAB., ASTR.), TRAJANJE SUMRAKA (IZLAZ, ZALAZ, delta/24), MJESEC (IZLAZ, ZALAZ, delta/24). Rows show sunrise, sunset, and moon phase data.

Table with columns: UT, MJESEC (S_m, delta_m), JUPITER (S_jup, delta_jup), SATURN (S_sat, delta_sat). Rows show planetary data for Jupiter and Saturn.

Summary table with columns: SUNCE, MJESEC, PLANETE. Includes moon phase (Faza) and planetary positions (PL., T_m, pi, beta-gamma, Vel.).

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Table with columns: UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_gamma), VENERA (S_ven, delta_ven), MARS (S_mar, delta_mar). Rows show astronomical data for the 25th of June.

Table with columns: SUNCE (IZLAZ, ZALAZ, GRAB., ASTR.), TRAJANJE SUMRAKA (IZLAZ, ZALAZ, delta/24), MJESEC (IZLAZ, ZALAZ, delta/24). Rows show sunrise, sunset, and moon phase data.

Table with columns: UT, MJESEC (S_m, delta_m), JUPITER (S_jup, delta_jup), SATURN (S_sat, delta_sat). Rows show planetary data for Jupiter and Saturn.

Summary table with columns: SUNCE, MJESEC, PLANETE. Includes moon phase (Faza) and planetary positions (PL., T_m, pi, beta-gamma, Vel.).

Table with columns for UT, SUNCE (S_sun, delta_sun), PROLI TAČKA S_p, VENERA (S_ven, delta_ven), MARS (S_mar, delta_mar). Rows show times from 0 to 22 hours.

Table with columns for SUNCE (IZLAZ, ZALAZ), TRAJANJE SUMRAKA (GRAB, ASTR.), MJESEC (IZLAZ, ZALAZ, delta/24). Rows show times from 0 to 22 hours.

Table with columns for UT, MJESEC (S_m, delta_m), JUPITER (S_jup, delta_jup), SATURN (S_sat, delta_sat). Rows show times from 0 to 22 hours.

Summary tables for SUNCE, MJESEC, and PLANETE. Includes solar position, moon phase, and planetary data.

Table with columns for UT, SUNCE (S_sun, delta_sun), PROLI TAČKA S_p, VENERA (S_ven, delta_ven), MARS (S_mar, delta_mar). Rows show times from 0 to 22 hours.

Table with columns for SUNCE (IZLAZ, ZALAZ), TRAJANJE SUMRAKA (GRAB, ASTR.), MJESEC (IZLAZ, ZALAZ, delta/24). Rows show times from 0 to 22 hours.

Table with columns for UT, MJESEC (S_m, delta_m), JUPITER (S_jup, delta_jup), SATURN (S_sat, delta_sat). Rows show times from 0 to 22 hours.

Summary tables for SUNCE, MJESEC, and PLANETE. Includes solar position, moon phase, and planetary data.

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_gamma), VENERA (S_venus, delta_venus), MARS (S_mars, delta_mars). Rows include times from 0 to 22 and a delta row.

Table with columns: SUNCE (IZLAZ, ZALAZ), TRAJANJE SUMRAKA (GRAB., ASTR.), MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows include times from 0 to 22 and a delta row.

Table with columns: UT, MJESEC (S_m, delta_m), JUPITER (S_j, delta_j), SATURN (S_s, delta_s). Rows include times from 0 to 22 and a delta row.

Summary table for SUNCE, MJESEC, and PLANETE. Includes parameters like T_m, pi, 360-alpha, Vel., and coordinates for the Sun, Moon, and planets.

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_gamma), VENERA (S_venus, delta_venus), MARS (S_mars, delta_mars). Rows include times from 0 to 22 and a delta row.

Table with columns: SUNCE (IZLAZ, ZALAZ), TRAJANJE SUMRAKA (GRAB., ASTR.), MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows include times from 0 to 22 and a delta row.

Table with columns: UT, MJESEC (S_m, delta_m), JUPITER (S_j, delta_j), SATURN (S_s, delta_s). Rows include times from 0 to 22 and a delta row.

Summary table for SUNCE, MJESEC, and PLANETE. Includes parameters like T_m, pi, 360-alpha, Vel., and coordinates for the Sun, Moon, and planets.

Table with columns for UT, SUNCE, PROLI TAČKA, VENERA, and MARS. It lists astronomical data for the 29th of June, including right ascension and declination for the Sun and planets.

Table with columns for SUNCE, TRAJANJE SUMRAKA, and MJESEC. It details the duration of twilight and moon phases for June 29th.

Table with columns for UT, MJESEC, JUPITER, and SATURN. It provides data for moon phases and the positions of Jupiter and Saturn.

Table with columns for SUNCE, MJESEC, and PLANETE. It includes sunrise and moon phase data, followed by a table of planetary positions.

Table with columns for UT, SUNCE, PROLI TAČKA, VENERA, and MARS. It lists astronomical data for the 30th of June.

Table with columns for SUNCE, TRAJANJE SUMRAKA, and MJESEC. It details twilight and moon phase data for June 30th.

Table with columns for UT, MJESEC, JUPITER, and SATURN. It provides data for moon phases and the positions of Jupiter and Saturn.

Table with columns for SUNCE, MJESEC, and PLANETE. It includes sunrise and moon phase data, followed by a table of planetary positions.

Table for 1. JUL showing astronomical data for SUNCE, VENERA, MARS, and PROLJ. TAČKA. Columns include UT, SUNE (S_sun, delta_sun), VENERA (S_ven, delta_ven), MARS (S_mar, delta_mar), and PROLJ. TAČKA (S_p, delta_p). Rows are listed by hour from 0 to 22.

Table for 1. JUL showing astronomical data for MJESEC, JUPITER, and SATURN. Columns include UT, MJESEC (S_m, delta_m, lambda_m), JUPITER (S_j, delta_j), and SATURN (S_s, delta_s). Rows are listed by hour from 0 to 22.

Table for 1. JUL showing astronomical data for SUNCE, MJESEC, and PLANETE. Includes columns for SUNCE (IZLAZ, ZALAZ, GRAB., ASTR.), MJESEC (IZLAZ, ZALAZ), and PLANETE (Pl., T_m, pi, 360-alpha, Vel.). Rows include a list of times and a summary section for 12.

Table for 2. JUL showing astronomical data for SUNCE, VENERA, MARS, and PROLJ. TAČKA. Columns include UT, SUNE (S_sun, delta_sun), VENERA (S_ven, delta_ven), MARS (S_mar, delta_mar), and PROLJ. TAČKA (S_p, delta_p). Rows are listed by hour from 0 to 22.

Table for 2. JUL showing astronomical data for MJESEC, JUPITER, and SATURN. Columns include UT, MJESEC (S_m, delta_m, lambda_m), JUPITER (S_j, delta_j), and SATURN (S_s, delta_s). Rows are listed by hour from 0 to 22.

Table for 2. JUL showing astronomical data for SUNCE, MJESEC, and PLANETE. Includes columns for SUNCE (IZLAZ, ZALAZ, GRAB., ASTR.), MJESEC (IZLAZ, ZALAZ), and PLANETE (Pl., T_m, pi, 360-alpha, Vel.). Rows include a list of times and a summary section for 12.

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_gamma), VENERA (S_venus, delta_venus), MARS (S_mars, delta_mars). Rows show astronomical data for the day.

Table with columns: SUNCE (IZLAZ, ZALAZ), TRAJANJE SUMRAKA (GRAB., ASTR.), MJESEC (IZLAZ, ZALAZ, delta/24). Rows show sunrise, sunset, twilight, and moon data.

Table with columns: UT, MJESEC (S_moon, delta_moon, delta), JUPITER (S_jup, delta_jup), SATURN (S_sat, delta_sat). Rows show moon, Jupiter, and Saturn data.

Summary table for 3. JUL with columns: SUNCE, MJESEC, PLANETE. Includes sunrise/sunset times, moon phase, and planetary positions.

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_gamma), VENERA (S_venus, delta_venus), MARS (S_mars, delta_mars). Rows show astronomical data for the day.

Table with columns: SUNCE (IZLAZ, ZALAZ), TRAJANJE SUMRAKA (GRAB., ASTR.), MJESEC (IZLAZ, ZALAZ, delta/24). Rows show sunrise, sunset, twilight, and moon data.

Table with columns: UT, MJESEC (S_moon, delta_moon, delta), JUPITER (S_jup, delta_jup), SATURN (S_sat, delta_sat). Rows show moon, Jupiter, and Saturn data.

Summary table for 4. JUL with columns: SUNCE, MJESEC, PLANETE. Includes sunrise/sunset times, moon phase, and planetary positions.

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_gamma), VENERA (S_venus, delta_venus), MARS (S_mars, delta_mars). Rows include times from 0 to 24.

Table with columns: SUNCE (IZLAZ, ZALAZ), TRAJANJE SUMRAKA (GRAB., ASTR.), MJESEC (IZLAZ, ZALAZ). Rows include times from 0 to 24.

Table with columns: UT, MJESEC (S_moon, delta_moon), JUPITER (S_jupiter, delta_jupiter), SATURN (S_saturn, delta_saturn). Rows include times from 0 to 24.

Table with columns: SUNCE, MJESEC, PLANETE (PI, T_m, pi, beta-gamma, Vel.). Includes a section for the moon's position and planetary data.

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_gamma), VENERA (S_venus, delta_venus), MARS (S_mars, delta_mars). Rows include times from 0 to 24.

Table with columns: SUNCE (IZLAZ, ZALAZ), TRAJANJE SUMRAKA (GRAB., ASTR.), MJESEC (IZLAZ, ZALAZ). Rows include times from 0 to 24.

Table with columns: UT, MJESEC (S_moon, delta_moon), JUPITER (S_jupiter, delta_jupiter), SATURN (S_saturn, delta_saturn). Rows include times from 0 to 24.

Table with columns: SUNCE, MJESEC, PLANETE (PI, T_m, pi, beta-gamma, Vel.). Includes a section for the moon's position and planetary data.

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_gamma), VENERA (S_venus, delta_venus), MARS (S_mars, delta_mars). Rows include time intervals from 0 to 22 hours.

Table with columns: SUNCE (IZLAZ, ZALAZ), TRAJANJE SUMRAKA (GRAB., ASTR.), MJESEC (IZLAZ, ZALAZ). Rows include time intervals from 0 to 22 hours.

Table with columns: UT, MJESEC (S_m, delta_m), JUPITER (S_j, delta_j), SATURN (S_s, delta_s). Rows include time intervals from 0 to 22 hours.

Table with columns: SUNCE (UT, e, T_p, UT, delta_24, tau), MJESEC (Prolaz, delta_24, tau), PLANETE (Pl., T_m, pi, beta-2, Vel.).

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_gamma), VENERA (S_venus, delta_venus), MARS (S_mars, delta_mars). Rows include time intervals from 0 to 22 hours.

Table with columns: SUNCE (IZLAZ, ZALAZ), TRAJANJE SUMRAKA (GRAB., ASTR.), MJESEC (IZLAZ, ZALAZ). Rows include time intervals from 0 to 22 hours.

Table with columns: UT, MJESEC (S_m, delta_m), JUPITER (S_j, delta_j), SATURN (S_s, delta_s). Rows include time intervals from 0 to 22 hours.

Table with columns: SUNCE (UT, e, T_p, UT, delta_24, tau), MJESEC (Prolaz, delta_24, tau), PLANETE (Pl., T_m, pi, beta-2, Vel.).

Table with columns: UT, SUNCE, PROLJ. TAČKA, VENERA, MARS. Rows include time intervals and astronomical data for the Sun, Venus, and Mars.

Table with columns: SUNCE, TRAJANJE SUMRAKA, MJESEC. Rows include time intervals, twilight durations, and moon phase data.

Table with columns: UT, MJESEC, JUPITER, SATURN. Rows include time intervals and astronomical data for the Moon, Jupiter, and Saturn.

Table with columns: SUNCE, MJESEC, PLANETE. Rows include time intervals, moon phase data, and planetary data for Jupiter, Saturn, Uranus, and Neptune.

Table with columns: UT, SUNCE, PROLJ. TAČKA, VENERA, MARS. Rows include time intervals and astronomical data for the Sun, Venus, and Mars.

Table with columns: SUNCE, TRAJANJE SUMRAKA, MJESEC. Rows include time intervals, twilight durations, and moon phase data.

Table with columns: UT, MJESEC, JUPITER, SATURN. Rows include time intervals and astronomical data for the Moon, Jupiter, and Saturn.

Table with columns: SUNCE, MJESEC, PLANETE. Rows include time intervals, moon phase data, and planetary data for Jupiter, Saturn, Uranus, and Neptune.

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLIJ. TAČKA (S_sun), VENERA (S_ven, delta_ven), MARS (S_mar, delta_mar). Rows show data for hours 0 to 24.

Table with columns: SUNCE (IZLAZ, ZALAZ), TRAJANJE SUMRAKA (GRAB., ASTR.), MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows show data for hours 0 to 24.

Table with columns: UT, MJESEC (S_mj, delta_mj, delta_mj), JUPITER (S_jup, delta_jup), SATURN (S_sat, delta_sat). Rows show data for hours 0 to 24.

Table with columns: SUNCE (UT, e=TP-UT, delta/24, f), MJESEC (Prolaz, delta/24, pi, f), PLANETE (Pl., T_m, pi, 360-alpha, Vel.). Rows show planetary data.

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLIJ. TAČKA (S_sun), VENERA (S_ven, delta_ven), MARS (S_mar, delta_mar). Rows show data for hours 0 to 24.

Table with columns: SUNCE (IZLAZ, ZALAZ), TRAJANJE SUMRAKA (GRAB., ASTR.), MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows show data for hours 0 to 24.

Table with columns: UT, MJESEC (S_mj, delta_mj, delta_mj), JUPITER (S_jup, delta_jup), SATURN (S_sat, delta_sat). Rows show data for hours 0 to 24.

Table with columns: SUNCE (UT, e=TP-UT, delta/24, f), MJESEC (Prolaz, delta/24, pi, f), PLANETE (Pl., T_m, pi, 360-alpha, Vel.). Rows show planetary data.

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_pi), VENERA (S_venus, delta_venus), MARS (S_mars, delta_mars). Rows include time intervals from 0h to 22h.

Table with columns: SUNCE (IZLAZ, ZALAZ, GRAB., ASTR.), TRAJANJE SUMRAKA, MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows include time intervals from 0h to 22h.

Table with columns: UT, MJESEC (S_m, delta_m, delta), JUPITER (S_j, delta_j), SATURN (S_s, delta_s). Rows include time intervals from 0h to 22h.

Summary table with columns: SUNCE, MJESEC, PLANETE. Includes values for sun, moon, and planets (Mercury, Venus, Earth, Mars, Jupiter, Saturn).

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_pi), VENERA (S_venus, delta_venus), MARS (S_mars, delta_mars). Rows include time intervals from 0h to 22h.

Table with columns: SUNCE (IZLAZ, ZALAZ, GRAB., ASTR.), TRAJANJE SUMRAKA, MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows include time intervals from 0h to 22h.

Table with columns: UT, MJESEC (S_m, delta_m, delta), JUPITER (S_j, delta_j), SATURN (S_s, delta_s). Rows include time intervals from 0h to 22h.

Summary table with columns: SUNCE, MJESEC, PLANETE. Includes values for sun, moon, and planets (Mercury, Venus, Earth, Mars, Jupiter, Saturn).

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLIJ. TAČKA (S_pi), VENERA (S_ven, delta_ven), MARS (S_mar, delta_mar). Rows show astronomical data for the day.

Table with columns: SUNCE (IZLAZ, ZALAZ, GRAB., ASTR.), TRAJANJE SUMRAKA, MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows show sunrise, sunset, and moon data.

Table with columns: UT, MJESEC (S_c, delta_c, delta), JUPITER (S_jup, delta_jup), SATURN (S_sat, delta_sat). Rows show planetary data for Jupiter and Saturn.

Summary tables for SUNCE, MJESEC, and PLANETE. Includes parameters like T_m, pi, 360-alpha, and Vel.

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLIJ. TAČKA (S_pi), VENERA (S_ven, delta_ven), MARS (S_mar, delta_mar). Rows show astronomical data for the day.

Table with columns: SUNCE (IZLAZ, ZALAZ, GRAB., ASTR.), TRAJANJE SUMRAKA, MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows show sunrise, sunset, and moon data.

Table with columns: UT, MJESEC (S_c, delta_c, delta), JUPITER (S_jup, delta_jup), SATURN (S_sat, delta_sat). Rows show planetary data for Jupiter and Saturn.

Summary tables for SUNCE, MJESEC, and PLANETE. Includes parameters like T_m, pi, 360-alpha, and Vel.

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_sun), VENERA (S_ven, delta_ven), MARS (S_mar, delta_mar). Rows include UT from 0 to 24 and a summary row Delta.

Table with columns: SUNCE (IZLAZ, ZALAZ), TRAJANJE SUMRAKA (GRAB., ASTR.), MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows include UT from 0 to 24 and a summary row S.

Table with columns: UT, MJESEC (S_mj, delta_mj, delta), JUPITER (S_jup, delta_jup), SATURN (S_sat, delta_sat). Rows include UT from 0 to 24 and a summary row Delta.

Summary tables for SUNCE, MJESEC, and PLANETE. Includes parameters like Tm, pi, 360-alpha, Vel., and phase information.

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_sun), VENERA (S_ven, delta_ven), MARS (S_mar, delta_mar). Rows include UT from 0 to 24 and a summary row Delta.

Table with columns: SUNCE (IZLAZ, ZALAZ), TRAJANJE SUMRAKA (GRAB., ASTR.), MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows include UT from 0 to 24 and a summary row S.

Table with columns: UT, MJESEC (S_mj, delta_mj, delta), JUPITER (S_jup, delta_jup), SATURN (S_sat, delta_sat). Rows include UT from 0 to 24 and a summary row Delta.

Summary tables for SUNCE, MJESEC, and PLANETE. Includes parameters like Tm, pi, 360-alpha, Vel., and phase information.

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLI TAČKA (S_sun), VENERA (S_ven, delta_ven), MARS (S_mar, delta_mar). Rows include time intervals from 0 to 24 hours.

Table with columns: SUNCE (IZLAZ, ZALAZ), TRAJANJE SUMRAKA (GRAB., ASTR.), MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Includes a section for PLANETE with columns: Pl., T_m, pi, beta-2, Vel.

Table with columns: UT, MJESEC (S_m, delta, delta_sun, delta_sun), JUPITER (S_jup, delta_jup), SATURN (S_sat, delta_sat). Rows include time intervals from 0 to 24 hours.

Table with columns: SUNCE (e = T_p - UT, delta/24, r, Prolaz, delta/24, pi_sun, r), PLANETE (Pl., T_m, pi, beta-2, Vel.). Includes a section for PLANETE with columns: Pl., T_m, pi, beta-2, Vel.

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLI TAČKA (S_sun), VENERA (S_ven, delta_ven), MARS (S_mar, delta_mar). Rows include time intervals from 0 to 24 hours.

Table with columns: SUNCE (IZLAZ, ZALAZ), TRAJANJE SUMRAKA (GRAB., ASTR.), MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Includes a section for PLANETE with columns: Pl., T_m, pi, beta-2, Vel.

Table with columns: UT, MJESEC (S_m, delta, delta_sun, delta_sun), JUPITER (S_jup, delta_jup), SATURN (S_sat, delta_sat). Rows include time intervals from 0 to 24 hours.

Table with columns: SUNCE (e = T_p - UT, delta/24, r, Prolaz, delta/24, pi_sun, r), PLANETE (Pl., T_m, pi, beta-2, Vel.). Includes a section for PLANETE with columns: Pl., T_m, pi, beta-2, Vel.

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLI TAČKA (S_gamma), VENERA (S_ven, delta_ven), MARS (S_mar, delta_mar). Rows include times from 0 to 24 hours.

Table with columns: SUNCE (IZLAZ, ZALAZ), TRAJANJE SUMRAKA (GRAB, ASTR.), MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows include times from 0 to 24 hours.

Table with columns: UT, MJESEC (S_mj, delta_mj), JUPITER (S_jup, delta_jup), SATURN (S_sat, delta_sat). Rows include times from 0 to 24 hours.

Summary table for SUNCE, MJESEC, and PLANETE with various astronomical parameters like T_m, pi, beta-gamma, and Vel.

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLI TAČKA (S_gamma), VENERA (S_ven, delta_ven), MARS (S_mar, delta_mar). Rows include times from 0 to 24 hours.

Table with columns: SUNCE (IZLAZ, ZALAZ), TRAJANJE SUMRAKA (GRAB, ASTR.), MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows include times from 0 to 24 hours.

Table with columns: UT, MJESEC (S_mj, delta_mj), JUPITER (S_jup, delta_jup), SATURN (S_sat, delta_sat). Rows include times from 0 to 24 hours.

Summary table for SUNCE, MJESEC, and PLANETE with various astronomical parameters like T_m, pi, beta-gamma, and Vel.

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_gamma), VENERA (S_venus, delta_venus), MARS (S_mars, delta_mars). Rows show hourly data from 0 to 24 hours.

Table with columns: SUNCE (IZLAZ, ZALAZ), TRAJANJE SUMRAKA (GRAB., ASTR.), MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows show hourly data from 0 to 24 hours.

Table with columns: UT, MJESEC (S_moon, delta_moon), JUPITER (S_jupiter, delta_jupiter), SATURN (S_saturn, delta_saturn). Rows show hourly data from 0 to 24 hours.

Summary tables for SUNCE, MJESEC, and PLANETE. Includes parameters like T_moon, pi, 360-alpha, Vel., and planetary positions.

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_gamma), VENERA (S_venus, delta_venus), MARS (S_mars, delta_mars). Rows show hourly data from 0 to 24 hours.

Table with columns: SUNCE (IZLAZ, ZALAZ), TRAJANJE SUMRAKA (GRAB., ASTR.), MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows show hourly data from 0 to 24 hours.

Table with columns: UT, MJESEC (S_moon, delta_moon), JUPITER (S_jupiter, delta_jupiter), SATURN (S_saturn, delta_saturn). Rows show hourly data from 0 to 24 hours.

Summary tables for SUNCE, MJESEC, and PLANETE. Includes parameters like T_moon, pi, 360-alpha, Vel., and planetary positions.

Table with columns for UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_gamma), VENERA (S_venus, delta_venus), and MARS (S_mars, delta_mars). Rows show hourly data from 0 to 22 hours.

Table with columns for SUNCE (IZLAZ, ZALAZ), TRAJANJE SUMRAKA (GRAB., ASTR.), and MJESEC (IZLAZ, ZALAZ, delta/24). Rows show hourly data from 0 to 22 hours.

Table with columns for MJESEC (S_moon, delta_moon), JUPITER (S_jupiter, delta_jupiter), and SATURN (S_saturn, delta_saturn). Rows show hourly data from 0 to 22 hours.

Summary tables for SUNCE, MJESEC, and PLANETE. Includes sunrise/sunset times, moon phase, and planetary positions (PL, T_m, pi, beta-gamma, Vel.).

Table with columns for UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_gamma), VENERA (S_venus, delta_venus), and MARS (S_mars, delta_mars). Rows show hourly data from 0 to 22 hours.

Table with columns for SUNCE (IZLAZ, ZALAZ), TRAJANJE SUMRAKA (GRAB., ASTR.), and MJESEC (IZLAZ, ZALAZ, delta/24). Rows show hourly data from 0 to 22 hours.

Table with columns for MJESEC (S_moon, delta_moon), JUPITER (S_jupiter, delta_jupiter), and SATURN (S_saturn, delta_saturn). Rows show hourly data from 0 to 22 hours.

Summary tables for SUNCE, MJESEC, and PLANETE. Includes sunrise/sunset times, moon phase, and planetary positions (PL, T_m, pi, beta-gamma, Vel.).

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_gamma), VENERA (S_venus, delta_venus), MARS (S_mars, delta_mars). Rows show hourly data from 0 to 24 hours.

Table with columns: SUNCE (IZLAZ, ZALAZ, GRAB., ASTR.), TRAJANJE SUMRAKA, MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows show hourly data from 0 to 24 hours.

Table with columns: UT, MJESEC (S_gamma, delta, delta_gamma, delta_delta), JUPITER (S_jup, delta_jup), SATURN (S_sat, delta_sat). Rows show hourly data from 0 to 24 hours.

Summary tables for SUNCE, MJESEC, and PLANETE. Includes parameters like T_sun, T_moon, T_mercury, T_venus, T_mars, T_jupiter, T_saturn, and planetary velocities.

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_gamma), VENERA (S_venus, delta_venus), MARS (S_mars, delta_mars). Rows show hourly data from 0 to 24 hours.

Table with columns: SUNCE (IZLAZ, ZALAZ, GRAB., ASTR.), TRAJANJE SUMRAKA, MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows show hourly data from 0 to 24 hours.

Table with columns: UT, MJESEC (S_gamma, delta, delta_gamma, delta_delta), JUPITER (S_jup, delta_jup), SATURN (S_sat, delta_sat). Rows show hourly data from 0 to 24 hours.

Summary tables for SUNCE, MJESEC, and PLANETE. Includes parameters like T_sun, T_moon, T_mercury, T_venus, T_mars, T_jupiter, T_saturn, and planetary velocities.

Table with 4 columns: SUNCE, PROLIJAČKA TAČKA, VENERA, MARS. Rows include UT, S_☉, δ_☉, S_♀, δ_♀, S_♂, δ_♂.

Table with 4 columns: SUNCE, TRAJANJE SUMRAKA, MJESEC. Rows include UT, IZLAZ, ZALAZ, GRAB., ASTR., IZLAZ Δ/24, ZALAZ Δ/24.

Table with 3 columns: MJESEC, JUPITER, SATURN. Rows include UT, S_♃, Δ, δ_♃, Δ, S_♃, δ_♃, S_♄, δ_♄.

Table with 2 columns: SUNCE, MJESEC. Rows include UT, e = T_p - UT, Δ/24, Prolaz, Δ/24, π, r. Includes PLANETE section with PL, T_m, π, β₆₀₋₂, Vel.

Table with 4 columns: SUNCE, PROLIJAČKA TAČKA, VENERA, MARS. Rows include UT, S_☉, δ_☉, S_♀, δ_♀, S_♂, δ_♂.

Table with 4 columns: SUNCE, TRAJANJE SUMRAKA, MJESEC. Rows include UT, IZLAZ, ZALAZ, GRAB., ASTR., IZLAZ Δ/24, ZALAZ Δ/24.

Table with 3 columns: MJESEC, JUPITER, SATURN. Rows include UT, S_♃, Δ, δ_♃, Δ, S_♃, δ_♃, S_♄, δ_♄.

Table with 2 columns: SUNCE, MJESEC. Rows include UT, e = T_p - UT, Δ/24, Prolaz, Δ/24, π, r. Includes PLANETE section with PL, T_m, π, β₆₀₋₂, Vel.

Table with 4 main columns: SUNCE, PROJ. TAČKA, VENERA, MARS. Each column contains time, longitude, and latitude data for various hours of the day.

Table with 3 main columns: MJESEC, JUPITER, SATURN. Each column contains time, longitude, latitude, and distance data for various hours of the day.

Table with 4 main columns: SUNCE, TRAJANJE SUMRAKA, MJESEC. Includes sunrise/sunset times, twilight durations, moon phase, and moon position data.

Summary table for the month of August, including planetary data (PLANETE) and moon phase information.

Table with 4 main columns: SUNCE, PROJ. TAČKA, VENERA, MARS. Each column contains time, longitude, and latitude data for various hours of the day.

Table with 3 main columns: MJESEC, JUPITER, SATURN. Each column contains time, longitude, latitude, and distance data for various hours of the day.

Table with 4 main columns: SUNCE, TRAJANJE SUMRAKA, MJESEC. Includes sunrise/sunset times, twilight durations, moon phase, and moon position data.

Summary table for the month of August, including planetary data (PLANETE) and moon phase information.

Table for August 16th showing astronomical data for Sun, Venus, and Mars, including right ascension and declination.

Main astronomical data table for August 16th, including Sun, Moon, and planet positions (Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune).

Table for August 16th showing astronomical data for Moon, Jupiter, and Saturn, including distance and phase.

Summary table for August 16th, including Sun, Moon, and Planet information.

Table for August 17th showing astronomical data for Sun, Venus, and Mars, including right ascension and declination.

Main astronomical data table for August 17th, including Sun, Moon, and planet positions.

Table for August 17th showing astronomical data for Moon, Jupiter, and Saturn, including distance and phase.

Summary table for August 17th, including Sun, Moon, and Planet information.

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_gamma), VENERA (S_venus, delta_venus), MARS (S_mars, delta_mars). Rows include times from 0 to 22 and a delta row.

Table with columns: UT, MJESEC (S_moon, delta_moon), JUPITER (S_jupiter, delta_jupiter), SATURN (S_saturn, delta_saturn). Rows include times from 0 to 22 and a delta row.

Table with columns: SUNCE (IZLAZ, ZALAZ, GRAB., ASTR.), TRAJANJE SUMRAKA (IZLAZ, ZALAZ), MJESEC (IZLAZ, ZALAZ). Rows include times from 0 to 22 and a delta row.

Summary table with columns: SUNCE (e=TP-UT, delta/24, Prolaz, T_moon, Starost), MJESEC (Prolaz, delta/24, pi_c, r), PLANETE (PI, T_m, pi, 360-z, Vel.).

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_gamma), VENERA (S_venus, delta_venus), MARS (S_mars, delta_mars). Rows include times from 0 to 22 and a delta row.

Table with columns: UT, MJESEC (S_moon, delta_moon), JUPITER (S_jupiter, delta_jupiter), SATURN (S_saturn, delta_saturn). Rows include times from 0 to 22 and a delta row.

Table with columns: SUNCE (IZLAZ, ZALAZ, GRAB., ASTR.), TRAJANJE SUMRAKA (IZLAZ, ZALAZ), MJESEC (IZLAZ, ZALAZ). Rows include times from 0 to 22 and a delta row.

Summary table with columns: SUNCE (e=TP-UT, delta/24, Prolaz, T_moon, Starost), MJESEC (Prolaz, delta/24, pi_c, r), PLANETE (PI, T_m, pi, 360-z, Vel.).

Table with columns: UT, SUNCE (S_sun, delta_sun), PROJ. TAČKA (S_gamma), VENERA (S_venus, delta_venus), MARS (S_mars, delta_mars). Rows include times from 0 to 22 and a delta row.

Table with columns: SUNCE (IZLAZ, ZALAZ), TRAJANJE SUMRAKA (GRAB., ASTR.), MJESEC (IZLAZ, ZALAZ). Rows include times from 0 to 22 and a delta row.

Table with columns: UT, MJESEC (S_m, delta_m), JUPITER (S_j, delta_j), SATURN (S_s, delta_s). Rows include times from 0 to 22 and a delta row.

Summary tables for SUNCE, MJESEC, and PLANETE. Includes parameters like T_m, pi, beta, and Vel.

Table with columns: UT, SUNCE (S_sun, delta_sun), PROJ. TAČKA (S_gamma), VENERA (S_venus, delta_venus), MARS (S_mars, delta_mars). Rows include times from 0 to 22 and a delta row.

Table with columns: SUNCE (IZLAZ, ZALAZ), TRAJANJE SUMRAKA (GRAB., ASTR.), MJESEC (IZLAZ, ZALAZ). Rows include times from 0 to 22 and a delta row.

Table with columns: UT, MJESEC (S_m, delta_m), JUPITER (S_j, delta_j), SATURN (S_s, delta_s). Rows include times from 0 to 22 and a delta row.

Summary tables for SUNCE, MJESEC, and PLANETE. Includes parameters like T_m, pi, beta, and Vel.

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_sun), VENERA (S_ven, delta_ven), MARS (S_mar, delta_mar). Rows include times from 0 to 22 and a delta row.

Table with columns: SUNCE (IZLAZ, ZALAZ, GRAB., ASTR.), TRAJANJE SUMRAKA, MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows include times from 0 to 22 and a delta row.

Table with columns: UT, MJESEC (S_mj, delta, delta_sun, delta), JUPITER (S_jup, delta_jup), SATURN (S_sat, delta_sat). Rows include times from 0 to 22 and a delta row.

Summary table with columns: SUNCE (UT, e=TP-UT, delta/24, tau, Prolaz, delta/24, pi_sun, tau), PLANETE (Pl., T_m, pi, beta-2, Vel., Pl., T_m, pi, beta-2, Vel.).

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_sun), VENERA (S_ven, delta_ven), MARS (S_mar, delta_mar). Rows include times from 0 to 22 and a delta row.

Table with columns: SUNCE (IZLAZ, ZALAZ, GRAB., ASTR.), TRAJANJE SUMRAKA, MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows include times from 0 to 22 and a delta row.

Table with columns: UT, MJESEC (S_mj, delta, delta_sun, delta), JUPITER (S_jup, delta_jup), SATURN (S_sat, delta_sat). Rows include times from 0 to 22 and a delta row.

Summary table with columns: SUNCE (UT, e=TP-UT, delta/24, tau, Prolaz, delta/24, pi_sun, tau), PLANETE (Pl., T_m, pi, beta-2, Vel., Pl., T_m, pi, beta-2, Vel.).

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLI TAČKA (S_gamma), VENERA (S_venus, delta_venus), MARS (S_mars, delta_mars). Rows show hourly data from 0 to 24 hours.

Table with columns: SUNCE (IZLAZ, ZALAZ, GRAB., ASTR.), TRAJANJE SUMRAKA, MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows show hourly data from 0 to 24 hours.

Table with columns: UT, MJESEC (S_m, delta_m), JUPITER (S_j, delta_j), SATURN (S_s, delta_s). Rows show hourly data from 0 to 24 hours.

Summary table for SUNCE and MJESEC with columns: UT, e=gamma-UT, delta/24, tau, Prolaz, delta/24, pi_c, tau. Includes PLANETE section with columns: Pl, T_m, pi, beta-2, Vel.

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLI TAČKA (S_gamma), VENERA (S_venus, delta_venus), MARS (S_mars, delta_mars). Rows show hourly data from 0 to 24 hours.

Table with columns: SUNCE (IZLAZ, ZALAZ, GRAB., ASTR.), TRAJANJE SUMRAKA, MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows show hourly data from 0 to 24 hours.

Table with columns: UT, MJESEC (S_m, delta_m), JUPITER (S_j, delta_j), SATURN (S_s, delta_s). Rows show hourly data from 0 to 24 hours.

Summary table for SUNCE and MJESEC with columns: UT, e=gamma-UT, delta/24, tau, Prolaz, delta/24, pi_c, tau. Includes PLANETE section with columns: Pl, T_m, pi, beta-2, Vel.

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_sun), VENERA (S_ven, delta_ven), MARS (S_mar, delta_mar). Rows include times from 0 to 22 and a delta row.

Table with columns: SUNCE (IZLAZ, ZALAZ), TRAJANJE SUMRAKA (GRAB., ASTR.), MJESEC (IZLAZ, ZALAZ). Rows include times from 0 to 22 and a delta row.

Table with columns: UT, MJESEC (S_mj, delta_mj), JUPITER (S_jup, delta_jup), SATURN (S_sat, delta_sat). Rows include times from 0 to 22 and a delta row.

Summary table with columns: SUNCE, MJESEC, PLANETE. Includes parameters like e=TP-UT, Prolaz, and planet data for PL, Tm, pi, 360-alpha, Vel.

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_sun), VENERA (S_ven, delta_ven), MARS (S_mar, delta_mar). Rows include times from 0 to 22 and a delta row.

Table with columns: SUNCE (IZLAZ, ZALAZ), TRAJANJE SUMRAKA (GRAB., ASTR.), MJESEC (IZLAZ, ZALAZ). Rows include times from 0 to 22 and a delta row.

Table with columns: UT, MJESEC (S_mj, delta_mj), JUPITER (S_jup, delta_jup), SATURN (S_sat, delta_sat). Rows include times from 0 to 22 and a delta row.

Summary table with columns: SUNCE, MJESEC, PLANETE. Includes parameters like e=TP-UT, Prolaz, and planet data for PL, Tm, pi, 360-alpha, Vel.

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_T), VENERA (S_V, delta_V), MARS (S_M, delta_M). Rows include UT 0-24 and a summary row Delta.

Table with columns: UT, MJESEC (S_c, delta_c), JUPITER (S_J, delta_J), SATURN (S_S, delta_S). Rows include UT 0-24 and a summary row Delta.

Table with columns: SUNCE (IZLAZ, ZALAZ, GRAB., ASTR.), TRAJANJE SUMRAKA (IZLAZ, ZALAZ), MJESEC (IZLAZ, ZALAZ). Rows include UT 0-24 and a summary row S.

Table with columns: SUNCE (e, Prolaz, T_m), MJESEC (Prolaz, T_m), PLANETE (PI, T_m, pi, 360-alpha, Vel.). Rows include UT 0-24 and a summary row S.

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_T), VENERA (S_V, delta_V), MARS (S_M, delta_M). Rows include UT 0-24 and a summary row Delta.

Table with columns: UT, MJESEC (S_c, delta_c), JUPITER (S_J, delta_J), SATURN (S_S, delta_S). Rows include UT 0-24 and a summary row Delta.

Table with columns: SUNCE (IZLAZ, ZALAZ, GRAB., ASTR.), TRAJANJE SUMRAKA (IZLAZ, ZALAZ), MJESEC (IZLAZ, ZALAZ). Rows include UT 0-24 and a summary row S.

Table with columns: SUNCE (e, Prolaz, T_m), MJESEC (Prolaz, T_m), PLANETE (PI, T_m, pi, 360-alpha, Vel.). Rows include UT 0-24 and a summary row S.

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLI TAČKA (S_gamma), VENERA (S_venus, delta_venus), MARS (S_mars, delta_mars). Rows show hourly data from 0 to 24 hours.

Table with columns: SUNCE (IZLAZ, ZALAZ), TRAJANJE SUMRAKA (GRAB, ASTR.), MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows show hourly data from 0 to 24 hours.

Table with columns: UT, MJESEC (S_gamma, delta, delta_gamma, delta_delta), JUPITER (S_jup, delta_jup), SATURN (S_sat, delta_sat). Rows show hourly data from 0 to 24 hours.

Summary tables for SUNCE, MJESEC, and PLANETE. Includes parameters like T_sun, T_moon, and planet positions (Pl, T_m, pi, 360-alpha, Vel).

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLI TAČKA (S_gamma), VENERA (S_venus, delta_venus), MARS (S_mars, delta_mars). Rows show hourly data from 0 to 24 hours.

Table with columns: SUNCE (IZLAZ, ZALAZ), TRAJANJE SUMRAKA (GRAB, ASTR.), MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows show hourly data from 0 to 24 hours.

Table with columns: UT, MJESEC (S_gamma, delta, delta_gamma, delta_delta), JUPITER (S_jup, delta_jup), SATURN (S_sat, delta_sat). Rows show hourly data from 0 to 24 hours.

Summary tables for SUNCE, MJESEC, and PLANETE. Includes parameters like T_sun, T_moon, and planet positions (Pl, T_m, pi, 360-alpha, Vel).

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLIJ. TAČKA (S_gamma), VENERA (S_ven, delta_ven), MARS (S_mar, delta_mar). Rows show hourly data from 0 to 24 hours.

Table with columns: SUNCE (IZLAZ, ZALAZ, GRAB., ASTR.), TRAJANJE SUMRAKA (h min), MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows show hourly data from 0 to 24 hours.

Table with columns: UT, MJESEC (S_gamma, delta_gamma, delta), JUPITER (S_jup, delta_jup), SATURN (S_sat, delta_sat). Rows show hourly data from 0 to 24 hours.

Summary table for Sun and Moon (SUNCE, MJESEC) and Planets (PLANETE). Includes orbital parameters like Tm, pi, 360-alpha, Vel., and position data for Sun, Moon, and planets.

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLIJ. TAČKA (S_gamma), VENERA (S_ven, delta_ven), MARS (S_mar, delta_mar). Rows show hourly data from 0 to 24 hours.

Table with columns: SUNCE (IZLAZ, ZALAZ, GRAB., ASTR.), TRAJANJE SUMRAKA (h min), MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows show hourly data from 0 to 24 hours.

Table with columns: UT, MJESEC (S_gamma, delta_gamma, delta), JUPITER (S_jup, delta_jup), SATURN (S_sat, delta_sat). Rows show hourly data from 0 to 24 hours.

Summary table for Sun and Moon (SUNCE, MJESEC) and Planets (PLANETE). Includes orbital parameters like Tm, pi, 360-alpha, Vel., and position data for Sun, Moon, and planets.

11. SEPTEMBAR

2012.

UTORAK

Table with columns: UT, SUNCE, PROLI TAČKA, VENERA, MARS. Contains astronomical data for the first part of September 11, 2012.

Table with columns: SUNCE, TRAJANJE SUMRAKA, MJESEC. Contains astronomical data for the second part of September 11, 2012.

Table with columns: MJESEC, JUPITER, SATURN. Contains astronomical data for the rest of September 11, 2012.

Table with columns: SUNCE, MJESEC, PLANETE. Contains astronomical data for the rest of September 11, 2012.

12. SEPTEMBAR

SRIJEDA

Table with columns: UT, SUNCE, PROLI TAČKA, VENERA, MARS. Contains astronomical data for the first part of September 12, 2012.

Table with columns: SUNCE, TRAJANJE SUMRAKA, MJESEC. Contains astronomical data for the second part of September 12, 2012.

Table with columns: MJESEC, JUPITER, SATURN. Contains astronomical data for the rest of September 12, 2012.

Table with columns: SUNCE, MJESEC, PLANETE. Contains astronomical data for the rest of September 12, 2012.

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLI TAČKA (S_gamma), VENERA (S_venus, delta_venus), MARS (S_mars, delta_mars). Rows show astronomical data for the 24 hours of the day.

Table with columns: SUNCE (IZLAZ, ZALAZ), TRAJANJE SUMRAKA (GRAB, ASTR.), MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows show sunrise, sunset, twilight, and moon data for the 24 hours of the day.

Table with columns: MJESEC (S_moon, delta, delta_sun), JUPITER (S_jup, delta_jup), SATURN (S_sat, delta_sat). Rows show moon, Jupiter, and Saturn data for the 24 hours of the day.

Summary tables for SUNCE, MJESEC, and PLANETE. Includes sunrise/sunset times, moon phase (Prolaz, Starost), and planetary positions (Pl., T_m, pi, beta-delta, Vel.).

14. SEPTEMBAR

PETAK

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLI TAČKA (S_gamma), VENERA (S_venus, delta_venus), MARS (S_mars, delta_mars). Rows show astronomical data for the 24 hours of the day.

Table with columns: SUNCE (IZLAZ, ZALAZ), TRAJANJE SUMRAKA (GRAB, ASTR.), MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows show sunrise, sunset, twilight, and moon data for the 24 hours of the day.

Table with columns: MJESEC (S_moon, delta, delta_sun), JUPITER (S_jup, delta_jup), SATURN (S_sat, delta_sat). Rows show moon, Jupiter, and Saturn data for the 24 hours of the day.

Summary tables for SUNCE, MJESEC, and PLANETE. Includes sunrise/sunset times, moon phase (Prolaz, Starost), and planetary positions (Pl., T_m, pi, beta-delta, Vel.).

| UT | SUNCE | | PROJ. TAČKA S _↑ | VENERA | | MARS | | |
|----|----------------|----------------|-------------------------------|----------------|----------------|----------------|----------------|---|
| | S _☉ | δ _☉ | | S _♀ | δ _♀ | S _♂ | δ _♂ | |
| h | ° | ' | ° | ' | ° | ' | ° | ' |
| 0 | 181 11.2 | 2 57.1 | 354 21.2 | 222 59.7 | 17 4.1 | 132 20.3 | -16 53.3 | |
| 2 | 211 11.6 | 2 55.2 | 24 26.1 | 252 58.9 | 17 3.0 | 162 21.9 | -16 54.4 | |
| 4 | 241 12.0 | 2 53.3 | 54 31.0 | 282 58.2 | 17 1.9 | 192 23.4 | -16 55.4 | |
| 6 | 271 12.5 | 2 51.4 | 84 36.0 | 312 57.4 | 17 .8 | 222 25.0 | -16 56.5 | |
| 8 | 301 12.9 | 2 49.4 | 114 40.9 | 342 56.6 | 16 59.6 | 252 26.6 | -16 57.5 | |
| 10 | 331 13.4 | 2 47.5 | 144 45.8 | 12 55.8 | 16 58.5 | 282 28.1 | -16 58.5 | |
| 12 | 1 13.8 | 2 45.6 | 174 50.8 | 42 55.0 | 16 57.4 | 312 29.7 | -16 59.6 | |
| 14 | 31 14.3 | 2 43.6 | 204 55.7 | 72 54.3 | 16 56.3 | 342 31.3 | -17 .6 | |
| 16 | 61 14.7 | 2 41.7 | 235 .6 | 102 53.5 | 16 55.2 | 12 32.8 | -17 1.7 | |
| 18 | 91 15.2 | 2 39.8 | 265 5.5 | 132 52.7 | 16 54.1 | 42 34.4 | -17 2.7 | |
| 20 | 121 15.6 | 2 37.9 | 295 10.5 | 162 51.9 | 16 52.9 | 72 36.0 | -17 3.8 | |
| 22 | 151 16.0 | 2 35.9 | 325 15.4 | 192 51.1 | 16 51.8 | 102 37.5 | -17 4.8 | |
| Δ | 2 | -10 | | -4 | -6 | 8 | -5 | |

| UT | MJESEC | | JUPITER | | SATURN | |
|----|----------------|-----|----------------|------|----------------|----------------|
| | S _♃ | Δ | δ _♃ | Δ | S _♃ | δ _♃ |
| h | ° | ' | ° | ' | ° | ' |
| 0 | 196 15.9 | 111 | 3 49.8 | -123 | 279 44.1 | 21 52.3 |
| 2 | 225 16.1 | 111 | 3 25.1 | -124 | 309 48.7 | 21 52.4 |
| 4 | 254 16.2 | 110 | 3 .3 | -125 | 339 53.3 | 21 52.4 |
| 6 | 283 16.2 | 110 | 2 35.4 | -125 | 9 57.9 | 21 52.4 |
| 8 | 312 16.2 | 109 | 2 10.4 | -126 | 40 2.5 | 21 52.5 |
| 10 | 341 16.0 | 109 | 1 45.3 | -126 | 70 7.1 | 21 52.5 |
| 12 | 10 15.8 | 108 | 1 20.1 | -126 | 100 11.7 | 21 52.5 |
| 14 | 39 15.4 | 108 | 0 54.8 | -127 | 130 16.3 | 21 52.5 |
| 16 | 68 14.9 | 107 | 0 29.5 | -127 | 160 20.9 | 21 52.6 |
| 18 | 97 14.4 | 107 | 0 4.1 | -127 | 190 25.5 | 21 52.6 |
| 20 | 126 13.7 | 106 | - 0 21.3 | -127 | 220 30.1 | 21 52.6 |
| 22 | 155 12.9 | 105 | - 0 46.8 | -127 | 250 34.7 | 21 52.7 |
| Δ | | | | | 23 | 0 |

| UT | SUNCE | | TRAJANJE SUMRAKA | | MJESEC | | |
|----|--------|----------------|------------------|----------------|--------|------|-------|
| | IZLAZ | ZALAZ | GRAB. | ASTR. | IZLAZ | Δ/24 | ZALAZ |
| h | min | h min | h min | h min | h min | min | h min |
| 00 | 4 44.8 | .9 | 15.9 | T _m | 11 18 | 2.1 | 58.3 |
| 12 | 4 55.5 | T _m | 11 h 55.1 min | Starost | 28.3 d | Faza | ● |

| SUNCE | | | | MJESEC | | | |
|-------|-------------------------|----------------|---------------|----------------|--------|----------------|------|
| UT | e = T _p - UT | Δ/24 | τ | Prolaz | Δ/24 | π _☾ | τ |
| h | min | s | s | h min | min | ' | ' |
| 00 | 4 44.8 | .9 | 15.9 | T _m | 11 18 | 2.1 | 58.3 |
| 12 | 4 55.5 | T _m | 11 h 55.1 min | Starost | 28.3 d | Faza | ● |

| PLANETE | | | | | | | |
|---------|----------------|----|-------------------|------|-----|----------------|----|
| Pl. | T _m | π | β _{60-z} | Vel. | Pl. | T _m | π |
| h | min | ' | ° | | h | min | ' |
| ☉ | 9 8 | .1 | 229 | -4.1 | ♃ | 5 20 | .0 |
| ♃ | 15 10 | .1 | 138 | .9 | ♂ | 14 6 | .0 |

16. SEPTEMBAR

NEDJELJA

| UT | SUNCE | | PROJ. TAČKA S _↑ | VENERA | | MARS | | |
|----|----------------|----------------|-------------------------------|----------------|----------------|----------------|----------------|---|
| | S _☉ | δ _☉ | | S _♀ | δ _♀ | S _♂ | δ _♂ | |
| h | ° | ' | ° | ' | ° | ' | ° | ' |
| 0 | 181 16.5 | 2 34.0 | 355 20.3 | 222 50.3 | 16 50.7 | 132 39.1 | -17 5.8 | |
| 2 | 211 16.9 | 2 32.1 | 25 25.3 | 252 49.6 | 16 49.5 | 162 40.6 | -17 6.9 | |
| 4 | 241 17.4 | 2 30.1 | 55 30.2 | 282 48.8 | 16 48.4 | 192 42.2 | -17 7.9 | |
| 6 | 271 17.8 | 2 28.2 | 85 35.1 | 312 48.0 | 16 47.3 | 222 43.8 | -17 8.9 | |
| 8 | 301 18.3 | 2 26.3 | 115 40.0 | 342 47.2 | 16 46.1 | 252 45.3 | -17 10.0 | |
| 10 | 331 18.7 | 2 24.4 | 145 45.0 | 12 46.4 | 16 45.0 | 282 46.9 | -17 11.0 | |
| 12 | 1 19.2 | 2 22.4 | 175 49.9 | 42 45.6 | 16 43.8 | 312 48.4 | -17 12.0 | |
| 14 | 31 19.6 | 2 20.5 | 205 54.8 | 72 44.9 | 16 42.6 | 342 50.0 | -17 13.1 | |
| 16 | 61 20.1 | 2 18.6 | 235 59.7 | 102 44.1 | 16 41.5 | 12 51.5 | -17 14.1 | |
| 18 | 91 20.5 | 2 16.6 | 266 4.7 | 132 43.3 | 16 40.3 | 42 53.1 | -17 15.1 | |
| 20 | 121 20.9 | 2 14.7 | 296 9.6 | 162 42.5 | 16 39.2 | 72 54.6 | -17 16.2 | |
| 22 | 151 21.4 | 2 12.8 | 326 14.5 | 192 41.7 | 16 38.0 | 102 56.2 | -17 17.2 | |
| Δ | 2 | -10 | | -4 | -6 | 8 | -5 | |

| UT | MJESEC | | JUPITER | | SATURN | |
|----|----------------|-----|----------------|------|----------------|----------------|
| | S _♃ | Δ | δ _♃ | Δ | S _♃ | δ _♃ |
| h | ° | ' | ° | ' | ° | ' |
| 0 | 184 11.9 | 105 | - 1 12.3 | -128 | 280 39.3 | 21 52.7 |
| 2 | 213 10.9 | 104 | - 1 37.8 | -128 | 310 43.9 | 21 52.7 |
| 4 | 242 9.7 | 103 | - 2 3.3 | -128 | 340 48.5 | 21 52.7 |
| 6 | 271 8.3 | 103 | - 2 28.8 | -127 | 10 53.1 | 21 52.8 |
| 8 | 300 6.8 | 102 | - 2 54.3 | -127 | 40 57.7 | 21 52.8 |
| 10 | 329 5.2 | 101 | - 3 19.7 | -127 | 71 2.3 | 21 52.8 |
| 12 | 358 3.4 | 100 | - 3 45.2 | -127 | 101 7.0 | 21 52.8 |
| 14 | 27 1.4 | 99 | - 4 10.5 | -127 | 131 11.6 | 21 52.9 |
| 16 | 55 59.3 | 99 | - 4 35.8 | -126 | 161 16.2 | 21 52.9 |
| 18 | 84 57.0 | 98 | - 5 1.1 | -126 | 191 20.8 | 21 52.9 |
| 20 | 113 54.6 | 97 | - 5 26.2 | -125 | 221 25.4 | 21 52.9 |
| 22 | 142 52.0 | 96 | - 5 51.3 | -125 | 251 30.0 | 21 53.0 |
| Δ | | | | | 23 | 0 |

| UT | SUNCE | | TRAJANJE SUMRAKA | | MJESEC | | |
|----|--------|----------------|------------------|----------------|--------|------|-------|
| | IZLAZ | ZALAZ | GRAB. | ASTR. | IZLAZ | Δ/24 | ZALAZ |
| h | min | h min | h min | h min | h min | min | h min |
| 00 | 5 6.2 | .9 | 15.9 | T _m | 12 8 | 2.2 | 59.0 |
| 12 | 5 16.8 | T _m | 11 h 54.7 min | Starost | 29.3 d | Faza | ● |

| PLANETE | | | | | | | |
|---------|----------------|----|-------------------|------|-----|----------------|----|
| Pl. | T _m | π | β _{60-z} | Vel. | Pl. | T _m | π |
| h | min | ' | ° | | h | min | ' |
| ☉ | 9 9 | .1 | 227 | -4.1 | ♃ | 5 17 | .0 |
| ♃ | 15 9 | .1 | 137 | .9 | ♂ | 14 3 | .0 |

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_gamma), VENERA (S_venus, delta_venus), MARS (S_mars, delta_mars). Rows include hourly data and daily averages.

Table with columns: SUNCE (IZLAZ, ZALAZ, GRAB., ASTR.), TRAJANJE SUMRAKA, MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows include hourly data and daily averages.

Table with columns: UT, MJESEC (S_moon, delta_moon, delta_moon), JUPITER (S_jupiter, delta_jupiter), SATURN (S_saturn, delta_saturn). Rows include hourly data and daily averages.

Table with columns: SUNCE (e=gamma-UT, delta/24, tau, Prolaz, delta/24, pi_sun, tau), PLANETE (Pl., T_m, pi, beta-2, Vel., Pl., T_m, pi, beta-2, Vel.). Rows include planetary data.

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_gamma), VENERA (S_venus, delta_venus), MARS (S_mars, delta_mars). Rows include hourly data and daily averages.

Table with columns: SUNCE (IZLAZ, ZALAZ, GRAB., ASTR.), TRAJANJE SUMRAKA, MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows include hourly data and daily averages.

Table with columns: UT, MJESEC (S_moon, delta_moon, delta_moon), JUPITER (S_jupiter, delta_jupiter), SATURN (S_saturn, delta_saturn). Rows include hourly data and daily averages.

Table with columns: SUNCE (e=gamma-UT, delta/24, tau, Prolaz, delta/24, pi_sun, tau), PLANETE (Pl., T_m, pi, beta-2, Vel., Pl., T_m, pi, beta-2, Vel.). Rows include planetary data.

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_sun), VENERA (S_ven, delta_ven), MARS (S_mar, delta_mar). Rows show astronomical data for the 24 hours of the day.

Table with columns: SUNCE (IZLAZ, ZALAZ, GRAB., ASTR.), TRAJANJE SUMRAKA, MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows show sunrise, sunset, twilight, and moon data.

Table with columns: UT, MJESEC (S_mj, delta_mj), JUPITER (S_jup, delta_jup), SATURN (S_sat, delta_sat). Rows show planetary data for the 24 hours of the day.

Table with columns: SUNCE (e=TP-UT, delta/24, r), MJESEC (Prolaz, delta/24, r), PLANETE (Pl, T_m, pi, beta-zeta, Vel.). Rows show moon phases and planetary positions.

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_sun), VENERA (S_ven, delta_ven), MARS (S_mar, delta_mar). Rows show astronomical data for the 24 hours of the day.

Table with columns: SUNCE (IZLAZ, ZALAZ, GRAB., ASTR.), TRAJANJE SUMRAKA, MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows show sunrise, sunset, twilight, and moon data.

Table with columns: UT, MJESEC (S_mj, delta_mj), JUPITER (S_jup, delta_jup), SATURN (S_sat, delta_sat). Rows show planetary data for the 24 hours of the day.

Table with columns: SUNCE (e=TP-UT, delta/24, r), MJESEC (Prolaz, delta/24, r), PLANETE (Pl, T_m, pi, beta-zeta, Vel.). Rows show moon phases and planetary positions.

Table with columns for UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_gamma), VENERA (S_venus, delta_venus), and MARS (S_mars, delta_mars). Rows show hourly data from 0 to 24 hours.

Table with columns for SUNCE (IZLAZ, ZALAZ, GRAB., ASTR.), TRAJANJE SUMRAKA, and MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows show hourly data from 0 to 24 hours.

Table with columns for UT, MJESEC (S_m, delta_m), JUPITER (S_j, delta_j), and SATURN (S_s, delta_s). Rows show hourly data from 0 to 24 hours.

Summary table for SUNCE and MJESEC with columns for UT, e=gamma-Tp-UT, delta/24, Prolaz, and MJESEC parameters. Includes PLANETE section with columns for Pl, T_m, pi, 360-alpha, Vel.

Table with columns for UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_gamma), VENERA (S_venus, delta_venus), and MARS (S_mars, delta_mars). Rows show hourly data from 0 to 24 hours.

Table with columns for SUNCE (IZLAZ, ZALAZ, GRAB., ASTR.), TRAJANJE SUMRAKA, and MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows show hourly data from 0 to 24 hours.

Table with columns for UT, MJESEC (S_m, delta_m), JUPITER (S_j, delta_j), and SATURN (S_s, delta_s). Rows show hourly data from 0 to 24 hours.

Summary table for SUNCE and MJESEC with columns for UT, e=gamma-Tp-UT, delta/24, Prolaz, and MJESEC parameters. Includes PLANETE section with columns for Pl, T_m, pi, 360-alpha, Vel.

Table with columns for UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_sun), VENERA (S_ven, delta_ven), and MARS (S_mar, delta_mar). Rows show celestial coordinates for various times of day.

Table with columns for SUNCE (IZLAZ, ZALAZ, GRAB., ASTR.), TRAJANJE SUMRAKA, and MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows show sunrise, sunset, twilight, and moon data.

Table with columns for UT, MJESEC (S_mj, delta_mj, delta), JUPITER (S_jup, delta_jup), and SATURN (S_sat, delta_sat). Rows show coordinates for the moon, Jupiter, and Saturn.

Table with columns for SUNCE (e = T_p - UT, delta/24, tau), MJESEC (Prolaz, delta/24, pi_c, tau), and PLANETE (Pl, T_m, pi, beta - z, Vel.). Rows show moon phases and planet data.

Table with columns for UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_sun), VENERA (S_ven, delta_ven), and MARS (S_mar, delta_mar). Rows show celestial coordinates for various times of day.

Table with columns for SUNCE (IZLAZ, ZALAZ, GRAB., ASTR.), TRAJANJE SUMRAKA, and MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows show sunrise, sunset, twilight, and moon data.

Table with columns for UT, MJESEC (S_mj, delta_mj, delta), JUPITER (S_jup, delta_jup), and SATURN (S_sat, delta_sat). Rows show coordinates for the moon, Jupiter, and Saturn.

Table with columns for SUNCE (e = T_p - UT, delta/24, tau), MJESEC (Prolaz, delta/24, pi_c, tau), and PLANETE (Pl, T_m, pi, beta - z, Vel.). Rows show moon phases and planet data.

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_gamma), VENERA (S_venus, delta_venus), MARS (S_mars, delta_mars). Rows show astronomical data for the 24 hours of the day.

Table with columns: UT, MJESEC (S_moon, delta_moon, delta_moon), JUPITER (S_jupiter, delta_jupiter), SATURN (S_saturn, delta_saturn). Rows show astronomical data for the 24 hours of the day.

Table with columns: SUNCE (IZLAZ, ZALAZ, GRAB., ASTR.), TRAJANJE SUMRAKA (IZLAZ, ZALAZ), MJESEC (IZLAZ, ZALAZ, delta/24). Rows show sunrise, sunset, twilight, and moon data.

Summary table with columns: SUNCE (e = T_p - UT, delta/24, tau), MJESEC (Prolaz, delta/24, tau), PLANETE (Pl., T_m, pi, 360-alpha, Vel.).

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_gamma), VENERA (S_venus, delta_venus), MARS (S_mars, delta_mars). Rows show astronomical data for the 24 hours of the day.

Table with columns: UT, MJESEC (S_moon, delta_moon, delta_moon), JUPITER (S_jupiter, delta_jupiter), SATURN (S_saturn, delta_saturn). Rows show astronomical data for the 24 hours of the day.

Table with columns: SUNCE (IZLAZ, ZALAZ, GRAB., ASTR.), TRAJANJE SUMRAKA (IZLAZ, ZALAZ), MJESEC (IZLAZ, ZALAZ, delta/24). Rows show sunrise, sunset, twilight, and moon data.

Summary table with columns: SUNCE (e = T_p - UT, delta/24, tau), MJESEC (Prolaz, delta/24, tau), PLANETE (Pl., T_m, pi, 360-alpha, Vel.).

Table with columns for UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_sun), VENERA (S_ven, delta_ven), and MARS (S_mar, delta_mar). Rows include times from 0 to 22 and a delta row.

Table with columns for SUNCE (IZLAZ, ZALAZ, GRAB., ASTR.), TRAJANJE SUMRAKA, and MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows include times from 0 to 60 and a delta row.

Table with columns for UT, MJESEC (S_mj, delta, delta_sun, delta_sun), JUPITER (S_jup, delta_jup), and SATURN (S_sat, delta_sat). Rows include times from 0 to 22 and a delta row.

Table with columns for SUNCE (e=TP-UT, delta/24, r) and MJESEC (Prolaz, delta/24, pi_sun, r). Below is PLANETE table with columns for PL, T_mj, pi, beta-alpha, Vel., and other parameters.

Table with columns for UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_sun), VENERA (S_ven, delta_ven), and MARS (S_mar, delta_mar). Rows include times from 0 to 22 and a delta row.

Table with columns for SUNCE (IZLAZ, ZALAZ, GRAB., ASTR.), TRAJANJE SUMRAKA, and MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows include times from 0 to 60 and a delta row.

Table with columns for UT, MJESEC (S_mj, delta, delta_sun, delta_sun), JUPITER (S_jup, delta_jup), and SATURN (S_sat, delta_sat). Rows include times from 0 to 22 and a delta row.

Table with columns for SUNCE (e=TP-UT, delta/24, r) and MJESEC (Prolaz, delta/24, pi_sun, r). Below is PLANETE table with columns for PL, T_mj, pi, beta-alpha, Vel., and other parameters.

Table with columns UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_omega), VENERA (S_venus, delta_venus), and MARS (S_mars, delta_mars) for dates 0 to 22. Includes values for distance and declination.

Table with columns UT, MJESEC (S_moon, delta_moon), JUPITER (S_jupiter, delta_jupiter), and SATURN (S_saturn, delta_saturn) for dates 0 to 22. Includes values for distance and declination.

Table with columns SUNCE (IZLAZ, ZALAZ, GRAB., ASTR.), TRAJANJE SUMRACA (GRAB., ASTR.), and MJESEC (IZLAZ, ZALAZ, delta) for dates 0 to 22. Includes sunrise, sunset, and moon data.

Summary table for SUNCE and MJESEC with columns for time (UT), distance (e = Tp - UT), and other parameters. Includes a PLANETE section with columns for planet name, time, distance, and velocity.

Table with columns UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_omega), VENERA (S_venus, delta_venus), and MARS (S_mars, delta_mars) for dates 0 to 22. Includes values for distance and declination.

Table with columns UT, MJESEC (S_moon, delta_moon), JUPITER (S_jupiter, delta_jupiter), and SATURN (S_saturn, delta_saturn) for dates 0 to 22. Includes values for distance and declination.

Table with columns SUNCE (IZLAZ, ZALAZ, GRAB., ASTR.), TRAJANJE SUMRACA (GRAB., ASTR.), and MJESEC (IZLAZ, ZALAZ, delta) for dates 0 to 22. Includes sunrise, sunset, and moon data.

Summary table for SUNCE and MJESEC with columns for time (UT), distance (e = Tp - UT), and other parameters. Includes a PLANETE section with columns for planet name, time, distance, and velocity.

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLIJ TAČKA (S_sun), VENERA (S_ven, delta_ven), MARS (S_mar, delta_mar). Rows include times from 0 to 24 hours.

Table with columns: SUNCE (IZLAZ, ZALAZ, GRAB., ASTR.), TRAJANJE SUMRAKA, MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows include times from 0 to 24 hours.

Table with columns: UT, MJESEC (S_mj, delta, delta_sun, delta), JUPITER (S_jup, delta_jup), SATURN (S_sat, delta_sat). Rows include times from 0 to 24 hours.

Table with columns: SUNCE (e=TP-UT, delta/24, r), MJESEC (Prolaz, delta/24, pi_sun, r), PLANETE (Pl, T_m, pi, beta-alpha, Vel.). Rows include times from 0 to 24 hours.

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLIJ TAČKA (S_sun), VENERA (S_ven, delta_ven), MARS (S_mar, delta_mar). Rows include times from 0 to 24 hours.

Table with columns: SUNCE (IZLAZ, ZALAZ, GRAB., ASTR.), TRAJANJE SUMRAKA, MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows include times from 0 to 24 hours.

Table with columns: UT, MJESEC (S_mj, delta, delta_sun, delta), JUPITER (S_jup, delta_jup), SATURN (S_sat, delta_sat). Rows include times from 0 to 24 hours.

Table with columns: SUNCE (e=TP-UT, delta/24, r), MJESEC (Prolaz, delta/24, pi_sun, r), PLANETE (Pl, T_m, pi, beta-alpha, Vel.). Rows include times from 0 to 24 hours.

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Table with columns for UT, SUNCE, PROLI TAČKA, VENERA, and MARS. Rows include celestial coordinates and distances.

Table with columns for SUNCE, TRAJANJE SUMRAKA, and MJESEC. Includes sunrise/sunset times and moon phase data.

Table with columns for MJESEC, JUPITER, and SATURN. Includes moon phase data and planet coordinates.

Table with columns for SUNCE, MJESEC, and PLANETE. Includes moon phase data and planet positions.

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PETAK

Table with columns for UT, SUNCE, PROLI TAČKA, VENERA, and MARS. Rows include celestial coordinates and distances.

Table with columns for SUNCE, TRAJANJE SUMRAKA, and MJESEC. Includes sunrise/sunset times and moon phase data.

Table with columns for MJESEC, JUPITER, and SATURN. Includes moon phase data and planet coordinates.

Table with columns for SUNCE, MJESEC, and PLANETE. Includes moon phase data and planet positions.

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_gamma), VENERA (S_venus, delta_venus), MARS (S_mars, delta_mars). Rows show hourly data for Sun, Venus, and Mars.

Table with columns: SUNCE (IZLAZ, ZALAZ), TRAJANJE SUMRAKA (GRAB., ASTR.), MJESEC (IZLAZ, ZALAZ). Rows show lunar data including rise/set times and eclipse details.

Table with columns: UT, MJESEC (S_moon, delta_moon), JUPITER (S_jup, delta_jup), SATURN (S_sat, delta_sat). Rows show hourly data for Moon, Jupiter, and Saturn.

Summary tables for SUNCE, MJESEC, and PLANETE. Includes parameters like T_sun, T_moon, and planetary positions (PL, T_m, pi, 360-alpha, Vel.).

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Table with columns: UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_gamma), VENERA (S_venus, delta_venus), MARS (S_mars, delta_mars). Rows show hourly data for Sun, Venus, and Mars.

Table with columns: SUNCE (IZLAZ, ZALAZ), TRAJANJE SUMRAKA (GRAB., ASTR.), MJESEC (IZLAZ, ZALAZ). Rows show lunar data including rise/set times and eclipse details.

Table with columns: UT, MJESEC (S_moon, delta_moon), JUPITER (S_jup, delta_jup), SATURN (S_sat, delta_sat). Rows show hourly data for Moon, Jupiter, and Saturn.

Summary tables for SUNCE, MJESEC, and PLANETE. Includes parameters like T_sun, T_moon, and planetary positions (PL, T_m, pi, 360-alpha, Vel.).

Table with columns for UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_sun), VENERA (S_ven, delta_ven), and MARS (S_mar, delta_mar). Rows show hourly data from 0 to 24 hours.

Table with columns for SUNCE (IZLAZ, ZALAZ), TRAJANJE SUMRAKA (GRAB., ASTR.), and MJESEC (IZLAZ, ZALAZ). Rows show hourly data from 0 to 24 hours.

Table with columns for UT, MJESEC (S_mj, delta_mj), JUPITER (S_jup, delta_jup), and SATURN (S_sat, delta_sat). Rows show hourly data from 0 to 24 hours.

Summary table for SUNCE and MJESEC with columns for UT, e=TP-UT, delta/24, Prolaz, delta/24, pi, and r. Includes PLANETE section with columns for Pl, Tm, pi, beta-gamma, Vel.

Table with columns for UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_sun), VENERA (S_ven, delta_ven), and MARS (S_mar, delta_mar). Rows show hourly data from 0 to 24 hours.

Table with columns for SUNCE (IZLAZ, ZALAZ), TRAJANJE SUMRAKA (GRAB., ASTR.), and MJESEC (IZLAZ, ZALAZ). Rows show hourly data from 0 to 24 hours.

Table with columns for UT, MJESEC (S_mj, delta_mj), JUPITER (S_jup, delta_jup), and SATURN (S_sat, delta_sat). Rows show hourly data from 0 to 24 hours.

Summary table for SUNCE and MJESEC with columns for UT, e=TP-UT, delta/24, Prolaz, delta/24, pi, and r. Includes PLANETE section with columns for Pl, Tm, pi, beta-gamma, Vel.

Table with columns for Sun (SUNCE), Venus (VENERA), and Mars (MARS) showing astronomical data like RA, DEC, and distances.

Table with columns for Sun (SUNCE), Moon (MJESEC), and Planets (PLANETE) showing astronomical data like RA, DEC, and distances.

Table with columns for Moon (MJESEC), Jupiter (JUPITER), and Saturn (SATURN) showing astronomical data like RA, DEC, and distances.

Table with columns for Sun (SUNCE), Moon (MJESEC), and Planets (PLANETE) showing astronomical data like RA, DEC, and distances.

Table with columns for Sun (SUNCE), Venus (VENERA), and Mars (MARS) showing astronomical data like RA, DEC, and distances.

Table with columns for Sun (SUNCE), Moon (MJESEC), and Planets (PLANETE) showing astronomical data like RA, DEC, and distances.

Table with columns for Moon (MJESEC), Jupiter (JUPITER), and Saturn (SATURN) showing astronomical data like RA, DEC, and distances.

Table with columns for Sun (SUNCE), Moon (MJESEC), and Planets (PLANETE) showing astronomical data like RA, DEC, and distances.

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLIJ. TAČKA (S_gamma), VENERA (S_venus, delta_venus), MARS (S_mars, delta_mars). Rows include time intervals from 0 to 22 hours.

Table with columns: SUNCE (IZLAZ, ZALAZ), TRAJANJE SUMRAKA (GRAB., ASTR.), MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows include time intervals from 0 to 22 hours.

Table with columns: UT, MJESEC (S_m, delta_m), JUPITER (S_j, delta_j), SATURN (S_s, delta_s). Rows include time intervals from 0 to 22 hours.

Summary tables for SUNCE, MJESEC, and PLANETE. Includes parameters like T_m, pi, 360-alpha, Vel., and phase information.

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLIJ. TAČKA (S_gamma), VENERA (S_venus, delta_venus), MARS (S_mars, delta_mars). Rows include time intervals from 0 to 22 hours.

Table with columns: SUNCE (IZLAZ, ZALAZ), TRAJANJE SUMRAKA (GRAB., ASTR.), MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows include time intervals from 0 to 22 hours.

Table with columns: UT, MJESEC (S_m, delta_m), JUPITER (S_j, delta_j), SATURN (S_s, delta_s). Rows include time intervals from 0 to 22 hours.

Summary tables for SUNCE, MJESEC, and PLANETE. Includes parameters like T_m, pi, 360-alpha, Vel., and phase information.

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLIJ TAČKA (S_alpha), VENERA (S_v, delta_v), MARS (S_m, delta_m). Rows 0-24 showing celestial coordinates.

Table with columns: SUNCE (IZLAZ, ZALAZ), TRAJANJE SUMRAKA (GRAB, ASTR.), MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows 0-24 showing sunset, twilight, and moon data.

Table with columns: MJESEC (S_beta, delta_beta, delta_gamma), JUPITER (S_j, delta_j), SATURN (S_h, delta_h). Rows 0-24 showing planetary coordinates.

Table with columns: SUNCE, MJESEC, PLANETE (PL, T_m, pi, beta-gamma, Vel). Rows 0-24 showing solar, lunar, and planetary parameters.

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLIJ TAČKA (S_alpha), VENERA (S_v, delta_v), MARS (S_m, delta_m). Rows 0-24 showing celestial coordinates.

Table with columns: SUNCE (IZLAZ, ZALAZ), TRAJANJE SUMRAKA (GRAB, ASTR.), MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows 0-24 showing sunset, twilight, and moon data.

Table with columns: MJESEC (S_beta, delta_beta, delta_gamma), JUPITER (S_j, delta_j), SATURN (S_h, delta_h). Rows 0-24 showing planetary coordinates.

Table with columns: SUNCE, MJESEC, PLANETE (PL, T_m, pi, beta-gamma, Vel). Rows 0-24 showing solar, lunar, and planetary parameters.

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_gamma), VENERA (S_venus, delta_venus), MARS (S_mars, delta_mars). Rows include time intervals from 0 to 22 hours and a delta row.

Table with columns: SUNCE (IZLAZ, ZALAZ), TRAJANJE SUMRAKA (GRAB, ASTR.), MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows include time intervals from 0 to 22 hours and a delta row.

Table with columns: UT, MJESEC (S_moon, delta_moon), JUPITER (S_jupiter, delta_jupiter), SATURN (S_saturn, delta_saturn). Rows include time intervals from 0 to 22 hours and a delta row.

Summary tables for SUNCE, MJESEC, and PLANETE. Includes parameters like T_m, pi, beta, and Vel. for various celestial bodies.

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_gamma), VENERA (S_venus, delta_venus), MARS (S_mars, delta_mars). Rows include time intervals from 0 to 22 hours and a delta row.

Table with columns: SUNCE (IZLAZ, ZALAZ), TRAJANJE SUMRAKA (GRAB, ASTR.), MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows include time intervals from 0 to 22 hours and a delta row.

Table with columns: UT, MJESEC (S_moon, delta_moon), JUPITER (S_jupiter, delta_jupiter), SATURN (S_saturn, delta_saturn). Rows include time intervals from 0 to 22 hours and a delta row.

Summary tables for SUNCE, MJESEC, and PLANETE. Includes parameters like T_m, pi, beta, and Vel. for various celestial bodies.

Table with columns: UT, SUNCE, PROLIJ. TAČKA, VENERA, MARS. Rows include UT, h, 0-22, Δ.

Table with columns: SUNCE, TRAJANJE SUMRAKA, MJESEC. Rows include UT, h, 0-22, Δ, S.

Table with columns: UT, MJESEC, JUPITER, SATURN. Rows include UT, h, 0-22, Δ.

Table with columns: SUNCE, MJESEC, PLANETE. Rows include UT, h, 0-22, Δ, S, PL.

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UTORAK

Table with columns: UT, SUNCE, PROLIJ. TAČKA, VENERA, MARS. Rows include UT, h, 0-22, Δ.

Table with columns: SUNCE, TRAJANJE SUMRAKA, MJESEC. Rows include UT, h, 0-22, Δ, S.

Table with columns: UT, MJESEC, JUPITER, SATURN. Rows include UT, h, 0-22, Δ.

Table with columns: SUNCE, MJESEC, PLANETE. Rows include UT, h, 0-22, Δ, S, PL.

Table with 5 columns: UT, SUNCE, PROLIJ TAČKA, VENERA, MARS. Includes data for hours 0 to 24.

Table with 4 columns: UT, MJESEC, JUPITER, SATURN. Includes data for hours 0 to 24.

Table with 10 columns: SUNCE, TRAJANJE SUMRAKA, MJESEC. Includes data for hours 0 to 24.

Table with 2 main sections: SUNCE and MJESEC, and PLANETE. Includes orbital parameters and planet data.

1. NOVEMBAR

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Table with 5 columns: UT, SUNCE, PROLIJ TAČKA, VENERA, MARS. Includes data for hours 0 to 24.

Table with 4 columns: UT, MJESEC, JUPITER, SATURN. Includes data for hours 0 to 24.

Table with 10 columns: SUNCE, TRAJANJE SUMRAKA, MJESEC. Includes data for hours 0 to 24.

Table with 2 main sections: SUNCE and MJESEC, and PLANETE. Includes orbital parameters and planet data.

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_p), VENERA (S_ven, delta_ven), MARS (S_mar, delta_mar). Rows include times from 0 to 24 hours.

Table with columns: SUNCE (IZLAZ, ZALAZ), TRAJANJE SUMRAKA (GRAB, ASTR.), MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows include times from 0 to 24 hours.

Table with columns: UT, MJESEC (S_mj, delta_mj), JUPITER (S_jup, delta_jup), SATURN (S_sat, delta_sat). Rows include times from 0 to 24 hours.

Summary tables for SUNCE, MJESEC, and PLANETE. Includes parameters like T_m, pi, beta, and velocities.

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_p), VENERA (S_ven, delta_ven), MARS (S_mar, delta_mar). Rows include times from 0 to 24 hours.

Table with columns: SUNCE (IZLAZ, ZALAZ), TRAJANJE SUMRAKA (GRAB, ASTR.), MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows include times from 0 to 24 hours.

Table with columns: UT, MJESEC (S_mj, delta_mj), JUPITER (S_jup, delta_jup), SATURN (S_sat, delta_sat). Rows include times from 0 to 24 hours.

Summary tables for SUNCE, MJESEC, and PLANETE. Includes parameters like T_m, pi, beta, and velocities.

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLI TAČKA (S_gamma), VENERA (S_venus, delta_venus), MARS (S_mars, delta_mars). Rows include times from 0 to 24 hours.

Table with columns: SUNCE (IZLAZ, ZALAZ), TRAJANJE SUMRAKA (GRAB, ASTR.), MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows include times from 0 to 24 hours.

Table with columns: UT, MJESEC (S_moon, delta_moon), JUPITER (S_jupiter, delta_jupiter), SATURN (S_saturn, delta_saturn). Rows include times from 0 to 24 hours.

Summary table for SUNCE and MJESEC with sub-tables for PLANETE (Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune, Pluto) showing orbital parameters.

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLI TAČKA (S_gamma), VENERA (S_venus, delta_venus), MARS (S_mars, delta_mars). Rows include times from 0 to 24 hours.

Table with columns: SUNCE (IZLAZ, ZALAZ), TRAJANJE SUMRAKA (GRAB, ASTR.), MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows include times from 0 to 24 hours.

Table with columns: UT, MJESEC (S_moon, delta_moon), JUPITER (S_jupiter, delta_jupiter), SATURN (S_saturn, delta_saturn). Rows include times from 0 to 24 hours.

Summary table for SUNCE and MJESEC with sub-tables for PLANETE (Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune, Pluto) showing orbital parameters.

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_gamma), VENERA (S_venus, delta_venus), MARS (S_mars, delta_mars). Rows show hourly data for Sun, Venus, and Mars.

Table with columns: SUNCE (IZLAZ, ZALAZ), TRAJANJE SUMRAKA (GRAB., ASTR.), MJESEC (IZLAZ, ZALAZ). Rows show hourly data for Moon phases and eclipses.

Table with columns: UT, MJESEC (S_moon, delta_moon), JUPITER (S_jup, delta_jup), SATURN (S_sat, delta_sat). Rows show hourly data for Moon, Jupiter, and Saturn.

Summary table for SUNCE, MJESEC, and PLANETE (Pl., T_m, pi, beta-gamma, Vel.).

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_gamma), VENERA (S_venus, delta_venus), MARS (S_mars, delta_mars). Rows show hourly data for Sun, Venus, and Mars.

Table with columns: SUNCE (IZLAZ, ZALAZ), TRAJANJE SUMRAKA (GRAB., ASTR.), MJESEC (IZLAZ, ZALAZ). Rows show hourly data for Moon phases and eclipses.

Table with columns: UT, MJESEC (S_moon, delta_moon), JUPITER (S_jup, delta_jup), SATURN (S_sat, delta_sat). Rows show hourly data for Moon, Jupiter, and Saturn.

Summary table for SUNCE, MJESEC, and PLANETE (Pl., T_m, pi, beta-gamma, Vel.).

Table with columns for UT, SUNCE (S_sun, delta_sun), PROLI TAČKA (S_up), VENERA (S_ven, delta_ven), and MARS (S_mar, delta_mar). Includes a small delta row at the bottom.

Table with columns for UT, MJESEC (S_mj, delta_mj, pi_mj, delta_mj), JUPITER (S_jup, delta_jup), and SATURN (S_sat, delta_sat). Includes a small delta row at the bottom.

Main astronomical data table for Nov 12 with columns for SUNCE, TRAJANJE SUMRAKA, and MJESEC. Includes sub-tables for SUNCE and MJESEC details and a PLANETE table.

Table with columns for UT, SUNCE (S_sun, delta_sun), PROLI TAČKA (S_up), VENERA (S_ven, delta_ven), and MARS (S_mar, delta_mar). Includes a small delta row at the bottom.

Table with columns for UT, MJESEC (S_mj, delta_mj, pi_mj, delta_mj), JUPITER (S_jup, delta_jup), and SATURN (S_sat, delta_sat). Includes a small delta row at the bottom.

Main astronomical data table for Nov 13 with columns for SUNCE, TRAJANJE SUMRAKA, and MJESEC. Includes sub-tables for SUNCE and MJESEC details and a PLANETE table.

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_gamma), VENERA (S_venus, delta_venus), MARS (S_mars, delta_mars). Rows show data for hours 0 to 24.

Table with columns: SUNCE (IZLAZ, ZALAZ), TRAJANJE SUMRAKA (GRAB, ASTR.), MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows show data for hours 0 to 24.

Table with columns: UT, MJESEC (S_m, delta_m), JUPITER (S_j, delta_j), SATURN (S_s, delta_s). Rows show data for hours 0 to 24.

Summary tables for SUNCE, MJESEC, and PLANETE. Includes parameters like T_sun, T_moon, and planetary positions.

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_gamma), VENERA (S_venus, delta_venus), MARS (S_mars, delta_mars). Rows show data for hours 0 to 24.

Table with columns: SUNCE (IZLAZ, ZALAZ), TRAJANJE SUMRAKA (GRAB, ASTR.), MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows show data for hours 0 to 24.

Table with columns: UT, MJESEC (S_m, delta_m), JUPITER (S_j, delta_j), SATURN (S_s, delta_s). Rows show data for hours 0 to 24.

Summary tables for SUNCE, MJESEC, and PLANETE. Includes parameters like T_sun, T_moon, and planetary positions.

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_sun), VENERA (S_ven, delta_ven), MARS (S_mar, delta_mar). Rows include time intervals from 0 to 22 and a delta row.

Table with columns: SUNCE (IZLAZ, ZALAZ), TRAJANJE SUMRAKA (GRAB., ASTR.), MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Includes a sub-table for MJESEC with columns: e = Tp - UT, Prolaz, delta/24, pi/c, r.

Table with columns: UT, MJESEC (S_mj, delta_mj, delta), JUPITER (S_jup, delta_jup), SATURN (S_sat, delta_sat). Rows include time intervals from 0 to 22 and a delta row.

Table with columns: SUNCE (IZLAZ, ZALAZ), MJESEC (IZLAZ, delta/24, pi/c, r). Includes a sub-table for PLANETE with columns: Pl., T_m, pi, beta - zeta, Vel., and a table for planetary coordinates (alpha, delta).

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_sun), VENERA (S_ven, delta_ven), MARS (S_mar, delta_mar). Rows include time intervals from 0 to 22 and a delta row.

Table with columns: SUNCE (IZLAZ, ZALAZ), TRAJANJE SUMRAKA (GRAB., ASTR.), MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Includes a sub-table for MJESEC with columns: e = Tp - UT, Prolaz, delta/24, pi/c, r.

Table with columns: UT, MJESEC (S_mj, delta_mj, delta), JUPITER (S_jup, delta_jup), SATURN (S_sat, delta_sat). Rows include time intervals from 0 to 22 and a delta row.

Table with columns: SUNCE (IZLAZ, ZALAZ), MJESEC (IZLAZ, delta/24, pi/c, r). Includes a sub-table for PLANETE with columns: Pl., T_m, pi, beta - zeta, Vel., and a table for planetary coordinates (alpha, delta).

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_gamma), VENERA (S_venus, delta_venus), MARS (S_mars, delta_mars). Rows include time intervals from 0 to 22 hours.

Table with columns: SUNCE (IZLAZ, ZALAZ), TRAJANJE SUMRAKA (GRAB., ASTR.), MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows include time intervals from 0 to 60 minutes.

Table with columns: UT, MJESEC (S_m, delta_m), JUPITER (S_j, delta_j), SATURN (S_s, delta_s). Rows include time intervals from 0 to 22 hours.

Table with columns: SUNCE (e=gamma-UT, delta/24, tau), MJESEC (Prolaz, delta/24, pi_c, tau), PLANETE (PL, T_m, pi, 360-alpha, Vel.). Rows include data for various celestial bodies.

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_gamma), VENERA (S_venus, delta_venus), MARS (S_mars, delta_mars). Rows include time intervals from 0 to 22 hours.

Table with columns: SUNCE (IZLAZ, ZALAZ), TRAJANJE SUMRAKA (GRAB., ASTR.), MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows include time intervals from 0 to 60 minutes.

Table with columns: UT, MJESEC (S_m, delta_m), JUPITER (S_j, delta_j), SATURN (S_s, delta_s). Rows include time intervals from 0 to 22 hours.

Table with columns: SUNCE (e=gamma-UT, delta/24, tau), MJESEC (Prolaz, delta/24, pi_c, tau), PLANETE (PL, T_m, pi, 360-alpha, Vel.). Rows include data for various celestial bodies.

Table with columns for UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_gamma), VENERA (S_venus, delta_venus), and MARS (S_mars, delta_mars). Rows show astronomical data for various times of day.

Table with columns for SUNCE (IZLAZ, ZALAZ), TRAJANJE SUMRAKA (GRAB., ASTR.), and MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows show moon and sun data.

Table with columns for UT, MJESEC (S_moon, delta_moon), JUPITER (S_jup, delta_jup), and SATURN (S_sat, delta_sat). Rows show data for Jupiter and Saturn.

Table with columns for SUNCE (e, T_p, UT, delta/24, r) and MJESEC (Prolaz, delta/24, pi, r). Includes PLANETE section with columns for PL, T_m, pi, 360-alpha, Vel.

Table with columns for UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_gamma), VENERA (S_venus, delta_venus), and MARS (S_mars, delta_mars). Rows show astronomical data for various times of day.

Table with columns for SUNCE (IZLAZ, ZALAZ), TRAJANJE SUMRAKA (GRAB., ASTR.), and MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows show moon and sun data.

Table with columns for UT, MJESEC (S_moon, delta_moon), JUPITER (S_jup, delta_jup), and SATURN (S_sat, delta_sat). Rows show data for Jupiter and Saturn.

Table with columns for SUNCE (e, T_p, UT, delta/24, r) and MJESEC (Prolaz, delta/24, pi, r). Includes PLANETE section with columns for PL, T_m, pi, 360-alpha, Vel.

Table with columns for UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_gamma), VENERA (S_ven, delta_ven), and MARS (S_mar, delta_mar). Rows include times from 0 to 24 hours.

Table with columns for SUNCE (IZLAZ, ZALAZ, GRAB., ASTR.), TRAJANJE SUMRAKA, and MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows include times from 0 to 24 hours.

Table with columns for UT, MJESEC (S_c, delta_c, delta), JUPITER (S_jup, delta_jup), and SATURN (S_sat, delta_sat). Rows include times from 0 to 24 hours.

Summary table for SUNCE and MJESEC with columns for UT, e=gamma-UT, delta/24, Prolaz, delta/24, pi_c, r. Includes PLANETE section with columns for Pl., T_m, pi, beta-2, Vel., and other parameters.

Table with columns for UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_gamma), VENERA (S_ven, delta_ven), and MARS (S_mar, delta_mar). Rows include times from 0 to 24 hours.

Table with columns for SUNCE (IZLAZ, ZALAZ, GRAB., ASTR.), TRAJANJE SUMRAKA, and MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows include times from 0 to 24 hours.

Table with columns for UT, MJESEC (S_c, delta_c, delta), JUPITER (S_jup, delta_jup), and SATURN (S_sat, delta_sat). Rows include times from 0 to 24 hours.

Summary table for SUNCE and MJESEC with columns for UT, e=gamma-UT, delta/24, Prolaz, delta/24, pi_c, r. Includes PLANETE section with columns for Pl., T_m, pi, beta-2, Vel., and other parameters.

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_gamma), VENERA (S_venus, delta_venus), MARS (S_mars, delta_mars). Rows include times from 0 to 24 hours.

Table with columns: SUNCE (IZLAZ, ZALAZ, GRAB., ASTR.), TRAJANJE SUMRAKA, MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows include times from 0 to 24 hours.

Table with columns: UT, MJESEC (S_moon, delta_moon, delta_moon), JUPITER (S_jup, delta_jup), SATURN (S_sat, delta_sat). Rows include times from 0 to 24 hours.

Summary tables for SUNCE, MJESEC, and PLANETE. Includes parameters like T_sun, T_moon, and planetary data for Jupiter and Saturn.

1. DECEMBAR

SUBOTA

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_gamma), VENERA (S_venus, delta_venus), MARS (S_mars, delta_mars). Rows include times from 0 to 24 hours.

Table with columns: SUNCE (IZLAZ, ZALAZ, GRAB., ASTR.), TRAJANJE SUMRAKA, MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows include times from 0 to 24 hours.

Table with columns: UT, MJESEC (S_moon, delta_moon, delta_moon), JUPITER (S_jup, delta_jup), SATURN (S_sat, delta_sat). Rows include times from 0 to 24 hours.

Summary tables for SUNCE, MJESEC, and PLANETE. Includes parameters like T_sun, T_moon, and planetary data for Jupiter and Saturn.

Table with columns for UT, SUNCE, PROLJ. TAČKA, VENERA, and MARS, containing astronomical data for December 4th.

Table with columns for SUNCE, TRAJANJE SUMRAKA, and MJESEC, containing astronomical data for December 4th.

Table with columns for UT, MJESEC, JUPITER, and SATURN, containing astronomical data for December 4th.

Summary table with columns for SUNCE, MJESEC, and PLANETE, containing astronomical data for December 4th.

5. DECEMBAR

SRIJEDA

Table with columns for UT, SUNCE, PROLJ. TAČKA, VENERA, and MARS, containing astronomical data for December 5th.

Table with columns for SUNCE, TRAJANJE SUMRAKA, and MJESEC, containing astronomical data for December 5th.

Table with columns for UT, MJESEC, JUPITER, and SATURN, containing astronomical data for December 5th.

Summary table with columns for SUNCE, MJESEC, and PLANETE, containing astronomical data for December 5th.

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_tau), VENERA (S_ven, delta_ven), MARS (S_mar, delta_mar). Rows include times from 0 to 24 hours.

Table with columns: SUNCE (IZLAZ, ZALAZ, GRAB., ASTR.), TRAJANJE SUMRAKA, MJESEC (IZLAZ, ZALAZ, delta/24). Rows include times from 0 to 24 hours.

Table with columns: UT, MJESEC (S_mj, delta_mj), JUPITER (S_jup, delta_jup), SATURN (S_sat, delta_sat). Rows include times from 0 to 24 hours.

Summary table for SUNCE and MJESEC with sub-tables for PLANETE. Includes parameters like T_m, pi, 360-alpha, Vel., and phase information.

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_tau), VENERA (S_ven, delta_ven), MARS (S_mar, delta_mar). Rows include times from 0 to 24 hours.

Table with columns: SUNCE (IZLAZ, ZALAZ, GRAB., ASTR.), TRAJANJE SUMRAKA, MJESEC (IZLAZ, ZALAZ, delta/24). Rows include times from 0 to 24 hours.

Table with columns: UT, MJESEC (S_mj, delta_mj), JUPITER (S_jup, delta_jup), SATURN (S_sat, delta_sat). Rows include times from 0 to 24 hours.

Summary table for SUNCE and MJESEC with sub-tables for PLANETE. Includes parameters like T_m, pi, 360-alpha, Vel., and phase information.

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_sun), VENERA (S_ven, delta_ven), MARS (S_mar, delta_mar). Rows include time intervals from 0 to 22 hours.

Table with columns: SUNCE (IZLAZ, ZALAZ, GRAB., ASTR.), TRAJANJE SUMRAKA, MJESEC (IZLAZ, ZALAZ, delta/24). Rows include time intervals from 0 to 22 hours.

Table with columns: UT, MJESEC (S_mj, delta_mj), JUPITER (S_jup, delta_jup), SATURN (S_sat, delta_sat). Rows include time intervals from 0 to 22 hours.

Summary table for SUNCE, MJESEC, and PLANETE. Includes parameters like T_sun, T_mj, and planetary data for Jupiter and Saturn.

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_sun), VENERA (S_ven, delta_ven), MARS (S_mar, delta_mar). Rows include time intervals from 0 to 22 hours.

Table with columns: SUNCE (IZLAZ, ZALAZ, GRAB., ASTR.), TRAJANJE SUMRAKA, MJESEC (IZLAZ, ZALAZ, delta/24). Rows include time intervals from 0 to 22 hours.

Table with columns: UT, MJESEC (S_mj, delta_mj), JUPITER (S_jup, delta_jup), SATURN (S_sat, delta_sat). Rows include time intervals from 0 to 22 hours.

Summary table for SUNCE, MJESEC, and PLANETE. Includes parameters like T_sun, T_mj, and planetary data for Jupiter and Saturn.

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_sun), VENERA (S_ven, delta_ven), MARS (S_mar, delta_mar). Rows show hourly data from 0 to 24.

Table with columns: SUNCE (IZLAZ, ZALAZ, GRAB., ASTR.), TRAJANJE SUMRAKA, MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows show hourly data from 0 to 24.

Table with columns: UT, MJESEC (S_mj, delta_mj), JUPITER (S_jup, delta_jup), SATURN (S_sat, delta_sat). Rows show hourly data from 0 to 24.

Table with columns: SUNCE, MJESEC, PLANETE. Includes sub-tables for Sun and Moon data, and planetary data for Jupiter and Saturn.

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_sun), VENERA (S_ven, delta_ven), MARS (S_mar, delta_mar). Rows show hourly data from 0 to 24.

Table with columns: SUNCE (IZLAZ, ZALAZ, GRAB., ASTR.), TRAJANJE SUMRAKA, MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows show hourly data from 0 to 24.

Table with columns: UT, MJESEC (S_mj, delta_mj), JUPITER (S_jup, delta_jup), SATURN (S_sat, delta_sat). Rows show hourly data from 0 to 24.

Table with columns: SUNCE, MJESEC, PLANETE. Includes sub-tables for Sun and Moon data, and planetary data for Jupiter and Saturn.

16. DECEMBAR

2012.

NEDJELJA

Table with columns for UT, SUNCE, PROJ. TAČKA, VENERA, and MARS. Rows show astronomical data for each day from 0 to 24 hours.

Table with columns for SUNCE, TRAJANJE SUMRAKA, and MJESEC. Rows show astronomical data for each day from 0 to 24 hours.

Table with columns for UT, MJESEC, JUPITER, and SATURN. Rows show astronomical data for each day from 0 to 24 hours.

Table with columns for SUNCE, MJESEC, and PLANETE. Rows show astronomical data for each day from 0 to 24 hours.

17. DECEMBAR

PONEDJELJAK

Table with columns for UT, SUNCE, PROJ. TAČKA, VENERA, and MARS. Rows show astronomical data for each day from 0 to 24 hours.

Table with columns for SUNCE, TRAJANJE SUMRAKA, and MJESEC. Rows show astronomical data for each day from 0 to 24 hours.

Table with columns for UT, MJESEC, JUPITER, and SATURN. Rows show astronomical data for each day from 0 to 24 hours.

Table with columns for SUNCE, MJESEC, and PLANETE. Rows show astronomical data for each day from 0 to 24 hours.

Table with columns for UT, SUNCE (S_sun, delta_sun), PROLI TAČKA (S_gamma), VENERA (S_ven, delta_ven), and MARS (S_mar, delta_mar). Rows include time intervals from 0 to 22 hours and a delta row.

Main astronomical data table for Dec 18, 2012. Columns include SUNCE (IZLAZ, ZALAZ), TRAJANJE SUMRAKA (GRAB, ASTR.), and MJESEC (IZLAZ, ZALAZ, delta/24). Rows include time intervals and a summary row S.

Table with columns for UT, MJESEC (S_mj, delta_mj), JUPITER (S_jup, delta_jup), and SATURN (S_sat, delta_sat). Rows include time intervals from 0 to 22 hours and a delta row.

Summary table for Dec 18, 2012. Includes SUNCE, MJESEC, and PLANETE sections with various astronomical parameters like T_m, pi, 360-alpha, and Vel.

Table with columns for UT, SUNCE (S_sun, delta_sun), PROLI TAČKA (S_gamma), VENERA (S_ven, delta_ven), and MARS (S_mar, delta_mar). Rows include time intervals from 0 to 22 hours and a delta row.

Main astronomical data table for Dec 19, 2012. Columns include SUNCE (IZLAZ, ZALAZ), TRAJANJE SUMRAKA (GRAB, ASTR.), and MJESEC (IZLAZ, ZALAZ, delta/24). Rows include time intervals and a summary row S.

Table with columns for UT, MJESEC (S_mj, delta_mj), JUPITER (S_jup, delta_jup), and SATURN (S_sat, delta_sat). Rows include time intervals from 0 to 22 hours and a delta row.

Summary table for Dec 19, 2012. Includes SUNCE, MJESEC, and PLANETE sections with various astronomical parameters like T_m, pi, 360-alpha, and Vel.

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLIJ TACKA (S_gamma), VENERA (S_venus, delta_venus), MARS (S_mars, delta_mars). Rows include UT values from 0 to 22 and a delta row.

Table with columns: SUNCE (IZLAZ, ZALAZ), TRAJANJE SUMRAKA (GRAB., ASTR.), MJESEC (IZLAZ, ZALAZ, delta/24). Rows include UT values from 0 to 60 and a delta row.

Table with columns: UT, MJESEC (S_moon, delta_moon), JUPITER (S_jup, delta_jup), SATURN (S_sat, delta_sat). Rows include UT values from 0 to 22 and a delta row.

Table with columns: SUNCE (UT, e, T_p-UT, delta/24, tau), MJESEC (Prolaz, delta/24, pi, tau), PLANETE (Pl, T_m, pi, beta-omega, Vel.). Rows include UT values from 00 to 60 and a delta row.

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLIJ TACKA (S_gamma), VENERA (S_venus, delta_venus), MARS (S_mars, delta_mars). Rows include UT values from 0 to 22 and a delta row.

Table with columns: SUNCE (IZLAZ, ZALAZ), TRAJANJE SUMRAKA (GRAB., ASTR.), MJESEC (IZLAZ, ZALAZ, delta/24). Rows include UT values from 0 to 60 and a delta row.

Table with columns: UT, MJESEC (S_moon, delta_moon), JUPITER (S_jup, delta_jup), SATURN (S_sat, delta_sat). Rows include UT values from 0 to 22 and a delta row.

Table with columns: SUNCE (UT, e, T_p-UT, delta/24, tau), MJESEC (Prolaz, delta/24, pi, tau), PLANETE (Pl, T_m, pi, beta-omega, Vel.). Rows include UT values from 00 to 60 and a delta row.

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_gamma), VENERA (S_venus, delta_venus), MARS (S_mars, delta_mars). Rows show hourly data for Sun, Venus, and Mars.

Table with columns: SUNCE (IZLAZ, ZALAZ, GRAB., ASTR.), TRAJANJE SUMRAKA, MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows show hourly data for Sun, Moon phases, and twilight durations.

Table with columns: UT, MJESEC (S_moon, delta_moon), JUPITER (S_jupiter, delta_jupiter), SATURN (S_saturn, delta_saturn). Rows show hourly data for Moon, Jupiter, and Saturn.

Summary table for SUNCE, MJESEC, and PLANETE. Includes parameters like e=gamma-Tp-UT, Prolaz, T_moon, and planetary data for Mercury, Venus, Earth, Mars, Jupiter, and Saturn.

Table with columns: UT, SUNCE (S_sun, delta_sun), PROLJ. TAČKA (S_gamma), VENERA (S_venus, delta_venus), MARS (S_mars, delta_mars). Rows show hourly data for Sun, Venus, and Mars.

Table with columns: SUNCE (IZLAZ, ZALAZ, GRAB., ASTR.), TRAJANJE SUMRAKA, MJESEC (IZLAZ, delta/24, ZALAZ, delta/24). Rows show hourly data for Sun, Moon phases, and twilight durations.

Table with columns: UT, MJESEC (S_moon, delta_moon), JUPITER (S_jupiter, delta_jupiter), SATURN (S_saturn, delta_saturn). Rows show hourly data for Moon, Jupiter, and Saturn.

Summary table for SUNCE, MJESEC, and PLANETE. Includes parameters like e=gamma-Tp-UT, Prolaz, T_moon, and planetary data for Mercury, Venus, Earth, Mars, Jupiter, and Saturn.

★ ★ ★ ★ ★

Efemeride

NAUTIČKIH ZVJEZDA

SUREKTASCENZIJE NAUTIČKIH ZVJEZDA

za 1. u mjesecu

| R.b. | Ime zvijezde | 360°-α | 2012 JAN | FEB | MAR | APR | MAJ | JUN | JUL | AVG | SEP | OKT | NOV | DEC | 2013 JAN |
|------|-----------------|--------|-------------|------|------|------|------|------|------|------|------|------|------|------|-------------|
| 1 | ALPHERATZ | 357 | 44.7 | 44.8 | 44.7 | 44.6 | 44.4 | 44.1 | 43.9 | 43.7 | 43.6 | 43.7 | 43.7 | 43.8 | 43.9 |
| 2 | CAPH | 357 | 32.6 | 32.7 | 32.7 | 32.5 | 32.2 | 31.8 | 31.4 | 31.2 | 31.1 | 31.1 | 31.3 | 31.5 | 31.7 |
| 3 | DIPHDA | 348 | 57.0 | 57.1 | 57.1 | 57.0 | 56.8 | 56.6 | 56.3 | 56.1 | 56.0 | 56.0 | 56.1 | 56.2 | 56.3 |
| 4 | ACHERNAR | 335 | 27.6 | 27.8 | 27.9 | 27.9 | 27.7 | 27.4 | 27.1 | 26.7 | 26.6 | 26.5 | 26.7 | 26.9 | 27.1 |
| 5 | HAMAL | 328 | 1.9 | 2.0 | 2.0 | 2.0 | 1.9 | 1.6 | 1.4 | 1.1 | 1.0 | 0.9 | 0.9 | 0.9 | 1.1 |
| 6 | POLARIS | 318 | 13.0 | 25.5 | 35.0 | 37.2 | 31.7 | 20.3 | 5.3 | 50.6 | 38.9 | 31.8 | 31.6 | 39.0 | 51.9 |
| 7 | MIRFAK | 308 | 41.6 | 41.8 | 42.0 | 42.0 | 41.9 | 41.6 | 41.3 | 41.0 | 40.7 | 40.5 | 40.4 | 40.4 | 40.6 |
| 8 | ALDEBARAN | 290 | 50.3 | 50.4 | 50.5 | 50.6 | 50.6 | 50.4 | 50.2 | 50.0 | 49.8 | 49.6 | 49.5 | 49.4 | 49.5 |
| 9 | RIGEL | 281 | 12.7 | 12.9 | 13.0 | 13.1 | 13.1 | 13.0 | 12.8 | 12.6 | 12.4 | 12.2 | 12.1 | 12.0 | 12.1 |
| 10 | CAPELLA | 280 | 35.5 | 35.7 | 35.9 | 36.0 | 36.0 | 35.9 | 35.6 | 35.3 | 35.0 | 34.7 | 34.5 | 34.4 | 34.5 |
| 11 | BELLATRIX | 278 | 32.8 | 32.9 | 33.0 | 33.1 | 33.1 | 33.0 | 32.9 | 32.6 | 32.4 | 32.2 | 32.1 | 32.0 | 32.0 |
| 12 | EL NATH | 278 | 13.6 | 13.7 | 13.8 | 13.9 | 13.9 | 13.8 | 13.6 | 13.4 | 13.1 | 12.9 | 12.7 | 12.6 | 12.7 |
| 13 | ALNILAM | 275 | 47.1 | 47.2 | 47.3 | 47.4 | 47.4 | 47.4 | 47.2 | 47.0 | 46.8 | 46.6 | 46.4 | 46.3 | 46.4 |
| 14 | BETELGEUSE | 271 | 2.1 | 2.1 | 2.3 | 2.4 | 2.4 | 2.3 | 2.2 | 2.0 | 1.8 | 1.6 | 1.4 | 1.3 | 1.3 |
| 15 | CANOPUS | 263 | 56.1 | 56.3 | 56.6 | 56.8 | 57.0 | 57.0 | 56.9 | 56.6 | 56.3 | 56.0 | 55.8 | 55.7 | 55.8 |
| 16 | SIRIUS | 258 | 34.3 | 34.3 | 34.5 | 34.6 | 34.7 | 34.7 | 34.5 | 34.4 | 34.2 | 33.9 | 33.7 | 33.6 | 33.6 |
| 17 | ADHARA | 255 | 12.9 | 13.0 | 13.2 | 13.3 | 13.4 | 13.4 | 13.3 | 13.2 | 12.9 | 12.7 | 12.5 | 12.4 | 12.4 |
| 18 | PROCYON | 245 | 0.4 | 0.4 | 0.5 | 0.7 | 0.8 | 0.7 | 0.7 | 0.5 | 0.3 | 0.1 | 59.9 | 59.7 | 59.7 |
| 19 | POLLUX | 243 | 28.5 | 28.5 | 28.7 | 28.8 | 28.9 | 28.9 | 28.8 | 28.6 | 28.4 | 28.2 | 27.9 | 27.7 | 27.7 |
| 20 | AVIOR | 234 | 17.8 | 17.9 | 18.1 | 18.4 | 18.7 | 18.9 | 18.9 | 18.8 | 18.5 | 18.1 | 17.8 | 17.5 | 17.4 |
| 21 | AL SUHAIL | 222 | 52.7 | 52.7 | 52.8 | 53.0 | 53.2 | 53.3 | 53.3 | 53.2 | 53.1 | 52.8 | 52.5 | 52.3 | 52.1 |
| 22 | MIAPLACIDUS | 221 | 39.0 | 39.1 | 39.4 | 39.8 | 40.2 | 40.6 | 40.7 | 40.7 | 40.4 | 39.8 | 39.3 | 38.9 | 38.7 |
| 23 | ALPHARD | 217 | 56.7 | 56.7 | 56.7 | 56.8 | 56.9 | 57.0 | 57.0 | 56.9 | 56.8 | 56.6 | 56.3 | 56.1 | 56.0 |
| 24 | REGULUS | 207 | 44.2 | 44.1 | 44.2 | 44.3 | 44.4 | 44.4 | 44.4 | 44.4 | 44.3 | 44.1 | 43.9 | 43.6 | 43.4 |
| 25 | DUBHE | 193 | 52.2 | 52.1 | 52.1 | 52.3 | 52.5 | 52.8 | 52.9 | 53.0 | 52.9 | 52.6 | 52.3 | 51.8 | 51.4 |
| 26 | DENEbola | 182 | 34.4 | 34.2 | 34.2 | 34.2 | 34.3 | 34.4 | 34.5 | 34.5 | 34.5 | 34.4 | 34.1 | 33.9 | 33.7 |
| 27 | ACRUX | 173 | 10.0 | 9.8 | 9.6 | 9.7 | 9.9 | 10.1 | 10.3 | 10.5 | 10.6 | 10.4 | 10.0 | 9.6 | 9.1 |
| 28 | GACRUX | 172 | 1.7 | 1.4 | 1.3 | 1.3 | 1.5 | 1.6 | 1.8 | 2.0 | 2.0 | 1.9 | 1.6 | 1.2 | 0.8 |
| 29 | MINOSA | 167 | 52.8 | 52.5 | 52.4 | 52.4 | 52.5 | 52.7 | 52.9 | 53.1 | 53.1 | 53.0 | 52.7 | 52.3 | 51.9 |
| 30 | ALIOth | 166 | 21.2 | 21.0 | 20.8 | 20.9 | 21.0 | 21.2 | 21.4 | 21.6 | 21.7 | 21.6 | 21.4 | 21.0 | 20.7 |
| 31 | MIZAR | 158 | 53.5 | 53.2 | 53.1 | 53.1 | 53.2 | 53.4 | 53.6 | 53.8 | 53.9 | 53.9 | 53.7 | 53.4 | 53.0 |
| 32 | SPICA | 158 | 32.1 | 32.0 | 31.8 | 31.8 | 31.8 | 31.9 | 32.0 | 32.0 | 32.1 | 32.0 | 31.9 | 31.6 | 31.4 |
| 33 | ALKAID | 152 | 59.5 | 59.2 | 59.1 | 59.0 | 59.1 | 59.3 | 59.4 | 59.6 | 59.7 | 59.7 | 59.6 | 59.3 | 59.0 |
| 34 | MENKENT | 148 | 8.6 | 8.4 | 8.2 | 8.1 | 8.1 | 8.2 | 8.3 | 8.4 | 8.5 | 8.5 | 8.3 | 8.1 | 7.8 |
| 35 | ARCTURUS | 145 | 56.5 | 56.3 | 56.2 | 56.1 | 56.1 | 56.2 | 56.3 | 56.4 | 56.5 | 56.5 | 56.4 | 56.1 | 55.9 |
| 36 | RIGEL KENTAURUS | 139 | 53.1 | 52.7 | 52.4 | 52.3 | 52.2 | 52.4 | 52.6 | 52.9 | 53.1 | 53.1 | 52.9 | 52.5 | 52.1 |
| 37 | KOHAB | 137 | 20.0 | 19.4 | 18.9 | 18.8 | 18.9 | 19.3 | 19.9 | 20.5 | 20.9 | 21.2 | 21.1 | 20.7 | 20.1 |
| 38 | ALPHECCA | 126 | 11.9 | 11.7 | 11.4 | 11.3 | 11.3 | 11.3 | 11.4 | 11.5 | 11.7 | 11.7 | 11.7 | 11.5 | 11.3 |
| 39 | DSCHUBBA | 119 | 44.1 | 43.8 | 43.6 | 43.4 | 43.3 | 43.3 | 43.4 | 43.5 | 43.6 | 43.7 | 43.6 | 43.4 | 43.2 |
| 40 | ANTARES | 112 | 27.6 | 27.4 | 27.1 | 26.9 | 26.8 | 26.7 | 26.8 | 26.9 | 27.1 | 27.1 | 27.1 | 26.9 | 26.7 |
| 41 | ATRIA | 107 | 30.6 | 30.1 | 29.5 | 29.0 | 28.7 | 28.6 | 28.8 | 29.1 | 29.5 | 29.8 | 29.8 | 29.5 | 29.0 |
| 42 | SHAULA | 96 | 23.5 | 23.2 | 22.9 | 22.7 | 22.5 | 22.4 | 22.4 | 22.5 | 22.7 | 22.8 | 22.8 | 22.7 | 22.5 |
| 43 | RASALHAGUE | 96 | 7.6 | 7.4 | 7.1 | 6.9 | 6.8 | 6.7 | 6.7 | 6.9 | 7.0 | 7.1 | 7.1 | 7.1 | 6.9 |
| 44 | ELTANIN | 90 | 47.0 | 46.7 | 46.4 | 46.1 | 46.0 | 45.9 | 46.0 | 46.2 | 46.5 | 46.7 | 46.8 | 46.8 | 46.6 |
| 45 | KAUS AUSTRALIS | 83 | 45.4 | 45.2 | 44.9 | 44.6 | 44.4 | 44.3 | 44.2 | 44.3 | 44.5 | 44.6 | 44.7 | 44.6 | 44.4 |
| 46 | VEGA | 80 | 40.0 | 39.8 | 39.5 | 39.3 | 39.1 | 39.0 | 39.0 | 39.1 | 39.3 | 39.5 | 39.6 | 39.6 | 39.5 |
| 47 | NUNKI | 75 | 59.8 | 59.6 | 59.4 | 59.1 | 58.9 | 58.8 | 58.7 | 58.8 | 58.9 | 59.0 | 59.1 | 59.1 | 58.9 |
| 48 | ALTAIR | 62 | 9.5 | 9.3 | 9.1 | 8.9 | 8.7 | 8.6 | 8.5 | 8.5 | 8.6 | 8.8 | 8.8 | 8.9 | 8.8 |
| 49 | PEACOCK | 53 | 21.3 | 21.1 | 20.8 | 20.4 | 20.0 | 19.7 | 19.6 | 19.6 | 19.8 | 20.0 | 20.2 | 20.3 | 20.2 |
| 50 | DENEb | 49 | 32.6 | 32.5 | 32.3 | 32.0 | 31.7 | 31.5 | 31.4 | 31.4 | 31.6 | 31.8 | 32.0 | 32.1 | 32.1 |
| 51 | ENIF | 33 | 48.4 | 48.3 | 48.2 | 48.0 | 47.7 | 47.5 | 47.4 | 47.3 | 47.4 | 47.5 | 47.6 | 47.6 | 47.7 |
| 52 | AL NA IR | 27 | 45.3 | 45.3 | 45.1 | 44.9 | 44.5 | 44.3 | 44.0 | 43.9 | 44.0 | 44.1 | 44.3 | 44.4 | 44.5 |
| 53 | FOMALHAUT | 15 | 25.3 | 25.3 | 25.2 | 25.0 | 24.8 | 24.5 | 24.3 | 24.2 | 24.2 | 24.3 | 24.4 | 24.5 | 24.6 |
| 54 | MARKAB | 13 | 39.5 | 39.5 | 39.5 | 39.3 | 39.1 | 38.8 | 38.6 | 38.5 | 38.5 | 38.6 | 38.7 | 38.8 | 38.8 |

DEKLINACIJE NAUTIČKIH ZVJEZDA

za 1. u mjesecu

| R.b. | Zvjezda-Sazviježđe | δ | 2012 JAN | FEB | MAR | APR | MAJ | JUN | JUL | AVG | SEP | OKT | NOV | DEC | 2013 JAN |
|------|----------------------|-----|-------------|------|------|------|------|------|------|------|------|------|------|------|-------------|
| | | o | l | l | l | l | l | l | l | l | l | l | l | l | l |
| 1 | α Andromedae | +29 | 9.6 | 9.5 | 9.4 | 9.4 | 9.4 | 9.5 | 9.6 | 9.8 | 9.9 | 10.0 | 10.0 | 10.0 | 9.9 |
| 2 | β Cassiopeae | +59 | 13.3 | 13.2 | 13.0 | 12.9 | 12.9 | 12.9 | 13.1 | 13.2 | 13.4 | 13.5 | 13.6 | 13.7 | 13.6 |
| 3 | β Ceti | -17 | 55.3 | 55.3 | 55.2 | 55.1 | 55.0 | 54.9 | 54.8 | 54.8 | 54.8 | 54.9 | 54.9 | 55.0 | 55.0 |
| 4 | α Eridani | -57 | 10.8 | 10.7 | 10.5 | 10.4 | 10.2 | 10.1 | 10.0 | 10.0 | 10.1 | 10.3 | 10.4 | 10.5 | 10.5 |
| 5 | α Arietis | +23 | 31.3 | 31.2 | 31.2 | 31.1 | 31.2 | 31.2 | 31.3 | 31.4 | 31.4 | 31.5 | 31.5 | 31.5 | 31.5 |
| 6 | α Ursae Minoris | +89 | 19.3 | 19.3 | 19.2 | 19.0 | 18.9 | 18.8 | 18.8 | 18.8 | 19.0 | 19.1 | 19.3 | 19.5 | 19.5 |
| 7 | α Persei | +49 | 54.4 | 54.4 | 54.3 | 54.2 | 54.2 | 54.1 | 54.1 | 54.2 | 54.3 | 54.4 | 54.5 | 54.6 | 54.6 |
| 8 | α Tauri | +16 | 31.9 | 31.9 | 31.9 | 31.9 | 31.9 | 31.9 | 32.0 | 32.0 | 32.1 | 32.1 | 32.0 | 32.0 | 32.0 |
| 9 | β Orionis | - 8 | 11.5 | 11.5 | 11.5 | 11.5 | 11.4 | 11.3 | 11.2 | 11.1 | 11.1 | 11.2 | 11.3 | 11.4 | 11.4 |
| 10 | α Aurigae | +46 | 0.6 | 0.7 | 0.6 | 0.6 | 0.5 | 0.4 | 0.4 | 0.4 | 0.4 | 0.5 | 0.5 | 0.6 | 0.6 |
| 11 | γ Orionis | + 6 | 21.5 | 21.5 | 21.5 | 21.5 | 21.5 | 21.6 | 21.6 | 21.7 | 21.7 | 21.6 | 21.6 | 21.5 | 21.5 |
| 12 | β Tauri | +28 | 37.0 | 37.0 | 37.0 | 37.0 | 36.9 | 36.9 | 36.9 | 36.9 | 36.9 | 37.0 | 37.0 | 37.0 | 37.0 |
| 13 | ε Orionis | - 1 | 11.8 | 11.9 | 11.9 | 11.9 | 11.8 | 11.7 | 11.7 | 11.6 | 11.6 | 11.6 | 11.7 | 11.8 | 11.9 |
| 14 | α Orionis | + 7 | 24.4 | 24.4 | 24.4 | 24.4 | 24.4 | 24.4 | 24.5 | 24.5 | 24.5 | 24.5 | 24.4 | 24.4 | 24.4 |
| 15 | α Carinae | -52 | 42.4 | 42.5 | 42.6 | 42.5 | 42.4 | 42.2 | 42.1 | 42.0 | 41.9 | 42.0 | 42.2 | 42.3 | 42.5 |
| 16 | α Canis Majoris | -16 | 44.2 | 44.3 | 44.3 | 44.3 | 44.2 | 44.1 | 44.0 | 43.9 | 43.9 | 44.0 | 44.1 | 44.2 | 44.3 |
| 17 | ε Canis Majoris | -28 | 59.6 | 59.7 | 59.7 | 59.7 | 59.6 | 59.5 | 59.4 | 59.3 | 59.2 | 59.3 | 59.4 | 59.6 | 59.7 |
| 18 | α Canis Minoris | + 5 | 11.4 | 11.4 | 11.4 | 11.4 | 11.4 | 11.4 | 11.5 | 11.5 | 11.5 | 11.4 | 11.4 | 11.3 | 11.2 |
| 19 | β Geminorum | +27 | 59.6 | 59.6 | 59.7 | 59.7 | 59.7 | 59.7 | 59.6 | 59.6 | 59.5 | 59.5 | 59.4 | 59.4 | 59.4 |
| 20 | ε Carinae | -59 | 33.1 | 33.3 | 33.4 | 33.4 | 33.4 | 33.2 | 33.1 | 32.9 | 32.9 | 32.9 | 33.0 | 33.1 | 33.3 |
| 21 | λ Velorum | -43 | 29.1 | 29.2 | 29.3 | 29.4 | 29.3 | 29.3 | 29.1 | 29.0 | 28.9 | 28.9 | 29.0 | 29.1 | 29.3 |
| 22 | β Carinae | -69 | 46.1 | 46.3 | 46.5 | 46.5 | 46.5 | 46.4 | 46.3 | 46.1 | 46.0 | 46.0 | 46.0 | 46.2 | 46.4 |
| 23 | α Hydrae | - 8 | 42.9 | 43.0 | 43.0 | 43.0 | 43.0 | 42.9 | 42.9 | 42.8 | 42.8 | 42.9 | 42.9 | 43.1 | 43.2 |
| 24 | α Leonis | +11 | 54.2 | 54.2 | 54.2 | 54.2 | 54.3 | 54.3 | 54.3 | 54.3 | 54.2 | 54.2 | 54.1 | 54.0 | 53.9 |
| 25 | α Ursae Majoris | +61 | 40.8 | 40.9 | 41.0 | 41.1 | 41.2 | 41.2 | 41.1 | 40.9 | 40.7 | 40.6 | 40.5 | 40.4 | 40.5 |
| 26 | β Leonis | +14 | 30.0 | 30.0 | 30.0 | 30.0 | 30.1 | 30.1 | 30.1 | 30.1 | 30.1 | 30.0 | 29.9 | 29.7 | 29.7 |
| 27 | α Crucis | -63 | 9.9 | 10.0 | 10.2 | 10.3 | 10.4 | 10.5 | 10.4 | 10.3 | 10.2 | 10.1 | 10.0 | 10.0 | 10.2 |
| 28 | γ Crucis | -57 | 10.8 | 10.9 | 11.1 | 11.2 | 11.3 | 11.3 | 11.3 | 11.2 | 11.1 | 11.0 | 10.9 | 11.0 | 11.1 |
| 29 | β Crucis | -59 | 45.2 | 45.3 | 45.5 | 45.6 | 45.7 | 45.8 | 45.7 | 45.6 | 45.5 | 45.4 | 45.3 | 45.4 | 45.5 |
| 30 | ε Ursae Majoris | +55 | 53.3 | 53.3 | 53.4 | 53.6 | 53.7 | 53.7 | 53.7 | 53.6 | 53.5 | 53.3 | 53.1 | 53.0 | 53.0 |
| 31 | ζ Ursae Majoris | +54 | 51.3 | 51.4 | 51.5 | 51.6 | 51.8 | 51.8 | 51.8 | 51.7 | 51.6 | 51.4 | 51.3 | 51.1 | 51.1 |
| 32 | α Virginis | -11 | 13.6 | 13.6 | 13.7 | 13.7 | 13.7 | 13.7 | 13.7 | 13.6 | 13.6 | 13.6 | 13.7 | 13.7 | 13.8 |
| 33 | η Ursae Majoris | +49 | 14.8 | 14.8 | 14.9 | 15.1 | 15.2 | 15.3 | 15.3 | 15.2 | 15.1 | 14.9 | 14.8 | 14.6 | 14.5 |
| 34 | θ Centauri | -36 | 25.7 | 25.8 | 25.9 | 26.0 | 26.0 | 26.1 | 26.1 | 26.0 | 25.9 | 25.9 | 25.8 | 25.9 | 25.9 |
| 35 | α Bootis | +19 | 6.9 | 6.9 | 6.9 | 7.0 | 7.1 | 7.1 | 7.2 | 7.2 | 7.1 | 7.0 | 6.9 | 6.8 | 6.7 |
| 36 | α Centauri | -60 | 52.9 | 53.0 | 53.1 | 53.2 | 53.4 | 53.4 | 53.5 | 53.4 | 53.3 | 53.2 | 53.1 | 53.1 | 53.1 |
| 37 | β Ursae Minoris | +74 | 6.0 | 6.0 | 6.1 | 6.2 | 6.4 | 6.5 | 6.5 | 6.5 | 6.4 | 6.2 | 6.0 | 5.8 | 5.8 |
| 38 | α Coronae Borealis | +26 | 40.2 | 40.2 | 40.2 | 40.3 | 40.4 | 40.5 | 40.6 | 40.6 | 40.6 | 40.5 | 40.3 | 40.2 | 40.1 |
| 39 | δ Scorpii | -22 | 39.3 | 39.3 | 39.4 | 39.4 | 39.4 | 39.4 | 39.4 | 39.4 | 39.4 | 39.4 | 39.3 | 39.4 | 39.4 |
| 40 | α Scorpii | -26 | 27.4 | 27.5 | 27.5 | 27.5 | 27.5 | 27.5 | 27.6 | 27.6 | 27.5 | 27.5 | 27.5 | 27.5 | 27.5 |
| 41 | α Trianguli Australi | -69 | 2.7 | 2.6 | 2.7 | 2.8 | 2.9 | 3.0 | 3.1 | 3.2 | 3.1 | 3.0 | 2.9 | 2.8 | 2.7 |
| 42 | λ Scorpii | -37 | 6.6 | 6.6 | 6.6 | 6.6 | 6.6 | 6.7 | 6.7 | 6.7 | 6.7 | 6.7 | 6.6 | 6.6 | 6.6 |
| 43 | α Ophiuchi | +12 | 33.0 | 33.0 | 33.0 | 33.0 | 33.1 | 33.2 | 33.3 | 33.3 | 33.3 | 33.3 | 33.2 | 33.1 | 33.0 |
| 44 | γ Draconis | +51 | 29.1 | 29.0 | 29.0 | 29.1 | 29.2 | 29.4 | 29.6 | 29.6 | 29.7 | 29.6 | 29.5 | 29.3 | 29.1 |
| 45 | ε Sagittarii | -34 | 22.6 | 22.6 | 22.5 | 22.5 | 22.5 | 22.6 | 22.6 | 22.6 | 22.6 | 22.6 | 22.6 | 22.5 | 22.5 |
| 46 | α Lyrae | +38 | 47.6 | 47.5 | 47.5 | 47.6 | 47.7 | 47.9 | 48.0 | 48.1 | 48.2 | 48.1 | 48.0 | 47.9 | 47.7 |
| 47 | σ Sagittarii | -26 | 16.8 | 16.8 | 16.7 | 16.7 | 16.7 | 16.7 | 16.7 | 16.7 | 16.7 | 16.7 | 16.7 | 16.7 | 16.7 |
| 48 | α Aquilae | + 8 | 54.1 | 54.0 | 54.0 | 54.0 | 54.1 | 54.3 | 54.4 | 54.4 | 54.5 | 54.4 | 54.4 | 54.3 | 54.2 |
| 49 | α Pavonis | -56 | 41.7 | 41.5 | 41.4 | 41.4 | 41.3 | 41.4 | 41.5 | 41.6 | 41.6 | 41.7 | 41.6 | 41.5 | 41.4 |
| 50 | α Cygni | +45 | 19.5 | 19.4 | 19.3 | 19.3 | 19.4 | 19.5 | 19.7 | 19.9 | 20.0 | 20.0 | 20.0 | 19.9 | 19.7 |
| 51 | ε Pegasi | + 9 | 55.9 | 55.9 | 55.8 | 55.9 | 56.0 | 56.1 | 56.2 | 56.3 | 56.3 | 56.3 | 56.3 | 56.3 | 56.2 |
| 52 | α Gruis | -46 | 54.2 | 54.0 | 53.9 | 53.8 | 53.7 | 53.7 | 53.7 | 53.8 | 53.9 | 53.9 | 54.0 | 53.9 | 53.9 |
| 53 | α Piscis Austrini | -29 | 33.5 | 33.5 | 33.4 | 33.2 | 33.1 | 33.1 | 33.0 | 33.0 | 33.1 | 33.2 | 33.2 | 33.2 | 33.2 |
| 54 | α Pegasi | +15 | 16.3 | 16.3 | 16.2 | 16.2 | 16.3 | 16.4 | 16.5 | 16.6 | 16.7 | 16.7 | 16.7 | 16.7 | 16.6 |

VREMENA GORNJIH PROLAZA NAUTIČKIH ZVJEZDA

kroz meridijan u Griniču

za 1. u mjesecu

| R.b. | Ime zvijezde | 2012 | | MAR | APR | MAJ | JUN | JUL | AVG | SEP | OKT | NOV | DEC | 2013 | |
|------|-----------------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|-----|
| | | JAN | FEB | | | | | | | | | | | JAN | |
| | | h | min | h | min | h | min | h | min | h | min | h | min | h | min |
| 1 | ALPHERATZ | 15 | 27 | 13 | 36 | 11 | 30 | 9 | 32 | 7 | 30 | 5 | 31 | 3 | 29 |
| 2 | CAPH | 15 | 27 | 13 | 37 | 11 | 31 | 9 | 33 | 7 | 30 | 5 | 32 | 3 | 30 |
| 3 | DIPHDA | 16 | 2 | 14 | 11 | 12 | 5 | 10 | 7 | 8 | 5 | 6 | 6 | 4 | 4 |
| 4 | ACHERNAR | 16 | 56 | 15 | 5 | 12 | 59 | 11 | 1 | 8 | 59 | 7 | 0 | 4 | 58 |
| 5 | HAMAL | 17 | 25 | 15 | 35 | 13 | 29 | 11 | 31 | 9 | 28 | 7 | 30 | 5 | 28 |
| 6 | POLARIS | 0 | 47 | 22 | 57 | 20 | 51 | 18 | 52 | 16 | 49 | 14 | 51 | 12 | 49 |
| 7 | MIRFAK | 18 | 43 | 16 | 52 | 14 | 46 | 12 | 48 | 10 | 46 | 8 | 47 | 6 | 45 |
| 8 | ALDEBARAN | 19 | 54 | 18 | 4 | 15 | 58 | 13 | 59 | 11 | 57 | 9 | 59 | 7 | 57 |
| 9 | RIGEL | 20 | 33 | 18 | 42 | 16 | 36 | 14 | 38 | 12 | 36 | 10 | 37 | 8 | 35 |
| 10 | CAPELLA | 20 | 35 | 18 | 45 | 16 | 39 | 14 | 40 | 12 | 38 | 10 | 40 | 8 | 38 |
| 11 | BELLATRIX | 20 | 43 | 18 | 53 | 16 | 47 | 14 | 48 | 12 | 46 | 10 | 48 | 8 | 46 |
| 12 | EL NATH | 20 | 45 | 18 | 54 | 16 | 48 | 14 | 50 | 12 | 48 | 10 | 49 | 8 | 47 |
| 13 | ALNILAM | 20 | 54 | 19 | 4 | 16 | 58 | 14 | 60 | 12 | 57 | 10 | 59 | 8 | 57 |
| 14 | BETELGEUSE | 21 | 13 | 19 | 23 | 17 | 17 | 15 | 19 | 13 | 16 | 11 | 18 | 9 | 16 |
| 15 | CANOPUS | 21 | 42 | 19 | 51 | 17 | 45 | 15 | 47 | 13 | 45 | 11 | 46 | 9 | 44 |
| 16 | SIRIUS | 22 | 3 | 20 | 13 | 18 | 7 | 16 | 8 | 14 | 6 | 12 | 8 | 10 | 6 |
| 17 | ADHARA | 22 | 17 | 20 | 26 | 18 | 20 | 16 | 22 | 14 | 20 | 12 | 21 | 10 | 19 |
| 18 | PROCYON | 22 | 57 | 21 | 7 | 19 | 1 | 17 | 3 | 15 | 0 | 13 | 2 | 10 | 60 |
| 19 | POLLUX | 23 | 4 | 21 | 13 | 19 | 7 | 17 | 9 | 15 | 7 | 13 | 8 | 11 | 6 |
| 20 | AVIOR | 23 | 40 | 21 | 50 | 19 | 44 | 17 | 45 | 15 | 43 | 13 | 45 | 11 | 43 |
| 21 | AL SUHAIL | 0 | 26 | 22 | 36 | 20 | 29 | 18 | 31 | 16 | 29 | 14 | 31 | 12 | 28 |
| 22 | MIAPLACIDUS | 0 | 31 | 22 | 41 | 20 | 34 | 18 | 36 | 16 | 34 | 14 | 35 | 12 | 33 |
| 23 | ALPHARD | 0 | 46 | 22 | 55 | 20 | 49 | 18 | 51 | 16 | 49 | 14 | 50 | 12 | 48 |
| 24 | REGULUS | 1 | 27 | 23 | 36 | 21 | 30 | 19 | 32 | 17 | 30 | 15 | 31 | 13 | 29 |
| 25 | DUBHE | 2 | 22 | 0 | 32 | 22 | 25 | 20 | 27 | 18 | 25 | 16 | 27 | 14 | 24 |
| 26 | DENEbola | 3 | 7 | 1 | 17 | 23 | 11 | 21 | 12 | 19 | 10 | 17 | 12 | 15 | 10 |
| 27 | ACRUX | 3 | 45 | 1 | 54 | 23 | 48 | 21 | 50 | 19 | 48 | 17 | 50 | 15 | 47 |
| 28 | GACRUX | 3 | 49 | 1 | 59 | 23 | 53 | 21 | 55 | 19 | 52 | 17 | 54 | 15 | 52 |
| 29 | MINOSA | 4 | 6 | 2 | 16 | 0 | 9 | 22 | 11 | 20 | 9 | 18 | 11 | 16 | 8 |
| 30 | ALIOTh | 4 | 12 | 2 | 22 | 0 | 16 | 22 | 17 | 20 | 15 | 18 | 17 | 16 | 15 |
| 31 | MIZAR | 4 | 42 | 2 | 52 | 0 | 45 | 22 | 47 | 20 | 45 | 18 | 47 | 16 | 44 |
| 32 | SPICA | 4 | 43 | 2 | 53 | 0 | 47 | 22 | 49 | 20 | 46 | 18 | 48 | 16 | 46 |
| 33 | ALKAID | 5 | 6 | 3 | 15 | 1 | 9 | 23 | 11 | 21 | 9 | 19 | 10 | 17 | 8 |
| 34 | MENKENT | 5 | 25 | 3 | 35 | 1 | 28 | 23 | 30 | 21 | 28 | 19 | 30 | 17 | 27 |
| 35 | ARCTURUS | 5 | 34 | 3 | 43 | 1 | 37 | 23 | 39 | 21 | 37 | 19 | 38 | 17 | 36 |
| 36 | RIGEL KENTAURUS | 5 | 58 | 4 | 8 | 2 | 1 | 0 | 3 | 22 | 1 | 20 | 3 | 18 | 0 |
| 37 | KOHAB | 6 | 8 | 4 | 18 | 2 | 12 | 0 | 13 | 22 | 11 | 20 | 13 | 18 | 11 |
| 38 | ALPHECCA | 6 | 53 | 5 | 2 | 2 | 56 | 0 | 58 | 22 | 56 | 20 | 57 | 18 | 55 |
| 39 | DSCHUBBA | 7 | 19 | 5 | 28 | 3 | 22 | 1 | 24 | 23 | 22 | 21 | 23 | 19 | 21 |
| 40 | ANTARES | 7 | 48 | 5 | 57 | 3 | 51 | 1 | 53 | 23 | 51 | 21 | 52 | 19 | 50 |
| 41 | ATRIA | 8 | 7 | 6 | 17 | 4 | 11 | 2 | 13 | 0 | 11 | 22 | 12 | 20 | 10 |
| 42 | SHAULA | 8 | 52 | 7 | 2 | 4 | 55 | 2 | 57 | 0 | 55 | 22 | 57 | 20 | 54 |
| 43 | RASALHAGUE | 8 | 53 | 7 | 3 | 4 | 56 | 2 | 58 | 0 | 56 | 22 | 58 | 20 | 56 |
| 44 | ELTANIN | 9 | 14 | 7 | 24 | 5 | 18 | 3 | 20 | 1 | 17 | 23 | 19 | 21 | 17 |
| 45 | KAUS AUSTRALIS | 9 | 42 | 7 | 52 | 5 | 46 | 3 | 48 | 1 | 46 | 23 | 47 | 21 | 45 |
| 46 | VEGA | 9 | 55 | 8 | 4 | 5 | 58 | 4 | 0 | 1 | 58 | 23 | 60 | 21 | 57 |
| 47 | NUNKI | 10 | 14 | 8 | 23 | 6 | 17 | 4 | 19 | 2 | 17 | 0 | 18 | 22 | 16 |
| 48 | ALTAIR | 11 | 9 | 9 | 19 | 7 | 12 | 5 | 14 | 3 | 12 | 1 | 14 | 23 | 11 |
| 49 | PEACOCK | 11 | 44 | 9 | 54 | 7 | 48 | 5 | 49 | 3 | 47 | 1 | 49 | 23 | 47 |
| 50 | DENEB | 11 | 59 | 10 | 9 | 8 | 3 | 6 | 5 | 4 | 2 | 2 | 4 | 0 | 2 |
| 51 | ENIF | 13 | 2 | 11 | 12 | 9 | 6 | 7 | 7 | 5 | 5 | 3 | 7 | 1 | 5 |
| 52 | AL NA IR | 13 | 26 | 11 | 36 | 9 | 30 | 7 | 32 | 5 | 30 | 3 | 31 | 1 | 29 |
| 53 | FOMALHAUT | 14 | 16 | 12 | 25 | 10 | 19 | 8 | 21 | 6 | 19 | 4 | 21 | 2 | 18 |
| 54 | MARKAB | 14 | 23 | 12 | 32 | 10 | 26 | 8 | 28 | 6 | 26 | 4 | 28 | 2 | 25 |

| POPRAVKA ZA DATUM | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| uvijek se oduzima | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. | 2. | 3. | 4. | 5. | 6. | 7. | 8. | 9. | 10. | 11. | 12. | 13. | 14. | 15. | 16. | 17. | 18. | 19. | 20. | 21. | 22. | 23. | 24. | 25. | 26. | 27. | 28. | 29. | 30. | 31. | |
| h min | h min | h min | h min | h min | h min | h min | h min | h min | h min | h min | h min | h min | h min | h min | h min | h min | h min | h min | h min | h min | h min | h min | h min | h min | h min | h min | h min | h min | h min | h min | h min |
| 0 00 | 0 04 | 0 08 | 0 12 | 0 16 | 0 20 | 0 24 | 0 28 | 0 31 | 0 35 | 0 39 | 0 43 | 0 47 | 0 51 | 0 55 | 0 59 | 1 03 | 1 07 | 1 11 | 1 15 | 1 19 | 1 23 | 1 27 | 1 30 | 1 34 | 1 38 | 1 42 | 1 46 | 1 50 | 1 54 | 1 58 | |

Tablice

ZA

*ODREĐIVANJE GEOGRAFSKE ŠIRINE
POMOĆU VISINE I AZIMUTA SJEVERNJAČE*

TABLICA I

| S _T | | S _T | | S _T | | S _T | | S _T | | S _T | |
|----------------|-------|----------------|-------|----------------|------|----------------|------|----------------|------|----------------|-------|
| o | l | o | l | o | l | o | l | o | l | o | l |
| 0 | -31.2 | 60 | -38.8 | 120 | -7.5 | 180 | 31.2 | 240 | 38.8 | 300 | 7.5 |
| 1 | -31.7 | 61 | -38.5 | 121 | -6.8 | 181 | 31.7 | 241 | 38.5 | 301 | 6.8 |
| 2 | -32.1 | 62 | -38.3 | 122 | -6.1 | 182 | 32.1 | 242 | 38.3 | 302 | 6.1 |
| 3 | -32.6 | 63 | -38.0 | 123 | -5.4 | 183 | 32.6 | 243 | 38.0 | 303 | 5.4 |
| 4 | -33.0 | 64 | -37.7 | 124 | -4.7 | 184 | 33.0 | 244 | 37.7 | 304 | 4.7 |
| 5 | -33.4 | 65 | -37.4 | 125 | -4.0 | 185 | 33.4 | 245 | 37.4 | 305 | 4.0 |
| 6 | -33.8 | 66 | -37.1 | 126 | -3.3 | 186 | 33.8 | 246 | 37.1 | 306 | 3.3 |
| 7 | -34.3 | 67 | -36.8 | 127 | -2.5 | 187 | 34.3 | 247 | 36.8 | 307 | 2.5 |
| 8 | -34.6 | 68 | -36.5 | 128 | -1.8 | 188 | 34.6 | 248 | 36.5 | 308 | 1.8 |
| 9 | -35.0 | 69 | -36.1 | 129 | -1.1 | 189 | 35.0 | 249 | 36.1 | 309 | 1.1 |
| 10 | -35.4 | 70 | -35.8 | 130 | -0.4 | 190 | 35.4 | 250 | 35.8 | 310 | 0.4 |
| 11 | -35.8 | 71 | -35.4 | 131 | 0.3 | 191 | 35.8 | 251 | 35.4 | 311 | -0.3 |
| 12 | -36.1 | 72 | -35.1 | 132 | 1.0 | 192 | 36.1 | 252 | 35.1 | 312 | -1.0 |
| 13 | -36.4 | 73 | -34.7 | 133 | 1.8 | 193 | 36.4 | 253 | 34.7 | 313 | -1.8 |
| 14 | -36.8 | 74 | -34.3 | 134 | 2.5 | 194 | 36.8 | 254 | 34.3 | 314 | -2.5 |
| 15 | -37.1 | 75 | -33.9 | 135 | 3.2 | 195 | 37.1 | 255 | 33.9 | 315 | -3.2 |
| 16 | -37.4 | 76 | -33.5 | 136 | 3.9 | 196 | 37.4 | 256 | 33.5 | 316 | -3.9 |
| 17 | -37.7 | 77 | -33.1 | 137 | 4.6 | 197 | 37.7 | 257 | 33.1 | 317 | -4.6 |
| 18 | -38.0 | 78 | -32.6 | 138 | 5.3 | 198 | 38.0 | 258 | 32.6 | 318 | -5.3 |
| 19 | -38.2 | 79 | -32.2 | 139 | 6.0 | 199 | 38.2 | 259 | 32.2 | 319 | -6.0 |
| 20 | -38.5 | 80 | -31.7 | 140 | 6.7 | 200 | 38.5 | 260 | 31.7 | 320 | -6.7 |
| 21 | -38.7 | 81 | -31.3 | 141 | 7.5 | 201 | 38.7 | 261 | 31.3 | 321 | -7.5 |
| 22 | -39.0 | 82 | -30.8 | 142 | 8.2 | 202 | 39.0 | 262 | 30.8 | 322 | -8.2 |
| 23 | -39.2 | 83 | -30.3 | 143 | 8.9 | 203 | 39.2 | 263 | 30.3 | 323 | -8.9 |
| 24 | -39.4 | 84 | -29.8 | 144 | 9.6 | 204 | 39.4 | 264 | 29.8 | 324 | -9.6 |
| 25 | -39.6 | 85 | -29.3 | 145 | 10.3 | 205 | 39.6 | 265 | 29.3 | 325 | -10.3 |
| 26 | -39.8 | 86 | -28.8 | 146 | 10.9 | 206 | 39.8 | 266 | 28.8 | 326 | -10.9 |
| 27 | -40.0 | 87 | -28.3 | 147 | 11.6 | 207 | 40.0 | 267 | 28.3 | 327 | -11.6 |
| 28 | -40.1 | 88 | -27.8 | 148 | 12.3 | 208 | 40.1 | 268 | 27.8 | 328 | -12.3 |
| 29 | -40.3 | 89 | -27.3 | 149 | 13.0 | 209 | 40.3 | 269 | 27.3 | 329 | -13.0 |
| 30 | -40.4 | 90 | -26.7 | 150 | 13.7 | 210 | 40.4 | 270 | 26.7 | 330 | -13.7 |
| 31 | -40.5 | 91 | -26.2 | 151 | 14.4 | 211 | 40.5 | 271 | 26.2 | 331 | -14.4 |
| 32 | -40.6 | 92 | -25.6 | 152 | 15.0 | 212 | 40.6 | 272 | 25.6 | 332 | -15.0 |
| 33 | -40.7 | 93 | -25.1 | 153 | 15.7 | 213 | 40.7 | 273 | 25.1 | 333 | -15.7 |
| 34 | -40.8 | 94 | -24.5 | 154 | 16.4 | 214 | 40.8 | 274 | 24.5 | 334 | -16.4 |
| 35 | -40.9 | 95 | -23.9 | 155 | 17.0 | 215 | 40.9 | 275 | 23.9 | 335 | -17.0 |
| 36 | -41.0 | 96 | -23.3 | 156 | 17.7 | 216 | 41.0 | 276 | 23.3 | 336 | -17.7 |
| 37 | -41.0 | 97 | -22.7 | 157 | 18.3 | 217 | 41.0 | 277 | 22.7 | 337 | -18.3 |
| 38 | -41.1 | 98 | -22.1 | 158 | 18.9 | 218 | 41.1 | 278 | 22.1 | 338 | -18.9 |
| 39 | -41.1 | 99 | -21.5 | 159 | 19.6 | 219 | 41.1 | 279 | 21.5 | 339 | -19.6 |
| 40 | -41.1 | 100 | -20.9 | 160 | 20.2 | 220 | 41.1 | 280 | 20.9 | 340 | -20.2 |
| 41 | -41.1 | 101 | -20.3 | 161 | 20.8 | 221 | 41.1 | 281 | 20.3 | 341 | -20.8 |
| 42 | -41.1 | 102 | -19.6 | 162 | 21.4 | 222 | 41.1 | 282 | 19.6 | 342 | -21.4 |
| 43 | -41.1 | 103 | -19.0 | 163 | 22.1 | 223 | 41.1 | 283 | 19.0 | 343 | -22.1 |
| 44 | -41.0 | 104 | -18.4 | 164 | 22.7 | 224 | 41.0 | 284 | 18.4 | 344 | -22.7 |
| 45 | -41.0 | 105 | -17.7 | 165 | 23.2 | 225 | 41.0 | 285 | 17.7 | 345 | -23.2 |
| 46 | -40.9 | 106 | -17.1 | 166 | 23.8 | 226 | 40.9 | 286 | 17.1 | 346 | -23.8 |
| 47 | -40.8 | 107 | -16.4 | 167 | 24.4 | 227 | 40.8 | 287 | 16.4 | 347 | -24.4 |
| 48 | -40.8 | 108 | -15.8 | 168 | 25.0 | 228 | 40.8 | 288 | 15.8 | 348 | -25.0 |
| 49 | -40.7 | 109 | -15.1 | 169 | 25.6 | 229 | 40.7 | 289 | 15.1 | 349 | -25.6 |
| 50 | -40.5 | 110 | -14.4 | 170 | 26.1 | 230 | 40.5 | 290 | 14.4 | 350 | -26.1 |
| 51 | -40.4 | 111 | -13.8 | 171 | 26.7 | 231 | 40.4 | 291 | 13.8 | 351 | -26.7 |
| 52 | -40.3 | 112 | -13.1 | 172 | 27.2 | 232 | 40.3 | 292 | 13.1 | 352 | -27.2 |
| 53 | -40.1 | 113 | -12.4 | 173 | 27.7 | 233 | 40.1 | 293 | 12.4 | 353 | -27.7 |
| 54 | -40.0 | 114 | -11.7 | 174 | 28.3 | 234 | 40.0 | 294 | 11.7 | 354 | -28.3 |
| 55 | -39.8 | 115 | -11.0 | 175 | 28.8 | 235 | 39.8 | 295 | 11.0 | 355 | -28.8 |
| 56 | -39.6 | 116 | -10.3 | 176 | 29.3 | 236 | 39.6 | 296 | 10.3 | 356 | -29.3 |
| 57 | -39.4 | 117 | -9.6 | 177 | 29.8 | 237 | 39.4 | 297 | 9.6 | 357 | -29.8 |
| 58 | -39.2 | 118 | -8.9 | 178 | 30.3 | 238 | 39.2 | 298 | 8.9 | 358 | -30.3 |
| 59 | -39.0 | 119 | -8.2 | 179 | 30.8 | 239 | 39.0 | 299 | 8.2 | 359 | -30.8 |
| 60 | -38.8 | 120 | -7.5 | 180 | 31.2 | 240 | 38.8 | 300 | 7.5 | 360 | -31.2 |

TABLICA II

| S _T | | φ | | | | | | | | | | | | | | | S _T | |
|----------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----------------|----|
| | | 0° | 10° | 15° | 20° | 25° | 30° | 35° | 40° | 45° | 50° | 55° | 60° | 62° | 64° | 66° | | |
| h | o | / | / | / | / | / | / | / | / | / | / | / | / | / | / | / | o | h |
| 1 | 15 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 15 | 1 |
| 2 | 30 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 30 | 2 |
| 3 | 45 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 45 | 3 |
| 4 | 60 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 60 | 4 |
| 5 | 75 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 75 | 5 |
| 6 | 90 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.3 | 0.3 | 0.3 | 90 | 6 |
| 7 | 105 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 | 0.3 | 0.4 | 0.4 | 105 | 7 |
| 8 | 120 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.3 | 0.3 | 0.4 | 0.5 | 0.5 | 120 | 8 |
| 9 | 135 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.3 | 0.3 | 0.5 | 0.5 | 0.5 | 135 | 9 |
| 10 | 150 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.3 | 0.3 | 0.4 | 0.5 | 0.5 | 150 | 10 |
| 11 | 165 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.3 | 0.4 | 0.4 | 165 | 11 |
| 12 | 180 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 | 180 | 12 |
| 13 | 195 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 195 | 13 |
| 14 | 210 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 210 | 14 |
| 15 | 225 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 225 | 15 |
| 16 | 240 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 240 | 16 |
| 17 | 255 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 255 | 17 |
| 18 | 270 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.3 | 0.3 | 0.3 | 270 | 18 |
| 19 | 285 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.3 | 0.4 | 0.4 | 0.4 | 285 | 19 |
| 20 | 300 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.3 | 0.3 | 0.4 | 0.5 | 0.5 | 300 | 20 |
| 21 | 315 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.3 | 0.3 | 0.5 | 0.5 | 0.5 | 315 | 21 |
| 22 | 330 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.3 | 0.3 | 0.4 | 0.5 | 0.5 | 330 | 22 |
| 23 | 345 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.3 | 0.4 | 0.4 | 345 | 23 |
| 24 | 360 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 360 | 24 |

TABLICA III

| S _T | | Datum | | | | | | | | | | | | Datum | | S _T | |
|----------------|-----|----------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|-----|----------------|--|
| | | 2012 1. JAN | 1. FEB | 1. MAR | 1. APR | 1. MAJ | 1. JUN | 1. JUL | 1. AVG | 1. SEP | 1. OKT | 1. NOV | 1. DEC | | | | |
| h | o | / | / | / | / | / | / | / | / | / | / | / | / | o | h | | |
| 1 | 15 | -2 | -2 | -2 | -1 | .0 | .1 | .2 | .3 | .3 | .1 | .0 | -1 | -3 | 15 | 1 | |
| 2 | 30 | -2 | -2 | -2 | -1 | .1 | .2 | .3 | .3 | .3 | .1 | .0 | -2 | -4 | 30 | 2 | |
| 3 | 45 | -2 | -2 | -2 | -1 | .1 | .2 | .3 | .3 | .3 | .1 | .0 | -2 | -4 | 45 | 3 | |
| 4 | 60 | -2 | -2 | -2 | -1 | .1 | .2 | .3 | .3 | .3 | .1 | .0 | -2 | -4 | 60 | 4 | |
| 5 | 75 | -2 | -2 | -1 | .0 | .1 | .2 | .3 | .3 | .2 | .0 | -1 | -2 | -4 | 75 | 5 | |
| 6 | 90 | -1 | -1 | -1 | .0 | .1 | .2 | .2 | .2 | .2 | .0 | -1 | -2 | -3 | 90 | 6 | |
| 7 | 105 | -1 | -1 | .0 | .0 | .1 | .2 | .2 | .1 | .1 | .0 | -1 | -2 | -2 | 105 | 7 | |
| 8 | 120 | -1 | .0 | .0 | .1 | .1 | .1 | .1 | .1 | .0 | -1 | -1 | -1 | -2 | 120 | 8 | |
| 9 | 135 | .0 | .0 | .1 | .1 | .1 | .1 | .0 | .0 | -1 | -1 | -1 | -1 | -1 | 135 | 9 | |
| 10 | 150 | .1 | .1 | .1 | .1 | .1 | .0 | -1 | -1 | -1 | -1 | -1 | .0 | .1 | 150 | 10 | |
| 11 | 165 | .1 | .1 | .2 | .1 | .0 | .0 | -1 | -2 | -2 | -1 | -1 | .0 | .2 | 165 | 11 | |
| 12 | 180 | .1 | .2 | .2 | .1 | .0 | -1 | -2 | -2 | -3 | -1 | -1 | .1 | .2 | 180 | 12 | |
| 13 | 195 | .2 | .2 | .2 | .1 | .0 | -1 | -2 | -3 | -3 | -1 | .0 | .1 | .3 | 195 | 13 | |
| 14 | 210 | .2 | .2 | .2 | .1 | -1 | -2 | -3 | -3 | -3 | -1 | .0 | .2 | .4 | 210 | 14 | |
| 15 | 225 | .2 | .2 | .2 | .1 | -1 | -2 | -3 | -3 | -3 | -1 | .0 | .2 | .4 | 225 | 15 | |
| 16 | 240 | .2 | .2 | .2 | .1 | -1 | -2 | -3 | -3 | -3 | -1 | .0 | .2 | .4 | 240 | 16 | |
| 17 | 255 | .2 | .2 | .1 | .0 | -1 | -2 | -3 | -3 | -2 | .0 | .1 | .2 | .4 | 255 | 17 | |
| 18 | 270 | .1 | .1 | .1 | .0 | -1 | -2 | -2 | -2 | -2 | .0 | .1 | .2 | .3 | 270 | 18 | |
| 19 | 285 | .1 | .1 | .0 | .0 | -1 | -2 | -2 | -1 | -1 | .0 | .1 | .2 | .2 | 285 | 19 | |
| 20 | 300 | .1 | .0 | .0 | -1 | -1 | -1 | -1 | -1 | .0 | .1 | .1 | .1 | .2 | 300 | 20 | |
| 21 | 315 | .0 | .0 | -1 | -1 | -1 | -1 | .0 | .0 | .1 | .1 | .1 | .1 | .1 | 315 | 21 | |
| 22 | 330 | -1 | -1 | -1 | -1 | -1 | .0 | .1 | .1 | .1 | .1 | .1 | .0 | -1 | 330 | 22 | |
| 23 | 345 | -1 | -1 | -2 | -1 | .0 | .0 | .1 | .2 | .2 | .1 | .1 | .0 | -2 | 345 | 23 | |
| 24 | 360 | -1 | -2 | -2 | -1 | .0 | .1 | .2 | .2 | .3 | .1 | .1 | -1 | -2 | 360 | 24 | |

AZIMUTI SJEVERNJAČE

| $s_T \backslash \varphi$ | 0° | 30° | 40° | 50° | 55° | 60° | 65° | 70° | 75° | + $\varphi = v$ |
|--------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-----------------|
| 0 | 0.5 | 0.6 | 0.6 | 0.8 | 0.8 | 1.0 | 1.2 | 1.4 | 1.9 | 0 |
| 15 | 0.3 | 0.4 | 0.4 | 0.5 | 0.6 | 0.7 | 0.8 | 1.0 | 1.3 | 15 |
| 30 | 0.1 | 0.2 | 0.2 | 0.2 | 0.3 | 0.3 | 0.4 | 0.4 | 0.6 | 30 |
| 45 | 360.0 | 359.9 | 359.9 | 359.9 | 359.9 | 359.9 | 359.9 | 359.9 | 359.8 | 45 |
| 60 | 359.8 | 359.7 | 359.7 | 359.6 | 359.6 | 359.5 | 359.4 | 359.3 | 359.1 | 60 |
| 75 | 359.6 | 359.5 | 359.5 | 359.4 | 359.3 | 359.2 | 359.0 | 358.8 | 358.4 | 75 |
| 90 | 359.5 | 359.4 | 359.3 | 359.1 | 359.0 | 358.9 | 358.7 | 358.4 | 357.8 | 90 |
| 105 | 359.4 | 359.2 | 359.1 | 359.0 | 358.9 | 358.7 | 358.4 | 358.1 | 357.4 | 105 |
| 120 | 359.3 | 359.2 | 359.1 | 358.9 | 358.8 | 358.6 | 358.3 | 357.9 | 357.2 | 120 |
| 135 | 359.3 | 359.2 | 359.1 | 358.9 | 358.7 | 358.6 | 358.3 | 357.9 | 357.2 | 135 |
| 150 | 359.3 | 359.2 | 359.1 | 358.9 | 358.8 | 358.6 | 358.4 | 358.0 | 357.4 | 150 |
| 165 | 359.4 | 359.3 | 359.2 | 359.1 | 359.0 | 358.8 | 358.6 | 358.3 | 357.7 | 165 |
| 180 | 359.5 | 359.4 | 359.4 | 359.3 | 359.2 | 359.1 | 358.9 | 358.6 | 358.2 | 180 |
| 195 | 359.7 | 359.6 | 359.6 | 359.5 | 359.4 | 359.4 | 359.3 | 359.1 | 358.8 | 195 |
| 210 | 359.9 | 359.8 | 359.8 | 359.8 | 359.8 | 359.7 | 359.7 | 359.6 | 359.5 | 210 |
| 225 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 225 |
| 240 | 0.2 | 0.3 | 0.3 | 0.4 | 0.4 | 0.4 | 0.5 | 0.6 | 0.8 | 240 |
| 255 | 0.4 | 0.5 | 0.5 | 0.6 | 0.7 | 0.8 | 0.9 | 1.1 | 1.5 | 255 |
| 270 | 0.5 | 0.6 | 0.7 | 0.8 | 0.9 | 1.1 | 1.3 | 1.6 | 2.0 | 270 |
| 285 | 0.6 | 0.7 | 0.8 | 1.0 | 1.1 | 1.3 | 1.5 | 1.9 | 2.5 | 285 |
| 300 | 0.7 | 0.8 | 0.9 | 1.1 | 1.2 | 1.4 | 1.7 | 2.1 | 2.7 | 300 |
| 315 | 0.7 | 0.8 | 0.9 | 1.1 | 1.3 | 1.4 | 1.7 | 2.1 | 2.8 | 315 |
| 330 | 0.7 | 0.8 | 0.9 | 1.1 | 1.2 | 1.4 | 1.6 | 2.0 | 2.7 | 330 |
| 345 | 0.6 | 0.7 | 0.8 | 0.9 | 1.1 | 1.2 | 1.5 | 1.8 | 2.4 | 345 |
| 360 | 0.5 | 0.6 | 0.6 | 0.8 | 0.8 | 1.0 | 1.2 | 1.4 | 1.9 | 360 |

O B J A Š N J E N J E

Posljednja rubrika daje podatak, koji algebarski zbrojen sa geografskom širinom zbirne pozicije broda daje približnu visinu sa tačnošću od nekoliko lučnih minuta radi njenog prethodnog postavljanja na sekstant u cilju olakšanja rada pri mjerenju visine Sjevernjače.

I_n terpolazione

|
POMOĆNE TABLICE

INTERPOLACIONA TABLICA
za izračunavanje trenutaka izlaza i zalaza Sunca i Mjeseca

| ZA $\varphi = \pm(30^\circ \text{ DO } 60^\circ)$ | | | | |
|---|------|------|------|------|
| $\Delta\varphi$ Δt_s | 1° | 2° | 3° | 4° |
| 1 | 0.2 | 0.4 | 0.6 | 0.8 |
| 2 | 0.4 | 0.8 | 1.2 | 1.6 |
| 3 | 0.6 | 1.2 | 1.8 | 2.4 |
| 4 | 0.8 | 1.6 | 2.4 | 3.2 |
| 5 | 1.0 | 2.0 | 3.0 | 4.0 |
| 6 | 1.2 | 2.4 | 3.6 | 4.8 |
| 7 | 1.4 | 2.8 | 4.2 | 5.6 |
| 8 | 1.6 | 3.2 | 4.8 | 6.4 |
| 9 | 1.8 | 3.6 | 5.4 | 7.2 |
| 10 | 2.0 | 4.0 | 6.0 | 8.0 |
| 11 | 2.2 | 4.4 | 6.6 | 8.8 |
| 12 | 2.4 | 4.8 | 7.2 | 9.6 |
| 13 | 2.6 | 5.2 | 7.8 | 10.4 |
| 14 | 2.8 | 5.6 | 8.4 | 11.2 |
| 15 | 3.0 | 6.0 | 9.0 | 12.0 |
| 16 | 3.2 | 6.4 | 9.6 | 12.8 |
| 17 | 3.4 | 6.8 | 10.2 | 13.6 |
| 18 | 3.6 | 7.2 | 10.8 | 14.4 |
| 19 | 3.8 | 7.6 | 11.4 | 15.2 |
| 20 | 4.0 | 8.0 | 12.0 | 16.0 |
| 21 | 4.2 | 8.4 | 12.6 | 16.8 |
| 22 | 4.4 | 8.8 | 13.2 | 17.6 |
| 23 | 4.6 | 9.2 | 13.8 | 18.4 |
| 24 | 4.8 | 9.6 | 14.4 | 19.2 |
| 25 | 5.0 | 10.0 | 15.0 | 20.0 |
| 26 | 5.2 | 10.4 | 15.6 | 20.8 |
| 27 | 5.4 | 10.8 | 16.2 | 21.6 |
| 28 | 5.6 | 11.2 | 16.8 | 22.4 |
| 29 | 5.8 | 11.6 | 17.4 | 23.2 |
| 30 | 6.0 | 12.0 | 18.0 | 24.0 |
| 31 | 6.2 | 12.4 | 18.6 | 24.8 |
| 32 | 6.4 | 12.8 | 19.2 | 25.6 |
| 33 | 6.6 | 13.2 | 19.8 | 26.4 |
| 34 | 6.8 | 13.6 | 20.4 | 27.2 |
| 35 | 7.0 | 14.0 | 21.0 | 28.0 |
| 36 | 7.2 | 14.4 | 21.6 | 28.8 |
| 37 | 7.4 | 14.8 | 22.2 | 29.6 |
| 38 | 7.6 | 15.2 | 22.8 | 30.4 |
| 39 | 7.8 | 15.6 | 23.4 | 31.2 |
| 40 | 8.0 | 16.0 | 24.0 | 32.0 |
| 41 | 8.2 | 16.4 | 24.6 | 32.8 |
| 42 | 8.4 | 16.8 | 25.2 | 33.6 |
| 43 | 8.6 | 17.2 | 25.8 | 34.4 |
| 44 | 8.8 | 17.6 | 26.4 | 35.2 |
| 45 | 9.0 | 18.0 | 27.0 | 36.0 |
| 46 | 9.2 | 18.4 | 27.6 | 36.8 |
| 47 | 9.4 | 18.8 | 28.2 | 37.6 |
| 48 | 9.6 | 19.2 | 28.8 | 38.4 |
| 49 | 9.8 | 19.6 | 29.4 | 39.2 |
| 50 | 10.0 | 20.0 | 30.0 | 40.0 |
| 51 | 10.2 | 20.4 | 30.6 | 40.8 |
| 52 | 10.4 | 20.8 | 31.2 | 41.6 |
| 53 | 10.6 | 21.2 | 31.8 | 42.4 |
| 54 | 10.8 | 21.6 | 32.4 | 43.2 |
| 55 | 11.0 | 22.0 | 33.0 | 44.0 |
| 56 | 11.2 | 22.4 | 33.6 | 44.8 |
| 57 | 11.4 | 22.8 | 34.2 | 45.6 |
| 58 | 11.6 | 23.2 | 34.8 | 46.4 |
| 59 | 11.8 | 23.6 | 35.4 | 47.2 |
| 60 | 12.0 | 24.0 | 36.0 | 48.0 |

| ZA $\varphi = \pm(30^\circ \text{ DO } 60^\circ)$ | | | | | | | | | | |
|---|-----|-----|-----|-----|-----|-----|-----|------|---------------------------------|--|
| 0°1 | 0°2 | 0°3 | 0°4 | 0°5 | 0°6 | 0°7 | 0°8 | 0°9 | $\Delta\varphi$ Δt_s | |
| 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 1 | |
| 0.0 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.3 | 0.3 | 0.4 | 2 | |
| 0.1 | 0.1 | 0.2 | 0.2 | 0.3 | 0.4 | 0.4 | 0.5 | 0.5 | 3 | |
| 0.1 | 0.2 | 0.2 | 0.3 | 0.4 | 0.5 | 0.6 | 0.6 | 0.7 | 4 | |
| 0.1 | 0.2 | 0.3 | 0.4 | 0.5 | 0.6 | 0.7 | 0.7 | 0.8 | 5 | |
| 0.1 | 0.2 | 0.4 | 0.5 | 0.6 | 0.7 | 0.8 | 1.0 | 1.1 | 6 | |
| 0.1 | 0.3 | 0.4 | 0.6 | 0.7 | 0.8 | 1.0 | 1.1 | 1.3 | 7 | |
| 0.2 | 0.3 | 0.5 | 0.6 | 0.8 | 1.0 | 1.1 | 1.3 | 1.4 | 8 | |
| 0.2 | 0.4 | 0.5 | 0.7 | 0.9 | 1.1 | 1.3 | 1.4 | 1.6 | 9 | |
| 0.2 | 0.4 | 0.6 | 0.8 | 1.0 | 1.2 | 1.4 | 1.6 | 1.8 | 10 | |
| 0.2 | 0.4 | 0.7 | 0.9 | 1.1 | 1.3 | 1.5 | 1.8 | 2.0 | 11 | |
| 0.2 | 0.5 | 0.7 | 1.0 | 1.2 | 1.4 | 1.7 | 1.9 | 2.2 | 12 | |
| 0.3 | 0.5 | 0.8 | 1.0 | 1.3 | 1.6 | 1.8 | 2.1 | 2.3 | 13 | |
| 0.3 | 0.6 | 0.8 | 1.1 | 1.4 | 1.7 | 2.0 | 2.2 | 2.5 | 14 | |
| 0.3 | 0.6 | 0.9 | 1.2 | 1.5 | 1.8 | 2.1 | 2.4 | 2.7 | 15 | |
| 0.3 | 0.6 | 1.0 | 1.3 | 1.6 | 1.9 | 2.2 | 2.6 | 2.9 | 16 | |
| 0.3 | 0.7 | 1.0 | 1.4 | 1.7 | 2.0 | 2.4 | 2.7 | 3.1 | 17 | |
| 0.4 | 0.7 | 1.1 | 1.4 | 1.8 | 2.2 | 2.5 | 2.9 | 3.2 | 18 | |
| 0.4 | 0.8 | 1.1 | 1.5 | 1.9 | 2.3 | 2.7 | 3.0 | 3.4 | 19 | |
| 0.4 | 0.8 | 1.2 | 1.6 | 2.0 | 2.4 | 2.8 | 3.2 | 3.6 | 20 | |
| 0.4 | 0.8 | 1.3 | 1.7 | 2.1 | 2.5 | 2.9 | 3.4 | 3.8 | 21 | |
| 0.4 | 0.9 | 1.3 | 1.8 | 2.2 | 2.6 | 3.1 | 3.5 | 4.0 | 22 | |
| 0.5 | 0.9 | 1.4 | 1.8 | 2.3 | 2.8 | 3.2 | 3.7 | 4.1 | 23 | |
| 0.5 | 1.0 | 1.4 | 1.9 | 2.4 | 2.9 | 3.4 | 3.8 | 4.3 | 24 | |
| 0.5 | 1.0 | 1.5 | 2.0 | 2.5 | 3.0 | 3.5 | 4.0 | 4.5 | 25 | |
| 0.5 | 1.0 | 1.6 | 2.1 | 2.6 | 3.1 | 3.6 | 4.2 | 4.7 | 26 | |
| 0.5 | 1.1 | 1.6 | 2.2 | 2.7 | 3.2 | 3.8 | 4.3 | 4.9 | 27 | |
| 0.6 | 1.1 | 1.7 | 2.2 | 2.8 | 3.4 | 3.9 | 4.5 | 5.0 | 28 | |
| 0.6 | 1.2 | 1.7 | 2.3 | 2.9 | 3.5 | 4.1 | 4.6 | 5.2 | 29 | |
| 0.6 | 1.2 | 1.8 | 2.4 | 3.0 | 3.6 | 4.2 | 4.8 | 5.4 | 30 | |
| 0.6 | 1.2 | 1.9 | 2.5 | 3.1 | 3.7 | 4.3 | 5.0 | 5.6 | 31 | |
| 0.6 | 1.3 | 1.9 | 2.6 | 3.2 | 3.8 | 4.5 | 5.1 | 5.8 | 32 | |
| 0.7 | 1.3 | 2.0 | 2.6 | 3.3 | 4.0 | 4.6 | 5.3 | 5.9 | 33 | |
| 0.7 | 1.4 | 2.0 | 2.7 | 3.4 | 4.1 | 4.8 | 5.4 | 6.1 | 34 | |
| 0.7 | 1.4 | 2.1 | 2.8 | 3.5 | 4.2 | 4.9 | 5.6 | 6.3 | 35 | |
| 0.7 | 1.4 | 2.2 | 2.9 | 3.6 | 4.3 | 5.0 | 5.8 | 6.5 | 36 | |
| 0.7 | 1.5 | 2.2 | 3.0 | 3.7 | 4.4 | 5.2 | 5.9 | 6.7 | 37 | |
| 0.8 | 1.5 | 2.3 | 3.0 | 3.8 | 4.6 | 5.3 | 6.1 | 6.8 | 38 | |
| 0.8 | 1.6 | 2.3 | 3.1 | 3.9 | 4.7 | 5.5 | 6.2 | 7.0 | 39 | |
| 0.8 | 1.6 | 2.4 | 3.2 | 4.0 | 4.8 | 5.6 | 6.4 | 7.2 | 40 | |
| 0.8 | 1.6 | 2.5 | 3.3 | 4.1 | 4.9 | 5.7 | 6.6 | 7.4 | 41 | |
| 0.8 | 1.7 | 2.5 | 3.4 | 4.2 | 5.0 | 5.9 | 6.7 | 7.6 | 42 | |
| 0.9 | 1.7 | 2.6 | 3.4 | 4.3 | 5.2 | 6.0 | 6.9 | 7.7 | 43 | |
| 0.9 | 1.8 | 2.6 | 3.5 | 4.4 | 5.3 | 6.2 | 7.0 | 7.9 | 44 | |
| 0.9 | 1.8 | 2.7 | 3.6 | 4.5 | 5.4 | 6.3 | 7.2 | 8.1 | 45 | |
| 0.9 | 1.8 | 2.8 | 3.7 | 4.6 | 5.5 | 6.4 | 7.4 | 8.3 | 46 | |
| 0.9 | 1.9 | 2.8 | 3.8 | 4.7 | 5.6 | 6.6 | 7.5 | 8.5 | 47 | |
| 1.0 | 1.9 | 2.9 | 3.8 | 4.8 | 5.8 | 6.7 | 7.7 | 8.6 | 48 | |
| 1.0 | 2.0 | 2.9 | 3.9 | 4.9 | 5.9 | 6.9 | 7.8 | 8.8 | 49 | |
| 1.0 | 2.0 | 3.0 | 4.0 | 5.0 | 6.0 | 7.0 | 8.0 | 9.0 | 50 | |
| 1.0 | 2.0 | 3.1 | 4.1 | 5.1 | 6.1 | 7.1 | 8.2 | 9.2 | 51 | |
| 1.0 | 2.1 | 3.1 | 4.2 | 5.2 | 6.2 | 7.3 | 8.3 | 9.4 | 52 | |
| 1.1 | 2.1 | 3.2 | 4.2 | 5.3 | 6.4 | 7.4 | 8.5 | 9.5 | 53 | |
| 1.1 | 2.2 | 3.2 | 4.3 | 5.4 | 6.5 | 7.6 | 8.6 | 9.7 | 54 | |
| 1.1 | 2.2 | 3.3 | 4.4 | 5.5 | 6.6 | 7.7 | 8.8 | 9.9 | 55 | |
| 1.1 | 2.2 | 3.4 | 4.5 | 5.6 | 6.7 | 7.8 | 9.0 | 10.1 | 56 | |
| 1.1 | 2.3 | 3.4 | 4.6 | 5.7 | 6.8 | 8.0 | 9.1 | 10.3 | 57 | |
| 1.2 | 2.3 | 3.5 | 4.6 | 5.8 | 7.0 | 8.1 | 9.3 | 10.4 | 58 | |
| 1.2 | 2.4 | 3.5 | 4.7 | 5.9 | 7.1 | 8.3 | 9.4 | 10.6 | 59 | |
| 1.2 | 2.4 | 3.6 | 4.8 | 6.0 | 7.2 | 8.4 | 9.6 | 10.8 | 60 | |

INTERPOLACIONA TABLICA
za izračunavanje trenutaka izlaza, zalaza i prolaza Mjeseca kroz meridijan

| $\frac{\lambda}{24}$ | 20° | 30° | 40° | 50° | 60° | 70° | 80° | 90° | 100° | 110° | 120° | 130° | 140° | 150° | 160° | 170° | 180° | $\frac{\lambda}{24}$ |
|----------------------|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|----------------------|
| 0.1 | 0.1 | 0.2 | 0.3 | 0.3 | 0.4 | 0.5 | 0.5 | 0.6 | 0.7 | 0.7 | 0.8 | 0.9 | 0.9 | 1.0 | 1.1 | 1.1 | 1.2 | 0.1 |
| 0.2 | 0.3 | 0.4 | 0.5 | 0.7 | 0.8 | 0.9 | 1.1 | 1.2 | 1.3 | 1.5 | 1.6 | 1.7 | 1.9 | 2.0 | 2.1 | 2.3 | 2.4 | 0.2 |
| 0.3 | 0.4 | 0.6 | 0.8 | 1.0 | 1.2 | 1.4 | 1.6 | 1.8 | 2.0 | 2.2 | 2.4 | 2.6 | 2.8 | 3.0 | 3.2 | 3.4 | 3.6 | 0.3 |
| 0.4 | 0.5 | 0.8 | 1.1 | 1.3 | 1.6 | 1.9 | 2.1 | 2.4 | 2.7 | 2.9 | 3.2 | 3.5 | 3.7 | 4.0 | 4.3 | 4.5 | 4.8 | 0.4 |
| 0.5 | 0.7 | 1.0 | 1.3 | 1.7 | 2.0 | 2.3 | 2.7 | 3.0 | 3.3 | 3.7 | 4.0 | 4.3 | 4.7 | 5.0 | 5.3 | 5.7 | 6.0 | 0.5 |
| 0.6 | 0.8 | 1.2 | 1.6 | 2.0 | 2.4 | 2.8 | 3.2 | 3.6 | 4.0 | 4.4 | 4.8 | 5.2 | 5.6 | 6.0 | 6.4 | 6.8 | 7.2 | 0.6 |
| 0.7 | 0.9 | 1.4 | 1.9 | 2.3 | 2.8 | 3.3 | 3.7 | 4.2 | 4.7 | 5.1 | 5.6 | 6.1 | 6.5 | 7.0 | 7.5 | 7.9 | 8.4 | 0.7 |
| 0.8 | 1.1 | 1.6 | 2.1 | 2.7 | 3.2 | 3.7 | 4.3 | 4.8 | 5.3 | 5.9 | 6.4 | 6.9 | 7.5 | 8.0 | 8.5 | 9.1 | 9.6 | 0.8 |
| 0.9 | 1.2 | 1.8 | 2.4 | 3.0 | 3.6 | 4.2 | 4.8 | 5.4 | 6.0 | 6.6 | 7.2 | 7.8 | 8.4 | 9.0 | 9.6 | 10.2 | 10.8 | 0.9 |
| 1.0 | 1.3 | 2.0 | 2.7 | 3.3 | 4.0 | 4.7 | 5.3 | 6.0 | 6.7 | 7.3 | 8.0 | 8.7 | 9.3 | 10.0 | 10.7 | 11.3 | 12.0 | 1.0 |
| 1.1 | 1.5 | 2.2 | 2.9 | 3.7 | 4.4 | 5.1 | 5.9 | 6.6 | 7.3 | 8.1 | 8.8 | 9.5 | 10.3 | 11.0 | 11.7 | 12.5 | 13.2 | 1.1 |
| 1.2 | 1.6 | 2.4 | 3.2 | 4.0 | 4.8 | 5.6 | 6.4 | 7.2 | 8.0 | 8.8 | 9.6 | 10.4 | 11.2 | 12.0 | 12.8 | 13.6 | 14.4 | 1.2 |
| 1.3 | 1.7 | 2.6 | 3.5 | 4.3 | 5.2 | 6.1 | 6.9 | 7.8 | 8.7 | 9.5 | 10.4 | 11.3 | 12.1 | 13.0 | 13.9 | 14.7 | 15.6 | 1.3 |
| 1.4 | 1.9 | 2.8 | 3.7 | 4.7 | 5.6 | 6.5 | 7.5 | 8.4 | 9.3 | 10.3 | 11.2 | 12.1 | 13.1 | 14.0 | 14.9 | 15.9 | 16.8 | 1.4 |
| 1.5 | 2.0 | 3.0 | 4.0 | 5.0 | 6.0 | 7.0 | 8.0 | 9.0 | 10.0 | 11.0 | 12.0 | 13.0 | 14.0 | 15.0 | 16.0 | 17.0 | 18.0 | 1.5 |
| 1.6 | 2.1 | 3.2 | 4.3 | 5.3 | 6.4 | 7.5 | 8.5 | 9.6 | 10.7 | 11.7 | 12.8 | 13.9 | 14.9 | 16.0 | 17.1 | 18.1 | 19.2 | 1.6 |
| 1.7 | 2.3 | 3.4 | 4.5 | 5.7 | 6.8 | 7.9 | 9.1 | 10.2 | 11.3 | 12.5 | 13.6 | 14.7 | 15.9 | 17.0 | 18.1 | 19.3 | 20.4 | 1.7 |
| 1.8 | 2.4 | 3.6 | 4.8 | 6.0 | 7.2 | 8.4 | 9.6 | 10.8 | 12.0 | 13.2 | 14.4 | 15.6 | 16.8 | 18.0 | 19.2 | 20.4 | 21.6 | 1.8 |
| 1.9 | 2.5 | 3.8 | 5.1 | 6.3 | 7.6 | 8.9 | 10.1 | 11.4 | 12.7 | 13.9 | 15.2 | 16.5 | 17.7 | 19.0 | 20.3 | 21.5 | 22.8 | 1.9 |
| 2.0 | 2.7 | 4.0 | 5.3 | 6.7 | 8.0 | 9.3 | 10.7 | 12.0 | 13.3 | 14.7 | 16.0 | 17.3 | 18.7 | 20.0 | 21.3 | 22.7 | 24.0 | 2.0 |
| 2.1 | 2.8 | 4.2 | 5.6 | 7.0 | 8.4 | 9.8 | 11.2 | 12.6 | 14.0 | 15.4 | 16.8 | 18.2 | 19.6 | 21.0 | 22.4 | 23.8 | 25.2 | 2.1 |
| 2.2 | 2.9 | 4.4 | 5.9 | 7.3 | 8.8 | 10.3 | 11.7 | 13.2 | 14.7 | 16.1 | 17.6 | 19.1 | 20.5 | 22.0 | 23.5 | 24.9 | 26.4 | 2.2 |
| 2.3 | 3.1 | 4.6 | 6.1 | 7.7 | 9.2 | 10.7 | 12.3 | 13.8 | 15.3 | 16.9 | 18.4 | 19.9 | 21.5 | 23.0 | 24.5 | 26.1 | 27.6 | 2.3 |
| 2.4 | 3.2 | 4.8 | 6.4 | 8.0 | 9.6 | 11.2 | 12.8 | 14.4 | 16.0 | 17.6 | 19.2 | 20.8 | 22.4 | 24.0 | 25.6 | 27.2 | 28.8 | 2.4 |
| 2.5 | 3.3 | 5.0 | 6.7 | 8.3 | 10.0 | 11.7 | 13.3 | 15.0 | 16.7 | 18.3 | 20.0 | 21.7 | 23.3 | 25.0 | 26.7 | 28.3 | 30.0 | 2.5 |
| 2.6 | 3.5 | 5.2 | 6.9 | 8.7 | 10.4 | 12.1 | 13.9 | 15.6 | 17.3 | 19.1 | 20.8 | 22.5 | 24.3 | 26.0 | 27.7 | 29.5 | 31.2 | 2.6 |
| 2.7 | 3.6 | 5.4 | 7.2 | 9.0 | 10.8 | 12.6 | 14.4 | 16.2 | 18.0 | 19.8 | 21.6 | 23.4 | 25.2 | 27.0 | 28.8 | 30.6 | 32.4 | 2.7 |
| 2.8 | 3.7 | 5.6 | 7.5 | 9.3 | 11.2 | 13.1 | 14.9 | 16.8 | 18.7 | 20.5 | 22.4 | 24.3 | 26.1 | 28.0 | 29.9 | 31.7 | 33.6 | 2.8 |
| 2.9 | 3.9 | 5.8 | 7.7 | 9.7 | 11.6 | 13.5 | 15.5 | 17.4 | 19.3 | 21.3 | 23.2 | 25.1 | 27.1 | 29.0 | 30.9 | 32.9 | 34.8 | 2.9 |
| 3.0 | 4.0 | 6.0 | 8.0 | 10.0 | 12.0 | 14.0 | 16.0 | 18.0 | 20.0 | 22.0 | 24.0 | 26.0 | 28.0 | 30.0 | 32.0 | 34.0 | 36.0 | 3.0 |
| 3.1 | 4.1 | 6.2 | 8.3 | 10.3 | 12.4 | 14.5 | 16.5 | 18.6 | 20.7 | 22.7 | 24.8 | 26.9 | 28.9 | 31.0 | 33.1 | 35.1 | 37.2 | 3.1 |
| 3.2 | 4.3 | 6.4 | 8.5 | 10.7 | 12.8 | 14.9 | 17.1 | 19.2 | 21.3 | 23.5 | 25.6 | 27.7 | 29.9 | 32.0 | 34.1 | 36.3 | 38.4 | 3.2 |
| 3.3 | 4.4 | 6.6 | 8.8 | 11.0 | 13.2 | 15.4 | 17.6 | 19.8 | 22.0 | 24.2 | 26.4 | 28.6 | 30.8 | 33.0 | 35.2 | 37.4 | 39.6 | 3.3 |
| 3.4 | 4.5 | 6.8 | 9.1 | 11.3 | 13.6 | 15.9 | 18.1 | 20.4 | 22.7 | 24.9 | 27.2 | 29.5 | 31.7 | 34.0 | 36.3 | 38.5 | 40.8 | 3.4 |
| 3.5 | 4.7 | 7.0 | 9.3 | 11.7 | 14.0 | 16.3 | 18.7 | 21.0 | 23.3 | 25.7 | 28.0 | 30.3 | 32.7 | 35.0 | 37.3 | 39.7 | 42.0 | 3.5 |
| 3.6 | 4.8 | 7.2 | 9.6 | 12.0 | 14.4 | 16.8 | 19.2 | 21.6 | 24.0 | 26.4 | 28.8 | 31.2 | 33.6 | 36.0 | 38.4 | 40.8 | 43.2 | 3.6 |
| 3.7 | 4.9 | 7.4 | 9.9 | 12.3 | 14.8 | 17.3 | 19.7 | 22.2 | 24.7 | 27.1 | 29.6 | 32.1 | 34.5 | 37.0 | 39.5 | 41.9 | 44.4 | 3.7 |
| 3.8 | 5.1 | 7.6 | 10.1 | 12.7 | 15.2 | 17.7 | 20.3 | 22.8 | 25.3 | 27.9 | 30.4 | 32.9 | 35.5 | 38.0 | 40.5 | 43.1 | 45.6 | 3.8 |
| 3.9 | 5.2 | 7.8 | 10.4 | 13.0 | 15.6 | 18.2 | 20.8 | 23.4 | 26.0 | 28.6 | 31.2 | 33.8 | 36.4 | 39.0 | 41.6 | 44.2 | 46.8 | 3.9 |
| 4.0 | 5.3 | 8.0 | 10.7 | 13.3 | 16.0 | 18.7 | 21.3 | 24.0 | 26.7 | 29.3 | 32.0 | 34.7 | 37.3 | 40.0 | 42.7 | 45.3 | 48.0 | 4.0 |
| 4.1 | 5.5 | 8.2 | 10.9 | 13.7 | 16.4 | 19.1 | 21.9 | 24.6 | 27.3 | 30.1 | 32.8 | 35.5 | 38.3 | 41.0 | 43.7 | 46.5 | 49.2 | 4.1 |
| 4.2 | 5.6 | 8.4 | 11.2 | 14.0 | 16.8 | 19.6 | 22.4 | 25.2 | 28.0 | 30.8 | 33.6 | 36.4 | 39.2 | 42.0 | 44.8 | 47.6 | 50.4 | 4.2 |
| 4.3 | 5.7 | 8.6 | 11.5 | 14.3 | 17.2 | 20.1 | 22.9 | 25.8 | 28.7 | 31.5 | 34.4 | 37.3 | 40.1 | 43.0 | 45.9 | 48.7 | 51.6 | 4.3 |
| 4.4 | 5.9 | 8.8 | 11.7 | 14.7 | 17.6 | 20.5 | 23.5 | 26.4 | 29.3 | 32.3 | 35.2 | 38.1 | 41.1 | 44.0 | 46.9 | 49.9 | 52.8 | 4.4 |
| 4.5 | 6.0 | 9.0 | 12.0 | 15.0 | 18.0 | 21.0 | 24.0 | 27.0 | 30.0 | 33.0 | 36.0 | 39.0 | 42.0 | 45.0 | 48.0 | 51.0 | 54.0 | 4.5 |
| 4.6 | 6.1 | 9.2 | 12.3 | 15.3 | 18.4 | 21.5 | 24.5 | 27.6 | 30.7 | 33.7 | 36.8 | 39.9 | 42.9 | 46.0 | 49.1 | 52.1 | 55.2 | 4.6 |
| 4.7 | 6.3 | 9.4 | 12.5 | 15.7 | 18.8 | 21.9 | 25.1 | 28.2 | 31.3 | 34.5 | 37.6 | 40.7 | 43.9 | 47.0 | 50.1 | 53.3 | 56.4 | 4.7 |
| 4.8 | 6.4 | 9.6 | 12.8 | 16.0 | 19.2 | 22.4 | 25.6 | 28.8 | 32.0 | 35.2 | 38.4 | 41.6 | 44.8 | 48.0 | 51.2 | 54.4 | 57.6 | 4.8 |
| 4.9 | 6.5 | 9.8 | 13.1 | 16.3 | 19.6 | 22.9 | 26.1 | 29.4 | 32.7 | 35.9 | 39.2 | 42.5 | 45.7 | 49.0 | 52.3 | 55.5 | 58.8 | 4.9 |
| 5.0 | 6.7 | 10.0 | 13.3 | 16.7 | 20.0 | 23.3 | 26.7 | 30.0 | 33.3 | 36.7 | 40.0 | 43.3 | 46.7 | 50.0 | 53.3 | 56.7 | 60.0 | 5.0 |

★ ★ ★ ★ ★

I_nterpolaciona tablica

ZA

POPRAVKU ČASOVNOG UGLA I DEKLINACIJE

0 h 14 min

| POPRAVKA ČASOVNOG UGLA | | | | POPRAVKA DRUGOG REDA za časovni ugao i deklinaciju Sunca, Mjeseca i planeta | | | | | |
|------------------------|--------------------|----------------------|--------------|---|-----|-----|-------|-----|-----|
| s | SUNCA I PLANETA | PROLJEČNE TAKČE ° | MJESECA ☾ | Δ | | | popr. | | |
| | | | | o | f | t | | | |
| 0 | 3 30.0 | 3 30.6 | 3 20.4 | 0 | .0 | 60 | 1.5 | 120 | 2.9 |
| 1 | 3 30.3 | 3 30.8 | 3 20.7 | 1 | .0 | 61 | 1.5 | 121 | 2.9 |
| 2 | 3 30.5 | 3 31.1 | 3 20.9 | 2 | .0 | 62 | 1.5 | 122 | 2.9 |
| 3 | 3 30.8 | 3 31.3 | 3 21.1 | 3 | .1 | 63 | 1.5 | 123 | 3.0 |
| 4 | 3 31.0 | 3 31.6 | 3 21.4 | 4 | .1 | 64 | 1.5 | 124 | 3.0 |
| 5 | 3 31.3 | 3 31.8 | 3 21.6 | 5 | .1 | 65 | 1.6 | 125 | 3.0 |
| 6 | 3 31.5 | 3 32.1 | 3 21.9 | 6 | .1 | 66 | 1.6 | 126 | 3.0 |
| 7 | 3 31.8 | 3 32.3 | 3 22.1 | 7 | .2 | 67 | 1.6 | 127 | 3.1 |
| 8 | 3 32.0 | 3 32.6 | 3 22.3 | 8 | .2 | 68 | 1.6 | 128 | 3.1 |
| 9 | 3 32.3 | 3 32.8 | 3 22.6 | 9 | .2 | 69 | 1.7 | 129 | 3.1 |
| 10 | 3 32.5 | 3 33.1 | 3 22.8 | 10 | .2 | 70 | 1.7 | 130 | 3.1 |
| 11 | 3 32.8 | 3 33.3 | 3 23.1 | 11 | .3 | 71 | 1.7 | 131 | 3.2 |
| 12 | 3 33.0 | 3 33.6 | 3 23.3 | 12 | .3 | 72 | 1.7 | 132 | 3.2 |
| 13 | 3 33.3 | 3 33.8 | 3 23.5 | 13 | .3 | 73 | 1.8 | 133 | 3.2 |
| 14 | 3 33.5 | 3 34.1 | 3 23.8 | 14 | .3 | 74 | 1.8 | 134 | 3.2 |
| 15 | 3 33.8 | 3 34.3 | 3 24.0 | 15 | .4 | 75 | 1.8 | 135 | 3.3 |
| 16 | 3 34.0 | 3 34.6 | 3 24.3 | 16 | .4 | 76 | 1.8 | 136 | 3.3 |
| 17 | 3 34.3 | 3 34.8 | 3 24.5 | 17 | .4 | 77 | 1.9 | 137 | 3.3 |
| 18 | 3 34.5 | 3 35.1 | 3 24.7 | 18 | .4 | 78 | 1.9 | 138 | 3.3 |
| 19 | 3 34.8 | 3 35.3 | 3 25.0 | 19 | .5 | 79 | 1.9 | 139 | 3.4 |
| 20 | 3 35.0 | 3 35.6 | 3 25.2 | 20 | .5 | 80 | 1.9 | 140 | 3.4 |
| 21 | 3 35.3 | 3 35.8 | 3 25.4 | 21 | .5 | 81 | 2.0 | 141 | 3.4 |
| 22 | 3 35.5 | 3 36.1 | 3 25.7 | 22 | .5 | 82 | 2.0 | 142 | 3.4 |
| 23 | 3 35.8 | 3 36.3 | 3 25.9 | 23 | .6 | 83 | 2.0 | 143 | 3.5 |
| 24 | 3 36.0 | 3 36.6 | 3 26.2 | 24 | .6 | 84 | 2.0 | 144 | 3.5 |
| 25 | 3 36.3 | 3 36.9 | 3 26.4 | 25 | .6 | 85 | 2.1 | 145 | 3.5 |
| 26 | 3 36.5 | 3 37.1 | 3 26.6 | 26 | .6 | 86 | 2.1 | 146 | 3.5 |
| 27 | 3 36.8 | 3 37.4 | 3 26.9 | 27 | .7 | 87 | 2.1 | 147 | 3.6 |
| 28 | 3 37.0 | 3 37.6 | 3 27.1 | 28 | .7 | 88 | 2.1 | 148 | 3.6 |
| 29 | 3 37.3 | 3 37.9 | 3 27.4 | 29 | .7 | 89 | 2.2 | 149 | 3.6 |
| 30 | 3 37.5 | 3 38.1 | 3 27.6 | 30 | .7 | 90 | 2.2 | 150 | 3.6 |
| 31 | 3 37.8 | 3 38.4 | 3 27.8 | 31 | .7 | 91 | 2.2 | 151 | 3.6 |
| 32 | 3 38.0 | 3 38.6 | 3 28.1 | 32 | .8 | 92 | 2.2 | 152 | 3.7 |
| 33 | 3 38.3 | 3 38.9 | 3 28.3 | 33 | .8 | 93 | 2.2 | 153 | 3.7 |
| 34 | 3 38.5 | 3 39.1 | 3 28.5 | 34 | .8 | 94 | 2.3 | 154 | 3.7 |
| 35 | 3 38.8 | 3 39.4 | 3 28.8 | 35 | .8 | 95 | 2.3 | 155 | 3.7 |
| 36 | 3 39.0 | 3 39.6 | 3 29.0 | 36 | .9 | 96 | 2.3 | 156 | 3.8 |
| 37 | 3 39.3 | 3 39.9 | 3 29.3 | 37 | .9 | 97 | 2.3 | 157 | 3.8 |
| 38 | 3 39.5 | 3 40.1 | 3 29.5 | 38 | .9 | 98 | 2.4 | 158 | 3.8 |
| 39 | 3 39.8 | 3 40.4 | 3 29.7 | 39 | .9 | 99 | 2.4 | 159 | 3.8 |
| 40 | 3 40.0 | 3 40.6 | 3 30.0 | 40 | 1.0 | 100 | 2.4 | 160 | 3.9 |
| 41 | 3 40.3 | 3 40.9 | 3 30.2 | 41 | 1.0 | 101 | 2.4 | 161 | 3.9 |
| 42 | 3 40.5 | 3 41.1 | 3 30.5 | 42 | 1.0 | 102 | 2.5 | 162 | 3.9 |
| 43 | 3 40.8 | 3 41.4 | 3 30.7 | 43 | 1.0 | 103 | 2.5 | 163 | 3.9 |
| 44 | 3 41.0 | 3 41.6 | 3 30.9 | 44 | 1.1 | 104 | 2.5 | 164 | 4.0 |
| 45 | 3 41.3 | 3 41.9 | 3 31.2 | 45 | 1.1 | 105 | 2.5 | 165 | 4.0 |
| 46 | 3 41.5 | 3 42.1 | 3 31.4 | 46 | 1.1 | 106 | 2.6 | 166 | 4.0 |
| 47 | 3 41.8 | 3 42.4 | 3 31.6 | 47 | 1.1 | 107 | 2.6 | 167 | 4.0 |
| 48 | 3 42.0 | 3 42.6 | 3 31.9 | 48 | 1.2 | 108 | 2.6 | 168 | 4.1 |
| 49 | 3 42.3 | 3 42.9 | 3 32.1 | 49 | 1.2 | 109 | 2.6 | 169 | 4.1 |
| 50 | 3 42.5 | 3 43.1 | 3 32.4 | 50 | 1.2 | 110 | 2.7 | 170 | 4.1 |
| 51 | 3 42.8 | 3 43.4 | 3 32.6 | 51 | 1.2 | 111 | 2.7 | 171 | 4.1 |
| 52 | 3 43.0 | 3 43.6 | 3 32.8 | 52 | 1.3 | 112 | 2.7 | 172 | 4.2 |
| 53 | 3 43.3 | 3 43.9 | 3 33.1 | 53 | 1.3 | 113 | 2.7 | 173 | 4.2 |
| 54 | 3 43.5 | 3 44.1 | 3 33.3 | 54 | 1.3 | 114 | 2.8 | 174 | 4.2 |
| 55 | 3 43.8 | 3 44.4 | 3 33.6 | 55 | 1.3 | 115 | 2.8 | 175 | 4.2 |
| 56 | 3 44.0 | 3 44.6 | 3 33.8 | 56 | 1.4 | 116 | 2.8 | 176 | 4.3 |
| 57 | 3 44.3 | 3 44.9 | 3 34.0 | 57 | 1.4 | 117 | 2.8 | 177 | 4.3 |
| 58 | 3 44.5 | 3 45.1 | 3 34.3 | 58 | 1.4 | 118 | 2.9 | 178 | 4.3 |
| 59 | 3 44.8 | 3 45.4 | 3 34.5 | 59 | 1.4 | 119 | 2.9 | 179 | 4.3 |
| 60 | 3 45.0 | 3 45.6 | 3 34.8 | 60 | 1.5 | 120 | 2.9 | 180 | 4.4 |

0 h 15 min

| POPRAVKA ČASOVNOG UGLA | | | | POPRAVKA DRUGOG REDA za časovni ugao i deklinaciju Sunca, Mjeseca i planeta | | | | | |
|------------------------|--------------------|----------------------|--------------|---|-----|-----|-------|-----|-----|
| s | SUNCA I PLANETA | PROLJEČNE TAKČE ° | MJESECA ☾ | Δ | | | popr. | | |
| | | | | o | f | t | | | |
| 0 | 3 45.0 | 3 45.6 | 3 34.8 | 0 | .0 | 60 | 1.6 | 120 | 3.1 |
| 1 | 3 45.3 | 3 45.9 | 3 35.0 | 1 | .0 | 61 | 1.6 | 121 | 3.1 |
| 2 | 3 45.5 | 3 46.1 | 3 35.2 | 2 | .1 | 62 | 1.6 | 122 | 3.2 |
| 3 | 3 45.8 | 3 46.4 | 3 35.5 | 3 | .1 | 63 | 1.6 | 123 | 3.2 |
| 4 | 3 46.0 | 3 46.6 | 3 35.7 | 4 | .1 | 64 | 1.7 | 124 | 3.2 |
| 5 | 3 46.3 | 3 46.9 | 3 35.9 | 5 | .1 | 65 | 1.7 | 125 | 3.2 |
| 6 | 3 46.5 | 3 47.1 | 3 36.2 | 6 | .2 | 66 | 1.7 | 126 | 3.3 |
| 7 | 3 46.8 | 3 47.4 | 3 36.4 | 7 | .2 | 67 | 1.7 | 127 | 3.3 |
| 8 | 3 47.0 | 3 47.6 | 3 36.7 | 8 | .2 | 68 | 1.8 | 128 | 3.3 |
| 9 | 3 47.3 | 3 47.9 | 3 36.9 | 9 | .2 | 69 | 1.8 | 129 | 3.3 |
| 10 | 3 47.5 | 3 48.1 | 3 37.1 | 10 | .3 | 70 | 1.8 | 130 | 3.4 |
| 11 | 3 47.8 | 3 48.4 | 3 37.4 | 11 | .3 | 71 | 1.8 | 131 | 3.4 |
| 12 | 3 48.0 | 3 48.6 | 3 37.6 | 12 | .3 | 72 | 1.9 | 132 | 3.4 |
| 13 | 3 48.3 | 3 48.9 | 3 37.9 | 13 | .3 | 73 | 1.9 | 133 | 3.4 |
| 14 | 3 48.5 | 3 49.1 | 3 38.1 | 14 | .4 | 74 | 1.9 | 134 | 3.5 |
| 15 | 3 48.8 | 3 49.4 | 3 38.3 | 15 | .4 | 75 | 1.9 | 135 | 3.5 |
| 16 | 3 49.0 | 3 49.6 | 3 38.6 | 16 | .4 | 76 | 2.0 | 136 | 3.5 |
| 17 | 3 49.3 | 3 49.9 | 3 38.8 | 17 | .4 | 77 | 2.0 | 137 | 3.5 |
| 18 | 3 49.5 | 3 50.1 | 3 39.0 | 18 | .5 | 78 | 2.0 | 138 | 3.6 |
| 19 | 3 49.8 | 3 50.4 | 3 39.3 | 19 | .5 | 79 | 2.0 | 139 | 3.6 |
| 20 | 3 50.0 | 3 50.6 | 3 39.5 | 20 | .5 | 80 | 2.1 | 140 | 3.6 |
| 21 | 3 50.3 | 3 50.9 | 3 39.8 | 21 | .5 | 81 | 2.1 | 141 | 3.6 |
| 22 | 3 50.5 | 3 51.1 | 3 40.0 | 22 | .6 | 82 | 2.1 | 142 | 3.7 |
| 23 | 3 50.8 | 3 51.4 | 3 40.2 | 23 | .6 | 83 | 2.1 | 143 | 3.7 |
| 24 | 3 51.0 | 3 51.6 | 3 40.5 | 24 | .6 | 84 | 2.2 | 144 | 3.7 |
| 25 | 3 51.3 | 3 51.9 | 3 40.7 | 25 | .6 | 85 | 2.2 | 145 | 3.7 |
| 26 | 3 51.5 | 3 52.1 | 3 41.0 | 26 | .7 | 86 | 2.2 | 146 | 3.8 |
| 27 | 3 51.8 | 3 52.4 | 3 41.2 | 27 | .7 | 87 | 2.2 | 147 | 3.8 |
| 28 | 3 52.0 | 3 52.6 | 3 41.4 | 28 | .7 | 88 | 2.3 | 148 | 3.8 |
| 29 | 3 52.3 | 3 52.9 | 3 41.7 | 29 | .7 | 89 | 2.3 | 149 | 3.8 |
| 30 | 3 52.5 | 3 53.1 | 3 41.9 | 30 | .8 | 90 | 2.3 | 150 | 3.9 |
| 31 | 3 52.8 | 3 53.4 | 3 42.1 | 31 | .8 | 91 | 2.4 | 151 | 3.9 |
| 32 | 3 53.0 | 3 53.6 | 3 42.4 | 32 | .8 | 92 | 2.4 | 152 | 3.9 |
| 33 | 3 53.3 | 3 53.9 | 3 42.6 | 33 | .9 | 93 | 2.4 | 153 | 4.0 |
| 34 | 3 53.5 | 3 54.1 | 3 42.9 | 34 | .9 | 94 | 2.4 | 154 | 4.0 |
| 35 | 3 53.8 | 3 54.4 | 3 43.1 | 35 | .9 | 95 | 2.5 | 155 | 4.0 |
| 36 | 3 54.0 | 3 54.7 | 3 43.3 | 36 | .9 | 96 | 2.5 | 156 | 4.0 |
| 37 | 3 54.3 | 3 54.9 | 3 43.6 | 37 | 1.0 | 97 | 2.5 | 157 | 4.1 |
| 38 | 3 54.5 | 3 55.2 | 3 43.8 | 38 | 1.0 | 98 | 2.5 | 158 | 4.1 |
| 39 | 3 54.8 | 3 55.4 | 3 44.1 | 39 | 1.0 | 99 | 2.6 | 159 | 4.1 |
| 40 | 3 55.0 | 3 55.7 | 3 44.3 | 40 | 1.0 | 100 | 2.6 | 160 | 4.1 |
| 41 | 3 55.3 | 3 55.9 | 3 44.5 | 41 | 1.1 | 101 | 2.6 | 161 | 4.2 |
| 42 | 3 55.5 | 3 56.2 | 3 44.8 | 42 | 1.1 | 102 | 2.6 | 162 | 4.2 |
| 43 | 3 55.8 | 3 56.4 | 3 45.0 | 43 | 1.1 | 103 | 2.7 | 163 | 4.2 |
| 44 | 3 56.0 | 3 56.7 | 3 45.2 | 44 | 1.1 | 104 | 2.7 | 164 | 4.2 |
| 45 | 3 56.3 | 3 56.9 | 3 45.5 | 45 | 1.2 | 105 | 2.7 | 165 | 4.3 |
| 46 | 3 56.5 | 3 57.2 | 3 45.7 | 46 | 1.2 | 106 | 2.7 | 166 | 4.3 |
| 47 | 3 56.8 | 3 57.4 | 3 46.0 | 47 | 1.2 | 107 | 2.8 | 167 | 4.3 |
| 48 | 3 57.0 | 3 57.7 | 3 46.2 | 48 | 1.2 | 108 | 2.8 | 168 | 4.3 |
| 49 | 3 57.3 | 3 57.9 | 3 46.4 | 49 | 1.3 | 109 | 2.8 | 169 | 4.4 |
| 50 | 3 57.5 | 3 58.2 | 3 46.7 | 50 | 1.3 | 110 | 2.8 | 170 | 4.4 |
| 51 | 3 57.8 | 3 58.4 | 3 46.9 | 51 | 1.3 | 111 | 2.9 | 171 | 4.4 |
| 52 | 3 58.0 | 3 58.7 | 3 47.2 | 52 | 1.3 | 112 | 2.9 | 172 | 4.4 |
| 53 | 3 58.3 | 3 58.9 | 3 47.4 | 53 | 1.4 | 113 | 2.9 | 173 | 4.5 |
| 54 | 3 58.5 | 3 59.2 | 3 47.6 | 54 | 1.4 | 114 | 2.9 | 174 | 4.5 |
| 55 | 3 58.8 | 3 59.4 | 3 47.9 | 55 | 1.4 | 115 | 3.0 | 175 | 4.5 |
| 56 | 3 59.0 | 3 59.7 | 3 48.1 | 56 | 1.4 | 116 | 3.0 | 176 | 4.5 |
| 57 | 3 59.3 | 3 59.9 | 3 48.4 | 57 | 1.5 | 117 | 3.0 | 177 | 4.6 |
| 58 | 3 59.5 | 4 .2 | 3 48.6 | 58 | 1.5 | 118 | 3.0 | 178 | 4.6 |
| 59 | 3 59.8 | 4 .4 | 3 48.8 | 59 | 1.5 | 119 | 3.1 | 179 | 4.6 |
| 60 | 4 .0 | 4 .7 | 3 49.1 | 60 | 1.6 | 120 | 3.1 | 180 | 4.7 |

| 0h 16 min | | | | | | | | | |
|------------------------|-----------------|------|--------------------|---|--------|----|-----|---------|---------|
| POPRAVKA ČASOVNOG UGLA | | | | POPRAVKA DRUGOG REDA za časovni ugao i deklinaciju Sunca, Mjeseca i planeta | | | | | |
| S | SUNCA I PLANETA | | PROLJEĆNE TACKE T° | MJESECA (| Δ | Δ | Δ | | |
| | o | ′ | o | ′ | ″ | ″ | ″ | | |
| 0 | 4 | .0 | 4 | .7 | 3 49.1 | 0 | .0 | 60 1.7 | 120 3.3 |
| 1 | 4 | .3 | 4 | .9 | 3 49.3 | 1 | .0 | 61 1.7 | 121 3.3 |
| 2 | 4 | .5 | 4 | 1.2 | 3 49.5 | 2 | .1 | 62 1.7 | 122 3.4 |
| 3 | 4 | .8 | 4 | 1.4 | 3 49.8 | 3 | .1 | 63 1.7 | 123 3.4 |
| 4 | 4 | 1.0 | 4 | 1.7 | 3 50.0 | 4 | .1 | 64 1.8 | 124 3.4 |
| 5 | 4 | 1.3 | 4 | 1.9 | 3 50.3 | 5 | .1 | 65 1.8 | 125 3.4 |
| 6 | 4 | 1.5 | 4 | 2.2 | 3 50.5 | 6 | .2 | 66 1.8 | 126 3.5 |
| 7 | 4 | 1.8 | 4 | 2.4 | 3 50.7 | 7 | .2 | 67 1.8 | 127 3.5 |
| 8 | 4 | 2.0 | 4 | 2.7 | 3 51.0 | 8 | .2 | 68 1.9 | 128 3.5 |
| 9 | 4 | 2.3 | 4 | 2.9 | 3 51.2 | 9 | .2 | 69 1.9 | 129 3.5 |
| 10 | 4 | 2.5 | 4 | 3.2 | 3 51.5 | 10 | .3 | 70 1.9 | 130 3.6 |
| 11 | 4 | 2.8 | 4 | 3.4 | 3 51.7 | 11 | .3 | 71 2.0 | 131 3.6 |
| 12 | 4 | 3.0 | 4 | 3.7 | 3 51.9 | 12 | .3 | 72 2.0 | 132 3.6 |
| 13 | 4 | 3.3 | 4 | 3.9 | 3 52.2 | 13 | .4 | 73 2.0 | 133 3.7 |
| 14 | 4 | 3.5 | 4 | 4.2 | 3 52.4 | 14 | .4 | 74 2.0 | 134 3.7 |
| 15 | 4 | 3.8 | 4 | 4.4 | 3 52.6 | 15 | .4 | 75 2.1 | 135 3.7 |
| 16 | 4 | 4.0 | 4 | 4.7 | 3 52.9 | 16 | .4 | 76 2.1 | 136 3.7 |
| 17 | 4 | 4.3 | 4 | 4.9 | 3 53.1 | 17 | .5 | 77 2.1 | 137 3.8 |
| 18 | 4 | 4.5 | 4 | 5.2 | 3 53.4 | 18 | .5 | 78 2.1 | 138 3.8 |
| 19 | 4 | 4.8 | 4 | 5.4 | 3 53.6 | 19 | .5 | 79 2.2 | 139 3.8 |
| 20 | 4 | 5.0 | 4 | 5.7 | 3 53.8 | 20 | .6 | 80 2.2 | 140 3.9 |
| 21 | 4 | 5.3 | 4 | 5.9 | 3 54.1 | 21 | .6 | 81 2.2 | 141 3.9 |
| 22 | 4 | 5.5 | 4 | 6.2 | 3 54.3 | 22 | .6 | 82 2.3 | 142 3.9 |
| 23 | 4 | 5.8 | 4 | 6.4 | 3 54.6 | 23 | .6 | 83 2.3 | 143 3.9 |
| 24 | 4 | 6.0 | 4 | 6.7 | 3 54.8 | 24 | .7 | 84 2.3 | 144 4.0 |
| 25 | 4 | 6.3 | 4 | 6.9 | 3 55.0 | 25 | .7 | 85 2.3 | 145 4.0 |
| 26 | 4 | 6.5 | 4 | 7.2 | 3 55.3 | 26 | .7 | 86 2.4 | 146 4.0 |
| 27 | 4 | 6.8 | 4 | 7.4 | 3 55.5 | 27 | .7 | 87 2.4 | 147 4.0 |
| 28 | 4 | 7.0 | 4 | 7.7 | 3 55.7 | 28 | .8 | 88 2.4 | 148 4.1 |
| 29 | 4 | 7.3 | 4 | 7.9 | 3 56.0 | 29 | .8 | 89 2.4 | 149 4.1 |
| 30 | 4 | 7.5 | 4 | 8.2 | 3 56.2 | 30 | .8 | 90 2.5 | 150 4.1 |
| 31 | 4 | 7.8 | 4 | 8.4 | 3 56.5 | 31 | .9 | 91 2.5 | 151 4.2 |
| 32 | 4 | 8.0 | 4 | 8.7 | 3 56.7 | 32 | .9 | 92 2.5 | 152 4.2 |
| 33 | 4 | 8.3 | 4 | 8.9 | 3 56.9 | 33 | .9 | 93 2.6 | 153 4.2 |
| 34 | 4 | 8.5 | 4 | 9.2 | 3 57.2 | 34 | .9 | 94 2.6 | 154 4.2 |
| 35 | 4 | 8.8 | 4 | 9.4 | 3 57.4 | 35 | 1.0 | 95 2.6 | 155 4.3 |
| 36 | 4 | 9.0 | 4 | 9.7 | 3 57.7 | 36 | 1.0 | 96 2.6 | 156 4.3 |
| 37 | 4 | 9.3 | 4 | 9.9 | 3 57.9 | 37 | 1.0 | 97 2.7 | 157 4.3 |
| 38 | 4 | 9.5 | 4 | 10.2 | 3 58.1 | 38 | 1.0 | 98 2.7 | 158 4.3 |
| 39 | 4 | 9.8 | 4 | 10.4 | 3 58.4 | 39 | 1.1 | 99 2.7 | 159 4.4 |
| 40 | 4 | 10.0 | 4 | 10.7 | 3 58.6 | 40 | 1.1 | 100 2.8 | 160 4.4 |
| 41 | 4 | 10.3 | 4 | 10.9 | 3 58.8 | 41 | 1.1 | 101 2.8 | 161 4.4 |
| 42 | 4 | 10.5 | 4 | 11.2 | 3 59.1 | 42 | 1.2 | 102 2.8 | 162 4.5 |
| 43 | 4 | 10.8 | 4 | 11.4 | 3 59.3 | 43 | 1.2 | 103 2.8 | 163 4.5 |
| 44 | 4 | 11.0 | 4 | 11.7 | 3 59.6 | 44 | 1.2 | 104 2.9 | 164 4.5 |
| 45 | 4 | 11.3 | 4 | 11.9 | 3 59.8 | 45 | 1.2 | 105 2.9 | 165 4.5 |
| 46 | 4 | 11.5 | 4 | 12.2 | 4 .0 | 46 | 1.3 | 106 2.9 | 166 4.6 |
| 47 | 4 | 11.8 | 4 | 12.4 | 4 .3 | 47 | 1.3 | 107 2.9 | 167 4.6 |
| 48 | 4 | 12.0 | 4 | 12.7 | 4 .5 | 48 | 1.3 | 108 3.0 | 168 4.6 |
| 49 | 4 | 12.3 | 4 | 13.0 | 4 .8 | 49 | 1.3 | 109 3.0 | 169 4.6 |
| 50 | 4 | 12.5 | 4 | 13.2 | 4 1.0 | 50 | 1.4 | 110 3.0 | 170 4.7 |
| 51 | 4 | 12.8 | 4 | 13.5 | 4 1.2 | 51 | 1.4 | 111 3.1 | 171 4.7 |
| 52 | 4 | 13.0 | 4 | 13.7 | 4 1.5 | 52 | 1.4 | 112 3.1 | 172 4.7 |
| 53 | 4 | 13.3 | 4 | 14.0 | 4 1.7 | 53 | 1.5 | 113 3.1 | 173 4.8 |
| 54 | 4 | 13.5 | 4 | 14.2 | 4 2.0 | 54 | 1.5 | 114 3.1 | 174 4.8 |
| 55 | 4 | 13.8 | 4 | 14.5 | 4 2.2 | 55 | 1.5 | 115 3.2 | 175 4.8 |
| 56 | 4 | 14.0 | 4 | 14.7 | 4 2.4 | 56 | 1.5 | 116 3.2 | 176 4.8 |
| 57 | 4 | 14.3 | 4 | 15.0 | 4 2.7 | 57 | 1.6 | 117 3.2 | 177 4.9 |
| 58 | 4 | 14.5 | 4 | 15.2 | 4 2.9 | 58 | 1.6 | 118 3.2 | 178 4.9 |
| 59 | 4 | 14.8 | 4 | 15.5 | 4 3.1 | 59 | 1.6 | 119 3.3 | 179 4.9 |
| 60 | 4 | 15.0 | 4 | 15.7 | 4 3.4 | 60 | 1.7 | 120 3.3 | 180 5.0 |

| 0h 17 min | | | | | | | | | |
|------------------------|-----------------|------|--------------------|---|--------|----|-----|---------|---------|
| POPRAVKA ČASOVNOG UGLA | | | | POPRAVKA DRUGOG REDA za časovni ugao i deklinaciju Sunca, Mjeseca i planeta | | | | | |
| S | SUNCA I PLANETA | | PROLJEĆNE TACKE T° | MJESECA (| Δ | Δ | Δ | | |
| | o | ′ | o | ′ | ″ | ″ | ″ | | |
| 0 | 4 | 15.0 | 4 | 15.7 | 4 3.4 | 0 | .0 | 60 1.8 | 120 3.5 |
| 1 | 4 | 15.3 | 4 | 16.0 | 4 3.6 | 1 | .0 | 61 1.8 | 121 3.5 |
| 2 | 4 | 15.5 | 4 | 16.2 | 4 3.9 | 2 | .1 | 62 1.8 | 122 3.6 |
| 3 | 4 | 15.8 | 4 | 16.5 | 4 4.1 | 3 | .1 | 63 1.8 | 123 3.6 |
| 4 | 4 | 16.0 | 4 | 16.7 | 4 4.3 | 4 | .1 | 64 1.9 | 124 3.6 |
| 5 | 4 | 16.3 | 4 | 17.0 | 4 4.6 | 5 | .1 | 65 1.9 | 125 3.6 |
| 6 | 4 | 16.5 | 4 | 17.2 | 4 4.8 | 6 | .2 | 66 1.9 | 126 3.7 |
| 7 | 4 | 16.8 | 4 | 17.5 | 4 5.1 | 7 | .2 | 67 2.0 | 127 3.7 |
| 8 | 4 | 17.0 | 4 | 17.7 | 4 5.3 | 8 | .2 | 68 2.0 | 128 3.7 |
| 9 | 4 | 17.3 | 4 | 18.0 | 4 5.5 | 9 | .3 | 69 2.0 | 129 3.8 |
| 10 | 4 | 17.5 | 4 | 18.2 | 4 5.8 | 10 | .3 | 70 2.0 | 130 3.8 |
| 11 | 4 | 17.8 | 4 | 18.5 | 4 6.0 | 11 | .3 | 71 2.1 | 131 3.8 |
| 12 | 4 | 18.0 | 4 | 18.7 | 4 6.2 | 12 | .4 | 72 2.1 | 132 3.9 |
| 13 | 4 | 18.3 | 4 | 19.0 | 4 6.5 | 13 | .4 | 73 2.1 | 133 3.9 |
| 14 | 4 | 18.5 | 4 | 19.2 | 4 6.7 | 14 | .4 | 74 2.2 | 134 3.9 |
| 15 | 4 | 18.8 | 4 | 19.5 | 4 7.0 | 15 | .4 | 75 2.2 | 135 3.9 |
| 16 | 4 | 19.0 | 4 | 19.7 | 4 7.2 | 16 | .5 | 76 2.2 | 136 4.0 |
| 17 | 4 | 19.3 | 4 | 20.0 | 4 7.4 | 17 | .5 | 77 2.2 | 137 4.0 |
| 18 | 4 | 19.5 | 4 | 20.2 | 4 7.7 | 18 | .5 | 78 2.3 | 138 4.0 |
| 19 | 4 | 19.8 | 4 | 20.5 | 4 7.9 | 19 | .6 | 79 2.3 | 139 4.1 |
| 20 | 4 | 20.0 | 4 | 20.7 | 4 8.2 | 20 | .6 | 80 2.3 | 140 4.1 |
| 21 | 4 | 20.3 | 4 | 21.0 | 4 8.4 | 21 | .6 | 81 2.4 | 141 4.1 |
| 22 | 4 | 20.5 | 4 | 21.2 | 4 8.6 | 22 | .6 | 82 2.4 | 142 4.1 |
| 23 | 4 | 20.8 | 4 | 21.5 | 4 8.9 | 23 | .7 | 83 2.4 | 143 4.2 |
| 24 | 4 | 21.0 | 4 | 21.7 | 4 9.1 | 24 | .7 | 84 2.5 | 144 4.2 |
| 25 | 4 | 21.3 | 4 | 22.0 | 4 9.3 | 25 | .7 | 85 2.5 | 145 4.2 |
| 26 | 4 | 21.5 | 4 | 22.2 | 4 9.6 | 26 | .8 | 86 2.5 | 146 4.3 |
| 27 | 4 | 21.8 | 4 | 22.5 | 4 9.8 | 27 | .8 | 87 2.5 | 147 4.3 |
| 28 | 4 | 22.0 | 4 | 22.7 | 4 10.1 | 28 | .8 | 88 2.6 | 148 4.3 |
| 29 | 4 | 22.3 | 4 | 23.0 | 4 10.3 | 29 | .8 | 89 2.6 | 149 4.3 |
| 30 | 4 | 22.5 | 4 | 23.2 | 4 10.5 | 30 | .9 | 90 2.6 | 150 4.4 |
| 31 | 4 | 22.8 | 4 | 23.5 | 4 10.8 | 31 | .9 | 91 2.7 | 151 4.4 |
| 32 | 4 | 23.0 | 4 | 23.7 | 4 11.0 | 32 | .9 | 92 2.7 | 152 4.4 |
| 33 | 4 | 23.3 | 4 | 24.0 | 4 11.3 | 33 | 1.0 | 93 2.7 | 153 4.5 |
| 34 | 4 | 23.5 | 4 | 24.2 | 4 11.5 | 34 | 1.0 | 94 2.7 | 154 4.5 |
| 35 | 4 | 23.8 | 4 | 24.5 | 4 11.7 | 35 | 1.0 | 95 2.8 | 155 4.5 |
| 36 | 4 | 24.0 | 4 | 24.7 | 4 12.0 | 36 | 1.1 | 96 2.8 | 156 4.6 |
| 37 | 4 | 24.3 | 4 | 25.0 | 4 12.2 | 37 | 1.1 | 97 2.8 | 157 4.6 |
| 38 | 4 | 24.5 | 4 | 25.2 | 4 12.5 | 38 | 1.1 | 98 2.9 | 158 4.6 |
| 39 | 4 | 24.8 | 4 | 25.5 | 4 12.7 | 39 | 1.1 | 99 2.9 | 159 4.6 |
| 40 | 4 | 25.0 | 4 | 25.7 | 4 12.9 | 40 | 1.2 | 100 2.9 | 160 4.7 |
| 41 | 4 | 25.3 | 4 | 26.0 | 4 13.2 | 41 | 1.2 | 101 2.9 | 161 4.7 |
| 42 | 4 | 25.5 | 4 | 26.2 | 4 13.4 | 42 | 1.2 | 102 3.0 | 162 4.7 |
| 43 | 4 | 25.8 | 4 | 26.5 | 4 13.6 | 43 | 1.3 | 103 3.0 | 163 4.8 |
| 44 | 4 | 26.0 | 4 | 26.7 | 4 13.9 | 44 | 1.3 | 104 3.0 | 164 4.8 |
| 45 | 4 | 26.3 | 4 | 27.0 | 4 14.1 | 45 | 1.3 | 105 3.1 | 165 4.8 |
| 46 | 4 | 26.5 | 4 | 27.2 | 4 14.4 | 46 | 1.3 | 106 3.1 | 166 4.8 |
| 47 | 4 | 26.8 | 4 | 27.5 | 4 14.6 | 47 | 1.4 | 107 3.1 | 167 4.9 |
| 48 | 4 | 27.0 | 4 | 27.7 | 4 14.8 | 48 | 1.4 | 108 3.2 | 168 4.9 |
| 49 | 4 | 27.3 | 4 | 28.0 | 4 15.1 | 49 | 1.4 | 109 3.2 | 169 4.9 |
| 50 | 4 | 27.5 | 4 | 28.2 | 4 15.3 | 50 | 1.5 | 110 3.2 | 170 5.0 |
| 51 | 4 | 27.8 | 4 | 28.5 | 4 15.6 | 51 | 1.5 | 111 3.2 | 171 5.0 |
| 52 | 4 | 28.0 | 4 | 28.7 | 4 15.8 | 52 | 1.5 | 112 3.3 | 172 5.0 |
| 53 | 4 | 28.3 | 4 | 29.0 | 4 16.0 | 53 | 1.5 | 113 3.3 | 173 5.0 |
| 54 | 4 | 28.5 | 4 | 29.2 | 4 16.3 | 54 | 1.6 | 114 3.3 | 174 5.1 |
| 55 | 4 | 28.8 | 4 | 29.5 | 4 16.5 | 55 | 1.6 | 115 3.4 | 175 5.1 |
| 56 | 4 | 29.0 | 4 | 29.7 | 4 16.7 | 56 | 1.6 | 116 3.4 | 176 5.1 |
| 57 | 4 | 29.3 | 4 | 30.0 | 4 17.0 | 57 | 1.7 | 117 3.4 | 177 5.2 |
| 58 | 4 | 29.5 | 4 | 30.2 | 4 17.2 | 58 | 1.7 | 118 3.4 | 178 5.2 |
| 59 | 4 | 29.8 | 4 | 30.5 | 4 17.5 | 59 | 1.7 | 119 3.5 | 179 5.2 |
| 60 | 4 | 30.0 | 4 | 30.8 | 4 17.7 | 60 | 1.8 | 120 3.5 | 180 5.3 |

0h 22 min

| POPRAVKA ČASOVNOG UGLA | | | POPRAVKA DRUGOG REDA za časovni ugao i deklinaciju Sunca, Mjeseca i planeta | | | |
|------------------------|--------------------|----------------------|---|---------|---------|---------|
| s | SUNCA I PLANETA | PROLJEĆNE TACKE T | MJESECA ☾ | Δ popr. | Δ popr. | Δ popr. |
| o | ' | o | ' | o | ' | " |
| 0 | 5 30.0 | 5 30.9 | 5 15.0 | 0 .0 | 60 2.3 | 120 4.5 |
| 1 | 5 30.3 | 5 31.2 | 5 15.2 | 1 .0 | 61 2.3 | 121 4.5 |
| 2 | 5 30.5 | 5 31.4 | 5 15.4 | 2 .1 | 62 2.3 | 122 4.6 |
| 3 | 5 30.8 | 5 31.7 | 5 15.7 | 3 .1 | 63 2.4 | 123 4.6 |
| 4 | 5 31.0 | 5 31.9 | 5 15.9 | 4 .2 | 64 2.4 | 124 4.7 |
| 5 | 5 31.3 | 5 32.2 | 5 16.2 | 5 .2 | 65 2.4 | 125 4.7 |
| 6 | 5 31.5 | 5 32.4 | 5 16.4 | 6 .2 | 66 2.5 | 126 4.7 |
| 7 | 5 31.8 | 5 32.7 | 5 16.6 | 7 .3 | 67 2.5 | 127 4.8 |
| 8 | 5 32.0 | 5 32.9 | 5 16.9 | 8 .3 | 68 2.6 | 128 4.8 |
| 9 | 5 32.3 | 5 33.2 | 5 17.1 | 9 .3 | 69 2.6 | 129 4.8 |
| 10 | 5 32.5 | 5 33.4 | 5 17.4 | 10 .4 | 70 2.6 | 130 4.9 |
| 11 | 5 32.8 | 5 33.7 | 5 17.6 | 11 .4 | 71 2.7 | 131 4.9 |
| 12 | 5 33.0 | 5 33.9 | 5 17.8 | 12 .5 | 72 2.7 | 132 5.0 |
| 13 | 5 33.3 | 5 34.2 | 5 18.1 | 13 .5 | 73 2.7 | 133 5.0 |
| 14 | 5 33.5 | 5 34.4 | 5 18.3 | 14 .5 | 74 2.8 | 134 5.0 |
| 15 | 5 33.8 | 5 34.7 | 5 18.5 | 15 .6 | 75 2.8 | 135 5.1 |
| 16 | 5 34.0 | 5 34.9 | 5 18.8 | 16 .6 | 76 2.9 | 136 5.1 |
| 17 | 5 34.3 | 5 35.2 | 5 19.0 | 17 .6 | 77 2.9 | 137 5.1 |
| 18 | 5 34.5 | 5 35.4 | 5 19.3 | 18 .7 | 78 2.9 | 138 5.2 |
| 19 | 5 34.8 | 5 35.7 | 5 19.5 | 19 .7 | 79 3.0 | 139 5.2 |
| 20 | 5 35.0 | 5 35.9 | 5 19.7 | 20 .8 | 80 3.0 | 140 5.3 |
| 21 | 5 35.3 | 5 36.2 | 5 20.0 | 21 .8 | 81 3.0 | 141 5.3 |
| 22 | 5 35.5 | 5 36.4 | 5 20.2 | 22 .8 | 82 3.1 | 142 5.3 |
| 23 | 5 35.8 | 5 36.7 | 5 20.5 | 23 .9 | 83 3.1 | 143 5.4 |
| 24 | 5 36.0 | 5 36.9 | 5 20.7 | 24 .9 | 84 3.2 | 144 5.4 |
| 25 | 5 36.3 | 5 37.2 | 5 20.9 | 25 .9 | 85 3.2 | 145 5.4 |
| 26 | 5 36.5 | 5 37.4 | 5 21.2 | 26 1.0 | 86 3.2 | 146 5.5 |
| 27 | 5 36.8 | 5 37.7 | 5 21.4 | 27 1.0 | 87 3.3 | 147 5.5 |
| 28 | 5 37.0 | 5 37.9 | 5 21.6 | 28 1.1 | 88 3.3 | 148 5.6 |
| 29 | 5 37.3 | 5 38.2 | 5 21.9 | 29 1.1 | 89 3.3 | 149 5.6 |
| 30 | 5 37.5 | 5 38.4 | 5 22.1 | 30 1.1 | 90 3.4 | 150 5.6 |
| 31 | 5 37.8 | 5 38.7 | 5 22.4 | 31 1.2 | 91 3.4 | 151 5.7 |
| 32 | 5 38.0 | 5 38.9 | 5 22.6 | 32 1.2 | 92 3.5 | 152 5.7 |
| 33 | 5 38.3 | 5 39.2 | 5 22.8 | 33 1.2 | 93 3.5 | 153 5.7 |
| 34 | 5 38.5 | 5 39.4 | 5 23.1 | 34 1.3 | 94 3.5 | 154 5.8 |
| 35 | 5 38.8 | 5 39.7 | 5 23.3 | 35 1.3 | 95 3.6 | 155 5.8 |
| 36 | 5 39.0 | 5 39.9 | 5 23.6 | 36 1.4 | 96 3.6 | 156 5.9 |
| 37 | 5 39.3 | 5 40.2 | 5 23.8 | 37 1.4 | 97 3.6 | 157 5.9 |
| 38 | 5 39.5 | 5 40.4 | 5 24.0 | 38 1.4 | 98 3.7 | 158 5.9 |
| 39 | 5 39.8 | 5 40.7 | 5 24.3 | 39 1.5 | 99 3.7 | 159 6.0 |
| 40 | 5 40.0 | 5 40.9 | 5 24.5 | 40 1.5 | 100 3.8 | 160 6.0 |
| 41 | 5 40.3 | 5 41.2 | 5 24.7 | 41 1.5 | 101 3.8 | 161 6.0 |
| 42 | 5 40.5 | 5 41.4 | 5 25.0 | 42 1.6 | 102 3.8 | 162 6.1 |
| 43 | 5 40.8 | 5 41.7 | 5 25.2 | 43 1.6 | 103 3.9 | 163 6.1 |
| 44 | 5 41.0 | 5 41.9 | 5 25.5 | 44 1.7 | 104 3.9 | 164 6.2 |
| 45 | 5 41.3 | 5 42.2 | 5 25.7 | 45 1.7 | 105 3.9 | 165 6.2 |
| 46 | 5 41.5 | 5 42.4 | 5 25.9 | 46 1.7 | 106 4.0 | 166 6.2 |
| 47 | 5 41.8 | 5 42.7 | 5 26.2 | 47 1.8 | 107 4.0 | 167 6.3 |
| 48 | 5 42.0 | 5 43.0 | 5 26.4 | 48 1.8 | 108 4.1 | 168 6.3 |
| 49 | 5 42.3 | 5 43.2 | 5 26.7 | 49 1.8 | 109 4.1 | 169 6.3 |
| 50 | 5 42.5 | 5 43.5 | 5 26.9 | 50 1.9 | 110 4.1 | 170 6.4 |
| 51 | 5 42.8 | 5 43.7 | 5 27.1 | 51 1.9 | 111 4.2 | 171 6.4 |
| 52 | 5 43.0 | 5 44.0 | 5 27.4 | 52 2.0 | 112 4.2 | 172 6.5 |
| 53 | 5 43.3 | 5 44.2 | 5 27.6 | 53 2.0 | 113 4.2 | 173 6.5 |
| 54 | 5 43.5 | 5 44.5 | 5 27.9 | 54 2.0 | 114 4.3 | 174 6.5 |
| 55 | 5 43.8 | 5 44.7 | 5 28.1 | 55 2.1 | 115 4.3 | 175 6.6 |
| 56 | 5 44.0 | 5 45.0 | 5 28.3 | 56 2.1 | 116 4.4 | 176 6.6 |
| 57 | 5 44.3 | 5 45.2 | 5 28.6 | 57 2.1 | 117 4.4 | 177 6.6 |
| 58 | 5 44.5 | 5 45.5 | 5 28.8 | 58 2.2 | 118 4.4 | 178 6.7 |
| 59 | 5 44.8 | 5 45.7 | 5 29.0 | 59 2.2 | 119 4.5 | 179 6.7 |
| 60 | 5 45.0 | 5 46.0 | 5 29.3 | 60 2.3 | 120 4.5 | 180 6.8 |

0h 23 min

| POPRAVKA ČASOVNOG UGLA | | | POPRAVKA DRUGOG REDA za časovni ugao i deklinaciju Sunca, Mjeseca i planeta | | | |
|------------------------|--------------------|----------------------|---|---------|---------|---------|
| s | SUNCA I PLANETA | PROLJEĆNE TACKE T | MJESECA ☾ | Δ popr. | Δ popr. | Δ popr. |
| o | ' | o | ' | o | ' | " |
| 0 | 5 45.0 | 5 46.0 | 5 29.3 | 0 .0 | 60 2.4 | 120 4.7 |
| 1 | 5 45.3 | 5 46.2 | 5 29.5 | 1 .0 | 61 2.4 | 121 4.7 |
| 2 | 5 45.5 | 5 46.5 | 5 29.8 | 2 .1 | 62 2.4 | 122 4.8 |
| 3 | 5 45.8 | 5 46.7 | 5 30.0 | 3 .1 | 63 2.5 | 123 4.8 |
| 4 | 5 46.0 | 5 47.0 | 5 30.2 | 4 .2 | 64 2.5 | 124 4.9 |
| 5 | 5 46.3 | 5 47.2 | 5 30.5 | 5 .2 | 65 2.5 | 125 4.9 |
| 6 | 5 46.5 | 5 47.5 | 5 30.7 | 6 .2 | 66 2.6 | 126 4.9 |
| 7 | 5 46.8 | 5 47.7 | 5 31.0 | 7 .3 | 67 2.6 | 127 5.0 |
| 8 | 5 47.0 | 5 48.0 | 5 31.2 | 8 .3 | 68 2.7 | 128 5.0 |
| 9 | 5 47.3 | 5 48.2 | 5 31.4 | 9 .4 | 69 2.7 | 129 5.1 |
| 10 | 5 47.5 | 5 48.5 | 5 31.7 | 10 .4 | 70 2.7 | 130 5.1 |
| 11 | 5 47.8 | 5 48.7 | 5 31.9 | 11 .4 | 71 2.8 | 131 5.1 |
| 12 | 5 48.0 | 5 49.0 | 5 32.1 | 12 .5 | 72 2.8 | 132 5.2 |
| 13 | 5 48.3 | 5 49.2 | 5 32.4 | 13 .5 | 73 2.9 | 133 5.2 |
| 14 | 5 48.5 | 5 49.5 | 5 32.6 | 14 .5 | 74 2.9 | 134 5.2 |
| 15 | 5 48.8 | 5 49.7 | 5 32.9 | 15 .6 | 75 2.9 | 135 5.3 |
| 16 | 5 49.0 | 5 50.0 | 5 33.1 | 16 .6 | 76 3.0 | 136 5.3 |
| 17 | 5 49.3 | 5 50.2 | 5 33.3 | 17 .7 | 77 3.0 | 137 5.4 |
| 18 | 5 49.5 | 5 50.5 | 5 33.6 | 18 .7 | 78 3.1 | 138 5.4 |
| 19 | 5 49.8 | 5 50.7 | 5 33.8 | 19 .7 | 79 3.1 | 139 5.4 |
| 20 | 5 50.0 | 5 51.0 | 5 34.1 | 20 .8 | 80 3.1 | 140 5.5 |
| 21 | 5 50.3 | 5 51.2 | 5 34.3 | 21 .8 | 81 3.2 | 141 5.5 |
| 22 | 5 50.5 | 5 51.5 | 5 34.5 | 22 .9 | 82 3.2 | 142 5.6 |
| 23 | 5 50.8 | 5 51.7 | 5 34.8 | 23 .9 | 83 3.3 | 143 5.6 |
| 24 | 5 51.0 | 5 52.0 | 5 35.0 | 24 .9 | 84 3.3 | 144 5.6 |
| 25 | 5 51.3 | 5 52.2 | 5 35.2 | 25 1.0 | 85 3.3 | 145 5.7 |
| 26 | 5 51.5 | 5 52.5 | 5 35.5 | 26 1.0 | 86 3.4 | 146 5.7 |
| 27 | 5 51.8 | 5 52.7 | 5 35.7 | 27 1.1 | 87 3.4 | 147 5.8 |
| 28 | 5 52.0 | 5 53.0 | 5 36.0 | 28 1.1 | 88 3.4 | 148 5.8 |
| 29 | 5 52.3 | 5 53.2 | 5 36.2 | 29 1.1 | 89 3.5 | 149 5.8 |
| 30 | 5 52.5 | 5 53.5 | 5 36.4 | 30 1.2 | 90 3.5 | 150 5.9 |
| 31 | 5 52.8 | 5 53.7 | 5 36.7 | 31 1.2 | 91 3.6 | 151 5.9 |
| 32 | 5 53.0 | 5 54.0 | 5 36.9 | 32 1.3 | 92 3.6 | 152 6.0 |
| 33 | 5 53.3 | 5 54.2 | 5 37.2 | 33 1.3 | 93 3.6 | 153 6.0 |
| 34 | 5 53.5 | 5 54.5 | 5 37.4 | 34 1.3 | 94 3.7 | 154 6.0 |
| 35 | 5 53.8 | 5 54.7 | 5 37.6 | 35 1.4 | 95 3.7 | 155 6.1 |
| 36 | 5 54.0 | 5 55.0 | 5 37.9 | 36 1.4 | 96 3.8 | 156 6.1 |
| 37 | 5 54.3 | 5 55.2 | 5 38.1 | 37 1.4 | 97 3.8 | 157 6.1 |
| 38 | 5 54.5 | 5 55.5 | 5 38.4 | 38 1.5 | 98 3.8 | 158 6.2 |
| 39 | 5 54.8 | 5 55.7 | 5 38.6 | 39 1.5 | 99 3.9 | 159 6.2 |
| 40 | 5 55.0 | 5 56.0 | 5 38.8 | 40 1.6 | 100 3.9 | 160 6.3 |
| 41 | 5 55.3 | 5 56.2 | 5 39.1 | 41 1.6 | 101 4.0 | 161 6.3 |
| 42 | 5 55.5 | 5 56.5 | 5 39.3 | 42 1.6 | 102 4.0 | 162 6.3 |
| 43 | 5 55.8 | 5 56.7 | 5 39.5 | 43 1.7 | 103 4.0 | 163 6.4 |
| 44 | 5 56.0 | 5 57.0 | 5 39.8 | 44 1.7 | 104 4.1 | 164 6.4 |
| 45 | 5 56.3 | 5 57.2 | 5 40.0 | 45 1.8 | 105 4.1 | 165 6.5 |
| 46 | 5 56.5 | 5 57.5 | 5 40.3 | 46 1.8 | 106 4.2 | 166 6.5 |
| 47 | 5 56.8 | 5 57.7 | 5 40.5 | 47 1.8 | 107 4.2 | 167 6.5 |
| 48 | 5 57.0 | 5 58.0 | 5 40.7 | 48 1.9 | 108 4.2 | 168 6.6 |
| 49 | 5 57.3 | 5 58.2 | 5 41.0 | 49 1.9 | 109 4.3 | 169 6.6 |
| 50 | 5 57.5 | 5 58.5 | 5 41.2 | 50 2.0 | 110 4.3 | 170 6.7 |
| 51 | 5 57.8 | 5 58.7 | 5 41.5 | 51 2.0 | 111 4.3 | 171 6.7 |
| 52 | 5 58.0 | 5 59.0 | 5 41.7 | 52 2.0 | 112 4.4 | 172 6.7 |
| 53 | 5 58.3 | 5 59.2 | 5 41.9 | 53 2.1 | 113 4.4 | 173 6.8 |
| 54 | 5 58.5 | 5 59.5 | 5 42.2 | 54 2.1 | 114 4.5 | 174 6.8 |
| 55 | 5 58.8 | 5 59.7 | 5 42.4 | 55 2.2 | 115 4.5 | 175 6.9 |
| 56 | 5 59.0 | 5 60.0 | 5 42.6 | 56 2.2 | 116 4.5 | 176 6.9 |
| 57 | 5 59.3 | 6 .2 | 5 42.9 | 57 2.2 | 117 4.6 | 177 6.9 |
| 58 | 5 59.5 | 6 .5 | 5 43.1 | 58 2.3 | 118 4.6 | 178 7.0 |
| 59 | 5 59.8 | 6 .7 | 5 43.4 | 59 2.3 | 119 4.7 | 179 7.0 |
| 60 | 6 .0 | 6 1.0 | 5 43.6 | 60 2.4 | 120 4.7 | 180 7.1 |

0 h 28 min

| POPRAVKA ČASOVNOG UGLA | | | | POPRAVKA DRUGOG REDA za časovni ugao i deklinaciju Sunca, Mjeseca i planeta | | | |
|------------------------|-----------------|------|--------------------|---|-------------|------|------------------------|
| s | SUNCA I PLANETA | | PROLJEĆNE TAČKE T° | | MJESECA (°) | | Δ popr. |
| | o | t | o | t | o | t | |
| 0 | 7 | .0 | 7 | 1.2 | 6 | 40.9 | 0 .0 60 2.9 120 5.7 |
| 1 | 7 | .3 | 7 | 1.4 | 6 | 41.1 | 1 .0 61 2.9 121 5.7 |
| 2 | 7 | .5 | 7 | 1.7 | 6 | 41.3 | 2 .1 62 2.9 122 5.8 |
| 3 | 7 | .8 | 7 | 1.9 | 6 | 41.6 | 3 .1 63 3.0 123 5.8 |
| 4 | 7 | 1.0 | 7 | 2.2 | 6 | 41.8 | 4 .2 64 3.0 124 5.9 |
| 5 | 7 | 1.3 | 7 | 2.4 | 6 | 42.1 | 5 .2 65 3.1 125 5.9 |
| 6 | 7 | 1.5 | 7 | 2.7 | 6 | 42.3 | 6 .3 66 3.1 126 6.0 |
| 7 | 7 | 1.8 | 7 | 2.9 | 6 | 42.5 | 7 .3 67 3.2 127 6.0 |
| 8 | 7 | 2.0 | 7 | 3.2 | 6 | 42.8 | 8 .4 68 3.2 128 6.1 |
| 9 | 7 | 2.3 | 7 | 3.4 | 6 | 43.0 | 9 .4 69 3.3 129 6.1 |
| 10 | 7 | 2.5 | 7 | 3.7 | 6 | 43.3 | 10 .5 70 3.3 130 6.2 |
| 11 | 7 | 2.8 | 7 | 3.9 | 6 | 43.5 | 11 .5 71 3.4 131 6.2 |
| 12 | 7 | 3.0 | 7 | 4.2 | 6 | 43.7 | 12 .6 72 3.4 132 6.3 |
| 13 | 7 | 3.3 | 7 | 4.4 | 6 | 44.0 | 13 .6 73 3.5 133 6.3 |
| 14 | 7 | 3.5 | 7 | 4.7 | 6 | 44.2 | 14 .7 74 3.5 134 6.4 |
| 15 | 7 | 3.8 | 7 | 4.9 | 6 | 44.4 | 15 .7 75 3.6 135 6.4 |
| 16 | 7 | 4.0 | 7 | 5.2 | 6 | 44.7 | 16 .8 76 3.6 136 6.5 |
| 17 | 7 | 4.3 | 7 | 5.4 | 6 | 44.9 | 17 .8 77 3.7 137 6.5 |
| 18 | 7 | 4.5 | 7 | 5.7 | 6 | 45.2 | 18 .9 78 3.7 138 6.6 |
| 19 | 7 | 4.8 | 7 | 5.9 | 6 | 45.4 | 19 .9 79 3.8 139 6.6 |
| 20 | 7 | 5.0 | 7 | 6.2 | 6 | 45.6 | 20 1.0 80 3.8 140 6.7 |
| 21 | 7 | 5.3 | 7 | 6.4 | 6 | 45.9 | 21 1.0 81 3.8 141 6.7 |
| 22 | 7 | 5.5 | 7 | 6.7 | 6 | 46.1 | 22 1.0 82 3.9 142 6.7 |
| 23 | 7 | 5.8 | 7 | 6.9 | 6 | 46.4 | 23 1.1 83 3.9 143 6.8 |
| 24 | 7 | 6.0 | 7 | 7.2 | 6 | 46.6 | 24 1.1 84 4.0 144 6.8 |
| 25 | 7 | 6.3 | 7 | 7.4 | 6 | 46.8 | 25 1.2 85 4.0 145 6.9 |
| 26 | 7 | 6.5 | 7 | 7.7 | 6 | 47.1 | 26 1.2 86 4.1 146 6.9 |
| 27 | 7 | 6.8 | 7 | 7.9 | 6 | 47.3 | 27 1.3 87 4.1 147 7.0 |
| 28 | 7 | 7.0 | 7 | 8.2 | 6 | 47.5 | 28 1.3 88 4.2 148 7.0 |
| 29 | 7 | 7.3 | 7 | 8.4 | 6 | 47.8 | 29 1.4 89 4.2 149 7.1 |
| 30 | 7 | 7.5 | 7 | 8.7 | 6 | 48.0 | 30 1.4 90 4.3 150 7.1 |
| 31 | 7 | 7.8 | 7 | 8.9 | 6 | 48.3 | 31 1.5 91 4.3 151 7.2 |
| 32 | 7 | 8.0 | 7 | 9.2 | 6 | 48.5 | 32 1.5 92 4.4 152 7.2 |
| 33 | 7 | 8.3 | 7 | 9.4 | 6 | 48.7 | 33 1.6 93 4.4 153 7.3 |
| 34 | 7 | 8.5 | 7 | 9.7 | 6 | 48.9 | 34 1.6 94 4.5 154 7.3 |
| 35 | 7 | 8.8 | 7 | 9.9 | 6 | 49.2 | 35 1.7 95 4.5 155 7.4 |
| 36 | 7 | 9.0 | 7 | 10.2 | 6 | 49.5 | 36 1.7 96 4.6 156 7.4 |
| 37 | 7 | 9.3 | 7 | 10.4 | 6 | 49.7 | 37 1.8 97 4.6 157 7.5 |
| 38 | 7 | 9.5 | 7 | 10.7 | 6 | 49.9 | 38 1.8 98 4.7 158 7.5 |
| 39 | 7 | 9.8 | 7 | 10.9 | 6 | 50.2 | 39 1.9 99 4.7 159 7.6 |
| 40 | 7 | 10.0 | 7 | 11.2 | 6 | 50.4 | 40 1.9 100 4.8 160 7.6 |
| 41 | 7 | 10.3 | 7 | 11.4 | 6 | 50.6 | 41 1.9 101 4.8 161 7.6 |
| 42 | 7 | 10.5 | 7 | 11.7 | 6 | 50.9 | 42 2.0 102 4.8 162 7.7 |
| 43 | 7 | 10.8 | 7 | 11.9 | 6 | 51.1 | 43 2.0 103 4.9 163 7.7 |
| 44 | 7 | 11.0 | 7 | 12.2 | 6 | 51.4 | 44 2.1 104 4.9 164 7.8 |
| 45 | 7 | 11.3 | 7 | 12.4 | 6 | 51.6 | 45 2.1 105 5.0 165 7.8 |
| 46 | 7 | 11.5 | 7 | 12.7 | 6 | 51.8 | 46 2.2 106 5.0 166 7.9 |
| 47 | 7 | 11.8 | 7 | 12.9 | 6 | 52.1 | 47 2.2 107 5.1 167 7.9 |
| 48 | 7 | 12.0 | 7 | 13.2 | 6 | 52.3 | 48 2.3 108 5.1 168 8.0 |
| 49 | 7 | 12.3 | 7 | 13.5 | 6 | 52.6 | 49 2.3 109 5.2 169 8.0 |
| 50 | 7 | 12.5 | 7 | 13.7 | 6 | 52.8 | 50 2.4 110 5.2 170 8.1 |
| 51 | 7 | 12.8 | 7 | 14.0 | 6 | 53.0 | 51 2.4 111 5.3 171 8.1 |
| 52 | 7 | 13.0 | 7 | 14.2 | 6 | 53.3 | 52 2.5 112 5.3 172 8.2 |
| 53 | 7 | 13.3 | 7 | 14.5 | 6 | 53.5 | 53 2.5 113 5.4 173 8.2 |
| 54 | 7 | 13.5 | 7 | 14.7 | 6 | 53.8 | 54 2.6 114 5.4 174 8.3 |
| 55 | 7 | 13.8 | 7 | 15.0 | 6 | 54.0 | 55 2.6 115 5.5 175 8.3 |
| 56 | 7 | 14.0 | 7 | 15.2 | 6 | 54.2 | 56 2.7 116 5.5 176 8.4 |
| 57 | 7 | 14.3 | 7 | 15.5 | 6 | 54.5 | 57 2.7 117 5.6 177 8.4 |
| 58 | 7 | 14.5 | 7 | 15.7 | 6 | 54.7 | 58 2.8 118 5.6 178 8.5 |
| 59 | 7 | 14.8 | 7 | 16.0 | 6 | 54.9 | 59 2.8 119 5.7 179 8.5 |
| 60 | 7 | 15.0 | 7 | 16.2 | 6 | 55.2 | 60 2.9 120 5.7 180 8.6 |

0 h 29 min

| POPRAVKA ČASOVNOG UGLA | | | | POPRAVKA DRUGOG REDA za časovni ugao i deklinaciju Sunca, Mjeseca i planeta | | | |
|------------------------|-----------------|------|--------------------|---|-------------|----------------------------|-----------------------|
| s | SUNCA I PLANETA | | PROLJEĆNE TAČKE T° | | MJESECA (°) | | Δ popr. |
| | o | t | o | t | o | t | |
| 0 | 7 | 15.0 | 7 | 16.2 | 6 | 55.2 | 0 .0 60 3.0 120 5.9 |
| 1 | 7 | 15.3 | 7 | 16.5 | 6 | 55.4 | 1 .0 61 3.0 121 5.9 |
| 2 | 7 | 15.5 | 7 | 16.7 | 6 | 55.7 | 2 .1 62 3.0 122 6.0 |
| 3 | 7 | 15.8 | 7 | 17.0 | 6 | 55.9 | 3 .1 63 3.1 123 6.0 |
| 4 | 7 | 16.0 | 7 | 17.2 | 6 | 56.1 | 4 .2 64 3.1 124 6.1 |
| 5 | 7 | 16.3 | 7 | 17.5 | 6 | 56.4 | 5 .2 65 3.2 125 6.1 |
| 6 | 7 | 16.5 | 7 | 17.7 | 6 | 56.6 | 6 .3 66 3.2 126 6.2 |
| 7 | 7 | 16.8 | 7 | 18.0 | 6 | 56.9 | 7 .3 67 3.3 127 6.2 |
| 8 | 7 | 17.0 | 7 | 18.2 | 6 | 57.1 | 8 .4 68 3.3 128 6.3 |
| 9 | 7 | 17.3 | 7 | 18.5 | 6 | 57.3 | 9 .4 69 3.4 129 6.3 |
| 10 | 7 | 17.5 | 7 | 18.7 | 6 | 57.6 | 10 .5 70 3.4 130 6.4 |
| 11 | 7 | 17.8 | 7 | 19.0 | 6 | 57.8 | 11 .5 71 3.5 131 6.4 |
| 12 | 7 | 18.0 | 7 | 19.2 | 6 | 58.0 | 12 .6 72 3.5 132 6.5 |
| 13 | 7 | 18.3 | 7 | 19.5 | 6 | 58.3 | 13 .6 73 3.6 133 6.5 |
| 14 | 7 | 18.5 | 7 | 19.7 | 6 | 58.5 | 14 .7 74 3.6 134 6.6 |
| 15 | 7 | 18.8 | 7 | 20.0 | 6 | 58.8 | 15 .7 75 3.7 135 6.6 |
| 16 | 7 | 19.0 | 7 | 20.2 | 6 | 59.0 | 16 .8 76 3.7 136 6.7 |
| 17 | 7 | 19.3 | 7 | 20.5 | 6 | 59.2 | 17 .8 77 3.8 137 6.7 |
| 18 | 7 | 19.5 | 7 | 20.7 | 6 | 59.5 | 18 .9 78 3.8 138 6.8 |
| 19 | 7 | 19.8 | 7 | 21.0 | 6 | 59.7 | 19 .9 79 3.9 139 6.8 |
| 20 | 7 | 20.0 | 7 | 21.2 | 6 | 60.0 | 20 1.0 80 3.9 140 6.9 |
| 21 | 7 | 20.3 | 7 | 21.5 | 7 | .2 21 1.0 81 4.0 141 6.9 | |
| 22 | 7 | 20.5 | 7 | 21.7 | 7 | .4 22 1.1 82 4.0 142 7.0 | |
| 23 | 7 | 20.8 | 7 | 22.0 | 7 | .7 23 1.1 83 4.1 143 7.0 | |
| 24 | 7 | 21.0 | 7 | 22.2 | 7 | .9 24 1.2 84 4.1 144 7.1 | |
| 25 | 7 | 21.3 | 7 | 22.5 | 7 | 1.1 25 1.2 85 4.2 145 7.1 | |
| 26 | 7 | 21.5 | 7 | 22.7 | 7 | 1.4 26 1.3 86 4.2 146 7.2 | |
| 27 | 7 | 21.8 | 7 | 23.0 | 7 | 1.6 27 1.3 87 4.3 147 7.2 | |
| 28 | 7 | 22.0 | 7 | 23.2 | 7 | 1.9 28 1.4 88 4.3 148 7.3 | |
| 29 | 7 | 22.3 | 7 | 23.5 | 7 | 2.1 29 1.4 89 4.4 149 7.3 | |
| 30 | 7 | 22.5 | 7 | 23.7 | 7 | 2.3 30 1.5 90 4.4 150 7.4 | |
| 31 | 7 | 22.8 | 7 | 24.0 | 7 | 2.6 31 1.5 91 4.5 151 7.4 | |
| 32 | 7 | 23.0 | 7 | 24.2 | 7 | 2.8 32 1.6 92 4.5 152 7.5 | |
| 33 | 7 | 23.3 | 7 | 24.5 | 7 | 3.1 33 1.6 93 4.6 153 7.5 | |
| 34 | 7 | 23.5 | 7 | 24.7 | 7 | 3.3 34 1.7 94 4.6 154 7.6 | |
| 35 | 7 | 23.8 | 7 | 25.0 | 7 | 3.5 35 1.7 95 4.7 155 7.6 | |
| 36 | 7 | 24.0 | 7 | 25.2 | 7 | 3.8 36 1.8 96 4.7 156 7.7 | |
| 37 | 7 | 24.3 | 7 | 25.5 | 7 | 4.0 37 1.8 97 4.8 157 7.7 | |
| 38 | 7 | 24.5 | 7 | 25.7 | 7 | 4.3 38 1.9 98 4.8 158 7.8 | |
| 39 | 7 | 24.8 | 7 | 26.0 | 7 | 4.5 39 1.9 99 4.9 159 7.8 | |
| 40 | 7 | 25.0 | 7 | 26.2 | 7 | 4.7 40 2.0 100 4.9 160 7.9 | |
| 41 | 7 | 25.3 | 7 | 26.5 | 7 | 5.0 41 2.0 101 5.0 161 7.9 | |
| 42 | 7 | 25.5 | 7 | 26.7 | 7 | 5.2 42 2.1 102 5.0 162 8.0 | |
| 43 | 7 | 25.8 | 7 | 27.0 | 7 | 5.4 43 2.1 103 5.1 163 8.0 | |
| 44 | 7 | 26.0 | 7 | 27.2 | 7 | 5.7 44 2.2 104 5.1 164 8.1 | |
| 45 | 7 | 26.3 | 7 | 27.5 | 7 | 5.9 45 2.2 105 5.2 165 8.1 | |
| 46 | 7 | 26.5 | 7 | 27.7 | 7 | 6.2 46 2.3 106 5.2 166 8.2 | |
| 47 | 7 | 26.8 | 7 | 28.0 | 7 | 6.4 47 2.3 107 5.3 167 8.2 | |
| 48 | 7 | 27.0 | 7 | 28.2 | 7 | 6.6 48 2.4 108 5.3 168 8.3 | |
| 49 | 7 | 27.3 | 7 | 28.5 | 7 | 6.9 49 2.4 109 5.4 169 8.3 | |
| 50 | 7 | 27.5 | 7 | 28.7 | 7 | 7.1 50 2.5 110 5.4 170 8.4 | |
| 51 | 7 | 27.8 | 7 | 29.0 | 7 | 7.4 51 2.5 111 5.5 171 8.4 | |
| 52 | 7 | 28.0 | 7 | 29.2 | 7 | 7.6 52 2.6 112 5.5 172 8.5 | |
| 53 | 7 | 28.3 | 7 | 29.5 | 7 | 7.8 53 2.6 113 5.6 173 8.5 | |
| 54 | 7 | 28.5 | 7 | 29.7 | 7 | 8.1 54 2.7 114 5.6 174 8.6 | |
| 55 | 7 | 28.8 | 7 | 30.0 | 7 | 8.3 55 2.7 115 5.7 175 8.6 | |
| 56 | 7 | 29.0 | 7 | 30.2 | 7 | 8.5 56 2.8 116 5.7 176 8.7 | |
| 57 | 7 | 29.3 | 7 | 30.5 | 7 | 8.8 57 2.8 117 5.8 177 8.7 | |
| 58 | 7 | 29.5 | 7 | 30.7 | 7 | 9.0 58 2.9 118 5.8 178 8.8 | |
| 59 | 7 | 29.8 | 7 | 31.0 | 7 | 9.3 59 2.9 119 5.9 179 8.8 | |
| 60 | 7 | 30.0 | 7 | 31.3 | 7 | 9.5 60 3.0 120 5.9 180 8.9 | |

0 h 30 min

| POPRAVKA ČASOVNOG UGLA | | | POPRAVKA DRUGOG REDA za časovni ugao i deklinaciju Sunca, Mjeseca i planeta | | | | | | |
|------------------------|--------------------|----------------------|---|----|-------|-----|-------|-----|-------|
| S | SUNCA I PLANETA | PROLJEČNE TAČKE ° | MJESECA (°) | Δ | popr. | Δ | popr. | Δ | popr. |
| | o | ' | o | ' | " | ' | " | ' | " |
| 0 | 7 30.0 | 7 31.3 | 7 9.5 | 0 | .0 | 60 | 3.1 | 120 | 6.1 |
| 1 | 7 30.3 | 7 31.5 | 7 9.7 | 1 | .1 | 61 | 3.1 | 121 | 6.2 |
| 2 | 7 30.5 | 7 31.8 | 7 10.0 | 2 | .1 | 62 | 3.2 | 122 | 6.2 |
| 3 | 7 30.8 | 7 32.0 | 7 10.2 | 3 | .2 | 63 | 3.2 | 123 | 6.3 |
| 4 | 7 31.0 | 7 32.3 | 7 10.5 | 4 | .2 | 64 | 3.3 | 124 | 6.3 |
| 5 | 7 31.3 | 7 32.5 | 7 10.7 | 5 | .3 | 65 | 3.3 | 125 | 6.4 |
| 6 | 7 31.5 | 7 32.8 | 7 10.9 | 6 | .3 | 66 | 3.4 | 126 | 6.4 |
| 7 | 7 31.8 | 7 33.0 | 7 11.2 | 7 | .4 | 67 | 3.4 | 127 | 6.5 |
| 8 | 7 32.0 | 7 33.3 | 7 11.4 | 8 | .4 | 68 | 3.5 | 128 | 6.5 |
| 9 | 7 32.3 | 7 33.5 | 7 11.6 | 9 | .5 | 69 | 3.5 | 129 | 6.6 |
| 10 | 7 32.5 | 7 33.8 | 7 11.9 | 10 | .5 | 70 | 3.6 | 130 | 6.6 |
| 11 | 7 32.8 | 7 34.0 | 7 12.1 | 11 | .6 | 71 | 3.6 | 131 | 6.7 |
| 12 | 7 33.0 | 7 34.3 | 7 12.4 | 12 | .6 | 72 | 3.7 | 132 | 6.7 |
| 13 | 7 33.3 | 7 34.5 | 7 12.6 | 13 | .7 | 73 | 3.7 | 133 | 6.8 |
| 14 | 7 33.5 | 7 34.8 | 7 12.8 | 14 | .7 | 74 | 3.8 | 134 | 6.8 |
| 15 | 7 33.8 | 7 35.0 | 7 13.1 | 15 | .8 | 75 | 3.8 | 135 | 6.9 |
| 16 | 7 34.0 | 7 35.3 | 7 13.3 | 16 | .8 | 76 | 3.9 | 136 | 6.9 |
| 17 | 7 34.3 | 7 35.5 | 7 13.6 | 17 | .9 | 77 | 3.9 | 137 | 7.0 |
| 18 | 7 34.5 | 7 35.8 | 7 13.8 | 18 | .9 | 78 | 4.0 | 138 | 7.0 |
| 19 | 7 34.8 | 7 36.0 | 7 14.0 | 19 | 1.0 | 79 | 4.0 | 139 | 7.1 |
| 20 | 7 35.0 | 7 36.3 | 7 14.3 | 20 | 1.0 | 80 | 4.1 | 140 | 7.1 |
| 21 | 7 35.3 | 7 36.5 | 7 14.5 | 21 | 1.1 | 81 | 4.1 | 141 | 7.2 |
| 22 | 7 35.5 | 7 36.8 | 7 14.7 | 22 | 1.1 | 82 | 4.2 | 142 | 7.2 |
| 23 | 7 35.8 | 7 37.0 | 7 15.0 | 23 | 1.2 | 83 | 4.2 | 143 | 7.3 |
| 24 | 7 36.0 | 7 37.3 | 7 15.2 | 24 | 1.2 | 84 | 4.3 | 144 | 7.3 |
| 25 | 7 36.3 | 7 37.5 | 7 15.5 | 25 | 1.3 | 85 | 4.3 | 145 | 7.4 |
| 26 | 7 36.5 | 7 37.8 | 7 15.7 | 26 | 1.3 | 86 | 4.4 | 146 | 7.4 |
| 27 | 7 36.8 | 7 38.0 | 7 15.9 | 27 | 1.4 | 87 | 4.4 | 147 | 7.5 |
| 28 | 7 37.0 | 7 38.3 | 7 16.2 | 28 | 1.4 | 88 | 4.5 | 148 | 7.5 |
| 29 | 7 37.3 | 7 38.5 | 7 16.4 | 29 | 1.5 | 89 | 4.5 | 149 | 7.6 |
| 30 | 7 37.5 | 7 38.8 | 7 16.7 | 30 | 1.5 | 90 | 4.6 | 150 | 7.6 |
| 31 | 7 37.8 | 7 39.0 | 7 16.9 | 31 | 1.6 | 91 | 4.6 | 151 | 7.7 |
| 32 | 7 38.0 | 7 39.3 | 7 17.1 | 32 | 1.6 | 92 | 4.7 | 152 | 7.7 |
| 33 | 7 38.3 | 7 39.5 | 7 17.4 | 33 | 1.7 | 93 | 4.7 | 153 | 7.8 |
| 34 | 7 38.5 | 7 39.8 | 7 17.6 | 34 | 1.7 | 94 | 4.8 | 154 | 7.8 |
| 35 | 7 38.8 | 7 40.0 | 7 17.9 | 35 | 1.8 | 95 | 4.8 | 155 | 7.9 |
| 36 | 7 39.0 | 7 40.3 | 7 18.1 | 36 | 1.8 | 96 | 4.9 | 156 | 7.9 |
| 37 | 7 39.3 | 7 40.5 | 7 18.3 | 37 | 1.9 | 97 | 4.9 | 157 | 8.0 |
| 38 | 7 39.5 | 7 40.8 | 7 18.6 | 38 | 1.9 | 98 | 5.0 | 158 | 8.0 |
| 39 | 7 39.8 | 7 41.0 | 7 18.8 | 39 | 2.0 | 99 | 5.0 | 159 | 8.1 |
| 40 | 7 40.0 | 7 41.3 | 7 19.0 | 40 | 2.0 | 100 | 5.1 | 160 | 8.1 |
| 41 | 7 40.3 | 7 41.5 | 7 19.3 | 41 | 2.1 | 101 | 5.1 | 161 | 8.2 |
| 42 | 7 40.5 | 7 41.8 | 7 19.5 | 42 | 2.1 | 102 | 5.2 | 162 | 8.2 |
| 43 | 7 40.8 | 7 42.0 | 7 19.8 | 43 | 2.2 | 103 | 5.2 | 163 | 8.3 |
| 44 | 7 41.0 | 7 42.3 | 7 20.0 | 44 | 2.2 | 104 | 5.3 | 164 | 8.3 |
| 45 | 7 41.3 | 7 42.5 | 7 20.2 | 45 | 2.3 | 105 | 5.3 | 165 | 8.4 |
| 46 | 7 41.5 | 7 42.8 | 7 20.5 | 46 | 2.3 | 106 | 5.4 | 166 | 8.4 |
| 47 | 7 41.8 | 7 43.0 | 7 20.7 | 47 | 2.4 | 107 | 5.4 | 167 | 8.5 |
| 48 | 7 42.0 | 7 43.3 | 7 21.0 | 48 | 2.4 | 108 | 5.5 | 168 | 8.5 |
| 49 | 7 42.3 | 7 43.5 | 7 21.2 | 49 | 2.5 | 109 | 5.5 | 169 | 8.6 |
| 50 | 7 42.5 | 7 43.8 | 7 21.4 | 50 | 2.5 | 110 | 5.6 | 170 | 8.6 |
| 51 | 7 42.8 | 7 44.0 | 7 21.7 | 51 | 2.6 | 111 | 5.6 | 171 | 8.7 |
| 52 | 7 43.0 | 7 44.3 | 7 21.9 | 52 | 2.6 | 112 | 5.7 | 172 | 8.7 |
| 53 | 7 43.3 | 7 44.5 | 7 22.1 | 53 | 2.7 | 113 | 5.7 | 173 | 8.8 |
| 54 | 7 43.5 | 7 44.8 | 7 22.4 | 54 | 2.7 | 114 | 5.8 | 174 | 8.8 |
| 55 | 7 43.8 | 7 45.0 | 7 22.6 | 55 | 2.8 | 115 | 5.8 | 175 | 8.9 |
| 56 | 7 44.0 | 7 45.3 | 7 22.9 | 56 | 2.8 | 116 | 5.9 | 176 | 8.9 |
| 57 | 7 44.3 | 7 45.5 | 7 23.1 | 57 | 2.9 | 117 | 5.9 | 177 | 9.0 |
| 58 | 7 44.5 | 7 45.8 | 7 23.3 | 58 | 2.9 | 118 | 6.0 | 178 | 9.0 |
| 59 | 7 44.8 | 7 46.0 | 7 23.6 | 59 | 3.0 | 119 | 6.0 | 179 | 9.1 |
| 60 | 7 45.0 | 7 46.3 | 7 23.8 | 60 | 3.1 | 120 | 6.1 | 180 | 9.2 |

0 h 31 min

| POPRAVKA ČASOVNOG UGLA | | | POPRAVKA DRUGOG REDA za časovni ugao i deklinaciju Sunca, Mjeseca i planeta | | | | | | |
|------------------------|--------------------|----------------------|---|----|-------|-----|-------|-----|-------|
| S | SUNCA I PLANETA | PROLJEČNE TAČKE ° | MJESECA (°) | Δ | popr. | Δ | popr. | Δ | popr. |
| | o | ' | o | ' | " | ' | " | ' | " |
| 0 | 7 45.0 | 7 46.3 | 7 23.8 | 0 | .0 | 60 | 3.2 | 120 | 6.3 |
| 1 | 7 45.3 | 7 46.5 | 7 24.1 | 1 | .1 | 61 | 3.2 | 121 | 6.4 |
| 2 | 7 45.5 | 7 46.8 | 7 24.3 | 2 | .1 | 62 | 3.3 | 122 | 6.4 |
| 3 | 7 45.8 | 7 47.0 | 7 24.5 | 3 | .2 | 63 | 3.3 | 123 | 6.5 |
| 4 | 7 46.0 | 7 47.3 | 7 24.8 | 4 | .2 | 64 | 3.4 | 124 | 6.5 |
| 5 | 7 46.3 | 7 47.5 | 7 25.0 | 5 | .3 | 65 | 3.4 | 125 | 6.6 |
| 6 | 7 46.5 | 7 47.8 | 7 25.2 | 6 | .3 | 66 | 3.5 | 126 | 6.6 |
| 7 | 7 46.8 | 7 48.0 | 7 25.5 | 7 | .4 | 67 | 3.5 | 127 | 6.7 |
| 8 | 7 47.0 | 7 48.3 | 7 25.7 | 8 | .4 | 68 | 3.6 | 128 | 6.7 |
| 9 | 7 47.3 | 7 48.5 | 7 26.0 | 9 | .5 | 69 | 3.6 | 129 | 6.8 |
| 10 | 7 47.5 | 7 48.8 | 7 26.2 | 10 | .5 | 70 | 3.7 | 130 | 6.8 |
| 11 | 7 47.8 | 7 49.0 | 7 26.4 | 11 | .6 | 71 | 3.7 | 131 | 6.9 |
| 12 | 7 48.0 | 7 49.3 | 7 26.7 | 12 | .6 | 72 | 3.8 | 132 | 6.9 |
| 13 | 7 48.3 | 7 49.6 | 7 26.9 | 13 | .7 | 73 | 3.8 | 133 | 7.0 |
| 14 | 7 48.5 | 7 49.8 | 7 27.2 | 14 | .7 | 74 | 3.9 | 134 | 7.0 |
| 15 | 7 48.8 | 7 50.1 | 7 27.4 | 15 | .8 | 75 | 3.9 | 135 | 7.1 |
| 16 | 7 49.0 | 7 50.3 | 7 27.6 | 16 | .8 | 76 | 4.0 | 136 | 7.1 |
| 17 | 7 49.3 | 7 50.6 | 7 27.9 | 17 | .9 | 77 | 4.0 | 137 | 7.2 |
| 18 | 7 49.5 | 7 50.8 | 7 28.1 | 18 | .9 | 78 | 4.1 | 138 | 7.2 |
| 19 | 7 49.8 | 7 51.1 | 7 28.4 | 19 | 1.0 | 79 | 4.1 | 139 | 7.3 |
| 20 | 7 50.0 | 7 51.3 | 7 28.6 | 20 | 1.1 | 80 | 4.2 | 140 | 7.4 |
| 21 | 7 50.3 | 7 51.6 | 7 28.8 | 21 | 1.1 | 81 | 4.3 | 141 | 7.4 |
| 22 | 7 50.5 | 7 51.8 | 7 29.1 | 22 | 1.2 | 82 | 4.3 | 142 | 7.5 |
| 23 | 7 50.8 | 7 52.1 | 7 29.3 | 23 | 1.2 | 83 | 4.4 | 143 | 7.5 |
| 24 | 7 51.0 | 7 52.3 | 7 29.5 | 24 | 1.3 | 84 | 4.4 | 144 | 7.6 |
| 25 | 7 51.3 | 7 52.6 | 7 29.8 | 25 | 1.3 | 85 | 4.5 | 145 | 7.6 |
| 26 | 7 51.5 | 7 52.8 | 7 30.0 | 26 | 1.4 | 86 | 4.5 | 146 | 7.7 |
| 27 | 7 51.8 | 7 53.1 | 7 30.3 | 27 | 1.4 | 87 | 4.6 | 147 | 7.7 |
| 28 | 7 52.0 | 7 53.3 | 7 30.5 | 28 | 1.5 | 88 | 4.6 | 148 | 7.8 |
| 29 | 7 52.3 | 7 53.6 | 7 30.7 | 29 | 1.5 | 89 | 4.7 | 149 | 7.8 |
| 30 | 7 52.5 | 7 53.8 | 7 31.0 | 30 | 1.6 | 90 | 4.7 | 150 | 7.9 |
| 31 | 7 52.8 | 7 54.1 | 7 31.2 | 31 | 1.6 | 91 | 4.8 | 151 | 7.9 |
| 32 | 7 53.0 | 7 54.3 | 7 31.5 | 32 | 1.7 | 92 | 4.8 | 152 | 8.0 |
| 33 | 7 53.3 | 7 54.6 | 7 31.7 | 33 | 1.7 | 93 | 4.9 | 153 | 8.0 |
| 34 | 7 53.5 | 7 54.8 | 7 31.9 | 34 | 1.8 | 94 | 4.9 | 154 | 8.1 |
| 35 | 7 53.8 | 7 55.1 | 7 32.2 | 35 | 1.8 | 95 | 5.0 | 155 | 8.1 |
| 36 | 7 54.0 | 7 55.3 | 7 32.4 | 36 | 1.9 | 96 | 5.0 | 156 | 8.2 |
| 37 | 7 54.3 | 7 55.6 | 7 32.6 | 37 | 1.9 | 97 | 5.1 | 157 | 8.2 |
| 38 | 7 54.5 | 7 55.8 | 7 32.9 | 38 | 2.0 | 98 | 5.1 | 158 | 8.3 |
| 39 | 7 54.8 | 7 56.1 | 7 33.1 | 39 | 2.0 | 99 | 5.2 | 159 | 8.3 |
| 40 | 7 55.0 | 7 56.3 | 7 33.4 | 40 | 2.1 | 100 | 5.3 | 160 | 8.4 |
| 41 | 7 55.3 | 7 56.6 | 7 33.6 | 41 | 2.2 | 101 | 5.3 | 161 | 8.5 |
| 42 | 7 55.5 | 7 56.8 | 7 33.8 | 42 | 2.2 | 102 | 5.4 | 162 | 8.5 |
| 43 | 7 55.8 | 7 57.1 | 7 34.1 | 43 | 2.3 | 103 | 5.4 | 163 | 8.6 |
| 44 | 7 56.0 | 7 57.3 | 7 34.3 | 44 | 2.3 | 104 | 5.5 | 164 | 8.6 |
| 45 | 7 56.3 | 7 57.6 | 7 34.6 | 45 | 2.4 | 105 | 5.5 | 165 | 8.7 |
| 46 | 7 56.5 | 7 57.8 | 7 34.8 | 46 | 2.4 | 106 | 5.6 | 166 | 8.7 |
| 47 | 7 56.8 | 7 58.1 | 7 35.0 | 47 | 2.5 | 107 | 5.6 | 167 | 8.8 |
| 48 | 7 57.0 | 7 58.3 | 7 35.3 | 48 | 2.5 | 108 | 5.7 | 168 | 8.8 |
| 49 | 7 57.3 | 7 58.6 | 7 35.5 | 49 | 2.6 | 109 | 5.7 | 169 | 8.9 |
| 50 | 7 57.5 | 7 58.8 | 7 35.7 | 50 | 2.6 | 110 | 5.8 | 170 | 8.9 |
| 51 | 7 57.8 | 7 59.1 | 7 36.0 | 51 | 2.7 | 111 | 5.8 | 171 | 9.0 |
| 52 | 7 58.0 | 7 59.3 | 7 36.2 | 52 | 2.7 | 112 | 5.9 | 172 | 9.0 |
| 53 | 7 58.3 | 7 59.6 | 7 36.5 | 53 | 2.8 | 113 | 5.9 | 173 | 9.1 |
| 54 | 7 58.5 | 7 59.8 | 7 36.7 | 54 | 2.8 | 114 | 6.0 | 174 | 9.1 |
| 55 | 7 58.8 | 8 .1 | 7 36.9 | 55 | 2.9 | 115 | 6.0 | 175 | 9.2 |
| 56 | 7 59.0 | 8 .3 | 7 37.2 | 56 | 2.9 | 116 | 6.1 | 176 | 9.2 |
| 57 | 7 59.3 | 8 .6 | 7 37.4 | 57 | 3.0 | 117 | 6.1 | 177 | 9.3 |
| 58 | 7 59.5 | 8 .8 | 7 37.7 | 58 | 3.0 | 118 | 6.2 | 178 | 9.3 |
| 59 | 7 59.8 | 8 1.1 | 7 37.9 | 59 | 3.1 | 119 | 6.2 | 179 | 9.4 |
| 60 | 8 .0 | 8 1.3 | 7 38.1 | 60 | 3.2 | 120 | 6.3 | 180 | 9.5 |

0h 32 min

| POPRAVKA ČASOVNOG UGLA | | | POPRAVKA DRUGOG REDA za časovni ugao i deklinaciju Sunca, Mjeseca i planeta | | | | | | |
|------------------------|-----------------|------|---|------|-------------|---------|---------|---------|---------|
| S | SUNCA I PLANETA | | PROLJEČNE TACKE T | | MJESECA (C) | Δ popr. | Δ popr. | Δ popr. | |
| | o | f | o | f | | | | | |
| 0 | 8 | .0 | 8 | 1.3 | 7 38.1 | 0 | .0 | 60 3.3 | 120 6.5 |
| 1 | 8 | .3 | 8 | 1.6 | 7 38.4 | 1 | .1 | 61 3.3 | 121 6.6 |
| 2 | 8 | .5 | 8 | 1.8 | 7 38.6 | 2 | .1 | 62 3.4 | 122 6.6 |
| 3 | 8 | .8 | 8 | 2.1 | 7 38.8 | 3 | .2 | 63 3.4 | 123 6.7 |
| 4 | 8 | 1.0 | 8 | 2.3 | 7 39.1 | 4 | .2 | 64 3.5 | 124 6.7 |
| 5 | 8 | 1.3 | 8 | 2.6 | 7 39.3 | 5 | .3 | 65 3.5 | 125 6.8 |
| 6 | 8 | 1.5 | 8 | 2.8 | 7 39.6 | 6 | .3 | 66 3.6 | 126 6.8 |
| 7 | 8 | 1.8 | 8 | 3.1 | 7 39.8 | 7 | .4 | 67 3.6 | 127 6.9 |
| 8 | 8 | 2.0 | 8 | 3.3 | 7 40.0 | 8 | .4 | 68 3.7 | 128 6.9 |
| 9 | 8 | 2.3 | 8 | 3.6 | 7 40.3 | 9 | .5 | 69 3.7 | 129 7.0 |
| 10 | 8 | 2.5 | 8 | 3.8 | 7 40.5 | 10 | .5 | 70 3.8 | 130 7.0 |
| 11 | 8 | 2.8 | 8 | 4.1 | 7 40.8 | 11 | .6 | 71 3.8 | 131 7.1 |
| 12 | 8 | 3.0 | 8 | 4.3 | 7 41.0 | 12 | .7 | 72 3.9 | 132 7.2 |
| 13 | 8 | 3.3 | 8 | 4.6 | 7 41.2 | 13 | .7 | 73 4.0 | 133 7.2 |
| 14 | 8 | 3.5 | 8 | 4.8 | 7 41.5 | 14 | .8 | 74 4.0 | 134 7.3 |
| 15 | 8 | 3.8 | 8 | 5.1 | 7 41.7 | 15 | .8 | 75 4.1 | 135 7.3 |
| 16 | 8 | 4.0 | 8 | 5.3 | 7 42.0 | 16 | .9 | 76 4.1 | 136 7.4 |
| 17 | 8 | 4.3 | 8 | 5.6 | 7 42.2 | 17 | .9 | 77 4.2 | 137 7.4 |
| 18 | 8 | 4.5 | 8 | 5.8 | 7 42.4 | 18 | 1.0 | 78 4.2 | 138 7.5 |
| 19 | 8 | 4.8 | 8 | 6.1 | 7 42.7 | 19 | 1.0 | 79 4.3 | 139 7.5 |
| 20 | 8 | 5.0 | 8 | 6.3 | 7 42.9 | 20 | 1.1 | 80 4.3 | 140 7.6 |
| 21 | 8 | 5.3 | 8 | 6.6 | 7 43.1 | 21 | 1.1 | 81 4.4 | 141 7.6 |
| 22 | 8 | 5.5 | 8 | 6.8 | 7 43.4 | 22 | 1.2 | 82 4.4 | 142 7.7 |
| 23 | 8 | 5.8 | 8 | 7.1 | 7 43.6 | 23 | 1.2 | 83 4.5 | 143 7.7 |
| 24 | 8 | 6.0 | 8 | 7.4 | 7 43.9 | 24 | 1.3 | 84 4.6 | 144 7.8 |
| 25 | 8 | 6.3 | 8 | 7.6 | 7 44.1 | 25 | 1.4 | 85 4.6 | 145 7.9 |
| 26 | 8 | 6.5 | 8 | 7.9 | 7 44.3 | 26 | 1.4 | 86 4.7 | 146 7.9 |
| 27 | 8 | 6.8 | 8 | 8.1 | 7 44.6 | 27 | 1.5 | 87 4.7 | 147 8.0 |
| 28 | 8 | 7.0 | 8 | 8.4 | 7 44.8 | 28 | 1.5 | 88 4.8 | 148 8.0 |
| 29 | 8 | 7.3 | 8 | 8.6 | 7 45.1 | 29 | 1.6 | 89 4.8 | 149 8.1 |
| 30 | 8 | 7.5 | 8 | 8.9 | 7 45.3 | 30 | 1.6 | 90 4.9 | 150 8.1 |
| 31 | 8 | 7.8 | 8 | 9.1 | 7 45.5 | 31 | 1.7 | 91 4.9 | 151 8.2 |
| 32 | 8 | 8.0 | 8 | 9.4 | 7 45.8 | 32 | 1.7 | 92 5.0 | 152 8.2 |
| 33 | 8 | 8.3 | 8 | 9.6 | 7 46.0 | 33 | 1.8 | 93 5.0 | 153 8.3 |
| 34 | 8 | 8.5 | 8 | 9.9 | 7 46.2 | 34 | 1.8 | 94 5.1 | 154 8.3 |
| 35 | 8 | 8.8 | 8 | 10.1 | 7 46.5 | 35 | 1.9 | 95 5.1 | 155 8.4 |
| 36 | 8 | 9.0 | 8 | 10.4 | 7 46.7 | 36 | 2.0 | 96 5.2 | 156 8.5 |
| 37 | 8 | 9.3 | 8 | 10.6 | 7 47.0 | 37 | 2.0 | 97 5.3 | 157 8.5 |
| 38 | 8 | 9.5 | 8 | 10.9 | 7 47.2 | 38 | 2.1 | 98 5.3 | 158 8.6 |
| 39 | 8 | 9.8 | 8 | 11.1 | 7 47.4 | 39 | 2.1 | 99 5.4 | 159 8.6 |
| 40 | 8 | 10.0 | 8 | 11.4 | 7 47.7 | 40 | 2.2 | 100 5.4 | 160 8.7 |
| 41 | 8 | 10.3 | 8 | 11.6 | 7 47.9 | 41 | 2.2 | 101 5.5 | 161 8.7 |
| 42 | 8 | 10.5 | 8 | 11.9 | 7 48.2 | 42 | 2.3 | 102 5.5 | 162 8.8 |
| 43 | 8 | 10.8 | 8 | 12.1 | 7 48.4 | 43 | 2.3 | 103 5.6 | 163 8.8 |
| 44 | 8 | 11.0 | 8 | 12.4 | 7 48.6 | 44 | 2.4 | 104 5.6 | 164 8.9 |
| 45 | 8 | 11.3 | 8 | 12.6 | 7 48.9 | 45 | 2.4 | 105 5.7 | 165 8.9 |
| 46 | 8 | 11.5 | 8 | 12.9 | 7 49.1 | 46 | 2.5 | 106 5.7 | 166 9.0 |
| 47 | 8 | 11.8 | 8 | 13.1 | 7 49.3 | 47 | 2.5 | 107 5.8 | 167 9.0 |
| 48 | 8 | 12.0 | 8 | 13.4 | 7 49.6 | 48 | 2.6 | 108 5.9 | 168 9.1 |
| 49 | 8 | 12.3 | 8 | 13.6 | 7 49.8 | 49 | 2.7 | 109 5.9 | 169 9.2 |
| 50 | 8 | 12.5 | 8 | 13.9 | 7 50.1 | 50 | 2.7 | 110 6.0 | 170 9.2 |
| 51 | 8 | 12.8 | 8 | 14.1 | 7 50.3 | 51 | 2.8 | 111 6.0 | 171 9.3 |
| 52 | 8 | 13.0 | 8 | 14.4 | 7 50.5 | 52 | 2.8 | 112 6.1 | 172 9.3 |
| 53 | 8 | 13.3 | 8 | 14.6 | 7 50.8 | 53 | 2.9 | 113 6.1 | 173 9.4 |
| 54 | 8 | 13.5 | 8 | 14.9 | 7 51.0 | 54 | 2.9 | 114 6.2 | 174 9.4 |
| 55 | 8 | 13.8 | 8 | 15.1 | 7 51.3 | 55 | 3.0 | 115 6.2 | 175 9.5 |
| 56 | 8 | 14.0 | 8 | 15.4 | 7 51.5 | 56 | 3.0 | 116 6.3 | 176 9.5 |
| 57 | 8 | 14.3 | 8 | 15.6 | 7 51.7 | 57 | 3.1 | 117 6.3 | 177 9.6 |
| 58 | 8 | 14.5 | 8 | 15.9 | 7 52.0 | 58 | 3.1 | 118 6.4 | 178 9.6 |
| 59 | 8 | 14.8 | 8 | 16.1 | 7 52.2 | 59 | 3.2 | 119 6.4 | 179 9.7 |
| 60 | 8 | 15.0 | 8 | 16.4 | 7 52.5 | 60 | 3.3 | 120 6.5 | 180 9.8 |

0h 33 min

| POPRAVKA ČASOVNOG UGLA | | | POPRAVKA DRUGOG REDA za časovni ugao i deklinaciju Sunca, Mjeseca i planeta | | | | | | |
|------------------------|-----------------|------|---|------|-------------|---------|---------|---------|----------|
| S | SUNCA I PLANETA | | PROLJEČNE TACKE T | | MJESECA (C) | Δ popr. | Δ popr. | Δ popr. | |
| | o | f | o | f | | | | | |
| 0 | 8 | 15.0 | 8 | 16.4 | 7 52.5 | 0 | .0 | 60 3.4 | 120 6.7 |
| 1 | 8 | 15.3 | 8 | 16.6 | 7 52.7 | 1 | .1 | 61 3.4 | 121 6.8 |
| 2 | 8 | 15.5 | 8 | 16.9 | 7 52.9 | 2 | .1 | 62 3.5 | 122 6.8 |
| 3 | 8 | 15.8 | 8 | 17.1 | 7 53.2 | 3 | .2 | 63 3.5 | 123 6.9 |
| 4 | 8 | 16.0 | 8 | 17.4 | 7 53.4 | 4 | .2 | 64 3.6 | 124 6.9 |
| 5 | 8 | 16.3 | 8 | 17.6 | 7 53.6 | 5 | .3 | 65 3.6 | 125 7.0 |
| 6 | 8 | 16.5 | 8 | 17.9 | 7 53.9 | 6 | .3 | 66 3.7 | 126 7.0 |
| 7 | 8 | 16.8 | 8 | 18.1 | 7 54.1 | 7 | .4 | 67 3.7 | 127 7.1 |
| 8 | 8 | 17.0 | 8 | 18.4 | 7 54.4 | 8 | .4 | 68 3.8 | 128 7.1 |
| 9 | 8 | 17.3 | 8 | 18.6 | 7 54.6 | 9 | .5 | 69 3.9 | 129 7.2 |
| 10 | 8 | 17.5 | 8 | 18.9 | 7 54.8 | 10 | .6 | 70 3.9 | 130 7.3 |
| 11 | 8 | 17.8 | 8 | 19.1 | 7 55.1 | 11 | .6 | 71 4.0 | 131 7.3 |
| 12 | 8 | 18.0 | 8 | 19.4 | 7 55.3 | 12 | .7 | 72 4.0 | 132 7.4 |
| 13 | 8 | 18.3 | 8 | 19.6 | 7 55.6 | 13 | .7 | 73 4.1 | 133 7.4 |
| 14 | 8 | 18.5 | 8 | 19.9 | 7 55.8 | 14 | .8 | 74 4.1 | 134 7.5 |
| 15 | 8 | 18.8 | 8 | 20.1 | 7 56.0 | 15 | .8 | 75 4.2 | 135 7.5 |
| 16 | 8 | 19.0 | 8 | 20.4 | 7 56.3 | 16 | .9 | 76 4.2 | 136 7.6 |
| 17 | 8 | 19.3 | 8 | 20.6 | 7 56.5 | 17 | .9 | 77 4.3 | 137 7.6 |
| 18 | 8 | 19.5 | 8 | 20.9 | 7 56.7 | 18 | 1.0 | 78 4.4 | 138 7.7 |
| 19 | 8 | 19.8 | 8 | 21.1 | 7 57.0 | 19 | 1.1 | 79 4.4 | 139 7.8 |
| 20 | 8 | 20.0 | 8 | 21.4 | 7 57.2 | 20 | 1.1 | 80 4.5 | 140 7.8 |
| 21 | 8 | 20.3 | 8 | 21.6 | 7 57.5 | 21 | 1.2 | 81 4.5 | 141 7.9 |
| 22 | 8 | 20.5 | 8 | 21.9 | 7 57.7 | 22 | 1.2 | 82 4.6 | 142 7.9 |
| 23 | 8 | 20.8 | 8 | 22.1 | 7 57.9 | 23 | 1.3 | 83 4.6 | 143 8.0 |
| 24 | 8 | 21.0 | 8 | 22.4 | 7 58.2 | 24 | 1.3 | 84 4.7 | 144 8.0 |
| 25 | 8 | 21.3 | 8 | 22.6 | 7 58.4 | 25 | 1.4 | 85 4.7 | 145 8.1 |
| 26 | 8 | 21.5 | 8 | 22.9 | 7 58.7 | 26 | 1.5 | 86 4.8 | 146 8.2 |
| 27 | 8 | 21.8 | 8 | 23.1 | 7 58.9 | 27 | 1.5 | 87 4.9 | 147 8.2 |
| 28 | 8 | 22.0 | 8 | 23.4 | 7 59.1 | 28 | 1.6 | 88 4.9 | 148 8.3 |
| 29 | 8 | 22.3 | 8 | 23.6 | 7 59.4 | 29 | 1.6 | 89 5.0 | 149 8.3 |
| 30 | 8 | 22.5 | 8 | 23.9 | 7 59.6 | 30 | 1.7 | 90 5.0 | 150 8.4 |
| 31 | 8 | 22.8 | 8 | 24.1 | 7 59.8 | 31 | 1.7 | 91 5.1 | 151 8.4 |
| 32 | 8 | 23.0 | 8 | 24.4 | 8 | .1 | 32 1.8 | 92 5.1 | 152 8.5 |
| 33 | 8 | 23.3 | 8 | 24.6 | 8 | .3 | 33 1.8 | 93 5.2 | 153 8.5 |
| 34 | 8 | 23.5 | 8 | 24.9 | 8 | .6 | 34 1.9 | 94 5.2 | 154 8.6 |
| 35 | 8 | 23.8 | 8 | 25.1 | 8 | .8 | 35 2.0 | 95 5.3 | 155 8.7 |
| 36 | 8 | 24.0 | 8 | 25.4 | 8 | 1.0 | 36 2.0 | 96 5.4 | 156 8.7 |
| 37 | 8 | 24.3 | 8 | 25.7 | 8 | 1.3 | 37 2.1 | 97 5.4 | 157 8.8 |
| 38 | 8 | 24.5 | 8 | 25.9 | 8 | 1.5 | 38 2.1 | 98 5.5 | 158 8.8 |
| 39 | 8 | 24.8 | 8 | 26.2 | 8 | 1.8 | 39 2.2 | 99 5.5 | 159 8.9 |
| 40 | 8 | 25.0 | 8 | 26.4 | 8 | 2.0 | 40 2.2 | 100 5.6 | 160 8.9 |
| 41 | 8 | 25.3 | 8 | 26.7 | 8 | 2.2 | 41 2.3 | 101 5.6 | 161 9.0 |
| 42 | 8 | 25.5 | 8 | 26.9 | 8 | 2.5 | 42 2.3 | 102 5.7 | 162 9.0 |
| 43 | 8 | 25.8 | 8 | 27.2 | 8 | 2.7 | 43 2.4 | 103 5.8 | 163 9.1 |
| 44 | 8 | 26.0 | 8 | 27.4 | 8 | 2.9 | 44 2.5 | 104 5.8 | 164 9.2 |
| 45 | 8 | 26.3 | 8 | 27.7 | 8 | 3.2 | 45 2.5 | 105 5.9 | 165 9.2 |
| 46 | 8 | 26.5 | 8 | 27.9 | 8 | 3.4 | 46 2.6 | 106 5.9 | 166 9.3 |
| 47 | 8 | 26.8 | 8 | 28.2 | 8 | 3.7 | 47 2.6 | 107 6.0 | 167 9.3 |
| 48 | 8 | 27.0 | 8 | 28.4 | 8 | 3.9 | 48 2.7 | 108 6.0 | 168 9.4 |
| 49 | 8 | 27.3 | 8 | 28.7 | 8 | 4.1 | 49 2.7 | 109 6.1 | 169 9.4 |
| 50 | 8 | 27.5 | 8 | 28.9 | 8 | 4.4 | 50 2.8 | 110 6.1 | 170 9.5 |
| 51 | 8 | 27.8 | 8 | 29.2 | 8 | 4.6 | 51 2.8 | 111 6.2 | 171 9.5 |
| 52 | 8 | 28.0 | 8 | 29.4 | 8 | 4.9 | 52 2.9 | 112 6.3 | 172 9.6 |
| 53 | 8 | 28.3 | 8 | 29.7 | 8 | 5.1 | 53 3.0 | 113 6.3 | 173 9.7 |
| 54 | 8 | 28.5 | 8 | 29.9 | 8 | 5.3 | 54 3.0 | 114 6.4 | 174 9.7 |
| 55 | 8 | 28.8 | 8 | 30.2 | 8 | 5.6 | 55 3.1 | 115 6.4 | 175 9.8 |
| 56 | 8 | 29.0 | 8 | 30.4 | 8 | 5.8 | 56 3.1 | 116 6.5 | 176 9.8 |
| 57 | 8 | 29.3 | 8 | 30.7 | 8 | 6.1 | 57 3.2 | 117 6.5 | 177 9.9 |
| 58 | 8 | 29.5 | 8 | 30.9 | 8 | 6.3 | 58 3.2 | 118 6.6 | 178 9.9 |
| 59 | 8 | 29.8 | 8 | 31.2 | 8 | 6.5 | 59 3.3 | 119 6.6 | 179 10.0 |
| 60 | 8 | 30.0 | 8 | 31.4 | 8 | 6.8 | 60 3.4 | 120 6.7 | 180 10.1 |

0 h 34 min

| POPRAVKA ČASOVNOG UGLA | | | | POPRAVKA DRUGOG REDA za časovni ugao i deklinaciju Sunca, Mjeseca i planeta | | | |
|------------------------|-----------------|----------------------|----------------|---|-------|-----|-------|
| s | SUNCA I PLANETA | PROLJEĆNE TAKČE ° | MJESECA (') | Δ | popr. | Δ | popr. |
| | o ' " | o ' " | o ' " | | ' " | ' " | ' " |
| 0 | 8 30.0 | 8 31.4 | 8 6.8 | 0 | .0 | 60 | 3.5 |
| 1 | 8 30.3 | 8 31.7 | 8 7.0 | 1 | .1 | 61 | 3.5 |
| 2 | 8 30.5 | 8 31.9 | 8 7.2 | 2 | .1 | 62 | 3.6 |
| 3 | 8 30.8 | 8 32.2 | 8 7.5 | 3 | .2 | 63 | 3.6 |
| 4 | 8 31.0 | 8 32.4 | 8 7.7 | 4 | .2 | 64 | 3.7 |
| 5 | 8 31.3 | 8 32.7 | 8 8.0 | 5 | .3 | 65 | 3.7 |
| 6 | 8 31.5 | 8 32.9 | 8 8.2 | 6 | .3 | 66 | 3.8 |
| 7 | 8 31.8 | 8 33.2 | 8 8.4 | 7 | .4 | 67 | 3.9 |
| 8 | 8 32.0 | 8 33.4 | 8 8.7 | 8 | .5 | 68 | 3.9 |
| 9 | 8 32.3 | 8 33.7 | 8 8.9 | 9 | .5 | 69 | 4.0 |
| 10 | 8 32.5 | 8 33.9 | 8 9.2 | 10 | .6 | 70 | 4.0 |
| 11 | 8 32.8 | 8 34.2 | 8 9.4 | 11 | .6 | 71 | 4.1 |
| 12 | 8 33.0 | 8 34.4 | 8 9.6 | 12 | .7 | 72 | 4.1 |
| 13 | 8 33.3 | 8 34.7 | 8 9.9 | 13 | .7 | 73 | 4.2 |
| 14 | 8 33.5 | 8 34.9 | 8 10.1 | 14 | .8 | 74 | 4.3 |
| 15 | 8 33.8 | 8 35.2 | 8 10.3 | 15 | .9 | 75 | 4.3 |
| 16 | 8 34.0 | 8 35.4 | 8 10.6 | 16 | .9 | 76 | 4.4 |
| 17 | 8 34.3 | 8 35.7 | 8 10.8 | 17 | 1.0 | 77 | 4.4 |
| 18 | 8 34.5 | 8 35.9 | 8 11.1 | 18 | 1.0 | 78 | 4.5 |
| 19 | 8 34.8 | 8 36.2 | 8 11.3 | 19 | 1.1 | 79 | 4.5 |
| 20 | 8 35.0 | 8 36.4 | 8 11.5 | 20 | 1.2 | 80 | 4.6 |
| 21 | 8 35.3 | 8 36.7 | 8 11.8 | 21 | 1.2 | 81 | 4.7 |
| 22 | 8 35.5 | 8 36.9 | 8 12.0 | 22 | 1.3 | 82 | 4.7 |
| 23 | 8 35.8 | 8 37.2 | 8 12.3 | 23 | 1.3 | 83 | 4.8 |
| 24 | 8 36.0 | 8 37.4 | 8 12.5 | 24 | 1.4 | 84 | 4.8 |
| 25 | 8 36.3 | 8 37.7 | 8 12.7 | 25 | 1.4 | 85 | 4.9 |
| 26 | 8 36.5 | 8 37.9 | 8 13.0 | 26 | 1.5 | 86 | 4.9 |
| 27 | 8 36.8 | 8 38.2 | 8 13.2 | 27 | 1.6 | 87 | 5.0 |
| 28 | 8 37.0 | 8 38.4 | 8 13.4 | 28 | 1.6 | 88 | 5.1 |
| 29 | 8 37.3 | 8 38.7 | 8 13.7 | 29 | 1.7 | 89 | 5.1 |
| 30 | 8 37.5 | 8 38.9 | 8 13.9 | 30 | 1.7 | 90 | 5.2 |
| 31 | 8 37.8 | 8 39.2 | 8 14.2 | 31 | 1.8 | 91 | 5.2 |
| 32 | 8 38.0 | 8 39.4 | 8 14.4 | 32 | 1.8 | 92 | 5.3 |
| 33 | 8 38.3 | 8 39.7 | 8 14.6 | 33 | 1.9 | 93 | 5.3 |
| 34 | 8 38.5 | 8 39.9 | 8 14.9 | 34 | 2.0 | 94 | 5.4 |
| 35 | 8 38.8 | 8 40.2 | 8 15.1 | 35 | 2.0 | 95 | 5.5 |
| 36 | 8 39.0 | 8 40.4 | 8 15.4 | 36 | 2.1 | 96 | 5.5 |
| 37 | 8 39.3 | 8 40.7 | 8 15.6 | 37 | 2.1 | 97 | 5.6 |
| 38 | 8 39.5 | 8 40.9 | 8 15.8 | 38 | 2.2 | 98 | 5.6 |
| 39 | 8 39.8 | 8 41.2 | 8 16.1 | 39 | 2.2 | 99 | 5.7 |
| 40 | 8 40.0 | 8 41.4 | 8 16.3 | 40 | 2.3 | 100 | 5.8 |
| 41 | 8 40.3 | 8 41.7 | 8 16.5 | 41 | 2.4 | 101 | 5.8 |
| 42 | 8 40.5 | 8 41.9 | 8 16.8 | 42 | 2.4 | 102 | 5.9 |
| 43 | 8 40.8 | 8 42.2 | 8 17.0 | 43 | 2.5 | 103 | 5.9 |
| 44 | 8 41.0 | 8 42.4 | 8 17.3 | 44 | 2.5 | 104 | 6.0 |
| 45 | 8 41.3 | 8 42.7 | 8 17.5 | 45 | 2.6 | 105 | 6.0 |
| 46 | 8 41.5 | 8 42.9 | 8 17.7 | 46 | 2.6 | 106 | 6.1 |
| 47 | 8 41.8 | 8 43.2 | 8 18.0 | 47 | 2.7 | 107 | 6.2 |
| 48 | 8 42.0 | 8 43.5 | 8 18.2 | 48 | 2.8 | 108 | 6.2 |
| 49 | 8 42.3 | 8 43.7 | 8 18.5 | 49 | 2.8 | 109 | 6.3 |
| 50 | 8 42.5 | 8 44.0 | 8 18.7 | 50 | 2.9 | 110 | 6.3 |
| 51 | 8 42.8 | 8 44.2 | 8 18.9 | 51 | 2.9 | 111 | 6.4 |
| 52 | 8 43.0 | 8 44.5 | 8 19.2 | 52 | 3.0 | 112 | 6.4 |
| 53 | 8 43.3 | 8 44.7 | 8 19.4 | 53 | 3.0 | 113 | 6.5 |
| 54 | 8 43.5 | 8 45.0 | 8 19.7 | 54 | 3.1 | 114 | 6.5 |
| 55 | 8 43.8 | 8 45.2 | 8 19.9 | 55 | 3.2 | 115 | 6.6 |
| 56 | 8 44.0 | 8 45.5 | 8 20.1 | 56 | 3.2 | 116 | 6.7 |
| 57 | 8 44.3 | 8 45.7 | 8 20.4 | 57 | 3.3 | 117 | 6.7 |
| 58 | 8 44.5 | 8 46.0 | 8 20.6 | 58 | 3.3 | 118 | 6.8 |
| 59 | 8 44.8 | 8 46.2 | 8 20.8 | 59 | 3.4 | 119 | 6.8 |
| 60 | 8 45.0 | 8 46.5 | 8 21.1 | 60 | 3.5 | 120 | 6.9 |

0 h 35 min

| POPRAVKA ČASOVNOG UGLA | | | | POPRAVKA DRUGOG REDA za časovni ugao i deklinaciju Sunca, Mjeseca i planeta | | | |
|------------------------|-----------------|----------------------|----------------|---|-------|-----|-------|
| s | SUNCA I PLANETA | PROLJEĆNE TAKČE ° | MJESECA (') | Δ | popr. | Δ | popr. |
| | o ' " | o ' " | o ' " | | ' " | ' " | ' " |
| 0 | 8 45.0 | 8 46.5 | 8 21.1 | 0 | .0 | 60 | 3.6 |
| 1 | 8 45.3 | 8 46.7 | 8 21.3 | 1 | .1 | 61 | 3.6 |
| 2 | 8 45.5 | 8 47.0 | 8 21.6 | 2 | .1 | 62 | 3.7 |
| 3 | 8 45.8 | 8 47.2 | 8 21.8 | 3 | .2 | 63 | 3.7 |
| 4 | 8 46.0 | 8 47.5 | 8 22.0 | 4 | .2 | 64 | 3.8 |
| 5 | 8 46.3 | 8 47.7 | 8 22.3 | 5 | .3 | 65 | 3.8 |
| 6 | 8 46.5 | 8 48.0 | 8 22.5 | 6 | .4 | 66 | 3.9 |
| 7 | 8 46.8 | 8 48.2 | 8 22.8 | 7 | .4 | 67 | 4.0 |
| 8 | 8 47.0 | 8 48.5 | 8 23.0 | 8 | .5 | 68 | 4.0 |
| 9 | 8 47.3 | 8 48.7 | 8 23.2 | 9 | .5 | 69 | 4.1 |
| 10 | 8 47.5 | 8 49.0 | 8 23.5 | 10 | .6 | 70 | 4.1 |
| 11 | 8 47.8 | 8 49.2 | 8 23.7 | 11 | .7 | 71 | 4.2 |
| 12 | 8 48.0 | 8 49.5 | 8 23.9 | 12 | .7 | 72 | 4.3 |
| 13 | 8 48.3 | 8 49.7 | 8 24.2 | 13 | .8 | 73 | 4.3 |
| 14 | 8 48.5 | 8 50.0 | 8 24.4 | 14 | .8 | 74 | 4.4 |
| 15 | 8 48.8 | 8 50.2 | 8 24.7 | 15 | .9 | 75 | 4.4 |
| 16 | 8 49.0 | 8 50.5 | 8 24.9 | 16 | .9 | 76 | 4.5 |
| 17 | 8 49.3 | 8 50.7 | 8 25.1 | 17 | 1.0 | 77 | 4.6 |
| 18 | 8 49.5 | 8 51.0 | 8 25.4 | 18 | 1.1 | 78 | 4.6 |
| 19 | 8 49.8 | 8 51.2 | 8 25.6 | 19 | 1.1 | 79 | 4.7 |
| 20 | 8 50.0 | 8 51.5 | 8 25.9 | 20 | 1.2 | 80 | 4.7 |
| 21 | 8 50.3 | 8 51.7 | 8 26.1 | 21 | 1.2 | 81 | 4.8 |
| 22 | 8 50.5 | 8 52.0 | 8 26.3 | 22 | 1.3 | 82 | 4.9 |
| 23 | 8 50.8 | 8 52.2 | 8 26.6 | 23 | 1.4 | 83 | 4.9 |
| 24 | 8 51.0 | 8 52.5 | 8 26.8 | 24 | 1.4 | 84 | 5.0 |
| 25 | 8 51.3 | 8 52.7 | 8 27.0 | 25 | 1.5 | 85 | 5.0 |
| 26 | 8 51.5 | 8 53.0 | 8 27.3 | 26 | 1.5 | 86 | 5.1 |
| 27 | 8 51.8 | 8 53.2 | 8 27.5 | 27 | 1.6 | 87 | 5.1 |
| 28 | 8 52.0 | 8 53.5 | 8 27.8 | 28 | 1.7 | 88 | 5.2 |
| 29 | 8 52.3 | 8 53.7 | 8 28.0 | 29 | 1.7 | 89 | 5.3 |
| 30 | 8 52.5 | 8 54.0 | 8 28.2 | 30 | 1.8 | 90 | 5.3 |
| 31 | 8 52.8 | 8 54.2 | 8 28.5 | 31 | 1.8 | 91 | 5.4 |
| 32 | 8 53.0 | 8 54.5 | 8 28.7 | 32 | 1.9 | 92 | 5.4 |
| 33 | 8 53.3 | 8 54.7 | 8 29.0 | 33 | 2.0 | 93 | 5.5 |
| 34 | 8 53.5 | 8 55.0 | 8 29.2 | 34 | 2.0 | 94 | 5.6 |
| 35 | 8 53.8 | 8 55.2 | 8 29.4 | 35 | 2.1 | 95 | 5.6 |
| 36 | 8 54.0 | 8 55.5 | 8 29.7 | 36 | 2.1 | 96 | 5.7 |
| 37 | 8 54.3 | 8 55.7 | 8 29.9 | 37 | 2.2 | 97 | 5.7 |
| 38 | 8 54.5 | 8 56.0 | 8 30.2 | 38 | 2.2 | 98 | 5.8 |
| 39 | 8 54.8 | 8 56.2 | 8 30.4 | 39 | 2.3 | 99 | 5.9 |
| 40 | 8 55.0 | 8 56.5 | 8 30.6 | 40 | 2.4 | 100 | 5.9 |
| 41 | 8 55.3 | 8 56.7 | 8 30.9 | 41 | 2.4 | 101 | 6.0 |
| 42 | 8 55.5 | 8 57.0 | 8 31.1 | 42 | 2.5 | 102 | 6.0 |
| 43 | 8 55.8 | 8 57.2 | 8 31.3 | 43 | 2.5 | 103 | 6.1 |
| 44 | 8 56.0 | 8 57.5 | 8 31.6 | 44 | 2.6 | 104 | 6.2 |
| 45 | 8 56.3 | 8 57.7 | 8 31.8 | 45 | 2.7 | 105 | 6.2 |
| 46 | 8 56.5 | 8 58.0 | 8 32.1 | 46 | 2.7 | 106 | 6.3 |
| 47 | 8 56.8 | 8 58.2 | 8 32.3 | 47 | 2.8 | 107 | 6.3 |
| 48 | 8 57.0 | 8 58.5 | 8 32.5 | 48 | 2.8 | 108 | 6.4 |
| 49 | 8 57.3 | 8 58.7 | 8 32.8 | 49 | 2.9 | 109 | 6.4 |
| 50 | 8 57.5 | 8 59.0 | 8 33.0 | 50 | 3.0 | 110 | 6.5 |
| 51 | 8 57.8 | 8 59.2 | 8 33.3 | 51 | 3.0 | 111 | 6.6 |
| 52 | 8 58.0 | 8 59.5 | 8 33.5 | 52 | 3.1 | 112 | 6.6 |
| 53 | 8 58.3 | 8 59.7 | 8 33.7 | 53 | 3.1 | 113 | 6.7 |
| 54 | 8 58.5 | 8 60.0 | 8 34.0 | 54 | 3.2 | 114 | 6.7 |
| 55 | 8 58.8 | 9 .2 | 8 34.2 | 55 | 3.3 | 115 | 6.8 |
| 56 | 8 59.0 | 9 .5 | 8 34.4 | 56 | 3.3 | 116 | 6.9 |
| 57 | 8 59.3 | 9 .7 | 8 34.7 | 57 | 3.4 | 117 | 6.9 |
| 58 | 8 59.5 | 9 1.0 | 8 34.9 | 58 | 3.4 | 118 | 7.0 |
| 59 | 8 59.8 | 9 1.2 | 8 35.2 | 59 | 3.5 | 119 | 7.0 |
| 60 | 9 .0 | 9 1.5 | 8 35.4 | 60 | 3.6 | 120 | 7.1 |

0 h 36 min

| POPRAVKA ČASOVNOG UGLA | | | POPRAVKA DRUGOG REDA za časovni ugao i deklinaciju Sunca, Mjeseca i planeta | | | | | | |
|------------------------|-----------------|--------------------|---|----|-------|-----|-------|-----|-------|
| s | SUNCA I PLANETA | PROLJEČNE TACKE T' | MJESECA (| Δ | popr. | Δ | popr. | Δ | popr. |
| | o ′ | o ′ | o ′ | ′ | ′ | ′ | ′ | ′ | ′ |
| 0 | 9 0 | 9 1.5 | 8 35.4 | 0 | .0 | 60 | 3.7 | 120 | 7.3 |
| 1 | 9 .3 | 9 1.8 | 8 35.6 | 1 | .1 | 61 | 3.7 | 121 | 7.4 |
| 2 | 9 .5 | 9 2.0 | 8 35.9 | 2 | .1 | 62 | 3.8 | 122 | 7.4 |
| 3 | 9 .8 | 9 2.3 | 8 36.1 | 3 | .2 | 63 | 3.8 | 123 | 7.5 |
| 4 | 9 1.0 | 9 2.5 | 8 36.4 | 4 | .2 | 64 | 3.9 | 124 | 7.5 |
| 5 | 9 1.3 | 9 2.8 | 8 36.6 | 5 | .3 | 65 | 4.0 | 125 | 7.6 |
| 6 | 9 1.5 | 9 3.0 | 8 36.8 | 6 | .4 | 66 | 4.0 | 126 | 7.7 |
| 7 | 9 1.8 | 9 3.3 | 8 37.1 | 7 | .4 | 67 | 4.1 | 127 | 7.7 |
| 8 | 9 2.0 | 9 3.5 | 8 37.3 | 8 | .5 | 68 | 4.1 | 128 | 7.8 |
| 9 | 9 2.3 | 9 3.8 | 8 37.5 | 9 | .5 | 69 | 4.2 | 129 | 7.8 |
| 10 | 9 2.5 | 9 4.0 | 8 37.8 | 10 | .6 | 70 | 4.3 | 130 | 7.9 |
| 11 | 9 2.8 | 9 4.3 | 8 38.0 | 11 | .7 | 71 | 4.3 | 131 | 8.0 |
| 12 | 9 3.0 | 9 4.5 | 8 38.3 | 12 | .7 | 72 | 4.4 | 132 | 8.0 |
| 13 | 9 3.3 | 9 4.8 | 8 38.5 | 13 | .8 | 73 | 4.4 | 133 | 8.1 |
| 14 | 9 3.5 | 9 5.0 | 8 38.7 | 14 | .9 | 74 | 4.5 | 134 | 8.2 |
| 15 | 9 3.8 | 9 5.3 | 8 39.0 | 15 | .9 | 75 | 4.6 | 135 | 8.2 |
| 16 | 9 4.0 | 9 5.5 | 8 39.2 | 16 | 1.0 | 76 | 4.6 | 136 | 8.3 |
| 17 | 9 4.3 | 9 5.8 | 8 39.5 | 17 | 1.0 | 77 | 4.7 | 137 | 8.3 |
| 18 | 9 4.5 | 9 6.0 | 8 39.7 | 18 | 1.1 | 78 | 4.7 | 138 | 8.4 |
| 19 | 9 4.8 | 9 6.3 | 8 39.9 | 19 | 1.2 | 79 | 4.8 | 139 | 8.5 |
| 20 | 9 5.0 | 9 6.5 | 8 40.2 | 20 | 1.2 | 80 | 4.9 | 140 | 8.5 |
| 21 | 9 5.3 | 9 6.8 | 8 40.4 | 21 | 1.3 | 81 | 4.9 | 141 | 8.6 |
| 22 | 9 5.5 | 9 7.0 | 8 40.6 | 22 | 1.3 | 82 | 5.0 | 142 | 8.6 |
| 23 | 9 5.8 | 9 7.3 | 8 40.9 | 23 | 1.4 | 83 | 5.0 | 143 | 8.7 |
| 24 | 9 6.0 | 9 7.5 | 8 41.1 | 24 | 1.5 | 84 | 5.1 | 144 | 8.8 |
| 25 | 9 6.3 | 9 7.8 | 8 41.4 | 25 | 1.5 | 85 | 5.2 | 145 | 8.8 |
| 26 | 9 6.5 | 9 8.0 | 8 41.6 | 26 | 1.6 | 86 | 5.2 | 146 | 8.9 |
| 27 | 9 6.8 | 9 8.3 | 8 41.8 | 27 | 1.6 | 87 | 5.3 | 147 | 8.9 |
| 28 | 9 7.0 | 9 8.5 | 8 42.1 | 28 | 1.7 | 88 | 5.4 | 148 | 9.0 |
| 29 | 9 7.3 | 9 8.8 | 8 42.3 | 29 | 1.8 | 89 | 5.4 | 149 | 9.1 |
| 30 | 9 7.5 | 9 9.0 | 8 42.6 | 30 | 1.8 | 90 | 5.5 | 150 | 9.1 |
| 31 | 9 7.8 | 9 9.3 | 8 42.8 | 31 | 1.9 | 91 | 5.5 | 151 | 9.2 |
| 32 | 9 8.0 | 9 9.5 | 8 43.0 | 32 | 1.9 | 92 | 5.6 | 152 | 9.2 |
| 33 | 9 8.3 | 9 9.8 | 8 43.3 | 33 | 2.0 | 93 | 5.7 | 153 | 9.3 |
| 34 | 9 8.5 | 9 10.0 | 8 43.5 | 34 | 2.1 | 94 | 5.7 | 154 | 9.4 |
| 35 | 9 8.8 | 9 10.3 | 8 43.8 | 35 | 2.1 | 95 | 5.8 | 155 | 9.4 |
| 36 | 9 9.0 | 9 10.5 | 8 44.0 | 36 | 2.2 | 96 | 5.8 | 156 | 9.5 |
| 37 | 9 9.3 | 9 10.8 | 8 44.2 | 37 | 2.3 | 97 | 5.9 | 157 | 9.6 |
| 38 | 9 9.5 | 9 11.0 | 8 44.5 | 38 | 2.3 | 98 | 6.0 | 158 | 9.6 |
| 39 | 9 9.8 | 9 11.3 | 8 44.7 | 39 | 2.4 | 99 | 6.0 | 159 | 9.7 |
| 40 | 9 10.0 | 9 11.5 | 8 44.9 | 40 | 2.4 | 100 | 6.1 | 160 | 9.7 |
| 41 | 9 10.3 | 9 11.8 | 8 45.2 | 41 | 2.5 | 101 | 6.1 | 161 | 9.8 |
| 42 | 9 10.5 | 9 12.0 | 8 45.4 | 42 | 2.6 | 102 | 6.2 | 162 | 9.9 |
| 43 | 9 10.8 | 9 12.3 | 8 45.7 | 43 | 2.6 | 103 | 6.3 | 163 | 9.9 |
| 44 | 9 11.0 | 9 12.5 | 8 45.9 | 44 | 2.7 | 104 | 6.3 | 164 | 10.0 |
| 45 | 9 11.3 | 9 12.8 | 8 46.1 | 45 | 2.7 | 105 | 6.4 | 165 | 10.0 |
| 46 | 9 11.5 | 9 13.0 | 8 46.4 | 46 | 2.8 | 106 | 6.4 | 166 | 10.1 |
| 47 | 9 11.8 | 9 13.3 | 8 46.6 | 47 | 2.9 | 107 | 6.5 | 167 | 10.2 |
| 48 | 9 12.0 | 9 13.5 | 8 46.9 | 48 | 2.9 | 108 | 6.6 | 168 | 10.2 |
| 49 | 9 12.3 | 9 13.8 | 8 47.1 | 49 | 3.0 | 109 | 6.6 | 169 | 10.3 |
| 50 | 9 12.5 | 9 14.0 | 8 47.3 | 50 | 3.0 | 110 | 6.7 | 170 | 10.3 |
| 51 | 9 12.8 | 9 14.3 | 8 47.6 | 51 | 3.1 | 111 | 6.8 | 171 | 10.4 |
| 52 | 9 13.0 | 9 14.5 | 8 47.8 | 52 | 3.2 | 112 | 6.8 | 172 | 10.5 |
| 53 | 9 13.3 | 9 14.8 | 8 48.0 | 53 | 3.2 | 113 | 6.9 | 173 | 10.5 |
| 54 | 9 13.5 | 9 15.0 | 8 48.3 | 54 | 3.3 | 114 | 6.9 | 174 | 10.6 |
| 55 | 9 13.8 | 9 15.3 | 8 48.5 | 55 | 3.3 | 115 | 7.0 | 175 | 10.6 |
| 56 | 9 14.0 | 9 15.5 | 8 48.8 | 56 | 3.4 | 116 | 7.1 | 176 | 10.7 |
| 57 | 9 14.3 | 9 15.8 | 8 49.0 | 57 | 3.5 | 117 | 7.1 | 177 | 10.8 |
| 58 | 9 14.5 | 9 16.0 | 8 49.2 | 58 | 3.5 | 118 | 7.2 | 178 | 10.8 |
| 59 | 9 14.8 | 9 16.3 | 8 49.5 | 59 | 3.6 | 119 | 7.2 | 179 | 10.9 |
| 60 | 9 15.0 | 9 16.5 | 8 49.7 | 60 | 3.7 | 120 | 7.3 | 180 | 11.0 |

0 h 37 min

| POPRAVKA ČASOVNOG UGLA | | | POPRAVKA DRUGOG REDA za časovni ugao i deklinaciju Sunca, Mjeseca i planeta | | | | | | |
|------------------------|-----------------|--------------------|---|----|-------|-----|-------|-----|-------|
| s | SUNCA I PLANETA | PROLJEČNE TACKE T' | MJESECA (| Δ | popr. | Δ | popr. | Δ | popr. |
| | o ′ | o ′ | o ′ | ′ | ′ | ′ | ′ | ′ | ′ |
| 0 | 9 15.0 | 9 16.5 | 8 49.7 | 0 | .0 | 60 | 3.8 | 120 | 7.5 |
| 1 | 9 15.3 | 9 16.8 | 8 50.0 | 1 | .1 | 61 | 3.8 | 121 | 7.6 |
| 2 | 9 15.5 | 9 17.0 | 8 50.2 | 2 | .1 | 62 | 3.9 | 122 | 7.6 |
| 3 | 9 15.8 | 9 17.3 | 8 50.4 | 3 | .2 | 63 | 3.9 | 123 | 7.7 |
| 4 | 9 16.0 | 9 17.5 | 8 50.7 | 4 | .3 | 64 | 4.0 | 124 | 7.8 |
| 5 | 9 16.3 | 9 17.8 | 8 50.9 | 5 | .3 | 65 | 4.1 | 125 | 7.8 |
| 6 | 9 16.5 | 9 18.0 | 8 51.1 | 6 | .4 | 66 | 4.1 | 126 | 7.9 |
| 7 | 9 16.8 | 9 18.3 | 8 51.4 | 7 | .4 | 67 | 4.2 | 127 | 7.9 |
| 8 | 9 17.0 | 9 18.5 | 8 51.6 | 8 | .5 | 68 | 4.3 | 128 | 8.0 |
| 9 | 9 17.3 | 9 18.8 | 8 51.9 | 9 | .6 | 69 | 4.3 | 129 | 8.1 |
| 10 | 9 17.5 | 9 19.0 | 8 52.1 | 10 | .6 | 70 | 4.4 | 130 | 8.1 |
| 11 | 9 17.8 | 9 19.3 | 8 52.3 | 11 | .7 | 71 | 4.4 | 131 | 8.2 |
| 12 | 9 18.0 | 9 19.6 | 8 52.6 | 12 | .8 | 72 | 4.5 | 132 | 8.3 |
| 13 | 9 18.3 | 9 19.8 | 8 52.8 | 13 | .8 | 73 | 4.6 | 133 | 8.3 |
| 14 | 9 18.5 | 9 20.1 | 8 53.1 | 14 | .9 | 74 | 4.6 | 134 | 8.4 |
| 15 | 9 18.8 | 9 20.3 | 8 53.3 | 15 | .9 | 75 | 4.7 | 135 | 8.4 |
| 16 | 9 19.0 | 9 20.6 | 8 53.5 | 16 | 1.0 | 76 | 4.8 | 136 | 8.5 |
| 17 | 9 19.3 | 9 20.8 | 8 53.8 | 17 | 1.1 | 77 | 4.8 | 137 | 8.6 |
| 18 | 9 19.5 | 9 21.1 | 8 54.0 | 18 | 1.1 | 78 | 4.9 | 138 | 8.6 |
| 19 | 9 19.8 | 9 21.3 | 8 54.3 | 19 | 1.2 | 79 | 4.9 | 139 | 8.7 |
| 20 | 9 20.0 | 9 21.6 | 8 54.5 | 20 | 1.3 | 80 | 5.0 | 140 | 8.8 |
| 21 | 9 20.3 | 9 21.8 | 8 54.7 | 21 | 1.3 | 81 | 5.1 | 141 | 8.8 |
| 22 | 9 20.5 | 9 22.1 | 8 55.0 | 22 | 1.4 | 82 | 5.1 | 142 | 8.9 |
| 23 | 9 20.8 | 9 22.3 | 8 55.2 | 23 | 1.4 | 83 | 5.2 | 143 | 8.9 |
| 24 | 9 21.0 | 9 22.6 | 8 55.4 | 24 | 1.5 | 84 | 5.3 | 144 | 9.0 |
| 25 | 9 21.3 | 9 22.8 | 8 55.7 | 25 | 1.6 | 85 | 5.3 | 145 | 9.1 |
| 26 | 9 21.5 | 9 23.1 | 8 55.9 | 26 | 1.6 | 86 | 5.4 | 146 | 9.1 |
| 27 | 9 21.8 | 9 23.3 | 8 56.2 | 27 | 1.7 | 87 | 5.4 | 147 | 9.2 |
| 28 | 9 22.0 | 9 23.6 | 8 56.4 | 28 | 1.8 | 88 | 5.5 | 148 | 9.3 |
| 29 | 9 22.3 | 9 23.8 | 8 56.6 | 29 | 1.8 | 89 | 5.6 | 149 | 9.3 |
| 30 | 9 22.5 | 9 24.1 | 8 56.9 | 30 | 1.9 | 90 | 5.6 | 150 | 9.4 |
| 31 | 9 22.8 | 9 24.3 | 8 57.1 | 31 | 1.9 | 91 | 5.7 | 151 | 9.4 |
| 32 | 9 23.0 | 9 24.6 | 8 57.4 | 32 | 2.0 | 92 | 5.8 | 152 | 9.5 |
| 33 | 9 23.3 | 9 24.8 | 8 57.6 | 33 | 2.1 | 93 | 5.8 | 153 | 9.6 |
| 34 | 9 23.5 | 9 25.1 | 8 57.8 | 34 | 2.1 | 94 | 5.9 | 154 | 9.6 |
| 35 | 9 23.8 | 9 25.3 | 8 58.1 | 35 | 2.2 | 95 | 5.9 | 155 | 9.7 |
| 36 | 9 24.0 | 9 25.6 | 8 58.3 | 36 | 2.3 | 96 | 6.0 | 156 | 9.8 |
| 37 | 9 24.3 | 9 25.8 | 8 58.5 | 37 | 2.3 | 97 | 6.1 | 157 | 9.8 |
| 38 | 9 24.5 | 9 26.1 | 8 58.8 | 38 | 2.4 | 98 | 6.1 | 158 | 9.9 |
| 39 | 9 24.8 | 9 26.3 | 8 59.0 | 39 | 2.4 | 99 | 6.2 | 159 | 9.9 |
| 40 | 9 25.0 | 9 26.6 | 8 59.3 | 40 | 2.5 | 100 | 6.3 | 160 | 10.0 |
| 41 | 9 25.3 | 9 26.8 | 8 59.5 | 41 | 2.6 | 101 | 6.3 | 161 | 10.1 |
| 42 | 9 25.5 | 9 27.1 | 8 59.7 | 42 | 2.6 | 102 | 6.4 | 162 | 10.1 |
| 43 | 9 25.8 | 9 27.3 | 8 60.0 | 43 | 2.7 | 103 | 6.4 | 163 | 10.2 |
| 44 | 9 26.0 | 9 27.6 | 9 .2 | 44 | 2.8 | 104 | 6.5 | 164 | 10.3 |
| 45 | 9 26.3 | 9 27.8 | 9 .5 | 45 | 2.8 | 105 | 6.6 | 165 | 10.3 |
| 46 | 9 26.5 | 9 28.1 | 9 .7 | 46 | 2.9 | 106 | 6.6 | 166 | 10.4 |
| 47 | 9 26.8 | 9 28.3 | 9 .9 | 47 | 2.9 | 107 | 6.7 | 167 | 10.4 |
| 48 | 9 27.0 | 9 28.6 | 9 1.2 | 48 | 3.0 | 108 | 6.8 | 168 | 10.5 |
| 49 | 9 27.3 | 9 28.8 | 9 1.4 | 49 | 3.1 | 109 | 6.8 | 169 | 10.6 |
| 50 | 9 27.5 | 9 29.1 | 9 1.6 | 50 | 3.1 | 110 | 6.9 | 170 | 10.6 |
| 51 | 9 27.8 | 9 29.3 | 9 1.9 | 51 | 3.2 | 111 | 6.9 | 171 | 10.7 |
| 52 | 9 28.0 | 9 29.6 | 9 2.1 | 52 | 3.3 | 112 | 7.0 | 172 | 10.8 |
| 53 | 9 28.3 | 9 29.8 | 9 2.4 | 53 | 3.3 | 113 | 7.1 | 173 | 10.8 |
| 54 | 9 28.5 | 9 30.1 | 9 2.6 | 54 | 3.4 | 114 | 7.1 | 174 | 10.9 |
| 55 | 9 28.8 | 9 30.3 | 9 2.8 | 55 | 3.4 | 115 | 7.2 | 175 | 10.9 |
| 56 | 9 29.0 | 9 30.6 | 9 3.1 | 56 | 3.5 | 116 | 7.3 | 176 | 11.0 |
| 57 | 9 29.3 | 9 30.8 | 9 3.3 | 57 | 3.6 | 117 | 7.3 | 177 | 11.1 |
| 58 | 9 29.5 | 9 31.1 | 9 3.6 | 58 | 3.6 | 118 | 7.4 | 178 | 11.1 |
| 59 | 9 29.8 | 9 31.3 | 9 3.8 | 59 | 3.7 | 119 | 7.4 | 179 | 11.2 |
| 60 | 9 30.0 | 9 31.6 | 9 4.0 | 60 | 3.8 | 120 | 7.5 | 180 | 11.3 |

| POPRAVKA ČASOVNOG UGLA | | | | POPRAVKA DRUGOG REDA za časovni ugao i deklinaciju Sunca, Mjeseca i planeta | | | | | |
|------------------------|-----------------|--------|-----------------------|---|--------------|---------|----------|---------|---------|
| s | SUNCA I PLANETA | | PROLJEČNE TAČKE °' | | MJESECA (| | Δ popr. | Δ popr. | Δ popr. |
| | o | l | o | l | o | l | | | |
| 0 | 9 30.0 | 9 31.6 | 9 4.0 | 0 | .0 | 60 3.9 | 120 7.7 | | |
| 1 | 9 30.3 | 9 31.8 | 9 4.3 | 1 | .1 | 61 3.9 | 121 7.8 | | |
| 2 | 9 30.5 | 9 32.1 | 9 4.5 | 2 | .1 | 62 4.0 | 122 7.8 | | |
| 3 | 9 30.8 | 9 32.3 | 9 4.7 | 3 | .2 | 63 4.0 | 123 7.9 | | |
| 4 | 9 31.0 | 9 32.6 | 9 5.0 | 4 | .3 | 64 4.1 | 124 8.0 | | |
| 5 | 9 31.3 | 9 32.8 | 9 5.2 | 5 | .3 | 65 4.2 | 125 8.0 | | |
| 6 | 9 31.5 | 9 33.1 | 9 5.5 | 6 | .4 | 66 4.2 | 126 8.1 | | |
| 7 | 9 31.8 | 9 33.3 | 9 5.7 | 7 | .4 | 67 4.3 | 127 8.1 | | |
| 8 | 9 32.0 | 9 33.6 | 9 5.9 | 8 | .5 | 68 4.4 | 128 8.2 | | |
| 9 | 9 32.3 | 9 33.8 | 9 6.2 | 9 | .6 | 69 4.4 | 129 8.3 | | |
| 10 | 9 32.5 | 9 34.1 | 9 6.4 | 10 | .6 | 70 4.5 | 130 8.3 | | |
| 11 | 9 32.8 | 9 34.3 | 9 6.7 | 11 | .7 | 71 4.6 | 131 8.4 | | |
| 12 | 9 33.0 | 9 34.6 | 9 6.9 | 12 | .8 | 72 4.6 | 132 8.5 | | |
| 13 | 9 33.3 | 9 34.8 | 9 7.1 | 13 | .8 | 73 4.7 | 133 8.5 | | |
| 14 | 9 33.5 | 9 35.1 | 9 7.4 | 14 | .9 | 74 4.7 | 134 8.6 | | |
| 15 | 9 33.8 | 9 35.3 | 9 7.6 | 15 | 1.0 | 75 4.8 | 135 8.7 | | |
| 16 | 9 34.0 | 9 35.6 | 9 7.9 | 16 | 1.0 | 76 4.9 | 136 8.7 | | |
| 17 | 9 34.3 | 9 35.8 | 9 8.1 | 17 | 1.1 | 77 4.9 | 137 8.8 | | |
| 18 | 9 34.5 | 9 36.1 | 9 8.3 | 18 | 1.2 | 78 5.0 | 138 8.9 | | |
| 19 | 9 34.8 | 9 36.3 | 9 8.6 | 19 | 1.2 | 79 5.1 | 139 8.9 | | |
| 20 | 9 35.0 | 9 36.6 | 9 8.8 | 20 | 1.3 | 80 5.1 | 140 9.0 | | |
| 21 | 9 35.3 | 9 36.8 | 9 9.0 | 21 | 1.3 | 81 5.2 | 141 9.0 | | |
| 22 | 9 35.5 | 9 37.1 | 9 9.3 | 22 | 1.4 | 82 5.3 | 142 9.1 | | |
| 23 | 9 35.8 | 9 37.3 | 9 9.5 | 23 | 1.5 | 83 5.3 | 143 9.2 | | |
| 24 | 9 36.0 | 9 37.6 | 9 9.8 | 24 | 1.5 | 84 5.4 | 144 9.2 | | |
| 25 | 9 36.3 | 9 37.9 | 9 10.0 | 25 | 1.6 | 85 5.5 | 145 9.3 | | |
| 26 | 9 36.5 | 9 38.1 | 9 10.2 | 26 | 1.7 | 86 5.5 | 146 9.4 | | |
| 27 | 9 36.8 | 9 38.4 | 9 10.5 | 27 | 1.7 | 87 5.6 | 147 9.4 | | |
| 28 | 9 37.0 | 9 38.6 | 9 10.7 | 28 | 1.8 | 88 5.6 | 148 9.5 | | |
| 29 | 9 37.3 | 9 38.9 | 9 11.0 | 29 | 1.9 | 89 5.7 | 149 9.6 | | |
| 30 | 9 37.5 | 9 39.1 | 9 11.2 | 30 | 1.9 | 90 5.8 | 150 9.6 | | |
| 31 | 9 37.8 | 9 39.4 | 9 11.4 | 31 | 2.0 | 91 5.8 | 151 9.7 | | |
| 32 | 9 38.0 | 9 39.6 | 9 11.7 | 32 | 2.1 | 92 5.9 | 152 9.8 | | |
| 33 | 9 38.3 | 9 39.9 | 9 11.9 | 33 | 2.1 | 93 6.0 | 153 9.8 | | |
| 34 | 9 38.5 | 9 40.1 | 9 12.1 | 34 | 2.2 | 94 6.0 | 154 9.9 | | |
| 35 | 9 38.8 | 9 40.4 | 9 12.4 | 35 | 2.2 | 95 6.1 | 155 9.9 | | |
| 36 | 9 39.0 | 9 40.6 | 9 12.6 | 36 | 2.3 | 96 6.2 | 156 10.0 | | |
| 37 | 9 39.3 | 9 40.9 | 9 12.9 | 37 | 2.4 | 97 6.2 | 157 10.1 | | |
| 38 | 9 39.5 | 9 41.1 | 9 13.1 | 38 | 2.4 | 98 6.3 | 158 10.1 | | |
| 39 | 9 39.8 | 9 41.4 | 9 13.3 | 39 | 2.5 | 99 6.4 | 159 10.2 | | |
| 40 | 9 40.0 | 9 41.6 | 9 13.6 | 40 | 2.6 | 100 6.4 | 160 10.3 | | |
| 41 | 9 40.3 | 9 41.9 | 9 13.8 | 41 | 2.6 | 101 6.5 | 161 10.3 | | |
| 42 | 9 40.5 | 9 42.1 | 9 14.1 | 42 | 2.7 | 102 6.5 | 162 10.4 | | |
| 43 | 9 40.8 | 9 42.4 | 9 14.3 | 43 | 2.8 | 103 6.6 | 163 10.5 | | |
| 44 | 9 41.0 | 9 42.6 | 9 14.5 | 44 | 2.8 | 104 6.7 | 164 10.5 | | |
| 45 | 9 41.3 | 9 42.9 | 9 14.8 | 45 | 2.9 | 105 6.7 | 165 10.6 | | |
| 46 | 9 41.5 | 9 43.1 | 9 15.0 | 46 | 3.0 | 106 6.8 | 166 10.7 | | |
| 47 | 9 41.8 | 9 43.4 | 9 15.2 | 47 | 3.0 | 107 6.9 | 167 10.7 | | |
| 48 | 9 42.0 | 9 43.6 | 9 15.5 | 48 | 3.1 | 108 6.9 | 168 10.8 | | |
| 49 | 9 42.3 | 9 43.9 | 9 15.7 | 49 | 3.1 | 109 7.0 | 169 10.8 | | |
| 50 | 9 42.5 | 9 44.1 | 9 16.0 | 50 | 3.2 | 110 7.1 | 170 10.9 | | |
| 51 | 9 42.8 | 9 44.4 | 9 16.2 | 51 | 3.3 | 111 7.1 | 171 11.0 | | |
| 52 | 9 43.0 | 9 44.6 | 9 16.4 | 52 | 3.3 | 112 7.2 | 172 11.0 | | |
| 53 | 9 43.3 | 9 44.9 | 9 16.7 | 53 | 3.4 | 113 7.3 | 173 11.1 | | |
| 54 | 9 43.5 | 9 45.1 | 9 16.9 | 54 | 3.5 | 114 7.3 | 174 11.2 | | |
| 55 | 9 43.8 | 9 45.4 | 9 17.2 | 55 | 3.5 | 115 7.4 | 175 11.2 | | |
| 56 | 9 44.0 | 9 45.6 | 9 17.4 | 56 | 3.6 | 116 7.4 | 176 11.3 | | |
| 57 | 9 44.3 | 9 45.9 | 9 17.6 | 57 | 3.7 | 117 7.5 | 177 11.4 | | |
| 58 | 9 44.5 | 9 46.1 | 9 17.9 | 58 | 3.7 | 118 7.6 | 178 11.4 | | |
| 59 | 9 44.8 | 9 46.4 | 9 18.1 | 59 | 3.8 | 119 7.6 | 179 11.5 | | |
| 60 | 9 45.0 | 9 46.6 | 9 18.4 | 60 | 3.9 | 120 7.7 | 180 11.6 | | |

| POPRAVKA ČASOVNOG UGLA | | | | POPRAVKA DRUGOG REDA za časovni ugao i deklinaciju Sunca, Mjeseca i planeta | | | | | |
|------------------------|-----------------|--------|-----------------------|---|--------------|---------|----------|---------|---------|
| s | SUNCA I PLANETA | | PROLJEČNE TAČKE °' | | MJESECA (| | Δ popr. | Δ popr. | Δ popr. |
| | o | l | o | l | o | l | | | |
| 0 | 9 45.0 | 9 46.6 | 9 18.4 | 0 | .0 | 60 4.0 | 120 7.9 | | |
| 1 | 9 45.3 | 9 46.9 | 9 18.6 | 1 | .1 | 61 4.0 | 121 8.0 | | |
| 2 | 9 45.5 | 9 47.1 | 9 18.8 | 2 | .1 | 62 4.1 | 122 8.0 | | |
| 3 | 9 45.8 | 9 47.4 | 9 19.1 | 3 | .2 | 63 4.1 | 123 8.1 | | |
| 4 | 9 46.0 | 9 47.6 | 9 19.3 | 4 | .3 | 64 4.2 | 124 8.2 | | |
| 5 | 9 46.3 | 9 47.9 | 9 19.5 | 5 | .3 | 65 4.3 | 125 8.2 | | |
| 6 | 9 46.5 | 9 48.1 | 9 19.8 | 6 | .4 | 66 4.3 | 126 8.3 | | |
| 7 | 9 46.8 | 9 48.4 | 9 20.0 | 7 | .5 | 67 4.4 | 127 8.4 | | |
| 8 | 9 47.0 | 9 48.6 | 9 20.3 | 8 | .5 | 68 4.5 | 128 8.4 | | |
| 9 | 9 47.3 | 9 48.9 | 9 20.5 | 9 | .6 | 69 4.5 | 129 8.5 | | |
| 10 | 9 47.5 | 9 49.1 | 9 20.7 | 10 | .7 | 70 4.6 | 130 8.6 | | |
| 11 | 9 47.8 | 9 49.4 | 9 21.0 | 11 | .7 | 71 4.7 | 131 8.6 | | |
| 12 | 9 48.0 | 9 49.6 | 9 21.2 | 12 | .8 | 72 4.7 | 132 8.7 | | |
| 13 | 9 48.3 | 9 49.9 | 9 21.5 | 13 | .9 | 73 4.8 | 133 8.8 | | |
| 14 | 9 48.5 | 9 50.1 | 9 21.7 | 14 | .9 | 74 4.9 | 134 8.8 | | |
| 15 | 9 48.8 | 9 50.4 | 9 21.9 | 15 | 1.0 | 75 4.9 | 135 8.9 | | |
| 16 | 9 49.0 | 9 50.6 | 9 22.2 | 16 | 1.1 | 76 5.0 | 136 9.0 | | |
| 17 | 9 49.3 | 9 50.9 | 9 22.4 | 17 | 1.1 | 77 5.1 | 137 9.0 | | |
| 18 | 9 49.5 | 9 51.1 | 9 22.6 | 18 | 1.2 | 78 5.1 | 138 9.1 | | |
| 19 | 9 49.8 | 9 51.4 | 9 22.9 | 19 | 1.3 | 79 5.2 | 139 9.2 | | |
| 20 | 9 50.0 | 9 51.6 | 9 23.1 | 20 | 1.3 | 80 5.3 | 140 9.2 | | |
| 21 | 9 50.3 | 9 51.9 | 9 23.4 | 21 | 1.4 | 81 5.3 | 141 9.3 | | |
| 22 | 9 50.5 | 9 52.1 | 9 23.6 | 22 | 1.4 | 82 5.4 | 142 9.3 | | |
| 23 | 9 50.8 | 9 52.4 | 9 23.8 | 23 | 1.5 | 83 5.5 | 143 9.4 | | |
| 24 | 9 51.0 | 9 52.6 | 9 24.1 | 24 | 1.6 | 84 5.5 | 144 9.5 | | |
| 25 | 9 51.3 | 9 52.9 | 9 24.3 | 25 | 1.6 | 85 5.6 | 145 9.5 | | |
| 26 | 9 51.5 | 9 53.1 | 9 24.6 | 26 | 1.7 | 86 5.7 | 146 9.6 | | |
| 27 | 9 51.8 | 9 53.4 | 9 24.8 | 27 | 1.8 | 87 5.7 | 147 9.7 | | |
| 28 | 9 52.0 | 9 53.6 | 9 25.0 | 28 | 1.8 | 88 5.8 | 148 9.7 | | |
| 29 | 9 52.3 | 9 53.9 | 9 25.3 | 29 | 1.9 | 89 5.9 | 149 9.8 | | |
| 30 | 9 52.5 | 9 54.1 | 9 25.5 | 30 | 2.0 | 90 5.9 | 150 9.9 | | |
| 31 | 9 52.8 | 9 54.4 | 9 25.7 | 31 | 2.0 | 91 6.0 | 151 9.9 | | |
| 32 | 9 53.0 | 9 54.6 | 9 26.0 | 32 | 2.1 | 92 6.1 | 152 10.0 | | |
| 33 | 9 53.3 | 9 54.9 | 9 26.2 | 33 | 2.2 | 93 6.1 | 153 10.1 | | |
| 34 | 9 53.5 | 9 55.1 | 9 26.5 | 34 | 2.2 | 94 6.2 | 154 10.1 | | |
| 35 | 9 53.8 | 9 55.4 | 9 26.7 | 35 | 2.3 | 95 6.3 | 155 10.2 | | |
| 36 | 9 54.0 | 9 55.7 | 9 26.9 | 36 | 2.4 | 96 6.3 | 156 10.3 | | |
| 37 | 9 54.3 | 9 55.9 | 9 27.2 | 37 | 2.4 | 97 6.4 | 157 10.3 | | |
| 38 | 9 54.5 | 9 56.2 | 9 27.4 | 38 | 2.5 | 98 6.5 | 158 10.4 | | |
| 39 | 9 54.8 | 9 56.4 | 9 27.7 | 39 | 2.6 | 99 6.5 | 159 10.5 | | |
| 40 | 9 55.0 | 9 56.7 | 9 27.9 | 40 | 2.6 | 100 6.6 | 160 10.5 | | |
| 41 | 9 55.3 | 9 56.9 | 9 28.1 | 41 | 2.7 | 101 6.6 | 161 10.6 | | |
| 42 | 9 55.5 | 9 57.2 | 9 28.4 | 42 | 2.8 | 102 6.7 | 162 10.7 | | |
| 43 | 9 55.8 | 9 57.4 | 9 28.6 | 43 | 2.8 | 103 6.8 | 163 10.7 | | |
| 44 | 9 56.0 | 9 57.7 | 9 28.8 | 44 | 2.9 | 104 6.8 | 164 10.8 | | |
| 45 | 9 56.3 | 9 57.9 | 9 29.1 | 45 | 3.0 | 105 6.9 | 165 10.9 | | |
| 46 | 9 56.5 | 9 58.2 | 9 29.3 | 46 | 3.0 | 106 7.0 | 166 10.9 | | |
| 47 | 9 56.8 | 9 58.4 | 9 29.6 | 47 | 3.1 | 107 7.0 | 167 11.0 | | |
| 48 | 9 57.0 | 9 58.7 | 9 29.8 | 48 | 3.2 | 108 7.1 | 168 11.1 | | |
| 49 | 9 57.3 | 9 58.9 | 9 30.0 | 49 | 3.2 | 109 7.2 | 169 11.1 | | |
| 50 | 9 57.5 | 9 59.2 | 9 30.3 | 50 | 3.3 | 110 7.2 | 170 11.2 | | |
| 51 | 9 57.8 | 9 59.4 | 9 30.5 | 51 | 3.4 | 111 7.3 | 171 11.3 | | |
| 52 | 9 58.0 | 9 59.7 | 9 30.8 | 52 | 3.4 | 112 7.4 | 172 11.3 | | |
| 53 | 9 58.3 | 9 59.9 | 9 31.0 | 53 | 3.5 | 113 7.4 | 173 11.4 | | |
| 54 | 9 58.5 | 10 .2 | 9 31.2 | 54 | 3.6 | 114 7.5 | 174 11.5 | | |
| 55 | 9 58.8 | 10 .4 | 9 31.5 | 55 | 3.6 | 115 7.6 | 175 11.5 | | |
| 56 | 9 59.0 | 10 .7 | 9 31.7 | 56 | 3.7 | 116 7.6 | 176 11.6 | | |
| 57 | 9 59.3 | 10 .9 | 9 32.0 | 57 | 3.8 | 117 7.7 | 177 11.7 | | |
| 58 | 9 59.5 | 10 1.2 | 9 32.2 | 58 | 3.8 | 118 7.8 | 178 11.7 | | |
| 59 | 9 59.8 | 10 1.4 | 9 32.4 | 59 | 3.9 | 119 7.8 | 179 11.8 | | |
| 60 | 10 .0 | 10 1.7 | 9 32.7 | 60 | 4.0 | 120 7.9 | 180 11.9 | | |

0 h 40 min

| s | SUNCA I PLANETA | | PROLJEĆNE TAČKE °' | | MJESECA (°) | | POPRAVKA DRUGOG REDA za časovni ugao i deklinaciju Sunca, Mjeseca i planeta | | | | | |
|----|-----------------|------|--------------------|------|-------------|------|---|-------|-----|-------|-----|------|
| | o | l | o | l | o | l | Δ | popr. | Δ | popr. | | |
| | | | | | | | l | l | l | l | | |
| 0 | 10 | .0 | 10 | 1.7 | 9 | 32.7 | 0 | .0 | 60 | 4.1 | 120 | 8.1 |
| 1 | 10 | .3 | 10 | 1.9 | 9 | 32.9 | 1 | .1 | 61 | 4.1 | 121 | 8.2 |
| 2 | 10 | .5 | 10 | 2.2 | 9 | 33.1 | 2 | .1 | 62 | 4.2 | 122 | 8.2 |
| 3 | 10 | .8 | 10 | 2.4 | 9 | 33.4 | 3 | .2 | 63 | 4.3 | 123 | 8.3 |
| 4 | 10 | 1.0 | 10 | 2.7 | 9 | 33.6 | 4 | .3 | 64 | 4.3 | 124 | 8.4 |
| 5 | 10 | 1.3 | 10 | 2.9 | 9 | 33.9 | 5 | .3 | 65 | 4.4 | 125 | 8.4 |
| 6 | 10 | 1.5 | 10 | 3.2 | 9 | 34.1 | 6 | .4 | 66 | 4.5 | 126 | 8.5 |
| 7 | 10 | 1.8 | 10 | 3.4 | 9 | 34.3 | 7 | .5 | 67 | 4.5 | 127 | 8.6 |
| 8 | 10 | 2.0 | 10 | 3.7 | 9 | 34.6 | 8 | .5 | 68 | 4.6 | 128 | 8.6 |
| 9 | 10 | 2.3 | 10 | 3.9 | 9 | 34.8 | 9 | .6 | 69 | 4.7 | 129 | 8.7 |
| 10 | 10 | 2.5 | 10 | 4.2 | 9 | 35.1 | 10 | .7 | 70 | 4.7 | 130 | 8.8 |
| 11 | 10 | 2.8 | 10 | 4.4 | 9 | 35.3 | 11 | .7 | 71 | 4.8 | 131 | 8.8 |
| 12 | 10 | 3.0 | 10 | 4.7 | 9 | 35.5 | 12 | .8 | 72 | 4.9 | 132 | 8.9 |
| 13 | 10 | 3.3 | 10 | 4.9 | 9 | 35.8 | 13 | .9 | 73 | 4.9 | 133 | 9.0 |
| 14 | 10 | 3.5 | 10 | 5.2 | 9 | 36.0 | 14 | .9 | 74 | 5.0 | 134 | 9.0 |
| 15 | 10 | 3.8 | 10 | 5.4 | 9 | 36.2 | 15 | 1.0 | 75 | 5.1 | 135 | 9.1 |
| 16 | 10 | 4.0 | 10 | 5.7 | 9 | 36.5 | 16 | 1.1 | 76 | 5.1 | 136 | 9.2 |
| 17 | 10 | 4.3 | 10 | 5.9 | 9 | 36.7 | 17 | 1.1 | 77 | 5.2 | 137 | 9.2 |
| 18 | 10 | 4.5 | 10 | 6.2 | 9 | 37.0 | 18 | 1.2 | 78 | 5.3 | 138 | 9.3 |
| 19 | 10 | 4.8 | 10 | 6.4 | 9 | 37.2 | 19 | 1.3 | 79 | 5.3 | 139 | 9.4 |
| 20 | 10 | 5.0 | 10 | 6.7 | 9 | 37.4 | 20 | 1.4 | 80 | 5.4 | 140 | 9.5 |
| 21 | 10 | 5.3 | 10 | 6.9 | 9 | 37.7 | 21 | 1.4 | 81 | 5.5 | 141 | 9.5 |
| 22 | 10 | 5.5 | 10 | 7.2 | 9 | 37.9 | 22 | 1.5 | 82 | 5.5 | 142 | 9.6 |
| 23 | 10 | 5.8 | 10 | 7.4 | 9 | 38.2 | 23 | 1.6 | 83 | 5.6 | 143 | 9.7 |
| 24 | 10 | 6.0 | 10 | 7.7 | 9 | 38.4 | 24 | 1.6 | 84 | 5.7 | 144 | 9.7 |
| 25 | 10 | 6.3 | 10 | 7.9 | 9 | 38.6 | 25 | 1.7 | 85 | 5.7 | 145 | 9.8 |
| 26 | 10 | 6.5 | 10 | 8.2 | 9 | 38.9 | 26 | 1.8 | 86 | 5.8 | 146 | 9.9 |
| 27 | 10 | 6.8 | 10 | 8.4 | 9 | 39.1 | 27 | 1.8 | 87 | 5.9 | 147 | 9.9 |
| 28 | 10 | 7.0 | 10 | 8.7 | 9 | 39.3 | 28 | 1.9 | 88 | 5.9 | 148 | 10.0 |
| 29 | 10 | 7.3 | 10 | 8.9 | 9 | 39.6 | 29 | 2.0 | 89 | 6.0 | 149 | 10.1 |
| 30 | 10 | 7.5 | 10 | 9.2 | 9 | 39.8 | 30 | 2.0 | 90 | 6.1 | 150 | 10.1 |
| 31 | 10 | 7.8 | 10 | 9.4 | 9 | 40.1 | 31 | 2.1 | 91 | 6.1 | 151 | 10.2 |
| 32 | 10 | 8.0 | 10 | 9.7 | 9 | 40.3 | 32 | 2.2 | 92 | 6.2 | 152 | 10.3 |
| 33 | 10 | 8.3 | 10 | 9.9 | 9 | 40.5 | 33 | 2.2 | 93 | 6.3 | 153 | 10.3 |
| 34 | 10 | 8.5 | 10 | 10.2 | 9 | 40.8 | 34 | 2.3 | 94 | 6.3 | 154 | 10.4 |
| 35 | 10 | 8.8 | 10 | 10.4 | 9 | 41.0 | 35 | 2.4 | 95 | 6.4 | 155 | 10.5 |
| 36 | 10 | 9.0 | 10 | 10.7 | 9 | 41.3 | 36 | 2.4 | 96 | 6.5 | 156 | 10.5 |
| 37 | 10 | 9.3 | 10 | 10.9 | 9 | 41.5 | 37 | 2.5 | 97 | 6.5 | 157 | 10.6 |
| 38 | 10 | 9.5 | 10 | 11.2 | 9 | 41.7 | 38 | 2.6 | 98 | 6.6 | 158 | 10.7 |
| 39 | 10 | 9.8 | 10 | 11.4 | 9 | 42.0 | 39 | 2.6 | 99 | 6.7 | 159 | 10.7 |
| 40 | 10 | 10.0 | 10 | 11.7 | 9 | 42.2 | 40 | 2.7 | 100 | 6.8 | 160 | 10.8 |
| 41 | 10 | 10.3 | 10 | 11.9 | 9 | 42.4 | 41 | 2.8 | 101 | 6.8 | 161 | 10.9 |
| 42 | 10 | 10.5 | 10 | 12.2 | 9 | 42.7 | 42 | 2.8 | 102 | 6.9 | 162 | 10.9 |
| 43 | 10 | 10.8 | 10 | 12.4 | 9 | 42.9 | 43 | 2.9 | 103 | 7.0 | 163 | 11.0 |
| 44 | 10 | 11.0 | 10 | 12.7 | 9 | 43.2 | 44 | 3.0 | 104 | 7.0 | 164 | 11.1 |
| 45 | 10 | 11.3 | 10 | 12.9 | 9 | 43.4 | 45 | 3.0 | 105 | 7.1 | 165 | 11.1 |
| 46 | 10 | 11.5 | 10 | 13.2 | 9 | 43.6 | 46 | 3.1 | 106 | 7.2 | 166 | 11.2 |
| 47 | 10 | 11.8 | 10 | 13.4 | 9 | 43.9 | 47 | 3.2 | 107 | 7.2 | 167 | 11.3 |
| 48 | 10 | 12.0 | 10 | 13.7 | 9 | 44.1 | 48 | 3.2 | 108 | 7.3 | 168 | 11.3 |
| 49 | 10 | 12.3 | 10 | 14.0 | 9 | 44.4 | 49 | 3.3 | 109 | 7.4 | 169 | 11.4 |
| 50 | 10 | 12.5 | 10 | 14.2 | 9 | 44.6 | 50 | 3.4 | 110 | 7.4 | 170 | 11.5 |
| 51 | 10 | 12.8 | 10 | 14.5 | 9 | 44.8 | 51 | 3.4 | 111 | 7.5 | 171 | 11.5 |
| 52 | 10 | 13.0 | 10 | 14.7 | 9 | 45.1 | 52 | 3.5 | 112 | 7.6 | 172 | 11.6 |
| 53 | 10 | 13.3 | 10 | 15.0 | 9 | 45.3 | 53 | 3.6 | 113 | 7.6 | 173 | 11.7 |
| 54 | 10 | 13.5 | 10 | 15.2 | 9 | 45.6 | 54 | 3.6 | 114 | 7.7 | 174 | 11.7 |
| 55 | 10 | 13.8 | 10 | 15.5 | 9 | 45.8 | 55 | 3.7 | 115 | 7.8 | 175 | 11.8 |
| 56 | 10 | 14.0 | 10 | 15.7 | 9 | 46.0 | 56 | 3.8 | 116 | 7.8 | 176 | 11.9 |
| 57 | 10 | 14.3 | 10 | 16.0 | 9 | 46.3 | 57 | 3.8 | 117 | 7.9 | 177 | 11.9 |
| 58 | 10 | 14.5 | 10 | 16.2 | 9 | 46.5 | 58 | 3.9 | 118 | 8.0 | 178 | 12.0 |
| 59 | 10 | 14.8 | 10 | 16.5 | 9 | 46.7 | 59 | 4.0 | 119 | 8.0 | 179 | 12.1 |
| 60 | 10 | 15.0 | 10 | 16.7 | 9 | 47.0 | 60 | 4.1 | 120 | 8.1 | 180 | 12.2 |

0 h 41 min

| s | SUNCA I PLANETA | | PROLJEĆNE TAČKE °' | | MJESECA (°) | | POPRAVKA DRUGOG REDA za časovni ugao i deklinaciju Sunca, Mjeseca i planeta | | | | | |
|----|-----------------|------|--------------------|------|-------------|------|---|-------|-----|-------|-----|------|
| | o | l | o | l | o | l | Δ | popr. | Δ | popr. | | |
| | | | | | | | l | l | l | l | | |
| 0 | 10 | 15.0 | 10 | 16.7 | 9 | 47.0 | 0 | .0 | 60 | 4.2 | 120 | 8.3 |
| 1 | 10 | 15.3 | 10 | 17.0 | 9 | 47.2 | 1 | .1 | 61 | 4.2 | 121 | 8.4 |
| 2 | 10 | 15.5 | 10 | 17.2 | 9 | 47.5 | 2 | .1 | 62 | 4.3 | 122 | 8.4 |
| 3 | 10 | 15.8 | 10 | 17.5 | 9 | 47.7 | 3 | .2 | 63 | 4.4 | 123 | 8.5 |
| 4 | 10 | 16.0 | 10 | 17.7 | 9 | 47.9 | 4 | .3 | 64 | 4.4 | 124 | 8.6 |
| 5 | 10 | 16.3 | 10 | 18.0 | 9 | 48.2 | 5 | .3 | 65 | 4.5 | 125 | 8.6 |
| 6 | 10 | 16.5 | 10 | 18.2 | 9 | 48.4 | 6 | .4 | 66 | 4.6 | 126 | 8.7 |
| 7 | 10 | 16.8 | 10 | 18.5 | 9 | 48.7 | 7 | .5 | 67 | 4.6 | 127 | 8.8 |
| 8 | 10 | 17.0 | 10 | 18.7 | 9 | 48.9 | 8 | .6 | 68 | 4.7 | 128 | 8.9 |
| 9 | 10 | 17.3 | 10 | 19.0 | 9 | 49.1 | 9 | .6 | 69 | 4.8 | 129 | 8.9 |
| 10 | 10 | 17.5 | 10 | 19.2 | 9 | 49.4 | 10 | .7 | 70 | 4.8 | 130 | 9.0 |
| 11 | 10 | 17.8 | 10 | 19.5 | 9 | 49.6 | 11 | .8 | 71 | 4.9 | 131 | 9.1 |
| 12 | 10 | 18.0 | 10 | 19.7 | 9 | 49.8 | 12 | .8 | 72 | 5.0 | 132 | 9.1 |
| 13 | 10 | 18.3 | 10 | 20.0 | 9 | 50.1 | 13 | .9 | 73 | 5.0 | 133 | 9.2 |
| 14 | 10 | 18.5 | 10 | 20.2 | 9 | 50.3 | 14 | 1.0 | 74 | 5.1 | 134 | 9.3 |
| 15 | 10 | 18.8 | 10 | 20.5 | 9 | 50.6 | 15 | 1.0 | 75 | 5.2 | 135 | 9.3 |
| 16 | 10 | 19.0 | 10 | 20.7 | 9 | 50.8 | 16 | 1.1 | 76 | 5.3 | 136 | 9.4 |
| 17 | 10 | 19.3 | 10 | 21.0 | 9 | 51.0 | 17 | 1.2 | 77 | 5.3 | 137 | 9.5 |
| 18 | 10 | 19.5 | 10 | 21.2 | 9 | 51.3 | 18 | 1.2 | 78 | 5.4 | 138 | 9.5 |
| 19 | 10 | 19.8 | 10 | 21.5 | 9 | 51.5 | 19 | 1.3 | 79 | 5.5 | 139 | 9.6 |
| 20 | 10 | 20.0 | 10 | 21.7 | 9 | 51.8 | 20 | 1.4 | 80 | 5.5 | 140 | 9.7 |
| 21 | 10 | 20.3 | 10 | 22.0 | 9 | 52.0 | 21 | 1.5 | 81 | 5.6 | 141 | 9.8 |
| 22 | 10 | 20.5 | 10 | 22.2 | 9 | 52.2 | 22 | 1.5 | 82 | 5.7 | 142 | 9.8 |
| 23 | 10 | 20.8 | 10 | 22.5 | 9 | 52.5 | 23 | 1.6 | 83 | 5.7 | 143 | 9.9 |
| 24 | 10 | 21.0 | 10 | 22.7 | 9 | 52.7 | 24 | 1.7 | 84 | 5.8 | 144 | 10.0 |
| 25 | 10 | 21.3 | 10 | 23.0 | 9 | 52.9 | 25 | 1.7 | 85 | 5.9 | 145 | 10.0 |
| 26 | 10 | 21.5 | 10 | 23.2 | 9 | 53.2 | 26 | 1.8 | 86 | 5.9 | 146 | 10.1 |
| 27 | 10 | 21.8 | 10 | 23.5 | 9 | 53.4 | 27 | 1.9 | 87 | 6.0 | 147 | 10.2 |
| 28 | 10 | 22.0 | 10 | 23.7 | 9 | 53.7 | 28 | 1.9 | 88 | 6.1 | 148 | 10.2 |
| 29 | 10 | 22.3 | 10 | 24.0 | 9 | 53.9 | 29 | 2.0 | 89 | 6.2 | 149 | 10.3 |
| 30 | 10 | 22.5 | 10 | 24.2 | 9 | 54.1 | 30 | 2.1 | 90 | 6.2 | 150 | 10.4 |
| 31 | 10 | 22.8 | 10 | 24.5 | 9 | 54.4 | 31 | 2.1 | 91 | 6.3 | 151 | 10.4 |
| 32 | 10 | 23.0 | 10 | 24.7 | 9 | 54.6 | 32 | 2.2 | 92 | 6.4 | 152 | 10.5 |
| 33 | 10 | 23.3 | 10 | 25.0 | 9 | 54.9 | 33 | 2.3 | 93 | 6.4 | 153 | 10.6 |
| 34 | 10 | 23.5 | 10 | 25.2 | 9 | 55.1 | 34 | 2.4 | 94 | 6.5 | 154 | 10.7 |
| 35 | 10 | 23.8 | 10 | 25.5 | 9 | 55.3 | 35 | 2.4 | 95 | 6.6 | 155 | 10.7 |
| 36 | 10 | 24.0 | 10 | 25.7 | 9 | 55.6 | 36 | 2.5 | 96 | 6.6 | 156 | 10.8 |
| 37 | 10 | 24.3 | 10 | 26.0 | 9 | 55.8 | 37 | 2.6 | 97 | 6.7 | 157 | 10.9 |
| 38 | 10 | 24.5 | 10 | 26.2 | 9 | 56.1 | 38 | 2.6 | 98 | 6.8 | 158 | 10.9 |
| 39 | 10 | 24.8 | 10 | 26.5 | 9 | 56.3 | 39 | 2.7 | 99 | 6.8 | 159 | 11.0 |
| 40 | 10 | 25.0 | 10 | 26.7 | 9 | 56.5 | 40 | 2.8 | 100 | 6.9 | 160 | 11.1 |
| 41 | 10 | 25.3 | 10 | 27.0 | 9 | 56.8 | 41 | 2.8 | 101 | 7.0 | 161 | 11.1 |
| 42 | 10 | 25.5 | 10 | 27.2 | 9 | 57.0 | 42 | 2.9 | 102 | 7.1 | 162 | 11.2 |
| 43 | 10 | 25.8 | 10 | 27.5 | 9 | 57.2 | 43 | 3.0 | 103 | 7.1 | 163 | 11.3 |
| 44 | 10 | 26.0 | 10 | 27.7 | 9 | 57.5 | 44 | 3.0 | 104 | 7.2 | 164 | 11.3 |
| 45 | 10 | 26.3 | 10 | 28.0 | 9 | 57.7 | 45 | 3.1 | 105 | 7.3 | 165 | 11.4 |
| 46 | 10 | 26.5 | 10 | 28.2 | 9 | 58.0 | 46 | 3.2 | 106 | 7.3 | 166 | 11.5 |
| 47 | 10 | 26.8 | 10 | 28.5 | 9 | 58.2 | 47 | 3.3 | 107 | 7.4 | 167 | 11.6 |
| 48 | 10 | 27.0 | 10 | 28.7 | 9 | 58.4 | 48 | 3.3 | 108 | 7.5 | 168 | 11.6 |
| 49 | 10 | 27.3 | 10 | 29.0 | 9 | 58.7 | 49 | 3.4 | 109 | 7.5 | 169 | 11.7 |
| 50 | 10 | 27.5 | 10 | 29.2 | 9 | 58.9 | 50 | 3.5 | 110 | 7.6 | 170 | 11.8 |
| 51 | 10 | 27.8 | 10 | 29.5 | 9 | 59.2 | 51 | 3.5 | | | | |

| 0 h 42 min | | | | | | | | | | | |
|------------------------|-----------------|---|----------------------|---|---|---|---------|-----|---------|----------|--|
| POPRAVKA ČASOVNOG UGLA | | | | | POPRAVKA DRUGOG REDA za časovni ugao i deklinaciju Sunca, Mjeseca i planeta | | | | | | |
| S | SUNCA I PLANETA | | PROLJEĆNE TAČKE ° | | MJESECA ⊕ | | Δ popr. | | | | |
| | o | f | o | f | o | f | f | f | f | | |
| 0 | 10 30.0 | | 10 31.8 | | 10 1.3 | | 0 | .0 | 60 4.3 | 120 8.5 | |
| 1 | 10 30.3 | | 10 32.0 | | 10 1.5 | | 1 | .1 | 61 4.3 | 121 8.6 | |
| 2 | 10 30.5 | | 10 32.3 | | 10 1.8 | | 2 | .1 | 62 4.4 | 122 8.6 | |
| 3 | 10 30.8 | | 10 32.5 | | 10 2.0 | | 3 | .2 | 63 4.5 | 123 8.7 | |
| 4 | 10 31.0 | | 10 32.8 | | 10 2.3 | | 4 | .3 | 64 4.5 | 124 8.8 | |
| 5 | 10 31.3 | | 10 33.0 | | 10 2.5 | | 5 | .4 | 65 4.6 | 125 8.9 | |
| 6 | 10 31.5 | | 10 33.3 | | 10 2.7 | | 6 | .4 | 66 4.7 | 126 8.9 | |
| 7 | 10 31.8 | | 10 33.5 | | 10 3.0 | | 7 | .5 | 67 4.7 | 127 9.0 | |
| 8 | 10 32.0 | | 10 33.8 | | 10 3.2 | | 8 | .6 | 68 4.8 | 128 9.1 | |
| 9 | 10 32.3 | | 10 34.0 | | 10 3.4 | | 9 | .6 | 69 4.9 | 129 9.1 | |
| 10 | 10 32.5 | | 10 34.3 | | 10 3.7 | | 10 | .7 | 70 5.0 | 130 9.2 | |
| 11 | 10 32.8 | | 10 34.5 | | 10 3.9 | | 11 | .8 | 71 5.0 | 131 9.3 | |
| 12 | 10 33.0 | | 10 34.8 | | 10 4.2 | | 12 | .9 | 72 5.1 | 132 9.4 | |
| 13 | 10 33.3 | | 10 35.0 | | 10 4.4 | | 13 | .9 | 73 5.2 | 133 9.4 | |
| 14 | 10 33.5 | | 10 35.3 | | 10 4.6 | | 14 | 1.0 | 74 5.2 | 134 9.5 | |
| 15 | 10 33.8 | | 10 35.5 | | 10 4.9 | | 15 | 1.1 | 75 5.3 | 135 9.6 | |
| 16 | 10 34.0 | | 10 35.8 | | 10 5.1 | | 16 | 1.1 | 76 5.4 | 136 9.6 | |
| 17 | 10 34.3 | | 10 36.0 | | 10 5.4 | | 17 | 1.2 | 77 5.5 | 137 9.7 | |
| 18 | 10 34.5 | | 10 36.3 | | 10 5.6 | | 18 | 1.3 | 78 5.5 | 138 9.8 | |
| 19 | 10 34.8 | | 10 36.5 | | 10 5.8 | | 19 | 1.3 | 79 5.6 | 139 9.8 | |
| 20 | 10 35.0 | | 10 36.8 | | 10 6.1 | | 20 | 1.4 | 80 5.7 | 140 9.9 | |
| 21 | 10 35.3 | | 10 37.0 | | 10 6.3 | | 21 | 1.5 | 81 5.7 | 141 10.0 | |
| 22 | 10 35.5 | | 10 37.3 | | 10 6.5 | | 22 | 1.6 | 82 5.8 | 142 10.1 | |
| 23 | 10 35.8 | | 10 37.5 | | 10 6.8 | | 23 | 1.6 | 83 5.9 | 143 10.1 | |
| 24 | 10 36.0 | | 10 37.8 | | 10 7.0 | | 24 | 1.7 | 84 6.0 | 144 10.2 | |
| 25 | 10 36.3 | | 10 38.0 | | 10 7.3 | | 25 | 1.8 | 85 6.0 | 145 10.3 | |
| 26 | 10 36.5 | | 10 38.3 | | 10 7.5 | | 26 | 1.8 | 86 6.1 | 146 10.3 | |
| 27 | 10 36.8 | | 10 38.5 | | 10 7.7 | | 27 | 1.9 | 87 6.2 | 147 10.4 | |
| 28 | 10 37.0 | | 10 38.8 | | 10 8.0 | | 28 | 2.0 | 88 6.2 | 148 10.5 | |
| 29 | 10 37.3 | | 10 39.0 | | 10 8.2 | | 29 | 2.1 | 89 6.3 | 149 10.6 | |
| 30 | 10 37.5 | | 10 39.3 | | 10 8.5 | | 30 | 2.1 | 90 6.4 | 150 10.6 | |
| 31 | 10 37.8 | | 10 39.5 | | 10 8.7 | | 31 | 2.2 | 91 6.4 | 151 10.7 | |
| 32 | 10 38.0 | | 10 39.8 | | 10 8.9 | | 32 | 2.3 | 92 6.5 | 152 10.8 | |
| 33 | 10 38.3 | | 10 40.0 | | 10 9.2 | | 33 | 2.3 | 93 6.6 | 153 10.8 | |
| 34 | 10 38.5 | | 10 40.3 | | 10 9.4 | | 34 | 2.4 | 94 6.7 | 154 10.9 | |
| 35 | 10 38.8 | | 10 40.5 | | 10 9.7 | | 35 | 2.5 | 95 6.7 | 155 11.0 | |
| 36 | 10 39.0 | | 10 40.8 | | 10 9.9 | | 36 | 2.6 | 96 6.8 | 156 11.1 | |
| 37 | 10 39.3 | | 10 41.0 | | 10 10.1 | | 37 | 2.6 | 97 6.9 | 157 11.1 | |
| 38 | 10 39.5 | | 10 41.3 | | 10 10.4 | | 38 | 2.7 | 98 6.9 | 158 11.2 | |
| 39 | 10 39.8 | | 10 41.5 | | 10 10.6 | | 39 | 2.8 | 99 7.0 | 159 11.3 | |
| 40 | 10 40.0 | | 10 41.8 | | 10 10.8 | | 40 | 2.8 | 100 7.1 | 160 11.3 | |
| 41 | 10 40.3 | | 10 42.0 | | 10 11.1 | | 41 | 2.9 | 101 7.2 | 161 11.4 | |
| 42 | 10 40.5 | | 10 42.3 | | 10 11.3 | | 42 | 3.0 | 102 7.2 | 162 11.5 | |
| 43 | 10 40.8 | | 10 42.5 | | 10 11.6 | | 43 | 3.0 | 103 7.3 | 163 11.5 | |
| 44 | 10 41.0 | | 10 42.8 | | 10 11.8 | | 44 | 3.1 | 104 7.4 | 164 11.6 | |
| 45 | 10 41.3 | | 10 43.0 | | 10 12.0 | | 45 | 3.2 | 105 7.4 | 165 11.7 | |
| 46 | 10 41.5 | | 10 43.3 | | 10 12.3 | | 46 | 3.3 | 106 7.5 | 166 11.8 | |
| 47 | 10 41.8 | | 10 43.5 | | 10 12.5 | | 47 | 3.3 | 107 7.6 | 167 11.8 | |
| 48 | 10 42.0 | | 10 43.8 | | 10 12.8 | | 48 | 3.4 | 108 7.7 | 168 11.9 | |
| 49 | 10 42.3 | | 10 44.0 | | 10 13.0 | | 49 | 3.5 | 109 7.7 | 169 12.0 | |
| 50 | 10 42.5 | | 10 44.3 | | 10 13.2 | | 50 | 3.5 | 110 7.8 | 170 12.0 | |
| 51 | 10 42.8 | | 10 44.5 | | 10 13.5 | | 51 | 3.6 | 111 7.9 | 171 12.1 | |
| 52 | 10 43.0 | | 10 44.8 | | 10 13.7 | | 52 | 3.7 | 112 7.9 | 172 12.2 | |
| 53 | 10 43.3 | | 10 45.0 | | 10 13.9 | | 53 | 3.8 | 113 8.0 | 173 12.3 | |
| 54 | 10 43.5 | | 10 45.3 | | 10 14.2 | | 54 | 3.8 | 114 8.1 | 174 12.3 | |
| 55 | 10 43.8 | | 10 45.5 | | 10 14.4 | | 55 | 3.9 | 115 8.1 | 175 12.4 | |
| 56 | 10 44.0 | | 10 45.8 | | 10 14.7 | | 56 | 4.0 | 116 8.2 | 176 12.5 | |
| 57 | 10 44.3 | | 10 46.0 | | 10 14.9 | | 57 | 4.0 | 117 8.3 | 177 12.5 | |
| 58 | 10 44.5 | | 10 46.3 | | 10 15.1 | | 58 | 4.1 | 118 8.4 | 178 12.6 | |
| 59 | 10 44.8 | | 10 46.5 | | 10 15.4 | | 59 | 4.2 | 119 8.4 | 179 12.7 | |
| 60 | 10 45.0 | | 10 46.8 | | 10 15.6 | | 60 | 4.3 | 120 8.5 | 180 12.8 | |

| 0 h 43 min | | | | | | | | | | | |
|------------------------|-----------------|---|----------------------|---|---|---|---------|-----|---------|----------|--|
| POPRAVKA ČASOVNOG UGLA | | | | | POPRAVKA DRUGOG REDA za časovni ugao i deklinaciju Sunca, Mjeseca i planeta | | | | | | |
| S | SUNCA I PLANETA | | PROLJEĆNE TAČKE ° | | MJESECA ⊕ | | Δ popr. | | | | |
| | o | f | o | f | o | f | f | f | f | | |
| 0 | 10 45.0 | | 10 46.8 | | 10 15.6 | | 0 | .0 | 60 4.4 | 120 8.7 | |
| 1 | 10 45.3 | | 10 47.0 | | 10 15.9 | | 1 | .1 | 61 4.4 | 121 8.8 | |
| 2 | 10 45.5 | | 10 47.3 | | 10 16.1 | | 2 | .1 | 62 4.5 | 122 8.8 | |
| 3 | 10 45.8 | | 10 47.5 | | 10 16.3 | | 3 | .2 | 63 4.6 | 123 8.9 | |
| 4 | 10 46.0 | | 10 47.8 | | 10 16.6 | | 4 | .3 | 64 4.6 | 124 9.0 | |
| 5 | 10 46.3 | | 10 48.0 | | 10 16.8 | | 5 | .4 | 65 4.7 | 125 9.1 | |
| 6 | 10 46.5 | | 10 48.3 | | 10 17.0 | | 6 | .4 | 66 4.8 | 126 9.1 | |
| 7 | 10 46.8 | | 10 48.5 | | 10 17.3 | | 7 | .5 | 67 4.9 | 127 9.2 | |
| 8 | 10 47.0 | | 10 48.8 | | 10 17.5 | | 8 | .6 | 68 4.9 | 128 9.3 | |
| 9 | 10 47.3 | | 10 49.0 | | 10 17.8 | | 9 | .7 | 69 5.0 | 129 9.4 | |
| 10 | 10 47.5 | | 10 49.3 | | 10 18.0 | | 10 | .7 | 70 5.1 | 130 9.4 | |
| 11 | 10 47.8 | | 10 49.5 | | 10 18.2 | | 11 | .8 | 71 5.1 | 131 9.5 | |
| 12 | 10 48.0 | | 10 49.8 | | 10 18.5 | | 12 | .9 | 72 5.2 | 132 9.6 | |
| 13 | 10 48.3 | | 10 50.1 | | 10 18.7 | | 13 | .9 | 73 5.3 | 133 9.6 | |
| 14 | 10 48.5 | | 10 50.3 | | 10 19.0 | | 14 | 1.0 | 74 5.4 | 134 9.7 | |
| 15 | 10 48.8 | | 10 50.6 | | 10 19.2 | | 15 | 1.1 | 75 5.4 | 135 9.8 | |
| 16 | 10 49.0 | | 10 50.8 | | 10 19.4 | | 16 | 1.2 | 76 5.5 | 136 9.9 | |
| 17 | 10 49.3 | | 10 51.1 | | 10 19.7 | | 17 | 1.2 | 77 5.6 | 137 9.9 | |
| 18 | 10 49.5 | | 10 51.3 | | 10 19.9 | | 18 | 1.3 | 78 5.7 | 138 10.0 | |
| 19 | 10 49.8 | | 10 51.6 | | 10 20.2 | | 19 | 1.4 | 79 5.7 | 139 10.1 | |
| 20 | 10 50.0 | | 10 51.8 | | 10 20.4 | | 20 | 1.5 | 80 5.8 | 140 10.2 | |
| 21 | 10 50.3 | | 10 52.1 | | 10 20.6 | | 21 | 1.5 | 81 5.9 | 141 10.2 | |
| 22 | 10 50.5 | | 10 52.3 | | 10 20.9 | | 22 | 1.6 | 82 5.9 | 142 10.3 | |
| 23 | 10 50.8 | | 10 52.6 | | 10 21.1 | | 23 | 1.7 | 83 6.0 | 143 10.4 | |
| 24 | 10 51.0 | | 10 52.8 | | 10 21.3 | | 24 | 1.7 | 84 6.1 | 144 10.4 | |
| 25 | 10 51.3 | | 10 53.1 | | 10 21.6 | | 25 | 1.8 | 85 6.2 | 145 10.5 | |
| 26 | 10 51.5 | | 10 53.3 | | 10 21.8 | | 26 | 1.9 | 86 6.2 | 146 10.6 | |
| 27 | 10 51.8 | | 10 53.6 | | 10 22.1 | | 27 | 2.0 | 87 6.3 | 147 10.7 | |
| 28 | 10 52.0 | | 10 53.8 | | 10 22.3 | | 28 | 2.0 | 88 6.4 | 148 10.7 | |
| 29 | 10 52.3 | | 10 54.1 | | 10 22.5 | | 29 | 2.1 | 89 6.5 | 149 10.8 | |
| 30 | 10 52.5 | | 10 54.3 | | 10 22.8 | | 30 | 2.2 | 90 6.5 | 150 10.9 | |
| 31 | 10 52.8 | | 10 54.6 | | 10 23.0 | | 31 | 2.2 | 91 6.6 | 151 10.9 | |
| 32 | 10 53.0 | | 10 54.8 | | 10 23.3 | | 32 | 2.3 | 92 6.7 | 152 11.0 | |
| 33 | 10 53.3 | | 10 55.1 | | 10 23.5 | | 33 | 2.4 | 93 6.7 | 153 11.1 | |
| 34 | 10 53.5 | | 10 55.3 | | 10 23.7 | | 34 | 2.5 | 94 6.8 | 154 11.2 | |
| 35 | 10 53.8 | | 10 55.6 | | 10 24.0 | | 35 | 2.5 | 95 6.9 | 155 11.2 | |
| 36 | 10 54.0 | | 10 55.8 | | 10 24.2 | | 36 | 2.6 | 96 7.0 | 156 11.3 | |
| 37 | 10 54.3 | | 10 56.1 | | 10 24.4 | | 37 | 2.7 | 97 7.0 | 157 11.4 | |
| 38 | 10 54.5 | | 10 56.3 | | 10 24.7 | | 38 | 2.8 | 98 7.1 | 158 11.5 | |
| 39 | 10 54.8 | | 10 56.6 | | 10 24.9 | | 39 | 2.8 | 99 7.2 | 159 11.5 | |
| 40 | 10 55.0 | | 10 56.8 | | 10 25.2 | | 40 | 2.9 | 100 7.3 | 160 11.6 | |
| 41 | 10 55.3 | | 10 57.1 | | 10 25.4 | | 41 | 3.0 | 101 7.3 | 161 11.7 | |
| 42 | 10 55.5 | | 10 57.3 | | 10 25.6 | | 42 | 3.0 | 102 7.4 | 162 11.7 | |
| 43 | 10 55.8 | | 10 57.6 | | 10 25.9 | | 43 | 3.1 | 103 7.5 | 163 11.8 | |
| 44 | 10 56.0 | | 10 57.8 | | 10 26.1 | | 44 | 3.2 | 104 7.5 | 164 11.9 | |
| 45 | 10 56.3 | | 10 58.1 | | 10 26.4 | | 45 | 3.3 | 105 7.6 | 165 12.0 | |
| 46 | 10 56.5 | | 10 58.3 | | 10 26.6 | | 46 | 3.3 | 106 7.7 | 166 12.0 | |
| 47 | 10 56.8 | | 10 58.6 | | 10 26.8 | | 47 | 3.4 | 107 7.8 | 167 12.1 | |
| 48 | 10 57.0 | | 10 58.8 | | 10 27.1 | | 48 | 3.5 | 108 7.8 | 168 12.2 | |
| 49 | 10 57.3 | | 10 59.1 | | 10 27.3 | | 49 | 3.6 | 109 7.9 | 169 12.3 | |
| 50 | 10 57.5 | | 10 59.3 | | 10 27.5 | | 50 | 3.6 | 110 8.0 | 170 12.3 | |
| 51 | 10 57.8 | | 10 59.6 | | 10 27.8 | | 51 | 3.7 | 111 8.0 | 171 12.4 | |
| 52 | 10 58.0 | | 10 59.8 | | 10 28.0 | | 52 | 3.8 | 112 8.1 | 172 12.5 | |
| 53 | 10 58.3 | | 11 .1 | | 10 28.3 | | 53 | 3.8 | 113 8.2 | 173 12.5 | |
| 54 | 10 58.5 | | 11 .3 | | 10 28.5 | | 54 | 3.9 | 114 8.3 | 174 12.6 | |
| 55 | 10 58.8 | | 11 .6 | | 10 28.7 | | 55 | 4.0 | 115 8.3 | 175 12.7 | |
| 56 | 10 59.0 | | 11 .8 | | 10 29.0 | | 56 | 4.1 | 116 8.4 | 176 12.8 | |
| 57 | 10 59.3 | | 11 1.1 | | 10 29.2 | | 57 | 4.1 | 117 8.5 | 177 12.8 | |
| 58 | 10 59.5 | | 11 1.3 | | 10 29.5 | | 58 | 4.2 | 118 8.6 | 178 12.9 | |
| 59 | 10 59.8 | | 11 1.6 | | 10 29.7 | | 59 | 4.3 | 119 8 | | |

| 0 h 44 min | | | | | | | | | | | | |
|------------------------|--------------------|------|-----------------------|---|--------------|------|----|-------|-----|-------|-----|------|
| POPRAVKA ČASOVNOG UGLA | | | | POPRAVKA DRUGOG REDA za časovni ugao i deklinaciju Sunca, Mjeseca i planeta | | | | | | | | |
| s | SUNCA I PLANETA | | PROLJEČNE TAKČE T° | | MJESECA ☾ | | Δ | popr. | Δ | popr. | | |
| | o | t | o | t | o | t | | | | | | |
| 0 | 11 | .0 | 11 | 1.8 | 10 | 29.9 | 0 | .0 | 60 | 4.5 | 120 | 8.9 |
| 1 | 11 | .3 | 11 | 2.1 | 10 | 30.2 | 1 | .1 | 61 | 4.5 | 121 | 9.0 |
| 2 | 11 | .5 | 11 | 2.3 | 10 | 30.4 | 2 | .1 | 62 | 4.6 | 122 | 9.0 |
| 3 | 11 | .8 | 11 | 2.6 | 10 | 30.6 | 3 | .2 | 63 | 4.7 | 123 | 9.1 |
| 4 | 11 | 1.0 | 11 | 2.8 | 10 | 30.9 | 4 | .3 | 64 | 4.7 | 124 | 9.2 |
| 5 | 11 | 1.3 | 11 | 3.1 | 10 | 31.1 | 5 | .4 | 65 | 4.8 | 125 | 9.3 |
| 6 | 11 | 1.5 | 11 | 3.3 | 10 | 31.4 | 6 | .4 | 66 | 4.9 | 126 | 9.3 |
| 7 | 11 | 1.8 | 11 | 3.6 | 10 | 31.6 | 7 | .5 | 67 | 5.0 | 127 | 9.4 |
| 8 | 11 | 2.0 | 11 | 3.8 | 10 | 31.8 | 8 | .6 | 68 | 5.0 | 128 | 9.5 |
| 9 | 11 | 2.3 | 11 | 4.1 | 10 | 32.1 | 9 | .7 | 69 | 5.1 | 129 | 9.6 |
| 10 | 11 | 2.5 | 11 | 4.3 | 10 | 32.3 | 10 | .7 | 70 | 5.2 | 130 | 9.6 |
| 11 | 11 | 2.8 | 11 | 4.6 | 10 | 32.6 | 11 | .8 | 71 | 5.3 | 131 | 9.7 |
| 12 | 11 | 3.0 | 11 | 4.8 | 10 | 32.8 | 12 | .9 | 72 | 5.3 | 132 | 9.8 |
| 13 | 11 | 3.3 | 11 | 5.1 | 10 | 33.0 | 13 | 1.0 | 73 | 5.4 | 133 | 9.9 |
| 14 | 11 | 3.5 | 11 | 5.3 | 10 | 33.3 | 14 | 1.0 | 74 | 5.5 | 134 | 9.9 |
| 15 | 11 | 3.8 | 11 | 5.6 | 10 | 33.5 | 15 | 1.1 | 75 | 5.6 | 135 | 10.0 |
| 16 | 11 | 4.0 | 11 | 5.8 | 10 | 33.8 | 16 | 1.2 | 76 | 5.6 | 136 | 10.1 |
| 17 | 11 | 4.3 | 11 | 6.1 | 10 | 34.0 | 17 | 1.3 | 77 | 5.7 | 137 | 10.2 |
| 18 | 11 | 4.5 | 11 | 6.3 | 10 | 34.2 | 18 | 1.3 | 78 | 5.8 | 138 | 10.2 |
| 19 | 11 | 4.8 | 11 | 6.6 | 10 | 34.5 | 19 | 1.4 | 79 | 5.9 | 139 | 10.3 |
| 20 | 11 | 5.0 | 11 | 6.8 | 10 | 34.7 | 20 | 1.5 | 80 | 5.9 | 140 | 10.4 |
| 21 | 11 | 5.3 | 11 | 7.1 | 10 | 34.9 | 21 | 1.6 | 81 | 6.0 | 141 | 10.5 |
| 22 | 11 | 5.5 | 11 | 7.3 | 10 | 35.2 | 22 | 1.6 | 82 | 6.1 | 142 | 10.5 |
| 23 | 11 | 5.8 | 11 | 7.6 | 10 | 35.4 | 23 | 1.7 | 83 | 6.2 | 143 | 10.6 |
| 24 | 11 | 6.0 | 11 | 7.9 | 10 | 35.7 | 24 | 1.8 | 84 | 6.2 | 144 | 10.7 |
| 25 | 11 | 6.3 | 11 | 8.1 | 10 | 35.9 | 25 | 1.9 | 85 | 6.3 | 145 | 10.8 |
| 26 | 11 | 6.5 | 11 | 8.4 | 10 | 36.1 | 26 | 1.9 | 86 | 6.4 | 146 | 10.8 |
| 27 | 11 | 6.8 | 11 | 8.6 | 10 | 36.4 | 27 | 2.0 | 87 | 6.5 | 147 | 10.9 |
| 28 | 11 | 7.0 | 11 | 8.9 | 10 | 36.6 | 28 | 2.1 | 88 | 6.5 | 148 | 11.0 |
| 29 | 11 | 7.3 | 11 | 9.1 | 10 | 36.9 | 29 | 2.2 | 89 | 6.6 | 149 | 11.1 |
| 30 | 11 | 7.5 | 11 | 9.4 | 10 | 37.1 | 30 | 2.2 | 90 | 6.7 | 150 | 11.1 |
| 31 | 11 | 7.8 | 11 | 9.6 | 10 | 37.3 | 31 | 2.3 | 91 | 6.7 | 151 | 11.2 |
| 32 | 11 | 8.0 | 11 | 9.9 | 10 | 37.6 | 32 | 2.4 | 92 | 6.8 | 152 | 11.3 |
| 33 | 11 | 8.3 | 11 | 10.1 | 10 | 37.8 | 33 | 2.4 | 93 | 6.9 | 153 | 11.3 |
| 34 | 11 | 8.5 | 11 | 10.4 | 10 | 38.0 | 34 | 2.5 | 94 | 7.0 | 154 | 11.4 |
| 35 | 11 | 8.8 | 11 | 10.6 | 10 | 38.3 | 35 | 2.6 | 95 | 7.0 | 155 | 11.5 |
| 36 | 11 | 9.0 | 11 | 10.9 | 10 | 38.5 | 36 | 2.7 | 96 | 7.1 | 156 | 11.6 |
| 37 | 11 | 9.3 | 11 | 11.1 | 10 | 38.8 | 37 | 2.7 | 97 | 7.2 | 157 | 11.6 |
| 38 | 11 | 9.5 | 11 | 11.4 | 10 | 39.0 | 38 | 2.8 | 98 | 7.3 | 158 | 11.7 |
| 39 | 11 | 9.8 | 11 | 11.6 | 10 | 39.2 | 39 | 2.9 | 99 | 7.3 | 159 | 11.8 |
| 40 | 11 | 10.0 | 11 | 11.9 | 10 | 39.5 | 40 | 3.0 | 100 | 7.4 | 160 | 11.9 |
| 41 | 11 | 10.3 | 11 | 12.1 | 10 | 39.7 | 41 | 3.0 | 101 | 7.5 | 161 | 11.9 |
| 42 | 11 | 10.5 | 11 | 12.4 | 10 | 40.0 | 42 | 3.1 | 102 | 7.6 | 162 | 12.0 |
| 43 | 11 | 10.8 | 11 | 12.6 | 10 | 40.2 | 43 | 3.2 | 103 | 7.6 | 163 | 12.1 |
| 44 | 11 | 11.0 | 11 | 12.9 | 10 | 40.4 | 44 | 3.3 | 104 | 7.7 | 164 | 12.2 |
| 45 | 11 | 11.3 | 11 | 13.1 | 10 | 40.7 | 45 | 3.3 | 105 | 7.8 | 165 | 12.2 |
| 46 | 11 | 11.5 | 11 | 13.4 | 10 | 40.9 | 46 | 3.4 | 106 | 7.9 | 166 | 12.3 |
| 47 | 11 | 11.8 | 11 | 13.6 | 10 | 41.1 | 47 | 3.5 | 107 | 7.9 | 167 | 12.4 |
| 48 | 11 | 12.0 | 11 | 13.9 | 10 | 41.4 | 48 | 3.6 | 108 | 8.0 | 168 | 12.5 |
| 49 | 11 | 12.3 | 11 | 14.1 | 10 | 41.6 | 49 | 3.6 | 109 | 8.1 | 169 | 12.5 |
| 50 | 11 | 12.5 | 11 | 14.4 | 10 | 41.9 | 50 | 3.7 | 110 | 8.2 | 170 | 12.6 |
| 51 | 11 | 12.8 | 11 | 14.6 | 10 | 42.1 | 51 | 3.8 | 111 | 8.2 | 171 | 12.7 |
| 52 | 11 | 13.0 | 11 | 14.9 | 10 | 42.3 | 52 | 3.9 | 112 | 8.3 | 172 | 12.8 |
| 53 | 11 | 13.3 | 11 | 15.1 | 10 | 42.6 | 53 | 3.9 | 113 | 8.4 | 173 | 12.8 |
| 54 | 11 | 13.5 | 11 | 15.4 | 10 | 42.8 | 54 | 4.0 | 114 | 8.5 | 174 | 12.9 |
| 55 | 11 | 13.8 | 11 | 15.6 | 10 | 43.1 | 55 | 4.1 | 115 | 8.5 | 175 | 13.0 |
| 56 | 11 | 14.0 | 11 | 15.9 | 10 | 43.3 | 56 | 4.2 | 116 | 8.6 | 176 | 13.1 |
| 57 | 11 | 14.3 | 11 | 16.1 | 10 | 43.5 | 57 | 4.2 | 117 | 8.7 | 177 | 13.1 |
| 58 | 11 | 14.5 | 11 | 16.4 | 10 | 43.8 | 58 | 4.3 | 118 | 8.8 | 178 | 13.2 |
| 59 | 11 | 14.8 | 11 | 16.6 | 10 | 44.0 | 59 | 4.4 | 119 | 8.8 | 179 | 13.3 |
| 60 | 11 | 15.0 | 11 | 16.9 | 10 | 44.3 | 60 | 4.5 | 120 | 8.9 | 180 | 13.4 |

| 0 h 45 min | | | | | | | | | | | | |
|------------------------|--------------------|------|-----------------------|---|--------------|------|----|-------|-----|-------|-----|------|
| POPRAVKA ČASOVNOG UGLA | | | | POPRAVKA DRUGOG REDA za časovni ugao i deklinaciju Sunca, Mjeseca i planeta | | | | | | | | |
| s | SUNCA I PLANETA | | PROLJEČNE TAKČE T° | | MJESECA ☾ | | Δ | popr. | Δ | popr. | | |
| | o | t | o | t | o | t | | | | | | |
| 0 | 11 | 15.0 | 11 | 16.9 | 10 | 44.3 | 0 | .0 | 60 | 4.6 | 120 | 9.1 |
| 1 | 11 | 15.3 | 11 | 17.1 | 10 | 44.5 | 1 | .1 | 61 | 4.6 | 121 | 9.2 |
| 2 | 11 | 15.5 | 11 | 17.4 | 10 | 44.7 | 2 | .2 | 62 | 4.7 | 122 | 9.3 |
| 3 | 11 | 15.8 | 11 | 17.6 | 10 | 45.0 | 3 | .2 | 63 | 4.8 | 123 | 9.3 |
| 4 | 11 | 16.0 | 11 | 17.9 | 10 | 45.2 | 4 | .3 | 64 | 4.9 | 124 | 9.4 |
| 5 | 11 | 16.3 | 11 | 18.1 | 10 | 45.4 | 5 | .4 | 65 | 4.9 | 125 | 9.5 |
| 6 | 11 | 16.5 | 11 | 18.4 | 10 | 45.7 | 6 | .5 | 66 | 5.0 | 126 | 9.6 |
| 7 | 11 | 16.8 | 11 | 18.6 | 10 | 45.9 | 7 | .5 | 67 | 5.1 | 127 | 9.6 |
| 8 | 11 | 17.0 | 11 | 18.9 | 10 | 46.2 | 8 | .6 | 68 | 5.2 | 128 | 9.7 |
| 9 | 11 | 17.3 | 11 | 19.1 | 10 | 46.4 | 9 | .7 | 69 | 5.2 | 129 | 9.8 |
| 10 | 11 | 17.5 | 11 | 19.4 | 10 | 46.6 | 10 | .8 | 70 | 5.3 | 130 | 9.9 |
| 11 | 11 | 17.8 | 11 | 19.6 | 10 | 46.9 | 11 | .8 | 71 | 5.4 | 131 | 9.9 |
| 12 | 11 | 18.0 | 11 | 19.9 | 10 | 47.1 | 12 | .9 | 72 | 5.5 | 132 | 10.0 |
| 13 | 11 | 18.3 | 11 | 20.1 | 10 | 47.4 | 13 | 1.0 | 73 | 5.5 | 133 | 10.1 |
| 14 | 11 | 18.5 | 11 | 20.4 | 10 | 47.6 | 14 | 1.1 | 74 | 5.6 | 134 | 10.2 |
| 15 | 11 | 18.8 | 11 | 20.6 | 10 | 47.8 | 15 | 1.1 | 75 | 5.7 | 135 | 10.2 |
| 16 | 11 | 19.0 | 11 | 20.9 | 10 | 48.1 | 16 | 1.2 | 76 | 5.8 | 136 | 10.3 |
| 17 | 11 | 19.3 | 11 | 21.1 | 10 | 48.3 | 17 | 1.3 | 77 | 5.8 | 137 | 10.4 |
| 18 | 11 | 19.5 | 11 | 21.4 | 10 | 48.5 | 18 | 1.4 | 78 | 5.9 | 138 | 10.5 |
| 19 | 11 | 19.8 | 11 | 21.6 | 10 | 48.8 | 19 | 1.4 | 79 | 6.0 | 139 | 10.5 |
| 20 | 11 | 20.0 | 11 | 21.9 | 10 | 49.0 | 20 | 1.5 | 80 | 6.1 | 140 | 10.6 |
| 21 | 11 | 20.3 | 11 | 22.1 | 10 | 49.3 | 21 | 1.6 | 81 | 6.1 | 141 | 10.7 |
| 22 | 11 | 20.5 | 11 | 22.4 | 10 | 49.5 | 22 | 1.7 | 82 | 6.2 | 142 | 10.8 |
| 23 | 11 | 20.8 | 11 | 22.6 | 10 | 49.7 | 23 | 1.7 | 83 | 6.3 | 143 | 10.8 |
| 24 | 11 | 21.0 | 11 | 22.9 | 10 | 50.0 | 24 | 1.8 | 84 | 6.4 | 144 | 10.9 |
| 25 | 11 | 21.3 | 11 | 23.1 | 10 | 50.2 | 25 | 1.9 | 85 | 6.4 | 145 | 11.0 |
| 26 | 11 | 21.5 | 11 | 23.4 | 10 | 50.5 | 26 | 2.0 | 86 | 6.5 | 146 | 11.1 |
| 27 | 11 | 21.8 | 11 | 23.6 | 10 | 50.7 | 27 | 2.0 | 87 | 6.6 | 147 | 11.1 |
| 28 | 11 | 22.0 | 11 | 23.9 | 10 | 50.9 | 28 | 2.1 | 88 | 6.7 | 148 | 11.2 |
| 29 | 11 | 22.3 | 11 | 24.1 | 10 | 51.2 | 29 | 2.2 | 89 | 6.7 | 149 | 11.3 |
| 30 | 11 | 22.5 | 11 | 24.4 | 10 | 51.4 | 30 | 2.3 | 90 | 6.8 | 150 | 11.4 |
| 31 | 11 | 22.8 | 11 | 24.6 | 10 | 51.6 | 31 | 2.4 | 91 | 6.9 | 151 | 11.5 |
| 32 | 11 | 23.0 | 11 | 24.9 | 10 | 51.9 | 32 | 2.4 | 92 | 7.0 | 152 | 11.5 |
| 33 | 11 | 23.3 | 11 | 25.1 | 10 | 52.1 | 33 | 2.5 | 93 | 7.1 | 153 | 11.6 |
| 34 | 11 | 23.5 | 11 | 25.4 | 10 | 52.4 | 34 | 2.6 | 94 | 7.1 | 154 | 11.7 |
| 35 | 11 | 23.8 | 11 | 25.6 | 10 | 52.6 | 35 | 2.7 | 95 | 7.2 | 155 | 11.8 |
| 36 | 11 | 24.0 | 11 | 25.9 | 10 | 52.8 | 36 | 2.7 | 96 | 7.3 | 156 | 11.8 |
| 37 | 11 | 24.3 | 11 | 26.2 | 10 | 53.1 | 37 | 2.8 | 97 | 7.4 | 157 | 11.9 |
| 38 | 11 | 24.5 | 11 | 26.4 | 10 | 53.3 | 38 | 2.9 | 98 | 7.4 | 158 | 12.0 |
| 39 | 11 | 24.8 | 11 | 26.7 | 10 | 53.6 | 39 | 3.0 | 99 | 7.5 | 159 | 12.1 |
| 40 | 11 | 25.0 | 11 | 26.9 | 10 | 53.8 | 40 | 3.0 | 100 | 7.6 | 160 | 12.1 |
| 41 | 11 | 25.3 | 11 | 27.2 | 10 | 54.0 | 41 | 3.1 | 101 | 7.7 | 161 | 12.2 |
| 42 | 11 | 25.5 | 11 | 27.4 | 10 | 54.3 | 42 | 3.2 | 102 | 7.7 | 162 | 12.3 |
| 43 | 11 | 25.8 | 11 | 27.7 | 10 | 54.5 | 43 | 3.3 | 103 | 7.8 | 163 | 12.4 |
| 44 | 11 | 26.0 | 11 | 27.9 | 10 | 54.7 | 44 | 3.3 | 104 | 7.9 | 164 | 12.4 |
| 45 | 11 | 26.3 | 11 | 28.2 | 10 | 55.0 | 45 | 3.4 | 105 | 8.0 | 165 | 12.5 |
| 46 | 11 | 26.5 | 11 | 28.4 | 10 | 55.2 | 46 | 3.5 | 106 | 8.0 | 166 | 12.6 |
| 47 | 11 | 26.8 | 11 | 28.7 | 10 | 55.5 | 47 | 3.6 | 107 | 8.1 | 167 | 12.7 |
| 48 | 11 | 27.0 | 11 | 28.9 | 10 | 55.7 | 48 | 3.6 | 108 | 8.2 | 168 | 12.7 |
| 49 | 11 | 27.3 | 11 | 29.2 | 10 | 55.9 | 49 | 3.7 | 109 | 8.3 | 169 | 12.8 |
| 50 | 11 | 27.5 | 11 | 29.4 | 10 | 56.2 | 50 | 3.8 | | | | |

0 h 46 min

| POPRAVKA ČASOVNOG UGLA | | | POPRAVKA DRUGOG REDA za časovni ugao i deklinaciju Sunca, Mjeseca i planeta | | | | |
|------------------------|--------------------|----------------------|---|---------|---------|----------|--|
| s | SUNCA I PLANETA | PROLJEČNE TAČKE ° | MJESECA ζ | Δ popr. | | | |
| | o t | o t | o t | t | t | t | |
| 0 | 11 30.0 | 11 31.9 | 10 58.6 | 0 .0 | 60 4.7 | 120 9.3 | |
| 1 | 11 30.3 | 11 32.2 | 10 58.8 | 1 .1 | 61 4.7 | 121 9.4 | |
| 2 | 11 30.5 | 11 32.4 | 10 59.0 | 2 .2 | 62 4.8 | 122 9.5 | |
| 3 | 11 30.8 | 11 32.7 | 10 59.3 | 3 .2 | 63 4.9 | 123 9.5 | |
| 4 | 11 31.0 | 11 32.9 | 10 59.5 | 4 .3 | 64 5.0 | 124 9.6 | |
| 5 | 11 31.3 | 11 33.2 | 10 59.8 | 5 .4 | 65 5.0 | 125 9.7 | |
| 6 | 11 31.5 | 11 33.4 | 10 60.0 | 6 .5 | 66 5.1 | 126 9.8 | |
| 7 | 11 31.8 | 11 33.7 | 11 .2 | 7 .5 | 67 5.2 | 127 9.8 | |
| 8 | 11 32.0 | 11 33.9 | 11 .5 | 8 .6 | 68 5.3 | 128 9.9 | |
| 9 | 11 32.3 | 11 34.2 | 11 .7 | 9 .7 | 69 5.3 | 129 10.0 | |
| 10 | 11 32.5 | 11 34.4 | 11 1.0 | 10 .8 | 70 5.4 | 130 10.1 | |
| 11 | 11 32.8 | 11 34.7 | 11 1.2 | 11 .9 | 71 5.5 | 131 10.2 | |
| 12 | 11 33.0 | 11 34.9 | 11 1.4 | 12 .9 | 72 5.6 | 132 10.2 | |
| 13 | 11 33.3 | 11 35.2 | 11 1.7 | 13 1.0 | 73 5.7 | 133 10.3 | |
| 14 | 11 33.5 | 11 35.4 | 11 1.9 | 14 1.1 | 74 5.7 | 134 10.4 | |
| 15 | 11 33.8 | 11 35.7 | 11 2.1 | 15 1.2 | 75 5.8 | 135 10.5 | |
| 16 | 11 34.0 | 11 35.9 | 11 2.4 | 16 1.2 | 76 5.9 | 136 10.5 | |
| 17 | 11 34.3 | 11 36.2 | 11 2.6 | 17 1.3 | 77 6.0 | 137 10.6 | |
| 18 | 11 34.5 | 11 36.4 | 11 2.9 | 18 1.4 | 78 6.0 | 138 10.7 | |
| 19 | 11 34.8 | 11 36.7 | 11 3.1 | 19 1.5 | 79 6.1 | 139 10.8 | |
| 20 | 11 35.0 | 11 36.9 | 11 3.3 | 20 1.6 | 80 6.2 | 140 10.9 | |
| 21 | 11 35.3 | 11 37.2 | 11 3.6 | 21 1.6 | 81 6.3 | 141 10.9 | |
| 22 | 11 35.5 | 11 37.4 | 11 3.8 | 22 1.7 | 82 6.4 | 142 11.0 | |
| 23 | 11 35.8 | 11 37.7 | 11 4.1 | 23 1.8 | 83 6.4 | 143 11.1 | |
| 24 | 11 36.0 | 11 37.9 | 11 4.3 | 24 1.9 | 84 6.5 | 144 11.2 | |
| 25 | 11 36.3 | 11 38.2 | 11 4.5 | 25 1.9 | 85 6.6 | 145 11.2 | |
| 26 | 11 36.5 | 11 38.4 | 11 4.8 | 26 2.0 | 86 6.7 | 146 11.3 | |
| 27 | 11 36.8 | 11 38.7 | 11 5.0 | 27 2.1 | 87 6.7 | 147 11.4 | |
| 28 | 11 37.0 | 11 38.9 | 11 5.2 | 28 2.2 | 88 6.8 | 148 11.5 | |
| 29 | 11 37.3 | 11 39.2 | 11 5.5 | 29 2.2 | 89 6.9 | 149 11.5 | |
| 30 | 11 37.5 | 11 39.4 | 11 5.7 | 30 2.3 | 90 7.0 | 150 11.6 | |
| 31 | 11 37.8 | 11 39.7 | 11 6.0 | 31 2.4 | 91 7.1 | 151 11.7 | |
| 32 | 11 38.0 | 11 39.9 | 11 6.2 | 32 2.5 | 92 7.1 | 152 11.8 | |
| 33 | 11 38.3 | 11 40.2 | 11 6.4 | 33 2.6 | 93 7.2 | 153 11.9 | |
| 34 | 11 38.5 | 11 40.4 | 11 6.7 | 34 2.6 | 94 7.3 | 154 11.9 | |
| 35 | 11 38.8 | 11 40.7 | 11 6.9 | 35 2.7 | 95 7.4 | 155 12.0 | |
| 36 | 11 39.0 | 11 40.9 | 11 7.2 | 36 2.8 | 96 7.4 | 156 12.1 | |
| 37 | 11 39.3 | 11 41.2 | 11 7.4 | 37 2.9 | 97 7.5 | 157 12.2 | |
| 38 | 11 39.5 | 11 41.4 | 11 7.6 | 38 2.9 | 98 7.6 | 158 12.2 | |
| 39 | 11 39.8 | 11 41.7 | 11 7.9 | 39 3.0 | 99 7.7 | 159 12.3 | |
| 40 | 11 40.0 | 11 41.9 | 11 8.1 | 40 3.1 | 100 7.8 | 160 12.4 | |
| 41 | 11 40.3 | 11 42.2 | 11 8.3 | 41 3.2 | 101 7.8 | 161 12.5 | |
| 42 | 11 40.5 | 11 42.4 | 11 8.6 | 42 3.3 | 102 7.9 | 162 12.6 | |
| 43 | 11 40.8 | 11 42.7 | 11 8.8 | 43 3.3 | 103 8.0 | 163 12.6 | |
| 44 | 11 41.0 | 11 42.9 | 11 9.1 | 44 3.4 | 104 8.1 | 164 12.7 | |
| 45 | 11 41.3 | 11 43.2 | 11 9.3 | 45 3.5 | 105 8.1 | 165 12.8 | |
| 46 | 11 41.5 | 11 43.4 | 11 9.5 | 46 3.6 | 106 8.2 | 166 12.9 | |
| 47 | 11 41.8 | 11 43.7 | 11 9.8 | 47 3.6 | 107 8.3 | 167 12.9 | |
| 48 | 11 42.0 | 11 44.0 | 11 10.0 | 48 3.7 | 108 8.4 | 168 13.0 | |
| 49 | 11 42.3 | 11 44.2 | 11 10.3 | 49 3.8 | 109 8.4 | 169 13.1 | |
| 50 | 11 42.5 | 11 44.5 | 11 10.5 | 50 3.9 | 110 8.5 | 170 13.2 | |
| 51 | 11 42.8 | 11 44.7 | 11 10.7 | 51 4.0 | 111 8.6 | 171 13.3 | |
| 52 | 11 43.0 | 11 45.0 | 11 11.0 | 52 4.0 | 112 8.7 | 172 13.3 | |
| 53 | 11 43.3 | 11 45.2 | 11 11.2 | 53 4.1 | 113 8.8 | 173 13.4 | |
| 54 | 11 43.5 | 11 45.5 | 11 11.5 | 54 4.2 | 114 8.8 | 174 13.5 | |
| 55 | 11 43.8 | 11 45.7 | 11 11.7 | 55 4.3 | 115 8.9 | 175 13.6 | |
| 56 | 11 44.0 | 11 46.0 | 11 11.9 | 56 4.3 | 116 9.0 | 176 13.6 | |
| 57 | 11 44.3 | 11 46.2 | 11 12.2 | 57 4.4 | 117 9.1 | 177 13.7 | |
| 58 | 11 44.5 | 11 46.5 | 11 12.4 | 58 4.5 | 118 9.1 | 178 13.8 | |
| 59 | 11 44.8 | 11 46.7 | 11 12.6 | 59 4.6 | 119 9.2 | 179 13.9 | |
| 60 | 11 45.0 | 11 47.0 | 11 12.9 | 60 4.7 | 120 9.3 | 180 14.0 | |

0 h 47 min

| POPRAVKA ČASOVNOG UGLA | | | POPRAVKA DRUGOG REDA za časovni ugao i deklinaciju Sunca, Mjeseca i planeta | | | | |
|------------------------|--------------------|----------------------|---|---------|---------|----------|--|
| s | SUNCA I PLANETA | PROLJEČNE TAČKE ° | MJESECA ζ | Δ popr. | | | |
| | o t | o t | o t | t | t | t | |
| 0 | 11 45.0 | 11 47.0 | 11 12.9 | 0 .0 | 60 4.8 | 120 9.5 | |
| 1 | 11 45.3 | 11 47.2 | 11 13.1 | 1 .1 | 61 4.8 | 121 9.6 | |
| 2 | 11 45.5 | 11 47.5 | 11 13.4 | 2 .2 | 62 4.9 | 122 9.7 | |
| 3 | 11 45.8 | 11 47.7 | 11 13.6 | 3 .2 | 63 5.0 | 123 9.7 | |
| 4 | 11 46.0 | 11 48.0 | 11 13.8 | 4 .3 | 64 5.1 | 124 9.8 | |
| 5 | 11 46.3 | 11 48.2 | 11 14.1 | 5 .4 | 65 5.1 | 125 9.9 | |
| 6 | 11 46.5 | 11 48.5 | 11 14.3 | 6 .5 | 66 5.2 | 126 10.0 | |
| 7 | 11 46.8 | 11 48.7 | 11 14.6 | 7 .6 | 67 5.3 | 127 10.1 | |
| 8 | 11 47.0 | 11 49.0 | 11 14.8 | 8 .6 | 68 5.4 | 128 10.1 | |
| 9 | 11 47.3 | 11 49.2 | 11 15.0 | 9 .7 | 69 5.5 | 129 10.2 | |
| 10 | 11 47.5 | 11 49.5 | 11 15.3 | 10 .8 | 70 5.5 | 130 10.3 | |
| 11 | 11 47.8 | 11 49.7 | 11 15.5 | 11 .9 | 71 5.6 | 131 10.4 | |
| 12 | 11 48.0 | 11 50.0 | 11 15.7 | 12 1.0 | 72 5.7 | 132 10.5 | |
| 13 | 11 48.3 | 11 50.2 | 11 16.0 | 13 1.0 | 73 5.8 | 133 10.5 | |
| 14 | 11 48.5 | 11 50.5 | 11 16.2 | 14 1.1 | 74 5.9 | 134 10.6 | |
| 15 | 11 48.8 | 11 50.7 | 11 16.5 | 15 1.2 | 75 5.9 | 135 10.7 | |
| 16 | 11 49.0 | 11 51.0 | 11 16.7 | 16 1.3 | 76 6.0 | 136 10.8 | |
| 17 | 11 49.3 | 11 51.2 | 11 16.9 | 17 1.3 | 77 6.1 | 137 10.8 | |
| 18 | 11 49.5 | 11 51.5 | 11 17.2 | 18 1.4 | 78 6.2 | 138 10.9 | |
| 19 | 11 49.8 | 11 51.7 | 11 17.4 | 19 1.5 | 79 6.3 | 139 11.0 | |
| 20 | 11 50.0 | 11 52.0 | 11 17.7 | 20 1.6 | 80 6.3 | 140 11.1 | |
| 21 | 11 50.3 | 11 52.2 | 11 17.9 | 21 1.7 | 81 6.4 | 141 11.2 | |
| 22 | 11 50.5 | 11 52.5 | 11 18.1 | 22 1.7 | 82 6.5 | 142 11.2 | |
| 23 | 11 50.8 | 11 52.7 | 11 18.4 | 23 1.8 | 83 6.6 | 143 11.3 | |
| 24 | 11 51.0 | 11 53.0 | 11 18.6 | 24 1.9 | 84 6.7 | 144 11.4 | |
| 25 | 11 51.3 | 11 53.2 | 11 18.8 | 25 2.0 | 85 6.7 | 145 11.5 | |
| 26 | 11 51.5 | 11 53.5 | 11 19.1 | 26 2.1 | 86 6.8 | 146 11.6 | |
| 27 | 11 51.8 | 11 53.7 | 11 19.3 | 27 2.1 | 87 6.9 | 147 11.6 | |
| 28 | 11 52.0 | 11 54.0 | 11 19.6 | 28 2.2 | 88 7.0 | 148 11.7 | |
| 29 | 11 52.3 | 11 54.2 | 11 19.8 | 29 2.3 | 89 7.0 | 149 11.8 | |
| 30 | 11 52.5 | 11 54.5 | 11 20.0 | 30 2.4 | 90 7.1 | 150 11.9 | |
| 31 | 11 52.8 | 11 54.7 | 11 20.3 | 31 2.5 | 91 7.2 | 151 12.0 | |
| 32 | 11 53.0 | 11 55.0 | 11 20.5 | 32 2.5 | 92 7.3 | 152 12.0 | |
| 33 | 11 53.3 | 11 55.2 | 11 20.8 | 33 2.6 | 93 7.4 | 153 12.1 | |
| 34 | 11 53.5 | 11 55.5 | 11 21.0 | 34 2.7 | 94 7.4 | 154 12.2 | |
| 35 | 11 53.8 | 11 55.7 | 11 21.2 | 35 2.8 | 95 7.5 | 155 12.3 | |
| 36 | 11 54.0 | 11 56.0 | 11 21.5 | 36 2.9 | 96 7.6 | 156 12.4 | |
| 37 | 11 54.3 | 11 56.2 | 11 21.7 | 37 2.9 | 97 7.7 | 157 12.4 | |
| 38 | 11 54.5 | 11 56.5 | 11 22.0 | 38 3.0 | 98 7.8 | 158 12.5 | |
| 39 | 11 54.8 | 11 56.7 | 11 22.2 | 39 3.1 | 99 7.8 | 159 12.6 | |
| 40 | 11 55.0 | 11 57.0 | 11 22.4 | 40 3.2 | 100 7.9 | 160 12.7 | |
| 41 | 11 55.3 | 11 57.2 | 11 22.7 | 41 3.2 | 101 8.0 | 161 12.7 | |
| 42 | 11 55.5 | 11 57.5 | 11 22.9 | 42 3.3 | 102 8.1 | 162 12.8 | |
| 43 | 11 55.8 | 11 57.7 | 11 23.1 | 43 3.4 | 103 8.2 | 163 12.9 | |
| 44 | 11 56.0 | 11 58.0 | 11 23.4 | 44 3.5 | 104 8.2 | 164 13.0 | |
| 45 | 11 56.3 | 11 58.2 | 11 23.6 | 45 3.6 | 105 8.3 | 165 13.1 | |
| 46 | 11 56.5 | 11 58.5 | 11 23.9 | 46 3.6 | 106 8.4 | 166 13.1 | |
| 47 | 11 56.8 | 11 58.7 | 11 24.1 | 47 3.7 | 107 8.5 | 167 13.2 | |
| 48 | 11 57.0 | 11 59.0 | 11 24.3 | 48 3.8 | 108 8.6 | 168 13.3 | |
| 49 | 11 57.3 | 11 59.2 | 11 24.6 | 49 3.9 | 109 8.6 | 169 13.4 | |
| 50 | 11 57.5 | 11 59.5 | 11 24.8 | 50 4.0 | 110 8.7 | 170 13.5 | |
| 51 | 11 57.8 | 11 59.7 | 11 25.1 | 51 4.0 | 111 8.8 | 171 13.5 | |
| 52 | 11 58.0 | 11 60.0 | 11 25.3 | 52 4.1 | 112 8.9 | 172 13.6 | |
| 53 | 11 58.3 | 12 .2 | 11 25.5 | 53 4.2 | 113 8.9 | 173 13.7 | |
| 54 | 11 58.5 | 12 .5 | 11 25.8 | 54 4.3 | 114 9.0 | 174 13.8 | |
| 55 | 11 58.8 | 12 .7 | 11 26.0 | 55 4.4 | 115 9.1 | 175 13.9 | |
| 56 | 11 59.0 | 12 1.0 | 11 26.2 | 56 4.4 | 116 9.2 | 176 13.9 | |
| 57 | 11 59.3 | 12 1.2 | 11 26.5 | 57 4.5 | 117 9.3 | 177 14.0 | |
| 58 | 11 59.5 | 12 1.5 | 11 26.7 | 58 4.6 | 118 9.3 | 178 14.1 | |
| 59 | 11 59.8 | 12 1.7 | 11 27.0 | 59 4.7 | 119 9.4 | 179 14.2 | |
| 60 | 12 .0 | 12 2.0 | 11 27.2 | 60 4.8 | 120 9.5 | 180 14.3 | |

0 h 48 min

| POPRAVKA ČASOVNOG UGLA | | | | POPRAVKA DRUGOG REDA za časovni ugao i deklinaciju Sunca, Mjeseca i planeta | | | | | | | | |
|------------------------|-----------------|------|----------------------|---|---------|------|----|-----|-----|-----|-----|------|
| s | SUNCA I PLANETA | | PROLJEĆNE TACKE T | MJESECA ☾ | Δ popr. | | | | | | | |
| | o | l | o | l | l | l | l | | | | | |
| 0 | 12 | .0 | 12 | 2.0 | 11 | 27.2 | 0 | .0 | 60 | 4.9 | 120 | 9.7 |
| 1 | 12 | .3 | 12 | 2.3 | 11 | 27.4 | 1 | .1 | 61 | 4.9 | 121 | 9.8 |
| 2 | 12 | .5 | 12 | 2.5 | 11 | 27.7 | 2 | .2 | 62 | 5.0 | 122 | 9.9 |
| 3 | 12 | .8 | 12 | 2.8 | 11 | 27.9 | 3 | .2 | 63 | 5.1 | 123 | 9.9 |
| 4 | 12 | 1.0 | 12 | 3.0 | 11 | 28.2 | 4 | .3 | 64 | 5.2 | 124 | 10.0 |
| 5 | 12 | 1.3 | 12 | 3.3 | 11 | 28.4 | 5 | .4 | 65 | 5.3 | 125 | 10.1 |
| 6 | 12 | 1.5 | 12 | 3.5 | 11 | 28.6 | 6 | .5 | 66 | 5.3 | 126 | 10.2 |
| 7 | 12 | 1.8 | 12 | 3.8 | 11 | 28.9 | 7 | .6 | 67 | 5.4 | 127 | 10.3 |
| 8 | 12 | 2.0 | 12 | 4.0 | 11 | 29.1 | 8 | .6 | 68 | 5.5 | 128 | 10.3 |
| 9 | 12 | 2.3 | 12 | 4.3 | 11 | 29.3 | 9 | .7 | 69 | 5.6 | 129 | 10.4 |
| 10 | 12 | 2.5 | 12 | 4.5 | 11 | 29.6 | 10 | .8 | 70 | 5.7 | 130 | 10.5 |
| 11 | 12 | 2.8 | 12 | 4.8 | 11 | 29.8 | 11 | .9 | 71 | 5.7 | 131 | 10.6 |
| 12 | 12 | 3.0 | 12 | 5.0 | 11 | 30.1 | 12 | 1.0 | 72 | 5.8 | 132 | 10.7 |
| 13 | 12 | 3.3 | 12 | 5.3 | 11 | 30.3 | 13 | 1.1 | 73 | 5.9 | 133 | 10.8 |
| 14 | 12 | 3.5 | 12 | 5.5 | 11 | 30.5 | 14 | 1.1 | 74 | 6.0 | 134 | 10.8 |
| 15 | 12 | 3.8 | 12 | 5.8 | 11 | 30.8 | 15 | 1.2 | 75 | 6.1 | 135 | 10.9 |
| 16 | 12 | 4.0 | 12 | 6.0 | 11 | 31.0 | 16 | 1.3 | 76 | 6.1 | 136 | 11.0 |
| 17 | 12 | 4.3 | 12 | 6.3 | 11 | 31.3 | 17 | 1.4 | 77 | 6.2 | 137 | 11.1 |
| 18 | 12 | 4.5 | 12 | 6.5 | 11 | 31.5 | 18 | 1.5 | 78 | 6.3 | 138 | 11.2 |
| 19 | 12 | 4.8 | 12 | 6.8 | 11 | 31.7 | 19 | 1.5 | 79 | 6.4 | 139 | 11.2 |
| 20 | 12 | 5.0 | 12 | 7.0 | 11 | 32.0 | 20 | 1.6 | 80 | 6.5 | 140 | 11.3 |
| 21 | 12 | 5.3 | 12 | 7.3 | 11 | 32.2 | 21 | 1.7 | 81 | 6.5 | 141 | 11.4 |
| 22 | 12 | 5.5 | 12 | 7.5 | 11 | 32.4 | 22 | 1.8 | 82 | 6.6 | 142 | 11.5 |
| 23 | 12 | 5.8 | 12 | 7.8 | 11 | 32.7 | 23 | 1.9 | 83 | 6.7 | 143 | 11.6 |
| 24 | 12 | 6.0 | 12 | 8.0 | 11 | 32.9 | 24 | 1.9 | 84 | 6.8 | 144 | 11.6 |
| 25 | 12 | 6.3 | 12 | 8.3 | 11 | 33.2 | 25 | 2.0 | 85 | 6.9 | 145 | 11.7 |
| 26 | 12 | 6.5 | 12 | 8.5 | 11 | 33.4 | 26 | 2.1 | 86 | 7.0 | 146 | 11.8 |
| 27 | 12 | 6.8 | 12 | 8.8 | 11 | 33.6 | 27 | 2.2 | 87 | 7.0 | 147 | 11.9 |
| 28 | 12 | 7.0 | 12 | 9.0 | 11 | 33.9 | 28 | 2.3 | 88 | 7.1 | 148 | 12.0 |
| 29 | 12 | 7.3 | 12 | 9.3 | 11 | 34.1 | 29 | 2.3 | 89 | 7.2 | 149 | 12.0 |
| 30 | 12 | 7.5 | 12 | 9.5 | 11 | 34.4 | 30 | 2.4 | 90 | 7.3 | 150 | 12.1 |
| 31 | 12 | 7.8 | 12 | 9.8 | 11 | 34.6 | 31 | 2.5 | 91 | 7.4 | 151 | 12.2 |
| 32 | 12 | 8.0 | 12 | 10.0 | 11 | 34.8 | 32 | 2.6 | 92 | 7.4 | 152 | 12.3 |
| 33 | 12 | 8.3 | 12 | 10.3 | 11 | 35.1 | 33 | 2.7 | 93 | 7.5 | 153 | 12.4 |
| 34 | 12 | 8.5 | 12 | 10.5 | 11 | 35.3 | 34 | 2.7 | 94 | 7.6 | 154 | 12.4 |
| 35 | 12 | 8.8 | 12 | 10.8 | 11 | 35.6 | 35 | 2.8 | 95 | 7.7 | 155 | 12.5 |
| 36 | 12 | 9.0 | 12 | 11.0 | 11 | 35.8 | 36 | 2.9 | 96 | 7.8 | 156 | 12.6 |
| 37 | 12 | 9.3 | 12 | 11.3 | 11 | 36.0 | 37 | 3.0 | 97 | 7.8 | 157 | 12.7 |
| 38 | 12 | 9.5 | 12 | 11.5 | 11 | 36.3 | 38 | 3.1 | 98 | 7.9 | 158 | 12.8 |
| 39 | 12 | 9.8 | 12 | 11.8 | 11 | 36.5 | 39 | 3.2 | 99 | 8.0 | 159 | 12.9 |
| 40 | 12 | 10.0 | 12 | 12.0 | 11 | 36.7 | 40 | 3.2 | 100 | 8.1 | 160 | 12.9 |
| 41 | 12 | 10.3 | 12 | 12.3 | 11 | 37.0 | 41 | 3.3 | 101 | 8.2 | 161 | 13.0 |
| 42 | 12 | 10.5 | 12 | 12.5 | 11 | 37.2 | 42 | 3.4 | 102 | 8.2 | 162 | 13.1 |
| 43 | 12 | 10.8 | 12 | 12.8 | 11 | 37.5 | 43 | 3.5 | 103 | 8.3 | 163 | 13.2 |
| 44 | 12 | 11.0 | 12 | 13.0 | 11 | 37.7 | 44 | 3.6 | 104 | 8.4 | 164 | 13.3 |
| 45 | 12 | 11.3 | 12 | 13.3 | 11 | 37.9 | 45 | 3.6 | 105 | 8.5 | 165 | 13.3 |
| 46 | 12 | 11.5 | 12 | 13.5 | 11 | 38.2 | 46 | 3.7 | 106 | 8.6 | 166 | 13.4 |
| 47 | 12 | 11.8 | 12 | 13.8 | 11 | 38.4 | 47 | 3.8 | 107 | 8.6 | 167 | 13.5 |
| 48 | 12 | 12.0 | 12 | 14.0 | 11 | 38.7 | 48 | 3.9 | 108 | 8.7 | 168 | 13.6 |
| 49 | 12 | 12.3 | 12 | 14.3 | 11 | 38.9 | 49 | 4.0 | 109 | 8.8 | 169 | 13.7 |
| 50 | 12 | 12.5 | 12 | 14.5 | 11 | 39.1 | 50 | 4.0 | 110 | 8.9 | 170 | 13.7 |
| 51 | 12 | 12.8 | 12 | 14.8 | 11 | 39.4 | 51 | 4.1 | 111 | 9.0 | 171 | 13.8 |
| 52 | 12 | 13.0 | 12 | 15.0 | 11 | 39.6 | 52 | 4.2 | 112 | 9.1 | 172 | 13.9 |
| 53 | 12 | 13.3 | 12 | 15.3 | 11 | 39.8 | 53 | 4.3 | 113 | 9.1 | 173 | 14.0 |
| 54 | 12 | 13.5 | 12 | 15.5 | 11 | 40.1 | 54 | 4.4 | 114 | 9.2 | 174 | 14.1 |
| 55 | 12 | 13.8 | 12 | 15.8 | 11 | 40.3 | 55 | 4.4 | 115 | 9.3 | 175 | 14.1 |
| 56 | 12 | 14.0 | 12 | 16.0 | 11 | 40.6 | 56 | 4.5 | 116 | 9.4 | 176 | 14.2 |
| 57 | 12 | 14.3 | 12 | 16.3 | 11 | 40.8 | 57 | 4.6 | 117 | 9.5 | 177 | 14.3 |
| 58 | 12 | 14.5 | 12 | 16.5 | 11 | 41.0 | 58 | 4.7 | 118 | 9.5 | 178 | 14.4 |
| 59 | 12 | 14.8 | 12 | 16.8 | 11 | 41.3 | 59 | 4.8 | 119 | 9.6 | 179 | 14.5 |
| 60 | 12 | 15.0 | 12 | 17.0 | 11 | 41.5 | 60 | 4.9 | 120 | 9.7 | 180 | 14.6 |

0 h 49 min

| POPRAVKA ČASOVNOG UGLA | | | | POPRAVKA DRUGOG REDA za časovni ugao i deklinaciju Sunca, Mjeseca i planeta | | | | | | | | |
|------------------------|-----------------|------|----------------------|---|---------|------|----|-----|-----|-----|-----|------|
| s | SUNCA I PLANETA | | PROLJEĆNE TACKE T | MJESECA ☾ | Δ popr. | | | | | | | |
| | o | l | o | l | l | l | l | | | | | |
| 0 | 12 | 15.0 | 12 | 17.0 | 11 | 41.5 | 0 | .0 | 60 | 5.0 | 120 | 9.9 |
| 1 | 12 | 15.3 | 12 | 17.3 | 11 | 41.8 | 1 | .1 | 61 | 5.0 | 121 | 10.0 |
| 2 | 12 | 15.5 | 12 | 17.5 | 11 | 42.0 | 2 | .2 | 62 | 5.1 | 122 | 10.1 |
| 3 | 12 | 15.8 | 12 | 17.8 | 11 | 42.2 | 3 | .2 | 63 | 5.2 | 123 | 10.1 |
| 4 | 12 | 16.0 | 12 | 18.0 | 11 | 42.5 | 4 | .3 | 64 | 5.3 | 124 | 10.2 |
| 5 | 12 | 16.3 | 12 | 18.3 | 11 | 42.7 | 5 | .4 | 65 | 5.4 | 125 | 10.3 |
| 6 | 12 | 16.5 | 12 | 18.5 | 11 | 42.9 | 6 | .5 | 66 | 5.4 | 126 | 10.4 |
| 7 | 12 | 16.8 | 12 | 18.8 | 11 | 43.2 | 7 | .6 | 67 | 5.5 | 127 | 10.5 |
| 8 | 12 | 17.0 | 12 | 19.0 | 11 | 43.4 | 8 | .7 | 68 | 5.6 | 128 | 10.6 |
| 9 | 12 | 17.3 | 12 | 19.3 | 11 | 43.7 | 9 | .7 | 69 | 5.7 | 129 | 10.6 |
| 10 | 12 | 17.5 | 12 | 19.5 | 11 | 43.9 | 10 | .8 | 70 | 5.8 | 130 | 10.7 |
| 11 | 12 | 17.8 | 12 | 19.8 | 11 | 44.1 | 11 | .9 | 71 | 5.9 | 131 | 10.8 |
| 12 | 12 | 18.0 | 12 | 20.1 | 11 | 44.4 | 12 | 1.0 | 72 | 5.9 | 132 | 10.9 |
| 13 | 12 | 18.3 | 12 | 20.3 | 11 | 44.6 | 13 | 1.1 | 73 | 6.0 | 133 | 11.0 |
| 14 | 12 | 18.5 | 12 | 20.6 | 11 | 44.9 | 14 | 1.2 | 74 | 6.1 | 134 | 11.1 |
| 15 | 12 | 18.8 | 12 | 20.8 | 11 | 45.1 | 15 | 1.2 | 75 | 6.2 | 135 | 11.1 |
| 16 | 12 | 19.0 | 12 | 21.1 | 11 | 45.3 | 16 | 1.3 | 76 | 6.3 | 136 | 11.2 |
| 17 | 12 | 19.3 | 12 | 21.3 | 11 | 45.6 | 17 | 1.4 | 77 | 6.4 | 137 | 11.3 |
| 18 | 12 | 19.5 | 12 | 21.6 | 11 | 45.8 | 18 | 1.5 | 78 | 6.4 | 138 | 11.4 |
| 19 | 12 | 19.8 | 12 | 21.8 | 11 | 46.1 | 19 | 1.6 | 79 | 6.5 | 139 | 11.5 |
| 20 | 12 | 20.0 | 12 | 22.1 | 11 | 46.3 | 20 | 1.7 | 80 | 6.6 | 140 | 11.6 |
| 21 | 12 | 20.3 | 12 | 22.3 | 11 | 46.5 | 21 | 1.7 | 81 | 6.7 | 141 | 11.6 |
| 22 | 12 | 20.5 | 12 | 22.6 | 11 | 46.8 | 22 | 1.8 | 82 | 6.8 | 142 | 11.7 |
| 23 | 12 | 20.8 | 12 | 22.8 | 11 | 47.0 | 23 | 1.9 | 83 | 6.8 | 143 | 11.8 |
| 24 | 12 | 21.0 | 12 | 23.1 | 11 | 47.2 | 24 | 2.0 | 84 | 6.9 | 144 | 11.9 |
| 25 | 12 | 21.3 | 12 | 23.3 | 11 | 47.5 | 25 | 2.1 | 85 | 7.0 | 145 | 12.0 |
| 26 | 12 | 21.5 | 12 | 23.6 | 11 | 47.7 | 26 | 2.1 | 86 | 7.1 | 146 | 12.0 |
| 27 | 12 | 21.8 | 12 | 23.8 | 11 | 48.0 | 27 | 2.2 | 87 | 7.2 | 147 | 12.1 |
| 28 | 12 | 22.0 | 12 | 24.1 | 11 | 48.2 | 28 | 2.3 | 88 | 7.3 | 148 | 12.2 |
| 29 | 12 | 22.3 | 12 | 24.3 | 11 | 48.4 | 29 | 2.4 | 89 | 7.3 | 149 | 12.3 |
| 30 | 12 | 22.5 | 12 | 24.6 | 11 | 48.7 | 30 | 2.5 | 90 | 7.4 | 150 | 12.4 |
| 31 | 12 | 22.8 | 12 | 24.8 | 11 | 48.9 | 31 | 2.6 | 91 | 7.5 | 151 | 12.5 |
| 32 | 12 | 23.0 | 12 | 25.1 | 11 | 49.2 | 32 | 2.6 | 92 | 7.6 | 152 | 12.5 |
| 33 | 12 | 23.3 | 12 | 25.3 | 11 | 49.4 | 33 | 2.7 | 93 | 7.7 | 153 | 12.6 |
| 34 | 12 | 23.5 | 12 | 25.6 | 11 | 49.6 | 34 | 2.8 | 94 | 7.8 | 154 | 12.7 |
| 35 | 12 | 23.8 | 12 | 25.8 | 11 | 49.9 | 35 | 2.9 | 95 | 7.8 | 155 | 12.8 |
| 36 | 12 | 24.0 | 12 | 26.1 | 11 | 50.1 | 36 | 3.0 | 96 | 7.9 | 156 | 12.9 |
| 37 | 12 | 24.3 | 12 | 26.3 | 11 | 50.3 | 37 | 3.1 | 97 | 8.0 | 157 | 13.0 |
| 38 | 12 | 24.5 | 12 | 26.6 | 11 | 50.6 | 38 | 3.1 | 98 | 8.1 | 158 | 13.0 |
| 39 | 12 | 24.8 | 12 | 26.8 | 11 | 50.8 | 39 | 3.2 | 99 | 8.2 | 159 | 13.1 |
| 40 | 12 | 25.0 | 12 | 27.1 | 11 | 51.1 | 40 | 3.3 | 100 | 8.3 | 160 | 13.2 |
| 41 | 12 | 25.3 | 12 | 27.3 | 11 | 51.3 | 41 | 3.4 | 101 | 8.3 | 161 | 13.3 |
| 42 | 12 | 25.5 | 12 | 27.6 | 11 | 51.5 | 42 | 3.5 | 102 | 8.4 | 162 | 13.4 |
| 43 | 12 | 25.8 | 12 | 27.8 | 11 | 51.8 | 43 | 3.5 | 103 | 8.5 | 163 | 13.4 |
| 44 | 12 | 26.0 | 12 | 28.1 | 11 | 52.0 | 44 | 3.6 | 104 | 8.6 | 164 | 13.5 |
| 45 | 12 | 26.3 | 12 | 28.3 | 11 | 52.3 | 45 | 3.7 | 105 | 8.7 | 165 | 13.6 |
| 46 | 12 | 26.5 | 12 | 28.6 | 11 | 52.5 | 46 | 3.8 | 106 | 8.7 | 166 | 13.7 |
| 47 | 12 | 26.8 | 12 | 28.8 | 11 | 52.7 | 47 | 3.9 | 107 | 8.8 | 167 | 13.8 |
| 48 | 12 | 27.0 | 12 | 29.1 | 11 | 53.0 | 48 | 4.0 | 108 | 8.9 | 168 | 13.9 |
| 49 | 12 | 27.3 | 12 | 29.3 | 11 | 53.2 | 49 | 4.0 | 109 | 9.0 | 169 | 13.9 |
| 50 | 12 | 27.5 | 12 | 29.6 | 11 | 53.4 | 50 | 4.1 | | | | |

| 0 h 50 min | | | | | | | | | |
|------------------------|-----------------|----------------------|--------------|---|-------|-----|-------|-----|-------|
| POPRAVKA ČASOVNOG UGLA | | | | POPRAVKA DRUGOG REDA za časovni ugao i deklinaciju Sunca, Mjeseca i planeta | | | | | |
| s | SUNCA I PLANETA | PROLJEĆNE TAKŖE T | MJESECA ♄ | Δ | popr. | Δ | popr. | Δ | popr. |
| | o † | o † | o † | | † | † | † | | † |
| 0 | 12 30.0 | 12 32.1 | 11 55.8 | 0 | .0 | 60 | 5.1 | 120 | 10.1 |
| 1 | 12 30.3 | 12 32.3 | 11 56.1 | 1 | .1 | 61 | 5.1 | 121 | 10.2 |
| 2 | 12 30.5 | 12 32.6 | 11 56.3 | 2 | .2 | 62 | 5.2 | 122 | 10.3 |
| 3 | 12 30.8 | 12 32.8 | 11 56.5 | 3 | .3 | 63 | 5.3 | 123 | 10.4 |
| 4 | 12 31.0 | 12 33.1 | 11 56.8 | 4 | .3 | 64 | 5.4 | 124 | 10.4 |
| 5 | 12 31.3 | 12 33.3 | 11 57.0 | 5 | .4 | 65 | 5.5 | 125 | 10.5 |
| 6 | 12 31.5 | 12 33.6 | 11 57.3 | 6 | .5 | 66 | 5.6 | 126 | 10.6 |
| 7 | 12 31.8 | 12 33.8 | 11 57.5 | 7 | .6 | 67 | 5.6 | 127 | 10.7 |
| 8 | 12 32.0 | 12 34.1 | 11 57.7 | 8 | .7 | 68 | 5.7 | 128 | 10.8 |
| 9 | 12 32.3 | 12 34.3 | 11 58.0 | 9 | .8 | 69 | 5.8 | 129 | 10.9 |
| 10 | 12 32.5 | 12 34.6 | 11 58.2 | 10 | .8 | 70 | 5.9 | 130 | 10.9 |
| 11 | 12 32.8 | 12 34.8 | 11 58.5 | 11 | .9 | 71 | 6.0 | 131 | 11.0 |
| 12 | 12 33.0 | 12 35.1 | 11 58.7 | 12 | 1.0 | 72 | 6.1 | 132 | 11.1 |
| 13 | 12 33.3 | 12 35.3 | 11 58.9 | 13 | 1.1 | 73 | 6.1 | 133 | 11.2 |
| 14 | 12 33.5 | 12 35.6 | 11 59.2 | 14 | 1.2 | 74 | 6.2 | 134 | 11.3 |
| 15 | 12 33.8 | 12 35.8 | 11 59.4 | 15 | 1.3 | 75 | 6.3 | 135 | 11.4 |
| 16 | 12 34.0 | 12 36.1 | 11 59.7 | 16 | 1.3 | 76 | 6.4 | 136 | 11.4 |
| 17 | 12 34.3 | 12 36.3 | 11 59.9 | 17 | 1.4 | 77 | 6.5 | 137 | 11.5 |
| 18 | 12 34.5 | 12 36.6 | 12 .1 | 18 | 1.5 | 78 | 6.6 | 138 | 11.6 |
| 19 | 12 34.8 | 12 36.8 | 12 .4 | 19 | 1.6 | 79 | 6.6 | 139 | 11.7 |
| 20 | 12 35.0 | 12 37.1 | 12 .6 | 20 | 1.7 | 80 | 6.7 | 140 | 11.8 |
| 21 | 12 35.3 | 12 37.3 | 12 .8 | 21 | 1.8 | 81 | 6.8 | 141 | 11.9 |
| 22 | 12 35.5 | 12 37.6 | 12 1.1 | 22 | 1.9 | 82 | 6.9 | 142 | 12.0 |
| 23 | 12 35.8 | 12 37.8 | 12 1.3 | 23 | 1.9 | 83 | 7.0 | 143 | 12.0 |
| 24 | 12 36.0 | 12 38.1 | 12 1.6 | 24 | 2.0 | 84 | 7.1 | 144 | 12.1 |
| 25 | 12 36.3 | 12 38.4 | 12 1.8 | 25 | 2.1 | 85 | 7.2 | 145 | 12.2 |
| 26 | 12 36.5 | 12 38.6 | 12 2.0 | 26 | 2.2 | 86 | 7.2 | 146 | 12.3 |
| 27 | 12 36.8 | 12 38.9 | 12 2.3 | 27 | 2.3 | 87 | 7.3 | 147 | 12.4 |
| 28 | 12 37.0 | 12 39.1 | 12 2.5 | 28 | 2.4 | 88 | 7.4 | 148 | 12.5 |
| 29 | 12 37.3 | 12 39.4 | 12 2.8 | 29 | 2.4 | 89 | 7.5 | 149 | 12.5 |
| 30 | 12 37.5 | 12 39.6 | 12 3.0 | 30 | 2.5 | 90 | 7.6 | 150 | 12.6 |
| 31 | 12 37.8 | 12 39.9 | 12 3.2 | 31 | 2.6 | 91 | 7.7 | 151 | 12.7 |
| 32 | 12 38.0 | 12 40.1 | 12 3.5 | 32 | 2.7 | 92 | 7.7 | 152 | 12.8 |
| 33 | 12 38.3 | 12 40.4 | 12 3.7 | 33 | 2.8 | 93 | 7.8 | 153 | 12.9 |
| 34 | 12 38.5 | 12 40.6 | 12 3.9 | 34 | 2.9 | 94 | 7.9 | 154 | 13.0 |
| 35 | 12 38.8 | 12 40.9 | 12 4.2 | 35 | 2.9 | 95 | 8.0 | 155 | 13.0 |
| 36 | 12 39.0 | 12 41.1 | 12 4.4 | 36 | 3.0 | 96 | 8.1 | 156 | 13.1 |
| 37 | 12 39.3 | 12 41.4 | 12 4.7 | 37 | 3.1 | 97 | 8.2 | 157 | 13.2 |
| 38 | 12 39.5 | 12 41.6 | 12 4.9 | 38 | 3.2 | 98 | 8.2 | 158 | 13.3 |
| 39 | 12 39.8 | 12 41.9 | 12 5.1 | 39 | 3.3 | 99 | 8.3 | 159 | 13.4 |
| 40 | 12 40.0 | 12 42.1 | 12 5.4 | 40 | 3.4 | 100 | 8.4 | 160 | 13.5 |
| 41 | 12 40.3 | 12 42.4 | 12 5.6 | 41 | 3.5 | 101 | 8.5 | 161 | 13.6 |
| 42 | 12 40.5 | 12 42.6 | 12 5.9 | 42 | 3.5 | 102 | 8.6 | 162 | 13.6 |
| 43 | 12 40.8 | 12 42.9 | 12 6.1 | 43 | 3.6 | 103 | 8.7 | 163 | 13.7 |
| 44 | 12 41.0 | 12 43.1 | 12 6.3 | 44 | 3.7 | 104 | 8.8 | 164 | 13.8 |
| 45 | 12 41.3 | 12 43.4 | 12 6.6 | 45 | 3.8 | 105 | 8.8 | 165 | 13.9 |
| 46 | 12 41.5 | 12 43.6 | 12 6.8 | 46 | 3.9 | 106 | 8.9 | 166 | 14.0 |
| 47 | 12 41.8 | 12 43.9 | 12 7.0 | 47 | 4.0 | 107 | 9.0 | 167 | 14.1 |
| 48 | 12 42.0 | 12 44.1 | 12 7.3 | 48 | 4.0 | 108 | 9.1 | 168 | 14.1 |
| 49 | 12 42.3 | 12 44.4 | 12 7.5 | 49 | 4.1 | 109 | 9.2 | 169 | 14.2 |
| 50 | 12 42.5 | 12 44.6 | 12 7.8 | 50 | 4.2 | 110 | 9.3 | 170 | 14.3 |
| 51 | 12 42.8 | 12 44.9 | 12 8.0 | 51 | 4.3 | 111 | 9.3 | 171 | 14.4 |
| 52 | 12 43.0 | 12 45.1 | 12 8.2 | 52 | 4.4 | 112 | 9.4 | 172 | 14.5 |
| 53 | 12 43.3 | 12 45.4 | 12 8.5 | 53 | 4.5 | 113 | 9.5 | 173 | 14.6 |
| 54 | 12 43.5 | 12 45.6 | 12 8.7 | 54 | 4.5 | 114 | 9.6 | 174 | 14.6 |
| 55 | 12 43.8 | 12 45.9 | 12 9.0 | 55 | 4.6 | 115 | 9.7 | 175 | 14.7 |
| 56 | 12 44.0 | 12 46.1 | 12 9.2 | 56 | 4.7 | 116 | 9.8 | 176 | 14.8 |
| 57 | 12 44.3 | 12 46.4 | 12 9.4 | 57 | 4.8 | 117 | 9.8 | 177 | 14.9 |
| 58 | 12 44.5 | 12 46.6 | 12 9.7 | 58 | 4.9 | 118 | 9.9 | 178 | 15.0 |
| 59 | 12 44.8 | 12 46.9 | 12 9.9 | 59 | 5.0 | 119 | 10.0 | 179 | 15.1 |
| 60 | 12 45.0 | 12 47.1 | 12 10.2 | 60 | 5.1 | 120 | 10.1 | 180 | 15.2 |

| 0 h 51 min | | | | | | | | | |
|------------------------|-----------------|----------------------|--------------|---|-------|-----|-------|-----|-------|
| POPRAVKA ČASOVNOG UGLA | | | | POPRAVKA DRUGOG REDA za časovni ugao i deklinaciju Sunca, Mjeseca i planeta | | | | | |
| s | SUNCA I PLANETA | PROLJEĆNE TAKŖE T | MJESECA ♄ | Δ | popr. | Δ | popr. | Δ | popr. |
| | o † | o † | o † | | † | † | † | | † |
| 0 | 12 45.0 | 12 47.1 | 12 10.2 | 0 | .0 | 60 | 5.2 | 120 | 10.3 |
| 1 | 12 45.3 | 12 47.4 | 12 10.4 | 1 | .1 | 61 | 5.2 | 121 | 10.4 |
| 2 | 12 45.5 | 12 47.6 | 12 10.6 | 2 | .2 | 62 | 5.3 | 122 | 10.5 |
| 3 | 12 45.8 | 12 47.9 | 12 10.9 | 3 | .3 | 63 | 5.4 | 123 | 10.6 |
| 4 | 12 46.0 | 12 48.1 | 12 11.1 | 4 | .3 | 64 | 5.5 | 124 | 10.6 |
| 5 | 12 46.3 | 12 48.4 | 12 11.3 | 5 | .4 | 65 | 5.6 | 125 | 10.7 |
| 6 | 12 46.5 | 12 48.6 | 12 11.6 | 6 | .5 | 66 | 5.7 | 126 | 10.8 |
| 7 | 12 46.8 | 12 48.9 | 12 11.8 | 7 | .6 | 67 | 5.8 | 127 | 10.9 |
| 8 | 12 47.0 | 12 49.1 | 12 12.1 | 8 | .7 | 68 | 5.8 | 128 | 11.0 |
| 9 | 12 47.3 | 12 49.4 | 12 12.3 | 9 | .8 | 69 | 5.9 | 129 | 11.1 |
| 10 | 12 47.5 | 12 49.6 | 12 12.5 | 10 | .9 | 70 | 6.0 | 130 | 11.2 |
| 11 | 12 47.8 | 12 49.9 | 12 12.8 | 11 | .9 | 71 | 6.1 | 131 | 11.2 |
| 12 | 12 48.0 | 12 50.1 | 12 13.0 | 12 | 1.0 | 72 | 6.2 | 132 | 11.3 |
| 13 | 12 48.3 | 12 50.4 | 12 13.3 | 13 | 1.1 | 73 | 6.3 | 133 | 11.4 |
| 14 | 12 48.5 | 12 50.6 | 12 13.5 | 14 | 1.2 | 74 | 6.4 | 134 | 11.5 |
| 15 | 12 48.8 | 12 50.9 | 12 13.7 | 15 | 1.3 | 75 | 6.4 | 135 | 11.6 |
| 16 | 12 49.0 | 12 51.1 | 12 14.0 | 16 | 1.4 | 76 | 6.5 | 136 | 11.7 |
| 17 | 12 49.3 | 12 51.4 | 12 14.2 | 17 | 1.5 | 77 | 6.6 | 137 | 11.8 |
| 18 | 12 49.5 | 12 51.6 | 12 14.4 | 18 | 1.5 | 78 | 6.7 | 138 | 11.8 |
| 19 | 12 49.8 | 12 51.9 | 12 14.7 | 19 | 1.6 | 79 | 6.8 | 139 | 11.9 |
| 20 | 12 50.0 | 12 52.1 | 12 14.9 | 20 | 1.7 | 80 | 6.9 | 140 | 12.0 |
| 21 | 12 50.3 | 12 52.4 | 12 15.2 | 21 | 1.8 | 81 | 7.0 | 141 | 12.1 |
| 22 | 12 50.5 | 12 52.6 | 12 15.4 | 22 | 1.9 | 82 | 7.0 | 142 | 12.2 |
| 23 | 12 50.8 | 12 52.9 | 12 15.6 | 23 | 2.0 | 83 | 7.1 | 143 | 12.3 |
| 24 | 12 51.0 | 12 53.1 | 12 15.9 | 24 | 2.1 | 84 | 7.2 | 144 | 12.4 |
| 25 | 12 51.3 | 12 53.4 | 12 16.1 | 25 | 2.1 | 85 | 7.3 | 145 | 12.4 |
| 26 | 12 51.5 | 12 53.6 | 12 16.4 | 26 | 2.2 | 86 | 7.4 | 146 | 12.5 |
| 27 | 12 51.8 | 12 53.9 | 12 16.6 | 27 | 2.3 | 87 | 7.5 | 147 | 12.6 |
| 28 | 12 52.0 | 12 54.1 | 12 16.8 | 28 | 2.4 | 88 | 7.6 | 148 | 12.7 |
| 29 | 12 52.3 | 12 54.4 | 12 17.1 | 29 | 2.5 | 89 | 7.6 | 149 | 12.8 |
| 30 | 12 52.5 | 12 54.6 | 12 17.3 | 30 | 2.6 | 90 | 7.7 | 150 | 12.9 |
| 31 | 12 52.8 | 12 54.9 | 12 17.5 | 31 | 2.7 | 91 | 7.8 | 151 | 13.0 |
| 32 | 12 53.0 | 12 55.1 | 12 17.8 | 32 | 2.7 | 92 | 7.9 | 152 | 13.0 |
| 33 | 12 53.3 | 12 55.4 | 12 18.0 | 33 | 2.8 | 93 | 8.0 | 153 | 13.1 |
| 34 | 12 53.5 | 12 55.6 | 12 18.3 | 34 | 2.9 | 94 | 8.1 | 154 | 13.2 |
| 35 | 12 53.8 | 12 55.9 | 12 18.5 | 35 | 3.0 | 95 | 8.2 | 155 | 13.3 |
| 36 | 12 54.0 | 12 56.2 | 12 18.7 | 36 | 3.1 | 96 | 8.2 | 156 | 13.4 |
| 37 | 12 54.3 | 12 56.4 | 12 19.0 | 37 | 3.2 | 97 | 8.3 | 157 | 13.5 |
| 38 | 12 54.5 | 12 56.7 | 12 19.2 | 38 | 3.3 | 98 | 8.4 | 158 | 13.6 |
| 39 | 12 54.8 | 12 56.9 | 12 19.5 | 39 | 3.3 | 99 | 8.5 | 159 | 13.6 |
| 40 | 12 55.0 | 12 57.2 | 12 19.7 | 40 | 3.4 | 100 | 8.6 | 160 | 13.7 |
| 41 | 12 55.3 | 12 57.4 | 12 19.9 | 41 | 3.5 | 101 | 8.7 | 161 | 13.8 |
| 42 | 12 55.5 | 12 57.7 | 12 20.2 | 42 | 3.6 | 102 | 8.8 | 162 | 13.9 |
| 43 | 12 55.8 | 12 57.9 | 12 20.4 | 43 | 3.7 | 103 | 8.8 | 163 | 14.0 |
| 44 | 12 56.0 | 12 58.2 | 12 20.6 | 44 | 3.8 | 104 | 8.9 | 164 | 14.1 |
| 45 | 12 56.3 | 12 58.4 | 12 20.9 | 45 | 3.9 | 105 | 9.0 | 165 | 14.2 |
| 46 | 12 56.5 | 12 58.7 | 12 21.1 | 46 | 3.9 | 106 | 9.1 | 166 | 14.2 |
| 47 | 12 56.8 | 12 58.9 | 12 21.4 | 47 | 4.0 | 107 | 9.2 | 167 | 14.3 |
| 48 | 12 57.0 | 12 59.2 | 12 21.6 | 48 | 4.1 | 108 | 9.3 | 168 | 14.4 |
| 49 | 12 57.3 | 12 59.4 | 12 21.8 | 49 | 4.2 | 109 | 9.4 | 169 | 14.5 |
| 50 | 12 57.5 | 12 59.7 | 12 22.1 | 50 | 4.3 | 110 | 9.4 | 170 | 14.6 |
| 51 | 12 57.8 | 12 59.9 | 12 22.3 | 51 | 4.4 | 111 | 9.5 | 171 | 14.7 |
| 52 | 12 58.0 | 13 .2 | 12 22.6 | 52 | 4.5 | 112 | 9.6 | 172 | 14.8 |
| 53 | 12 58.3 | 13 .4 | 12 22.8 | 53 | 4.5 | 113 | 9.7 | 173 | 14.8 |
| 54 | 12 58.5 | 13 .7 | 12 23.0 | 54 | 4.6 | 114 | 9.8 | 174 | 14.9 |
| 55 | 12 58.8 | 13 .9 | 12 23.3 | 55 | 4.7 | 115 | 9.9 | 175 | 15.0 |
| 56 | 12 59.0 | 13 1.2 | 12 23.5 | 56 | 4.8 | 116 | 10.0 | 176 | 15.1 |
| 57 | 12 59.3 | 13 1.4 | 12 23.8 | 57 | 4.9 | 117 | 10.0 | 177 | 15.2 |
| 58 | 12 59.5 | 13 1.7 | 12 24.0 | 58 | 5.0 | 118 | 10.1 | 178 | 15.3 |
| 59 | 12 59.8 | 13 1.9 | 12 24.2 | 59 | 5.1 | 119 | 10.2 | 179 | 15.4 |
| 60 | 13 .0 | 13 2.2 | 12 24.5 | 60 | 5.2 | 120 | 10.3 | 180 | 15.5 |

0 h 52 min

| POPRAVKA ČASOVNOG UGLA | | | | POPRAVKA DRUGOG REDA za časovni ugao i deklinaciju Sunca, Mjeseca i planeta | | | |
|------------------------|--------------------|----------------------|--------------|---|------------|------------|--|
| S | SUNCA I PLANETA | PROLJEČNE TAČKE ° | MJESECA ζ | Δ popr. | Δ popr. | Δ popr. | |
| | o f | o f | o f | f | f | f | |
| 0 | 13 .0 | 13 2.2 | 12 24.5 | 0 .0 | 60 5.3 | 120 10.5 | |
| 1 | 13 .3 | 13 2.4 | 12 24.7 | 1 .1 | 61 5.3 | 121 10.6 | |
| 2 | 13 .5 | 13 2.7 | 12 24.9 | 2 .2 | 62 5.4 | 122 10.7 | |
| 3 | 13 .8 | 13 2.9 | 12 25.2 | 3 .3 | 63 5.5 | 123 10.8 | |
| 4 | 13 1.0 | 13 3.2 | 12 25.4 | 4 .4 | 64 5.6 | 124 10.9 | |
| 5 | 13 1.3 | 13 3.4 | 12 25.7 | 5 .4 | 65 5.7 | 125 10.9 | |
| 6 | 13 1.5 | 13 3.7 | 12 25.9 | 6 .5 | 66 5.8 | 126 11.0 | |
| 7 | 13 1.8 | 13 3.9 | 12 26.1 | 7 .6 | 67 5.9 | 127 11.1 | |
| 8 | 13 2.0 | 13 4.2 | 12 26.4 | 8 .7 | 68 6.0 | 128 11.2 | |
| 9 | 13 2.3 | 13 4.4 | 12 26.6 | 9 .8 | 69 6.0 | 129 11.3 | |
| 10 | 13 2.5 | 13 4.7 | 12 26.9 | 10 .9 | 70 6.1 | 130 11.4 | |
| 11 | 13 2.8 | 13 4.9 | 12 27.1 | 11 1.0 | 71 6.2 | 131 11.5 | |
| 12 | 13 3.0 | 13 5.2 | 12 27.3 | 12 1.1 | 72 6.3 | 132 11.6 | |
| 13 | 13 3.3 | 13 5.4 | 12 27.6 | 13 1.1 | 73 6.4 | 133 11.6 | |
| 14 | 13 3.5 | 13 5.7 | 12 27.8 | 14 1.2 | 74 6.5 | 134 11.7 | |
| 15 | 13 3.8 | 13 5.9 | 12 28.0 | 15 1.3 | 75 6.6 | 135 11.8 | |
| 16 | 13 4.0 | 13 6.2 | 12 28.3 | 16 1.4 | 76 6.7 | 136 11.9 | |
| 17 | 13 4.3 | 13 6.4 | 12 28.5 | 17 1.5 | 77 6.7 | 137 12.0 | |
| 18 | 13 4.5 | 13 6.7 | 12 28.8 | 18 1.6 | 78 6.8 | 138 12.1 | |
| 19 | 13 4.8 | 13 6.9 | 12 29.0 | 19 1.7 | 79 6.9 | 139 12.2 | |
| 20 | 13 5.0 | 13 7.2 | 12 29.2 | 20 1.8 | 80 7.0 | 140 12.3 | |
| 21 | 13 5.3 | 13 7.4 | 12 29.5 | 21 1.8 | 81 7.1 | 141 12.3 | |
| 22 | 13 5.5 | 13 7.7 | 12 29.7 | 22 1.9 | 82 7.2 | 142 12.4 | |
| 23 | 13 5.8 | 13 7.9 | 12 30.0 | 23 2.0 | 83 7.3 | 143 12.5 | |
| 24 | 13 6.0 | 13 8.2 | 12 30.2 | 24 2.1 | 84 7.4 | 144 12.6 | |
| 25 | 13 6.3 | 13 8.4 | 12 30.4 | 25 2.2 | 85 7.4 | 145 12.7 | |
| 26 | 13 6.5 | 13 8.7 | 12 30.7 | 26 2.3 | 86 7.5 | 146 12.8 | |
| 27 | 13 6.8 | 13 8.9 | 12 30.9 | 27 2.4 | 87 7.6 | 147 12.9 | |
| 28 | 13 7.0 | 13 9.2 | 12 31.1 | 28 2.5 | 88 7.7 | 148 13.0 | |
| 29 | 13 7.3 | 13 9.4 | 12 31.4 | 29 2.5 | 89 7.8 | 149 13.0 | |
| 30 | 13 7.5 | 13 9.7 | 12 31.6 | 30 2.6 | 90 7.9 | 150 13.1 | |
| 31 | 13 7.8 | 13 9.9 | 12 31.9 | 31 2.7 | 91 8.0 | 151 13.2 | |
| 32 | 13 8.0 | 13 10.2 | 12 32.1 | 32 2.8 | 92 8.1 | 152 13.3 | |
| 33 | 13 8.3 | 13 10.4 | 12 32.3 | 33 2.9 | 93 8.1 | 153 13.4 | |
| 34 | 13 8.5 | 13 10.7 | 12 32.6 | 34 3.0 | 94 8.2 | 154 13.5 | |
| 35 | 13 8.8 | 13 10.9 | 12 32.8 | 35 3.1 | 95 8.3 | 155 13.6 | |
| 36 | 13 9.0 | 13 11.2 | 12 33.1 | 36 3.2 | 96 8.4 | 156 13.7 | |
| 37 | 13 9.3 | 13 11.4 | 12 33.3 | 37 3.2 | 97 8.5 | 157 13.7 | |
| 38 | 13 9.5 | 13 11.7 | 12 33.5 | 38 3.3 | 98 8.6 | 158 13.8 | |
| 39 | 13 9.8 | 13 11.9 | 12 33.8 | 39 3.4 | 99 8.7 | 159 13.9 | |
| 40 | 13 10.0 | 13 12.2 | 12 34.0 | 40 3.5 | 100 8.8 | 160 14.0 | |
| 41 | 13 10.3 | 13 12.4 | 12 34.2 | 41 3.6 | 101 8.8 | 161 14.1 | |
| 42 | 13 10.5 | 13 12.7 | 12 34.5 | 42 3.7 | 102 8.9 | 162 14.2 | |
| 43 | 13 10.8 | 13 12.9 | 12 34.7 | 43 3.8 | 103 9.0 | 163 14.3 | |
| 44 | 13 11.0 | 13 13.2 | 12 35.0 | 44 3.9 | 104 9.1 | 164 14.4 | |
| 45 | 13 11.3 | 13 13.4 | 12 35.2 | 45 3.9 | 105 9.2 | 165 14.4 | |
| 46 | 13 11.5 | 13 13.7 | 12 35.4 | 46 4.0 | 106 9.3 | 166 14.5 | |
| 47 | 13 11.8 | 13 13.9 | 12 35.7 | 47 4.1 | 107 9.4 | 167 14.6 | |
| 48 | 13 12.0 | 13 14.2 | 12 35.9 | 48 4.2 | 108 9.5 | 168 14.7 | |
| 49 | 13 12.3 | 13 14.5 | 12 36.2 | 49 4.3 | 109 9.5 | 169 14.8 | |
| 50 | 13 12.5 | 13 14.7 | 12 36.4 | 50 4.4 | 110 9.6 | 170 14.9 | |
| 51 | 13 12.8 | 13 15.0 | 12 36.6 | 51 4.5 | 111 9.7 | 171 15.0 | |
| 52 | 13 13.0 | 13 15.2 | 12 36.9 | 52 4.6 | 112 9.8 | 172 15.1 | |
| 53 | 13 13.3 | 13 15.5 | 12 37.1 | 53 4.6 | 113 9.9 | 173 15.1 | |
| 54 | 13 13.5 | 13 15.7 | 12 37.4 | 54 4.7 | 114 10.0 | 174 15.2 | |
| 55 | 13 13.8 | 13 16.0 | 12 37.6 | 55 4.8 | 115 10.1 | 175 15.3 | |
| 56 | 13 14.0 | 13 16.2 | 12 37.8 | 56 4.9 | 116 10.2 | 176 15.4 | |
| 57 | 13 14.3 | 13 16.5 | 12 38.1 | 57 5.0 | 117 10.2 | 177 15.5 | |
| 58 | 13 14.5 | 13 16.7 | 12 38.3 | 58 5.1 | 118 10.3 | 178 15.6 | |
| 59 | 13 14.8 | 13 17.0 | 12 38.5 | 59 5.2 | 119 10.4 | 179 15.7 | |
| 60 | 13 15.0 | 13 17.2 | 12 38.8 | 60 5.3 | 120 10.5 | 180 15.8 | |

0 h 53 min

| POPRAVKA ČASOVNOG UGLA | | | | POPRAVKA DRUGOG REDA za časovni ugao i deklinaciju Sunca, Mjeseca i planeta | | | |
|------------------------|--------------------|----------------------|--------------|---|------------|------------|--|
| S | SUNCA I PLANETA | PROLJEČNE TAČKE ° | MJESECA ζ | Δ popr. | Δ popr. | Δ popr. | |
| | o f | o f | o f | f | f | f | |
| 0 | 13 15.0 | 13 17.2 | 12 38.8 | 0 .0 | 60 5.4 | 120 10.7 | |
| 1 | 13 15.3 | 13 17.5 | 12 39.0 | 1 .1 | 61 5.4 | 121 10.8 | |
| 2 | 13 15.5 | 13 17.7 | 12 39.3 | 2 .2 | 62 5.5 | 122 10.9 | |
| 3 | 13 15.8 | 13 18.0 | 12 39.5 | 3 .3 | 63 5.6 | 123 11.0 | |
| 4 | 13 16.0 | 13 18.2 | 12 39.7 | 4 .4 | 64 5.7 | 124 11.1 | |
| 5 | 13 16.3 | 13 18.5 | 12 40.0 | 5 .4 | 65 5.8 | 125 11.1 | |
| 6 | 13 16.5 | 13 18.7 | 12 40.2 | 6 .5 | 66 5.9 | 126 11.2 | |
| 7 | 13 16.8 | 13 19.0 | 12 40.5 | 7 .6 | 67 6.0 | 127 11.3 | |
| 8 | 13 17.0 | 13 19.2 | 12 40.7 | 8 .7 | 68 6.1 | 128 11.4 | |
| 9 | 13 17.3 | 13 19.5 | 12 40.9 | 9 .8 | 69 6.2 | 129 11.5 | |
| 10 | 13 17.5 | 13 19.7 | 12 41.2 | 10 .9 | 70 6.2 | 130 11.6 | |
| 11 | 13 17.8 | 13 20.0 | 12 41.4 | 11 1.0 | 71 6.3 | 131 11.7 | |
| 12 | 13 18.0 | 13 20.2 | 12 41.6 | 12 1.1 | 72 6.4 | 132 11.8 | |
| 13 | 13 18.3 | 13 20.5 | 12 41.9 | 13 1.2 | 73 6.5 | 133 11.9 | |
| 14 | 13 18.5 | 13 20.7 | 12 42.1 | 14 1.2 | 74 6.6 | 134 11.9 | |
| 15 | 13 18.8 | 13 21.0 | 12 42.4 | 15 1.3 | 75 6.7 | 135 12.0 | |
| 16 | 13 19.0 | 13 21.2 | 12 42.6 | 16 1.4 | 76 6.8 | 136 12.1 | |
| 17 | 13 19.3 | 13 21.5 | 12 42.8 | 17 1.5 | 77 6.9 | 137 12.2 | |
| 18 | 13 19.5 | 13 21.7 | 12 43.1 | 18 1.6 | 78 7.0 | 138 12.3 | |
| 19 | 13 19.8 | 13 22.0 | 12 43.3 | 19 1.7 | 79 7.0 | 139 12.4 | |
| 20 | 13 20.0 | 13 22.2 | 12 43.6 | 20 1.8 | 80 7.1 | 140 12.5 | |
| 21 | 13 20.3 | 13 22.5 | 12 43.8 | 21 1.9 | 81 7.2 | 141 12.6 | |
| 22 | 13 20.5 | 13 22.7 | 12 44.0 | 22 2.0 | 82 7.3 | 142 12.7 | |
| 23 | 13 20.8 | 13 23.0 | 12 44.3 | 23 2.1 | 83 7.4 | 143 12.8 | |
| 24 | 13 21.0 | 13 23.2 | 12 44.5 | 24 2.1 | 84 7.5 | 144 12.8 | |
| 25 | 13 21.3 | 13 23.5 | 12 44.7 | 25 2.2 | 85 7.6 | 145 12.9 | |
| 26 | 13 21.5 | 13 23.7 | 12 45.0 | 26 2.3 | 86 7.7 | 146 13.0 | |
| 27 | 13 21.8 | 13 24.0 | 12 45.2 | 27 2.4 | 87 7.8 | 147 13.1 | |
| 28 | 13 22.0 | 13 24.2 | 12 45.5 | 28 2.5 | 88 7.8 | 148 13.2 | |
| 29 | 13 22.3 | 13 24.5 | 12 45.7 | 29 2.6 | 89 7.9 | 149 13.3 | |
| 30 | 13 22.5 | 13 24.7 | 12 45.9 | 30 2.7 | 90 8.0 | 150 13.4 | |
| 31 | 13 22.8 | 13 25.0 | 12 46.2 | 31 2.8 | 91 8.1 | 151 13.5 | |
| 32 | 13 23.0 | 13 25.2 | 12 46.4 | 32 2.9 | 92 8.2 | 152 13.6 | |
| 33 | 13 23.3 | 13 25.5 | 12 46.7 | 33 2.9 | 93 8.3 | 153 13.6 | |
| 34 | 13 23.5 | 13 25.7 | 12 46.9 | 34 3.0 | 94 8.4 | 154 13.7 | |
| 35 | 13 23.8 | 13 26.0 | 12 47.1 | 35 3.1 | 95 8.5 | 155 13.8 | |
| 36 | 13 24.0 | 13 26.2 | 12 47.4 | 36 3.2 | 96 8.6 | 156 13.9 | |
| 37 | 13 24.3 | 13 26.5 | 12 47.6 | 37 3.3 | 97 8.6 | 157 14.0 | |
| 38 | 13 24.5 | 13 26.7 | 12 47.9 | 38 3.4 | 98 8.7 | 158 14.1 | |
| 39 | 13 24.8 | 13 27.0 | 12 48.1 | 39 3.5 | 99 8.8 | 159 14.2 | |
| 40 | 13 25.0 | 13 27.2 | 12 48.3 | 40 3.6 | 100 8.9 | 160 14.3 | |
| 41 | 13 25.3 | 13 27.5 | 12 48.6 | 41 3.7 | 101 9.0 | 161 14.4 | |
| 42 | 13 25.5 | 13 27.7 | 12 48.8 | 42 3.7 | 102 9.1 | 162 14.4 | |
| 43 | 13 25.8 | 13 28.0 | 12 49.0 | 43 3.8 | 103 9.2 | 163 14.5 | |
| 44 | 13 26.0 | 13 28.2 | 12 49.3 | 44 3.9 | 104 9.3 | 164 14.6 | |
| 45 | 13 26.3 | 13 28.5 | 12 49.5 | 45 4.0 | 105 9.4 | 165 14.7 | |
| 46 | 13 26.5 | 13 28.7 | 12 49.8 | 46 4.1 | 106 9.5 | 166 14.8 | |
| 47 | 13 26.8 | 13 29.0 | 12 50.0 | 47 4.2 | 107 9.5 | 167 14.9 | |
| 48 | 13 27.0 | 13 29.2 | 12 50.2 | 48 4.3 | 108 9.6 | 168 15.0 | |
| 49 | 13 27.3 | 13 29.5 | 12 50.5 | 49 4.4 | 109 9.7 | 169 15.1 | |
| 50 | 13 27.5 | 13 29.7 | 12 50.7 | 50 4.5 | 110 9.8 | 170 15.2 | |
| 51 | 13 27.8 | 13 30.0 | 12 51.0 | 51 4.5 | 111 9.9 | 171 15.2 | |
| 52 | 13 28.0 | 13 30.2 | 12 51.2 | 52 4.6 | 112 10.0 | 172 15.3 | |
| 53 | 13 28.3 | 13 30.5 | 12 51.4 | 53 4.7 | 113 10.1 | 173 15.4 | |
| 54 | 13 28.5 | 13 30.7 | 12 51.7 | 54 4.8 | 114 10.2 | 174 15.5 | |
| 55 | 13 28.8 | 13 31.0 | 12 51.9 | 55 4.9 | 115 10.3 | 175 15.6 | |
| 56 | 13 29.0 | 13 31.2 | 12 52.1 | 56 5.0 | 116 10.3 | 176 15.7 | |
| 57 | 13 29.3 | 13 31.5 | 12 52.4 | 57 5.1 | 117 10.4 | 177 15.8 | |
| 58 | 13 29.5 | 13 31.7 | 12 52.6 | 58 5.2 | 118 10.5 | 178 15.9 | |
| 59 | 13 29.8 | 13 32.0 | 12 52.9 | 59 5.3 | 119 10.6 | 179 16.0 | |
| 60 | 13 30.0 | 13 32.3 | 12 53.1 | 60 5.4 | 120 10.7 | 180 16.1 | |

0 h 54 min

| POPRAVKA ČASOVNOG UGLA | | | | POPRAVKA DRUGOG REDA za časovni ugao i deklinaciju Sunca, Mjeseca i planeta | | | |
|------------------------|--------------------|----------------------|--------------|---|-------|----------|----------|
| S | SUNCA I PLANETA | PROLJEČNE TAČKE ° | MJESECA ζ | Δ | popr. | Δ | popr. |
| | o / f | o / f | o / f | | /' | /' | /' |
| 0 | 13 30.0 | 13 32.3 | 12 53.1 | 0 | .0 | 60 5.5 | 120 10.9 |
| 1 | 13 30.3 | 13 32.5 | 12 53.3 | 1 | .1 | 61 5.5 | 121 11.0 |
| 2 | 13 30.5 | 13 32.8 | 12 53.6 | 2 | .2 | 62 5.6 | 122 11.1 |
| 3 | 13 30.8 | 13 33.0 | 12 53.8 | 3 | .3 | 63 5.7 | 123 11.2 |
| 4 | 13 31.0 | 13 33.3 | 12 54.1 | 4 | .4 | 64 5.8 | 124 11.3 |
| 5 | 13 31.3 | 13 33.5 | 12 54.3 | 5 | .5 | 65 5.9 | 125 11.4 |
| 6 | 13 31.5 | 13 33.8 | 12 54.5 | 6 | .5 | 66 6.0 | 126 11.4 |
| 7 | 13 31.8 | 13 34.0 | 12 54.8 | 7 | .6 | 67 6.1 | 127 11.5 |
| 8 | 13 32.0 | 13 34.3 | 12 55.0 | 8 | .7 | 68 6.2 | 128 11.6 |
| 9 | 13 32.3 | 13 34.5 | 12 55.2 | 9 | .8 | 69 6.3 | 129 11.7 |
| 10 | 13 32.5 | 13 34.8 | 12 55.5 | 10 | .9 | 70 6.4 | 130 11.8 |
| 11 | 13 32.8 | 13 35.0 | 12 55.7 | 11 | 1.0 | 71 6.4 | 131 11.9 |
| 12 | 13 33.0 | 13 35.3 | 12 56.0 | 12 | 1.1 | 72 6.5 | 132 12.0 |
| 13 | 13 33.3 | 13 35.5 | 12 56.2 | 13 | 1.2 | 73 6.6 | 133 12.1 |
| 14 | 13 33.5 | 13 35.8 | 12 56.4 | 14 | 1.3 | 74 6.7 | 134 12.2 |
| 15 | 13 33.8 | 13 36.0 | 12 56.7 | 15 | 1.4 | 75 6.8 | 135 12.3 |
| 16 | 13 34.0 | 13 36.3 | 12 56.9 | 16 | 1.5 | 76 6.9 | 136 12.4 |
| 17 | 13 34.3 | 13 36.5 | 12 57.2 | 17 | 1.5 | 77 7.0 | 137 12.4 |
| 18 | 13 34.5 | 13 36.8 | 12 57.4 | 18 | 1.6 | 78 7.1 | 138 12.5 |
| 19 | 13 34.8 | 13 37.0 | 12 57.6 | 19 | 1.7 | 79 7.2 | 139 12.6 |
| 20 | 13 35.0 | 13 37.3 | 12 57.9 | 20 | 1.8 | 80 7.3 | 140 12.7 |
| 21 | 13 35.3 | 13 37.5 | 12 58.1 | 21 | 1.9 | 81 7.4 | 141 12.8 |
| 22 | 13 35.5 | 13 37.8 | 12 58.3 | 22 | 2.0 | 82 7.4 | 142 12.9 |
| 23 | 13 35.8 | 13 38.0 | 12 58.6 | 23 | 2.1 | 83 7.5 | 143 13.0 |
| 24 | 13 36.0 | 13 38.3 | 12 58.8 | 24 | 2.2 | 84 7.6 | 144 13.1 |
| 25 | 13 36.3 | 13 38.5 | 12 59.1 | 25 | 2.3 | 85 7.7 | 145 13.2 |
| 26 | 13 36.5 | 13 38.8 | 12 59.3 | 26 | 2.4 | 86 7.8 | 146 13.3 |
| 27 | 13 36.8 | 13 39.0 | 12 59.5 | 27 | 2.5 | 87 7.9 | 147 13.4 |
| 28 | 13 37.0 | 13 39.3 | 12 59.8 | 28 | 2.5 | 88 8.0 | 148 13.4 |
| 29 | 13 37.3 | 13 39.5 | 13 .0 | 29 | 2.6 | 89 8.1 | 149 13.5 |
| 30 | 13 37.5 | 13 39.8 | 13 .3 | 30 | 2.7 | 90 8.2 | 150 13.6 |
| 31 | 13 37.8 | 13 40.0 | 13 .5 | 31 | 2.8 | 91 8.3 | 151 13.7 |
| 32 | 13 38.0 | 13 40.3 | 13 .7 | 32 | 2.9 | 92 8.4 | 152 13.8 |
| 33 | 13 38.3 | 13 40.5 | 13 1.0 | 33 | 3.0 | 93 8.4 | 153 13.9 |
| 34 | 13 38.5 | 13 40.8 | 13 1.2 | 34 | 3.1 | 94 8.5 | 154 14.0 |
| 35 | 13 38.8 | 13 41.0 | 13 1.5 | 35 | 3.2 | 95 8.6 | 155 14.1 |
| 36 | 13 39.0 | 13 41.3 | 13 1.7 | 36 | 3.3 | 96 8.7 | 156 14.2 |
| 37 | 13 39.3 | 13 41.5 | 13 1.9 | 37 | 3.4 | 97 8.8 | 157 14.3 |
| 38 | 13 39.5 | 13 41.8 | 13 2.2 | 38 | 3.5 | 98 8.9 | 158 14.4 |
| 39 | 13 39.8 | 13 42.0 | 13 2.4 | 39 | 3.5 | 99 9.0 | 159 14.4 |
| 40 | 13 40.0 | 13 42.3 | 13 2.6 | 40 | 3.6 | 100 9.1 | 160 14.5 |
| 41 | 13 40.3 | 13 42.5 | 13 2.9 | 41 | 3.7 | 101 9.2 | 161 14.6 |
| 42 | 13 40.5 | 13 42.8 | 13 3.1 | 42 | 3.8 | 102 9.3 | 162 14.7 |
| 43 | 13 40.8 | 13 43.0 | 13 3.4 | 43 | 3.9 | 103 9.4 | 163 14.8 |
| 44 | 13 41.0 | 13 43.3 | 13 3.6 | 44 | 4.0 | 104 9.4 | 164 14.9 |
| 45 | 13 41.3 | 13 43.5 | 13 3.8 | 45 | 4.1 | 105 9.5 | 165 15.0 |
| 46 | 13 41.5 | 13 43.8 | 13 4.1 | 46 | 4.2 | 106 9.6 | 166 15.1 |
| 47 | 13 41.8 | 13 44.0 | 13 4.3 | 47 | 4.3 | 107 9.7 | 167 15.2 |
| 48 | 13 42.0 | 13 44.3 | 13 4.6 | 48 | 4.4 | 108 9.8 | 168 15.3 |
| 49 | 13 42.3 | 13 44.5 | 13 4.8 | 49 | 4.5 | 109 9.9 | 169 15.4 |
| 50 | 13 42.5 | 13 44.8 | 13 5.0 | 50 | 4.5 | 110 10.0 | 170 15.4 |
| 51 | 13 42.8 | 13 45.0 | 13 5.3 | 51 | 4.6 | 111 10.1 | 171 15.5 |
| 52 | 13 43.0 | 13 45.3 | 13 5.5 | 52 | 4.7 | 112 10.2 | 172 15.6 |
| 53 | 13 43.3 | 13 45.5 | 13 5.7 | 53 | 4.8 | 113 10.3 | 173 15.7 |
| 54 | 13 43.5 | 13 45.8 | 13 6.0 | 54 | 4.9 | 114 10.4 | 174 15.8 |
| 55 | 13 43.8 | 13 46.0 | 13 6.2 | 55 | 5.0 | 115 10.4 | 175 15.9 |
| 56 | 13 44.0 | 13 46.3 | 13 6.5 | 56 | 5.1 | 116 10.5 | 176 16.0 |
| 57 | 13 44.3 | 13 46.5 | 13 6.7 | 57 | 5.2 | 117 10.6 | 177 16.1 |
| 58 | 13 44.5 | 13 46.8 | 13 6.9 | 58 | 5.3 | 118 10.7 | 178 16.2 |
| 59 | 13 44.8 | 13 47.0 | 13 7.2 | 59 | 5.4 | 119 10.8 | 179 16.3 |
| 60 | 13 45.0 | 13 47.3 | 13 7.4 | 60 | 5.5 | 120 10.9 | 180 16.4 |

0 h 55 min

| POPRAVKA ČASOVNOG UGLA | | | | POPRAVKA DRUGOG REDA za časovni ugao i deklinaciju Sunca, Mjeseca i planeta | | | |
|------------------------|--------------------|----------------------|--------------|---|-------|----------|----------|
| S | SUNCA I PLANETA | PROLJEČNE TAČKE ° | MJESECA ζ | Δ | popr. | Δ | popr. |
| | o / f | o / f | o / f | | /' | /' | /' |
| 0 | 13 45.0 | 13 47.3 | 13 7.4 | 0 | .0 | 60 5.6 | 120 11.1 |
| 1 | 13 45.3 | 13 47.5 | 13 7.7 | 1 | .1 | 61 5.6 | 121 11.2 |
| 2 | 13 45.5 | 13 47.8 | 13 7.9 | 2 | .2 | 62 5.7 | 122 11.3 |
| 3 | 13 45.8 | 13 48.0 | 13 8.1 | 3 | .3 | 63 5.8 | 123 11.4 |
| 4 | 13 46.0 | 13 48.3 | 13 8.4 | 4 | .4 | 64 5.9 | 124 11.5 |
| 5 | 13 46.3 | 13 48.5 | 13 8.6 | 5 | .5 | 65 6.0 | 125 11.6 |
| 6 | 13 46.5 | 13 48.8 | 13 8.8 | 6 | .6 | 66 6.1 | 126 11.7 |
| 7 | 13 46.8 | 13 49.0 | 13 9.1 | 7 | .6 | 67 6.2 | 127 11.7 |
| 8 | 13 47.0 | 13 49.3 | 13 9.3 | 8 | .7 | 68 6.3 | 128 11.8 |
| 9 | 13 47.3 | 13 49.5 | 13 9.6 | 9 | .8 | 69 6.4 | 129 11.9 |
| 10 | 13 47.5 | 13 49.8 | 13 9.8 | 10 | .9 | 70 6.5 | 130 12.0 |
| 11 | 13 47.8 | 13 50.0 | 13 10.0 | 11 | 1.0 | 71 6.6 | 131 12.1 |
| 12 | 13 48.0 | 13 50.3 | 13 10.3 | 12 | 1.1 | 72 6.7 | 132 12.2 |
| 13 | 13 48.3 | 13 50.6 | 13 10.5 | 13 | 1.2 | 73 6.8 | 133 12.3 |
| 14 | 13 48.5 | 13 50.8 | 13 10.8 | 14 | 1.3 | 74 6.8 | 134 12.4 |
| 15 | 13 48.8 | 13 51.1 | 13 11.0 | 15 | 1.4 | 75 6.9 | 135 12.5 |
| 16 | 13 49.0 | 13 51.3 | 13 11.2 | 16 | 1.5 | 76 7.0 | 136 12.6 |
| 17 | 13 49.3 | 13 51.6 | 13 11.5 | 17 | 1.6 | 77 7.1 | 137 12.7 |
| 18 | 13 49.5 | 13 51.8 | 13 11.7 | 18 | 1.7 | 78 7.2 | 138 12.8 |
| 19 | 13 49.8 | 13 52.1 | 13 12.0 | 19 | 1.8 | 79 7.3 | 139 12.9 |
| 20 | 13 50.0 | 13 52.3 | 13 12.2 | 20 | 1.9 | 80 7.4 | 140 13.0 |
| 21 | 13 50.3 | 13 52.6 | 13 12.4 | 21 | 1.9 | 81 7.5 | 141 13.0 |
| 22 | 13 50.5 | 13 52.8 | 13 12.7 | 22 | 2.0 | 82 7.6 | 142 13.1 |
| 23 | 13 50.8 | 13 53.1 | 13 12.9 | 23 | 2.1 | 83 7.7 | 143 13.2 |
| 24 | 13 51.0 | 13 53.3 | 13 13.1 | 24 | 2.2 | 84 7.8 | 144 13.3 |
| 25 | 13 51.3 | 13 53.6 | 13 13.4 | 25 | 2.3 | 85 7.9 | 145 13.4 |
| 26 | 13 51.5 | 13 53.8 | 13 13.6 | 26 | 2.4 | 86 8.0 | 146 13.5 |
| 27 | 13 51.8 | 13 54.1 | 13 13.9 | 27 | 2.5 | 87 8.0 | 147 13.6 |
| 28 | 13 52.0 | 13 54.3 | 13 14.1 | 28 | 2.6 | 88 8.1 | 148 13.7 |
| 29 | 13 52.3 | 13 54.6 | 13 14.3 | 29 | 2.7 | 89 8.2 | 149 13.8 |
| 30 | 13 52.5 | 13 54.8 | 13 14.6 | 30 | 2.8 | 90 8.3 | 150 13.9 |
| 31 | 13 52.8 | 13 55.1 | 13 14.8 | 31 | 2.9 | 91 8.4 | 151 14.0 |
| 32 | 13 53.0 | 13 55.3 | 13 15.1 | 32 | 3.0 | 92 8.5 | 152 14.1 |
| 33 | 13 53.3 | 13 55.6 | 13 15.3 | 33 | 3.1 | 93 8.6 | 153 14.2 |
| 34 | 13 53.5 | 13 55.8 | 13 15.5 | 34 | 3.1 | 94 8.7 | 154 14.2 |
| 35 | 13 53.8 | 13 56.1 | 13 15.8 | 35 | 3.2 | 95 8.8 | 155 14.3 |
| 36 | 13 54.0 | 13 56.3 | 13 16.0 | 36 | 3.3 | 96 8.9 | 156 14.4 |
| 37 | 13 54.3 | 13 56.6 | 13 16.2 | 37 | 3.4 | 97 9.0 | 157 14.5 |
| 38 | 13 54.5 | 13 56.8 | 13 16.5 | 38 | 3.5 | 98 9.1 | 158 14.6 |
| 39 | 13 54.8 | 13 57.1 | 13 16.7 | 39 | 3.6 | 99 9.2 | 159 14.7 |
| 40 | 13 55.0 | 13 57.3 | 13 17.0 | 40 | 3.7 | 100 9.3 | 160 14.8 |
| 41 | 13 55.3 | 13 57.6 | 13 17.2 | 41 | 3.8 | 101 9.3 | 161 14.9 |
| 42 | 13 55.5 | 13 57.8 | 13 17.4 | 42 | 3.9 | 102 9.4 | 162 15.0 |
| 43 | 13 55.8 | 13 58.1 | 13 17.7 | 43 | 4.0 | 103 9.5 | 163 15.1 |
| 44 | 13 56.0 | 13 58.3 | 13 17.9 | 44 | 4.1 | 104 9.6 | 164 15.2 |
| 45 | 13 56.3 | 13 58.6 | 13 18.2 | 45 | 4.2 | 105 9.7 | 165 15.3 |
| 46 | 13 56.5 | 13 58.8 | 13 18.4 | 46 | 4.3 | 106 9.8 | 166 15.4 |
| 47 | 13 56.8 | 13 59.1 | 13 18.6 | 47 | 4.3 | 107 9.9 | 167 15.4 |
| 48 | 13 57.0 | 13 59.3 | 13 18.9 | 48 | 4.4 | 108 10.0 | 168 15.5 |
| 49 | 13 57.3 | 13 59.6 | 13 19.1 | 49 | 4.5 | 109 10.1 | 169 15.6 |
| 50 | 13 57.5 | 13 59.8 | 13 19.3 | 50 | 4.6 | 110 10.2 | 170 15.7 |
| 51 | 13 57.8 | 14 .1 | 13 19.6 | 51 | 4.7 | 111 10.3 | 171 15.8 |
| 52 | 13 58.0 | 14 .3 | 13 19.8 | 52 | 4.8 | 112 10.4 | 172 15.9 |
| 53 | 13 58.3 | 14 .6 | 13 20.1 | 53 | 4.9 | 113 10.5 | 173 16.0 |
| 54 | 13 58.5 | 14 .8 | 13 20.3 | 54 | 5.0 | 114 10.5 | 174 16.1 |
| 55 | 13 58.8 | 14 1.1 | 13 20.5 | 55 | 5.1 | 115 10.6 | 175 16.2 |
| 56 | 13 59.0 | 14 1.3 | 13 20.8 | 56 | 5.2 | 116 10.7 | 176 16.3 |
| 57 | 13 59.3 | 14 1.6 | 13 21.0 | 57 | 5.3 | 117 10.8 | 177 16.4 |
| 58 | 13 59.5 | 14 1.8 | 13 21.3 | 58 | 5.4 | 118 10.9 | 178 16.5 |
| 59 | 13 59.8 | 14 2.1 | 13 21.5 | 59 | 5.5 | 119 11.0 | 179 16.6 |
| 60 | 14 .0 | 14 2.3 | 13 21.7 | 60 | 5.6 | 120 11.1 | 180 16.7 |

0 h 56 min

| POPRAVKA ČASOVNOG UGLA | | | | POPRAVKA DRUGOG REDA za časovni ugao i deklinaciju Sunca, Mjeseca i planeta | | | | | | | | |
|------------------------|--------------------|------|----------------------|---|--------------|------|---------|-----|-----|------|-----|------|
| s | SUNCA I PLANETA | | PROLJEĆNE TAČKE ♄ | | MJESECA ♁ | | Δ popr. | | | | | |
| | o | f | o | f | o | f | f | f | f | | | |
| 0 | 14 | .0 | 14 | 2.3 | 13 | 21.7 | 0 | .0 | 60 | 5.7 | 120 | 11.3 |
| 1 | 14 | .3 | 14 | 2.6 | 13 | 22.0 | 1 | .1 | 61 | 5.7 | 121 | 11.4 |
| 2 | 14 | .5 | 14 | 2.8 | 13 | 22.2 | 2 | .2 | 62 | 5.8 | 122 | 11.5 |
| 3 | 14 | .8 | 14 | 3.1 | 13 | 22.4 | 3 | .3 | 63 | 5.9 | 123 | 11.6 |
| 4 | 14 | 1.0 | 14 | 3.3 | 13 | 22.7 | 4 | .4 | 64 | 6.0 | 124 | 11.7 |
| 5 | 14 | 1.3 | 14 | 3.6 | 13 | 22.9 | 5 | .5 | 65 | 6.1 | 125 | 11.8 |
| 6 | 14 | 1.5 | 14 | 3.8 | 13 | 23.2 | 6 | .6 | 66 | 6.2 | 126 | 11.9 |
| 7 | 14 | 1.8 | 14 | 4.1 | 13 | 23.4 | 7 | .7 | 67 | 6.3 | 127 | 12.0 |
| 8 | 14 | 2.0 | 14 | 4.3 | 13 | 23.6 | 8 | .8 | 68 | 6.4 | 128 | 12.1 |
| 9 | 14 | 2.3 | 14 | 4.6 | 13 | 23.9 | 9 | .8 | 69 | 6.5 | 129 | 12.1 |
| 10 | 14 | 2.5 | 14 | 4.8 | 13 | 24.1 | 10 | .9 | 70 | 6.6 | 130 | 12.2 |
| 11 | 14 | 2.8 | 14 | 5.1 | 13 | 24.4 | 11 | 1.0 | 71 | 6.7 | 131 | 12.3 |
| 12 | 14 | 3.0 | 14 | 5.3 | 13 | 24.6 | 12 | 1.1 | 72 | 6.8 | 132 | 12.4 |
| 13 | 14 | 3.3 | 14 | 5.6 | 13 | 24.8 | 13 | 1.2 | 73 | 6.9 | 133 | 12.5 |
| 14 | 14 | 3.5 | 14 | 5.8 | 13 | 25.1 | 14 | 1.3 | 74 | 7.0 | 134 | 12.6 |
| 15 | 14 | 3.8 | 14 | 6.1 | 13 | 25.3 | 15 | 1.4 | 75 | 7.1 | 135 | 12.7 |
| 16 | 14 | 4.0 | 14 | 6.3 | 13 | 25.6 | 16 | 1.5 | 76 | 7.2 | 136 | 12.8 |
| 17 | 14 | 4.3 | 14 | 6.6 | 13 | 25.8 | 17 | 1.6 | 77 | 7.3 | 137 | 12.9 |
| 18 | 14 | 4.5 | 14 | 6.8 | 13 | 26.0 | 18 | 1.7 | 78 | 7.3 | 138 | 13.0 |
| 19 | 14 | 4.8 | 14 | 7.1 | 13 | 26.3 | 19 | 1.8 | 79 | 7.4 | 139 | 13.1 |
| 20 | 14 | 5.0 | 14 | 7.3 | 13 | 26.5 | 20 | 1.9 | 80 | 7.5 | 140 | 13.2 |
| 21 | 14 | 5.3 | 14 | 7.6 | 13 | 26.7 | 21 | 2.0 | 81 | 7.6 | 141 | 13.3 |
| 22 | 14 | 5.5 | 14 | 7.8 | 13 | 27.0 | 22 | 2.1 | 82 | 7.7 | 142 | 13.4 |
| 23 | 14 | 5.8 | 14 | 8.1 | 13 | 27.2 | 23 | 2.2 | 83 | 7.8 | 143 | 13.5 |
| 24 | 14 | 6.0 | 14 | 8.4 | 13 | 27.5 | 24 | 2.3 | 84 | 7.9 | 144 | 13.6 |
| 25 | 14 | 6.3 | 14 | 8.6 | 13 | 27.7 | 25 | 2.4 | 85 | 8.0 | 145 | 13.7 |
| 26 | 14 | 6.5 | 14 | 8.9 | 13 | 27.9 | 26 | 2.4 | 86 | 8.1 | 146 | 13.7 |
| 27 | 14 | 6.8 | 14 | 9.1 | 13 | 28.2 | 27 | 2.5 | 87 | 8.2 | 147 | 13.8 |
| 28 | 14 | 7.0 | 14 | 9.4 | 13 | 28.4 | 28 | 2.6 | 88 | 8.3 | 148 | 13.9 |
| 29 | 14 | 7.3 | 14 | 9.6 | 13 | 28.7 | 29 | 2.7 | 89 | 8.4 | 149 | 14.0 |
| 30 | 14 | 7.5 | 14 | 9.9 | 13 | 28.9 | 30 | 2.8 | 90 | 8.5 | 150 | 14.1 |
| 31 | 14 | 7.8 | 14 | 10.1 | 13 | 29.1 | 31 | 2.9 | 91 | 8.6 | 151 | 14.2 |
| 32 | 14 | 8.0 | 14 | 10.4 | 13 | 29.4 | 32 | 3.0 | 92 | 8.7 | 152 | 14.3 |
| 33 | 14 | 8.3 | 14 | 10.6 | 13 | 29.6 | 33 | 3.1 | 93 | 8.8 | 153 | 14.4 |
| 34 | 14 | 8.5 | 14 | 10.9 | 13 | 29.8 | 34 | 3.2 | 94 | 8.9 | 154 | 14.5 |
| 35 | 14 | 8.8 | 14 | 11.1 | 13 | 30.1 | 35 | 3.3 | 95 | 8.9 | 155 | 14.6 |
| 36 | 14 | 9.0 | 14 | 11.4 | 13 | 30.3 | 36 | 3.4 | 96 | 9.0 | 156 | 14.7 |
| 37 | 14 | 9.3 | 14 | 11.6 | 13 | 30.6 | 37 | 3.5 | 97 | 9.1 | 157 | 14.8 |
| 38 | 14 | 9.5 | 14 | 11.9 | 13 | 30.8 | 38 | 3.6 | 98 | 9.2 | 158 | 14.9 |
| 39 | 14 | 9.8 | 14 | 12.1 | 13 | 31.0 | 39 | 3.7 | 99 | 9.3 | 159 | 15.0 |
| 40 | 14 | 10.0 | 14 | 12.4 | 13 | 31.3 | 40 | 3.8 | 100 | 9.4 | 160 | 15.1 |
| 41 | 14 | 10.3 | 14 | 12.6 | 13 | 31.5 | 41 | 3.9 | 101 | 9.5 | 161 | 15.2 |
| 42 | 14 | 10.5 | 14 | 12.9 | 13 | 31.8 | 42 | 4.0 | 102 | 9.6 | 162 | 15.3 |
| 43 | 14 | 10.8 | 14 | 13.1 | 13 | 32.0 | 43 | 4.0 | 103 | 9.7 | 163 | 15.3 |
| 44 | 14 | 11.0 | 14 | 13.4 | 13 | 32.2 | 44 | 4.1 | 104 | 9.8 | 164 | 15.4 |
| 45 | 14 | 11.3 | 14 | 13.6 | 13 | 32.5 | 45 | 4.2 | 105 | 9.9 | 165 | 15.5 |
| 46 | 14 | 11.5 | 14 | 13.9 | 13 | 32.7 | 46 | 4.3 | 106 | 10.0 | 166 | 15.6 |
| 47 | 14 | 11.8 | 14 | 14.1 | 13 | 32.9 | 47 | 4.4 | 107 | 10.1 | 167 | 15.7 |
| 48 | 14 | 12.0 | 14 | 14.4 | 13 | 33.2 | 48 | 4.5 | 108 | 10.2 | 168 | 15.8 |
| 49 | 14 | 12.3 | 14 | 14.6 | 13 | 33.4 | 49 | 4.6 | 109 | 10.3 | 169 | 15.9 |
| 50 | 14 | 12.5 | 14 | 14.9 | 13 | 33.7 | 50 | 4.7 | 110 | 10.4 | 170 | 16.0 |
| 51 | 14 | 12.8 | 14 | 15.1 | 13 | 33.9 | 51 | 4.8 | 111 | 10.5 | 171 | 16.1 |
| 52 | 14 | 13.0 | 14 | 15.4 | 13 | 34.1 | 52 | 4.9 | 112 | 10.5 | 172 | 16.2 |
| 53 | 14 | 13.3 | 14 | 15.6 | 13 | 34.4 | 53 | 5.0 | 113 | 10.6 | 173 | 16.3 |
| 54 | 14 | 13.5 | 14 | 15.9 | 13 | 34.6 | 54 | 5.1 | 114 | 10.7 | 174 | 16.4 |
| 55 | 14 | 13.8 | 14 | 16.1 | 13 | 34.9 | 55 | 5.2 | 115 | 10.8 | 175 | 16.5 |
| 56 | 14 | 14.0 | 14 | 16.4 | 13 | 35.1 | 56 | 5.3 | 116 | 10.9 | 176 | 16.6 |
| 57 | 14 | 14.3 | 14 | 16.6 | 13 | 35.3 | 57 | 5.4 | 117 | 11.0 | 177 | 16.7 |
| 58 | 14 | 14.5 | 14 | 16.9 | 13 | 35.6 | 58 | 5.5 | 118 | 11.1 | 178 | 16.8 |
| 59 | 14 | 14.8 | 14 | 17.1 | 13 | 35.8 | 59 | 5.6 | 119 | 11.2 | 179 | 16.9 |
| 60 | 14 | 15.0 | 14 | 17.4 | 13 | 36.1 | 60 | 5.7 | 120 | 11.3 | 180 | 17.0 |

0 h 57 min

| POPRAVKA ČASOVNOG UGLA | | | | POPRAVKA DRUGOG REDA za časovni ugao i deklinaciju Sunca, Mjeseca i planeta | | | | | | | | |
|------------------------|--------------------|------|----------------------|---|--------------|------|---------|-----|-----|------|-----|------|
| s | SUNCA I PLANETA | | PROLJEĆNE TAČKE ♄ | | MJESECA ♁ | | Δ popr. | | | | | |
| | o | f | o | f | o | f | f | f | f | | | |
| 0 | 14 | 15.0 | 14 | 17.4 | 13 | 36.1 | 0 | .0 | 60 | 5.8 | 120 | 11.5 |
| 1 | 14 | 15.3 | 14 | 17.6 | 13 | 36.3 | 1 | .1 | 61 | 5.8 | 121 | 11.6 |
| 2 | 14 | 15.5 | 14 | 17.9 | 13 | 36.5 | 2 | .2 | 62 | 5.9 | 122 | 11.7 |
| 3 | 14 | 15.8 | 14 | 18.1 | 13 | 36.8 | 3 | .3 | 63 | 6.0 | 123 | 11.8 |
| 4 | 14 | 16.0 | 14 | 18.4 | 13 | 37.0 | 4 | .4 | 64 | 6.1 | 124 | 11.9 |
| 5 | 14 | 16.3 | 14 | 18.6 | 13 | 37.2 | 5 | .5 | 65 | 6.2 | 125 | 12.0 |
| 6 | 14 | 16.5 | 14 | 18.9 | 13 | 37.5 | 6 | .6 | 66 | 6.3 | 126 | 12.1 |
| 7 | 14 | 16.8 | 14 | 19.1 | 13 | 37.7 | 7 | .7 | 67 | 6.4 | 127 | 12.2 |
| 8 | 14 | 17.0 | 14 | 19.4 | 13 | 38.0 | 8 | .8 | 68 | 6.5 | 128 | 12.3 |
| 9 | 14 | 17.3 | 14 | 19.6 | 13 | 38.2 | 9 | .9 | 69 | 6.6 | 129 | 12.4 |
| 10 | 14 | 17.5 | 14 | 19.9 | 13 | 38.4 | 10 | 1.0 | 70 | 6.7 | 130 | 12.5 |
| 11 | 14 | 17.8 | 14 | 20.1 | 13 | 38.7 | 11 | 1.1 | 71 | 6.8 | 131 | 12.6 |
| 12 | 14 | 18.0 | 14 | 20.4 | 13 | 38.9 | 12 | 1.2 | 72 | 6.9 | 132 | 12.7 |
| 13 | 14 | 18.3 | 14 | 20.6 | 13 | 39.2 | 13 | 1.2 | 73 | 7.0 | 133 | 12.7 |
| 14 | 14 | 18.5 | 14 | 20.9 | 13 | 39.4 | 14 | 1.3 | 74 | 7.1 | 134 | 12.8 |
| 15 | 14 | 18.8 | 14 | 21.1 | 13 | 39.6 | 15 | 1.4 | 75 | 7.2 | 135 | 12.9 |
| 16 | 14 | 19.0 | 14 | 21.4 | 13 | 39.9 | 16 | 1.5 | 76 | 7.3 | 136 | 13.0 |
| 17 | 14 | 19.3 | 14 | 21.6 | 13 | 40.1 | 17 | 1.6 | 77 | 7.4 | 137 | 13.1 |
| 18 | 14 | 19.5 | 14 | 21.9 | 13 | 40.3 | 18 | 1.7 | 78 | 7.5 | 138 | 13.2 |
| 19 | 14 | 19.8 | 14 | 22.1 | 13 | 40.6 | 19 | 1.8 | 79 | 7.6 | 139 | 13.3 |
| 20 | 14 | 20.0 | 14 | 22.4 | 13 | 40.8 | 20 | 1.9 | 80 | 7.7 | 140 | 13.4 |
| 21 | 14 | 20.3 | 14 | 22.6 | 13 | 41.1 | 21 | 2.0 | 81 | 7.8 | 141 | 13.5 |
| 22 | 14 | 20.5 | 14 | 22.9 | 13 | 41.3 | 22 | 2.1 | 82 | 7.9 | 142 | 13.6 |
| 23 | 14 | 20.8 | 14 | 23.1 | 13 | 41.5 | 23 | 2.2 | 83 | 8.0 | 143 | 13.7 |
| 24 | 14 | 21.0 | 14 | 23.4 | 13 | 41.8 | 24 | 2.3 | 84 | 8.1 | 144 | 13.8 |
| 25 | 14 | 21.3 | 14 | 23.6 | 13 | 42.0 | 25 | 2.4 | 85 | 8.1 | 145 | 13.9 |
| 26 | 14 | 21.5 | 14 | 23.9 | 13 | 42.3 | 26 | 2.5 | 86 | 8.2 | 146 | 14.0 |
| 27 | 14 | 21.8 | 14 | 24.1 | 13 | 42.5 | 27 | 2.6 | 87 | 8.3 | 147 | 14.1 |
| 28 | 14 | 22.0 | 14 | 24.4 | 13 | 42.7 | 28 | 2.7 | 88 | 8.4 | 148 | 14.2 |
| 29 | 14 | 22.3 | 14 | 24.6 | 13 | 43.0 | 29 | 2.8 | 89 | 8.5 | 149 | 14.3 |
| 30 | 14 | 22.5 | 14 | 24.9 | 13 | 43.2 | 30 | 2.9 | 90 | 8.6 | 150 | 14.4 |
| 31 | 14 | 22.8 | 14 | 25.1 | 13 | 43.4 | 31 | 3.0 | 91 | 8.7 | 151 | 14.5 |
| 32 | 14 | 23.0 | 14 | 25.4 | 13 | 43.7 | 32 | 3.1 | 92 | 8.8 | 152 | 14.6 |
| 33 | 14 | 23.3 | 14 | 25.6 | 13 | 43.9 | 33 | 3.2 | 93 | 8.9 | 153 | 14.7 |
| 34 | 14 | 23.5 | 14 | 25.9 | 13 | 44.2 | 34 | 3.3 | 94 | 9.0 | 154 | 14.8 |
| 35 | 14 | 23.8 | 14 | 26.1 | 13 | 44.4 | 35 | 3.4 | 95 | 9.1 | 155 | 14.9 |
| 36 | 14 | 24.0 | 14 | 26.4 | 13 | 44.6 | 36 | 3.5 | 96 | 9.2 | 156 | 15.0 |
| 37 | 14 | 24.3 | 14 | 26.7 | 13 | 44.9 | 37 | 3.5 | 97 | 9.3 | 157 | 15.0 |
| 38 | 14 | 24.5 | 14 | 26.9 | 13 | 45.1 | 38 | 3.6 | 98 | 9.4 | 158 | 15.1 |
| 39 | 14 | 24.8 | 14 | 27.2 | 13 | 45.4 | 39 | 3.7 | 99 | 9.5 | 159 | 15.2 |
| 40 | 14 | 25.0 | 14 | 27.4 | 13 | 45.6 | 40 | 3.8 | 100 | 9.6 | 160 | 15.3 |
| 41 | 14 | 25.3 | 14 | 27.7 | 13 | 45.8 | 41 | 3.9 | 101 | 9.7 | 161 | 15.4 |
| 42 | 14 | 25.5 | 14 | 27.9 | 13 | 46.1 | 42 | 4.0 | 102 | 9.8 | 162 | 15.5 |
| 43 | 14 | 25.8 | 14 | 28.2 | 13 | 46.3 | 43 | 4.1 | 103 | 9.9 | 163 | 15.6 |
| 44 | 14 | 26.0 | 14 | 28.4 | 13 | 46.5 | 44 | 4.2 | 104 | 10.0 | 164 | 15.7 |
| 45 | 14 | 26.3 | 14 | 28.7 | 13 | 46.8 | 45 | 4.3 | 105 | 10.1 | 165 | 15.8 |
| 46 | 14 | 26.5 | 14 | 28.9 | 13 | 47.0 | 46 | 4.4 | 106 | 10.2 | 166 | 15.9 |
| 47 | 14 | 26.8 | 14 | 29.2 | 13 | 47.3 | 47 | 4.5 | 107 | 10.3 | 167 | 16.0 |
| 48 | 14 | 27.0 | 14 | 29.4 | 13 | 47.5 | 48 | 4.6 | 108 | 10.4 | 168 | 16.1 |
| 49 | 14 | 27.3 | 14 | 29.7 | 13 | 47.7 | 49 | 4.7 | 109 | 10.4 | 169 | 16.2 |

0 h 58 min

| POPRAVKA ČASOVNOG UGLA | | | | POPRAVKA DRUGOG REDA za časovni ugao i deklinaciju Sunca, Mjeseca i planeta | | | | | | | | |
|------------------------|--------------------|------|----------------------|---|----|-------|----|-------|-----|-------|-----|------|
| s | SUNCA I PLANETA | | PROLJEĆNE TAČKE ♀ | MJESECA ♁ | Δ | popr. | Δ | popr. | Δ | popr. | | |
| | o | l | o | l | o | l | o | l | o | l | | |
| 0 | 14 | 30.0 | 14 | 32.4 | 13 | 50.4 | 0 | .0 | 60 | 5.9 | 120 | 11.7 |
| 1 | 14 | 30.3 | 14 | 32.7 | 13 | 50.6 | 1 | .1 | 61 | 5.9 | 121 | 11.8 |
| 2 | 14 | 30.5 | 14 | 32.9 | 13 | 50.8 | 2 | .2 | 62 | 6.0 | 122 | 11.9 |
| 3 | 14 | 30.8 | 14 | 33.2 | 13 | 51.1 | 3 | .3 | 63 | 6.1 | 123 | 12.0 |
| 4 | 14 | 31.0 | 14 | 33.4 | 13 | 51.3 | 4 | .4 | 64 | 6.2 | 124 | 12.1 |
| 5 | 14 | 31.3 | 14 | 33.7 | 13 | 51.6 | 5 | .5 | 65 | 6.3 | 125 | 12.2 |
| 6 | 14 | 31.5 | 14 | 33.9 | 13 | 51.8 | 6 | .6 | 66 | 6.4 | 126 | 12.3 |
| 7 | 14 | 31.8 | 14 | 34.2 | 13 | 52.0 | 7 | .7 | 67 | 6.5 | 127 | 12.4 |
| 8 | 14 | 32.0 | 14 | 34.4 | 13 | 52.3 | 8 | .8 | 68 | 6.6 | 128 | 12.5 |
| 9 | 14 | 32.3 | 14 | 34.7 | 13 | 52.5 | 9 | .9 | 69 | 6.7 | 129 | 12.6 |
| 10 | 14 | 32.5 | 14 | 34.9 | 13 | 52.8 | 10 | 1.0 | 70 | 6.8 | 130 | 12.7 |
| 11 | 14 | 32.8 | 14 | 35.2 | 13 | 53.0 | 11 | 1.1 | 71 | 6.9 | 131 | 12.8 |
| 12 | 14 | 33.0 | 14 | 35.4 | 13 | 53.2 | 12 | 1.2 | 72 | 7.0 | 132 | 12.9 |
| 13 | 14 | 33.3 | 14 | 35.7 | 13 | 53.5 | 13 | 1.3 | 73 | 7.1 | 133 | 13.0 |
| 14 | 14 | 33.5 | 14 | 35.9 | 13 | 53.7 | 14 | 1.4 | 74 | 7.2 | 134 | 13.1 |
| 15 | 14 | 33.8 | 14 | 36.2 | 13 | 53.9 | 15 | 1.5 | 75 | 7.3 | 135 | 13.2 |
| 16 | 14 | 34.0 | 14 | 36.4 | 13 | 54.2 | 16 | 1.6 | 76 | 7.4 | 136 | 13.3 |
| 17 | 14 | 34.3 | 14 | 36.7 | 13 | 54.4 | 17 | 1.7 | 77 | 7.5 | 137 | 13.4 |
| 18 | 14 | 34.5 | 14 | 36.9 | 13 | 54.7 | 18 | 1.8 | 78 | 7.6 | 138 | 13.5 |
| 19 | 14 | 34.8 | 14 | 37.2 | 13 | 54.9 | 19 | 1.9 | 79 | 7.7 | 139 | 13.6 |
| 20 | 14 | 35.0 | 14 | 37.4 | 13 | 55.1 | 20 | 2.0 | 80 | 7.8 | 140 | 13.7 |
| 21 | 14 | 35.3 | 14 | 37.7 | 13 | 55.4 | 21 | 2.0 | 81 | 7.9 | 141 | 13.7 |
| 22 | 14 | 35.5 | 14 | 37.9 | 13 | 55.6 | 22 | 2.1 | 82 | 8.0 | 142 | 13.8 |
| 23 | 14 | 35.8 | 14 | 38.2 | 13 | 55.9 | 23 | 2.2 | 83 | 8.1 | 143 | 13.9 |
| 24 | 14 | 36.0 | 14 | 38.4 | 13 | 56.1 | 24 | 2.3 | 84 | 8.2 | 144 | 14.0 |
| 25 | 14 | 36.3 | 14 | 38.7 | 13 | 56.3 | 25 | 2.4 | 85 | 8.3 | 145 | 14.1 |
| 26 | 14 | 36.5 | 14 | 38.9 | 13 | 56.6 | 26 | 2.5 | 86 | 8.4 | 146 | 14.2 |
| 27 | 14 | 36.8 | 14 | 39.2 | 13 | 56.8 | 27 | 2.6 | 87 | 8.5 | 147 | 14.3 |
| 28 | 14 | 37.0 | 14 | 39.4 | 13 | 57.0 | 28 | 2.7 | 88 | 8.6 | 148 | 14.4 |
| 29 | 14 | 37.3 | 14 | 39.7 | 13 | 57.3 | 29 | 2.8 | 89 | 8.7 | 149 | 14.5 |
| 30 | 14 | 37.5 | 14 | 39.9 | 13 | 57.5 | 30 | 2.9 | 90 | 8.8 | 150 | 14.6 |
| 31 | 14 | 37.8 | 14 | 40.2 | 13 | 57.8 | 31 | 3.0 | 91 | 8.9 | 151 | 14.7 |
| 32 | 14 | 38.0 | 14 | 40.4 | 13 | 58.0 | 32 | 3.1 | 92 | 9.0 | 152 | 14.8 |
| 33 | 14 | 38.3 | 14 | 40.7 | 13 | 58.2 | 33 | 3.2 | 93 | 9.1 | 153 | 14.9 |
| 34 | 14 | 38.5 | 14 | 40.9 | 13 | 58.5 | 34 | 3.3 | 94 | 9.2 | 154 | 15.0 |
| 35 | 14 | 38.8 | 14 | 41.2 | 13 | 58.7 | 35 | 3.4 | 95 | 9.3 | 155 | 15.1 |
| 36 | 14 | 39.0 | 14 | 41.4 | 13 | 59.0 | 36 | 3.5 | 96 | 9.4 | 156 | 15.2 |
| 37 | 14 | 39.3 | 14 | 41.7 | 13 | 59.2 | 37 | 3.6 | 97 | 9.5 | 157 | 15.3 |
| 38 | 14 | 39.5 | 14 | 41.9 | 13 | 59.4 | 38 | 3.7 | 98 | 9.6 | 158 | 15.4 |
| 39 | 14 | 39.8 | 14 | 42.2 | 13 | 59.7 | 39 | 3.8 | 99 | 9.7 | 159 | 15.5 |
| 40 | 14 | 40.0 | 14 | 42.4 | 13 | 59.9 | 40 | 3.9 | 100 | 9.8 | 160 | 15.6 |
| 41 | 14 | 40.3 | 14 | 42.7 | 14 | .1 | 41 | 4.0 | 101 | 9.8 | 161 | 15.7 |
| 42 | 14 | 40.5 | 14 | 42.9 | 14 | .4 | 42 | 4.1 | 102 | 9.9 | 162 | 15.8 |
| 43 | 14 | 40.8 | 14 | 43.2 | 14 | .6 | 43 | 4.2 | 103 | 10.0 | 163 | 15.9 |
| 44 | 14 | 41.0 | 14 | 43.4 | 14 | .9 | 44 | 4.3 | 104 | 10.1 | 164 | 16.0 |
| 45 | 14 | 41.3 | 14 | 43.7 | 14 | 1.1 | 45 | 4.4 | 105 | 10.2 | 165 | 16.1 |
| 46 | 14 | 41.5 | 14 | 43.9 | 14 | 1.3 | 46 | 4.5 | 106 | 10.3 | 166 | 16.2 |
| 47 | 14 | 41.8 | 14 | 44.2 | 14 | 1.6 | 47 | 4.6 | 107 | 10.4 | 167 | 16.3 |
| 48 | 14 | 42.0 | 14 | 44.5 | 14 | 1.8 | 48 | 4.7 | 108 | 10.5 | 168 | 16.4 |
| 49 | 14 | 42.3 | 14 | 44.7 | 14 | 2.1 | 49 | 4.8 | 109 | 10.6 | 169 | 16.5 |
| 50 | 14 | 42.5 | 14 | 45.0 | 14 | 2.3 | 50 | 4.9 | 110 | 10.7 | 170 | 16.6 |
| 51 | 14 | 42.8 | 14 | 45.2 | 14 | 2.5 | 51 | 5.0 | 111 | 10.8 | 171 | 16.7 |
| 52 | 14 | 43.0 | 14 | 45.5 | 14 | 2.8 | 52 | 5.1 | 112 | 10.9 | 172 | 16.8 |
| 53 | 14 | 43.3 | 14 | 45.7 | 14 | 3.0 | 53 | 5.2 | 113 | 11.0 | 173 | 16.9 |
| 54 | 14 | 43.5 | 14 | 46.0 | 14 | 3.3 | 54 | 5.3 | 114 | 11.1 | 174 | 17.0 |
| 55 | 14 | 43.8 | 14 | 46.2 | 14 | 3.5 | 55 | 5.4 | 115 | 11.2 | 175 | 17.1 |
| 56 | 14 | 44.0 | 14 | 46.5 | 14 | 3.7 | 56 | 5.5 | 116 | 11.3 | 176 | 17.2 |
| 57 | 14 | 44.3 | 14 | 46.7 | 14 | 4.0 | 57 | 5.6 | 117 | 11.4 | 177 | 17.3 |
| 58 | 14 | 44.5 | 14 | 47.0 | 14 | 4.2 | 58 | 5.7 | 118 | 11.5 | 178 | 17.4 |
| 59 | 14 | 44.8 | 14 | 47.2 | 14 | 4.4 | 59 | 5.8 | 119 | 11.6 | 179 | 17.5 |
| 60 | 14 | 45.0 | 14 | 47.5 | 14 | 4.7 | 60 | 5.9 | 120 | 11.7 | 180 | 17.6 |

0 h 59 min

| POPRAVKA ČASOVNOG UGLA | | | | POPRAVKA DRUGOG REDA za časovni ugao i deklinaciju Sunca, Mjeseca i planeta | | | | | | | | |
|------------------------|--------------------|------|----------------------|---|----|-------|----|-------|-----|-------|-----|------|
| s | SUNCA I PLANETA | | PROLJEĆNE TAČKE ♀ | MJESECA ♁ | Δ | popr. | Δ | popr. | Δ | popr. | | |
| | o | l | o | l | o | l | o | l | o | l | | |
| 0 | 14 | 45.0 | 14 | 47.5 | 14 | 4.7 | 0 | .0 | 60 | 6.0 | 120 | 11.9 |
| 1 | 14 | 45.3 | 14 | 47.7 | 14 | 4.9 | 1 | .1 | 61 | 6.0 | 121 | 12.0 |
| 2 | 14 | 45.5 | 14 | 48.0 | 14 | 5.2 | 2 | .2 | 62 | 6.1 | 122 | 12.1 |
| 3 | 14 | 45.8 | 14 | 48.2 | 14 | 5.4 | 3 | .3 | 63 | 6.2 | 123 | 12.2 |
| 4 | 14 | 46.0 | 14 | 48.5 | 14 | 5.6 | 4 | .4 | 64 | 6.3 | 124 | 12.3 |
| 5 | 14 | 46.3 | 14 | 48.7 | 14 | 5.9 | 5 | .5 | 65 | 6.4 | 125 | 12.4 |
| 6 | 14 | 46.5 | 14 | 49.0 | 14 | 6.1 | 6 | .6 | 66 | 6.5 | 126 | 12.5 |
| 7 | 14 | 46.8 | 14 | 49.2 | 14 | 6.4 | 7 | .7 | 67 | 6.6 | 127 | 12.6 |
| 8 | 14 | 47.0 | 14 | 49.5 | 14 | 6.6 | 8 | .8 | 68 | 6.7 | 128 | 12.7 |
| 9 | 14 | 47.3 | 14 | 49.7 | 14 | 6.8 | 9 | .9 | 69 | 6.8 | 129 | 12.8 |
| 10 | 14 | 47.5 | 14 | 50.0 | 14 | 7.1 | 10 | 1.0 | 70 | 6.9 | 130 | 12.9 |
| 11 | 14 | 47.8 | 14 | 50.2 | 14 | 7.3 | 11 | 1.1 | 71 | 7.0 | 131 | 13.0 |
| 12 | 14 | 48.0 | 14 | 50.5 | 14 | 7.5 | 12 | 1.2 | 72 | 7.1 | 132 | 13.1 |
| 13 | 14 | 48.3 | 14 | 50.7 | 14 | 7.8 | 13 | 1.3 | 73 | 7.2 | 133 | 13.2 |
| 14 | 14 | 48.5 | 14 | 51.0 | 14 | 8.0 | 14 | 1.4 | 74 | 7.3 | 134 | 13.3 |
| 15 | 14 | 48.8 | 14 | 51.2 | 14 | 8.3 | 15 | 1.5 | 75 | 7.4 | 135 | 13.4 |
| 16 | 14 | 49.0 | 14 | 51.5 | 14 | 8.5 | 16 | 1.6 | 76 | 7.5 | 136 | 13.5 |
| 17 | 14 | 49.3 | 14 | 51.7 | 14 | 8.7 | 17 | 1.7 | 77 | 7.6 | 137 | 13.6 |
| 18 | 14 | 49.5 | 14 | 52.0 | 14 | 9.0 | 18 | 1.8 | 78 | 7.7 | 138 | 13.7 |
| 19 | 14 | 49.8 | 14 | 52.2 | 14 | 9.2 | 19 | 1.9 | 79 | 7.8 | 139 | 13.8 |
| 20 | 14 | 50.0 | 14 | 52.5 | 14 | 9.5 | 20 | 2.0 | 80 | 7.9 | 140 | 13.9 |
| 21 | 14 | 50.3 | 14 | 52.7 | 14 | 9.7 | 21 | 2.1 | 81 | 8.0 | 141 | 14.0 |
| 22 | 14 | 50.5 | 14 | 53.0 | 14 | 9.9 | 22 | 2.2 | 82 | 8.1 | 142 | 14.1 |
| 23 | 14 | 50.8 | 14 | 53.2 | 14 | 10.2 | 23 | 2.3 | 83 | 8.2 | 143 | 14.2 |
| 24 | 14 | 51.0 | 14 | 53.5 | 14 | 10.4 | 24 | 2.4 | 84 | 8.3 | 144 | 14.3 |
| 25 | 14 | 51.3 | 14 | 53.7 | 14 | 10.6 | 25 | 2.5 | 85 | 8.4 | 145 | 14.4 |
| 26 | 14 | 51.5 | 14 | 54.0 | 14 | 10.9 | 26 | 2.6 | 86 | 8.5 | 146 | 14.5 |
| 27 | 14 | 51.8 | 14 | 54.2 | 14 | 11.1 | 27 | 2.7 | 87 | 8.6 | 147 | 14.6 |
| 28 | 14 | 52.0 | 14 | 54.5 | 14 | 11.4 | 28 | 2.8 | 88 | 8.7 | 148 | 14.7 |
| 29 | 14 | 52.3 | 14 | 54.7 | 14 | 11.6 | 29 | 2.9 | 89 | 8.8 | 149 | 14.8 |
| 30 | 14 | 52.5 | 14 | 55.0 | 14 | 11.8 | 30 | 3.0 | 90 | 8.9 | 150 | 14.9 |
| 31 | 14 | 52.8 | 14 | 55.2 | 14 | 12.1 | 31 | 3.1 | 91 | 9.0 | 151 | 15.0 |
| 32 | 14 | 53.0 | 14 | 55.5 | 14 | 12.3 | 32 | 3.2 | 92 | 9.1 | 152 | 15.1 |
| 33 | 14 | 53.3 | 14 | 55.7 | 14 | 12.6 | 33 | 3.3 | 93 | 9.2 | 153 | 15.2 |
| 34 | 14 | 53.5 | 14 | 56.0 | 14 | 12.8 | 34 | 3.4 | 94 | 9.3 | 154 | 15.3 |
| 35 | 14 | 53.8 | 14 | 56.2 | 14 | 13.0 | 35 | 3.5 | 95 | 9.4 | 155 | 15.4 |
| 36 | 14 | 54.0 | 14 | 56.5 | 14 | 13.3 | 36 | 3.6 | 96 | 9.5 | 156 | 15.5 |
| 37 | 14 | 54.3 | 14 | 56.7 | 14 | 13.5 | 37 | 3.7 | 97 | 9.6 | 157 | 15.6 |
| 38 | 14 | 54.5 | 14 | 57.0 | 14 | 13.8 | 38 | 3.8 | 98 | 9.7 | 158 | 15.7 |
| 39 | 14 | 54.8 | 14 | 57.2 | 14 | 14.0 | 39 | 3.9 | 99 | 9.8 | 159 | 15.8 |
| 40 | 14 | 55.0 | 14 | 57.5 | 14 | 14.2 | 40 | 4.0 | 100 | 9.9 | 160 | 15.9 |
| 41 | 14 | 55.3 | 14 | 57.7 | 14 | 14.5 | 41 | 4.1 | 101 | 10.0 | 161 | 16.0 |
| 42 | 14 | 55.5 | 14 | 58.0 | 14 | 14.7 | 42 | 4.2 | 102 | 10.1 | 162 | 16.1 |
| 43 | 14 | 55.8 | 14 | 58.2 | 14 | 14.9 | 43 | 4.3 | 103 | 10.2 | 163 | 16.2 |
| 44 | 14 | 56.0 | 14 | 58.5 | 14 | 15.2 | 44 | 4.4 | 104 | 10.3 | 164 | 16.3 |
| 45 | 14 | 56.3 | 14 | 58.7 | 14 | 15.4 | 45 | 4.5 | 105 | 10.4 | 165 | 16.4 |
| 46 | 14 | 56.5 | 14 | 59.0 | 14 | 15.7 | 46 | 4.6 | 106 | 10.5 | 166 | 16.5 |
| 47 | 14 | 56.8 | 14 | 59.2 | 14 | 15.9 | 47 | 4.7 | 107 | 10.6 | 167 | 16.6 |
| 48 | 14 | 57.0 | 14 | 59.5 | 14 | 16.1 | 48 | 4.8 | 108 | 10.7 | | |

1 h 0 min

| POPRAVKA ČASOVNOG UGLA | | | POPRAVKA DRUGOG REDA za časovni ugao i deklinaciju Sunca, Mjeseca i planeta | | | | | | |
|------------------------|--------------------|----------------------|---|----|-------|-----|-------|-----|-------|
| s | SUNCA I PLANETA | PROLJEČNE TAČKE ° | MJESECA ζ | Δ | popr. | Δ | popr. | Δ | popr. |
| | o ′ | o ′ | o ′ | | ′ | | ′ | | ′ |
| 0 | 15 0 | 15 2.5 | 14 19.0 | 0 | .0 | 60 | 6.1 | 120 | 12.1 |
| 1 | 15 .3 | 15 2.8 | 14 19.2 | 1 | .1 | 61 | 6.2 | 121 | 12.2 |
| 2 | 15 .5 | 15 3.0 | 14 19.5 | 2 | .2 | 62 | 6.3 | 122 | 12.3 |
| 3 | 15 .8 | 15 3.3 | 14 19.7 | 3 | .3 | 63 | 6.4 | 123 | 12.4 |
| 4 | 15 1.0 | 15 3.5 | 14 20.0 | 4 | .4 | 64 | 6.5 | 124 | 12.5 |
| 5 | 15 1.3 | 15 3.8 | 14 20.2 | 5 | .5 | 65 | 6.6 | 125 | 12.6 |
| 6 | 15 1.5 | 15 4.0 | 14 20.4 | 6 | .6 | 66 | 6.7 | 126 | 12.7 |
| 7 | 15 1.8 | 15 4.3 | 14 20.7 | 7 | .7 | 67 | 6.8 | 127 | 12.8 |
| 8 | 15 2.0 | 15 4.5 | 14 20.9 | 8 | .8 | 68 | 6.9 | 128 | 12.9 |
| 9 | 15 2.3 | 15 4.8 | 14 21.1 | 9 | .9 | 69 | 7.0 | 129 | 13.0 |
| 10 | 15 2.5 | 15 5.0 | 14 21.4 | 10 | 1.0 | 70 | 7.1 | 130 | 13.1 |
| 11 | 15 2.8 | 15 5.3 | 14 21.6 | 11 | 1.1 | 71 | 7.2 | 131 | 13.2 |
| 12 | 15 3.0 | 15 5.5 | 14 21.9 | 12 | 1.2 | 72 | 7.3 | 132 | 13.3 |
| 13 | 15 3.3 | 15 5.8 | 14 22.1 | 13 | 1.3 | 73 | 7.4 | 133 | 13.4 |
| 14 | 15 3.5 | 15 6.0 | 14 22.3 | 14 | 1.4 | 74 | 7.5 | 134 | 13.5 |
| 15 | 15 3.8 | 15 6.3 | 14 22.6 | 15 | 1.5 | 75 | 7.6 | 135 | 13.6 |
| 16 | 15 4.0 | 15 6.5 | 14 22.8 | 16 | 1.6 | 76 | 7.7 | 136 | 13.7 |
| 17 | 15 4.3 | 15 6.8 | 14 23.1 | 17 | 1.7 | 77 | 7.8 | 137 | 13.8 |
| 18 | 15 4.5 | 15 7.0 | 14 23.3 | 18 | 1.8 | 78 | 7.9 | 138 | 13.9 |
| 19 | 15 4.8 | 15 7.3 | 14 23.5 | 19 | 1.9 | 79 | 8.0 | 139 | 14.0 |
| 20 | 15 5.0 | 15 7.5 | 14 23.8 | 20 | 2.0 | 80 | 8.1 | 140 | 14.1 |
| 21 | 15 5.3 | 15 7.8 | 14 24.0 | 21 | 2.1 | 81 | 8.2 | 141 | 14.2 |
| 22 | 15 5.5 | 15 8.0 | 14 24.2 | 22 | 2.2 | 82 | 8.3 | 142 | 14.3 |
| 23 | 15 5.8 | 15 8.3 | 14 24.5 | 23 | 2.3 | 83 | 8.4 | 143 | 14.4 |
| 24 | 15 6.0 | 15 8.5 | 14 24.7 | 24 | 2.4 | 84 | 8.5 | 144 | 14.5 |
| 25 | 15 6.3 | 15 8.8 | 14 25.0 | 25 | 2.5 | 85 | 8.6 | 145 | 14.6 |
| 26 | 15 6.5 | 15 9.0 | 14 25.2 | 26 | 2.6 | 86 | 8.7 | 146 | 14.7 |
| 27 | 15 6.8 | 15 9.3 | 14 25.4 | 27 | 2.7 | 87 | 8.8 | 147 | 14.8 |
| 28 | 15 7.0 | 15 9.5 | 14 25.7 | 28 | 2.8 | 88 | 8.9 | 148 | 14.9 |
| 29 | 15 7.3 | 15 9.8 | 14 25.9 | 29 | 2.9 | 89 | 9.0 | 149 | 15.0 |
| 30 | 15 7.5 | 15 10.0 | 14 26.2 | 30 | 3.0 | 90 | 9.1 | 150 | 15.1 |
| 31 | 15 7.8 | 15 10.3 | 14 26.4 | 31 | 3.1 | 91 | 9.2 | 151 | 15.2 |
| 32 | 15 8.0 | 15 10.5 | 14 26.6 | 32 | 3.2 | 92 | 9.3 | 152 | 15.3 |
| 33 | 15 8.3 | 15 10.8 | 14 26.9 | 33 | 3.3 | 93 | 9.4 | 153 | 15.4 |
| 34 | 15 8.5 | 15 11.0 | 14 27.1 | 34 | 3.4 | 94 | 9.5 | 154 | 15.5 |
| 35 | 15 8.8 | 15 11.3 | 14 27.4 | 35 | 3.5 | 95 | 9.6 | 155 | 15.6 |
| 36 | 15 9.0 | 15 11.5 | 14 27.6 | 36 | 3.6 | 96 | 9.7 | 156 | 15.7 |
| 37 | 15 9.3 | 15 11.8 | 14 27.8 | 37 | 3.7 | 97 | 9.8 | 157 | 15.8 |
| 38 | 15 9.5 | 15 12.0 | 14 28.1 | 38 | 3.8 | 98 | 9.9 | 158 | 15.9 |
| 39 | 15 9.8 | 15 12.3 | 14 28.3 | 39 | 3.9 | 99 | 10.0 | 159 | 16.0 |
| 40 | 15 10.0 | 15 12.5 | 14 28.5 | 40 | 4.0 | 100 | 10.1 | 160 | 16.1 |
| 41 | 15 10.3 | 15 12.8 | 14 28.8 | 41 | 4.1 | 101 | 10.2 | 161 | 16.2 |
| 42 | 15 10.5 | 15 13.0 | 14 29.0 | 42 | 4.2 | 102 | 10.3 | 162 | 16.3 |
| 43 | 15 10.8 | 15 13.3 | 14 29.3 | 43 | 4.3 | 103 | 10.4 | 163 | 16.4 |
| 44 | 15 11.0 | 15 13.5 | 14 29.5 | 44 | 4.4 | 104 | 10.5 | 164 | 16.5 |
| 45 | 15 11.3 | 15 13.8 | 14 29.7 | 45 | 4.5 | 105 | 10.6 | 165 | 16.6 |
| 46 | 15 11.5 | 15 14.0 | 14 30.0 | 46 | 4.6 | 106 | 10.7 | 166 | 16.7 |
| 47 | 15 11.8 | 15 14.3 | 14 30.2 | 47 | 4.7 | 107 | 10.8 | 167 | 16.8 |
| 48 | 15 12.0 | 15 14.5 | 14 30.5 | 48 | 4.8 | 108 | 10.9 | 168 | 16.9 |
| 49 | 15 12.3 | 15 14.8 | 14 30.7 | 49 | 4.9 | 109 | 11.0 | 169 | 17.0 |
| 50 | 15 12.5 | 15 15.0 | 14 30.9 | 50 | 5.0 | 110 | 11.1 | 170 | 17.1 |
| 51 | 15 12.8 | 15 15.3 | 14 31.2 | 51 | 5.1 | 111 | 11.2 | 171 | 17.2 |
| 52 | 15 13.0 | 15 15.5 | 14 31.4 | 52 | 5.2 | 112 | 11.3 | 172 | 17.3 |
| 53 | 15 13.3 | 15 15.8 | 14 31.6 | 53 | 5.3 | 113 | 11.4 | 173 | 17.4 |
| 54 | 15 13.5 | 15 16.0 | 14 31.9 | 54 | 5.4 | 114 | 11.5 | 174 | 17.5 |
| 55 | 15 13.8 | 15 16.3 | 14 32.1 | 55 | 5.5 | 115 | 11.6 | 175 | 17.6 |
| 56 | 15 14.0 | 15 16.5 | 14 32.4 | 56 | 5.6 | 116 | 11.7 | 176 | 17.7 |
| 57 | 15 14.3 | 15 16.8 | 14 32.6 | 57 | 5.7 | 117 | 11.8 | 177 | 17.8 |
| 58 | 15 14.5 | 15 17.0 | 14 32.8 | 58 | 5.8 | 118 | 11.9 | 178 | 17.9 |
| 59 | 15 14.8 | 15 17.3 | 14 33.1 | 59 | 5.9 | 119 | 12.0 | 179 | 18.0 |
| 60 | 15 15.0 | 15 17.5 | 14 33.3 | 60 | 6.1 | 120 | 12.1 | 180 | 18.2 |

1 h 1 min

| POPRAVKA ČASOVNOG UGLA | | | POPRAVKA DRUGOG REDA za časovni ugao i deklinaciju Sunca, Mjeseca i planeta | | | | | | |
|------------------------|--------------------|----------------------|---|----|-------|-----|-------|-----|-------|
| s | SUNCA I PLANETA | PROLJEČNE TAČKE ° | MJESECA ζ | Δ | popr. | Δ | popr. | Δ | popr. |
| | o ′ | o ′ | o ′ | | ′ | | ′ | | ′ |
| 0 | 15 15.0 | 15 17.5 | 14 33.3 | 0 | .0 | 60 | 6.2 | 120 | 12.3 |
| 1 | 15 15.3 | 15 17.8 | 14 33.6 | 1 | .1 | 61 | 6.3 | 121 | 12.4 |
| 2 | 15 15.5 | 15 18.0 | 14 33.8 | 2 | .2 | 62 | 6.4 | 122 | 12.5 |
| 3 | 15 15.8 | 15 18.3 | 14 34.0 | 3 | .3 | 63 | 6.5 | 123 | 12.6 |
| 4 | 15 16.0 | 15 18.5 | 14 34.3 | 4 | .4 | 64 | 6.6 | 124 | 12.7 |
| 5 | 15 16.3 | 15 18.8 | 14 34.5 | 5 | .5 | 65 | 6.7 | 125 | 12.8 |
| 6 | 15 16.5 | 15 19.0 | 14 34.7 | 6 | .6 | 66 | 6.8 | 126 | 12.9 |
| 7 | 15 16.8 | 15 19.3 | 14 35.0 | 7 | .7 | 67 | 6.9 | 127 | 13.0 |
| 8 | 15 17.0 | 15 19.5 | 14 35.2 | 8 | .8 | 68 | 7.0 | 128 | 13.1 |
| 9 | 15 17.3 | 15 19.8 | 14 35.5 | 9 | .9 | 69 | 7.1 | 129 | 13.2 |
| 10 | 15 17.5 | 15 20.0 | 14 35.7 | 10 | 1.0 | 70 | 7.2 | 130 | 13.3 |
| 11 | 15 17.8 | 15 20.3 | 14 35.9 | 11 | 1.1 | 71 | 7.3 | 131 | 13.4 |
| 12 | 15 18.0 | 15 20.6 | 14 36.2 | 12 | 1.2 | 72 | 7.4 | 132 | 13.5 |
| 13 | 15 18.3 | 15 20.8 | 14 36.4 | 13 | 1.3 | 73 | 7.5 | 133 | 13.6 |
| 14 | 15 18.5 | 15 21.1 | 14 36.7 | 14 | 1.4 | 74 | 7.6 | 134 | 13.7 |
| 15 | 15 18.8 | 15 21.3 | 14 36.9 | 15 | 1.5 | 75 | 7.7 | 135 | 13.8 |
| 16 | 15 19.0 | 15 21.6 | 14 37.1 | 16 | 1.6 | 76 | 7.8 | 136 | 13.9 |
| 17 | 15 19.3 | 15 21.8 | 14 37.4 | 17 | 1.7 | 77 | 7.9 | 137 | 14.0 |
| 18 | 15 19.5 | 15 22.1 | 14 37.6 | 18 | 1.8 | 78 | 8.0 | 138 | 14.1 |
| 19 | 15 19.8 | 15 22.3 | 14 37.9 | 19 | 1.9 | 79 | 8.1 | 139 | 14.2 |
| 20 | 15 20.0 | 15 22.6 | 14 38.1 | 20 | 2.1 | 80 | 8.2 | 140 | 14.4 |
| 21 | 15 20.3 | 15 22.8 | 14 38.3 | 21 | 2.2 | 81 | 8.3 | 141 | 14.5 |
| 22 | 15 20.5 | 15 23.1 | 14 38.6 | 22 | 2.3 | 82 | 8.4 | 142 | 14.6 |
| 23 | 15 20.8 | 15 23.3 | 14 38.8 | 23 | 2.4 | 83 | 8.5 | 143 | 14.7 |
| 24 | 15 21.0 | 15 23.6 | 14 39.0 | 24 | 2.5 | 84 | 8.6 | 144 | 14.8 |
| 25 | 15 21.3 | 15 23.8 | 14 39.3 | 25 | 2.6 | 85 | 8.7 | 145 | 14.9 |
| 26 | 15 21.5 | 15 24.1 | 14 39.5 | 26 | 2.7 | 86 | 8.8 | 146 | 15.0 |
| 27 | 15 21.8 | 15 24.3 | 14 39.8 | 27 | 2.8 | 87 | 8.9 | 147 | 15.1 |
| 28 | 15 22.0 | 15 24.6 | 14 40.0 | 28 | 2.9 | 88 | 9.0 | 148 | 15.2 |
| 29 | 15 22.3 | 15 24.8 | 14 40.2 | 29 | 3.0 | 89 | 9.1 | 149 | 15.3 |
| 30 | 15 22.5 | 15 25.1 | 14 40.5 | 30 | 3.1 | 90 | 9.2 | 150 | 15.4 |
| 31 | 15 22.8 | 15 25.3 | 14 40.7 | 31 | 3.2 | 91 | 9.3 | 151 | 15.5 |
| 32 | 15 23.0 | 15 25.6 | 14 41.0 | 32 | 3.3 | 92 | 9.4 | 152 | 15.6 |
| 33 | 15 23.3 | 15 25.8 | 14 41.2 | 33 | 3.4 | 93 | 9.5 | 153 | 15.7 |
| 34 | 15 23.5 | 15 26.1 | 14 41.4 | 34 | 3.5 | 94 | 9.6 | 154 | 15.8 |
| 35 | 15 23.8 | 15 26.3 | 14 41.7 | 35 | 3.6 | 95 | 9.7 | 155 | 15.9 |
| 36 | 15 24.0 | 15 26.6 | 14 41.9 | 36 | 3.7 | 96 | 9.8 | 156 | 16.0 |
| 37 | 15 24.3 | 15 26.8 | 14 42.1 | 37 | 3.8 | 97 | 9.9 | 157 | 16.1 |
| 38 | 15 24.5 | 15 27.1 | 14 42.4 | 38 | 3.9 | 98 | 10.0 | 158 | 16.2 |
| 39 | 15 24.8 | 15 27.3 | 14 42.6 | 39 | 4.0 | 99 | 10.1 | 159 | 16.3 |
| 40 | 15 25.0 | 15 27.6 | 14 42.9 | 40 | 4.1 | 100 | 10.3 | 160 | 16.4 |
| 41 | 15 25.3 | 15 27.8 | 14 43.1 | 41 | 4.2 | 101 | 10.4 | 161 | 16.5 |
| 42 | 15 25.5 | 15 28.1 | 14 43.3 | 42 | 4.3 | 102 | 10.5 | 162 | 16.6 |
| 43 | 15 25.8 | 15 28.3 | 14 43.6 | 43 | 4.4 | 103 | 10.6 | 163 | 16.7 |
| 44 | 15 26.0 | 15 28.6 | 14 43.8 | 44 | 4.5 | 104 | 10.7 | 164 | 16.8 |
| 45 | 15 26.3 | 15 28.8 | 14 44.1 | 45 | 4.6 | 105 | 10.8 | 165 | 16.9 |
| 46 | 15 26.5 | 15 29.1 | 14 44.3 | 46 | 4.7 | 106 | 10.9 | 166 | 17.0 |
| 47 | 15 26.8 | 15 29.3 | 14 44.5 | 47 | 4.8 | 107 | 11.0 | 167 | 17.1 |
| 48 | 15 27.0 | 15 29.6 | 14 44.8 | 48 | 4.9 | 108 | 11.1 | 168 | 17.2 |
| 49 | 15 27.3 | 15 29.8 | 14 45.0 | 49 | 5.0 | 109 | 11.2 | 169 | 17.3 |
| 50 | 15 27.5 | 15 30.1 | 14 45.2 | 50 | 5.1 | 110 | 11.3 | 170 | 17.4 |
| 51 | 15 27.8 | 15 30.3 | 14 45.5 | 51 | 5.2 | 111 | 11.4 | 171 | 17.5 |
| 52 | 15 28.0 | 15 30.6 | 14 45.7 | 52 | 5.3 | 112 | 11.5 | 172 | 17.6 |
| 53 | 15 28.3 | 15 30.8 | 14 46.0 | 53 | 5.4 | 113 | 11.6 | 173 | 17.7 |
| 54 | 15 28.5 | 15 31.1 | 14 46.2 | 54 | 5.5 | 114 | 11.7 | 174 | 17.8 |
| 55 | 15 28.8 | 15 31.3 | 14 46.4 | 55 | 5.6 | 115 | 11.8 | 175 | 17.9 |
| 56 | 15 29.0 | 15 31.6 | 14 46.7 | 56 | 5.7 | 116 | 11.9 | 176 | 18.0 |
| 57 | 15 29.3 | 15 31.8 | 14 46.9 | 57 | 5.8 | 117 | 12.0 | 177 | 18.1 |
| 58 | 15 29.5 | 15 32.1 | 14 47.2 | 58 | 5.9 | 118 | 12.1 | 178 | 18.2 |
| 59 | 15 29.8 | 15 32.3 | 14 47.4 | 59 | 6.0 | 119 | 12.2 | 179 | 18.3 |
| 60 | 15 30.0 | 15 32.6 | 14 47.6 | 60 | 6.2 | 120 | 12.3 | 180 | 18.5 |

1 h 2 min

| POPRAVKA ČASOVNOG UGLA | | | | POPRAVKA DRUGOG REDA za časovni ugao i deklinaciju Sunca, Mjeseca i planeta | | | |
|------------------------|-----------------|-----------------------|--------------|---|-------|----------|----------|
| S | SUNCA I PLANETA | PROLJEĆNE TAČKE 'T | MJESECA ☾ | Δ | popr. | Δ | popr. |
| | o / f | o / f | o / f | | ' | " | " |
| 0 | 15 30.0 | 15 32.6 | 14 47.6 | 0 | .0 | 60 6.3 | 120 12.5 |
| 1 | 15 30.3 | 15 32.8 | 14 47.9 | 1 | .1 | 61 6.4 | 121 12.6 |
| 2 | 15 30.5 | 15 33.1 | 14 48.1 | 2 | .2 | 62 6.5 | 122 12.7 |
| 3 | 15 30.8 | 15 33.3 | 14 48.3 | 3 | .3 | 63 6.6 | 123 12.8 |
| 4 | 15 31.0 | 15 33.6 | 14 48.6 | 4 | .4 | 64 6.7 | 124 12.9 |
| 5 | 15 31.3 | 15 33.8 | 14 48.8 | 5 | .5 | 65 6.8 | 125 13.0 |
| 6 | 15 31.5 | 15 34.1 | 14 49.1 | 6 | .6 | 66 6.9 | 126 13.1 |
| 7 | 15 31.8 | 15 34.3 | 14 49.3 | 7 | .7 | 67 7.0 | 127 13.2 |
| 8 | 15 32.0 | 15 34.6 | 14 49.5 | 8 | .8 | 68 7.1 | 128 13.3 |
| 9 | 15 32.3 | 15 34.8 | 14 49.8 | 9 | .9 | 69 7.2 | 129 13.4 |
| 10 | 15 32.5 | 15 35.1 | 14 50.0 | 10 | 1.0 | 70 7.3 | 130 13.5 |
| 11 | 15 32.8 | 15 35.3 | 14 50.3 | 11 | 1.1 | 71 7.4 | 131 13.6 |
| 12 | 15 33.0 | 15 35.6 | 14 50.5 | 12 | 1.3 | 72 7.5 | 132 13.8 |
| 13 | 15 33.3 | 15 35.8 | 14 50.7 | 13 | 1.4 | 73 7.6 | 133 13.9 |
| 14 | 15 33.5 | 15 36.1 | 14 51.0 | 14 | 1.5 | 74 7.7 | 134 14.0 |
| 15 | 15 33.8 | 15 36.3 | 14 51.2 | 15 | 1.6 | 75 7.8 | 135 14.1 |
| 16 | 15 34.0 | 15 36.6 | 14 51.5 | 16 | 1.7 | 76 7.9 | 136 14.2 |
| 17 | 15 34.3 | 15 36.8 | 14 51.7 | 17 | 1.8 | 77 8.0 | 137 14.3 |
| 18 | 15 34.5 | 15 37.1 | 14 51.9 | 18 | 1.9 | 78 8.1 | 138 14.4 |
| 19 | 15 34.8 | 15 37.3 | 14 52.2 | 19 | 2.0 | 79 8.2 | 139 14.5 |
| 20 | 15 35.0 | 15 37.6 | 14 52.4 | 20 | 2.1 | 80 8.3 | 140 14.6 |
| 21 | 15 35.3 | 15 37.8 | 14 52.6 | 21 | 2.2 | 81 8.4 | 141 14.7 |
| 22 | 15 35.5 | 15 38.1 | 14 52.9 | 22 | 2.3 | 82 8.5 | 142 14.8 |
| 23 | 15 35.8 | 15 38.3 | 14 53.1 | 23 | 2.4 | 83 8.6 | 143 14.9 |
| 24 | 15 36.0 | 15 38.6 | 14 53.4 | 24 | 2.5 | 84 8.8 | 144 15.0 |
| 25 | 15 36.3 | 15 38.9 | 14 53.6 | 25 | 2.6 | 85 8.9 | 145 15.1 |
| 26 | 15 36.5 | 15 39.1 | 14 53.8 | 26 | 2.7 | 86 9.0 | 146 15.2 |
| 27 | 15 36.8 | 15 39.4 | 14 54.1 | 27 | 2.8 | 87 9.1 | 147 15.3 |
| 28 | 15 37.0 | 15 39.6 | 14 54.3 | 28 | 2.9 | 88 9.2 | 148 15.4 |
| 29 | 15 37.3 | 15 39.9 | 14 54.6 | 29 | 3.0 | 89 9.3 | 149 15.5 |
| 30 | 15 37.5 | 15 40.1 | 14 54.8 | 30 | 3.1 | 90 9.4 | 150 15.6 |
| 31 | 15 37.8 | 15 40.4 | 14 55.0 | 31 | 3.2 | 91 9.5 | 151 15.7 |
| 32 | 15 38.0 | 15 40.6 | 14 55.3 | 32 | 3.3 | 92 9.6 | 152 15.8 |
| 33 | 15 38.3 | 15 40.9 | 14 55.5 | 33 | 3.4 | 93 9.7 | 153 15.9 |
| 34 | 15 38.5 | 15 41.1 | 14 55.7 | 34 | 3.5 | 94 9.8 | 154 16.0 |
| 35 | 15 38.8 | 15 41.4 | 14 56.0 | 35 | 3.6 | 95 9.9 | 155 16.1 |
| 36 | 15 39.0 | 15 41.6 | 14 56.2 | 36 | 3.8 | 96 10.0 | 156 16.3 |
| 37 | 15 39.3 | 15 41.9 | 14 56.5 | 37 | 3.9 | 97 10.1 | 157 16.4 |
| 38 | 15 39.5 | 15 42.1 | 14 56.7 | 38 | 4.0 | 98 10.2 | 158 16.5 |
| 39 | 15 39.8 | 15 42.4 | 14 56.9 | 39 | 4.1 | 99 10.3 | 159 16.6 |
| 40 | 15 40.0 | 15 42.6 | 14 57.2 | 40 | 4.2 | 100 10.4 | 160 16.7 |
| 41 | 15 40.3 | 15 42.9 | 14 57.4 | 41 | 4.3 | 101 10.5 | 161 16.8 |
| 42 | 15 40.5 | 15 43.1 | 14 57.7 | 42 | 4.4 | 102 10.6 | 162 16.9 |
| 43 | 15 40.8 | 15 43.4 | 14 57.9 | 43 | 4.5 | 103 10.7 | 163 17.0 |
| 44 | 15 41.0 | 15 43.6 | 14 58.1 | 44 | 4.6 | 104 10.8 | 164 17.1 |
| 45 | 15 41.3 | 15 43.9 | 14 58.4 | 45 | 4.7 | 105 10.9 | 165 17.2 |
| 46 | 15 41.5 | 15 44.1 | 14 58.6 | 46 | 4.8 | 106 11.0 | 166 17.3 |
| 47 | 15 41.8 | 15 44.4 | 14 58.8 | 47 | 4.9 | 107 11.1 | 167 17.4 |
| 48 | 15 42.0 | 15 44.6 | 14 59.1 | 48 | 5.0 | 108 11.3 | 168 17.5 |
| 49 | 15 42.3 | 15 44.9 | 14 59.3 | 49 | 5.1 | 109 11.4 | 169 17.6 |
| 50 | 15 42.5 | 15 45.1 | 14 59.6 | 50 | 5.2 | 110 11.5 | 170 17.7 |
| 51 | 15 42.8 | 15 45.4 | 14 59.8 | 51 | 5.3 | 111 11.6 | 171 17.8 |
| 52 | 15 43.0 | 15 45.6 | 15 .0 | 52 | 5.4 | 112 11.7 | 172 17.9 |
| 53 | 15 43.3 | 15 45.9 | 15 .3 | 53 | 5.5 | 113 11.8 | 173 18.0 |
| 54 | 15 43.5 | 15 46.1 | 15 .5 | 54 | 5.6 | 114 11.9 | 174 18.1 |
| 55 | 15 43.8 | 15 46.4 | 15 .8 | 55 | 5.7 | 115 12.0 | 175 18.2 |
| 56 | 15 44.0 | 15 46.6 | 15 1.0 | 56 | 5.8 | 116 12.1 | 176 18.3 |
| 57 | 15 44.3 | 15 46.9 | 15 1.2 | 57 | 5.9 | 117 12.2 | 177 18.4 |
| 58 | 15 44.5 | 15 47.1 | 15 1.5 | 58 | 6.0 | 118 12.3 | 178 18.5 |
| 59 | 15 44.8 | 15 47.4 | 15 1.7 | 59 | 6.1 | 119 12.4 | 179 18.6 |
| 60 | 15 45.0 | 15 47.6 | 15 2.0 | 60 | 6.3 | 120 12.5 | 180 18.8 |

1 h 3 min

| POPRAVKA ČASOVNOG UGLA | | | | POPRAVKA DRUGOG REDA za časovni ugao i deklinaciju Sunca, Mjeseca i planeta | | | |
|------------------------|-----------------|-----------------------|--------------|---|-------|----------|----------|
| S | SUNCA I PLANETA | PROLJEĆNE TAČKE 'T | MJESECA ☾ | Δ | popr. | Δ | popr. |
| | o / f | o / f | o / f | | ' | " | " |
| 0 | 15 45.0 | 15 47.6 | 15 2.0 | 0 | .0 | 60 6.4 | 120 12.7 |
| 1 | 15 45.3 | 15 47.9 | 15 2.2 | 1 | .1 | 61 6.5 | 121 12.8 |
| 2 | 15 45.5 | 15 48.1 | 15 2.4 | 2 | .2 | 62 6.6 | 122 12.9 |
| 3 | 15 45.8 | 15 48.4 | 15 2.7 | 3 | .3 | 63 6.7 | 123 13.0 |
| 4 | 15 46.0 | 15 48.6 | 15 2.9 | 4 | .4 | 64 6.8 | 124 13.1 |
| 5 | 15 46.3 | 15 48.9 | 15 3.1 | 5 | .5 | 65 6.9 | 125 13.2 |
| 6 | 15 46.5 | 15 49.1 | 15 3.4 | 6 | .6 | 66 7.0 | 126 13.3 |
| 7 | 15 46.8 | 15 49.4 | 15 3.6 | 7 | .7 | 67 7.1 | 127 13.4 |
| 8 | 15 47.0 | 15 49.6 | 15 3.9 | 8 | .8 | 68 7.2 | 128 13.5 |
| 9 | 15 47.3 | 15 49.9 | 15 4.1 | 9 | 1.0 | 69 7.3 | 129 13.7 |
| 10 | 15 47.5 | 15 50.1 | 15 4.3 | 10 | 1.1 | 70 7.4 | 130 13.8 |
| 11 | 15 47.8 | 15 50.4 | 15 4.6 | 11 | 1.2 | 71 7.5 | 131 13.9 |
| 12 | 15 48.0 | 15 50.6 | 15 4.8 | 12 | 1.3 | 72 7.6 | 132 14.0 |
| 13 | 15 48.3 | 15 50.9 | 15 5.1 | 13 | 1.4 | 73 7.7 | 133 14.1 |
| 14 | 15 48.5 | 15 51.1 | 15 5.3 | 14 | 1.5 | 74 7.8 | 134 14.2 |
| 15 | 15 48.8 | 15 51.4 | 15 5.5 | 15 | 1.6 | 75 7.9 | 135 14.3 |
| 16 | 15 49.0 | 15 51.6 | 15 5.8 | 16 | 1.7 | 76 8.0 | 136 14.4 |
| 17 | 15 49.3 | 15 51.9 | 15 6.0 | 17 | 1.8 | 77 8.1 | 137 14.5 |
| 18 | 15 49.5 | 15 52.1 | 15 6.2 | 18 | 1.9 | 78 8.3 | 138 14.6 |
| 19 | 15 49.8 | 15 52.4 | 15 6.5 | 19 | 2.0 | 79 8.4 | 139 14.7 |
| 20 | 15 50.0 | 15 52.6 | 15 6.7 | 20 | 2.1 | 80 8.5 | 140 14.8 |
| 21 | 15 50.3 | 15 52.9 | 15 7.0 | 21 | 2.2 | 81 8.6 | 141 14.9 |
| 22 | 15 50.5 | 15 53.1 | 15 7.2 | 22 | 2.3 | 82 8.7 | 142 15.0 |
| 23 | 15 50.8 | 15 53.4 | 15 7.4 | 23 | 2.4 | 83 8.8 | 143 15.1 |
| 24 | 15 51.0 | 15 53.6 | 15 7.7 | 24 | 2.5 | 84 8.9 | 144 15.2 |
| 25 | 15 51.3 | 15 53.9 | 15 7.9 | 25 | 2.6 | 85 9.0 | 145 15.3 |
| 26 | 15 51.5 | 15 54.1 | 15 8.2 | 26 | 2.8 | 86 9.1 | 146 15.5 |
| 27 | 15 51.8 | 15 54.4 | 15 8.4 | 27 | 2.9 | 87 9.2 | 147 15.6 |
| 28 | 15 52.0 | 15 54.6 | 15 8.6 | 28 | 3.0 | 88 9.3 | 148 15.7 |
| 29 | 15 52.3 | 15 54.9 | 15 8.9 | 29 | 3.1 | 89 9.4 | 149 15.8 |
| 30 | 15 52.5 | 15 55.1 | 15 9.1 | 30 | 3.2 | 90 9.5 | 150 15.9 |
| 31 | 15 52.8 | 15 55.4 | 15 9.3 | 31 | 3.3 | 91 9.6 | 151 16.0 |
| 32 | 15 53.0 | 15 55.6 | 15 9.6 | 32 | 3.4 | 92 9.7 | 152 16.1 |
| 33 | 15 53.3 | 15 55.9 | 15 9.8 | 33 | 3.5 | 93 9.8 | 153 16.2 |
| 34 | 15 53.5 | 15 56.1 | 15 10.1 | 34 | 3.6 | 94 9.9 | 154 16.3 |
| 35 | 15 53.8 | 15 56.4 | 15 10.3 | 35 | 3.7 | 95 10.1 | 155 16.4 |
| 36 | 15 54.0 | 15 56.7 | 15 10.5 | 36 | 3.8 | 96 10.2 | 156 16.5 |
| 37 | 15 54.3 | 15 56.9 | 15 10.8 | 37 | 3.9 | 97 10.3 | 157 16.6 |
| 38 | 15 54.5 | 15 57.2 | 15 11.0 | 38 | 4.0 | 98 10.4 | 158 16.7 |
| 39 | 15 54.8 | 15 57.4 | 15 11.3 | 39 | 4.1 | 99 10.5 | 159 16.8 |
| 40 | 15 55.0 | 15 57.7 | 15 11.5 | 40 | 4.2 | 100 10.6 | 160 16.9 |
| 41 | 15 55.3 | 15 57.9 | 15 11.7 | 41 | 4.3 | 101 10.7 | 161 17.0 |
| 42 | 15 55.5 | 15 58.2 | 15 12.0 | 42 | 4.4 | 102 10.8 | 162 17.1 |
| 43 | 15 55.8 | 15 58.4 | 15 12.2 | 43 | 4.6 | 103 10.9 | 163 17.3 |
| 44 | 15 56.0 | 15 58.7 | 15 12.4 | 44 | 4.7 | 104 11.0 | 164 17.4 |
| 45 | 15 56.3 | 15 58.9 | 15 12.7 | 45 | 4.8 | 105 11.1 | 165 17.5 |
| 46 | 15 56.5 | 15 59.2 | 15 12.9 | 46 | 4.9 | 106 11.2 | 166 17.6 |
| 47 | 15 56.8 | 15 59.4 | 15 13.2 | 47 | 5.0 | 107 11.3 | 167 17.7 |
| 48 | 15 57.0 | 15 59.7 | 15 13.4 | 48 | 5.1 | 108 11.4 | 168 17.8 |
| 49 | 15 57.3 | 15 59.9 | 15 13.6 | 49 | 5.2 | 109 11.5 | 169 17.9 |
| 50 | 15 57.5 | 16 .2 | 15 13.9 | 50 | 5.3 | 110 11.6 | 170 18.0 |
| 51 | 15 57.8 | 16 .4 | 15 14.1 | 51 | 5.4 | 111 11.7 | 171 18.1 |
| 52 | 15 58.0 | 16 .7 | 15 14.4 | 52 | 5.5 | 112 11.9 | 172 18.2 |
| 53 | 15 58.3 | 16 .9 | 15 14.6 | 53 | 5.6 | 113 12.0 | 173 18.3 |
| 54 | 15 58.5 | 16 1.2 | 15 14.8 | 54 | 5.7 | 114 12.1 | 174 18.4 |
| 55 | 15 58.8 | 16 1.4 | 15 15.1 | 55 | 5.8 | 115 12.2 | 175 18.5 |
| 56 | 15 59.0 | 16 1.7 | 15 15.3 | 56 | 5.9 | 116 12.3 | 176 18.6 |
| 57 | 15 59.3 | 16 1.9 | 15 15.6 | 57 | 6.0 | 117 12.4 | 177 18.7 |
| 58 | 15 59.5 | 16 2.2 | 15 15.8 | 58 | 6.1 | 118 12.5 | 178 18.8 |
| 59 | 15 59.8 | 16 2.4 | 15 16.0 | 59 | 6.2 | 119 12.6 | 179 18.9 |
| 60 | 16 .0 | 16 2.7 | 15 16.3 | 60 | 6.4 | 120 12.7 | 180 19.1 |

1 h 4 min

| POPRAVKA ČASOVNOG UGLA | | | POPRAVKA DRUGOG REDA za časovni ugao i deklinaciju Sunca, Mjeseca i planeta | | | | | | | | | | | | |
|------------------------|--------------------|------|---|------|--------------|------|----|-------|-----|------|-------|------|---|-------|--|
| s | SUNCA I PLANETA | | PROLJEČNE TAČKE T | | MJESECA ☾ | | Δ | popr. | | Δ | popr. | | Δ | popr. | |
| | o | t | o | t | o | t | | t | t | | t | t | | t | |
| 0 | 16 | .0 | 16 | 2.7 | 15 | 16.3 | 0 | .0 | 60 | 6.5 | 120 | 12.9 | | | |
| 1 | 16 | .3 | 16 | 2.9 | 15 | 16.5 | 1 | .1 | 61 | 6.6 | 121 | 13.0 | | | |
| 2 | 16 | .5 | 16 | 3.2 | 15 | 16.7 | 2 | .2 | 62 | 6.7 | 122 | 13.1 | | | |
| 3 | 16 | .8 | 16 | 3.4 | 15 | 17.0 | 3 | .3 | 63 | 6.8 | 123 | 13.2 | | | |
| 4 | 16 | 1.0 | 16 | 3.7 | 15 | 17.2 | 4 | .4 | 64 | 6.9 | 124 | 13.3 | | | |
| 5 | 16 | 1.3 | 16 | 3.9 | 15 | 17.5 | 5 | .5 | 65 | 7.0 | 125 | 13.4 | | | |
| 6 | 16 | 1.5 | 16 | 4.2 | 15 | 17.7 | 6 | .6 | 66 | 7.1 | 126 | 13.5 | | | |
| 7 | 16 | 1.8 | 16 | 4.4 | 15 | 17.9 | 7 | .8 | 67 | 7.2 | 127 | 13.7 | | | |
| 8 | 16 | 2.0 | 16 | 4.7 | 15 | 18.2 | 8 | .9 | 68 | 7.3 | 128 | 13.8 | | | |
| 9 | 16 | 2.3 | 16 | 4.9 | 15 | 18.4 | 9 | 1.0 | 69 | 7.4 | 129 | 13.9 | | | |
| 10 | 16 | 2.5 | 16 | 5.2 | 15 | 18.7 | 10 | 1.1 | 70 | 7.5 | 130 | 14.0 | | | |
| 11 | 16 | 2.8 | 16 | 5.4 | 15 | 18.9 | 11 | 1.2 | 71 | 7.6 | 131 | 14.1 | | | |
| 12 | 16 | 3.0 | 16 | 5.7 | 15 | 19.1 | 12 | 1.3 | 72 | 7.7 | 132 | 14.2 | | | |
| 13 | 16 | 3.3 | 16 | 5.9 | 15 | 19.4 | 13 | 1.4 | 73 | 7.8 | 133 | 14.3 | | | |
| 14 | 16 | 3.5 | 16 | 6.2 | 15 | 19.6 | 14 | 1.5 | 74 | 8.0 | 134 | 14.4 | | | |
| 15 | 16 | 3.8 | 16 | 6.4 | 15 | 19.8 | 15 | 1.6 | 75 | 8.1 | 135 | 14.5 | | | |
| 16 | 16 | 4.0 | 16 | 6.7 | 15 | 20.1 | 16 | 1.7 | 76 | 8.2 | 136 | 14.6 | | | |
| 17 | 16 | 4.3 | 16 | 6.9 | 15 | 20.3 | 17 | 1.8 | 77 | 8.3 | 137 | 14.7 | | | |
| 18 | 16 | 4.5 | 16 | 7.2 | 15 | 20.6 | 18 | 1.9 | 78 | 8.4 | 138 | 14.8 | | | |
| 19 | 16 | 4.8 | 16 | 7.4 | 15 | 20.8 | 19 | 2.0 | 79 | 8.5 | 139 | 14.9 | | | |
| 20 | 16 | 5.0 | 16 | 7.7 | 15 | 21.0 | 20 | 2.2 | 80 | 8.6 | 140 | 15.1 | | | |
| 21 | 16 | 5.3 | 16 | 7.9 | 15 | 21.3 | 21 | 2.3 | 81 | 8.7 | 141 | 15.2 | | | |
| 22 | 16 | 5.5 | 16 | 8.2 | 15 | 21.5 | 22 | 2.4 | 82 | 8.8 | 142 | 15.3 | | | |
| 23 | 16 | 5.8 | 16 | 8.4 | 15 | 21.8 | 23 | 2.5 | 83 | 8.9 | 143 | 15.4 | | | |
| 24 | 16 | 6.0 | 16 | 8.7 | 15 | 22.0 | 24 | 2.6 | 84 | 9.0 | 144 | 15.5 | | | |
| 25 | 16 | 6.3 | 16 | 8.9 | 15 | 22.2 | 25 | 2.7 | 85 | 9.1 | 145 | 15.6 | | | |
| 26 | 16 | 6.5 | 16 | 9.2 | 15 | 22.5 | 26 | 2.8 | 86 | 9.2 | 146 | 15.7 | | | |
| 27 | 16 | 6.8 | 16 | 9.4 | 15 | 22.7 | 27 | 2.9 | 87 | 9.4 | 147 | 15.8 | | | |
| 28 | 16 | 7.0 | 16 | 9.7 | 15 | 22.9 | 28 | 3.0 | 88 | 9.5 | 148 | 15.9 | | | |
| 29 | 16 | 7.3 | 16 | 9.9 | 15 | 23.2 | 29 | 3.1 | 89 | 9.6 | 149 | 16.0 | | | |
| 30 | 16 | 7.5 | 16 | 10.2 | 15 | 23.4 | 30 | 3.2 | 90 | 9.7 | 150 | 16.1 | | | |
| 31 | 16 | 7.8 | 16 | 10.4 | 15 | 23.7 | 31 | 3.3 | 91 | 9.8 | 151 | 16.2 | | | |
| 32 | 16 | 8.0 | 16 | 10.7 | 15 | 23.9 | 32 | 3.4 | 92 | 9.9 | 152 | 16.3 | | | |
| 33 | 16 | 8.3 | 16 | 10.9 | 15 | 24.1 | 33 | 3.5 | 93 | 10.0 | 153 | 16.4 | | | |
| 34 | 16 | 8.5 | 16 | 11.2 | 15 | 24.4 | 34 | 3.7 | 94 | 10.1 | 154 | 16.6 | | | |
| 35 | 16 | 8.8 | 16 | 11.4 | 15 | 24.6 | 35 | 3.8 | 95 | 10.2 | 155 | 16.7 | | | |
| 36 | 16 | 9.0 | 16 | 11.7 | 15 | 24.9 | 36 | 3.9 | 96 | 10.3 | 156 | 16.8 | | | |
| 37 | 16 | 9.3 | 16 | 11.9 | 15 | 25.1 | 37 | 4.0 | 97 | 10.4 | 157 | 16.9 | | | |
| 38 | 16 | 9.5 | 16 | 12.2 | 15 | 25.3 | 38 | 4.1 | 98 | 10.5 | 158 | 17.0 | | | |
| 39 | 16 | 9.8 | 16 | 12.4 | 15 | 25.6 | 39 | 4.2 | 99 | 10.6 | 159 | 17.1 | | | |
| 40 | 16 | 10.0 | 16 | 12.7 | 15 | 25.8 | 40 | 4.3 | 100 | 10.8 | 160 | 17.2 | | | |
| 41 | 16 | 10.3 | 16 | 12.9 | 15 | 26.0 | 41 | 4.4 | 101 | 10.9 | 161 | 17.3 | | | |
| 42 | 16 | 10.5 | 16 | 13.2 | 15 | 26.3 | 42 | 4.5 | 102 | 11.0 | 162 | 17.4 | | | |
| 43 | 16 | 10.8 | 16 | 13.4 | 15 | 26.5 | 43 | 4.6 | 103 | 11.1 | 163 | 17.5 | | | |
| 44 | 16 | 11.0 | 16 | 13.7 | 15 | 26.8 | 44 | 4.7 | 104 | 11.2 | 164 | 17.6 | | | |
| 45 | 16 | 11.3 | 16 | 13.9 | 15 | 27.0 | 45 | 4.8 | 105 | 11.3 | 165 | 17.7 | | | |
| 46 | 16 | 11.5 | 16 | 14.2 | 15 | 27.2 | 46 | 4.9 | 106 | 11.4 | 166 | 17.8 | | | |
| 47 | 16 | 11.8 | 16 | 14.4 | 15 | 27.5 | 47 | 5.1 | 107 | 11.5 | 167 | 18.0 | | | |
| 48 | 16 | 12.0 | 16 | 14.7 | 15 | 27.7 | 48 | 5.2 | 108 | 11.6 | 168 | 18.1 | | | |
| 49 | 16 | 12.3 | 16 | 15.0 | 15 | 28.0 | 49 | 5.3 | 109 | 11.7 | 169 | 18.2 | | | |
| 50 | 16 | 12.5 | 16 | 15.2 | 15 | 28.2 | 50 | 5.4 | 110 | 11.8 | 170 | 18.3 | | | |
| 51 | 16 | 12.8 | 16 | 15.5 | 15 | 28.4 | 51 | 5.5 | 111 | 11.9 | 171 | 18.4 | | | |
| 52 | 16 | 13.0 | 16 | 15.7 | 15 | 28.7 | 52 | 5.6 | 112 | 12.0 | 172 | 18.5 | | | |
| 53 | 16 | 13.3 | 16 | 16.0 | 15 | 28.9 | 53 | 5.7 | 113 | 12.1 | 173 | 18.6 | | | |
| 54 | 16 | 13.5 | 16 | 16.2 | 15 | 29.2 | 54 | 5.8 | 114 | 12.3 | 174 | 18.7 | | | |
| 55 | 16 | 13.8 | 16 | 16.5 | 15 | 29.4 | 55 | 5.9 | 115 | 12.4 | 175 | 18.8 | | | |
| 56 | 16 | 14.0 | 16 | 16.7 | 15 | 29.6 | 56 | 6.0 | 116 | 12.5 | 176 | 18.9 | | | |
| 57 | 16 | 14.3 | 16 | 17.0 | 15 | 29.9 | 57 | 6.1 | 117 | 12.6 | 177 | 19.0 | | | |
| 58 | 16 | 14.5 | 16 | 17.2 | 15 | 30.1 | 58 | 6.2 | 118 | 12.7 | 178 | 19.1 | | | |
| 59 | 16 | 14.8 | 16 | 17.5 | 15 | 30.3 | 59 | 6.3 | 119 | 12.8 | 179 | 19.2 | | | |
| 60 | 16 | 15.0 | 16 | 17.7 | 15 | 30.6 | 60 | 6.5 | 120 | 12.9 | 180 | 19.4 | | | |

1 h 5 min

| POPRAVKA ČASOVNOG UGLA | | | POPRAVKA DRUGOG REDA za časovni ugao i deklinaciju Sunca, Mjeseca i planeta | | | | | | | | | | | | |
|------------------------|--------------------|------|---|------|--------------|------|----|-------|----|------|-------|------|---|-------|--|
| s | SUNCA I PLANETA | | PROLJEČNE TAČKE T | | MJESECA ☾ | | Δ | popr. | | Δ | popr. | | Δ | popr. | |
| | o | t | o | t | o | t | | t | t | | t | t | | | |
| 0 | 16 | 15.0 | 16 | 17.7 | 15 | 30.6 | 0 | .0 | 60 | 6.6 | 120 | 13.1 | | | |
| 1 | 16 | 15.3 | 16 | 18.0 | 15 | 30.8 | 1 | .1 | 61 | 6.7 | 121 | 13.2 | | | |
| 2 | 16 | 15.5 | 16 | 18.2 | 15 | 31.1 | 2 | .2 | 62 | 6.8 | 122 | 13.3 | | | |
| 3 | 16 | 15.8 | 16 | 18.5 | 15 | 31.3 | 3 | .3 | 63 | 6.9 | 123 | 13.4 | | | |
| 4 | 16 | 16.0 | 16 | 18.7 | 15 | 31.5 | 4 | .4 | 64 | 7.0 | 124 | 13.5 | | | |
| 5 | 16 | 16.3 | 16 | 19.0 | 15 | 31.8 | 5 | .5 | 65 | 7.1 | 125 | 13.6 | | | |
| 6 | 16 | 16.5 | 16 | 19.2 | 15 | 32.0 | 6 | .7 | 66 | 7.2 | 126 | 13.8 | | | |
| 7 | 16 | 16.8 | 16 | 19.5 | 15 | 32.3 | 7 | .8 | 67 | 7.3 | 127 | 13.9 | | | |
| 8 | 16 | 17.0 | 16 | 19.7 | 15 | 32.5 | 8 | .9 | 68 | 7.4 | 128 | 14.0 | | | |
| 9 | 16 | 17.3 | 16 | 20.0 | 15 | 32.7 | 9 | 1.0 | 69 | 7.5 | 129 | 14.1 | | | |
| 10 | 16 | 17.5 | 16 | 20.2 | 15 | 33.0 | 10 | 1.1 | 70 | 7.6 | 130 | 14.2 | | | |
| 11 | 16 | 17.8 | 16 | 20.5 | 15 | 33.2 | 11 | 1.2 | 71 | 7.8 | 131 | 14.3 | | | |
| 12 | 16 | 18.0 | 16 | 20.7 | 15 | 33.4 | 12 | 1.3 | 72 | 7.9 | 132 | 14.4 | | | |
| 13 | 16 | 18.3 | 16 | 21.0 | 15 | 33.7 | 13 | 1.4 | 73 | 8.0 | 133 | 14.5 | | | |
| 14 | 16 | 18.5 | 16 | 21.2 | 15 | 33.9 | 14 | 1.5 | 74 | 8.1 | 134 | 14.6 | | | |
| 15 | 16 | 18.8 | 16 | 21.5 | 15 | 34.2 | 15 | 1.6 | 75 | 8.2 | 135 | 14.7 | | | |
| 16 | 16 | 19.0 | 16 | 21.7 | 15 | 34.4 | 16 | 1.7 | 76 | 8.3 | 136 | 14.8 | | | |
| 17 | 16 | 19.3 | 16 | 22.0 | 15 | 34.6 | 17 | 1.9 | 77 | 8.4 | 137 | 15.0 | | | |
| 18 | 16 | 19.5 | 16 | 22.2 | 15 | 34.9 | 18 | 2.0 | 78 | 8.5 | 138 | 15.1 | | | |
| 19 | 16 | 19.8 | 16 | 22.5 | 15 | 35.1 | 19 | 2.1 | 79 | 8.6 | 139 | 15.2 | | | |
| 20 | 16 | 20.0 | 16 | 22.7 | 15 | 35.4 | 20 | 2.2 | 80 | 8.7 | 140 | 15.3 | | | |
| 21 | 16 | 20.3 | 16 | 23.0 | 15 | 35.6 | 21 | 2.3 | 81 | 8.8 | 141 | 15.4 | | | |
| 22 | 16 | 20.5 | 16 | 23.2 | 15 | 35.8 | 22 | 2.4 | 82 | 9.0 | 142 | 15.5 | | | |
| 23 | 16 | 20.8 | 16 | 23.5 | 15 | 36.1 | 23 | 2.5 | 83 | 9.1 | 143 | 15.6 | | | |
| 24 | 16 | 21.0 | 16 | 23.7 | 15 | 36.3 | 24 | 2.6 | 84 | 9.2 | 144 | 15.7 | | | |
| 25 | 16 | 21.3 | 16 | 24.0 | 15 | 36.5 | 25 | 2.7 | 85 | 9.3 | 145 | 15.8 | | | |
| 26 | 16 | 21.5 | 16 | 24.2 | 15 | 36.8 | 26 | 2.8 | 86 | 9.4 | 146 | 15.9 | | | |
| 27 | 16 | 21.8 | 16 | 24.5 | 15 | 37.0 | 27 | 2.9 | 87 | 9.5 | 147 | 16.0 | | | |
| 28 | 16 | 22.0 | 16 | 24.7 | 15 | 37.3 | 28 | 3.1 | 88 | 9.6 | 148 | 16.2 | | | |
| 29 | 16 | 22.3 | 16 | 25.0 | 15 | 37.5 | 29 | 3.2 | 89 | 9.7 | 149 | 16.3 | | | |
| 30 | 16 | 22.5 | 16 | 25.2 | 15 | 37.7 | 30 | 3.3 | 90 | 9.8 | 150 | 16.4 | | | |
| 31 | 16 | 22.8 | 16 | 25.5 | 15 | 38.0 | 31 | 3.4 | 91 | 9.9 | 151 | 16.5 | | | |
| 32 | 16 | 23.0 | 16 | 25.7 | 15 | 38.2 | 32 | 3.5 | 92 | 10.0 | 152 | 16.6 | | | |
| 33 | 16 | 23.3 | 16 | 26.0 | 15 | 38.5 | 33 | 3.6 | 93 | 10.2 | 153 | 16.7 | | | |
| 34 | 16 | 23.5 | 16 | 26.2 | 15 | 38.7 | 34 | 3.7 | 94 | 10.3 | 154 | 16.8 | | | |
| 35 | 16 | 23.8 | 16 | 26.5 | 15 | 38.9 | 35 | 3.8 | 95 | 10.4 | 155 | 16.9 | | | |
| 36 | 16 | 24.0 | 16 | 26.7 | 15 | 39.2 | 36 | 3.9 | 96 | 10.5 | 156 | 17 | | | |

1 h 6 min

| s | POPRAVKA ČASOVNOG UGLA | | | POPRAVKA DRUGOG REDA za časovni ugao i deklinaciju Sunca, Mjeseca i planeta | | |
|----|------------------------|-------------------|-----------|---|----------|----------|
| | SUNCA I PLANETA | PROLJEČNE TACKE ♄ | MJESECA ♃ | Δ popr. | Δ popr. | Δ popr. |
| | o † | o † | o † | † | † | † |
| 0 | 16 30.0 | 16 32.8 | 15 44.9 | 0 .0 | 60 6.7 | 120 13.3 |
| 1 | 16 30.3 | 16 33.0 | 15 45.1 | 1 .1 | 61 6.8 | 121 13.4 |
| 2 | 16 30.5 | 16 33.3 | 15 45.4 | 2 .2 | 62 6.9 | 122 13.5 |
| 3 | 16 30.8 | 16 33.5 | 15 45.6 | 3 .3 | 63 7.0 | 123 13.6 |
| 4 | 16 31.0 | 16 33.8 | 15 45.9 | 4 .4 | 64 7.1 | 124 13.7 |
| 5 | 16 31.3 | 16 34.0 | 15 46.1 | 5 .6 | 65 7.2 | 125 13.9 |
| 6 | 16 31.5 | 16 34.3 | 15 46.3 | 6 .7 | 66 7.3 | 126 14.0 |
| 7 | 16 31.8 | 16 34.5 | 15 46.6 | 7 .8 | 67 7.4 | 127 14.1 |
| 8 | 16 32.0 | 16 34.8 | 15 46.8 | 8 .9 | 68 7.5 | 128 14.2 |
| 9 | 16 32.3 | 16 35.0 | 15 47.0 | 9 1.0 | 69 7.6 | 129 14.3 |
| 10 | 16 32.5 | 16 35.3 | 15 47.3 | 10 1.1 | 70 7.8 | 130 14.4 |
| 11 | 16 32.8 | 16 35.5 | 15 47.5 | 11 1.2 | 71 7.9 | 131 14.5 |
| 12 | 16 33.0 | 16 35.8 | 15 47.8 | 12 1.3 | 72 8.0 | 132 14.6 |
| 13 | 16 33.3 | 16 36.0 | 15 48.0 | 13 1.4 | 73 8.1 | 133 14.7 |
| 14 | 16 33.5 | 16 36.3 | 15 48.2 | 14 1.6 | 74 8.2 | 134 14.9 |
| 15 | 16 33.8 | 16 36.5 | 15 48.5 | 15 1.7 | 75 8.3 | 135 15.0 |
| 16 | 16 34.0 | 16 36.8 | 15 48.7 | 16 1.8 | 76 8.4 | 136 15.1 |
| 17 | 16 34.3 | 16 37.0 | 15 49.0 | 17 1.9 | 77 8.5 | 137 15.2 |
| 18 | 16 34.5 | 16 37.3 | 15 49.2 | 18 2.0 | 78 8.6 | 138 15.3 |
| 19 | 16 34.8 | 16 37.5 | 15 49.4 | 19 2.1 | 79 8.8 | 139 15.4 |
| 20 | 16 35.0 | 16 37.8 | 15 49.7 | 20 2.2 | 80 8.9 | 140 15.5 |
| 21 | 16 35.3 | 16 38.0 | 15 49.9 | 21 2.3 | 81 9.0 | 141 15.6 |
| 22 | 16 35.5 | 16 38.3 | 15 50.1 | 22 2.4 | 82 9.1 | 142 15.7 |
| 23 | 16 35.8 | 16 38.5 | 15 50.4 | 23 2.5 | 83 9.2 | 143 15.8 |
| 24 | 16 36.0 | 16 38.8 | 15 50.6 | 24 2.7 | 84 9.3 | 144 16.0 |
| 25 | 16 36.3 | 16 39.0 | 15 50.9 | 25 2.8 | 85 9.4 | 145 16.1 |
| 26 | 16 36.5 | 16 39.3 | 15 51.1 | 26 2.9 | 86 9.5 | 146 16.2 |
| 27 | 16 36.8 | 16 39.5 | 15 51.3 | 27 3.0 | 87 9.6 | 147 16.3 |
| 28 | 16 37.0 | 16 39.8 | 15 51.6 | 28 3.1 | 88 9.8 | 148 16.4 |
| 29 | 16 37.3 | 16 40.0 | 15 51.8 | 29 3.2 | 89 9.9 | 149 16.5 |
| 30 | 16 37.5 | 16 40.3 | 15 52.1 | 30 3.3 | 90 10.0 | 150 16.6 |
| 31 | 16 37.8 | 16 40.5 | 15 52.3 | 31 3.4 | 91 10.1 | 151 16.7 |
| 32 | 16 38.0 | 16 40.8 | 15 52.5 | 32 3.5 | 92 10.2 | 152 16.8 |
| 33 | 16 38.3 | 16 41.0 | 15 52.8 | 33 3.7 | 93 10.3 | 153 17.0 |
| 34 | 16 38.5 | 16 41.3 | 15 53.0 | 34 3.8 | 94 10.4 | 154 17.1 |
| 35 | 16 38.8 | 16 41.5 | 15 53.3 | 35 3.9 | 95 10.5 | 155 17.2 |
| 36 | 16 39.0 | 16 41.8 | 15 53.5 | 36 4.0 | 96 10.6 | 156 17.3 |
| 37 | 16 39.3 | 16 42.0 | 15 53.7 | 37 4.1 | 97 10.8 | 157 17.4 |
| 38 | 16 39.5 | 16 42.3 | 15 54.0 | 38 4.2 | 98 10.9 | 158 17.5 |
| 39 | 16 39.8 | 16 42.5 | 15 54.2 | 39 4.3 | 99 11.0 | 159 17.6 |
| 40 | 16 40.0 | 16 42.8 | 15 54.4 | 40 4.4 | 100 11.1 | 160 17.7 |
| 41 | 16 40.3 | 16 43.0 | 15 54.7 | 41 4.5 | 101 11.2 | 161 17.8 |
| 42 | 16 40.5 | 16 43.3 | 15 54.9 | 42 4.7 | 102 11.3 | 162 18.0 |
| 43 | 16 40.8 | 16 43.5 | 15 55.2 | 43 4.8 | 103 11.4 | 163 18.1 |
| 44 | 16 41.0 | 16 43.8 | 15 55.4 | 44 4.9 | 104 11.5 | 164 18.2 |
| 45 | 16 41.3 | 16 44.0 | 15 55.6 | 45 5.0 | 105 11.6 | 165 18.3 |
| 46 | 16 41.5 | 16 44.3 | 15 55.9 | 46 5.1 | 106 11.7 | 166 18.4 |
| 47 | 16 41.8 | 16 44.5 | 15 56.1 | 47 5.2 | 107 11.9 | 167 18.5 |
| 48 | 16 42.0 | 16 44.8 | 15 56.4 | 48 5.3 | 108 12.0 | 168 18.6 |
| 49 | 16 42.3 | 16 45.0 | 15 56.6 | 49 5.4 | 109 12.1 | 169 18.7 |
| 50 | 16 42.5 | 16 45.3 | 15 56.8 | 50 5.5 | 110 12.2 | 170 18.8 |
| 51 | 16 42.8 | 16 45.5 | 15 57.1 | 51 5.7 | 111 12.3 | 171 19.0 |
| 52 | 16 43.0 | 16 45.8 | 15 57.3 | 52 5.8 | 112 12.4 | 172 19.1 |
| 53 | 16 43.3 | 16 46.0 | 15 57.5 | 53 5.9 | 113 12.5 | 173 19.2 |
| 54 | 16 43.5 | 16 46.3 | 15 57.8 | 54 6.0 | 114 12.6 | 174 19.3 |
| 55 | 16 43.8 | 16 46.5 | 15 58.0 | 55 6.1 | 115 12.7 | 175 19.4 |
| 56 | 16 44.0 | 16 46.8 | 15 58.3 | 56 6.2 | 116 12.9 | 176 19.5 |
| 57 | 16 44.3 | 16 47.0 | 15 58.5 | 57 6.3 | 117 13.0 | 177 19.6 |
| 58 | 16 44.5 | 16 47.3 | 15 58.7 | 58 6.4 | 118 13.1 | 178 19.7 |
| 59 | 16 44.8 | 16 47.5 | 15 59.0 | 59 6.5 | 119 13.2 | 179 19.8 |
| 60 | 16 45.0 | 16 47.8 | 15 59.2 | 60 6.7 | 120 13.3 | 180 20.0 |

1 h 7 min

| s | POPRAVKA ČASOVNOG UGLA | | | POPRAVKA DRUGOG REDA za časovni ugao i deklinaciju Sunca, Mjeseca i planeta | | |
|----|------------------------|-------------------|-----------|---|----------|----------|
| | SUNCA I PLANETA | PROLJEČNE TACKE ♄ | MJESECA ♃ | Δ popr. | Δ popr. | Δ popr. |
| | o † | o † | o † | † | † | † |
| 0 | 16 45.0 | 16 47.8 | 15 59.2 | 0 .0 | 60 6.8 | 120 13.5 |
| 1 | 16 45.3 | 16 48.0 | 15 59.5 | 1 .1 | 61 6.9 | 121 13.6 |
| 2 | 16 45.5 | 16 48.3 | 15 59.7 | 2 .2 | 62 7.0 | 122 13.7 |
| 3 | 16 45.8 | 16 48.5 | 15 59.9 | 3 .3 | 63 7.1 | 123 13.8 |
| 4 | 16 46.0 | 16 48.8 | 16 .2 | 4 .5 | 64 7.2 | 124 14.0 |
| 5 | 16 46.3 | 16 49.0 | 16 .4 | 5 .6 | 65 7.3 | 125 14.1 |
| 6 | 16 46.5 | 16 49.3 | 16 .6 | 6 .7 | 66 7.4 | 126 14.2 |
| 7 | 16 46.8 | 16 49.5 | 16 .9 | 7 .8 | 67 7.5 | 127 14.3 |
| 8 | 16 47.0 | 16 49.8 | 16 1.1 | 8 .9 | 68 7.7 | 128 14.4 |
| 9 | 16 47.3 | 16 50.0 | 16 1.4 | 9 1.0 | 69 7.8 | 129 14.5 |
| 10 | 16 47.5 | 16 50.3 | 16 1.6 | 10 1.1 | 70 7.9 | 130 14.6 |
| 11 | 16 47.8 | 16 50.5 | 16 1.8 | 11 1.2 | 71 8.0 | 131 14.7 |
| 12 | 16 48.0 | 16 50.8 | 16 2.1 | 12 1.4 | 72 8.1 | 132 14.9 |
| 13 | 16 48.3 | 16 51.1 | 16 2.3 | 13 1.5 | 73 8.2 | 133 15.0 |
| 14 | 16 48.5 | 16 51.3 | 16 2.6 | 14 1.6 | 74 8.3 | 134 15.1 |
| 15 | 16 48.8 | 16 51.6 | 16 2.8 | 15 1.7 | 75 8.4 | 135 15.2 |
| 16 | 16 49.0 | 16 51.8 | 16 3.0 | 16 1.8 | 76 8.6 | 136 15.3 |
| 17 | 16 49.3 | 16 52.1 | 16 3.3 | 17 1.9 | 77 8.7 | 137 15.4 |
| 18 | 16 49.5 | 16 52.3 | 16 3.5 | 18 2.0 | 78 8.8 | 138 15.5 |
| 19 | 16 49.8 | 16 52.6 | 16 3.8 | 19 2.1 | 79 8.9 | 139 15.6 |
| 20 | 16 50.0 | 16 52.8 | 16 4.0 | 20 2.3 | 80 9.0 | 140 15.8 |
| 21 | 16 50.3 | 16 53.1 | 16 4.2 | 21 2.4 | 81 9.1 | 141 15.9 |
| 22 | 16 50.5 | 16 53.3 | 16 4.5 | 22 2.5 | 82 9.2 | 142 16.0 |
| 23 | 16 50.8 | 16 53.6 | 16 4.7 | 23 2.6 | 83 9.3 | 143 16.1 |
| 24 | 16 51.0 | 16 53.8 | 16 4.9 | 24 2.7 | 84 9.5 | 144 16.2 |
| 25 | 16 51.3 | 16 54.1 | 16 5.2 | 25 2.8 | 85 9.6 | 145 16.3 |
| 26 | 16 51.5 | 16 54.3 | 16 5.4 | 26 2.9 | 86 9.7 | 146 16.4 |
| 27 | 16 51.8 | 16 54.6 | 16 5.7 | 27 3.0 | 87 9.8 | 147 16.5 |
| 28 | 16 52.0 | 16 54.8 | 16 5.9 | 28 3.2 | 88 9.9 | 148 16.7 |
| 29 | 16 52.3 | 16 55.1 | 16 6.1 | 29 3.3 | 89 10.0 | 149 16.8 |
| 30 | 16 52.5 | 16 55.3 | 16 6.4 | 30 3.4 | 90 10.1 | 150 16.9 |
| 31 | 16 52.8 | 16 55.6 | 16 6.6 | 31 3.5 | 91 10.2 | 151 17.0 |
| 32 | 16 53.0 | 16 55.8 | 16 6.9 | 32 3.6 | 92 10.4 | 152 17.1 |
| 33 | 16 53.3 | 16 56.1 | 16 7.1 | 33 3.7 | 93 10.5 | 153 17.2 |
| 34 | 16 53.5 | 16 56.3 | 16 7.3 | 34 3.8 | 94 10.6 | 154 17.3 |
| 35 | 16 53.8 | 16 56.6 | 16 7.6 | 35 3.9 | 95 10.7 | 155 17.4 |
| 36 | 16 54.0 | 16 56.8 | 16 7.8 | 36 4.1 | 96 10.8 | 156 17.6 |
| 37 | 16 54.3 | 16 57.1 | 16 8.0 | 37 4.2 | 97 10.9 | 157 17.7 |
| 38 | 16 54.5 | 16 57.3 | 16 8.3 | 38 4.3 | 98 11.0 | 158 17.8 |
| 39 | 16 54.8 | 16 57.6 | 16 8.5 | 39 4.4 | 99 11.1 | 159 17.9 |
| 40 | 16 55.0 | 16 57.8 | 16 8.8 | 40 4.5 | 100 11.3 | 160 18.0 |
| 41 | 16 55.3 | 16 58.1 | 16 9.0 | 41 4.6 | 101 11.4 | 161 18.1 |
| 42 | 16 55.5 | 16 58.3 | 16 9.2 | 42 4.7 | 102 11.5 | 162 18.2 |
| 43 | 16 55.8 | 16 58.6 | 16 9.5 | 43 4.8 | 103 11.6 | 163 18.3 |
| 44 | 16 56.0 | 16 58.8 | 16 9.7 | 44 5.0 | 104 11.7 | 164 18.5 |
| 45 | 16 56.3 | 16 59.1 | 16 10.0 | 45 5.1 | 105 11.8 | 165 18.6 |
| 46 | 16 56.5 | 16 59.3 | 16 10.2 | 46 5.2 | 106 11.9 | 166 18.7 |
| 47 | 16 56.8 | 16 59.6 | 16 10.4 | 47 5.3 | 107 12.0 | 167 18.8 |
| 48 | 16 57.0 | 16 59.8 | 16 10.7 | 48 5.4 | 108 12.2 | 168 18.9 |
| 49 | 16 57.3 | 17 .1 | 16 10.9 | 49 5.5 | 109 12.3 | 169 19.0 |
| 50 | 16 57.5 | 17 .3 | 16 11.1 | 50 5.6 | 110 12.4 | 170 19.1 |
| 51 | 16 57.8 | 17 .6 | 16 11.4 | 51 5.7 | 111 12.5 | 171 19.2 |
| 52 | 16 58.0 | 17 .8 | 16 11.6 | 52 5.9 | 112 12.6 | 172 19.4 |
| 53 | 16 58.3 | 17 1.1 | 16 11.9 | 53 6.0 | 113 12.7 | 173 19.5 |
| 54 | 16 58.5 | 17 1.3 | 16 12.1 | 54 6.1 | 114 12.8 | 174 19.6 |
| 55 | 16 58.8 | 17 1.6 | 16 12.3 | 55 6.2 | 115 12.9 | 175 19.7 |
| 56 | 16 59.0 | 17 1.8 | 16 12.6 | 56 6.3 | 116 13.1 | 176 19.8 |
| 57 | 16 59.3 | 17 2.1 | 16 12.8 | 57 6.4 | 117 13.2 | 177 19.9 |
| 58 | 16 59.5 | 17 2.3 | 16 13.1 | 58 6.5 | 118 13.3 | 178 20.0 |
| 59 | 16 59.8 | 17 2.6 | 16 13.3 | 59 6.6 | 119 13.4 | 179 20.1 |
| 60 | 17 .0 | 17 2.8 | 16 13.5 | 60 6.8 | 120 13.5 | 180 20.3 |

1 h 8 min

| POPRAVKA ČASOVNOG UGLA | | | | POPRAVKA DRUGOG REDA za časovni ugao i deklinaciju Sunca, Mjeseca i planeta | | | | | | | | |
|------------------------|-----------------|------|--------------------|---|-------------|------|---------|---------|---------|------|-----|------|
| S | SUNCA I PLANETA | | PROLJEČNE TAČKE °' | | MJESECA (°) | | Δ popr. | Δ popr. | Δ popr. | | | |
| | o | t | o | t | o | t | | | | | | |
| 0 | 17 | .0 | 17 | 2.8 | 16 | 13.5 | 0 | .0 | 60 | 6.9 | 120 | 13.7 |
| 1 | 17 | .3 | 17 | 3.1 | 16 | 13.8 | 1 | .1 | 61 | 7.0 | 121 | 13.8 |
| 2 | 17 | .5 | 17 | 3.3 | 16 | 14.0 | 2 | .2 | 62 | 7.1 | 122 | 13.9 |
| 3 | 17 | .8 | 17 | 3.6 | 16 | 14.2 | 3 | .3 | 63 | 7.2 | 123 | 14.0 |
| 4 | 17 | 1.0 | 17 | 3.8 | 16 | 14.5 | 4 | .5 | 64 | 7.3 | 124 | 14.2 |
| 5 | 17 | 1.3 | 17 | 4.1 | 16 | 14.7 | 5 | .6 | 65 | 7.4 | 125 | 14.3 |
| 6 | 17 | 1.5 | 17 | 4.3 | 16 | 15.0 | 6 | .7 | 66 | 7.5 | 126 | 14.4 |
| 7 | 17 | 1.8 | 17 | 4.6 | 16 | 15.2 | 7 | .8 | 67 | 7.6 | 127 | 14.5 |
| 8 | 17 | 2.0 | 17 | 4.8 | 16 | 15.4 | 8 | .9 | 68 | 7.8 | 128 | 14.6 |
| 9 | 17 | 2.3 | 17 | 5.1 | 16 | 15.7 | 9 | 1.0 | 69 | 7.9 | 129 | 14.7 |
| 10 | 17 | 2.5 | 17 | 5.3 | 16 | 15.9 | 10 | 1.1 | 70 | 8.0 | 130 | 14.8 |
| 11 | 17 | 2.8 | 17 | 5.6 | 16 | 16.2 | 11 | 1.3 | 71 | 8.1 | 131 | 15.0 |
| 12 | 17 | 3.0 | 17 | 5.8 | 16 | 16.4 | 12 | 1.4 | 72 | 8.2 | 132 | 15.1 |
| 13 | 17 | 3.3 | 17 | 6.1 | 16 | 16.6 | 13 | 1.5 | 73 | 8.3 | 133 | 15.2 |
| 14 | 17 | 3.5 | 17 | 6.3 | 16 | 16.9 | 14 | 1.6 | 74 | 8.4 | 134 | 15.3 |
| 15 | 17 | 3.8 | 17 | 6.6 | 16 | 17.1 | 15 | 1.7 | 75 | 8.6 | 135 | 15.4 |
| 16 | 17 | 4.0 | 17 | 6.8 | 16 | 17.4 | 16 | 1.8 | 76 | 8.7 | 136 | 15.5 |
| 17 | 17 | 4.3 | 17 | 7.1 | 16 | 17.6 | 17 | 1.9 | 77 | 8.8 | 137 | 15.6 |
| 18 | 17 | 4.5 | 17 | 7.3 | 16 | 17.8 | 18 | 2.1 | 78 | 8.9 | 138 | 15.8 |
| 19 | 17 | 4.8 | 17 | 7.6 | 16 | 18.1 | 19 | 2.2 | 79 | 9.0 | 139 | 15.9 |
| 20 | 17 | 5.0 | 17 | 7.8 | 16 | 18.3 | 20 | 2.3 | 80 | 9.1 | 140 | 16.0 |
| 21 | 17 | 5.3 | 17 | 8.1 | 16 | 18.5 | 21 | 2.4 | 81 | 9.2 | 141 | 16.1 |
| 22 | 17 | 5.5 | 17 | 8.3 | 16 | 18.8 | 22 | 2.5 | 82 | 9.4 | 142 | 16.2 |
| 23 | 17 | 5.8 | 17 | 8.6 | 16 | 19.0 | 23 | 2.6 | 83 | 9.5 | 143 | 16.3 |
| 24 | 17 | 6.0 | 17 | 8.9 | 16 | 19.3 | 24 | 2.7 | 84 | 9.6 | 144 | 16.4 |
| 25 | 17 | 6.3 | 17 | 9.1 | 16 | 19.5 | 25 | 2.9 | 85 | 9.7 | 145 | 16.6 |
| 26 | 17 | 6.5 | 17 | 9.4 | 16 | 19.7 | 26 | 3.0 | 86 | 9.8 | 146 | 16.7 |
| 27 | 17 | 6.8 | 17 | 9.6 | 16 | 20.0 | 27 | 3.1 | 87 | 9.9 | 147 | 16.8 |
| 28 | 17 | 7.0 | 17 | 9.9 | 16 | 20.2 | 28 | 3.2 | 88 | 10.0 | 148 | 16.9 |
| 29 | 17 | 7.3 | 17 | 10.1 | 16 | 20.5 | 29 | 3.3 | 89 | 10.2 | 149 | 17.0 |
| 30 | 17 | 7.5 | 17 | 10.4 | 16 | 20.7 | 30 | 3.4 | 90 | 10.3 | 150 | 17.1 |
| 31 | 17 | 7.8 | 17 | 10.6 | 16 | 20.9 | 31 | 3.5 | 91 | 10.4 | 151 | 17.2 |
| 32 | 17 | 8.0 | 17 | 10.9 | 16 | 21.2 | 32 | 3.7 | 92 | 10.5 | 152 | 17.4 |
| 33 | 17 | 8.3 | 17 | 11.1 | 16 | 21.4 | 33 | 3.8 | 93 | 10.6 | 153 | 17.5 |
| 34 | 17 | 8.5 | 17 | 11.4 | 16 | 21.6 | 34 | 3.9 | 94 | 10.7 | 154 | 17.6 |
| 35 | 17 | 8.8 | 17 | 11.6 | 16 | 21.9 | 35 | 4.0 | 95 | 10.8 | 155 | 17.7 |
| 36 | 17 | 9.0 | 17 | 11.9 | 16 | 22.1 | 36 | 4.1 | 96 | 11.0 | 156 | 17.8 |
| 37 | 17 | 9.3 | 17 | 12.1 | 16 | 22.4 | 37 | 4.2 | 97 | 11.1 | 157 | 17.9 |
| 38 | 17 | 9.5 | 17 | 12.4 | 16 | 22.6 | 38 | 4.3 | 98 | 11.2 | 158 | 18.0 |
| 39 | 17 | 9.8 | 17 | 12.6 | 16 | 22.8 | 39 | 4.5 | 99 | 11.3 | 159 | 18.2 |
| 40 | 17 | 10.0 | 17 | 12.9 | 16 | 23.1 | 40 | 4.6 | 100 | 11.4 | 160 | 18.3 |
| 41 | 17 | 10.3 | 17 | 13.1 | 16 | 23.3 | 41 | 4.7 | 101 | 11.5 | 161 | 18.4 |
| 42 | 17 | 10.5 | 17 | 13.4 | 16 | 23.6 | 42 | 4.8 | 102 | 11.6 | 162 | 18.5 |
| 43 | 17 | 10.8 | 17 | 13.6 | 16 | 23.8 | 43 | 4.9 | 103 | 11.8 | 163 | 18.6 |
| 44 | 17 | 11.0 | 17 | 13.9 | 16 | 24.0 | 44 | 5.0 | 104 | 11.9 | 164 | 18.7 |
| 45 | 17 | 11.3 | 17 | 14.1 | 16 | 24.3 | 45 | 5.1 | 105 | 12.0 | 165 | 18.8 |
| 46 | 17 | 11.5 | 17 | 14.4 | 16 | 24.5 | 46 | 5.3 | 106 | 12.1 | 166 | 19.0 |
| 47 | 17 | 11.8 | 17 | 14.6 | 16 | 24.7 | 47 | 5.4 | 107 | 12.2 | 167 | 19.1 |
| 48 | 17 | 12.0 | 17 | 14.9 | 16 | 25.0 | 48 | 5.5 | 108 | 12.3 | 168 | 19.2 |
| 49 | 17 | 12.3 | 17 | 15.1 | 16 | 25.2 | 49 | 5.6 | 109 | 12.4 | 169 | 19.3 |
| 50 | 17 | 12.5 | 17 | 15.4 | 16 | 25.5 | 50 | 5.7 | 110 | 12.6 | 170 | 19.4 |
| 51 | 17 | 12.8 | 17 | 15.6 | 16 | 25.7 | 51 | 5.8 | 111 | 12.7 | 171 | 19.5 |
| 52 | 17 | 13.0 | 17 | 15.9 | 16 | 25.9 | 52 | 5.9 | 112 | 12.8 | 172 | 19.6 |
| 53 | 17 | 13.3 | 17 | 16.1 | 16 | 26.2 | 53 | 6.1 | 113 | 12.9 | 173 | 19.8 |
| 54 | 17 | 13.5 | 17 | 16.4 | 16 | 26.4 | 54 | 6.2 | 114 | 13.0 | 174 | 19.9 |
| 55 | 17 | 13.8 | 17 | 16.6 | 16 | 26.7 | 55 | 6.3 | 115 | 13.1 | 175 | 20.0 |
| 56 | 17 | 14.0 | 17 | 16.9 | 16 | 26.9 | 56 | 6.4 | 116 | 13.2 | 176 | 20.1 |
| 57 | 17 | 14.3 | 17 | 17.1 | 16 | 27.1 | 57 | 6.5 | 117 | 13.4 | 177 | 20.2 |
| 58 | 17 | 14.5 | 17 | 17.4 | 16 | 27.4 | 58 | 6.6 | 118 | 13.5 | 178 | 20.3 |
| 59 | 17 | 14.8 | 17 | 17.6 | 16 | 27.6 | 59 | 6.7 | 119 | 13.6 | 179 | 20.4 |
| 60 | 17 | 15.0 | 17 | 17.9 | 16 | 27.9 | 60 | 6.9 | 120 | 13.7 | 180 | 20.6 |

1 h 9 min

| POPRAVKA ČASOVNOG UGLA | | | | POPRAVKA DRUGOG REDA za časovni ugao i deklinaciju Sunca, Mjeseca i planeta | | | | | | | | |
|------------------------|-----------------|------|--------------------|---|-------------|------|---------|---------|---------|------|-----|------|
| S | SUNCA I PLANETA | | PROLJEČNE TAČKE °' | | MJESECA (°) | | Δ popr. | Δ popr. | Δ popr. | | | |
| | o | t | o | t | o | t | | | | | | |
| 0 | 17 | 15.0 | 17 | 17.9 | 16 | 27.9 | 0 | .0 | 60 | 7.0 | 120 | 13.9 |
| 1 | 17 | 15.3 | 17 | 18.1 | 16 | 28.1 | 1 | .1 | 61 | 7.1 | 121 | 14.0 |
| 2 | 17 | 15.5 | 17 | 18.4 | 16 | 28.3 | 2 | .2 | 62 | 7.2 | 122 | 14.1 |
| 3 | 17 | 15.8 | 17 | 18.6 | 16 | 28.6 | 3 | .3 | 63 | 7.3 | 123 | 14.2 |
| 4 | 17 | 16.0 | 17 | 18.9 | 16 | 28.8 | 4 | .5 | 64 | 7.4 | 124 | 14.4 |
| 5 | 17 | 16.3 | 17 | 19.1 | 16 | 29.0 | 5 | .6 | 65 | 7.5 | 125 | 14.5 |
| 6 | 17 | 16.5 | 17 | 19.4 | 16 | 29.3 | 6 | .7 | 66 | 7.6 | 126 | 14.6 |
| 7 | 17 | 16.8 | 17 | 19.6 | 16 | 29.5 | 7 | .8 | 67 | 7.8 | 127 | 14.7 |
| 8 | 17 | 17.0 | 17 | 19.9 | 16 | 29.8 | 8 | .9 | 68 | 7.9 | 128 | 14.8 |
| 9 | 17 | 17.3 | 17 | 20.1 | 16 | 30.0 | 9 | 1.0 | 69 | 8.0 | 129 | 14.9 |
| 10 | 17 | 17.5 | 17 | 20.4 | 16 | 30.2 | 10 | 1.2 | 70 | 8.1 | 130 | 15.1 |
| 11 | 17 | 17.8 | 17 | 20.6 | 16 | 30.5 | 11 | 1.3 | 71 | 8.2 | 131 | 15.2 |
| 12 | 17 | 18.0 | 17 | 20.9 | 16 | 30.7 | 12 | 1.4 | 72 | 8.3 | 132 | 15.3 |
| 13 | 17 | 18.3 | 17 | 21.1 | 16 | 31.0 | 13 | 1.5 | 73 | 8.5 | 133 | 15.4 |
| 14 | 17 | 18.5 | 17 | 21.4 | 16 | 31.2 | 14 | 1.6 | 74 | 8.6 | 134 | 15.5 |
| 15 | 17 | 18.8 | 17 | 21.6 | 16 | 31.4 | 15 | 1.7 | 75 | 8.7 | 135 | 15.6 |
| 16 | 17 | 19.0 | 17 | 21.9 | 16 | 31.7 | 16 | 1.9 | 76 | 8.8 | 136 | 15.8 |
| 17 | 17 | 19.3 | 17 | 22.1 | 16 | 31.9 | 17 | 2.0 | 77 | 8.9 | 137 | 15.9 |
| 18 | 17 | 19.5 | 17 | 22.4 | 16 | 32.1 | 18 | 2.1 | 78 | 9.0 | 138 | 16.0 |
| 19 | 17 | 19.8 | 17 | 22.6 | 16 | 32.4 | 19 | 2.2 | 79 | 9.2 | 139 | 16.1 |
| 20 | 17 | 20.0 | 17 | 22.9 | 16 | 32.6 | 20 | 2.3 | 80 | 9.3 | 140 | 16.2 |
| 21 | 17 | 20.3 | 17 | 23.1 | 16 | 32.9 | 21 | 2.4 | 81 | 9.4 | 141 | 16.3 |
| 22 | 17 | 20.5 | 17 | 23.4 | 16 | 33.1 | 22 | 2.5 | 82 | 9.5 | 142 | 16.4 |
| 23 | 17 | 20.8 | 17 | 23.6 | 16 | 33.3 | 23 | 2.7 | 83 | 9.6 | 143 | 16.6 |
| 24 | 17 | 21.0 | 17 | 23.9 | 16 | 33.6 | 24 | 2.8 | 84 | 9.7 | 144 | 16.7 |
| 25 | 17 | 21.3 | 17 | 24.1 | 16 | 33.8 | 25 | 2.9 | 85 | 9.8 | 145 | 16.8 |
| 26 | 17 | 21.5 | 17 | 24.4 | 16 | 34.1 | 26 | 3.0 | 86 | 10.0 | 146 | 16.9 |
| 27 | 17 | 21.8 | 17 | 24.6 | 16 | 34.3 | 27 | 3.1 | 87 | 10.1 | 147 | 17.0 |
| 28 | 17 | 22.0 | 17 | 24.9 | 16 | 34.5 | 28 | 3.2 | 88 | 10.2 | 148 | 17.1 |
| 29 | 17 | 22.3 | 17 | 25.1 | 16 | 34.8 | 29 | 3.4 | 89 | 10.3 | 149 | 17.3 |
| 30 | 17 | 22.5 | 17 | 25.4 | 16 | 35.0 | 30 | 3.5 | 90 | 10.4 | 150 | 17.4 |
| 31 | 17 | 22.8 | 17 | 25.6 | 16 | 35.2 | 31 | 3.6 | 91 | 10.5 | 151 | 17.5 |
| 32 | 17 | 23.0 | 17 | 25.9 | 16 | 35.5 | 32 | 3.7 | 92 | 10.7 | 152 | 17.6 |
| 33 | 17 | 23.3 | 17 | 26.1 | 16 | 35.7 | 33 | 3.8 | 93 | 10.8 | 153 | 17.7 |
| 34 | 17 | 23.5 | 17 | 26.4 | 16 | 36.0 | 34 | 3.9 | 94 | 10.9 | 154 | 17.8 |
| 35 | 17 | 23.8 | 17 | 26.6 | 16 | 36.2 | 35 | 4.1 | 95 | 11.0 | 155 | 18.0 |
| 36 | 17 | 24.0 | 17 | 26.9 | 16 | 36.4 | 36 | 4.2 | 96 | 11.1 | 156 | 18.1 |
| 37 | 17 | 24.3 | 17 | 27.2 | 16 | 36.7 | 37 | 4.3 | 97 | 11.2 | 157 | 18.2 |
| 38 | 17 | 24.5 | 17 | 27.4 | 16 | 36.9 | 38 | 4.4 | 98 | 11.4 | 158 | 18.3 |
| 39 | 17 | 24.8 | 17 | 27.7 | 16 | 37.2 | 39 | 4.5 | 99 | 11.5 | 159 | 18.4 |
| 40 | 17 | 25.0 | 17 | 27.9 | 16 | 37.4 | 40 | 4.6 | 100 | 11.6 | 160 | 18.5 |
| 41 | 17 | 25.3 | 17 | 28.2 | 16 | 37.6 | 41 | 4.7 | 101 | 11.7 | 161 | 18.6 |
| 42 | 17 | 25.5 | 17 | 28.4 | 16 | 37.9 | 42 | 4.9 | 102 | 11.8 | 162 | 18.8 |
| 43 | 17 | 25.8 | 17 | 28.7 | 16 | 38.1 | 43 | 5.0 | 103 | 11.9 | 163 | 18.9 |
| 44 | 17 | 26.0 | 17 | 28.9 | 16 | 38.3 | 44 | 5.1 | 104 | 12.0 | 164 | 19.0 |
| 45 | 17 | 26.3 | 17 | 29.2 | 16 | 38.6 | 45 | 5.2 | 105 | 12.2 | 165 | 19.1 |
| 46 | 17 | 26.5 | 17 | 29.4 | 16 | 38.8 | 46 | 5.3 | 106 | 12.3 | 166 | 19.2 |
| 47 | 17 | 26.8 | 17 | 29.7 | 16 | 39.1 | 47 | 5.4 | 107 | 12.4 | 167 | 19.3 |
| 48 | 17 | 27.0 | 17 | 29.9 | 16 | 39.3 | 48 | 5.6 | 108 | 12.5 | 168 | 19.5 |
| 49 | 17 | 27.3 | 17 | 30.2 | 16 | 39.5 | 49 | | | | | |

| 1 h 10 min | | | | | | | | | | | |
|------------------------|--------------------|---------|----------------------|---|-----|-----|-------|-----|------|-------|--|
| POPRAVKA ČASOVNOG UGLA | | | | POPRAVKA DRUGOG REDA za časovni ugao i deklinaciju Sunca, Mjeseca i planeta | | | | | | | |
| s | SUNCA I PLANETA | | PROLJEČNE TAČKE ° | MJESECA ☾ | | Δ | popr. | | Δ | popr. | |
| | o | f | | o | f | | f | f | | f | |
| 0 | 17 30.0 | 17 32.9 | 16 42.2 | 0 | .0 | 60 | 7.1 | 120 | 14.1 | | |
| 1 | 17 30.3 | 17 33.2 | 16 42.4 | 1 | .1 | 61 | 7.2 | 121 | 14.2 | | |
| 2 | 17 30.5 | 17 33.4 | 16 42.6 | 2 | .2 | 62 | 7.3 | 122 | 14.3 | | |
| 3 | 17 30.8 | 17 33.7 | 16 42.9 | 3 | .4 | 63 | 7.4 | 123 | 14.5 | | |
| 4 | 17 31.0 | 17 33.9 | 16 43.1 | 4 | .5 | 64 | 7.5 | 124 | 14.6 | | |
| 5 | 17 31.3 | 17 34.2 | 16 43.4 | 5 | .6 | 65 | 7.6 | 125 | 14.7 | | |
| 6 | 17 31.5 | 17 34.4 | 16 43.6 | 6 | .7 | 66 | 7.8 | 126 | 14.8 | | |
| 7 | 17 31.8 | 17 34.7 | 16 43.8 | 7 | .8 | 67 | 7.9 | 127 | 14.9 | | |
| 8 | 17 32.0 | 17 34.9 | 16 44.1 | 8 | .9 | 68 | 8.0 | 128 | 15.0 | | |
| 9 | 17 32.3 | 17 35.2 | 16 44.3 | 9 | 1.1 | 69 | 8.1 | 129 | 15.2 | | |
| 10 | 17 32.5 | 17 35.4 | 16 44.6 | 10 | 1.2 | 70 | 8.2 | 130 | 15.3 | | |
| 11 | 17 32.8 | 17 35.7 | 16 44.8 | 11 | 1.3 | 71 | 8.3 | 131 | 15.4 | | |
| 12 | 17 33.0 | 17 35.9 | 16 45.0 | 12 | 1.4 | 72 | 8.5 | 132 | 15.5 | | |
| 13 | 17 33.3 | 17 36.2 | 16 45.3 | 13 | 1.5 | 73 | 8.6 | 133 | 15.6 | | |
| 14 | 17 33.5 | 17 36.4 | 16 45.5 | 14 | 1.6 | 74 | 8.7 | 134 | 15.7 | | |
| 15 | 17 33.8 | 17 36.7 | 16 45.7 | 15 | 1.8 | 75 | 8.8 | 135 | 15.9 | | |
| 16 | 17 34.0 | 17 36.9 | 16 46.0 | 16 | 1.9 | 76 | 8.9 | 136 | 16.0 | | |
| 17 | 17 34.3 | 17 37.2 | 16 46.2 | 17 | 2.0 | 77 | 9.0 | 137 | 16.1 | | |
| 18 | 17 34.5 | 17 37.4 | 16 46.5 | 18 | 2.1 | 78 | 9.2 | 138 | 16.2 | | |
| 19 | 17 34.8 | 17 37.7 | 16 46.7 | 19 | 2.2 | 79 | 9.3 | 139 | 16.3 | | |
| 20 | 17 35.0 | 17 37.9 | 16 46.9 | 20 | 2.4 | 80 | 9.4 | 140 | 16.5 | | |
| 21 | 17 35.3 | 17 38.2 | 16 47.2 | 21 | 2.5 | 81 | 9.5 | 141 | 16.6 | | |
| 22 | 17 35.5 | 17 38.4 | 16 47.4 | 22 | 2.6 | 82 | 9.6 | 142 | 16.7 | | |
| 23 | 17 35.8 | 17 38.7 | 16 47.7 | 23 | 2.7 | 83 | 9.8 | 143 | 16.8 | | |
| 24 | 17 36.0 | 17 38.9 | 16 47.9 | 24 | 2.8 | 84 | 9.9 | 144 | 16.9 | | |
| 25 | 17 36.3 | 17 39.2 | 16 48.1 | 25 | 2.9 | 85 | 10.0 | 145 | 17.0 | | |
| 26 | 17 36.5 | 17 39.4 | 16 48.4 | 26 | 3.1 | 86 | 10.1 | 146 | 17.2 | | |
| 27 | 17 36.8 | 17 39.7 | 16 48.6 | 27 | 3.2 | 87 | 10.2 | 147 | 17.3 | | |
| 28 | 17 37.0 | 17 39.9 | 16 48.8 | 28 | 3.3 | 88 | 10.3 | 148 | 17.4 | | |
| 29 | 17 37.3 | 17 40.2 | 16 49.1 | 29 | 3.4 | 89 | 10.5 | 149 | 17.5 | | |
| 30 | 17 37.5 | 17 40.4 | 16 49.3 | 30 | 3.5 | 90 | 10.6 | 150 | 17.6 | | |
| 31 | 17 37.8 | 17 40.7 | 16 49.6 | 31 | 3.6 | 91 | 10.7 | 151 | 17.7 | | |
| 32 | 17 38.0 | 17 40.9 | 16 49.8 | 32 | 3.8 | 92 | 10.8 | 152 | 17.9 | | |
| 33 | 17 38.3 | 17 41.2 | 16 50.0 | 33 | 3.9 | 93 | 10.9 | 153 | 18.0 | | |
| 34 | 17 38.5 | 17 41.4 | 16 50.3 | 34 | 4.0 | 94 | 11.0 | 154 | 18.1 | | |
| 35 | 17 38.8 | 17 41.7 | 16 50.5 | 35 | 4.1 | 95 | 11.2 | 155 | 18.2 | | |
| 36 | 17 39.0 | 17 41.9 | 16 50.8 | 36 | 4.2 | 96 | 11.3 | 156 | 18.3 | | |
| 37 | 17 39.3 | 17 42.2 | 16 51.0 | 37 | 4.3 | 97 | 11.4 | 157 | 18.4 | | |
| 38 | 17 39.5 | 17 42.4 | 16 51.2 | 38 | 4.5 | 98 | 11.5 | 158 | 18.6 | | |
| 39 | 17 39.8 | 17 42.7 | 16 51.5 | 39 | 4.6 | 99 | 11.6 | 159 | 18.7 | | |
| 40 | 17 40.0 | 17 42.9 | 16 51.7 | 40 | 4.7 | 100 | 11.8 | 160 | 18.8 | | |
| 41 | 17 40.3 | 17 43.2 | 16 51.9 | 41 | 4.8 | 101 | 11.9 | 161 | 18.9 | | |
| 42 | 17 40.5 | 17 43.4 | 16 52.2 | 42 | 4.9 | 102 | 12.0 | 162 | 19.0 | | |
| 43 | 17 40.8 | 17 43.7 | 16 52.4 | 43 | 5.1 | 103 | 12.1 | 163 | 19.2 | | |
| 44 | 17 41.0 | 17 43.9 | 16 52.7 | 44 | 5.2 | 104 | 12.2 | 164 | 19.3 | | |
| 45 | 17 41.3 | 17 44.2 | 16 52.9 | 45 | 5.3 | 105 | 12.3 | 165 | 19.4 | | |
| 46 | 17 41.5 | 17 44.4 | 16 53.1 | 46 | 5.4 | 106 | 12.5 | 166 | 19.5 | | |
| 47 | 17 41.8 | 17 44.7 | 16 53.4 | 47 | 5.5 | 107 | 12.6 | 167 | 19.6 | | |
| 48 | 17 42.0 | 17 45.0 | 16 53.6 | 48 | 5.6 | 108 | 12.7 | 168 | 19.7 | | |
| 49 | 17 42.3 | 17 45.2 | 16 53.9 | 49 | 5.8 | 109 | 12.8 | 169 | 19.9 | | |
| 50 | 17 42.5 | 17 45.5 | 16 54.1 | 50 | 5.9 | 110 | 12.9 | 170 | 20.0 | | |
| 51 | 17 42.8 | 17 45.7 | 16 54.3 | 51 | 6.0 | 111 | 13.0 | 171 | 20.1 | | |
| 52 | 17 43.0 | 17 46.0 | 16 54.6 | 52 | 6.1 | 112 | 13.2 | 172 | 20.2 | | |
| 53 | 17 43.3 | 17 46.2 | 16 54.8 | 53 | 6.2 | 113 | 13.3 | 173 | 20.3 | | |
| 54 | 17 43.5 | 17 46.5 | 16 55.1 | 54 | 6.3 | 114 | 13.4 | 174 | 20.4 | | |
| 55 | 17 43.8 | 17 46.7 | 16 55.3 | 55 | 6.5 | 115 | 13.5 | 175 | 20.6 | | |
| 56 | 17 44.0 | 17 47.0 | 16 55.5 | 56 | 6.6 | 116 | 13.6 | 176 | 20.7 | | |
| 57 | 17 44.3 | 17 47.2 | 16 55.8 | 57 | 6.7 | 117 | 13.7 | 177 | 20.8 | | |
| 58 | 17 44.5 | 17 47.5 | 16 56.0 | 58 | 6.8 | 118 | 13.9 | 178 | 20.9 | | |
| 59 | 17 44.8 | 17 47.7 | 16 56.2 | 59 | 6.9 | 119 | 14.0 | 179 | 21.0 | | |
| 60 | 17 45.0 | 17 48.0 | 16 56.5 | 60 | 7.1 | 120 | 14.1 | 180 | 21.2 | | |

| 1 h 11 min | | | | | | | | | | | |
|------------------------|--------------------|---------|----------------------|---|-----|-----|-------|-----|------|-------|--|
| POPRAVKA ČASOVNOG UGLA | | | | POPRAVKA DRUGOG REDA za časovni ugao i deklinaciju Sunca, Mjeseca i planeta | | | | | | | |
| s | SUNCA I PLANETA | | PROLJEČNE TAČKE ° | MJESECA ☾ | | Δ | popr. | | Δ | popr. | |
| | o | f | | o | f | | f | f | | f | |
| 0 | 17 45.0 | 17 48.0 | 16 56.5 | 0 | .0 | 60 | 7.2 | 120 | 14.3 | | |
| 1 | 17 45.3 | 17 48.2 | 16 56.7 | 1 | .1 | 61 | 7.3 | 121 | 14.4 | | |
| 2 | 17 45.5 | 17 48.5 | 16 57.0 | 2 | .2 | 62 | 7.4 | 122 | 14.5 | | |
| 3 | 17 45.8 | 17 48.7 | 16 57.2 | 3 | .4 | 63 | 7.5 | 123 | 14.7 | | |
| 4 | 17 46.0 | 17 49.0 | 16 57.4 | 4 | .5 | 64 | 7.6 | 124 | 14.8 | | |
| 5 | 17 46.3 | 17 49.2 | 16 57.7 | 5 | .6 | 65 | 7.7 | 125 | 14.9 | | |
| 6 | 17 46.5 | 17 49.5 | 16 57.9 | 6 | .7 | 66 | 7.9 | 126 | 15.0 | | |
| 7 | 17 46.8 | 17 49.7 | 16 58.2 | 7 | .8 | 67 | 8.0 | 127 | 15.1 | | |
| 8 | 17 47.0 | 17 50.0 | 16 58.4 | 8 | 1.0 | 68 | 8.1 | 128 | 15.3 | | |
| 9 | 17 47.3 | 17 50.2 | 16 58.6 | 9 | 1.1 | 69 | 8.2 | 129 | 15.4 | | |
| 10 | 17 47.5 | 17 50.5 | 16 58.9 | 10 | 1.2 | 70 | 8.3 | 130 | 15.5 | | |
| 11 | 17 47.8 | 17 50.7 | 16 59.1 | 11 | 1.3 | 71 | 8.5 | 131 | 15.6 | | |
| 12 | 17 48.0 | 17 51.0 | 16 59.3 | 12 | 1.4 | 72 | 8.6 | 132 | 15.7 | | |
| 13 | 17 48.3 | 17 51.2 | 16 59.6 | 13 | 1.5 | 73 | 8.7 | 133 | 15.8 | | |
| 14 | 17 48.5 | 17 51.5 | 16 59.8 | 14 | 1.7 | 74 | 8.8 | 134 | 16.0 | | |
| 15 | 17 48.8 | 17 51.7 | 17 .1 | 15 | 1.8 | 75 | 8.9 | 135 | 16.1 | | |
| 16 | 17 49.0 | 17 52.0 | 17 .3 | 16 | 1.9 | 76 | 9.1 | 136 | 16.2 | | |
| 17 | 17 49.3 | 17 52.2 | 17 .5 | 17 | 2.0 | 77 | 9.2 | 137 | 16.3 | | |
| 18 | 17 49.5 | 17 52.5 | 17 .8 | 18 | 2.1 | 78 | 9.3 | 138 | 16.4 | | |
| 19 | 17 49.8 | 17 52.7 | 17 1.0 | 19 | 2.3 | 79 | 9.4 | 139 | 16.6 | | |
| 20 | 17 50.0 | 17 53.0 | 17 1.3 | 20 | 2.4 | 80 | 9.5 | 140 | 16.7 | | |
| 21 | 17 50.3 | 17 53.2 | 17 1.5 | 21 | 2.5 | 81 | 9.7 | 141 | 16.8 | | |
| 22 | 17 50.5 | 17 53.5 | 17 1.7 | 22 | 2.6 | 82 | 9.8 | 142 | 16.9 | | |
| 23 | 17 50.8 | 17 53.7 | 17 2.0 | 23 | 2.7 | 83 | 9.9 | 143 | 17.0 | | |
| 24 | 17 51.0 | 17 54.0 | 17 2.2 | 24 | 2.9 | 84 | 10.0 | 144 | 17.2 | | |
| 25 | 17 51.3 | 17 54.2 | 17 2.4 | 25 | 3.0 | 85 | 10.1 | 145 | 17.3 | | |
| 26 | 17 51.5 | 17 54.5 | 17 2.7 | 26 | 3.1 | 86 | 10.2 | 146 | 17.4 | | |
| 27 | 17 51.8 | 17 54.7 | 17 2.9 | 27 | 3.2 | 87 | 10.4 | 147 | 17.5 | | |
| 28 | 17 52.0 | 17 55.0 | 17 3.2 | 28 | 3.3 | 88 | 10.5 | 148 | 17.6 | | |
| 29 | 17 52.3 | 17 55.2 | 17 3.4 | 29 | 3.5 | 89 | 10.6 | 149 | 17.8 | | |
| 30 | 17 52.5 | 17 55.5 | 17 3.6 | 30 | 3.6 | 90 | 10.7 | 150 | 17.9 | | |
| 31 | 17 52.8 | 17 55.7 | 17 3.9 | 31 | 3.7 | 91 | 10.8 | 151 | 18.0 | | |
| 32 | 17 53.0 | 17 56.0 | 17 4.1 | 32 | 3.8 | 92 | 11.0 | 152 | 18.1 | | |
| 33 | 17 53.3 | 17 56.2 | 17 4.4 | 33 | 3.9 | 93 | 11.1 | 153 | 18.2 | | |
| 34 | 17 53.5 | 17 56.5 | 17 4.6 | 34 | 4.1 | 94 | 11.2 | 154 | 18.4 | | |
| 35 | 17 53.8 | 17 56.7 | 17 4.8 | 35 | 4.2 | 95 | 11.3 | 155 | 18.5 | | |
| 36 | 17 54.0 | 17 57.0 | 17 5.1 | 36 | 4.3 | 96 | 11.4 | 156 | 18.6 | | |
| 37 | 17 54.3 | 17 57.2 | 17 5.3 | 37 | 4.4 | 97 | 11.6 | 157 | 18.7 | | |
| 38 | 17 54.5 | 17 57.5 | 17 5.6 | 38 | 4.5 | 98 | 11.7 | 158 | 18.8 | | |
| 39 | 17 54.8 | 17 57.7 | 17 5.8 | 39 | 4.6 | 99 | 11.8 | 159 | 18.9 | | |
| 40 | 17 55.0 | 17 58.0 | 17 6.0 | 40 | 4.8 | 100 | 11.9 | 160 | 19.1 | | |
| 41 | 17 55.3 | 17 58.2 | 17 6.3 | 41 | 4.9 | 101 | 12.0 | 161 | 19.2 | | |
| 42 | 17 55.5 | 17 58.5 | 17 6.5 | 42 | 5.0 | 102 | 12.2 | 162 | 19.3 | | |
| 43 | 17 55.8 | 17 58.7 | 17 6.7 | 43 | 5.1 | 103 | 12.3 | 163 | 19.4 | | |
| 44 | 17 56.0 | 17 59.0 | 17 7.0 | 44 | 5.2 | 104 | 12.4 | 164 | 19.5 | | |
| 45 | 17 56.3 | 17 59.2 | 17 7.2 | 45 | 5.4 | 105 | 12.5 | 165 | 19.7 | | |
| 46 | 17 56.5 | 17 59.5 | 17 7.5 | 46 | 5.5 | 106 | 12.6 | 166 | 19.8 | | |
| 47 | 17 56.8 | 17 59.7 | 17 7.7 | 47 | 5.6 | 107 | 12.8 | 167 | 19.9 | | |
| 48 | 17 57.0 | 17 60.0 | 17 7.9 | 48 | 5.7 | 108 | 12.9 | 168 | 20.0 | | |
| 49 | 17 57.3 | 18 .2 | 17 8.2 | 49 | 5.8 | 109 | 13.0 | 169 | 20.1 | | |
| 50 | 17 57.5 | 18 .5 | 17 8.4 | 50 | 6.0 | 110 | 13.1 | 170 | 20.3 | | |
| 51 | 17 57.8 | 18 .7 | 17 8.7 | 51 | 6.1 | 111 | 13.2 | 171 | 20.4 | | |
| 52 | 17 58.0 | 18 1.0 | 17 8.9 | 52 | 6.2 | 112 | 13.3 | 172 | 20.5 | | |
| 53 | 17 58.3 | 18 1.2 | 17 9.1 | 53 | 6.3 | 113 | | | | | |

1 h 12 min

| POPRAVKA ČASOVNOG UGLA | | | | POPRAVKA DRUGOG REDA za časovni ugao i deklinaciju Sunca, Mjeseca i planeta | | | | |
|------------------------|--------------------|----------------------|--------------|---|-------|------|-------|-----|
| S | SUNCA I PLANETA | PROLJEĆNE TAČKE ° | MJESECA ⊕ | Δ | popr. | Δ | popr. | |
| | o | ' | o | ' | | ' | | |
| 0 | 18 | .0 | 18 | 3.0 | 17 | 10.8 | 0 | .0 |
| 1 | 18 | .3 | 18 | 3.3 | 17 | 11.0 | 1 | .1 |
| 2 | 18 | .5 | 18 | 3.5 | 17 | 11.3 | 2 | .2 |
| 3 | 18 | .8 | 18 | 3.8 | 17 | 11.5 | 3 | .4 |
| 4 | 18 | 1.0 | 18 | 4.0 | 17 | 11.8 | 4 | .5 |
| 5 | 18 | 1.3 | 18 | 4.3 | 17 | 12.0 | 5 | .6 |
| 6 | 18 | 1.5 | 18 | 4.5 | 17 | 12.2 | 6 | .7 |
| 7 | 18 | 1.8 | 18 | 4.8 | 17 | 12.5 | 7 | .8 |
| 8 | 18 | 2.0 | 18 | 5.0 | 17 | 12.7 | 8 | 1.0 |
| 9 | 18 | 2.3 | 18 | 5.3 | 17 | 12.9 | 9 | 1.1 |
| 10 | 18 | 2.5 | 18 | 5.5 | 17 | 13.2 | 10 | 1.2 |
| 11 | 18 | 2.8 | 18 | 5.8 | 17 | 13.4 | 11 | 1.3 |
| 12 | 18 | 3.0 | 18 | 6.0 | 17 | 13.7 | 12 | 1.5 |
| 13 | 18 | 3.3 | 18 | 6.3 | 17 | 13.9 | 13 | 1.6 |
| 14 | 18 | 3.5 | 18 | 6.5 | 17 | 14.1 | 14 | 1.7 |
| 15 | 18 | 3.8 | 18 | 6.8 | 17 | 14.4 | 15 | 1.8 |
| 16 | 18 | 4.0 | 18 | 7.0 | 17 | 14.6 | 16 | 1.9 |
| 17 | 18 | 4.3 | 18 | 7.3 | 17 | 14.9 | 17 | 2.1 |
| 18 | 18 | 4.5 | 18 | 7.5 | 17 | 15.1 | 18 | 2.2 |
| 19 | 18 | 4.8 | 18 | 7.8 | 17 | 15.3 | 19 | 2.3 |
| 20 | 18 | 5.0 | 18 | 8.0 | 17 | 15.6 | 20 | 2.4 |
| 21 | 18 | 5.3 | 18 | 8.3 | 17 | 15.8 | 21 | 2.5 |
| 22 | 18 | 5.5 | 18 | 8.5 | 17 | 16.0 | 22 | 2.7 |
| 23 | 18 | 5.8 | 18 | 8.8 | 17 | 16.3 | 23 | 2.8 |
| 24 | 18 | 6.0 | 18 | 9.0 | 17 | 16.5 | 24 | 2.9 |
| 25 | 18 | 6.3 | 18 | 9.3 | 17 | 16.8 | 25 | 3.0 |
| 26 | 18 | 6.5 | 18 | 9.5 | 17 | 17.0 | 26 | 3.1 |
| 27 | 18 | 6.8 | 18 | 9.8 | 17 | 17.2 | 27 | 3.3 |
| 28 | 18 | 7.0 | 18 | 10.0 | 17 | 17.5 | 28 | 3.4 |
| 29 | 18 | 7.3 | 18 | 10.3 | 17 | 17.7 | 29 | 3.5 |
| 30 | 18 | 7.5 | 18 | 10.5 | 17 | 18.0 | 30 | 3.6 |
| 31 | 18 | 7.8 | 18 | 10.8 | 17 | 18.2 | 31 | 3.7 |
| 32 | 18 | 8.0 | 18 | 11.0 | 17 | 18.4 | 32 | 3.9 |
| 33 | 18 | 8.3 | 18 | 11.3 | 17 | 18.7 | 33 | 4.0 |
| 34 | 18 | 8.5 | 18 | 11.5 | 17 | 18.9 | 34 | 4.1 |
| 35 | 18 | 8.8 | 18 | 11.8 | 17 | 19.2 | 35 | 4.2 |
| 36 | 18 | 9.0 | 18 | 12.0 | 17 | 19.4 | 36 | 4.4 |
| 37 | 18 | 9.3 | 18 | 12.3 | 17 | 19.6 | 37 | 4.5 |
| 38 | 18 | 9.5 | 18 | 12.5 | 17 | 19.9 | 38 | 4.6 |
| 39 | 18 | 9.8 | 18 | 12.8 | 17 | 20.1 | 39 | 4.7 |
| 40 | 18 | 10.0 | 18 | 13.0 | 17 | 20.3 | 40 | 4.8 |
| 41 | 18 | 10.3 | 18 | 13.3 | 17 | 20.6 | 41 | 5.0 |
| 42 | 18 | 10.5 | 18 | 13.5 | 17 | 20.8 | 42 | 5.1 |
| 43 | 18 | 10.8 | 18 | 13.8 | 17 | 21.1 | 43 | 5.2 |
| 44 | 18 | 11.0 | 18 | 14.0 | 17 | 21.3 | 44 | 5.3 |
| 45 | 18 | 11.3 | 18 | 14.3 | 17 | 21.5 | 45 | 5.4 |
| 46 | 18 | 11.5 | 18 | 14.5 | 17 | 21.8 | 46 | 5.6 |
| 47 | 18 | 11.8 | 18 | 14.8 | 17 | 22.0 | 47 | 5.7 |
| 48 | 18 | 12.0 | 18 | 15.0 | 17 | 22.3 | 48 | 5.8 |
| 49 | 18 | 12.3 | 18 | 15.3 | 17 | 22.5 | 49 | 5.9 |
| 50 | 18 | 12.5 | 18 | 15.5 | 17 | 22.7 | 50 | 6.0 |
| 51 | 18 | 12.8 | 18 | 15.8 | 17 | 23.0 | 51 | 6.2 |
| 52 | 18 | 13.0 | 18 | 16.0 | 17 | 23.2 | 52 | 6.3 |
| 53 | 18 | 13.3 | 18 | 16.3 | 17 | 23.4 | 53 | 6.4 |
| 54 | 18 | 13.5 | 18 | 16.5 | 17 | 23.7 | 54 | 6.5 |
| 55 | 18 | 13.8 | 18 | 16.8 | 17 | 23.9 | 55 | 6.6 |
| 56 | 18 | 14.0 | 18 | 17.0 | 17 | 24.2 | 56 | 6.8 |
| 57 | 18 | 14.3 | 18 | 17.3 | 17 | 24.4 | 57 | 6.9 |
| 58 | 18 | 14.5 | 18 | 17.5 | 17 | 24.6 | 58 | 7.0 |
| 59 | 18 | 14.8 | 18 | 17.8 | 17 | 24.9 | 59 | 7.1 |
| 60 | 18 | 15.0 | 18 | 18.0 | 17 | 25.1 | 60 | 7.3 |

1 h 13 min

| POPRAVKA ČASOVNOG UGLA | | | | POPRAVKA DRUGOG REDA za časovni ugao i deklinaciju Sunca, Mjeseca i planeta | | | | |
|------------------------|--------------------|----------------------|--------------|---|-------|------|-------|-----|
| S | SUNCA I PLANETA | PROLJEĆNE TAČKE ° | MJESECA ⊕ | Δ | popr. | Δ | popr. | |
| | o | ' | o | ' | | ' | | |
| 0 | 18 | 15.0 | 18 | 18.0 | 17 | 25.1 | 0 | .0 |
| 1 | 18 | 15.3 | 18 | 18.3 | 17 | 25.4 | 1 | .1 |
| 2 | 18 | 15.5 | 18 | 18.5 | 17 | 25.6 | 2 | .2 |
| 3 | 18 | 15.8 | 18 | 18.8 | 17 | 25.8 | 3 | .4 |
| 4 | 18 | 16.0 | 18 | 19.0 | 17 | 26.1 | 4 | .5 |
| 5 | 18 | 16.3 | 18 | 19.3 | 17 | 26.3 | 5 | .6 |
| 6 | 18 | 16.5 | 18 | 19.5 | 17 | 26.5 | 6 | .7 |
| 7 | 18 | 16.8 | 18 | 19.8 | 17 | 26.8 | 7 | .9 |
| 8 | 18 | 17.0 | 18 | 20.0 | 17 | 27.0 | 8 | 1.0 |
| 9 | 18 | 17.3 | 18 | 20.3 | 17 | 27.3 | 9 | 1.1 |
| 10 | 18 | 17.5 | 18 | 20.5 | 17 | 27.5 | 10 | 1.2 |
| 11 | 18 | 17.8 | 18 | 20.8 | 17 | 27.7 | 11 | 1.3 |
| 12 | 18 | 18.0 | 18 | 21.1 | 17 | 28.0 | 12 | 1.5 |
| 13 | 18 | 18.3 | 18 | 21.3 | 17 | 28.2 | 13 | 1.6 |
| 14 | 18 | 18.5 | 18 | 21.6 | 17 | 28.5 | 14 | 1.7 |
| 15 | 18 | 18.8 | 18 | 21.8 | 17 | 28.7 | 15 | 1.8 |
| 16 | 18 | 19.0 | 18 | 22.1 | 17 | 28.9 | 16 | 2.0 |
| 17 | 18 | 19.3 | 18 | 22.3 | 17 | 29.2 | 17 | 2.1 |
| 18 | 18 | 19.5 | 18 | 22.6 | 17 | 29.4 | 18 | 2.2 |
| 19 | 18 | 19.8 | 18 | 22.8 | 17 | 29.7 | 19 | 2.3 |
| 20 | 18 | 20.0 | 18 | 23.1 | 17 | 29.9 | 20 | 2.5 |
| 21 | 18 | 20.3 | 18 | 23.3 | 17 | 30.1 | 21 | 2.6 |
| 22 | 18 | 20.5 | 18 | 23.6 | 17 | 30.4 | 22 | 2.7 |
| 23 | 18 | 20.8 | 18 | 23.8 | 17 | 30.6 | 23 | 2.8 |
| 24 | 18 | 21.0 | 18 | 24.1 | 17 | 30.8 | 24 | 2.9 |
| 25 | 18 | 21.3 | 18 | 24.3 | 17 | 31.1 | 25 | 3.1 |
| 26 | 18 | 21.5 | 18 | 24.6 | 17 | 31.3 | 26 | 3.2 |
| 27 | 18 | 21.8 | 18 | 24.8 | 17 | 31.6 | 27 | 3.3 |
| 28 | 18 | 22.0 | 18 | 25.1 | 17 | 31.8 | 28 | 3.4 |
| 29 | 18 | 22.3 | 18 | 25.3 | 17 | 32.0 | 29 | 3.6 |
| 30 | 18 | 22.5 | 18 | 25.6 | 17 | 32.3 | 30 | 3.7 |
| 31 | 18 | 22.8 | 18 | 25.8 | 17 | 32.5 | 31 | 3.8 |
| 32 | 18 | 23.0 | 18 | 26.1 | 17 | 32.8 | 32 | 3.9 |
| 33 | 18 | 23.3 | 18 | 26.3 | 17 | 33.0 | 33 | 4.0 |
| 34 | 18 | 23.5 | 18 | 26.6 | 17 | 33.2 | 34 | 4.2 |
| 35 | 18 | 23.8 | 18 | 26.8 | 17 | 33.5 | 35 | 4.3 |
| 36 | 18 | 24.0 | 18 | 27.1 | 17 | 33.7 | 36 | 4.4 |
| 37 | 18 | 24.3 | 18 | 27.3 | 17 | 33.9 | 37 | 4.5 |
| 38 | 18 | 24.5 | 18 | 27.6 | 17 | 34.2 | 38 | 4.7 |
| 39 | 18 | 24.8 | 18 | 27.8 | 17 | 34.4 | 39 | 4.8 |
| 40 | 18 | 25.0 | 18 | 28.1 | 17 | 34.7 | 40 | 4.9 |
| 41 | 18 | 25.3 | 18 | 28.3 | 17 | 34.9 | 41 | 5.0 |
| 42 | 18 | 25.5 | 18 | 28.6 | 17 | 35.1 | 42 | 5.1 |
| 43 | 18 | 25.8 | 18 | 28.8 | 17 | 35.4 | 43 | 5.3 |
| 44 | 18 | 26.0 | 18 | 29.1 | 17 | 35.6 | 44 | 5.4 |
| 45 | 18 | 26.3 | 18 | 29.3 | 17 | 35.9 | 45 | 5.5 |
| 46 | 18 | 26.5 | 18 | 29.6 | 17 | 36.1 | 46 | 5.6 |
| 47 | 18 | 26.8 | 18 | 29.8 | 17 | 36.3 | 47 | 5.8 |
| 48 | 18 | 27.0 | 18 | 30.1 | 17 | 36.6 | 48 | 5.9 |
| 49 | 18 | 27.3 | 18 | 30.3 | 17 | 36.8 | 49 | 6.0 |
| 50 | 18 | 27.5 | 18 | 30.6 | 17 | 37.0 | 50 | 6.1 |
| 51 | 18 | 27.8 | 18 | 30.8 | 17 | 37.3 | 51 | 6.2 |
| 52 | 18 | 28.0 | 18 | 31.1 | 17 | 37.5 | 52 | 6.4 |
| 53 | 18 | 28.3 | 18 | 31.3 | 17 | 37.8 | 53 | 6.5 |
| 54 | 18 | 28.5 | 18 | 31.6 | 17 | 38.0 | 54 | 6.6 |
| 55 | 18 | 28.8 | 18 | 31.8 | 17 | 38.2 | 55 | 6.7 |
| 56 | 18 | 29.0 | 18 | 32.1 | 17 | 38.5 | 56 | 6.9 |
| 57 | 18 | 29.3 | 18 | 32.3 | 17 | 38.7 | 57 | 7.0 |
| 58 | 18 | 29.5 | 18 | 32.6 | 17 | 39.0 | 58 | 7.1 |
| 59 | 18 | 29.8 | 18 | 32.8 | 17 | 39.2 | 59 | 7.2 |
| 60 | 18 | 30.0 | 18 | 33.1 | 17 | 39.4 | 60 | 7.4 |

1 h 14 min

| POPRAVKA ČASOVNOG UGLA | | | | POPRAVKA DRUGOG REDA za časovni ugao i deklinaciju Sunca, Mjeseca i planeta | | | | | |
|------------------------|--------------------|---------|----------------------|---|--------------|-----|---------|---------|----------|
| s | SUNCA I PLANETA | | PROLJEĆNE TAČKE ° | | MJESECA ζ | | Δ popr. | Δ popr. | Δ popr. |
| | o | t | o | t | o | t | | | |
| 0 | 18 30.0 | 18 33.1 | 17 39.4 | | 0 | .0 | 60 | 7.5 | 120 14.9 |
| 1 | 18 30.3 | 18 33.3 | 17 39.7 | | 1 | .1 | 61 | 7.6 | 121 15.0 |
| 2 | 18 30.5 | 18 33.6 | 17 39.9 | | 2 | .2 | 62 | 7.7 | 122 15.1 |
| 3 | 18 30.8 | 18 33.8 | 17 40.1 | | 3 | .4 | 63 | 7.8 | 123 15.3 |
| 4 | 18 31.0 | 18 34.1 | 17 40.4 | | 4 | .5 | 64 | 7.9 | 124 15.4 |
| 5 | 18 31.3 | 18 34.3 | 17 40.6 | | 5 | .6 | 65 | 8.1 | 125 15.5 |
| 6 | 18 31.5 | 18 34.6 | 17 40.9 | | 6 | .7 | 66 | 8.2 | 126 15.6 |
| 7 | 18 31.8 | 18 34.8 | 17 41.1 | | 7 | .9 | 67 | 8.3 | 127 15.8 |
| 8 | 18 32.0 | 18 35.1 | 17 41.3 | | 8 | 1.0 | 68 | 8.4 | 128 15.9 |
| 9 | 18 32.3 | 18 35.3 | 17 41.6 | | 9 | 1.1 | 69 | 8.6 | 129 16.0 |
| 10 | 18 32.5 | 18 35.6 | 17 41.8 | | 10 | 1.2 | 70 | 8.7 | 130 16.1 |
| 11 | 18 32.8 | 18 35.8 | 17 42.1 | | 11 | 1.4 | 71 | 8.8 | 131 16.3 |
| 12 | 18 33.0 | 18 36.1 | 17 42.3 | | 12 | 1.5 | 72 | 8.9 | 132 16.4 |
| 13 | 18 33.3 | 18 36.3 | 17 42.5 | | 13 | 1.6 | 73 | 9.1 | 133 16.5 |
| 14 | 18 33.5 | 18 36.6 | 17 42.8 | | 14 | 1.7 | 74 | 9.2 | 134 16.6 |
| 15 | 18 33.8 | 18 36.8 | 17 43.0 | | 15 | 1.9 | 75 | 9.3 | 135 16.8 |
| 16 | 18 34.0 | 18 37.1 | 17 43.3 | | 16 | 2.0 | 76 | 9.4 | 136 16.9 |
| 17 | 18 34.3 | 18 37.3 | 17 43.5 | | 17 | 2.1 | 77 | 9.6 | 137 17.0 |
| 18 | 18 34.5 | 18 37.6 | 17 43.7 | | 18 | 2.2 | 78 | 9.7 | 138 17.1 |
| 19 | 18 34.8 | 18 37.8 | 17 44.0 | | 19 | 2.4 | 79 | 9.8 | 139 17.3 |
| 20 | 18 35.0 | 18 38.1 | 17 44.2 | | 20 | 2.5 | 80 | 9.9 | 140 17.4 |
| 21 | 18 35.3 | 18 38.3 | 17 44.4 | | 21 | 2.6 | 81 | 10.1 | 141 17.5 |
| 22 | 18 35.5 | 18 38.6 | 17 44.7 | | 22 | 2.7 | 82 | 10.2 | 142 17.6 |
| 23 | 18 35.8 | 18 38.8 | 17 44.9 | | 23 | 2.9 | 83 | 10.3 | 143 17.8 |
| 24 | 18 36.0 | 18 39.1 | 17 45.2 | | 24 | 3.0 | 84 | 10.4 | 144 17.9 |
| 25 | 18 36.3 | 18 39.4 | 17 45.4 | | 25 | 3.1 | 85 | 10.6 | 145 18.0 |
| 26 | 18 36.5 | 18 39.6 | 17 45.6 | | 26 | 3.2 | 86 | 10.7 | 146 18.1 |
| 27 | 18 36.8 | 18 39.9 | 17 45.9 | | 27 | 3.4 | 87 | 10.8 | 147 18.3 |
| 28 | 18 37.0 | 18 40.1 | 17 46.1 | | 28 | 3.5 | 88 | 10.9 | 148 18.4 |
| 29 | 18 37.3 | 18 40.4 | 17 46.4 | | 29 | 3.6 | 89 | 11.1 | 149 18.5 |
| 30 | 18 37.5 | 18 40.6 | 17 46.6 | | 30 | 3.7 | 90 | 11.2 | 150 18.6 |
| 31 | 18 37.8 | 18 40.9 | 17 46.8 | | 31 | 3.8 | 91 | 11.3 | 151 18.7 |
| 32 | 18 38.0 | 18 41.1 | 17 47.1 | | 32 | 4.0 | 92 | 11.4 | 152 18.9 |
| 33 | 18 38.3 | 18 41.4 | 17 47.3 | | 33 | 4.1 | 93 | 11.5 | 153 19.0 |
| 34 | 18 38.5 | 18 41.6 | 17 47.5 | | 34 | 4.2 | 94 | 11.7 | 154 19.1 |
| 35 | 18 38.8 | 18 41.9 | 17 47.8 | | 35 | 4.3 | 95 | 11.8 | 155 19.2 |
| 36 | 18 39.0 | 18 42.1 | 17 48.0 | | 36 | 4.5 | 96 | 11.9 | 156 19.4 |
| 37 | 18 39.3 | 18 42.4 | 17 48.3 | | 37 | 4.6 | 97 | 12.0 | 157 19.5 |
| 38 | 18 39.5 | 18 42.6 | 17 48.5 | | 38 | 4.7 | 98 | 12.2 | 158 19.6 |
| 39 | 18 39.8 | 18 42.9 | 17 48.7 | | 39 | 4.8 | 99 | 12.3 | 159 19.7 |
| 40 | 18 40.0 | 18 43.1 | 17 49.0 | | 40 | 5.0 | 100 | 12.4 | 160 19.9 |
| 41 | 18 40.3 | 18 43.4 | 17 49.2 | | 41 | 5.1 | 101 | 12.5 | 161 20.0 |
| 42 | 18 40.5 | 18 43.6 | 17 49.5 | | 42 | 5.2 | 102 | 12.7 | 162 20.1 |
| 43 | 18 40.8 | 18 43.9 | 17 49.7 | | 43 | 5.3 | 103 | 12.8 | 163 20.2 |
| 44 | 18 41.0 | 18 44.1 | 17 49.9 | | 44 | 5.5 | 104 | 12.9 | 164 20.4 |
| 45 | 18 41.3 | 18 44.4 | 17 50.2 | | 45 | 5.6 | 105 | 13.0 | 165 20.5 |
| 46 | 18 41.5 | 18 44.6 | 17 50.4 | | 46 | 5.7 | 106 | 13.2 | 166 20.6 |
| 47 | 18 41.8 | 18 44.9 | 17 50.6 | | 47 | 5.8 | 107 | 13.3 | 167 20.7 |
| 48 | 18 42.0 | 18 45.1 | 17 50.9 | | 48 | 6.0 | 108 | 13.4 | 168 20.9 |
| 49 | 18 42.3 | 18 45.4 | 17 51.1 | | 49 | 6.1 | 109 | 13.5 | 169 21.0 |
| 50 | 18 42.5 | 18 45.6 | 17 51.4 | | 50 | 6.2 | 110 | 13.7 | 170 21.1 |
| 51 | 18 42.8 | 18 45.9 | 17 51.6 | | 51 | 6.3 | 111 | 13.8 | 171 21.2 |
| 52 | 18 43.0 | 18 46.1 | 17 51.8 | | 52 | 6.5 | 112 | 13.9 | 172 21.4 |
| 53 | 18 43.3 | 18 46.4 | 17 52.1 | | 53 | 6.6 | 113 | 14.0 | 173 21.5 |
| 54 | 18 43.5 | 18 46.6 | 17 52.3 | | 54 | 6.7 | 114 | 14.2 | 174 21.6 |
| 55 | 18 43.8 | 18 46.9 | 17 52.6 | | 55 | 6.8 | 115 | 14.3 | 175 21.7 |
| 56 | 18 44.0 | 18 47.1 | 17 52.8 | | 56 | 7.0 | 116 | 14.4 | 176 21.9 |
| 57 | 18 44.3 | 18 47.4 | 17 53.0 | | 57 | 7.1 | 117 | 14.5 | 177 22.0 |
| 58 | 18 44.5 | 18 47.6 | 17 53.3 | | 58 | 7.2 | 118 | 14.7 | 178 22.1 |
| 59 | 18 44.8 | 18 47.9 | 17 53.5 | | 59 | 7.3 | 119 | 14.8 | 179 22.2 |
| 60 | 18 45.0 | 18 48.1 | 17 53.8 | | 60 | 7.5 | 120 | 14.9 | 180 22.4 |

1 h 15 min

| POPRAVKA ČASOVNOG UGLA | | | | POPRAVKA DRUGOG REDA za časovni ugao i deklinaciju Sunca, Mjeseca i planeta | | | | | |
|------------------------|--------------------|---------|----------------------|---|--------------|-----|---------|---------|----------|
| s | SUNCA I PLANETA | | PROLJEĆNE TAČKE ° | | MJESECA ζ | | Δ popr. | Δ popr. | Δ popr. |
| | o | t | o | t | o | t | | | |
| 0 | 18 45.0 | 18 48.1 | 17 53.8 | | 0 | .0 | 60 | 7.6 | 120 15.1 |
| 1 | 18 45.3 | 18 48.4 | 17 54.0 | | 1 | .1 | 61 | 7.7 | 121 15.2 |
| 2 | 18 45.5 | 18 48.6 | 17 54.2 | | 2 | .3 | 62 | 7.8 | 122 15.4 |
| 3 | 18 45.8 | 18 48.9 | 17 54.5 | | 3 | .4 | 63 | 7.9 | 123 15.5 |
| 4 | 18 46.0 | 18 49.1 | 17 54.7 | | 4 | .5 | 64 | 8.1 | 124 15.6 |
| 5 | 18 46.3 | 18 49.4 | 17 54.9 | | 5 | .6 | 65 | 8.2 | 125 15.7 |
| 6 | 18 46.5 | 18 49.6 | 17 55.2 | | 6 | .8 | 66 | 8.3 | 126 15.9 |
| 7 | 18 46.8 | 18 49.9 | 17 55.4 | | 7 | .9 | 67 | 8.4 | 127 16.0 |
| 8 | 18 47.0 | 18 50.1 | 17 55.7 | | 8 | 1.0 | 68 | 8.6 | 128 16.1 |
| 9 | 18 47.3 | 18 50.4 | 17 55.9 | | 9 | 1.1 | 69 | 8.7 | 129 16.2 |
| 10 | 18 47.5 | 18 50.6 | 17 56.1 | | 10 | 1.3 | 70 | 8.8 | 130 16.4 |
| 11 | 18 47.8 | 18 50.9 | 17 56.4 | | 11 | 1.4 | 71 | 8.9 | 131 16.5 |
| 12 | 18 48.0 | 18 51.1 | 17 56.6 | | 12 | 1.5 | 72 | 9.1 | 132 16.6 |
| 13 | 18 48.3 | 18 51.4 | 17 56.9 | | 13 | 1.6 | 73 | 9.2 | 133 16.7 |
| 14 | 18 48.5 | 18 51.6 | 17 57.1 | | 14 | 1.8 | 74 | 9.3 | 134 16.9 |
| 15 | 18 48.8 | 18 51.9 | 17 57.3 | | 15 | 1.9 | 75 | 9.4 | 135 17.0 |
| 16 | 18 49.0 | 18 52.1 | 17 57.6 | | 16 | 2.0 | 76 | 9.6 | 136 17.1 |
| 17 | 18 49.3 | 18 52.4 | 17 57.8 | | 17 | 2.1 | 77 | 9.7 | 137 17.2 |
| 18 | 18 49.5 | 18 52.6 | 17 58.0 | | 18 | 2.3 | 78 | 9.8 | 138 17.4 |
| 19 | 18 49.8 | 18 52.9 | 17 58.3 | | 19 | 2.4 | 79 | 9.9 | 139 17.5 |
| 20 | 18 50.0 | 18 53.1 | 17 58.5 | | 20 | 2.5 | 80 | 10.1 | 140 17.6 |
| 21 | 18 50.3 | 18 53.4 | 17 58.8 | | 21 | 2.6 | 81 | 10.2 | 141 17.7 |
| 22 | 18 50.5 | 18 53.6 | 17 59.0 | | 22 | 2.8 | 82 | 10.3 | 142 17.9 |
| 23 | 18 50.8 | 18 53.9 | 17 59.2 | | 23 | 2.9 | 83 | 10.4 | 143 18.0 |
| 24 | 18 51.0 | 18 54.1 | 17 59.5 | | 24 | 3.0 | 84 | 10.6 | 144 18.1 |
| 25 | 18 51.3 | 18 54.4 | 17 59.7 | | 25 | 3.1 | 85 | 10.7 | 145 18.2 |
| 26 | 18 51.5 | 18 54.6 | 17 60.0 | | 26 | 3.3 | 86 | 10.8 | 146 18.4 |
| 27 | 18 51.8 | 18 54.9 | 18 .2 | | 27 | 3.4 | 87 | 10.9 | 147 18.5 |
| 28 | 18 52.0 | 18 55.1 | 18 .4 | | 28 | 3.5 | 88 | 11.1 | 148 18.6 |
| 29 | 18 52.3 | 18 55.4 | 18 .7 | | 29 | 3.6 | 89 | 11.2 | 149 18.7 |
| 30 | 18 52.5 | 18 55.6 | 18 .9 | | 30 | 3.8 | 90 | 11.3 | 150 18.9 |
| 31 | 18 52.8 | 18 55.9 | 18 1.1 | | 31 | 3.9 | 91 | 11.5 | 151 19.0 |
| 32 | 18 53.0 | 18 56.1 | 18 1.4 | | 32 | 4.0 | 92 | 11.6 | 152 19.1 |
| 33 | 18 53.3 | 18 56.4 | 18 1.6 | | 33 | 4.2 | 93 | 11.7 | 153 19.3 |
| 34 | 18 53.5 | 18 56.6 | 18 1.9 | | 34 | 4.3 | 94 | 11.8 | 154 19.4 |
| 35 | 18 53.8 | 18 56.9 | 18 2.1 | | 35 | 4.4 | 95 | 12.0 | 155 19.5 |
| 36 | 18 54.0 | 18 57.2 | 18 2.3 | | 36 | 4.5 | 96 | 12.1 | 156 19.6 |
| 37 | 18 54.3 | 18 57.4 | 18 2.6 | | 37 | 4.7 | 97 | 12.2 | 157 19.8 |
| 38 | 18 54.5 | 18 57.7 | 18 2.8 | | 38 | 4.8 | 98 | 12.3 | 158 19.9 |
| 39 | 18 54.8 | 18 57.9 | 18 3.1 | | 39 | 4.9 | 99 | 12.5 | 159 20.0 |
| 40 | 18 55.0 | 18 58.2 | 18 3.3 | | 40 | 5.0 | 100 | 12.6 | 160 20.1 |
| 41 | 18 55.3 | 18 58.4 | 18 3.5 | | 41 | 5.2 | 101 | 12.7 | 161 20.3 |
| 42 | 18 55.5 | 18 58.7 | 18 3.8 | | 42 | 5.3 | 102 | 12.8 | 162 20.4 |
| 43 | 18 55.8 | 18 58.9 | 18 4.0 | | 43 | 5.4 | 103 | 13.0 | 163 20.5 |
| 44 | 18 56.0 | 18 59.2 | 18 4.2 | | 44 | 5.5 | 104 | 13.1 | 164 20.6 |
| 45 | 18 56.3 | 18 59.4 | 18 4.5 | | 45 | 5.7 | 105 | 13.2 | 165 20.8 |
| 46 | 18 56.5 | 18 59.7 | 18 4.7 | | 46 | 5.8 | 106 | 13.3 | 166 20.9 |
| 47 | 18 56.8 | 18 59.9 | 18 5.0 | | 47 | 5.9 | 107 | 13.5 | 167 21.0 |
| 48 | 18 57.0 | 19 .2 | 18 5.2 | | 48 | 6.0 | 108 | 13.6 | 168 21.1 |
| 49 | 18 57.3 | 19 .4 | 18 5.4 | | 49 | 6.2 | 109 | 13.7 | 169 21.3 |
| 50 | 18 57.5 | 19 .7 | 18 5.7 | | 50 | 6.3 | 110 | 13.8 | 170 21.4 |
| 51 | 18 57.8 | 19 .9 | 18 5.9 | | 51 | 6.4 | 111 | 14.0 | 171 21.5 |
| 52 | 18 58.0 | 19 1.2 | 18 6.2 | | 52 | 6.5 | 112 | 14.1 | 172 21.6 |
| 53 | 18 58.3 | 19 1.4 | 18 6.4 | | 53 | 6.7 | 113 | 14.2 | 173 21.8 |
| 54 | 18 58.5 | 19 1.7 | 18 6.6 | | 54 | 6.8 | 114 | 14.3 | 174 21.9 |
| 55 | 18 58.8 | 19 1.9 | 18 6.9 | | 55 | 6.9 | 115 | 14.5 | 175 22.0 |
| 56 | 18 59.0 | 19 2.2 | 18 7.1 | | 56 | 7.0 | 116 | 14.6 | 176 22.1 |
| 57 | 18 59.3 | 19 2.4 | 18 7.4 | | 57 | 7.2 | 117 | 14.7 | 177 22.3 |
| 58 | 18 59.5 | 19 2.7 | 18 7.6 | | 58 | 7.3 | 118 | 14.8 | 178 22.4 |
| 59 | 18 59.8 | 19 2.9 | 18 7.8 | | 59 | 7.4 | 119 | 15.0 | 179 22.5 |
| 60 | 19 .0 | 19 3.2 | 18 8.1 | | 60 | 7.6 | 120 | 15.1 | 180 22.7 |

| 1 h 16 min | | | | | | | | | | | | |
|------------------------|--------------------|-----------------------|---|------|-------|------|-------|-----|-------|------|-----|------|
| POPRAVKA ČASOVNOG UGLA | | | POPRAVKA DRUGOG REDA za časovni ugao i deklinaciju Sunca, Mjeseca i planeta | | | | | | | | | |
| S | SUNCA I PLANETA | PROLJEČNE TAČKE °' | MJESECA ☾ | Δ | popr. | Δ | popr. | Δ | popr. | | | |
| | o | l | o | l | o | l | o | l | o | l | | |
| 0 | 19 | .0 | 19 | 3.2 | 18 | 8.1 | 0 | .0 | 60 | 7.7 | 120 | 15.3 |
| 1 | 19 | .3 | 19 | 3.4 | 18 | 8.3 | 1 | .1 | 61 | 7.8 | 121 | 15.4 |
| 2 | 19 | .5 | 19 | 3.7 | 18 | 8.5 | 2 | .3 | 62 | 7.9 | 122 | 15.6 |
| 3 | 19 | .8 | 19 | 3.9 | 18 | 8.8 | 3 | .4 | 63 | 8.0 | 123 | 15.7 |
| 4 | 19 | 1.0 | 19 | 4.2 | 18 | 9.0 | 4 | .5 | 64 | 8.2 | 124 | 15.8 |
| 5 | 19 | 1.3 | 19 | 4.4 | 18 | 9.3 | 5 | .6 | 65 | 8.3 | 125 | 15.9 |
| 6 | 19 | 1.5 | 19 | 4.7 | 18 | 9.5 | 6 | .8 | 66 | 8.4 | 126 | 16.1 |
| 7 | 19 | 1.8 | 19 | 4.9 | 18 | 9.7 | 7 | .9 | 67 | 8.5 | 127 | 16.2 |
| 8 | 19 | 2.0 | 19 | 5.2 | 18 | 10.0 | 8 | 1.0 | 68 | 8.7 | 128 | 16.3 |
| 9 | 19 | 2.3 | 19 | 5.4 | 18 | 10.2 | 9 | 1.1 | 69 | 8.8 | 129 | 16.4 |
| 10 | 19 | 2.5 | 19 | 5.7 | 18 | 10.5 | 10 | 1.3 | 70 | 8.9 | 130 | 16.6 |
| 11 | 19 | 2.8 | 19 | 5.9 | 18 | 10.7 | 11 | 1.4 | 71 | 9.1 | 131 | 16.7 |
| 12 | 19 | 3.0 | 19 | 6.2 | 18 | 10.9 | 12 | 1.5 | 72 | 9.2 | 132 | 16.8 |
| 13 | 19 | 3.3 | 19 | 6.4 | 18 | 11.2 | 13 | 1.7 | 73 | 9.3 | 133 | 17.0 |
| 14 | 19 | 3.5 | 19 | 6.7 | 18 | 11.4 | 14 | 1.8 | 74 | 9.4 | 134 | 17.1 |
| 15 | 19 | 3.8 | 19 | 6.9 | 18 | 11.6 | 15 | 1.9 | 75 | 9.6 | 135 | 17.2 |
| 16 | 19 | 4.0 | 19 | 7.2 | 18 | 11.9 | 16 | 2.0 | 76 | 9.7 | 136 | 17.3 |
| 17 | 19 | 4.3 | 19 | 7.4 | 18 | 12.1 | 17 | 2.2 | 77 | 9.8 | 137 | 17.5 |
| 18 | 19 | 4.5 | 19 | 7.7 | 18 | 12.4 | 18 | 2.3 | 78 | 9.9 | 138 | 17.6 |
| 19 | 19 | 4.8 | 19 | 7.9 | 18 | 12.6 | 19 | 2.4 | 79 | 10.1 | 139 | 17.7 |
| 20 | 19 | 5.0 | 19 | 8.2 | 18 | 12.8 | 20 | 2.6 | 80 | 10.2 | 140 | 17.9 |
| 21 | 19 | 5.3 | 19 | 8.4 | 18 | 13.1 | 21 | 2.7 | 81 | 10.3 | 141 | 18.0 |
| 22 | 19 | 5.5 | 19 | 8.7 | 18 | 13.3 | 22 | 2.8 | 82 | 10.5 | 142 | 18.1 |
| 23 | 19 | 5.8 | 19 | 8.9 | 18 | 13.6 | 23 | 2.9 | 83 | 10.6 | 143 | 18.2 |
| 24 | 19 | 6.0 | 19 | 9.2 | 18 | 13.8 | 24 | 3.1 | 84 | 10.7 | 144 | 18.4 |
| 25 | 19 | 6.3 | 19 | 9.4 | 18 | 14.0 | 25 | 3.2 | 85 | 10.8 | 145 | 18.5 |
| 26 | 19 | 6.5 | 19 | 9.7 | 18 | 14.3 | 26 | 3.3 | 86 | 11.0 | 146 | 18.6 |
| 27 | 19 | 6.8 | 19 | 9.9 | 18 | 14.5 | 27 | 3.4 | 87 | 11.1 | 147 | 18.7 |
| 28 | 19 | 7.0 | 19 | 10.2 | 18 | 14.7 | 28 | 3.6 | 88 | 11.2 | 148 | 18.9 |
| 29 | 19 | 7.3 | 19 | 10.4 | 18 | 15.0 | 29 | 3.7 | 89 | 11.3 | 149 | 19.0 |
| 30 | 19 | 7.5 | 19 | 10.7 | 18 | 15.2 | 30 | 3.8 | 90 | 11.5 | 150 | 19.1 |
| 31 | 19 | 7.8 | 19 | 10.9 | 18 | 15.5 | 31 | 4.0 | 91 | 11.6 | 151 | 19.3 |
| 32 | 19 | 8.0 | 19 | 11.2 | 18 | 15.7 | 32 | 4.1 | 92 | 11.7 | 152 | 19.4 |
| 33 | 19 | 8.3 | 19 | 11.4 | 18 | 15.9 | 33 | 4.2 | 93 | 11.9 | 153 | 19.5 |
| 34 | 19 | 8.5 | 19 | 11.7 | 18 | 16.2 | 34 | 4.3 | 94 | 12.0 | 154 | 19.6 |
| 35 | 19 | 8.8 | 19 | 11.9 | 18 | 16.4 | 35 | 4.5 | 95 | 12.1 | 155 | 19.8 |
| 36 | 19 | 9.0 | 19 | 12.2 | 18 | 16.7 | 36 | 4.6 | 96 | 12.2 | 156 | 19.9 |
| 37 | 19 | 9.3 | 19 | 12.4 | 18 | 16.9 | 37 | 4.7 | 97 | 12.4 | 157 | 20.0 |
| 38 | 19 | 9.5 | 19 | 12.7 | 18 | 17.1 | 38 | 4.8 | 98 | 12.5 | 158 | 20.1 |
| 39 | 19 | 9.8 | 19 | 12.9 | 18 | 17.4 | 39 | 5.0 | 99 | 12.6 | 159 | 20.3 |
| 40 | 19 | 10.0 | 19 | 13.2 | 18 | 17.6 | 40 | 5.1 | 100 | 12.8 | 160 | 20.4 |
| 41 | 19 | 10.3 | 19 | 13.4 | 18 | 17.8 | 41 | 5.2 | 101 | 12.9 | 161 | 20.5 |
| 42 | 19 | 10.5 | 19 | 13.7 | 18 | 18.1 | 42 | 5.4 | 102 | 13.0 | 162 | 20.7 |
| 43 | 19 | 10.8 | 19 | 13.9 | 18 | 18.3 | 43 | 5.5 | 103 | 13.1 | 163 | 20.8 |
| 44 | 19 | 11.0 | 19 | 14.2 | 18 | 18.6 | 44 | 5.6 | 104 | 13.3 | 164 | 20.9 |
| 45 | 19 | 11.3 | 19 | 14.4 | 18 | 18.8 | 45 | 5.7 | 105 | 13.4 | 165 | 21.0 |
| 46 | 19 | 11.5 | 19 | 14.7 | 18 | 19.0 | 46 | 5.9 | 106 | 13.5 | 166 | 21.2 |
| 47 | 19 | 11.8 | 19 | 14.9 | 18 | 19.3 | 47 | 6.0 | 107 | 13.6 | 167 | 21.3 |
| 48 | 19 | 12.0 | 19 | 15.2 | 18 | 19.5 | 48 | 6.1 | 108 | 13.8 | 168 | 21.4 |
| 49 | 19 | 12.3 | 19 | 15.5 | 18 | 19.8 | 49 | 6.2 | 109 | 13.9 | 169 | 21.5 |
| 50 | 19 | 12.5 | 19 | 15.7 | 18 | 20.0 | 50 | 6.4 | 110 | 14.0 | 170 | 21.7 |
| 51 | 19 | 12.8 | 19 | 16.0 | 18 | 20.2 | 51 | 6.5 | 111 | 14.2 | 171 | 21.8 |
| 52 | 19 | 13.0 | 19 | 16.2 | 18 | 20.5 | 52 | 6.6 | 112 | 14.3 | 172 | 21.9 |
| 53 | 19 | 13.3 | 19 | 16.5 | 18 | 20.7 | 53 | 6.8 | 113 | 14.4 | 173 | 22.1 |
| 54 | 19 | 13.5 | 19 | 16.7 | 18 | 21.0 | 54 | 6.9 | 114 | 14.5 | 174 | 22.2 |
| 55 | 19 | 13.8 | 19 | 17.0 | 18 | 21.2 | 55 | 7.0 | 115 | 14.7 | 175 | 22.3 |
| 56 | 19 | 14.0 | 19 | 17.2 | 18 | 21.4 | 56 | 7.1 | 116 | 14.8 | 176 | 22.4 |
| 57 | 19 | 14.3 | 19 | 17.5 | 18 | 21.7 | 57 | 7.3 | 117 | 14.9 | 177 | 22.6 |
| 58 | 19 | 14.5 | 19 | 17.7 | 18 | 21.9 | 58 | 7.4 | 118 | 15.0 | 178 | 22.7 |
| 59 | 19 | 14.8 | 19 | 18.0 | 18 | 22.1 | 59 | 7.5 | 119 | 15.2 | 179 | 22.8 |
| 60 | 19 | 15.0 | 19 | 18.2 | 18 | 22.4 | 60 | 7.7 | 120 | 15.3 | 180 | 23.0 |

| 1 h 17 min | | | | | | | | | | | | |
|------------------------|--------------------|-----------------------|---|------|-------|------|-------|-----|-------|------|-----|------|
| POPRAVKA ČASOVNOG UGLA | | | POPRAVKA DRUGOG REDA za časovni ugao i deklinaciju Sunca, Mjeseca i planeta | | | | | | | | | |
| S | SUNCA I PLANETA | PROLJEČNE TAČKE °' | MJESECA ☾ | Δ | popr. | Δ | popr. | Δ | popr. | | | |
| | o | l | o | l | o | l | o | l | o | l | | |
| 0 | 19 | 15.0 | 19 | 18.2 | 18 | 22.4 | 0 | .0 | 60 | 7.8 | 120 | 15.5 |
| 1 | 19 | 15.3 | 19 | 18.5 | 18 | 22.6 | 1 | .1 | 61 | 7.9 | 121 | 15.6 |
| 2 | 19 | 15.5 | 19 | 18.7 | 18 | 22.9 | 2 | .3 | 62 | 8.0 | 122 | 15.8 |
| 3 | 19 | 15.8 | 19 | 19.0 | 18 | 23.1 | 3 | .4 | 63 | 8.1 | 123 | 15.9 |
| 4 | 19 | 16.0 | 19 | 19.2 | 18 | 23.3 | 4 | .5 | 64 | 8.3 | 124 | 16.0 |
| 5 | 19 | 16.3 | 19 | 19.5 | 18 | 23.6 | 5 | .6 | 65 | 8.4 | 125 | 16.1 |
| 6 | 19 | 16.5 | 19 | 19.7 | 18 | 23.8 | 6 | .8 | 66 | 8.5 | 126 | 16.3 |
| 7 | 19 | 16.8 | 19 | 20.0 | 18 | 24.1 | 7 | .9 | 67 | 8.7 | 127 | 16.4 |
| 8 | 19 | 17.0 | 19 | 20.2 | 18 | 24.3 | 8 | 1.0 | 68 | 8.8 | 128 | 16.5 |
| 9 | 19 | 17.3 | 19 | 20.5 | 18 | 24.5 | 9 | 1.2 | 69 | 8.9 | 129 | 16.7 |
| 10 | 19 | 17.5 | 19 | 20.7 | 18 | 24.8 | 10 | 1.3 | 70 | 9.0 | 130 | 16.8 |
| 11 | 19 | 17.8 | 19 | 21.0 | 18 | 25.0 | 11 | 1.4 | 71 | 9.2 | 131 | 16.9 |
| 12 | 19 | 18.0 | 19 | 21.2 | 18 | 25.2 | 12 | 1.6 | 72 | 9.3 | 132 | 17.1 |
| 13 | 19 | 18.3 | 19 | 21.5 | 18 | 25.5 | 13 | 1.7 | 73 | 9.4 | 133 | 17.2 |
| 14 | 19 | 18.5 | 19 | 21.7 | 18 | 25.7 | 14 | 1.8 | 74 | 9.6 | 134 | 17.3 |
| 15 | 19 | 18.8 | 19 | 22.0 | 18 | 26.0 | 15 | 1.9 | 75 | 9.7 | 135 | 17.4 |
| 16 | 19 | 19.0 | 19 | 22.2 | 18 | 26.2 | 16 | 2.1 | 76 | 9.8 | 136 | 17.6 |
| 17 | 19 | 19.3 | 19 | 22.5 | 18 | 26.4 | 17 | 2.2 | 77 | 9.9 | 137 | 17.7 |
| 18 | 19 | 19.5 | 19 | 22.7 | 18 | 26.7 | 18 | 2.3 | 78 | 10.1 | 138 | 17.8 |
| 19 | 19 | 19.8 | 19 | 23.0 | 18 | 26.9 | 19 | 2.5 | 79 | 10.2 | 139 | 18.0 |
| 20 | 19 | 20.0 | 19 | 23.2 | 18 | 27.2 | 20 | 2.6 | 80 | 10.3 | 140 | 18.1 |
| 21 | 19 | 20.3 | 19 | 23.5 | 18 | 27.4 | 21 | 2.7 | 81 | 10.5 | 141 | 18.2 |
| 22 | 19 | 20.5 | 19 | 23.7 | 18 | 27.6 | 22 | 2.8 | 82 | 10.6 | 142 | 18.3 |
| 23 | 19 | 20.8 | 19 | 24.0 | 18 | 27.9 | 23 | 3.0 | 83 | 10.7 | 143 | 18.5 |
| 24 | 19 | 21.0 | 19 | 24.2 | 18 | 28.1 | 24 | 3.1 | 84 | 10.9 | 144 | 18.6 |
| 25 | 19 | 21.3 | 19 | 24.5 | 18 | 28.3 | 25 | 3.2 | 85 | 11.0 | 145 | 18.7 |
| 26 | 19 | 21.5 | 19 | 24.7 | 18 | 28.6 | 26 | 3.4 | 86 | 11.1 | 146 | 18.9 |
| 27 | 19 | 21.8 | 19 | 25.0 | 18 | 28.8 | 27 | 3.5 | 87 | 11.2 | 147 | 19.0 |
| 28 | 19 | 22.0 | 19 | 25.2 | 18 | 29.1 | 28 | 3.6 | 88 | 11.4 | 148 | 19.1 |
| 29 | 19 | 22.3 | 19 | 25.5 | 18 | 29.3 | 29 | 3.7 | 89 | 11.5 | 149 | 19.2 |
| 30 | 19 | 22.5 | 19 | 25.7 | 18 | 29.5 | 30 | 3.9 | 90 | 11.6 | 150 | 19.4 |
| 31 | 19 | 22.8 | 19 | 26.0 | 18 | 29.8 | 31 | 4.0 | 91 | 11.8 | 151 | 19.5 |
| 32 | 19 | 23.0 | 19 | 26.2 | 18 | 30.0 | 32 | 4.1 | 92 | 11.9 | 152 | 19.6 |
| 33 | 19 | 23.3 | 19 | 26.5 | 18 | 30.3 | 33 | 4.3 | 93 | 12.0 | 153 | 19.8 |
| 34 | 19 | 23.5 | 19 | 26.7 | 18 | 30.5 | 34 | 4.4 | 94 | 12.1 | 154 | 19.9 |
| 35 | 19 | 23.8 | 19 | 27.0 | 18 | 30.7 | 35 | 4.5 | 95 | 12.3 | 155 | 20.0 |
| 36 | 19 | 24.0 | 19 | 27.2 | 18 | 31.0 | 36 | 4.7 | 96 | 12.4 | 156 | 20.2 |
| 37 | 19 | 24.3 | 19 | 27.5 | 18 | 31.2 | 37 | 4.8 | 97 | 12.5 | 157 | 20.3 |
| 38 | 19 | 24.5 | 19 | 27.7 | 18 | 31.5 | 38 | 4.9 | 98 | 12.7 | 158 | 20.4 |
| 39 | 19 | 24.8 | 19 | 28.0 | 18 | 31.7 | 39 | 5.0 | 99 | 12.8 | 159 | 20.5 |
| 40 | 19 | 25.0 | 19 | 28.2 | 18 | 31.9 | 40 | 5.2 | 100 | 12.9 | 160 | 20.7 |
| 41 | 19 | 25.3 | 19 | 28.5 | 18 | 32.2 | 41 | 5.3 | 101 | 13.0 | 161 | 20.8 |
| 42 | 19 | 25.5 | 19 | 28.7 | 18 | 32.4 | 42 | 5.4 | 102 | 13.2 | 162 | 20.9 |
| 43 | 19 | 25.8 | 19 | 29.0 | 18 | 32.6 | 43 | 5.6 | 103 | 13.3 | 163 | 21.1 |
| 44 | 19 | 26.0 | 19 | 29.2 | 18 | 32.9 | 44 | 5.7 | 104 | 13.4 | 164 | 21.2 |
| 45 | 19 | 26.3 | 19 | 29.5 | 18 | 33.1 | 45 | 5.8 | 105 | 13.6 | 165 | 21.3 |
| 46 | 19 | 26.5 | 19 | 29.7 | 18 | 33.4 | 46 | 5.9 | 106 | 13.7 | 166 | 21.4 |
| 47 | 19 | 26.8 | 19 | 30.0 | 18 | 33.6 | 47 | 6.1 | 107 | 13.8 | 167 | 21.6 |
| 48 | 19 | 27.0 | 19 | 30.2 | 18 | 33.8 | 48 | 6.2 | 108 | 14.0 | 168 | 21.7 |
| 49 | 19 | 27.3 | 19 | 30.5 | 18 | 34.1 | 49 | 6.3 | 109 | 14.1 | 169 | 21.8 |
| 50 | 19 | 27.5 | 19 | 30.7 | 18 | 34.3 | 50 | 6.5 | 110 | 14.2 | 170 | 22.0 |
| 5 | | | | | | | | | | | | |

| 1 h 18 min | | | | | | | | | |
|------------------------|--------------------|---------|----------------------|---|--------------|----------|----------|---|---|
| POPRAVKA ČASOVNOG UGLA | | | | POPRAVKA DRUGOG REDA za časovni ugao i deklinaciju Sunca, Mjeseca i planeta | | | | | |
| s | SUNCA I PLANETA | | PROLJEĆNE TACKE γ | | MJESECA ☾ | | Δ popr. | | |
| | o | t | o | t | o | t | t | t | t |
| 0 | 19 30.0 | 19 33.3 | 18 36.7 | 0 | .0 | 60 7.9 | 120 15.7 | | |
| 1 | 19 30.3 | 19 33.5 | 18 36.9 | 1 | .1 | 61 8.0 | 121 15.8 | | |
| 2 | 19 30.5 | 19 33.8 | 18 37.2 | 2 | .3 | 62 8.1 | 122 16.0 | | |
| 3 | 19 30.8 | 19 34.0 | 18 37.4 | 3 | .4 | 63 8.2 | 123 16.1 | | |
| 4 | 19 31.0 | 19 34.3 | 18 37.7 | 4 | .5 | 64 8.4 | 124 16.2 | | |
| 5 | 19 31.3 | 19 34.5 | 18 37.9 | 5 | .7 | 65 8.5 | 125 16.4 | | |
| 6 | 19 31.5 | 19 34.8 | 18 38.1 | 6 | .8 | 66 8.6 | 126 16.5 | | |
| 7 | 19 31.8 | 19 35.0 | 18 38.4 | 7 | .9 | 67 8.8 | 127 16.6 | | |
| 8 | 19 32.0 | 19 35.3 | 18 38.6 | 8 | 1.0 | 68 8.9 | 128 16.7 | | |
| 9 | 19 32.3 | 19 35.5 | 18 38.8 | 9 | 1.2 | 69 9.0 | 129 16.9 | | |
| 10 | 19 32.5 | 19 35.8 | 18 39.1 | 10 | 1.3 | 70 9.2 | 130 17.0 | | |
| 11 | 19 32.8 | 19 36.0 | 18 39.3 | 11 | 1.4 | 71 9.3 | 131 17.1 | | |
| 12 | 19 33.0 | 19 36.3 | 18 39.6 | 12 | 1.6 | 72 9.4 | 132 17.3 | | |
| 13 | 19 33.3 | 19 36.5 | 18 39.8 | 13 | 1.7 | 73 9.6 | 133 17.4 | | |
| 14 | 19 33.5 | 19 36.8 | 18 40.0 | 14 | 1.8 | 74 9.7 | 134 17.5 | | |
| 15 | 19 33.8 | 19 37.0 | 18 40.3 | 15 | 2.0 | 75 9.8 | 135 17.7 | | |
| 16 | 19 34.0 | 19 37.3 | 18 40.5 | 16 | 2.1 | 76 9.9 | 136 17.8 | | |
| 17 | 19 34.3 | 19 37.5 | 18 40.8 | 17 | 2.2 | 77 10.1 | 137 17.9 | | |
| 18 | 19 34.5 | 19 37.8 | 18 41.0 | 18 | 2.4 | 78 10.2 | 138 18.1 | | |
| 19 | 19 34.8 | 19 38.0 | 18 41.2 | 19 | 2.5 | 79 10.3 | 139 18.2 | | |
| 20 | 19 35.0 | 19 38.3 | 18 41.5 | 20 | 2.6 | 80 10.5 | 140 18.3 | | |
| 21 | 19 35.3 | 19 38.5 | 18 41.7 | 21 | 2.7 | 81 10.6 | 141 18.4 | | |
| 22 | 19 35.5 | 19 38.8 | 18 41.9 | 22 | 2.9 | 82 10.7 | 142 18.6 | | |
| 23 | 19 35.8 | 19 39.0 | 18 42.2 | 23 | 3.0 | 83 10.9 | 143 18.7 | | |
| 24 | 19 36.0 | 19 39.3 | 18 42.4 | 24 | 3.1 | 84 11.0 | 144 18.8 | | |
| 25 | 19 36.3 | 19 39.5 | 18 42.7 | 25 | 3.3 | 85 11.1 | 145 19.0 | | |
| 26 | 19 36.5 | 19 39.8 | 18 42.9 | 26 | 3.4 | 86 11.3 | 146 19.1 | | |
| 27 | 19 36.8 | 19 40.0 | 18 43.1 | 27 | 3.5 | 87 11.4 | 147 19.2 | | |
| 28 | 19 37.0 | 19 40.3 | 18 43.4 | 28 | 3.7 | 88 11.5 | 148 19.4 | | |
| 29 | 19 37.3 | 19 40.5 | 18 43.6 | 29 | 3.8 | 89 11.6 | 149 19.5 | | |
| 30 | 19 37.5 | 19 40.8 | 18 43.9 | 30 | 3.9 | 90 11.8 | 150 19.6 | | |
| 31 | 19 37.8 | 19 41.0 | 18 44.1 | 31 | 4.1 | 91 11.9 | 151 19.8 | | |
| 32 | 19 38.0 | 19 41.3 | 18 44.3 | 32 | 4.2 | 92 12.0 | 152 19.9 | | |
| 33 | 19 38.3 | 19 41.5 | 18 44.6 | 33 | 4.3 | 93 12.2 | 153 20.0 | | |
| 34 | 19 38.5 | 19 41.8 | 18 44.8 | 34 | 4.4 | 94 12.3 | 154 20.1 | | |
| 35 | 19 38.8 | 19 42.0 | 18 45.1 | 35 | 4.6 | 95 12.4 | 155 20.3 | | |
| 36 | 19 39.0 | 19 42.3 | 18 45.3 | 36 | 4.7 | 96 12.6 | 156 20.4 | | |
| 37 | 19 39.3 | 19 42.5 | 18 45.5 | 37 | 4.8 | 97 12.7 | 157 20.5 | | |
| 38 | 19 39.5 | 19 42.8 | 18 45.8 | 38 | 5.0 | 98 12.8 | 158 20.7 | | |
| 39 | 19 39.8 | 19 43.0 | 18 46.0 | 39 | 5.1 | 99 13.0 | 159 20.8 | | |
| 40 | 19 40.0 | 19 43.3 | 18 46.2 | 40 | 5.2 | 100 13.1 | 160 20.9 | | |
| 41 | 19 40.3 | 19 43.5 | 18 46.5 | 41 | 5.4 | 101 13.2 | 161 21.1 | | |
| 42 | 19 40.5 | 19 43.8 | 18 46.7 | 42 | 5.5 | 102 13.3 | 162 21.2 | | |
| 43 | 19 40.8 | 19 44.0 | 18 47.0 | 43 | 5.6 | 103 13.5 | 163 21.3 | | |
| 44 | 19 41.0 | 19 44.3 | 18 47.2 | 44 | 5.8 | 104 13.6 | 164 21.5 | | |
| 45 | 19 41.3 | 19 44.5 | 18 47.4 | 45 | 5.9 | 105 13.7 | 165 21.6 | | |
| 46 | 19 41.5 | 19 44.8 | 18 47.7 | 46 | 6.0 | 106 13.9 | 166 21.7 | | |
| 47 | 19 41.8 | 19 45.0 | 18 47.9 | 47 | 6.1 | 107 14.0 | 167 21.8 | | |
| 48 | 19 42.0 | 19 45.3 | 18 48.2 | 48 | 6.3 | 108 14.1 | 168 22.0 | | |
| 49 | 19 42.3 | 19 45.5 | 18 48.4 | 49 | 6.4 | 109 14.3 | 169 22.1 | | |
| 50 | 19 42.5 | 19 45.8 | 18 48.6 | 50 | 6.5 | 110 14.4 | 170 22.2 | | |
| 51 | 19 42.8 | 19 46.0 | 18 48.9 | 51 | 6.7 | 111 14.5 | 171 22.4 | | |
| 52 | 19 43.0 | 19 46.3 | 18 49.1 | 52 | 6.8 | 112 14.7 | 172 22.5 | | |
| 53 | 19 43.3 | 19 46.5 | 18 49.3 | 53 | 6.9 | 113 14.8 | 173 22.6 | | |
| 54 | 19 43.5 | 19 46.8 | 18 49.6 | 54 | 7.1 | 114 14.9 | 174 22.8 | | |
| 55 | 19 43.8 | 19 47.0 | 18 49.8 | 55 | 7.2 | 115 15.0 | 175 22.9 | | |
| 56 | 19 44.0 | 19 47.3 | 18 50.1 | 56 | 7.3 | 116 15.2 | 176 23.0 | | |
| 57 | 19 44.3 | 19 47.5 | 18 50.3 | 57 | 7.5 | 117 15.3 | 177 23.2 | | |
| 58 | 19 44.5 | 19 47.8 | 18 50.5 | 58 | 7.6 | 118 15.4 | 178 23.3 | | |
| 59 | 19 44.8 | 19 48.0 | 18 50.8 | 59 | 7.7 | 119 15.6 | 179 23.4 | | |
| 60 | 19 45.0 | 19 48.3 | 18 51.0 | 60 | 7.9 | 120 15.7 | 180 23.6 | | |

| 1 h 19 min | | | | | | | | | |
|------------------------|--------------------|---------|----------------------|---|--------------|----------|----------|---|---|
| POPRAVKA ČASOVNOG UGLA | | | | POPRAVKA DRUGOG REDA za časovni ugao i deklinaciju Sunca, Mjeseca i planeta | | | | | |
| s | SUNCA I PLANETA | | PROLJEĆNE TACKE γ | | MJESECA ☾ | | Δ popr. | | |
| | o | t | o | t | o | t | t | t | t |
| 0 | 19 45.0 | 19 48.3 | 18 51.0 | 0 | .0 | 60 8.0 | 120 15.9 | | |
| 1 | 19 45.3 | 19 48.5 | 18 51.3 | 1 | .1 | 61 8.1 | 121 16.0 | | |
| 2 | 19 45.5 | 19 48.8 | 18 51.5 | 2 | .3 | 62 8.2 | 122 16.2 | | |
| 3 | 19 45.8 | 19 49.0 | 18 51.7 | 3 | .4 | 63 8.3 | 123 16.3 | | |
| 4 | 19 46.0 | 19 49.3 | 18 52.0 | 4 | .5 | 64 8.5 | 124 16.4 | | |
| 5 | 19 46.3 | 19 49.5 | 18 52.2 | 5 | .7 | 65 8.6 | 125 16.6 | | |
| 6 | 19 46.5 | 19 49.8 | 18 52.4 | 6 | .8 | 66 8.7 | 126 16.7 | | |
| 7 | 19 46.8 | 19 50.0 | 18 52.7 | 7 | .9 | 67 8.9 | 127 16.8 | | |
| 8 | 19 47.0 | 19 50.3 | 18 52.9 | 8 | 1.1 | 68 9.0 | 128 17.0 | | |
| 9 | 19 47.3 | 19 50.5 | 18 53.2 | 9 | 1.2 | 69 9.1 | 129 17.1 | | |
| 10 | 19 47.5 | 19 50.8 | 18 53.4 | 10 | 1.3 | 70 9.3 | 130 17.2 | | |
| 11 | 19 47.8 | 19 51.0 | 18 53.6 | 11 | 1.5 | 71 9.4 | 131 17.4 | | |
| 12 | 19 48.0 | 19 51.3 | 18 53.9 | 12 | 1.6 | 72 9.5 | 132 17.5 | | |
| 13 | 19 48.3 | 19 51.6 | 18 54.1 | 13 | 1.7 | 73 9.7 | 133 17.6 | | |
| 14 | 19 48.5 | 19 51.8 | 18 54.4 | 14 | 1.9 | 74 9.8 | 134 17.8 | | |
| 15 | 19 48.8 | 19 52.1 | 18 54.6 | 15 | 2.0 | 75 9.9 | 135 17.9 | | |
| 16 | 19 49.0 | 19 52.3 | 18 54.8 | 16 | 2.1 | 76 10.1 | 136 18.0 | | |
| 17 | 19 49.3 | 19 52.6 | 18 55.1 | 17 | 2.3 | 77 10.2 | 137 18.2 | | |
| 18 | 19 49.5 | 19 52.8 | 18 55.3 | 18 | 2.4 | 78 10.3 | 138 18.3 | | |
| 19 | 19 49.8 | 19 53.1 | 18 55.6 | 19 | 2.5 | 79 10.5 | 139 18.4 | | |
| 20 | 19 50.0 | 19 53.3 | 18 55.8 | 20 | 2.7 | 80 10.6 | 140 18.6 | | |
| 21 | 19 50.3 | 19 53.6 | 18 56.0 | 21 | 2.8 | 81 10.7 | 141 18.7 | | |
| 22 | 19 50.5 | 19 53.8 | 18 56.3 | 22 | 2.9 | 82 10.9 | 142 18.8 | | |
| 23 | 19 50.8 | 19 54.1 | 18 56.5 | 23 | 3.0 | 83 11.0 | 143 18.9 | | |
| 24 | 19 51.0 | 19 54.3 | 18 56.7 | 24 | 3.2 | 84 11.1 | 144 19.1 | | |
| 25 | 19 51.3 | 19 54.6 | 18 57.0 | 25 | 3.3 | 85 11.3 | 145 19.2 | | |
| 26 | 19 51.5 | 19 54.8 | 18 57.2 | 26 | 3.4 | 86 11.4 | 146 19.3 | | |
| 27 | 19 51.8 | 19 55.1 | 18 57.5 | 27 | 3.6 | 87 11.5 | 147 19.5 | | |
| 28 | 19 52.0 | 19 55.3 | 18 57.7 | 28 | 3.7 | 88 11.7 | 148 19.6 | | |
| 29 | 19 52.3 | 19 55.6 | 18 57.9 | 29 | 3.8 | 89 11.8 | 149 19.7 | | |
| 30 | 19 52.5 | 19 55.8 | 18 58.2 | 30 | 4.0 | 90 11.9 | 150 19.9 | | |
| 31 | 19 52.8 | 19 56.1 | 18 58.4 | 31 | 4.1 | 91 12.1 | 151 20.0 | | |
| 32 | 19 53.0 | 19 56.3 | 18 58.7 | 32 | 4.2 | 92 12.2 | 152 20.1 | | |
| 33 | 19 53.3 | 19 56.6 | 18 58.9 | 33 | 4.4 | 93 12.3 | 153 20.3 | | |
| 34 | 19 53.5 | 19 56.8 | 18 59.1 | 34 | 4.5 | 94 12.5 | 154 20.4 | | |
| 35 | 19 53.8 | 19 57.1 | 18 59.4 | 35 | 4.6 | 95 12.6 | 155 20.5 | | |
| 36 | 19 54.0 | 19 57.3 | 18 59.6 | 36 | 4.8 | 96 12.7 | 156 20.7 | | |
| 37 | 19 54.3 | 19 57.6 | 18 59.8 | 37 | 4.9 | 97 12.9 | 157 20.8 | | |
| 38 | 19 54.5 | 19 57.8 | 19 .1 | 38 | 5.0 | 98 13.0 | 158 20.9 | | |
| 39 | 19 54.8 | 19 58.1 | 19 .3 | 39 | 5.2 | 99 13.1 | 159 21.1 | | |
| 40 | 19 55.0 | 19 58.3 | 19 .6 | 40 | 5.3 | 100 13.3 | 160 21.2 | | |
| 41 | 19 55.3 | 19 58.6 | 19 .8 | 41 | 5.4 | 101 13.4 | 161 21.3 | | |
| 42 | 19 55.5 | 19 58.8 | 19 1.0 | 42 | 5.6 | 102 13.5 | 162 21.5 | | |
| 43 | 19 55.8 | 19 59.1 | 19 1.3 | 43 | 5.7 | 103 13.6 | 163 21.6 | | |
| 44 | 19 56.0 | 19 59.3 | 19 1.5 | 44 | 5.8 | 104 13.8 | 164 21.7 | | |
| 45 | 19 56.3 | 19 59.6 | 19 1.8 | 45 | 6.0 | 105 13.9 | 165 21.9 | | |
| 46 | 19 56.5 | 19 59.8 | 19 2.0 | 46 | 6.1 | 106 14.0 | 166 22.0 | | |
| 47 | 19 56.8 | 20 .1 | 19 2.2 | 47 | 6.2 | 107 14.2 | 167 22.1 | | |
| 48 | 19 57.0 | 20 .3 | 19 2.5 | 48 | 6.4 | 108 14.3 | 168 22.3 | | |
| 49 | 19 57.3 | 20 .6 | 19 2.7 | 49 | 6.5 | 109 14.4 | 169 22.4 | | |
| 50 | 19 57.5 | 20 .8 | 19 2.9 | 50 | 6.6 | 110 14.6 | 170 22.5 | | |
| 51 | 19 57.8 | 20 1.1 | 19 3.2 | 51 | 6.8 | 111 14.7 | 171 22.7 | | |
| 52 | 19 58.0 | 20 1.3 | 19 3.4 | 52 | 6.9 | 112 14.8 | 172 22.8 | | |
| 53 | 19 58.3 | 20 1.6 | 19 3.7 | 53 | 7.0 | 113 15.0 | 173 22.9 | | |
| 54 | 19 58.5 | 20 1.8 | 19 3.9 | 54 | 7.2 | 114 15.1 | 174 23.1 | | |
| 55 | 19 58.8 | 20 2.1 | 19 4.1 | 55 | 7.3 | 115 15.2 | 175 23.2 | | |
| 56 | 19 59.0 | 20 2.3 | 19 4.4 | 56 | 7.4 | 116 15.4 | 176 23.3 | | |
| 57 | 19 59.3 | 20 2.6 | 19 4.6 | 57 | 7.6 | 117 15.5 | 177 23.5 | | |
| 58 | 19 59.5 | 20 2.8 | 19 4.9 | 58 | 7.7 | 118 15.6 | 178 23.6 | | |
| 59 | 19 59.8 | 20 3.1 | 19 5.1 | 59 | 7.8 | 119 15.8 | 179 23.7 | | |
| 60 | 20 .0 | 20 3.3 | 19 5.3 | 60 | 8.0 | 120 15.9 | 180 23.9 | | |

| 1 h 20 min | | | | | | | | | | | | |
|------------------------|--------------------|------|----------------------|---|--------------|------|----|-------|-----|-------|-----|------|
| POPRAVKA ČASOVNOG UGLA | | | | POPRAVKA DRUGOG REDA za časovni ugao i deklinaciju Sunca, Mjeseca i planeta | | | | | | | | |
| S | SUNCA I PLANETA | | PROLJEĆNE TAČKE γ | | MJESECA ☾ | | Δ | popr. | Δ | popr. | | |
| | o | f | o | f | o | f | | | | | | |
| 0 | 20 | .0 | 20 | 3.3 | 19 | 5.3 | 0 | .0 | 60 | 8.1 | 120 | 16.1 |
| 1 | 20 | .3 | 20 | 3.6 | 19 | 5.6 | 1 | .1 | 61 | 8.2 | 121 | 16.2 |
| 2 | 20 | .5 | 20 | 3.8 | 19 | 5.8 | 2 | .3 | 62 | 8.3 | 122 | 16.4 |
| 3 | 20 | .8 | 20 | 4.1 | 19 | 6.0 | 3 | .4 | 63 | 8.5 | 123 | 16.5 |
| 4 | 20 | 1.0 | 20 | 4.3 | 19 | 6.3 | 4 | .5 | 64 | 8.6 | 124 | 16.6 |
| 5 | 20 | 1.3 | 20 | 4.6 | 19 | 6.5 | 5 | .7 | 65 | 8.7 | 125 | 16.8 |
| 6 | 20 | 1.5 | 20 | 4.8 | 19 | 6.8 | 6 | .8 | 66 | 8.9 | 126 | 16.9 |
| 7 | 20 | 1.8 | 20 | 5.1 | 19 | 7.0 | 7 | .9 | 67 | 9.0 | 127 | 17.0 |
| 8 | 20 | 2.0 | 20 | 5.3 | 19 | 7.2 | 8 | 1.1 | 68 | 9.1 | 128 | 17.2 |
| 9 | 20 | 2.3 | 20 | 5.6 | 19 | 7.5 | 9 | 1.2 | 69 | 9.3 | 129 | 17.3 |
| 10 | 20 | 2.5 | 20 | 5.8 | 19 | 7.7 | 10 | 1.3 | 70 | 9.4 | 130 | 17.4 |
| 11 | 20 | 2.8 | 20 | 6.1 | 19 | 8.0 | 11 | 1.5 | 71 | 9.5 | 131 | 17.6 |
| 12 | 20 | 3.0 | 20 | 6.3 | 19 | 8.2 | 12 | 1.6 | 72 | 9.7 | 132 | 17.7 |
| 13 | 20 | 3.3 | 20 | 6.6 | 19 | 8.4 | 13 | 1.7 | 73 | 9.8 | 133 | 17.8 |
| 14 | 20 | 3.5 | 20 | 6.8 | 19 | 8.7 | 14 | 1.9 | 74 | 9.9 | 134 | 18.0 |
| 15 | 20 | 3.8 | 20 | 7.1 | 19 | 8.9 | 15 | 2.0 | 75 | 10.1 | 135 | 18.1 |
| 16 | 20 | 4.0 | 20 | 7.3 | 19 | 9.2 | 16 | 2.1 | 76 | 10.2 | 136 | 18.2 |
| 17 | 20 | 4.3 | 20 | 7.6 | 19 | 9.4 | 17 | 2.3 | 77 | 10.3 | 137 | 18.4 |
| 18 | 20 | 4.5 | 20 | 7.8 | 19 | 9.6 | 18 | 2.4 | 78 | 10.5 | 138 | 18.5 |
| 19 | 20 | 4.8 | 20 | 8.1 | 19 | 9.9 | 19 | 2.5 | 79 | 10.6 | 139 | 18.6 |
| 20 | 20 | 5.0 | 20 | 8.3 | 19 | 10.1 | 20 | 2.7 | 80 | 10.7 | 140 | 18.8 |
| 21 | 20 | 5.3 | 20 | 8.6 | 19 | 10.3 | 21 | 2.8 | 81 | 10.9 | 141 | 18.9 |
| 22 | 20 | 5.5 | 20 | 8.8 | 19 | 10.6 | 22 | 3.0 | 82 | 11.0 | 142 | 19.1 |
| 23 | 20 | 5.8 | 20 | 9.1 | 19 | 10.8 | 23 | 3.1 | 83 | 11.1 | 143 | 19.2 |
| 24 | 20 | 6.0 | 20 | 9.4 | 19 | 11.1 | 24 | 3.2 | 84 | 11.3 | 144 | 19.3 |
| 25 | 20 | 6.3 | 20 | 9.6 | 19 | 11.3 | 25 | 3.4 | 85 | 11.4 | 145 | 19.5 |
| 26 | 20 | 6.5 | 20 | 9.9 | 19 | 11.5 | 26 | 3.5 | 86 | 11.5 | 146 | 19.6 |
| 27 | 20 | 6.8 | 20 | 10.1 | 19 | 11.8 | 27 | 3.6 | 87 | 11.7 | 147 | 19.7 |
| 28 | 20 | 7.0 | 20 | 10.4 | 19 | 12.0 | 28 | 3.8 | 88 | 11.8 | 148 | 19.9 |
| 29 | 20 | 7.3 | 20 | 10.6 | 19 | 12.3 | 29 | 3.9 | 89 | 11.9 | 149 | 20.0 |
| 30 | 20 | 7.5 | 20 | 10.9 | 19 | 12.5 | 30 | 4.0 | 90 | 12.1 | 150 | 20.1 |
| 31 | 20 | 7.8 | 20 | 11.1 | 19 | 12.7 | 31 | 4.2 | 91 | 12.2 | 151 | 20.3 |
| 32 | 20 | 8.0 | 20 | 11.4 | 19 | 13.0 | 32 | 4.3 | 92 | 12.3 | 152 | 20.4 |
| 33 | 20 | 8.3 | 20 | 11.6 | 19 | 13.2 | 33 | 4.4 | 93 | 12.5 | 153 | 20.5 |
| 34 | 20 | 8.5 | 20 | 11.9 | 19 | 13.4 | 34 | 4.6 | 94 | 12.6 | 154 | 20.7 |
| 35 | 20 | 8.8 | 20 | 12.1 | 19 | 13.7 | 35 | 4.7 | 95 | 12.7 | 155 | 20.8 |
| 36 | 20 | 9.0 | 20 | 12.4 | 19 | 13.9 | 36 | 4.8 | 96 | 12.9 | 156 | 20.9 |
| 37 | 20 | 9.3 | 20 | 12.6 | 19 | 14.2 | 37 | 5.0 | 97 | 13.0 | 157 | 21.1 |
| 38 | 20 | 9.5 | 20 | 12.9 | 19 | 14.4 | 38 | 5.1 | 98 | 13.1 | 158 | 21.2 |
| 39 | 20 | 9.8 | 20 | 13.1 | 19 | 14.6 | 39 | 5.2 | 99 | 13.3 | 159 | 21.3 |
| 40 | 20 | 10.0 | 20 | 13.4 | 19 | 14.9 | 40 | 5.4 | 100 | 13.4 | 160 | 21.5 |
| 41 | 20 | 10.3 | 20 | 13.6 | 19 | 15.1 | 41 | 5.5 | 101 | 13.6 | 161 | 21.6 |
| 42 | 20 | 10.5 | 20 | 13.9 | 19 | 15.4 | 42 | 5.6 | 102 | 13.7 | 162 | 21.7 |
| 43 | 20 | 10.8 | 20 | 14.1 | 19 | 15.6 | 43 | 5.8 | 103 | 13.8 | 163 | 21.9 |
| 44 | 20 | 11.0 | 20 | 14.4 | 19 | 15.8 | 44 | 5.9 | 104 | 14.0 | 164 | 22.0 |
| 45 | 20 | 11.3 | 20 | 14.6 | 19 | 16.1 | 45 | 6.0 | 105 | 14.1 | 165 | 22.1 |
| 46 | 20 | 11.5 | 20 | 14.9 | 19 | 16.3 | 46 | 6.2 | 106 | 14.2 | 166 | 22.3 |
| 47 | 20 | 11.8 | 20 | 15.1 | 19 | 16.5 | 47 | 6.3 | 107 | 14.4 | 167 | 22.4 |
| 48 | 20 | 12.0 | 20 | 15.4 | 19 | 16.8 | 48 | 6.4 | 108 | 14.5 | 168 | 22.5 |
| 49 | 20 | 12.3 | 20 | 15.6 | 19 | 17.0 | 49 | 6.6 | 109 | 14.6 | 169 | 22.7 |
| 50 | 20 | 12.5 | 20 | 15.9 | 19 | 17.3 | 50 | 6.7 | 110 | 14.8 | 170 | 22.8 |
| 51 | 20 | 12.8 | 20 | 16.1 | 19 | 17.5 | 51 | 6.8 | 111 | 14.9 | 171 | 22.9 |
| 52 | 20 | 13.0 | 20 | 16.4 | 19 | 17.7 | 52 | 7.0 | 112 | 15.0 | 172 | 23.1 |
| 53 | 20 | 13.3 | 20 | 16.6 | 19 | 18.0 | 53 | 7.1 | 113 | 15.2 | 173 | 23.2 |
| 54 | 20 | 13.5 | 20 | 16.9 | 19 | 18.2 | 54 | 7.2 | 114 | 15.3 | 174 | 23.3 |
| 55 | 20 | 13.8 | 20 | 17.1 | 19 | 18.5 | 55 | 7.4 | 115 | 15.4 | 175 | 23.5 |
| 56 | 20 | 14.0 | 20 | 17.4 | 19 | 18.7 | 56 | 7.5 | 116 | 15.6 | 176 | 23.6 |
| 57 | 20 | 14.3 | 20 | 17.6 | 19 | 18.9 | 57 | 7.6 | 117 | 15.7 | 177 | 23.7 |
| 58 | 20 | 14.5 | 20 | 17.9 | 19 | 19.2 | 58 | 7.8 | 118 | 15.8 | 178 | 23.9 |
| 59 | 20 | 14.8 | 20 | 18.1 | 19 | 19.4 | 59 | 7.9 | 119 | 16.0 | 179 | 24.0 |
| 60 | 20 | 15.0 | 20 | 18.4 | 19 | 19.7 | 60 | 8.1 | 120 | 16.1 | 180 | 24.2 |

| 1 h 21 min | | | | | | | | | | | | |
|------------------------|--------------------|------|----------------------|---|--------------|------|----|-------|-----|-------|-----|------|
| POPRAVKA ČASOVNOG UGLA | | | | POPRAVKA DRUGOG REDA za časovni ugao i deklinaciju Sunca, Mjeseca i planeta | | | | | | | | |
| S | SUNCA I PLANETA | | PROLJEĆNE TAČKE γ | | MJESECA ☾ | | Δ | popr. | Δ | popr. | | |
| | o | f | o | f | o | f | | | | | | |
| 0 | 20 | 15.0 | 20 | 18.4 | 19 | 19.7 | 0 | .0 | 60 | 8.2 | 120 | 16.3 |
| 1 | 20 | 15.3 | 20 | 18.6 | 19 | 19.9 | 1 | .1 | 61 | 8.3 | 121 | 16.4 |
| 2 | 20 | 15.5 | 20 | 18.9 | 19 | 20.1 | 2 | .3 | 62 | 8.4 | 122 | 16.6 |
| 3 | 20 | 15.8 | 20 | 19.1 | 19 | 20.4 | 3 | .4 | 63 | 8.6 | 123 | 16.7 |
| 4 | 20 | 16.0 | 20 | 19.4 | 19 | 20.6 | 4 | .5 | 64 | 8.7 | 124 | 16.8 |
| 5 | 20 | 16.3 | 20 | 19.6 | 19 | 20.8 | 5 | .7 | 65 | 8.8 | 125 | 17.0 |
| 6 | 20 | 16.5 | 20 | 19.9 | 19 | 21.1 | 6 | .8 | 66 | 9.0 | 126 | 17.1 |
| 7 | 20 | 16.8 | 20 | 20.1 | 19 | 21.3 | 7 | 1.0 | 67 | 9.1 | 127 | 17.3 |
| 8 | 20 | 17.0 | 20 | 20.4 | 19 | 21.6 | 8 | 1.1 | 68 | 9.2 | 128 | 17.4 |
| 9 | 20 | 17.3 | 20 | 20.6 | 19 | 21.8 | 9 | 1.2 | 69 | 9.4 | 129 | 17.5 |
| 10 | 20 | 17.5 | 20 | 20.9 | 19 | 22.0 | 10 | 1.4 | 70 | 9.5 | 130 | 17.7 |
| 11 | 20 | 17.8 | 20 | 21.1 | 19 | 22.3 | 11 | 1.5 | 71 | 9.6 | 131 | 17.8 |
| 12 | 20 | 18.0 | 20 | 21.4 | 19 | 22.5 | 12 | 1.6 | 72 | 9.8 | 132 | 17.9 |
| 13 | 20 | 18.3 | 20 | 21.6 | 19 | 22.8 | 13 | 1.8 | 73 | 9.9 | 133 | 18.1 |
| 14 | 20 | 18.5 | 20 | 21.9 | 19 | 23.0 | 14 | 1.9 | 74 | 10.1 | 134 | 18.2 |
| 15 | 20 | 18.8 | 20 | 22.1 | 19 | 23.2 | 15 | 2.0 | 75 | 10.2 | 135 | 18.3 |
| 16 | 20 | 19.0 | 20 | 22.4 | 19 | 23.5 | 16 | 2.2 | 76 | 10.3 | 136 | 18.5 |
| 17 | 20 | 19.3 | 20 | 22.6 | 19 | 23.7 | 17 | 2.3 | 77 | 10.5 | 137 | 18.6 |
| 18 | 20 | 19.5 | 20 | 22.9 | 19 | 23.9 | 18 | 2.4 | 78 | 10.6 | 138 | 18.7 |
| 19 | 20 | 19.8 | 20 | 23.1 | 19 | 24.2 | 19 | 2.6 | 79 | 10.7 | 139 | 18.9 |
| 20 | 20 | 20.0 | 20 | 23.4 | 19 | 24.4 | 20 | 2.7 | 80 | 10.9 | 140 | 19.0 |
| 21 | 20 | 20.3 | 20 | 23.6 | 19 | 24.7 | 21 | 2.9 | 81 | 11.0 | 141 | 19.2 |
| 22 | 20 | 20.5 | 20 | 23.9 | 19 | 24.9 | 22 | 3.0 | 82 | 11.1 | 142 | 19.3 |
| 23 | 20 | 20.8 | 20 | 24.1 | 19 | 25.1 | 23 | 3.1 | 83 | 11.3 | 143 | 19.4 |
| 24 | 20 | 21.0 | 20 | 24.4 | 19 | 25.4 | 24 | 3.3 | 84 | 11.4 | 144 | 19.6 |
| 25 | 20 | 21.3 | 20 | 24.6 | 19 | 25.6 | 25 | 3.4 | 85 | 11.5 | 145 | 19.7 |
| 26 | 20 | 21.5 | 20 | 24.9 | 19 | 25.9 | 26 | 3.5 | 86 | 11.7 | 146 | 19.8 |
| 27 | 20 | 21.8 | 20 | 25.1 | 19 | 26.1 | 27 | 3.7 | 87 | 11.8 | 147 | 20.0 |
| 28 | 20 | 22.0 | 20 | 25.4 | 19 | 26.3 | 28 | 3.8 | 88 | 12.0 | 148 | 20.1 |
| 29 | 20 | 22.3 | 20 | 25.6 | 19 | 26.6 | 29 | 3.9 | 89 | 12.1 | 149 | 20.2 |
| 30 | 20 | 22.5 | 20 | 25.9 | 19 | 26.8 | 30 | 4.1 | 90 | 12.2 | 150 | 20.4 |
| 31 | 20 | 22.8 | 20 | 26.1 | 19 | 27.0 | 31 | 4.2 | 91 | 12.4 | 151 | 20.5 |
| 32 | 20 | 23.0 | 20 | 26.4 | 19 | 27.3 | 32 | 4.3 | 92 | 12.5 | 152 | 20.6 |
| 33 | 20 | 23.3 | 20 | 26.6 | 19 | 27.5 | 33 | 4.5 | 93 | 12.6 | 153 | 20.8 |
| 34 | 20 | 23.5 | 20 | 26.9 | 19 | 27.8 | 34 | 4.6 | 94 | 12.8 | 154 | 20.9 |
| 35 | 20 | 23.8 | 20 | 27.1 | 19 | 28.0 | 35 | 4.8 | 95 | 12.9 | 155 | 21.1 |
| 36 | 20 | 24.0 | 20 | 27.4 | 19 | 28.2 | 36 | 4.9 | 96 | 13.0 | 156 | 21.2 |
| 37 | 20 | 24.3 | 20 | 27.7 | 19 | 28.5 | 37 | 5.0 | 97 | 13.2 | 157 | 21.3 |
| 38 | 20 | 24.5 | 20 | 27.9 | 19 | 28.7 | 38 | 5.2 | 98 | 13.3 | 158 | 21.5 |
| 39 | 20 | 24.8 | 20 | 28.2 | 19 | 29.0 | 39 | 5.3 | 99 | 13.4 | 159 | 21.6 |
| 40 | 20 | 25.0 | 20 | 28.4 | 19 | 29.2 | 40 | 5.4 | 100 | 13.6 | 160 | 21.7 |
| 41 | 20 | 25.3 | 20 | 28.7 | 19 | 29.4 | 41 | 5.6 | 101 | 13.7 | 161 | 21.9 |
| 42 | 20 | 25.5 | 20 | 28.9 | 19 | 29.7 | 42 | 5.7 | 102 | 13.9 | 162 | 22.0 |
| 43 | 20 | 25.8 | 20 | 29.2 | 19 | 29.9 | 43 | 5.8 | 103 | 14.0 | 163 | 22.1 |
| 44 | 20 | 26.0 | 20 | 29.4 | 19 | 30.1 | 44 | 6.0 | 104 | 14.1 | 164 | 22.3 |
| 45 | 20 | 26.3 | 20 | 29.7 | 19 | 30.4 | 45 | 6.1 | 105 | 14.3 | 165 | 22.4 |
| 46 | 20 | 26.5 | 20 | 29.9 | 19 | 30.6 | 46 | 6.2 | 106 | 14.4 | 166 | 22.5 |
| 47 | 20 | 26.8 | 20 | 30.2 | 19 | 30.9 | 47 | 6.4 | 107 | 14.5 | 167 | 22.7 |
| 48 | 20 | 27.0 | 20 | 30.4 | 19 | 31.1 | 48 | 6.5 | 108 | 14.7 | 168 | 22.8 |
| 49 | 20 | 27.3 | 20 | 30.7 | 19 | 31.3 | 49 | 6.7</ | | | | |

| 1 h 22 min | | | | | | | | | |
|------------------------|--------------------|----------------------|--------------|---|-------|-----|------|-------|------|
| POPRAVKA ČASOVNOG UGLA | | | | POPRAVKA DRUGOG REDA za časovni ugao i deklinaciju Sunca, Mjeseca i planeta | | | | | |
| S | SUNCA I PLANETA | PROLJEČNE TAKČE ° | MJESECA ζ | Δ | popr. | | Δ | popr. | |
| | | | | | o | l | | o | l |
| 0 | 20 30.0 | 20 33.4 | 19 34.0 | 0 | .0 | 60 | 8.3 | 120 | 16.5 |
| 1 | 20 30.3 | 20 33.7 | 19 34.2 | 1 | .1 | 61 | 8.4 | 121 | 16.6 |
| 2 | 20 30.5 | 20 33.9 | 19 34.4 | 2 | .3 | 62 | 8.5 | 122 | 16.8 |
| 3 | 20 30.8 | 20 34.2 | 19 34.7 | 3 | .4 | 63 | 8.7 | 123 | 16.9 |
| 4 | 20 31.0 | 20 34.4 | 19 34.9 | 4 | .6 | 64 | 8.8 | 124 | 17.1 |
| 5 | 20 31.3 | 20 34.7 | 19 35.2 | 5 | .7 | 65 | 8.9 | 125 | 17.2 |
| 6 | 20 31.5 | 20 34.9 | 19 35.4 | 6 | .8 | 66 | 9.1 | 126 | 17.3 |
| 7 | 20 31.8 | 20 35.2 | 19 35.6 | 7 | 1.0 | 67 | 9.2 | 127 | 17.5 |
| 8 | 20 32.0 | 20 35.4 | 19 35.9 | 8 | 1.1 | 68 | 9.4 | 128 | 17.6 |
| 9 | 20 32.3 | 20 35.7 | 19 36.1 | 9 | 1.2 | 69 | 9.5 | 129 | 17.7 |
| 10 | 20 32.5 | 20 35.9 | 19 36.4 | 10 | 1.4 | 70 | 9.6 | 130 | 17.9 |
| 11 | 20 32.8 | 20 36.2 | 19 36.6 | 11 | 1.5 | 71 | 9.8 | 131 | 18.0 |
| 12 | 20 33.0 | 20 36.4 | 19 36.8 | 12 | 1.7 | 72 | 9.9 | 132 | 18.2 |
| 13 | 20 33.3 | 20 36.7 | 19 37.1 | 13 | 1.8 | 73 | 10.0 | 133 | 18.3 |
| 14 | 20 33.5 | 20 36.9 | 19 37.3 | 14 | 1.9 | 74 | 10.2 | 134 | 18.4 |
| 15 | 20 33.8 | 20 37.2 | 19 37.5 | 15 | 2.1 | 75 | 10.3 | 135 | 18.6 |
| 16 | 20 34.0 | 20 37.4 | 19 37.8 | 16 | 2.2 | 76 | 10.5 | 136 | 18.7 |
| 17 | 20 34.3 | 20 37.7 | 19 38.0 | 17 | 2.3 | 77 | 10.6 | 137 | 18.8 |
| 18 | 20 34.5 | 20 37.9 | 19 38.3 | 18 | 2.5 | 78 | 10.7 | 138 | 19.0 |
| 19 | 20 34.8 | 20 38.2 | 19 38.5 | 19 | 2.6 | 79 | 10.9 | 139 | 19.1 |
| 20 | 20 35.0 | 20 38.4 | 19 38.7 | 20 | 2.8 | 80 | 11.0 | 140 | 19.3 |
| 21 | 20 35.3 | 20 38.7 | 19 39.0 | 21 | 2.9 | 81 | 11.1 | 141 | 19.4 |
| 22 | 20 35.5 | 20 38.9 | 19 39.2 | 22 | 3.0 | 82 | 11.3 | 142 | 19.5 |
| 23 | 20 35.8 | 20 39.2 | 19 39.5 | 23 | 3.2 | 83 | 11.4 | 143 | 19.7 |
| 24 | 20 36.0 | 20 39.4 | 19 39.7 | 24 | 3.3 | 84 | 11.6 | 144 | 19.8 |
| 25 | 20 36.3 | 20 39.7 | 19 39.9 | 25 | 3.4 | 85 | 11.7 | 145 | 19.9 |
| 26 | 20 36.5 | 20 39.9 | 19 40.2 | 26 | 3.6 | 86 | 11.8 | 146 | 20.1 |
| 27 | 20 36.8 | 20 40.2 | 19 40.4 | 27 | 3.7 | 87 | 12.0 | 147 | 20.2 |
| 28 | 20 37.0 | 20 40.4 | 19 40.6 | 28 | 3.9 | 88 | 12.1 | 148 | 20.4 |
| 29 | 20 37.3 | 20 40.7 | 19 40.9 | 29 | 4.0 | 89 | 12.2 | 149 | 20.5 |
| 30 | 20 37.5 | 20 40.9 | 19 41.1 | 30 | 4.1 | 90 | 12.4 | 150 | 20.6 |
| 31 | 20 37.8 | 20 41.2 | 19 41.4 | 31 | 4.3 | 91 | 12.5 | 151 | 20.8 |
| 32 | 20 38.0 | 20 41.4 | 19 41.6 | 32 | 4.4 | 92 | 12.7 | 152 | 20.9 |
| 33 | 20 38.3 | 20 41.7 | 19 41.8 | 33 | 4.5 | 93 | 12.8 | 153 | 21.0 |
| 34 | 20 38.5 | 20 41.9 | 19 42.1 | 34 | 4.7 | 94 | 12.9 | 154 | 21.2 |
| 35 | 20 38.8 | 20 42.2 | 19 42.3 | 35 | 4.8 | 95 | 13.1 | 155 | 21.3 |
| 36 | 20 39.0 | 20 42.4 | 19 42.6 | 36 | 5.0 | 96 | 13.2 | 156 | 21.5 |
| 37 | 20 39.3 | 20 42.7 | 19 42.8 | 37 | 5.1 | 97 | 13.3 | 157 | 21.6 |
| 38 | 20 39.5 | 20 42.9 | 19 43.0 | 38 | 5.2 | 98 | 13.5 | 158 | 21.7 |
| 39 | 20 39.8 | 20 43.2 | 19 43.3 | 39 | 5.4 | 99 | 13.6 | 159 | 21.9 |
| 40 | 20 40.0 | 20 43.4 | 19 43.5 | 40 | 5.5 | 100 | 13.8 | 160 | 22.0 |
| 41 | 20 40.3 | 20 43.7 | 19 43.7 | 41 | 5.6 | 101 | 13.9 | 161 | 22.1 |
| 42 | 20 40.5 | 20 43.9 | 19 44.0 | 42 | 5.8 | 102 | 14.0 | 162 | 22.3 |
| 43 | 20 40.8 | 20 44.2 | 19 44.2 | 43 | 5.9 | 103 | 14.2 | 163 | 22.4 |
| 44 | 20 41.0 | 20 44.4 | 19 44.5 | 44 | 6.1 | 104 | 14.3 | 164 | 22.6 |
| 45 | 20 41.3 | 20 44.7 | 19 44.7 | 45 | 6.2 | 105 | 14.4 | 165 | 22.7 |
| 46 | 20 41.5 | 20 44.9 | 19 44.9 | 46 | 6.3 | 106 | 14.6 | 166 | 22.8 |
| 47 | 20 41.8 | 20 45.2 | 19 45.2 | 47 | 6.5 | 107 | 14.7 | 167 | 23.0 |
| 48 | 20 42.0 | 20 45.5 | 19 45.4 | 48 | 6.6 | 108 | 14.9 | 168 | 23.1 |
| 49 | 20 42.3 | 20 45.7 | 19 45.7 | 49 | 6.7 | 109 | 15.0 | 169 | 23.2 |
| 50 | 20 42.5 | 20 46.0 | 19 45.9 | 50 | 6.9 | 110 | 15.1 | 170 | 23.4 |
| 51 | 20 42.8 | 20 46.2 | 19 46.1 | 51 | 7.0 | 111 | 15.3 | 171 | 23.5 |
| 52 | 20 43.0 | 20 46.5 | 19 46.4 | 52 | 7.2 | 112 | 15.4 | 172 | 23.7 |
| 53 | 20 43.3 | 20 46.7 | 19 46.6 | 53 | 7.3 | 113 | 15.5 | 173 | 23.8 |
| 54 | 20 43.5 | 20 47.0 | 19 46.9 | 54 | 7.4 | 114 | 15.7 | 174 | 23.9 |
| 55 | 20 43.8 | 20 47.2 | 19 47.1 | 55 | 7.6 | 115 | 15.8 | 175 | 24.1 |
| 56 | 20 44.0 | 20 47.5 | 19 47.3 | 56 | 7.7 | 116 | 16.0 | 176 | 24.2 |
| 57 | 20 44.3 | 20 47.7 | 19 47.6 | 57 | 7.8 | 117 | 16.1 | 177 | 24.3 |
| 58 | 20 44.5 | 20 48.0 | 19 47.8 | 58 | 8.0 | 118 | 16.2 | 178 | 24.5 |
| 59 | 20 44.8 | 20 48.2 | 19 48.0 | 59 | 8.1 | 119 | 16.4 | 179 | 24.6 |
| 60 | 20 45.0 | 20 48.5 | 19 48.3 | 60 | 8.3 | 120 | 16.5 | 180 | 24.8 |

| 1 h 23 min | | | | | | | | | |
|------------------------|--------------------|----------------------|--------------|---|-------|-----|------|-------|------|
| POPRAVKA ČASOVNOG UGLA | | | | POPRAVKA DRUGOG REDA za časovni ugao i deklinaciju Sunca, Mjeseca i planeta | | | | | |
| S | SUNCA I PLANETA | PROLJEČNE TAKČE ° | MJESECA ζ | Δ | popr. | | Δ | popr. | |
| | | | | | o | l | | o | l |
| 0 | 20 45.0 | 20 48.5 | 19 48.3 | 0 | .0 | 60 | 8.4 | 120 | 16.7 |
| 1 | 20 45.3 | 20 48.7 | 19 48.5 | 1 | .1 | 61 | 8.5 | 121 | 16.8 |
| 2 | 20 45.5 | 20 49.0 | 19 48.8 | 2 | .3 | 62 | 8.6 | 122 | 17.0 |
| 3 | 20 45.8 | 20 49.2 | 19 49.0 | 3 | .4 | 63 | 8.8 | 123 | 17.1 |
| 4 | 20 46.0 | 20 49.5 | 19 49.2 | 4 | .6 | 64 | 8.9 | 124 | 17.3 |
| 5 | 20 46.3 | 20 49.7 | 19 49.5 | 5 | .7 | 65 | 9.0 | 125 | 17.4 |
| 6 | 20 46.5 | 20 50.0 | 19 49.7 | 6 | .8 | 66 | 9.2 | 126 | 17.5 |
| 7 | 20 46.8 | 20 50.2 | 19 50.0 | 7 | 1.0 | 67 | 9.3 | 127 | 17.7 |
| 8 | 20 47.0 | 20 50.5 | 19 50.2 | 8 | 1.1 | 68 | 9.5 | 128 | 17.8 |
| 9 | 20 47.3 | 20 50.7 | 19 50.4 | 9 | 1.3 | 69 | 9.6 | 129 | 18.0 |
| 10 | 20 47.5 | 20 51.0 | 19 50.7 | 10 | 1.4 | 70 | 9.7 | 130 | 18.1 |
| 11 | 20 47.8 | 20 51.2 | 19 50.9 | 11 | 1.5 | 71 | 9.9 | 131 | 18.2 |
| 12 | 20 48.0 | 20 51.5 | 19 51.1 | 12 | 1.7 | 72 | 10.0 | 132 | 18.4 |
| 13 | 20 48.3 | 20 51.7 | 19 51.4 | 13 | 1.8 | 73 | 10.2 | 133 | 18.5 |
| 14 | 20 48.5 | 20 52.0 | 19 51.6 | 14 | 1.9 | 74 | 10.3 | 134 | 18.6 |
| 15 | 20 48.8 | 20 52.2 | 19 51.9 | 15 | 2.1 | 75 | 10.4 | 135 | 18.8 |
| 16 | 20 49.0 | 20 52.5 | 19 52.1 | 16 | 2.2 | 76 | 10.6 | 136 | 18.9 |
| 17 | 20 49.3 | 20 52.7 | 19 52.3 | 17 | 2.4 | 77 | 10.7 | 137 | 19.1 |
| 18 | 20 49.5 | 20 53.0 | 19 52.6 | 18 | 2.5 | 78 | 10.9 | 138 | 19.2 |
| 19 | 20 49.8 | 20 53.2 | 19 52.8 | 19 | 2.6 | 79 | 11.0 | 139 | 19.3 |
| 20 | 20 50.0 | 20 53.5 | 19 53.1 | 20 | 2.8 | 80 | 11.1 | 140 | 19.5 |
| 21 | 20 50.3 | 20 53.7 | 19 53.3 | 21 | 2.9 | 81 | 11.3 | 141 | 19.6 |
| 22 | 20 50.5 | 20 54.0 | 19 53.5 | 22 | 3.1 | 82 | 11.4 | 142 | 19.8 |
| 23 | 20 50.8 | 20 54.2 | 19 53.8 | 23 | 3.2 | 83 | 11.6 | 143 | 19.9 |
| 24 | 20 51.0 | 20 54.5 | 19 54.0 | 24 | 3.3 | 84 | 11.7 | 144 | 20.0 |
| 25 | 20 51.3 | 20 54.7 | 19 54.2 | 25 | 3.5 | 85 | 11.8 | 145 | 20.2 |
| 26 | 20 51.5 | 20 55.0 | 19 54.5 | 26 | 3.6 | 86 | 12.0 | 146 | 20.3 |
| 27 | 20 51.8 | 20 55.2 | 19 54.7 | 27 | 3.8 | 87 | 12.1 | 147 | 20.5 |
| 28 | 20 52.0 | 20 55.5 | 19 55.0 | 28 | 3.9 | 88 | 12.2 | 148 | 20.6 |
| 29 | 20 52.3 | 20 55.7 | 19 55.2 | 29 | 4.0 | 89 | 12.4 | 149 | 20.7 |
| 30 | 20 52.5 | 20 56.0 | 19 55.4 | 30 | 4.2 | 90 | 12.5 | 150 | 20.9 |
| 31 | 20 52.8 | 20 56.2 | 19 55.7 | 31 | 4.3 | 91 | 12.7 | 151 | 21.0 |
| 32 | 20 53.0 | 20 56.5 | 19 55.9 | 32 | 4.5 | 92 | 12.8 | 152 | 21.2 |
| 33 | 20 53.3 | 20 56.7 | 19 56.2 | 33 | 4.6 | 93 | 12.9 | 153 | 21.3 |
| 34 | 20 53.5 | 20 57.0 | 19 56.4 | 34 | 4.7 | 94 | 13.1 | 154 | 21.4 |
| 35 | 20 53.8 | 20 57.2 | 19 56.6 | 35 | 4.9 | 95 | 13.2 | 155 | 21.6 |
| 36 | 20 54.0 | 20 57.5 | 19 56.9 | 36 | 5.0 | 96 | 13.4 | 156 | 21.7 |
| 37 | 20 54.3 | 20 57.7 | 19 57.1 | 37 | 5.1 | 97 | 13.5 | 157 | 21.8 |
| 38 | 20 54.5 | 20 58.0 | 19 57.4 | 38 | 5.3 | 98 | 13.6 | 158 | 22.0 |
| 39 | 20 54.8 | 20 58.2 | 19 57.6 | 39 | 5.4 | 99 | 13.8 | 159 | 22.1 |
| 40 | 20 55.0 | 20 58.5 | 19 57.8 | 40 | 5.6 | 100 | 13.9 | 160 | 22.3 |
| 41 | 20 55.3 | 20 58.7 | 19 58.1 | 41 | 5.7 | 101 | 14.1 | 161 | 22.4 |
| 42 | 20 55.5 | 20 59.0 | 19 58.3 | 42 | 5.8 | 102 | 14.2 | 162 | 22.5 |
| 43 | 20 55.8 | 20 59.2 | 19 58.5 | 43 | 6.0 | 103 | 14.3 | 163 | 22.7 |
| 44 | 20 56.0 | 20 59.5 | 19 58.8 | 44 | 6.1 | 104 | 14.5 | 164 | 22.8 |
| 45 | 20 56.3 | 20 59.7 | 19 59.0 | 45 | 6.3 | 105 | 14.6 | 165 | 23.0 |
| 46 | 20 56.5 | 20 60.0 | 19 59.3 | 46 | 6.4 | 106 | 14.8 | 166 | 23.1 |
| 47 | 20 56.8 | 21 . 2 | 19 59.5 | 47 | 6.5 | 107 | 14.9 | 167 | 23.2 |
| 48 | 20 57.0 | 21 . 5 | 19 59.7 | 48 | 6.7 | 108 | 15.0 | 168 | 23.4 |
| 49 | 20 57.3 | 21 . 7 | 19 60.0 | 49 | 6.8 | 109 | 15.2 | 169 | 23.5 |
| 50 | 20 57.5 | 21 1.0 | 20 . 2 | 50 | 7.0 | 110 | 15.3 | 170 | 23.7 |
| 51 | 20 57.8 | 21 1.2 | 20 . 5 | 51 | 7.1 | 111 | 15.4 | 171 | 23.8 |
| 52 | 20 58.0 | 21 1.5 | 20 . 7 | 52 | 7.2 | 112 | 15.6 | 172 | 23.9 |
| 53 | 20 58.3 | 21 1.7 | 20 . 9 | 53 | 7.4 | 113 | 15.7 | 173 | 24.1 |
| 54 | 20 58.5 | 21 2.0 | 20 1.2 | 54 | 7.5 | 114 | 15.9 | 174 | 24.2 |
| 55 | 20 58.8 | 21 2.2 | 20 1.4 | 55 | 7.7 | 115 | 16.0 | 175 | 24.4 |
| 56 | 20 59.0 | 21 2.5 | 20 1.6 | 56 | 7.8 | 116 | 16.1 | 176 | 24.5 |
| 57 | 20 59.3 | 21 2.7 | 20 1.9 | 57 | 7.9 | 117 | 16.3 | 177 | 24.6 |
| 58 | 20 59.5 | 21 3.0 | 20 2.1 | 58 | 8.1 | 118 | 16.4 | 178 | 24.8 |
| 59 | 20 59.8 | 21 3.2 | 20 2.4 | 59 | 8.2 | 119 | 16.6 | 179 | 24.9 |
| 60 | 21 . 0 | 21 3.5 | 20 2.6 | 60 | 8.4 | 120 | 16.7 | 180 | 25.1 |

1 h 24 min

| POPRAVKA ČASOVNOG UGLA | | | POPRAVKA DRUGOG REDA | | | za časovni ugao i deklinaciju Sunca, Mjeseca i planeta | | |
|------------------------|-----------------|-------------------|----------------------|---------|----------|---|--|--|
| s | SUNCA I PLANETA | PROLJEČNE TACKE ° | MJESECA (°) | Δ popr. | Δ popr. | Δ popr. | | |
| | o f | o f | o f | | | | | |
| 0 | 21 .0 | 21 3.5 | 20 2.6 | 0 .0 | 60 8.5 | 120 16.9 | | |
| 1 | 21 .3 | 21 3.8 | 20 2.8 | 1 .1 | 61 8.6 | 121 17.0 | | |
| 2 | 21 .5 | 21 4.0 | 20 3.1 | 2 .3 | 62 8.7 | 122 17.2 | | |
| 3 | 21 .8 | 21 4.3 | 20 3.3 | 3 .4 | 63 8.9 | 123 17.3 | | |
| 4 | 21 1.0 | 21 4.5 | 20 3.6 | 4 .6 | 64 9.0 | 124 17.5 | | |
| 5 | 21 1.3 | 21 4.8 | 20 3.8 | 5 .7 | 65 9.2 | 125 17.6 | | |
| 6 | 21 1.5 | 21 5.0 | 20 4.0 | 6 .8 | 66 9.3 | 126 17.7 | | |
| 7 | 21 1.8 | 21 5.3 | 20 4.3 | 7 1.0 | 67 9.4 | 127 17.9 | | |
| 8 | 21 2.0 | 21 5.5 | 20 4.5 | 8 1.1 | 68 9.6 | 128 18.0 | | |
| 9 | 21 2.3 | 21 5.8 | 20 4.7 | 9 1.3 | 69 9.7 | 129 18.2 | | |
| 10 | 21 2.5 | 21 6.0 | 20 5.0 | 10 1.4 | 70 9.9 | 130 18.3 | | |
| 11 | 21 2.8 | 21 6.3 | 20 5.2 | 11 1.5 | 71 10.0 | 131 18.4 | | |
| 12 | 21 3.0 | 21 6.5 | 20 5.5 | 12 1.7 | 72 10.1 | 132 18.6 | | |
| 13 | 21 3.3 | 21 6.8 | 20 5.7 | 13 1.8 | 73 10.3 | 133 18.7 | | |
| 14 | 21 3.5 | 21 7.0 | 20 5.9 | 14 2.0 | 74 10.4 | 134 18.9 | | |
| 15 | 21 3.8 | 21 7.3 | 20 6.2 | 15 2.1 | 75 10.6 | 135 19.0 | | |
| 16 | 21 4.0 | 21 7.5 | 20 6.4 | 16 2.3 | 76 10.7 | 136 19.2 | | |
| 17 | 21 4.3 | 21 7.8 | 20 6.7 | 17 2.4 | 77 10.8 | 137 19.3 | | |
| 18 | 21 4.5 | 21 8.0 | 20 6.9 | 18 2.5 | 78 11.0 | 138 19.4 | | |
| 19 | 21 4.8 | 21 8.3 | 20 7.1 | 19 2.7 | 79 11.1 | 139 19.6 | | |
| 20 | 21 5.0 | 21 8.5 | 20 7.4 | 20 2.8 | 80 11.3 | 140 19.7 | | |
| 21 | 21 5.3 | 21 8.8 | 20 7.6 | 21 3.0 | 81 11.4 | 141 19.9 | | |
| 22 | 21 5.5 | 21 9.0 | 20 7.8 | 22 3.1 | 82 11.5 | 142 20.0 | | |
| 23 | 21 5.8 | 21 9.3 | 20 8.1 | 23 3.2 | 83 11.7 | 143 20.1 | | |
| 24 | 21 6.0 | 21 9.5 | 20 8.3 | 24 3.4 | 84 11.8 | 144 20.3 | | |
| 25 | 21 6.3 | 21 9.8 | 20 8.6 | 25 3.5 | 85 12.0 | 145 20.4 | | |
| 26 | 21 6.5 | 21 10.0 | 20 8.8 | 26 3.7 | 86 12.1 | 146 20.6 | | |
| 27 | 21 6.8 | 21 10.3 | 20 9.0 | 27 3.8 | 87 12.3 | 147 20.7 | | |
| 28 | 21 7.0 | 21 10.5 | 20 9.3 | 28 3.9 | 88 12.4 | 148 20.8 | | |
| 29 | 21 7.3 | 21 10.8 | 20 9.5 | 29 4.1 | 89 12.5 | 149 21.0 | | |
| 30 | 21 7.5 | 21 11.0 | 20 9.8 | 30 4.2 | 90 12.7 | 150 21.1 | | |
| 31 | 21 7.8 | 21 11.3 | 20 10.0 | 31 4.4 | 91 12.8 | 151 21.3 | | |
| 32 | 21 8.0 | 21 11.5 | 20 10.2 | 32 4.5 | 92 13.0 | 152 21.4 | | |
| 33 | 21 8.3 | 21 11.8 | 20 10.5 | 33 4.6 | 93 13.1 | 153 21.5 | | |
| 34 | 21 8.5 | 21 12.0 | 20 10.7 | 34 4.8 | 94 13.2 | 154 21.7 | | |
| 35 | 21 8.8 | 21 12.3 | 20 11.0 | 35 4.9 | 95 13.4 | 155 21.8 | | |
| 36 | 21 9.0 | 21 12.5 | 20 11.2 | 36 5.1 | 96 13.5 | 156 22.0 | | |
| 37 | 21 9.3 | 21 12.8 | 20 11.4 | 37 5.2 | 97 13.7 | 157 22.1 | | |
| 38 | 21 9.5 | 21 13.0 | 20 11.7 | 38 5.4 | 98 13.8 | 158 22.3 | | |
| 39 | 21 9.8 | 21 13.3 | 20 11.9 | 39 5.5 | 99 13.9 | 159 22.4 | | |
| 40 | 21 10.0 | 21 13.5 | 20 12.1 | 40 5.6 | 100 14.1 | 160 22.5 | | |
| 41 | 21 10.3 | 21 13.8 | 20 12.4 | 41 5.8 | 101 14.2 | 161 22.7 | | |
| 42 | 21 10.5 | 21 14.0 | 20 12.6 | 42 5.9 | 102 14.4 | 162 22.8 | | |
| 43 | 21 10.8 | 21 14.3 | 20 12.9 | 43 6.1 | 103 14.5 | 163 23.0 | | |
| 44 | 21 11.0 | 21 14.5 | 20 13.1 | 44 6.2 | 104 14.6 | 164 23.1 | | |
| 45 | 21 11.3 | 21 14.8 | 20 13.3 | 45 6.3 | 105 14.8 | 165 23.2 | | |
| 46 | 21 11.5 | 21 15.0 | 20 13.6 | 46 6.5 | 106 14.9 | 166 23.4 | | |
| 47 | 21 11.8 | 21 15.3 | 20 13.8 | 47 6.6 | 107 15.1 | 167 23.5 | | |
| 48 | 21 12.0 | 21 15.5 | 20 14.1 | 48 6.8 | 108 15.2 | 168 23.7 | | |
| 49 | 21 12.3 | 21 15.8 | 20 14.3 | 49 6.9 | 109 15.4 | 169 23.8 | | |
| 50 | 21 12.5 | 21 16.0 | 20 14.5 | 50 7.0 | 110 15.5 | 170 23.9 | | |
| 51 | 21 12.8 | 21 16.3 | 20 14.8 | 51 7.2 | 111 15.6 | 171 24.1 | | |
| 52 | 21 13.0 | 21 16.5 | 20 15.0 | 52 7.3 | 112 15.8 | 172 24.2 | | |
| 53 | 21 13.3 | 21 16.8 | 20 15.2 | 53 7.5 | 113 15.9 | 173 24.4 | | |
| 54 | 21 13.5 | 21 17.0 | 20 15.5 | 54 7.6 | 114 16.1 | 174 24.5 | | |
| 55 | 21 13.8 | 21 17.3 | 20 15.7 | 55 7.7 | 115 16.2 | 175 24.6 | | |
| 56 | 21 14.0 | 21 17.5 | 20 16.0 | 56 7.9 | 116 16.3 | 176 24.8 | | |
| 57 | 21 14.3 | 21 17.8 | 20 16.2 | 57 8.0 | 117 16.5 | 177 24.9 | | |
| 58 | 21 14.5 | 21 18.0 | 20 16.4 | 58 8.2 | 118 16.6 | 178 25.1 | | |
| 59 | 21 14.8 | 21 18.3 | 20 16.7 | 59 8.3 | 119 16.8 | 179 25.2 | | |
| 60 | 21 15.0 | 21 18.5 | 20 16.9 | 60 8.5 | 120 16.9 | 180 25.4 | | |

1 h 25 min

| POPRAVKA ČASOVNOG UGLA | | | POPRAVKA DRUGOG REDA | | | za časovni ugao i deklinaciju Sunca, Mjeseca i planeta | | |
|------------------------|-----------------|-------------------|----------------------|---------|----------|---|--|--|
| s | SUNCA I PLANETA | PROLJEČNE TACKE ° | MJESECA (°) | Δ popr. | Δ popr. | Δ popr. | | |
| | o f | o f | o f | | | | | |
| 0 | 21 15.0 | 21 18.5 | 20 16.9 | 0 .0 | 60 8.6 | 120 17.1 | | |
| 1 | 21 15.3 | 21 18.8 | 20 17.2 | 1 .1 | 61 8.7 | 121 17.2 | | |
| 2 | 21 15.5 | 21 19.0 | 20 17.4 | 2 .3 | 62 8.8 | 122 17.4 | | |
| 3 | 21 15.8 | 21 19.3 | 20 17.6 | 3 .4 | 63 9.0 | 123 17.5 | | |
| 4 | 21 16.0 | 21 19.5 | 20 17.9 | 4 .6 | 64 9.1 | 124 17.7 | | |
| 5 | 21 16.3 | 21 19.8 | 20 18.1 | 5 .7 | 65 9.3 | 125 17.8 | | |
| 6 | 21 16.5 | 21 20.0 | 20 18.3 | 6 .9 | 66 9.4 | 126 18.0 | | |
| 7 | 21 16.8 | 21 20.3 | 20 18.6 | 7 1.0 | 67 9.5 | 127 18.1 | | |
| 8 | 21 17.0 | 21 20.5 | 20 18.8 | 8 1.1 | 68 9.7 | 128 18.2 | | |
| 9 | 21 17.3 | 21 20.8 | 20 19.1 | 9 1.3 | 69 9.8 | 129 18.4 | | |
| 10 | 21 17.5 | 21 21.0 | 20 19.3 | 10 1.4 | 70 10.0 | 130 18.5 | | |
| 11 | 21 17.8 | 21 21.3 | 20 19.5 | 11 1.6 | 71 10.1 | 131 18.7 | | |
| 12 | 21 18.0 | 21 21.6 | 20 19.8 | 12 1.7 | 72 10.3 | 132 18.8 | | |
| 13 | 21 18.3 | 21 21.8 | 20 20.0 | 13 1.9 | 73 10.4 | 133 19.0 | | |
| 14 | 21 18.5 | 21 22.1 | 20 20.3 | 14 2.0 | 74 10.5 | 134 19.1 | | |
| 15 | 21 18.8 | 21 22.3 | 20 20.5 | 15 2.1 | 75 10.7 | 135 19.2 | | |
| 16 | 21 19.0 | 21 22.6 | 20 20.7 | 16 2.3 | 76 10.8 | 136 19.4 | | |
| 17 | 21 19.3 | 21 22.8 | 20 21.0 | 17 2.4 | 77 11.0 | 137 19.5 | | |
| 18 | 21 19.5 | 21 23.1 | 20 21.2 | 18 2.6 | 78 11.1 | 138 19.7 | | |
| 19 | 21 19.8 | 21 23.3 | 20 21.5 | 19 2.7 | 79 11.3 | 139 19.8 | | |
| 20 | 21 20.0 | 21 23.6 | 20 21.7 | 20 2.9 | 80 11.4 | 140 20.0 | | |
| 21 | 21 20.3 | 21 23.8 | 20 21.9 | 21 3.0 | 81 11.5 | 141 20.1 | | |
| 22 | 21 20.5 | 21 24.1 | 20 22.2 | 22 3.1 | 82 11.7 | 142 20.2 | | |
| 23 | 21 20.8 | 21 24.3 | 20 22.4 | 23 3.3 | 83 11.8 | 143 20.4 | | |
| 24 | 21 21.0 | 21 24.6 | 20 22.6 | 24 3.4 | 84 12.0 | 144 20.5 | | |
| 25 | 21 21.3 | 21 24.8 | 20 22.9 | 25 3.6 | 85 12.1 | 145 20.7 | | |
| 26 | 21 21.5 | 21 25.1 | 20 23.1 | 26 3.7 | 86 12.3 | 146 20.8 | | |
| 27 | 21 21.8 | 21 25.3 | 20 23.4 | 27 3.8 | 87 12.4 | 147 20.9 | | |
| 28 | 21 22.0 | 21 25.6 | 20 23.6 | 28 4.0 | 88 12.5 | 148 21.1 | | |
| 29 | 21 22.3 | 21 25.8 | 20 23.8 | 29 4.1 | 89 12.7 | 149 21.2 | | |
| 30 | 21 22.5 | 21 26.1 | 20 24.1 | 30 4.3 | 90 12.8 | 150 21.4 | | |
| 31 | 21 22.8 | 21 26.3 | 20 24.3 | 31 4.4 | 91 13.0 | 151 21.5 | | |
| 32 | 21 23.0 | 21 26.6 | 20 24.6 | 32 4.6 | 92 13.1 | 152 21.7 | | |
| 33 | 21 23.3 | 21 26.8 | 20 24.8 | 33 4.7 | 93 13.3 | 153 21.8 | | |
| 34 | 21 23.5 | 21 27.1 | 20 25.0 | 34 4.8 | 94 13.4 | 154 21.9 | | |
| 35 | 21 23.8 | 21 27.3 | 20 25.3 | 35 5.0 | 95 13.5 | 155 22.1 | | |
| 36 | 21 24.0 | 21 27.6 | 20 25.5 | 36 5.1 | 96 13.7 | 156 22.2 | | |
| 37 | 21 24.3 | 21 27.8 | 20 25.7 | 37 5.3 | 97 13.8 | 157 22.4 | | |
| 38 | 21 24.5 | 21 28.1 | 20 26.0 | 38 5.4 | 98 14.0 | 158 22.5 | | |
| 39 | 21 24.8 | 21 28.3 | 20 26.2 | 39 5.6 | 99 14.1 | 159 22.7 | | |
| 40 | 21 25.0 | 21 28.6 | 20 26.5 | 40 5.7 | 100 14.3 | 160 22.8 | | |
| 41 | 21 25.3 | 21 28.8 | 20 26.7 | 41 5.8 | 101 14.4 | 161 22.9 | | |
| 42 | 21 25.5 | 21 29.1 | 20 26.9 | 42 6.0 | 102 14.5 | 162 23.1 | | |
| 43 | 21 25.8 | 21 29.3 | 20 27.2 | 43 6.1 | 103 14.7 | 163 23.2 | | |
| 44 | 21 26.0 | 21 29.6 | 20 27.4 | 44 6.3 | 104 14.8 | 164 23.4 | | |
| 45 | 21 26.3 | 21 29.8 | 20 27.7 | 45 6.4 | 105 15.0 | 165 23.5 | | |
| 46 | 21 26.5 | 21 30.1 | 20 27.9 | 46 6.6 | 106 15.1 | 166 23.7 | | |
| 47 | 21 26.8 | 21 30.3 | 20 28.1 | 47 6.7 | 107 15.2 | 167 23.8 | | |
| 48 | 21 27.0 | 21 30.6 | 20 28.4 | 48 6.8 | 108 15.4 | 168 23.9 | | |
| 49 | 21 27.3 | 21 30.8 | 20 28.6 | 49 7.0 | 109 15.5 | 169 24.1 | | |
| 50 | 21 27.5 | 21 31.1 | 20 28.8 | 50 7.1 | 110 15.7 | 170 24.2 | | |
| 51 | 21 27.8 | 21 31.3 | 20 29.1 | 51 7.3 | 111 15.8 | 171 24.4 | | |
| 52 | 21 28.0 | 21 31.6 | 20 29.3 | 52 7.4 | 112 16.0 | 172 24.5 | | |
| 53 | 21 28.3 | 21 31.8 | 20 29.6 | 53 7.6 | 113 16.1 | 173 24.7 | | |
| 54 | 21 28.5 | 21 32.1 | 20 29.8 | 54 7.7 | 114 16.2 | 174 24.8 | | |
| 55 | 21 28.8 | 21 32.3 | 20 30.0 | 55 7.8 | 115 16.4 | 175 24.9 | | |
| 56 | 21 29.0 | 21 32.6 | 20 30.3 | 56 8.0 | 116 16.5 | 176 25.1 | | |
| 57 | 21 29.3 | 21 32.8 | 20 30.5 | 57 8.1 | 117 16.7 | 177 25.2 | | |
| 58 | 21 29.5 | 21 33.1 | 20 30.8 | 58 8.3 | 118 16.8 | 178 25.4 | | |
| 59 | 21 29.8 | 21 33.3 | 20 31.0 | 59 8.4 | 119 17.0 | 179 25.5 | | |
| 60 | 21 30.0 | 21 33.6 | 20 31.2 | 60 8.6 | 120 17.1 | 180 25.7 | | |

| 1 h 26 min | | | | | | | | | | |
|------------------------|-----------------|-------------------|-------------|---|-------|-----|-------|-----|-------|--|
| POPRAVKA ČASOVNOG UGLA | | | | POPRAVKA DRUGOG REDA za časovni ugao i deklinaciju Sunca, Mjeseca i planeta | | | | | | |
| s | SUNCA I PLANETA | PROLJEĆNE TACKE ° | MJESECA (°) | Δ | popr. | Δ | popr. | Δ | popr. | |
| | o / f | o / f | o / f | | | | | | | |
| 0 | 21 30.0 | 21 33.6 | 20 31.2 | 0 | .0 | 60 | 8.7 | 120 | 17.3 | |
| 1 | 21 30.3 | 21 33.8 | 20 31.5 | 1 | .1 | 61 | 8.8 | 121 | 17.4 | |
| 2 | 21 30.5 | 21 34.1 | 20 31.7 | 2 | .3 | 62 | 8.9 | 122 | 17.6 | |
| 3 | 21 30.8 | 21 34.3 | 20 31.9 | 3 | .4 | 63 | 9.1 | 123 | 17.7 | |
| 4 | 21 31.0 | 21 34.6 | 20 32.2 | 4 | .6 | 64 | 9.2 | 124 | 17.9 | |
| 5 | 21 31.3 | 21 34.8 | 20 32.4 | 5 | .7 | 65 | 9.4 | 125 | 18.0 | |
| 6 | 21 31.5 | 21 35.1 | 20 32.7 | 6 | .9 | 66 | 9.5 | 126 | 18.2 | |
| 7 | 21 31.8 | 21 35.3 | 20 32.9 | 7 | 1.0 | 67 | 9.7 | 127 | 18.3 | |
| 8 | 21 32.0 | 21 35.6 | 20 33.1 | 8 | 1.2 | 68 | 9.8 | 128 | 18.5 | |
| 9 | 21 32.3 | 21 35.8 | 20 33.4 | 9 | 1.3 | 69 | 9.9 | 129 | 18.6 | |
| 10 | 21 32.5 | 21 36.1 | 20 33.6 | 10 | 1.4 | 70 | 10.1 | 130 | 18.7 | |
| 11 | 21 32.8 | 21 36.3 | 20 33.9 | 11 | 1.6 | 71 | 10.2 | 131 | 18.9 | |
| 12 | 21 33.0 | 21 36.6 | 20 34.1 | 12 | 1.7 | 72 | 10.4 | 132 | 19.0 | |
| 13 | 21 33.3 | 21 36.8 | 20 34.3 | 13 | 1.9 | 73 | 10.5 | 133 | 19.2 | |
| 14 | 21 33.5 | 21 37.1 | 20 34.6 | 14 | 2.0 | 74 | 10.7 | 134 | 19.3 | |
| 15 | 21 33.8 | 21 37.3 | 20 34.8 | 15 | 2.2 | 75 | 10.8 | 135 | 19.5 | |
| 16 | 21 34.0 | 21 37.6 | 20 35.1 | 16 | 2.3 | 76 | 11.0 | 136 | 19.6 | |
| 17 | 21 34.3 | 21 37.8 | 20 35.3 | 17 | 2.5 | 77 | 11.1 | 137 | 19.8 | |
| 18 | 21 34.5 | 21 38.1 | 20 35.5 | 18 | 2.6 | 78 | 11.2 | 138 | 19.9 | |
| 19 | 21 34.8 | 21 38.3 | 20 35.8 | 19 | 2.7 | 79 | 11.4 | 139 | 20.0 | |
| 20 | 21 35.0 | 21 38.6 | 20 36.0 | 20 | 2.9 | 80 | 11.5 | 140 | 20.2 | |
| 21 | 21 35.3 | 21 38.8 | 20 36.2 | 21 | 3.0 | 81 | 11.7 | 141 | 20.3 | |
| 22 | 21 35.5 | 21 39.1 | 20 36.5 | 22 | 3.2 | 82 | 11.8 | 142 | 20.5 | |
| 23 | 21 35.8 | 21 39.3 | 20 36.7 | 23 | 3.3 | 83 | 12.0 | 143 | 20.6 | |
| 24 | 21 36.0 | 21 39.6 | 20 37.0 | 24 | 3.5 | 84 | 12.1 | 144 | 20.8 | |
| 25 | 21 36.3 | 21 39.9 | 20 37.2 | 25 | 3.6 | 85 | 12.3 | 145 | 20.9 | |
| 26 | 21 36.5 | 21 40.1 | 20 37.4 | 26 | 3.7 | 86 | 12.4 | 146 | 21.0 | |
| 27 | 21 36.8 | 21 40.4 | 20 37.7 | 27 | 3.9 | 87 | 12.5 | 147 | 21.2 | |
| 28 | 21 37.0 | 21 40.6 | 20 37.9 | 28 | 4.0 | 88 | 12.7 | 148 | 21.3 | |
| 29 | 21 37.3 | 21 40.9 | 20 38.2 | 29 | 4.2 | 89 | 12.8 | 149 | 21.5 | |
| 30 | 21 37.5 | 21 41.1 | 20 38.4 | 30 | 4.3 | 90 | 13.0 | 150 | 21.6 | |
| 31 | 21 37.8 | 21 41.4 | 20 38.6 | 31 | 4.5 | 91 | 13.1 | 151 | 21.8 | |
| 32 | 21 38.0 | 21 41.6 | 20 38.9 | 32 | 4.6 | 92 | 13.3 | 152 | 21.9 | |
| 33 | 21 38.3 | 21 41.9 | 20 39.1 | 33 | 4.8 | 93 | 13.4 | 153 | 22.1 | |
| 34 | 21 38.5 | 21 42.1 | 20 39.3 | 34 | 4.9 | 94 | 13.6 | 154 | 22.2 | |
| 35 | 21 38.8 | 21 42.4 | 20 39.6 | 35 | 5.0 | 95 | 13.7 | 155 | 22.3 | |
| 36 | 21 39.0 | 21 42.6 | 20 39.8 | 36 | 5.2 | 96 | 13.8 | 156 | 22.5 | |
| 37 | 21 39.3 | 21 42.9 | 20 40.1 | 37 | 5.3 | 97 | 14.0 | 157 | 22.6 | |
| 38 | 21 39.5 | 21 43.1 | 20 40.3 | 38 | 5.5 | 98 | 14.1 | 158 | 22.8 | |
| 39 | 21 39.8 | 21 43.4 | 20 40.5 | 39 | 5.6 | 99 | 14.3 | 159 | 22.9 | |
| 40 | 21 40.0 | 21 43.6 | 20 40.8 | 40 | 5.8 | 100 | 14.4 | 160 | 23.1 | |
| 41 | 21 40.3 | 21 43.9 | 20 41.0 | 41 | 5.9 | 101 | 14.6 | 161 | 23.2 | |
| 42 | 21 40.5 | 21 44.1 | 20 41.3 | 42 | 6.1 | 102 | 14.7 | 162 | 23.4 | |
| 43 | 21 40.8 | 21 44.4 | 20 41.5 | 43 | 6.2 | 103 | 14.8 | 163 | 23.5 | |
| 44 | 21 41.0 | 21 44.6 | 20 41.7 | 44 | 6.3 | 104 | 15.0 | 164 | 23.6 | |
| 45 | 21 41.3 | 21 44.9 | 20 42.0 | 45 | 6.5 | 105 | 15.1 | 165 | 23.8 | |
| 46 | 21 41.5 | 21 45.1 | 20 42.2 | 46 | 6.6 | 106 | 15.3 | 166 | 23.9 | |
| 47 | 21 41.8 | 21 45.4 | 20 42.4 | 47 | 6.8 | 107 | 15.4 | 167 | 24.1 | |
| 48 | 21 42.0 | 21 45.6 | 20 42.7 | 48 | 6.9 | 108 | 15.6 | 168 | 24.2 | |
| 49 | 21 42.3 | 21 45.9 | 20 42.9 | 49 | 7.1 | 109 | 15.7 | 169 | 24.4 | |
| 50 | 21 42.5 | 21 46.1 | 20 43.2 | 50 | 7.2 | 110 | 15.9 | 170 | 24.5 | |
| 51 | 21 42.8 | 21 46.4 | 20 43.4 | 51 | 7.4 | 111 | 16.0 | 171 | 24.7 | |
| 52 | 21 43.0 | 21 46.6 | 20 43.6 | 52 | 7.5 | 112 | 16.1 | 172 | 24.8 | |
| 53 | 21 43.3 | 21 46.9 | 20 43.9 | 53 | 7.6 | 113 | 16.3 | 173 | 24.9 | |
| 54 | 21 43.5 | 21 47.1 | 20 44.1 | 54 | 7.8 | 114 | 16.4 | 174 | 25.1 | |
| 55 | 21 43.8 | 21 47.4 | 20 44.4 | 55 | 7.9 | 115 | 16.6 | 175 | 25.2 | |
| 56 | 21 44.0 | 21 47.6 | 20 44.6 | 56 | 8.1 | 116 | 16.7 | 176 | 25.4 | |
| 57 | 21 44.3 | 21 47.9 | 20 44.8 | 57 | 8.2 | 117 | 16.9 | 177 | 25.5 | |
| 58 | 21 44.5 | 21 48.1 | 20 45.1 | 58 | 8.4 | 118 | 17.0 | 178 | 25.7 | |
| 59 | 21 44.8 | 21 48.4 | 20 45.3 | 59 | 8.5 | 119 | 17.2 | 179 | 25.8 | |
| 60 | 21 45.0 | 21 48.6 | 20 45.6 | 60 | 8.7 | 120 | 17.3 | 180 | 26.0 | |

| 1 h 27 min | | | | | | | | | | |
|------------------------|-----------------|-------------------|-------------|---|-------|-----|-------|-----|-------|--|
| POPRAVKA ČASOVNOG UGLA | | | | POPRAVKA DRUGOG REDA za časovni ugao i deklinaciju Sunca, Mjeseca i planeta | | | | | | |
| s | SUNCA I PLANETA | PROLJEĆNE TACKE ° | MJESECA (°) | Δ | popr. | Δ | popr. | Δ | popr. | |
| | o / f | o / f | o / f | | | | | | | |
| 0 | 21 45.0 | 21 48.6 | 20 45.6 | 0 | .0 | 60 | 8.8 | 120 | 17.5 | |
| 1 | 21 45.3 | 21 48.9 | 20 45.8 | 1 | .1 | 61 | 8.9 | 121 | 17.6 | |
| 2 | 21 45.5 | 21 49.1 | 20 46.0 | 2 | .3 | 62 | 9.0 | 122 | 17.8 | |
| 3 | 21 45.8 | 21 49.4 | 20 46.3 | 3 | .4 | 63 | 9.2 | 123 | 17.9 | |
| 4 | 21 46.0 | 21 49.6 | 20 46.5 | 4 | .6 | 64 | 9.3 | 124 | 18.1 | |
| 5 | 21 46.3 | 21 49.9 | 20 46.7 | 5 | .7 | 65 | 9.5 | 125 | 18.2 | |
| 6 | 21 46.5 | 21 50.1 | 20 47.0 | 6 | .9 | 66 | 9.6 | 126 | 18.4 | |
| 7 | 21 46.8 | 21 50.4 | 20 47.2 | 7 | 1.0 | 67 | 9.8 | 127 | 18.5 | |
| 8 | 21 47.0 | 21 50.6 | 20 47.5 | 8 | 1.2 | 68 | 9.9 | 128 | 18.7 | |
| 9 | 21 47.3 | 21 50.9 | 20 47.7 | 9 | 1.3 | 69 | 10.1 | 129 | 18.8 | |
| 10 | 21 47.5 | 21 51.1 | 20 47.9 | 10 | 1.5 | 70 | 10.2 | 130 | 19.0 | |
| 11 | 21 47.8 | 21 51.4 | 20 48.2 | 11 | 1.6 | 71 | 10.4 | 131 | 19.1 | |
| 12 | 21 48.0 | 21 51.6 | 20 48.4 | 12 | 1.8 | 72 | 10.5 | 132 | 19.3 | |
| 13 | 21 48.3 | 21 51.9 | 20 48.7 | 13 | 1.9 | 73 | 10.6 | 133 | 19.4 | |
| 14 | 21 48.5 | 21 52.1 | 20 48.9 | 14 | 2.0 | 74 | 10.8 | 134 | 19.5 | |
| 15 | 21 48.8 | 21 52.4 | 20 49.1 | 15 | 2.2 | 75 | 10.9 | 135 | 19.7 | |
| 16 | 21 49.0 | 21 52.6 | 20 49.4 | 16 | 2.3 | 76 | 11.1 | 136 | 19.8 | |
| 17 | 21 49.3 | 21 52.9 | 20 49.6 | 17 | 2.5 | 77 | 11.2 | 137 | 20.0 | |
| 18 | 21 49.5 | 21 53.1 | 20 49.8 | 18 | 2.6 | 78 | 11.4 | 138 | 20.1 | |
| 19 | 21 49.8 | 21 53.4 | 20 50.1 | 19 | 2.8 | 79 | 11.5 | 139 | 20.3 | |
| 20 | 21 50.0 | 21 53.6 | 20 50.3 | 20 | 2.9 | 80 | 11.7 | 140 | 20.4 | |
| 21 | 21 50.3 | 21 53.9 | 20 50.6 | 21 | 3.1 | 81 | 11.8 | 141 | 20.6 | |
| 22 | 21 50.5 | 21 54.1 | 20 50.8 | 22 | 3.2 | 82 | 12.0 | 142 | 20.7 | |
| 23 | 21 50.8 | 21 54.4 | 20 51.0 | 23 | 3.4 | 83 | 12.1 | 143 | 20.9 | |
| 24 | 21 51.0 | 21 54.6 | 20 51.3 | 24 | 3.5 | 84 | 12.3 | 144 | 21.0 | |
| 25 | 21 51.3 | 21 54.9 | 20 51.5 | 25 | 3.6 | 85 | 12.4 | 145 | 21.1 | |
| 26 | 21 51.5 | 21 55.1 | 20 51.8 | 26 | 3.8 | 86 | 12.5 | 146 | 21.3 | |
| 27 | 21 51.8 | 21 55.4 | 20 52.0 | 27 | 3.9 | 87 | 12.7 | 147 | 21.4 | |
| 28 | 21 52.0 | 21 55.6 | 20 52.2 | 28 | 4.1 | 88 | 12.8 | 148 | 21.6 | |
| 29 | 21 52.3 | 21 55.9 | 20 52.5 | 29 | 4.2 | 89 | 13.0 | 149 | 21.7 | |
| 30 | 21 52.5 | 21 56.1 | 20 52.7 | 30 | 4.4 | 90 | 13.1 | 150 | 21.9 | |
| 31 | 21 52.8 | 21 56.4 | 20 52.9 | 31 | 4.5 | 91 | 13.3 | 151 | 22.0 | |
| 32 | 21 53.0 | 21 56.6 | 20 53.2 | 32 | 4.7 | 92 | 13.4 | 152 | 22.2 | |
| 33 | 21 53.3 | 21 56.9 | 20 53.4 | 33 | 4.8 | 93 | 13.6 | 153 | 22.3 | |
| 34 | 21 53.5 | 21 57.1 | 20 53.7 | 34 | 5.0 | 94 | 13.7 | 154 | 22.5 | |
| 35 | 21 53.8 | 21 57.4 | 20 53.9 | 35 | 5.1 | 95 | 13.9 | 155 | 22.6 | |
| 36 | 21 54.0 | 21 57.7 | 20 54.1 | 36 | 5.3 | 96 | 14.0 | 156 | 22.8 | |
| 37 | 21 54.3 | 21 57.9 | 20 54.4 | 37 | 5.4 | 97 | 14.1 | 157 | 22.9 | |
| 38 | 21 54.5 | 21 58.2 | 20 54.6 | 38 | 5.5 | 98 | 14.3 | 158 | 23.0 | |
| 39 | 21 54.8 | 21 58.4 | 20 54.9 | 39 | 5.7 | 99 | 14.4 | 159 | 23.2 | |
| 40 | 21 55.0 | 21 58.7 | 20 55.1 | 40 | 5.8 | 100 | 14.6 | 160 | 23.3 | |
| 41 | 21 55.3 | 21 58.9 | 20 55.3 | 41 | 6.0 | 101 | 14.7 | 161 | 23.5 | |
| 42 | 21 55.5 | 21 59.2 | 20 55.6 | 42 | 6.1 | 102 | 14.9 | 162 | 23.6 | |
| 43 | 21 55.8 | 21 59.4 | 20 55.8 | 43 | 6.3 | 103 | 15.0 | 163 | 23.8 | |
| 44 | 21 56.0 | 21 59.7 | 20 56.0 | 44 | 6.4 | 104 | 15.2 | 164 | 23.9 | |
| 45 | 21 56.3 | 21 59.9 | 20 56.3 | 45 | 6.6 | 105 | 15.3 | 165 | 24.1 | |
| 46 | 21 56.5 | 22 .2 | 20 56.5 | 46 | 6.7 | 106 | 15.5 | 166 | 24.2 | |
| 47 | 21 56.8 | 22 .4 | 20 56.8 | 47 | 6.9 | 107 | 15.6 | 167 | 24.4 | |
| 48 | 21 57.0 | 22 .7 | 20 57.0 | 48 | 7.0 | 108 | 15.8 | 168 | 24.5 | |
| 49 | 21 57.3 | 22 .9 | 20 57.2 | 49 | 7.1 | 109 | 15.9 | 169 | 24.6 | |
| 50 | 21 57.5 | 22 1.2 | 20 57.5 | 50 | 7.3 | 110 | 16.0 | 170 | 24.8 | |
| 51 | 21 57.8 | 22 1.4 | 20 57.7 | 51 | 7.4 | 111 | 16.2 | 171 | 24.9 | |
| 52 | 21 58.0 | 22 1.7 | 20 58.0 | 52 | 7.6 | 112 | 16.3 | 172 | 25.1 | |
| 53 | 21 58.3 | 22 1.9 | 20 58.2 | 53 | 7.7 | 113 | 16.5 | 173 | 25.2 | |
| 54 | 21 58.5 | 22 2.2 | 20 58.4 | 54 | 7.9 | 114 | 16.6 | 174 | 25.4 | |
| 55 | 21 58.8 | 22 2.4 | 20 58.7 | 55 | 8.0 | 115 | 16.8 | 175 | 25.5 | |
| 56 | 21 59.0 | 22 2.7 | 20 58.9 | 56 | 8.2 | 116 | 16.9 | 176 | 25.7 | |
| 57 | 21 59.3 | 2 | | | | | | | | |

1 h 28 min

| POPRAVKA ČASOVNOG UGLA | | | POPRAVKA DRUGOG REDA za časovni ugao i deklinaciju Sunca, Mjeseca i planeta | | | | | | | | | |
|------------------------|-----------------|------|---|------|----------------|------|----|-----|-----|------|-----|------|
| S | SUNCA I PLANETA | | PROLJEČNE TAČKE ° | | MJESECA (°) | | Δ | Δ | Δ | | | |
| | o | f | o | f | o | f | f | f | f | | | |
| 0 | 22 | .0 | 22 | 3.7 | 20 | 59.9 | 0 | .0 | 60 | 8.9 | 120 | 17.7 |
| 1 | 22 | .3 | 22 | 3.9 | 21 | .1 | 1 | .1 | 61 | 9.0 | 121 | 17.8 |
| 2 | 22 | .5 | 22 | 4.2 | 21 | .3 | 2 | .3 | 62 | 9.1 | 122 | 18.0 |
| 3 | 22 | .8 | 22 | 4.4 | 21 | .6 | 3 | .4 | 63 | 9.3 | 123 | 18.1 |
| 4 | 22 | 1.0 | 22 | 4.7 | 21 | .8 | 4 | .6 | 64 | 9.4 | 124 | 18.3 |
| 5 | 22 | 1.3 | 22 | 4.9 | 21 | 1.1 | 5 | .7 | 65 | 9.6 | 125 | 18.4 |
| 6 | 22 | 1.5 | 22 | 5.2 | 21 | 1.3 | 6 | .9 | 66 | 9.7 | 126 | 18.6 |
| 7 | 22 | 1.8 | 22 | 5.4 | 21 | 1.5 | 7 | 1.0 | 67 | 9.9 | 127 | 18.7 |
| 8 | 22 | 2.0 | 22 | 5.7 | 21 | 1.8 | 8 | 1.2 | 68 | 10.0 | 128 | 18.9 |
| 9 | 22 | 2.3 | 22 | 5.9 | 21 | 2.0 | 9 | 1.3 | 69 | 10.2 | 129 | 19.0 |
| 10 | 22 | 2.5 | 22 | 6.2 | 21 | 2.3 | 10 | 1.5 | 70 | 10.3 | 130 | 19.2 |
| 11 | 22 | 2.8 | 22 | 6.4 | 21 | 2.5 | 11 | 1.6 | 71 | 10.5 | 131 | 19.3 |
| 12 | 22 | 3.0 | 22 | 6.7 | 21 | 2.7 | 12 | 1.8 | 72 | 10.6 | 132 | 19.5 |
| 13 | 22 | 3.3 | 22 | 6.9 | 21 | 3.0 | 13 | 1.9 | 73 | 10.8 | 133 | 19.6 |
| 14 | 22 | 3.5 | 22 | 7.2 | 21 | 3.2 | 14 | 2.1 | 74 | 10.9 | 134 | 19.8 |
| 15 | 22 | 3.8 | 22 | 7.4 | 21 | 3.4 | 15 | 2.2 | 75 | 11.1 | 135 | 19.9 |
| 16 | 22 | 4.0 | 22 | 7.7 | 21 | 3.7 | 16 | 2.4 | 76 | 11.2 | 136 | 20.1 |
| 17 | 22 | 4.3 | 22 | 7.9 | 21 | 3.9 | 17 | 2.5 | 77 | 11.4 | 137 | 20.2 |
| 18 | 22 | 4.5 | 22 | 8.2 | 21 | 4.2 | 18 | 2.7 | 78 | 11.5 | 138 | 20.4 |
| 19 | 22 | 4.8 | 22 | 8.4 | 21 | 4.4 | 19 | 2.8 | 79 | 11.7 | 139 | 20.5 |
| 20 | 22 | 5.0 | 22 | 8.7 | 21 | 4.6 | 20 | 3.0 | 80 | 11.8 | 140 | 20.7 |
| 21 | 22 | 5.3 | 22 | 8.9 | 21 | 4.9 | 21 | 3.1 | 81 | 11.9 | 141 | 20.8 |
| 22 | 22 | 5.5 | 22 | 9.2 | 21 | 5.1 | 22 | 3.2 | 82 | 12.1 | 142 | 20.9 |
| 23 | 22 | 5.8 | 22 | 9.4 | 21 | 5.4 | 23 | 3.4 | 83 | 12.2 | 143 | 21.1 |
| 24 | 22 | 6.0 | 22 | 9.7 | 21 | 5.6 | 24 | 3.5 | 84 | 12.4 | 144 | 21.2 |
| 25 | 22 | 6.3 | 22 | 9.9 | 21 | 5.8 | 25 | 3.7 | 85 | 12.5 | 145 | 21.4 |
| 26 | 22 | 6.5 | 22 | 10.2 | 21 | 6.1 | 26 | 3.8 | 86 | 12.7 | 146 | 21.5 |
| 27 | 22 | 6.8 | 22 | 10.4 | 21 | 6.3 | 27 | 4.0 | 87 | 12.8 | 147 | 21.7 |
| 28 | 22 | 7.0 | 22 | 10.7 | 21 | 6.5 | 28 | 4.1 | 88 | 13.0 | 148 | 21.8 |
| 29 | 22 | 7.3 | 22 | 10.9 | 21 | 6.8 | 29 | 4.3 | 89 | 13.1 | 149 | 22.0 |
| 30 | 22 | 7.5 | 22 | 11.2 | 21 | 7.0 | 30 | 4.4 | 90 | 13.3 | 150 | 22.1 |
| 31 | 22 | 7.8 | 22 | 11.4 | 21 | 7.3 | 31 | 4.6 | 91 | 13.4 | 151 | 22.3 |
| 32 | 22 | 8.0 | 22 | 11.7 | 21 | 7.5 | 32 | 4.7 | 92 | 13.6 | 152 | 22.4 |
| 33 | 22 | 8.3 | 22 | 11.9 | 21 | 7.7 | 33 | 4.9 | 93 | 13.7 | 153 | 22.6 |
| 34 | 22 | 8.5 | 22 | 12.2 | 21 | 8.0 | 34 | 5.0 | 94 | 13.9 | 154 | 22.7 |
| 35 | 22 | 8.8 | 22 | 12.4 | 21 | 8.2 | 35 | 5.2 | 95 | 14.0 | 155 | 22.9 |
| 36 | 22 | 9.0 | 22 | 12.7 | 21 | 8.5 | 36 | 5.3 | 96 | 14.2 | 156 | 23.0 |
| 37 | 22 | 9.3 | 22 | 12.9 | 21 | 8.7 | 37 | 5.5 | 97 | 14.3 | 157 | 23.2 |
| 38 | 22 | 9.5 | 22 | 13.2 | 21 | 8.9 | 38 | 5.6 | 98 | 14.5 | 158 | 23.3 |
| 39 | 22 | 9.8 | 22 | 13.4 | 21 | 9.2 | 39 | 5.8 | 99 | 14.6 | 159 | 23.5 |
| 40 | 22 | 10.0 | 22 | 13.7 | 21 | 9.4 | 40 | 5.9 | 100 | 14.8 | 160 | 23.6 |
| 41 | 22 | 10.3 | 22 | 13.9 | 21 | 9.6 | 41 | 6.0 | 101 | 14.9 | 161 | 23.7 |
| 42 | 22 | 10.5 | 22 | 14.2 | 21 | 9.9 | 42 | 6.2 | 102 | 15.0 | 162 | 23.9 |
| 43 | 22 | 10.8 | 22 | 14.4 | 21 | 10.1 | 43 | 6.3 | 103 | 15.2 | 163 | 24.0 |
| 44 | 22 | 11.0 | 22 | 14.7 | 21 | 10.4 | 44 | 6.5 | 104 | 15.3 | 164 | 24.2 |
| 45 | 22 | 11.3 | 22 | 14.9 | 21 | 10.6 | 45 | 6.6 | 105 | 15.5 | 165 | 24.3 |
| 46 | 22 | 11.5 | 22 | 15.2 | 21 | 10.8 | 46 | 6.8 | 106 | 15.6 | 166 | 24.5 |
| 47 | 22 | 11.8 | 22 | 15.4 | 21 | 11.1 | 47 | 6.9 | 107 | 15.8 | 167 | 24.6 |
| 48 | 22 | 12.0 | 22 | 15.7 | 21 | 11.3 | 48 | 7.1 | 108 | 15.9 | 168 | 24.8 |
| 49 | 22 | 12.3 | 22 | 16.0 | 21 | 11.6 | 49 | 7.2 | 109 | 16.1 | 169 | 24.9 |
| 50 | 22 | 12.5 | 22 | 16.2 | 21 | 11.8 | 50 | 7.4 | 110 | 16.2 | 170 | 25.1 |
| 51 | 22 | 12.8 | 22 | 16.5 | 21 | 12.0 | 51 | 7.5 | 111 | 16.4 | 171 | 25.2 |
| 52 | 22 | 13.0 | 22 | 16.7 | 21 | 12.3 | 52 | 7.7 | 112 | 16.5 | 172 | 25.4 |
| 53 | 22 | 13.3 | 22 | 17.0 | 21 | 12.5 | 53 | 7.8 | 113 | 16.7 | 173 | 25.5 |
| 54 | 22 | 13.5 | 22 | 17.2 | 21 | 12.8 | 54 | 8.0 | 114 | 16.8 | 174 | 25.7 |
| 55 | 22 | 13.8 | 22 | 17.5 | 21 | 13.0 | 55 | 8.1 | 115 | 17.0 | 175 | 25.8 |
| 56 | 22 | 14.0 | 22 | 17.7 | 21 | 13.2 | 56 | 8.3 | 116 | 17.1 | 176 | 26.0 |
| 57 | 22 | 14.3 | 22 | 18.0 | 21 | 13.5 | 57 | 8.4 | 117 | 17.3 | 177 | 26.1 |
| 58 | 22 | 14.5 | 22 | 18.2 | 21 | 13.7 | 58 | 8.6 | 118 | 17.4 | 178 | 26.3 |
| 59 | 22 | 14.8 | 22 | 18.5 | 21 | 13.9 | 59 | 8.7 | 119 | 17.6 | 179 | 26.4 |
| 60 | 22 | 15.0 | 22 | 18.7 | 21 | 14.2 | 60 | 8.9 | 120 | 17.7 | 180 | 26.6 |

1 h 29 min

| POPRAVKA ČASOVNOG UGLA | | | POPRAVKA DRUGOG REDA za časovni ugao i deklinaciju Sunca, Mjeseca i planeta | | | | | | | | | |
|------------------------|-----------------|------|---|------|----------------|------|----|-----|-----|------|-----|------|
| S | SUNCA I PLANETA | | PROLJEČNE TAČKE ° | | MJESECA (°) | | Δ | Δ | Δ | | | |
| | o | f | o | f | o | f | f | f | f | | | |
| 0 | 22 | 15.0 | 22 | 18.7 | 21 | 14.2 | 0 | .0 | 60 | 9.0 | 120 | 17.9 |
| 1 | 22 | 15.3 | 22 | 19.0 | 21 | 14.4 | 1 | .1 | 61 | 9.1 | 121 | 18.0 |
| 2 | 22 | 15.5 | 22 | 19.2 | 21 | 14.7 | 2 | .3 | 62 | 9.2 | 122 | 18.2 |
| 3 | 22 | 15.8 | 22 | 19.5 | 21 | 14.9 | 3 | .4 | 63 | 9.4 | 123 | 18.3 |
| 4 | 22 | 16.0 | 22 | 19.7 | 21 | 15.1 | 4 | .6 | 64 | 9.5 | 124 | 18.5 |
| 5 | 22 | 16.3 | 22 | 20.0 | 21 | 15.4 | 5 | .7 | 65 | 9.7 | 125 | 18.6 |
| 6 | 22 | 16.5 | 22 | 20.2 | 21 | 15.6 | 6 | .9 | 66 | 9.8 | 126 | 18.8 |
| 7 | 22 | 16.8 | 22 | 20.5 | 21 | 15.9 | 7 | 1.0 | 67 | 10.0 | 127 | 18.9 |
| 8 | 22 | 17.0 | 22 | 20.7 | 21 | 16.1 | 8 | 1.2 | 68 | 10.1 | 128 | 19.1 |
| 9 | 22 | 17.3 | 22 | 21.0 | 21 | 16.3 | 9 | 1.3 | 69 | 10.3 | 129 | 19.2 |
| 10 | 22 | 17.5 | 22 | 21.2 | 21 | 16.6 | 10 | 1.5 | 70 | 10.4 | 130 | 19.4 |
| 11 | 22 | 17.8 | 22 | 21.5 | 21 | 16.8 | 11 | 1.6 | 71 | 10.6 | 131 | 19.5 |
| 12 | 22 | 18.0 | 22 | 21.7 | 21 | 17.0 | 12 | 1.8 | 72 | 10.7 | 132 | 19.7 |
| 13 | 22 | 18.3 | 22 | 22.0 | 21 | 17.3 | 13 | 1.9 | 73 | 10.9 | 133 | 19.8 |
| 14 | 22 | 18.5 | 22 | 22.2 | 21 | 17.5 | 14 | 2.1 | 74 | 11.0 | 134 | 20.0 |
| 15 | 22 | 18.8 | 22 | 22.5 | 21 | 17.8 | 15 | 2.2 | 75 | 11.2 | 135 | 20.1 |
| 16 | 22 | 19.0 | 22 | 22.7 | 21 | 18.0 | 16 | 2.4 | 76 | 11.3 | 136 | 20.3 |
| 17 | 22 | 19.3 | 22 | 23.0 | 21 | 18.2 | 17 | 2.5 | 77 | 11.5 | 137 | 20.4 |
| 18 | 22 | 19.5 | 22 | 23.2 | 21 | 18.5 | 18 | 2.7 | 78 | 11.6 | 138 | 20.6 |
| 19 | 22 | 19.8 | 22 | 23.5 | 21 | 18.7 | 19 | 2.8 | 79 | 11.8 | 139 | 20.7 |
| 20 | 22 | 20.0 | 22 | 23.7 | 21 | 19.0 | 20 | 3.0 | 80 | 11.9 | 140 | 20.9 |
| 21 | 22 | 20.3 | 22 | 24.0 | 21 | 19.2 | 21 | 3.1 | 81 | 12.1 | 141 | 21.0 |
| 22 | 22 | 20.5 | 22 | 24.2 | 21 | 19.4 | 22 | 3.3 | 82 | 12.2 | 142 | 21.2 |
| 23 | 22 | 20.8 | 22 | 24.5 | 21 | 19.7 | 23 | 3.4 | 83 | 12.4 | 143 | 21.3 |
| 24 | 22 | 21.0 | 22 | 24.7 | 21 | 19.9 | 24 | 3.6 | 84 | 12.5 | 144 | 21.5 |
| 25 | 22 | 21.3 | 22 | 25.0 | 21 | 20.1 | 25 | 3.7 | 85 | 12.7 | 145 | 21.6 |
| 26 | 22 | 21.5 | 22 | 25.2 | 21 | 20.4 | 26 | 3.9 | 86 | 12.8 | 146 | 21.8 |
| 27 | 22 | 21.8 | 22 | 25.5 | 21 | 20.6 | 27 | 4.0 | 87 | 13.0 | 147 | 21.9 |
| 28 | 22 | 22.0 | 22 | 25.7 | 21 | 20.9 | 28 | 4.2 | 88 | 13.1 | 148 | 22.1 |
| 29 | 22 | 22.3 | 22 | 26.0 | 21 | 21.1 | 29 | 4.3 | 89 | 13.3 | 149 | 22.2 |
| 30 | 22 | 22.5 | 22 | 26.2 | 21 | 21.3 | 30 | 4.5 | 90 | 13.4 | 150 | 22.4 |
| 31 | 22 | 22.8 | 22 | 26.5 | 21 | 21.6 | 31 | 4.6 | 91 | 13.6 | 151 | 22.5 |
| 32 | 22 | 23.0 | 22 | 26.7 | 21 | 21.8 | 32 | 4.8 | 92 | 13.7 | 152 | 22.7 |
| 33 | 22 | 23.3 | 22 | 27.0 | 21 | 22.1 | 33 | 4.9 | 93 | 13.9 | 153 | 22.8 |
| 34 | 22 | 23.5 | 22 | 27.2 | 21 | 22.3 | 34 | 5.1 | 94 | 14.0 | 154 | 23.0 |
| 35 | 22 | 23.8 | 22 | 27.5 | 21 | 22.5 | 35 | 5.2 | 95 | 14.2 | 155 | 23.1 |
| 36 | 22 | 24.0 | 22 | 27.7 | 21 | 22.8 | 36 | 5.4 | 96 | 14.3 | 156 | 23.3 |
| 37 | 22 | 24.3 | 22 | 28.0 | 21 | 23.0 | 37 | 5.5 | 97 | 14.5 | 157 | 23.4 |
| 38 | 22 | 24.5 | 22 | 28.2 | 21 | 23.3 | 38 | 5.7 | 98 | 14.6 | 158 | 23.6 |
| 39 | 22 | 24.8 | 22 | 28.5 | 21 | 23.5 | 39 | 5.8 | 99 | 14.8 | 159 | 23.7 |
| 40 | 22 | 25.0 | 22 | 28.7 | 21 | 23.7 | 40 | 6.0 | 100 | 14.9 | 160 | 23.9 |
| 41 | 22 | 25.3 | 22 | 29.0 | 21 | 24.0 | 41 | 6.1 | 101 | 15.1 | 161 | 24.0 |
| 42 | 22 | 25.5 | 22 | 29.2 | 21 | 24.2 | 42 | 6.3 | 102 | 15.2 | 162 | 24.2 |
| 43 | 22 | 25.8 | 22 | 29.5 | 21 | 24.4 | 43 | 6.4 | 103 | 15.4 | 163 | 24.3 |
| 44 | 22 | 26.0 | 22 | 29.7 | 21 | 24.7 | 44 | 6.6 | 104 | 15.5 | 164 | 24.5 |
| 45 | 22 | 26.3 | 22 | 30.0 | 21 | 24.9 | 45 | 6.7 | 105 | 15.7 | 165 | 24.6 |
| 46 | 22 | 26.5 | 22 | 30.2 | 21 | 25.2 | 46 | 6.9 | 106 | 15.8 | 166 | 24.8 |
| 47 | 22 | 26.8 | 22 | 30.5 | 21 | 25.4 | 47 | 7.0 | 107 | 16.0 | 167 | 24.9 |
| 48 | 22 | 27.0 | 22 | 30.7 | 21 | 25.6 | 48 | 7.2 | 108 | 16.1 | 168 | 25.1 |
| 49 | 22 | 27.3 | 22 | 31.0 | 21 | 25.9 | 49 | | | | | |

1 h 30 min

1 h 31 min

| POPRAVKA ČASOVNOG UGLA | | | | POPRAVKA DRUGOG REDA za časovni ugao i deklinaciju Sunca, Mjeseca i planeta | | |
|------------------------|-----------------|-------------------|-----------|---|---------|----------|
| S | SUNCA I PLANETA | PROLJEČNE TACKE T | MJESECA (| Δ popr. | Δ popr. | Δ popr. |
| | o / | o / | o / | t | t | t |
| 0 | 22 30.0 | 22 33.8 | 21 28.5 | 0 | .0 | 60 9.1 |
| 1 | 22 30.3 | 22 34.0 | 21 28.7 | 1 | .2 | 61 9.2 |
| 2 | 22 30.5 | 22 34.3 | 21 29.0 | 2 | .3 | 62 9.4 |
| 3 | 22 30.8 | 22 34.5 | 21 29.2 | 3 | .5 | 63 9.5 |
| 4 | 22 31.0 | 22 34.8 | 21 29.5 | 4 | .6 | 64 9.7 |
| 5 | 22 31.3 | 22 35.0 | 21 29.7 | 5 | .8 | 65 9.8 |
| 6 | 22 31.5 | 22 35.3 | 21 29.9 | 6 | .9 | 66 10.0 |
| 7 | 22 31.8 | 22 35.5 | 21 30.2 | 7 | 1.1 | 67 10.1 |
| 8 | 22 32.0 | 22 35.8 | 21 30.4 | 8 | 1.2 | 68 10.3 |
| 9 | 22 32.3 | 22 36.0 | 21 30.6 | 9 | 1.4 | 69 10.4 |
| 10 | 22 32.5 | 22 36.3 | 21 30.9 | 10 | 1.5 | 70 10.6 |
| 11 | 22 32.8 | 22 36.5 | 21 31.1 | 11 | 1.7 | 71 10.7 |
| 12 | 22 33.0 | 22 36.8 | 21 31.4 | 12 | 1.8 | 72 10.9 |
| 13 | 22 33.3 | 22 37.0 | 21 31.6 | 13 | 2.0 | 73 11.0 |
| 14 | 22 33.5 | 22 37.3 | 21 31.8 | 14 | 2.1 | 74 11.2 |
| 15 | 22 33.8 | 22 37.5 | 21 32.1 | 15 | 2.3 | 75 11.3 |
| 16 | 22 34.0 | 22 37.8 | 21 32.3 | 16 | 2.4 | 76 11.5 |
| 17 | 22 34.3 | 22 38.0 | 21 32.6 | 17 | 2.6 | 77 11.6 |
| 18 | 22 34.5 | 22 38.3 | 21 32.8 | 18 | 2.7 | 78 11.8 |
| 19 | 22 34.8 | 22 38.5 | 21 33.0 | 19 | 2.9 | 79 11.9 |
| 20 | 22 35.0 | 22 38.8 | 21 33.3 | 20 | 3.0 | 80 12.1 |
| 21 | 22 35.3 | 22 39.0 | 21 33.5 | 21 | 3.2 | 81 12.2 |
| 22 | 22 35.5 | 22 39.3 | 21 33.7 | 22 | 3.3 | 82 12.4 |
| 23 | 22 35.8 | 22 39.5 | 21 34.0 | 23 | 3.5 | 83 12.5 |
| 24 | 22 36.0 | 22 39.8 | 21 34.2 | 24 | 3.6 | 84 12.7 |
| 25 | 22 36.3 | 22 40.0 | 21 34.5 | 25 | 3.8 | 85 12.8 |
| 26 | 22 36.5 | 22 40.3 | 21 34.7 | 26 | 3.9 | 86 13.0 |
| 27 | 22 36.8 | 22 40.5 | 21 34.9 | 27 | 4.1 | 87 13.1 |
| 28 | 22 37.0 | 22 40.8 | 21 35.2 | 28 | 4.2 | 88 13.3 |
| 29 | 22 37.3 | 22 41.0 | 21 35.4 | 29 | 4.4 | 89 13.4 |
| 30 | 22 37.5 | 22 41.3 | 21 35.7 | 30 | 4.5 | 90 13.6 |
| 31 | 22 37.8 | 22 41.5 | 21 35.9 | 31 | 4.7 | 91 13.7 |
| 32 | 22 38.0 | 22 41.8 | 21 36.1 | 32 | 4.8 | 92 13.9 |
| 33 | 22 38.3 | 22 42.0 | 21 36.4 | 33 | 5.0 | 93 14.0 |
| 34 | 22 38.5 | 22 42.3 | 21 36.6 | 34 | 5.1 | 94 14.2 |
| 35 | 22 38.8 | 22 42.5 | 21 36.9 | 35 | 5.3 | 95 14.3 |
| 36 | 22 39.0 | 22 42.8 | 21 37.1 | 36 | 5.4 | 96 14.5 |
| 37 | 22 39.3 | 22 43.0 | 21 37.3 | 37 | 5.6 | 97 14.6 |
| 38 | 22 39.5 | 22 43.3 | 21 37.6 | 38 | 5.7 | 98 14.8 |
| 39 | 22 39.8 | 22 43.5 | 21 37.8 | 39 | 5.9 | 99 14.9 |
| 40 | 22 40.0 | 22 43.8 | 21 38.0 | 40 | 6.0 | 100 15.1 |
| 41 | 22 40.3 | 22 44.0 | 21 38.3 | 41 | 6.2 | 101 15.2 |
| 42 | 22 40.5 | 22 44.3 | 21 38.5 | 42 | 6.3 | 102 15.4 |
| 43 | 22 40.8 | 22 44.5 | 21 38.8 | 43 | 6.5 | 103 15.5 |
| 44 | 22 41.0 | 22 44.8 | 21 39.0 | 44 | 6.6 | 104 15.7 |
| 45 | 22 41.3 | 22 45.0 | 21 39.2 | 45 | 6.8 | 105 15.8 |
| 46 | 22 41.5 | 22 45.3 | 21 39.5 | 46 | 6.9 | 106 16.0 |
| 47 | 22 41.8 | 22 45.5 | 21 39.7 | 47 | 7.1 | 107 16.1 |
| 48 | 22 42.0 | 22 45.8 | 21 40.0 | 48 | 7.2 | 108 16.3 |
| 49 | 22 42.3 | 22 46.0 | 21 40.2 | 49 | 7.4 | 109 16.4 |
| 50 | 22 42.5 | 22 46.3 | 21 40.4 | 50 | 7.5 | 110 16.6 |
| 51 | 22 42.8 | 22 46.5 | 21 40.7 | 51 | 7.7 | 111 16.7 |
| 52 | 22 43.0 | 22 46.8 | 21 40.9 | 52 | 7.8 | 112 16.9 |
| 53 | 22 43.3 | 22 47.0 | 21 41.1 | 53 | 8.0 | 113 17.0 |
| 54 | 22 43.5 | 22 47.3 | 21 41.4 | 54 | 8.1 | 114 17.2 |
| 55 | 22 43.8 | 22 47.5 | 21 41.6 | 55 | 8.3 | 115 17.3 |
| 56 | 22 44.0 | 22 47.8 | 21 41.9 | 56 | 8.4 | 116 17.5 |
| 57 | 22 44.3 | 22 48.0 | 21 42.1 | 57 | 8.6 | 117 17.6 |
| 58 | 22 44.5 | 22 48.3 | 21 42.3 | 58 | 8.7 | 118 17.8 |
| 59 | 22 44.8 | 22 48.5 | 21 42.6 | 59 | 8.9 | 119 17.9 |
| 60 | 22 45.0 | 22 48.8 | 21 42.8 | 60 | 9.1 | 120 18.1 |

| POPRAVKA ČASOVNOG UGLA | | | | POPRAVKA DRUGOG REDA za časovni ugao i deklinaciju Sunca, Mjeseca i planeta | | |
|------------------------|-----------------|-------------------|-----------|---|---------|----------|
| S | SUNCA I PLANETA | PROLJEČNE TACKE T | MJESECA (| Δ popr. | Δ popr. | Δ popr. |
| | o / | o / | o / | t | t | t |
| 0 | 22 45.0 | 22 48.8 | 21 42.8 | 0 | .0 | 60 9.2 |
| 1 | 22 45.3 | 22 49.0 | 21 43.1 | 1 | .2 | 61 9.3 |
| 2 | 22 45.5 | 22 49.3 | 21 43.3 | 2 | .3 | 62 9.5 |
| 3 | 22 45.8 | 22 49.5 | 21 43.5 | 3 | .5 | 63 9.6 |
| 4 | 22 46.0 | 22 49.8 | 21 43.8 | 4 | .6 | 64 9.8 |
| 5 | 22 46.3 | 22 50.0 | 21 44.0 | 5 | .8 | 65 9.9 |
| 6 | 22 46.5 | 22 50.3 | 21 44.2 | 6 | .9 | 66 10.1 |
| 7 | 22 46.8 | 22 50.5 | 21 44.5 | 7 | 1.1 | 67 10.2 |
| 8 | 22 47.0 | 22 50.8 | 21 44.7 | 8 | 1.2 | 68 10.4 |
| 9 | 22 47.3 | 22 51.0 | 21 45.0 | 9 | 1.4 | 69 10.5 |
| 10 | 22 47.5 | 22 51.3 | 21 45.2 | 10 | 1.5 | 70 10.7 |
| 11 | 22 47.8 | 22 51.5 | 21 45.4 | 11 | 1.7 | 71 10.8 |
| 12 | 22 48.0 | 22 51.8 | 21 45.7 | 12 | 1.8 | 72 11.0 |
| 13 | 22 48.3 | 22 52.1 | 21 45.9 | 13 | 2.0 | 73 11.1 |
| 14 | 22 48.5 | 22 52.3 | 21 46.2 | 14 | 2.1 | 74 11.3 |
| 15 | 22 48.8 | 22 52.6 | 21 46.4 | 15 | 2.3 | 75 11.4 |
| 16 | 22 49.0 | 22 52.8 | 21 46.6 | 16 | 2.4 | 76 11.6 |
| 17 | 22 49.3 | 22 53.1 | 21 46.9 | 17 | 2.6 | 77 11.7 |
| 18 | 22 49.5 | 22 53.3 | 21 47.1 | 18 | 2.7 | 78 11.9 |
| 19 | 22 49.8 | 22 53.6 | 21 47.4 | 19 | 2.9 | 79 12.0 |
| 20 | 22 50.0 | 22 53.8 | 21 47.6 | 20 | 3.1 | 80 12.2 |
| 21 | 22 50.3 | 22 54.1 | 21 47.8 | 21 | 3.2 | 81 12.4 |
| 22 | 22 50.5 | 22 54.3 | 21 48.1 | 22 | 3.4 | 82 12.5 |
| 23 | 22 50.8 | 22 54.6 | 21 48.3 | 23 | 3.5 | 83 12.7 |
| 24 | 22 51.0 | 22 54.8 | 21 48.5 | 24 | 3.7 | 84 12.8 |
| 25 | 22 51.3 | 22 55.1 | 21 48.8 | 25 | 3.8 | 85 13.0 |
| 26 | 22 51.5 | 22 55.3 | 21 49.0 | 26 | 4.0 | 86 13.1 |
| 27 | 22 51.8 | 22 55.6 | 21 49.3 | 27 | 4.1 | 87 13.3 |
| 28 | 22 52.0 | 22 55.8 | 21 49.5 | 28 | 4.3 | 88 13.4 |
| 29 | 22 52.3 | 22 56.1 | 21 49.7 | 29 | 4.4 | 89 13.6 |
| 30 | 22 52.5 | 22 56.3 | 21 50.0 | 30 | 4.6 | 90 13.7 |
| 31 | 22 52.8 | 22 56.6 | 21 50.2 | 31 | 4.7 | 91 13.9 |
| 32 | 22 53.0 | 22 56.8 | 21 50.5 | 32 | 4.9 | 92 14.0 |
| 33 | 22 53.3 | 22 57.1 | 21 50.7 | 33 | 5.0 | 93 14.2 |
| 34 | 22 53.5 | 22 57.3 | 21 50.9 | 34 | 5.2 | 94 14.3 |
| 35 | 22 53.8 | 22 57.6 | 21 51.2 | 35 | 5.3 | 95 14.5 |
| 36 | 22 54.0 | 22 57.8 | 21 51.4 | 36 | 5.5 | 96 14.6 |
| 37 | 22 54.3 | 22 58.1 | 21 51.6 | 37 | 5.6 | 97 14.8 |
| 38 | 22 54.5 | 22 58.3 | 21 51.9 | 38 | 5.8 | 98 14.9 |
| 39 | 22 54.8 | 22 58.6 | 21 52.1 | 39 | 5.9 | 99 15.1 |
| 40 | 22 55.0 | 22 58.8 | 21 52.4 | 40 | 6.1 | 100 15.3 |
| 41 | 22 55.3 | 22 59.1 | 21 52.6 | 41 | 6.3 | 101 15.4 |
| 42 | 22 55.5 | 22 59.3 | 21 52.8 | 42 | 6.4 | 102 15.6 |
| 43 | 22 55.8 | 22 59.6 | 21 53.1 | 43 | 6.6 | 103 15.7 |
| 44 | 22 56.0 | 22 59.8 | 21 53.3 | 44 | 6.7 | 104 15.9 |
| 45 | 22 56.3 | 23 .1 | 21 53.6 | 45 | 6.9 | 105 16.0 |
| 46 | 22 56.5 | 23 .3 | 21 53.8 | 46 | 7.0 | 106 16.2 |
| 47 | 22 56.8 | 23 .6 | 21 54.0 | 47 | 7.2 | 107 16.3 |
| 48 | 22 57.0 | 23 .8 | 21 54.3 | 48 | 7.3 | 108 16.5 |
| 49 | 22 57.3 | 23 1.1 | 21 54.5 | 49 | 7.5 | 109 16.6 |
| 50 | 22 57.5 | 23 1.3 | 21 54.7 | 50 | 7.6 | 110 16.8 |
| 51 | 22 57.8 | 23 1.6 | 21 55.0 | 51 | 7.8 | 111 16.9 |
| 52 | 22 58.0 | 23 1.8 | 21 55.2 | 52 | 7.9 | 112 17.1 |
| 53 | 22 58.3 | 23 2.1 | 21 55.5 | 53 | 8.1 | 113 17.2 |
| 54 | 22 58.5 | 23 2.3 | 21 55.7 | 54 | 8.2 | 114 17.4 |
| 55 | 22 58.8 | 23 2.6 | 21 55.9 | 55 | 8.4 | 115 17.5 |
| 56 | 22 59.0 | 23 2.8 | 21 56.2 | 56 | 8.5 | 116 17.7 |
| 57 | 22 59.3 | 23 3.1 | 21 56.4 | 57 | 8.7 | 117 17.8 |
| 58 | 22 59.5 | 23 3.3 | 21 56.7 | 58 | 8.8 | 118 18.0 |
| 59 | 22 59.8 | 23 3.6 | 21 56.9 | 59 | 9.0 | 119 18.1 |
| 60 | 23 .0 | 23 3.8 | 21 57.1 | 60 | 9.2 | 120 18.3 |

1 h 32 min

| POPRAVKA ČASOVNOG UGLA | | | | POPRAVKA DRUGOG REDA za časovni ugao i deklinaciju Sunca, Mjeseca i planeta | | | | | | | | |
|------------------------|-----------------|----------------------|----------------|---|----------|----------|---|---|---|---|---|---|
| s | SUNCA I PLANETA | PROLJEČNE TACKE ° | MJESECA () | Δ | | | Δ | | | Δ | | |
| | | | | o | t | o | t | o | t | o | t | o |
| 0 | 23 .0 | 23 3.8 | 21 57.1 | 0 .0 | 60 9.3 | 120 18.5 | | | | | | |
| 1 | 23 .3 | 23 4.1 | 21 57.4 | 1 .2 | 61 9.4 | 121 18.7 | | | | | | |
| 2 | 23 .5 | 23 4.3 | 21 57.6 | 2 .3 | 62 9.6 | 122 18.8 | | | | | | |
| 3 | 23 .8 | 23 4.6 | 21 57.8 | 3 .5 | 63 9.7 | 123 19.0 | | | | | | |
| 4 | 23 1.0 | 23 4.8 | 21 58.1 | 4 .6 | 64 9.9 | 124 19.1 | | | | | | |
| 5 | 23 1.3 | 23 5.1 | 21 58.3 | 5 .8 | 65 10.0 | 125 19.3 | | | | | | |
| 6 | 23 1.5 | 23 5.3 | 21 58.6 | 6 .9 | 66 10.2 | 126 19.4 | | | | | | |
| 7 | 23 1.8 | 23 5.6 | 21 58.8 | 7 1.1 | 67 10.3 | 127 19.6 | | | | | | |
| 8 | 23 2.0 | 23 5.8 | 21 59.0 | 8 1.2 | 68 10.5 | 128 19.7 | | | | | | |
| 9 | 23 2.3 | 23 6.1 | 21 59.3 | 9 1.4 | 69 10.6 | 129 19.9 | | | | | | |
| 10 | 23 2.5 | 23 6.3 | 21 59.5 | 10 1.5 | 70 10.8 | 130 20.0 | | | | | | |
| 11 | 23 2.8 | 23 6.6 | 21 59.8 | 11 1.7 | 71 10.9 | 131 20.2 | | | | | | |
| 12 | 23 3.0 | 23 6.8 | 21 60.0 | 12 1.9 | 72 11.1 | 132 20.4 | | | | | | |
| 13 | 23 3.3 | 23 7.1 | 22 .2 | 13 2.0 | 73 11.3 | 133 20.5 | | | | | | |
| 14 | 23 3.5 | 23 7.3 | 22 .5 | 14 2.2 | 74 11.4 | 134 20.7 | | | | | | |
| 15 | 23 3.8 | 23 7.6 | 22 .7 | 15 2.3 | 75 11.6 | 135 20.8 | | | | | | |
| 16 | 23 4.0 | 23 7.8 | 22 1.0 | 16 2.5 | 76 11.7 | 136 21.0 | | | | | | |
| 17 | 23 4.3 | 23 8.1 | 22 1.2 | 17 2.6 | 77 11.9 | 137 21.1 | | | | | | |
| 18 | 23 4.5 | 23 8.3 | 22 1.4 | 18 2.8 | 78 12.0 | 138 21.3 | | | | | | |
| 19 | 23 4.8 | 23 8.6 | 22 1.7 | 19 2.9 | 79 12.2 | 139 21.4 | | | | | | |
| 20 | 23 5.0 | 23 8.8 | 22 1.9 | 20 3.1 | 80 12.3 | 140 21.6 | | | | | | |
| 21 | 23 5.3 | 23 9.1 | 22 2.1 | 21 3.2 | 81 12.5 | 141 21.7 | | | | | | |
| 22 | 23 5.5 | 23 9.3 | 22 2.4 | 22 3.4 | 82 12.6 | 142 21.9 | | | | | | |
| 23 | 23 5.8 | 23 9.6 | 22 2.6 | 23 3.5 | 83 12.8 | 143 22.0 | | | | | | |
| 24 | 23 6.0 | 23 9.9 | 22 2.9 | 24 3.7 | 84 13.0 | 144 22.2 | | | | | | |
| 25 | 23 6.3 | 23 10.1 | 22 3.1 | 25 3.9 | 85 13.1 | 145 22.4 | | | | | | |
| 26 | 23 6.5 | 23 10.4 | 22 3.3 | 26 4.0 | 86 13.3 | 146 22.5 | | | | | | |
| 27 | 23 6.8 | 23 10.6 | 22 3.6 | 27 4.2 | 87 13.4 | 147 22.7 | | | | | | |
| 28 | 23 7.0 | 23 10.9 | 22 3.8 | 28 4.3 | 88 13.6 | 148 22.8 | | | | | | |
| 29 | 23 7.3 | 23 11.1 | 22 4.1 | 29 4.5 | 89 13.7 | 149 23.0 | | | | | | |
| 30 | 23 7.5 | 23 11.4 | 22 4.3 | 30 4.6 | 90 13.9 | 150 23.1 | | | | | | |
| 31 | 23 7.8 | 23 11.6 | 22 4.5 | 31 4.8 | 91 14.0 | 151 23.3 | | | | | | |
| 32 | 23 8.0 | 23 11.9 | 22 4.8 | 32 4.9 | 92 14.2 | 152 23.4 | | | | | | |
| 33 | 23 8.3 | 23 12.1 | 22 5.0 | 33 5.1 | 93 14.3 | 153 23.6 | | | | | | |
| 34 | 23 8.5 | 23 12.4 | 22 5.2 | 34 5.2 | 94 14.5 | 154 23.7 | | | | | | |
| 35 | 23 8.8 | 23 12.6 | 22 5.5 | 35 5.4 | 95 14.6 | 155 23.9 | | | | | | |
| 36 | 23 9.0 | 23 12.9 | 22 5.7 | 36 5.6 | 96 14.8 | 156 24.1 | | | | | | |
| 37 | 23 9.3 | 23 13.1 | 22 6.0 | 37 5.7 | 97 15.0 | 157 24.2 | | | | | | |
| 38 | 23 9.5 | 23 13.4 | 22 6.2 | 38 5.9 | 98 15.1 | 158 24.4 | | | | | | |
| 39 | 23 9.8 | 23 13.6 | 22 6.4 | 39 6.0 | 99 15.3 | 159 24.5 | | | | | | |
| 40 | 23 10.0 | 23 13.9 | 22 6.7 | 40 6.2 | 100 15.4 | 160 24.7 | | | | | | |
| 41 | 23 10.3 | 23 14.1 | 22 6.9 | 41 6.3 | 101 15.6 | 161 24.8 | | | | | | |
| 42 | 23 10.5 | 23 14.4 | 22 7.2 | 42 6.5 | 102 15.7 | 162 25.0 | | | | | | |
| 43 | 23 10.8 | 23 14.6 | 22 7.4 | 43 6.6 | 103 15.9 | 163 25.1 | | | | | | |
| 44 | 23 11.0 | 23 14.9 | 22 7.6 | 44 6.8 | 104 16.0 | 164 25.3 | | | | | | |
| 45 | 23 11.3 | 23 15.1 | 22 7.9 | 45 6.9 | 105 16.2 | 165 25.4 | | | | | | |
| 46 | 23 11.5 | 23 15.4 | 22 8.1 | 46 7.1 | 106 16.3 | 166 25.6 | | | | | | |
| 47 | 23 11.8 | 23 15.6 | 22 8.3 | 47 7.2 | 107 16.5 | 167 25.7 | | | | | | |
| 48 | 23 12.0 | 23 15.9 | 22 8.6 | 48 7.4 | 108 16.7 | 168 25.9 | | | | | | |
| 49 | 23 12.3 | 23 16.1 | 22 8.8 | 49 7.6 | 109 16.8 | 169 26.1 | | | | | | |
| 50 | 23 12.5 | 23 16.4 | 22 9.1 | 50 7.7 | 110 17.0 | 170 26.2 | | | | | | |
| 51 | 23 12.8 | 23 16.6 | 22 9.3 | 51 7.9 | 111 17.1 | 171 26.4 | | | | | | |
| 52 | 23 13.0 | 23 16.9 | 22 9.5 | 52 8.0 | 112 17.3 | 172 26.5 | | | | | | |
| 53 | 23 13.3 | 23 17.1 | 22 9.8 | 53 8.2 | 113 17.4 | 173 26.7 | | | | | | |
| 54 | 23 13.5 | 23 17.4 | 22 10.0 | 54 8.3 | 114 17.6 | 174 26.8 | | | | | | |
| 55 | 23 13.8 | 23 17.6 | 22 10.3 | 55 8.5 | 115 17.7 | 175 27.0 | | | | | | |
| 56 | 23 14.0 | 23 17.9 | 22 10.5 | 56 8.6 | 116 17.9 | 176 27.1 | | | | | | |
| 57 | 23 14.3 | 23 18.1 | 22 10.7 | 57 8.8 | 117 18.0 | 177 27.3 | | | | | | |
| 58 | 23 14.5 | 23 18.4 | 22 11.0 | 58 8.9 | 118 18.2 | 178 27.4 | | | | | | |
| 59 | 23 14.8 | 23 18.6 | 22 11.2 | 59 9.1 | 119 18.3 | 179 27.6 | | | | | | |
| 60 | 23 15.0 | 23 18.9 | 22 11.5 | 60 9.3 | 120 18.5 | 180 27.8 | | | | | | |

1 h 33 min

| POPRAVKA ČASOVNOG UGLA | | | | POPRAVKA DRUGOG REDA za časovni ugao i deklinaciju Sunca, Mjeseca i planeta | | | | | | | | |
|------------------------|-----------------|----------------------|----------------|---|----------|----------|---|---|---|---|----|---|
| s | SUNCA I PLANETA | PROLJEČNE TACKE ° | MJESECA () | Δ | | | Δ | | | Δ | | |
| | | | | o | t | o | t | o | t | o | t | o |
| 0 | 23 15.0 | 23 18.9 | 22 11.5 | 0 .0 | 60 9.4 | 120 18.7 | | | | | | |
| 1 | 23 15.3 | 23 19.1 | 22 11.7 | 1 .2 | 61 9.5 | 121 18.9 | | | | | | |
| 2 | 23 15.5 | 23 19.4 | 22 11.9 | 2 .3 | 62 9.7 | 122 19.0 | | | | | | |
| 3 | 23 15.8 | 23 19.6 | 22 12.2 | 3 .5 | 63 9.8 | 123 19.2 | | | | | | |
| 4 | 23 16.0 | 23 19.9 | 22 12.4 | 4 .6 | 64 10.0 | 124 19.3 | | | | | | |
| 5 | 23 16.3 | 23 20.1 | 22 12.6 | 5 .8 | 65 10.1 | 125 19.5 | | | | | | |
| 6 | 23 16.5 | 23 20.4 | 22 12.9 | 6 .9 | 66 10.3 | 126 19.6 | | | | | | |
| 7 | 23 16.8 | 23 20.6 | 22 13.1 | 7 1.1 | 67 10.4 | 127 19.8 | | | | | | |
| 8 | 23 17.0 | 23 20.9 | 22 13.4 | 8 1.2 | 68 10.6 | 128 19.9 | | | | | | |
| 9 | 23 17.3 | 23 21.1 | 22 13.6 | 9 1.4 | 69 10.8 | 129 20.1 | | | | | | |
| 10 | 23 17.5 | 23 21.4 | 22 13.8 | 10 1.6 | 70 10.9 | 130 20.3 | | | | | | |
| 11 | 23 17.8 | 23 21.6 | 22 14.1 | 11 1.7 | 71 11.1 | 131 20.4 | | | | | | |
| 12 | 23 18.0 | 23 21.9 | 22 14.3 | 12 1.9 | 72 11.2 | 132 20.6 | | | | | | |
| 13 | 23 18.3 | 23 22.1 | 22 14.6 | 13 2.0 | 73 11.4 | 133 20.7 | | | | | | |
| 14 | 23 18.5 | 23 22.4 | 22 14.8 | 14 2.2 | 74 11.5 | 134 20.9 | | | | | | |
| 15 | 23 18.8 | 23 22.6 | 22 15.0 | 15 2.3 | 75 11.7 | 135 21.0 | | | | | | |
| 16 | 23 19.0 | 23 22.9 | 22 15.3 | 16 2.5 | 76 11.8 | 136 21.2 | | | | | | |
| 17 | 23 19.3 | 23 23.1 | 22 15.5 | 17 2.6 | 77 12.0 | 137 21.3 | | | | | | |
| 18 | 23 19.5 | 23 23.4 | 22 15.7 | 18 2.8 | 78 12.2 | 138 21.5 | | | | | | |
| 19 | 23 19.8 | 23 23.6 | 22 16.0 | 19 3.0 | 79 12.3 | 139 21.7 | | | | | | |
| 20 | 23 20.0 | 23 23.9 | 22 16.2 | 20 3.1 | 80 12.5 | 140 21.8 | | | | | | |
| 21 | 23 20.3 | 23 24.1 | 22 16.5 | 21 3.3 | 81 12.6 | 141 22.0 | | | | | | |
| 22 | 23 20.5 | 23 24.4 | 22 16.7 | 22 3.4 | 82 12.8 | 142 22.1 | | | | | | |
| 23 | 23 20.8 | 23 24.6 | 22 16.9 | 23 3.6 | 83 12.9 | 143 22.3 | | | | | | |
| 24 | 23 21.0 | 23 24.9 | 22 17.2 | 24 3.7 | 84 13.1 | 144 22.4 | | | | | | |
| 25 | 23 21.3 | 23 25.1 | 22 17.4 | 25 3.9 | 85 13.2 | 145 22.6 | | | | | | |
| 26 | 23 21.5 | 23 25.4 | 22 17.7 | 26 4.1 | 86 13.4 | 146 22.8 | | | | | | |
| 27 | 23 21.8 | 23 25.6 | 22 17.9 | 27 4.2 | 87 13.6 | 147 22.9 | | | | | | |
| 28 | 23 22.0 | 23 25.9 | 22 18.1 | 28 4.4 | 88 13.7 | 148 23.1 | | | | | | |
| 29 | 23 22.3 | 23 26.1 | 22 18.4 | 29 4.5 | 89 13.9 | 149 23.2 | | | | | | |
| 30 | 23 22.5 | 23 26.4 | 22 18.6 | 30 4.7 | 90 14.0 | 150 23.4 | | | | | | |
| 31 | 23 22.8 | 23 26.6 | 22 18.8 | 31 4.8 | 91 14.2 | 151 23.5 | | | | | | |
| 32 | 23 23.0 | 23 26.9 | 22 19.1 | 32 5.0 | 92 14.3 | 152 23.7 | | | | | | |
| 33 | 23 23.3 | 23 27.1 | 22 19.3 | 33 5.1 | 93 14.5 | 153 23.8 | | | | | | |
| 34 | 23 23.5 | 23 27.4 | 22 19.6 | 34 5.3 | 94 14.6 | 154 24.0 | | | | | | |
| 35 | 23 23.8 | 23 27.6 | 22 19.8 | 35 5.5 | 95 14.8 | 155 24.2 | | | | | | |
| 36 | 23 24.0 | 23 27.9 | 22 20.0 | 36 5.6 | 96 15.0 | 156 24.3 | | | | | | |
| 37 | 23 24.3 | 23 28.2 | 22 20.3 | 37 5.8 | 97 15.1 | 157 24.5 | | | | | | |
| 38 | 23 24.5 | 23 28.4 | 22 20.5 | 38 5.9 | 98 15.3 | 158 24.6 | | | | | | |
| 39 | 23 24.8 | 23 28.7 | 22 20.8 | 39 6.1 | 99 15.4 | 159 24.8 | | | | | | |
| 40 | 23 25.0 | 23 28.9 | 22 21.0 | 40 6.2 | 100 15.6 | 160 24.9 | | | | | | |
| 41 | 23 25.3 | 23 29.2 | 22 21.2 | 41 6.4 | 101 15.7 | 161 25.1 | | | | | | |
| 42 | 23 25.5 | 23 29.4 | 22 21.5 | 42 6.5 | 102 15.9 | 162 25.2 | | | | | | |
| 43 | 23 25.8 | 23 29.7 | 22 21.7 | 43 6.7 | 103 16.1 | 163 25.4 | | | | | | |
| 44 | 23 26.0 | 23 29.9 | 22 21.9 | 44 6.9 | 104 16.2 | 164 25.6 | | | | | | |
| 45 | 23 26.3 | 23 30.2 | 22 22.2 | 45 7.0 | 105 16.4 | 165 25.7 | | | | | | |
| 46 | 23 26.5 | 23 30.4 | 22 22.4 | 46 7.2 | 106 16.5 | 166 25.9 | | | | | | |
| 47 | 23 26.8 | 23 30.7 | 22 22.7 | 47 7.3 | 107 16.7 | 167 26.0 | | | | | | |
| 48 | 23 27.0 | 23 30.9 | 22 22.9 | 48 7.5 | 108 16.8 | 168 26.2 | | | | | </ | |

1 h 34 min

| POPRAVKA ČASOVNOG UGLA | | | | POPRAVKA DRUGOG REDA za časovni ugao i deklinaciju Sunca, Mjeseca i planeta | | | |
|------------------------|--------------------|-----------------------|----------------|---|-------|----------|----------|
| S | SUNCA I PLANETA | PROLJEĆNE TAČKE °' | MJESECA (°) | Δ | popr. | Δ | popr. |
| | o' " | o' " | o' " | | " | " | " |
| 0 | 23 30.0 | 23 33.9 | 22 25.8 | 0 | .0 | 60 9.5 | 120 18.9 |
| 1 | 23 30.3 | 23 34.2 | 22 26.0 | 1 | .2 | 61 9.6 | 121 19.1 |
| 2 | 23 30.5 | 23 34.4 | 22 26.2 | 2 | .3 | 62 9.8 | 122 19.2 |
| 3 | 23 30.8 | 23 34.7 | 22 26.5 | 3 | .5 | 63 9.9 | 123 19.4 |
| 4 | 23 31.0 | 23 34.9 | 22 26.7 | 4 | .6 | 64 10.1 | 124 19.5 |
| 5 | 23 31.3 | 23 35.2 | 22 27.0 | 5 | .8 | 65 10.2 | 125 19.7 |
| 6 | 23 31.5 | 23 35.4 | 22 27.2 | 6 | .9 | 66 10.4 | 126 19.8 |
| 7 | 23 31.8 | 23 35.7 | 22 27.4 | 7 | 1.1 | 67 10.6 | 127 20.0 |
| 8 | 23 32.0 | 23 35.9 | 22 27.7 | 8 | 1.3 | 68 10.7 | 128 20.2 |
| 9 | 23 32.3 | 23 36.2 | 22 27.9 | 9 | 1.4 | 69 10.9 | 129 20.3 |
| 10 | 23 32.5 | 23 36.4 | 22 28.2 | 10 | 1.6 | 70 11.0 | 130 20.5 |
| 11 | 23 32.8 | 23 36.7 | 22 28.4 | 11 | 1.7 | 71 11.2 | 131 20.6 |
| 12 | 23 33.0 | 23 36.9 | 22 28.6 | 12 | 1.9 | 72 11.3 | 132 20.8 |
| 13 | 23 33.3 | 23 37.2 | 22 28.9 | 13 | 2.0 | 73 11.5 | 133 20.9 |
| 14 | 23 33.5 | 23 37.4 | 22 29.1 | 14 | 2.2 | 74 11.7 | 134 21.1 |
| 15 | 23 33.8 | 23 37.7 | 22 29.3 | 15 | 2.4 | 75 11.8 | 135 21.3 |
| 16 | 23 34.0 | 23 37.9 | 22 29.6 | 16 | 2.5 | 76 12.0 | 136 21.4 |
| 17 | 23 34.3 | 23 38.2 | 22 29.8 | 17 | 2.7 | 77 12.1 | 137 21.6 |
| 18 | 23 34.5 | 23 38.4 | 22 30.1 | 18 | 2.8 | 78 12.3 | 138 21.7 |
| 19 | 23 34.8 | 23 38.7 | 22 30.3 | 19 | 3.0 | 79 12.4 | 139 21.9 |
| 20 | 23 35.0 | 23 38.9 | 22 30.5 | 20 | 3.2 | 80 12.6 | 140 22.1 |
| 21 | 23 35.3 | 23 39.2 | 22 30.8 | 21 | 3.3 | 81 12.8 | 141 22.2 |
| 22 | 23 35.5 | 23 39.4 | 22 31.0 | 22 | 3.5 | 82 12.9 | 142 22.4 |
| 23 | 23 35.8 | 23 39.7 | 22 31.3 | 23 | 3.6 | 83 13.1 | 143 22.5 |
| 24 | 23 36.0 | 23 39.9 | 22 31.5 | 24 | 3.8 | 84 13.2 | 144 22.7 |
| 25 | 23 36.3 | 23 40.2 | 22 31.7 | 25 | 3.9 | 85 13.4 | 145 22.8 |
| 26 | 23 36.5 | 23 40.4 | 22 32.0 | 26 | 4.1 | 86 13.5 | 146 23.0 |
| 27 | 23 36.8 | 23 40.7 | 22 32.2 | 27 | 4.3 | 87 13.7 | 147 23.2 |
| 28 | 23 37.0 | 23 40.9 | 22 32.4 | 28 | 4.4 | 88 13.9 | 148 23.3 |
| 29 | 23 37.3 | 23 41.2 | 22 32.7 | 29 | 4.6 | 89 14.0 | 149 23.5 |
| 30 | 23 37.5 | 23 41.4 | 22 32.9 | 30 | 4.7 | 90 14.2 | 150 23.6 |
| 31 | 23 37.8 | 23 41.7 | 22 33.2 | 31 | 4.9 | 91 14.3 | 151 23.8 |
| 32 | 23 38.0 | 23 41.9 | 22 33.4 | 32 | 5.0 | 92 14.5 | 152 23.9 |
| 33 | 23 38.3 | 23 42.2 | 22 33.6 | 33 | 5.2 | 93 14.6 | 153 24.1 |
| 34 | 23 38.5 | 23 42.4 | 22 33.9 | 34 | 5.4 | 94 14.8 | 154 24.3 |
| 35 | 23 38.8 | 23 42.7 | 22 34.1 | 35 | 5.5 | 95 15.0 | 155 24.4 |
| 36 | 23 39.0 | 23 42.9 | 22 34.4 | 36 | 5.7 | 96 15.1 | 156 24.6 |
| 37 | 23 39.3 | 23 43.2 | 22 34.6 | 37 | 5.8 | 97 15.3 | 157 24.7 |
| 38 | 23 39.5 | 23 43.4 | 22 34.8 | 38 | 6.0 | 98 15.4 | 158 24.9 |
| 39 | 23 39.8 | 23 43.7 | 22 35.1 | 39 | 6.1 | 99 15.6 | 159 25.0 |
| 40 | 23 40.0 | 23 43.9 | 22 35.3 | 40 | 6.3 | 100 15.8 | 160 25.2 |
| 41 | 23 40.3 | 23 44.2 | 22 35.5 | 41 | 6.5 | 101 15.9 | 161 25.4 |
| 42 | 23 40.5 | 23 44.4 | 22 35.8 | 42 | 6.6 | 102 16.1 | 162 25.5 |
| 43 | 23 40.8 | 23 44.7 | 22 36.0 | 43 | 6.8 | 103 16.2 | 163 25.7 |
| 44 | 23 41.0 | 23 44.9 | 22 36.3 | 44 | 6.9 | 104 16.4 | 164 25.8 |
| 45 | 23 41.3 | 23 45.2 | 22 36.5 | 45 | 7.1 | 105 16.5 | 165 26.0 |
| 46 | 23 41.5 | 23 45.4 | 22 36.7 | 46 | 7.2 | 106 16.7 | 166 26.1 |
| 47 | 23 41.8 | 23 45.7 | 22 37.0 | 47 | 7.4 | 107 16.9 | 167 26.3 |
| 48 | 23 42.0 | 23 46.0 | 22 37.2 | 48 | 7.6 | 108 17.0 | 168 26.5 |
| 49 | 23 42.3 | 23 46.2 | 22 37.5 | 49 | 7.7 | 109 17.2 | 169 26.6 |
| 50 | 23 42.5 | 23 46.5 | 22 37.7 | 50 | 7.9 | 110 17.3 | 170 26.8 |
| 51 | 23 42.8 | 23 46.7 | 22 37.9 | 51 | 8.0 | 111 17.5 | 171 26.9 |
| 52 | 23 43.0 | 23 47.0 | 22 38.2 | 52 | 8.2 | 112 17.6 | 172 27.1 |
| 53 | 23 43.3 | 23 47.2 | 22 38.4 | 53 | 8.3 | 113 17.8 | 173 27.2 |
| 54 | 23 43.5 | 23 47.5 | 22 38.7 | 54 | 8.5 | 114 18.0 | 174 27.4 |
| 55 | 23 43.8 | 23 47.7 | 22 38.9 | 55 | 8.7 | 115 18.1 | 175 27.6 |
| 56 | 23 44.0 | 23 48.0 | 22 39.1 | 56 | 8.8 | 116 18.3 | 176 27.7 |
| 57 | 23 44.3 | 23 48.2 | 22 39.4 | 57 | 9.0 | 117 18.4 | 177 27.9 |
| 58 | 23 44.5 | 23 48.5 | 22 39.6 | 58 | 9.1 | 118 18.6 | 178 28.0 |
| 59 | 23 44.8 | 23 48.7 | 22 39.8 | 59 | 9.3 | 119 18.7 | 179 28.2 |
| 60 | 23 45.0 | 23 49.0 | 22 40.1 | 60 | 9.5 | 120 18.9 | 180 28.4 |

1 h 35 min

| POPRAVKA ČASOVNOG UGLA | | | | POPRAVKA DRUGOG REDA za časovni ugao i deklinaciju Sunca, Mjeseca i planeta | | | |
|------------------------|--------------------|-----------------------|----------------|---|-------|----------|----------|
| S | SUNCA I PLANETA | PROLJEĆNE TAČKE °' | MJESECA (°) | Δ | popr. | Δ | popr. |
| | o' " | o' " | o' " | | " | " | " |
| 0 | 23 45.0 | 23 49.0 | 22 40.1 | 0 | .0 | 60 9.6 | 120 19.1 |
| 1 | 23 45.3 | 23 49.2 | 22 40.3 | 1 | .2 | 61 9.7 | 121 19.3 |
| 2 | 23 45.5 | 23 49.5 | 22 40.6 | 2 | .3 | 62 9.9 | 122 19.4 |
| 3 | 23 45.8 | 23 49.7 | 22 40.8 | 3 | .5 | 63 10.0 | 123 19.6 |
| 4 | 23 46.0 | 23 50.0 | 22 41.0 | 4 | .6 | 64 10.2 | 124 19.7 |
| 5 | 23 46.3 | 23 50.2 | 22 41.3 | 5 | .8 | 65 10.3 | 125 19.9 |
| 6 | 23 46.5 | 23 50.5 | 22 41.5 | 6 | 1.0 | 66 10.5 | 126 20.1 |
| 7 | 23 46.8 | 23 50.7 | 22 41.8 | 7 | 1.1 | 67 10.7 | 127 20.2 |
| 8 | 23 47.0 | 23 51.0 | 22 42.0 | 8 | 1.3 | 68 10.8 | 128 20.4 |
| 9 | 23 47.3 | 23 51.2 | 22 42.2 | 9 | 1.4 | 69 11.0 | 129 20.5 |
| 10 | 23 47.5 | 23 51.5 | 22 42.5 | 10 | 1.6 | 70 11.1 | 130 20.7 |
| 11 | 23 47.8 | 23 51.7 | 22 42.7 | 11 | 1.8 | 71 11.3 | 131 20.9 |
| 12 | 23 48.0 | 23 52.0 | 22 42.9 | 12 | 1.9 | 72 11.5 | 132 21.0 |
| 13 | 23 48.3 | 23 52.2 | 22 43.2 | 13 | 2.1 | 73 11.6 | 133 21.2 |
| 14 | 23 48.5 | 23 52.5 | 22 43.4 | 14 | 2.2 | 74 11.8 | 134 21.3 |
| 15 | 23 48.8 | 23 52.7 | 22 43.7 | 15 | 2.4 | 75 11.9 | 135 21.5 |
| 16 | 23 49.0 | 23 53.0 | 22 43.9 | 16 | 2.5 | 76 12.1 | 136 21.6 |
| 17 | 23 49.3 | 23 53.2 | 22 44.1 | 17 | 2.7 | 77 12.3 | 137 21.8 |
| 18 | 23 49.5 | 23 53.5 | 22 44.4 | 18 | 2.9 | 78 12.4 | 138 22.0 |
| 19 | 23 49.8 | 23 53.7 | 22 44.6 | 19 | 3.0 | 79 12.6 | 139 22.1 |
| 20 | 23 50.0 | 23 54.0 | 22 44.9 | 20 | 3.2 | 80 12.7 | 140 22.3 |
| 21 | 23 50.3 | 23 54.2 | 22 45.1 | 21 | 3.3 | 81 12.9 | 141 22.4 |
| 22 | 23 50.5 | 23 54.5 | 22 45.3 | 22 | 3.5 | 82 13.1 | 142 22.6 |
| 23 | 23 50.8 | 23 54.7 | 22 45.6 | 23 | 3.7 | 83 13.2 | 143 22.8 |
| 24 | 23 51.0 | 23 55.0 | 22 45.8 | 24 | 3.8 | 84 13.4 | 144 22.9 |
| 25 | 23 51.3 | 23 55.2 | 22 46.0 | 25 | 4.0 | 85 13.5 | 145 23.1 |
| 26 | 23 51.5 | 23 55.5 | 22 46.3 | 26 | 4.1 | 86 13.7 | 146 23.2 |
| 27 | 23 51.8 | 23 55.7 | 22 46.5 | 27 | 4.3 | 87 13.8 | 147 23.4 |
| 28 | 23 52.0 | 23 56.0 | 22 46.8 | 28 | 4.5 | 88 14.0 | 148 23.6 |
| 29 | 23 52.3 | 23 56.2 | 22 47.0 | 29 | 4.6 | 89 14.2 | 149 23.7 |
| 30 | 23 52.5 | 23 56.5 | 22 47.2 | 30 | 4.8 | 90 14.3 | 150 23.9 |
| 31 | 23 52.8 | 23 56.7 | 22 47.5 | 31 | 4.9 | 91 14.5 | 151 24.0 |
| 32 | 23 53.0 | 23 57.0 | 22 47.7 | 32 | 5.1 | 92 14.6 | 152 24.2 |
| 33 | 23 53.3 | 23 57.2 | 22 48.0 | 33 | 5.3 | 93 14.8 | 153 24.4 |
| 34 | 23 53.5 | 23 57.5 | 22 48.2 | 34 | 5.4 | 94 15.0 | 154 24.5 |
| 35 | 23 53.8 | 23 57.7 | 22 48.4 | 35 | 5.6 | 95 15.1 | 155 24.7 |
| 36 | 23 54.0 | 23 58.0 | 22 48.7 | 36 | 5.7 | 96 15.3 | 156 24.8 |
| 37 | 23 54.3 | 23 58.2 | 22 48.9 | 37 | 5.9 | 97 15.4 | 157 25.0 |
| 38 | 23 54.5 | 23 58.5 | 22 49.2 | 38 | 6.0 | 98 15.6 | 158 25.1 |
| 39 | 23 54.8 | 23 58.7 | 22 49.4 | 39 | 6.2 | 99 15.8 | 159 25.3 |
| 40 | 23 55.0 | 23 59.0 | 22 49.6 | 40 | 6.4 | 100 15.9 | 160 25.5 |
| 41 | 23 55.3 | 23 59.2 | 22 49.9 | 41 | 6.5 | 101 16.1 | 161 25.6 |
| 42 | 23 55.5 | 23 59.5 | 22 50.1 | 42 | 6.7 | 102 16.2 | 162 25.8 |
| 43 | 23 55.8 | 23 59.7 | 22 50.3 | 43 | 6.8 | 103 16.4 | 163 25.9 |
| 44 | 23 56.0 | 23 60.0 | 22 50.6 | 44 | 7.0 | 104 16.6 | 164 26.1 |
| 45 | 23 56.3 | 24 .2 | 22 50.8 | 45 | 7.2 | 105 16.7 | 165 26.3 |
| 46 | 23 56.5 | 24 .5 | 22 51.1 | 46 | 7.3 | 106 16.9 | 166 26.4 |
| 47 | 23 56.8 | 24 .7 | 22 51.3 | 47 | 7.5 | 107 17.0 | 167 26.6 |
| 48 | 23 57.0 | 24 1.0 | 22 51.5 | 48 | 7.6 | 108 17.2 | 168 26.7 |
| 49 | 23 57.3 | 24 1.2 | 22 51.8 | 49 | 7.8 | 109 17.3 | 169 26.9 |
| 50 | 23 57.5 | 24 1.5 | 22 52.0 | 50 | 8.0 | 110 17.5 | 170 27.1 |
| 51 | 23 57.8 | 24 1.7 | 22 52.3 | 51 | 8.1 | 111 17.7 | 171 27.2 |
| 52 | 23 58.0 | 24 2.0 | 22 52.5 | 52 | 8.3 | 112 17.8 | 172 27.4 |
| 53 | 23 58.3 | 24 2.2 | 22 52.7 | 53 | 8.4 | 113 18.0 | 173 27.5 |
| 54 | 23 58.5 | 24 2.5 | 22 53.0 | 54 | 8.6 | 114 18.1 | 174 27.7 |
| 55 | 23 58.8 | 24 2.7 | 22 53.2 | 55 | 8.8 | 115 18.3 | 175 27.9 |
| 56 | 23 59.0 | 24 3.0 | 22 53.4 | 56 | 8.9 | 116 18.5 | 176 28.0 |
| 57 | 23 59.3 | 24 3.2 | 22 53.7 | 57 | 9.1 | 117 18.6 | 177 28.2 |
| 58 | 23 59.5 | 24 3.5 | 22 53.9 | 58 | 9.2 | 118 18.8 | 178 28.3 |
| 59 | 23 59.8 | 24 3.7 | 22 54.2 | 59 | 9.4 | 119 18.9 | 179 28.5 |
| 60 | 24 .0 | 24 4.0 | 22 54.4 | 60 | 9.6 | 120 19.1 | 180 28.7 |

1 h 36 min

| POPRAVKA ČASOVNOG UGLA | | | | POPRAVKA DRUGOG REDA za časovni ugao i deklinaciju Sunca, Mjeseca i planeta | | | |
|------------------------|--------------------|-----------------------|----------------|---|----------|----------|---|
| s | SUNCA I PLANETA | PROLJEČNE TACKE °' | MJESECA (°) | Δ | Δ | Δ | Δ |
| | o ′ | o ′ | o ′ | | | | |
| 0 | 24 .0 | 24 4.0 | 22 54.4 | 0 .0 | 60 9.7 | 120 19.3 | |
| 1 | 24 .3 | 24 4.3 | 22 54.6 | 1 .2 | 61 9.8 | 121 19.5 | |
| 2 | 24 .5 | 24 4.5 | 22 54.9 | 2 .3 | 62 10.0 | 122 19.6 | |
| 3 | 24 .8 | 24 4.8 | 22 55.1 | 3 .5 | 63 10.1 | 123 19.8 | |
| 4 | 24 1.0 | 24 5.0 | 22 55.4 | 4 .6 | 64 10.3 | 124 19.9 | |
| 5 | 24 1.3 | 24 5.3 | 22 55.6 | 5 .8 | 65 10.5 | 125 20.1 | |
| 6 | 24 1.5 | 24 5.5 | 22 55.8 | 6 1.0 | 66 10.6 | 126 20.3 | |
| 7 | 24 1.8 | 24 5.8 | 22 56.1 | 7 1.1 | 67 10.8 | 127 20.4 | |
| 8 | 24 2.0 | 24 6.0 | 22 56.3 | 8 1.3 | 68 10.9 | 128 20.6 | |
| 9 | 24 2.3 | 24 6.3 | 22 56.5 | 9 1.4 | 69 11.1 | 129 20.7 | |
| 10 | 24 2.5 | 24 6.5 | 22 56.8 | 10 1.6 | 70 11.3 | 130 20.9 | |
| 11 | 24 2.8 | 24 6.8 | 22 57.0 | 11 1.8 | 71 11.4 | 131 21.1 | |
| 12 | 24 3.0 | 24 7.0 | 22 57.3 | 12 1.9 | 72 11.6 | 132 21.2 | |
| 13 | 24 3.3 | 24 7.3 | 22 57.5 | 13 2.1 | 73 11.7 | 133 21.4 | |
| 14 | 24 3.5 | 24 7.5 | 22 57.7 | 14 2.3 | 74 11.9 | 134 21.6 | |
| 15 | 24 3.8 | 24 7.8 | 22 58.0 | 15 2.4 | 75 12.1 | 135 21.7 | |
| 16 | 24 4.0 | 24 8.0 | 22 58.2 | 16 2.6 | 76 12.2 | 136 21.9 | |
| 17 | 24 4.3 | 24 8.3 | 22 58.5 | 17 2.7 | 77 12.4 | 137 22.0 | |
| 18 | 24 4.5 | 24 8.5 | 22 58.7 | 18 2.9 | 78 12.5 | 138 22.2 | |
| 19 | 24 4.8 | 24 8.8 | 22 58.9 | 19 3.1 | 79 12.7 | 139 22.4 | |
| 20 | 24 5.0 | 24 9.0 | 22 59.2 | 20 3.2 | 80 12.9 | 140 22.5 | |
| 21 | 24 5.3 | 24 9.3 | 22 59.4 | 21 3.4 | 81 13.0 | 141 22.7 | |
| 22 | 24 5.5 | 24 9.5 | 22 59.6 | 22 3.5 | 82 13.2 | 142 22.8 | |
| 23 | 24 5.8 | 24 9.8 | 22 59.9 | 23 3.7 | 83 13.3 | 143 23.0 | |
| 24 | 24 6.0 | 24 10.0 | 23 .1 | 24 3.9 | 84 13.5 | 144 23.2 | |
| 25 | 24 6.3 | 24 10.3 | 23 .4 | 25 4.0 | 85 13.7 | 145 23.3 | |
| 26 | 24 6.5 | 24 10.5 | 23 .6 | 26 4.2 | 86 13.8 | 146 23.5 | |
| 27 | 24 6.8 | 24 10.8 | 23 .8 | 27 4.3 | 87 14.0 | 147 23.6 | |
| 28 | 24 7.0 | 24 11.0 | 23 1.1 | 28 4.5 | 88 14.2 | 148 23.8 | |
| 29 | 24 7.3 | 24 11.3 | 23 1.3 | 29 4.7 | 89 14.3 | 149 24.0 | |
| 30 | 24 7.5 | 24 11.5 | 23 1.6 | 30 4.8 | 90 14.5 | 150 24.1 | |
| 31 | 24 7.8 | 24 11.8 | 23 1.8 | 31 5.0 | 91 14.6 | 151 24.3 | |
| 32 | 24 8.0 | 24 12.0 | 23 2.0 | 32 5.1 | 92 14.8 | 152 24.4 | |
| 33 | 24 8.3 | 24 12.3 | 23 2.3 | 33 5.3 | 93 15.0 | 153 24.6 | |
| 34 | 24 8.5 | 24 12.5 | 23 2.5 | 34 5.5 | 94 15.1 | 154 24.8 | |
| 35 | 24 8.8 | 24 12.8 | 23 2.8 | 35 5.6 | 95 15.3 | 155 24.9 | |
| 36 | 24 9.0 | 24 13.0 | 23 3.0 | 36 5.8 | 96 15.4 | 156 25.1 | |
| 37 | 24 9.3 | 24 13.3 | 23 3.2 | 37 6.0 | 97 15.6 | 157 25.3 | |
| 38 | 24 9.5 | 24 13.5 | 23 3.5 | 38 6.1 | 98 15.8 | 158 25.4 | |
| 39 | 24 9.8 | 24 13.8 | 23 3.7 | 39 6.3 | 99 15.9 | 159 25.6 | |
| 40 | 24 10.0 | 24 14.0 | 23 3.9 | 40 6.4 | 100 16.1 | 160 25.7 | |
| 41 | 24 10.3 | 24 14.3 | 23 4.2 | 41 6.6 | 101 16.2 | 161 25.9 | |
| 42 | 24 10.5 | 24 14.5 | 23 4.4 | 42 6.8 | 102 16.4 | 162 26.1 | |
| 43 | 24 10.8 | 24 14.8 | 23 4.7 | 43 6.9 | 103 16.6 | 163 26.2 | |
| 44 | 24 11.0 | 24 15.0 | 23 4.9 | 44 7.1 | 104 16.7 | 164 26.4 | |
| 45 | 24 11.3 | 24 15.3 | 23 5.1 | 45 7.2 | 105 16.9 | 165 26.5 | |
| 46 | 24 11.5 | 24 15.5 | 23 5.4 | 46 7.4 | 106 17.0 | 166 26.7 | |
| 47 | 24 11.8 | 24 15.8 | 23 5.6 | 47 7.6 | 107 17.2 | 167 26.9 | |
| 48 | 24 12.0 | 24 16.0 | 23 5.9 | 48 7.7 | 108 17.4 | 168 27.0 | |
| 49 | 24 12.3 | 24 16.3 | 23 6.1 | 49 7.9 | 109 17.5 | 169 27.2 | |
| 50 | 24 12.5 | 24 16.5 | 23 6.3 | 50 8.0 | 110 17.7 | 170 27.3 | |
| 51 | 24 12.8 | 24 16.8 | 23 6.6 | 51 8.2 | 111 17.9 | 171 27.5 | |
| 52 | 24 13.0 | 24 17.0 | 23 6.8 | 52 8.4 | 112 18.0 | 172 27.7 | |
| 53 | 24 13.3 | 24 17.3 | 23 7.0 | 53 8.5 | 113 18.2 | 173 27.8 | |
| 54 | 24 13.5 | 24 17.5 | 23 7.3 | 54 8.7 | 114 18.3 | 174 28.0 | |
| 55 | 24 13.8 | 24 17.8 | 23 7.5 | 55 8.8 | 115 18.5 | 175 28.1 | |
| 56 | 24 14.0 | 24 18.0 | 23 7.8 | 56 9.0 | 116 18.7 | 176 28.3 | |
| 57 | 24 14.3 | 24 18.3 | 23 8.0 | 57 9.2 | 117 18.8 | 177 28.5 | |
| 58 | 24 14.5 | 24 18.5 | 23 8.2 | 58 9.3 | 118 19.0 | 178 28.6 | |
| 59 | 24 14.8 | 24 18.8 | 23 8.5 | 59 9.5 | 119 19.1 | 179 28.8 | |
| 60 | 24 15.0 | 24 19.0 | 23 8.7 | 60 9.7 | 120 19.3 | 180 29.0 | |

1 h 37 min

| POPRAVKA ČASOVNOG UGLA | | | | POPRAVKA DRUGOG REDA za časovni ugao i deklinaciju Sunca, Mjeseca i planeta | | | |
|------------------------|--------------------|-----------------------|----------------|---|----------|----------|---|
| s | SUNCA I PLANETA | PROLJEČNE TACKE °' | MJESECA (°) | Δ | Δ | Δ | Δ |
| | o ′ | o ′ | o ′ | | | | |
| 0 | 24 15.0 | 24 19.0 | 23 8.7 | 0 .0 | 60 9.8 | 120 19.5 | |
| 1 | 24 15.3 | 24 19.3 | 23 9.0 | 1 .2 | 61 9.9 | 121 19.7 | |
| 2 | 24 15.5 | 24 19.5 | 23 9.2 | 2 .3 | 62 10.1 | 122 19.8 | |
| 3 | 24 15.8 | 24 19.8 | 23 9.4 | 3 .5 | 63 10.2 | 123 20.0 | |
| 4 | 24 16.0 | 24 20.0 | 23 9.7 | 4 .7 | 64 10.4 | 124 20.2 | |
| 5 | 24 16.3 | 24 20.3 | 23 9.9 | 5 .8 | 65 10.6 | 125 20.3 | |
| 6 | 24 16.5 | 24 20.5 | 23 10.1 | 6 1.0 | 66 10.7 | 126 20.5 | |
| 7 | 24 16.8 | 24 20.8 | 23 10.4 | 7 1.1 | 67 10.9 | 127 20.6 | |
| 8 | 24 17.0 | 24 21.0 | 23 10.6 | 8 1.3 | 68 11.1 | 128 20.8 | |
| 9 | 24 17.3 | 24 21.3 | 23 10.9 | 9 1.5 | 69 11.2 | 129 21.0 | |
| 10 | 24 17.5 | 24 21.5 | 23 11.1 | 10 1.6 | 70 11.4 | 130 21.1 | |
| 11 | 24 17.8 | 24 21.8 | 23 11.3 | 11 1.8 | 71 11.5 | 131 21.3 | |
| 12 | 24 18.0 | 24 22.1 | 23 11.6 | 12 2.0 | 72 11.7 | 132 21.5 | |
| 13 | 24 18.3 | 24 22.3 | 23 11.8 | 13 2.1 | 73 11.9 | 133 21.6 | |
| 14 | 24 18.5 | 24 22.6 | 23 12.1 | 14 2.3 | 74 12.0 | 134 21.8 | |
| 15 | 24 18.8 | 24 22.8 | 23 12.3 | 15 2.4 | 75 12.2 | 135 21.9 | |
| 16 | 24 19.0 | 24 23.1 | 23 12.5 | 16 2.6 | 76 12.4 | 136 22.1 | |
| 17 | 24 19.3 | 24 23.3 | 23 12.8 | 17 2.8 | 77 12.5 | 137 22.3 | |
| 18 | 24 19.5 | 24 23.6 | 23 13.0 | 18 2.9 | 78 12.7 | 138 22.4 | |
| 19 | 24 19.8 | 24 23.8 | 23 13.3 | 19 3.1 | 79 12.8 | 139 22.6 | |
| 20 | 24 20.0 | 24 24.1 | 23 13.5 | 20 3.3 | 80 13.0 | 140 22.8 | |
| 21 | 24 20.3 | 24 24.3 | 23 13.7 | 21 3.4 | 81 13.2 | 141 22.9 | |
| 22 | 24 20.5 | 24 24.6 | 23 14.0 | 22 3.6 | 82 13.3 | 142 23.1 | |
| 23 | 24 20.8 | 24 24.8 | 23 14.2 | 23 3.7 | 83 13.5 | 143 23.2 | |
| 24 | 24 21.0 | 24 25.1 | 23 14.4 | 24 3.9 | 84 13.7 | 144 23.4 | |
| 25 | 24 21.3 | 24 25.3 | 23 14.7 | 25 4.1 | 85 13.8 | 145 23.6 | |
| 26 | 24 21.5 | 24 25.6 | 23 14.9 | 26 4.2 | 86 14.0 | 146 23.7 | |
| 27 | 24 21.8 | 24 25.8 | 23 15.2 | 27 4.4 | 87 14.1 | 147 23.9 | |
| 28 | 24 22.0 | 24 26.1 | 23 15.4 | 28 4.6 | 88 14.3 | 148 24.1 | |
| 29 | 24 22.3 | 24 26.3 | 23 15.6 | 29 4.7 | 89 14.5 | 149 24.2 | |
| 30 | 24 22.5 | 24 26.6 | 23 15.9 | 30 4.9 | 90 14.6 | 150 24.4 | |
| 31 | 24 22.8 | 24 26.8 | 23 16.1 | 31 5.0 | 91 14.8 | 151 24.5 | |
| 32 | 24 23.0 | 24 27.1 | 23 16.4 | 32 5.2 | 92 15.0 | 152 24.7 | |
| 33 | 24 23.3 | 24 27.3 | 23 16.6 | 33 5.4 | 93 15.1 | 153 24.9 | |
| 34 | 24 23.5 | 24 27.6 | 23 16.8 | 34 5.5 | 94 15.3 | 154 25.0 | |
| 35 | 24 23.8 | 24 27.8 | 23 17.1 | 35 5.7 | 95 15.4 | 155 25.2 | |
| 36 | 24 24.0 | 24 28.1 | 23 17.3 | 36 5.9 | 96 15.6 | 156 25.4 | |
| 37 | 24 24.3 | 24 28.3 | 23 17.5 | 37 6.0 | 97 15.8 | 157 25.5 | |
| 38 | 24 24.5 | 24 28.6 | 23 17.8 | 38 6.2 | 98 15.9 | 158 25.7 | |
| 39 | 24 24.8 | 24 28.8 | 23 18.0 | 39 6.3 | 99 16.1 | 159 25.8 | |
| 40 | 24 25.0 | 24 29.1 | 23 18.3 | 40 6.5 | 100 16.3 | 160 26.0 | |
| 41 | 24 25.3 | 24 29.3 | 23 18.5 | 41 6.7 | 101 16.4 | 161 26.2 | |
| 42 | 24 25.5 | 24 29.6 | 23 18.7 | 42 6.8 | 102 16.6 | 162 26.3 | |
| 43 | 24 25.8 | 24 29.8 | 23 19.0 | 43 7.0 | 103 16.7 | 163 26.5 | |
| 44 | 24 26.0 | 24 30.1 | 23 19.2 | 44 7.2 | 104 16.9 | 164 26.7 | |
| 45 | 24 26.3 | 24 30.3 | 23 19.5 | 45 7.3 | 105 17.1 | 165 26.8 | |
| 46 | 24 26.5 | 24 30.6 | 23 19.7 | 46 7.5 | 106 17.2 | 166 27.0 | |
| 47 | 24 26.8 | 24 30.8 | 23 19.9 | 47 7.6 | 107 17.4 | 167 27.1 | |
| 48 | 24 27.0 | 24 31.1 | 23 20.2 | 48 7.8 | 108 17.6 | 168 27.3 | |
| 49 | 24 27.3 | 24 31.3 | 23 20.4 | 49 8.0 | 109 17.7 | 169 27.5 | |
| 50 | 24 27.5 | 24 31.6 | 23 20.6 | 50 8.1 | 110 17.9 | 170 27.6 | |
| 51 | 24 27.8 | 24 31.8 | 23 20.9 | 51 8.3 | 111 18.0 | 171 27.8 | |
| 52 | 24 28.0 | 24 32.1 | 23 21.1 | 52 8.5 | 112 18.2 | 172 28.0 | |
| 53 | 24 28.3 | 24 32.3 | 23 21.4 | 53 8.6 | 113 18.4 | 173 28.1 | |
| 54 | 24 28.5 | 24 32.6 | 23 21.6 | 54 8.8 | 114 18.5 | 174 28.3 | |
| 55 | 24 28.8 | 24 32.8 | 23 21.8 | 55 8.9 | 115 18.7 | 175 28.4 | |
| 56 | 24 29.0 | 24 33.1 | 23 22.1 | 56 9.1 | 116 18.9 | 176 28.6 | |
| 57 | 24 29.3 | 24 33.3 | 23 22.3 | 57 9.3 | 117 19.0 | 177 28.8 | |
| 58 | 24 29.5 | 24 33.6 | 23 22.6 | 58 9.4 | 118 19.2 | 178 28.9 | |
| 59 | 24 29.8 | 24 33.8 | 23 22.8 | 59 9.6 | 119 19.3 | 179 29.1 | |
| 60 | 24 30.0 | 24 34.1 | 23 23.0 | 60 9.8 | 120 19.5 | 180 29.3 | |

| POPRAVKA ČASOVNOG UGLA | | | | POPRAVKA DRUGOG REDA za časovni ugao i deklinaciju Sunca, Mjeseca i planeta | | | | |
|------------------------|-----------------|--------------------|-----------|---|-------|----------|-------|----------|
| s | SUNCA I PLANETA | PROLJEĆNE TACKE T' | MJESECA (| Δ | popr. | Δ | popr. | |
| | o | t | o | | | | | t |
| 0 | 24 30.0 | 24 34.1 | 23 23.0 | 0 | .0 | 60 | 9.9 | 120 19.7 |
| 1 | 24 30.3 | 24 34.3 | 23 23.3 | 1 | .2 | 61 | 10.0 | 121 19.9 |
| 2 | 24 30.5 | 24 34.6 | 23 23.5 | 2 | .3 | 62 | 10.2 | 122 20.0 |
| 3 | 24 30.8 | 24 34.8 | 23 23.7 | 3 | .5 | 63 | 10.3 | 123 20.2 |
| 4 | 24 31.0 | 24 35.1 | 23 24.0 | 4 | .7 | 64 | 10.5 | 124 20.4 |
| 5 | 24 31.3 | 24 35.3 | 23 24.2 | 5 | .8 | 65 | 10.7 | 125 20.5 |
| 6 | 24 31.5 | 24 35.6 | 23 24.5 | 6 | 1.0 | 66 | 10.8 | 126 20.7 |
| 7 | 24 31.8 | 24 35.8 | 23 24.7 | 7 | 1.1 | 67 | 11.0 | 127 20.8 |
| 8 | 24 32.0 | 24 36.1 | 23 24.9 | 8 | 1.3 | 68 | 11.2 | 128 21.0 |
| 9 | 24 32.3 | 24 36.3 | 23 25.2 | 9 | 1.5 | 69 | 11.3 | 129 21.2 |
| 10 | 24 32.5 | 24 36.6 | 23 25.4 | 10 | 1.6 | 70 | 11.5 | 130 21.3 |
| 11 | 24 32.8 | 24 36.8 | 23 25.7 | 11 | 1.8 | 71 | 11.7 | 131 21.5 |
| 12 | 24 33.0 | 24 37.1 | 23 25.9 | 12 | 2.0 | 72 | 11.8 | 132 21.7 |
| 13 | 24 33.3 | 24 37.3 | 23 26.1 | 13 | 2.1 | 73 | 12.0 | 133 21.8 |
| 14 | 24 33.5 | 24 37.6 | 23 26.4 | 14 | 2.3 | 74 | 12.1 | 134 22.0 |
| 15 | 24 33.8 | 24 37.8 | 23 26.6 | 15 | 2.5 | 75 | 12.3 | 135 22.2 |
| 16 | 24 34.0 | 24 38.1 | 23 26.9 | 16 | 2.6 | 76 | 12.5 | 136 22.3 |
| 17 | 24 34.3 | 24 38.3 | 23 27.1 | 17 | 2.8 | 77 | 12.6 | 137 22.5 |
| 18 | 24 34.5 | 24 38.6 | 23 27.3 | 18 | 3.0 | 78 | 12.8 | 138 22.7 |
| 19 | 24 34.8 | 24 38.8 | 23 27.6 | 19 | 3.1 | 79 | 13.0 | 139 22.8 |
| 20 | 24 35.0 | 24 39.1 | 23 27.8 | 20 | 3.3 | 80 | 13.1 | 140 23.0 |
| 21 | 24 35.3 | 24 39.3 | 23 28.0 | 21 | 3.4 | 81 | 13.3 | 141 23.1 |
| 22 | 24 35.5 | 24 39.6 | 23 28.3 | 22 | 3.6 | 82 | 13.5 | 142 23.3 |
| 23 | 24 35.8 | 24 39.8 | 23 28.5 | 23 | 3.8 | 83 | 13.6 | 143 23.5 |
| 24 | 24 36.0 | 24 40.1 | 23 28.8 | 24 | 3.9 | 84 | 13.8 | 144 23.6 |
| 25 | 24 36.3 | 24 40.4 | 23 29.0 | 25 | 4.1 | 85 | 14.0 | 145 23.8 |
| 26 | 24 36.5 | 24 40.6 | 23 29.2 | 26 | 4.3 | 86 | 14.1 | 146 24.0 |
| 27 | 24 36.8 | 24 40.9 | 23 29.5 | 27 | 4.4 | 87 | 14.3 | 147 24.1 |
| 28 | 24 37.0 | 24 41.1 | 23 29.7 | 28 | 4.6 | 88 | 14.4 | 148 24.3 |
| 29 | 24 37.3 | 24 41.4 | 23 30.0 | 29 | 4.8 | 89 | 14.6 | 149 24.5 |
| 30 | 24 37.5 | 24 41.6 | 23 30.2 | 30 | 4.9 | 90 | 14.8 | 150 24.6 |
| 31 | 24 37.8 | 24 41.9 | 23 30.4 | 31 | 5.1 | 91 | 14.9 | 151 24.8 |
| 32 | 24 38.0 | 24 42.1 | 23 30.7 | 32 | 5.3 | 92 | 15.1 | 152 25.0 |
| 33 | 24 38.3 | 24 42.4 | 23 30.9 | 33 | 5.4 | 93 | 15.3 | 153 25.1 |
| 34 | 24 38.5 | 24 42.6 | 23 31.1 | 34 | 5.6 | 94 | 15.4 | 154 25.3 |
| 35 | 24 38.8 | 24 42.9 | 23 31.4 | 35 | 5.7 | 95 | 15.6 | 155 25.4 |
| 36 | 24 39.0 | 24 43.1 | 23 31.6 | 36 | 5.9 | 96 | 15.8 | 156 25.6 |
| 37 | 24 39.3 | 24 43.4 | 23 31.9 | 37 | 6.1 | 97 | 15.9 | 157 25.8 |
| 38 | 24 39.5 | 24 43.6 | 23 32.1 | 38 | 6.2 | 98 | 16.1 | 158 25.9 |
| 39 | 24 39.8 | 24 43.9 | 23 32.3 | 39 | 6.4 | 99 | 16.3 | 159 26.1 |
| 40 | 24 40.0 | 24 44.1 | 23 32.6 | 40 | 6.6 | 100 | 16.4 | 160 26.3 |
| 41 | 24 40.3 | 24 44.4 | 23 32.8 | 41 | 6.7 | 101 | 16.6 | 161 26.4 |
| 42 | 24 40.5 | 24 44.6 | 23 33.1 | 42 | 6.9 | 102 | 16.7 | 162 26.6 |
| 43 | 24 40.8 | 24 44.9 | 23 33.3 | 43 | 7.1 | 103 | 16.9 | 163 26.8 |
| 44 | 24 41.0 | 24 45.1 | 23 33.5 | 44 | 7.2 | 104 | 17.1 | 164 26.9 |
| 45 | 24 41.3 | 24 45.4 | 23 33.8 | 45 | 7.4 | 105 | 17.2 | 165 27.1 |
| 46 | 24 41.5 | 24 45.6 | 23 34.0 | 46 | 7.6 | 106 | 17.4 | 166 27.3 |
| 47 | 24 41.8 | 24 45.9 | 23 34.2 | 47 | 7.7 | 107 | 17.6 | 167 27.4 |
| 48 | 24 42.0 | 24 46.1 | 23 34.5 | 48 | 7.9 | 108 | 17.7 | 168 27.6 |
| 49 | 24 42.3 | 24 46.4 | 23 34.7 | 49 | 8.0 | 109 | 17.9 | 169 27.7 |
| 50 | 24 42.5 | 24 46.6 | 23 35.0 | 50 | 8.2 | 110 | 18.1 | 170 27.9 |
| 51 | 24 42.8 | 24 46.9 | 23 35.2 | 51 | 8.4 | 111 | 18.2 | 171 28.1 |
| 52 | 24 43.0 | 24 47.1 | 23 35.4 | 52 | 8.5 | 112 | 18.4 | 172 28.2 |
| 53 | 24 43.3 | 24 47.4 | 23 35.7 | 53 | 8.7 | 113 | 18.6 | 173 28.4 |
| 54 | 24 43.5 | 24 47.6 | 23 35.9 | 54 | 8.9 | 114 | 18.7 | 174 28.6 |
| 55 | 24 43.8 | 24 47.9 | 23 36.2 | 55 | 9.0 | 115 | 18.9 | 175 28.7 |
| 56 | 24 44.0 | 24 48.1 | 23 36.4 | 56 | 9.2 | 116 | 19.0 | 176 28.9 |
| 57 | 24 44.3 | 24 48.4 | 23 36.6 | 57 | 9.4 | 117 | 19.2 | 177 29.1 |
| 58 | 24 44.5 | 24 48.6 | 23 36.9 | 58 | 9.5 | 118 | 19.4 | 178 29.2 |
| 59 | 24 44.8 | 24 48.9 | 23 37.1 | 59 | 9.7 | 119 | 19.5 | 179 29.4 |
| 60 | 24 45.0 | 24 49.1 | 23 37.4 | 60 | 9.9 | 120 | 19.7 | 180 29.6 |

| POPRAVKA ČASOVNOG UGLA | | | | POPRAVKA DRUGOG REDA za časovni ugao i deklinaciju Sunca, Mjeseca i planeta | | | | |
|------------------------|-----------------|--------------------|-----------|---|-------|----------|-------|----------|
| s | SUNCA I PLANETA | PROLJEĆNE TACKE T' | MJESECA (| Δ | popr. | Δ | popr. | |
| | o | t | o | | | | | t |
| 0 | 24 45.0 | 24 49.1 | 23 37.4 | 0 | .0 | 60 | 10.0 | 120 19.9 |
| 1 | 24 45.3 | 24 49.4 | 23 37.6 | 1 | .2 | 61 | 10.1 | 121 20.1 |
| 2 | 24 45.5 | 24 49.6 | 23 37.8 | 2 | .3 | 62 | 10.3 | 122 20.2 |
| 3 | 24 45.8 | 24 49.9 | 23 38.1 | 3 | .5 | 63 | 10.4 | 123 20.4 |
| 4 | 24 46.0 | 24 50.1 | 23 38.3 | 4 | .7 | 64 | 10.6 | 124 20.6 |
| 5 | 24 46.3 | 24 50.4 | 23 38.5 | 5 | .8 | 65 | 10.8 | 125 20.7 |
| 6 | 24 46.5 | 24 50.6 | 23 38.8 | 6 | 1.0 | 66 | 10.9 | 126 20.9 |
| 7 | 24 46.8 | 24 50.9 | 23 39.0 | 7 | 1.2 | 67 | 11.1 | 127 21.1 |
| 8 | 24 47.0 | 24 51.1 | 23 39.3 | 8 | 1.3 | 68 | 11.3 | 128 21.2 |
| 9 | 24 47.3 | 24 51.4 | 23 39.5 | 9 | 1.5 | 69 | 11.4 | 129 21.4 |
| 10 | 24 47.5 | 24 51.6 | 23 39.7 | 10 | 1.7 | 70 | 11.6 | 130 21.6 |
| 11 | 24 47.8 | 24 51.9 | 23 40.0 | 11 | 1.8 | 71 | 11.8 | 131 21.7 |
| 12 | 24 48.0 | 24 52.1 | 23 40.2 | 12 | 2.0 | 72 | 11.9 | 132 21.9 |
| 13 | 24 48.3 | 24 52.4 | 23 40.5 | 13 | 2.2 | 73 | 12.1 | 133 22.1 |
| 14 | 24 48.5 | 24 52.6 | 23 40.7 | 14 | 2.3 | 74 | 12.3 | 134 22.2 |
| 15 | 24 48.8 | 24 52.9 | 23 40.9 | 15 | 2.5 | 75 | 12.4 | 135 22.4 |
| 16 | 24 49.0 | 24 53.1 | 23 41.2 | 16 | 2.7 | 76 | 12.6 | 136 22.6 |
| 17 | 24 49.3 | 24 53.4 | 23 41.4 | 17 | 2.8 | 77 | 12.8 | 137 22.7 |
| 18 | 24 49.5 | 24 53.6 | 23 41.6 | 18 | 3.0 | 78 | 12.9 | 138 22.9 |
| 19 | 24 49.8 | 24 53.9 | 23 41.9 | 19 | 3.2 | 79 | 13.1 | 139 23.1 |
| 20 | 24 50.0 | 24 54.1 | 23 42.1 | 20 | 3.3 | 80 | 13.3 | 140 23.2 |
| 21 | 24 50.3 | 24 54.4 | 23 42.4 | 21 | 3.5 | 81 | 13.4 | 141 23.4 |
| 22 | 24 50.5 | 24 54.6 | 23 42.6 | 22 | 3.6 | 82 | 13.6 | 142 23.5 |
| 23 | 24 50.8 | 24 54.9 | 23 42.8 | 23 | 3.8 | 83 | 13.8 | 143 23.7 |
| 24 | 24 51.0 | 24 55.1 | 23 43.1 | 24 | 4.0 | 84 | 13.9 | 144 23.9 |
| 25 | 24 51.3 | 24 55.4 | 23 43.3 | 25 | 4.1 | 85 | 14.1 | 145 24.0 |
| 26 | 24 51.5 | 24 55.6 | 23 43.6 | 26 | 4.3 | 86 | 14.3 | 146 24.2 |
| 27 | 24 51.8 | 24 55.9 | 23 43.8 | 27 | 4.5 | 87 | 14.4 | 147 24.4 |
| 28 | 24 52.0 | 24 56.1 | 23 44.0 | 28 | 4.6 | 88 | 14.6 | 148 24.5 |
| 29 | 24 52.3 | 24 56.4 | 23 44.3 | 29 | 4.8 | 89 | 14.8 | 149 24.7 |
| 30 | 24 52.5 | 24 56.6 | 23 44.5 | 30 | 5.0 | 90 | 14.9 | 150 24.9 |
| 31 | 24 52.8 | 24 56.9 | 23 44.7 | 31 | 5.1 | 91 | 15.1 | 151 25.0 |
| 32 | 24 53.0 | 24 57.1 | 23 45.0 | 32 | 5.3 | 92 | 15.3 | 152 25.2 |
| 33 | 24 53.3 | 24 57.4 | 23 45.2 | 33 | 5.5 | 93 | 15.4 | 153 25.4 |
| 34 | 24 53.5 | 24 57.6 | 23 45.5 | 34 | 5.6 | 94 | 15.6 | 154 25.5 |
| 35 | 24 53.8 | 24 57.9 | 23 45.7 | 35 | 5.8 | 95 | 15.8 | 155 25.7 |
| 36 | 24 54.0 | 24 58.2 | 23 45.9 | 36 | 6.0 | 96 | 15.9 | 156 25.9 |
| 37 | 24 54.3 | 24 58.4 | 23 46.2 | 37 | 6.1 | 97 | 16.1 | 157 26.0 |
| 38 | 24 54.5 | 24 58.7 | 23 46.4 | 38 | 6.3 | 98 | 16.3 | 158 26.2 |
| 39 | 24 54.8 | 24 58.9 | 23 46.7 | 39 | 6.5 | 99 | 16.4 | 159 26.4 |
| 40 | 24 55.0 | 24 59.2 | 23 46.9 | 40 | 6.6 | 100 | 16.6 | 160 26.5 |
| 41 | 24 55.3 | 24 59.4 | 23 47.1 | 41 | 6.8 | 101 | 16.7 | 161 26.7 |
| 42 | 24 55.5 | 24 59.7 | 23 47.4 | 42 | 7.0 | 102 | 16.9 | 162 26.9 |
| 43 | 24 55.8 | 24 59.9 | 23 47.6 | 43 | 7.1 | 103 | 17.1 | 163 27.0 |
| 44 | 24 56.0 | 25 .2 | 23 47.8 | 44 | 7.3 | 104 | 17.2 | 164 27.2 |
| 45 | 24 56.3 | 25 .4 | 23 48.1 | 45 | 7.5 | 105 | 17.4 | 165 27.4 |
| 46 | 24 56.5 | 25 .7 | 23 48.3 | 46 | 7.6 | 106 | 17.6 | 166 27.5 |
| 47 | 24 56.8 | 25 .9 | 23 48.6 | 47 | 7.8 | 107 | 17.7 | 167 27.7 |
| 48 | 24 57.0 | 25 1.2 | 23 48.8 | 48 | 8.0 | 108 | 17.9 | 168 27.9 |
| 49 | 24 57.3 | 25 1.4 | 23 49.0 | 49 | 8.1 | 109 | 18.1 | 169 28.0 |
| 50 | 24 57.5 | 25 1.7 | 23 49.3 | 50 | 8.3 | 110 | 18.2 | 170 28.2 |
| 51 | 24 57.8 | 25 1.9 | 23 49.5 | 51 | 8.5 | 111 | 18.4 | 171 28.4 |
| 52 | 24 58.0 | 25 2.2 | 23 49.8 | 52 | 8.6 | 112 | 18.6 | 172 28.5 |
| 53 | 24 58.3 | 25 2.4 | 23 50.0 | 53 | 8.8 | 113 | 18.7 | 173 28.7 |
| 54 | 24 58.5 | 25 2.7 | 23 50.2 | 54 | 9.0 | 114 | 18.9 | 174 28.9 |
| 55 | 24 58.8 | 25 2.9 | 23 50.5 | 55 | 9.1 | 115 | 19.1 | 175 29.0 |
| 56 | 24 59.0 | 25 3.2 | 23 50.7 | 56 | 9.3 | 116 | 19.2 | 176 29.2 |
| 57 | 24 59.3 | 25 3.4 | 23 51.0 | 57 | 9.5 | 117 | 19.4 | 177 29.4 |
| 58 | 24 59.5 | 25 3.7 | 23 51.2 | 58 | 9.6 | 118 | 19.6 | 178 29.5 |
| 59 | 24 59.8 | 25 3.9 | 23 51.4 | 59 | 9.8 | 119 | 19.7 | 179 29.7 |
| 60 | 25 .0 | 25 4.2 | 23 51.7 | 60 | 10.0 | 120 | 19.9 | 180 29.9 |

1 h 40 min

| POPRAVKA ČASOVNOG UGLA | | | POPRAVKA DRUGOG REDA za časovni ugao i deklinaciju Sunca, Mjeseca i planeta | | | | | | | | | |
|------------------------|-----------------|------|---|----------------|----|------|-------|------|-------|------|-------|------|
| s | SUNCA I PLANETA | | PROLJEĆNE TAKČE T | MJESECA (C) | | Δ | popr. | Δ | popr. | Δ | popr. | |
| | o | t | | o | t | | | | | | | t |
| 0 | 25 | .0 | 25 | 4.2 | 23 | 51.7 | 0 | .0 | 60 | 10.1 | 120 | 20.1 |
| 1 | 25 | .3 | 25 | 4.4 | 23 | 51.9 | 1 | .2 | 61 | 10.2 | 121 | 20.3 |
| 2 | 25 | .5 | 25 | 4.7 | 23 | 52.1 | 2 | .3 | 62 | 10.4 | 122 | 20.4 |
| 3 | 25 | .8 | 25 | 4.9 | 23 | 52.4 | 3 | .5 | 63 | 10.6 | 123 | 20.6 |
| 4 | 25 | 1.0 | 25 | 5.2 | 23 | 52.6 | 4 | .7 | 64 | 10.7 | 124 | 20.8 |
| 5 | 25 | 1.3 | 25 | 5.4 | 23 | 52.9 | 5 | .8 | 65 | 10.9 | 125 | 20.9 |
| 6 | 25 | 1.5 | 25 | 5.7 | 23 | 53.1 | 6 | 1.0 | 66 | 11.1 | 126 | 21.1 |
| 7 | 25 | 1.8 | 25 | 5.9 | 23 | 53.3 | 7 | 1.2 | 67 | 11.2 | 127 | 21.3 |
| 8 | 25 | 2.0 | 25 | 6.2 | 23 | 53.6 | 8 | 1.3 | 68 | 11.4 | 128 | 21.4 |
| 9 | 25 | 2.3 | 25 | 6.4 | 23 | 53.8 | 9 | 1.5 | 69 | 11.6 | 129 | 21.6 |
| 10 | 25 | 2.5 | 25 | 6.7 | 23 | 54.1 | 10 | 1.7 | 70 | 11.7 | 130 | 21.8 |
| 11 | 25 | 2.8 | 25 | 6.9 | 23 | 54.3 | 11 | 1.8 | 71 | 11.9 | 131 | 21.9 |
| 12 | 25 | 3.0 | 25 | 7.2 | 23 | 54.5 | 12 | 2.0 | 72 | 12.1 | 132 | 22.1 |
| 13 | 25 | 3.3 | 25 | 7.4 | 23 | 54.8 | 13 | 2.2 | 73 | 12.2 | 133 | 22.3 |
| 14 | 25 | 3.5 | 25 | 7.7 | 23 | 55.0 | 14 | 2.3 | 74 | 12.4 | 134 | 22.4 |
| 15 | 25 | 3.8 | 25 | 7.9 | 23 | 55.2 | 15 | 2.5 | 75 | 12.6 | 135 | 22.6 |
| 16 | 25 | 4.0 | 25 | 8.2 | 23 | 55.5 | 16 | 2.7 | 76 | 12.7 | 136 | 22.8 |
| 17 | 25 | 4.3 | 25 | 8.4 | 23 | 55.7 | 17 | 2.8 | 77 | 12.9 | 137 | 22.9 |
| 18 | 25 | 4.5 | 25 | 8.7 | 23 | 56.0 | 18 | 3.0 | 78 | 13.1 | 138 | 23.1 |
| 19 | 25 | 4.8 | 25 | 8.9 | 23 | 56.2 | 19 | 3.2 | 79 | 13.2 | 139 | 23.3 |
| 20 | 25 | 5.0 | 25 | 9.2 | 23 | 56.4 | 20 | 3.4 | 80 | 13.4 | 140 | 23.5 |
| 21 | 25 | 5.3 | 25 | 9.4 | 23 | 56.7 | 21 | 3.5 | 81 | 13.6 | 141 | 23.6 |
| 22 | 25 | 5.5 | 25 | 9.7 | 23 | 56.9 | 22 | 3.7 | 82 | 13.7 | 142 | 23.8 |
| 23 | 25 | 5.8 | 25 | 9.9 | 23 | 57.2 | 23 | 3.9 | 83 | 13.9 | 143 | 24.0 |
| 24 | 25 | 6.0 | 25 | 10.2 | 23 | 57.4 | 24 | 4.0 | 84 | 14.1 | 144 | 24.1 |
| 25 | 25 | 6.3 | 25 | 10.4 | 23 | 57.6 | 25 | 4.2 | 85 | 14.2 | 145 | 24.3 |
| 26 | 25 | 6.5 | 25 | 10.7 | 23 | 57.9 | 26 | 4.4 | 86 | 14.4 | 146 | 24.5 |
| 27 | 25 | 6.8 | 25 | 10.9 | 23 | 58.1 | 27 | 4.5 | 87 | 14.6 | 147 | 24.6 |
| 28 | 25 | 7.0 | 25 | 11.2 | 23 | 58.3 | 28 | 4.7 | 88 | 14.7 | 148 | 24.8 |
| 29 | 25 | 7.3 | 25 | 11.4 | 23 | 58.6 | 29 | 4.9 | 89 | 14.9 | 149 | 25.0 |
| 30 | 25 | 7.5 | 25 | 11.7 | 23 | 58.8 | 30 | 5.0 | 90 | 15.1 | 150 | 25.1 |
| 31 | 25 | 7.8 | 25 | 11.9 | 23 | 59.1 | 31 | 5.2 | 91 | 15.2 | 151 | 25.3 |
| 32 | 25 | 8.0 | 25 | 12.2 | 23 | 59.3 | 32 | 5.4 | 92 | 15.4 | 152 | 25.5 |
| 33 | 25 | 8.3 | 25 | 12.4 | 23 | 59.5 | 33 | 5.5 | 93 | 15.6 | 153 | 25.6 |
| 34 | 25 | 8.5 | 25 | 12.7 | 23 | 59.8 | 34 | 5.7 | 94 | 15.7 | 154 | 25.8 |
| 35 | 25 | 8.8 | 25 | 12.9 | 24 | .0 | 35 | 5.9 | 95 | 15.9 | 155 | 26.0 |
| 36 | 25 | 9.0 | 25 | 13.2 | 24 | .3 | 36 | 6.0 | 96 | 16.1 | 156 | 26.1 |
| 37 | 25 | 9.3 | 25 | 13.4 | 24 | .5 | 37 | 6.2 | 97 | 16.2 | 157 | 26.3 |
| 38 | 25 | 9.5 | 25 | 13.7 | 24 | .7 | 38 | 6.4 | 98 | 16.4 | 158 | 26.5 |
| 39 | 25 | 9.8 | 25 | 13.9 | 24 | 1.0 | 39 | 6.5 | 99 | 16.6 | 159 | 26.6 |
| 40 | 25 | 10.0 | 25 | 14.2 | 24 | 1.2 | 40 | 6.7 | 100 | 16.8 | 160 | 26.8 |
| 41 | 25 | 10.3 | 25 | 14.4 | 24 | 1.4 | 41 | 6.9 | 101 | 16.9 | 161 | 27.0 |
| 42 | 25 | 10.5 | 25 | 14.7 | 24 | 1.7 | 42 | 7.0 | 102 | 17.1 | 162 | 27.1 |
| 43 | 25 | 10.8 | 25 | 14.9 | 24 | 1.9 | 43 | 7.2 | 103 | 17.3 | 163 | 27.3 |
| 44 | 25 | 11.0 | 25 | 15.2 | 24 | 2.2 | 44 | 7.4 | 104 | 17.4 | 164 | 27.5 |
| 45 | 25 | 11.3 | 25 | 15.4 | 24 | 2.4 | 45 | 7.5 | 105 | 17.6 | 165 | 27.6 |
| 46 | 25 | 11.5 | 25 | 15.7 | 24 | 2.6 | 46 | 7.7 | 106 | 17.8 | 166 | 27.8 |
| 47 | 25 | 11.8 | 25 | 15.9 | 24 | 2.9 | 47 | 7.9 | 107 | 17.9 | 167 | 28.0 |
| 48 | 25 | 12.0 | 25 | 16.2 | 24 | 3.1 | 48 | 8.0 | 108 | 18.1 | 168 | 28.1 |
| 49 | 25 | 12.3 | 25 | 16.5 | 24 | 3.4 | 49 | 8.2 | 109 | 18.3 | 169 | 28.3 |
| 50 | 25 | 12.5 | 25 | 16.7 | 24 | 3.6 | 50 | 8.4 | 110 | 18.4 | 170 | 28.5 |
| 51 | 25 | 12.8 | 25 | 17.0 | 24 | 3.8 | 51 | 8.5 | 111 | 18.6 | 171 | 28.6 |
| 52 | 25 | 13.0 | 25 | 17.2 | 24 | 4.1 | 52 | 8.7 | 112 | 18.8 | 172 | 28.8 |
| 53 | 25 | 13.3 | 25 | 17.5 | 24 | 4.3 | 53 | 8.9 | 113 | 18.9 | 173 | 29.0 |
| 54 | 25 | 13.5 | 25 | 17.7 | 24 | 4.6 | 54 | 9.0 | 114 | 19.1 | 174 | 29.1 |
| 55 | 25 | 13.8 | 25 | 18.0 | 24 | 4.8 | 55 | 9.2 | 115 | 19.3 | 175 | 29.3 |
| 56 | 25 | 14.0 | 25 | 18.2 | 24 | 5.0 | 56 | 9.4 | 116 | 19.4 | 176 | 29.5 |
| 57 | 25 | 14.3 | 25 | 18.5 | 24 | 5.3 | 57 | 9.5 | 117 | 19.6 | 177 | 29.6 |
| 58 | 25 | 14.5 | 25 | 18.7 | 24 | 5.5 | 58 | 9.7 | 118 | 19.8 | 178 | 29.8 |
| 59 | 25 | 14.8 | 25 | 19.0 | 24 | 5.7 | 59 | 9.9 | 119 | 19.9 | 179 | 30.0 |
| 60 | 25 | 15.0 | 25 | 19.2 | 24 | 6.0 | 60 | 10.1 | 120 | 20.1 | 180 | 30.2 |

1 h 41 min

| POPRAVKA ČASOVNOG UGLA | | | POPRAVKA DRUGOG REDA za časovni ugao i deklinaciju Sunca, Mjeseca i planeta | | | | | | | | | |
|------------------------|-----------------|------|---|----------------|----|------|-------|-----|-------|------|-------|------|
| s | SUNCA I PLANETA | | PROLJEĆNE TAKČE T | MJESECA (C) | | Δ | popr. | Δ | popr. | Δ | popr. | |
| | o | t | | o | t | | | | | | | t |
| 0 | 25 | 15.0 | 25 | 19.2 | 24 | 6.0 | 0 | .0 | 60 | 10.2 | 120 | 20.3 |
| 1 | 25 | 15.3 | 25 | 19.5 | 24 | 6.2 | 1 | .2 | 61 | 10.3 | 121 | 20.5 |
| 2 | 25 | 15.5 | 25 | 19.7 | 24 | 6.5 | 2 | .3 | 62 | 10.5 | 122 | 20.6 |
| 3 | 25 | 15.8 | 25 | 20.0 | 24 | 6.7 | 3 | .5 | 63 | 10.7 | 123 | 20.8 |
| 4 | 25 | 16.0 | 25 | 20.2 | 24 | 6.9 | 4 | .7 | 64 | 10.8 | 124 | 21.0 |
| 5 | 25 | 16.3 | 25 | 20.5 | 24 | 7.2 | 5 | .8 | 65 | 11.0 | 125 | 21.1 |
| 6 | 25 | 16.5 | 25 | 20.7 | 24 | 7.4 | 6 | 1.0 | 66 | 11.2 | 126 | 21.3 |
| 7 | 25 | 16.8 | 25 | 21.0 | 24 | 7.7 | 7 | 1.2 | 67 | 11.3 | 127 | 21.5 |
| 8 | 25 | 17.0 | 25 | 21.2 | 24 | 7.9 | 8 | 1.4 | 68 | 11.5 | 128 | 21.7 |
| 9 | 25 | 17.3 | 25 | 21.5 | 24 | 8.1 | 9 | 1.5 | 69 | 11.7 | 129 | 21.8 |
| 10 | 25 | 17.5 | 25 | 21.7 | 24 | 8.4 | 10 | 1.7 | 70 | 11.8 | 130 | 22.0 |
| 11 | 25 | 17.8 | 25 | 22.0 | 24 | 8.6 | 11 | 1.9 | 71 | 12.0 | 131 | 22.2 |
| 12 | 25 | 18.0 | 25 | 22.2 | 24 | 8.8 | 12 | 2.0 | 72 | 12.2 | 132 | 22.3 |
| 13 | 25 | 18.3 | 25 | 22.5 | 24 | 9.1 | 13 | 2.2 | 73 | 12.3 | 133 | 22.5 |
| 14 | 25 | 18.5 | 25 | 22.7 | 24 | 9.3 | 14 | 2.4 | 74 | 12.5 | 134 | 22.7 |
| 15 | 25 | 18.8 | 25 | 23.0 | 24 | 9.6 | 15 | 2.5 | 75 | 12.7 | 135 | 22.8 |
| 16 | 25 | 19.0 | 25 | 23.2 | 24 | 9.8 | 16 | 2.7 | 76 | 12.9 | 136 | 23.0 |
| 17 | 25 | 19.3 | 25 | 23.5 | 24 | 10.0 | 17 | 2.9 | 77 | 13.0 | 137 | 23.2 |
| 18 | 25 | 19.5 | 25 | 23.7 | 24 | 10.3 | 18 | 3.0 | 78 | 13.2 | 138 | 23.3 |
| 19 | 25 | 19.8 | 25 | 24.0 | 24 | 10.5 | 19 | 3.2 | 79 | 13.4 | 139 | 23.5 |
| 20 | 25 | 20.0 | 25 | 24.2 | 24 | 10.8 | 20 | 3.4 | 80 | 13.5 | 140 | 23.7 |
| 21 | 25 | 20.3 | 25 | 24.5 | 24 | 11.0 | 21 | 3.6 | 81 | 13.7 | 141 | 23.9 |
| 22 | 25 | 20.5 | 25 | 24.7 | 24 | 11.2 | 22 | 3.7 | 82 | 13.9 | 142 | 24.0 |
| 23 | 25 | 20.8 | 25 | 25.0 | 24 | 11.5 | 23 | 3.9 | 83 | 14.0 | 143 | 24.2 |
| 24 | 25 | 21.0 | 25 | 25.2 | 24 | 11.7 | 24 | 4.1 | 84 | 14.2 | 144 | 24.4 |
| 25 | 25 | 21.3 | 25 | 25.5 | 24 | 11.9 | 25 | 4.2 | 85 | 14.4 | 145 | 24.5 |
| 26 | 25 | 21.5 | 25 | 25.7 | 24 | 12.2 | 26 | 4.4 | 86 | 14.5 | 146 | 24.7 |
| 27 | 25 | 21.8 | 25 | 26.0 | 24 | 12.4 | 27 | 4.6 | 87 | 14.7 | 147 | 24.9 |
| 28 | 25 | 22.0 | 25 | 26.2 | 24 | 12.7 | 28 | 4.7 | 88 | 14.9 | 148 | 25.0 |
| 29 | 25 | 22.3 | 25 | 26.5 | 24 | 12.9 | 29 | 4.9 | 89 | 15.1 | 149 | 25.2 |
| 30 | 25 | 22.5 | 25 | 26.7 | 24 | 13.1 | 30 | 5.1 | 90 | 15.2 | 150 | 25.4 |
| 31 | 25 | 22.8 | 25 | 27.0 | 24 | 13.4 | 31 | 5.2 | 91 | 15.4 | 151 | 25.5 |
| 32 | 25 | 23.0 | 25 | 27.2 | 24 | 13.6 | 32 | 5.4 | 92 | 15.6 | 152 | 25.7 |
| 33 | 25 | 23.3 | 25 | 27.5 | 24 | 13.9 | 33 | 5.6 | 93 | 15.7 | 153 | 25.9 |
| 34 | 25 | 23.5 | 25 | 27.7 | 24 | 14.1 | 34 | 5.8 | 94 | 15.9 | 154 | 26.1 |
| 35 | 25 | 23.8 | 25 | 28.0 | 24 | 14.3 | 35 | 5.9 | 95 | 16.1 | 155 | 26.2 |
| 36 | 25 | 24.0 | 25 | 28.2 | 24 | 14.6 | 36 | 6.1 | 96 | 16.2 | 156 | 26.4 |
| 37 | 25 | 24.3 | 25 | 28.5 | 24 | 14.8 | 37 | 6.3 | 97 | 16.4 | 157 | 26.6 |
| 38 | 25 | 24.5 | 25 | 28.7 | 24 | 15.1 | 38 | 6.4 | 98 | 16.6 | 158 | 26.7 |
| 39 | 25 | 24.8 | 25 | 29.0 | 24 | 15.3 | 39 | 6.6 | 99 | 16.7 | 159 | 26.9 |
| 40 | 25 | 25.0 | 25 | 29.2 | 24 | 15.5 | 40 | 6.8 | 100 | 16.9 | 160 | 27.1 |
| 41 | 25 | 25.3 | 25 | 29.5 | 24 | 15.8 | 41 | 6.9 | 101 | 17.1 | 161 | 27.2 |
| 42 | 25 | 25.5 | 25 | 29.7 | 24 | 16.0 | 42 | 7.1 | 102 | 17.3 | 162 | 27.4 |
| 43 | 25 | 25.8 | 25 | 30.0 | 24 | 16.2 | 43 | 7.3 | 103 | 17.4 | 163 | 27.6 |
| 44 | 25 | 26.0 | 25 | 30.2 | 24 | 16.5 | 44 | 7.4 | 104 | 17.6 | 164 | 27.7 |
| 45 | 25 | 26.3 | 25 | 30.5 | 24 | 16.7 | 45 | 7.6 | 105 | 17.8 | 165 | 27.9 |
| 46 | 25 | 26.5 | 25 | 30.7 | 24 | 17.0 | 46 | 7.8 | 106 | 17.9 | 166 | 28.1 |
| 47 | 25 | 26.8 | 25 | 31.0 | 24 | 17.2 | 47 | 8.0 | 107 | 18.1 | 167 | 28.3 |
| 48 | 25 | 27.0 | 25 | 31.2 | 24 | 17.4 | 48 | 8.1 | 108 | | | |

1 h 42 min

| POPRAVKA ČASOVNOG UGLA | | | | POPRAVKA DRUGOG REDA za časovni ugao i deklinaciju Sunca, Mjeseca i planeta | | | | | | | | |
|------------------------|--------------------|------|----------------------|---|----|---------|----|------|-----|------|-----|------|
| s | SUNCA I PLANETA | | PROLJEČNE TACKE ° | MJESECA ☾ | | Δ popr. | | | | | | |
| | o | t | | o | t | t | t | t | | | | |
| 0 | 25 | 30.0 | 25 | 34.3 | 24 | 20.3 | 0 | .0 | 60 | 10.3 | 120 | 20.5 |
| 1 | 25 | 30.3 | 25 | 34.5 | 24 | 20.5 | 1 | .2 | 61 | 10.4 | 121 | 20.7 |
| 2 | 25 | 30.5 | 25 | 34.8 | 24 | 20.8 | 2 | .3 | 62 | 10.6 | 122 | 20.8 |
| 3 | 25 | 30.8 | 25 | 35.0 | 24 | 21.0 | 3 | .5 | 63 | 10.8 | 123 | 21.0 |
| 4 | 25 | 31.0 | 25 | 35.3 | 24 | 21.3 | 4 | .7 | 64 | 10.9 | 124 | 21.2 |
| 5 | 25 | 31.3 | 25 | 35.5 | 24 | 21.5 | 5 | .9 | 65 | 11.1 | 125 | 21.4 |
| 6 | 25 | 31.5 | 25 | 35.8 | 24 | 21.7 | 6 | 1.0 | 66 | 11.3 | 126 | 21.5 |
| 7 | 25 | 31.8 | 25 | 36.0 | 24 | 22.0 | 7 | 1.2 | 67 | 11.4 | 127 | 21.7 |
| 8 | 25 | 32.0 | 25 | 36.3 | 24 | 22.2 | 8 | 1.4 | 68 | 11.6 | 128 | 21.9 |
| 9 | 25 | 32.3 | 25 | 36.5 | 24 | 22.4 | 9 | 1.5 | 69 | 11.8 | 129 | 22.0 |
| 10 | 25 | 32.5 | 25 | 36.8 | 24 | 22.7 | 10 | 1.7 | 70 | 12.0 | 130 | 22.2 |
| 11 | 25 | 32.8 | 25 | 37.0 | 24 | 22.9 | 11 | 1.9 | 71 | 12.1 | 131 | 22.4 |
| 12 | 25 | 33.0 | 25 | 37.3 | 24 | 23.2 | 12 | 2.1 | 72 | 12.3 | 132 | 22.6 |
| 13 | 25 | 33.3 | 25 | 37.5 | 24 | 23.4 | 13 | 2.2 | 73 | 12.5 | 133 | 22.7 |
| 14 | 25 | 33.5 | 25 | 37.8 | 24 | 23.6 | 14 | 2.4 | 74 | 12.6 | 134 | 22.9 |
| 15 | 25 | 33.8 | 25 | 38.0 | 24 | 23.9 | 15 | 2.6 | 75 | 12.8 | 135 | 23.1 |
| 16 | 25 | 34.0 | 25 | 38.3 | 24 | 24.1 | 16 | 2.7 | 76 | 13.0 | 136 | 23.2 |
| 17 | 25 | 34.3 | 25 | 38.5 | 24 | 24.4 | 17 | 2.9 | 77 | 13.2 | 137 | 23.4 |
| 18 | 25 | 34.5 | 25 | 38.8 | 24 | 24.6 | 18 | 3.1 | 78 | 13.3 | 138 | 23.6 |
| 19 | 25 | 34.8 | 25 | 39.0 | 24 | 24.8 | 19 | 3.2 | 79 | 13.5 | 139 | 23.7 |
| 20 | 25 | 35.0 | 25 | 39.3 | 24 | 25.1 | 20 | 3.4 | 80 | 13.7 | 140 | 23.9 |
| 21 | 25 | 35.3 | 25 | 39.5 | 24 | 25.3 | 21 | 3.6 | 81 | 13.8 | 141 | 24.1 |
| 22 | 25 | 35.5 | 25 | 39.8 | 24 | 25.5 | 22 | 3.8 | 82 | 14.0 | 142 | 24.3 |
| 23 | 25 | 35.8 | 25 | 40.0 | 24 | 25.8 | 23 | 3.9 | 83 | 14.2 | 143 | 24.4 |
| 24 | 25 | 36.0 | 25 | 40.3 | 24 | 26.0 | 24 | 4.1 | 84 | 14.4 | 144 | 24.6 |
| 25 | 25 | 36.3 | 25 | 40.5 | 24 | 26.3 | 25 | 4.3 | 85 | 14.5 | 145 | 24.8 |
| 26 | 25 | 36.5 | 25 | 40.8 | 24 | 26.5 | 26 | 4.4 | 86 | 14.7 | 146 | 24.9 |
| 27 | 25 | 36.8 | 25 | 41.0 | 24 | 26.7 | 27 | 4.6 | 87 | 14.9 | 147 | 25.1 |
| 28 | 25 | 37.0 | 25 | 41.3 | 24 | 27.0 | 28 | 4.8 | 88 | 15.0 | 148 | 25.3 |
| 29 | 25 | 37.3 | 25 | 41.5 | 24 | 27.2 | 29 | 5.0 | 89 | 15.2 | 149 | 25.5 |
| 30 | 25 | 37.5 | 25 | 41.8 | 24 | 27.5 | 30 | 5.1 | 90 | 15.4 | 150 | 25.6 |
| 31 | 25 | 37.8 | 25 | 42.0 | 24 | 27.7 | 31 | 5.3 | 91 | 15.5 | 151 | 25.8 |
| 32 | 25 | 38.0 | 25 | 42.3 | 24 | 27.9 | 32 | 5.5 | 92 | 15.7 | 152 | 26.0 |
| 33 | 25 | 38.3 | 25 | 42.5 | 24 | 28.2 | 33 | 5.6 | 93 | 15.9 | 153 | 26.1 |
| 34 | 25 | 38.5 | 25 | 42.8 | 24 | 28.4 | 34 | 5.8 | 94 | 16.1 | 154 | 26.3 |
| 35 | 25 | 38.8 | 25 | 43.0 | 24 | 28.7 | 35 | 6.0 | 95 | 16.2 | 155 | 26.5 |
| 36 | 25 | 39.0 | 25 | 43.3 | 24 | 28.9 | 36 | 6.2 | 96 | 16.4 | 156 | 26.7 |
| 37 | 25 | 39.3 | 25 | 43.5 | 24 | 29.1 | 37 | 6.3 | 97 | 16.6 | 157 | 26.8 |
| 38 | 25 | 39.5 | 25 | 43.8 | 24 | 29.4 | 38 | 6.5 | 98 | 16.7 | 158 | 27.0 |
| 39 | 25 | 39.8 | 25 | 44.0 | 24 | 29.6 | 39 | 6.7 | 99 | 16.9 | 159 | 27.2 |
| 40 | 25 | 40.0 | 25 | 44.3 | 24 | 29.8 | 40 | 6.8 | 100 | 17.1 | 160 | 27.3 |
| 41 | 25 | 40.3 | 25 | 44.5 | 24 | 30.1 | 41 | 7.0 | 101 | 17.3 | 161 | 27.5 |
| 42 | 25 | 40.5 | 25 | 44.8 | 24 | 30.3 | 42 | 7.2 | 102 | 17.4 | 162 | 27.7 |
| 43 | 25 | 40.8 | 25 | 45.0 | 24 | 30.6 | 43 | 7.3 | 103 | 17.6 | 163 | 27.8 |
| 44 | 25 | 41.0 | 25 | 45.3 | 24 | 30.8 | 44 | 7.5 | 104 | 17.8 | 164 | 28.0 |
| 45 | 25 | 41.3 | 25 | 45.5 | 24 | 31.0 | 45 | 7.7 | 105 | 17.9 | 165 | 28.2 |
| 46 | 25 | 41.5 | 25 | 45.8 | 24 | 31.3 | 46 | 7.9 | 106 | 18.1 | 166 | 28.4 |
| 47 | 25 | 41.8 | 25 | 46.0 | 24 | 31.5 | 47 | 8.0 | 107 | 18.3 | 167 | 28.5 |
| 48 | 25 | 42.0 | 25 | 46.3 | 24 | 31.8 | 48 | 8.2 | 108 | 18.5 | 168 | 28.7 |
| 49 | 25 | 42.3 | 25 | 46.5 | 24 | 32.0 | 49 | 8.4 | 109 | 18.6 | 169 | 28.9 |
| 50 | 25 | 42.5 | 25 | 46.8 | 24 | 32.2 | 50 | 8.5 | 110 | 18.8 | 170 | 29.0 |
| 51 | 25 | 42.8 | 25 | 47.0 | 24 | 32.5 | 51 | 8.7 | 111 | 19.0 | 171 | 29.2 |
| 52 | 25 | 43.0 | 25 | 47.3 | 24 | 32.7 | 52 | 8.9 | 112 | 19.1 | 172 | 29.4 |
| 53 | 25 | 43.3 | 25 | 47.5 | 24 | 32.9 | 53 | 9.1 | 113 | 19.3 | 173 | 29.6 |
| 54 | 25 | 43.5 | 25 | 47.8 | 24 | 33.2 | 54 | 9.2 | 114 | 19.5 | 174 | 29.7 |
| 55 | 25 | 43.8 | 25 | 48.0 | 24 | 33.4 | 55 | 9.4 | 115 | 19.6 | 175 | 29.9 |
| 56 | 25 | 44.0 | 25 | 48.3 | 24 | 33.7 | 56 | 9.6 | 116 | 19.8 | 176 | 30.1 |
| 57 | 25 | 44.3 | 25 | 48.5 | 24 | 33.9 | 57 | 9.7 | 117 | 20.0 | 177 | 30.2 |
| 58 | 25 | 44.5 | 25 | 48.8 | 24 | 34.1 | 58 | 9.9 | 118 | 20.2 | 178 | 30.4 |
| 59 | 25 | 44.8 | 25 | 49.0 | 24 | 34.4 | 59 | 10.1 | 119 | 20.3 | 179 | 30.6 |
| 60 | 25 | 45.0 | 25 | 49.3 | 24 | 34.6 | 60 | 10.3 | 120 | 20.5 | 180 | 30.8 |

1 h 43 min

| POPRAVKA ČASOVNOG UGLA | | | | POPRAVKA DRUGOG REDA za časovni ugao i deklinaciju Sunca, Mjeseca i planeta | | | | | | | | |
|------------------------|--------------------|------|----------------------|---|----|---------|----|-----|-----|------|-----|------|
| s | SUNCA I PLANETA | | PROLJEČNE TACKE ° | MJESECA ☾ | | Δ popr. | | | | | | |
| | o | t | | o | t | t | t | t | | | | |
| 0 | 25 | 45.0 | 25 | 49.3 | 24 | 34.6 | 0 | .0 | 60 | 10.4 | 120 | 20.7 |
| 1 | 25 | 45.3 | 25 | 49.5 | 24 | 34.9 | 1 | .2 | 61 | 10.5 | 121 | 20.9 |
| 2 | 25 | 45.5 | 25 | 49.8 | 24 | 35.1 | 2 | .3 | 62 | 10.7 | 122 | 21.0 |
| 3 | 25 | 45.8 | 25 | 50.0 | 24 | 35.3 | 3 | .5 | 63 | 10.9 | 123 | 21.2 |
| 4 | 25 | 46.0 | 25 | 50.3 | 24 | 35.6 | 4 | .7 | 64 | 11.0 | 124 | 21.4 |
| 5 | 25 | 46.3 | 25 | 50.5 | 24 | 35.8 | 5 | .9 | 65 | 11.2 | 125 | 21.6 |
| 6 | 25 | 46.5 | 25 | 50.8 | 24 | 36.0 | 6 | 1.0 | 66 | 11.4 | 126 | 21.7 |
| 7 | 25 | 46.8 | 25 | 51.0 | 24 | 36.3 | 7 | 1.2 | 67 | 11.6 | 127 | 21.9 |
| 8 | 25 | 47.0 | 25 | 51.3 | 24 | 36.5 | 8 | 1.4 | 68 | 11.7 | 128 | 22.1 |
| 9 | 25 | 47.3 | 25 | 51.5 | 24 | 36.8 | 9 | 1.6 | 69 | 11.9 | 129 | 22.3 |
| 10 | 25 | 47.5 | 25 | 51.8 | 24 | 37.0 | 10 | 1.7 | 70 | 12.1 | 130 | 22.4 |
| 11 | 25 | 47.8 | 25 | 52.0 | 24 | 37.2 | 11 | 1.9 | 71 | 12.2 | 131 | 22.6 |
| 12 | 25 | 48.0 | 25 | 52.3 | 24 | 37.5 | 12 | 2.1 | 72 | 12.4 | 132 | 22.8 |
| 13 | 25 | 48.3 | 25 | 52.6 | 24 | 37.7 | 13 | 2.2 | 73 | 12.6 | 133 | 22.9 |
| 14 | 25 | 48.5 | 25 | 52.8 | 24 | 38.0 | 14 | 2.4 | 74 | 12.8 | 134 | 23.1 |
| 15 | 25 | 48.8 | 25 | 53.1 | 24 | 38.2 | 15 | 2.6 | 75 | 12.9 | 135 | 23.3 |
| 16 | 25 | 49.0 | 25 | 53.3 | 24 | 38.4 | 16 | 2.8 | 76 | 13.1 | 136 | 23.5 |
| 17 | 25 | 49.3 | 25 | 53.6 | 24 | 38.7 | 17 | 2.9 | 77 | 13.3 | 137 | 23.6 |
| 18 | 25 | 49.5 | 25 | 53.8 | 24 | 38.9 | 18 | 3.1 | 78 | 13.5 | 138 | 23.8 |
| 19 | 25 | 49.8 | 25 | 54.1 | 24 | 39.2 | 19 | 3.3 | 79 | 13.6 | 139 | 24.0 |
| 20 | 25 | 50.0 | 25 | 54.3 | 24 | 39.4 | 20 | 3.5 | 80 | 13.8 | 140 | 24.2 |
| 21 | 25 | 50.3 | 25 | 54.6 | 24 | 39.6 | 21 | 3.6 | 81 | 14.0 | 141 | 24.3 |
| 22 | 25 | 50.5 | 25 | 54.8 | 24 | 39.9 | 22 | 3.8 | 82 | 14.1 | 142 | 24.5 |
| 23 | 25 | 50.8 | 25 | 55.1 | 24 | 40.1 | 23 | 4.0 | 83 | 14.3 | 143 | 24.7 |
| 24 | 25 | 51.0 | 25 | 55.3 | 24 | 40.3 | 24 | 4.1 | 84 | 14.5 | 144 | 24.8 |
| 25 | 25 | 51.3 | 25 | 55.6 | 24 | 40.6 | 25 | 4.3 | 85 | 14.7 | 145 | 25.0 |
| 26 | 25 | 51.5 | 25 | 55.8 | 24 | 40.8 | 26 | 4.5 | 86 | 14.8 | 146 | 25.2 |
| 27 | 25 | 51.8 | 25 | 56.1 | 24 | 41.1 | 27 | 4.7 | 87 | 15.0 | 147 | 25.4 |
| 28 | 25 | 52.0 | 25 | 56.3 | 24 | 41.3 | 28 | 4.8 | 88 | 15.2 | 148 | 25.5 |
| 29 | 25 | 52.3 | 25 | 56.6 | 24 | 41.5 | 29 | 5.0 | 89 | 15.4 | 149 | 25.7 |
| 30 | 25 | 52.5 | 25 | 56.8 | 24 | 41.8 | 30 | 5.2 | 90 | 15.5 | 150 | 25.9 |
| 31 | 25 | 52.8 | 25 | 57.1 | 24 | 42.0 | 31 | 5.3 | 91 | 15.7 | 151 | 26.0 |
| 32 | 25 | 53.0 | 25 | 57.3 | 24 | 42.3 | 32 | 5.5 | 92 | 15.9 | 152 | 26.2 |
| 33 | 25 | 53.3 | 25 | 57.6 | 24 | 42.5 | 33 | 5.7 | 93 | 16.0 | 153 | 26.4 |
| 34 | 25 | 53.5 | 25 | 57.8 | 24 | 42.7 | 34 | 5.9 | 94 | 16.2 | 154 | 26.6 |
| 35 | 25 | 53.8 | 25 | 58.1 | 24 | 43.0 | 35 | 6.0 | 95 | 16.4 | 155 | 26.7 |
| 36 | 25 | 54.0 | 25 | 58.3 | 24 | 43.2 | 36 | 6.2 | 96 | 16.6 | 156 | 26.9 |
| 37 | 25 | 54.3 | 25 | 58.6 | 24 | 43.4 | 37 | 6.4 | 97 | 16.7 | 157 | 27.1 |
| 38 | 25 | 54.5 | 25 | 58.8 | 24 | 43.7 | 38 | 6.6 | 98 | 16.9 | 158 | 27.3 |
| 39 | 25 | 54.8 | 25 | 59.1 | 24 | 43.9 | 39 | 6.7 | 99 | 17.1 | 159 | 27.4 |
| 40 | 25 | 55.0 | 25 | 59.3 | 24 | 44.2 | 40 | 6.9 | 100 | 17.3 | 160 | 27.6 |
| 41 | 25 | 55.3 | 25 | 59.6 | 24 | 44.4 | 41 | 7.1 | 101 | 17.4 | 161 | 27.8 |
| 42 | 25 | 55.5 | 25 | 59.8 | 24 | 44.6 | 42 | 7.2 | 102 | 17.6 | 162 | 27.9 |
| 43 | 25 | 55.8 | 26 | .1 | 24 | 44.9 | 43 | 7.4 | 103 | 17.8 | 163 | 28.1 |
| 44 | 25 | 56.0 | 26 | .3 | 24 | 45.1 | 44 | 7.6 | 104 | 17.9 | 164 | 28.3 |
| 45 | 25 | 56.3 | 26 | .6 | 24 | 45.4 | 45 | 7.8 | 105 | 18.1 | 165 | 28.5 |
| 46 | 25 | 56.5 | 26 | .8 | 24 | 45.6 | 46 | 7.9 | 106 | 18.3 | 166 | 28.6 |
| 47 | 25 | 56.8 | 26 | 1.1 | 24 | 45.8 | 47 | 8.1 | 107 | 18.5 | 167 | 28.8 |
| 48 | 25 | 57.0 | 26 | 1.3 | 24 | 46.1 | 48 | 8.3 | 108 | 18.6 | | |

| POPRAVKA ČASOVNOG UGLA | | | POPRAVKA DRUGOG REDA za časovni ugao i deklinaciju Sunca, Mjeseca i planeta | | | |
|------------------------|-----------------|--------------------|---|---------|----------|----------|
| s | SUNCA I PLANETA | PROLJEĆNE TAČKE T° | MJESECA (C) | Δ popr. | Δ popr. | Δ popr. |
| | o ′ | o ′ | o ′ | ′ | ′ | ′ |
| 0 | 26 .0 | 26 4.3 | 24 48.9 | 0 .0 | 60 10.5 | 120 20.9 |
| 1 | 26 .3 | 26 4.6 | 24 49.2 | 1 .2 | 61 10.6 | 121 21.1 |
| 2 | 26 .5 | 26 4.8 | 24 49.4 | 2 .3 | 62 10.8 | 122 21.2 |
| 3 | 26 .8 | 26 5.1 | 24 49.6 | 3 .5 | 63 11.0 | 123 21.4 |
| 4 | 26 1.0 | 26 5.3 | 24 49.9 | 4 .7 | 64 11.1 | 124 21.6 |
| 5 | 26 1.3 | 26 5.6 | 24 50.1 | 5 .9 | 65 11.3 | 125 21.8 |
| 6 | 26 1.5 | 26 5.8 | 24 50.4 | 6 1.0 | 66 11.5 | 126 21.9 |
| 7 | 26 1.8 | 26 6.1 | 24 50.6 | 7 1.2 | 67 11.7 | 127 22.1 |
| 8 | 26 2.0 | 26 6.3 | 24 50.8 | 8 1.4 | 68 11.8 | 128 22.3 |
| 9 | 26 2.3 | 26 6.6 | 24 51.1 | 9 1.6 | 69 12.0 | 129 22.5 |
| 10 | 26 2.5 | 26 6.8 | 24 51.3 | 10 1.7 | 70 12.2 | 130 22.6 |
| 11 | 26 2.8 | 26 7.1 | 24 51.6 | 11 1.9 | 71 12.4 | 131 22.8 |
| 12 | 26 3.0 | 26 7.3 | 24 51.8 | 12 2.1 | 72 12.5 | 132 23.0 |
| 13 | 26 3.3 | 26 7.6 | 24 52.0 | 13 2.3 | 73 12.7 | 133 23.2 |
| 14 | 26 3.5 | 26 7.8 | 24 52.3 | 14 2.4 | 74 12.9 | 134 23.3 |
| 15 | 26 3.8 | 26 8.1 | 24 52.5 | 15 2.6 | 75 13.1 | 135 23.5 |
| 16 | 26 4.0 | 26 8.3 | 24 52.8 | 16 2.8 | 76 13.2 | 136 23.7 |
| 17 | 26 4.3 | 26 8.6 | 24 53.0 | 17 3.0 | 77 13.4 | 137 23.9 |
| 18 | 26 4.5 | 26 8.8 | 24 53.2 | 18 3.1 | 78 13.6 | 138 24.0 |
| 19 | 26 4.8 | 26 9.1 | 24 53.5 | 19 3.3 | 79 13.8 | 139 24.2 |
| 20 | 26 5.0 | 26 9.3 | 24 53.7 | 20 3.5 | 80 13.9 | 140 24.4 |
| 21 | 26 5.3 | 26 9.6 | 24 53.9 | 21 3.7 | 81 14.1 | 141 24.6 |
| 22 | 26 5.5 | 26 9.8 | 24 54.2 | 22 3.8 | 82 14.3 | 142 24.7 |
| 23 | 26 5.8 | 26 10.1 | 24 54.4 | 23 4.0 | 83 14.5 | 143 24.9 |
| 24 | 26 6.0 | 26 10.4 | 24 54.7 | 24 4.2 | 84 14.6 | 144 25.1 |
| 25 | 26 6.3 | 26 10.6 | 24 54.9 | 25 4.4 | 85 14.8 | 145 25.3 |
| 26 | 26 6.5 | 26 10.9 | 24 55.1 | 26 4.5 | 86 15.0 | 146 25.4 |
| 27 | 26 6.8 | 26 11.1 | 24 55.4 | 27 4.7 | 87 15.2 | 147 25.6 |
| 28 | 26 7.0 | 26 11.4 | 24 55.6 | 28 4.9 | 88 15.3 | 148 25.8 |
| 29 | 26 7.3 | 26 11.6 | 24 55.9 | 29 5.1 | 89 15.5 | 149 26.0 |
| 30 | 26 7.5 | 26 11.9 | 24 56.1 | 30 5.2 | 90 15.7 | 150 26.1 |
| 31 | 26 7.8 | 26 12.1 | 24 56.3 | 31 5.4 | 91 15.8 | 151 26.3 |
| 32 | 26 8.0 | 26 12.4 | 24 56.6 | 32 5.6 | 92 16.0 | 152 26.5 |
| 33 | 26 8.3 | 26 12.6 | 24 56.8 | 33 5.7 | 93 16.2 | 153 26.6 |
| 34 | 26 8.5 | 26 12.9 | 24 57.0 | 34 5.9 | 94 16.4 | 154 26.8 |
| 35 | 26 8.8 | 26 13.1 | 24 57.3 | 35 6.1 | 95 16.5 | 155 27.0 |
| 36 | 26 9.0 | 26 13.4 | 24 57.5 | 36 6.3 | 96 16.7 | 156 27.2 |
| 37 | 26 9.3 | 26 13.6 | 24 57.8 | 37 6.4 | 97 16.9 | 157 27.3 |
| 38 | 26 9.5 | 26 13.9 | 24 58.0 | 38 6.6 | 98 17.1 | 158 27.5 |
| 39 | 26 9.8 | 26 14.1 | 24 58.2 | 39 6.8 | 99 17.2 | 159 27.7 |
| 40 | 26 10.0 | 26 14.4 | 24 58.5 | 40 7.0 | 100 17.4 | 160 27.9 |
| 41 | 26 10.3 | 26 14.6 | 24 58.7 | 41 7.1 | 101 17.6 | 161 28.0 |
| 42 | 26 10.5 | 26 14.9 | 24 59.0 | 42 7.3 | 102 17.8 | 162 28.2 |
| 43 | 26 10.8 | 26 15.1 | 24 59.2 | 43 7.5 | 103 17.9 | 163 28.4 |
| 44 | 26 11.0 | 26 15.4 | 24 59.4 | 44 7.7 | 104 18.1 | 164 28.6 |
| 45 | 26 11.3 | 26 15.6 | 24 59.7 | 45 7.8 | 105 18.3 | 165 28.7 |
| 46 | 26 11.5 | 26 15.9 | 24 59.9 | 46 8.0 | 106 18.5 | 166 28.9 |
| 47 | 26 11.8 | 26 16.1 | 25 .1 | 47 8.2 | 107 18.6 | 167 29.1 |
| 48 | 26 12.0 | 26 16.4 | 25 .4 | 48 8.4 | 108 18.8 | 168 29.3 |
| 49 | 26 12.3 | 26 16.6 | 25 .6 | 49 8.5 | 109 19.0 | 169 29.4 |
| 50 | 26 12.5 | 26 16.9 | 25 .9 | 50 8.7 | 110 19.2 | 170 29.6 |
| 51 | 26 12.8 | 26 17.1 | 25 1.1 | 51 8.9 | 111 19.3 | 171 29.8 |
| 52 | 26 13.0 | 26 17.4 | 25 1.3 | 52 9.1 | 112 19.5 | 172 30.0 |
| 53 | 26 13.3 | 26 17.6 | 25 1.6 | 53 9.2 | 113 19.7 | 173 30.1 |
| 54 | 26 13.5 | 26 17.9 | 25 1.8 | 54 9.4 | 114 19.9 | 174 30.3 |
| 55 | 26 13.8 | 26 18.1 | 25 2.1 | 55 9.6 | 115 20.0 | 175 30.5 |
| 56 | 26 14.0 | 26 18.4 | 25 2.3 | 56 9.8 | 116 20.2 | 176 30.7 |
| 57 | 26 14.3 | 26 18.6 | 25 2.5 | 57 9.9 | 117 20.4 | 177 30.8 |
| 58 | 26 14.5 | 26 18.9 | 25 2.8 | 58 10.1 | 118 20.6 | 178 31.0 |
| 59 | 26 14.8 | 26 19.1 | 25 3.0 | 59 10.3 | 119 20.7 | 179 31.2 |
| 60 | 26 15.0 | 26 19.4 | 25 3.3 | 60 10.5 | 120 20.9 | 180 31.4 |

| POPRAVKA ČASOVNOG UGLA | | | POPRAVKA DRUGOG REDA za časovni ugao i deklinaciju Sunca, Mjeseca i planeta | | | |
|------------------------|-----------------|--------------------|---|---------|----------|----------|
| s | SUNCA I PLANETA | PROLJEĆNE TAČKE T° | MJESECA (C) | Δ popr. | Δ popr. | Δ popr. |
| | o ′ | o ′ | o ′ | ′ | ′ | ′ |
| 0 | 26 15.0 | 26 19.4 | 25 3.3 | 0 .0 | 60 10.6 | 120 21.1 |
| 1 | 26 15.3 | 26 19.6 | 25 3.5 | 1 .2 | 61 10.7 | 121 21.3 |
| 2 | 26 15.5 | 26 19.9 | 25 3.7 | 2 .4 | 62 10.9 | 122 21.5 |
| 3 | 26 15.8 | 26 20.1 | 25 4.0 | 3 .5 | 63 11.1 | 123 21.6 |
| 4 | 26 16.0 | 26 20.4 | 25 4.2 | 4 .7 | 64 11.3 | 124 21.8 |
| 5 | 26 16.3 | 26 20.6 | 25 4.4 | 5 .9 | 65 11.4 | 125 22.0 |
| 6 | 26 16.5 | 26 20.9 | 25 4.7 | 6 1.1 | 66 11.6 | 126 22.2 |
| 7 | 26 16.8 | 26 21.1 | 25 4.9 | 7 1.2 | 67 11.8 | 127 22.3 |
| 8 | 26 17.0 | 26 21.4 | 25 5.2 | 8 1.4 | 68 12.0 | 128 22.5 |
| 9 | 26 17.3 | 26 21.6 | 25 5.4 | 9 1.6 | 69 12.1 | 129 22.7 |
| 10 | 26 17.5 | 26 21.9 | 25 5.6 | 10 1.8 | 70 12.3 | 130 22.9 |
| 11 | 26 17.8 | 26 22.1 | 25 5.9 | 11 1.9 | 71 12.5 | 131 23.0 |
| 12 | 26 18.0 | 26 22.4 | 25 6.1 | 12 2.1 | 72 12.7 | 132 23.2 |
| 13 | 26 18.3 | 26 22.6 | 25 6.4 | 13 2.3 | 73 12.8 | 133 23.4 |
| 14 | 26 18.5 | 26 22.9 | 25 6.6 | 14 2.5 | 74 13.0 | 134 23.6 |
| 15 | 26 18.8 | 26 23.1 | 25 6.8 | 15 2.6 | 75 13.2 | 135 23.7 |
| 16 | 26 19.0 | 26 23.4 | 25 7.1 | 16 2.8 | 76 13.4 | 136 23.9 |
| 17 | 26 19.3 | 26 23.6 | 25 7.3 | 17 3.0 | 77 13.5 | 137 24.1 |
| 18 | 26 19.5 | 26 23.9 | 25 7.5 | 18 3.2 | 78 13.7 | 138 24.3 |
| 19 | 26 19.8 | 26 24.1 | 25 7.8 | 19 3.3 | 79 13.9 | 139 24.4 |
| 20 | 26 20.0 | 26 24.4 | 25 8.0 | 20 3.5 | 80 14.1 | 140 24.6 |
| 21 | 26 20.3 | 26 24.6 | 25 8.3 | 21 3.7 | 81 14.2 | 141 24.8 |
| 22 | 26 20.5 | 26 24.9 | 25 8.5 | 22 3.9 | 82 14.4 | 142 25.0 |
| 23 | 26 20.8 | 26 25.1 | 25 8.7 | 23 4.0 | 83 14.6 | 143 25.1 |
| 24 | 26 21.0 | 26 25.4 | 25 9.0 | 24 4.2 | 84 14.8 | 144 25.3 |
| 25 | 26 21.3 | 26 25.6 | 25 9.2 | 25 4.4 | 85 14.9 | 145 25.5 |
| 26 | 26 21.5 | 26 25.9 | 25 9.5 | 26 4.6 | 86 15.1 | 146 25.7 |
| 27 | 26 21.8 | 26 26.1 | 25 9.7 | 27 4.7 | 87 15.3 | 147 25.8 |
| 28 | 26 22.0 | 26 26.4 | 25 9.9 | 28 4.9 | 88 15.5 | 148 26.0 |
| 29 | 26 22.3 | 26 26.6 | 25 10.2 | 29 5.1 | 89 15.6 | 149 26.2 |
| 30 | 26 22.5 | 26 26.9 | 25 10.4 | 30 5.3 | 90 15.8 | 150 26.4 |
| 31 | 26 22.8 | 26 27.1 | 25 10.6 | 31 5.5 | 91 16.0 | 151 26.6 |
| 32 | 26 23.0 | 26 27.4 | 25 10.9 | 32 5.6 | 92 16.2 | 152 26.7 |
| 33 | 26 23.3 | 26 27.6 | 25 11.1 | 33 5.8 | 93 16.4 | 153 26.9 |
| 34 | 26 23.5 | 26 27.9 | 25 11.4 | 34 6.0 | 94 16.5 | 154 27.1 |
| 35 | 26 23.8 | 26 28.1 | 25 11.6 | 35 6.2 | 95 16.7 | 155 27.3 |
| 36 | 26 24.0 | 26 28.4 | 25 11.8 | 36 6.3 | 96 16.9 | 156 27.4 |
| 37 | 26 24.3 | 26 28.7 | 25 12.1 | 37 6.5 | 97 17.1 | 157 27.6 |
| 38 | 26 24.5 | 26 28.9 | 25 12.3 | 38 6.7 | 98 17.2 | 158 27.8 |
| 39 | 26 24.8 | 26 29.2 | 25 12.6 | 39 6.9 | 99 17.4 | 159 28.0 |
| 40 | 26 25.0 | 26 29.4 | 25 12.8 | 40 7.0 | 100 17.6 | 160 28.1 |
| 41 | 26 25.3 | 26 29.7 | 25 13.0 | 41 7.2 | 101 17.8 | 161 28.3 |
| 42 | 26 25.5 | 26 29.9 | 25 13.3 | 42 7.4 | 102 17.9 | 162 28.5 |
| 43 | 26 25.8 | 26 30.2 | 25 13.5 | 43 7.6 | 103 18.1 | 163 28.7 |
| 44 | 26 26.0 | 26 30.4 | 25 13.7 | 44 7.7 | 104 18.3 | 164 28.8 |
| 45 | 26 26.3 | 26 30.7 | 25 14.0 | 45 7.9 | 105 18.5 | 165 29.0 |
| 46 | 26 26.5 | 26 30.9 | 25 14.2 | 46 8.1 | 106 18.6 | 166 29.2 |
| 47 | 26 26.8 | 26 31.2 | 25 14.5 | 47 8.3 | 107 18.8 | 167 29.4 |
| 48 | 26 27.0 | 26 31.4 | 25 14.7 | 48 8.4 | 108 19.0 | 168 29.5 |
| 49 | 26 27.3 | 26 31.7 | 25 14.9 | 49 8.6 | 109 19.2 | 169 29.7 |
| 50 | 26 27.5 | 26 31.9 | 25 15.2 | 50 8.8 | 110 19.3 | 170 29.9 |
| 51 | 26 27.8 | 26 32.2 | 25 15.4 | 51 9.0 | 111 19.5 | 171 30.1 |
| 52 | 26 28.0 | 26 32.4 | 25 15.7 | 52 9.1 | 112 19.7 | 172 30.2 |
| 53 | 26 28.3 | 26 32.7 | 25 15.9 | 53 9.3 | 113 19.9 | 173 30.4 |
| 54 | 26 28.5 | 26 32.9 | 25 16.1 | 54 9.5 | 114 20.0 | 174 30.6 |
| 55 | 26 28.8 | 26 33.2 | 25 16.4 | 55 9.7 | 115 20.2 | 175 30.8 |
| 56 | 26 29.0 | 26 33.4 | 25 16.6 | 56 9.8 | 116 20.4 | 176 30.9 |
| 57 | 26 29.3 | 26 33.7 | 25 16.9 | 57 10.0 | 117 20.6 | 177 31.1 |
| 58 | 26 29.5 | 26 33.9 | 25 17.1 | 58 10.2 | 118 20.7 | 178 31.3 |
| 59 | 26 29.8 | 26 34.2 | 25 17.3 | 59 10.4 | 119 20.9 | 179 31.5 |
| 60 | 26 30.0 | 26 34.4 | 25 17.6 | 60 10.6 | 120 21.1 | 180 31.7 |

1 h 46 min**1 h 47 min**

| POPRAVKA ČASOVNOG UGLA | | | | POPRAVKA DRUGOG REDA za časovni ugao i deklinaciju Sunca, Mjeseca i planeta | | | | | | | |
|------------------------|--------------------|----------------------|--------------|---|-------|----------|----------|---|---|---|---|
| S | SUNCA I PLANETA | PROLJEĆNE TAKKE ° | MJESECA ☾ | Δ | popr. | | | | | | |
| | | | | | Δ | Δ | | | | | |
| | o | ′ | o | ′ | o | ′ | o | ′ | ″ | ″ | ″ |
| 0 | 26 30.0 | 26 34.4 | 25 17.6 | 0 | .0 | 60 10.7 | 120 21.3 | | | | |
| 1 | 26 30.3 | 26 34.7 | 25 17.8 | 1 | .2 | 61 10.8 | 121 21.5 | | | | |
| 2 | 26 30.5 | 26 34.9 | 25 18.0 | 2 | .4 | 62 11.0 | 122 21.7 | | | | |
| 3 | 26 30.8 | 26 35.2 | 25 18.3 | 3 | .5 | 63 11.2 | 123 21.8 | | | | |
| 4 | 26 31.0 | 26 35.4 | 25 18.5 | 4 | .7 | 64 11.4 | 124 22.0 | | | | |
| 5 | 26 31.3 | 26 35.7 | 25 18.8 | 5 | .9 | 65 11.5 | 125 22.2 | | | | |
| 6 | 26 31.5 | 26 35.9 | 25 19.0 | 6 | 1.1 | 66 11.7 | 126 22.4 | | | | |
| 7 | 26 31.8 | 26 36.2 | 25 19.2 | 7 | 1.2 | 67 11.9 | 127 22.5 | | | | |
| 8 | 26 32.0 | 26 36.4 | 25 19.5 | 8 | 1.4 | 68 12.1 | 128 22.7 | | | | |
| 9 | 26 32.3 | 26 36.7 | 25 19.7 | 9 | 1.6 | 69 12.2 | 129 22.9 | | | | |
| 10 | 26 32.5 | 26 36.9 | 25 20.0 | 10 | 1.8 | 70 12.4 | 130 23.1 | | | | |
| 11 | 26 32.8 | 26 37.2 | 25 20.2 | 11 | 2.0 | 71 12.6 | 131 23.3 | | | | |
| 12 | 26 33.0 | 26 37.4 | 25 20.4 | 12 | 2.1 | 72 12.8 | 132 23.4 | | | | |
| 13 | 26 33.3 | 26 37.7 | 25 20.7 | 13 | 2.3 | 73 13.0 | 133 23.6 | | | | |
| 14 | 26 33.5 | 26 37.9 | 25 20.9 | 14 | 2.5 | 74 13.1 | 134 23.8 | | | | |
| 15 | 26 33.8 | 26 38.2 | 25 21.1 | 15 | 2.7 | 75 13.3 | 135 24.0 | | | | |
| 16 | 26 34.0 | 26 38.4 | 25 21.4 | 16 | 2.8 | 76 13.5 | 136 24.1 | | | | |
| 17 | 26 34.3 | 26 38.7 | 25 21.6 | 17 | 3.0 | 77 13.7 | 137 24.3 | | | | |
| 18 | 26 34.5 | 26 38.9 | 25 21.9 | 18 | 3.2 | 78 13.8 | 138 24.5 | | | | |
| 19 | 26 34.8 | 26 39.2 | 25 22.1 | 19 | 3.4 | 79 14.0 | 139 24.7 | | | | |
| 20 | 26 35.0 | 26 39.4 | 25 22.3 | 20 | 3.6 | 80 14.2 | 140 24.9 | | | | |
| 21 | 26 35.3 | 26 39.7 | 25 22.6 | 21 | 3.7 | 81 14.4 | 141 25.0 | | | | |
| 22 | 26 35.5 | 26 39.9 | 25 22.8 | 22 | 3.9 | 82 14.6 | 142 25.2 | | | | |
| 23 | 26 35.8 | 26 40.2 | 25 23.1 | 23 | 4.1 | 83 14.7 | 143 25.4 | | | | |
| 24 | 26 36.0 | 26 40.4 | 25 23.3 | 24 | 4.3 | 84 14.9 | 144 25.6 | | | | |
| 25 | 26 36.3 | 26 40.7 | 25 23.5 | 25 | 4.4 | 85 15.1 | 145 25.7 | | | | |
| 26 | 26 36.5 | 26 40.9 | 25 23.8 | 26 | 4.6 | 86 15.3 | 146 25.9 | | | | |
| 27 | 26 36.8 | 26 41.2 | 25 24.0 | 27 | 4.8 | 87 15.4 | 147 26.1 | | | | |
| 28 | 26 37.0 | 26 41.4 | 25 24.2 | 28 | 5.0 | 88 15.6 | 148 26.3 | | | | |
| 29 | 26 37.3 | 26 41.7 | 25 24.5 | 29 | 5.1 | 89 15.8 | 149 26.4 | | | | |
| 30 | 26 37.5 | 26 41.9 | 25 24.7 | 30 | 5.3 | 90 16.0 | 150 26.6 | | | | |
| 31 | 26 37.8 | 26 42.2 | 25 25.0 | 31 | 5.5 | 91 16.2 | 151 26.8 | | | | |
| 32 | 26 38.0 | 26 42.4 | 25 25.2 | 32 | 5.7 | 92 16.3 | 152 27.0 | | | | |
| 33 | 26 38.3 | 26 42.7 | 25 25.4 | 33 | 5.9 | 93 16.5 | 153 27.2 | | | | |
| 34 | 26 38.5 | 26 42.9 | 25 25.7 | 34 | 6.0 | 94 16.7 | 154 27.3 | | | | |
| 35 | 26 38.8 | 26 43.2 | 25 25.9 | 35 | 6.2 | 95 16.9 | 155 27.5 | | | | |
| 36 | 26 39.0 | 26 43.4 | 25 26.2 | 36 | 6.4 | 96 17.0 | 156 27.7 | | | | |
| 37 | 26 39.3 | 26 43.7 | 25 26.4 | 37 | 6.6 | 97 17.2 | 157 27.9 | | | | |
| 38 | 26 39.5 | 26 43.9 | 25 26.6 | 38 | 6.7 | 98 17.4 | 158 28.0 | | | | |
| 39 | 26 39.8 | 26 44.2 | 25 26.9 | 39 | 6.9 | 99 17.6 | 159 28.2 | | | | |
| 40 | 26 40.0 | 26 44.4 | 25 27.1 | 40 | 7.1 | 100 17.8 | 160 28.4 | | | | |
| 41 | 26 40.3 | 26 44.7 | 25 27.3 | 41 | 7.3 | 101 17.9 | 161 28.6 | | | | |
| 42 | 26 40.5 | 26 44.9 | 25 27.6 | 42 | 7.5 | 102 18.1 | 162 28.8 | | | | |
| 43 | 26 40.8 | 26 45.2 | 25 27.8 | 43 | 7.6 | 103 18.3 | 163 28.9 | | | | |
| 44 | 26 41.0 | 26 45.4 | 25 28.1 | 44 | 7.8 | 104 18.5 | 164 29.1 | | | | |
| 45 | 26 41.3 | 26 45.7 | 25 28.3 | 45 | 8.0 | 105 18.6 | 165 29.3 | | | | |
| 46 | 26 41.5 | 26 45.9 | 25 28.5 | 46 | 8.2 | 106 18.8 | 166 29.5 | | | | |
| 47 | 26 41.8 | 26 46.2 | 25 28.8 | 47 | 8.3 | 107 19.0 | 167 29.6 | | | | |
| 48 | 26 42.0 | 26 46.5 | 25 29.0 | 48 | 8.5 | 108 19.2 | 168 29.8 | | | | |
| 49 | 26 42.3 | 26 46.7 | 25 29.3 | 49 | 8.7 | 109 19.3 | 169 30.0 | | | | |
| 50 | 26 42.5 | 26 47.0 | 25 29.5 | 50 | 8.9 | 110 19.5 | 170 30.2 | | | | |
| 51 | 26 42.8 | 26 47.2 | 25 29.7 | 51 | 9.1 | 111 19.7 | 171 30.4 | | | | |
| 52 | 26 43.0 | 26 47.5 | 25 30.0 | 52 | 9.2 | 112 19.9 | 172 30.5 | | | | |
| 53 | 26 43.3 | 26 47.7 | 25 30.2 | 53 | 9.4 | 113 20.1 | 173 30.7 | | | | |
| 54 | 26 43.5 | 26 48.0 | 25 30.5 | 54 | 9.6 | 114 20.2 | 174 30.9 | | | | |
| 55 | 26 43.8 | 26 48.2 | 25 30.7 | 55 | 9.8 | 115 20.4 | 175 31.1 | | | | |
| 56 | 26 44.0 | 26 48.5 | 25 30.9 | 56 | 9.9 | 116 20.6 | 176 31.2 | | | | |
| 57 | 26 44.3 | 26 48.7 | 25 31.2 | 57 | 10.1 | 117 20.8 | 177 31.4 | | | | |
| 58 | 26 44.5 | 26 49.0 | 25 31.4 | 58 | 10.3 | 118 20.9 | 178 31.6 | | | | |
| 59 | 26 44.8 | 26 49.2 | 25 31.6 | 59 | 10.5 | 119 21.1 | 179 31.8 | | | | |
| 60 | 26 45.0 | 26 49.5 | 25 31.9 | 60 | 10.7 | 120 21.3 | 180 32.0 | | | | |

| POPRAVKA ČASOVNOG UGLA | | | | POPRAVKA DRUGOG REDA za časovni ugao i deklinaciju Sunca, Mjeseca i planeta | | | | | | | |
|------------------------|--------------------|----------------------|--------------|---|-------|----------|----------|---|---|---|---|
| S | SUNCA I PLANETA | PROLJEĆNE TAKKE ° | MJESECA ☾ | Δ | popr. | | | | | | |
| | | | | | Δ | Δ | | | | | |
| | o | ′ | o | ′ | o | ′ | o | ′ | ″ | ″ | ″ |
| 0 | 26 45.0 | 26 49.5 | 25 31.9 | 0 | .0 | 60 10.8 | 120 21.5 | | | | |
| 1 | 26 45.3 | 26 49.7 | 25 32.1 | 1 | .2 | 61 10.9 | 121 21.7 | | | | |
| 2 | 26 45.5 | 26 50.0 | 25 32.4 | 2 | .4 | 62 11.1 | 122 21.9 | | | | |
| 3 | 26 45.8 | 26 50.2 | 25 32.6 | 3 | .5 | 63 11.3 | 123 22.0 | | | | |
| 4 | 26 46.0 | 26 50.5 | 25 32.8 | 4 | .7 | 64 11.5 | 124 22.2 | | | | |
| 5 | 26 46.3 | 26 50.7 | 25 33.1 | 5 | .9 | 65 11.6 | 125 22.4 | | | | |
| 6 | 26 46.5 | 26 51.0 | 25 33.3 | 6 | 1.1 | 66 11.8 | 126 22.6 | | | | |
| 7 | 26 46.8 | 26 51.2 | 25 33.6 | 7 | 1.3 | 67 12.0 | 127 22.8 | | | | |
| 8 | 26 47.0 | 26 51.5 | 25 33.8 | 8 | 1.4 | 68 12.2 | 128 22.9 | | | | |
| 9 | 26 47.3 | 26 51.7 | 25 34.0 | 9 | 1.6 | 69 12.4 | 129 23.1 | | | | |
| 10 | 26 47.5 | 26 52.0 | 25 34.3 | 10 | 1.8 | 70 12.5 | 130 23.3 | | | | |
| 11 | 26 47.8 | 26 52.2 | 25 34.5 | 11 | 2.0 | 71 12.7 | 131 23.5 | | | | |
| 12 | 26 48.0 | 26 52.5 | 25 34.7 | 12 | 2.2 | 72 12.9 | 132 23.7 | | | | |
| 13 | 26 48.3 | 26 52.7 | 25 35.0 | 13 | 2.3 | 73 13.1 | 133 23.8 | | | | |
| 14 | 26 48.5 | 26 53.0 | 25 35.2 | 14 | 2.5 | 74 13.3 | 134 24.0 | | | | |
| 15 | 26 48.8 | 26 53.2 | 25 35.5 | 15 | 2.7 | 75 13.4 | 135 24.2 | | | | |
| 16 | 26 49.0 | 26 53.5 | 25 35.7 | 16 | 2.9 | 76 13.6 | 136 24.4 | | | | |
| 17 | 26 49.3 | 26 53.7 | 25 35.9 | 17 | 3.0 | 77 13.8 | 137 24.5 | | | | |
| 18 | 26 49.5 | 26 54.0 | 25 36.2 | 18 | 3.2 | 78 14.0 | 138 24.7 | | | | |
| 19 | 26 49.8 | 26 54.2 | 25 36.4 | 19 | 3.4 | 79 14.2 | 139 24.9 | | | | |
| 20 | 26 50.0 | 26 54.5 | 25 36.7 | 20 | 3.6 | 80 14.3 | 140 25.1 | | | | |
| 21 | 26 50.3 | 26 54.7 | 25 36.9 | 21 | 3.8 | 81 14.5 | 141 25.3 | | | | |
| 22 | 26 50.5 | 26 55.0 | 25 37.1 | 22 | 3.9 | 82 14.7 | 142 25.4 | | | | |
| 23 | 26 50.8 | 26 55.2 | 25 37.4 | 23 | 4.1 | 83 14.9 | 143 25.6 | | | | |
| 24 | 26 51.0 | 26 55.5 | 25 37.6 | 24 | 4.3 | 84 15.1 | 144 25.8 | | | | |
| 25 | 26 51.3 | 26 55.7 | 25 37.8 | 25 | 4.5 | 85 15.2 | 145 26.0 | | | | |
| 26 | 26 51.5 | 26 56.0 | 25 38.1 | 26 | 4.7 | 86 15.4 | 146 26.2 | | | | |
| 27 | 26 51.8 | 26 56.2 | 25 38.3 | 27 | 4.8 | 87 15.6 | 147 26.3 | | | | |
| 28 | 26 52.0 | 26 56.5 | 25 38.6 | 28 | 5.0 | 88 15.8 | 148 26.5 | | | | |
| 29 | 26 52.3 | 26 56.7 | 25 38.8 | 29 | 5.2 | 89 15.9 | 149 26.7 | | | | |
| 30 | 26 52.5 | 26 57.0 | 25 39.0 | 30 | 5.4 | 90 16.1 | 150 26.9 | | | | |
| 31 | 26 52.8 | 26 57.2 | 25 39.3 | 31 | 5.6 | 91 16.3 | 151 27.1 | | | | |
| 32 | 26 53.0 | 26 57.5 | 25 39.5 | 32 | 5.7 | 92 16.5 | 152 27.2 | | | | |
| 33 | 26 53.3 | 26 57.7 | 25 39.8 | 33 | 5.9 | 93 16.7 | 153 27.4 | | | | |
| 34 | 26 53.5 | 26 58.0 | 25 40.0 | 34 | 6.1 | 94 16.8 | 154 27.6 | | | | |
| 35 | 26 53.8 | 26 58.2 | 25 40.2 | 35 | 6.3 | 95 17.0 | 155 27.8 | | | | |
| 36 | 26 54.0 | 26 58.5 | 25 40.5 | 36 | 6.5 | 96 17.2 | 156 28.0 | | | | |
| 37 | 26 54.3 | 26 58.7 | 25 40.7 | 37 | 6.6 | 97 17.4 | 157 28.1 | | | | |
| 38 | 26 54.5 | 26 59.0 | 25 41.0 | 38 | 6.8 | 98 17.6 | 158 28.3 | | | | |
| 39 | 26 54.8 | 26 59.2 | 25 41.2 | 39 | 7.0 | 99 17.7 | 159 28.5 | | | | |
| 40 | 26 55.0 | 26 59.5 | 25 41.4 | 40 | 7.2 | 100 17.9 | 160 28.7 | | | | |
| 41 | 26 55.3 | 26 59.7 | 25 41.7 | 41 | 7.3 | 101 18.1 | 161 28.8 | | | | |
| 42 | 26 55.5 | 26 60.0 | 25 41.9 | 42 | 7.5 | 102 18.3 | 162 29.0 | | | | |
| 43 | 26 55.8 | 27 .2 | 25 42.1 | 43 | 7.7 | 103 18.5 | 163 29.2 | | | | |
| 44 | 26 56.0 | 27 .5 | 25 42.4 | 44 | 7.9 | 104 18.6 | 164 29.4 | | | | |
| 45 | 26 56.3 | 27 .7 | 25 42.6 | 45 | 8.1 | 105 18.8 | 165 29.6 | | | | |
| 46 | 26 56.5 | 27 1.0 | 25 42.9 | 46 | 8.2 | 106 19.0 | 166 29.7 | | | | |
| 47 | 26 56.8 | 27 1.2 | 25 43.1 | 47 | 8.4 | 107 19.2 | 167 29.9 | | | | |
| 48 | 26 57.0 | 27 1.5 | 25 43.3 | 48 | 8.6 | 108 19.4 | 168 30.1 | | | | |
| 49 | 26 57.3 | 27 1.7 | 25 43.6 | 49 | 8.8 | 109 19.5 | 169 30.3 | | | | |
| 50 | 26 57.5 | 27 2.0 | 25 43.8 | 50 | 9.0 | 110 19.7 | 170 30.5 | | | | |
| 51 | 26 57.8 | 27 2.2 | 25 44.1 | 51 | 9.1 | 111 19.9 | 171 30.6 | | | | |
| 52 | 26 58.0 | 27 2.5 | 25 44.3 | 52 | 9.3 | 112 20.1 | 172 30.8 | | | | |
| 53 | 26 58.3 | 27 2.7 | 25 44.5 | 53 | 9.5 | 113 20.2 | 173 31.0 | | | | |
| 54 | 26 58.5 | 27 3.0 | 25 44.8 | 54 | 9.7 | 114 20.4 | 174 31.2 | | | | |
| 55 | 26 58.8 | 27 3.2 | 25 45.0 | 55 | 9.9 | 115 20.6 | 175 31.4 | | | | |
| 56 | 26 59.0 | 27 3.5 | 25 4 | | | | | | | | |

1 h 48 min

| POPRAVKA ČASOVNOG UGLA | | | | | | POPRAVKA DRUGOG REDA za časovni ugao i deklinaciju Sunca, Mjeseca i planeta | | | | | | |
|------------------------|-----------------|------|----------------------|------|--------------|---|----|-------|-----|-------|-----|-------|
| S | SUNCA I PLANETA | | PROLJEĆNE TAKČE ° | | MJESECA ζ | | Δ | popr. | Δ | popr. | Δ | popr. |
| | o | t | o | t | o | t | | | | | | |
| 0 | 27 | .0 | 27 | 4.5 | 25 | 46.2 | 0 | .0 | 60 | 10.9 | 120 | 21.7 |
| 1 | 27 | .3 | 27 | 4.8 | 25 | 46.4 | 1 | .2 | 61 | 11.0 | 121 | 21.9 |
| 2 | 27 | .5 | 27 | 5.0 | 25 | 46.7 | 2 | .4 | 62 | 11.2 | 122 | 22.1 |
| 3 | 27 | .8 | 27 | 5.3 | 25 | 46.9 | 3 | .5 | 63 | 11.4 | 123 | 22.2 |
| 4 | 27 | 1.0 | 27 | 5.5 | 25 | 47.2 | 4 | .7 | 64 | 11.6 | 124 | 22.4 |
| 5 | 27 | 1.3 | 27 | 5.8 | 25 | 47.4 | 5 | .9 | 65 | 11.8 | 125 | 22.6 |
| 6 | 27 | 1.5 | 27 | 6.0 | 25 | 47.6 | 6 | 1.1 | 66 | 11.9 | 126 | 22.8 |
| 7 | 27 | 1.8 | 27 | 6.3 | 25 | 47.9 | 7 | 1.3 | 67 | 12.1 | 127 | 23.0 |
| 8 | 27 | 2.0 | 27 | 6.5 | 25 | 48.1 | 8 | 1.4 | 68 | 12.3 | 128 | 23.1 |
| 9 | 27 | 2.3 | 27 | 6.8 | 25 | 48.3 | 9 | 1.6 | 69 | 12.5 | 129 | 23.3 |
| 10 | 27 | 2.5 | 27 | 7.0 | 25 | 48.6 | 10 | 1.8 | 70 | 12.7 | 130 | 23.5 |
| 11 | 27 | 2.8 | 27 | 7.3 | 25 | 48.8 | 11 | 2.0 | 71 | 12.8 | 131 | 23.7 |
| 12 | 27 | 3.0 | 27 | 7.5 | 25 | 49.1 | 12 | 2.2 | 72 | 13.0 | 132 | 23.9 |
| 13 | 27 | 3.3 | 27 | 7.8 | 25 | 49.3 | 13 | 2.4 | 73 | 13.2 | 133 | 24.1 |
| 14 | 27 | 3.5 | 27 | 8.0 | 25 | 49.5 | 14 | 2.5 | 74 | 13.4 | 134 | 24.2 |
| 15 | 27 | 3.8 | 27 | 8.3 | 25 | 49.8 | 15 | 2.7 | 75 | 13.6 | 135 | 24.4 |
| 16 | 27 | 4.0 | 27 | 8.5 | 25 | 50.0 | 16 | 2.9 | 76 | 13.7 | 136 | 24.6 |
| 17 | 27 | 4.3 | 27 | 8.8 | 25 | 50.3 | 17 | 3.1 | 77 | 13.9 | 137 | 24.8 |
| 18 | 27 | 4.5 | 27 | 9.0 | 25 | 50.5 | 18 | 3.3 | 78 | 14.1 | 138 | 25.0 |
| 19 | 27 | 4.8 | 27 | 9.3 | 25 | 50.7 | 19 | 3.4 | 79 | 14.3 | 139 | 25.1 |
| 20 | 27 | 5.0 | 27 | 9.5 | 25 | 51.0 | 20 | 3.6 | 80 | 14.5 | 140 | 25.3 |
| 21 | 27 | 5.3 | 27 | 9.8 | 25 | 51.2 | 21 | 3.8 | 81 | 14.6 | 141 | 25.5 |
| 22 | 27 | 5.5 | 27 | 10.0 | 25 | 51.4 | 22 | 4.0 | 82 | 14.8 | 142 | 25.7 |
| 23 | 27 | 5.8 | 27 | 10.3 | 25 | 51.7 | 23 | 4.2 | 83 | 15.0 | 143 | 25.9 |
| 24 | 27 | 6.0 | 27 | 10.5 | 25 | 51.9 | 24 | 4.3 | 84 | 15.2 | 144 | 26.0 |
| 25 | 27 | 6.3 | 27 | 10.8 | 25 | 52.2 | 25 | 4.5 | 85 | 15.4 | 145 | 26.2 |
| 26 | 27 | 6.5 | 27 | 11.0 | 25 | 52.4 | 26 | 4.7 | 86 | 15.6 | 146 | 26.4 |
| 27 | 27 | 6.8 | 27 | 11.3 | 25 | 52.6 | 27 | 4.9 | 87 | 15.7 | 147 | 26.6 |
| 28 | 27 | 7.0 | 27 | 11.5 | 25 | 52.9 | 28 | 5.1 | 88 | 15.9 | 148 | 26.8 |
| 29 | 27 | 7.3 | 27 | 11.8 | 25 | 53.1 | 29 | 5.2 | 89 | 16.1 | 149 | 26.9 |
| 30 | 27 | 7.5 | 27 | 12.0 | 25 | 53.4 | 30 | 5.4 | 90 | 16.3 | 150 | 27.1 |
| 31 | 27 | 7.8 | 27 | 12.3 | 25 | 53.6 | 31 | 5.6 | 91 | 16.5 | 151 | 27.3 |
| 32 | 27 | 8.0 | 27 | 12.5 | 25 | 53.8 | 32 | 5.8 | 92 | 16.6 | 152 | 27.5 |
| 33 | 27 | 8.3 | 27 | 12.8 | 25 | 54.1 | 33 | 6.0 | 93 | 16.8 | 153 | 27.7 |
| 34 | 27 | 8.5 | 27 | 13.0 | 25 | 54.3 | 34 | 6.1 | 94 | 17.0 | 154 | 27.8 |
| 35 | 27 | 8.8 | 27 | 13.3 | 25 | 54.6 | 35 | 6.3 | 95 | 17.2 | 155 | 28.0 |
| 36 | 27 | 9.0 | 27 | 13.5 | 25 | 54.8 | 36 | 6.5 | 96 | 17.4 | 156 | 28.2 |
| 37 | 27 | 9.3 | 27 | 13.8 | 25 | 55.0 | 37 | 6.7 | 97 | 17.5 | 157 | 28.4 |
| 38 | 27 | 9.5 | 27 | 14.0 | 25 | 55.3 | 38 | 6.9 | 98 | 17.7 | 158 | 28.6 |
| 39 | 27 | 9.8 | 27 | 14.3 | 25 | 55.5 | 39 | 7.1 | 99 | 17.9 | 159 | 28.8 |
| 40 | 27 | 10.0 | 27 | 14.5 | 25 | 55.7 | 40 | 7.2 | 100 | 18.1 | 160 | 28.9 |
| 41 | 27 | 10.3 | 27 | 14.8 | 25 | 56.0 | 41 | 7.4 | 101 | 18.3 | 161 | 29.1 |
| 42 | 27 | 10.5 | 27 | 15.0 | 25 | 56.2 | 42 | 7.6 | 102 | 18.4 | 162 | 29.3 |
| 43 | 27 | 10.8 | 27 | 15.3 | 25 | 56.5 | 43 | 7.8 | 103 | 18.6 | 163 | 29.5 |
| 44 | 27 | 11.0 | 27 | 15.5 | 25 | 56.7 | 44 | 8.0 | 104 | 18.8 | 164 | 29.7 |
| 45 | 27 | 11.3 | 27 | 15.8 | 25 | 56.9 | 45 | 8.1 | 105 | 19.0 | 165 | 29.8 |
| 46 | 27 | 11.5 | 27 | 16.0 | 25 | 57.2 | 46 | 8.3 | 106 | 19.2 | 166 | 30.0 |
| 47 | 27 | 11.8 | 27 | 16.3 | 25 | 57.4 | 47 | 8.5 | 107 | 19.3 | 167 | 30.2 |
| 48 | 27 | 12.0 | 27 | 16.5 | 25 | 57.7 | 48 | 8.7 | 108 | 19.5 | 168 | 30.4 |
| 49 | 27 | 12.3 | 27 | 16.8 | 25 | 57.9 | 49 | 8.9 | 109 | 19.7 | 169 | 30.6 |
| 50 | 27 | 12.5 | 27 | 17.0 | 25 | 58.1 | 50 | 9.0 | 110 | 19.9 | 170 | 30.7 |
| 51 | 27 | 12.8 | 27 | 17.3 | 25 | 58.4 | 51 | 9.2 | 111 | 20.1 | 171 | 30.9 |
| 52 | 27 | 13.0 | 27 | 17.5 | 25 | 58.6 | 52 | 9.4 | 112 | 20.3 | 172 | 31.1 |
| 53 | 27 | 13.3 | 27 | 17.8 | 25 | 58.8 | 53 | 9.6 | 113 | 20.4 | 173 | 31.3 |
| 54 | 27 | 13.5 | 27 | 18.0 | 25 | 59.1 | 54 | 9.8 | 114 | 20.6 | 174 | 31.5 |
| 55 | 27 | 13.8 | 27 | 18.3 | 25 | 59.3 | 55 | 9.9 | 115 | 20.8 | 175 | 31.6 |
| 56 | 27 | 14.0 | 27 | 18.5 | 25 | 59.6 | 56 | 10.1 | 116 | 21.0 | 176 | 31.8 |
| 57 | 27 | 14.3 | 27 | 18.8 | 25 | 59.8 | 57 | 10.3 | 117 | 21.2 | 177 | 32.0 |
| 58 | 27 | 14.5 | 27 | 19.0 | 26 | .0 | 58 | 10.5 | 118 | 21.3 | 178 | 32.2 |
| 59 | 27 | 14.8 | 27 | 19.3 | 26 | .3 | 59 | 10.7 | 119 | 21.5 | 179 | 32.4 |
| 60 | 27 | 15.0 | 27 | 19.5 | 26 | .5 | 60 | 10.9 | 120 | 21.7 | 180 | 32.6 |

1 h 49 min

| POPRAVKA ČASOVNOG UGLA | | | | | | POPRAVKA DRUGOG REDA za časovni ugao i deklinaciju Sunca, Mjeseca i planeta | | | | | | |
|------------------------|-----------------|------|----------------------|------|--------------|---|----|-------|-----|-------|-----|-------|
| S | SUNCA I PLANETA | | PROLJEĆNE TAKČE ° | | MJESECA ζ | | Δ | popr. | Δ | popr. | Δ | popr. |
| | o | t | o | t | o | t | | | | | | |
| 0 | 27 | 15.0 | 27 | 19.5 | 26 | .5 | 0 | .0 | 60 | 11.0 | 120 | 21.9 |
| 1 | 27 | 15.3 | 27 | 19.8 | 26 | .8 | 1 | .2 | 61 | 11.1 | 121 | 22.1 |
| 2 | 27 | 15.5 | 27 | 20.0 | 26 | 1.0 | 2 | .4 | 62 | 11.3 | 122 | 22.3 |
| 3 | 27 | 15.8 | 27 | 20.3 | 26 | 1.2 | 3 | .5 | 63 | 11.5 | 123 | 22.4 |
| 4 | 27 | 16.0 | 27 | 20.5 | 26 | 1.5 | 4 | .7 | 64 | 11.7 | 124 | 22.6 |
| 5 | 27 | 16.3 | 27 | 20.8 | 26 | 1.7 | 5 | .9 | 65 | 11.9 | 125 | 22.8 |
| 6 | 27 | 16.5 | 27 | 21.0 | 26 | 1.9 | 6 | 1.1 | 66 | 12.0 | 126 | 23.0 |
| 7 | 27 | 16.8 | 27 | 21.3 | 26 | 2.2 | 7 | 1.3 | 67 | 12.2 | 127 | 23.2 |
| 8 | 27 | 17.0 | 27 | 21.5 | 26 | 2.4 | 8 | 1.5 | 68 | 12.4 | 128 | 23.4 |
| 9 | 27 | 17.3 | 27 | 21.8 | 26 | 2.7 | 9 | 1.6 | 69 | 12.6 | 129 | 23.5 |
| 10 | 27 | 17.5 | 27 | 22.0 | 26 | 2.9 | 10 | 1.8 | 70 | 12.8 | 130 | 23.7 |
| 11 | 27 | 17.8 | 27 | 22.3 | 26 | 3.1 | 11 | 2.0 | 71 | 13.0 | 131 | 23.9 |
| 12 | 27 | 18.0 | 27 | 22.6 | 26 | 3.4 | 12 | 2.2 | 72 | 13.1 | 132 | 24.1 |
| 13 | 27 | 18.3 | 27 | 22.8 | 26 | 3.6 | 13 | 2.4 | 73 | 13.3 | 133 | 24.3 |
| 14 | 27 | 18.5 | 27 | 23.1 | 26 | 3.9 | 14 | 2.6 | 74 | 13.5 | 134 | 24.5 |
| 15 | 27 | 18.8 | 27 | 23.3 | 26 | 4.1 | 15 | 2.7 | 75 | 13.7 | 135 | 24.6 |
| 16 | 27 | 19.0 | 27 | 23.6 | 26 | 4.3 | 16 | 2.9 | 76 | 13.9 | 136 | 24.8 |
| 17 | 27 | 19.3 | 27 | 23.8 | 26 | 4.6 | 17 | 3.1 | 77 | 14.1 | 137 | 25.0 |
| 18 | 27 | 19.5 | 27 | 24.1 | 26 | 4.8 | 18 | 3.3 | 78 | 14.2 | 138 | 25.2 |
| 19 | 27 | 19.8 | 27 | 24.3 | 26 | 5.1 | 19 | 3.5 | 79 | 14.4 | 139 | 25.4 |
| 20 | 27 | 20.0 | 27 | 24.6 | 26 | 5.3 | 20 | 3.7 | 80 | 14.6 | 140 | 25.6 |
| 21 | 27 | 20.3 | 27 | 24.8 | 26 | 5.5 | 21 | 3.8 | 81 | 14.8 | 141 | 25.7 |
| 22 | 27 | 20.5 | 27 | 25.1 | 26 | 5.8 | 22 | 4.0 | 82 | 15.0 | 142 | 25.9 |
| 23 | 27 | 20.8 | 27 | 25.3 | 26 | 6.0 | 23 | 4.2 | 83 | 15.1 | 143 | 26.1 |
| 24 | 27 | 21.0 | 27 | 25.6 | 26 | 6.2 | 24 | 4.4 | 84 | 15.3 | 144 | 26.3 |
| 25 | 27 | 21.3 | 27 | 25.8 | 26 | 6.5 | 25 | 4.6 | 85 | 15.5 | 145 | 26.5 |
| 26 | 27 | 21.5 | 27 | 26.1 | 26 | 6.7 | 26 | 4.7 | 86 | 15.7 | 146 | 26.6 |
| 27 | 27 | 21.8 | 27 | 26.3 | 26 | 7.0 | 27 | 4.9 | 87 | 15.9 | 147 | 26.8 |
| 28 | 27 | 22.0 | 27 | 26.6 | 26 | 7.2 | 28 | 5.1 | 88 | 16.1 | 148 | 27.0 |
| 29 | 27 | 22.3 | 27 | 26.8 | 26 | 7.4 | 29 | 5.3 | 89 | 16.2 | 149 | 27.2 |
| 30 | 27 | 22.5 | 27 | 27.1 | 26 | 7.7 | 30 | 5.5 | 90 | 16.4 | 150 | 27.4 |
| 31 | 27 | 22.8 | 27 | 27.3 | 26 | 7.9 | 31 | 5.7 | 91 | 16.6 | 151 | 27.6 |
| 32 | 27 | 23.0 | 27 | 27.6 | 26 | 8.2 | 32 | 5.8 | 92 | 16.8 | 152 | 27.7 |
| 33 | 27 | 23.3 | 27 | 27.8 | 26 | 8.4 | 33 | 6.0 | 93 | 17.0 | 153 | 27.9 |
| 34 | 27 | 23.5 | 27 | 28.1 | 26 | 8.6 | 34 | 6.2 | 94 | 17.2 | 154 | 28.1 |
| 35 | 27 | 23.8 | 27 | 28.3 | 26 | 8.9 | 35 | 6.4 | 95 | 17.3 | 155 | 28.3 |
| 36 | 27 | 24.0 | 27 | 28.6 | 26 | 9.1 | 36 | 6.6 | 96 | 17.5 | 156 | 28.5 |
| 37 | 27 | 24.3 | 27 | 28.8 | 26 | 9.3 | 37 | 6.8 | 97 | 17.7 | 157 | 28.7 |
| 38 | 27 | 24.5 | 27 | 29.1 | 26 | 9.6 | 38 | 6.9 | 98 | 17.9 | 158 | 28.8 |
| 39 | 27 | 24.8 | 27 | 29.3 | 26 | 9.8 | 39 | 7.1 | 99 | 18.1 | 159 | 29.0 |
| 40 | 27 | 25.0 | 27 | 29.6 | 26 | 10.1 | 40 | 7.3 | 100 | 18.3 | 160 | 29.2 |
| 41 | 27 | 25.3 | 27 | 29.8 | 26 | 10.3 | 41 | 7.5 | 101 | 18.4 | 161 | 29.4 |
| 42 | 27 | 25.5 | 27 | 30.1 | 26 | 10.5 | 42 | 7.7 | 102 | 18.6 | 162 | 29.6 |
| 43 | 27 | 25.8 | 27 | 30.3 | 26 | 10.8 | 43 | 7.8 | 103 | 18.8 | 163 | 29.7 |
| 44 | 27 | 26.0 | 27 | 30.6 | 26 | 11.0 | 44 | 8.0 | 104 | 19.0 | 164 | 29.9 |
| 45 | 27 | 26.3 | 27 | 30.8 | 26 | 11.3 | 45 | 8.2 | 105 | 19.2 | 165 | 30.1 |
| 46 | 27 | 26.5 | 27 | 31.1 | 26 | 11.5 | 46 | 8.4 | 106 | 19.3 | 166 | 30.3 |
| 47 | 27 | 26.8 | 27 | 31.3 | 26 | 11.7 | 47 | 8.6 | 107 | 19.5 | 167 | 30.5 |
| 48 | 27 | 27.0 | 27 | 31.6 | 26 | 12.0 | 48 | 8.8 | | | | |

1 h 50 min

| POPRAVKA ČASOVNOG UGLA | | | | POPRAVKA DRUGOG REDA za časovni ugao i deklinaciju Sunca, Mjeseca i planeta | | | |
|------------------------|--------------------|----------------------|--------------|---|-------|----------|----------|
| S | SUNCA I PLANETA | PROLJEČNE TAČKE ° | MJESECA (| Δ | popr. | Δ | popr. |
| | o | l | o | l | o | l | o |
| 0 | 27 30.0 | 27 34.6 | 26 14.8 | 0 | .0 | 60 11.1 | 120 22.1 |
| 1 | 27 30.3 | 27 34.8 | 26 15.1 | 1 | .2 | 61 11.2 | 121 22.3 |
| 2 | 27 30.5 | 27 35.1 | 26 15.3 | 2 | .4 | 62 11.4 | 122 22.5 |
| 3 | 27 30.8 | 27 35.3 | 26 15.5 | 3 | .6 | 63 11.6 | 123 22.7 |
| 4 | 27 31.0 | 27 35.6 | 26 15.8 | 4 | .7 | 64 11.8 | 124 22.8 |
| 5 | 27 31.3 | 27 35.8 | 26 16.0 | 5 | .9 | 65 12.0 | 125 23.0 |
| 6 | 27 31.5 | 27 36.1 | 26 16.3 | 6 | 1.1 | 66 12.2 | 126 23.2 |
| 7 | 27 31.8 | 27 36.3 | 26 16.5 | 7 | 1.3 | 67 12.3 | 127 23.4 |
| 8 | 27 32.0 | 27 36.6 | 26 16.7 | 8 | 1.5 | 68 12.5 | 128 23.6 |
| 9 | 27 32.3 | 27 36.8 | 26 17.0 | 9 | 1.7 | 69 12.7 | 129 23.8 |
| 10 | 27 32.5 | 27 37.1 | 26 17.2 | 10 | 1.8 | 70 12.9 | 130 23.9 |
| 11 | 27 32.8 | 27 37.3 | 26 17.5 | 11 | 2.0 | 71 13.1 | 131 24.1 |
| 12 | 27 33.0 | 27 37.6 | 26 17.7 | 12 | 2.2 | 72 13.3 | 132 24.3 |
| 13 | 27 33.3 | 27 37.8 | 26 17.9 | 13 | 2.4 | 73 13.4 | 133 24.5 |
| 14 | 27 33.5 | 27 38.1 | 26 18.2 | 14 | 2.6 | 74 13.6 | 134 24.7 |
| 15 | 27 33.8 | 27 38.3 | 26 18.4 | 15 | 2.8 | 75 13.8 | 135 24.9 |
| 16 | 27 34.0 | 27 38.6 | 26 18.7 | 16 | 2.9 | 76 14.0 | 136 25.0 |
| 17 | 27 34.3 | 27 38.8 | 26 18.9 | 17 | 3.1 | 77 14.2 | 137 25.2 |
| 18 | 27 34.5 | 27 39.1 | 26 19.1 | 18 | 3.3 | 78 14.4 | 138 25.4 |
| 19 | 27 34.8 | 27 39.3 | 26 19.4 | 19 | 3.5 | 79 14.5 | 139 25.6 |
| 20 | 27 35.0 | 27 39.6 | 26 19.6 | 20 | 3.7 | 80 14.7 | 140 25.8 |
| 21 | 27 35.3 | 27 39.8 | 26 19.8 | 21 | 3.9 | 81 14.9 | 141 26.0 |
| 22 | 27 35.5 | 27 40.1 | 26 20.1 | 22 | 4.1 | 82 15.1 | 142 26.2 |
| 23 | 27 35.8 | 27 40.3 | 26 20.3 | 23 | 4.2 | 83 15.3 | 143 26.3 |
| 24 | 27 36.0 | 27 40.6 | 26 20.6 | 24 | 4.4 | 84 15.5 | 144 26.5 |
| 25 | 27 36.3 | 27 40.9 | 26 20.8 | 25 | 4.6 | 85 15.7 | 145 26.7 |
| 26 | 27 36.5 | 27 41.1 | 26 21.0 | 26 | 4.8 | 86 15.8 | 146 26.9 |
| 27 | 27 36.8 | 27 41.4 | 26 21.3 | 27 | 5.0 | 87 16.0 | 147 27.1 |
| 28 | 27 37.0 | 27 41.6 | 26 21.5 | 28 | 5.2 | 88 16.2 | 148 27.3 |
| 29 | 27 37.3 | 27 41.9 | 26 21.8 | 29 | 5.3 | 89 16.4 | 149 27.4 |
| 30 | 27 37.5 | 27 42.1 | 26 22.0 | 30 | 5.5 | 90 16.6 | 150 27.6 |
| 31 | 27 37.8 | 27 42.4 | 26 22.2 | 31 | 5.7 | 91 16.8 | 151 27.8 |
| 32 | 27 38.0 | 27 42.6 | 26 22.5 | 32 | 5.9 | 92 16.9 | 152 28.0 |
| 33 | 27 38.3 | 27 42.9 | 26 22.7 | 33 | 6.1 | 93 17.1 | 153 28.2 |
| 34 | 27 38.5 | 27 43.1 | 26 22.9 | 34 | 6.3 | 94 17.3 | 154 28.4 |
| 35 | 27 38.8 | 27 43.4 | 26 23.2 | 35 | 6.4 | 95 17.5 | 155 28.5 |
| 36 | 27 39.0 | 27 43.6 | 26 23.4 | 36 | 6.6 | 96 17.7 | 156 28.7 |
| 37 | 27 39.3 | 27 43.9 | 26 23.7 | 37 | 6.8 | 97 17.9 | 157 28.9 |
| 38 | 27 39.5 | 27 44.1 | 26 23.9 | 38 | 7.0 | 98 18.0 | 158 29.1 |
| 39 | 27 39.8 | 27 44.4 | 26 24.1 | 39 | 7.2 | 99 18.2 | 159 29.3 |
| 40 | 27 40.0 | 27 44.6 | 26 24.4 | 40 | 7.4 | 100 18.4 | 160 29.5 |
| 41 | 27 40.3 | 27 44.9 | 26 24.6 | 41 | 7.6 | 101 18.6 | 161 29.7 |
| 42 | 27 40.5 | 27 45.1 | 26 24.9 | 42 | 7.7 | 102 18.8 | 162 29.8 |
| 43 | 27 40.8 | 27 45.4 | 26 25.1 | 43 | 7.9 | 103 19.0 | 163 30.0 |
| 44 | 27 41.0 | 27 45.6 | 26 25.3 | 44 | 8.1 | 104 19.2 | 164 30.2 |
| 45 | 27 41.3 | 27 45.9 | 26 25.6 | 45 | 8.3 | 105 19.3 | 165 30.4 |
| 46 | 27 41.5 | 27 46.1 | 26 25.8 | 46 | 8.5 | 106 19.5 | 166 30.6 |
| 47 | 27 41.8 | 27 46.4 | 26 26.0 | 47 | 8.7 | 107 19.7 | 167 30.8 |
| 48 | 27 42.0 | 27 46.6 | 26 26.3 | 48 | 8.8 | 108 19.9 | 168 30.9 |
| 49 | 27 42.3 | 27 46.9 | 26 26.5 | 49 | 9.0 | 109 20.1 | 169 31.1 |
| 50 | 27 42.5 | 27 47.1 | 26 26.8 | 50 | 9.2 | 110 20.3 | 170 31.3 |
| 51 | 27 42.8 | 27 47.4 | 26 27.0 | 51 | 9.4 | 111 20.4 | 171 31.5 |
| 52 | 27 43.0 | 27 47.6 | 26 27.2 | 52 | 9.6 | 112 20.6 | 172 31.7 |
| 53 | 27 43.3 | 27 47.9 | 26 27.5 | 53 | 9.8 | 113 20.8 | 173 31.9 |
| 54 | 27 43.5 | 27 48.1 | 26 27.7 | 54 | 9.9 | 114 21.0 | 174 32.0 |
| 55 | 27 43.8 | 27 48.4 | 26 28.0 | 55 | 10.1 | 115 21.2 | 175 32.2 |
| 56 | 27 44.0 | 27 48.6 | 26 28.2 | 56 | 10.3 | 116 21.4 | 176 32.4 |
| 57 | 27 44.3 | 27 48.9 | 26 28.4 | 57 | 10.5 | 117 21.5 | 177 32.6 |
| 58 | 27 44.5 | 27 49.1 | 26 28.7 | 58 | 10.7 | 118 21.7 | 178 32.8 |
| 59 | 27 44.8 | 27 49.4 | 26 28.9 | 59 | 10.9 | 119 21.9 | 179 33.0 |
| 60 | 27 45.0 | 27 49.6 | 26 29.2 | 60 | 11.1 | 120 22.1 | 180 33.2 |

1 h 51 min

| POPRAVKA ČASOVNOG UGLA | | | | POPRAVKA DRUGOG REDA za časovni ugao i deklinaciju Sunca, Mjeseca i planeta | | | |
|------------------------|--------------------|----------------------|--------------|---|-------|----------|----------|
| S | SUNCA I PLANETA | PROLJEČNE TAČKE ° | MJESECA (| Δ | popr. | Δ | popr. |
| | o | l | o | l | o | l | o |
| 0 | 27 45.0 | 27 49.6 | 26 29.2 | 0 | .0 | 60 11.2 | 120 22.3 |
| 1 | 27 45.3 | 27 49.9 | 26 29.4 | 1 | .2 | 61 11.3 | 121 22.5 |
| 2 | 27 45.5 | 27 50.1 | 26 29.6 | 2 | .4 | 62 11.5 | 122 22.7 |
| 3 | 27 45.8 | 27 50.4 | 26 29.9 | 3 | .6 | 63 11.7 | 123 22.9 |
| 4 | 27 46.0 | 27 50.6 | 26 30.1 | 4 | .7 | 64 11.9 | 124 23.0 |
| 5 | 27 46.3 | 27 50.9 | 26 30.3 | 5 | .9 | 65 12.1 | 125 23.2 |
| 6 | 27 46.5 | 27 51.1 | 26 30.6 | 6 | 1.1 | 66 12.3 | 126 23.4 |
| 7 | 27 46.8 | 27 51.4 | 26 30.8 | 7 | 1.3 | 67 12.5 | 127 23.6 |
| 8 | 27 47.0 | 27 51.6 | 26 31.1 | 8 | 1.5 | 68 12.6 | 128 23.8 |
| 9 | 27 47.3 | 27 51.9 | 26 31.3 | 9 | 1.7 | 69 12.8 | 129 24.0 |
| 10 | 27 47.5 | 27 52.1 | 26 31.5 | 10 | 1.9 | 70 13.0 | 130 24.2 |
| 11 | 27 47.8 | 27 52.4 | 26 31.8 | 11 | 2.0 | 71 13.2 | 131 24.3 |
| 12 | 27 48.0 | 27 52.6 | 26 32.0 | 12 | 2.2 | 72 13.4 | 132 24.5 |
| 13 | 27 48.3 | 27 52.9 | 26 32.3 | 13 | 2.4 | 73 13.6 | 133 24.7 |
| 14 | 27 48.5 | 27 53.1 | 26 32.5 | 14 | 2.6 | 74 13.8 | 134 24.9 |
| 15 | 27 48.8 | 27 53.4 | 26 32.7 | 15 | 2.8 | 75 13.9 | 135 25.1 |
| 16 | 27 49.0 | 27 53.6 | 26 33.0 | 16 | 3.0 | 76 14.1 | 136 25.3 |
| 17 | 27 49.3 | 27 53.9 | 26 33.2 | 17 | 3.2 | 77 14.3 | 137 25.5 |
| 18 | 27 49.5 | 27 54.1 | 26 33.4 | 18 | 3.3 | 78 14.5 | 138 25.6 |
| 19 | 27 49.8 | 27 54.4 | 26 33.7 | 19 | 3.5 | 79 14.7 | 139 25.8 |
| 20 | 27 50.0 | 27 54.6 | 26 33.9 | 20 | 3.7 | 80 14.9 | 140 26.0 |
| 21 | 27 50.3 | 27 54.9 | 26 34.2 | 21 | 3.9 | 81 15.1 | 141 26.2 |
| 22 | 27 50.5 | 27 55.1 | 26 34.4 | 22 | 4.1 | 82 15.2 | 142 26.4 |
| 23 | 27 50.8 | 27 55.4 | 26 34.6 | 23 | 4.3 | 83 15.4 | 143 26.6 |
| 24 | 27 51.0 | 27 55.6 | 26 34.9 | 24 | 4.5 | 84 15.6 | 144 26.8 |
| 25 | 27 51.3 | 27 55.9 | 26 35.1 | 25 | 4.6 | 85 15.8 | 145 26.9 |
| 26 | 27 51.5 | 27 56.1 | 26 35.4 | 26 | 4.8 | 86 16.0 | 146 27.1 |
| 27 | 27 51.8 | 27 56.4 | 26 35.6 | 27 | 5.0 | 87 16.2 | 147 27.3 |
| 28 | 27 52.0 | 27 56.6 | 26 35.8 | 28 | 5.2 | 88 16.4 | 148 27.5 |
| 29 | 27 52.3 | 27 56.9 | 26 36.1 | 29 | 5.4 | 89 16.5 | 149 27.7 |
| 30 | 27 52.5 | 27 57.1 | 26 36.3 | 30 | 5.6 | 90 16.7 | 150 27.9 |
| 31 | 27 52.8 | 27 57.4 | 26 36.5 | 31 | 5.8 | 91 16.9 | 151 28.1 |
| 32 | 27 53.0 | 27 57.6 | 26 36.8 | 32 | 5.9 | 92 17.1 | 152 28.2 |
| 33 | 27 53.3 | 27 57.9 | 26 37.0 | 33 | 6.1 | 93 17.3 | 153 28.4 |
| 34 | 27 53.5 | 27 58.1 | 26 37.3 | 34 | 6.3 | 94 17.5 | 154 28.6 |
| 35 | 27 53.8 | 27 58.4 | 26 37.5 | 35 | 6.5 | 95 17.7 | 155 28.8 |
| 36 | 27 54.0 | 27 58.7 | 26 37.7 | 36 | 6.7 | 96 17.8 | 156 29.0 |
| 37 | 27 54.3 | 27 58.9 | 26 38.0 | 37 | 6.9 | 97 18.0 | 157 29.2 |
| 38 | 27 54.5 | 27 59.2 | 26 38.2 | 38 | 7.1 | 98 18.2 | 158 29.4 |
| 39 | 27 54.8 | 27 59.4 | 26 38.5 | 39 | 7.2 | 99 18.4 | 159 29.5 |
| 40 | 27 55.0 | 27 59.7 | 26 38.7 | 40 | 7.4 | 100 18.6 | 160 29.7 |
| 41 | 27 55.3 | 27 59.9 | 26 38.9 | 41 | 7.6 | 101 18.8 | 161 29.9 |
| 42 | 27 55.5 | 28 .2 | 26 39.2 | 42 | 7.8 | 102 19.0 | 162 30.1 |
| 43 | 27 55.8 | 28 .4 | 26 39.4 | 43 | 8.0 | 103 19.1 | 163 30.3 |
| 44 | 27 56.0 | 28 .7 | 26 39.6 | 44 | 8.2 | 104 19.3 | 164 30.5 |
| 45 | 27 56.3 | 28 .9 | 26 39.9 | 45 | 8.4 | 105 19.5 | 165 30.7 |
| 46 | 27 56.5 | 28 1.2 | 26 40.1 | 46 | 8.5 | 106 19.7 | 166 30.8 |
| 47 | 27 56.8 | 28 1.4 | 26 40.4 | 47 | 8.7 | 107 19.9 | 167 31.0 |
| 48 | 27 57.0 | 28 1.7 | 26 40.6 | 48 | 8.9 | 108 20.1 | 168 31.2 |
| 49 | 27 57.3 | 28 1.9 | 26 40.8 | 49 | 9.1 | 109 20.3 | 169 31.4 |
| 50 | 27 57.5 | 28 2.2 | 26 41.1 | 50 | 9.3 | 110 20.4 | 170 31.6 |
| 51 | 27 57.8 | 28 2.4 | 26 41.3 | 51 | 9.5 | 111 20.6 | 171 31.8 |
| 52 | 27 58.0 | 28 2.7 | 26 41.6 | 52 | 9.7 | 112 20.8 | 172 32.0 |
| 53 | 27 58.3 | 28 2.9 | 26 41.8 | 53 | 9.8 | 113 21.0 | 173 32.1 |
| 54 | 27 58.5 | 28 3.2 | 26 42.0 | 54 | 10.0 | 114 21.2 | 174 32.3 |
| 55 | 27 58.8 | 28 3.4 | 26 42.3 | 55 | 10.2 | 115 21.4 | 175 32.5 |
| 56 | 27 59.0 | 28 3.7 | 26 42.5 | 56 | 10.4 | 116 21.6 | 176 32.7 |
| 57 | 27 59.3 | 28 3.9 | 26 42.8 | 57 | 10.6 | 117 21.7 | 177 32.9 |
| 58 | 27 59.5 | 28 4.2 | 26 43.0 | 58 | 10.8 | 118 21.9 | 178 33.1 |
| 59 | 27 59.8 | 28 4.4 | 26 43.2 | 59 | 11.0 | 119 22.1 | 179 33.3 |
| 60 | 28 .0 | 28 4.7 | 26 43.5 | 60 | 11.2 | 120 22.3 | 180 33.5 |

1 h 52 min

| POPRAVKA ČASOVNOG UGLA | | | POPRAVKA DRUGOG REDA za časovni ugao i deklinaciju Sunca, Mjeseca i planeta | | | | | | | | | |
|------------------------|-----------------|------|---|------|--------------|------|----|-------|-----|-------|-----|-------|
| S | SUNCA I PLANETA | | PROLJEĆNE TAČKE T | | MJESECA C | | Δ | popr. | Δ | popr. | Δ | popr. |
| | o | t | o | t | o | t | | | | | | |
| 0 | 28 | .0 | 28 | 4.7 | 26 | 43.5 | 0 | .0 | 60 | 11.3 | 120 | 22.5 |
| 1 | 28 | .3 | 28 | 4.9 | 26 | 43.7 | 1 | .2 | 61 | 11.4 | 121 | 22.7 |
| 2 | 28 | .5 | 28 | 5.2 | 26 | 43.9 | 2 | .4 | 62 | 11.6 | 122 | 22.9 |
| 3 | 28 | .8 | 28 | 5.4 | 26 | 44.2 | 3 | .6 | 63 | 11.8 | 123 | 23.1 |
| 4 | 28 | 1.0 | 28 | 5.7 | 26 | 44.4 | 4 | .8 | 64 | 12.0 | 124 | 23.3 |
| 5 | 28 | 1.3 | 28 | 5.9 | 26 | 44.7 | 5 | .9 | 65 | 12.2 | 125 | 23.4 |
| 6 | 28 | 1.5 | 28 | 6.2 | 26 | 44.9 | 6 | 1.1 | 66 | 12.4 | 126 | 23.6 |
| 7 | 28 | 1.8 | 28 | 6.4 | 26 | 45.1 | 7 | 1.3 | 67 | 12.6 | 127 | 23.8 |
| 8 | 28 | 2.0 | 28 | 6.7 | 26 | 45.4 | 8 | 1.5 | 68 | 12.8 | 128 | 24.0 |
| 9 | 28 | 2.3 | 28 | 6.9 | 26 | 45.6 | 9 | 1.7 | 69 | 12.9 | 129 | 24.2 |
| 10 | 28 | 2.5 | 28 | 7.2 | 26 | 45.9 | 10 | 1.9 | 70 | 13.1 | 130 | 24.4 |
| 11 | 28 | 2.8 | 28 | 7.4 | 26 | 46.1 | 11 | 2.1 | 71 | 13.3 | 131 | 24.6 |
| 12 | 28 | 3.0 | 28 | 7.7 | 26 | 46.3 | 12 | 2.3 | 72 | 13.5 | 132 | 24.8 |
| 13 | 28 | 3.3 | 28 | 7.9 | 26 | 46.6 | 13 | 2.4 | 73 | 13.7 | 133 | 24.9 |
| 14 | 28 | 3.5 | 28 | 8.2 | 26 | 46.8 | 14 | 2.6 | 74 | 13.9 | 134 | 25.1 |
| 15 | 28 | 3.8 | 28 | 8.4 | 26 | 47.0 | 15 | 2.8 | 75 | 14.1 | 135 | 25.3 |
| 16 | 28 | 4.0 | 28 | 8.7 | 26 | 47.3 | 16 | 3.0 | 76 | 14.3 | 136 | 25.5 |
| 17 | 28 | 4.3 | 28 | 8.9 | 26 | 47.5 | 17 | 3.2 | 77 | 14.4 | 137 | 25.7 |
| 18 | 28 | 4.5 | 28 | 9.2 | 26 | 47.8 | 18 | 3.4 | 78 | 14.6 | 138 | 25.9 |
| 19 | 28 | 4.8 | 28 | 9.4 | 26 | 48.0 | 19 | 3.6 | 79 | 14.8 | 139 | 26.1 |
| 20 | 28 | 5.0 | 28 | 9.7 | 26 | 48.2 | 20 | 3.8 | 80 | 15.0 | 140 | 26.3 |
| 21 | 28 | 5.3 | 28 | 9.9 | 26 | 48.5 | 21 | 3.9 | 81 | 15.2 | 141 | 26.4 |
| 22 | 28 | 5.5 | 28 | 10.2 | 26 | 48.7 | 22 | 4.1 | 82 | 15.4 | 142 | 26.6 |
| 23 | 28 | 5.8 | 28 | 10.4 | 26 | 49.0 | 23 | 4.3 | 83 | 15.6 | 143 | 26.8 |
| 24 | 28 | 6.0 | 28 | 10.7 | 26 | 49.2 | 24 | 4.5 | 84 | 15.8 | 144 | 27.0 |
| 25 | 28 | 6.3 | 28 | 10.9 | 26 | 49.4 | 25 | 4.7 | 85 | 15.9 | 145 | 27.2 |
| 26 | 28 | 6.5 | 28 | 11.2 | 26 | 49.7 | 26 | 4.9 | 86 | 16.1 | 146 | 27.4 |
| 27 | 28 | 6.8 | 28 | 11.4 | 26 | 49.9 | 27 | 5.1 | 87 | 16.3 | 147 | 27.6 |
| 28 | 28 | 7.0 | 28 | 11.7 | 26 | 50.1 | 28 | 5.3 | 88 | 16.5 | 148 | 27.8 |
| 29 | 28 | 7.3 | 28 | 11.9 | 26 | 50.4 | 29 | 5.4 | 89 | 16.7 | 149 | 27.9 |
| 30 | 28 | 7.5 | 28 | 12.2 | 26 | 50.6 | 30 | 5.6 | 90 | 16.9 | 150 | 28.1 |
| 31 | 28 | 7.8 | 28 | 12.4 | 26 | 50.9 | 31 | 5.8 | 91 | 17.1 | 151 | 28.3 |
| 32 | 28 | 8.0 | 28 | 12.7 | 26 | 51.1 | 32 | 6.0 | 92 | 17.3 | 152 | 28.5 |
| 33 | 28 | 8.3 | 28 | 12.9 | 26 | 51.3 | 33 | 6.2 | 93 | 17.4 | 153 | 28.7 |
| 34 | 28 | 8.5 | 28 | 13.2 | 26 | 51.6 | 34 | 6.4 | 94 | 17.6 | 154 | 28.9 |
| 35 | 28 | 8.8 | 28 | 13.4 | 26 | 51.8 | 35 | 6.6 | 95 | 17.8 | 155 | 29.1 |
| 36 | 28 | 9.0 | 28 | 13.7 | 26 | 52.1 | 36 | 6.8 | 96 | 18.0 | 156 | 29.3 |
| 37 | 28 | 9.3 | 28 | 13.9 | 26 | 52.3 | 37 | 6.9 | 97 | 18.2 | 157 | 29.4 |
| 38 | 28 | 9.5 | 28 | 14.2 | 26 | 52.5 | 38 | 7.1 | 98 | 18.4 | 158 | 29.6 |
| 39 | 28 | 9.8 | 28 | 14.4 | 26 | 52.8 | 39 | 7.3 | 99 | 18.6 | 159 | 29.8 |
| 40 | 28 | 10.0 | 28 | 14.7 | 26 | 53.0 | 40 | 7.5 | 100 | 18.8 | 160 | 30.0 |
| 41 | 28 | 10.3 | 28 | 14.9 | 26 | 53.2 | 41 | 7.7 | 101 | 18.9 | 161 | 30.2 |
| 42 | 28 | 10.5 | 28 | 15.2 | 26 | 53.5 | 42 | 7.9 | 102 | 19.1 | 162 | 30.4 |
| 43 | 28 | 10.8 | 28 | 15.4 | 26 | 53.7 | 43 | 8.1 | 103 | 19.3 | 163 | 30.6 |
| 44 | 28 | 11.0 | 28 | 15.7 | 26 | 54.0 | 44 | 8.3 | 104 | 19.5 | 164 | 30.8 |
| 45 | 28 | 11.3 | 28 | 15.9 | 26 | 54.2 | 45 | 8.4 | 105 | 19.7 | 165 | 30.9 |
| 46 | 28 | 11.5 | 28 | 16.2 | 26 | 54.4 | 46 | 8.6 | 106 | 19.9 | 166 | 31.1 |
| 47 | 28 | 11.8 | 28 | 16.4 | 26 | 54.7 | 47 | 8.8 | 107 | 20.1 | 167 | 31.3 |
| 48 | 28 | 12.0 | 28 | 16.7 | 26 | 54.9 | 48 | 9.0 | 108 | 20.3 | 168 | 31.5 |
| 49 | 28 | 12.3 | 28 | 17.0 | 26 | 55.2 | 49 | 9.2 | 109 | 20.4 | 169 | 31.7 |
| 50 | 28 | 12.5 | 28 | 17.2 | 26 | 55.4 | 50 | 9.4 | 110 | 20.6 | 170 | 31.9 |
| 51 | 28 | 12.8 | 28 | 17.5 | 26 | 55.6 | 51 | 9.6 | 111 | 20.8 | 171 | 32.1 |
| 52 | 28 | 13.0 | 28 | 17.7 | 26 | 55.9 | 52 | 9.8 | 112 | 21.0 | 172 | 32.3 |
| 53 | 28 | 13.3 | 28 | 18.0 | 26 | 56.1 | 53 | 9.9 | 113 | 21.2 | 173 | 32.4 |
| 54 | 28 | 13.5 | 28 | 18.2 | 26 | 56.4 | 54 | 10.1 | 114 | 21.4 | 174 | 32.6 |
| 55 | 28 | 13.8 | 28 | 18.5 | 26 | 56.6 | 55 | 10.3 | 115 | 21.6 | 175 | 32.8 |
| 56 | 28 | 14.0 | 28 | 18.7 | 26 | 56.8 | 56 | 10.5 | 116 | 21.8 | 176 | 33.0 |
| 57 | 28 | 14.3 | 28 | 19.0 | 26 | 57.1 | 57 | 10.7 | 117 | 21.9 | 177 | 33.2 |
| 58 | 28 | 14.5 | 28 | 19.2 | 26 | 57.3 | 58 | 10.9 | 118 | 22.1 | 178 | 33.4 |
| 59 | 28 | 14.8 | 28 | 19.5 | 26 | 57.5 | 59 | 11.1 | 119 | 22.3 | 179 | 33.6 |
| 60 | 28 | 15.0 | 28 | 19.7 | 26 | 57.8 | 60 | 11.3 | 120 | 22.5 | 180 | 33.8 |

1 h 53 min

| POPRAVKA ČASOVNOG UGLA | | | POPRAVKA DRUGOG REDA za časovni ugao i deklinaciju Sunca, Mjeseca i planeta | | | | | | | | | |
|------------------------|-----------------|------|---|------|--------------|------|----|-------|-----|-------|-----|-------|
| S | SUNCA I PLANETA | | PROLJEĆNE TAČKE T | | MJESECA C | | Δ | popr. | Δ | popr. | Δ | popr. |
| | o | t | o | t | o | t | | | | | | |
| 0 | 28 | 15.0 | 28 | 19.7 | 26 | 57.8 | 0 | .0 | 60 | 11.4 | 120 | 22.7 |
| 1 | 28 | 15.3 | 28 | 20.0 | 26 | 58.0 | 1 | .2 | 61 | 11.5 | 121 | 22.9 |
| 2 | 28 | 15.5 | 28 | 20.2 | 26 | 58.3 | 2 | .4 | 62 | 11.7 | 122 | 23.1 |
| 3 | 28 | 15.8 | 28 | 20.5 | 26 | 58.5 | 3 | .6 | 63 | 11.9 | 123 | 23.3 |
| 4 | 28 | 16.0 | 28 | 20.7 | 26 | 58.7 | 4 | .8 | 64 | 12.1 | 124 | 23.5 |
| 5 | 28 | 16.3 | 28 | 21.0 | 26 | 59.0 | 5 | .9 | 65 | 12.3 | 125 | 23.6 |
| 6 | 28 | 16.5 | 28 | 21.2 | 26 | 59.2 | 6 | 1.1 | 66 | 12.5 | 126 | 23.8 |
| 7 | 28 | 16.8 | 28 | 21.5 | 26 | 59.5 | 7 | 1.3 | 67 | 12.7 | 127 | 24.0 |
| 8 | 28 | 17.0 | 28 | 21.7 | 26 | 59.7 | 8 | 1.5 | 68 | 12.9 | 128 | 24.2 |
| 9 | 28 | 17.3 | 28 | 22.0 | 26 | 59.9 | 9 | 1.7 | 69 | 13.1 | 129 | 24.4 |
| 10 | 28 | 17.5 | 28 | 22.2 | 27 | .2 | 10 | 1.9 | 70 | 13.2 | 130 | 24.6 |
| 11 | 28 | 17.8 | 28 | 22.5 | 27 | .4 | 11 | 2.1 | 71 | 13.4 | 131 | 24.8 |
| 12 | 28 | 18.0 | 28 | 22.7 | 27 | .6 | 12 | 2.3 | 72 | 13.6 | 132 | 25.0 |
| 13 | 28 | 18.3 | 28 | 23.0 | 27 | .9 | 13 | 2.5 | 73 | 13.8 | 133 | 25.2 |
| 14 | 28 | 18.5 | 28 | 23.2 | 27 | 1.1 | 14 | 2.6 | 74 | 14.0 | 134 | 25.3 |
| 15 | 28 | 18.8 | 28 | 23.5 | 27 | 1.4 | 15 | 2.8 | 75 | 14.2 | 135 | 25.5 |
| 16 | 28 | 19.0 | 28 | 23.7 | 27 | 1.6 | 16 | 3.0 | 76 | 14.4 | 136 | 25.7 |
| 17 | 28 | 19.3 | 28 | 24.0 | 27 | 1.8 | 17 | 3.2 | 77 | 14.6 | 137 | 25.9 |
| 18 | 28 | 19.5 | 28 | 24.2 | 27 | 2.1 | 18 | 3.4 | 78 | 14.8 | 138 | 26.1 |
| 19 | 28 | 19.8 | 28 | 24.5 | 27 | 2.3 | 19 | 3.6 | 79 | 14.9 | 139 | 26.3 |
| 20 | 28 | 20.0 | 28 | 24.7 | 27 | 2.6 | 20 | 3.8 | 80 | 15.1 | 140 | 26.5 |
| 21 | 28 | 20.3 | 28 | 25.0 | 27 | 2.8 | 21 | 4.0 | 81 | 15.3 | 141 | 26.7 |
| 22 | 28 | 20.5 | 28 | 25.2 | 27 | 3.0 | 22 | 4.2 | 82 | 15.5 | 142 | 26.9 |
| 23 | 28 | 20.8 | 28 | 25.5 | 27 | 3.3 | 23 | 4.4 | 83 | 15.7 | 143 | 27.1 |
| 24 | 28 | 21.0 | 28 | 25.7 | 27 | 3.5 | 24 | 4.5 | 84 | 15.9 | 144 | 27.2 |
| 25 | 28 | 21.3 | 28 | 26.0 | 27 | 3.7 | 25 | 4.7 | 85 | 16.1 | 145 | 27.4 |
| 26 | 28 | 21.5 | 28 | 26.2 | 27 | 4.0 | 26 | 4.9 | 86 | 16.3 | 146 | 27.6 |
| 27 | 28 | 21.8 | 28 | 26.5 | 27 | 4.2 | 27 | 5.1 | 87 | 16.5 | 147 | 27.8 |
| 28 | 28 | 22.0 | 28 | 26.7 | 27 | 4.5 | 28 | 5.3 | 88 | 16.6 | 148 | 28.0 |
| 29 | 28 | 22.3 | 28 | 27.0 | 27 | 4.7 | 29 | 5.5 | 89 | 16.8 | 149 | 28.2 |
| 30 | 28 | 22.5 | 28 | 27.2 | 27 | 4.9 | 30 | 5.7 | 90 | 17.0 | 150 | 28.4 |
| 31 | 28 | 22.8 | 28 | 27.5 | 27 | 5.2 | 31 | 5.9 | 91 | 17.2 | 151 | 28.6 |
| 32 | 28 | 23.0 | 28 | 27.7 | 27 | 5.4 | 32 | 6.1 | 92 | 17.4 | 152 | 28.8 |
| 33 | 28 | 23.3 | 28 | 28.0 | 27 | 5.7 | 33 | 6.2 | 93 | 17.6 | 153 | 28.9 |
| 34 | 28 | 23.5 | 28 | 28.2 | 27 | 5.9 | 34 | 6.4 | 94 | 17.8 | 154 | 29.1 |
| 35 | 28 | 23.8 | 28 | 28.5 | 27 | 6.1 | 35 | 6.6 | 95 | 18.0 | 155 | 29.3 |
| 36 | 28 | 24.0 | 28 | 28.7 | 27 | 6.4 | 36 | 6.8 | 96 | 18.2 | 156 | 29.5 |
| 37 | 28 | 24.3 | 28 | 29.0 | 27 | 6.6 | 37 | 7.0 | 97 | 18.3 | 157 | 29.7 |
| 38 | 28 | 24.5 | 28 | 29.2 | 27 | 6.9 | 38 | 7.2 | 98 | 18.5 | 158 | 29.9 |
| 39 | 28 | 24.8 | 28 | 29.5 | 27 | 7.1 | 39 | 7.4 | 99 | 18.7 | 159 | 30.1 |
| 40 | 28 | 25.0 | 28 | 29.7 | 27 | 7.3 | 40 | 7.6 | 100 | 18.9 | 160 | 30.3 |
| 41 | 28 | 25.3 | 28 | 30.0 | 27 | 7.6 | 41 | 7.8 | 101 | 19.1 | 161 | 30.5 |
| 42 | 28 | 25.5 | 28 | 30.2 | 27 | 7.8 | 42 | 7.9 | 102 | 19.3 | 162 | 30.6 |
| 43 | 28 | 25.8 | 28 | 30.5 | 27 | 8.0 | 43 | 8.1 | 103 | 19.5 | 163 | 30.8 |
| 44 | 28 | 26.0 | 28 | 30.7 | 27 | 8.3 | 44 | 8.3 | 104 | 19.7 | 164 | 31.0 |
| 45 | 28 | 26.3 | 28 | 31.0 | 27 | 8.5 | 45 | 8.5 | 105 | 19.9 | 165 | 31.2 |
| 46 | 28 | 26.5 | 28 | 31.2 | 27 | 8.8 | 46 | 8.7 | 106 | 20.1 | 166 | 31.4 |
| 47 | 28 | 26.8 | 28 | 31.5 | 27 | 9.0 | 47 | 8.9 | 107 | 20.2 | 167 | 31.6 |
| 48 | 28 | 27.0 | 28 | 31.7 | 27 | 9.2 | 48 | 9.1 | 108 | 20.4 | 168 | |

1 h 54 min

| POPRAVKA ČASOVNOG UGLA | | | | | POPRAVKA DRUGOG REDA za časovni ugao i deklinaciju Sunca, Mjeseca i planeta | | | | | | | |
|------------------------|--------------------|-----------------------|--------------|------|---|-------|----|-------|-----|-------|-----|------|
| S | SUNCA I PLANETA | PROLJEĆNE TACKE °' | MJESECA ζ | | Δ | popr. | Δ | popr. | Δ | popr. | | |
| | o | l | o | l | o | l | o | l | o | l | | |
| 0 | 28 | 30.0 | 28 | 34.8 | 27 | 12.1 | 0 | .0 | 60 | 11.5 | 120 | 22.9 |
| 1 | 28 | 30.3 | 28 | 35.0 | 27 | 12.3 | 1 | .2 | 61 | 11.6 | 121 | 23.1 |
| 2 | 28 | 30.5 | 28 | 35.3 | 27 | 12.6 | 2 | .4 | 62 | 11.8 | 122 | 23.3 |
| 3 | 28 | 30.8 | 28 | 35.5 | 27 | 12.8 | 3 | .6 | 63 | 12.0 | 123 | 23.5 |
| 4 | 28 | 31.0 | 28 | 35.8 | 27 | 13.1 | 4 | .8 | 64 | 12.2 | 124 | 23.7 |
| 5 | 28 | 31.3 | 28 | 36.0 | 27 | 13.3 | 5 | 1.0 | 65 | 12.4 | 125 | 23.9 |
| 6 | 28 | 31.5 | 28 | 36.3 | 27 | 13.5 | 6 | 1.1 | 66 | 12.6 | 126 | 24.0 |
| 7 | 28 | 31.8 | 28 | 36.5 | 27 | 13.8 | 7 | 1.3 | 67 | 12.8 | 127 | 24.2 |
| 8 | 28 | 32.0 | 28 | 36.8 | 27 | 14.0 | 8 | 1.5 | 68 | 13.0 | 128 | 24.4 |
| 9 | 28 | 32.3 | 28 | 37.0 | 27 | 14.2 | 9 | 1.7 | 69 | 13.2 | 129 | 24.6 |
| 10 | 28 | 32.5 | 28 | 37.3 | 27 | 14.5 | 10 | 1.9 | 70 | 13.4 | 130 | 24.8 |
| 11 | 28 | 32.8 | 28 | 37.5 | 27 | 14.7 | 11 | 2.1 | 71 | 13.5 | 131 | 25.0 |
| 12 | 28 | 33.0 | 28 | 37.8 | 27 | 15.0 | 12 | 2.3 | 72 | 13.7 | 132 | 25.2 |
| 13 | 28 | 33.3 | 28 | 38.0 | 27 | 15.2 | 13 | 2.5 | 73 | 13.9 | 133 | 25.4 |
| 14 | 28 | 33.5 | 28 | 38.3 | 27 | 15.4 | 14 | 2.7 | 74 | 14.1 | 134 | 25.6 |
| 15 | 28 | 33.8 | 28 | 38.5 | 27 | 15.7 | 15 | 2.9 | 75 | 14.3 | 135 | 25.8 |
| 16 | 28 | 34.0 | 28 | 38.8 | 27 | 15.9 | 16 | 3.1 | 76 | 14.5 | 136 | 26.0 |
| 17 | 28 | 34.3 | 28 | 39.0 | 27 | 16.2 | 17 | 3.2 | 77 | 14.7 | 137 | 26.1 |
| 18 | 28 | 34.5 | 28 | 39.3 | 27 | 16.4 | 18 | 3.4 | 78 | 14.9 | 138 | 26.3 |
| 19 | 28 | 34.8 | 28 | 39.5 | 27 | 16.6 | 19 | 3.6 | 79 | 15.1 | 139 | 26.5 |
| 20 | 28 | 35.0 | 28 | 39.8 | 27 | 16.9 | 20 | 3.8 | 80 | 15.3 | 140 | 26.7 |
| 21 | 28 | 35.3 | 28 | 40.0 | 27 | 17.1 | 21 | 4.0 | 81 | 15.5 | 141 | 26.9 |
| 22 | 28 | 35.5 | 28 | 40.3 | 27 | 17.3 | 22 | 4.2 | 82 | 15.6 | 142 | 27.1 |
| 23 | 28 | 35.8 | 28 | 40.5 | 27 | 17.6 | 23 | 4.4 | 83 | 15.8 | 143 | 27.3 |
| 24 | 28 | 36.0 | 28 | 40.8 | 27 | 17.8 | 24 | 4.6 | 84 | 16.0 | 144 | 27.5 |
| 25 | 28 | 36.3 | 28 | 41.0 | 27 | 18.1 | 25 | 4.8 | 85 | 16.2 | 145 | 27.7 |
| 26 | 28 | 36.5 | 28 | 41.3 | 27 | 18.3 | 26 | 5.0 | 86 | 16.4 | 146 | 27.9 |
| 27 | 28 | 36.8 | 28 | 41.5 | 27 | 18.5 | 27 | 5.2 | 87 | 16.6 | 147 | 28.1 |
| 28 | 28 | 37.0 | 28 | 41.8 | 27 | 18.8 | 28 | 5.3 | 88 | 16.8 | 148 | 28.2 |
| 29 | 28 | 37.3 | 28 | 42.0 | 27 | 19.0 | 29 | 5.5 | 89 | 17.0 | 149 | 28.4 |
| 30 | 28 | 37.5 | 28 | 42.3 | 27 | 19.3 | 30 | 5.7 | 90 | 17.2 | 150 | 28.6 |
| 31 | 28 | 37.8 | 28 | 42.5 | 27 | 19.5 | 31 | 5.9 | 91 | 17.4 | 151 | 28.8 |
| 32 | 28 | 38.0 | 28 | 42.8 | 27 | 19.7 | 32 | 6.1 | 92 | 17.6 | 152 | 29.0 |
| 33 | 28 | 38.3 | 28 | 43.0 | 27 | 20.0 | 33 | 6.3 | 93 | 17.7 | 153 | 29.2 |
| 34 | 28 | 38.5 | 28 | 43.3 | 27 | 20.2 | 34 | 6.5 | 94 | 17.9 | 154 | 29.4 |
| 35 | 28 | 38.8 | 28 | 43.5 | 27 | 20.5 | 35 | 6.7 | 95 | 18.1 | 155 | 29.6 |
| 36 | 28 | 39.0 | 28 | 43.8 | 27 | 20.7 | 36 | 6.9 | 96 | 18.3 | 156 | 29.8 |
| 37 | 28 | 39.3 | 28 | 44.0 | 27 | 20.9 | 37 | 7.1 | 97 | 18.5 | 157 | 30.0 |
| 38 | 28 | 39.5 | 28 | 44.3 | 27 | 21.2 | 38 | 7.3 | 98 | 18.7 | 158 | 30.2 |
| 39 | 28 | 39.8 | 28 | 44.5 | 27 | 21.4 | 39 | 7.4 | 99 | 18.9 | 159 | 30.3 |
| 40 | 28 | 40.0 | 28 | 44.8 | 27 | 21.6 | 40 | 7.6 | 100 | 19.1 | 160 | 30.5 |
| 41 | 28 | 40.3 | 28 | 45.0 | 27 | 21.9 | 41 | 7.8 | 101 | 19.3 | 161 | 30.7 |
| 42 | 28 | 40.5 | 28 | 45.3 | 27 | 22.1 | 42 | 8.0 | 102 | 19.5 | 162 | 30.9 |
| 43 | 28 | 40.8 | 28 | 45.5 | 27 | 22.4 | 43 | 8.2 | 103 | 19.7 | 163 | 31.1 |
| 44 | 28 | 41.0 | 28 | 45.8 | 27 | 22.6 | 44 | 8.4 | 104 | 19.8 | 164 | 31.3 |
| 45 | 28 | 41.3 | 28 | 46.0 | 27 | 22.8 | 45 | 8.6 | 105 | 20.0 | 165 | 31.5 |
| 46 | 28 | 41.5 | 28 | 46.3 | 27 | 23.1 | 46 | 8.8 | 106 | 20.2 | 166 | 31.7 |
| 47 | 28 | 41.8 | 28 | 46.5 | 27 | 23.3 | 47 | 9.0 | 107 | 20.4 | 167 | 31.9 |
| 48 | 28 | 42.0 | 28 | 46.8 | 27 | 23.6 | 48 | 9.2 | 108 | 20.6 | 168 | 32.1 |
| 49 | 28 | 42.3 | 28 | 47.0 | 27 | 23.8 | 49 | 9.4 | 109 | 20.8 | 169 | 32.3 |
| 50 | 28 | 42.5 | 28 | 47.3 | 27 | 24.0 | 50 | 9.5 | 110 | 21.0 | 170 | 32.4 |
| 51 | 28 | 42.8 | 28 | 47.5 | 27 | 24.3 | 51 | 9.7 | 111 | 21.2 | 171 | 32.6 |
| 52 | 28 | 43.0 | 28 | 47.8 | 27 | 24.5 | 52 | 9.9 | 112 | 21.4 | 172 | 32.8 |
| 53 | 28 | 43.3 | 28 | 48.0 | 27 | 24.7 | 53 | 10.1 | 113 | 21.6 | 173 | 33.0 |
| 54 | 28 | 43.5 | 28 | 48.3 | 27 | 25.0 | 54 | 10.3 | 114 | 21.8 | 174 | 33.2 |
| 55 | 28 | 43.8 | 28 | 48.5 | 27 | 25.2 | 55 | 10.5 | 115 | 21.9 | 175 | 33.4 |
| 56 | 28 | 44.0 | 28 | 48.8 | 27 | 25.5 | 56 | 10.7 | 116 | 22.1 | 176 | 33.6 |
| 57 | 28 | 44.3 | 28 | 49.0 | 27 | 25.7 | 57 | 10.9 | 117 | 22.3 | 177 | 33.8 |
| 58 | 28 | 44.5 | 28 | 49.3 | 27 | 25.9 | 58 | 11.1 | 118 | 22.5 | 178 | 34.0 |
| 59 | 28 | 44.8 | 28 | 49.5 | 27 | 26.2 | 59 | 11.3 | 119 | 22.7 | 179 | 34.2 |
| 60 | 28 | 45.0 | 28 | 49.8 | 27 | 26.4 | 60 | 11.5 | 120 | 22.9 | 180 | 34.4 |

1 h 55 min

| POPRAVKA ČASOVNOG UGLA | | | | | POPRAVKA DRUGOG REDA za časovni ugao i deklinaciju Sunca, Mjeseca i planeta | | | | | | | |
|------------------------|--------------------|-----------------------|--------------|------|---|-------|----|-------|-----|-------|-----|------|
| S | SUNCA I PLANETA | PROLJEĆNE TACKE °' | MJESECA ζ | | Δ | popr. | Δ | popr. | Δ | popr. | | |
| | o | l | o | l | o | l | o | l | o | l | | |
| 0 | 28 | 45.0 | 28 | 49.8 | 27 | 26.4 | 0 | .0 | 60 | 11.6 | 120 | 23.1 |
| 1 | 28 | 45.3 | 28 | 50.0 | 27 | 26.7 | 1 | .2 | 61 | 11.7 | 121 | 23.3 |
| 2 | 28 | 45.5 | 28 | 50.3 | 27 | 26.9 | 2 | .4 | 62 | 11.9 | 122 | 23.5 |
| 3 | 28 | 45.8 | 28 | 50.5 | 27 | 27.1 | 3 | .6 | 63 | 12.1 | 123 | 23.7 |
| 4 | 28 | 46.0 | 28 | 50.8 | 27 | 27.4 | 4 | .8 | 64 | 12.3 | 124 | 23.9 |
| 5 | 28 | 46.3 | 28 | 51.0 | 27 | 27.6 | 5 | 1.0 | 65 | 12.5 | 125 | 24.1 |
| 6 | 28 | 46.5 | 28 | 51.3 | 27 | 27.8 | 6 | 1.2 | 66 | 12.7 | 126 | 24.3 |
| 7 | 28 | 46.8 | 28 | 51.5 | 27 | 28.1 | 7 | 1.3 | 67 | 12.9 | 127 | 24.4 |
| 8 | 28 | 47.0 | 28 | 51.8 | 27 | 28.3 | 8 | 1.5 | 68 | 13.1 | 128 | 24.6 |
| 9 | 28 | 47.3 | 28 | 52.0 | 27 | 28.6 | 9 | 1.7 | 69 | 13.3 | 129 | 24.8 |
| 10 | 28 | 47.5 | 28 | 52.3 | 27 | 28.8 | 10 | 1.9 | 70 | 13.5 | 130 | 25.0 |
| 11 | 28 | 47.8 | 28 | 52.5 | 27 | 29.0 | 11 | 2.1 | 71 | 13.7 | 131 | 25.2 |
| 12 | 28 | 48.0 | 28 | 52.8 | 27 | 29.3 | 12 | 2.3 | 72 | 13.9 | 132 | 25.4 |
| 13 | 28 | 48.3 | 28 | 53.1 | 27 | 29.5 | 13 | 2.5 | 73 | 14.1 | 133 | 25.6 |
| 14 | 28 | 48.5 | 28 | 53.3 | 27 | 29.8 | 14 | 2.7 | 74 | 14.2 | 134 | 25.8 |
| 15 | 28 | 48.8 | 28 | 53.6 | 27 | 30.0 | 15 | 2.9 | 75 | 14.4 | 135 | 26.0 |
| 16 | 28 | 49.0 | 28 | 53.8 | 27 | 30.2 | 16 | 3.1 | 76 | 14.6 | 136 | 26.2 |
| 17 | 28 | 49.3 | 28 | 54.1 | 27 | 30.5 | 17 | 3.3 | 77 | 14.8 | 137 | 26.4 |
| 18 | 28 | 49.5 | 28 | 54.3 | 27 | 30.7 | 18 | 3.5 | 78 | 15.0 | 138 | 26.6 |
| 19 | 28 | 49.8 | 28 | 54.6 | 27 | 31.0 | 19 | 3.7 | 79 | 15.2 | 139 | 26.8 |
| 20 | 28 | 50.0 | 28 | 54.8 | 27 | 31.2 | 20 | 3.9 | 80 | 15.4 | 140 | 27.0 |
| 21 | 28 | 50.3 | 28 | 55.1 | 27 | 31.4 | 21 | 4.0 | 81 | 15.6 | 141 | 27.1 |
| 22 | 28 | 50.5 | 28 | 55.3 | 27 | 31.7 | 22 | 4.2 | 82 | 15.8 | 142 | 27.3 |
| 23 | 28 | 50.8 | 28 | 55.6 | 27 | 31.9 | 23 | 4.4 | 83 | 16.0 | 143 | 27.5 |
| 24 | 28 | 51.0 | 28 | 55.8 | 27 | 32.1 | 24 | 4.6 | 84 | 16.2 | 144 | 27.7 |
| 25 | 28 | 51.3 | 28 | 56.1 | 27 | 32.4 | 25 | 4.8 | 85 | 16.4 | 145 | 27.9 |
| 26 | 28 | 51.5 | 28 | 56.3 | 27 | 32.6 | 26 | 5.0 | 86 | 16.6 | 146 | 28.1 |
| 27 | 28 | 51.8 | 28 | 56.6 | 27 | 32.9 | 27 | 5.2 | 87 | 16.7 | 147 | 28.3 |
| 28 | 28 | 52.0 | 28 | 56.8 | 27 | 33.1 | 28 | 5.4 | 88 | 16.9 | 148 | 28.5 |
| 29 | 28 | 52.3 | 28 | 57.1 | 27 | 33.3 | 29 | 5.6 | 89 | 17.1 | 149 | 28.7 |
| 30 | 28 | 52.5 | 28 | 57.3 | 27 | 33.6 | 30 | 5.8 | 90 | 17.3 | 150 | 28.9 |
| 31 | 28 | 52.8 | 28 | 57.6 | 27 | 33.8 | 31 | 6.0 | 91 | 17.5 | 151 | 29.1 |
| 32 | 28 | 53.0 | 28 | 57.8 | 27 | 34.1 | 32 | 6.2 | 92 | 17.7 | 152 | 29.3 |
| 33 | 28 | 53.3 | 28 | 58.1 | 27 | 34.3 | 33 | 6.4 | 93 | 17.9 | 153 | 29.5 |
| 34 | 28 | 53.5 | 28 | 58.3 | 27 | 34.5 | 34 | 6.5 | 94 | 18.1 | 154 | 29.6 |
| 35 | 28 | 53.8 | 28 | 58.6 | 27 | 34.8 | 35 | 6.7 | 95 | 18.3 | 155 | 29.8 |
| 36 | 28 | 54.0 | 28 | 58.8 | 27 | 35.0 | 36 | 6.9 | 96 | 18.5 | 156 | 30.0 |
| 37 | 28 | 54.3 | 28 | 59.1 | 27 | 35.2 | 37 | 7.1 | 97 | 18.7 | 157 | 30.2 |
| 38 | 28 | 54.5 | 28 | 59.3 | 27 | 35.5 | 38 | 7.3 | 98 | 18.9 | 158 | 30.4 |
| 39 | 28 | 54.8 | 28 | 59.6 | 27 | 35.7 | 39 | 7.5 | 99 | 19.1 | 159 | 30.6 |
| 40 | 28 | 55.0 | 28 | 59.8 | 27 | 36.0 | 40 | 7.7 | 100 | 19.3 | 160 | 30.8 |
| 41 | 28 | 55.3 | 29 | .1 | 27 | 36.2 | 41 | 7.9 | 101 | 19.4 | 161 | 31.0 |
| 42 | 28 | 55.5 | 29 | .3 | 27 | 36.4 | 42 | 8.1 | 102 | 19.6 | 162 | 31.2 |
| 43 | 28 | 55.8 | 29 | .6 | 27 | 36.7 | 43 | 8.3 | 103 | 19.8 | 163 | 31.4 |
| 44 | 28 | 56.0 | 29 | .8 | 27 | 36.9 | 44 | 8.5 | 104 | 20.0 | 164 | 31.6 |
| 45 | 28 | 56.3 | 29 | 1.1 | 27 | 37.2 | 45 | 8.7 | 105 | 20.2 | 165 | 31.8 |
| 46 | 28 | 56.5 | 29 | 1.3 | 27 | 37.4 | 46 | 8.9 | 106 | 20.4 | 166 | 32.0 |
| 47 | 28 | 56.8 | 29 | 1.6 | 27 | 37.6 | 47 | 9.0 | 107 | | | |

1 h 56 min

| POPRAVKA ČASOVNOG UGLA | | | | POPRAVKA DRUGOG REDA za časovni ugao i deklinaciju Sunca, Mjeseca i planeta | | | | | | |
|------------------------|-----------------|------|----------------------|---|----|---------|----|---------|----------|----------|
| s | SUNCA I PLANETA | | PROLJEĆNE TACKE ° | MJESECA (| | Δ popr. | | Δ popr. | | |
| | o | f | o | f | o | f | o | f | | |
| 0 | 29 | .0 | 29 | 4.8 | 27 | 40.7 | 0 | .0 | 60 11.7 | 120 23.3 |
| 1 | 29 | .3 | 29 | 5.1 | 27 | 41.0 | 1 | .2 | 61 11.8 | 121 23.5 |
| 2 | 29 | .5 | 29 | 5.3 | 27 | 41.2 | 2 | .4 | 62 12.0 | 122 23.7 |
| 3 | 29 | .8 | 29 | 5.6 | 27 | 41.4 | 3 | .6 | 63 12.2 | 123 23.9 |
| 4 | 29 | 1.0 | 29 | 5.8 | 27 | 41.7 | 4 | .8 | 64 12.4 | 124 24.1 |
| 5 | 29 | 1.3 | 29 | 6.1 | 27 | 41.9 | 5 | 1.0 | 65 12.6 | 125 24.3 |
| 6 | 29 | 1.5 | 29 | 6.3 | 27 | 42.2 | 6 | 1.2 | 66 12.8 | 126 24.5 |
| 7 | 29 | 1.8 | 29 | 6.6 | 27 | 42.4 | 7 | 1.4 | 67 13.0 | 127 24.7 |
| 8 | 29 | 2.0 | 29 | 6.8 | 27 | 42.6 | 8 | 1.6 | 68 13.2 | 128 24.9 |
| 9 | 29 | 2.3 | 29 | 7.1 | 27 | 42.9 | 9 | 1.7 | 69 13.4 | 129 25.0 |
| 10 | 29 | 2.5 | 29 | 7.3 | 27 | 43.1 | 10 | 1.9 | 70 13.6 | 130 25.2 |
| 11 | 29 | 2.8 | 29 | 7.6 | 27 | 43.4 | 11 | 2.1 | 71 13.8 | 131 25.4 |
| 12 | 29 | 3.0 | 29 | 7.8 | 27 | 43.6 | 12 | 2.3 | 72 14.0 | 132 25.6 |
| 13 | 29 | 3.3 | 29 | 8.1 | 27 | 43.8 | 13 | 2.5 | 73 14.2 | 133 25.8 |
| 14 | 29 | 3.5 | 29 | 8.3 | 27 | 44.1 | 14 | 2.7 | 74 14.4 | 134 26.0 |
| 15 | 29 | 3.8 | 29 | 8.6 | 27 | 44.3 | 15 | 2.9 | 75 14.6 | 135 26.2 |
| 16 | 29 | 4.0 | 29 | 8.8 | 27 | 44.6 | 16 | 3.1 | 76 14.8 | 136 26.4 |
| 17 | 29 | 4.3 | 29 | 9.1 | 27 | 44.8 | 17 | 3.3 | 77 15.0 | 137 26.6 |
| 18 | 29 | 4.5 | 29 | 9.3 | 27 | 45.0 | 18 | 3.5 | 78 15.1 | 138 26.8 |
| 19 | 29 | 4.8 | 29 | 9.6 | 27 | 45.3 | 19 | 3.7 | 79 15.3 | 139 27.0 |
| 20 | 29 | 5.0 | 29 | 9.8 | 27 | 45.5 | 20 | 3.9 | 80 15.5 | 140 27.2 |
| 21 | 29 | 5.3 | 29 | 10.1 | 27 | 45.7 | 21 | 4.1 | 81 15.7 | 141 27.4 |
| 22 | 29 | 5.5 | 29 | 10.3 | 27 | 46.0 | 22 | 4.3 | 82 15.9 | 142 27.6 |
| 23 | 29 | 5.8 | 29 | 10.6 | 27 | 46.2 | 23 | 4.5 | 83 16.1 | 143 27.8 |
| 24 | 29 | 6.0 | 29 | 10.9 | 27 | 46.5 | 24 | 4.7 | 84 16.3 | 144 28.0 |
| 25 | 29 | 6.3 | 29 | 11.1 | 27 | 46.7 | 25 | 4.9 | 85 16.5 | 145 28.2 |
| 26 | 29 | 6.5 | 29 | 11.4 | 27 | 46.9 | 26 | 5.0 | 86 16.7 | 146 28.3 |
| 27 | 29 | 6.8 | 29 | 11.6 | 27 | 47.2 | 27 | 5.2 | 87 16.9 | 147 28.5 |
| 28 | 29 | 7.0 | 29 | 11.9 | 27 | 47.4 | 28 | 5.4 | 88 17.1 | 148 28.7 |
| 29 | 29 | 7.3 | 29 | 12.1 | 27 | 47.7 | 29 | 5.6 | 89 17.3 | 149 28.9 |
| 30 | 29 | 7.5 | 29 | 12.4 | 27 | 47.9 | 30 | 5.8 | 90 17.5 | 150 29.1 |
| 31 | 29 | 7.8 | 29 | 12.6 | 27 | 48.1 | 31 | 6.0 | 91 17.7 | 151 29.3 |
| 32 | 29 | 8.0 | 29 | 12.9 | 27 | 48.4 | 32 | 6.2 | 92 17.9 | 152 29.5 |
| 33 | 29 | 8.3 | 29 | 13.1 | 27 | 48.6 | 33 | 6.4 | 93 18.1 | 153 29.7 |
| 34 | 29 | 8.5 | 29 | 13.4 | 27 | 48.8 | 34 | 6.6 | 94 18.3 | 154 29.9 |
| 35 | 29 | 8.8 | 29 | 13.6 | 27 | 49.1 | 35 | 6.8 | 95 18.4 | 155 30.1 |
| 36 | 29 | 9.0 | 29 | 13.9 | 27 | 49.3 | 36 | 7.0 | 96 18.6 | 156 30.3 |
| 37 | 29 | 9.3 | 29 | 14.1 | 27 | 49.6 | 37 | 7.2 | 97 18.8 | 157 30.5 |
| 38 | 29 | 9.5 | 29 | 14.4 | 27 | 49.8 | 38 | 7.4 | 98 19.0 | 158 30.7 |
| 39 | 29 | 9.8 | 29 | 14.6 | 27 | 50.0 | 39 | 7.6 | 99 19.2 | 159 30.9 |
| 40 | 29 | 10.0 | 29 | 14.9 | 27 | 50.3 | 40 | 7.8 | 100 19.4 | 160 31.1 |
| 41 | 29 | 10.3 | 29 | 15.1 | 27 | 50.5 | 41 | 8.0 | 101 19.6 | 161 31.3 |
| 42 | 29 | 10.5 | 29 | 15.4 | 27 | 50.8 | 42 | 8.2 | 102 19.8 | 162 31.5 |
| 43 | 29 | 10.8 | 29 | 15.6 | 27 | 51.0 | 43 | 8.3 | 103 20.0 | 163 31.6 |
| 44 | 29 | 11.0 | 29 | 15.9 | 27 | 51.2 | 44 | 8.5 | 104 20.2 | 164 31.8 |
| 45 | 29 | 11.3 | 29 | 16.1 | 27 | 51.5 | 45 | 8.7 | 105 20.4 | 165 32.0 |
| 46 | 29 | 11.5 | 29 | 16.4 | 27 | 51.7 | 46 | 8.9 | 106 20.6 | 166 32.2 |
| 47 | 29 | 11.8 | 29 | 16.6 | 27 | 51.9 | 47 | 9.1 | 107 20.8 | 167 32.4 |
| 48 | 29 | 12.0 | 29 | 16.9 | 27 | 52.2 | 48 | 9.3 | 108 21.0 | 168 32.6 |
| 49 | 29 | 12.3 | 29 | 17.1 | 27 | 52.4 | 49 | 9.5 | 109 21.2 | 169 32.8 |
| 50 | 29 | 12.5 | 29 | 17.4 | 27 | 52.7 | 50 | 9.7 | 110 21.4 | 170 33.0 |
| 51 | 29 | 12.8 | 29 | 17.6 | 27 | 52.9 | 51 | 9.9 | 111 21.6 | 171 33.2 |
| 52 | 29 | 13.0 | 29 | 17.9 | 27 | 53.1 | 52 | 10.1 | 112 21.7 | 172 33.4 |
| 53 | 29 | 13.3 | 29 | 18.1 | 27 | 53.4 | 53 | 10.3 | 113 21.9 | 173 33.6 |
| 54 | 29 | 13.5 | 29 | 18.4 | 27 | 53.6 | 54 | 10.5 | 114 22.1 | 174 33.8 |
| 55 | 29 | 13.8 | 29 | 18.6 | 27 | 53.9 | 55 | 10.7 | 115 22.3 | 175 34.0 |
| 56 | 29 | 14.0 | 29 | 18.9 | 27 | 54.1 | 56 | 10.9 | 116 22.5 | 176 34.2 |
| 57 | 29 | 14.3 | 29 | 19.1 | 27 | 54.3 | 57 | 11.1 | 117 22.7 | 177 34.4 |
| 58 | 29 | 14.5 | 29 | 19.4 | 27 | 54.6 | 58 | 11.3 | 118 22.9 | 178 34.6 |
| 59 | 29 | 14.8 | 29 | 19.6 | 27 | 54.8 | 59 | 11.5 | 119 23.1 | 179 34.8 |
| 60 | 29 | 15.0 | 29 | 19.9 | 27 | 55.1 | 60 | 11.7 | 120 23.3 | 180 35.0 |

1 h 57 min

| POPRAVKA ČASOVNOG UGLA | | | | POPRAVKA DRUGOG REDA za časovni ugao i deklinaciju Sunca, Mjeseca i planeta | | | | | | |
|------------------------|-----------------|------|----------------------|---|----|---------|----|---------|----------|----------|
| s | SUNCA I PLANETA | | PROLJEĆNE TACKE ° | MJESECA (| | Δ popr. | | Δ popr. | | |
| | o | f | o | f | o | f | o | f | | |
| 0 | 29 | 15.0 | 29 | 19.9 | 27 | 55.1 | 0 | .0 | 60 11.8 | 120 23.5 |
| 1 | 29 | 15.3 | 29 | 20.1 | 27 | 55.3 | 1 | .2 | 61 11.9 | 121 23.7 |
| 2 | 29 | 15.5 | 29 | 20.4 | 27 | 55.5 | 2 | .4 | 62 12.1 | 122 23.9 |
| 3 | 29 | 15.8 | 29 | 20.6 | 27 | 55.8 | 3 | .6 | 63 12.3 | 123 24.1 |
| 4 | 29 | 16.0 | 29 | 20.9 | 27 | 56.0 | 4 | .8 | 64 12.5 | 124 24.3 |
| 5 | 29 | 16.3 | 29 | 21.1 | 27 | 56.2 | 5 | 1.0 | 65 12.7 | 125 24.5 |
| 6 | 29 | 16.5 | 29 | 21.4 | 27 | 56.5 | 6 | 1.2 | 66 12.9 | 126 24.7 |
| 7 | 29 | 16.8 | 29 | 21.6 | 27 | 56.7 | 7 | 1.4 | 67 13.1 | 127 24.9 |
| 8 | 29 | 17.0 | 29 | 21.9 | 27 | 57.0 | 8 | 1.6 | 68 13.3 | 128 25.1 |
| 9 | 29 | 17.3 | 29 | 22.1 | 27 | 57.2 | 9 | 1.8 | 69 13.5 | 129 25.3 |
| 10 | 29 | 17.5 | 29 | 22.4 | 27 | 57.4 | 10 | 2.0 | 70 13.7 | 130 25.5 |
| 11 | 29 | 17.8 | 29 | 22.6 | 27 | 57.7 | 11 | 2.2 | 71 13.9 | 131 25.7 |
| 12 | 29 | 18.0 | 29 | 22.9 | 27 | 57.9 | 12 | 2.4 | 72 14.1 | 132 25.9 |
| 13 | 29 | 18.3 | 29 | 23.1 | 27 | 58.2 | 13 | 2.5 | 73 14.3 | 133 26.0 |
| 14 | 29 | 18.5 | 29 | 23.4 | 27 | 58.4 | 14 | 2.7 | 74 14.5 | 134 26.2 |
| 15 | 29 | 18.8 | 29 | 23.6 | 27 | 58.6 | 15 | 2.9 | 75 14.7 | 135 26.4 |
| 16 | 29 | 19.0 | 29 | 23.9 | 27 | 58.9 | 16 | 3.1 | 76 14.9 | 136 26.6 |
| 17 | 29 | 19.3 | 29 | 24.1 | 27 | 59.1 | 17 | 3.3 | 77 15.1 | 137 26.8 |
| 18 | 29 | 19.5 | 29 | 24.4 | 27 | 59.3 | 18 | 3.5 | 78 15.3 | 138 27.0 |
| 19 | 29 | 19.8 | 29 | 24.6 | 27 | 59.6 | 19 | 3.7 | 79 15.5 | 139 27.2 |
| 20 | 29 | 20.0 | 29 | 24.9 | 27 | 59.8 | 20 | 3.9 | 80 15.7 | 140 27.4 |
| 21 | 29 | 20.3 | 29 | 25.1 | 28 | .1 | 21 | 4.1 | 81 15.9 | 141 27.6 |
| 22 | 29 | 20.5 | 29 | 25.4 | 28 | .3 | 22 | 4.3 | 82 16.1 | 142 27.8 |
| 23 | 29 | 20.8 | 29 | 25.6 | 28 | .5 | 23 | 4.5 | 83 16.3 | 143 28.0 |
| 24 | 29 | 21.0 | 29 | 25.9 | 28 | .8 | 24 | 4.7 | 84 16.5 | 144 28.2 |
| 25 | 29 | 21.3 | 29 | 26.1 | 28 | 1.0 | 25 | 4.9 | 85 16.6 | 145 28.4 |
| 26 | 29 | 21.5 | 29 | 26.4 | 28 | 1.3 | 26 | 5.1 | 86 16.8 | 146 28.6 |
| 27 | 29 | 21.8 | 29 | 26.6 | 28 | 1.5 | 27 | 5.3 | 87 17.0 | 147 28.8 |
| 28 | 29 | 22.0 | 29 | 26.9 | 28 | 1.7 | 28 | 5.5 | 88 17.2 | 148 29.0 |
| 29 | 29 | 22.3 | 29 | 27.1 | 28 | 2.0 | 29 | 5.7 | 89 17.4 | 149 29.2 |
| 30 | 29 | 22.5 | 29 | 27.4 | 28 | 2.2 | 30 | 5.9 | 90 17.6 | 150 29.4 |
| 31 | 29 | 22.8 | 29 | 27.6 | 28 | 2.4 | 31 | 6.1 | 91 17.8 | 151 29.6 |
| 32 | 29 | 23.0 | 29 | 27.9 | 28 | 2.7 | 32 | 6.3 | 92 18.0 | 152 29.8 |
| 33 | 29 | 23.3 | 29 | 28.1 | 28 | 2.9 | 33 | 6.5 | 93 18.2 | 153 30.0 |
| 34 | 29 | 23.5 | 29 | 28.4 | 28 | 3.2 | 34 | 6.7 | 94 18.4 | 154 30.2 |
| 35 | 29 | 23.8 | 29 | 28.6 | 28 | 3.4 | 35 | 6.9 | 95 18.6 | 155 30.4 |
| 36 | 29 | 24.0 | 29 | 28.9 | 28 | 3.6 | 36 | 7.1 | 96 18.8 | 156 30.6 |
| 37 | 29 | 24.3 | 29 | 29.2 | 28 | 3.9 | 37 | 7.2 | 97 19.0 | 157 30.7 |
| 38 | 29 | 24.5 | 29 | 29.4 | 28 | 4.1 | 38 | 7.4 | 98 19.2 | 158 30.9 |
| 39 | 29 | 24.8 | 29 | 29.7 | 28 | 4.4 | 39 | 7.6 | 99 19.4 | 159 31.1 |
| 40 | 29 | 25.0 | 29 | 29.9 | 28 | 4.6 | 40 | 7.8 | 100 19.6 | 160 31.3 |
| 41 | 29 | 25.3 | 29 | 30.2 | 28 | 4.8 | 41 | 8.0 | 101 19.8 | 161 31.5 |
| 42 | 29 | 25.5 | 29 | 30.4 | 28 | 5.1 | 42 | 8.2 | 102 20.0 | 162 31.7 |
| 43 | 29 | 25.8 | 29 | 30.7 | 28 | 5.3 | 43 | 8.4 | 103 20.2 | 163 31.9 |
| 44 | 29 | 26.0 | 29 | 30.9 | 28 | 5.5 | 44 | 8.6 | 104 20.4 | 164 32.1 |
| 45 | 29 | 26.3 | 29 | 31.2 | 28 | 5.8 | 45 | 8.8 | 105 20.6 | 165 32.3 |
| 46 | 29 | 26.5 | 29 | 31.4 | 28 | 6.0 | 46 | 9.0 | 106 20.8 | 166 32.5 |
| 47 | 29 | 26.8 | 29 | 31.7 | 28 | 6.3 | 47 | 9.2 | 107 21.0 | 167 32.7 |
| 48 | 29 | 27.0 | 29 | 31.9 | 28 | 6.5 | 48 | 9.4 | 108 21.2 | 168 32.9 |
| 49 | 29 | 27.3 | 29 | 32.2 | 28 | 6.7 | 49 | 9.6 | 109 21.3 | 169 33.1 |
| 50 | 29 | 27.5 | 29 | 32.4 | 28 | 7.0 | 50 | 9.8 | 110 21.5 | 170 33.3 |
| 51 | 29 | 27.8 | 29 | 32.7 | 28 | 7.2 | 51 | 10.0 | 111 21.7 | 171 33.5 |
| 52 | 29 | 28.0 | 29 | 32.9 | 28 | 7.5 | 52 | 10.2 | 112 21.9 | 172 33.7 |
| 53 | 29 | 28.3 | 29 | 33.2 | 28 | 7.7 | 53 | 10.4 | 113 22.1 | 173 33.9 |
| 54 | 29 | 28.5 | 29 | 33.4 | 28 | 7.9 | 54 | 10.6 | 114 22.3 | 174 34.1 |
| 55 | 29 | 28.8 | 29 | 33.7 | 28 | 8.2 | 55 | 10.8 | 115 22.5 | 175 34.3 |
| 56 | 29 | 29.0 | 29 | 33.9 | 28 | 8.4 | 56 | 11.0 | 116 22.7 | 176 34.5 |
| 57 | 29 | 29.3 | 29 | 34.2 | 28 | 8.7 | 57 | 11.2 | 117 22.9 | 177 34.7 |
| | | | | | | | | | | |

1 h 58 min

| POPRAVKA ČASOVNOG UGLA | | | POPRAVKA DRUGOG REDA | | | |
|------------------------|--------------------|----------------------|-------------------------------|---------|----------|----------|
| | | | za časovni ugao i deklinaciju | | | |
| s | SUNCA I PLANETA | PROLJEĆNE TAČKE ° | MJESECA ☾ | Δ popr. | Δ popr. | Δ popr. |
| | o / t | o / t | o / t | t | t | t |
| 0 | 29 30.0 | 29 34.9 | 28 9.4 | 0 .0 | 60 11.9 | 120 23.7 |
| 1 | 29 30.3 | 29 35.2 | 28 9.6 | 1 .2 | 61 12.0 | 121 23.9 |
| 2 | 29 30.5 | 29 35.4 | 28 9.8 | 2 .4 | 62 12.2 | 122 24.1 |
| 3 | 29 30.8 | 29 35.7 | 28 10.1 | 3 .6 | 63 12.4 | 123 24.3 |
| 4 | 29 31.0 | 29 35.9 | 28 10.3 | 4 .8 | 64 12.6 | 124 24.5 |
| 5 | 29 31.3 | 29 36.2 | 28 10.6 | 5 1.0 | 65 12.8 | 125 24.7 |
| 6 | 29 31.5 | 29 36.4 | 28 10.8 | 6 1.2 | 66 13.0 | 126 24.9 |
| 7 | 29 31.8 | 29 36.7 | 28 11.0 | 7 1.4 | 67 13.2 | 127 25.1 |
| 8 | 29 32.0 | 29 36.9 | 28 11.3 | 8 1.6 | 68 13.4 | 128 25.3 |
| 9 | 29 32.3 | 29 37.2 | 28 11.5 | 9 1.8 | 69 13.6 | 129 25.5 |
| 10 | 29 32.5 | 29 37.4 | 28 11.8 | 10 2.0 | 70 13.8 | 130 25.7 |
| 11 | 29 32.8 | 29 37.7 | 28 12.0 | 11 2.2 | 71 14.0 | 131 25.9 |
| 12 | 29 33.0 | 29 37.9 | 28 12.2 | 12 2.4 | 72 14.2 | 132 26.1 |
| 13 | 29 33.3 | 29 38.2 | 28 12.5 | 13 2.6 | 73 14.4 | 133 26.3 |
| 14 | 29 33.5 | 29 38.4 | 28 12.7 | 14 2.8 | 74 14.6 | 134 26.5 |
| 15 | 29 33.8 | 29 38.7 | 28 12.9 | 15 3.0 | 75 14.8 | 135 26.7 |
| 16 | 29 34.0 | 29 38.9 | 28 13.2 | 16 3.2 | 76 15.0 | 136 26.9 |
| 17 | 29 34.3 | 29 39.2 | 28 13.4 | 17 3.4 | 77 15.2 | 137 27.1 |
| 18 | 29 34.5 | 29 39.4 | 28 13.7 | 18 3.6 | 78 15.4 | 138 27.3 |
| 19 | 29 34.8 | 29 39.7 | 28 13.9 | 19 3.8 | 79 15.6 | 139 27.5 |
| 20 | 29 35.0 | 29 39.9 | 28 14.1 | 20 4.0 | 80 15.8 | 140 27.7 |
| 21 | 29 35.3 | 29 40.2 | 28 14.4 | 21 4.1 | 81 16.0 | 141 27.8 |
| 22 | 29 35.5 | 29 40.4 | 28 14.6 | 22 4.3 | 82 16.2 | 142 28.0 |
| 23 | 29 35.8 | 29 40.7 | 28 14.9 | 23 4.5 | 83 16.4 | 143 28.2 |
| 24 | 29 36.0 | 29 40.9 | 28 15.1 | 24 4.7 | 84 16.6 | 144 28.4 |
| 25 | 29 36.3 | 29 41.2 | 28 15.3 | 25 4.9 | 85 16.8 | 145 28.6 |
| 26 | 29 36.5 | 29 41.4 | 28 15.6 | 26 5.1 | 86 17.0 | 146 28.8 |
| 27 | 29 36.8 | 29 41.7 | 28 15.8 | 27 5.3 | 87 17.2 | 147 29.0 |
| 28 | 29 37.0 | 29 41.9 | 28 16.0 | 28 5.5 | 88 17.4 | 148 29.2 |
| 29 | 29 37.3 | 29 42.2 | 28 16.3 | 29 5.7 | 89 17.6 | 149 29.4 |
| 30 | 29 37.5 | 29 42.4 | 28 16.5 | 30 5.9 | 90 17.8 | 150 29.6 |
| 31 | 29 37.8 | 29 42.7 | 28 16.8 | 31 6.1 | 91 18.0 | 151 29.8 |
| 32 | 29 38.0 | 29 42.9 | 28 17.0 | 32 6.3 | 92 18.2 | 152 30.0 |
| 33 | 29 38.3 | 29 43.2 | 28 17.2 | 33 6.5 | 93 18.4 | 153 30.2 |
| 34 | 29 38.5 | 29 43.4 | 28 17.5 | 34 6.7 | 94 18.6 | 154 30.4 |
| 35 | 29 38.8 | 29 43.7 | 28 17.7 | 35 6.9 | 95 18.8 | 155 30.6 |
| 36 | 29 39.0 | 29 43.9 | 28 18.0 | 36 7.1 | 96 19.0 | 156 30.8 |
| 37 | 29 39.3 | 29 44.2 | 28 18.2 | 37 7.3 | 97 19.2 | 157 31.0 |
| 38 | 29 39.5 | 29 44.4 | 28 18.4 | 38 7.5 | 98 19.4 | 158 31.2 |
| 39 | 29 39.8 | 29 44.7 | 28 18.7 | 39 7.7 | 99 19.6 | 159 31.4 |
| 40 | 29 40.0 | 29 44.9 | 28 18.9 | 40 7.9 | 100 19.8 | 160 31.6 |
| 41 | 29 40.3 | 29 45.2 | 28 19.1 | 41 8.1 | 101 19.9 | 161 31.8 |
| 42 | 29 40.5 | 29 45.4 | 28 19.4 | 42 8.3 | 102 20.1 | 162 32.0 |
| 43 | 29 40.8 | 29 45.7 | 28 19.6 | 43 8.5 | 103 20.3 | 163 32.2 |
| 44 | 29 41.0 | 29 45.9 | 28 19.9 | 44 8.7 | 104 20.5 | 164 32.4 |
| 45 | 29 41.3 | 29 46.2 | 28 20.1 | 45 8.9 | 105 20.7 | 165 32.6 |
| 46 | 29 41.5 | 29 46.4 | 28 20.3 | 46 9.1 | 106 20.9 | 166 32.8 |
| 47 | 29 41.8 | 29 46.7 | 28 20.6 | 47 9.3 | 107 21.1 | 167 33.0 |
| 48 | 29 42.0 | 29 47.0 | 28 20.8 | 48 9.5 | 108 21.3 | 168 33.2 |
| 49 | 29 42.3 | 29 47.2 | 28 21.1 | 49 9.7 | 109 21.5 | 169 33.4 |
| 50 | 29 42.5 | 29 47.5 | 28 21.3 | 50 9.9 | 110 21.7 | 170 33.6 |
| 51 | 29 42.8 | 29 47.7 | 28 21.5 | 51 10.1 | 111 21.9 | 171 33.8 |
| 52 | 29 43.0 | 29 48.0 | 28 21.8 | 52 10.3 | 112 22.1 | 172 34.0 |
| 53 | 29 43.3 | 29 48.2 | 28 22.0 | 53 10.5 | 113 22.3 | 173 34.2 |
| 54 | 29 43.5 | 29 48.5 | 28 22.3 | 54 10.7 | 114 22.5 | 174 34.4 |
| 55 | 29 43.8 | 29 48.7 | 28 22.5 | 55 10.9 | 115 22.7 | 175 34.6 |
| 56 | 29 44.0 | 29 49.0 | 28 22.7 | 56 11.1 | 116 22.9 | 176 34.8 |
| 57 | 29 44.3 | 29 49.2 | 28 23.0 | 57 11.3 | 117 23.1 | 177 35.0 |
| 58 | 29 44.5 | 29 49.5 | 28 23.2 | 58 11.5 | 118 23.3 | 178 35.2 |
| 59 | 29 44.8 | 29 49.7 | 28 23.4 | 59 11.7 | 119 23.5 | 179 35.4 |
| 60 | 29 45.0 | 29 50.0 | 28 23.7 | 60 11.9 | 120 23.7 | 180 35.6 |

1 h 59 min

| POPRAVKA ČASOVNOG UGLA | | | POPRAVKA DRUGOG REDA | | | |
|------------------------|--------------------|----------------------|-------------------------------|---------|----------|----------|
| | | | za časovni ugao i deklinaciju | | | |
| s | SUNCA I PLANETA | PROLJEĆNE TAČKE ° | MJESECA ☾ | Δ popr. | Δ popr. | Δ popr. |
| | o / t | o / t | o / t | t | t | t |
| 0 | 29 45.0 | 29 50.0 | 28 23.7 | 0 .0 | 60 12.0 | 120 23.9 |
| 1 | 29 45.3 | 29 50.2 | 28 23.9 | 1 .2 | 61 12.1 | 121 24.1 |
| 2 | 29 45.5 | 29 50.5 | 28 24.2 | 2 .4 | 62 12.3 | 122 24.3 |
| 3 | 29 45.8 | 29 50.7 | 28 24.4 | 3 .6 | 63 12.5 | 123 24.5 |
| 4 | 29 46.0 | 29 51.0 | 28 24.6 | 4 .8 | 64 12.7 | 124 24.7 |
| 5 | 29 46.3 | 29 51.2 | 28 24.9 | 5 1.0 | 65 12.9 | 125 24.9 |
| 6 | 29 46.5 | 29 51.5 | 28 25.1 | 6 1.2 | 66 13.1 | 126 25.1 |
| 7 | 29 46.8 | 29 51.7 | 28 25.4 | 7 1.4 | 67 13.3 | 127 25.3 |
| 8 | 29 47.0 | 29 52.0 | 28 25.6 | 8 1.6 | 68 13.5 | 128 25.5 |
| 9 | 29 47.3 | 29 52.2 | 28 25.8 | 9 1.8 | 69 13.7 | 129 25.7 |
| 10 | 29 47.5 | 29 52.5 | 28 26.1 | 10 2.0 | 70 13.9 | 130 25.9 |
| 11 | 29 47.8 | 29 52.7 | 28 26.3 | 11 2.2 | 71 14.1 | 131 26.1 |
| 12 | 29 48.0 | 29 53.0 | 28 26.5 | 12 2.4 | 72 14.3 | 132 26.3 |
| 13 | 29 48.3 | 29 53.2 | 28 26.8 | 13 2.6 | 73 14.5 | 133 26.5 |
| 14 | 29 48.5 | 29 53.5 | 28 27.0 | 14 2.8 | 74 14.7 | 134 26.7 |
| 15 | 29 48.8 | 29 53.7 | 28 27.3 | 15 3.0 | 75 14.9 | 135 26.9 |
| 16 | 29 49.0 | 29 54.0 | 28 27.5 | 16 3.2 | 76 15.1 | 136 27.1 |
| 17 | 29 49.3 | 29 54.2 | 28 27.7 | 17 3.4 | 77 15.3 | 137 27.3 |
| 18 | 29 49.5 | 29 54.5 | 28 28.0 | 18 3.6 | 78 15.5 | 138 27.5 |
| 19 | 29 49.8 | 29 54.7 | 28 28.2 | 19 3.8 | 79 15.7 | 139 27.7 |
| 20 | 29 50.0 | 29 55.0 | 28 28.5 | 20 4.0 | 80 15.9 | 140 27.9 |
| 21 | 29 50.3 | 29 55.2 | 28 28.7 | 21 4.2 | 81 16.1 | 141 28.1 |
| 22 | 29 50.5 | 29 55.5 | 28 28.9 | 22 4.4 | 82 16.3 | 142 28.3 |
| 23 | 29 50.8 | 29 55.7 | 28 29.2 | 23 4.6 | 83 16.5 | 143 28.5 |
| 24 | 29 51.0 | 29 56.0 | 28 29.4 | 24 4.8 | 84 16.7 | 144 28.7 |
| 25 | 29 51.3 | 29 56.2 | 28 29.6 | 25 5.0 | 85 16.9 | 145 28.9 |
| 26 | 29 51.5 | 29 56.5 | 28 29.9 | 26 5.2 | 86 17.1 | 146 29.1 |
| 27 | 29 51.8 | 29 56.7 | 28 30.1 | 27 5.4 | 87 17.3 | 147 29.3 |
| 28 | 29 52.0 | 29 57.0 | 28 30.4 | 28 5.6 | 88 17.5 | 148 29.5 |
| 29 | 29 52.3 | 29 57.2 | 28 30.6 | 29 5.8 | 89 17.7 | 149 29.7 |
| 30 | 29 52.5 | 29 57.5 | 28 30.8 | 30 6.0 | 90 17.9 | 150 29.9 |
| 31 | 29 52.8 | 29 57.7 | 28 31.1 | 31 6.2 | 91 18.1 | 151 30.1 |
| 32 | 29 53.0 | 29 58.0 | 28 31.3 | 32 6.4 | 92 18.3 | 152 30.3 |
| 33 | 29 53.3 | 29 58.2 | 28 31.6 | 33 6.6 | 93 18.5 | 153 30.5 |
| 34 | 29 53.5 | 29 58.5 | 28 31.8 | 34 6.8 | 94 18.7 | 154 30.7 |
| 35 | 29 53.8 | 29 58.7 | 28 32.0 | 35 7.0 | 95 18.9 | 155 30.9 |
| 36 | 29 54.0 | 29 59.0 | 28 32.3 | 36 7.2 | 96 19.1 | 156 31.1 |
| 37 | 29 54.3 | 29 59.2 | 28 32.5 | 37 7.4 | 97 19.3 | 157 31.3 |
| 38 | 29 54.5 | 29 59.5 | 28 32.8 | 38 7.6 | 98 19.5 | 158 31.5 |
| 39 | 29 54.8 | 29 59.7 | 28 33.0 | 39 7.8 | 99 19.7 | 159 31.7 |
| 40 | 29 55.0 | 29 60.0 | 28 33.2 | 40 8.0 | 100 19.9 | 160 31.9 |
| 41 | 29 55.3 | 30 .2 | 28 33.5 | 41 8.2 | 101 20.1 | 161 32.1 |
| 42 | 29 55.5 | 30 .5 | 28 33.7 | 42 8.4 | 102 20.3 | 162 32.3 |
| 43 | 29 55.8 | 30 .7 | 28 33.9 | 43 8.6 | 103 20.5 | 163 32.5 |
| 44 | 29 56.0 | 30 1.0 | 28 34.2 | 44 8.8 | 104 20.7 | 164 32.7 |
| 45 | 29 56.3 | 30 1.2 | 28 34.4 | 45 9.0 | 105 20.9 | 165 32.9 |
| 46 | 29 56.5 | 30 1.5 | 28 34.7 | 46 9.2 | 106 21.1 | 166 33.1 |
| 47 | 29 56.8 | 30 1.7 | 28 34.9 | 47 9.4 | 107 21.3 | 167 33.3 |
| 48 | 29 57.0 | 30 2.0 | 28 35.1 | 48 9.6 | 108 21.5 | 168 33.5 |
| 49 | 29 57.3 | 30 2.2 | 28 35.4 | 49 9.8 | 109 21.7 | 169 33.7 |
| 50 | 29 57.5 | 30 2.5 | 28 35.6 | 50 10.0 | 110 21.9 | 170 33.9 |
| 51 | 29 57.8 | 30 2.7 | 28 35.9 | 51 10.2 | 111 22.1 | 171 34.1 |
| 52 | 29 58.0 | 30 3.0 | 28 36.1 | 52 10.4 | 112 22.3 | 172 34.3 |
| 53 | 29 58.3 | 30 3.2 | 28 36.3 | 53 10.6 | 113 22.5 | 173 34.5 |
| 54 | 29 58.5 | 30 3.5 | 28 36.6 | 54 10.8 | 114 22.7 | 174 34.7 |
| 55 | 29 58.8 | 30 3.7 | 28 36.8 | 55 11.0 | 115 22.9 | 175 34.9 |
| 56 | 29 59.0 | 30 4.0 | 28 37.0 | 56 11.2 | 116 23.1 | 176 35.1 |
| 57 | 29 59.3 | 30 4.2 | 28 37.3 | 57 11.4 | 117 23.3 | 177 35.3 |
| 58 | 29 59.5 | 30 4.5 | 28 37.5 | 58 11.6 | 118 23.5 | 178 35.5 |
| 59 | 29 59.8 | 30 4.7 | 28 37.8 | 59 11.8 | 119 23.7 | 179 35.7 |
| 60 | 30 .0 | 30 5.0 | 28 38.0 | 60 12.0 | 120 23.9 | 180 35.9 |

TABLICA ZA PRETVARANJE

| UGAONIH U VREMENSKE VREDNOSTI | | | | | | | | | | | VREMENSKIH U UGAONE | | | | | | | | | | | | |
|-------------------------------|-------|----|-------|---|-------|-----|-------|----|-------|----|---------------------|-----|-----|----|-----|----|-----|----|-----|----|---|-----|----|
| o | h min | o | h min | o | h min | o | h min | o | h min | o | h min | r | min | s | h | o | min | | o r | | | | |
| | | | | | | | | | | | | | | | | | s | r | s | r | | | |
| 0 | 0 | 0 | 60 | 4 | 0 | 120 | 8 | 0 | 180 | 12 | 0 | 240 | 16 | 0 | 300 | 20 | 0 | 0 | 0 | 0 | 0 | | |
| 1 | 0 | 4 | 61 | 4 | 4 | 121 | 8 | 4 | 181 | 12 | 4 | 241 | 16 | 4 | 301 | 20 | 4 | 1 | 15 | 1 | 0 | 15 | |
| 2 | 0 | 8 | 62 | 4 | 8 | 122 | 8 | 8 | 182 | 12 | 8 | 242 | 16 | 8 | 302 | 20 | 8 | 2 | 30 | 2 | 0 | 30 | |
| 3 | 0 | 12 | 63 | 4 | 12 | 123 | 8 | 12 | 183 | 12 | 12 | 243 | 16 | 12 | 303 | 20 | 12 | 3 | 45 | 3 | 0 | 45 | |
| 4 | 0 | 16 | 64 | 4 | 16 | 124 | 8 | 16 | 184 | 12 | 16 | 244 | 16 | 16 | 304 | 20 | 16 | 4 | 60 | 4 | 0 | 60 | |
| 5 | 0 | 20 | 65 | 4 | 20 | 125 | 8 | 20 | 185 | 12 | 20 | 245 | 16 | 20 | 305 | 20 | 20 | 5 | 75 | 5 | 0 | 75 | |
| 6 | 0 | 24 | 66 | 4 | 24 | 126 | 8 | 24 | 186 | 12 | 24 | 246 | 16 | 24 | 306 | 20 | 24 | 6 | 90 | 6 | 0 | 90 | |
| 7 | 0 | 28 | 67 | 4 | 28 | 127 | 8 | 28 | 187 | 12 | 28 | 247 | 16 | 28 | 307 | 20 | 28 | 7 | 105 | 7 | 0 | 105 | |
| 8 | 0 | 32 | 68 | 4 | 32 | 128 | 8 | 32 | 188 | 12 | 32 | 248 | 16 | 32 | 308 | 20 | 32 | 8 | 120 | 8 | 0 | 120 | |
| 9 | 0 | 36 | 69 | 4 | 36 | 129 | 8 | 36 | 189 | 12 | 36 | 249 | 16 | 36 | 309 | 20 | 36 | 9 | 135 | 9 | 0 | 135 | |
| 10 | 0 | 40 | 70 | 4 | 40 | 130 | 8 | 40 | 190 | 12 | 40 | 250 | 16 | 40 | 310 | 20 | 40 | 10 | 150 | 10 | 0 | 150 | |
| 11 | 0 | 44 | 71 | 4 | 44 | 131 | 8 | 44 | 191 | 12 | 44 | 251 | 16 | 44 | 311 | 20 | 44 | 11 | 165 | 11 | 0 | 165 | |
| 12 | 0 | 48 | 72 | 4 | 48 | 132 | 8 | 48 | 192 | 12 | 48 | 252 | 16 | 48 | 312 | 20 | 48 | 12 | 180 | 12 | 0 | 180 | |
| 13 | 0 | 52 | 73 | 4 | 52 | 133 | 8 | 52 | 193 | 12 | 52 | 253 | 16 | 52 | 313 | 20 | 52 | 13 | 195 | 13 | 0 | 195 | |
| 14 | 0 | 56 | 74 | 4 | 56 | 134 | 8 | 56 | 194 | 12 | 56 | 254 | 16 | 56 | 314 | 20 | 56 | 14 | 210 | 14 | 0 | 210 | |
| 15 | 1 | 0 | 75 | 5 | 0 | 135 | 9 | 0 | 195 | 13 | 0 | 255 | 17 | 0 | 315 | 21 | 0 | 15 | 225 | 15 | 0 | 225 | |
| 16 | 1 | 4 | 76 | 5 | 4 | 136 | 9 | 4 | 196 | 13 | 4 | 256 | 17 | 4 | 316 | 21 | 4 | 16 | 240 | 16 | 0 | 240 | |
| 17 | 1 | 8 | 77 | 5 | 8 | 137 | 9 | 8 | 197 | 13 | 8 | 257 | 17 | 8 | 317 | 21 | 8 | 17 | 255 | 17 | 0 | 255 | |
| 18 | 1 | 12 | 78 | 5 | 12 | 138 | 9 | 12 | 198 | 13 | 12 | 258 | 17 | 12 | 318 | 21 | 12 | 18 | 270 | 18 | 0 | 270 | |
| 19 | 1 | 16 | 79 | 5 | 16 | 139 | 9 | 16 | 199 | 13 | 16 | 259 | 17 | 16 | 319 | 21 | 16 | 19 | 285 | 19 | 0 | 285 | |
| 20 | 1 | 20 | 80 | 5 | 20 | 140 | 9 | 20 | 200 | 13 | 20 | 260 | 17 | 20 | 320 | 21 | 20 | 20 | 300 | 20 | 0 | 300 | |
| 21 | 1 | 24 | 81 | 5 | 24 | 141 | 9 | 24 | 201 | 13 | 24 | 261 | 17 | 24 | 321 | 21 | 24 | 21 | 315 | 21 | 0 | 315 | |
| 22 | 1 | 28 | 82 | 5 | 28 | 142 | 9 | 28 | 202 | 13 | 28 | 262 | 17 | 28 | 322 | 21 | 28 | 22 | 330 | 22 | 0 | 330 | |
| 23 | 1 | 32 | 83 | 5 | 32 | 143 | 9 | 32 | 203 | 13 | 32 | 263 | 17 | 32 | 323 | 21 | 32 | 23 | 345 | 23 | 0 | 345 | |
| 24 | 1 | 36 | 84 | 5 | 36 | 144 | 9 | 36 | 204 | 13 | 36 | 264 | 17 | 36 | 324 | 21 | 36 | 24 | 360 | 24 | 0 | 360 | |
| 25 | 1 | 40 | 85 | 5 | 40 | 145 | 9 | 40 | 205 | 13 | 40 | 265 | 17 | 40 | 325 | 21 | 40 | 25 | 6 | 25 | 0 | 6 | 25 |
| 26 | 1 | 44 | 86 | 5 | 44 | 146 | 9 | 44 | 206 | 13 | 44 | 266 | 17 | 44 | 326 | 21 | 44 | 26 | 6 | 26 | 0 | 6 | 26 |
| 27 | 1 | 48 | 87 | 5 | 48 | 147 | 9 | 48 | 207 | 13 | 48 | 267 | 17 | 48 | 327 | 21 | 48 | 27 | 6 | 27 | 0 | 6 | 27 |
| 28 | 1 | 52 | 88 | 5 | 52 | 148 | 9 | 52 | 208 | 13 | 52 | 268 | 17 | 52 | 328 | 21 | 52 | 28 | 6 | 28 | 0 | 6 | 28 |
| 29 | 1 | 56 | 89 | 5 | 56 | 149 | 9 | 56 | 209 | 13 | 56 | 269 | 17 | 56 | 329 | 21 | 56 | 29 | 6 | 29 | 0 | 6 | 29 |
| 30 | 2 | 0 | 90 | 6 | 0 | 150 | 10 | 0 | 210 | 14 | 0 | 270 | 18 | 0 | 330 | 22 | 0 | 30 | 7 | 30 | 0 | 7 | 30 |
| 31 | 2 | 4 | 91 | 6 | 4 | 151 | 10 | 4 | 211 | 14 | 4 | 271 | 18 | 4 | 331 | 22 | 4 | 31 | 7 | 31 | 0 | 7 | 31 |
| 32 | 2 | 8 | 92 | 6 | 8 | 152 | 10 | 8 | 212 | 14 | 8 | 272 | 18 | 8 | 332 | 22 | 8 | 32 | 7 | 32 | 0 | 7 | 32 |
| 33 | 2 | 12 | 93 | 6 | 12 | 153 | 10 | 12 | 213 | 14 | 12 | 273 | 18 | 12 | 333 | 22 | 12 | 33 | 7 | 33 | 0 | 7 | 33 |
| 34 | 2 | 16 | 94 | 6 | 16 | 154 | 10 | 16 | 214 | 14 | 16 | 274 | 18 | 16 | 334 | 22 | 16 | 34 | 7 | 34 | 0 | 7 | 34 |
| 35 | 2 | 20 | 95 | 6 | 20 | 155 | 10 | 20 | 215 | 14 | 20 | 275 | 18 | 20 | 335 | 22 | 20 | 35 | 7 | 35 | 0 | 7 | 35 |
| 36 | 2 | 24 | 96 | 6 | 24 | 156 | 10 | 24 | 216 | 14 | 24 | 276 | 18 | 24 | 336 | 22 | 24 | 36 | 7 | 36 | 0 | 7 | 36 |
| 37 | 2 | 28 | 97 | 6 | 28 | 157 | 10 | 28 | 217 | 14 | 28 | 277 | 18 | 28 | 337 | 22 | 28 | 37 | 7 | 37 | 0 | 7 | 37 |
| 38 | 2 | 32 | 98 | 6 | 32 | 158 | 10 | 32 | 218 | 14 | 32 | 278 | 18 | 32 | 338 | 22 | 32 | 38 | 7 | 38 | 0 | 7 | 38 |
| 39 | 2 | 36 | 99 | 6 | 36 | 159 | 10 | 36 | 219 | 14 | 36 | 279 | 18 | 36 | 339 | 22 | 36 | 39 | 7 | 39 | 0 | 7 | 39 |
| 40 | 2 | 40 | 100 | 6 | 40 | 160 | 10 | 40 | 220 | 14 | 40 | 280 | 18 | 40 | 340 | 22 | 40 | 40 | 7 | 40 | 0 | 7 | 40 |
| 41 | 2 | 44 | 101 | 6 | 44 | 161 | 10 | 44 | 221 | 14 | 44 | 281 | 18 | 44 | 341 | 22 | 44 | 41 | 7 | 41 | 0 | 7 | 41 |
| 42 | 2 | 48 | 102 | 6 | 48 | 162 | 10 | 48 | 222 | 14 | 48 | 282 | 18 | 48 | 342 | 22 | 48 | 42 | 7 | 42 | 0 | 7 | 42 |
| 43 | 2 | 52 | 103 | 6 | 52 | 163 | 10 | 52 | 223 | 14 | 52 | 283 | 18 | 52 | 343 | 22 | 52 | 43 | 7 | 43 | 0 | 7 | 43 |
| 44 | 2 | 56 | 104 | 6 | 56 | 164 | 10 | 56 | 224 | 14 | 56 | 284 | 18 | 56 | 344 | 22 | 56 | 44 | 7 | 44 | 0 | 7 | 44 |
| 45 | 3 | 0 | 105 | 7 | 0 | 165 | 11 | 0 | 225 | 15 | 0 | 285 | 19 | 0 | 345 | 23 | 0 | 45 | 8 | 45 | 0 | 8 | 45 |
| 46 | 3 | 4 | 106 | 7 | 4 | 166 | 11 | 4 | 226 | 15 | 4 | 286 | 19 | 4 | 346 | 23 | 4 | 46 | 8 | 46 | 0 | 8 | 46 |
| 47 | 3 | 8 | 107 | 7 | 8 | 167 | 11 | 8 | 227 | 15 | 8 | 287 | 19 | 8 | 347 | 23 | 8 | 47 | 8 | 47 | 0 | 8 | 47 |
| 48 | 3 | 12 | 108 | 7 | 12 | 168 | 11 | 12 | 228 | 15 | 12 | 288 | 19 | 12 | 348 | 23 | 12 | 48 | 8 | 48 | 0 | 8 | 48 |
| 49 | 3 | 16 | 109 | 7 | 16 | 169 | 11 | 16 | 229 | 15 | 16 | 289 | 19 | 16 | 349 | 23 | 16 | 49 | 8 | 49 | 0 | 8 | 49 |
| 50 | 3 | 20 | 110 | 7 | 20 | 170 | 11 | 20 | 230 | 15 | 20 | 290 | 19 | 20 | 350 | 23 | 20 | 50 | 8 | 50 | 0 | 8 | 50 |
| 51 | 3 | 24 | 111 | 7 | 24 | 171 | 11 | 24 | 231 | 15 | 24 | 291 | 19 | 24 | 351 | 23 | 24 | 51 | 8 | 51 | 0 | 8 | 51 |
| 52 | 3 | 28 | 112 | 7 | 28 | 172 | 11 | 28 | 232 | 15 | 28 | 292 | 19 | 28 | 352 | 23 | 28 | 52 | 8 | 52 | 0 | 8 | 52 |
| 53 | 3 | 32 | 113 | 7 | 32 | 173 | 11 | 32 | 233 | 15 | 32 | 293 | 19 | 32 | 353 | 23 | 32 | 53 | 8 | 53 | 0 | 8 | 53 |
| 54 | 3 | 36 | 114 | 7 | 36 | 174 | 11 | 36 | 234 | 15 | 36 | 294 | 19 | 36 | 354 | 23 | 36 | 54 | 8 | 54 | 0 | 8 | 54 |
| 55 | 3 | 40 | 115 | 7 | 40 | 175 | 11 | 40 | 235 | 15 | 40 | 295 | 19 | 40 | 355 | 23 | 40 | 55 | 8 | 55 | 0 | 8 | 55 |
| 56 | 3 | 44 | 116 | 7 | 44 | 176 | 11 | 44 | 236 | 15 | 44 | 296 | 19 | 44 | 356 | 23 | 44 | 56 | 8 | 56 | 0 | 8 | 56 |
| 57 | 3 | 48 | 117 | 7 | 48 | 177 | 11 | 48 | 237 | 15 | 48 | 297 | 19 | 48 | 357 | 23 | 48 | 57 | 8 | 57 | 0 | 8 | 57 |
| 58 | 3 | 52 | 118 | 7 | 52 | 178 | 11 | 52 | 238 | 15 | 52 | 298 | 19 | 52 | 358 | 23 | 52 | 58 | 8 | 58 | 0 | 8 | 58 |
| 59 | 3 | 56 | 119 | 7 | 56 | 179 | 11 | 56 | 239 | 15 | 56 | 299 | 19 | 56 | 359 | 23 | 56 | 59 | 8 | 59 | 0 | 8 | 59 |
| 60 | 4 | 0 | 120 | 8 | 0 | 180 | 12 | 0 | 240 | 16 | 0 | 300 | 20 | 0 | 360 | 24 | 0 | 60 | 9 | 60 | 0 | 9 | 60 |

Uputstvo
ZA
UPOTREBU NAUTIČKOG GODIŠNJAKA

UPUTSTVO

za upotrebu Nautičkog godišnjaka

Nautički godišnjak se sastoji od dva osnovna dijela:

1. **Promjenljivog** (efemeride Sunca, Mjeseca, Venere, Marsa, Jupitera, Saturna ...) i
2. **Stalnog** dijela.

Efemeride se mijenjaju svake godine, dok su u stalnom dijelu prilozi koji se ne mijenjaju.

Efemeride sadrže:

- a) Mjesečeve mjene, perigej, apogej, vidljivost planeta, početke godišnjih doba, pomračenje Sunca i Mjeseca, te kalendar za 2012. godinu;
- b) časovni ugao i deklinaciju Sunca, Mjeseca, Venere, Marsa, Jupitera i Saturna, časovni ugao Prolječne tačke za svaki parni čas univerzalnog vremena sa jednočasovnim srednjim i stvarnim razlikama;
- c) vrijeme izlaza i zalaza Sunca i Mjeseca sa jednočasovnim promjenama za Mjesec, i trajanje građanskog i astronomskog sumraka za svaki datum za geografske širine od 60°N do 60°S;
- d) vremensko izjednačenje za 00^h i 12^h univerzalnog vremena sa jednočasovnom promjenom, vrijeme gornjeg prolaza Sunca kroz meridijan u Griniču i prividni poluprečnik Sunca (r);
- e) vrijeme gornjeg prolaza Mjeseca kroz meridijan u Griniču sa jednočasovnom promjenom, horizontsku paralaksu Mjeseca i njegov prividni poluprečnik za 00^h u Griniču. Dalje slijede starost Mjeseca u danima i glavne faze (mjene) za određene dane;
- f) vrijeme gornjeg prolaza planeta kroz meridijan Griniča, horizontsku paralaksu, surektascenziju i prividnu veličinu za 00^h univerzalnog vremena;
- g) surektascenzije, deklinacije i vremena gornjih prolaza zvijezda kroz meridijan Griniča za svaki prvi dan u mjesecu;
- h) podatke za Sjevernjaču koje čine Tablice popravki I, II i III za određivanje geografske širine pomoću Sjevernjače i tablice azimuta Sjevernjače;
- i) ovo uputstvo.

Sadržaj **stalnog** dijela je:

- a) interpolacione tablice za izračunavanje trenutaka izlaza-zalaza Sunca i Mjeseca za $\varphi = 0^\circ$ do 30° i za $\varphi = 30^\circ$ do 60° ;
- b) interpolacione tablice za određivanje λ_v kao popravke srednjeg vremena pri izračunavanju trenutaka izlaza, zalaza i prolaza Mjeseca kroz meridijan;
- c) interpolacione tablice za popravku časovnog ugla Sunca i planeta, prolječne tačke i Mjeseca i za popravku drugog reda za časovni ugao navedenih nebeskih tijela. Tablice omogućuju i popravku deklinacije tih nebeskih tijela, određivanje časovnog ugla i deklinacije za bilo koji trenutak;
- d) pomoćne tablice za pretvaranje vremenskih u lučne vrednosti i obratno;
- e) zvanična i zonska vremena i karta zonskih i zvaničnih vremena;
- f) karte zvjezdanog neba.

Primeri za rad sa Godišnjakom grupisani su, radi lakšeg pronalaženja, prema sličnosti. Za vrijeme svakog izračunavanja mora se voditi računa o predznaku koji je jednako važan kao i sama brojka, jer su sva izračunavanja algebarska, gde predznak određuje da li će se vršiti sabiranje ili oduzimanje.

PREGLED PRIMJERA ZA KORIŠĆENJE NAUTIČKOG GODIŠNJAKA

1. Određivanje časovnog ugla i deklinacije nebeskih tijela

Primjer:

- | | |
|---|------|
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| 1.2. Određivanje časovnog ugla i deklinacije Mjeseca | 3, 4 |
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- | | |
|---|--------|
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| | |
|---|---------|
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1. ODREĐIVANJE ČASOVNOG UGLA I DEKLINACIJE NEBESKIH TIJELA

Efemeride daju časovni ugao i deklinaciju Sunca, Mjeseca i planeta za svaki parni čas datuma, a pomoćne interpolacione tablice omogućavaju određivanje časovnog ugla i deklinacije za bilo koji trenutak.

Popravka časovnog ugla određuje se pomoću interpolacionih tablica u koloni „Popravka časovnog ugla“, a popravka drugog reda za časovni ugao na istoj strani u koloni „Popravka drugog reda za časovni ugao i deklinaciju Sunca, Mjeseca i planeta“.

Prva popravka časovnog ugla određena je pod pretpostavkom da jednočasovne promjene časovnih uglova za Sunce iznose 15° , za proljećnu tačku $15^\circ 02' .5$ i za Mjesec $14^\circ 19'$. Popravka drugog reda časovnog ugla Sunca, Mjeseca i planeta jeste popravka tih srednjih promjena, jer stvarne časovne promjene časovnih uglova razlikuju se za veće ili manje vrijednosti od usvojenih srednjih promjena. Veličina Δ za račun popravke drugog reda nalazi se na dnu efemerida Sunca i planeta, za Mjesec desno od vrijednosti časovnog ugla, a za popravku drugog reda proljećne tačke ne uzima se u obzir jer su odstupanja od srednje vrijednosti $15^\circ 02' .5$ praktično zanemarljiva.

Određivanje deklinacije nekog nebeskog tijela za određeni trenutak vršimo na taj način da u efemeridama tog dana za parni čas pronađemo osnovnu vrijednost deklinacije. Popravku za određeni trenutak pronalazimo u interpolacionim tablicama u koloni „Popravka drugog reda za časovni ugao i deklinaciju Sunca, Mjeseca i planeta“, a pomoću vrijednosti Δ .

1.1. ODREĐIVANJE ČASOVNOG UGLA I DEKLINACIJE SUNCA

► **PRIMJER 1.** Odrediti mjesni časovni ugao i deklinaciju Sunca za 14. april 2012. godine u UT = $7^h 31^m 46^s$ na $\lambda = 96^\circ 14' .6E$.

a) časovni ugao

| | |
|--|-----------|
| Sa strane za 14. april S za 6^h | 269°56'.2 |
| Iz interpolacionih tablica za $1^h 31^m 46^s$ popravka časovnog ugla Sunca | 22°56'.5 |
| Iz interpolacionih tablica za $1^h 31^m$ popravka drugog reda za S ($\Delta = +2$) | 0'.3 |

| | |
|-------------|------------|
| S | 292°53'.0 |
| + λ | + 96°14'.6 |

$$s \dots\dots\dots 389^\circ 7'.6 \rightarrow s_W = 29^\circ 7'.6$$

b) deklinacija

| | |
|--|----------|
| Sa strane za 14. april δ za 6^h | +9°33'.9 |
| Iz interpol. tablica za $1^h 31^m$ popravka za $\delta(\Delta = +9)$ | + 1'.4 |
| δ | +9°35'.3 |

► **PRIMJER 2.** Odrediti mjesni časovni ugao i deklinaciju Sunca za 18. septembar 2012. godine u UT = $13^h 05^m 14^s$ na $\lambda = 28^\circ 53' .6W$.

a) časovni ugao

| | |
|---|----------|
| Sa strane za 18. septembar S za 12^h | 1°29'.8 |
| Iz interpolacionih tablica za $1^h 5^m 14^s$ popravka časovnog ugla Sunca | 16°18'.5 |
| Popravka drugog reda za S ($\Delta = +2$) | 0'.2 |

| | |
|-------------|------------|
| S | 17°48'.5 |
| + λ | - 28°53'.6 |

$$s_W \dots\dots\dots 348^\circ 54'.9 \rightarrow s_E = 11^\circ 5'.1$$

b) deklinacija

| | |
|--|----------|
| Sa strane za 18. septembar δ za 12^h | +1°36'.0 |
| Iz interpol. tablica za $1^h 5^m$ popravka za $\delta(\Delta = -10)$ | - 1'.1 |
| δ | +1°34'.9 |

1.2. ODREĐIVANJE ČASOVNOG UGLA I DEKLINACIJE MJESECA

► **PRIMJER 3.** Odrediti mjesni časovni ugao i deklinaciju Mjeseca za 15. mart 2012. godine u UT = 8^h15^m25^s na $\lambda = 15^{\circ}32'.0W$.

a) časovni ugao

| | |
|---|----------|
| Sa strane za 15. mart S za 8 ^h | 24°47'.6 |
| Iz interpolacionih tablica za 0 ^h 15 ^m 25 ^s popravka časovnog ugla Mjeseca | 3°40'.7 |
| Iz interpol. tablica za 0 ^h 15 ^m popravka za S($\Delta = +67$) | 1'.7 |

| | |
|-------------------|------------|
| S | 28°30'.0 |
| + λ | - 15°32'.0 |

$$s_{\text{W}} \dots\dots\dots 12^{\circ}58'.6 \rightarrow s_{\text{E}} = 347^{\circ} 8'.4$$

b) deklinacija

| | |
|---|-----------|
| Sa strane za 15. mart δ za 8 ^h | -21°39'.4 |
| Iz interpol. tablica za 0 ^h 15 ^m popravka za $\delta(\Delta = 26)$.. | + 0'.7 |
| δ | -21°38'.7 |

► **PRIMJER 4.** Odrediti mjesni časovni ugao i deklinaciju Mjeseca za 20. jun 2012. godine u UT = 10^h31^m18^s na $\lambda = 34^{\circ}23'.8E$.

a) časovni ugao

| | |
|---|-----------|
| Sa strane za 20. jun S za 10 ^h | 320° 6'.6 |
| Iz interpolacionih tablica za 0 ^h 31 ^m 18 ^s popravka časovnog ugla Mjeseca | 7°28'.1 |
| Iz interpol. tablica za 0 ^h 31 ^m popravka za S($\Delta = 110$) | 5'.8 |

| | |
|-------------------|------------|
| S | 320°40'.5 |
| + λ | + 34°23'.8 |

$$s_{\text{W}} \dots\dots\dots 355^{\circ} 4'.3 \rightarrow s_{\text{E}} = 4^{\circ}55'.7$$

b) deklinacija

| | |
|--|-----------|
| Sa strane za 20. jun δ za 10 ^h | +20°17'.6 |
| Iz interpol. tablica za 0 ^h 31 ^m popravka za $\delta(\Delta = -43)$.. | - 2'.3 |
| δ | +20°15'.3 |

1.3. ODREĐIVANJE ČASOVNOG UGLA I DEKLINACIJE PLANETA

► **PRIMJER 5.** Odrediti mjesni časovni ugao i deklinaciju Venere za 7. decembar 2012. godine u UT = 21^h15^m7^s na $\lambda = 58^{\circ}34'.2E$.

a) časovni ugao

| | |
|--|-----------|
| Sa strane za 7. decembar S za 20 ^h | 149°26'.1 |
| Iz interpolacionih tablica za 1 ^h 15 ^m 7 ^s popravka časovnog ugla planete | 18°46'.8 |
| Iz interpolacionih tablica za 1 ^h 15 ^m popravka drugog reda za S($\Delta = -6$) | - 0'.8 |

| | |
|-------------------|------------|
| S | 168°12'.1 |
| + λ | + 58°34'.2 |

$$s_{\text{W}} \dots\dots\dots 226^{\circ}46'.3 \rightarrow s_{\text{E}} = 133^{\circ}13'.7$$

b) deklinacija

| | |
|---|-----------|
| Sa strane za 7. decembar δ za 20 ^h | -16° 9'.2 |
| Iz interpol. tablica za 1 ^h 15 ^m popravka za $\delta(\Delta = -9)$.. | - 1'.1 |
| δ | -26°59'.3 |

► **PRIMJER 6.** Odrediti mjesni časovni ugao i deklinaciju Jupitera za 23. oktobar 2012. godine u UT = 8^h55^m28^s na $\lambda = 145^{\circ}20'.1W$.

a) časovni ugao

| | |
|---|----------|
| Sa strane za 23. oktobar S za 8 ^h | 77°28'.7 |
| Iz interpolacionih tablica za 0 ^h 55 ^m 28 ^s popravka časovnog ugla planete | 13°52'.0 |
| Iz interpolacionih tablica za 0 ^h 55 ^m popravka drugog reda za S($\Delta = +26$) | 2'.4 |

| | |
|-------------------|------------|
| S | 91°22'.1 |
| + λ | -145°20'.1 |

$$s \dots\dots\dots - 53^{\circ}58'.0 \rightarrow s_{\text{E}} = 306^{\circ} 2'.0$$

b) deklinacija

| | |
|--|-----------|
| Sa strane za 23. oktobar δ za 8 ^h | +21°51'.1 |
| Iz interpol. tablica za 0 ^h 55 ^m popravka za $\delta(\Delta = 0)$.. | 0'.0 |
| δ | +21°51'.1 |

1.4. ODREĐIVANJE ČASOVNOG UGLA I DEKLINACIJE ZVIJEZDE

Za određivanje časovnog ugla zvijezde prvo se određuje časovni ugao Prolječne tačke S_{T} , odnosno vrijednost zvjezdanog vremena izražena u stepenima. Njoj dodajemo surektascenziju ($360^{\circ} - \alpha$) te zvijezde prema jednačini $S_* = S_{\text{T}} - \alpha_*$, odnosno $S_* = S_{\text{T}} + (360^{\circ} - \alpha_*)$. Rektascenzija odnosno surektascenzija zvezda se tokom mjeseca neznatno mjenjaju, pa su stoga date njihove vrijednosti samo za prvi dan mjeseca. U slučaju veće promjene surektascenzije tokom mjeseca, njena interpolacija vrši se napamet. Isto tako, deklinacije zvezda date su za prvi dan mjeseca. U slučaju potrebe interpolacije, ista se vrši napamet.

► **PRIMJER 7.** Odrediti mjesni časovni ugao i deklinaciju zvijezde Regulus (α Leo) za 16. mart 2012. godine u UT = $18^{\text{h}}11^{\text{m}}26^{\text{s}}$ na $\lambda = 62^{\circ}13'.2\text{W}$.

a) časovni ugao Projecne (Υ) tačke

| | |
|--|--------------------|
| Sa strane za 16. mart S_{Υ} za 18^{h} | $84^{\circ}43'.1$ |
| Iz interpolacionih tablica za $0^{\text{h}}11^{\text{m}}26^{\text{s}}$ popravka časovnog ugla Υ tačke | $2^{\circ}52'.0$ |
| <hr/> | |
| S_{Υ} | $87^{\circ}35'.1$ |
| <hr/> | |
| Deklinacija (iz tablice deklinacija nautičkih zvjezda pod r.b. 24 za 1. mart): δ | $+11^{\circ}54'.2$ |

b) časovni ugao zvijezde

| | |
|---|---------------------|
| S_{Υ} | $87^{\circ}35'.1$ |
| Iz tablice surektascenzija nautičkih zvjezda pod r.b. 24 za 1. mart | $207^{\circ}44'.3$ |
| <hr/> | |
| S_* | $295^{\circ}19'.4$ |
| $+\lambda$ | $- 62^{\circ}13'.2$ |
| <hr/> | |
| s_* | $233^{\circ} 6'.2$ |
| s_E | $126^{\circ}53'.8$ |

► **PRIMJER 8.** Odrediti mjesni časovni ugao i deklinaciju zvijezde Deneb (α Cyg) za 10. avgust 2012. godine u UT = $21^{\text{h}}42^{\text{m}}8^{\text{s}}$ na $\lambda = 93^{\circ}14'.2\text{E}$.

a) časovni ugao Projecne (Υ) tačke

| | |
|---|---------------------|
| Sa strane za 10. avgust S_{Υ} za 20^{h} | $259^{\circ}41'.5$ |
| Iz interpolacionih tablica za $1^{\text{h}}42^{\text{m}}8^{\text{s}}$ popravka časovnog ugla Υ tačke | $25^{\circ}36'.3$ |
| <hr/> | |
| S_{Υ} | $285^{\circ}17'.8$ |
| <hr/> | |
| Deklinacija (iz tablice deklinacija nautičkih zvjezda pod r.b. 50 za 1. avgust): δ | $+ 45^{\circ}19'.9$ |

b) časovni ugao zvijezde

| | |
|---|---------------------|
| S_{Υ} | $285^{\circ}17'.8$ |
| Iz tablice surektascenzija nautičkih zvjezda pod r.b. 50 za 1. avgust | $49^{\circ}31'.4$ |
| <hr/> | |
| S_* | $334^{\circ}48'.2$ |
| $+\lambda$ | $+ 93^{\circ}14'.2$ |
| <hr/> | |
| s_* | $428^{\circ} 2'.4$ |
| s_E | $68^{\circ} 2'.4$ |

2. ODREĐIVANJE IZLAZA I ZALAZA NEBESKIH TIJELA

2.1. ODREĐIVANJE IZLAZA I ZALAZA SUNCA, POČETKA I ZAVRŠETKA GRAĐANSKOG I ASTRONOMSKOG SUMRAKA

Trenuci izlaza i zalaza Sunca (gornjeg ruba), te trajanja sumraka, dati su u efemeridama za sjeverne i južne širine od 0° do 60° . Početak građanskog ili astronomskeg svitanja određuje se oduzimanjem trajanja sumraka od trenutka izlaza Sunca. Završetak građanskog ili astronomskeg sumraka određuje se dodavanjem trajanja sumraka na trenutak zalaza Sunca. Dati su trenuci izlaza i zalaza Sunca, te trajanja sumraka, za svaki dan. Potrebno je izvršiti interpolaciju samo za određenu geografsku širinu pomoću dve interpolacione tablice. Prva tablica je za geografske širine od 0° do 30°N i S, a druga za širine od 30° do 60°N i S. Interpolacija trajanja sumraka vrši se po potrebi samo za celobrojne vrijednosti minuta.

► **PRIMJER 9.** Odrediti trenutak izlaza i zalaza Sunca, početak građanskog svitanja i završetak građanskog sumraka za 5. jul 2012. godine na $\varphi = 48^{\circ}28'.2\text{S}$, $\lambda = 72^{\circ}43'.6\text{E}$, $\varphi = 48^{\circ}.5\text{S}$, $\lambda = 4^{\text{h}}50^{\text{m}}.9$ ($x = +5^{\text{h}}$).

a) izlaz

| | |
|--|-------------------------------|
| UT = t_3 izlaza za $\varphi = 45^{\circ}\text{S}$ | $7^{\text{h}}38^{\text{m}}.0$ |
| Popravka za $3^{\circ}.5$ iz interpolacionih tablica ($\Delta = +20^{\text{m}}$) | $+ 14^{\text{m}}.0$ |
| <hr/> | |
| t_3 izlaza za $\varphi = 48^{\circ}.5\text{S}$ | $7^{\text{h}}52^{\text{m}}.0$ |
| $+(x - \lambda)$ | $+ 9^{\text{m}}.1$ |
| <hr/> | |
| t_x | $8^{\text{h}} 1^{\text{m}}.1$ |
| - trajanje građanskog sumraka | $- 37^{\text{m}}.0$ |
| <hr/> | |
| početak građanskog svitanja | $7^{\text{h}}24^{\text{m}}.1$ |

b) zalaz

| | |
|--|--------------------------------|
| UT = t_3 zalaza za $\varphi = 45^{\circ}\text{S}$ | $16^{\text{h}}31^{\text{m}}.0$ |
| Popravka za $3^{\circ}.5$ iz interpolacionih tablica ($\Delta = -19^{\text{m}}$) | $- 13^{\text{m}}.3$ |
| <hr/> | |
| t_3 zalaza za $\varphi = 48^{\circ}.5\text{S}$ | $16^{\text{h}}17^{\text{m}}.7$ |
| $+(x - \lambda)$ | $+ 9^{\text{m}}.1$ |
| <hr/> | |
| t_x | $16^{\text{h}}26^{\text{m}}.8$ |
| + trajanje građanskog sumraka | $+ 37^{\text{m}}.0$ |
| <hr/> | |
| završetak građanskog sumraka | $17^{\text{h}} 3^{\text{m}}.8$ |

► **PRIMJER 10.** Odrediti trenutak izlaza i zalaza Sunca, početak astronomskeg svitanja i završetak astronomskeg sumraka za 21. septembar 2012. godine na $\varphi = 22^{\circ}14'.0\text{N}$, $\lambda = 56^{\circ}41'.2\text{W}$, $\varphi = 22^{\circ}.2\text{N}$, $\lambda = 3^{\text{h}}46^{\text{m}}.7$ ($x = -4^{\text{h}}$).

a) izlaz

| | |
|---|-------------------------------|
| UT = t_3 izlaza za $\varphi = 20^{\circ}\text{N}$ | $5^{\text{h}}49^{\text{m}}.0$ |
| Popravka za $2^{\circ}.2$ iz interpolacionih tablica ($\Delta = -1^{\text{m}}$) | $- 0^{\text{m}}.2$ |

b) zalaz

| | |
|--|--------------------------------|
| UT = t_3 zalaza za $\varphi = 20^{\circ}\text{N}$ | $17^{\text{h}}57^{\text{m}}.0$ |
| Popravka za $2^{\circ}.2$ iz interpolacionih tablica ($\Delta = 0^{\text{m}}$) | $+ 0^{\text{m}}.0$ |

| | |
|---|------------------------------------|
| t_s izlaza za $\varphi = 22^\circ.2N$ | 5 ^h 48 ^m .8 |
| $+(x - \lambda)$ | - 13 ^m .3 |
| t_x | 5 ^h 35 ^m .5 |
| - trajanje astronomskog sumraka | -1 ^h 14 ^m .5 |
| početak astronomskog svitanja | 4 ^h 21 ^m .0 |

| | |
|---|-------------------------------------|
| t_s zalaza za $\varphi = 22^\circ.2N$ | 17 ^h 57 ^m .0 |
| $+(x - \lambda)$ | - 13 ^m .3 |
| t_x | 17 ^h 43 ^m .7 |
| + trajanje astronomskog sumraka | + 1 ^h 14 ^m .5 |
| završetak astronomskog sumraka | 18 ^h 58 ^m .2 |

2.2. ODREĐIVANJE IZLAZA I ZALAZA MJESECA

trenuci izlaza i zalaza Mjeseca (gornjeg ruba) za svaki dan, za sjeverne i južne geografske širine od 0° do 60° , te njihove promjene za jedan čas $\Delta/24$ date su u efemeridama. Pomoću promjene $\Delta/24$ određuje se popravka λ_v prilikom određivanja izlaza i zalaza Mjeseca. U slučaju određivanja izlaza i zalaza Mjeseca na istočnim geografskim dužinama u cilju postizanja tačnosti uzima se vrijednost $\Delta/24$ za prethodni dan. Veličina $\Delta/24$ je uvek pozitivna zbog kašnjenja Mjeseca. Popravka λ_v se uvek algebarski oduzima od trenutka izlaza ili zalaza Mjeseca u Griniču. Mora da se vodi računa o znacima uz $\lambda\Delta/24$. Popravka λ_v data je u interpolacionoj tablici za izračunavanje trenutaka izlaza, zalaza i prolaza Mjeseca kroz meridijan. Prvo se vrši interpolacija za geografsku širinu pomoću interpolacione tablice za određivanje trenutaka Sunčevih i Mesečevih izlaza i zalaza, a zatim se određuje popravka za geografsku dužinu.

Moguće je da za određeni dan i širinu u efemeridama nema potrebnih podataka. Ta mjesta označena su tačkama. U tim slučajevima koriste se podaci za naredni dan.

► **PRIMJER 11.** Odrediti trenutak izlaza i zalaza Mjeseca za 19. jun 2012. godine na $\varphi = 17^\circ 36'.0N$, $\lambda = 72^\circ 15'.0E$, $\varphi = 17^\circ.6N$, $\lambda = 4^h 49^m.0E$ ($x = +5^h$).

a) izlaz

| | |
|---|-----------------------------------|
| UT = t_s izlaza za $\varphi = 10^\circ N$ | 5 ^h 27 ^m .0 |
| Popravka za $7^\circ.6$ iz interpolacionih tabl. ($\Delta = -18^m$) | - 13 ^m .7 |
| UT izlaza za $\varphi = 17^\circ.6N$ | 5 ^h 13 ^m .3 |
| $\lambda = 72^\circ.3E$ | |
| $\Delta/24 = v = 2^m.1$ | $-\lambda_v$ |
| | - 10 ^m .1 |
| t_s | 5 ^h 2 ^m .8 |
| $+(x - \lambda)$ | + 11 ^m .0 |
| t_x | 5 ^h 13 ^m .8 |

b) zalaz

| | |
|---|------------------------------------|
| UT = t_s zalaza za $\varphi = 10^\circ N$ | 18 ^h 24 ^m .0 |
| Popravka za $7^\circ.6$ iz interpolacionih tabl. ($\Delta = +17^m$) | + 12 ^m .9 |
| UT zalaza za $\varphi = 17^\circ.6N$ | 18 ^h 36 ^m .9 |
| $\lambda = 72^\circ.3E$ | |
| $\Delta/24 = v = 2^m.0$ | $-\lambda_v$ |
| | - 9 ^m .6 |
| t_s | 18 ^h 27 ^m .3 |
| $+(x - \lambda)$ | + 11 ^m .0 |
| t_x | 18 ^h 38 ^m .3 |

► **PRIMJER 12.** Odrediti trenutke izlaza i zalaza Mjeseca za 23. oktobar 2012. godine na $\varphi = 33^\circ 25'.0S$, $\lambda = 38^\circ 53'.0W$, $\varphi = 33^\circ.4S$, $\lambda = 2^h 35^m.5W$ ($x = -3^h$).

a) izlaz

| | |
|---|-------------------------------------|
| UT = t_s izlaza za $\varphi = 30^\circ S$ | +12 ^h 41 ^m .0 |
| Popravka za $3^\circ.4$ iz interpolacionih tabl. ($\Delta = - 5^m$) | - 3 ^m .4 |
| UT izlaza za $\varphi = 33^\circ.4S$ | +12 ^h 37 ^m .6 |
| $\lambda = 38^\circ.9W$ | |
| $\Delta/24 = v = 2^m.4$ | $-\lambda_v$ |
| | - 6 ^m .2 |
| t_s | +12 ^h 31 ^m .4 |
| $+(x - \lambda)$ | - 24 ^m .5 |
| t_x | +12 ^h 6 ^m .9 |

b) zalaz

| | |
|---|------------------------------------|
| UT = t_s zalaza za $\varphi = 30^\circ S$ | 25 ^h 11 ^m .0 |
| Popravka za $3^\circ.4$ iz interpolacionih tabl. ($\Delta = + 6^m$) | + 4 ^m .1 |
| UT zalaza za $\varphi = 33^\circ.4S$ | 25 ^h 15 ^m .1 |
| $\lambda = 38^\circ.9W$ | |
| $\Delta/24 = v = 1^m.6$ | $-\lambda_v$ |
| | - 4 ^m .2 |
| t_s | 25 ^h 10 ^m .9 |
| $+(x - \lambda)$ | - 24 ^m .5 |
| t_x | 24 ^h 46 ^m .4 |

2.3. ODREĐIVANJE IZLAZA I ZALAZA PLANETA I ZVJEZDA

Trenutak izlaza i zalaza planeta i zvijezda se ne određuje jer se njihov izlaz i zalaz ne vide. Ali u slučaju potrebe može se odrediti dužina poludnevnog luka na osnovu deklinacije određene zvijezde i geografske širine posmatrača ili se ista veličina odredi pomoću Nautičkih tablica na osnovu zadatih vrijednosti. Tako određena dužina poludnevnog luka oduzima se od trenutka gornjeg prolaza određene zvijezde kroz meridijan i dobija se trenutak izlaza, a ako se veličina poludnevnog luka doda na trenutak prolaza dobija se trenutak zalaza.

3. ODREĐIVANJE GORNJEG PROLAZA NEBESKIH TIJELA KROZ MERIDIJAN

3.1. ODREĐIVANJE GORNJEG PROLAZA SUNCA KROZ MERIDIJAN

Za određivanje gornjeg prolaza Sunca kroz meridijan koristi se činjenica da Sunce u trenutku gornjeg prolaza kroz meridijan određenog mjesta ima časovni ugao 0° . Zapadna geografska dužina određenog mjesta, gdje je časovni ugao Sunca 0° , odgovara u tom momentu časovnom uglu Sunca u Griniču, odnosno $\lambda_W = S_\odot$. Za istočne geografske širine koristi se jednačina $(360^\circ - \lambda_E) = S_\odot$. Dakle, moramo odrediti trenutak UT za koji je časovni ugao Sunca S_\odot jednak λ_W ili $(360^\circ - \lambda_E)$. Tako određenom trenutku dodaje se zonski indeks sa predznakom i dobija se zonsko vrijeme gornjeg prolaza Sunca kroz meridijan.

Gornji prolaz Sunca kroz meridijan određuje se i pomoću vremenskog izjednačenja, tj. iz $T_p - e = UT$. U efemeridama su date vrednosti vremenskog izjednačenja $e = T_p - UT$ za 00^h i 12^h sa odgovarajućom jednočasovnom promjenom. Preko e određuje se univerzalno vrijeme gornjeg prolaza Sunca kroz meridijan. Za istočne geografske širine koristi se $\Delta/24$ za prethodni dan radi postizanja veće tačnosti.

Treći (približni) način određivanja trenutka gornjeg prolaza Sunca kroz meridijan, uz najveću moguću grešku do $\pm 0^m.2$, je ako trenutku gornjeg prolaza Sunca kroz meridijan u Griniču T_m dodamo $x - \lambda$ (primjer 14b).

► **PRIMJER 13.** Odrediti trenutak gornjeg prolaza Sunca kroz meridijan za 8. mart 2012. godine na $\lambda = 103^\circ 28'.8W$, $\lambda = 6^h 53^m 55^s$ ($x = -7^h$).

| a) pomoću časovnog ugla | | b) pomoću vremenskog izjednačenja | |
|--|---|-----------------------------------|---|
| $\lambda_W = S_\odot$ | 103° 28'.8 | t_p | 12 ^h 00 ^m 00 ^s .0 |
| u UT 18 ^h S_\odot | 87° 20'.6 | $-\lambda$ | + 6 ^h 53 ^m 55 ^s .0 |
| <hr/> | | e_{12^h} | -10 ^m 41 ^s .3 |
| Iz interpolacione tablice za Sunce u 1 ^h 04 ^m 32 ^s .7 ... | 16° 8'.2 | $\Delta/24$ | + 0 ^s .6 |
| UT | 19 ^h 04 ^m 32 ^s .7 | T_p | 18 ^h 53 ^m 55 ^s .0 |
| +x | - 7 ^h 00 ^m 00 ^s .0 | -e | + 10 ^m 41 ^s .3 |
| <hr/> | | UT | 19 ^h 04 ^m 32 ^s .2 |
| t_x | 12 ^h 04 ^m 32 ^s .7 | +x | - 7 ^h 00 ^m 00 ^s .0 |
| | | T_p | 18 ^h 53 ^m 55 ^s .0 |
| | | -e | + 10 ^m 41 ^s .3 |
| | | UT | 19 ^h 04 ^m 32 ^s .2 |
| | | +x | - 7 ^h 00 ^m 00 ^s .0 |
| | | t_x | 12 ^h 04 ^m 32 ^s .2 |
| | | e_{12^h} | -10 ^m 41 ^s .3 |
| | | Popravka | + 4 ^s .1 |
| | | Popravka | + 4 ^s .1 |
| | | e | -10 ^m 37 ^s .2 |

► **PRIMJER 14.** Odrediti trenutak gornjeg prolaza Sunca kroz meridijan za 22. januar 2012. godine na $\lambda = 145^\circ 52'.1E$, $\lambda = 9^h 43^m 28^s$ ($x = +10^h$).

| a) pomoću časovnog ugla | | b) skraćeni postupak | |
|--|---|--------------------------|-------------------------------------|
| $(360^\circ - \lambda_E) = S_\odot$ | 214° 07'.9 | $T_m = t_m$ | 12 ^h 11 ^m .5 |
| u UT 2 ^h S_\odot | 207° 9'.9 | $-\lambda$ | - 9 ^h 43 ^m .5 |
| <hr/> | | $T_m = t_m$ | 12 ^h 11 ^m .5 |
| Iz interpolacione tablice za Sunce u 0 ^h 27 ^m 52 ^s .0 ... | 6° 58'.0 | + (x - λ) | 0 ^h 16 ^m .5 |
| UT | 2 ^h 27 ^m 52 ^s .0 | UT | 2 ^h 28 ^m .0 |
| +x | +10 ^h 00 ^m 00 ^s .0 | +x | +10 ^h 00 ^m .0 |
| <hr/> | | t_x | 12 ^h 28 ^m .0 |
| t_x | 12 ^h 27 ^m 52 ^s .0 | t_x | 12 ^h 28 ^m .0 |

3.2. ODREĐIVANJE GORNJEG PROLAZA MJESECA KROZ MERIDIJAN

Način određivanja gornjeg prolaza Mjeseca kroz meridijan je isti kao određivanje izlaza i zalaza Mjeseca. Iz efemerida se dobija univerzalno vrijeme gornjeg prolaza Mjeseca kroz meridijan u Griniču uz odgovarajuću časovnu promjenu $\Delta/24$. Ako se određuje popravka λ_v za zapadne geografske širine, veličina $\Delta/24$ uzima se za dan prolaza Mjeseca kroz meridijan, a za istočne geografske širine uzima se $\Delta/24$ za prethodni dan. Popravka λ_v data je u interpolacionoj tablici za izračunavanje trenutaka izlaza, zalaza i prolaza Mjeseca kroz meridijan.

Moguće je da za određeni dan u efemeridama nema potrebnih podataka. Ta mesta označena su tačkama. U tim slučajevima koriste se podaci za naredni dan.

► **PRIMJER 15.** Odrediti trenutak gornjeg prolaza Mjeseca kroz meridijan za 18. januar 2012. godine na $\lambda = 48^\circ 6'.0W$.

| | | | | | |
|--------------------------|-----------------------------------|-----------------------|---------------------|--------------------------|-------------------------------------|
| T_m | 7 ^h 32 ^m .0 | $\Delta/24 = v$ | 2 ^m .5 | x | - 3 ^h 00 ^m .0 |
| $-\lambda_v$ | + 8 ^m .0 | λ | 48° 6'.1 | $-\lambda$ | + 3 ^h 12 ^m .4 |
| <hr/> | | λ_v | - 8 ^m .0 | + (x - λ) | + 0 ^h 12 ^m .4 |
| t_m | 7 ^h 11 ^m .2 | | | | |
| + (x - λ) | 12 ^m .4 | | | | |
| <hr/> | | | | | |
| t_x | 7 ^h 23 ^m .6 | | | | |

► **PRIMJER 16.** Odrediti trenutak gornjeg prolaza Mjeseca kroz meridijan u Griniču za 23. jun 2012. godine na $\lambda = 126^{\circ}40'.2E$.

| | | | | | |
|----------------------|----------------|-----------------------|-----------------|----------------------|----------------|
| T_m | $15^h 10^m.0$ | $\Delta/24 = v$ | $2^m.0$ | x | $+ 8^h 00^m.0$ |
| $-\lambda v$ | $- 16^m.9$ | λ | $126^{\circ}.7$ | $-\lambda$ | $- 8^h 26^m.7$ |
| <hr/> | | | | | |
| t_m | $14^h 53^m.1$ | λv | $16^m.9$ | $+(x-\lambda)$ | $- 0^h 26^m.7$ |
| $+(x-\lambda)$ | $- 0^h 26^m.7$ | | | | |
| <hr/> | | | | | |
| t_x | $14^h 26^m.4$ | | | | |

3.3. ODREĐIVANJE GORNJEG PROLAZA PLANETA KROZ MERIDIJAN

Metodologija određivanja trenutaka gornjih prolaza planeta kroz meridijan ista je kao za Mjesec, uz razliku da veličina $\Delta/24$ može biti pozitivna, kada planeta kasni kao Mjesec, ili negativna, kada planeta rani kao zvijezde. Obično je veličina $\Delta/24$ negativna.

Ako planeta rani u odnosu na prethodni dan na istočnim geografskim dužinama, vrijeme je veće od griničkog, a na zapadnim manje, t. j. suprotno nego kod Mjeseca. Ako planeta kasni postupak je isti kao u slučaju određivanja gornjeg prolaza Mjeseca kroz meridijan. Shodno tome, određuje se znak λv . Obično je planetarni dan kraći od srednjeg sunčevog, pa se može desiti da planeta u jednom danu dva puta prolazi kroz meridijan mjesta, odmah posle pola noći i nešto pre pola noći.

Pošto je razlika između trenutaka dva uzastopna prolaza kroz meridijan mala, iznos λv se ne određuje (primjer 17b); univerzalno vrijeme prolaza kroz meridijan je isto kao mjesno srednje vrijeme kojem se samo dodaje $(x-\lambda)$ i na taj način se određuje zonsko vrijeme prolaza planeta kroz meridijan mjesta.

► **PRIMJER 17.** Odrediti trenutak gornjeg prolaza Jupitera kroz meridijan za 14. jun 2012. godine na $\lambda = 46^{\circ}17'.3W$, $\lambda = 3^h 5^m.2$ ($x = -3^h$).

| | | | | | |
|--------------------------|---------------|---|--|----------------------|---------------|
| a) tačan postupak | | | b) približni postupak—u praksi dovoljno tačan | | |
| T_m | $10^h 22^m.0$ | λ | $3^h.1W$ | T_m | $10^h 22^m.0$ |
| $-\lambda v$ | $0^m.4$ | $v = \Delta/24$ | $-3^m/24$ | $+(x-\lambda)$ | $5^m.2$ |
| <hr/> | | | | | |
| t_m | $10^h 22^m.4$ | $\lambda v = 3.1 \times \frac{-3}{24}$.. | $-0^m.4$ | t_x | $10^h 27^m.2$ |
| $+(x-\lambda)$ | $+ 5^m.2$ | | | | |
| <hr/> | | | | | |
| t_x | $10^h 27^m.6$ | | | | |

3.4. ODREĐIVANJE GORNJEG PROLAZA ZVJEZDA KROZ MERIDIJAN

Trenutak gornjeg prolaza zvijezde kroz meridijan Griniča dat je u efemeridama za svaki prvi dan u mjesecu. U slučaju određivanja trenutka prolaza kroz meridijan za bilo koji drugi dan u mjesecu, od vrednosti iz efemerida oduzima se popravka koja se nalazi na donjem dijelu stranice za izabrani dan.

Trenutak gornjeg prolaza kroz meridijan T_m izraženo preko UT može da se uzme kao mjesno srednje vrijeme prolaza kroz meridijan posmatrača t_m , što je približno, jer zvijezda dnevno rani oko 4 minuta, a što na većim geografskim dužinama stvara greške od 1 do 2 minuta. Dakle, potrebno je odrediti λv , ali se to ne radi jer za svakodnevni rad tačnost je dovoljna, ako se griničko vrijeme prolaza kroz meridijan uzima kao mjesno srednje vrijeme i , uz dodavanje $(x-\lambda)$, pretvara u zonsko.

► **PRIMJER 18.** Odrediti vrijeme gornjeg prolaza zvijezde Arcturus (α Boo) kroz meridijan 23. maja 2012. godine na $\lambda = 28^{\circ}14'.2E$, $\lambda = 1^h 52^m.9$ ($x = +2^h$).

| | |
|--|----------------|
| Iz tablice gornjih prolaza zvijezda kroz meridijan za | |
| 1. maj 2012. godine (r.b. zvezde 35) $T_m = t_m$ | $21^h 37^m.0$ |
| Popravka za 23 dana iz iste tablice | $- 1^h 28^m.3$ |
| <hr/> | |
| t_m | $20^h 8^m.7$ |
| $+(x-\lambda)$ | $7^m.1$ |
| <hr/> | |
| t_x | $20^h 15^m.8$ |

4. SJEVERNJAČA

4.1. ODREĐIVANJE GEOGRAFSKE ŠIRINE POMOĆU VISINE SJEVERNJAČE I ODREĐIVANJE AZIMUTA SJEVERNJAČE

Izmjerena visina Sjevernjače ispravlja se radi instrumentskih grešaka k_i i k_e , depresije i refrakcije. Rezultat ispravki je V_p , kojem se dodaju popravke I, II i III iz tablica Godišnjaka. Ulazne veličine tablice azimuta Sjevernjače su mjesni časovni ugao Proljetne tačke i geografska širina posmatrača.

► **PRIMJER 19.** Odrediti geografsku širinu posmatrača pomoću visine zvijezde Sjevernjače; odrediti njen azimut za 18. septembar 2012. godine u UT = 22^h36^m00^s na $\varphi = 42^\circ 23' N$ i $\lambda = 38^\circ 47' W$ zbirne pozicije, ako je prava visina Sjevernjače $V_p = 41^\circ 54' 2''$.

a) određivanje mjesnog časovnog ugla s_{Γ}

| | |
|---|------------|
| S_{Γ} za UT 22 ^h | 328°12'.8 |
| Iz interpolacionih tablica popravka S_{Γ} za 36 ^m | 9° 1'.5 |
| S_{Γ} | 337°13'.3 |
| + λ | - 38°47'.0 |
| s_{Γ} | 298°26'.3 |

b) određivanje visine

| | |
|-----------------|----------|
| V_p | 41°54'.2 |
| I | - 12'.4 |
| II | + 0'.2 |
| III | + 0'.1 |
| φ | 41°42'.1 |
| ω | 1°.0 |

5. PRETVARANJE RAZNIH VRSTA VREMENA

5.1. PRETVARANJE ZONSKOG, MJESNOG SREDNJEG VREMENA I VREMENA PO ČASOVNIKU U UNIVERZALNO VRIJEME I OBRATNO

Podaci efemerida odnose se na grinički meridijan, pa je ulazna veličina univerzalno vreme UT.

U slučaju da časovnik posmatrača pokazuje zonsko vrijeme, vrijeme posmatranja je zonsko vrijeme t_x . Isto tako, može to vrijeme biti vrijeme po časovniku t_c ili mjesno zonsko vrijeme t_s , a što nije često.

► **PRIMJER 20.** Odrediti UT ako su poznati zonsko vrijeme t_x , vrijeme po časovniku t_c i srednje mjesno vrijeme t_s na $\lambda = 13^\circ 51'.0E$, $\lambda = 0^h 55^m 24^s$ ($x = +1^h$).

a) prelaz sa t_x na UT

| | |
|-------------|---|
| t_x | 7 ^h 39 ^m 19 ^s |
| - x | -1 ^h 00 ^m 00 ^s |
| t_c | 6 ^h 39 ^m 19 ^s |
| t_h | 6 ^h 39 ^m 19 ^s |
| +S | 1 ^m 12 ^s |
| UT | 6 ^h 39 ^m 19 ^s |

b) prelaz sa t_c na UT

| | |
|-------------|--|
| t_c | 7 ^h 31 ^m 55 ^s |
| +U | - 53 ^m 48 ^s |
| t_h | 6 ^h 38 ^m 07 ^s |
| +S | + 1 ^m 12 ^s |
| UT | 6 ^h 39 ^m 19 ^s |

c) prelaz sa t_s na UT

| | |
|-------------------|--|
| t_s | 7 ^h 34 ^m 43 ^s |
| - λ | - 55 ^m 24 ^s |
| t_c | 6 ^h 39 ^m 19 ^s |
| t_h | 6 ^h 39 ^m 19 ^s |
| +S | 1 ^m 12 ^s |
| UT | 6 ^h 39 ^m 19 ^s |

Napomena: U—poređenje hronometra sa časovnikom,
S—stanje hronometra.

► **PRIMJER 21.** Odrediti zonsko vrijeme t_x , vrijeme po časovniku t_c i srednje mjesno vrijeme t_s za UT na $\lambda = 57^\circ 24'.0E$, $\lambda = 3^h 49^m 36^s$ ($x = -4^h$).

a) prelaz sa UT na t_x

| | |
|-------------|--|
| UT | 9 ^h 46 ^m 12 ^s |
| + x | -4 ^h 00 ^m 00 ^s |
| t_c | 5 ^h 46 ^m 12 ^s |
| t_h | 5 ^h 46 ^m 12 ^s |
| -U | 3 ^h 53 ^m 27.5 ^s |
| t_x | 5 ^h 46 ^m 12 ^s |

b) prelaz sa UT na t_c

| | |
|-------------|---|
| UT | 9 ^h 46 ^m 12.0 ^s |
| -S | + 2 ^m 06 ^s .5 |
| t_h | 9 ^h 48 ^m 18.5 ^s |
| -U | +3 ^h 53 ^m 27.5 ^s |
| t_c | 5 ^h 54 ^m 51.0 ^s |

c) prelaz sa UT na t_s

| | |
|-------------------|--|
| UT | 9 ^h 46 ^m 12 ^s |
| + λ | -3 ^h 49 ^m 36 ^s |
| t_c | 5 ^h 54 ^m 51.0 ^s |
| t_h | 5 ^h 54 ^m 51.0 ^s |
| -U | 3 ^h 53 ^m 27.5 ^s |
| t_s | 5 ^h 56 ^m 36 ^s |

Napomena: U—poređenje hronometra sa časovnikom,
S—stanje hronometra.

► **PRIMJER 22.** Odrediti zonsko vrijeme t_x za mjesno srednje vrijeme $t_s = 13^h 15^m 36^s$ na $\lambda = 107^\circ 28' 0W$, $\lambda = 7^h 9^m 52^s$ ($x = -7$).

a) duži postupak

| | |
|------------------|------------------|
| t_s | $13^h 15^m 36^s$ |
| $-\lambda$ | $7^h 09^m 52^s$ |
| <hr/> | |
| UT | $20^h 25^m 28^s$ |
| $+x$ | $-7^h 00^m 00^s$ |
| <hr/> | |
| t_x | $13^h 25^m 28^s$ |

b) kraći postupak

| | | | |
|------------------------|------------------|-----------------------|------------------|
| t_s | $13^h 15^m 36^s$ | x | $-7^h 00^m 00^s$ |
| $+(x - \lambda)$ | $+ 9^m 52^s$ | $-\lambda$ | $7^h 09^m 52^s$ |
| <hr/> | | $(x - \lambda)$ | $9^m 52^s$ |
| <hr/> | | t_x | $13^h 25^m 28^s$ |

5.2. PRETVARANJE ZVJEZDANOG VREMENA U ZONSKO I MJESNO SREDNJE VRIJEME

Određeno zvjezdano vrijeme pretvorimo u mjesni časovni ugao Prolječne tačke. Grinički časovni ugao Prolječne tačke dobija se oduzimanjem geografske dužine od mjesnog časovnog ugla Prolječne tačke. Iz efemerida pomoću griničkog časovnog ugla Prolječne tačke određujemo univerzalno vrijeme. Dodavanjem zonskog indeksa dobija se zonsko vrijeme, ili dodavanjem geografske dužine izražene u vremenu dobija se mjesno srednje vrijeme. Moguće je da dobijemo t_x ili t_s za prethodni dan ili naredni dan od datuma za koji tražimo t_x ili t_s . U tom slučaju postupak određivanja vremena se ponavlja, ali od zapadne geografske dužine se oduzima S_p za naredni dan, a za istočne geografske dužine za prethodni dan.

► **PRIMJER 23.** Odrediti zonsko vrijeme t_x odnosno mjesno srednje vrijeme t_s za 19. januar 2012. godine ako je zvjezdano vrijeme $t_z = 6^h 36^m 03^s$ na $\lambda = 112^\circ 10' 5E$, $\lambda = 7^h 28^m 42^s$ ($x = +7$).

| | | | | | | | |
|--|-----------------------------|----------------------------|------------------|-----------------|----------------------------|------------|-------------------|
| $t_z = 6^h 36^m 03^s = s_{\Gamma}$ | $99^\circ 0' 8 + 360^\circ$ | a) t_s | UT | $15^h 9^m 44^s$ | b) t_x | UT | $15^h 9^m 44^s$ |
| $-\lambda$ | $-112^\circ 10' 5$ | | $+\lambda$ | $7^h 28^m 42^s$ | | $+x$ | $+ 7^h 00^m 00^s$ |
| <hr/> | | | <hr/> | | | <hr/> | |
| S_{Γ} | $346^\circ 50' 3$ | t_s | $22^h 38^m 26^s$ | t_x | $22^h 9^m 44^s$ | | |
| 20. januar u UT .. | $14^h 00^m 00^s$ | | | | | | |
| | $-S_{\Gamma}$ | | | | | | |
| | $-329^\circ 21' 5$ | | | | | | |
| <hr/> | | | | | | | |
| Iz interpol. tablice za Prolječnu tačku u .. | $1^h 9^m 44^s$ | | | | | | |
| UT | $15^h 9^m 44^s$ | | | | | | |

6. IDENTIFIKACIJA ZVJEZDA POMOĆU ZVJEZDANIH KARATA

Zvjezdane karte u prilogu služe za opštu orijentaciju na zvjezdanom nebu i prepoznavanje zvijezda na dva moguća načina.

1. Meridijan posmatrača moguće je odrediti na zvjezdanoj karti pomoću surektascenzije zvijezde na tom meridijanu. Ako je posmatrač na zapadnoj geografskoj dužini i zvijezda je tačno u meridijanu, vrijednost λ_W jednaka je griničkom časovnom uglu te zvijezde ($\lambda_W = S_*$). Za posmatrača na istoj geografskoj dužini odnos je $(360^\circ - \lambda_E) = S_*$. Pošto je grinički časovni ugao zvijezde S_* jednak griničkom časovnom uglu Prolječne tačke umanjenoj za rektascenziju zvijezde ($S_* = S_{\Gamma} - \alpha_*$), onda je ($\alpha_* = S_{\Gamma} - S_*$). Surektascenzija je jednaka časovnom uglu zvijezde umanjenoj za časovni ugao Prolječne tačke ($360^\circ - \alpha_*) = S_* - S_{\Gamma}$. Grinički časovni ugao zvijezde odgovara zapadnoj geografskoj dužini ($S_* = \lambda_W$), pa je $(360^\circ - \alpha_*) = \lambda_W - S_{\Gamma}$, dok je za istočne geografske dužine $(360^\circ - \alpha_*) = (360^\circ - \lambda_E) - S_{\Gamma}$.

► **PRIMJER 24.** Odrediti za 5. jul 2012. godine u UT = $00^h 06^m 03^s$ na zvjezdanoj karti meridijan posmatrača i prepoznati zvijezdu u zenitu ako je posmatrač na $\varphi = 45^\circ 11' N$, $\lambda = 25^\circ 45' 6E$.

a) određivanje S_{Γ}

| | |
|--|-------------------|
| 5. jul za $00^h S_{\Gamma}$ | $283^\circ 23' 2$ |
| Popravka časovnog ugla Prolječne tačke za $06^m 18^s$.. | $+ 1^\circ 34' 8$ |
| <hr/> | |
| S_{Γ} | $284^\circ 58' 0$ |

b) određivanje surektascenzije zvijezde pomoću izraza

| | |
|---|--------------------|
| $(360^\circ - \alpha_*) = (360^\circ - \lambda_E) - S_{\Gamma}$ | |
| $-\lambda$ | $360^\circ 00' 0$ |
| | $- 25^\circ 45' 6$ |
| <hr/> | |
| $(360^\circ - \lambda)$ | $334^\circ 14' 4$ |
| $-S_{\Gamma}$ | $284^\circ 58' 0$ |
| <hr/> | |
| $(360^\circ - \alpha_*)$ | $49^\circ 16' 4$ |
| | $\cong 49^\circ 3$ |

Prepoznavanje zvijezde u posmatračevom zenitu je jednostavno, jer se tačka u zenitu nalazi na njegovom meridijanu, a deklinacija zvijezde jednaka je geografskoj širini posmatrača. Stoga je surektascenzija zvezde oko $49^{\circ}.3$, a njena deklinacija oko $45^{\circ}11'.0N$. Iz pregleda zvjezda Godišnjaka ili zvjezdane karte vidljivo je da je to zvijezda Deneb (α Cyg) sa stvarnom surektascenzijom $49^{\circ}31'.4$ i deklinacijom $45^{\circ}19'.7$. Ostale zvjezde koje nisu u zenitu raspoznaju se upoređenjem slike zvjezdanog neba sa zvjezdanom kartom.

► **PRIMJER 25.** Odrediti za 22. januar 2012. godine u $t_x = 4^h 08^m.6$ ($x = +2$) na zvjezdanoj karti meridijan posmatrača i prepoznati zvijezdu blizu zenita. Posmatrač se nalazi na $\varphi = 54^{\circ}50'N$, $\lambda = 47^{\circ}20'.1E$.

| a) određivanje UT | b) određivanje S_T | c) određivanje surektascenzije zvijezde pomoću izraza $(360^{\circ} - \alpha_s) = (360^{\circ} - \lambda_E) - S_T$ |
|--------------------------|--|--|
| t_x $4^h 08^m.6$ | 22. januar u $02^h S_T$ $150^{\circ}50'.2$ | $(360^{\circ} - \lambda)$ $312^{\circ}39'.9$ |
| $-x$ $-2^h 00^m.0$ | Popravka časovnog ugla Prolječne tačke za $08^m.6$... $2^{\circ}09'.4$ | $-S_T$ $152^{\circ}59'.6$ |
| UT $2^h 08^m.6$ | S_T $152^{\circ}59'.6$ | $(360^{\circ} - \alpha_s)$ $159^{\circ}40'.3$ |

Iz zvjezdane karte ili pregleda zvjezda vidljivo je da je zvijezda blizu zenita Mizar (ζ Ursae Majoris) čija je deklinacija $54^{\circ}51'.3N$, a surektascenzija $158^{\circ}53'.5$.

2. Zvjezdana karta u Merkatorovoj projekciji na gornjem i donjem rubu ima upisane mjesece i dane i time je posmatraču omogućeno da odmah vidi koji je dio zvjezdanog neba vidljiv određenog datuma u pola noći. Ako želimo tačno odrediti meridijan posmatrača, moramo odrediti mjesni časovni ugao Prolječne tačke (zvjezdano mjesno vrijeme) i izračunatu vrednost oduzeti od 360° . Na gornjem rubu karte pronalazimo odgovarajuću surektascenziju i time dobijamo mesto meridijana posmatrača. Zvjezde desno od meridijana su prema zapadu, a lijevo prema istoku od posmatrača, koji je okrenut prema jugu.

► **PRIMJER 26.** Odrediti meridijan posmatrača i prepoznati zvijezdu blizu zenita 14. aprila 2012. godine u $t_x = 23^h 17^m.9$ ($x = +2$) na $\varphi = 52^{\circ}36'N$, $\lambda = 37^{\circ}55'.6E$.

| a) određivanje UT | b) određivanje s_T |
|---------------------------|---|
| t_x $23^h 17^m.9$ | 14. april za $20^h S_T$ $143^{\circ}23'.1$ |
| x $-2^h 00^m.0$ | Popravka časovnog ugla Prolječne tačke za $1^h 17^m 53^s$ $19^{\circ}31'.5$ |
| UT $21^h 17^m.9$ | $-S_T$ $162^{\circ}54'.6$ |
| | $+\lambda$ $+37^{\circ}55'.6$ |
| | s_T $200^{\circ}50'.2$ |
| | α $200^{\circ}50'.2$ |
| | $(360^{\circ} - s_T)$ $159^{\circ}9'.8$ |
| | $(360^{\circ} - \alpha)$ $159^{\circ}9'.8$ |

Meridijan posmatrača nalazi se na skali surektascenzije na $159^{\circ}.2$. Pošto je vrijednost posmatračeve geografske širine slična vrijednosti deklinacije zvijezde, zvijezda blizu zenita može biti Mizar (ζ UMa), čija je stvarna deklinacija $54^{\circ}51'.6$ i surektascenzija $158^{\circ}53'.1$.

3. Prepoznavanje zvijezde u blizini zenita moguće je i pomoću mjesnog vremena posmatrača. Zvjezdano nebo zvjezdane karte prikazano je u pola noći, odnosno kada je $t_s = 00^h$ posmatrača. Znači da je određivanje zenita posmatrača lako, na karti se kao apscisa koristi određeni datum, a ordinata je geografska širina (φ) mjesta posmatrača.

Ako se položaj zenita posmatrača određuje u drugom trenutku, prvo se određuje zenit u ponoć i zatim se određuje vremenska razlika između $t_s = 0^h$ i mjesnog vremena posmatrača, uzima šestarom na časovnoj podeli donjeg ruba zvjezdane karte i nanosi se od pozicije zenita u pola noći, ulijevo ako je traženo vrijeme posle pola noći ili udesno ako je vrijeme pre pola noći. Dobijena tačka je pozicija zenita posmatrača.

Na taj način, određeni zenit posmatrača može poslužiti za približnu orijentaciju mjerenjem zenitne udaljenosti zvijezde po levoj ili desnoj stepenskoj podjeli deklinacije. Isto tako, može se odrediti približan azimut slično određivanju na pomorskoj karti. U tom slučaju, navigacijski trougao mora se okrenuti jer su E i W strane zvjezdane karte suprotno okrenute u odnosu na navigacijsku kartu. Takođe je bitno da su na ovaj način određeni podaci u blizini horizonta posmatrača netačni.

► **PRIMJER 27.** Prepoznajte zvijezdu čiji je azimut $A_w = 168^{\circ}$ i zenitna udaljenost $z = 29^{\circ}$ dana 11. marta 2012. godine na poziciji $\varphi = 41^{\circ}20'N$ i $\lambda = 17^{\circ}56'E$ u $t_x = 22^h 15^m$ ($x = +1$).

| a) određivanje t_s | b) razlika u odnosu na ponoć |
|--------------------------------|--|
| t_x $22^h 15^m$ | t_{s1} $0^h 00^m$ |
| $-(x - \lambda)$ $+12^m$ | $-t_{s2}$ $22^h 27^m$ |
| t_s $22^h 27^m$ | Δt_s (pre ponoći) $1^h 33^m$ |

Postupajući na gore opisani način, nalazi se pozicija zenita u ponoć, sa koordinatama: $\phi = \delta = 41^{\circ}.3N$ i $(360^{\circ} - \alpha) = 215^{\circ}$ (11. mart). Od ove pozicije, približno u smjeru 168° i na udaljenosti 29° , pronalazimo zvijezdu Regulus (α Leonis).

★ ★ ★ ★ ★

Zvanična
/
ZONSKA VREMENA

ZVANIČNA I ZONSKA VREMENA

ZONSKO VRIJEME

Podjela Zemlje na vremenske zone izvršena je tako da svaka vremenska zona obuhvata područje od 15° geografske dužine. Početna vremenska zona sa zonskim indeksom 0 ($x = 0^h$) proteže se od griničkog meridijana na istok i na zapad do $\lambda = 7^{\circ}.5 E$ i $\lambda = 7^{\circ}.5 W$, a ostale zone nadovezuju se na ove prema istoku, i to sa zonskim indeksima $+1^h$ do $+12^h$, a prema zapadu one sa zonskim indeksima od -1^h do -12^h . Zone sa indeksima $+12^h$ i -12^h predstavljaju, u stvari, jednu te istu zonu sa indeksom $\pm 12^h$ koja se proteže između $\lambda = 172^{\circ}.5 E$ i $\lambda = 172^{\circ}.5 W$, sa središnjim meridijanom 180° od Griniča.

Za prijelaz sa zonskog na griničko vrijeme koristi se obrazac, gdje x označava zonski indeks:

$$UT = t_x - x$$

(O pretvaranju vremena vidi primjer u poglavlju 5 Uputstva za upotrebu Nautičkog godišnjaka).

DATUMSKA GRANICA

Linija na čijem se prelazu vrši promjena datuma zove se *datumska granica*. Ona se ne proteže tačno po meridijanu 180° , već zaobilazi nastanjeno kopno i ostrva, pa ide linijom koja se dobije spojnicom sledećih tačaka:

| φ | λ | φ | λ |
|-----------|----------------------------------|-----------|-----------|
| 90° 0' N | 180° | 48° 0' N | 180° |
| 75° 0' N | 180° | 05° 0' S | 180° |
| 68° 0' N | 168° 58' 22" W (ostrva Diomedee) | 15° 0' S | 172° 5' W |
| 65° 5' N | 168° 58' 22" W (Beringov moreuz) | 45° 0' S | 172° 5' W |
| 53° 0' N | 170° E | 51° 0' S | 180° |
| | | 90° 0' S | 180° |

Prilikom prijelaza datumske granice, ploveći prema zapadu datum se *povećava* za jedan dan. Kada se ona prelazi ploveći prema istoku, *smanjuje* se za jedan dan.

ZVANIČNO VRIJEME I LJETNO VRIJEME

Zvanično vrijeme, tj. ono vrijeme koje se unutar granica pojedinih država ili unutar njihovih određenih teritorija koristi u službenom i svakodnevnom životu, najčešće je jednako odgovarajućem zonskom vremenu ili tzv. zimskom vremenu (vidi „Pregled zvaničnih vremena“). Veće zemlje imaju više zvaničnih vremena od kojih svako važi za određene teritorije.

Neke zemlje uvode i *ljetno vrijeme* zbog racionalnog iskorišćenja dnevnog svjetla. Ono se obično razlikuje od zonskog (zimskog) vremena za 1^h , a načelno važi na sjevernoj hemisferi za razdoblje od aprila do oktobra, a na južnoj hemisferi od oktobra do marta. Ipak, neke zemlje ne utvrđuju ni jednake ni fiksne datume prelaska, već ih uvode od slučaja do slučaja na nekoliko dana pre prelaska.

Za prijelaz sa *zvaničnog* na *griničko* vrijeme koristi se obrazac

$$UT = t_{zv} - z_v,$$

gdje z_v označava indeks zvaničnog vremena.

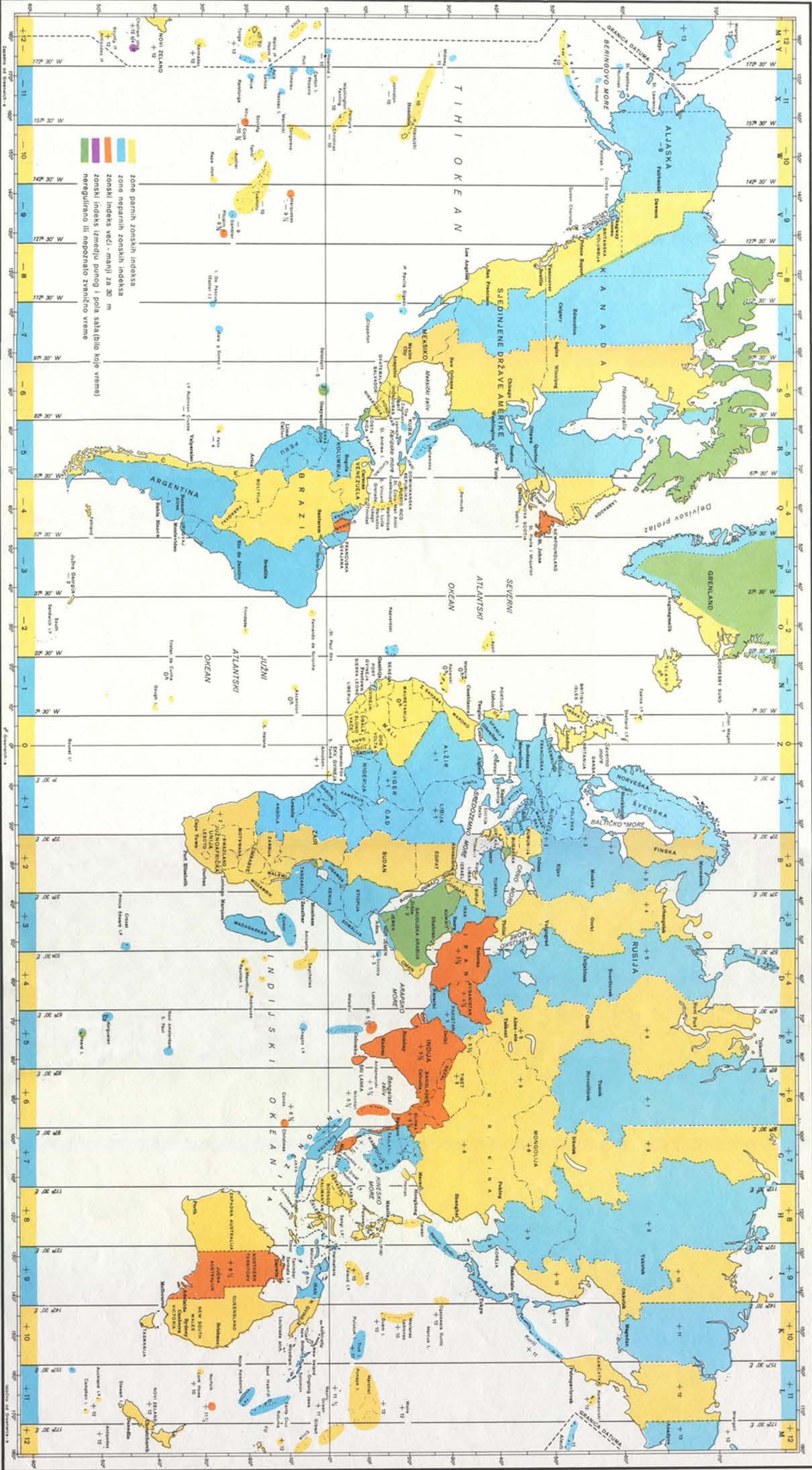
HRONOLOŠKI CIKLUSI I ERE

| | | | | | |
|-------------------------------------|--------|-------------------------|---------------------------|--------|----------|
| Epakta | 6 | Julijanski period | 6725 | | |
| Zlatni broj (Mjesečev ciklus) | XVIII | Sunčev ciklus | 5 | | |
| ERA | GODINA | POČINJE | ERA | GODINA | POČINJE |
| Vizantijska | 7521 | 14. Sep. | Japanska | 2672 | 1. Jan. |
| Jevrejska | 5773 | 16. Sep. | Grčka (Seleukidova) | 2324 | 14. Sep. |
| Kineska (rén chén) | (4649) | 3. Jan. | Indijska (Saka) | 1934 | 21. Mart |
| Rimska | 2765 | 14. Jan. | Dioklecijanova | 1729 | 11. Sep. |
| Nabonasarova | 2761 | 20. Apr. | Islamska (Hegira) | 1434 | 14. Nov. |

PREGLED ZVANIČNIH VREMENA

| ISTOČNO OD GREENWICH-a [+] | | ZAPADNO OD GREENWICH-a [-] | | | |
|-------------------------------|-------|-------------------------------|-------|------------------------|-------|
| Albanija | 1 00 | Kina | 8 00 | Argentina | 3 00 |
| Alžir | 1 00 | Kipar | 2 00 | Azorska ostrva | 1 00 |
| Angola | 1 00 | Koreja | 9 00 | Bahamska ostrva | 5 00 |
| Australija: | | Krit | 2 00 | Barbados | 4 00 |
| Capital Territory | 10 00 | Kuvajt | 3 00 | Belize | 6 00 |
| New South Wales | 10 00 | Laos | 7 00 | Bermuda | 4 00 |
| Northern Territory | 9 30 | Liban | 2 00 | Bolivija | 4 00 |
| Queensland | 10 00 | Libija | 1 00 | Brazil: | |
| South Australia | 9 30 | Madagaskar | 3 00 | Istočni deo | 3 00 |
| Tasmania | 10 00 | Makao | 8 00 | Srednji deo | 4 00 |
| Victoria | 10 00 | Maldivska ostrva | 5 00 | Zapadni deo | 5 00 |
| Western Australia | 8 00 | Malezija | 8 00 | Čile | 4 00 |
| Bahrein | 3 00 | Malta | 1 00 | Dominikanska Republika | 4 00 |
| Balearska ostrva | 1 00 | Mandžurija | 9 00 | Ekvador | 5 00 |
| Bali | 7 00 | Marijanska ostrva | 10 00 | Foklandska ostrva | 4 00 |
| Bangladeš | 6 00 | Mauricijus | 4 00 | Galapagos | 6 00 |
| Belgija | 1 00 | Monako | 1 00 | Gambija | 0 00 |
| Benin (Dahomej) | 1 00 | Mozambik | 2 00 | Gana | 0 00 |
| Brunei | 8 00 | Namibija | 2 00 | Grenada | 4 00 |
| Bugarska | 2 00 | Nemačka | 1 00 | Gvajana (Francuska) | 3 00 |
| Burma | 6 30 | Nigerija | 1 00 | Gvajana (Republika) | 3 00 |
| Burundi | 2 00 | Norveška | 1 00 | Gvatemala | 6 00 |
| Ceuta | 1 00 | Nova Kaledonija | 11 00 | Haiti | 5 00 |
| Čad | 1 00 | Novi Zeland | 12 00 | Honduras | 6 00 |
| Danska | 1 00 | Oman | 4 00 | Jamajka | 5 00 |
| Džibuti | 3 00 | Pakistan | 5 00 | Kajmanska ostrva | 5 00 |
| Egipat | 2 00 | Papua, Nova Gvineja | 10 00 | Kanada: | |
| Etiopija | 3 00 | Poljska | 1 00 | British Columbia | 8 00 |
| Fidži | 12 00 | Reunion | 4 00 | Labrador | 4 00 |
| Filipini | 8 00 | Rumunija | 2 00 | New Foundland | 3 30 |
| Finska | 2 00 | Rusija (10 zona): | | New Scotia | 4 00 |
| Francuska | 1 00 | Novi Port | 5 00 | Yucon | 8 00 |
| Gabon | 1 00 | Sahalin | 11 00 | Kanarska ostrva | 0 00 |
| Gibraltar | 1 00 | Sankt Petersburg | 3 00 | Kapverdska ostrva | 1 00 |
| Grčka | 2 00 | Vladivostok | 10 00 | Kolumbija | 5 00 |
| Holandija | 1 00 | Volgograd | 4 00 | Kostarika | 6 00 |
| Hong Kong | 8 00 | Sao Tome i Principe | 0 00 | Kuba | 5 00 |
| Indija | 5 30 | Sardinija | 1 00 | Martinik | 4 00 |
| Indonezija: | | Saudijska Arabija | 3 00 | Meksiko | 6 00 |
| Bali, Java, Sumatra | 7 00 | Sejšelska ostrva | 4 00 | Midvej | 11 00 |
| Borneo, Flores, Timor | 8 00 | Sicilija | 1 00 | Nikaragva | 6 00 |
| Irian, Molučka ostrva | 9 00 | Singapur | 8 00 | Panamski kanal | 5 00 |
| Irak | 3 00 | Sirija | 2 00 | Peru | 5 00 |
| Iran | 3 30 | Sokotra | 3 00 | Portoriko | 4 00 |
| Irska | 0 00 | Somalija | 3 00 | SAD (6 zona): | |
| Island | 0 00 | Sudan | 2 00 | Aljaska | 9 00 |
| Italija | 1 00 | Španija | 1 00 | Atlantska obala | 5 00 |
| Izrael | 2 00 | Šri Lanka (Cejlon) | 5 30 | Florida | 5 00 |
| Japan | 9 00 | Švedska | 1 00 | Havaji | 10 00 |
| Jemen | 3 00 | Tajland | 7 00 | Meksički zaliv | 6 00 |
| Jordan | 2 00 | Tajvan | 8 00 | Pacifička obala | 8 00 |
| Jugoslavija | 1 00 | Tanzanija | 3 00 | Salvador | 6 00 |
| Južnoafrička Republika | 2 00 | Tunis | 1 00 | Samoa | 11 00 |
| Kamčatka | 12 00 | Turska | 3 00 | Surinam | 3 00 |
| Kamerun | 1 00 | Uganda | 3 00 | Tobago | 4 00 |
| Kampučija | 7 00 | Ujedinjeni Emirati | 4 00 | Trinidad | 4 00 |
| Katar | 3 00 | Velika Britanija | 0 00 | Urugvaj | 3 00 |
| Kenija | 3 00 | Vijetnam | 7 00 | Venezuela | 4 00 |

KARTA ZONSKIH I ZVANIČNIH VREMENA



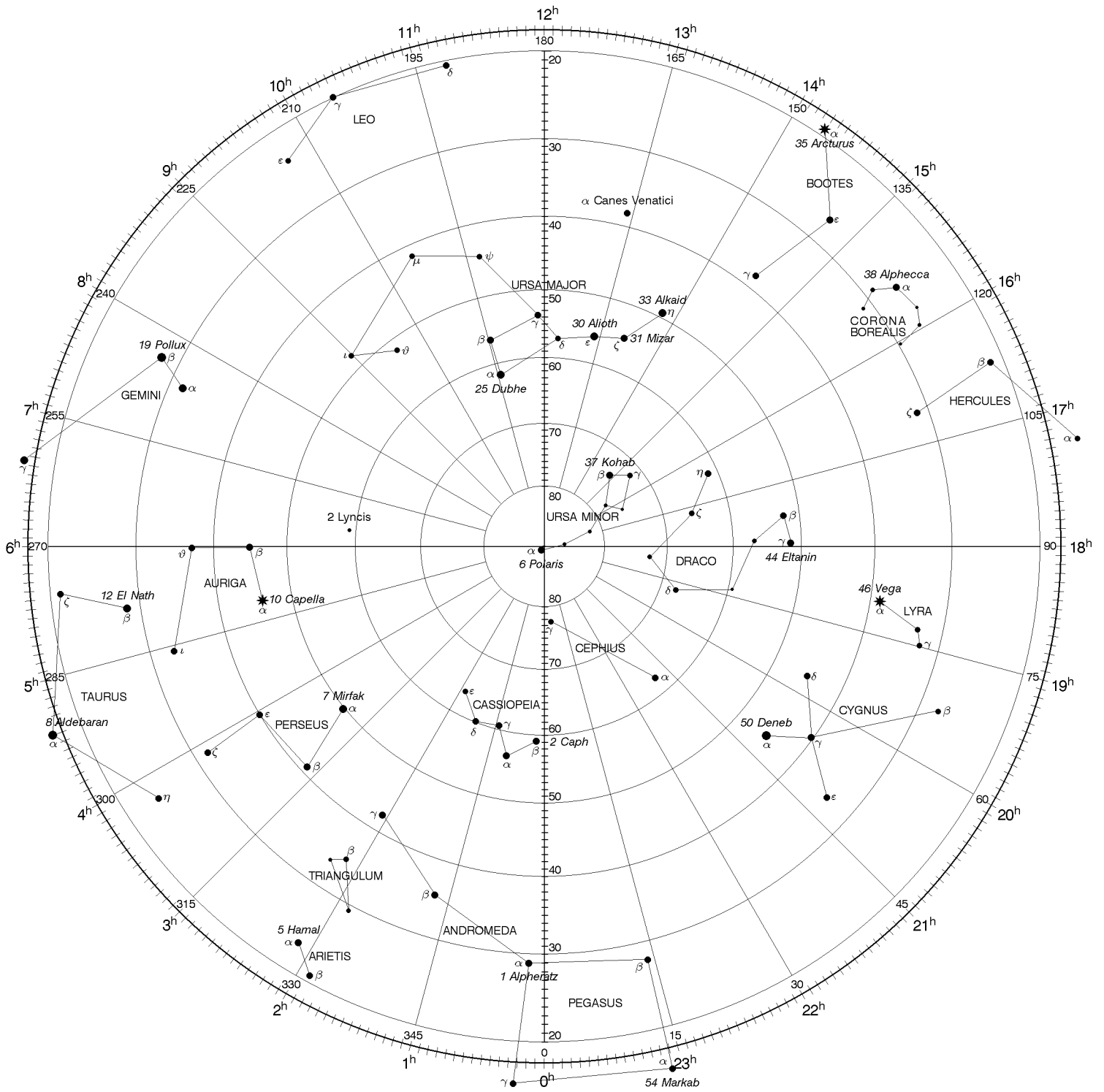
Хидрографски институт РМ Шпил 1990 - Прилог Навигационим годишњацима

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*K*arte

ZVJEZDANOG NEBA

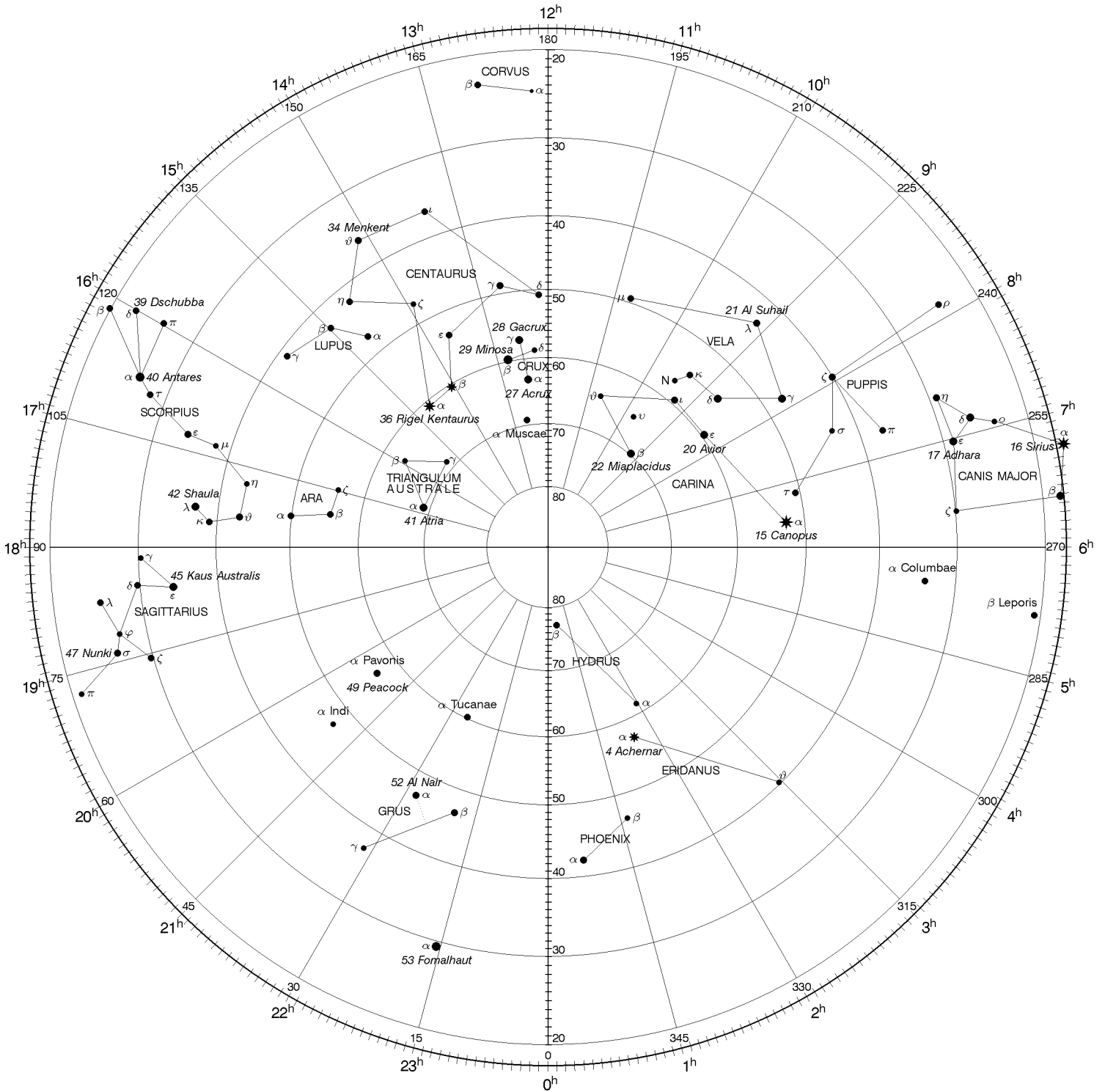
KARTA SAZVEŽDA SEVERNOG NEBA



VELIČINE ZVEZDA

- | | | | | | |
|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| * $0.0 \geq m$ | * $0.0 < m \leq 0.5$ | * $0.5 < m \leq 1.0$ | ● $1.0 < m \leq 1.5$ | ● $1.5 < m \leq 2.0$ | ● $2.0 < m \leq 2.5$ |
| ● $2.5 < m \leq 3.0$ | ● $3.0 < m \leq 3.5$ | ● $3.5 < m \leq 4.0$ | ● $4.0 < m \leq 4.5$ | ● $4.5 < m \leq 5.0$ | |

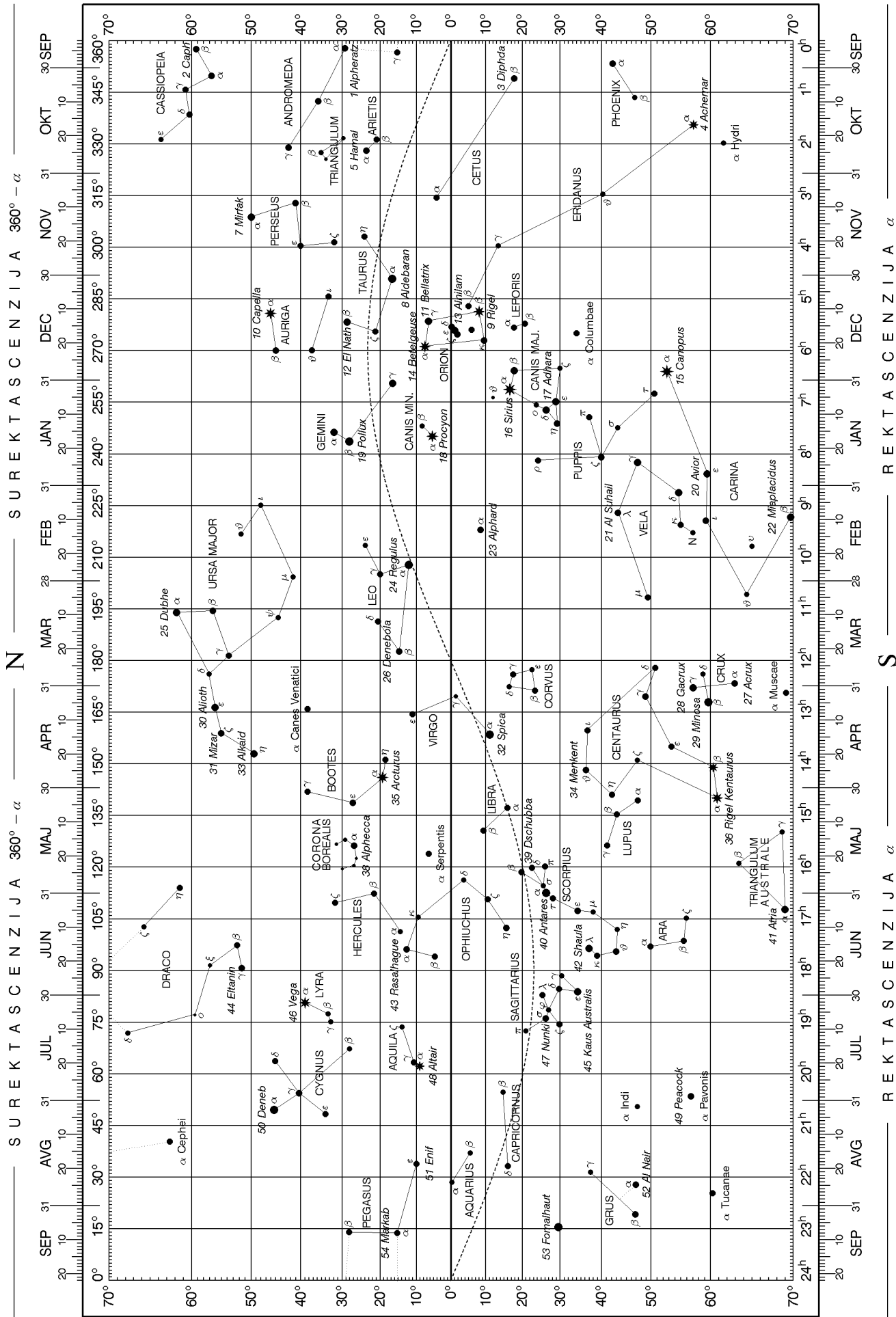
KARTA SAZVEŽDA JUŽNOG NEBA



VELIČINE ZVEZDA



ZVEZDANO NEBO U POLA NOĆI



* 0.0 < m ≤ 0.5 * 0.0 < m ≤ 1.0 * 1.0 < m ≤ 1.5 * 1.5 < m ≤ 2.0 * 2.0 < m ≤ 3.0 * 3.0 < m ≤ 3.5 * 3.5 < m ≤ 4.0 * 4.0 < m ≤ 4.5 * 4.5 < m ≤ 5.0