Sky this Month

December 2024

By David Mills

MOON

NEW MOON

Moon

- The New Moon is on December 1st, at 1:21 a.m.

- The Moon is southeast of the sun. Mercury is southwest of the sun.

Moon

Type: **moon**
Magnitude: **-1.73**
Absolute Magnitude: 42.70
RA/Dec (J2000.0): 16h28m4.57s/-26°39'00.7"
RA/Dec (on date): 16h29m36.67s/-26°42'22.3"
Hour angle/DE: 13h23m21.92s/-26°42'22.3"
Az/Alt: +50°33'32.9"/-65°41'53.4"
Ecliptic longitude/latitude (J2000.0): +249°30'03.4"/-4°49'53.8"
Ecliptic longitude/latitude (on date): +249°50'58.3"/-4°50'13.1"
Ecliptic obliquity (on date): +23°26'10"
Galactic longitude/latitude: -8°25'35.5"/+15°08'33.9"
Mean Sidereal Time: 5h52m58.7s
Apparent Sidereal Time: 5h52m58.6s
Distance: 0.002688AU (402069.715 km)
Apparent diameter: +0°29'42.6"
Sidereal period: 27.32 days (0.075 a)
Sidereal day: 655h43m11.5s
Mean solar day: 708h44m2.8s
Phase Angle: +175°08'40"
Elongation: +4°50'33"
Phase: 0.00
Illuminated: 0.2%

Sun
Moon
Antares
Mercury
Scorpius

Date and Time

Date and Time | Julian Day

2024 / 12 / 1 | 1 : 23 : 48

FULL MOON

Moon

- The full Moon is on December 15th, at 4:02 a.m.
- Moonrise starts at 3:35 p.m. in the eastern sky
- This month's Full Moon called the Cold Moon.

Moon

Type: **moon**
Magnitude: -**12.37** (extincted to: -**8.05**)
Absolute Magnitude: 32.24
RA/Dec (J2000.0): 5h00m22.33s/+26°43'12.7"
RA/Dec (on date): 5h01m55.34s/+26°45'28.0"
Hour angle/DE: 16h02m26.52s/+27°08'49.5" (apparent)
Az/Alt: +50°50'07.1"/+0°21'06.6" (apparent)
Ecliptic longitude/latitude (J2000.0): +76°41'00.3"/+3°58'02.7"
Ecliptic longitude/latitude (on date): +77°01'56.4"/+3°58'22.5"
Ecliptic obliquity (on date): +23°26'10"
Galactic longitude/latitude: +176°11'41.8"/-9°30'56.1"
Mean Sidereal Time: -2h57m1.5s
Apparent Sidereal Time: -2h57m1.5s
Distance: 0.002465AU (368694.499 km)
Apparent diameter: +0°32'24.0"
Sidereal period: 27.32 days (0.075 a)
Sidereal day: 655h43m11.5s
Mean solar day: 708h44m2.8s
Phase Angle: +7°26'54"
Elongation: +172°31'59"
Phase: 1.00
Illuminated: 99.6%

Auriga

Moon

Date and Time

Date and Time | Julian Day

2024 / 12 / 14 15 : 40 : 12

Earth, Peterborough, 188m FOV 22.1° 16 FPS 2024-12-14 15:40:12 UTC-05:00

MERCURY

Mercury

- Mercury reappears in the eastern morning sky just before sunrise.

- Mercury rises at 6:30 a.m. on December 12th.

Mercury

Type: **planet**
Magnitude: **2.18** (extincted to: **6.68**)
Absolute Magnitude: 34.40
RA/Dec (J2000.0): 16h22m55.37s/-18°47'37.5"
RA/Dec (on date): 16h24m22.49s/-18°51'09.6"
Hour angle/DE: 19h17m38.21s/-18°28'18.9" (apparent)
Az/Alt: +116°32'41.5"/+0°14'45.6" (apparent)
Ecliptic longitude/latitude (J2000.0): +247°04'23.3"/+2°44'04.9"
Ecliptic longitude/latitude (on date): +247°25'20.0"/+2°43'45.8"
Ecliptic obliquity (on date): +23°26'10"
Galactic longitude/latitude: -3°00'49.5"/+21°12'08.4"
Mean Sidereal Time: 11h40m32.4s
Apparent Sidereal Time: 11h40m32.3s
Distance: 0.741AU (110.902 Mio km)
Apparent diameter: +0°00'09.1"
Sidereal period: 87.97 days (0.241 a)
Sidereal day: 1407h30m33.8s
Mean solar day: 4222h27m52.5s
Phase Angle: +132°28'20"
Elongation: +13°47'18"
Phase: 0.16
Illuminated: 16.2%

Mercury

Date and Time

Date and Time | Julian Day

2024 / 12 / 12 6 : 27 : 10

Earth Peterborough 188m FOV 9.59° 60.6 FPS 2024-12-12 06:27:10 UTC-05:00

Mercury

- On December 21st, Mercury reaches its maximum elongation west from the sun.

- Mercury rises around 6:00 a.m. and best seen after 6:30 a.m. in the eastern morning twilight sky.

Date and Time

Date and Time | Julian Day

2024 / 12 / 21 6 : 30 : 23

Earth Peterborough 188m FOV 15.8° 34.2 FPS 2024-12-21 06:30:23 UTC-05:00

Mercury

- On December 31st, Mercury rises at 6:15 a.m.

- The planet is now moving towards the sun in the eastern pre-dawn sky.

Date and Time

Date and Time | Julian Day

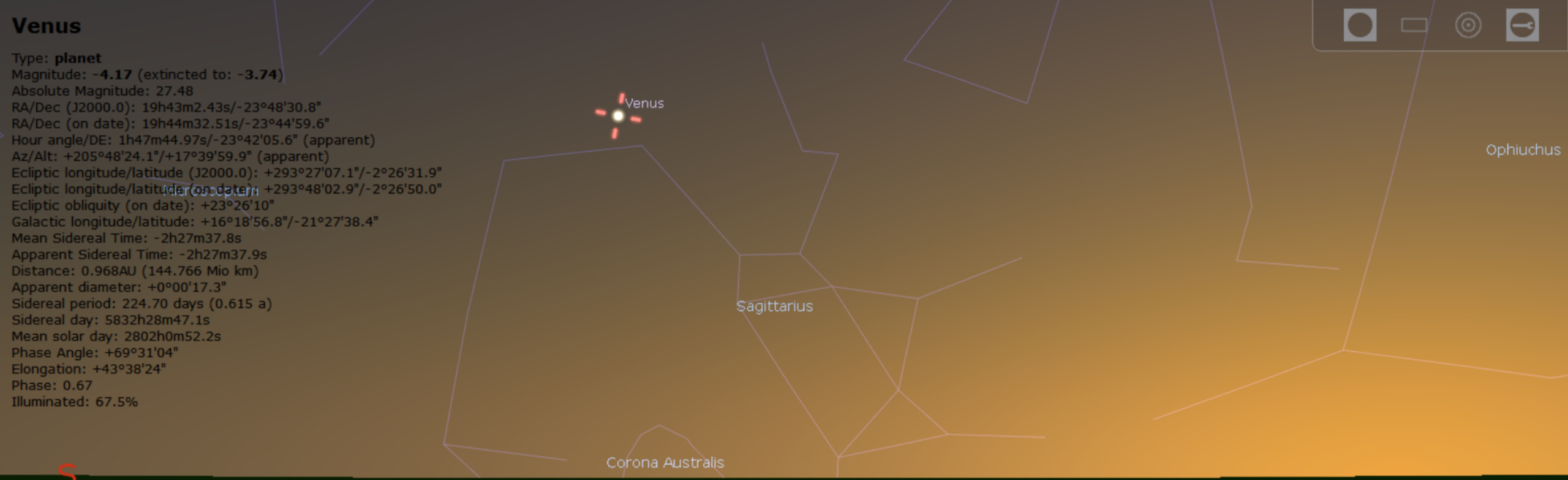
2024 / 12 / 31 6 : 15 : 52

Earth, Peterborough, 188m FOV 15.8° 27.7 FPS 2024-12-31 06:15:52 UTC-05:00

VENUS

Venus

- On December 1st, Venus is now well placed in the southwestern sky at sunset.



Venus

Type: **planet**
Magnitude: **-4.17** (extincted to: **-3.74**)
Absolute Magnitude: 27.48
RA/Dec (J2000.0): 19h43m2.43s/-23°48'30.8"
RA/Dec (on date): 19h44m32.51s/-23°44'59.6"
Hour angle/DE: 1h47m44.97s/-23°42'05.6" (apparent)
Az/Alt: +205°48'24.1"/+17°39'59.9" (apparent)
Ecliptic longitude/latitude (J2000.0): +293°27'07.1"/-2°26'31.9"
Ecliptic longitude/latitude (on date): +293°48'02.9"/-2°26'50.0"
Ecliptic obliquity (on date): +23°26'10"
Galactic longitude/latitude: +16°18'56.8"/-21°27'38.4"
Mean Sidereal Time: -2h27m37.8s
Apparent Sidereal Time: -2h27m37.9s
Distance: 0.968AU (144.766 Mio km)
Apparent diameter: +0°00'17.3"
Sidereal period: 224.70 days (0.615 a)
Sidereal day: 5832h28m47.1s
Mean solar day: 2802h0m52.2s
Phase Angle: +69°31'04"
Elongation: +43°38'24"
Phase: 0.67
Illuminated: 67.5%

Date and Time

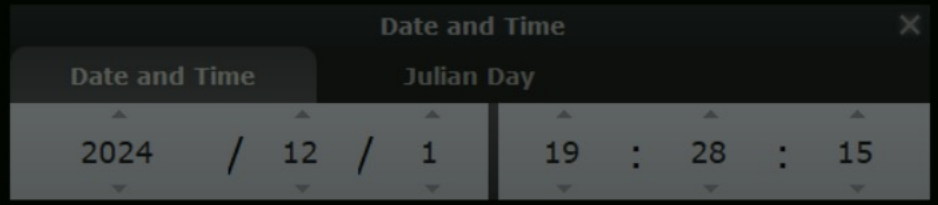
Date and Time | Julian Day

2024 / 12 / 1 17 : 0 : 38

Earth, Peterborough, 188m | FOV 43° | 49 FPS | 2024-12-01 17:00:38 UTC-05:00

Venus

- On November 1st, Venus now sets at 7:28 p.m. in the western sky.



Full-screen mode [F11]

Venus

- On December 4th, Venus and a very young new Moon share a close conjunction at sunset.

- Venus and the Moon are less than 5 degrees apart in the western evening sky.

Venus

Type: **planet**
Magnitude: **-4.18** (extincted to: **-3.72**)
Absolute Magnitude: 27.51
RA/Dec (J2000.0): 19h58m4.26s/-23°08'37.3"
RA/Dec (on date): 19h59m33.50s/-23°04'36.9"
Hour angle/DE: 2h11m47.18s/-23°01'32.6" (apparent)
Az/Alt: +211°25'13.3"/+16°14'02.5" (apparent)
Ecliptic longitude/latitude (J2000.0): +296°57'54.5"/-2°25'31.0"
Ecliptic longitude/latitude (on date): +297°18'50.2"/-2°25'48.5"
Ecliptic obliquity (on date): +23°26'10"
Galactic longitude/latitude: +18°19'24.1"/-24°26'40.6"
Mean Sidereal Time: -1h48m33.3s
Apparent Sidereal Time: -1h48m33.4s
Distance: 0.946AU (141.594 Mio km)
Apparent diameter: +0°00'17.6"
Sidereal period: 224.70 days (0.615 a)
Sidereal day: 5832h28m47.1s
Mean solar day: 2802h0m52.2s
Phase Angle: +70°48'37"
Elongation: +44°05'19"
Phase: 0.66
Illuminated: 66.4%

S

Date and Time

Date and Time | Julian Day

2024 / 12 / 4 17 : 27 : 48

Earth, Peterborough, 188m | FOV 43° | 60.5 FPS | 2024-12-04 17:27:48 UTC-05:00

Venus

- On December 31st, Venus continues to move east and is high in western twilight sky at sunset.

Venus

Type: **planet**
Magnitude: **-4.36** (extincted to: **-4.06**)
Absolute Magnitude: 27.83
RA/Dec (J2000.0): 21h59m59.51s/-13°44'01.1"
RA/Dec (on date): 22h01m20.55s/-13°36'50.7"
Hour angle/DE: 1h59m48.31s/-13°34'58.7" (apparent)
Az/Alt: +212°41'14.2"/+26°01'25.0" (apparent)
Ecliptic longitude/latitude (J2000.0): +327°17'57.0"/-1°24'35.4"
Ecliptic longitude/latitude (on date): +327°38'54.7"/-1°24'45.4"
Ecliptic obliquity (on date): +23°26'10"
Galactic longitude/latitude: +42°40'08.3"/-47°53'56.5"
Mean Sidereal Time: 0h1m12.2s
Apparent Sidereal Time: 0h1m12.2s
Distance: 0.751AU (112.385 Mio km)
Apparent diameter: +0°00'22.2"
Sidereal period: 224.70 days (0.615 a)
Sidereal day: 5832h28m47.1s
Mean solar day: 2802h0m52.2s
Phase Angle: +83°41'07"
Elongation: +46°54'36"
Phase: 0.55
Illuminated: 55.5%

S

Date and Time

Date and Time | Julian Day

2024 / 12 / 31 17 : 31 : 6

Earth, Peterborough, 188m FOV 50.8° 29 FPS 2024-12-31 17:31:06 UTC-05:00

Venus

- On December 31st, Venus now sets at 8:34 p.m. in the western sky.

Venus

Type: **planet**
Magnitude: **-4.36** (extincted to: **-0.65**)
Absolute Magnitude: 27.84
RA/Dec (J2000.0): 22h00m30.23s/-13°40'40.2"
RA/Dec (on date): 22h01m51.24s/-13°33'29.2"
Hour angle/DE: 5h02m19.42s/-13°14'52.9" (apparent)
Az/Alt: +250°31'44.6"/+0°46'08.1" (apparent)
Ecliptic longitude/latitude (J2000.0): +327°26'06.7"/-1°24'01.2"
Ecliptic longitude/latitude (on date): +327°47'04.4"/-1°24'11.2"
Ecliptic obliquity (on date): +23°26'10"
Galactic longitude/latitude: +42°49'26.7"/-47°59'14.1"
Mean Sidereal Time: 3h5m24.3s
Apparent Sidereal Time: 3h5m24.3s
Distance: 0.750AU (112.247 Mio km)
Apparent diameter: +0°00'22.2"
Sidereal period: 224.70 days (0.615 a)
Sidereal day: 5832h28m47.1s
Mean solar day: 2802h0m52.2s
Phase Angle: +83°45'15"
Elongation: +46°54'56"
Phase: 0.55
Illuminated: 55.4%

Saturn

Venus

W

Date and Time

Date and Time | Julian Day

2024 / 12 / 31 20 : 34 : 48

Earth, Peterborough, 188m FOV 83.7° 26.6 FPS 2024-12-31 20:34:48 UTC-05:00

MARS

Mars

- On December 1st, Mars rises at 8:35 p.m. in the northeastern midnight sky.
- Mars is visible all night.
- Mars remains high in the west at sunrise.

Date and Time

Date and Time | Julian Day

2024 / 12 / 1 20 : 35 : 9

Earth, Peterborough, 188m FOV 26.1° 55.1 FPS 2024-12-01 20:35:09 UTC-05:00

Mars

- On December 17th, Mars and the Moon rise together in a close conjunction.

- Both objects are visible at 7:30 p.m. in the northeastern sky. Mars is less than 4 degrees south of the Moon.

Date and Time

Date and Time | Julian Day

2024 / 12 / 17 19 : 29 : 49

Mars

- On December 18th, at 4:00 a.m. Mars is just 45 arc minutes south of the Moon in a Lunar Occultation.

Mars

Type: **planet**
Magnitude: **-0.89** (extincted to: **-0.75**)
Absolute Magnitude: 31.43
RA/Dec (J2000.0): 8h32m36.48s/+22°16'31.1"
RA/Dec (on date): 8h34m4.12s/+22°11'27.3"
Hour angle/DE: 1h03m41.72s/+22°11'53.1" (apparent)
Az/Alt: +215°51'34.2"/+64°18'05.2" (apparent)
Ecliptic longitude/latitude (J2000.0): +124°56'00.1"/+3°20'36.2"
Ecliptic longitude/latitude (on date): +125°16'56.9"/+3°20'52.1"
Ecliptic obliquity (on date): +23°26'10"
Galactic longitude/latitude: -157°42'04.9"/+31°38'54.4"
Mean Sidereal Time: 9h37m46.8s
Apparent Sidereal Time: 9h37m46.8s
Distance: 0.707AU (105.713 Mio km)
Apparent diameter: +0°00'13.3"
Sidereal period: 686.97 days (1.881 a)
Sidereal day: 24h37m22.7s
Mean solar day: 24h39m35.2s
Phase Angle: +22°30'29"
Elongation: +141°32'05"
Phase: 0.96
Illuminated: 96.2%

Date and Time

Date and Time | Julian Day

2024 / 12 / 18 4 : 1 : 9

Earth, Peterborough, 188m FOV 0.787° 54.9 FPS 2024-12-18 04:01:09 UTC-05:00

Mars

- On December 31st, Mars rises at 6:18 p.m. in the eastern sky.


Mars
Type: planet
Magnitude: -1.19 (extincted to: 1.63)
Absolute Magnitude: 31.30
RA/Dec (J2000.0): 8h19m3.89s/+23°37'02.9"
RA/Dec (on date): 8h20m32.85s/+23°32'22.9"
Hour angle/DE: 16h28m56.49s/+23°47'17.8" (apparent)
Az/Alt: +57°34'32.5"/+1°37'19.2" (apparent)
Ecliptic longitude/latitude (J2000.0): +121°34'47.1"/+3°54'32.3"
Ecliptic longitude/latitude (on date): +121°55'45.2"/+3°54'48.9"
Ecliptic obliquity (on date): +23°26'10"
Galactic longitude/latitude: -160°21'02.6"/+29°08'17.8"
Mean Sidereal Time: 0h48m32.2s
Apparent Sidereal Time: 0h48m32.2s
Distance: 0.657AU (98.257 Mio km)
Apparent diameter: +0°00'14.3"
Sidereal period: 686.97 days (1.881 a)
Sidereal day: 24h37m22.7s
Mean solar day: 24h39m35.2s
Phase Angle: +12°54'17"
Elongation: +158°31'00"
Phase: 0.99
Illuminated: 98.7%
Betelgeuse
Rigel
Mars
E
Date and Time
Date and Time
Julian Day
2024 / 12 / 31
18 : 18 : 19
Earth, Peterborough, 188m
FOV 60°
26.4 FPS
2024-12-31 18:18:19 UTC-05:00

Mars

- On December 31st, Mars remains high in the western sky at sunrise.

Mars

Type: **planet**
Magnitude: **-1.18** (extincted to: **-0.84**)
Absolute Magnitude: 31.30
RA/Dec (J2000.0): 8h19m39.66s/+23°34'04.4"
RA/Dec (on date): 8h21m8.58s/+23°29'23.2"
Hour angle/DE: 5h23m8.91s/+23°30'55.2" (apparent)
Az/Alt: +281°25'53.7"/+22°33'54.5" (apparent)
Ecliptic longitude/latitude (J2000.0): +121°43'27.8"/+3°53'30.4"
Ecliptic longitude/latitude (on date): +122°04'25.9"/+3°53'47.0"
Ecliptic obliquity (on date): +23°26'10"
Galactic longitude/latitude: -160°14'45.6"/+29°15'04.4"
Mean Sidereal Time: 13h44m25.4s
Apparent Sidereal Time: 13h44m25.4s
Distance: 0.658AU (98.427 Mio km)
Apparent diameter: +0°00'14.2"
Sidereal period: 686.97 days (1.881 a)
Sidereal day: 24h37m22.7s
Mean solar day: 24h39m35.2s
Phase Angle: +13°15'19"
Elongation: +157°55'12"
Phase: 0.99
Illuminated: 98.7%

Date and Time

Date and Time | Julian Day

2024 / 12 / 31 7 : 16 : 1

Earth, Peterborough, 188m FOV 60° 54.7 FPS 2024-12-31 07:16:01 UTC-05:00

JUPITER

Jupiter

- On December 1st, Jupiter rises at 5:02 p.m. in the eastern sky.

- Now visible all night.

Jupiter

Type: **planet**
Magnitude: **-2.81** (extincted to: **-0.02**)
Absolute Magnitude: 25.71
RA/Dec (J2000.0): 5h02m33.79s/+22°05'36.3"
RA/Dec (on date): 5h04m3.63s/+22°07'47.0"
Hour angle/DE: 16h36m2.58s/+22°22'26.2" (apparent)
Az/Alt: +59°44'12.7"/+1°39'00.2" (apparent)
Ecliptic longitude/latitude (J2000.0): +76°42'51.5"/-0°41'09.8"
Ecliptic longitude/latitude (on date): +77°03'46.9"/-0°40'49.9"
Ecliptic obliquity (on date): +23°26'10"
Galactic longitude/latitude: -179°43'09.2"/-11°52'08.7"
Mean Sidereal Time: -2h20m50.5s
Apparent Sidereal Time: -2h20m50.6s
Distance: 4.093AU (612.240 Mio km)
Apparent diameter: +0°00'48.2"
Sidereal period: 4331.87 days (11.860 a)
Sidereal day: 9h55m29.7s
Mean solar day: 9h55m33.1s
Phase Angle: +1°20'01"
Elongation: +173°07'24"
Phase: 1.00
Illuminated: 100.0%

Date and Time

Date and Time | Julian Day

2024 / 12 / 1 17 : 7 : 24

Earth, Peterborough, 188m | FOV 60° | 53.3 FPS | 2024-12-01 17:07:24 UTC-05:00

Jupiter

- On December 1st, Jupiter is well placed in the western sky at sunrise.

Jupiter

Type: **planet**
Magnitude: -**2.81** (extincted to: -**2.12**)
Absolute Magnitude: 25.71
RA/Dec (J2000.0): 5h02m48.20s/+22°05'53.6"
RA/Dec (on date): 5h04m18.04s/+22°08'03.8"
Hour angle/DE: 6h27m33.12s/+22°11'34.5" (apparent)
Az/Alt: +290°43'46.1"/+10°37'21.0" (apparent)
Ecliptic longitude/latitude (J2000.0): +76°46'12.4"/-0°41'12.3"
Ecliptic longitude/latitude (on date): +77°07'07.8"/-0°40'52.4"
Ecliptic obliquity (on date): +23°26'10"
Galactic longitude/latitude: -179°41'23.2"/-11°49'16.6"
Mean Sidereal Time: 11h32m7.1s
Apparent Sidereal Time: 11h32m7.0s
Distance: 4.093AU (612.333 Mio km)
Apparent diameter: +0°00'48.2"
Sidereal period: 4331.87 days (11.860 a)
Sidereal day: 9h55m29.7s
Mean solar day: 9h55m33.1s
Phase Angle: +1°25'32"
Elongation: +172°38'48"
Phase: 1.00
Illuminated: 100.0%

Date and Time

Date and Time | Julian Day

2024 / 12 / 1 7 : 2 : 1

Earth, Peterborough, 188m FOV 30.8° 59.8 FPS 2024-12-01 07:02:01 UTC-05:00

Jupiter

- On December 14th, Jupiter and the Moon rise together in wide conjunction.

- Both objects are visible at 5:00 p.m. in the early evening eastern sky. Jupiter is west of the Moon.

Jupiter

Type: **planet**
Magnitude: **-2.80** (extincted to: **-2.34**)
Absolute Magnitude: 25.71
RA/Dec (J2000.0): 4h54m58.35s/+21°56'16.3"
RA/Dec (on date): 4h56m28.03s/+21°58'42.9"
Hour angle/DE: 18h05m48.52s/+22°00'58.0" (apparent)
Az/Alt: +74°47'43.5"/+16°10'42.0" (apparent)
Ecliptic longitude/latitude (J2000.0): +74°56'53.9"/-0°39'21.5"
Ecliptic longitude/latitude (on date): +75°17'50.2"/-0°39'01.9"
Ecliptic obliquity (on date): +23°26'10"
Galactic longitude/latitude: +179°20'12.8"/-13°22'33.8"
Mean Sidereal Time: 0h57m54.2s
Apparent Sidereal Time: 0h57m54.3s
Distance: 4.101AU (613.477 Mio km)
Apparent diameter: +0°00'48.1"
Sidereal period: 4331.87 days (11.860 a)
Sidereal day: 9h55m29.7s
Mean solar day: 9h55m33.1s
Phase Angle: +1°34'47"
Elongation: +171°49'31"
Phase: 1.00
Illuminated: 100.0%

Capella
Uranus
Moon
Jupiter
Aldebaran
E

Date and Time

Date and Time | Julian Day

2024 / 12 / 14 17 : 39 : 0

Earth, Peterborough, 188m | FOV 60° | 19.8 FPS | 2024-12-14 17:39:00 UTC-05:00

Jupiter

- On December 31st, Jupiter is well placed in the eastern sky at sunset.

Jupiter

Type: **planet**
Magnitude: **-2.73** (extincted to: **-2.41**)
Absolute Magnitude: 25.73
RA/Dec (J2000.0): 4h46m3.90s/+21°44'30.0"
RA/Dec (on date): 4h47m33.37s/+21°47'15.3"
Hour angle/DE: 18h47m57.51s/+21°48'44.0" (apparent)
Az/Alt: +81°46'39.6"/+23°25'27.6" (apparent)
Ecliptic longitude/latitude (J2000.0): +72°52'20.8"/-0°36'19.1"
Ecliptic longitude/latitude (on date): +73°13'18.2"/-0°35'59.5"
Ecliptic obliquity (on date): +23°26'10"
Galactic longitude/latitude: +178°11'57.1"/-15°08'07.5"
Mean Sidereal Time: 0h24m36.7s
Apparent Sidereal Time: 0h24m36.6s
Distance: 4.190AU (626.831 Mio km)
Apparent diameter: +0°00'47.1"
Sidereal period: 4331.87 days (11.860 a)
Sidereal day: 9h55m29.7s
Mean solar day: 9h55m33.1s
Phase Angle: +5°07'45"
Elongation: +152°28'45"
Phase: 1.00
Illuminated: 99.8%

Date and Time

Date and Time | Julian Day

2024 / 12 / 31 17 : 5 : 22

Earth, Peterborough, 188m | FOV 70.9° | 59.1 FPS | 2024-12-31 17:05:22 UTC-05:00

Jupiter

- On December 31st, Jupiter now sets at 5:48 a.m. in the western predawn sky.

Jupiter

Type: **planet**
Magnitude: **-2.74** (extincted to: **0.80**)
Absolute Magnitude: 25.73
RA/Dec (J2000.0): 4h46m16.67s/+21°44'47.0"
RA/Dec (on date): 4h47m46.14s/+21°47'31.9"
Hour angle/DE: 7h27m28.32s/+22°06'00.6" (apparent)
Az/Alt: +300°41'14.1"/+0°54'14.2" (apparent)
Ecliptic longitude/latitude (J2000.0): +72°55'19.5"/-0°36'24.7"
Ecliptic longitude/latitude (on date): +73°16'16.8"/-0°36'05.1"
Ecliptic obliquity (on date): +23°26'10"
Galactic longitude/latitude: +178°13'36.8"/-15°05'37.0"
Mean Sidereal Time: 12h16m25.1s
Apparent Sidereal Time: 12h16m25.1s
Distance: 4.187AU (626.294 Mio km)
Apparent diameter: +0°00'47.1"
Sidereal period: 4331.87 days (11.860 a)
Sidereal day: 9h55m29.7s
Mean solar day: 9h55m33.1s
Phase Angle: +5°02'19"
Elongation: +153°00'17"
Phase: 1.00
Illuminated: 99.8%

W

Date and Time

Date and Time | Julian Day

2024 / 12 / 31 5 : 48 : 15

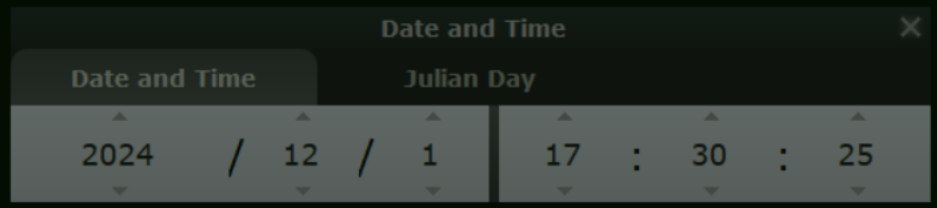
Earth, Peterborough, 188m | FOV 36.4° | 23.7 FPS | 2024-12-31 05:48:15 UTC-05:00

SATURN

Saturn

- On December 1st, Saturn is well placed in the evening twilight south sky at sunset.


Saturn
Type: planet
Magnitude: 0.97 (extincted to: 1.19)
Absolute Magnitude: 27.64
RA/Dec (J2000.0): 22h58m56.64s/-8°44'11.0"
RA/Dec (on date): 23h00m14.81s/-8°36'10.3"
Hour angle/DE: 23h02m0.67s/-8°34'48.4" (apparent)
Az/Alt: +162°17'42.2"/+35°31'02.7" (apparent)
Ecliptic longitude/latitude (J2000.0): +342°34'53.0"/-2°03'15.9"
Ecliptic longitude/latitude (on date): +342°55'49.0"/-2°03'20.9"
Ecliptic obliquity (on date): +23°26'10"
Galactic longitude/latitude: +62°18'40.5"/-57°40'43.0"
Mean Sidereal Time: -1h57m45.7s
Apparent Sidereal Time: -1h57m45.8s
Distance: 9.543AU (1427.576 Mio km)
Apparent diameter: +0°00'17.4", with rings: +0°00'40.6"
Sidereal period: 10760.00 days (29.459 a)
Sidereal day: 10h39m22.4s
Mean solar day: 10h39m24.0s
Phase Angle: +5°51'51"
Elongation: +92°41'31"
Phase: 1.00
Illuminated: 99.7%
Saturn
Venus
S


Date and Time
Date and Time
Julian Day
2024 / 12 / 1
17 : 30 : 25


Full-screen mode [F11]
Earth, Peterborough, 188m
FOV 83.7°
48.9 FPS
2024-12-01
17:30:25 UTC-05:00

Saturn

- On December 1st, Saturn sets at midnight in the western sky.

Saturn

Type: **planet**
Magnitude: **0.97** (extincted to: **4.72**)
Absolute Magnitude: 27.64
RA/Dec (J2000.0): 22h58m58.23s/-8°43'57.9"
RA/Dec (on date): 23h00m16.40s/-8°35'57.1"
Hour angle/DE: 5h23m5.13s/-8°17'28.8" (apparent)
Az/Alt: +257°38'22.1"/+0°44'13.1" (apparent)
Ecliptic longitude/latitude (J2000.0): +342°35'19.9"/-2°03'12.8"
Ecliptic longitude/latitude (on date): +342°56'15.9"/-2°03'17.8"
Ecliptic obliquity (on date): +23°26'10"
Galactic longitude/latitude: +62°19'27.2"/-57°40'53.4"
Mean Sidereal Time: 4h24m36.3s
Apparent Sidereal Time: 4h24m36.1s
Distance: 9.547AU (1428.236 Mio km)
Apparent diameter: +0°00'17.4", with rings: +0°00'40.6"
Sidereal period: 10760.00 days (29.459 a)
Sidereal day: 10h39m22.4s
Mean solar day: 10h39m24.0s
Phase Angle: +5°51'56"
Elongation: +92°25'46"
Phase: 1.00
Illuminated: 99.7%

Date and Time

Date and Time | Julian Day

2024 / 12 / 1 23 : 51 : 45

Earth, Peterborough, 188m | FOV 43° | 52.2 FPS | 2024-12-01 23:51:45 UTC-05:00

Saturn

- On December 7th, Saturn and a quarter Moon share a wide conjunction as they appear together in the southern sky at sunset.

- Saturn is 5 degrees northeast of the Moon.

Saturn

Type: **planet**
Magnitude: **1.00** (extincted to: **1.21**)
Absolute Magnitude: 27.65
RA/Dec (J2000.0): 22h59m40.63s/-8°38'34.5"
RA/Dec (on date): 23h00m58.78s/-8°30'33.3"
Hour angle/DE: 23h21m22.64s/-8°29'13.2" (apparent)
Az/Alt: +168°05'28.5"/+36°29'41.4" (apparent)
Ecliptic longitude/latitude (J2000.0): +342°47'05.0"/-2°02'15.8"
Ecliptic longitude/latitude (on date): +343°08'01.2"/-2°02'20.8"
Ecliptic obliquity (on date): +23°26'10"
Galactic longitude/latitude: +62°39'33.5"/-57°45'44.6"
Mean Sidereal Time: -1h37m39.3s
Apparent Sidereal Time: -1h37m39.4s
Distance: 9.642AU (1442.448 Mio km)
Apparent diameter: +0°00'17.2", with rings: +0°00'40.2"
Sidereal period: 10760.00 days (29.459 a)
Sidereal day: 10h39m22.4s
Mean solar day: 10h39m24.0s
Phase Angle: +5°51'27"
Elongation: +86°48'42"
Phase: 1.00
Illuminated: 99.7%

Saturn
Moon
Venus
S

Date and Time

Date and Time | Julian Day

2024 / 12 / 7 17 : 26 : 53

Earth, Peterborough, 188m FOV 83.7° 15.5 FPS 2024-12-07 17:26:53 UTC-05:00

Saturn

- On December 31st, Saturn is high in southern sky at sunset.

- Over the next 2 weeks Saturn and Venus are both moving into a close conjunction on January 16th. 1 degree of separation.

Saturn

Type: **planet**
Magnitude: **1.08** (extincted to: **1.30**)
Absolute Magnitude: 27.65
RA/Dec (J2000.0): 23h04m45.82s/-8°03'06.2"
RA/Dec (on date): 23h06m3.88s/-7°55'01.4"
Hour angle/DE: 0h56m25.37s/-7°53'41.7" (apparent)
Az/Alt: +197°25'21.8"/+36°16'14.4" (apparent)
Ecliptic longitude/latitude (J2000.0): +344°10'27.7"/-1°58'37.7"
Ecliptic longitude/latitude (on date): +344°31'25.7"/-1°58'42.1"
Ecliptic obliquity (on date): +23°26'10"
Galactic longitude/latitude: +65°02'03.5"/-58°21'26.7"
Mean Sidereal Time: 0h2m30.4s
Apparent Sidereal Time: 0h2m30.4s
Distance: 10.024AU (1499.622 Mio km)
Apparent diameter: +0°00'16.6", with rings: +0°00'38.6"
Sidereal period: 10760.00 days (29.459 a)
Sidereal day: 10h39m22.4s
Mean solar day: 10h39m24.0s
Phase Angle: +5°15'22"
Elongation: +63°47'06"
Phase: 1.00
Illuminated: 99.8%

Date and Time

Date and Time | Julian Day

2024 / 12 / 31 17 : 32 : 24

Earth, Peterborough, 188m FOV 70.9° 15.8 FPS 2024-12-31 17:32:24 UTC-05:00

Saturn

- On December 31st, Saturn now sets at 9:56 p.m. in the western sky.

Saturn

Type: **planet**
Magnitude: **1.08** (extincted to: **4.40**)
Absolute Magnitude: 27.65
RA/Dec (J2000.0): 23h04m48.89s/-8°02'45.2"
RA/Dec (on date): 23h06m6.95s/-7°54'40.3"
Hour angle/DE: 5h23m42.36s/-7°38'13.7" (apparent)
Az/Alt: +258°12'38.0"/+1°05'28.7" (apparent)
Ecliptic longitude/latitude (J2000.0): +344°11'18.0"/-1°58'35.9"
Ecliptic longitude/latitude (on date): +344°32'15.9"/-1°58'40.4"
Ecliptic obliquity (on date): +23°26'10"
Galactic longitude/latitude: +65°03'30.4"/-58°21'47.8"
Mean Sidereal Time: 4h30m55.7s
Apparent Sidereal Time: 4h30m55.7s
Distance: 10.027AU (1500.039 Mio km)
Apparent diameter: +0°00'16.6", with rings: +0°00'38.6"
Sidereal period: 10760.00 days (29.459 a)
Sidereal day: 10h39m22.4s
Mean solar day: 10h39m24.0s
Phase Angle: +5°14'54"
Elongation: +63°36'31"
Phase: 1.00
Illuminated: 99.8%

Date and Time

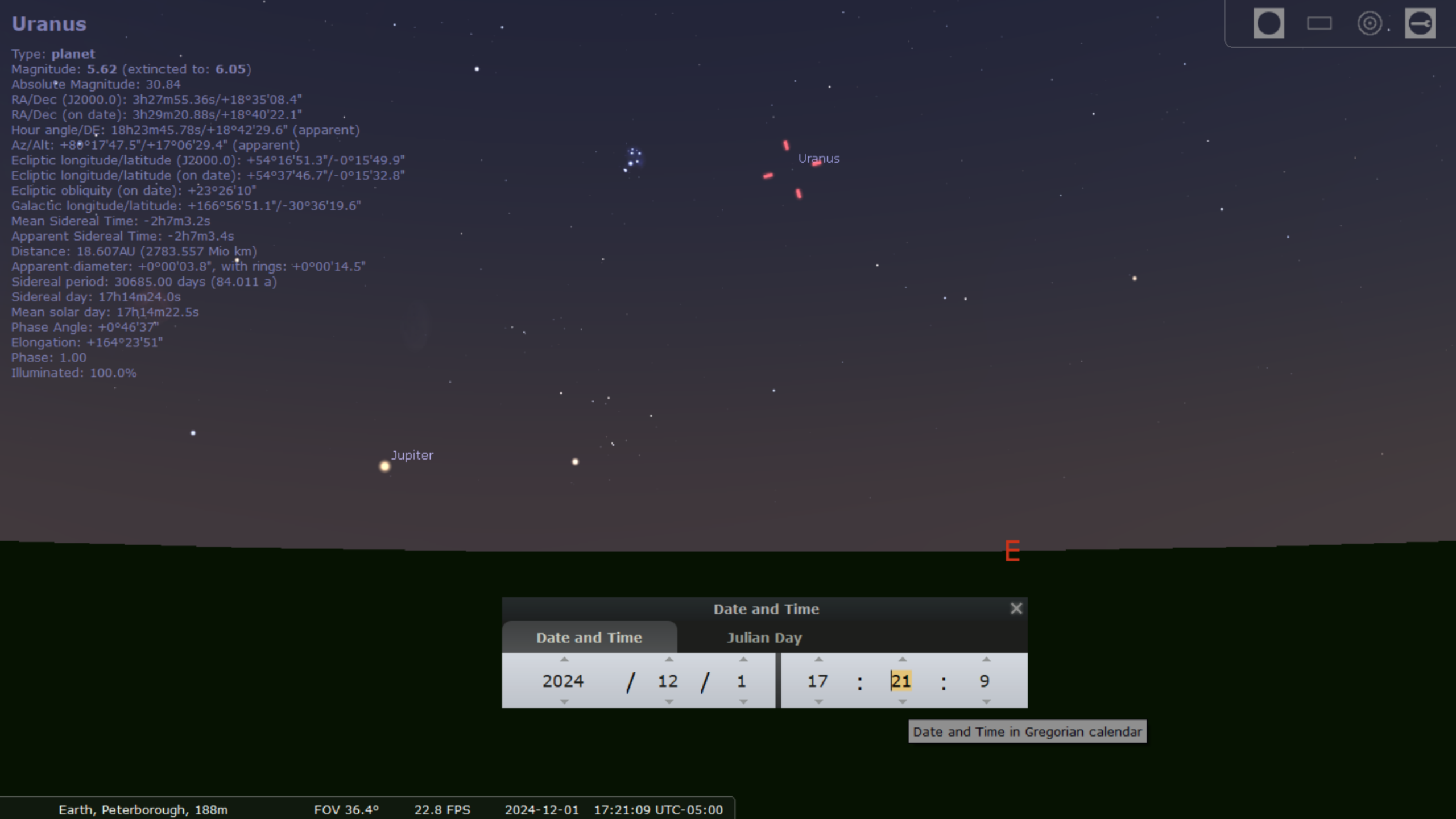
Date and Time | Julian Day

2024 / 12 / 31 22 : 0 : 6

URANUS

Uranus

- On December 1st, Uranus is high above the eastern horizon at sunset.


Uranus
Type: planet
Magnitude: 5.62 (extincted to: 6.05)
Absolute Magnitude: 30.84
RA/Dec (J2000.0): 3h27m55.36s/+18°35'08.4"
RA/Dec (on date): 3h29m20.88s/+18°40'22.1"
Hour angle/DE: 18h23m45.78s/+18°42'29.6" (apparent)
Az/Alt: +80°17'47.5"/+17°06'29.4" (apparent)
Ecliptic longitude/latitude (J2000.0): +54°16'51.3"/-0°15'49.9"
Ecliptic longitude/latitude (on date): +54°37'46.7"/-0°15'32.8"
Ecliptic obliquity (on date): +23°26'10"
Galactic longitude/latitude: +166°56'51.1"/-30°36'19.6"
Mean Sidereal Time: -2h7m3.2s
Apparent Sidereal Time: -2h7m3.4s
Distance: 18.607AU (2783.557 Mio km)
Apparent diameter: +0°00'03.8", with rings: +0°00'14.5"
Sidereal period: 30685.00 days (84.011 a)
Sidereal day: 17h14m24.0s
Mean solar day: 17h14m22.5s
Phase Angle: +0°46'37"
Elongation: +164°23'51"
Phase: 1.00
Illuminated: 100.0%
Uranus
Jupiter
E
Date and Time
Date and Time
Julian Day
2024 / 12 / 1
17 : 21 : 9
Date and Time in Gregorian calendar
Earth, Peterborough, 188m
FOV 36.4°
22.8 FPS
2024-12-01 17:21:09 UTC-05:00

Uranus

- On December 1st, Uranus is sets at 6:15 a.m. in western predawn sky.

Uranus

Type: **planet**
Magnitude: **5.61** (extincted to: **9.58**)
Absolute Magnitude: 30.84
RA/Dec (J2000.0): 3h27m59.84s/+18°35'24.3"
RA/Dec (on date): 3h29m25.36s/+18°40'37.8"
Hour angle/DE: 7h14m57.92s/+19°00'53.5" (apparent)
Az/Alt: +296°26'46.6"/+0°34'54.0" (apparent)
Ecliptic longitude/latitude (J2000.0): +54°17'56.8"/-0°15'50.1"
Ecliptic longitude/latitude (on date): +54°38'52.2"/-0°15'33.1"
Ecliptic obliquity (on date): +23°26'10"
Galactic longitude/latitude: +166°57'35.2"/-30°35'26.1"
Mean Sidereal Time: 10h45m42.2s
Apparent Sidereal Time: 10h45m42.1s
Distance: 18.605AU (2783.244 Mio km)
Apparent diameter: +0°00'03.8", with rings: +0°00'14.5"
Sidereal period: 30685.00 days (84.011 a)
Sidereal day: 17h14m24.0s
Mean solar day: 17h14m22.5s
Phase Angle: +0°45'12"
Elongation: +164°52'51"
Phase: 1.00
Illuminated: 100.0%

Uranus

Date and Time

Date and Time | Julian Day

2024 / 12 / 1 6 : 15 : 44

Date and Time in Gregorian calendar

Earth Peterborough 188m FOV 15.8° 46.5 FPS 2024-12-01 06:15:44 UTC-05:00

Uranus

- On December 31st, Uranus is high in the eastern sky at sunset.

Date and Time

Date and Time | Julian Day

2024 / 12 / 31 17 : 34 : 53

Uranus

- On December 31st, Uranus sets at 4:07 a.m. in the western sky.

Date and Time

Date and Time | Julian Day

2024 / 12 / 31 4 : 7 : 7

Earth, Peterborough, 188m FOV 43° 35.9 FPS 2024-12-31 04:07:07 UTC-05:00

NEPTUNE

Neptune

- On December 1st, Neptune is high in the southeastern sky at evening twilight.

Neptune

Type: **planet**
Magnitude: **7.86** (extincted to: **8.08**)
Absolute Magnitude: 32.08
RA/Dec (J2000.0): 23h50m18.27s/-2°28'17.6"
RA/Dec (on date): 23h51m35.11s/-2°19'58.1"
Hour angle/DE: 22h12m2.00s/-2°18'46.9" (apparent)
Az/Alt: +145°07'37.2"/+37°31'08.8" (apparent)
Ecliptic longitude/latitude (J2000.0): +356°47'36.8"/-1°18'14.5"
Ecliptic longitude/latitude (on date): +357°08'32.6"/-1°18'14.6"
Ecliptic obliquity (on date): +23°26'10"
Galactic longitude/latitude: +89°38'32.8"/-61°19'39.5"
Mean Sidereal Time: -1h56m24.9s
Apparent Sidereal Time: -1h56m25.0s
Distance: 29.594AU (4427.125 Mio km)
Apparent diameter: +0°00'02.3", with rings: +0°00'05.9"
Sidereal period: 60189.00 days (164.789 a)
Sidereal day: 16h6m36.0s
Mean solar day: 16h6m36.6s
Phase Angle: +1°48'30"
Elongation: +106°54'01"
Phase: 1.00
Illuminated: 100.0%

Saturn

E

S

Date and Time

Date and Time | Julian Day

2024 / 12 / 1 17 : 31 : 46

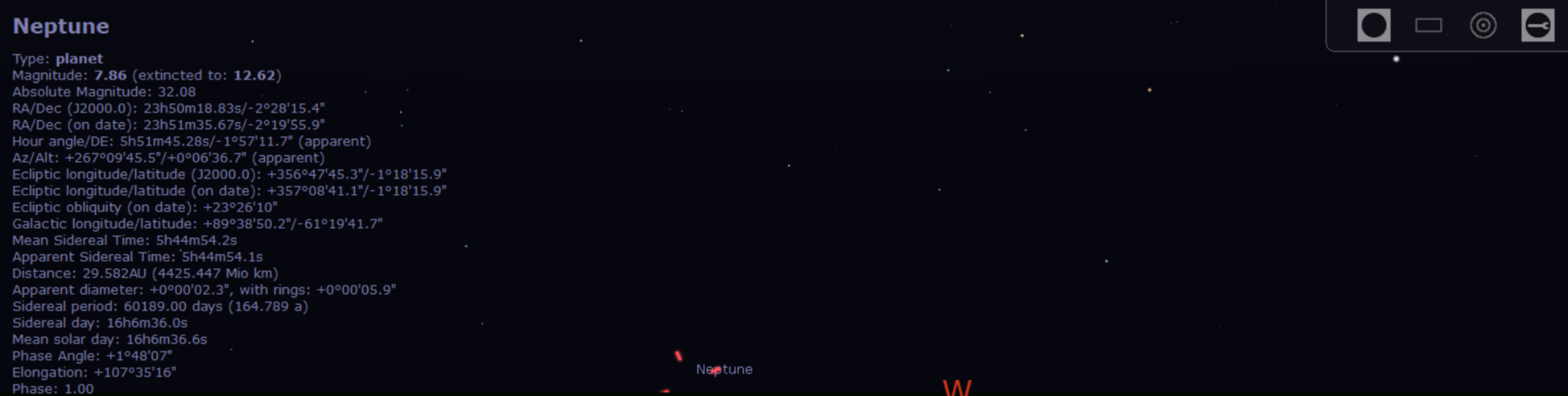
Earth, Peterborough, 188m FOV 70.9° 23.7 FPS 2024-12-01 17:31:46 UTC-05:00

Neptune

- On December 1st, Neptune sets at a.m. in the western sky.

Neptune

Type: **planet**
Magnitude: **7.86** (extincted to: **12.62**)
Absolute Magnitude: 32.08
RA/Dec (J2000.0): 23h50m18.83s/-2°28'15.4"
RA/Dec (on date): 23h51m35.67s/-2°19'55.9"
Hour angle/DE: 5h51m45.28s/-1°57'11.7" (apparent)
Az/Alt: +267°09'45.5"/+0°06'36.7" (apparent)
Ecliptic longitude/latitude (J2000.0): +356°47'45.3"/-1°18'15.9"
Ecliptic longitude/latitude (on date): +357°08'41.1"/-1°18'15.9"
Ecliptic obliquity (on date): +23°26'10"
Galactic longitude/latitude: +89°38'50.2"/-61°19'41.7"
Mean Sidereal Time: 5h44m54.2s
Apparent Sidereal Time: 5h44m54.1s
Distance: 29.582AU (4425.447 Mio km)
Apparent diameter: +0°00'02.3", with rings: +0°00'05.9"
Sidereal period: 60189.00 days (164.789 a)
Sidereal day: 16h6m36.0s
Mean solar day: 16h6m36.6s
Phase Angle: +1°48'07"
Elongation: +107°35'16"
Phase: 1.00
Illuminated: 100.0%



Date and Time

Date and Time | Julian Day

2024 / 12 / 1 1 : 15 : 45

Neptune

- On December 31st, Neptune is high in the southern sky at evening twilight.

- Neptune is just 5 degrees northeast of Saturn.

Neptune

Type: **planet**
Magnitude: **7.90** (extincted to: **8.10**)
Absolute Magnitude: 32.08
RA/Dec (J2000.0): 23h50m51.15s/-2°23'31.4"
RA/Dec (on date): 23h52m8.11s/-2°15'11.0"
Hour angle/DE: 0h56m36.14s/-2°14'05.7" (apparent)
Az/Alt: +199°07'15.4"/+41°46'31.0" (apparent)
Ecliptic longitude/latitude (J2000.0): +356°57'02.8"/-1°17'07.8"
Ecliptic longitude/latitude (on date): +357°18'00.6"/-1°17'07.8"
Ecliptic obliquity (on date): +23°26'10"
Galactic longitude/latitude: +89°58'20.2"/-61°19'29.4"
Mean Sidereal Time: 0h48m45.3s
Apparent Sidereal Time: 0h48m45.3s
Distance: 30.108AU (4504.128 Mio km)
Apparent diameter: +0°00'02.3", with rings: +0°00'05.8"
Sidereal period: 60189.00 days (164.789 a)
Sidereal day: 16h6m36.0s
Mean solar day: 16h6m36.6s
Phase Angle: +1°49'59"
Elongation: +76°30'55"
Phase: 1.00
Illuminated: 100.0%

Saturn

Venus

S

Date and Time

Date and Time | Julian Day

2024 / 12 / 31 18 : 18 : 32

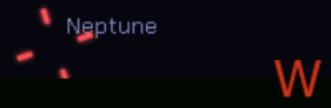
Earth, Peterborough, 188m FOV 83.7° 26.8 FPS 2024-12-31 18:18:32 UTC-05:00

Neptune

- On December 31st, Neptune sets at 11:10 p.m. in the western sky.

Neptune

Type: **planet**
Magnitude: **7.90** (extincted to: **12.12**)
Absolute Magnitude: 32.08
RA/Dec (J2000.0): 23h50m51.76s/-2°23'26.9"
RA/Dec (on date): 23h52m8.71s/-2°15'06.6"
Hour angle/DE: 5h50m10.82s/-1°54'44.7" (apparent)
Az/Alt: +266°55'00.8"/+0°25'12.2" (apparent)
Ecliptic longitude/latitude (J2000.0): +356°57'12.9"/-1°17'07.3"
Ecliptic longitude/latitude (on date): +357°18'10.6"/-1°17'07.3"
Ecliptic obliquity (on date): +23°26'10"
Galactic longitude/latitude: +89°58'41.2"/-61°19'29.8"
Mean Sidereal Time: 5h43m42.9s
Apparent Sidereal Time: 5h43m42.9s
Distance: 30.112AU (4504.648 Mio km)
Apparent diameter: +0°00'02.3", with rings: +0°00'05.8"
Sidereal period: 60189.00 days (164.789 a)
Sidereal day: 16h6m36.0s
Mean solar day: 16h6m36.6s
Phase Angle: +1°49'54"
Elongation: +76°18'31"
Phase: 1.00
Illuminated: 100.0%



Date and Time

Date and Time | Julian Day

2024 / 12 / 31 23 : 12 : 41

That is the Sky this Month

By David Mills