Sky this Month

October 2025

By David Mills

MOON

NEW MOON

Moon

- The New Moon is on October 21st, at 8:25 a.m. The Moon is southwest of the sun.

- This months New Moon is the New Beaver Moon

Moon

Type: **moon**
Magnitude: **-0.95**
Absolute Magnitude: 43.47
RA/Dec (J2000.0): 13h41m35.12s/-14°34'10.3"
RA/Dec (on date): 13h42m58.05s/-14°42'00.0"
Hour angle/DE: 19h30m45.04s/-14°42'00.0"
Az/Alt: +116°21'27.2"/+5°09'04.0"
Ecliptic longitude/latitude (J2000.0): +208°48'43.2"/-3°45'58.4"
Ecliptic longitude/latitude (on date): +209°10'17.3"/-3°46'09.6"
Ecliptic obliquity (on date): +23°26'09"
Galactic longitude/latitude: -39°16'35.8"/+46°33'45.3"
Mean Sidereal Time: 9h13m42.9s
Apparent Sidereal Time: 9h13m43.1s
Distance: 0.002698AU (403665.491 km)
Apparent diameter: +0°29'35.5"
Sidereal period: 27.32 days (0.075 a)
Sidereal day: 655h43m11.5s
Mean solar day: 708h44m2.8s
Phase Angle: +176°08'20"
Elongation: +3°51'03"
Phase: 0.00
Illuminated: 0.1%

Date and Time

Date and Time | Julian Day

2025 / 10 / 21 8 : 26 : 9

Earth, Peterborough, 188m FOV 9.59° 20.9 FPS 2025-10-21 08:26:09 UTC-04:00

Moon

- The planets Mercury and Mars are south of the sun. Both planets are in solar conjunction. Not visible.

- The planet Venus is now west of the sun and rises in the pre-dawn sky.

- Saturn and Jupiter are both east of the sun. Saturn just past opposition and Jupiter is approaching opposition.

Moon
Type: moon
Magnitude: -0.96
Absolute Magnitude: 43.46
RA/Dec (J2000.0): 13h41m39.36s/-14°34'50.1"
RA/Dec (on date): 13h43m2.29s/-14°42'39.7"
Hour angle/DE: 19h33m20.45s/-14°42'39.7"
Az/Alt: +116°50'12.0"/+5°33'26.2"
Ecliptic longitude/latitude (J2000.0): +208°49'55.0"/-3°46'13.4"
Ecliptic longitude/latitude (on date): +209°11'29.1"/-3°46'24.6"
Ecliptic obliquity (on date): +23°26'09"
Galactic longitude/latitude: -39°15'26.3"/+46°32'49.9"
Mean Sidereal Time: 9h16m22.6s
Apparent Sidereal Time: 9h16m22.7s
Distance: 0.002698AU (403623.639 km)
Apparent diameter: +0°29'35.7"
Sidereal period: 27.32 days (0.075 a)
Sidereal day: 655h43m11.5s
Mean solar day: 708h44m2.8s
Phase Angle: +176°07'51"
Elongation: +3°51'31"
Phase: 0.00
Illuminated: 0.1%
Arcturus
Venus
Spica
Sun
Moon
E
S
Mars
Mercury
Gacrux
Antares
Date and Time
Date and Time
Julian Day
2025 / 10 / 21
8 : 28 : 48
Earth, Peterborough, 188m
FOV 83.7°
56.2 FPS
2025-10-21 08:28:48 UTC-04:00

FULL MOON

Moon

- The full Moon is on October 6th, at 11:47 p.m.
- The moon rises at 6:23 p.m. on October 6th, 2025.
- This month’s full moon is the Hunter’s Moon - Supermoon

Moon

Type: **moon**
Magnitude: -**12.39** (extincted to: -**8.04**)
Absolute Magnitude: 32.27
RA/Dec (J2000.0): 0h38m13.75s/+5°17'32.3"
RA/Dec (on date): 0h39m33.29s/+5°26'01.8"
Hour angle/DE: 17h39m13.79s/+5°47'03.2" (apparent)
Az/Alt: +82°14'25.0"/+0°20'26.3" (apparent)
Ecliptic longitude/latitude (J2000.0): +10°51'35.3"/+1°04'51.0"
Ecliptic longitude/latitude (on date): +11°13'07.9"/+1°04'56.2"
Ecliptic obliquity (on date): +23°26'09"
Galactic longitude/latitude: +116°49'00.8"/-57°25'21.1"
Mean Sidereal Time: 18h17m21.1s
Apparent Sidereal Time: 18h17m21.3s
Distance: 0.002420AU (361988.597 km)
Apparent diameter: +0°33'00.0"
Sidereal period: 27.32 days (0.075 a)
Sidereal day: 655h43m11.5s
Mean solar day: 708h44m2.8s
Phase Angle: +2°54'24"
Elongation: +177°05'11"
Phase: 1.00
Illuminated: 99.9%

MERCURY

Mercury

- Mercery is right on the western horizon all month.

- Not visible this month

VENUS

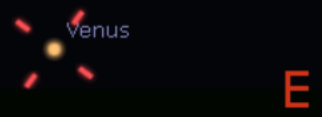
Venus

- On October 1st, Venus rises at 5:12 a.m. in the late morning pre-dawn eastern sky.

- Venus is still moving east in a retrograde motion.

Venus

Type: **planet**
Magnitude: **-3.94** (extincted to: **-1.00**)
Absolute Magnitude: 26.74
RA/Dec (J2000.0): 11h03m46.79s/+7°24'49.7"
RA/Dec (on date): 11h05m6.91s/+7°16'32.2"
Hour angle/DE: 17h38m46.10s/+7°31'03.5" (apparent)
Az/Alt: +80°55'27.1"/+1°28'29.1" (apparent)
Ecliptic longitude/latitude (J2000.0): +164°11'45.4"/+1°17'40.4"
Ecliptic longitude/latitude (on date): +164°33'17.7"/+1°17'45.2"
Ecliptic obliquity (on date): +23°26'09"
Galactic longitude/latitude: -114°21'06.3"/+57°45'24.1"
Mean Sidereal Time: 4h42m53.3s
Apparent Sidereal Time: 4h42m53.5s
Distance: 1.508AU (225.523 Mio km)
Apparent diameter: +0°00'11.1"
Sidereal period: 224.70 days (0.615 a)
Sidereal day: 5832h28m47.1s
Mean solar day: 2802h0m52.2s
Phase Angle: +34°26'19"
Elongation: +23°56'31"
Phase: 0.91
Illuminated: 91.2%



Date and Time

Date and Time | Julian Day

2025 / 10 / 1 | 5 : 14 : 42

Earth, Peterborough, 188m FOV 52.4° 34.3 FPS 2025-10-01 05:14:42 UTC-04:00

Venus

- On October 19th, Venus and a very old waning crescent Moon rise together at 5:52 a.m. in the eastern pre-dawn sky.

Venus

Type: **planet**
Magnitude: **-3.94** (extincted to: **0.33**)
Absolute Magnitude: 26.65
RA/Dec (J2000.0): 12h26m21.24s/-1°10'40.2"
RA/Dec (on date): 12h27m40.48s/-1°19'13.6"
Hour angle/DE: 18h06m0.21s/-0°58'39.8" (apparent)
Az/Alt: +91°44'52.8"/+0°23'27.8" (apparent)
Ecliptic longitude/latitude (J2000.0): +186°30'54.2"/+1°32'02.6"
Ecliptic longitude/latitude (on date): +186°52'29.5"/+1°31'59.0"
Ecliptic obliquity (on date): +23°26'09"
Galactic longitude/latitude: -70°06'36.5"/+61°03'25.7"
Mean Sidereal Time: 6h32m16.3s
Apparent Sidereal Time: 6h32m16.4s
Distance: 1.577AU (235.911 Mio km)
Apparent diameter: +0°00'10.6"
Sidereal period: 224.70 days (0.615 a)
Sidereal day: 5832h28m47.1s
Mean solar day: 2802h0m52.2s
Phase Angle: +27°29'17"
Elongation: +19°27'39"
Phase: 0.94
Illuminated: 94.4%

Moon

Date and Time

Date and Time | Julian Day

2025 / 10 / 19 5 : 52 : 1

Earth, Peterborough, 188m FOV 8.38° 24.8 FPS 2025-10-19 05:53:01 UTC-04:00

Venus

- On October 31st, Venus rises at 6:23 a.m. in the eastern morning twilight sky.

- Venus is still moving East or Retrograde motion towards the sun.

Venus

Type: **planet**
Magnitude: **-3.93** (extincted to: **0.49**)
Absolute Magnitude: 26.60
RA/Dec (J2000.0): 13h21m44.33s/-7°00'42.2"
RA/Dec (on date): 13h23m5.03s/-7°08'48.9"
Hour angle/DE: 18h28m20.88s/-6°47'22.0" (apparent)
Az/Alt: +99°47'53.0"/+0°17'34.5" (apparent)
Ecliptic longitude/latitude (J2000.0): +201°30'24.9"/+1°28'50.8"
Ecliptic longitude/latitude (on date): +201°52'01.7"/+1°28'42.0"
Ecliptic obliquity (on date): +23°26'09"
Galactic longitude/latitude: -43°51'17.5"/+55°04'50.8"
Mean Sidereal Time: 7h49m58.5s
Apparent Sidereal Time: 7h49m58.6s
Distance: 1.615AU (241.577 Mio km)
Apparent diameter: +0°00'10.3"
Sidereal period: 224.70 days (0.615 a)
Sidereal day: 5832h28m47.1s
Mean solar day: 2802h0m52.2s
Phase Angle: +22°59'48"
Elongation: +16°27'32"
Phase: 0.96
Illuminated: 96.0%

Date and Time

Date and Time | Julian Day

2025 / 10 / 31 | 6 : 23 : 19

Earth, Peterborough, 188m FOV 7.1° 49 FPS 2025-10-31 06:23:19 UTC-04:00

MARS

Mars

- On October 1st, Mars is low on the western horizon at sunset.

- Mars is just 5 degrees above the western horizon.

Mars

Type: **planet**
Magnitude: **1.56** (extincted to: **3.30**)
Absolute Magnitude: 31.27
RA/Dec (J2000.0): 14h15m19.72s/-13°39'50.0"
RA/Dec (on date): 14h16m43.28s/-13°47'02.0"
Hour angle/DE: 4h43m48.55s/-13°37'48.9" (apparent)
Az/Alt: +246°59'15.1"/+3°34'40.6" (apparent)
Ecliptic longitude/latitude (J2000.0): +216°10'49.0"/-0°05'16.4"
Ecliptic longitude/latitude (on date): +216°32'20.9"/-0°05'29.9"
Ecliptic obliquity (on date): +23°26'09"
Galactic longitude/latitude: -27°55'59.1"/+44°24'37.4"
Mean Sidereal Time: -4h58m53.4s
Apparent Sidereal Time: -4h58m53.2s
Distance: 2.359AU (352.836 Mio km)
Apparent diameter: +0°00'04.0"
Sidereal period: 686.97 days (1.881 a)
Sidereal day: 24h37m22.7s
Mean solar day: 24h39m35.2s
Phase Angle: +17°26'38"
Elongation: +27°29'38"
Phase: 0.98
Illuminated: 97.7%

Mars

- On October 1st, Mars sets at 7:52 p.m. in the western sky.

- Mars is visible for 20 minutes after sunset.

Mars

Type: **planet**
Magnitude: **1.56** (extincted to: **6.24**)
Absolute Magnitude: 31.27
RA/Dec (J2000.0): 14h15m22.18s/-13°40'03.1"
RA/Dec (on date): 14h16m45.73s/-13°47'15.1"
Hour angle/DE: 5h05m17.91s/-13°24'15.0" (apparent)
Az/Alt: +250°56'29.2"/+0°09'14.7" (apparent)
Ecliptic longitude/latitude (J2000.0): +216°11'27.1"/-0°05'16.9"
Ecliptic longitude/latitude (on date): +216°32'59.0"/-0°05'30.5"
Ecliptic obliquity (on date): +23°26'09"
Galactic longitude/latitude: -27°55'22.5"/+44°24'09.7"
Mean Sidereal Time: -4h36m24.8s
Apparent Sidereal Time: -4h36m24.6s
Distance: 2.359AU (352.842 Mio km)
Apparent diameter: +0°00'04.0"
Sidereal period: 686.97 days (1.881 a)
Sidereal day: 24h37m22.7s
Mean solar day: 24h39m35.2s
Phase Angle: +17°26'29"
Elongation: +27°29'21"
Phase: 0.98
Illuminated: 97.7%

Date and Time

Date and Time | Julian Day

2025 / 10 / 1 19 : 53 : 0

Earth, Peterborough, 188m FOV 4.3° 54.6 FPS 2025-10-01 19:53:00 UTC-04:00

Mars

- On October 15th, Mars is a couple degrees above the western horizon at sunset.

- Mars sets at only 15 minutes after becoming visible. The shorter days are helping the planet to appear stationary in the sky.

Mars

Type: **planet**
Magnitude: **1.52** (extincted to: **4.40**)
Absolute Magnitude: 31.21
RA/Dec (J2000.0): 14h53m7.54s/-16°47'47.9"
RA/Dec (on date): 14h54m33.68s/-16°54'08.5"
Hour angle/DE: 4h42m36.35s/-16°39'12.5" (apparent)
Az/Alt: +244°43'33.1"/+1°32'53.7" (apparent)
Ecliptic longitude/latitude (J2000.0): +225°49'04.1"/-0°13'56.6"
Ecliptic longitude/latitude (on date): +226°10'38.0"/-0°14'12.7"
Ecliptic obliquity (on date): +23°26'09"
Galactic longitude/latitude: -19°38'58.1"/+37°04'51.8"
Mean Sidereal Time: -4h21m52.9s
Apparent Sidereal Time: -4h21m52.7s
Distance: 2.387AU (357.085 Mio km)
Apparent diameter: +0°00'03.9"
Sidereal period: 686.97 days (1.881 a)
Sidereal day: 24h37m22.7s
Mean solar day: 24h39m35.2s
Phase Angle: +15°01'02"
Elongation: +23°19'25"
Phase: 0.98
Illuminated: 98.3%

Date and Time

Date and Time | Julian Day

2025 / 10 / 15 19 : 12 : 26

Earth, Peterborough, 188m FOV 7.1° 30.6 FPS 2025-10-15 19:12:26 UTC-04:00

JUPITER

Jupiter

- On October 1st, Jupiter rises at 12:38 a.m. in the midnight northeastern sky.

Jupiter

Type: **planet**
Magnitude: **-2.14** (extincted to: **2.03**)
Absolute Magnitude: 25.80
RA/Dec (J2000.0): 7h35m38.03s/+21°38'20.2"
RA/Dec (on date): 7h37m9.53s/+21°34'58.5"
Hour angle/DE: 16h30m17.87s/+21°56'39.3" (apparent)
Az/Alt: +59°01'44.8"/+0°26'40.4" (apparent)
Ecliptic longitude/latitude (J2000.0): +112°07'49.3"/+0°01'03.8"
Ecliptic longitude/latitude (on date): +112°29'21.1"/+0°01'23.2"
Ecliptic obliquity (on date): +23°26'09"
Galactic longitude/latitude: -162°12'54.2"/+19°04'05.0"
Mean Sidereal Time: 0h6m5.0s
Apparent Sidereal Time: 0h6m5.2s
Distance: 5.333AU (797.738 Mio km)
Apparent diameter: +0°00'37.0"
Sidereal period: 4331.87 days (11.860 a)
Sidereal day: 9h55m29.7s
Mean solar day: 9h55m33.1s
Phase Angle: +10°48'09"
Elongation: +75°47'05"
Phase: 0.99
Illuminated: 99.1%

Date and Time

Date and Time | Julian Day

2025 / 10 / 1 | 0 : 38 : 39

Earth, Peterborough, 188m FOV 22.1° 53.5 FPS 2025-10-01 00:38:39 UTC-04:00

Jupiter

- On October 1st, Jupiter is high in the southeastern sky at sunrise.

Jupiter
Type: planet
Magnitude: -2.14 (extincted to: -1.99)
Absolute Magnitude: 25.80
RA/Dec (J2000.0): 7h35m45.60s/+21°38'05.1"
RA/Dec (on date): 7h37m17.09s/+21°34'43.2"
Hour angle/DE: 22h23m42.72s/+21°35'11.7" (apparent)
Az/Alt: +130°59'43.1"/+59°50'01.6" (apparent)
Ecliptic longitude/latitude (J2000.0): +112°09'35.8"/+0°01'06.0"
Ecliptic longitude/latitude (on date): +112°31'07.6"/+0°01'25.4"
Ecliptic obliquity (on date): +23°26'09"
Galactic longitude/latitude: -162°11'56.9"/+19°05'36.7"
Mean Sidereal Time: 6h0m58.2s
Apparent Sidereal Time: 6h0m58.3s
Distance: 5.329AU (797.183 Mio km)
Apparent diameter: +0°00'37.0"
Sidereal period: 4331.87 days (11.860 a)
Sidereal day: 9h55m29.7s
Mean solar day: 9h55m33.1s
Phase Angle: +10°48'42"
Elongation: +75°59'54"
Phase: 0.99
Illuminated: 99.1%
Jupiter
Sirius
Venus
E
S
Date and Time
Date and Time
Julian Day
2025 / 10 / 1
6 : 32 : 34
Earth, Peterborough, 188m
FOV 138°
15.5 FPS
2025-10-01 06:32:34 UTC-04:00

Jupiter

- On October 14th, Jupiter and the last quarter Moon rise together in a close conjunction.

- Both objects rise at 12:21 a.m. in the midnight northeastern sky. The waning Quarter Moon is directly east of Jupiter.

Jupiter

Type: **planet**
Magnitude: **-2.22** (extincted to: **-0.74**)
Absolute Magnitude: 25.80
RA/Dec (J2000.0): 7h41m27.02s/+21°26'15.9"
RA/Dec (on date): 7h42m58.38s/+21°22'41.8"
Hour angle/DE: 16h57m48.61s/+21°30'25.7" (apparent)
Az/Alt: +64°01'54.7"/+4°26'57.4" (apparent)
Ecliptic longitude/latitude (J2000.0): +113°29'51.2"/+0°02'37.0"
Ecliptic longitude/latitude (on date): +113°51'24.9"/+0°02'56.0"
Ecliptic obliquity (on date): +23°26'09"
Galactic longitude/latitude: -161°28'20.0"/+20°14'34.9"
Mean Sidereal Time: 0h40m15.0s
Apparent Sidereal Time: 0h40m15.2s
Distance: 5.135AU (768.144 Mio km)
Apparent diameter: +0°00'38.4"
Sidereal period: 4331.87 days (11.860 a)
Sidereal day: 9h55m29.7s
Mean solar day: 9h55m33.1s
Phase Angle: +11°04'59"
Elongation: +87°13'47"
Phase: 0.99
Illuminated: 99.1%

Date and Time

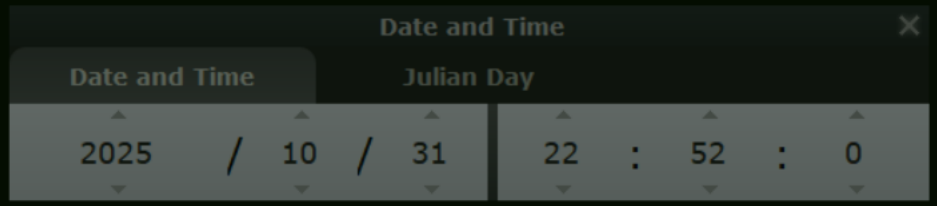
Date and Time | Julian Day

2025 / 10 / 14 | 0 : 21 : 37

Jupiter

- On October 31st, Jupiter rises at 10:51 p.m. in the northeastern evening sky.

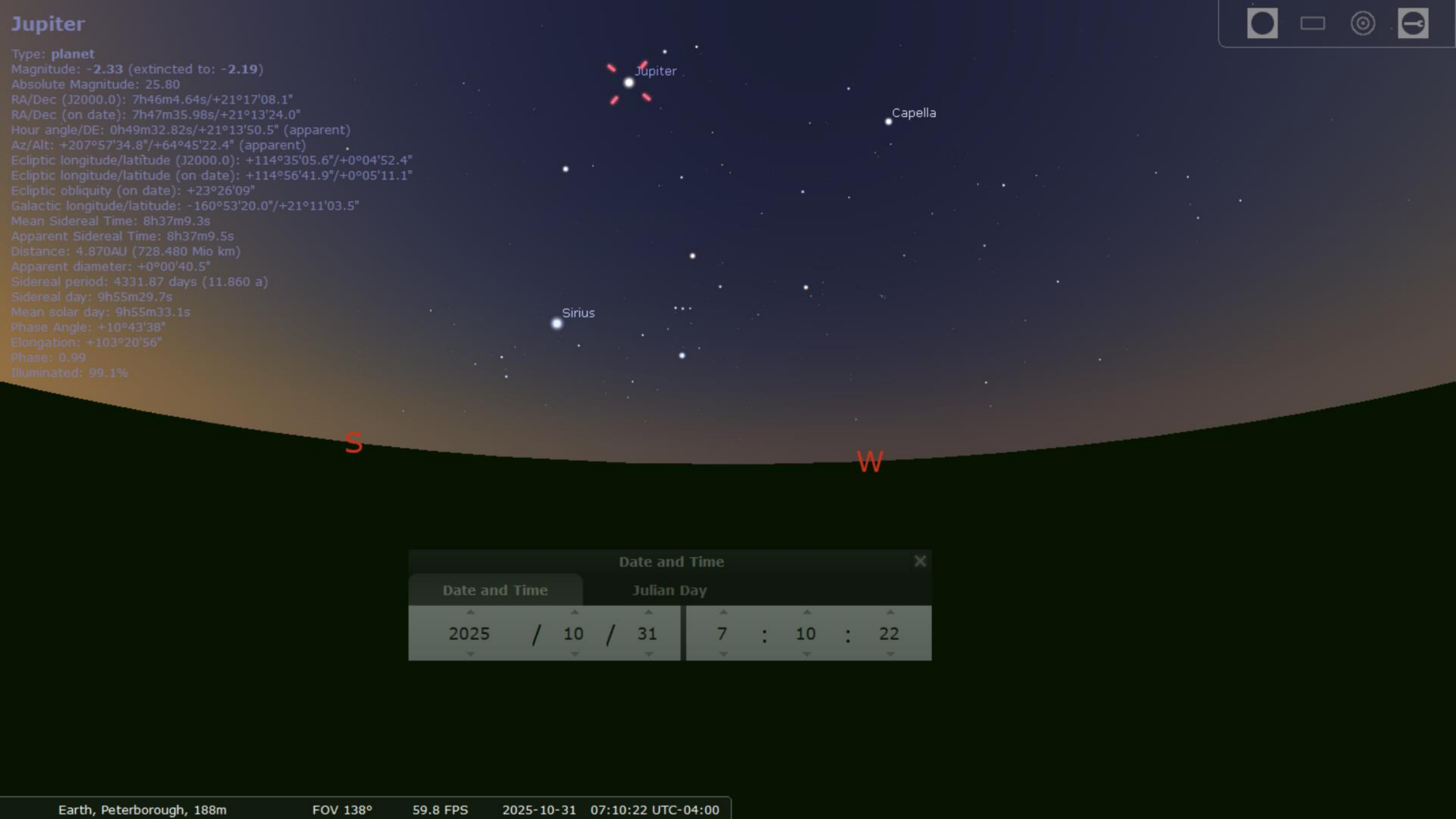
- Visible most of the night.



Earth, Peterborough, 188m FOV 22.1° 19.9 FPS 2025-10-31 22:52:00 UTC-04:00

Jupiter

- On October 31st, Jupiter is high in the southwestern sky at sunrise.


Jupiter
Type: planet
Magnitude: -2.33 (extincted to: -2.19)
Absolute Magnitude: 25.80
RA/Dec (J2000.0): 7h46m4.64s/+21°17'08.1"
RA/Dec (on date): 7h47m35.98s/+21°13'24.0"
Hour angle/DE: 0h49m32.82s/+21°13'50.5" (apparent)
Az/Alt: +207°57'34.8"/+64°45'22.4" (apparent)
Ecliptic longitude/latitude (J2000.0): +114°35'05.6"/+0°04'52.4"
Ecliptic longitude/latitude (on date): +114°56'41.9"/+0°05'11.1"
Ecliptic obliquity (on date): +23°26'09"
Galactic longitude/latitude: -160°53'20.0"/+21°11'03.5"
Mean Sidereal Time: 8h37m9.3s
Apparent Sidereal Time: 8h37m9.5s
Distance: 4.870AU (728.480 Mio km)
Apparent diameter: +0°00'40.5"
Sidereal period: 4331.87 days (11.860 a)
Sidereal day: 9h55m29.7s
Mean solar day: 9h55m33.1s
Phase Angle: +10°43'38"
Elongation: +103°20'56"
Phase: 0.99
Illuminated: 99.1%
Jupiter
Capella
Sirius
S
W
Date and Time
Date and Time
Julian Day
2025 / 10 / 31
7 : 10 : 22
Earth, Peterborough, 188m
FOV 138°
59.8 FPS
2025-10-31 07:10:22 UTC-04:00

SATURN

Saturn

- On October 1st, Saturn is low on the eastern horizon at sunset.

Saturn

Type: **planet**
Magnitude: **0.68** (extincted to: **1.69**)
Absolute Magnitude: 27.59
RA/Dec (J2000.0): 23h54m9.82s/-3°22'11.6"
RA/Dec (on date): 23h55m28.89s/-3°13'37.2"
Hour angle/DE: 18h51m24.65s/-3°08'18.7" (apparent)
Az/Alt: +101°17'17.1"/+6°56'02.1" (apparent)
Ecliptic longitude/latitude (J2000.0): +357°19'13.9"/-2°30'41.5"
Ecliptic longitude/latitude (on date): +357°40'46.7"/-2°30'41.3"
Ecliptic obliquity (on date): +23°26'09"
Galactic longitude/latitude: +90°30'45.4"/-62°34'47.5"
Mean Sidereal Time: 18h46m32.3s
Apparent Sidereal Time: 18h46m32.5s
Distance: 8.564AU (1281.166 Mio km)
Apparent diameter: +0°00'19.4", with rings: +0°00'45.2"
Sidereal period: 10760.00 days (29.459 a)
Sidereal day: 10h39m22.4s
Mean solar day: 10h39m24.0s
Phase Angle: +1°12'39"
Elongation: +168°22'22"
Phase: 1.00
Illuminated: 100.0%

E

Date and Time

Date and Time | Julian Day

2025 / 10 / 1 | 19 : 15 : 3

Earth, Peterborough, 188m FOV 18.7° 34.7 FPS 2025-10-01 19:16:03 UTC-04:00

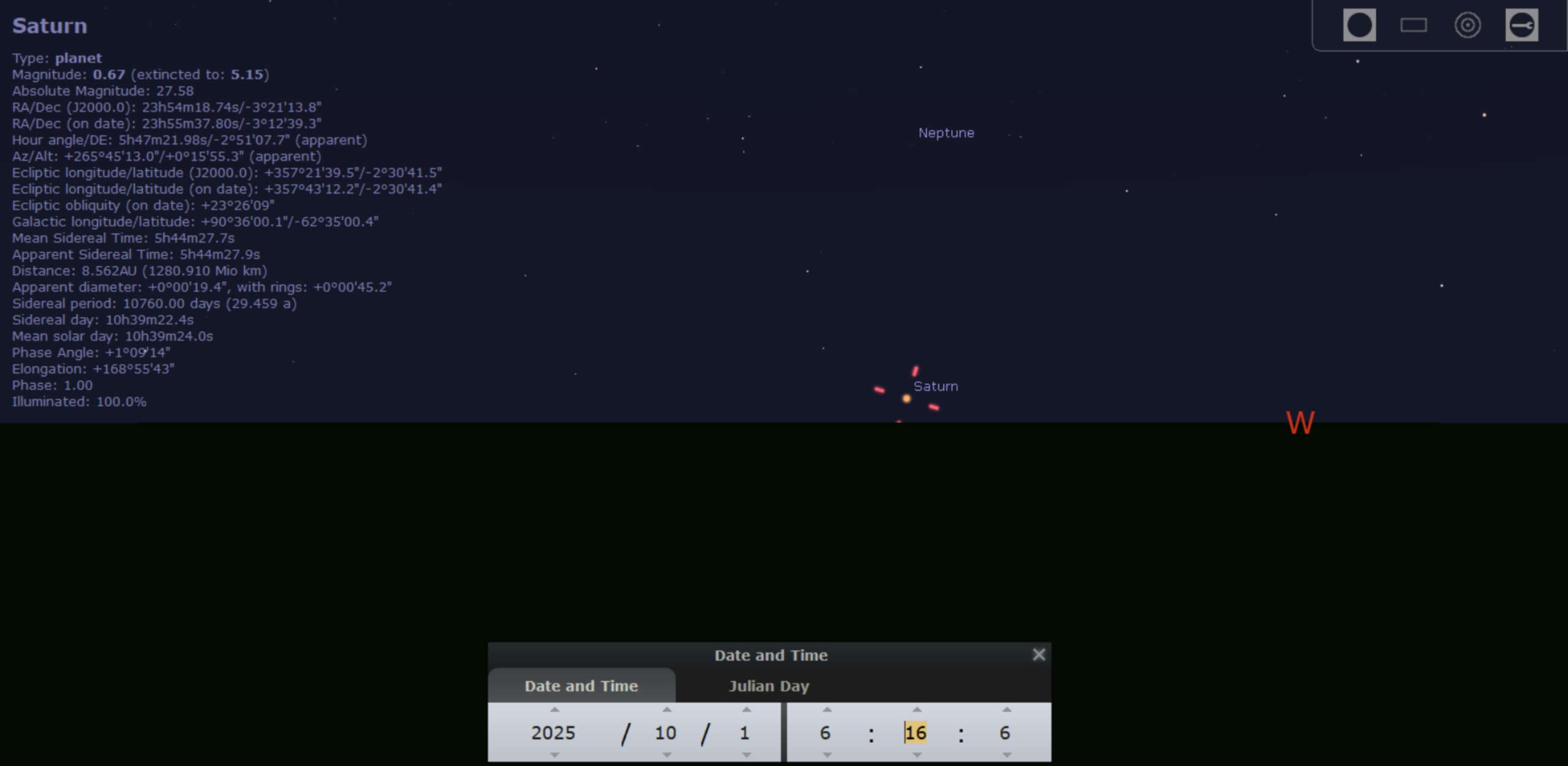
Saturn

- On October 1st, Saturn sets at 6:17 a.m. in the western sky.

- Saturn is visible all night.

Saturn

Type: **planet**
Magnitude: **0.67** (extincted to: **5.15**)
Absolute Magnitude: 27.58
RA/Dec (J2000.0): 23h54m18.74s/-3°21'13.8"
RA/Dec (on date): 23h55m37.80s/-3°12'39.3"
Hour angle/DE: 5h47m21.98s/-2°51'07.7" (apparent)
Az/Alt: +265°45'13.0"/+0°15'55.3" (apparent)
Ecliptic longitude/latitude (J2000.0): +357°21'39.5"/-2°30'41.5"
Ecliptic longitude/latitude (on date): +357°43'12.2"/-2°30'41.4"
Ecliptic obliquity (on date): +23°26'09"
Galactic longitude/latitude: +90°36'00.1"/-62°35'00.4"
Mean Sidereal Time: 5h44m27.7s
Apparent Sidereal Time: 5h44m27.9s
Distance: 8.562AU (1280.910 Mio km)
Apparent diameter: +0°00'19.4", with rings: +0°00'45.2"
Sidereal period: 10760.00 days (29.459 a)
Sidereal day: 10h39m22.4s
Mean solar day: 10h39m24.0s
Phase Angle: +1°09'14"
Elongation: +168°55'43"
Phase: 1.00
Illuminated: 100.0%



Earth, Peterborough, 188m FOV 9.59° 59.4 FPS 2025-10-01 06:16:06 UTC-04:00

Saturn

- On October 5th , Saturn and a near Full Moon rise together in the eastern sky at sunset. Saturn is directly south of the moon.

- Saturn and the Moon share a close conjunction at sunset.

- Saturn may get partially washed out by the lunar glare

Saturn

Type: **planet**
Magnitude: **0.71** (extincted to: **2.36**)
Absolute Magnitude: 27.61
RA/Dec (J2000.0): 23h53m4.59s/-3°29'07.1"
RA/Dec (on date): 23h54m23.73s/-3°20'32.4"
Hour angle/DE: 18h34m1.02s/-3°12'06.4" (apparent)
Az/Alt: +98°14'43.7"/+3°49'20.9" (apparent)
Ecliptic longitude/latitude (J2000.0): +357°01'31.5"/-2°30'33.8"
Ecliptic longitude/latitude (on date): +357°23'05.1"/-2°30'33.8"
Ecliptic obliquity (on date): +23°26'09"
Galactic longitude/latitude: +89°52'33.4"/-62°33'00.5"
Mean Sidereal Time: 18h27m50.5s
Apparent Sidereal Time: 18h27m50.7s
Distance: 8.579AU (1283.447 Mio km)
Apparent diameter: +0°00'19.4", with rings: +0°00'45.1"
Sidereal period: 10760.00 days (29.459 a)
Sidereal day: 10h39m22.4s
Mean solar day: 10h39m24.0s
Phase Angle: +1°37'49"
Elongation: +164°14'20"
Phase: 1.00
Illuminated: 100.0%

Date and Time

Date and Time | Julian Day

2025 / 10 / 5 18 : 41 : 41

Earth, Peterborough, 188m FOV 11.3° 50 FPS 2025-10-05 18:41:41 UTC-04:00

Saturn

- On October 31st, Saturn remains well placed on the southeastern horizon at evening twilight.

Saturn
Type: planet
Magnitude: 0.90 (extincted to: 1.28)
Absolute Magnitude: 27.75
RA/Dec (J2000.0): 23h47m9.69s/-4°04'34.5"
RA/Dec (on date): 23h48m29.13s/-3°55'59.1"
Hour angle/DE: 20h10m7.24s/-3°53'52.0" (apparent)
Az/Alt: +116°42'57.2"/+19°39'47.9" (apparent)
Ecliptic longitude/latitude (J2000.0): +355°26'06.3"/-2°27'52.8"
Ecliptic longitude/latitude (on date): +355°47'43.6"/-2°27'53.4"
Ecliptic obliquity (on date): +23°26'09"
Galactic longitude/latitude: +86°28'52.3"/-62°18'31.5"
Mean Sidereal Time: -4h1m30.9s
Apparent Sidereal Time: -4h1m30.7s
Distance: 8.788AU (1314.612 Mio km)
Apparent diameter: +0°00'18.9", with rings: +0°00'44.1"
Sidereal period: 10760.00 days (29.459 a)
Sidereal day: 10h39m22.4s
Mean solar day: 10h39m24.0s
Phase Angle: +4°04'20"
Elongation: +136°58'34"
Phase: 1.00
Illuminated: 99.9%
Moon
Saturn
E
Date and Time
Date and Time
Julian Day
2025 / 10 / 31
18 : 29 : 51
Earth, Peterborough, 188m
FOV 43°
25.7 FPS
2025-10-31 18:29:51 UTC-04:00

Saturn

- On October 31st, Saturn sets at 4:07 a.m. in the western morning sky.

Saturn
Type: planet
Magnitude: 0.89 (extincted to: 5.08)
Absolute Magnitude: 27.75
RA/Dec (J2000.0): 23h47m15.82s/-4°04'00.3"
RA/Dec (on date): 23h48m35.25s/-3°55'24.9"
Hour angle/DE: 5h43m32.34s/-3°35'07.3" (apparent)
Az/Alt: +264°33'40.5"/+0°26'04.4" (apparent)
Ecliptic longitude/latitude (J2000.0): +355°27'44.0"/-2°27'57.9"
Ecliptic longitude/latitude (on date): +355°49'21.3"/-2°27'58.4"
Ecliptic obliquity (on date): +23°26'09"
Galactic longitude/latitude: +86°32'18.6"/-62°18'51.1"
Mean Sidereal Time: 5h33m30.4s
Apparent Sidereal Time: 5h33m30.5s
Distance: 8.781AU (1313.608 Mio km)
Apparent diameter: +0°00'18.9", with rings: +0°00'44.1"
Sidereal period: 10760.00 days (29.459 a)
Sidereal day: 10h39m22.4s
Mean solar day: 10h39m24.0s
Phase Angle: +4°01'30"
Elongation: +137°35'53"
Phase: 1.00
Illuminated: 99.9%
Ceres
Neptune
Saturn
W
Date and Time
Date and Time
Julian Day
2025 / 10 / 31
4 : 7 : 14
Earth, Peterborough, 188m
FOV 18.7°
53.4 FPS
2025-10-31 04:07:14 UTC-04:00

URANUS

Uranus

- On October 1st, Uranus rises at 8:58 p.m. in the eastern sky.

Uranus

Type: **planet**
Magnitude: **5.64** (extincted to: **10.37**)
Absolute Magnitude: 30.83
RA/Dec (J2000.0): 3h54m54.13s/+20°06'50.3"
RA/Dec (on date): 3h56m23.79s/+20°11'24.2"
Hour angle/DE: 16h34m46.12s/+20°35'32.6" (apparent)
Az/Alt: +60°42'20.4"/+0°07'32.7" (apparent)
Ecliptic longitude/latitude (J2000.0): +60°49'29.7"/-0°12'49.2"
Ecliptic longitude/latitude (on date): +61°11'01.7"/-0°12'29.9"
Ecliptic obliquity (on date): +23°26'09"
Galactic longitude/latitude: +171°03'16.6"/-25°09'31.5"
Mean Sidereal Time: -3h30m22.2s
Apparent Sidereal Time: -3h30m22.0s
Distance: 18.875AU (2823.658 Mio km)
Apparent diameter: +0°00'03.7", with rings: +0°00'14.3"
Sidereal period: 30685.00 days (84.011 a)
Sidereal day: 17h14m24.0s
Mean solar day: 17h14m22.5s
Phase Angle: +2°19'12"
Elongation: +127°55'18"
Phase: 1.00
Illuminated: 100.0%

Date and Time

Date and Time | Julian Day

2025 / 10 / 1 | 20 : 58 : 51

Earth, Peterborough, 188m FOV 0.787° 15.4 FPS 2025-10-01 20:58:51 UTC-04:00

Uranus

- On October 1st, Uranus remains in the southwestern sky at sunrise.
- Uranus is 5 degrees south of M45 – The Pleiades

Uranus
Type: planet
Magnitude: 5.64 (extincted to: 5.80)
Absolute Magnitude: 30.83
RA/Dec (J2000.0): 3h54m57.24s/+20°06'59.8"
RA/Dec (on date): 3h56m26.90s/+20°11'33.5"
Hour angle/DE: 1h58m31.61s/+20°12'05.6" (apparent)
Az/Alt: +235°11'31.6"/+55°35'20.5" (apparent)
Ecliptic longitude/latitude (J2000.0): +60°50'14.6"/-0°12'49.0"
Ecliptic longitude/latitude (on date): +61°11'46.4"/-0°12'29.7"
Ecliptic obliquity (on date): +23°26'09"
Galactic longitude/latitude: +171°03'43.5"/-25°08'53.9"
Mean Sidereal Time: 5h55m0.1s
Apparent Sidereal Time: 5h55m0.3s
Distance: 18.883AU (2824.871 Mio km)
Apparent diameter: +0°00'03.7", with rings: +0°00'14.3"
Sidereal period: 30685.00 days (84.011 a)
Sidereal day: 17h14m24.0s
Mean solar day: 17h14m22.5s
Phase Angle: +2°20'22"
Elongation: +127°18'60"
Phase: 1.00
Illuminated: 100.0%
Procyon
Betelgeuse
Rigel
Sirius
S
W
Date and Time
Date and Time
Julian Day
2025 / 10 / 1
6 : 26 : 37
Earth, Peterborough, 188m
FOV 117°
15.1 FPS
2025-10-01 06:26:37 UTC-04:00

Uranus

- On October 31st, Uranus rises at 7:00 p.m. in eastern evening twilight sky.

Date and Time

Date and Time | Julian Day

2025 / 10 / 31 18 : 59 : 16

Earth, Peterborough, 188m FOV 6.87° 17.4 FPS 2025-10-31 18:59:16 UTC-04:00

Uranus

- On October 31st, Uranus remains high in the western sky at sunrise.

Uranus
Type: planet
Magnitude: 5.61 (extincted to: 5.88)
Absolute Magnitude: 30.83
RA/Dec (J2000.0): 3h51m11.08s/+19°55'42.6"
RA/Dec (on date): 3h52m40.84s/+20°00'24.1"
Hour angle/DE: 4h36m39.03s/+20°01'35.1" (apparent)
Az/Alt: +270°45'42.1"/+28°34'43.3" (apparent)
Ecliptic longitude/latitude (J2000.0): +59°55'56.0"/-0°12'44.4"
Ecliptic longitude/latitude (on date): +60°17'32.4"/-0°12'25.5"
Ecliptic obliquity (on date): +23°26'09"
Galactic longitude/latitude: +170°30'36.2"/-25°54'14.6"
Mean Sidereal Time: 8h29m25.6s
Apparent Sidereal Time: 8h29m25.8s
Distance: 18.577AU (2779.082 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: +1°05'35"
Elongation: +157°59'42"
Phase: 1.00
Illuminated: 100.0%
Sirius
Rigel
Uranus
W
Date and Time
Date and Time
Julian Day
2025 / 10 / 31
7 : 2 : 40
Earth, Peterborough, 188m
FOV 73.2°
21.9 FPS
2025-10-31 07:02:40 UTC-04:00

NEPTUNE

Neptune

- On October 1st, Neptune is low on the eastern horizon at evening twilight.

- The planet Saturn is 2 degrees west of Neptune and can be used as a guidepost to find the planet.

Neptune

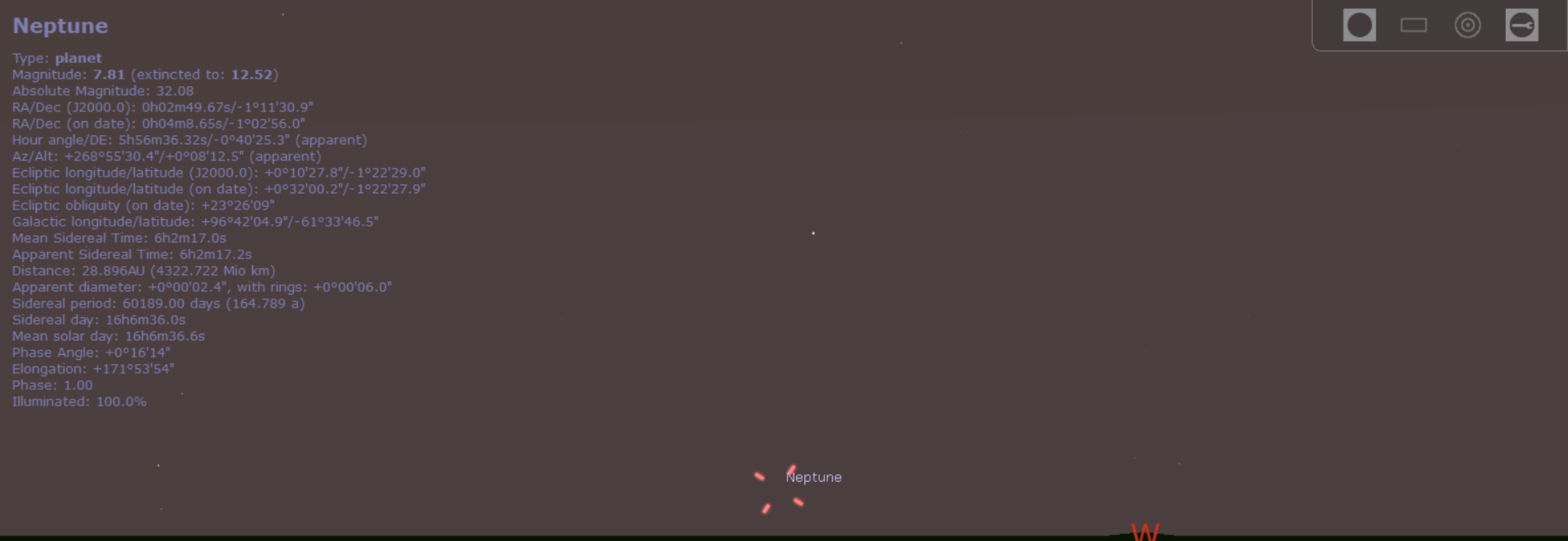
Type: **planet**
Magnitude: **7.81** (extincted to: **8.70**)
Absolute Magnitude: 32.08
RA/Dec (J2000.0): 0h02m46.48s/-1°11'51.8"
RA/Dec (on date): 0h04m5.47s/-1°03'16.9"
Hour angle/DE: 18h49m5.84s/-0°58'39.1" (apparent)
Az/Alt: +99°20'19.1"/+8°03'36.7" (apparent)
Ecliptic longitude/latitude (J2000.0): +0°09'35.7"/-1°22'29.2"
Ecliptic longitude/latitude (on date): +0°31'08.0"/-1°22'28.0"
Ecliptic obliquity (on date): +23°26'09"
Galactic longitude/latitude: +96°40'15.3"/-61°33'46.9"
Mean Sidereal Time: -5h7m7.4s
Apparent Sidereal Time: -5h7m7.2s
Distance: 28.897AU (4322.938 Mio km)
Apparent diameter: +0°00'02.4", with rings: +0°00'06.0"
Sidereal period: 60189.00 days (164.789 a)
Sidereal day: 16h6m36.0s
Mean solar day: 16h6m36.6s
Phase Angle: +0°17'17"
Elongation: +171°22'10"
Phase: 1.00
Illuminated: 100.0%

Neptune

- On October 1st, Neptune sets at 6:33 a.m. in the western sky.

Neptune

Type: **planet**
Magnitude: **7.81** (extincted to: **12.52**)
Absolute Magnitude: 32.08
RA/Dec (J2000.0): 0h02m49.67s/-1°11'30.9"
RA/Dec (on date): 0h04m8.65s/-1°02'56.0"
Hour angle/DE: 5h56m36.32s/-0°40'25.3" (apparent)
Az/Alt: +268°55'30.4"/+0°08'12.5" (apparent)
Ecliptic longitude/latitude (J2000.0): +0°10'27.8"/-1°22'29.0"
Ecliptic longitude/latitude (on date): +0°32'00.2"/-1°22'27.9"
Ecliptic obliquity (on date): +23°26'09"
Galactic longitude/latitude: +96°42'04.9"/-61°33'46.5"
Mean Sidereal Time: 6h2m17.0s
Apparent Sidereal Time: 6h2m17.2s
Distance: 28.896AU (4322.722 Mio km)
Apparent diameter: +0°00'02.4", with rings: +0°00'06.0"
Sidereal period: 60189.00 days (164.789 a)
Sidereal day: 16h6m36.0s
Mean solar day: 16h6m36.6s
Phase Angle: +0°16'14"
Elongation: +171°53'54"
Phase: 1.00
Illuminated: 100.0%



Date and Time

Date and Time | Julian Day

2025 / 10 / 1 | 6 : 33 : 53

Earth, Peterborough, 188m FOV 2.61° 14.9 FPS 2025-10-01 06:33:53 UTC-04:00

Neptune

- On October 31st, Neptune is high in the soueastern sky at evening twilight.

Neptune
Type: planet
Magnitude: 7.83 (extincted to: 8.19)
Absolute Magnitude: 32.08
RA/Dec (J2000.0): 0h00m4.81s/-1°28'58.5"
RA/Dec (on date): 0h01m24.10s/-1°20'21.9"
Hour angle/DE: 20h03m49.12s/-1°18'23.0" (apparent)
Az/Alt: +113°39'00.4"/+20°36'57.8" (apparent)
Ecliptic longitude/latitude (J2000.0): +359°25'42.2"/-1°22'06.6"
Ecliptic longitude/latitude (on date): +359°47'19.2"/-1°22'05.7"
Ecliptic obliquity (on date): +23°26'09"
Galactic longitude/latitude: +95°08'08.1"/-61°33'05.2"
Mean Sidereal Time: -3h54m53.8s
Apparent Sidereal Time: -3h54m53.7s
Distance: 29.108AU (4354.547 Mio km)
Apparent diameter: +0°00'02.4", with rings: +0°00'06.0"
Sidereal period: 60189.00 days (164.789 a)
Sidereal day: 16h6m36.0s
Mean solar day: 16h6m36.6s
Phase Angle: +1°11'52"
Elongation: +141°00'05"
Phase: 1.00
Illuminated: 100.0%
Moon
Saturn
E
Date and Time
Date and Time
Julian Day
2025 / 10 / 31
18 : 36 : 27
Earth, Peterborough, 188m
FOV 37.6°
59.5 FPS
2025-10-31 18:36:27 UTC-04:00

Neptune

- On October 31st, Neptune sets at 4:31 a.m. in the western sky.

Neptune

Type: **planet**
Magnitude: **7.83** (extincted to: **12.04**)
Absolute Magnitude: 32.08
RA/Dec (J2000.0): 0h00m7.41s/-1°28'42.4"
RA/Dec (on date): 0h01m26.68s/-1°20'05.8"
Hour angle/DE: 5h53m46.61s/-0°59'43.7" (apparent)
Az/Alt: +268°12'03.4"/+0°25'04.8" (apparent)
Ecliptic longitude/latitude (J2000.0): +359°26'24.3"/-1°22'07.3"
Ecliptic longitude/latitude (on date): +359°48'01.2"/-1°22'06.4"
Ecliptic obliquity (on date): +23°26'09"
Galactic longitude/latitude: +95°09'36.5"/-61°33'06.6"
Mean Sidereal Time: 5h56m36.6s
Apparent Sidereal Time: 5h56m36.7s
Distance: 29.102AU (4353.587 Mio km)
Apparent diameter: +0°00'02.4", with rings: +0°00'06.0"
Sidereal period: 60189.00 days (164.789 a)
Sidereal day: 16h6m36.0s
Mean solar day: 16h6m36.6s
Phase Angle: +1°10'57"
Elongation: +141°35'51"
Phase: 1.00
Illuminated: 100.0%

Date and Time

Date and Time | Julian Day

2025 / 10 / 31 4 : 30 : 16

Earth, Peterborough, 188m FOV 11.7° 55.2 FPS 2025-10-31 04:30:16 UTC-04:00

DEEP SKY

COMETS

COMET LEMMON

C/2025 A6 (Lemmon)

The best comet of fall 2025

C/2025 - A6 – COMET LEMMON

- Favors the Northern Hemisphere. The comet’s orbit is tilted by 144°, so the comet moves retrograde — opposite the planets’ usual direction — and reaches perihelion north of the ecliptic, favoring northern observers.

- By October 10, it even becomes circumpolar (never setting) for latitudes 48° N or above . Besides, its best evening visibility for many locations arrives in late October–early November, aligning with the long, clear autumn nights in the Northern Hemisphere.

C/2025 - A6 – COMET LEMMON

- Early October: Best visible before dawn (around 2 a.m. local time), rising highest shortly before sunrise. Look northeast, east of the Big Dipper, near the Ursa Major border.
- Mid-October: Shifts into the evening sky for many locations (some will still see it in the morning and evening). In the evening, look above the northwest horizon (west of the Big Dipper).
- In the morning, look northwest, north of the Big Dipper. On October 16, passes less than 1° from Cor Caroli (mag 2.9). Elongation ~48°.

C/2025 - A6 – COMET LEMMON

- Orbital Period 1,350 years. Now shortened to 1,150 years.
- In August and September, the comet passed close enough to Jupiter that its gravity slowed the comet enough to change the escape velocity of Comet Lemmon. Jupiter took 200 years off the orbit.
- Magnitude – Comet Lemmon is +7 - +6 magnitude early October. Expected to climb to +4 or +2 by October 21st , closest approach to Earth. Tail is now 3 degrees
- Distance at closest approach 56 million miles 0.60 AU
- Amateur photo of Comet Lemmon taken Sept 20, 2025

C/2025 - A6 – COMET LEMMON

- Photo by Oct. 2, and it's still getting brighter. I used my Celestron RASA telescope, ZWO ASI533MC color camera, and an Antlia L-Filter from Starfront Observatories.

- Chuck’s Photography

That is the Sky this Month

By David Mills