Sky this Month

September 2025

By David Mills

MOON

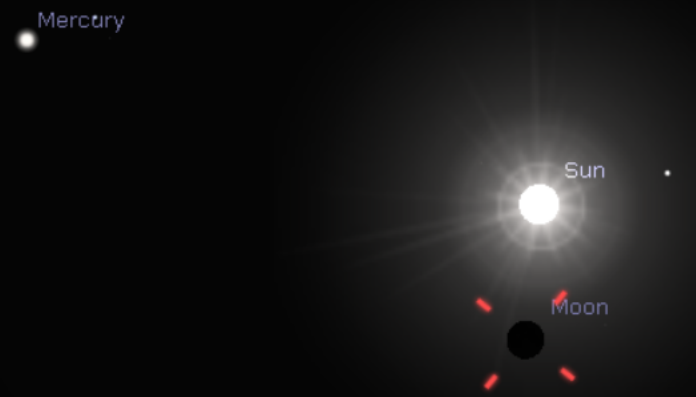
NEW MOON

Moon

- The New Moon is on September 21st, at 3:54 p.m.
- September's new Moon is the New Harvest Moon.
- The Moon is located south of the sun.

Moon

Type: **moon**
Magnitude: **1.55**
Absolute Magnitude: 46.02
RA/Dec (J2000.0): 11h52m1.91s/-1°03'24.5"
RA/Dec (on date): 11h53m20.77s/-1°11'58.1"
Hour angle/DE: 2h53m50.44s/-1°11'58.1"
Az/Alt: +232°48'33.0"/+30°18'53.8"
Ecliptic longitude/latitude (J2000.0): +178°35'33.1"/-1°45'43.0"
Ecliptic longitude/latitude (on date): +178°57'02.7"/-1°45'43.6"
Ecliptic obliquity (on date): +23°26'09"
Galactic longitude/latitude: -86°20'44.3"/+58°23'49.4"
Mean Sidereal Time: 14h47m11.0s
Apparent Sidereal Time: 14h47m11.2s
Distance: 0.002633AU (393869.955 km)
Apparent diameter: +0°30'19.7"
Sidereal period: 27.32 days (0.075 a)
Sidereal day: 655h43m11.5s
Mean solar day: 708h44m2.8s
Phase Angle: +178°13'47"
Elongation: +1°45'56"
Phase: 0.00
Illuminated: 0.0%



Date and Time

Date and Time | Julian Day

2025 / 9 / 21 15 : 56 : 40

Earth, Peterborough, 188m FOV 18.7° 15.5 FPS 2025-09-21 15:56:40 UTC-04:00

Moon

- The New Moon is on September 21st, at 3:54 p.m.
- The planets Mercury and Mars are now east of the sun.
- The planets Venus, Jupiter and Saturn are now west of the sun.

Moon

Type: **moon**
Magnitude: **1.55**
Absolute Magnitude: 46.02
RA/Dec (J2000.0): 11h52m4.42s/-1°03'52.6"
RA/Dec (on date): 11h53m23.28s/-1°12'26.2"
Hour angle/DE: 2h55m42.03s/-1°12'26.2"
Az/Alt: +233°14'42.5"/+30°02'33.6"
Ecliptic longitude/latitude (J2000.0): +178°36'18.9"/-1°45'53.7"
Ecliptic longitude/latitude (on date): +178°57'48.5"/-1°45'54.3"
Ecliptic obliquity (on date): +23°26'09"
Galactic longitude/latitude: -86°19'16.2"/+58°23'40.5"
Mean Sidereal Time: 14h49m5.1s
Apparent Sidereal Time: 14h49m5.3s
Distance: 0.002633AU (393899.932 km)
Apparent diameter: +0°30'19.6"
Sidereal period: 27.32 days (0.075 a)
Sidereal day: 655h43m11.5s
Mean solar day: 708h44m2.8s
Phase Angle: +178°13'39"
Elongation: +1°46'04"
Phase: 0.00
Illuminated: 0.0%

Mars
Spica
Mercury
Sun
Moon
Venus
Regulus

Date and Time

Date and Time | Julian Day

2025 / 9 / 21 15 : 58 : 34

Earth, Peterborough, 188m FOV 50.8° 15.3 FPS 2025-09-21 15:58:34 UTC-04:00

FULL MOON

Moon

- The full Moon is on September 7th, at 7:10 p.m.
- This month's Full Moon is called the Harvest or Corn Moon.
- On September 7th, the moon rises at 7:38 p.m.

Moon

Type: **moon**
Magnitude: -**12.33** (extincted to: -**8.21**)
Absolute Magnitude: 32.28
RA/Dec (J2000.0): 23h19m54.91s/-5°16'14.0"
RA/Dec (on date): 23h21m14.25s/-5°07'49.9"
Hour angle/DE: 18h21m29.78s/-4°47'49.7" (apparent)
Az/Alt: +97°10'58.9"/+0°28'50.2" (apparent)
Ecliptic longitude/latitude (J2000.0): +348°43'25.2"/-0°52'46.9"
Ecliptic longitude/latitude (on date): +349°04'53.5"/-0°52'50.0"
Ecliptic obliquity (on date): +23°26'09"
Galactic longitude/latitude: +73°55'59.2"/-59°08'06.6"
Mean Sidereal Time: 17h41m22.2s
Apparent Sidereal Time: 17h41m22.4s
Distance: 0.002465AU (368825.246 km)
Apparent diameter: +0°32'23.3"
Sidereal period: 27.32 days (0.075 a)
Sidereal day: 655h43m11.5s
Mean solar day: 708h44m2.8s
Phase Angle: +3°34'41"
Elongation: +176°24'47"
Phase: 1.00
Illuminated: 99.9%

Date and Time

Date and Time | Julian Day

2025 / 9 / 7 19 : 45 : 25

Full-screen mode [F11]

Earth, Peterborough, 188m FOV 8.12° 32.7 FPS 2025-09-07 19:45:25 UTC-04:00

MERCURY

Mercury

- On September 1st, Mercury rises at 5:36 a.m. in the eastern twilight sky.

- Mercury rises 1 hour before sunrise. Mercury is just above the eastern horizon before sunrise.

Mercury

Type: **planet**
Magnitude: **-0.43** (extincted to: **3.71**)
Absolute Magnitude: 30.69
RA/Dec (J2000.0): 10h00m47.92s/+13°48'10.9"
RA/Dec (on date): 10h02m10.88s/+13°40'49.6"
Hour angle/DE: 17h06m19.76s/+14°01'25.6" (apparent)
Az/Alt: +70°41'24.6"/+0°27'54.6" (apparent)
Ecliptic longitude/latitude (J2000.0): +147°27'33.0"/+1°32'33.2"
Ecliptic longitude/latitude (on date): +147°49'00.6"/+1°32'43.7"
Ecliptic obliquity (on date): +23°26'09"
Galactic longitude/latitude: -137°17'56.2"/+48°06'20.6"
Mean Sidereal Time: 3h7m8.2s
Apparent Sidereal Time: 3h7m8.4s
Distance: 1.231AU (184.163 Mio km)
Apparent diameter: +0°00'05.5"
Sidereal period: 87.97 days (0.241 a)
Sidereal day: 1407h30m33.8s
Mean solar day: 4222h27m52.5s
Phase Angle: +39°44'27"
Elongation: +11°30'34"
Phase: 0.88
Illuminated: 88.4%

Date and Time

Date and Time | Julian Day

2025 / 9 / 1 5 : 37 : 10

Mercury

- On September 1st, Mercury, Venus and Jupiter form a straight line in the morning twilight sky.

- All 3 planets align just 50 minutes before sunrise.

Mercury

Type: **planet**
Magnitude: **-0.43** (extincted to: **1.61**)
Absolute Magnitude: 30.69
RA/Dec (J2000.0): 10h00m52.70s/+13°47'48.9"
RA/Dec (on date): 10h02m15.66s/+13°40'27.5"
Hour angle/DE: 17h21m6.27s/+13°50'47.1" (apparent)
Az/Alt: +73°22'16.5"/+2°51'11.6" (apparent)
Ecliptic longitude/latitude (J2000.0): +147°28'46.0"/+1°32'36.5"
Ecliptic longitude/latitude (on date): +147°50'13.6"/+1°32'47.0"
Ecliptic obliquity (on date): +23°26'09"
Galactic longitude/latitude: -137°16'41.6"/+48°07'14.1"
Mean Sidereal Time: 3h22m39.3s
Apparent Sidereal Time: 3h22m39.5s
Distance: 1.231AU (184.194 Mio km)
Apparent diameter: +0°00'05.5"
Sidereal period: 87.97 days (0.241 a)
Sidereal day: 1407h30m33.8s
Mean solar day: 4222h27m52.5s
Phase Angle: +39°41'48"
Elongation: +11°29'59"
Phase: 0.88
Illuminated: 88.5%

Jupiter
Venus
Sirius
Mercury
E

Date and Time

Date and Time | Julian Day

2025 / 9 / 1 5 : 52 : 38

Date and Time in Gregorian calendar

Earth, Peterborough, 188m FOV 70.9° 15.6 FPS 2025-09-01 05:52:38 UTC-04:00

Mercury

- On September 4th, Mercury is too low on the eastern horizon at sunrise to be seen.

- The planet is now getting lost in the pre-dawn solar glare at sunrise. Mercury reappears in the evening sky at month's end.

Mercury

Type: **planet**
Magnitude: **-0.58** (extincted to: **2.86**)
Absolute Magnitude: 30.45
RA/Dec (J2000.0): 10h23m12.34s/+11°55'58.2"
RA/Dec (on date): 10h24m34.09s/+11°48'13.4"
Hour angle/DE: 17h17m29.43s/+12°05'19.5" (apparent)
Az/Alt: +73°59'09.5"/+0°59'09.0" (apparent)
Ecliptic longitude/latitude (J2000.0): +153°13'50.0"/+1°43'45.4"
Ecliptic longitude/latitude (on date): +153°35'17.9"/+1°43'54.1"
Ecliptic obliquity (on date): +23°26'09"
Galactic longitude/latitude: -130°48'16.2"/+52°06'27.6"
Mean Sidereal Time: 3h40m54.1s
Apparent Sidereal Time: 3h40m54.4s
Distance: 1.285AU (192.184 Mio km)
Apparent diameter: +0°00'05.2"
Sidereal period: 87.97 days (0.241 a)
Sidereal day: 1407h30m33.8s
Mean solar day: 4222h27m52.5s
Phase Angle: +27°59'06"
Elongation: +8°43'36"
Phase: 0.94
Illuminated: 94.2%

Date and Time

Date and Time | Julian Day

2025 / 9 / 4 5 : 59 : 3

Earth, Peterborough, 188m FOV 30.8° 53.7 FPS 2025-09-04 05:59:03 UTC-04:00

VENUS

Venus

- On September 1st, Venus rises at 3:55 a.m. in the eastern morning sky.

Venus

Type: **planet**
Magnitude: **-3.95** (extincted to: **0.35**)
Absolute Magnitude: 26.95
RA/Dec (J2000.0): 8h40m12.69s/+18°30'09.0"
RA/Dec (on date): 8h41m40.23s/+18°24'44.7"
Hour angle/DE: 16h44m45.85s/+18°46'37.7" (apparent)
Az/Alt: +63°40'03.9"/+0°21'48.6" (apparent)
Ecliptic longitude/latitude (J2000.0): +127°36'23.0"/+0°08'18.9"
Ecliptic longitude/latitude (on date): +127°57'50.1"/+0°08'35.1"
Ecliptic obliquity (on date): +23°26'09"
Galactic longitude/latitude: -152°48'37.9"/+32°01'57.3"
Mean Sidereal Time: 1h25m1.0s
Apparent Sidereal Time: 1h25m1.2s
Distance: 1.359AU (203.271 Mio km)
Apparent diameter: +0°00'12.3"
Sidereal period: 224.70 days (0.615 a)
Sidereal day: 5832h28m47.1s
Mean solar day: 2802h0m52.2s
Phase Angle: +46°31'44"
Elongation: +31°11'27"
Phase: 0.84
Illuminated: 84.4%

Date and Time

Date and Time | Julian Day

2025 / 9 / 1 3 : 55 : 19

Venus

- On September 19th, Venus, an old Moon and Regulus rise together in a triple conjunction with just 2 degrees of separation between them.

- Venus and the old Moon have just 1 degree of separation.

- All 3 objects rise in the early morning eastern sky at 4:48 a.m.

Date and Time

Date and Time | Julian Day

2025 / 9 / 19 4 : 48 : 53

Earth, Peterborough, 188m FOV 50.8° 54.6 FPS 2025-09-19 04:48:53 UTC-04:00

Venus

- On September 30th, Venus rises at 5:04 a.m. in the eastern morning sky.

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

Venus

Type: **planet**
Magnitude: **-3.94** (extincted to: **0.39**)
Absolute Magnitude: 26.75
RA/Dec (J2000.0): 10h59m7.58s/+7°52'05.2"
RA/Dec (on date): 11h00m27.86s/+7°43'50.5"
Hour angle/DE: 17h30m7.75s/+8°04'54.0" (apparent)
Az/Alt: +79°01'07.3"/+0°20'56.9" (apparent)
Ecliptic longitude/latitude (J2000.0): +162°57'23.6"/+1°16'11.9"
Ecliptic longitude/latitude (on date): +163°18'55.8"/+1°16'17.1"
Ecliptic obliquity (on date): +23°26'09"
Galactic longitude/latitude: -116°22'49.6"/+57°10'08.0"
Mean Sidereal Time: 4h29m9.8s
Apparent Sidereal Time: 4h29m10.0s
Distance: 1.503AU (224.878 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°50'02"
Elongation: +24°11'25"
Phase: 0.91
Illuminated: 91.0%

E

Date and Time

Date and Time | Julian Day

2025 / 9 / 30 5 : 4 : 57

Earth, Peterborough, 188m | FOV 15.8° | 19.8 FPS | 2025-09-30 05:04:57 UTC-04:00

MARS

Mars

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

- Mars is just 10 degrees above the western horizon.

Mars

Type: **planet**
Magnitude: **1.61** (extincted to: **2.59**)
Absolute Magnitude: 31.40
RA/Dec (J2000.0): 13h00m9.21s/-6°09'34.6"
RA/Dec (on date): 13h01m28.83s/-6°17'52.0"
Hour angle/DE: 4h54m29.67s/-6°12'38.6" (apparent)
Az/Alt: +254°01'01.9"/+7°10'59.8" (apparent)
Ecliptic longitude/latitude (J2000.0): +196°13'20.2"/+0°14'19.9"
Ecliptic longitude/latitude (on date): +196°34'47.4"/+0°14'12.9"
Ecliptic obliquity (on date): +23°26'09"
Galactic longitude/latitude: -53°07'33.2"/+56°38'43.5"
Mean Sidereal Time: 17h56m18.4s
Apparent Sidereal Time: 17h56m18.6s
Distance: 2.266AU (339.060 Mio km)
Apparent diameter: +0°00'04.1"
Sidereal period: 686.97 days (1.881 a)
Sidereal day: 24h37m22.7s
Mean solar day: 24h39m35.2s
Phase Angle: +22°29'52"
Elongation: +36°45'52"
Phase: 0.96
Illuminated: 96.2%

W

Date and Time

Date and Time | Julian Day

2025 / 9 / 1 20 : 23 : 54

Earth, Peterborough, 188m FOV 22.1° 52.8 FPS 2025-09-01 20:23:54 UTC-04:00

Mars

- On September 1st, Mars sets at 9:04 p.m. in the western sky.

- Mars remains low in the west all month.

Mars

Type: **planet**
Magnitude: **1.61** (extincted to: **5.85**)
Absolúte Magnitude: 31.40
RA/Dec (J2000.0): 13h00m13.29s/-6°10'01.2"
RA/Dec (on date): 13h01m32.91s/-6°18'18.5"
Hour angle/DE: 5h34m19.89s/-5°57'42.3" (apparent)
Az/Alt: +261°15'30.8"/+0°24'07.4" (apparent)
Ecliptic longitude/latitude (J2000.0): +196°14'26.5"/+0°14'18.8"
Ecliptic longitude/latitude (on date): +196°35'53.7"/+0°14'11.8"
Ecliptic obliquity (on date): +23°26'09"
Galactic longitude/latitude: -53°05'45.8"/+56°38'13.2"
Mean Sidereal Time: 18h37m16.5s
Apparent Sidereal Time: 18h37m16.7s
Distance: 2.267AU (339.077 Mio km)
Apparent diameter: +0°00'04.1"
Sidereal period: 686.97 days (1.881 a)
Sidereal day: 24h37m22.7s
Mean solar day: 24h39m35.2s
Phase Angle: +22°29'35"
Elongation: +36°45'19"
Phase: 0.96
Illuminated: 96.2%

Date and Time

Date and Time | Julian Day

2025 / 9 / 1 21 : 4 : 46

Mars

- On September 30th, Mars is just 5 degrees above the western horizon at sunset.

- Mars sets at 7:54 p.m. The planet is visible for just 30 minutes at evening twilight.

Mars

Type: **planet**
Magnitude: **1.56** (extincted to: **3.21**)
Absolute Magnitude: 31.28
RA/Dec (J2000.0): 14h12m41.98s/-13°25'41.0"
RA/Dec (on date): 14h14m5.36s/-13°32'56.2"
Hour angle/DE: 4h43m7.62s/-13°24'11.5" (apparent)
Az/Alt: +247°01'10.2"/+3°51'26.2" (apparent)
Ecliptic longitude/latitude (J2000.0): +215°29'57.3"/-0°04'38.5"
Ecliptic longitude/latitude (on date): +215°51'29.0"/-0°04'51.8"
Ecliptic obliquity (on date): +23°26'09"
Galactic longitude/latitude: -28°35'35.0"/+44°54'14.0"
Mean Sidereal Time: -5h2m14.1s
Apparent Sidereal Time: -5h2m13.9s
Distance: 2.356AU (352.482 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°36'58"
Elongation: +27°47'44"
Phase: 0.98
Illuminated: 97.7%

Date and Time

Date and Time | Julian Day

2025 / 9 / 30 19 : 31 : 11

Earth, Peterborough, 188m FOV 11.3° 15.6 FPS 2025-09-30 19:31:11 UTC-04:00

JUPITER

Jupiter

- On September 1st, Jupiter rises at 2:17 a.m. in the early morning eastern sky.

Jupiter

Type: **planet**
Magnitude: **-2.00** (extincted to: **1.59**)
Absolute Magnitude: 25.78
RA/Dec (J2000.0): 7h16m7.50s/+22°15'03.2"
RA/Dec (on date): 7h17m39.48s/+22°12'23.1"
Hour angle/DE: 16h30m13.73s/+22°31'09.6" (apparent)
Az/Alt: +58°38'11.9"/+0°51'54.8" (apparent)
Ecliptic longitude/latitude (J2000.0): +107°33'57.1"/-0°02'07.2"
Ecliptic longitude/latitude (on date): +107°55'24.1"/-0°01'47.3"
Ecliptic obliquity (on date): +23°26'09"
Galactic longitude/latitude: -164°39'11.8"/+15°08'33.1"
Mean Sidereal Time: 0h13m18.5s
Apparent Sidereal Time: 0h13m18.3s
Distance: 5.740AU (858.733 Mio km)
Apparent diameter: +0°00'34.3"
Sidereal period: 4331.87 days (11.860 a)
Sidereal day: 9h55m29.7s
Mean solar day: 9h55m33.1s
Phase Angle: +8°45'01"
Elongation: +51°09'53"
Phase: 0.99
Illuminated: 99.4%

Date and Time

Date and Time | Julian Day

2025 / 9 / 1 2 : 17 : 16

Earth, Peterborough, 188m FOV 30.8° 56.5 FPS 2025-09-01 02:17:16 UTC-04:00

Jupiter

- On September 1st, Jupiter is high in the eastern sky at sunrise.

Jupiter

Type: **planet**
Magnitude: **-2.00** (extincted to: **-1.81**)
Absolute Magnitude: 25.78
RA/Dec (J2000.0): 7h16m15.42s/+22°14'50.3"
RA/Dec (on date): 7h17m47.40s/+22°12'09.8"
Hour angle/DE: 20h37m41.81s/+22°12'51.4" (apparent)
Az/Alt: +101°04'44.4"/+43°13'17.5" (apparent)
Ecliptic longitude/latitude (J2000.0): +107°35'47.8"/-0°02'05.8"
Ecliptic longitude/latitude (on date): +107°57'14.9"/-0°01'45.9"
Ecliptic obliquity (on date): +23°26'09"
Galactic longitude/latitude: -164°38'14.0"/+15°10'08.8"
Mean Sidereal Time: 3h55m25.5s
Apparent Sidereal Time: 3h55m25.7s
Distance: 5.738AU (858.421 Mio km)
Apparent diameter: +0°00'34.4"
Sidereal period: 4331.87 days (11.860 a)
Sidereal day: 9h55m29.7s
Mean solar day: 9h55m33.1s
Phase Angle: +8°45'59"
Elongation: +51°18'06"
Phase: 0.99
Illuminated: 99.4%

Date and Time

Date and Time | Julian Day

2025 / 9 / 1 6 : 25 : 19

Jupiter

- On September 16th, Jupiter and the last quarter Moon rise together in a wide conjunction.

- Both objects rise at 2:03 a.m. in the early morning eastern sky. The waning Quarter Moon is directly north of Jupiter.

Jupiter

Type: **planet**
Magnitude: **-2.06** (extincted to: **-0.88**)
Absolute Magnitude: 25.79
RA/Dec (J2000.0): 7h26m50.04s/+21°55'48.1"
RA/Dec (on date): 7h28m21.74s/+21°52'45.2"
Hour angle/DE: 17h04m21.57s/+21°58'55.3" (apparent)
Az/Alt: +64°47'54.5"/+5°50'51.7" (apparent)
Ecliptic longitude/latitude (J2000.0): +110°04'01.4"/-0°00'34.7"
Ecliptic longitude/latitude (on date): +110°25'30.6"/-0°00'15.0"
Ecliptic obliquity (on date): +23°26'09"
Galactic longitude/latitude: -163°19'37.1"/+17°17'43.7"
Mean Sidereal Time: 0h32m17.1s
Apparent Sidereal Time: 0h32m17.4s
Distance: 5.548AU (829.905 Mio km)
Apparent diameter: +0°00'35.5"
Sidereal period: 4331.87 days (11.860 a)
Sidereal day: 9h55m29.7s
Mean solar day: 9h55m33.1s
Phase Angle: +9°59'31"
Elongation: +63°13'07"
Phase: 0.99
Illuminated: 99.2%

Date and Time

Date and Time | Julian Day

2025 / 9 / 16 2 : 3 : 46

Earth, Peterborough, 188m FOV 50.8° 15 FPS 2025-09-16 02:03:46 UTC-04:00

Jupiter

- On September 30th, Jupiter rises at 12:45 a.m. in the eastern midnight sky.

- Visible most of the night.

Jupiter

Type: **planet**
Magnitude: **-2.13** (extincted to: **1.64**)
Absolute Magnitude: 25.80
RA/Dec (J2000.0): 7h35m6.82s/+21°39'24.1"
RA/Dec (on date): 7h36m38.34s/+21°36'03.5"
Hour angle/DE: 16h32m8.36s/+21°55'44.6" (apparent)
Az/Alt: +59°21'32.4"/+0°42'58.1" (apparent)
Ecliptic longitude/latitude (J2000.0): +112°00'29.5"/+0°00'57.0"
Ecliptic longitude/latitude (on date): +112°22'01.2"/+0°01'16.4"
Ecliptic obliquity (on date): +23°26'09"
Galactic longitude/latitude: -162°16'52.6"/+18°57'47.3"
Mean Sidereal Time: 0h7m31.4s
Apparent Sidereal Time: 0h7m31.6s
Distance: 5.347AU (799.961 Mio km)
Apparent diameter: +0°00'36.9"
Sidereal period: 4331.87 days (11.860 a)
Sidereal day: 9h55m29.7s
Mean solar day: 9h55m33.1s
Phase Angle: +10°45'50"
Elongation: +74°55'40"
Phase: 0.99
Illuminated: 99.1%

Date and Time

Date and Time | Julian Day

2025 / 9 / 30 0 : 44 : 1

Earth, Peterborough, 188m FOV 22.1° 59.9 FPS 2025-09-30 00:44:01 UTC-04:00

Jupiter

- On September 30th, 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): 7h35m14.73s/+21°39'08.4"
RA/Dec (on date): 7h36m46.24s/+21°35'47.5"
Hour angle/DE: 22h34m58.27s/+21°36'15.2" (apparent)
Az/Alt: +135°23'09.9"/+61°19'02.9" (apparent)
Ecliptic longitude/latitude (J2000.0): +112°02'20.9"/+0°00'59.2"
Ecliptic longitude/latitude (on date): +112°23'52.6"/+0°01'18.6"
Ecliptic obliquity (on date): +23°26'09"
Galactic longitude/latitude: -162°15'52.7"/+18°59'23.2"
Mean Sidereal Time: 6h11m43.0s
Apparent Sidereal Time: 6h11m43.2s
Distance: 5.344AU (799.394 Mio km)
Apparent diameter: +0°00'36.9"
Sidereal period: 4331.87 days (11.860 a)
Sidereal day: 9h55m29.7s
Mean solar day: 9h55m33.1s
Phase Angle: +10°46'25"
Elongation: +75°08'47"
Phase: 0.99
Illuminated: 99.1%

Date and Time

Date and Time | Julian Day

2025 / 9 / 30 6 : 47 : 13

Earth, Peterborough, 188m FOV 138° 54.4 FPS 2025-09-30 06:47:13 UTC-04:00

SATURN

Saturn

- On September 1st, Saturn rises at 8:37 p.m. in eastern early evening twilight sky at sunset.

Saturn

Type: **planet**
Magnitude: **0.68** (extincted to: **5.46**)
Absolute Magnitude: 27.58
RA/Dec (J2000.0): 0h02m26.54s/-2°26'26.2"
RA/Dec (on date): 0h03m45.25s/-2°17'53.3"
Hour angle/DE: 18h08m3.46s/-1°55'04.7" (apparent)
Az/Alt: +92°46'45.6"/+0°06'04.6" (apparent)
Ecliptic longitude/latitude (J2000.0): +359°35'19.5"/-2°28'55.1"
Ecliptic longitude/latitude (on date): +359°56'47.5"/-2°28'54.1"
Ecliptic obliquity (on date): +23°26'09"
Galactic longitude/latitude: +95°26'18.8"/-62°40'02.7"
Mean Sidereal Time: 18h10m15.0s
Apparent Sidereal Time: 18h10m15.2s
Distance: 8.603AU (1286.981 Mio km)
Apparent diameter: +0°00'19.3", with rings: +0°00'45.0"
Sidereal period: 10760.00 days (29.459 a)
Sidereal day: 10h39m22.4s
Mean solar day: 10h39m24.0s
Phase Angle: +2°05'46"
Elongation: +159°43'58"
Phase: 1.00
Illuminated: 100.0%

Neptune

Saturn

E

Date and Time

Date and Time | Julian Day

2025 / 9 / 1 20 : 37 : 49

Earth, Peterborough, 188m FOV 5.82° 50.8 FPS 2025-09-01 20:37:49 UTC-04:00

Saturn

- On September 1st, Saturn remains high in the southwestern sky at sunrise.
- Saturn is visible all night.
- Saturn reaches opposition on September 21st.

Saturn

Type: **planet**
Magnitude: **0.68** (extincted to: **1.00**)
Absolute Magnitude: 27.58
RA/Dec (J2000.0): 0h02m35.68s/-2°25'20.7"
RA/Dec (on date): 0h03m54.38s/-2°16'47.8"
Hour angle/DE: 3h28m11.05s/-2°15'04.6" (apparent)
Az/Alt: +239°52'02.4"/+24°21'19.4" (apparent)
Ecliptic longitude/latitude (J2000.0): +359°37'51.4"/-2°28'49.5"
Ecliptic longitude/latitude (on date): +359°59'19.4"/-2°28'48.6"
Ecliptic obliquity (on date): +23°26'09"
Galactic longitude/latitude: +95°31'49.5"/-62°39'59.2"
Mean Sidereal Time: 3h32m10.6s
Apparent Sidereal Time: 3h32m10.9s
Distance: 8.606AU (1287.507 Mio km)
Apparent diameter: +0°00'19.3", with rings: +0°00'45.0"
Sidereal period: 10760.00 days (29.459 a)
Sidereal day: 10h39m22.4s
Mean solar day: 10h39m24.0s
Phase Angle: +2°09'29"
Elongation: +159°06'37"
Phase: 1.00
Illuminated: 100.0%

Date and Time

Date and Time | Julian Day

2025 / 9 / 1 6 : 2 : 8

Earth, Peterborough, 188m FOV 70.9° 15.4 FPS 2025-09-01 06:02:08 UTC-04:00

Saturn

- On September 8th, Saturn and a Full Moon rise together in the eastern sky at sunset.

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

- Saturn may get partially washed out by the lunar glare. Saturn is less than 4 degrees from the Moon.

Saturn

Type: **planet**
Magnitude: **0.65** (extincted to: **3.30**)
Absolute Magnitude: 27.56
RA/Dec (J2000.0): 0h00m36.34s/-2°39'17.5"
RA/Dec (on date): 0h01m55.13s/-2°30'44.1"
Hour angle/DE: 18h19m12.85s/-2°17'36.6" (apparent)
Az/Alt: +94°59'53.2"/+1°49'47.9" (apparent)
Ecliptic longitude/latitude (J2000.0): +359°04'55.8"/-2°29'45.1"
Ecliptic longitude/latitude (on date): +359°26'25.1"/-2°29'44.3"
Ecliptic obliquity (on date): +23°26'09"
Galactic longitude/latitude: +94°20'09.2"/-62°40'11.4"
Mean Sidereal Time: 18h20m14.2s
Apparent Sidereal Time: 18h20m14.4s
Distance: 8.570AU (1282.032 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°22'01"
Elongation: +166°55'19"
Phase: 1.00
Illuminated: 100.0%

Date and Time

Date and Time | Julian Day

2025 / 9 / 8 20 : 20 : 15

Earth, Peterborough, 188m FOV 18.7° 59.8 FPS 2025-09-08 20:20:15 UTC-04:00

Saturn

- On September 21st, Saturn has reached its opposition to Earth.
- Saturn is well placed in the eastern sky at even twilight.
- Now is the best time to photograph the planet.

Saturn

Type: **planet**
Magnitude: **0.62** (extincted to: **2.12**)
Absolute Magnitude: 27.53
RA/Dec (J2000.0): 23h56m58.65s/-3°03'50.7"
RA/Dec (on date): 23h58m17.60s/-2°55'16.6"
Hour angle/DE: 18h35m19.91s/-2°47'35.8" (apparent)
Az/Alt: +98°11'13.0"/+4°20'35.6" (apparent)
Ecliptic longitude/latitude (J2000.0): +358°05'14.3"/-2°30'38.0"
Ecliptic longitude/latitude (on date): +358°26'45.5"/-2°30'37.6"
Ecliptic obliquity (on date): +23°26'09"
Galactic longitude/latitude: +92°10'22.9"/-62°38'14.5"
Mean Sidereal Time: 18h33m6.3s
Apparent Sidereal Time: 18h33m6.5s
Distance: 8.547AU (1278.586 Mio km)
Apparent diameter: +0°00'19.5", with rings: +0°00'45.3"
Sidereal period: 10760.00 days (29.459 a)
Sidereal day: 10h39m22.4s
Mean solar day: 10h39m24.0s
Phase Angle: +0°16'37"
Elongation: +177°21'50"
Phase: 1.00
Illuminated: 100.0%

Date and Time

Date and Time | Julian Day

2025 / 9 / 21 19 : 41 : 58

Earth, Peterborough, 188m FOV 11.3° 59.6 FPS 2025-09-21 19:41:58 UTC-04:00

Saturn

- On September 21st, Saturn remains well placed on the western horizon at morning twilight.

- Still visible all night.

Saturn

Type: **planet**
Magnitude: **0.62** (extincted to: **1.73**)
Absolute Magnitude: 27.53
RA/Dec (J2000.0): 23h57m8.01s/-3°02'47.9"
RA/Dec (on date): 23h58m26.95s/-2°54'13.9"
Hour angle/DE: 5h13m56.64s/-2°48'26.2" (apparent)
Az/Alt: +259°54'07.9"/+6°13'39.6" (apparent)
Ecliptic longitude/latitude (J2000.0): +358°07'48.0"/-2°30'36.3"
Ecliptic longitude/latitude (on date): +358°29'19.1"/-2°30'35.9"
Ecliptic obliquity (on date): +23°26'09"
Galactic longitude/latitude: +92°15'56.6"/-62°38'22.5"
Mean Sidereal Time: 5h12m46.5s
Apparent Sidereal Time: 5h12m46.7s
Distance: 8.547AU (1278.576 Mio km)
Apparent diameter: +0°00'19.5", with rings: +0°00'45.3"
Sidereal period: 10760.00 days (29.459 a)
Sidereal day: 10h39m22.4s
Mean solar day: 10h39m24.0s
Phase Angle: +0°15'53"
Elongation: +177°28'48"
Phase: 1.00
Illuminated: 100.0%

Date and Time

Date and Time | Julian Day

2025 / 9 / 21 6 : 23 : 49

Earth, Peterborough, 188m FOV 11.3° 23.6 FPS 2025-09-21 06:23:49 UTC-04:00

Saturn

- On September 30th, Saturn remains well placed on the eastern horizon at evening twilight.

Saturn

Type: **planet**
Magnitude: **0.67** (extincted to: **1.68**)
Absolute Magnitude: 27.58
RA/Dec (J2000.0): 23h54m26.43s/-3°20'25.0"
RA/Dec (on date): 23h55m45.49s/-3°11'50.5"
Hour angle/DE: 18h51m30.65s/-3°06'33.6" (apparent)
Az/Alt: +101°17'07.0"/+6°58'20.1" (apparent)
Ecliptic longitude/latitude (J2000.0): +357°23'44.7"/-2°30'42.6"
Ecliptic longitude/latitude (on date): +357°45'17.4"/-2°30'42.4"
Ecliptic obliquity (on date): +23°26'09"
Galactic longitude/latitude: +90°40'30.5"/-62°35'12.3"
Mean Sidereal Time: -5h13m5.0s
Apparent Sidereal Time: -5h13m4.8s
Distance: 8.561AU (1280.704 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°06'19"
Elongation: +169°24'01"
Phase: 1.00
Illuminated: 100.0%

E

Date and Time

Date and Time | Julian Day

2025 / 9 / 30 19 : 20 : 21

Earth, Peterborough, 188m FOV 18.7° 54.5 FPS 2025-09-30 19:20:21 UTC-04:00

Saturn

- On September 30th, Saturn sets at 6:20 a.m. in the western morning twilight sky.

Saturn

Type: **planet**
Magnitude: **0.67** (extincted to: **5.27**)
Absolute Magnitude: 27.58
RA/Dec (J2000.0): 23h54m35.38s/-3°19'26.7"
RA/Dec (on date): 23h55m54.44s/-3°10'52.2"
Hour angle/DE: 5h47m55.62s/-2°48'46.7" (apparent)
Az/Alt: +265°52'46.2"/+0°11'33.8" (apparent)
Ecliptic longitude/latitude (J2000.0): +357°26'11.0"/-2°30'42.5"
Ecliptic longitude/latitude (on date): +357°47'43.7"/-2°30'42.3"
Ecliptic obliquity (on date): +23°26'09"
Galactic longitude/latitude: +90°45'46.9"/-62°35'24.8"
Mean Sidereal Time: 5h45m20.3s
Apparent Sidereal Time: 5h45m20.5s
Distance: 8.559AU (1280.473 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°02'55"
Elongation: +169°57'10"
Phase: 1.00
Illuminated: 100.0%

Neptune

Saturn

W

Date and Time

Date and Time | Julian Day

2025 / 9 / 30 6 : 20 : 55

Date and Time in Gregorian calendar

Earth, Peterborough, 188m FOV 8.12° 59.3 FPS 2025-09-30 06:20:55 UTC-04:00

URANUS

Uranus

- On September 1st, Uranus rises at 10:58 p.m. in the eastern sky.

- Uranus is 5 degrees south of M45

Uranus

Type: **planet**
Magnitude: **5.69** (extincted to: **10.23**)
Absolute Magnitude: 30.83
RA/Dec (J2000.0): 3h56m2.17s/+20°10'13.6"
RA/Dec (on date): 3h57m31.56s/+20°14'44.2"
Hour angle/DE: 16h35m15.63s/+20°37'57.3" (apparent)
Az/Alt: +60°45'52.5"/+0°13'56.9" (apparent)
Ecliptic longitude/latitude (J2000.0): +61°05'49.2"/-0°12'47.4"
Ecliptic longitude/latitude (on date): +61°27'16.4"/-0°12'28.2"
Ecliptic obliquity (on date): +23°26'09"
Galactic longitude/latitude: +171°13'06.3"/-24°55'50.6"
Mean Sidereal Time: -3h28m41.7s
Apparent Sidereal Time: -3h28m41.4s
Distance: 19.337AU (2892.817 Mio km)
Apparent diameter: +0°00'03.6", with rings: +0°00'13.9"
Sidereal period: 30685.00 days (84.011 a)
Sidereal day: 17h14m24.0s
Mean solar day: 17h14m22.5s
Phase Angle: +2°55'55"
Elongation: +98°27'58"
Phase: 1.00
Illuminated: 99.9%

Uranus

Date and Time

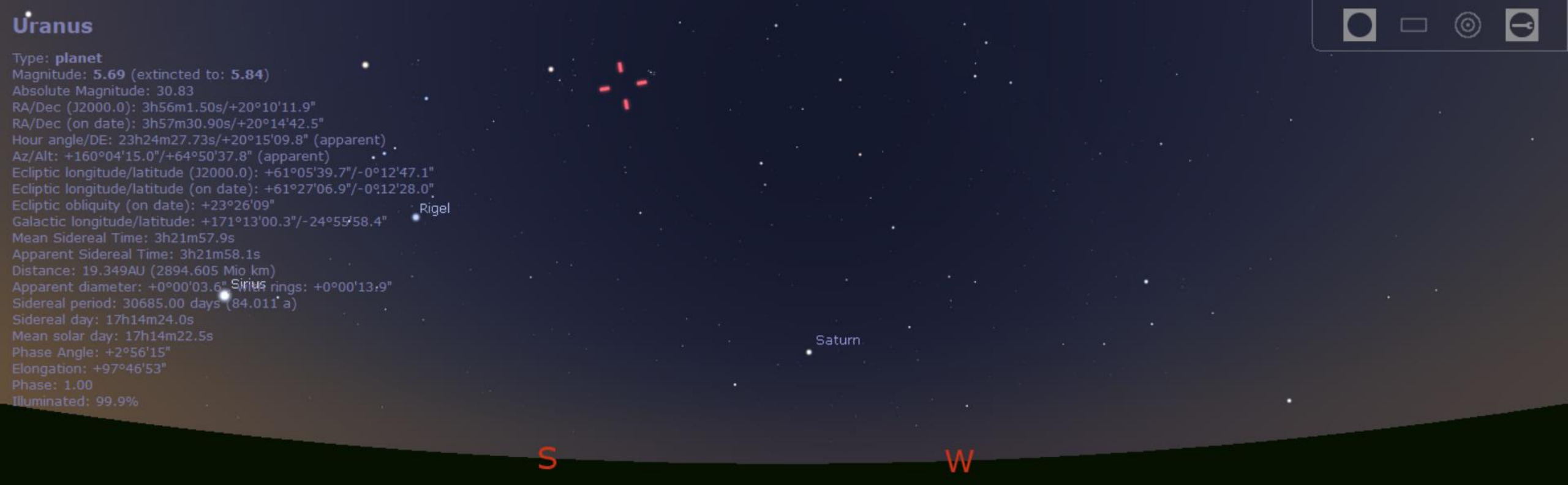
Date and Time | Julian Day

2025 / 9 / 1 22 : 58 : 29

Earth, Peterborough, 188m FOV 4.93° 52.9 FPS 2025-09-01 22:58:29 UTC-04:00

Uranus

- On September 1st, Uranus remains high in the southwestern sky at sunrise.



Date and Time

Date and Time | Julian Day

2025 / 9 / 1 5 : 51 : 57

Earth, Peterborough, 188m FOV 168° 39.2 FPS 2025-09-01 05:51:57 UTC-04:00

Uranus

- On September 30th, Uranus rises at 9:06 p.m. in the northeastern evening sky.

Uranus

Type: **planet**
Magnitude: **5.64** (extincted to: **9.74**)
Absolute Magnitude: 30.83
RA/Dec (J2000.0): 3h54m59.26s/+20°07'05.6"
RA/Dec (on date): 3h56m28.92s/+20°11'39.2"
Hour angle/DE: 16h37m19.93s/+20°32'46.0" (apparent)
Az/Alt: +61°10'58.7"/+0°29'32.2" (apparent)
Ecliptic longitude/latitude (J2000.0): +60°50'43.7"/-0°12'49.2"
Ecliptic longitude/latitude (on date): +61°12'15.5"/-0°12'30.0"
Ecliptic obliquity (on date): +23°26'09"
Galactic longitude/latitude: +171°04'01.3"/-25°08'29.7"
Mean Sidereal Time: -3h27m32.4s
Apparent Sidereal Time: -3h27m32.2s
Distance: 18.888AU (2825.665 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°21'07"
Elongation: +126°55'21"
Phase: 1.00
Illuminated: 100.0%

Date and Time

Date and Time | Julian Day

2025 / 9 / 30 21 : 5 : 37

Uranus

- On September 30th, Uranus remains high in the western sky at sunrise.

Date and Time

Date and Time | Julian Day

2025 / 9 / 30 6 : 30 : 12

Earth, Peterborough, 188m FOV 143° 54.7 FPS 2025-09-30 06:30:12 UTC-04:00

NEPTUNE

Neptune

- On September 1st, Neptune rises at 8:35 p.m. in the eastern at evening twilight.

- The planet Saturn is close to Neptune and can be used as a guidepost to find the planet.

Neptune

Type: **planet**
Magnitude: **7.82** (extincted to: **12.39**)
Absolute Magnitude: 32.08
RA/Dec (J2000.0): 0h05m44.74s/-0°52'08.6"
RA/Dec (on date): 0h07m3.43s/-0°43'35.6"
Hour angle/DE: 18h02m34.46s/-0°21'39.2" (apparent)
Az/Alt: +90°42'28.0"/+0°12'30.7" (apparent)
Ecliptic longitude/latitude (J2000.0): +0°58'20.0"/-1°22'07.2"
Ecliptic longitude/latitude (on date): +1°19'47.6"/-1°22'05.7"
Ecliptic obliquity (on date): +23°26'09"
Galactic longitude/latitude: +98°22'31.1"/-61°32'34.5"
Mean Sidereal Time: 18h8m7.7s
Apparent Sidereal Time: 18h8m8.0s
Distance: 28.947AU (4330.419 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°42'38"
Elongation: +158°27'10"
Phase: 1.00
Illuminated: 100.0%

E

Date and Time

Date and Time | Julian Day

2025 / 9 / 1 20 : 35 : 42

Neptune

- On September 1st, Neptune remains well placed in the southwestern sky at morning twilight.

- Saturn is directly south of the planet.

Neptune

Type: **planet**
Magnitude: **7.82** (extincted to: **8.10**)
Absolute Magnitude: 32.08
RA/Dec (J2000.0): 0h05m48.09s/-0°51'45.7"
RA/Dec (on date): 0h07m6.78s/-0°43'12.7"
Hour angle/DE: 3h18m1.85s/-0°41'40.7" (apparent)
Az/Alt: +238°42'38.7"/+27°08'38.8" (apparent)
Ecliptic longitude/latitude (J2000.0): +0°59'15.2"/-1°22'06.2"
Ecliptic longitude/latitude (on date): +1°20'42.8"/-1°22'04.7"
Ecliptic obliquity (on date): +23°26'09"
Galactic longitude/latitude: +98°24'26.8"/-61°32'31.8"
Mean Sidereal Time: 3h25m13.1s
Apparent Sidereal Time: 3h25m13.4s
Distance: 28.951AU (4330.973 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°43'46"
Elongation: +157°51'00"
Phase: 1.00
Illuminated: 100.0%

Saturn

S

W

Date and Time

Date and Time | Julian Day

2025 / 9 / 1 5 : 55 : 12

Earth, Peterborough, 188m FOV 61.9° 15.1 FPS 2025-09-01 05:55:12 UTC-04:00

Neptune

- On September 23rd, Neptune reaches opposition to Earth.
- Now is the best time to observe Neptune. Saturn is just 2 degrees from Neptune.
- Neptune is well placed in the eastern twilight sky at sunset. Visibile all night.

Neptune

Type: **planet**
Magnitude: **7.81** (extincted to: **8.83**)
Absolute Magnitude: 32.08
RA/Dec (J2000.0): 0h03m34.96s/-1°06'34.9"
RA/Dec (on date): 0h04m53.89s/-0°58'00.4"
Hour angle/DE: 18h42m8.34s/-0°52'43.2" (apparent)
Az/Alt: +98°01'42.2"/+6°53'57.6" (apparent)
Ecliptic longitude/latitude (J2000.0): +0°22'49.1"/-1°22'27.8"
Ecliptic longitude/latitude (on date): +0°44'20.5"/-1°22'26.5"
Ecliptic obliquity (on date): +23°26'09"
Galactic longitude/latitude: +97°08'00.9"/-61°33'39.3"
Mean Sidereal Time: 18h46m40.8s
Apparent Sidereal Time: 18h46m41.0s
Distance: 28.884AU (4321.032 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°02'56"
Elongation: +178°32'48"
Phase: 1.00
Illuminated: 100.0%

Date and Time

Date and Time | Julian Day

2025 / 9 / 23 19 : 47 : 39

Earth, Peterborough, 188m FOV 19.3° 29.6 FPS 2025-09-23 19:47:39 UTC-04:00

Neptune

- On September 30th, Neptune remains well placed in the eastern sky at evening twilight.

Neptune

Type: **planet**
Magnitude: **7.81** (extincted to: **8.60**)
Absolute Magnitude: 32.08
RA/Dec (J2000.0): 0h02m52.47s/-1°11'12.8"
RA/Dec (on date): 0h04m11.45s/-1°02'38.0"
Hour angle/DE: 18h54m55.89s/-0°58'27.9" (apparent)
Az/Alt: +100°22'55.5"/+9°05'27.0" (apparent)
Ecliptic longitude/latitude (J2000.0): +0°11'13.6"/-1°22'29.2"
Ecliptic longitude/latitude (on date): +0°32'45.9"/-1°22'28.0"
Ecliptic obliquity (on date): +23°26'09"
Galactic longitude/latitude: +96°43'40.9"/-61°33'46.5"
Mean Sidereal Time: -5h1m9.4s
Apparent Sidereal Time: -5h1m9.2s
Distance: 28.894AU (4322.545 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°15'19"
Elongation: +172°21'30"
Phase: 1.00
Illuminated: 100.0%

Date and Time

Date and Time | Julian Day

2025 / 9 / 30 19 : 32 : 15

Earth, Peterborough, 188m FOV 19.3° 16 FPS 2025-09-30 19:32:15 UTC-04:00

Neptune

- On September 30th, Neptune sets at 6:36 a.m. in the western sky at sunrise.

Neptune

Type: **planet**
Magnitude: **7.81** (extincted to: **11.84**)
Absolute Magnitude: 32.08
RA/Dec (J2000.0): 0h02m55.70s/-1°10'51.6"
RA/Dec (on date): 0h04m14.68s/-1°02'16.8"
Hour angle/DE: 5h54m12.78s/-0°42'44.9" (apparent)
Az/Alt: +268°28'46.6"/+0°32'15.5" (apparent)
Ecliptic longitude/latitude (J2000.0): +0°12'06.5"/-1°22'29.0"
Ecliptic longitude/latitude (on date): +0°33'38.8"/-1°22'27.8"
Ecliptic obliquity (on date): +23°26'09"
Galactic longitude/latitude: +96°45'32.1"/-61°33'46.0"
Mean Sidereal Time: 5h59m47.3s
Apparent Sidereal Time: 5h59m47.5s
Distance: 28.893AU (4322.351 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°14'15"
Elongation: +172°53'27"
Phase: 1.00
Illuminated: 100.0%

Date and Time

Date and Time | Julian Day

2025 / 9 / 30 6 : 35 : 19

DEEP SKY

PERSEUS

NEBULA

CALIFORNIA NEBULA

NGC 1499

Date and Time

Date and Time | Julian Day

2025 / 9 / 3 22 : 15 : 59

Earth, Peterborough, 188m FOV 22.8° 15.8 FPS 2025-09-03 22:15:59 UTC-04:00

NGC 1499 – THE CALIFORNIA NEBULA

- Object: NGC 1499 – The California Nebula
- Other Designation: NGC 1499, Sharpless 220
- Class: Emission Nebula – Type: H II region of ionized hydrogen
- Constellation: Perseus
- Distance: 1,000 light years from Earth.
- Diameter: 100 light years in length by 44 light years across
- Size: 2.5 arc minutes across in length
- Magnitude: +3.3.

NGC 1499 – THE CALIFORNIA NEBULA

- The nebula is a large region of ionized hydrogen gas. It is one of the closest HII regions to our solar system. The nebula resembles the State of California in shape. NGC 1499 transits California due to its identical declination in latitude.

- The nebula is difficult to see visually due to the low surface brightness. Photographically, it is a large beautiful nebula.

- Photo taken by wide field telescope by NASA – Astronomy photo of the day.


Steven Powell

NGC 1499 – THE CALIFORNIA NEBULA

- Second photo taken by CAL-TECH at Mt Palomar.
- 2.30 x 2.9 arc minutes field of view.

That is the Sky this Month

By David Mills