Sky this Month

September 2024

By David Mills

MOON

NEW MOON

Moon

- The New Moon is on September 2nd, at 10:54 p.m.
- The Moon is north of the sun.
- Mercury is now east of the sun
- Mars is now placed west of the sun.
- Saturn is approaching opposition now visible most of the night.
- Venus is now west of the sun


Moon
Type: moon
Magnitude: 2.26
Absolute Magnitude: 46.66
RA/Dec (J2000.0): 10h50m26.74s/+8°56'36.9"
RA/Dec (on date): 10h51m44.34s/+8°48'46.8"
Hour angle/DE: 8h44m15.72s/+8°48'46.8"
Az/Alt: +307°04'41.8"/-20°57'09.8"
Ecliptic longitude/latitude (J2000.0): +160°33'40.0"/+1°26'39.0"
Ecliptic longitude/latitude (on date): +160°54'22.9"/+1°26'45.0"
Ecliptic obliquity (on date): +23°26'10"
Galactic longitude/latitude: -120°19'27.1"/+56°08'08.3"
Mean Sidereal Time: -4h23m59.9s
Apparent Sidereal Time: -4h23m60.0s
Distance: 0.002715AU (406131.723 km)
Apparent diameter: +0°29'24.8"
Sidereal period: 27.32 days (0.075 a)
Sidereal day: 655h43m11.5s
Mean solar day: 708h44m2.8s
Phase Angle: +178°32'20"
Elongation: +1°27'26"
Phase: 0.00
Illuminated: 0.0%
Spica
Venus
Moon
Sun
Regulus
Mercury
Procyon
Date and Time
Date and Time
Julian Day
2024 / 9 / 2
21 : 58 : 27
Earth, Peterborough, 188m
FOV 50.8°
58.4 FPS
2024-09-02 21:58:27 UTC-04:00

FULL MOON

Moon

- The full Moon is on September 17th at 10:34 p.m.
- This month's moon is the Supermoon. 2nd of 4 in 2024.
- Moonrise is at 7:21 p.m.
- This month's Full Moon called the Harvest Moon

40 (extincted to: **-8.17**)
ude: 32.28
): 23h40m12.56s/-4°27'58.1"
): 23h41m28.95s/-4°19'44.5"
18h17m52.75s/-3°59'13.8" (apparent)
3.8"/+0°24'20.0" (apparent)
e/latitude (J2000.0): +353°41'17.3"/-2°08'03.4"
e/latitude (on date): +354°02'03.1"/-2°08'04.7"
(on date): +23°26'10"
le/latitude: +82°56'41.7"/-61°40'36.0"
me: 17h57m58.0s
al Time: 17h57m57.9s
390AU (357573.316 km)
er: +0°33'24.4"
27.32 days (0.075 a)
5h43m11.5s
708h44m2.8s
°36'57"
7°22'40"

%

Saturn

Moon

E

Date and Time

Date and Time | Julian Day

2024 / 9 / 17 19 : 21 : 42

terborough, 188m FOV 13.4° 55.6 FPS 2024-09-17 19:21:42 UTC-04:00

Moon

- On September 21st, the Moon and the Pleiades – M45 rise together in a wide conjunction in the eastern sky at 7:21 p.m.

- Over the next 8 hours the Moon moves closer to M45. The Moon finally eclipses the constellation at 6:15 a.m. on September 22nd.

Moon

Type: **moon**
Magnitude: **-11.89** (extincted to: **-9.83**)
Absolute Magnitude: 32.73
RA/Dec (J2000.0): 3h26m16.04s/+21°55'09.2"
RA/Dec (on date): 3h27m42.54s/+22°00'24.1"
Hour angle/DE: 16h44m25.95s/+22°11'12.6" (apparent)
Az/Alt: +61°17'56.6"/+2°49'06.2" (apparent)
Ecliptic longitude/latitude (J2000.0): +54°43'32.5"/+3°03'45.5"
Ecliptic longitude/latitude (on date): +55°04'17.8"/+3°04'03.4"
Ecliptic obliquity (on date): +23°26'10"
Galactic longitude/latitude: +164°08'48.8"/-28°17'58.0"
Mean Sidereal Time: -3h48m34.3s
Apparent Sidereal Time: -3h48m34.5s
Distance: 0.002456AU (367415.739 km)
Apparent diameter: +0°32'30.7"
Sidereal period: 27.32 days (0.075 a)
Sidereal day: 655h43m11.5s
Mean solar day: 708h44m2.8s
Phase Angle: +55°28'15"
Elongation: +124°24'49"
Phase: 0.78
Illuminated: 78.3%

Date and Time

Date and Time | Julian Day

2024 / 9 / 21 21 : 18 : 4

Moon

- On September 22nd, the Moon begins to eclipse M45 in the early morning, high in the southwestern sky.

- From 5:30 a.m. onward the Moon slowly passes over the lower stars of M45.

Moon

Type: **moon**
Magnitude: **-11.85** (extincted to: **-11.71**)
Absolute Magnitude: 32.80
RA/Dec (J2000.0): 3h43m5.69s/+23°43'46.6"
RA/Dec (on date): 3h44m33.80s/+23°48'32.4"
Hour angle/DE: 0h39m32.56s/+23°48'55.4" (apparent)
Az/Alt: +204°45'52.3"/+67°58'43.0" (apparent)
Ecliptic longitude/latitude (J2000.0): +58°55'42.3"/+3°54'23.6"
Ecliptic longitude/latitude (on date): +59°16'27.5"/+3°54'42.2"
Ecliptic obliquity (on date): +23°26'10"
Galactic longitude/latitude: +166°07'42.2"/-24°24'21.6"
Mean Sidereal Time: 4h24m7.1s
Apparent Sidereal Time: 4h24m6.9s
Distance: 0.002431AU (363680.452 km)
Apparent diameter: +0°32'50.8"
Sidereal period: 27.32 days (0.075 a)
Sidereal day: 655h43m11.5s
Mean solar day: 708h44m2.8s
Phase Angle: +59°21'21"
Elongation: +120°31'29"
Phase: 0.75
Illuminated: 75.5%

Alcyone
Moon
Uranus
Aldebaran

Date and Time

Date and Time | Julian Day

2024 / 9 / 22 5 : 30 : 25

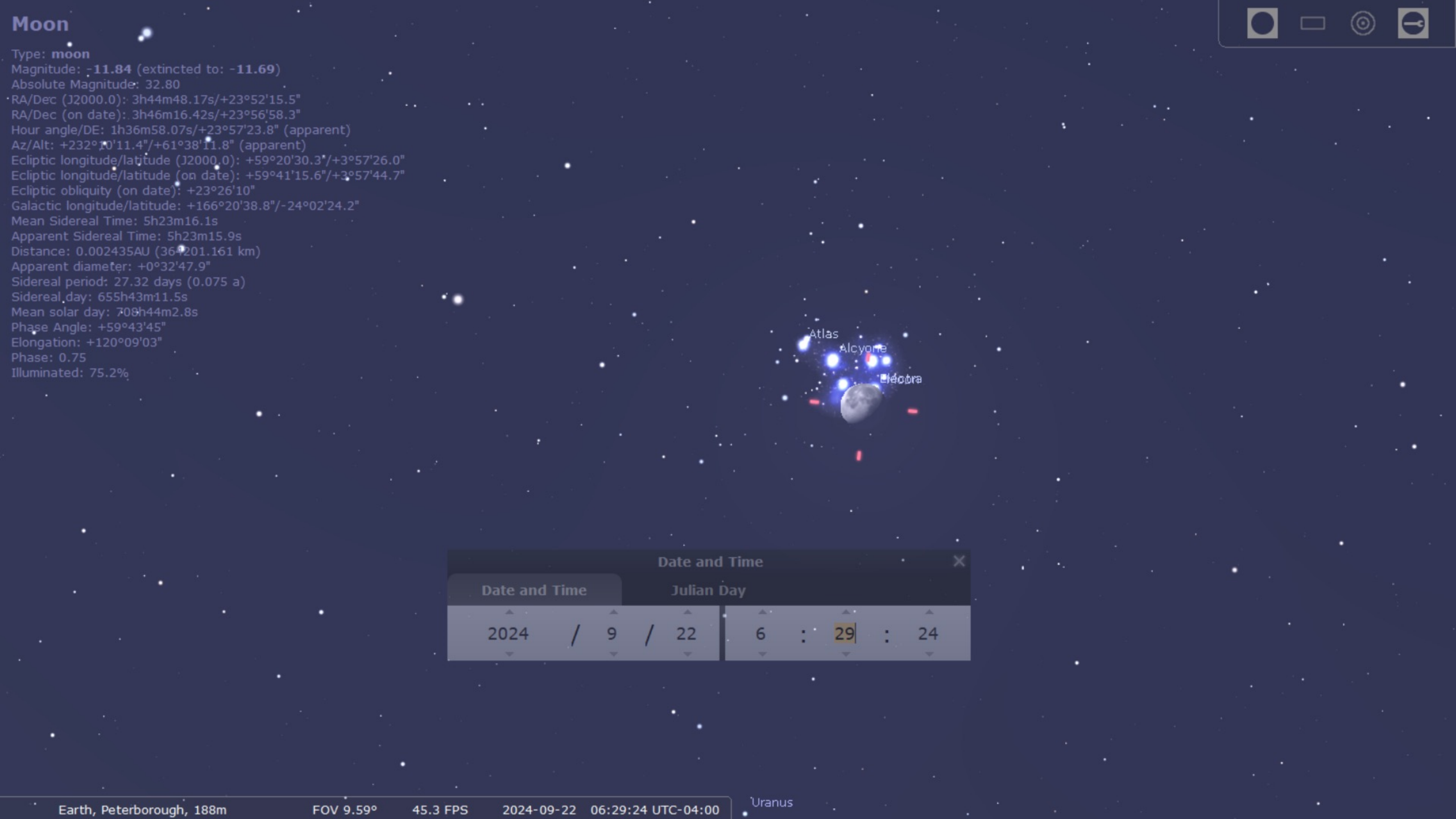
Earth, Peterborough, 188m | FOV 18.7° | 54.9 FPS | 2024-09-22 05:30:25 UTC-04:00

Moon

- The sun rises just as the Moon begins to fully eclipse the bottom and handle stars of M45 – The Pleiades at 6:30 a.m.

Moon

Type: **moon**
Magnitude: **-11.84** (extincted to: **-11.69**)
Absolute Magnitude: 32.80
RA/Dec (J2000.0): 3h44m48.17s/+23°52'15.5"
RA/Dec (on date): 3h46m16.42s/+23°56'58.3"
Hour angle/DE: 1h36m58.07s/+23°57'23.8" (apparent)
Az/Alt: +232°10'11.4"/+61°38'11.8" (apparent)
Ecliptic longitude/latitude (J2000.0): +59°20'30.3"/+3°57'26.0"
Ecliptic longitude/latitude (on date): +59°41'15.6"/+3°57'44.7"
Ecliptic obliquity (on date): +23°26'10"
Galactic longitude/latitude: +166°20'38.8"/-24°02'24.2"
Mean Sidereal Time: 5h23m16.1s
Apparent Sidereal Time: 5h23m15.9s
Distance: 0.002435AU (364201.161 km)
Apparent diameter: +0°32'47.9"
Sidereal period: 27.32 days (0.075 a)
Sidereal day: 655h43m11.5s
Mean solar day: 708h44m2.8s
Phase Angle: +59°43'45"
Elongation: +120°09'03"
Phase: 0.75
Illuminated: 75.2%



Date and Time

Date and Time | Julian Day

2024 / 9 / 22 6 : 29 : 24

MERCURY

Mercury

- On September 1st, Mercury rises at 5:12 a.m. just over an hour before official sunrise.

- The planet remains low in the eastern morning pre-dawn sky until September 4th. Mercury reaches maximum western elongation

Mercury

Type: **planet**
Magnitude: **1.35** (extincted to: **5.69**)
Absolute Magnitude: 33.33
RA/Dec (J2000.0): 9h35m49.24s/+13°16'06.6"
RA/Dec (on date): 9h37m9.84s/+13°09'31.1"
Hour angle/DE: 17h07m47.43s/+13°30'57.5" (apparent)
Az/Alt: +71°17'54.5"/+0°20'53.0" (apparent)
Ecliptic longitude/latitude (J2000.0): +141°54'51.5"/-0°59'15.2"
Ecliptic longitude/latitude (on date): +142°15'33.3"/-0°59'03.1"
Ecliptic obliquity (on date): +23°26'10"
Galactic longitude/latitude: -140°16'06.3"/+42°22'47.8"
Mean Sidereal Time: 2h43m31.7s
Apparent Sidereal Time: 2h43m31.7s
Distance: 0.829AU (124.042 Mio km)
Apparent diameter: +0°00'08.1"
Sidereal period: 87.97 days (0.241 a)
Sidereal day: 1407h30m33.8s
Mean solar day: 4222h27m52.5s
Phase Angle: +114°18'52"
Elongation: +17°12'13"
Phase: 0.29
Illuminated: 29.4%

Date and Time

Date and Time | Julian Day

2024 / 9 / 1 5 : 12 : 40

Mercury

- On September 4th, Mercury reaches it highest point west of the sun.

Mercury

Type: **planet**
Magnitude: **0.74** (extincted to: **2.47**)
Absolute Magnitude: 32.52
RA/Dec (J2000.0): 9h44m59.61s/+13°23'16.9"
RA/Dec (on date): 9h46m20.05s/+13°16'29.6"
Hour angle/DE: 17h27m14.09s/+13°25'16.8" (apparent)
Az/Alt: +74°43'34.1"/+3°36'27.5" (apparent)
Ecliptic longitude/latitude (J2000.0): +143°59'05.2"/-0°08'47.7"
Ecliptic longitude/latitude (on date): +144°19'48.0"/-0°08'36.2"
Ecliptic obliquity (on date): +23°26'10"
Galactic longitude/latitude: -139°07'26.8"/+44°27'15.5"
Mean Sidereal Time: 3h12m57.9s
Apparent Sidereal Time: 3h12m57.8s
Distance: 0.909AU (136.002 Mio km)
Apparent diameter: +0°00'07.4"
Sidereal period: 87.97 days (0.241 a)
Sidereal day: 1407h30m33.8s
Mean solar day: 4222h27m52.5s
Phase Angle: +99°04'28"
Elongation: +18°01'28"
Phase: 0.42
Illuminated: 42.1%

Date and Time

Date and Time | Julian Day

2024 / 9 / 4 5 : 30 : 14

Earth, Peterborough, 188m FOV 11.3° 20.9 FPS 2024-09-04 05:30:14 UTC-04:00

Mercury

- Mercury finally disappears below the eastern horizon on September 17th, at 5:55 a.m.

- The planet is difficult to view at sunrise. The shorter days may allow for extended visibility of the planet.

- Mercury reappears in the western sky after month end.

Mercury

Type: **planet**
Magnitude: **-0.38** (extincted to: **3.89**)
Absolute Magnitude: 30.73
RA/Dec (J2000.0): 11h00m44.91s/+8°15'33.4"
RA/Dec (on date): 11h02m2.32s/+8°07'35.9"
Hour angle/DE: 17h28m46.46s/+8°28'23.4" (apparent)
Az/Alt: +78°30'17.0"/+0°23'14.4" (apparent)
Ecliptic longitude/latitude (J2000.0): +163°10'37.2"/+1°47'07.5"
Ecliptic longitude/latitude (on date): +163°31'22.7"/+1°47'12.7"
Ecliptic obliquity (on date): +23°26'10"
Galactic longitude/latitude: -116°28'10.5"/+57°43'38.7"
Mean Sidereal Time: 4h29m24.5s
Apparent Sidereal Time: 4h29m24.3s
Distance: 1.239AU (185.386 Mio km)
Apparent diameter: +0°00'05.4"
Sidereal period: 87.97 days (0.241 a)
Sidereal day: 1407h30m33.8s
Mean solar day: 4222h27m52.5s
Phase Angle: +38°28'16"
Elongation: +11°37'29"
Phase: 0.89
Illuminated: 89.1%

Vesta

Mercury

Date and Time

Date and Time | Julian Day

2024 / 9 / 17 5 : 55 : 21

Earth, Peterborough, 188m FOV 11.3° 54.8 FPS 2024-09-17 05:55:21 UTC-04:00

VENUS

Venus

- On September 1st, Venus is low in western sky at sunset.

Venus

Type: **planet**
Magnitude: -**3.91** (extincted to: -**2.89**)
Absolute Magnitude: 26.76
RA/Dec (J2000.0): 12h15m49.99s/-0°37'56.7"
RA/Dec (on date): 12h17m5.96s/-0°46'11.1"
Hour angle/DE: 5h18m30.20s/-0°40'55.0" (apparent)
Az/Alt: +262°13'34.0"/+6°55'27.4" (apparent)
Ecliptic longitude/latitude (J2000.0): +183°53'01.1"/+0°59'34.8"
Ecliptic longitude/latitude (on date): +184°13'43.6"/+0°59'32.3"
Ecliptic obliquity (on date): +23°26'10"
Galactic longitude/latitude: -75°38'51.9"/+60°56'54.4"
Mean Sidereal Time: 17h35m57.4s
Apparent Sidereal Time: 17h35m57.3s
Distance: 1.513AU (226.353 Mio km)
Apparent diameter: +0°00'11.0"
Sidereal period: 224.70 days (0.615 a)
Sidereal day: 5832h28m47.1s
Mean solar day: 2802h0m52.2s
Phase Angle: +34°55'14"
Elongation: +24°13'01"
Phase: 0.91
Illuminated: 91.0%

W

Date and Time

Date and Time | Julian Day

2024 / 9 / 1 20 : 2 : 40

Earth, Peterborough, 188m FOV 26.1° 15.4 FPS 2024-09-01 20:02:40 UTC-04:00

Venus

- On September 1st, Venus sets at 8:40 p.m. in the western evening sky.

- Venus remains low in the western sky all month at sunset.

Venus

Type: **planet**
Magnitude: **-3.91** (extincted to: **0.19**)
Absolute Magnitude: 26.76
RA/Dec (J2000.0): 12h15m57.01s/-0°38'45.6"
RA/Dec (on date): 12h17m12.99s/-0°47'00.0"
Hour angle/DE: 5h55m28.07s/-0°27'10.5" (apparent)
Az/Alt: +268°53'04.0"/+0°29'40.3" (apparent)
Ecliptic longitude/latitude (J2000.0): +183°54'57.2"/+0°59'31.7"
Ecliptic longitude/latitude (on date): +184°15'39.8"/+0°59'29.2"
Ecliptic obliquity (on date): +23°26'10"
Galactic longitude/latitude: -75°34'55.3"/+60°56'37.3"
Mean Sidereal Time: 18h14m2.4s
Apparent Sidereal Time: 18h14m2.3s
Distance: 1.513AU (226.335 Mio km)
Apparent diameter: +0°00'11.0"
Sidereal period: 224.70 days (0.615 a)
Sidereal day: 5832h28m47.1s
Mean solar day: 2802h0m52.2s
Phase Angle: +34°55'50"
Elongation: +24°13'25"
Phase: 0.91
Illuminated: 91.0%

Spica

Venus

W

Date and Time

Date and Time | Julian Day

2024 / 9 / 1 20 : 40 : 38

Earth, Peterborough, 188m FOV 26.1° 54.3 FPS 2024-09-01 20:40:38 UTC-04:00

Venus

- On September 30th, Venus is visible just after sunset in the evening twilight.

Venus

Type: **planet**
Magnitude: -**3.94** (extincted to: -**3.07**)
Absolute Magnitude: 26.96
RA/Dec (J2000.0): 14h26m59.65s/-14°49'10.8"
RA/Dec (on date): 14h28m21.06s/-14°55'53.9"
Hour angle/DE: 4h09m8.80s/-14°50'57.2" (apparent)
Az/Alt: +239°50'01.6"/+8°12'20.7" (apparent)
Ecliptic longitude/latitude (J2000.0): +219°13'44.7"/-0°15'48.1"
Ecliptic longitude/latitude (on date): +219°34'31.7"/-0°16'02.4"
Ecliptic obliquity (on date): +23°26'10"
Galactic longitude/latitude: -25°14'18.6"/+42°04'13.9"
Mean Sidereal Time: 18h37m47.0s
Apparent Sidereal Time: 18h37m46.9s
Distance: 1.363AU (203.900 Mio km)
Apparent diameter: +0°00'12.2"
Sidereal period: 224.70 days (0.615 a)
Sidereal day: 5832h28m47.1s
Mean solar day: 2802h0m52.2s
Phase Angle: +45°42'24"
Elongation: +31°17'47"
Phase: 0.85
Illuminated: 84.9%

Date and Time

Date and Time | Julian Day

2024 / 9 / 30 19 : 10 : 18

Earth, Peterborough, 188m FOV 26.1° 53.4 FPS 2024-09-30 19:10:18 UTC-04:00

Venus

- On September 30th, Venus sets at 8:00 p.m. in the western evening twilight sky.

- The planet is only visible for 50 minutes after sunset.

Venus

Type: **planet**
Magnitude: **-3.94** (extincted to: **0.55**)
Absolute Magnitude: 26.96
RA/Dec (J2000.0): 14h27m9.76s/-14°50'06.9"
RA/Dec (on date): 14h28m31.18s/-14°56'49.8"
Hour angle/DE: 4h59m39.86s/-14°34'32.1" (apparent)
Az/Alt: +249°08'39.8"/+0°15'26.5" (apparent)
Ecliptic longitude/latitude (J2000.0): +219°16'21.5"/-0°15'54.5"
Ecliptic longitude/latitude (on date): +219°37'08.6"/-0°16'08.8"
Ecliptic obliquity (on date): +23°26'10"
Galactic longitude/latitude: -25°12'02.7"/+42°02'13.7"
Mean Sidereal Time: -4h30m20.5s
Apparent Sidereal Time: -4h30m20.7s
Distance: 1.363AU (203.871 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: +45°43'13"
Elongation: +31°18'17"
Phase: 0.85
Illuminated: 84.9%

Date and Time

Date and Time | Julian Day

2024 / 9 / 30 20 : 2 : 2

Earth, Peterborough, 188m FOV 26.1° 15.3 FPS 2024-09-30 20:02:02 UTC-04:00

MARS

Mars

- On September 1st, Mars rises at 12:40 a.m. in the eastern midnight sky.

- Now visible most of the night.

Mars

Type: **planet**
Magnitude: **0.74** (extincted to: **4.94**)
Absolute Magnitude: 31.53
RA/Dec (J2000.0): 5h48m53.73s/+23°19'10.4"
RA/Dec (on date): 5h50m23.87s/+23°19'42.2"
Hour angle/DE: 16h21m26.28s/+23°41'47.7" (apparent)
Az/Alt: +56°20'19.2"/+0°25'38.4" (apparent)
Ecliptic longitude/latitude (J2000.0): +87°27'02.9"/-0°05'42.6"
Ecliptic longitude/latitude (on date): +87°47'44.9"/-0°05'21.6"
Ecliptic obliquity (on date): +23°26'10"
Galactic longitude/latitude: -174°48'46.6"/-2°16'45.0"
Mean Sidereal Time: -1h49m32.1s
Apparent Sidereal Time: -1h49m32.2s
Distance: 1.430AU (213.928 Mio km)
Apparent diameter: +0°00'06.6"
Sidereal period: 686.97 days (1.881 a)
Sidereal day: 24h37m22.7s
Mean solar day: 24h39m35.2s
Phase Angle: +40°47'11"
Elongation: +71°27'18"
Phase: 0.88
Illuminated: 87.9%

Date and Time

Date and Time | Julian Day

2024 / 9 / 1 0 : 40 : 21

Mars

- On September 25th, Mars and the Moon rise together in a wide conjunction shortly after midnight in the eastern sky.

- Moonrise is around 11:30 p.m. and Mars rises at 12:07 a.m.

Mars

Type: **planet**
Magnitude: **0.55** (extincted to: **3.08**)
Absolute Magnitude: 31.59
RA/Dec (J2000.0): 6h49m42.19s/+23°20'22.0"
RA/Dec (on date): 6h51m12.38s/+23°18'42.9"
Hour angle/DE: 16h32m40.26s/+23°32'06.4" (apparent)
Az/Alt: +58°23'00.6"/+1°59'53.2" (apparent)
Ecliptic longitude/latitude (J2000.0): +101°23'42.2"/+0°23'25.3"
Ecliptic longitude/latitude (on date): +101°44'28.3"/+0°23'45.7"
Ecliptic obliquity (on date): +23°26'10"
Galactic longitude/latitude: -168°14'54.1"/+10°02'51.2"
Mean Sidereal Time: 0h36m59.1s
Apparent Sidereal Time: 0h36m59.2s
Distance: 1.280AU (191.442 Mio km)
Apparent diameter: +0°00'07.3"
Sidereal period: 686.97 days (1.881 a)
Sidereal day: 24h37m22.7s
Mean solar day: 24h39m35.2s
Phase Angle: +41°28'07"
Elongation: +80°51'36"
Phase: 0.87
Illuminated: 87.5%

Date and Time

Date and Time | Julian Day

2024 / 9 / 25 0 : 18 : 20

Earth, Peterborough, 188m FOV 44.4° 26.9 FPS 2024-09-25 00:18:20 UTC-04:00

Mars

- On September 30th, Mars rises at 12 midnight in the eastern sky.

- The planet remains high in the sky until dawn.

Mars

Type: **planet**
Magnitude: **0.50** (extincted to: **4.46**)
Absolute Magnitude: 31.60
RA/Dec (J2000.0): 7h01m21.19s/+23°11'53.6"
RA/Dec (on date): 7h02m51.17s/+23°09'49.9"
Hour angle/DE: 16h23m27.80s/+23°30'38.9" (apparent)
Az/Alt: +56°48'42.0"/+0°35'20.0" (apparent)
Ecliptic longitude/latitude (J2000.0): +104°04'18.9"/+0°30'18.4"
Ecliptic longitude/latitude (on date): +104°25'05.8"/+0°30'38.7"
Ecliptic obliquity (on date): +23°26'10"
Galactic longitude/latitude: -166°58'12.3"/+12°24'55.3"
Mean Sidereal Time: 0h34m59.0s
Apparent Sidereal Time: 0h34m59.1s
Distance: 1.246AU (186.427 Mio km)
Apparent diameter: +0°00'07.5"
Sidereal period: 686.97 days (1.881 a)
Sidereal day: 24h37m22.7s
Mean solar day: 24h39m35.2s
Phase Angle: +41°27'20"
Elongation: +83°04'41"
Phase: 0.87
Illuminated: 87.5%

Date and Time

Date and Time | Julian Day

2024 / 9 / 30 0 : 0 : 41

Earth, Peterborough, 188m FOV 22.8° 53.8 FPS 2024-09-30 00:00:41 UTC-04:00

JUPITER

Jupiter

- On September 1st, Jupiter rises at 12:08 a.m. in the eastern sky.
- The planet remains well placed in the midnight and early morning skies.
- On the same night Jupiter, The Hyades and the Pleiades rise together in a wide conjunction.

Jupiter

Type: **planet**
Magnitude: **-2.28** (extincted to: **1.72**)
Absolute Magnitude: 25.74
RA/Dec (J2000.0): 5h11m7.60s/+22°15'27.1"
RA/Dec (on date): 5h12m36.71s/+22°17'19.5"
Hour angle/DE: 16h27m37.78s/+22°38'14.5" (apparent)
Az/Alt: +58°06'28.6"/+0°33'28.4" (apparent)
Ecliptic longitude/latitude (J2000.0): +78°42'13.2"/-0°42'14.0"
Ecliptic longitude/latitude (on date): +79°02'55.3"/-0°41'53.2"
Ecliptic obliquity (on date): +23°26'10"
Galactic longitude/latitude: -178°40'54.3"/-10°09'36.7"
Mean Sidereal Time: -2h21m4.4s
Apparent Sidereal Time: -2h21m4.5s
Distance: 5.118AU (765.608 Mio km)
Apparent diameter: +0°00'38.5"
Sidereal period: 4331.87 days (11.860 a)
Sidereal day: 9h55m29.7s
Mean solar day: 9h55m33.1s
Phase Angle: +11°22'09"
Elongation: +80°10'54"
Phase: 0.99
Illuminated: 99.0%

Uranus

Jupiter

E

Date and Time

Date and Time | Julian Day

2024 / 9 / 1 0 : 8 : 54

Earth, Peterborough, 188m | FOV 31.8° | 37.4 FPS | 2024-09-01 00:08:54 UTC-04:00

Jupiter

- On September 23rd, Jupiter and the Moon rise together in the eastern sky at 11:00 p.m.

- On the same night Jupiter, the Moon, Hyades and the Pleiades all form a wide conjunction on the eastern horizon.

Jupiter

Type: **planet**
Magnitude: **-2.43** (extincted to: **-0.40**)
Absolute Magnitude: 25.75
RA/Dec (J2000.0): 5h19m21.90s/+22°23'38.9"
RA/Dec (on date): 5h20m51.48s/+22°25'14.2"
Hour angle/DE: 16h42m46.91s/+22°35'57.6" (apparent)
Az/Alt: +60°44'17.8"/+2°51'48.9" (apparent)
Ecliptic longitude/latitude (J2000.0): +80°36'49.7"/-0°42'53.1"
Ecliptic longitude/latitude (on date): +80°57'35.8"/-0°42'32.1"
Ecliptic obliquity (on date): +23°26'10"
Galactic longitude/latitude: -177°42'02.9"/-8°30'48.8"
Mean Sidereal Time: -1h57m4.0s
Apparent Sidereal Time: -1h57m4.2s
Distance: 4.770AU (713.524 Mio km)
Apparent diameter: +0°00'41.3"
Sidereal period: 4331.87 days (11.860 a)
Sidereal day: 9h55m29.7s
Mean solar day: 9h55m33.1s
Phase Angle: +11°15'22"
Elongation: +100°36'31"
Phase: 0.99
Illuminated: 99.0%

Uranus
Moon
Aldebaran
Jupiter
E

Date and Time

Date and Time | Julian Day

2024 / 9 / 23 23 : 2 : 24

Earth, Peterborough, 188m | FOV 37.6° | 15.8 FPS | 2024-09-23 23:02:24 UTC-04:00

Jupiter

- On September 30th, Jupiter rises at 10:18 p.m. in the eastern sky.
- Jupiter remains in a close conjunction with the Hyades all month.
- Jupiter remains visible most of the night

Date and Time

Date and Time | Julian Day

2024 / 9 / 30 22 : 18 : 39

Earth, Peterborough, 188m FOV 16.3° 30.6 FPS 2024-09-30 22:18:39 UTC-04:00

SATURN

Saturn

- On September 1st, Saturn appears low on the eastern at sunset.
- Now well place high in the sky at 11 PM. Visible all night.
- Saturn reach opposition with Earth on September 8th.

Saturn

Type: **planet**
Magnitude: **0.60** (extincted to: **2.56**)
Absolute Magnitude: 27.49
RA/Dec (J2000.0): 23h12m26.31s/-7°28'32.1"
RA/Dec (on date): 23h13m43.21s/-7°20'29.4"
Hour angle/DE: 18h45m36.03s/-7°10'32.4" (apparent)
Az/Alt: +103°06'07.2"/+3°02'40.8" (apparent)
Ecliptic longitude/latitude (J2000.0): +346°09'04.9"/-2°11'01.9"
Ecliptic longitude/latitude (on date): +346°29'47.9"/-2°11'05.9"
Ecliptic obliquity (on date): +23°26'10"
Galactic longitude/latitude: +68°18'46.3"/-59°23'40.1"
Mean Sidereal Time: 17h58m39.7s
Apparent Sidereal Time: 17h58m39.6s
Distance: 8.664AU (1296.125 Mio km)
Apparent diameter: +0°00'19.2", with rings: +0°00'44.7"
Sidereal period: 10760.00 days (29.459 a)
Sidereal day: 10h39m22.4s
Mean solar day: 10h39m24.0s
Phase Angle: +0°42'33"
Elongation: +173°11'26"
Phase: 1.00
Illuminated: 100.0%

Date and Time

Date and Time | Julian Day

2024 / 9 / 1 20 : 25 : 18

Earth, Peterborough, 188m FOV 18.7° 37.8 FPS 2024-09-01 20:25:18 UTC-04:00

Saturn

- On September 1st, Saturn remains high in the western sky at sunrise.

Saturn

Type: **planet**
Magnitude: **0.61** (extincted to: **1.12**)
Absolute Magnitude: 27.49
RA/Dec (J2000.0): 23h12m36.43s/-7°27'24.6"
RA/Dec (on date): 23h13m53.32s/-7°19'21.8"
Hour angle/DE: 4h04m56.49s/-7°16'31.8" (apparent)
Az/Alt: +244°00'17.1"/+14°39'56.5" (apparent)
Ecliptic longitude/latitude (J2000.0): +346°11'50.0"/-2°10'58.3"
Ecliptic longitude/latitude (on date): +346°32'32.9"/-2°11'02.3"
Ecliptic obliquity (on date): +23°26'10"
Galactic longitude/latitude: +68°23'45.2"/-59°24'44.1"
Mean Sidereal Time: 3h18m59.6s
Apparent Sidereal Time: 3h18m59.5s
Distance: 8.665AU (1296.306 Mio km)
Apparent diameter: +0°00'19.2", with rings: +0°00'44.7"
Sidereal period: 10760.00 days (29.459 a)
Sidereal day: 10h39m22.4s
Mean solar day: 10h39m24.0s
Phase Angle: +0°46'17"
Elongation: +172°35'22"
Phase: 1.00
Illuminated: 100.0%

Date and Time

Date and Time | Julian Day

2024 / 9 / 1 5 : 47 : 2

Earth, Peterborough, 188m FOV 50.8° 15.8 FPS 2024-09-01 05:48:02 UTC-04:00

Saturn

- On September 16th, Saturn and the Moon rise together in the eastern twilight sky at sunset.

- The pair become visible around 8 p.m.

Saturn

Type: **planet**
Magnitude: **0.59** (extincted to: **1.40**)
Absolute Magnitude: 27.48
RA/Dec (J2000.0): 23h08m12.67s/-7°55'50.0"
RA/Dec (on date): 23h09m29.87s/-7°47'48.5"
Hour angle/DE: 19h22m8.17s/-7°43'25.0" (apparent)
Az/Alt: +110°03'53.2"/+8°54'39.0" (apparent)
Ecliptic longitude/latitude (J2000.0): +345°00'31.5"/-2°11'45.3"
Ecliptic longitude/latitude (on date): +345°21'17.0"/-2°11'49.8"
Ecliptic obliquity (on date): +23°26'10"
Galactic longitude/latitude: +66°17'01.7"/-58°55'24.2"
Mean Sidereal Time: 18h31m21.8s
Apparent Sidereal Time: 18h31m21.7s
Distance: 8.670AU (1296.942 Mio km)
Apparent diameter: +0°00'19.2", with rings: +0°00'44.7"
Sidereal period: 10760.00 days (29.459 a)
Sidereal day: 10h39m22.4s
Mean solar day: 10h39m24.0s
Phase Angle: +0°59'03"
Elongation: +170°29'41"
Phase: 1.00
Illuminated: 100.0%

Saturn
Moon

E
S

Date and Time

Date and Time | Julian Day

2024 / 9 / 16 19 : 58 : 56

Earth, Peterborough, 188m | FOV 60° | 26.7 FPS | 2024-09-16 19:58:56 UTC-04:00

Saturn

- On September 16th, Saturn and the Moon rise together in the eastern twilight sky at sunset. Both share a close conjunction.

- The pair are best seen after 10 p.m.

Saturn

Type: **planet**
Magnitude: **0.59** (extincted to: **0.89**)
Absolute Magnitude: 27.48
RA/Dec (J2000.0): 23h08m11.36s/-7°55'58.2"
RA/Dec (on date): 23h09m28.57s/-7°47'56.7"
Hour angle/DE: 21h13m52.33s/-7°46'12.3" (apparent)
Az/Alt: +133°06'03.6"/+25°52'30.8" (apparent)
Ecliptic longitude/latitude (J2000.0): +345°00'10.3"/-2°11'45.3"
Ecliptic longitude/latitude (on date): +345°20'55.9"/-2°11'49.8"
Ecliptic obliquity (on date): +23°26'10"
Galactic longitude/latitude: +66°16'24.8"/-58°55'15.1"
Mean Sidereal Time: -3h36m43.4s
Apparent Sidereal Time: -3h36m43.5s
Distance: 8.670AU (1296.970 Mio km)
Apparent diameter: +0°00'19.2", with rings: +0°00'44.7"
Sidereal period: 10760.00 days (29.459 a)
Sidereal day: 10h39m22.4s
Mean solar day: 10h39m24.0s
Phase Angle: +0°59'33"
Elongation: +170°24'54"
Phase: 1.00
Illuminated: 100.0%

Date and Time

Date and Time | Julian Day

2024 / 9 / 16 21 : 50 : 33

Earth, Peterborough, 188m | FOV 60° | 59.2 FPS | 2024-09-16 21:50:33 UTC-04:00

Saturn

- On September 17th, Saturn and the Moon continue to move closer together in the early morning western sky at 5:00 a.m.
- At moonset both Saturn and the Moon are separated by less than 2 degrees of separation.
- The full moon is also a supermoon that will be 30% brighter and 15% bigger.

Saturn

Type: **planet**
Magnitude: **0.60** (extincted to: **1.32**)
Absolute Magnitude: 27.48
RA/Dec (J2000.0): 23h08m6.22s/-7°56'30.1"
RA/Dec (on date): 23h09m23.43s/-7°48'28.5"
Hour angle/DE: 4h30m53.04s/-7°44'31.3" (apparent)
Az/Alt: +248°37'48.0"/+10°03'55.3" (apparent)
Ecliptic longitude/latitude (J2000.0): +344°58'47.5"/-2°11'45.1"
Ecliptic longitude/latitude (on date): +345°19'33.2"/-2°11'49.5"
Ecliptic obliquity (on date): +23°26'10"
Galactic longitude/latitude: +66°14'00.9"/-58°54'38.8"
Mean Sidereal Time: 3h40m31.1s
Apparent Sidereal Time: 3h40m31.0s
Distance: 8.671AU (1297.094 Mio km)
Apparent diameter: +0°00'19.2", with rings: +0°00'44.7"
Sidereal period: 10760.00 days (29.459 a)
Sidereal day: 10h39m22.4s
Mean solar day: 10h39m24.0s
Phase Angle: +1°01'28"
Elongation: +170°06'10"
Phase: 1.00
Illuminated: 100.0%

Date and Time

Date and Time | Julian Day

2024 / 9 / 17 5 : 6 : 36

Earth, Peterborough, 188m FOV 36.4° 40 FPS 2024-09-17 05:06:36 UTC-04:00

Saturn

- On September 30th, Saturn is well placed above the eastern horizon at sunset.

- Visible all night.

Saturn

Type: **planet**
Magnitude: **0.65** (extincted to: **1.20**)
Absolute Magnitude: 27.52
RA/Dec (J2000.0): 23h04m29.51s/-8°18'45.2"
RA/Dec (on date): 23h05m46.99s/-8°10'44.7"
Hour angle/DE: 19h52m45.41s/-8°07'42.4" (apparent)
Az/Alt: +116°07'06.4"/+13°38'48.0" (apparent)
Ecliptic longitude/latitude (J2000.0): +344°00'41.1"/-2°11'30.1"
Ecliptic longitude/latitude (on date): +344°21'29.0"/-2°11'34.9"
Ecliptic obliquity (on date): +23°26'10"
Galactic longitude/latitude: +64°34'15.9"/-58°28'28.1"
Mean Sidereal Time: -5h1m37.9s
Apparent Sidereal Time: -5h1m38.1s
Distance: 8.735AU (1306.739 Mio km)
Apparent diameter: +0°00'19.0", with rings: +0°00'44.3"
Sidereal period: 10760.00 days (29.459 a)
Sidereal day: 10h39m22.4s
Mean solar day: 10h39m24.0s
Phase Angle: +2°25'10"
Elongation: +155°58'10"
Phase: 1.00
Illuminated: 100.0%

E

Date and Time

Date and Time | Julian Day

2024 / 9 / 30 19 : 30 : 49

Earth, Peterborough, 188m FOV 43° 55.9 FPS 2024-09-30 19:30:49 UTC-04:00

Saturn

- On September 30th, Saturn now sets at 5:04 a.m. in the western sky.

- At the start of Astronomical Twilight.

Saturn

Type: **planet**
Magnitude: **0.65** (extincted to: **4.02**)
Absolute Magnitude: 27.52
RA/Dec (J2000.0): 23h04m38.42s/-8°17'51.1"
RA/Dec (on date): 23h05m55.89s/-8°09'50.5"
Hour angle/DE: 5h22m56.56s/-7°53'09.9" (apparent)
Az/Alt: +257°54'02.8"/+1°02'55.6" (apparent)
Ecliptic longitude/latitude (J2000.0): +344°03'04.1"/-2°11'31.3"
Ecliptic longitude/latitude (on date): +344°23'51.8"/-2°11'36.1"
Ecliptic obliquity (on date): +23°26'10"
Galactic longitude/latitude: +64°38'18.1"/-58°29'34.5"
Mean Sidereal Time: 4h29m59.9s
Apparent Sidereal Time: 4h29m59.7s
Distance: 8.731AU (1306.145 Mio km)
Apparent diameter: +0°00'19.0", with rings: +0°00'44.3"
Sidereal period: 10760.00 days (29.459 a)
Sidereal day: 10h39m22.4s
Mean solar day: 10h39m24.0s
Phase Angle: +2°21'38"
Elongation: +156°35'41"
Phase: 1.00
Illuminated: 100.0%

Date and Time

Date and Time | Julian Day

2024 / 9 / 30 5 : 4 : 50

Earth, Peterborough, 188m FOV 22.1° 58.9 FPS 2024-09-30 05:04:50 UTC-04:00

URANUS

Uranus

- On September 1st, Uranus rises at 10:49 p.m. in the eastern sky.
- Uranus also rises together with the Pleiades located direct west of the constellation.
- Uranus remains visible until sunrise.

Uranus

Type: **planet**
Magnitude: **5.70** (extincted to: **9.15**)
Absolute Magnitude: 30.84
RA/Dec (J2000.0): 3h38m43.94s/+19°12'25.0"
RA/Dec (on date): 3h40m9.19s/+19°17'17.7"
Hour angle/DE: 16h44m54.09s/+19°35'02.0" (apparent)
Az/Alt: +63°08'41.6"/+0°58'43.6" (apparent)
Ecliptic longitude/latitude (J2000.0): +56°54'43.3"/-0°16'03.6"
Ecliptic longitude/latitude (on date): +57°15'25.6"/-0°15'45.4"
Ecliptic obliquity (on date): +23°26'10"
Galactic longitude/latitude: +168°40'16.6"/-28°26'37.0"
Mean Sidereal Time: -3h36m5.9s
Apparent Sidereal Time: -3h36m6.0s
Distance: 19.324AU (2890.795 Mio km)
Apparent diameter: +0°00'03.7", 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°52'49"
Elongation: +102°53'13"
Phase: 1.00
Illuminated: 99.9%

Date and Time

Date and Time | Julian Day

2024 / 9 / 1 22 : 50 : 9

Earth, Peterborough, 188m FOV 18.7° 61.1 FPS 2024-09-01 22:50:09 UTC-04:00

Uranus

- On September 30th, Uranus rises at 8:55 p.m. in the eastern sky.

- The planet is visible all night.

Uranus

Type: **planet**
Magnitude: **5.65** (extincted to: **8.77**)
Absolute Magnitude: 30.84
RA/Dec (J2000.0): 3h37m16.03s/+19°07'23.1"
RA/Dec (on date): 3h38m41.53s/+19°12'19.6"
Hour angle/DE: 16h47m20.36s/+19°28'22.9" (apparent)
Az/Alt: +63°38'31.1"/+1°17'14.5" (apparent)
Ecliptic longitude/latitude (J2000.0): +56°33'21.7"/-0°16'09.7"
Ecliptic longitude/latitude (on date): +56°54'08.9"/-0°15'51.3"
Ecliptic obliquity (on date): +23°26'10"
Galactic longitude/latitude: +168°26'39.6"/-28°44'19.0"
Mean Sidereal Time: -3h35m1.0s
Apparent Sidereal Time: -3h35m1.2s
Distance: 18.892AU (2826.135 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°11'52"
Elongation: +131°27'01"
Phase: 1.00
Illuminated: 100.0%

Uranus

E

Date and Time

Date and Time | Julian Day

2024 / 9 / 30 20 : 57 : 12

Earth, Peterborough, 188m FOV 26.1° 17.9 FPS 2024-09-30 20:57:12 UTC-04:00

NEPTUNE

Neptune

- On September 1st, Neptune appears low on the eastern horizon at sunset.

Neptune

Type: **planet**
Magnitude: **7.82** (extincted to: **11.04**)
Absolute Magnitude: 32.08
RA/Dec (J2000.0): 23h57m15.56s/-1°44'15.0"
RA/Dec (on date): 23h58m31.54s/-1°36'00.1"
Hour angle/DE: 18h11m51.08s/-1°20'12.7" (apparent)
Az/Alt: +93°01'35.6"/+1°11'07.5" (apparent)
Ecliptic longitude/latitude (J2000.0): +358°40'48.6"/-1°19'17.7"
Ecliptic longitude/latitude (on date): +359°01'31.3"/-1°19'17.1"
Ecliptic obliquity (on date): +23°26'10"
Galactic longitude/latitude: +93°34'15.0"/-61°28'53.5"
Mean Sidereal Time: 18h9m18.1s
Apparent Sidereal Time: 18h9m18.0s
Distance: 28.942AU (4329.607 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°37'48"
Elongation: +160°59'01"
Phase: 1.00
Illuminated: 100.0%

Neptune

E

Date and Time

Date and Time | Julian Day

2024 / 9 / 1 20 : 35 : 55

Earth, Peterborough, 188m | FOV 13.4° | 57.9 FPS | 2024-09-01 20:35:55 UTC-04:00

Neptune

- On September 1st, Neptune remains high above the western horizon at sunrise.

Neptune

Type: **planet**
Magnitude: **7.82** (extincted to: **8.11**)
Absolute Magnitude: 32.08
RA/Dec (J2000.0): 23h57m19.02s/-1°43'51.4"
RA/Dec (on date): 23h58m34.99s/-1°35'36.6"
Hour angle/DE: 3h18m28.48s/-1°34'01.2" (apparent)
Az/Alt: +238°12'47.2"/+26°23'06.8" (apparent)
Ecliptic longitude/latitude (J2000.0): +358°41'45.6"/-1°19'16.7"
Ecliptic longitude/latitude (on date): +359°02'28.1"/-1°19'16.1"
Ecliptic obliquity (on date): +23°26'10"
Galactic longitude/latitude: +93°36'14.3"/-61°28'54.9"
Mean Sidereal Time: 3h17m8.4s
Apparent Sidereal Time: 3h17m8.3s
Distance: 28.945AU (4330.103 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°38'59"
Elongation: +160°22'27"
Phase: 1.00
Illuminated: 100.0%

Saturn

W

Date and Time

Date and Time | Julian Day

2024 / 9 / 1 5 : 46 : 11

Earth, Peterborough, 188m FOV 70.9° 54.9 FPS 2024-09-01 05:46:11 UTC-04:00

Neptune

- On September 30th, Neptune is well placed above the eastern horizon at evening twilight.

Neptune

Type: **planet**
Magnitude: **7.81** (extincted to: **8.45**)
Absolute Magnitude: 32.08
RA/Dec (J2000.0): 23h54m22.35s/-2°03'21.3"
RA/Dec (on date): 23h55m38.66s/-1°55'04.7"
Hour angle/DE: 19h12m42.88s/-1°51'42.2" (apparent)
Az/Alt: +104°14'32.3"/+11°33'52.9" (apparent)
Ecliptic longitude/latitude (J2000.0): +357°53'29.5"/-1°19'36.4"
Ecliptic longitude/latitude (on date): +358°14'17.1"/-1°19'36.1"
Ecliptic obliquity (on date): +23°26'10"
Galactic longitude/latitude: +91°55'20.4"/-61°26'35.9"
Mean Sidereal Time: -4h51m51.4s
Apparent Sidereal Time: -4h51m51.5s
Distance: 28.911AU (4324.956 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°20'17"
Elongation: +169°51'03"
Phase: 1.00
Illuminated: 100.0%

Date and Time

Date and Time | Julian Day

2024 / 9 / 30 19 : 40 : 34

Neptune

- On September 30th, Neptune sets at 6:22 a.m. in the western sky.

- Neptune is visible all night.

Neptune

Type: **planet**
Magnitude: **7.81** (extincted to: **11.97**)
Absolute Magnitude: 32.08
RA/Dec (J2000.0): 23h54m25.65s/-2°02'59.8"
RA/Dec (on date): 23h55m41.94s/-1°54'43.2"
Hour angle/DE: 5h51m16.70s/-1°34'37.8" (apparent)
Az/Alt: +267°20'54.4"/+0°27'29.4" (apparent)
Ecliptic longitude/latitude (J2000.0): +357°54'23.3"/-1°19'36.3"
Ecliptic longitude/latitude (on date): +358°15'10.8"/-1°19'36.0"
Ecliptic obliquity (on date): +23°26'10"
Galactic longitude/latitude: +91°57'12.8"/-61°26'39.4"
Mean Sidereal Time: 5h48m21.0s
Apparent Sidereal Time: 5h48m20.9s
Distance: 28.909AU (4324.696 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°19'12"
Elongation: +170°24'09"
Phase: 1.00
Illuminated: 100.0%

Neptune

W

Date and Time

Date and Time | Julian Day

2024 / 9 / 30 6 : 22 : 58

Earth, Peterborough, 188m FOV 13.4° 17.9 FPS 2024-09-30 06:22:58 UTC-04:00

That is the Sky this Month

By David Mills