

# Sky this Month

## August 2023

By David Mills

**MOON**

**FULL MOON**

# Moon

- The full Moon is on August 1, at 2:32 p.m.
- The Moon rises at 9:17 p.m. on August 1st, 2023
- This month's Full Moon is called the Sturgeon Moon.
- August is a supermoon. This is the 2<sup>nd</sup> of 4 supermoons this year.

Moon

Type: **moon**  
Magnitude: **-12.38** (reduced to **-8.32** by **31.49** Airmasses)  
Absolute Magnitude: 0.21  
Mean Opposition Magnitude: -12.74  
RA/Dec (J2000.0): 21h11m42.74s/-22°14'20.3"  
RA/Dec (on date): 21h13m03.54s/-22°08'35.8"  
HA/Dec: 19h35m17.03s/-21°47'23.1" (apparent)  
Az./Alt.: +121°50'39.0"/+0°31'26.8" (apparent)  
Gal. long./lat.: +25°50'02.3"/-40°13'56.1"  
Supergal. long./lat.: -111°15'49.8"/+39°23'57.0"  
Ecl. long./lat. (J2000.0): +313°40'35.2"/-5°46'11.1"  
Ecl. long./lat. (on date): +314°00'15.4"/-5°46'18.4"  
Ecliptic obliquity (on date): +23°26'18.2"  
Mean Sidereal Time: 16h47m01.6s  
Apparent Sidereal Time: 16h47m01.1s  
Rise: 21h19m  
Transit: 1h46m  
Set: 6h12m  
Parallactic Angle: -40°54'02.6"  
IAU Constellation: Cap  
Hourly motion: +0°33'57" towards 77.3°  
Hourly motion: dα=+0°35'39" dδ=+0°08'00"  
Elongation: +172°42'18.4"  
Phase angle: +7°16'40.1"  
Illuminated: 99.6%  
Moon age: 15.1 days old (Waning Gibbous)  
Position angle of bright limb: +124.7847°  
Distance from Sun: 1.017 AU (152.186 M km)  
Distance: 0.002388 AU (357271.736 km)  
Light time: 0h00m01.2s  
Sidereal period: 27.32 days (0.075 a)  
Synodic period: 29.53 days (0.081 a)  
Apparent diameter: +0°33'26.10"  
Diameter: 3474.8 km  
Sidereal day: 655h43m11.7s  
Mean solar day: 708h44m03.0s  
Albedo: 0.120



SE

Date and Time										✕	
Date and Time					Julian Day						
⬆		⬆		⬆	⬆		⬆		⬆		
2023	-	8	-	1	21	:	18	:	44		
⬇		⬇		⬇	⬇		⬇		⬇		

**NEW MOON**

# Moon

- The New Moon is on August 16th, at 5:38 a.m.
- Moon is northeast of the sun.

Moon

Type: **moon**  
Magnitude: **-2.62**  
Absolute Magnitude: 0.21  
Mean Opposition Magnitude: -12.74  
RA/Dec (J2000.0): 9h49m55.12s/+17°26'34.0"  
RA/Dec (on date): 9h51m12.76s/+17°20'00.8"  
HA/Dec: 16h13m54.12s/+17°20'00.8"  
Az./Alt.: +59°06'37.4"/-5°34'02.8"  
Gal. long./lat.: +216°12'01.8"/+47°08'39.2"  
Supergal. long./lat.: +80°40'17.2"/-35°37'40.6"  
Ecl. long./lat. (J2000.0): +143°45'06.5"/+4°04'18.6"  
Ecl. long./lat. (on date): +144°04'48.6"/+4°04'24.4"  
Ecliptic obliquity (on date): +23°26'18.6"  
Mean Sidereal Time: 2h05m07.3s  
Apparent Sidereal Time: 2h05m06.9s  
Rise: 6h15m  
Transit: 13h38m  
Set: 20h47m  
Parallactic Angle: -40°02'43.8"  
IAU Constellation: Leo  
Hourly motion: +0°33'04" towards 104.0°  
Hourly motion:  $da=+0^{\circ}33'31"$   $d\delta=-0^{\circ}08'22"$   
Elongation: 4°08'56.0"  
Elong. in Ecl.Long.: E0°47'20"  
Phase angle: +175°50'23.8"  
Illuminated: 0.1%

Distance from Sun: 1.010 AU (151.099 M km)  
Distance: 0.002722 AU (407210.900 km)  
Light time: 0h00m01.4s  
Orbital velocity: 0.971 km/s  
Heliocentric velocity: 28.438 km/s  
Sidereal period: 27.32 days (0.075 a)  
Synodic period: 29.53 days (0.081 a)  
Apparent diameter: +0°29'20.08"  
Diameter: 3474.8 km  
Sidereal day: 655h43m11.6s  
Mean solar day: 708h44m02.9s  
Equatorial rotation velocity: 4.624 m/s  
Moon age: 0.0 days old (New Moon)  
Position angle of bright limb: 149°18'32"

Position angle of bright limb: 149°18'32"  
Earth, Peterborough, 188 m  
Libration: +5°57'54" towards +3°40'27" (Sill)  
Libration: +0°22'56" A5°57'83"

NE

E

Procyon

Moon

Sun

Venus

Regulus

Mercury

Mars

Date and Time

Date and Time

Julian Day

2023

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8

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16

5

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40

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15

FOV 60° 20.1 FPS 2023-08-16 05:40:15 UTC-04:00





# Moon

- The planet Saturn is the furthest west of the sun. Not in view.
- Mercury and Mars are both well south of the sun.
- Jupiter is well east of the sun. Not in view

Moon

Type: **moon**  
Magnitude: **-2.62**  
Absolute Magnitude: 0.21  
Mean Opposition Magnitude: -12.74  
RA/Dec (J2000.0): 9h49m59.19s/+17°26'18.8"  
RA/Dec (on date): 9h51m16.82s/+17°19'45.5"  
HA/Dec: 16h15m39.97s/+17°19'45.5"  
Az./Alt.: +59°26'11.5"/-5°17'57.6"  
Gal. long./lat.: +216°12'53.8"/+47°09'27.9"  
Supergal. long./lat.: +80°41'13.6"/-35°37'01.7"  
Ecl. long./lat. (J2000.0): +143°46'06.6"/+4°04'23.9"  
Ecl. long./lat. (on date): +144°05'48.6"/+4°04'29.6"  
Ecliptic obliquity (on date): +23°26'18.6"  
Mean Sidereal Time: 2h06m57.2s  
Apparent Sidereal Time: 2h06m56.8s  
Rise: 6h15m  
Transit: 13h38m  
Set: 20h47m  
Parallactic Angle: -40°12'27.9"  
IAU Constellation: Leo  
Hourly motion: +0°33'00" towards 104.0°  
Hourly motion:  $da=+0^{\circ}33'27''$   $db=-0^{\circ}08'21''$   
Elongation: 4°09'11.8"  
Elong. in Ecl.Long.: E0°48'16"  
Phase angle: +175°50'08.0"  
Illuminated: 0.1%  
Distance from Sun: 1.010 AU (151.099 M km)  
Distance: 0.002722 AU (407181.172 km)  
Light time: 0h00m01.4s  
Orbital velocity: 0.971 km/s  
Heliocentric velocity: 28.438 km/s  
Sidereal period: 27.32 days (0.075 a)  
Synodic period: 29.53 days (0.081 a)  
Apparent diameter: +0°29'20.21"  
Diameter: 3474.8 km  
Sidereal day: 655h43m11.6s  
Mean solar day: 708h44m02.9s  
Equatorial rotation velocity: 4.624 m/s  
Moon age: 0.0 days old (New Moon)  
Position angle of bright limb: 149°05'58"

Position Angle of axis: +18°55'24"

Earth, Peterborough, 188 m

Libration: +5°57'50" towards +3°39'31" (Sill)

Libration: +0°22'59" / +5°57'50"

Date and Time

Date and Time

Julian Day

2023

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8

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16

5

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42

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5

Full-screen mode [F11]

FOV 83.7°

19.7 FPS

2023-08-16 05:42:05 UTC-04:00

**AUGUST BLUE MOON**

# Blue Moon - Supermoon

- On August 30th, the full super Blue Moon rises at 8:08 p.m.
- This is the 2<sup>nd</sup> supermoon of the month of August.
- It is also the 3<sup>rd</sup> supermoon of the year 2023.

Moon

Type: **moon**  
Magnitude: **-12.39** (reduced to **-7.11** by **42.99** Airmasses)  
Absolute Magnitude: 0.21  
Mean Opposition Magnitude: -12.74  
RA/Dec (J2000.0): 22h40m36.13s/-13°35'23.0"  
RA/Dec (on date): 22h41m51.15s/-13°28'01.9"  
HA/Dec: 18h51m27.06s/-13°02'36.8" (apparent)  
Az./Alt.: +108°14'23.0"/-0°08'17.8" (apparent)  
Gal. long./lat.: +50°15'14.2"/-56°37'10.2"  
Supergal. long./lat.: -88°13'09.8"/+27°00'57.4"  
Ecl. long./lat. (J2000.0): +336°33'58.2"/-4°50'07.7"  
Ecl. long./lat. (on date): +336°53'42.3"/-4°50'11.2"  
Ecliptic obliquity (on date): +23°26'18.9"  
Mean sidereal time: 17h31m36.7s  
Apparent Sidereal Time: 17h31m36.3s  
Rise: 20h14m  
Transit: 1h20m  
Set: 6h26m  
Parallactic Angle: -44°14'43.7"  
IAU Constellation: Aqr  
Hourly motion: +0°36'12" towards 68.3°  
Hourly motion: dα=+0°34'28" dδ=+0°13'43"  
Elongation: +175°08'18.1"  
Phase angle: +4°51'00.6"  
Illuminated: 99.8%  
Moon age: 14.7 days old (Waxing Gibbous)  
Position angle of bright limb: +163.4165°  
Distance from Sun: 1.012 AU (151.394 M km)  
Distance: 0.002389 AU (357315.008 km)  
Light time: 0h00m01.2s  
Sidereal period: 27.32 days (0.075 a)  
Synodic period: 29.53 days (0.081 a)  
Apparent diameter: +0°33'25.86"  
Diameter: 3474.8 km  
Sidereal day: 655h43m11.7s  
Mean solar day: 708h44m03.0s  
Albedo: 0.120

Southern I-Aquariids

Moon

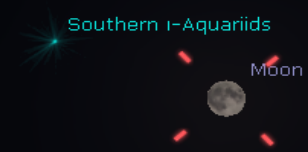
Date and Time										✕
Date and Time					Julian Day					
▲ 2023 ▼	–	▲ 8 ▼	–	▲ 30 ▼	▲ 20 ▼	:	▲ 9 ▼	:	▲ 10 ▼	

# Blue Moon - Supermoon

- At 9:36 p.m. August 30<sup>th</sup>, the super Blue Moon reaches its peak brightness.

Moon

Type: **moon**  
Magnitude: **-12.40** (reduced to **-11.84** by **4.35** Airmasses)  
Absolute Magnitude: 0.21  
Mean Opposition Magnitude: -12.74  
RA/Dec (J2000.0): 22h43m35.72s/-13°14'58.1"  
RA/Dec (on date): 22h44m50.59s/-13°07'34.9"  
HA/Dec: 20h14m29.77s/-13°04'18.9" (apparent)  
Az./Alt.: +123°35'05.3"/+13°11'01.4" (apparent)  
Gal. long./lat.: +51°27'02.4"/-57°05'08.8"  
Supergal. long./lat.: -87°31'24.6"/+26°30'23.5"  
Ecl. long./lat. (J2000.0): +337°22'17.1"/-4°47'39.0"  
Ecl. long./lat. (on date): +337°42'01.2"/-4°47'42.4"  
Ecliptic obliquity (on date): +23°26'18.9"  
Mean Sidereal Time: 18h59m10.4s  
Apparent Sidereal Time: 18h59m10.0s  
Rise: 20h15m  
Transit: 1h23m  
Set: 6h30m  
Parallactic Angle: -37°44'24.3"  
IAU Constellation: Aqr  
Hourly motion: +0°32'45" towards 64.9°  
Hourly motion: dα=+0°30'19" dδ=+0°14'12"  
Elongation: +175°11'41.5"  
Phase angle: +4°47'37.9"  
Illuminated: 99.8%  
Moon age: 14.8 days old (Full Moon)  
Position angle of bright limb: +154.4560°  
Distance from Sun: 1.012 AU (151.392 M km)  
Distance: 0.002379 AU (355831.392 km)  
Light time: 0h00m01.2s  
Sidereal period: 27.32 days (0.075 a)  
Synodic period: 29.53 days (0.081 a)  
Apparent diameter: +0°33'34.22"  
Diameter: 3474.8 km  
Sidereal day: 655h43m11.7s  
Mean solar day: 708h44m03.0s  
Albedo: 0.120



Date and Time										X	
Date and Time					Julian Day						
2023	-	8	-	30	21	:	36	:	30		

SE

# MERCURY



# Mercury

- On August 1<sup>st</sup>, Mercury is low in the west at evening twilight.
- Mercury is visible at 9:17 p.m. and sets around 45 minutes later.

Mercury

Type: **planet**  
Magnitude: **0.17** (reduced to **1.83** by **12.74** Airmasses)  
Absolute Magnitude: -0.60  
RA/Dec (J2000.0): 10h27m56.22s/+9°19'55.5"  
RA/Dec (on date): 10h29m10.40s/+9°12'45.5"  
HA/Dec: 6h15m16.78s/+9°21'08.3" (apparent)  
Az./Alt.: +279°21'22.6"/+3°48'36.3" (apparent)  
Gal. long./lat.: +233°47'05.5"/+51°46'17.4"  
Supergal. long./lat.: +94°39'30.2"/-31°38'56.2"  
Ecl. long./lat. (J2000.0): +155°15'40.9"/-0°16'07.5"  
Ecl. long./lat. (on date): +155°35'20.1"/-0°16'03.8"  
Ecliptic obliquity (on date): +23°26'18.2"  
Mean Sidereal Time: 16h45m02.4s  
Apparent Sidereal Time: 16h45m02.0s  
Rise: 8h20m  
Transit: 15h01m  
Set: 21h41m  
Parallactic Angle: +45°41'57.1"  
IAU Constellation: Leo  
Hourly motion: +0°03'13" towards 118.6°  
Hourly motion:  $\text{d}\alpha=+0^{\circ}02'51''$   $\text{d}\delta=-0^{\circ}01'33''$   
Elongation: 26°03'29.4"  
Elong. in Ecl.Long.: E26°03'26"

Phase angle: +77°47'33.2"  
Illuminated: 60.6%  
Distance from Sun: 0.456 AU (68.240 M km)  
Distance: 1.008 AU (150.820 M km)  
Light time: 0h08m23.1s  
Orbital velocity: 39.973 km/s  
Sidereal period: 87.97 days (0.241 a)  
Synodic period: 115.88 days (0.317 a)  
Apparent diameter: +0°00'06.68"  
Equatorial diameter: 4881.1 km  
Sidereal day: 1407h30m27.0s  
Mean solar day: 4222h26m51.1s  
Equatorial rotation velocity: 3.026 m/s  
Position Angle of axis: +23°36'08"  
Center point:  $L_{\odot}=+318^{\circ}28'12''$   $\phi_{\odot}=+6^{\circ}59'27''$   
Subsolar point:  $L_{\odot}=+240^{\circ}46'23''$   $\phi_{\odot}:-0^{\circ}00'51''$   
Albedo: 0.06



Date and Time

Date and Time

Julian Day

2023

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8

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21

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16

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45

# Mercury

- On August 7th, Mercury is less than 5 degrees above the western horizon by even twilight.
- The observing window is less than 10 minutes.
- After August 9th, Mercury no longer visible this month.

Mercury

Type: **planet**  
Magnitude: **0.34** (reduced to **2.81** by **18.86** Airmasses)  
Absolute Magnitude: -0.60  
RA/Dec (J2000.0): 10h52m25.54s/+5°45'52.1"  
RA/Dec (on date): 10h53m38.63s/+5°38'24.2"  
HA/Dec: 6h11m13.75s/+5°50'40.2" (apparent)  
Az./Alt.: +276°08'27.9"/+2°04'38.5" (apparent)  
Gal. long./lat.: +244°35'33.4"/+54°32'36.0"  
Supergal. long./lat.: +101°09'36.9"/-27°27'15.8"  
Ecl. long./lat. (J2000.0): +162°13'25.6"/-1°18'34.8"  
Ecl. long./lat. (on date): +162°33'05.2"/-1°18'32.4"  
Ecliptic obliquity (on date): +23°26'18.4"  
Mean Sidereal Time: 17h05m43.3s  
Apparent Sidereal Time: 17h05m42.8s  
Rise: 8h35m  
Transit: 15h02m  
Set: 21h27m  
Parallactic Angle: +45°40'04.8"  
IAU Constellation: Leo  
Hourly motion: +0°02'39" towards 122.2°  
Hourly motion:  $\text{d}\alpha=+0^{\circ}02'15"$   $\text{d}\delta=-0^{\circ}01'25"$   
Elongation: 27°18'26.0"  
Elong. in Ecl.Long.: E27°16'44"  
Phase angle: +87°33'05.1"  
Illuminated: 52.1%

Distance from Sun: 0.466 AU (69.662 M km)  
Distance: 0.921 AU (137.774 M km)  
Light time: 0h07m39.6s  
Orbital velocity: 38.967 km/s  
Sidereal period: 87.97 days (0.241 a)  
Synodic period: 115.88 days (0.317 a)  
Apparent diameter: +0°00'07.31"  
Equatorial diameter: 4881.1 km  
Sidereal day: 1407h30m27.0s  
Mean solar day: 4222h26m51.1s  
Equatorial rotation velocity: 3.026 m/s  
Position Angle of axis: +25°17'58"  
Center point:  $L_{\odot}=+348^{\circ}13'42"$   $\phi_{\odot}=+7^{\circ}43'44"$   
Subsolar point:  $L_{\odot}=+260^{\circ}42'12"$   $\phi_{\odot}:-0^{\circ}01'22"$   
Albedo: 0.06

Full-screen mode [F11]

Solar Az./Alt.: +301°48'16"/-7°43'29"

Earth, Peterborough, 188 m

Lunar Az./Alt.: +38°44'39"/-21°01'28"

Date and Time

Date and Time

Julian Day

2023

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21

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13

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47

FOV 11.3° 25.4 FPS 2023-08-07 21:13:47 UTC-04:00



**VENUS**

# Venus

- On August 23<sup>rd</sup>, Venus reappears in the morning sky.
- Venus now rises at 5:30 a.m. in the eastern morning twilight sky.

Venus

Type: **planet**  
Magnitude: **-4.26** (reduced to **0.09** by **34.05** Airmasses)  
Absolute Magnitude: -5.18  
Color Index (B-V): **0.91**  
RA/Dec (J2000.0): 8h58m40.83s/+8°44'29.7"  
RA/Dec (on date): 8h59m56.55s/+8°39'03.6"  
HA/Dec: 17h26m22.35s/+9°00'13.7" (apparent)  
Az./Alt.: +77°42'35.8"/+0°20'28.5" (apparent)  
Gal. long./lat.: +219°52'35.3"/+32°12'24.1"  
Supergal. long./lat.: +79°56'28.7"/-50°49'02.4"  
Ecl. long./lat. (J2000.0): +134°34'13.5"/-8°03'26.1"  
Ecl. long./lat. (on date): +134°53'54.0"/-8°03'18.8"  
Ecliptic obliquity (on date): +23°26'18.7"  
Mean Sidereal Time: 2h24m53.5s  
Apparent Sidereal Time: 2h24m53.1s  
Rise: 5h30m  
Transit: 12h06m  
Set: 18h42m  
Parallactic Angle: -45°04'24.7"  
IAU Constellation: Cnc  
Hourly motion: +0°01'06" towards 291.3°  
Hourly motion:  $\text{d}\alpha=-0^{\circ}01'02''$   $\text{d}\delta=+0^{\circ}00'24''$   
Elongation: 17°05'28.7"  
Elong. in Ecl.Long.: W15°07'28"  
Phase angle: +155°53'43.2"  
Illuminated: 4.4%  
Distance from Sun: 0.728 AU (108.875 M km)  
Distance: 0.302 AU (45.234 M km)  
Light time: 0h02m30.9s  
Orbital velocity: 34.806 km/s  
Sidereal period: 224.70 days (0.615 a)  
Synodic period: 583.92 days (1.599 a)  
Apparent diameter: +0°00'55.19"  
Equatorial diameter: 12103.6 km  
Sidereal day: 5832h26m37.0s  
Mean solar day: 2802h00m22.2s  
Equatorial rotation velocity: 1.811 m/s  
Position Angle of axis: +15°17'06"  
Center point:  $L_{\odot}=+343^{\circ}07'26''$   $\phi_{\odot}=+8^{\circ}21'35''$   
Subsolar point:  $L_{\odot}=+184^{\circ}39'10''$   $\phi_{\odot}=+2^{\circ}36'42''$   
Albedo: 0.77  
Solar Az./Alt.: +63°25'18"/-9°38'27"  
Lunar Az./Alt.: +341°24'56"/-64°03'07"



Venus

Date and Time

Date and Time

Julian Day

2023

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23

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32

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27

# Venus

- On August 31st, Venus now rises at 4:48 a.m. in the morning eastern pre-dawn sky.



Venus

Type: **planet**  
Magnitude: **-4.61** (reduced to **-0.73** by **29.96** Airmasses)  
Absolute Magnitude: -5.18  
Color Index (B-V): **0.91**  
RA/Dec (J2000.0): 8h50m00.73s/+9°58'16.5"  
RA/Dec (on date): 8h51m17.19s/+9°53'03.2"  
HA/Dec: 17h23m16.24s/+10°12'06.7" (apparent)  
Az./Alt.: +76°19'19.2"/+0°38'50.7" (apparent)  
Gal. long./lat.: +217°28'30.9"/+30°49'49.0"  
Supergal. long./lat.: +76°14'19.7"/-51°39'41.1"  
Ecl. long./lat. (J2000.0): +132°09'11.6"/-7°28'02.7"  
Ecl. long./lat. (on date): +132°28'53.8"/-7°27'55.2"  
Ecliptic obliquity (on date): +23°26'18.9"  
Mean Sidereal Time: 2h13m16.6s  
Apparent Sidereal Time: 2h13m16.2s  
Rise: 4h45m  
Transit: 11h26m  
Set: 18h08m  
Parallactic Angle: -44°57'22.1"  
IAU Constellation: Cnc  
Hourly motion: +0°00'28" towards 324.7°  
Hourly motion:  $d\alpha=-0^{\circ}00'16"$   $d\delta=+0^{\circ}00'23"$   
Elongation: 26°14'38.6"  
Elong. in Ecl.Long.: W25°13'55"  
Phase angle: +142°07'50.8"  
Illuminated: 10.5%  
Distance from Sun: 0.727 AU (108.792 M km)  
Distance: 0.331 AU (49.579 M km)  
Light time: 0h02m45.4s  
Orbital velocity: 34.833 km/s  
Sidereal period: 224.70 days (0.615 a)  
Synodic period: 583.92 days (1.599 a)  
Apparent diameter: +0°00'50.36"  
Equatorial diameter: 12103.6 km  
Sidereal day: 5832h26m37.0s  
Mean solar day: 2802h00m22.2s  
Equatorial rotation velocity: 1.811 m/s  
Position Angle of axis: +14°35'60"  
Center point:  $L_{\odot}=+352^{\circ}31'30"$   $\phi_{\odot}=+7^{\circ}43'10"$   
Subsolar point:  $L_{\odot}=+209^{\circ}05'34"$   $\phi_{\odot}=+2^{\circ}28'00"$   
Albedo: 0.77  
Solar Az./Alt.: +57°13'20"/-18°08'07"  
Lunar Az./Alt.: +221°38'19"/+18°01'02"



Date and Time

Date and Time

Julian Day

2023

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**MARS**

# Mars

- On August 1<sup>st</sup>, Mars is low on the western horizon at sunset.
- Mars is less than 15 degrees above the horizon at twilight.

Mars

Type: **planet**  
Magnitude: **1.71** (reduced to **2.65** by **7.28** Airmasses)  
Absolute Magnitude: -1.52  
Mean Opposition Magnitude: -2.01  
Color Index (B-V): **1.45**  
RA/Dec (J2000.0): 11h00m49.83s/+7°18'10.3"  
RA/Dec (on date): 11h02m03.01s/+7°10'37.6"  
HA/Dec: 5h46m03.74s/+7°15'25.9" (apparent)  
Az./Alt.: +272°47'33.9"/+7°32'56.7" (apparent)  
Gal. long./lat.: +244°55'06.2"/+57°07'48.0"  
Supergal. long./lat.: +100°23'53.5"/-24°57'10.8"  
Ecl. long./lat. (J2000.0): +163°33'49.7"/+0°54'37.6"  
Ecl. long./lat. (on date): +163°53'29.2"/+0°54'39.8"  
Ecliptic obliquity (on date): +23°26'18.2"  
Mean Sidereal Time: 16h48m27.3s  
Apparent Sidereal Time: 16h48m26.9s  
Rise: 9h03m  
Transit: 15h34m  
Set: 22h05m  
Parallactic Angle: +46°06'18.7"  
IAU Constellation: Leo  
Hourly motion: +0°01'33" towards 113.4°  
Hourly motion:  $da=+0^{\circ}01'26''$   $d\delta=-0^{\circ}00'37''$   
Elongation: 34°22'02.6"  
Elong. in Ecl.Long.: E34°21'27"  
Phase angle: +20°21'52.1"  
Illuminated: 96.9%  
Distance from Sun: 1.646 AU (246.295 M km)  
Distance: 2.381 AU (356.208 M km)  
Light time: 0h19m48.2s

Orbital velocity: 22.259 km/s  
Sidereal period: 686.97 days (1.881 a)  
Synodic period: 779.95 days (2.135 a)  
Apparent diameter: +0°00'03.93"  
Equatorial diameter: 6792.4 km  
Sidereal day: 24h37m22.7s  
Mean solar day: 24h39m35.2s  
Equatorial rotation velocity: 240.729 m/s  
Position Angle of axis: +18°02'37"  
Center point:  $L_{\odot}=+99^{\circ}10'23''$   $\phi_{\odot}=+25^{\circ}26'00''$   
Subsolar point:  $L_{\odot}=+76^{\circ}39'29''$   $\phi_{\odot}=+24^{\circ}52'13''$   
Albedo: 0.15  
Solar Az./Alt.: +203°54'34"/+7°30'33"



Mercury

W

Date and Time

Date and Time

Julian Day

2023

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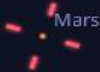
9

# Mars

- On August 1<sup>st</sup>, Mars now sets at 10:00 p.m. in the western sky.

Mars

Type: **planet**  
Magnitude: **1.70** (reduced to **6.03** by **33.86** Airmasses)  
Absolute Magnitude: -1.52  
Mean Opposition Magnitude: -2.01  
Color Index (B-V): **1.45**  
RA/Dec (J2000.0): 11h00m53.92s/+7°17'43.8"  
RA/Dec (on date): 11h02m07.10s/+7°10'11.1"  
HA/Dec: 6h27m35.74s/+7°31'10.9" (apparent)  
Az./Alt.: +280°11'07.6"/+0°21'13.0" (apparent)  
Gal. long./lat.: +244°56'56.0"/+57°08'17.1"  
Supergal. long./lat.: +100°24'44.9"/-24°56'23.6"  
Ecl. long./lat. (J2000.0): +163°34'56.0"/+0°54'36.6"  
Ecl. long./lat. (on date): +163°54'35.5"/+0°54'38.7"  
Ecliptic obliquity (on date): +23°26'18.2"  
Mean Sidereal Time: 17h31m08.7s  
Apparent Sidereal Time: 17h31m08.3s  
Rise: 9h03m  
Transit: 15h34m  
Set: 22h05m  
Parallactic Angle: +45°16'38.9"  
IAU Constellation: Leo  
Hourly motion: +0°01'34" towards 113.4°  
Hourly motion:  $\text{d}\alpha$ =+0°01'26"  $\text{d}\delta$ =-0°00'37"  
Elongation: 34°21'26.5"  
Elong. in Ecl.Long.: E34°20'51"  
Phase angle: +20°21'33.3"  
Illuminated: 96.9%  
Distance from Sun: 1.646 AU (246.292 M km)  
Distance: 2.381 AU (356.229 M km)  
Light time: 0h19m48.3s  
Orbital velocity: 22.259 km/s  
Sidereal period: 686.97 days (1.881 a)  
Synodic period: 779.95 days (2.135 a)  
Apparent diameter: +0°00'03.93"  
Equatorial diameter: 6792.4 km  
Sidereal day: 24h37m22.7s  
Mean solar day: 24h39m35.2s  
Equatorial rotation velocity: 240.729 m/s  
Position Angle of axis: +18°03'16"  
Center point:  $L_{\text{c}}$ =+109°31'36"  $\phi_{\text{c}}$ : +25°26'06"  
Subsolar point:  $L_{\text{s}}$ =+87°01'03"  $\phi_{\text{s}}$ : +24°52'10"  
Albedo: 0.15  
Solar Az./Alt.: +312°12'27"/+13°20'46"  
Earth, Peterborough, 188 m



Date and Time

Date and Time

Julian Day

2023-8-1

22:21:44

# Mars

- On August 18th, Mars and a young Moon share a very close conjunction at sunset.
- By 9:00 p.m. both objects are visible low in the west at twilight.

Mars

Type: **planet**  
Magnitude: **1.77** (reduced to **3.67** by **14.51** Airmasses)  
Absolute Magnitude: -1.52  
Mean Opposition Magnitude: -2.01  
Color Index (B-V): **1.45**  
RA/Dec (J2000.0): 11h40m03.66s/+2°58'54.8"  
RA/Dec (on date): 11h41m16.06s/+2°51'06.4"  
HA/Dec: 5h54m01.75s/+3°00'36.5" (apparent)  
Az./Alt.: +271°06'50.9"/+3°10'10.9" (apparent)  
Gal. long./lat.: +264°36'31.9"/+60°25'45.3"  
Supergal. long./lat.: +108°12'40.0"/-17°08'33.8"  
Ecl. long./lat. (J2000.0): +174°14'33.9"/+0°45'25.1"  
Ecl. long./lat. (on date): +174°34'15.5"/+0°45'25.3"  
Ecliptic obliquity (on date): +23°26'18.7"  
Mean Sidereal Time: 17h35m57.3s  
Apparent Sidereal Time: 17h35m56.9s  
Rise: 8h52m  
Transit: 15h06m  
Set: 21h20m  
Parallactic Angle: +45°46'11.7"  
IAU Constellation: Vir  
Hourly motion: +0°01'35" towards 114.2°  
Hourly motion:  $\text{d}\alpha=+0^{\circ}01'27''$   $\text{d}\delta=-0^{\circ}00'39''$   
Elongation: 28°45'11.4°  
Elong. in Ecl.Long.: E28°44'40°  
Phase angle: +17°19'44.8°

Illuminated: 97.7%  
Distance from Sun: 1.635 AU (244.556 M km)  
Distance: 2.448 AU (366.198 M km)  
Light time: 0h20m21.5s  
Orbital velocity: 22.430 km/s  
Sidereal period: 686.97 days (1.881 a)  
Synodic period: 779.95 days (2.135 a)  
Apparent diameter: +0°00'03.83"  
Equatorial diameter: 6792.4 km  
Sidereal day: 24h37m22.7s  
Mean solar day: 24h39m35.2s  
Equatorial rotation velocity: 240.729 m/s  
Position Angle of axis: +24°03'05"  
Center point:  $L_{\odot}=+287^{\circ}36'59''$   $\phi_{\odot}=+25^{\circ}57'12''$   
Subsolar point:  $L_{\odot}=+268^{\circ}35'17''$   $\phi_{\odot}=+24^{\circ}04'59''$   
Albedo: 0.15  
Solar Az./Alt.: +297°22'46"/+8°33'20"

Date and Time

Date and Time

Julian Day

2023

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# Mars

- On August 28th, Mars is just above the western horizon at sunset.
- Mars is now extremely difficult to observe.

Mars

Type: **planet**  
Magnitude: **1.68** (reduced to **5.21** by **27.14** Airmasses)  
Absolute Magnitude: -1.52  
Mean Opposition Magnitude: -2.01  
Color Index (B-V): **1.45**  
RA/Dec (J2000.0): 11h58m39.75s/+0°53'25.6"  
RA/Dec (on date): 11h59m52.06s/+0°45'34.4"  
HA/Dec: 5h59m00.66s/+1°02'48.0" (apparent)  
Az./Alt.: +270°34'35.3"/+0°54'28.5" (apparent)  
Gal. long./lat.: +274°58'43.1"/+60°51'54.8"  
Supergal. long./lat.: +111°41'03.4"/-13°18'09.0"  
Ecl. long./lat. (J2000.0): +179°20'20.4"/+0°41'02.2"  
Ecl. long./lat. (on date): +179°40'03.0"/+0°41'01.4"  
Ecliptic obliquity (on date): +23°26'18.6"  
Mean Sidereal Time: 18h00m03.8s  
Apparent Sidereal Time: 18h00m03.4s  
Rise: 8h47m  
Transit: 14h53m  
Set: 20h59m  
Parallactic Angle: +45°42'24.1"  
IAU Constellation: Vir  
Hourly motion: +0°01'36" towards 114.3°  
Hourly motion:  $\text{d}\alpha$ =+0°01'28"  $\text{d}\delta$ =-0°00'39"  
Elongation: 26°08'46.2"  
Elong. in Ecl.Long.: E26°08'18"  
Phase angle: +15°52'12.5"  
Illuminated: 98.1%  
Distance from Sun: 1.628 AU (243.611 M km)  
Distance: 2.473 AU (370.015 M km)  
Light time: 0h20m34.2s  
Orbital velocity: 22.524 km/s  
Sidereal period: 686.97 days (1.881 a)  
Synodic period: 779.95 days (2.135 a)  
Apparent diameter: +0°00'03.79"  
Equatorial diameter: 6792.4 km  
Sidereal day: 24h37m22.7s  
Mean solar day: 24h39m35.2s  
Equatorial rotation velocity: 240.729 m/s  
Position Angle of axis: +26°40'27"  
Center point:  $L_{\text{c}}$ =+207°13'45"  $\phi_{\text{c}}$ : +25°51'05"  
Subsolar point:  $L_{\text{s}}$ =+189°55'57"  $\phi_{\text{s}}$ : +23°32'59"  
Albedo: 0.15  
Solar Az./Alt.: +294°45'05"/+0°43'58"  
Earth, Peterborough, 188 m

W



Date and Time

Date and Time

Julian Day

2023-08-26

20:53:16

# JUPITER

# Jupiter

- On August 1<sup>st</sup>, Jupiter 12:22 a.m. in the eastern midnight sky.

Jupiter

Type: **planet**  
Magnitude: **-2.39** (reduced to **-0.37** by **15.45** Airmasses)  
Absolute Magnitude: -9.40  
Mean Opposition Magnitude: -2.70  
RA/Dec (J2000.0): 2h45m12.22s/+14°41'20.5"  
RA/Dec (on date): 2h46m29.67s/+14°47'17.7"  
HA/Dec: 17h16m40.75s/+14°57'34.8" (apparent)  
Az./Alt.: +71°49'28.3"/+2°53'13.6" (apparent)  
Gal. long./lat.: +159°50'05.7"/-39°53'38.1"  
Supergal. long./lat.: -40°29'00.3"/-21°13'21.8"  
Ecl. long./lat. (J2000.0): +43°22'32.8"/-1°13'15.7"  
Ecl. long./lat. (on date): +43°42'12.1"/-1°13'07.4"  
Ecliptic obliquity (on date): +23°26'18.2"  
Mean Sidereal Time: 20h02m28.7s  
Apparent Sidereal Time: 20h02m28.3s  
Rise: 0h18m  
Transit: 7h23m  
Set: 14h27m  
Parallactic Angle: -44°44'08.4"  
IAU Constellation: Ari  
Hourly motion: +0°00'19" towards 74.7°  
Hourly motion:  $\text{d}\alpha$ =+0°00'19"  $\text{d}\delta$ =+0°00'05"  
Elongation: +85°00'47.6"  
Phase angle: +11°45'33.4"  
Illuminated: 99.0%  
Distance from Sun: 4.962 AU (742.268 M km)  
Distance: 4.946 AU (739.889 M km)  
Light time: 0h41m08.0s  
Orbital velocity: 13.684 km/s  
Sidereal period: 4331.87 days (11.860 a)  
Synodic period: 398.89 days (1.092 a)  
Apparent diameter: +0°00'39.86"  
Equatorial diameter: 142984.0 km  
Sidereal day: 9h55m29.7s  
Mean solar day: 9h55m33.1s  
Equatorial rotation velocity: 12.572 km/s  
Albedo: 0.510

Perseids

Capella

NE

Uranus

Jupiter

E

Date and Time												×
Date and Time						Julian Day						
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# Jupiter

- On August 8<sup>th</sup>, Jupiter and half moon share a wide conjunction.
- Jupiter and the Moon rise at 12:25 a.m. in the eastern sky.
- Jupiter rises below the Moon.

Jupiter

Type: **planet**  
Magnitude: **-2.44** (reduced to **-1.17** by **9.80** Airmasses)  
Absolute Magnitude: -9.40  
Mean Opposition Magnitude: -2.70  
RA/Dec (J2000.0): 2h47m52.22s/+14°52'02.2"  
RA/Dec (on date): 2h49m09.85s/+14°57'56.2"  
HA/Dec: 17h30m33.52s/+15°04'26.5" (apparent)  
Az./Alt.: +74°06'53.2"/+5°20'31.8" (apparent)  
Gal. long./lat.: +160°24'06.2"/-39°23'13.9"  
Supergal. long./lat.: -40°01'40.4"/-21°44'24.0"  
Ecl. long./lat. (J2000.0): +44°02'39.8"/-1°14'33.1"  
Ecl. long./lat. (on date): +44°22'19.7"/-1°14'24.7"  
Ecliptic obliquity (on date): +23°26'18.4"  
Mean Sidereal Time: 20h19m16.4s  
Apparent Sidereal Time: 20h19m16.0s  
Rise: 23h53m  
Transit: 6h58m  
Set: 14h03m  
Parallactic Angle: -45°28'14.1"  
IAU Constellation: Ari  
Hourly motion: +0°00'14" towards 75.2°  
Hourly motion: dα=+0°00'14" dδ=+0°00'04"  
Elongation: +91°02'07.1"  
Phase angle: +11°47'23.1"  
Illuminated: 98.9%  
Distance from Sun: 4.963 AU (742.386 M km)  
Distance: 4.840 AU (723.983 M km)  
Light time: 0h40m14.9s  
Orbital velocity: 13.681 km/s  
Sidereal period: 4331.87 days (11.860 a)  
Synodic period: 398.89 days (1.092 a)  
Apparent diameter: +0°00'40.74"  
Equatorial diameter: 142984.0 km  
Sidereal day: 9h55m29.7s  
Mean solar day: 9h55m33.1s  
Equatorial rotation velocity: 12.572 km/s  
Albedo: 0.510

Uranus



E

Date and Time										✕
Date and Time					Julian Day					
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# Jupiter

- On August 31st, Jupiter rises at 10:26 p.m. in the eastern sky.
- Now visible all night.



Jupiter

Type: **planet**  
Magnitude: **-2.61** (reduced to **1.42** by **31.28** Airmasses)  
Absolute Magnitude: -9.40.  
Mean Opposition Magnitude: -2.70  
RA/Dec (J2000.0): 2h52m39.68s/+15°08'27.3"  
RA/Dec (on date): 2h53m57.77s/+15°14'16.2"  
HA/Dec: 17h00m07.29s/+15°34'27.6" (apparent)  
Az./Alt.: +68°32'01.5"/+0°32'26.5" (apparent)  
Gal. long./lat.: +161°25'38.8"/-38°30'20.7"  
Supergal. long./lat.: -39°14'36.4"/-22°40'52.4"  
Ecl. long./lat. (J2000.0): +45°13'51.5"/-1°19'11.6"  
Ecl. long./lat. (on date): +45°33'35.0"/-1°19'03.1"  
Ecliptic obliquity (on date): +23°26'19.0"  
Mean Sidereal Time: 19h52m45.4s  
Apparent Sidereal Time: 19h52m45.0s  
Rise: 22h22m  
Transit: 5h28m  
Set: 12h35m  
Parallactic Angle: -43°44'37.3"  
IAU Constellation: Ari  
Hourly motion: +0°00'02" towards 86.3°  
Hourly motion: dα=+0°00'02" dδ=+0°00'00"  
Elongation: +112°51'36.7"  
Phase angle: +10°47'46.2"  
Illuminated: 99.1%  
Distance from Sun: 4.965 AU (742.819 M km)  
Distance: 4.485 AU (671.009 M km)  
Light time: 0h37m18.2s  
Orbital velocity: 13.674 km/s  
Sidereal period: 4331.87 days (11.860 a)  
Synodic period: 398.89 days (1.092 a)  
Apparent diameter: +0°00'43.95"  
Equatorial diameter: 142984.0 km  
Sidereal day: 9h55m29.7s  
Mean solar day: 9h55m33.1s  
Equatorial rotation velocity: 12.572 km/s  
Albedo: 0.510



Date and Time										✕	
Date and Time					Julian Day						
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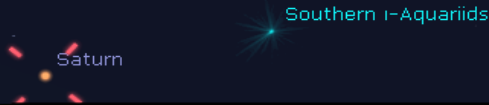
**SATURN**

# Saturn

- On August 1st, Saturn rises at 9:46 p.m. in the eastern twilight sky.
- Now visible all night.

Saturn

Type: **planet**  
Magnitude: **0.57** (reduced to **5.06** by **35.32** Airmasses)  
Absolute Magnitude: -8.88  
Mean Opposition Magnitude: 0.67  
RA/Dec (J2000.0): 22h31m07.10s/-11°10'28.9"  
RA/Dec (on date): 22h32m21.62s/-11°03'16.3"  
HA/Dec: 18h43m57.57s/-10°41'20.1" (apparent)  
Az./Alt.: +105°16'57.2"/+0°15'34.2" (apparent)  
Gal. long./lat.: +51°52'58.3"/-53°24'23.2"  
Supergal. long./lat.: -86°53'25.7"/+30°09'06.3"  
Ecl. long./lat. (J2000.0): +335°18'45.4"/-1°43'57.0"  
Ecl. long./lat. (on date): +335°38'25.0"/-1°44'00.7"  
Ecliptic obliquity (on date): +23°26'18.2"  
Mean Sidereal Time: 17h14m51.3s  
Apparent Sidereal Time: 17h14m50.9s  
Rise: 21h45m  
Transit: 3h05m  
Set: 8h25m  
Parallactic Angle: -44°38'01.8"  
IAU Constellation: Aqr  
Hourly motion: +0°00'10" towards 246.2°  
Hourly motion: dα=-0°00'09" dδ=-0°00'04"  
Elongation: +153°51'47.0"  
Phase angle: +2°37'12.8"  
Illuminated: 99.9%  
Distance from Sun: 9.780 AU (1463.055 M km)  
Distance: 8.859 AU (1325.219 M km)  
Light time: 1h13m40.5s  
Orbital velocity: 9.422 km/s  
Sidereal period: 10760.00 days (29.459 a)  
Synodic period: 378.09 days (1.035 a)  
Apparent diameter: +0°00'18.76", with rings: +0°00'43.70"  
Equatorial diameter: 120536.0 km  
Sidereal day: 10h39m22.4s  
Mean solar day: 10h39m24.0s  
Equatorial rotation velocity: 9.871 km/s  
Albedo: 0.500



Date and Time										✕	
Date and Time					Julian Day						
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# Saturn

- On August 27th, Saturn is at full opposition to Earth.
- Now is the best time view the planet.
- Saturn is well placed in the eastern sky at sunset.

Saturn

Type: **planet**  
Magnitude: **0.41** (reduced to **1.80** by **10.70** Airmasses)  
Absolute Magnitude: -8.88  
Mean Opposition Magnitude: 0.67  
RA/Dec (J2000.0): 22h24m07.09s/-11°54'04.1"  
RA/Dec (on date): 22h25m22.18s/-11°46'56.3"  
HA/Dec: 19h14m45.32s/-11°39'31.6" (apparent)  
Az./Alt.: +111°24'44.6"/+4°47'14.5" (apparent)  
Gal. long./lat.: +49°25'06.3"/-52°17'13.2"  
Supergal. long./lat.: -88°31'57.5"/+31°22'00.9"  
Ecl. long./lat. (J2000.0): +333°27'00.5"/-1°46'51.1"  
Ecl. long./lat. (on date): +333°46'43.6"/-1°46'55.2"  
Ecliptic obliquity (on date): +23°26'18.7"  
Mean Sidereal Time: 17h39m39.8s  
Apparent Sidereal Time: 17h39m39.4s  
Rise: 19h58m  
Transit: 1h16m  
Set: 6h33m  
Parallactic Angle: -42°52'09.5"  
IAU Constellation: Aqr  
Hourly motion: +0°00'11" towards 248.1°  
Hourly motion: dα=-0°00'11" dδ=-0°00'04"  
Elongation: +178°04'53.8"  
Phase angle: +0°11'53.8"  
Illuminated: 100.0%  
Distance from Sun: 9.773 AU (1461.999 M km)  
Distance: 8.763 AU (1310.934 M km)  
Light time: 1h12m52.8s  
Orbital velocity: 9.429 km/s  
Sidereal period: 10760.00 days (29.459 a)  
Synodic period: 378.09 days (1.035 a)  
Apparent diameter: +0°00'18.97", with rings: +0°00'44.18"  
Equatorial diameter: 120536.0 km  
Sidereal day: 10h39m22.4s  
Mean solar day: 10h39m24.0s  
Equatorial rotation velocity: 9.871 km/s  
Albedo: 0.500



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Date and Time										✕	
Date and Time					Julian Day						
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# Saturn

- On August 31<sup>st</sup>, Saturn rises at 7:45 p.m. not visible until evening twilight.
- Saturn appears at late twilight looking east. Visible all night.

Saturn

Type: **planet**  
Magnitude: **0.42** (reduced to **4.42** by **31.04** Airmasses)  
Absolute Magnitude: -8.88  
Mean Opposition Magnitude: 0.67  
RA/Dec (J2000.0): 22h22m58.89s/-12°00'49.2"  
RA/Dec (on date): 22h24m14.07s/-11°53'42.3"  
HA/Dec: 18h49m20.07s/-11°33'52.6" (apparent)  
Az./Alt.: +106°50'12.4"/+0°33'32.5" (apparent)  
Gal. long./lat.: +49°02'13.5"/-52°05'56.8"  
Supergal. long./lat.: -88°47'53.5"/+31°33'48.7"  
Ecl. long./lat. (J2000.0): +333°09'00.4"/-1°47'05.0"  
Ecl. long./lat. (on date): +333°28'43.9"/-1°47'09.1"  
Ecliptic obliquity (on date): +23°26'19.0"  
Mean Sidereal Time: 17h12m15.2s  
Apparent Sidereal Time: 17h12m14.8s  
Rise: 19h42m  
Transit: 0h59m  
Set: 6h15m  
Parallactic Angle: -44°21'48.2"  
IAU Constellation: Aqr  
Hourly motion: +0°00'11" towards 248.3°  
Hourly motion: dα=-0°00'11" dδ=-0°00'04"  
Elongation: +174°50'29.6"  
Phase angle: +0°31'55.7"  
Illuminated: 100.0%  
Distance from Sun: 9.772 AU (1461.837 M km)  
Distance: 8.766 AU (1311.382 M km)  
Light time: 1h12m54.3s  
Orbital velocity: 9.430 km/s  
Sidereal period: 10760.00 days (29.459 a)  
Synodic period: 378.09 days (1.035 a)  
Apparent diameter: +0°00'18.96", with rings: +0°00'44.16"  
Equatorial diameter: 120536.0 km  
Sidereal day: 10h39m22.4s  
Mean solar day: 10h39m24.0s  
Equatorial rotation velocity: 9.871 km/s  
Albedo: 0.500

SE

Date and Time

2023

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19

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56

Earth, Peterborough, 188 m

FOV 30.8°

17.8 FPS

2023-08-31 19:45:56 UTC-04:00



**URANUS**

# Uranus

- On August 1<sup>st</sup>, Uranus rises at 12:42 a.m. in the eastern sky.
- Visible until morning.

Uranus

Type: **planet**  
Magnitude: **5.77** (reduced to **9.91** by **32.24** Airmasses)  
Absolute Magnitude: -7.19  
Mean Opposition Magnitude: 5.52  
RA/Dec (J2000.0): 3h20m24.84s/+18°04'15.3"  
RA/Dec (on date): 3h21m44.70s/+18°09'21.6"  
HA/Dec: 16h46m39.11s/+18°30'23.9" (apparent)  
Az./Alt.: +64°10'47.2"/+0°28'05.2" (apparent)  
Gal. long./lat.: +165°44'23.5"/-32°08'50.4"  
Supergal. long./lat.: -33°02'30.3"/-27°17'11.4"  
Ecl. long./lat. (J2000.0): +52°25'36.5"/-0°18'59.7"  
Ecl. long./lat. (on date): +52°45'15.7"/-0°18'50.4"  
Ecliptic obliquity (on date): +23°26'18.2"  
Mean Sidereal Time: 20h07m02.3s  
Apparent Sidereal Time: 20h07m01.9s  
Rise: 0h39m  
Transit: 7h58m  
Set: 15h17m  
Parallactic Angle: -42°47'40.7"  
IAU Constellation: Ari  
Hourly motion: +0°00'03" towards 76.1°  
Hourly motion: dα=+0°00'04" dδ=+0°00'01"  
Elongation: +75°57'51.8"  
Phase angle: +2°52'27.7"  
Illuminated: 99.9%  
Distance from Sun: 19.638 AU (2937.737 M km)  
Distance: 19.859 AU (2970.868 M km)  
Light time: 2h45m09.7s  
Orbital velocity: 6.662 km/s  
Sidereal period: 30685.00 days (84.011 a)  
Synodic period: 369.66 days (1.012 a)  
Apparent diameter: +0°00'03.55", with rings: +0°00'13.57"  
Equatorial diameter: 51118.0 km  
Sidereal day: 17h14m24.0s  
Mean solar day: 17h14m22.5s  
Albedo: 0.660



Jupiter

Date and Time

2023

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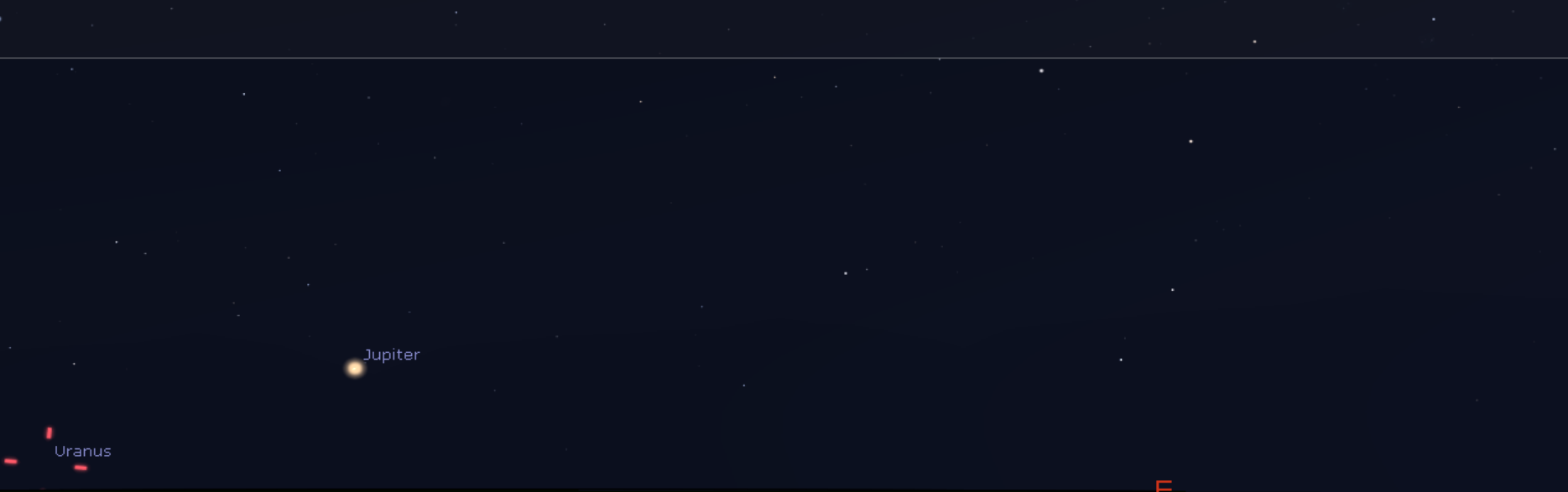
8

# Uranus

- On August 31st, Uranus rises at 10:42 p.m. in the eastern sky.
- Now visible all night.

Uranus

Type: **planet**  
Magnitude: **5.71** (reduced to **9.58** by **29.91** Airmasses)  
Absolute Magnitude: -7.19  
Mean Opposition Magnitude: 5.52  
RA/Dec (J2000.0): 3h21m42.34s/+18°08'51.3"  
RA/Dec (on date): 3h23m02.55s/+18°13'57.3"  
HA/Dec: 16h47m32.41s/+18°33'40.5" (apparent)  
Az./Alt.: +64°17'49.5"/+0°39'04.8" (apparent)  
Gal. long./lat.: +165°57'39.8"/-31°53'33.2"  
Supergal. long./lat.: -32°47'49.0"/-27°30'59.0"  
Ecl. long./lat. (J2000.0): +52°44'35.4"/-0°19'13.7"  
Ecl. long./lat. (on date): +53°04'18.6"/-0°19'04.3"  
Ecliptic obliquity (on date): +23°26'18.9"  
Mean Sidereal Time: 20h09m18.4s  
Apparent Sidereal Time: 20h09m17.9s  
Rise: 22h42m  
Transit: 6h01m  
Set: 13h21m  
Parallactic Angle: -42°51'50.7"  
IAU Constellation: Ari  
Hourly motion: +0°00'00" towards 254.9°  
Hourly motion: dα=-0°00'00" dδ=-0°00'00"  
Elongation: +104°24'05.4"  
Phase angle: +2°51'18.1"  
Illuminated: 99.9%  
Distance from Sun: 19.633 AU (2937.039 M km)  
Distance: 19.357 AU (2895.829 M km)  
Light time: 2h40m59.4s  
Orbital velocity: 6.664 km/s  
Sidereal period: 30685.00 days (84.011 a)  
Synodic period: 369.66 days (1.012 a)  
Apparent diameter: +0°00'03.64", with rings: +0°00'13.92"  
Equatorial diameter: 51118.0 km  
Sidereal day: 17h14m24.0s  
Mean solar day: 17h14m22.5s  
Albedo: 0.660



Date and Time										✕	
Date and Time					Julian Day						
2023	-	8	-	30	22	:	46	:	26		

**NEPTUNE**

# Neptune

- On August 1<sup>st</sup>, Neptune rises at 10:32 p.m. in the eastern sky.
- Neptune is visible most of the night.

Neptune

Type: **planet**  
Magnitude: **7.84** (reduced to **12.07** by **33.06** Airmasses)  
Absolute Magnitude: -6.87  
Mean Opposition Magnitude: 7.84  
RA/Dec (J2000.0): 23h51m18.05s/-2°18'40.7"  
RA/Dec (on date): 23h52m30.22s/-2°10'51.3"  
HA/Dec: 18h09m28.53s/-1°50'24.7" (apparent)  
Az./Alt.: +92°58'16.8"/+0°24'32.5" (apparent)  
Gal. long./lat.: +90°15'28.1"/-61°18'29.4"  
Supergal. long./lat.: -70°15'40.6"/+14°39'31.1"  
Ecl. long./lat. (J2000.0): +357°05'08.4"/-1°15'21.3"  
Ecl. long./lat. (on date): +357°24'47.9"/-1°15'20.9"  
Ecliptic obliquity (on date): +23°26'18.2"  
Mean Sidereal Time: 18h00m35.4s  
Apparent Sidereal Time: 18h00m35.0s  
Rise: 22h29m  
Transit: 4h25m  
Set: 10h21m  
Parallactic Angle: -45°39'04.4"  
IAU Constellation: Psc  
Hourly motion: +0°00'02" towards 244.1°  
Hourly motion: dα=-0°00'02" dδ=-0°00'01"  
Elongation: +132°09'42.0"  
Phase angle: +1°26'29.1"  
Illuminated: 100.0%  
Distance from Sun: 29.907 AU (4474.094 M km)  
Distance: 29.217 AU (4370.765 M km)  
Light time: 4h02m59.3s  
Orbital velocity: 5.480 km/s  
Sidereal period: 60189.00 days (164.789 a)  
Synodic period: 367.49 days (1.006 a)  
Apparent diameter: +0°00'02.34", with rings: +0°00'05.94"  
Equatorial diameter: 49528.0 km  
Sidereal day: 16h06m36.0s  
Mean solar day: 16h06m36.7s  
Equatorial rotation velocity: 2.683 km/s  
Albedo: 0.620

E



Date and Time										✕	
Date and Time					Julian Day						
2023	-	8	-	1	22	:	32	:	6		

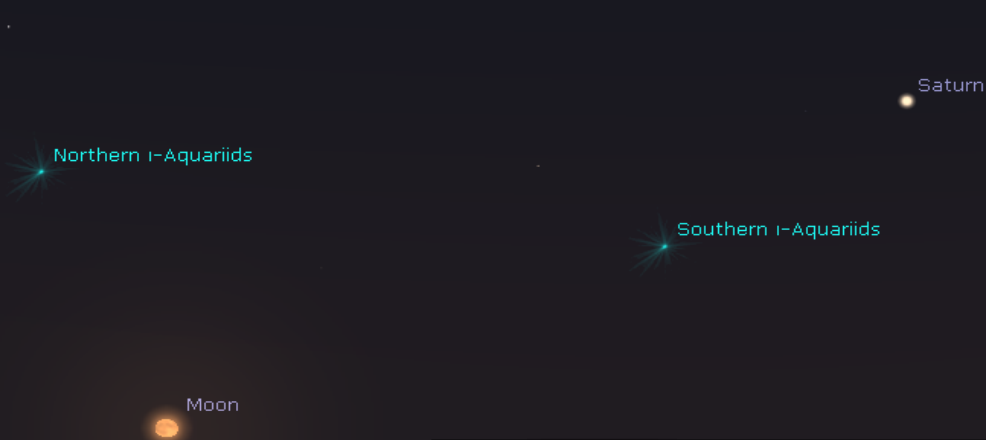


# Neptune

- On August 31st, Neptune rises at 8:36 p.m. in the eastern night sky.
- Neptune is washed out the full super moon.
- Both objects share a wide conjunction.

Neptune

Type: **planet**  
Magnitude: **7.82** (reduced to **11.33** by **26.99** Airmasses)  
Absolute Magnitude: -6.87  
Mean Opposition Magnitude: 7.84  
RA/Dec (J2000.0): 23h48m56.52s/-2°35'01.4"  
RA/Dec (on date): 23h50m08.96s/-2°27'10.7"  
HA/Dec: 18h13m38.12s/-2°10'00.6" (apparent)  
Az./Alt.: +93°55'54.1"/+0°55'24.7" (apparent)  
Gal. long./lat.: +88°54'39.7"/-61°15'25.8"  
Supergal. long./lat.: -70°42'31.8"/+15°08'33.7"  
Ecl. long./lat. (J2000.0): +356°26'11.7"/-1°16'18.1"  
Ecl. long./lat. (on date): +356°45'55.2"/-1°16'17.8"  
Ecliptic obliquity (on date): +23°26'19.0"  
Mean Sidereal Time: 18h02m37.3s  
Apparent Sidereal Time: 18h02m36.9s  
Rise: 20h30m  
Transit: 2h25m  
Set: 8h19m  
Parallactic Angle: -45°36'13.3"  
IAU Constellation: Psc  
Hourly motion: +0°00'04" towards 245.7°  
Hourly motion: dα=-0°00'04" dδ=-0°00'02"  
Elongation: +161°32'39.4"  
Phase angle: +0°36'43.9"  
Illuminated: 100.0%  
Distance from Sun: 29.907 AU (4473.985 M km)  
Distance: 28.948 AU (4330.492 M km)  
Light time: 4h00m45.0s  
Orbital velocity: 5.480 km/s  
Sidereal period: 60189.00 days (164.789 a)  
Synodic period: 367.49 days (1.006 a)  
Apparent diameter: +0°00'02.36", with rings: +0°00'06.00"  
Equatorial diameter: 49528.0 km  
Sidereal day: 16h06m36.0s  
Mean solar day: 16h06m36.7s  
Equatorial rotation velocity: 2.683 km/s  
Albedo: 0.620



Date and Time												×
Date and Time						Julian Day						
2023	-	8	-	31		20	:	36	:	10		

# That is the Sky this Month

By David Mills