



October 2025 Astronomy Report



- **Moon:**
 - Phases
 - Occultation of the Pleiades
- **Planets:**
 - Evening: Mars & Mercury (*very low in west*), Uranus, Saturn and Neptune
 - Morning: Venus, Jupiter, Uranus, Saturn, and Neptune
- **Comets/Asteroids/Meteor Showers:**
 - Comet SWAN R2
 - Ceres asteroid
 - Orionid meteor shower
- **Dark Sky Star Party:**
 - October 18
- **Public Viewing:**
 - Cub Lake, October 25

Moon - Phases

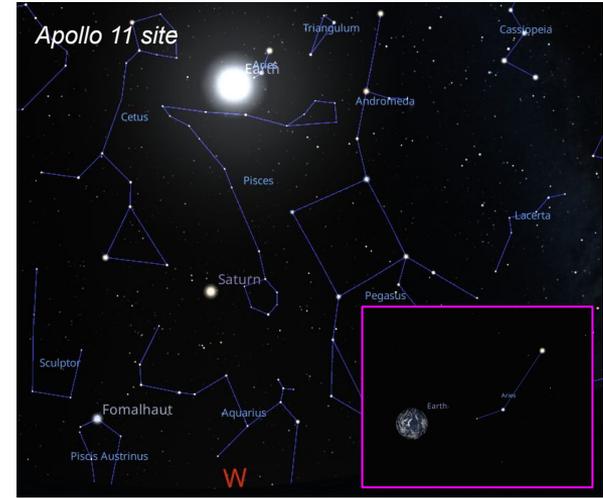
October 6 - Full Moon (Pisces)



October 13 - Last Quarter (Gemini)



October 21 - New Moon



October 29 - First Quarter (Capricornus)



Apogee (253K miles) - 23rd
Perigee (224K miles) - 8th

Moon - Occultation of the Pleiades

The stars disappear behind the Moon's bright limb, making it difficult to observe, but reappearances at the dark limb are easier to see

October 9. 11:30 pm, looking East





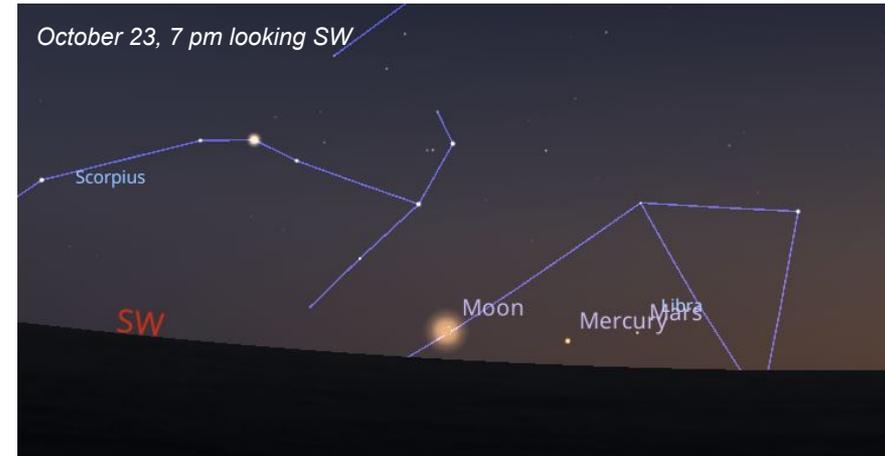
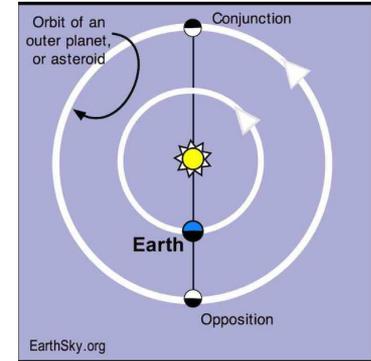
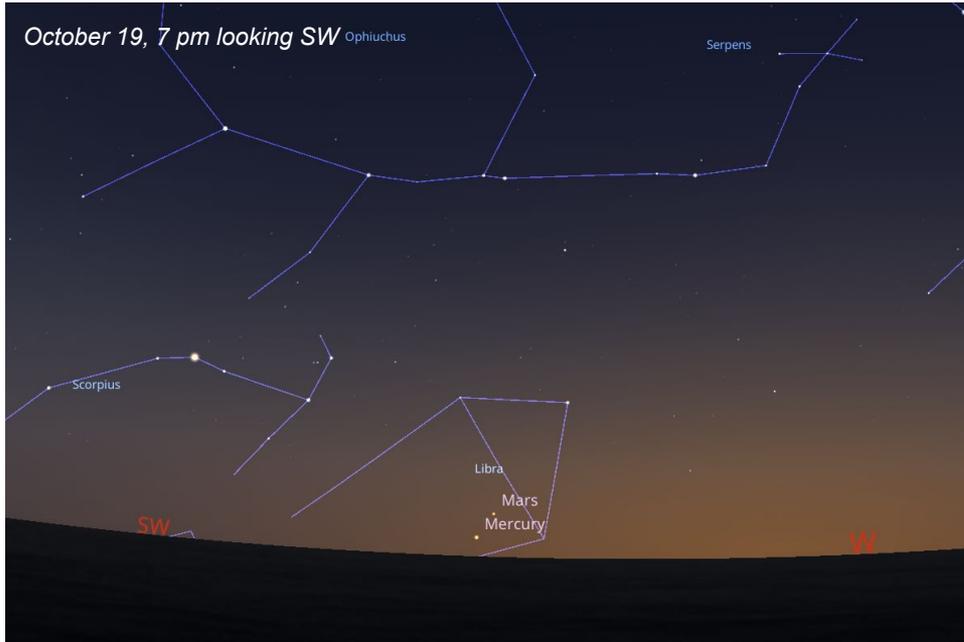
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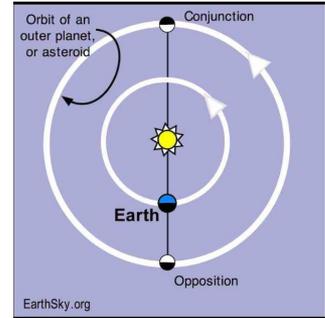
Evening Planets: Mars/Mercury - (Libra)

Mars & Mercury reach conjunction on October 19th, but set within an hour of the Sun. Mars is heading toward a solar conjunction.



Evening / Morning Planets: Uranus - (Taurus)

Uranus is one month from opposition and rises two hours after sunset, best viewed after midnight.

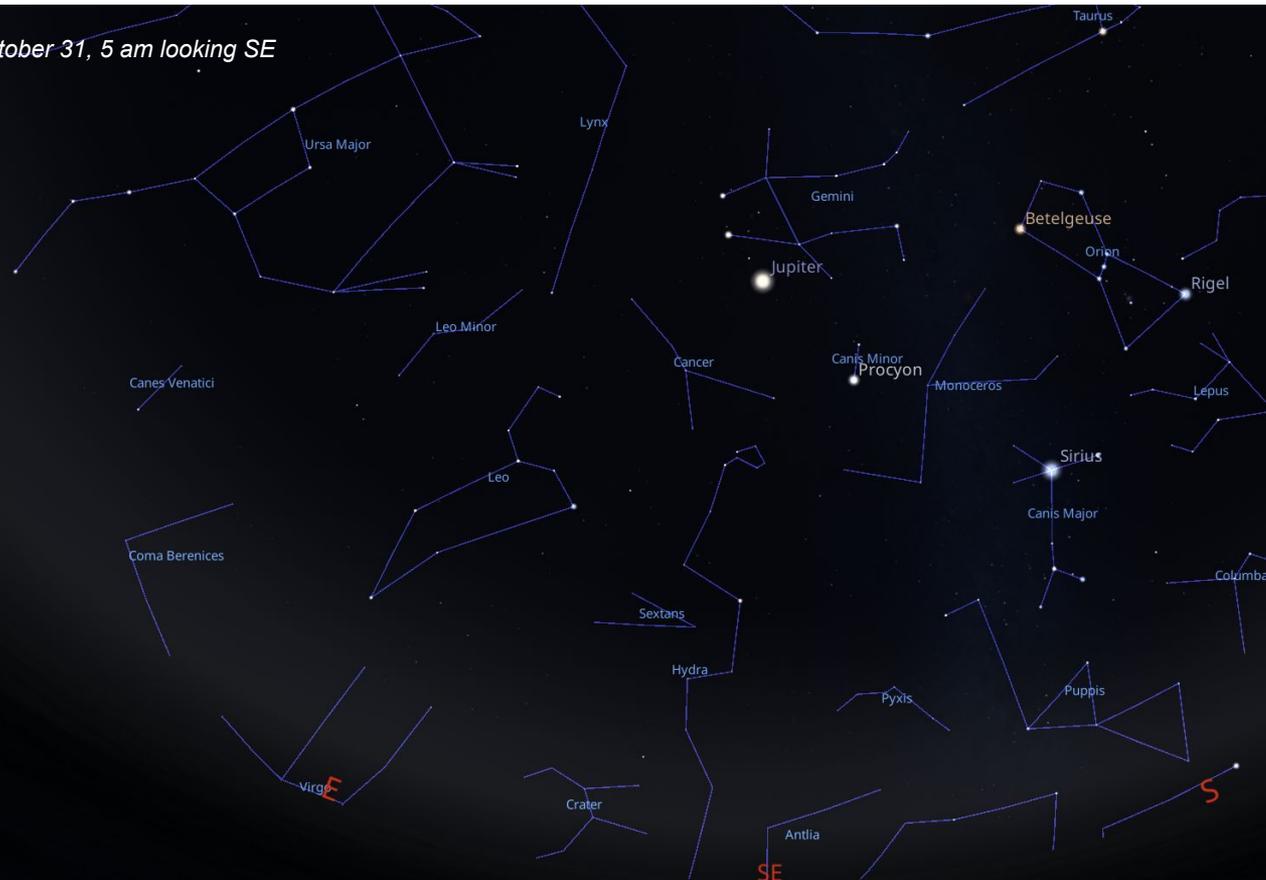


Uranus stands about 4 degrees SE of the Pleiades (M45)

Morning Planets: Jupiter - (Gemini)

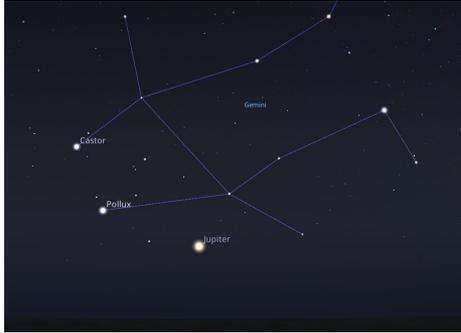
Jupiter rises shortly before midnight by the end of October.

October 31, 5 am looking SE



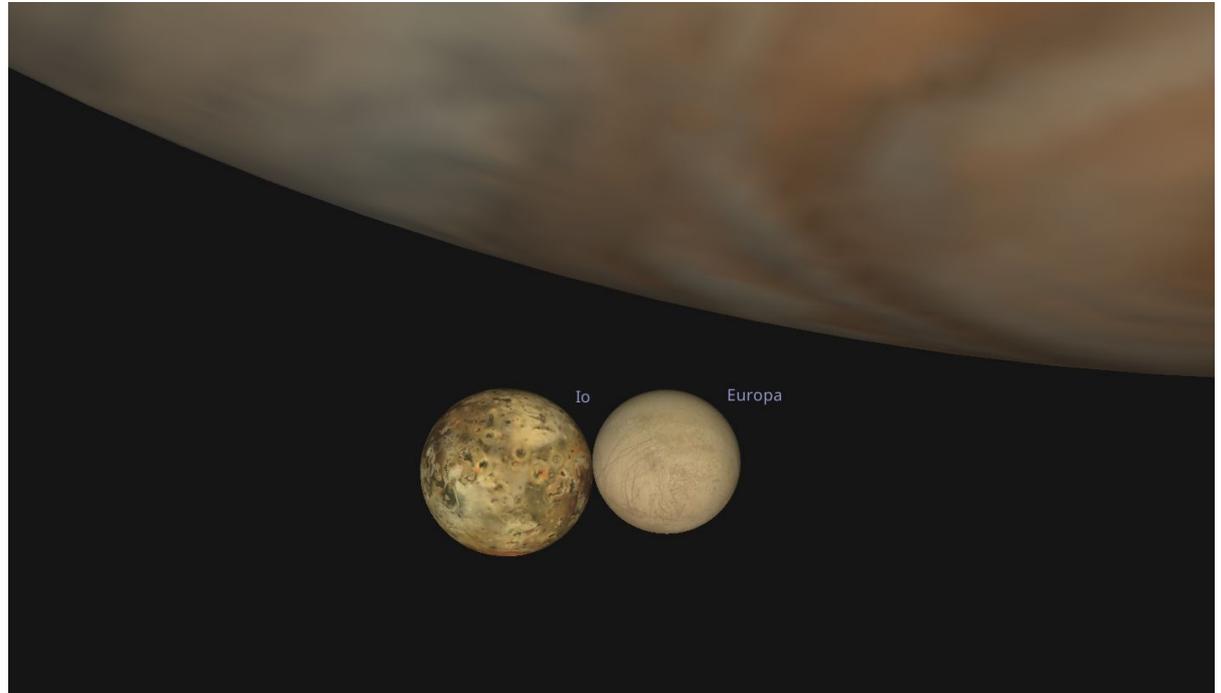
Morning Planets: Jupiter - (Gemini)

Jupiter moon transits - Io & Europa



October 4th, 1 am - very low in eastern sky

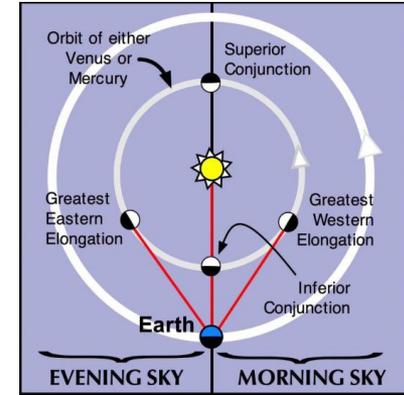
*Io - innermost Galilean moon (217,000 mi), most volcanically active body in solar system, slightly larger than Moon
Europa - 2nd closest Galilean moon (416,000 mi), liquid water beneath icy surface, slightly smaller than Moon*



Morning Planets: Venus - (Leo/Virgo)

Venus rises at 5 am at beginning of October in Leo. It crosses into Virgo by the 9th and its elongation from the Sun is declining, so it rises later each morning during the month.

October 19, 6 am looking East





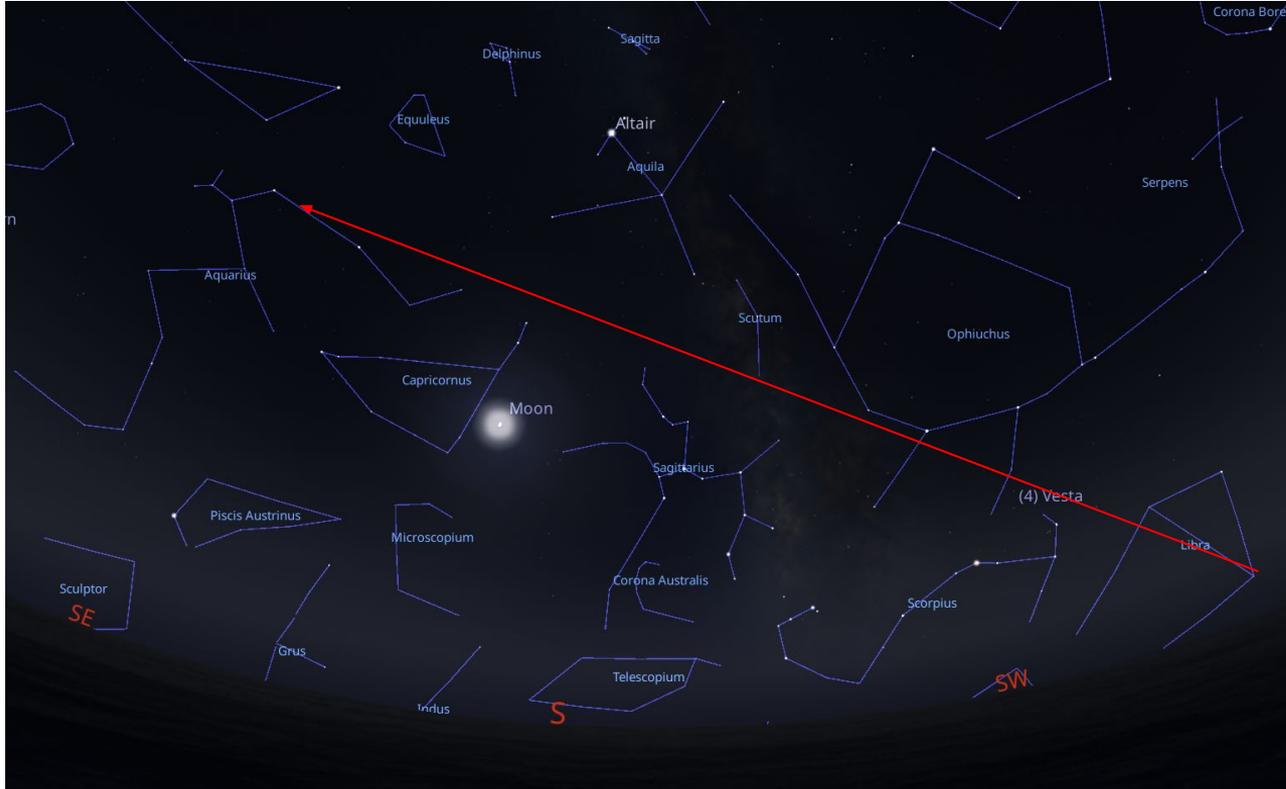
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Comet - SWAN R2

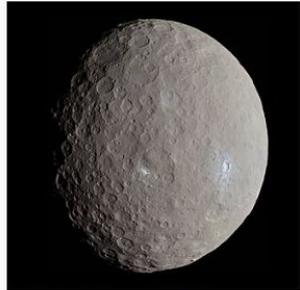
- Discovered in September 2025 by an amateur astronomer Vladimir Bezugly
- Starts October in Libra low on horizon, will improve in visibility during October (binoculars), possible naked-eye by end of October
- Closest approach to earth October 20 (25 million miles); long-period comet - will not return for thousands of years



Credit: theskylive.com

Asteroid - Ceres (Cetus)

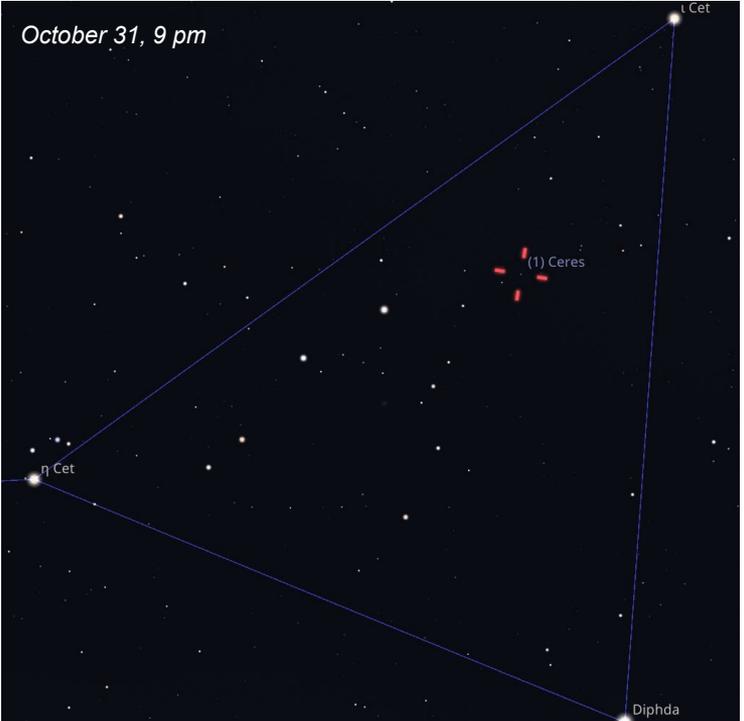
Dwarf planet in main asteroid belt between Mars and Jupiter - visible with binoculars or small telescope



Ceres as imaged by Dawn, May 2015. Two



With a telescope can see it move in an hour relative to background stars on the 8th, 13th, and 28th.



Meteor Shower - Orionid

Active October 2nd - November 7th; peak date October 21st (new Moon); max rate - 20 meteors/hour





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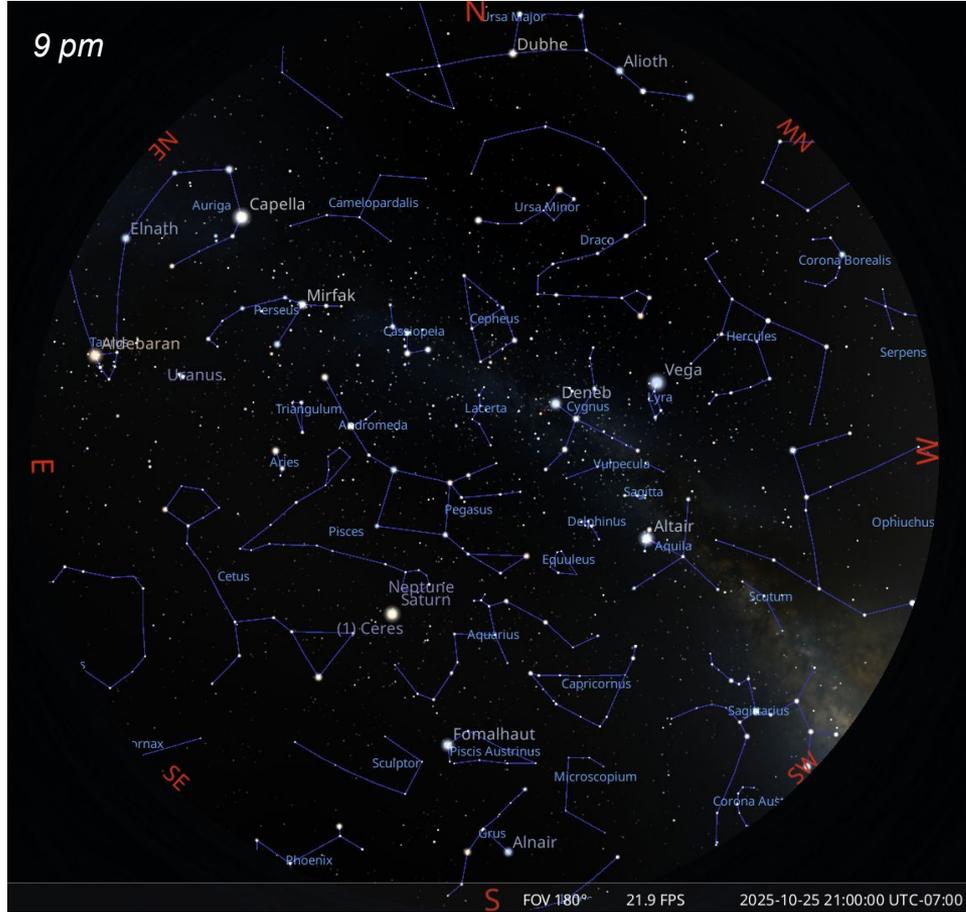
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Public Viewing

Cub Lake, October 25

Moon sets around 8:30 pm



October 2025 Viewing Chronology

- 4 - Jupiter moon transits *(1 am)*
- 6 - Full moon *(9 pm)*
- 9 - Occultation of M45 by Moon *(11:30 pm)*
- 13 - Last Qtr Moon *(5 am)*
- 18 - Dark Sky Star Party *(9 pm)*
- 19 - Venus/crescent Moon *(6 am)*; Mars/Mercury *(7 pm)*
- 21 - New Moon; Orionid meteor shower *(5:30 am)*
- 22 - Uranus *(5 am)*
- 23 - Moon/Mars/Mercury *(7 pm)*
- 25 - Public Viewing *(9 pm)*
- 26 - Saturn/Neptune *(9 pm)*
- 29 - 1st Qtr Moon *(9 pm)*
- 31 - Jupiter *(5 am)*

SWANN R2 comet/Ceres asteroid - all month

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