



# Planets

**Mercury** will only be visible this month before sunrise just above the eastern horizon. After this, it rises too close to the Sun to be seen. **Beware of glare from the Sun.** It reaches inferior conjunction, passing behind the Sun on the 17<sup>th</sup>, so will not be visible after this.

**Venus** appears in the early morning sky, rising higher until sunrise. You can view it in the east, and around the 12<sup>th</sup> it is at dichotomy (half-phase). It reaches Greatest Western Elongation on the 13<sup>th</sup>, its furthest point from the Sun in the sky. It is in conjunction with the Moon on the 15<sup>th</sup>.

**Mars** rises about an hour after sunset in the eastern sky, and is visible throughout the night. It will move towards the south, disappearing relatively high in the sky at sunrise. Over the course of the month, it increases in brightness. It is in conjunction with the Moon on the morning of the 9<sup>th</sup>.

**Jupiter** is visible in the evening sky. Look for it low on the southern horizon. It then sets a couple of hours before sunrise. Jupiter will be in conjunction with the Moon in the evening of the 1<sup>st</sup>, appearing close to Saturn in the sky, and also in the early hours of the morning on the 29<sup>th</sup>.

**Saturn** sticks very close to Jupiter this month, appearing low in the southern sky after sunset. It's visible until it sets a couple of hours before sunrise. Saturn will be in conjunction with the Moon on the morning of the 2<sup>nd</sup>, shortly after the Moon's conjunction with Jupiter, and again on the 29<sup>th</sup>. Check out the northern edge of Saturn's rings with a telescope as they begin to close.

**Uranus** is too faint to be seen with the naked eye. It rises in the east, getting higher and moving towards the south before sunrise.

**Neptune** is too faint to be seen with the naked eye. It makes its way across the southern horizon and is in the sky all night.

# Meteor Showers

The **Perseids** reach their peak on the 12<sup>th</sup>. This is one of the most spectacular meteor showers of the year, with over 100 meteors visible per hour. The radiant (origin point) of the meteors is in the constellation of Perseus, and is circumpolar, so meteors will be visible all night. This shower peaks near the new Moon, so it shouldn't provide much interference.

The **κ-Cygnids** reach their peak on the 17<sup>th</sup>. There'll be about 2 meteors visible per hour, and the radiant (origin point) of the meteors is in the constellation of Draco. The radiant is circumpolar, so meteors will be visible all night. This shower peaks near the new Moon, so it shouldn't provide much interference.

The **Aurigids** reach their peak on the 31<sup>st</sup>. There'll be about 5 meteors per hour, and the radiant (origin point) of the meteors is in the constellation of Auriga. The radiant is circumpolar, so meteors will be visible all night. The Moon is close to full, so may provide interference, but is situated away from the radiant.

# Moon

**Full Moon:** 3<sup>rd</sup>

**Last Quarter:** 11<sup>th</sup>

**New Moon:** 19<sup>th</sup>

**First Quarter:** 25<sup>th</sup>

The Moon reaches **perigee**, its closest point to the Earth, on the 21<sup>st</sup> and **apogee**, its furthest point on the 14<sup>th</sup>. This effect is not visually apparent.

The Moon will be at **aphelion**, its furthest point from the Sun, on the 2<sup>nd</sup>. This effect is not visually apparent.

Look out for **Earthshine** on the dark part of the crescent Moon from the 12<sup>th</sup> to the 18<sup>th</sup>, and the 20<sup>th</sup> to the 23<sup>rd</sup>.

## Points of Interest

The globular cluster **M15** will be well placed for observation on the 13<sup>th</sup>. It will be visible all night, reaching its highest point in the sky around midnight. M15 will be visible with a pair of binoculars.

The globular cluster **M2** will be well placed for observation on the 14<sup>th</sup>, in the constellation of Aquarius. It will be visible all night, reaching its highest point in the sky around midnight. You will need decent binoculars or a small telescope to see it.

**Ceres**, the dwarf planet, is at opposition in the constellation of Aquarius on the 28<sup>th</sup>. Ceres is smaller than the Moon and located in the Asteroid Belt, so you will need a small telescope to see it.

**Asteroid 20 Massalia** is at opposition in the constellation of Aquarius on the 29<sup>th</sup>. You will need a four-inch telescope to view it between 22:28 and 03:32. It reaches its highest point in the sky around midnight.

Visit <https://spotthestation.nasa.gov/sightings/> to find out when the **ISS** will be visible from your location.

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