



# The AstroGuy

## OBSERVING GUIDE

### NOVEMBER 2026

*A practical field companion for mid-northern observers. All times are Eastern Standard Time (EST, UTC-5).*

### Best Observing Windows

**Galaxies:** Favor clear, transparent evenings November 2-15, especially around New Moon on November 9. By midmonth the waxing Moon brightens the evening sky. Observe NGC 6946 first while it is higher in the northwest; save M77 for later in the evening.

**Planets:** Saturn is an evening target. Jupiter and Mars favor late night and dawn. In the second half of November, look low east-southeast for Mercury before sunrise, with much brighter Venus higher in the morning sky.

**Meteors:** Taurid activity is broad, with nominal maxima around November 5 and 12. For the Leonids, try the predawn hours of November 17 and 18 after the Moon has set. The best time to watch is after the Moon sets and before morning twilight begins.

### November 2026 Moon Phase Calendar

| Sunday                                                                                                                            | Monday                                                                                                                            | Tuesday                                                                                                                          | Wednesday                                                                                                                        | Thursday                                                                                                                           | Friday                                                                                                                              | Saturday                                                                                                                            |
|-----------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| 1<br><br>Last Quarter<br>51.5% illuminated     | 2<br><br>Waning Crescent<br>41.0% illuminated  | 3<br><br>Waning Crescent<br>30.9% illuminated | 4<br><br>Waning Crescent<br>21.6% illuminated | 5<br><br>Waning Crescent<br>13.6% illuminated  | 6<br><br>Waning Crescent<br>7.3% illuminated   | 7<br><br>Waning Crescent<br>2.8% illuminated   |
| 8<br><br>Waning Crescent<br>0.4% illuminated   | 9<br><br>New Moon<br>0.2% illuminated          | 10<br><br>Waxing Crescent<br>1.8% illuminated | 11<br><br>Waxing Crescent<br>5.3% illuminated | 12<br><br>Waxing Crescent<br>10.3% illuminated | 13<br><br>Waxing Crescent<br>16.8% illuminated | 14<br><br>Waxing Crescent<br>24.6% illuminated |
| 15<br><br>Waxing Crescent<br>33.2% illuminated | 16<br><br>Waxing Crescent<br>42.5% illuminated | 17<br><br>First Quarter<br>52.4% illuminated  | 18<br><br>Waxing Gibbous<br>63.2% illuminated | 19<br><br>Waxing Gibbous<br>73.5% illuminated  | 20<br><br>Waxing Gibbous<br>82.5% illuminated  | 21<br><br>Waxing Gibbous<br>90.1% illuminated  |
| 22<br><br>Waxing Gibbous<br>95.6% illuminated  | 23<br><br>Waxing Gibbous<br>99.0% illuminated  | 24<br><br>Full Moon<br>100.0% illuminated     | 25<br><br>Waning Gibbous<br>98.4% illuminated | 26<br><br>Waning Gibbous<br>94.0% illuminated  | 27<br><br>Waning Gibbous<br>87.2% illuminated  | 28<br><br>Waning Gibbous<br>78.4% illuminated  |
| 29<br><br>Waning Gibbous<br>67.9% illuminated  | 30<br><br>Waning Gibbous<br>56.5% illuminated  |                                                                                                                                  |                                                                                                                                  |                                                                                                                                    |                                                                                                                                     |                                                                                                                                     |

| Exact Major Phase Times (EST)                                                                                                    | Observing Notes                                                                                                            |
|----------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|
| Last Quarter: Nov 1, 3:28 p.m.<br>New Moon: Nov 9, 2:02 a.m.<br>First Quarter: Nov 17, 6:48 a.m.<br>Full Moon: Nov 24, 9:53 a.m. | Galaxy observing window: November 2-15.<br>Daily icons and percentages approximate noon EST.<br>All times use EST (UTC-5). |

## November 2026 Planetary Data

Representative mid-month values for planning. Low twilight objects should be verified with a current chart or app.

| Planet  | Best visibility      | Constellation | Mag.  | Diameter (arcsec) | Guide note                                                                                  |
|---------|----------------------|---------------|-------|-------------------|---------------------------------------------------------------------------------------------|
| Mercury | Morning twilight     | Virgo         | ~+0.1 | ~8.0"             | Greatest western elongation Nov 20; low ESE. An unobstructed horizon matters.               |
| Venus   | Morning              | Virgo         | ~-4.8 | ~50"              | Brilliant before sunrise; thin crescent Moon nearby Nov 7.                                  |
| Mars    | Late night / morning | Leo           | ~+0.7 | ~7.1"             | Small disk, requiring steady seeing for surface details. Mars is not at its best right now. |
| Jupiter | Late night / morning | Leo           | ~-2.1 | ~37"              | Cloud belts and four bright moons. Great Red Spot when properly timed.                      |
| Saturn  | Evening              | Cetus         | ~+0.5 | ~19"              | Rings at a shallow angle.                                                                   |
| Uranus  | Evening / all night  | Taurus        | ~+5.6 | ~3.8"             | Opposition Nov 25. Binoculars or a telescope with an updated chart to locate it.            |
| Neptune | Evening              | Pisces        | ~+7.7 | ~2.3"             | Chart and telescope needed to locate.                                                       |

## Quick Target List

The Best Autumn Galaxies — the six observing stops in this episode.

| Object                | Type           | Constellation    | Mag.       | Size                   | Distance         | Best Approach                                            |
|-----------------------|----------------|------------------|------------|------------------------|------------------|----------------------------------------------------------|
| NGC 6946              | Spiral galaxy  | Cepheus / Cygnus | ~8.9       | ~11.5 x 9.8 arcmin     | ~22.5 million ly | Dark sky; low power; averted vision                      |
| NGC 7331              | Spiral galaxy  | Pegasus          | ~9.5       | ~10.5 x 4.2 arcmin     | ~50 million ly   | Telescope; moderate power                                |
| M31 with M32 and M110 | Galaxy group   | Andromeda        | ~3.4 (M31) | ~189 x 62 arcmin (M31) | ~2.5 million ly  | Naked Eye / binoculars for M31; telescope for companions |
| M33                   | Spiral galaxy  | Triangulum       | ~5.7       | ~71 x 42 arcmin        | ~2.7 million ly  | Dark sky; binoculars or telescope; low power             |
| NGC 891               | Edge-on spiral | Andromeda        | ~10.0      | ~13.5 x 2.5 arcmin     | ~30 million ly   | Telescope; dark sky                                      |
| M77                   | Active spiral  | Cetus            | ~9.1       | ~7.1 x 6.0 arcmin      | ~47 million ly   | Telescope; moderate power                                |

## November News

| Topic                                                  | Details                                                                                                                                                                                                                        |
|--------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <a href="#">MMX heads for Phobos</a>                   | JAXA's MMX mission has launched toward Mars. It will study Phobos and Deimos and aims to bring a sample from Phobos back to Earth, helping explain how the Martian moons formed.                                               |
| <a href="#">Euclid discovers a new comet</a>           | ESA announced Euclid's first discovery of a previously unknown comet, C/2026 S1 (Euclid). Software picked out its movement in images originally taken to study distant galaxies.                                               |
| <a href="#">A white dwarf that would look green</a>    | Warwick researchers used stellar spectra and human-vision models to show that WD J1330+6435 would appear green. Sodium in its dense atmosphere changes its color; this is a modeled appearance, not a direct-color photograph. |
| <a href="#">Roman reaches final commissioning</a>      | NASA reports that Roman has entered science commissioning after checks of the observatory and its main instrument. The team is preparing the telescope for its wide-field surveys.                                             |
| <a href="#">BepiColombo approaches Mercury capture</a> | ESA/JAXA's BepiColombo is scheduled for gravitational capture at Mercury on November 21. The two science orbiters are then due to separate in December; their final science-orbit operations follow in stages.                 |

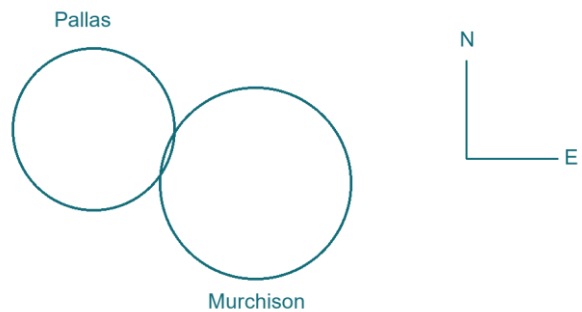
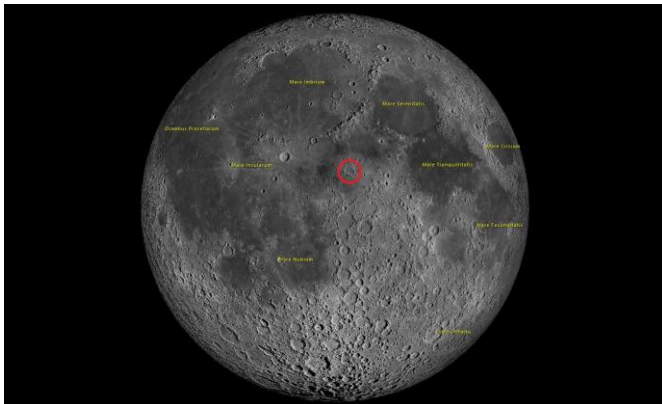
## Pallas and Murchison

Two worn neighboring craters near the center of the Moon: compare their low rims, shared boundary and changing shadows.

## When should you look

Try the predawn Moon on November 1. The pair returns to evening illumination around November 17 and remains on the sunlit side through the end of the month. Favor November 17-19 for low morning sunlight across this region; near Full Moon the relief looks flatter. The late-month waning Moon calls for later-night or predawn observing.

These dates describe an approximate illumination window. Libration, local horizon and atmospheric steadiness affect the view; the whole window does not provide equally strong shadows.



Crater pair shown north up, lunar east right. Diagram is schematic, not to scale; outlines are simplified. Telescope views may be inverted or mirror reversed.

## How can you find the pair

Begin with the whole lunar disk at low power. Find Sinus Medii near its center, then inspect the northern edge of that smooth region. Pallas lies west and slightly north of Murchison. Once located, increase magnification only as far as the seeing supports. Sketch the rims, then return a night or two later and compare.

## What is behind the names

Pallas honors Peter Simon Pallas, a natural historian and geologist; Murchison honors geologist Roderick Impey Murchison. The names invite a look at the history of geology and meteorites, but they should not be confused with the origins of meteorite names. The Murchison meteorite is named for its Australian fall location.

**Reference positions:** Pallas 5.48° N, 1.65° W (49.51 km diameter); Murchison 5.06° N, 0.18° W (57.83 km). These are the current control-network values in the USGS Gazetteer.

IAU / USGS Gazetteer: Pallas

IAU / USGS Gazetteer: Murchison

## Object Notes and Finder Tips

### NGC 6946 - Fireworks Galaxy

*Spiral galaxy | Cepheus / Cygnus*

|               |                                     |
|---------------|-------------------------------------|
| Magnitude     | ~8.9                                |
| Size          | ~11.5 x 9.8 arcmin                  |
| Distance      | ~22.5 million light-years           |
| Best approach | Dark sky; low power; averted vision |

**Star hop:** Start at Eta Cephei and move about 2° southwest. Use the detailed chart to identify the field.

**What to notice:** Look for a faint glow with a slightly brighter center. Dark, transparent skies help bring out mottling in larger telescopes. This face-on spiral is called the Fireworks Galaxy because of its repeated supernova discoveries. Long exposures reveal spiral arms and star-forming regions.

[NGC 6946 Finder Chart](#)

### M31 with M32 and M110

*Spiral galaxy and companions | Andromeda*

|               |                                             |
|---------------|---------------------------------------------|
| Magnitude     | ~3.4 (M31)                                  |
| Size          | ~189 x 62 arcmin (M31)                      |
| Distance      | ~2.5 million light-years                    |
| Best approach | Binoculars; wide-field telescope; low power |

**Star hop:** Start at Mirach, then follow Mu and Nu Andromedae northwest toward M31.

**What to notice:** Binoculars show a broad glow; a telescope emphasizes the bright center. Look for compact M32 south of the core and the more diffuse M110 to the northwest. Dark skies help reveal M31's dust lanes. Hubble's Cepheid observations helped establish its distance beyond the Milky Way.

[M31 with M32 and M110 Finder Chart](#)

### NGC 7331

*Spiral galaxy | Pegasus*

|               |                                     |
|---------------|-------------------------------------|
| Magnitude     | ~9.5                                |
| Size          | ~10.5 x 4.2 arcmin                  |
| Distance      | ~50 million light-years             |
| Best approach | Telescope; moderate power; dark sky |

**Star hop:** From Eta Pegasi (Matar), move a little over 4° north and slightly west.

**What to notice:** Look for an elongated patch with a brighter center. The outer disk is much harder to see than the core. William Herschel discovered this galaxy in 1784. Images show its inclined disk and much fainter neighboring galaxies.

[NGC 7331 Finder Chart](#)

### M33 - Triangulum Galaxy

*Spiral galaxy | Triangulum*

|               |                                              |
|---------------|----------------------------------------------|
| Magnitude     | ~5.7                                         |
| Size          | ~71 x 42 arcmin                              |
| Distance      | ~2.7 million light-years                     |
| Best approach | Dark sky; binoculars or telescope; low power |

**Star hop:** From Alpha Trianguli, sweep about 4° northwest toward Mirach. Match the field to the chart.

**What to notice:** Expect a large, faint patch rather than a bright core. Its low surface brightness makes it difficult under suburban skyglow. M33 is a Local Group galaxy. Photographs reveal blue spiral arms and pink star-forming regions, including the large nebula NGC 604.

[M33 Finder Chart](#)



**M33 photograph** © Wayne Zuhl. Tele Vue Pronto; 20 h 48 min. See the gallery page for the full image and acquisition details.

[M33 gallery and full image](#)

[NASA: M33 background](#)

## Object Notes and Finder Tips

The Best Autumn Galaxies, continued. Finder-chart links open the corresponding FreeStarCharts page.

### NGC 891

*Edge-on spiral galaxy | Andromeda*

|               |                                     |
|---------------|-------------------------------------|
| Magnitude     | ~10.0                               |
| Size          | ~13.5 x 2.5 arcmin                  |
| Distance      | ~30 million light-years             |
| Best approach | Telescope; dark sky; moderate power |

**Star hop:** Begin at Almach (Gamma Andromedae), then move about 3.5° east.

**What to notice:** Look for a thin streak of light with a brighter middle. An 8-inch telescope under dark skies can begin to show its dust lane, but this takes patience and good conditions. Images show the lane much more clearly. The edge-on view hides the galaxy's spiral arms.

[NGC 891 Finder Chart](#)

### M77

*Active spiral galaxy | Cetus*

|               |                                 |
|---------------|---------------------------------|
| Magnitude     | ~9.1                            |
| Size          | ~7.1 x 6.0 arcmin               |
| Distance      | ~47 million light-years         |
| Best approach | Small telescope; moderate power |

**Star hop:** Find Delta Ceti, then move about 1° southeast. The bright central glow is the easiest part to identify.

**What to notice:** A small telescope shows a compact glow with a bright center. The surrounding halo is fainter. M77 is a Seyfert galaxy: its active nucleus is powered by material falling toward a supermassive black hole. Long exposures reveal spiral structure around the central region.

[M77 Finder Chart](#)

## Quick Field Tips

- Use the November 2-15 galaxy observing window and choose the clearest nights.
- Observe NGC 6946 early, before it drops lower in the northwest.
- Start with low power, especially for M31 and M33. Their light covers a large area of sky.
- Try using averted vision and different magnifications on the smaller galaxies.
- Expect dim, gray light at the eyepiece.

## Your Notes: