

Kitt Peak Nightly Observing Program

Splendors of the Universe on YOUR Night!

Many pictures are links to larger versions.

Click here for the ["Best images of the OTOP" Gallery](#) and more information.



M8 Lagoon Nebula

M8: The "Lagoon Nebula." A huge cloud of gas and dust beside an open cluster of stars (NGC 6530). The Lagoon is a stellar nursery, 4,100 lightyears away, towards the galactic core.



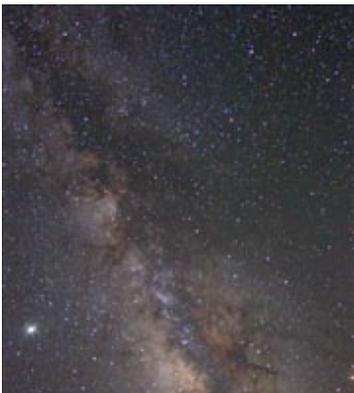
M20 Trifid Nebula

M20, the "Trifid Nebula" gets its nickname from the dark dust lanes that seem to split it into three parts. It is a region of star formation—a giant cloud of gas, roughly 30 light-years across, and about 5,200 light-years away.



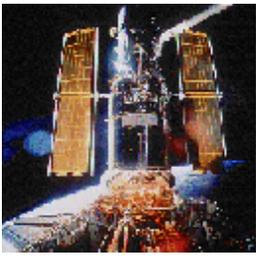
M4

M4 is a globular star cluster located near the bright, orange star Antares, in the constellation Scorpius. It is on the small side, as globular clusters go—only 70-75 light-years across. It is about 7,200 light-years away, which makes it possibly the closest globular cluster to our solar system.



Milky Way

That clumpy band of light is evidence that we live in a disk-shaped galaxy. Its pale glow is light from about 200 billion suns!



Satellites

Human technology! There are almost 500 of these in Low Earth Orbit (we can't see the higher ones). We see these little "moving stars" because they reflect sunlight.



Ecliptic

The ecliptic is a path in the sky, forming a great circle around the Earth, which the Sun and other planets of the Solar System move along. It is formed where the plane of the Solar System intersects with the Earth's sky.



M57 (Ring Nebula)

M57: The Ring Nebula. This remnant of a dead star looks exactly as it's name says - a ring or doughnut shape cloud of gas. The nebula is about 2.6 lightyears across and lies about 2,300 lightyears away.



Jupiter

Jupiter is the largest planet in the Solar System, a "gas giant" 11 Earth-diameters across. Its atmosphere contains the Great Red Spot, a long-lived storm 2-3 times the size of the Earth. The 4 large Galilean satellites and at least 63 smaller moons orbit Jupiter.



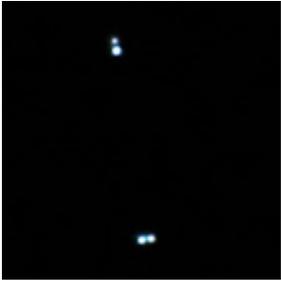
Saturn

Saturn, the second-largest planet in the Solar System, is known for its showy but thin rings made of ice chunks as small as dust and as large as buildings. Its largest moon, Titan, has an atmosphere and hydrocarbon lakes; at least 61 smaller moons orbit Saturn.



Albireo (β Cyg)

Named long before anyone knew it was more than one star, **Albireo** (β Cygni) comprises of a set of stars marking the beak of Cygnus, the swan. Through a telescope, we see two components shining in pale, but noticeably contrasting colors: orange and blue. The difference in color is due to the stars' difference in temperature of over 9000°C! The brighter orange component, Albireo A, is actually a true binary system, though we can't resolve two stars in the telescope. The fainter blue component, Albireo B, may be only passing by, and not gravitationally interacting with Albireo A at all. Albireo is about 430 light-years away.



Double Double (ϵ Lyr)

The **Double-Double** (ϵ Lyrae) looks like two stars in binoculars, but a good telescope shows that both of these two are themselves binaries. However, there may be as many as ten stars in this system! The distant pairs are about 0.16 light-year apart and take about half a million years to orbit one another. The Double-Double is about 160 light-years from Earth.

Phil Yehle

Your Telescope Operator and Guide. Thank you for joining me this evening! See you soon!!

The web page for the program in which you just participated is at [Nightly Observing Program](#). Most of the above images were taken as part of the Overnight Telescope Observing Program. For more information on this unique experience please visit [Overnight Telescope Observing Program](#).

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