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.

M17 Swan Nebula

M17, also known as the "**Swan Nebula**," or the "**Omega Nebula**" is a vast cloud of gas —mostly hydrogen, in which clumps of gas are contracting to make new stars. The nebula is 15 light-years across, and 5,500 light-years away.

M51 Whirlpool Galaxy

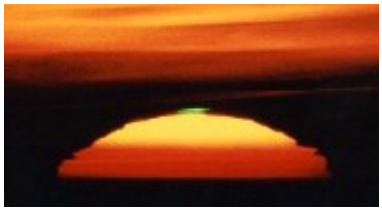
M51, the **Whirlpool Galaxy**, gets its name from its bright and prominent spiral arms. It lies at a distance of 23 million light-years away. It also has a smaller, companion galaxy (NGC 5195). The two galaxies are one of the best examples of interacting galaxies.

M13 Hercules Globular

M13, the "**Great Globular Cluster in Hercules**" was first discovered by Edmund Halley in 1714, and later catalogued by Charles Messier in 1764. It contains 300,000 stars, and is 22,000 light-years away. Light would need over a century to traverse its diameter.

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.

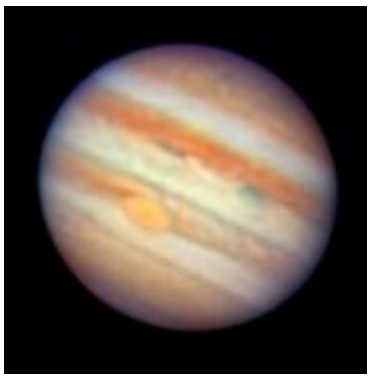


The Green Flash

What we call "The Green Flash" is not so much a flash as a flicker of green color, seen on the top of the sun as it sets (or rises). This rare event needs just the right atmospheric conditions.

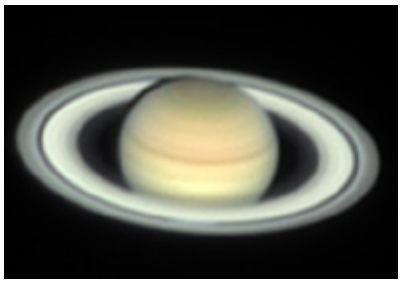
M57 (Ring Nebula)

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.

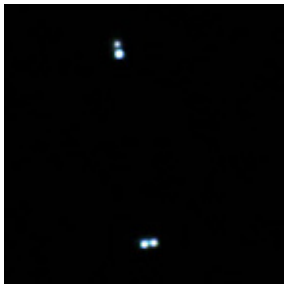


Saturn

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.

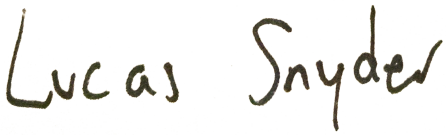
Albireo (β Cyg)

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.



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.