

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.



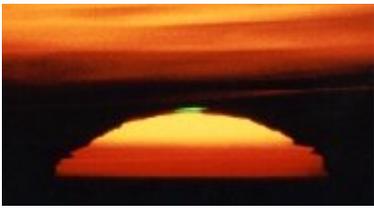
M82 Cigar Galaxy

M82, the "**Cigar Galaxy**" is an edge-on spiral galaxy, 12 million light-years away, and perhaps 37,000 light-years across. There are vast gas clouds in this galaxy, where stars are being born at an incredible rate.



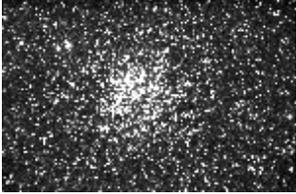
M13 Hercules Globular

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.



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.



M11 Wild Duck Cluster

M11 is an open star cluster also known as the "**Wild Duck Cluster**," due to its purported prominent V-shape, reminiscent of a flock of wild ducks in flight. This open cluster is 20 light-years in diameter and 6,200 light-years away.



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.



Moon

The same side of the Moon always faces Earth because the lunar periods of rotation and revolution are the same. The surface of the moon is covered with impact craters and lava-filled basins. The Moon is about a fourth of Earth's diameter and is about 30 Earth-diameters away.



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.

Lucas Snyder

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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