

# Kitt Peak Nightly Observing Program

## Splendors of the Universe on YOUR Night!

Many pictures are links to larger versions.

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**Albireo** ( $\beta$  Cygni) is a star system marking the beak of Cygnus, the swan. Through the telescope, we see two components shining in contrasting colors, golden-orange and blue. It turns out that the fainter blue component is actually a binary. It is unknown, though, if the bright gold component makes this a true triple star system or if it is just passing by. Albireo is about 430 light-years away.

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**Algieba** ( $\gamma$  Leonis) is a binary star in the mane of Leo, the lion. These two golden-yellow giant stars are about 23 and 10 times the diameter of the Sun, and are about 130 light-years away. Their orbital period is over 500 years. In 2009, a giant planet was found orbiting one of these stars.

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The star **Cor Caroli** ( $\alpha$  Canum Venaticorum) or "Heart of Charles" was named after King Charles I or II of England. These stars are about 110 light-years away, but it is unknown if they are actually orbiting around each other.

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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.

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M13: The "Great Globular Cluster in Hercules" was discovered by Edmund "Comet" Halley in 1714. It is 22,000 lightyears away, and light would need over a century to traverse its diameter.



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M51: The Whirlpool Galaxy. This galaxy gets its name from its bright and prominent spiral arms. It lies at a distance of 23 million ly. It also has a smaller, companion galaxy (NGC 5195). The two galaxies are in the process of a massive collision in space.



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M81: A small spiral galaxy, seven million lightyears away. It is a disk of 50 billion solar masses, only a stone's throw (150,000 lightyears) from M82.



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M82: The "Cigar Galaxy". This edge-on spiral galaxy is twelve million lightyears away, and perhaps 37,000 lightyears across. There are vast gas clouds here, where suns are being born at an incredible rate.

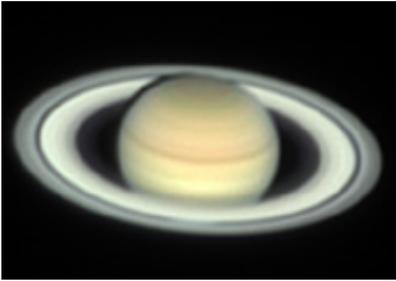


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M104: A spiral galaxy like the Milky Way, nicknamed the "Sombrero Galaxy" because the lane of dust in the disk looks like the brim of such a hat. It is about 50,000 lightyears across and about 29 million lightyears away.

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**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.



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**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.



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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.

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*Phil Yehle*

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

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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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