

# Kitt Peak Nightly Observing Program

## Splendors of the Universe on YOUR Night!

Many pictures are links to larger versions.

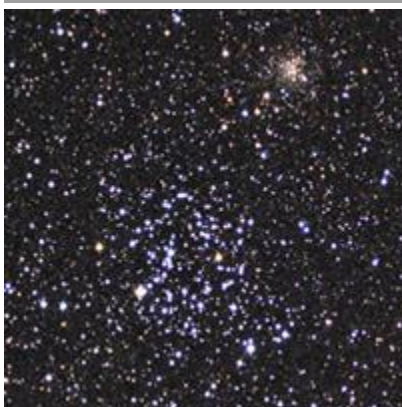
Click here for the [“Best images of the AOP” Gallery](#) and more information.

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**Albireo** ( $\beta$  Cygni) is a double star marking the beak of Cygnus, the swan. Its two components shine in contrasting colors, golden-orange and blue. Albireo is about 385 light-years away.

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**M35:** An open star cluster of over 300 stars. It lies at a distance of 2,800 ly, near the foot of Castor, one of the Gemini twins. Could you see the tiny cluster NGC 2158 nearby?

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**M45:** The Pleiades Star Cluster. A bright, nearby star cluster in the last stages of star formation. It has six to seven bright stars along with hundreds of fainter stars. It lies about 380 lightyears away and is around 100 million years old.

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"Double Cluster" (NGC 884 and NGC 869): These two star clusters are a treat for binoculars and telescope alike. Each is a congregation of many hundred stars around 70 light years in diameter. These clusters are between 5000 to 7000 light years away.

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M42: The Great Orion Nebula. This is a region of star formation about 1,500 ly away. It is 30 ly across and contains enough material to make 10,000 stars the size of our sun.

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M15: A distant globular cluster, 40,000 lightyears away. It has a few hundred thousand suns, and like most globular clusters, it is over 10 billion years old!

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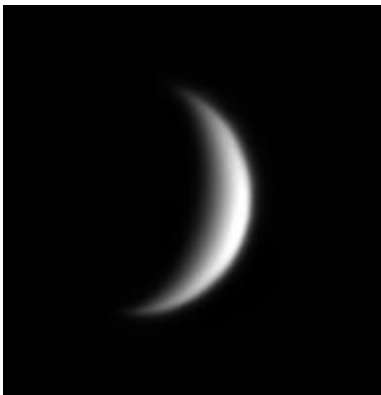
**M31:** The Andromeda Galaxy, our nearest major galactic neighbor. It is a spiral galaxy, lies 2,200,000 lightyears away and has a diameter of 180,000 lightyears. This galaxy contains as much material as 300 billion suns.

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**Ngc 253:** A lumpy, dusty, edge-on spiral galaxy just a bit smaller than the Milky Way. At least 100 billion stars, seven million lightyears from here. It was discovered by Caroline Herschel in 1783.

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**Venus**, the second planet, is the brightest natural object in the sky other than the Sun and Moon and is often erroneously called the “morning star” or “evening star.” It is completely wrapped in sulfuric acid clouds and its surface is hot enough to melt lead.

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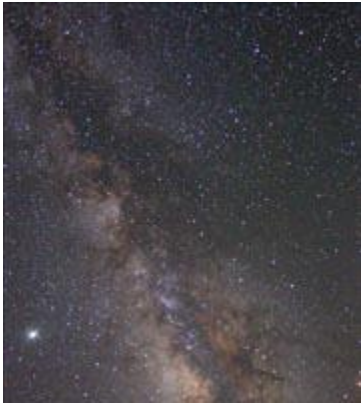
**Jupiter** is the largest planet in the Solar System, a “gas giant” 11 Earth-diameters across. Its atmosphere contains the Great Red Spot, a long-lived storm larger than Earth. The 4 large Galilean satellites and at least 59 smaller moons orbit Jupiter.

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M76: "The Little Dumbbell". This complex bubble of gas is the cloud of material ejected by a dying star. This ghostly glow has a fairly bright rectangular component with very dim outer loops. M76 is estimated to be more than 3,000 light years away; which means the bubble of gas is more than 2 light years across.

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Milky Way: That clumpy band of light is evidence that we live in a disk-shaped galaxy. Its pale glow is light from billions of suns!

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**Kevin Bays**

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

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**(HUCK DUGAN**

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 <http://www.noao.edu/outreach/nop>. Most of the above images were taken as part of the all-night observing program. For more information on this unique experience please visit <http://www.noao.edu/outreach/aop>.

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