

# Kitt Peak Nightly Observing Program

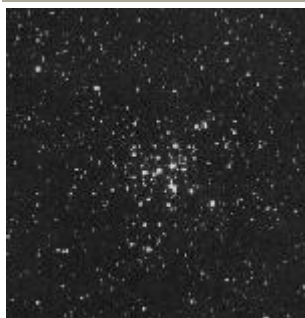
## Splendors of the Universe on YOUR Night!

Many pictures are links to larger versions.

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



**Almach** ( $\gamma$  Andromedae) appears as a golden and blue double star in small telescopes. The blue star itself is actually three stars, too close together to see as individuals, making Almach a four-star system. It is about 350 light-years away.



**M36:** One of three bright open star clusters in the constellation of Auriga. It lies about 4,000 ly away, is about 14 ly across, contains about 60 stars, and is about 25 million years old.



**M41:** An open star cluster just below Sirius, the brightest star in the sky. It contains about 150 stars spread out over 25 lightyears, and is 2,300 ly away. Aristotle described it in 325 B.C. as a "cloudy spot."

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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.



"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.



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.



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!



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.



**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.



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.



NGC 7662: A planetary nebula nicknamed the "Blue Snowball." It is a round cloud thrown off by a dying star, expanded to half a lightyear in diameter. The expanding hot gas would have fried any planets orbiting the star.

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The Green Flash: A smidge of green on the top of the sun as it sets (or rises). This rare event needs just the right atmospheric conditions.

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*Roy Lorenz*

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

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**Lucas Snyder**

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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