

# Kitt Peak Nightly Observing Program

## Splendors of the Universe on YOUR Night!

Many pictures are links to larger versions.

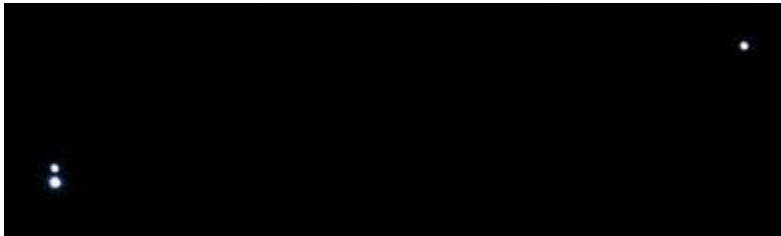
Click here for the [“Best images of the AOP” Gallery](#) and more information.

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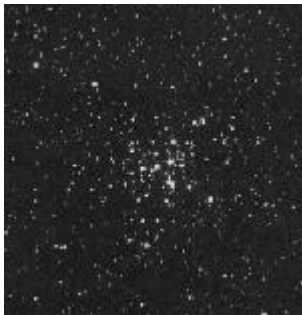
**Almach** ( $\gamma$  Andromedae) appears as a golden and blue double star in small telescopes. The blue star itself is actually three stars, too close together to see as individuals, making Almach a four-star system. It is about 350 light-years away.

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In the handle of the Big Dipper, **Mizar & Alcor** ( $\zeta$  & 80 Ursae Majoris) or the “Horse & Rider” form a naked-eye double star. They are traveling through space together about 78 light-years away from us, and are separated by about 3 light-years. A telescope splits Mizar itself into two stars.

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**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.

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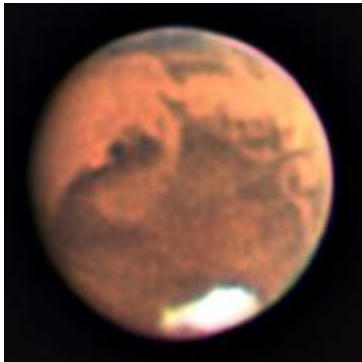
**M45:** The Pleiades Star Cluster. A bright, nearby star cluster in the last stages of star formation. It has six to seven bright stars along with hundreds of fainter stars. It lies about 380 lightyears away and is around 100 million years old.

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**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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**Mars**, the red planet, has a thin carbon dioxide atmosphere, clouds, dust storms, and polar caps made of dry ice. Images of dry riverbeds from orbiting spacecraft show us that liquid water once flowed on the Martian surface.

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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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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.

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Satellites: Human technology! There are almost 10,000 of these in Low Earth Orbit (we can't see the higher ones). We see these little "moving stars" because they reflect sunlight.

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**Allison McGraw** 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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