

# 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.



### 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.

---

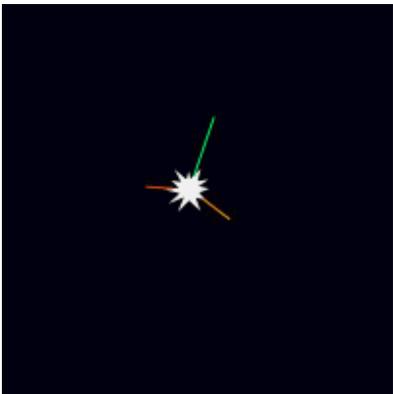


### M22

This target was visible during the second session of telescope observing but unfortunately not the first.

Near the top of the "teapot" in Sagittarius, **M22** is one of the brightest globular star clusters in our sky, and therefore, was probably the first globular cluster ever discovered. Its 80,000 stars span a diameter of about 100 light-years.

---



### Scintillation

The twinkling of star light is a beautiful effect of the Earth's atmosphere. As light passes through our atmosphere, its path is deviated (refracted) multiple times before reaching the ground. Stars that are near to the horizon will scintillate much more than stars high overhead since you are looking through more air (often the refracted light will display individual colors). In space, stars would not twinkle at all. Astronomers would like it if they could control the effects of this troubling twinkle.

---



## M57 (Ring Nebula)

This target was visible during the second session of telescope observing but unfortunately not the first.

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.

---

*JOHNATHAN SQUIEROS*

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](#).

Copyright © 2017 Kitt Peak Visitor Center