

Snake River Skies

Magic Valley Astronomical Society

MVAS Meeting: Saturday July 10th, 2004, 7pm Herrett Center, College of Southern Idaho



Join us for our next MVAS meeting, Saturday July 10th at 7pm at the Herrett Center on the campus of the College of Southern Idaho. A free public star party follows. We are hoping a clear night will allow more views from the new observatory.

Many MVAS members have trained on the new telescope operations. If you are interested in training, contact Chris Anderson at the Herrett Center.



Message from the President: Phil Hafer

As we begin the long days of summer, I want to thank the following for helping with Star Parties so far this year. They are: Chris Anderson, Tom Gilbertson, Rick Greenawald, Deb & Michelle Hartwell, Matt Holmquist, Cheri Lowman, Forrest Ray, Ken Thomason, Rick Widmer, Terry Wolfard.

Without their help, we would not have been able to support the amount of requests we have received. With the opening of the Centennial Observatory, the number of requests has increased. So be prepared to donate more of your time and astronomical talents in helping with the increasing number of requests for Star Parties in the Observatory.

Without the continued support of the membership of the Magic Valley Astronomical Society, the observatory will be unable to handle the number of requests they are receiving. The staffing of the observatory will not be just for the new telescope, but for smaller telescopes set up on the observers deck outside. So I encourage each and every member of MVAS to become proficient in the use of all of the smaller telescopes available for use at the observatory.

Until next month, I wish you all, clear nights and dark skies.

New Programs at the CSI Centennial Observatory

The CSI Centennial Observatory offers public programs outside the normal 2nd Saturday of the month star party.

Each Wednesday until Labor Day, **solar observing** will be offered from 1pm –3pm.

On **Friday July 23rd** at 8:30pm, an Astronomy Talk: “Saturn, the Ringed Giant” will be held in the Rick Allen Community Room. Observing for participants will

follow. Cost is \$2 per person, \$5 per family.

Each month, an Astronomy talk followed by telescope observing will occur the first Friday after the new moon. Watch for future announcements and an upcoming schedule. Each Astronomy talk/observing session costs \$2 per person/\$5 per family.

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If you would like to write an article or otherwise make an entry for the club newsletter, contact Jay Sneddon, 736-2447, jaysneddon@yahoo.com.

Yearly membership is \$20 per person, \$20 per family \$10 per student, Sponsor \$100

Fire Threatens Large Binocular Observatory By Nate Buchik, Arizona Daily Wildcat

Wednesday, July 7, 2004

The week-old wildfires on Mount Graham rage on, but the \$200 million University of Arizona (UA) observatory on the mountain may stay safe, even though the fire is less than a mile away.

The Gibson (started by lightning on June 22) and Nuttall (started by lightning on June 26) fires are 10 percent contained, according to a representative at the Nuttall Fire Complex, but they are moving ever closer to the observatory.

The Mount Graham International observatory holds three telescopes, including a large binocular telescope that will be the most powerful optical telescope in the world when - and if - it becomes fully functional in 2007.

The fire is currently less than three-quarters of a mile away, but astronomers and firefighters are optimistic because of the extra protection it has. This protection includes a sprinkler system that is pumping 10,000 gallons of water a night into grounds surrounding the observatory and a 200-foot defensible space around the complex to decrease the fire's force.

If the fire reached the observatory, the worst-case scenario would be a roaring crown fire, which would be propelled by strong winds across treetops. The best case would be a slow-burning fire that stayed close to the ground, Powell said.

The \$120 million large binocular telescope, which recently installed the first of two mirrors, will gather light from 10 times further away than the Hubble Telescope. The UA, Ohio State University, the Italian astronomical community and others have helped fund the telescope. Astronomers have been planning the telescope for 20 years and started construction in 1996.

"For the first time, scientists and students will be able to look for

planets outside of our solar system," Powell said. "Our faculty will use this facility, make new discoveries and share those discoveries with students."

The telescope will help in the search for life on other planets and in other solar systems, but astronomers are already losing precious preparation time.

"Right now we're losing day for day. If it burns and damages, we'll have to reassess. I'm hopeful this is a few days' or weeks' delay. I'm optimistic, but I don't know. The fire is out of control," Powell said.

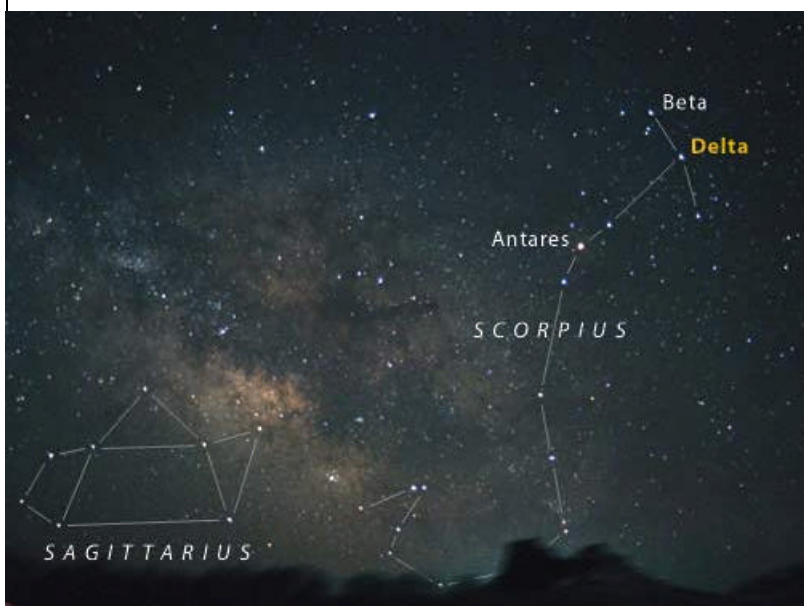
Although the university is using its own money to truck up the thousands of gallons of water every day, the cost to do so is insignificant compared to the amount it would have to spend to rebuild the facility, Powell said.

Powell remained optimistic that it won't come to a point where the university is forced to pay to rebuild part of the observatory. "We may suffer damage, but I think we will survive," Powell said.



A monitoring camera captured the intense smoke that threatened the Large Binocular Telescope on the afternoon of July 3, 2004. The camera is located at the Vatican Advanced Technology Telescope, about 300 meters to the west. Courtesy Mount Graham International Observatory.

Delta Scorpii in an Unexpected Flareup *courtesy Sky and Telescope*

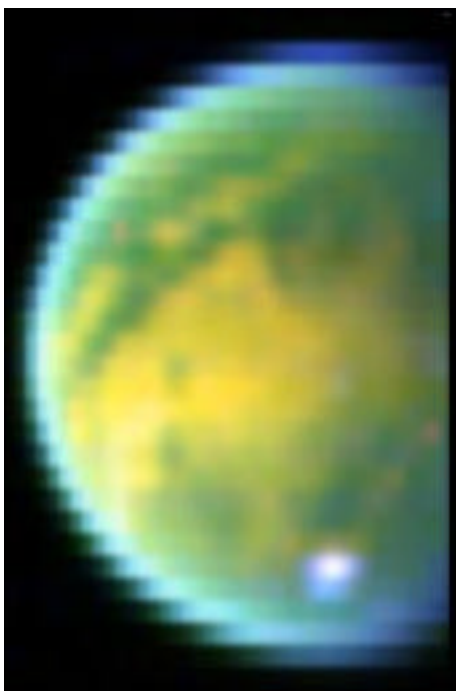


Now is the time of year when the constellation Scorpius stands highest in the south during evening, as shown here. Its brightest star is orange Antares — and its second-brightest is the new variable star Delta Scorpii, which brightened noticeably in July 2000 and has remained bright ever since, with fluctuations. No one knows what Delta Scorpii will do next. Check in on it whenever you look up at this constellation.

Photographs don't show the brightness differences between stars well, but to the naked eye Delta is obviously the brightest star in the nearly vertical row of three forming the head of Scorpius. Outdoors at night, estimate Delta's magnitude by comparing it with Beta, magnitude 2.6, and Antares, 1.1. *Photo by Jimmy Westlake.*

Cassini Peeks at Titan

By J. Kelly Beatty, Sky and Telescope



Cassini's Visual and Infrared Mapping Spectrometer used filters at 2.0 and 5.0 microns to see through the moon's dense, opaque atmosphere and reveal tantalizing surface features. The bright spot near the bottom of this false-color view is a high-altitude patch of methane clouds. Courtesy NASA/JPL/University of Arizona.

July 4, 2004 | Two days ago, as the Cassini spacecraft was settling into routine operations while orbiting Saturn, it passed Titan, the planet's largest moon, at a distant 339,000 kilometers (211,000 miles). That was too far away for the mission team to consider the event an official flyby — but close enough for the spacecraft's telephoto camera and an imaging spectrometer to take a peek anyway.

The two instruments' snapshots show the surface in surprising detail, despite the interference from Titan's opaque, haze-choked atmosphere. Cassini's views reveal a tantalizing variety of straight, curved, and round surface features, suggesting that the Mercury-size moon has been (or is) geologically active. "We're seeing a totally alien surface," reports Elizabeth Turtle, an imaging-team member from the University of Arizona.

Lots of subtle features are obvious even in raw, unenhanced images of Titan, raising scientists' hopes that far more detail will become evident during the first close brush (1,200 km away) on October 26th. After that there'll be 44 additional flybys over the next four years, some as close as 950 km.

Titan's nitrogen-dominated atmosphere proved completely opaque in 1981 when Voyager 1 swept by at a distance of just 4,000 km. The secret to Cassini's success has been to view the enshrouded moon through specific slices of near-infrared light, sometimes in combination with a polarizing filter, and at these wavelengths the atmosphere is mostly transparent. The onboard camera has been using a near-infrared filter at 938 nanometers (9380 angstroms), while the Visual and Infrared Mapping Spectrometer, or VIMS, has found success farther in the infrared at 2.0 and 5.0 microns.

Thanks to earlier efforts by ground-based observers and the Hubble Space Telescope, Cassini scientists suspected that brighter, higher regions on Titan were "continents" of water ice, and that organic solids and liquids probably covered the low, dark areas. But already this mysterious moon has challenged those expectations. "At some wavelengths," comments VIMS investigator Kevin Baines (Jet Propulsion Laboratory), "we see dark regions of relatively pure water ice and brighter regions with a much higher amount of non-ice materials, such as simple hydrocarbons."

Once it gets closer to Titan, Cassini will be able to use its onboard radar system to probe and map the surface directly, without atmospheric interference. And a *much* closer look at the surface should come early on January 14, 2005, when the European-built Huygens probe plops or splashes down after a 2-hour descent through Titan's atmosphere

July Features a Blue Moon

by Borgna Brunner and Anne Marie Imbornoni

Although the full moon occurring Saturday, July 31, 2004, will look like an ordinary full moon, it will actually be a bit extraordinary—a blue moon.

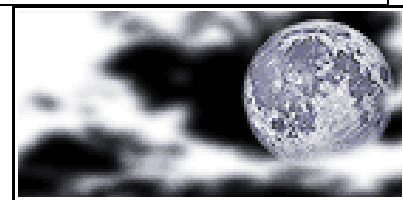
What is a Blue Moon?

There are in fact two definitions for a blue moon. According to the more recent definition, a blue moon is the second full moon in a calendar month. For a blue moon to occur, the first of the full moons must appear at or near the beginning of the month so that the second will fall within the same month (the average span between two moons is 29.5 days). July 2004 will have two full moons: the first on July 2, the second on July 31—that second full moon is called the blue moon.

How Often Does a Blue Moon Occur?

Over the next twenty years there will be a total of 17 blue

moons, with an almost equal number of both types of blue moons occurring. No blue moon of any kind will occur in the years 2006, 2011, 2014, and 2017.



The more recent phenomenon, where the blue moon is considered to be the second full moon in a calendar month, last occurred on Nov. 30, 2001. Two full moons in one month may occur in any month out of the year except for February, which is shorter than the lunar cycle.

The other, older blue moon event, which happens when there are four full moons in a season, last occurred on Nov. 20, 2002. Since this type of blue moon is reckoned according to the seasons, it can only occur in February, May, August, or November, about a month before the equinox or the solstice.



Magic Valley
Astronomical Society

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Planet Roundup courtesy skyandtelescope.com

Mercury and **Mars** are very deep in the glow of sunset. Using binoculars, look for them a little above the west-northwest horizon about 50 minutes after sundown. Mercury is located to the lower right of fainter Mars early in the week, and closes in on it day by day. They have a close conjunction, just 0.2° apart, on July 10th. Mercury shines at about magnitude -0.5 , while Mars is only about an eighth as bright at magnitude $+1.8$.

Venus (magnitude -4.4) is coming into view low in the glow of dawn. Look for it above the east-northeast horizon about 45 to 60 minutes before sunrise. It's getting a little higher every morning. Use binoculars to look for much fainter Aldebaran just 1° or 2° to Venus's right or lower right all week.

Jupiter (magnitude -2.0 , between the feet of Leo) shines brightly rather low in the west during and after twilight. Look for much fainter Regulus to its lower right, by more than a fist-width at arm's length. Jupiter sets around 11:30 p.m. daylight saving time.

Saturn is hidden in the glare of the Sun.

Uranus and **Neptune** (magnitudes 6 and 8, respectively, in Aquarius and Capricornus) are well up in the southeast by 1 a.m. daylight saving time.

Pluto (magnitude 14, in Serpens Cauda) is high in the south after dark.

Club & Star Party Calendar

The Magic Valley Astronomical Society meets the second Saturday of each month at the College of Southern Idaho, Herrett Center at 7pm. Star Party at the Herrett Center follows.

Saturday July 10th MVAS Club Meeting 7pm Herrett Center. Star Party follows. The event is free.

Each Wednesday 1pm-3pm, Solar Observing at the Centennial Observatory.

Friday July 23rd at 8:30pm, Astronomy Talk: "Saturn, the Ringed Giant", Herrett Center—Rick Allen Room. Observing through the Centennial Observatory follows. Cost is \$2 per person or \$5 per family.

STAR PARTIES

August 13th & 14th Lava Hot Springs Star Party, held at the airport in Lava Hot Springs, Idaho.

September 10-12th Idaho Star Party, Bruneau Dunes State Park.