SNAKE RIVER SKIES

February 2010

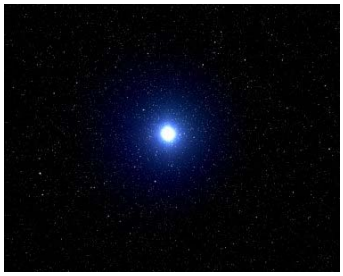
Special Announcement

The Boise Astronomical Society (BAS) will hold its annual Idaho Star Party in September this year.

BAS once again has made reservations for much of the Eagle Cove Loop A and Eagle Cove Loop B campgrounds and will begin reselling them this month.

The guest speaker this year will be Attilla Danko, creator of the Clear Sky Clock. You can see examples of his work on the web sites of the Centennial Observatory and our club.

As information becomes available it will be posted at *isp.boiseastro.org/* and in this newsletter.—Editor



This is Sirius, the brightest star in the sky and easily found in the winter time. Sirius is also known as the dog star since it is part of Canis Major. Image—NASA

Message from the President

Our first general membership meeting for the New Year will be held at 7:00 P.M. on Saturday the 12th of February, 2010. We meet at the Herrett Center, on the College of Southern Idaho Campus.

Tom Gilbertson will repeat his annual telescope workshop "I Have a New Telescope, Now What?" As usual, we have invited the public to bring their new (or old) telescopes to the workshop.

Members will pair off with new telescope owners and teach them how to operate their equipment. We could use a lot of help from our members, so that no one has to wait to be helped. If you can make it out, it would be greatly appreciated.

Following the meeting we will take the telescopes up to the Stargazer's Deck at the Centennial Observatory for a evening of observing.

On Tuesday, February 16th the Centennial Observatory will host another family night of stargazing. Chris will open the observatory to the general public at 6:15 pm

If you would like to participate and are available, I would strongly urge you to please contact Chris Anderson, Observatory Manager at 208-732-6663.

Finally, I want to remind everyone that our board meetings are on the same nights now as the general meeting. We will meet before the general meeting.

The usual start time is 6:00 pm and concludes before the meeting.

If you would like to have any input for the board this is an excellent way to attend a meeting.

Hopefully your February skies will be clear.

Until next month...

Terry Wofford, President
Magic Valley Astronomical Society.

Welcome to the Astronomical Society

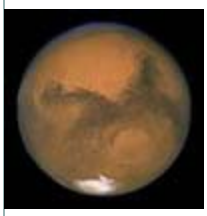
Welcome to the club and hello. We hope you have a good time, enjoy the hobby, and bring good skies with you. We hold indoor meetings each month at the Herrett Center on the College of Southern Idaho Campus in Twin Falls , ID , USA .

Our meetings start at 7:00pm on the second Saturday of each month, February through October. There will always be a very interesting program, class or presentation at these meetings, as well as good fellowship. There is always something new to learn. Following our meetings we have a star party at the Centennial Observatory also at the Herrett Center . Our star parties are free and you don't have to bring your own telescope. Telescopes are also set up outside on the stargazer's deck. Star Parties are year round, so please dress accordingly as the Observatory is not heated, nor air conditioned. Wishing you dark skies and clear nights!

The MVAS Board

February Night Sky

Winter skies are still with us for awhile longer.



Mars is moving eastward in direct motion (as it does most of the time) through the stars of Taurus and will cross over into Gemini next month, on March 5th. This brilliant yellow-orange world shines very high in the southeast sky after dusk, high above Orion and near the fairly bright star Beta Tauri, also known as Elnath. Seen in a telescope, Mars is 11" wide this week. At moderately high magnification it appears as a small, distinct reddish ball displaying subtle dark markings and a bright white South Polar Cap.

Jupiter returns to view in the morning sky low above the southeast horizon, and gets more conspicuous each morning. The planet spans 33" this week and grows to 47" by the time it reaches opposition in July. The telescopic view of Jupiter will improve markedly as it climbs higher in the coming months, but you can still practice observing this planet and training your eye to see detail.

Saturn, the ringed planet rises in the east around 7 P.M. local time and is highest in the south in the early-morning hours. It shines at magnitude +0.3 and remains in Leo throughout February, lower left of 1st- magnitude Regulus (Alpha Leonis) in the late evening. Saturn's disk measures 20" across this week, while the rings span 45" and tilt only 8° to our line of sight, allowing us to see more of the planet's globe.

Uranus is lost in evening twilight in the west-southwest sky. The planet will be visible again in early May, only now in the morning sky.

Neptune is hidden in the glow of the Sun. It will return to view in late March, low in the morning sky.

Pluto, the dwarf planet is too deep in the solar glare and cannot be observed until early March, when it will reappear in the morning sky.

The asteroid Vesta will pass between two closely spaced stars in Leo on the 16th/17th. This makes the normally hard to locate Vesta easy to spot. By coincidence Vesta will be in opposition the 18th so it is at its brightest. This will be a great opportunity to find it. You will need to find the location of the 2nd magnitude star “Algieba”-Gamma Leonis in Leo and its close neighbor to the south 5th magnitude “40 Leonis”.

The Beehive star cluster (M44) is always a favorite of beginning deep sky observers. This month, the cluster also serves as a handy guide to novice asteroid hunters. The main-belt asteroid 6 Hebe lies about 10° southeast of M44, at the border between the constellations Leo and Cancer. Glowing at magnitude +8.9, Hebe stands out from most background stars. Although too faint for binoculars to pull in under city lights, it is well within their reach from a dark sky when the Moon is out of the way.

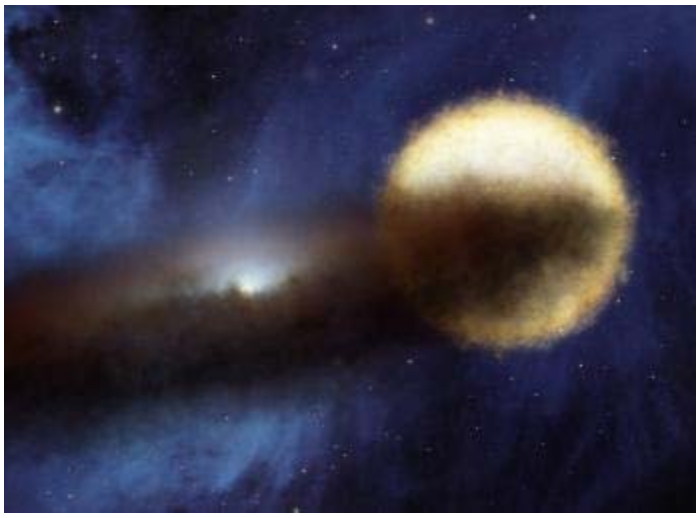
FU Orionis is easily visible in a small backyard telescope. It lies in northern Orion near the imaginary shoulder of the great hunter, about 3° northwest of Betelgeuse and less than 2° southeast of Collinder 69. This is a wonderful and yet woefully neglected open star cluster for small telescopes, consisting of the stars that form Orion's "head".

Other Sky Events by date:

4	**Moon near Spica** (morning sky) at 5h UT.
4	**Mars 3.2° NNE of Beehive cluster (M44)** at 20h UT (midnight sky). A nice sight in binoculars or a telescope.
5	**Last Quarter Moon** at 23:48 UT.
7	**Moon near Antares** (morning sky) at 21h UT.
8	**Alpha Centaurids meteor shower** peaks at 5h UT. Produces bright, fast meteors. Active Jan 28 to Feb 21. Best observed in the predawn hours.
13	**Moon at apogee** (farthest from Earth) at 2h UT (distance 406,540 km; angular size 29.4').
14	**New Moon** at 2:51 UT.
14	**Venus, Jupiter and Moon** within a 5° diameter circle at 22h UT (Caution: only 9° East of Sun).
17	**Venus 0.54° SSE of Jupiter** at 2h UT (Caution: only 9° East of Sun). Mags. -3.9 and -2.0.
21	**Moon near the Pleiades** (evening sky) at 21h UT.
22	**First Quarter Moon** at 0:42 UT.
25	**Moon near Pollux** (evening sky) at 14h UT.
26	**Moon near Mars** (evening sky) at 2h UT. Mag. -0.7.
26	**Moon near Beehive cluster (M44)** (evening sky) at 13h UT.
27	**Moon at perigee** (closest to Earth) at 22h UT (357,829 km; 33.4').
28	**Moon near Regulus** (midnight sky) at 0h UT.
28	**Jupiter at conjunction** with the Sun at 11h UT. Passes into the morning sky (not visible).
	Full Moon at 16:38 UT.

Clear skies until next month.

Mystery of the Fading Star



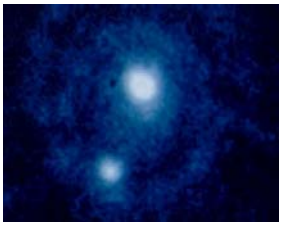
Using NASA's Spitzer Space Telescope, astronomers have found a likely solution to a centuries-old riddle of the night sky.

Every 27 years, a bright star called Epsilon Aurigae fades over period of two years, then brightens. Although amateur and professional astronomers have observed the system extensively, the nature of both the bright star and the companion object that periodically eclipses it have remained unclear. The companion is known to be surrounded by a dusty disk, as illustrated in this artist's concept.

Data from Spitzer finally seems to have solved the riddle. Spitzer's infrared vision revealed the size of the dusty disk that swirls around the companion object.

When astronomers plugged this data into a model of the system, they were able to rule out the theory that the main bright star is a supergiant. Instead, it is a bright star with a lot less mass. The new model also holds that the companion object is a so-called "B star" circled by a dusty disk. Image and news credit: NASA/JPL-Caltech

An Anniversary (Astronomically Speaking) for February



Pluto and Charon as imaged through the Hubble Space Telescope. NASA/STScI

Eighty years ago, the young astronomer Clyde Tombaugh discovered the (former) planet Pluto at Lowell Observatory (near Flagstaff, AZ) after a year of grinding, diligent work.

Through most of 1929 and early 1930, Tombaugh photographed and analyzed hundreds of star fields along the ecliptic from Cancer to Gemini in search of “Planet X”. Tombaugh planned to start his search in Gemini, but the full moon was in the way. So he started just next door, in the constellation Cancer, and worked his way all the way around the sky back to Gemini a year later.

Through this repeated procedure, the planet Pluto was found on February 18, 1930. Pluto was officially named and labeled as the ninth planet by the International Astronomical Union in 1930. Its name was based on the Roman god of the underworld, Hades and also rumored to be the initials of the man who carved the path to discovery: Percival Lowell (P.L.uto). In 2006 the IAU declared Pluto a dwarf planet. This designation makes Pluto the second largest dwarf and the tenth-largest body in our solar system.

From Wikipedia/NASA

Meade ETX-LS (Light switch) Series Telescopes Available at the Herrett

When Meade announced LightSwitch Technology in early 2009, the amateur astronomy game changed. Simply flip a switch and LightSwitch automatically aligns itself in the night sky.

Built-in GPS, magnetic north sensors, level sensors and a CCD camera do all the work - within minutes you’re observing with a 6” model

In early February a new model of the amazing ETX-LS will be available in a 8” version. Yes, you read that right. Meade now offers the ETX-LS in a 8” version. So if you are looking for a new telescope consider the ETX-LS.

For further information or a chance to order the latest ETX-LS from Meade please contact Chris Anderson at the Herrett Center 208-732-6663.

The Herrett Center store is your full line Meade dealer in southern Idaho.

DISCLAIMER: The MVAS does not have any affiliation with Meade.

Image—ETX-LS 8” ACF telescope from the Meade website common use license applied.

Terzan 5, Galaxy Building Block

Peering through the thick dust clouds of our galaxy's "bulge" (the myriads of stars surrounding its center), and revealing an amazing amount of detail, a team of astronomers has unveiled an unusual mix of stars in the stellar grouping known as Terzan 5. Never observed anywhere in the bulge before, this peculiar "cocktail" of stars suggests that Terzan 5 is in fact one of the bulge's primordial building blocks, most likely the relic of a dwarf galaxy that merged with the Milky Way during its very early days.

"The history of the Milky Way is encoded in its oldest fragments, globular clusters and other systems of stars that have witnessed the entire evolution of our," says Francesco Ferraro, lead author of a paper appearing in this week's issue of the journal *Nature*. "Our new study opens a new window on yet another piece of our galactic past."

Like archaeologists, who dig through the dust piling up on top of the remains of past civilizations and unearth crucial pieces of the history of mankind, astronomers have been gazing through the thick layers of interstellar dust obscuring the bulge of the Milky Way and have unveiled an extraordinary cosmic relic.

The target of the study is the star cluster Terzan 5. The new observations show that this object, unlike all but a few exceptional globular clusters, does not harbor stars which are all born at the same time -- what astronomers call a "single population" of stars.

Instead, the multitude of glowing stars in Terzan 5 formed in at least two different epochs, the earliest probably some 12 billion years ago and then again 6 billion years ago.

"Only one globular cluster with such a complex history of star formation has been observed in the halo of the Milky Way: Omega Centauri," says team member Emanuele Dalessandro. "This is the first time we see this in the bulge."
The galactic bulge is the most inaccessible region of our galaxy for astronomical observations: only infrared light can penetrate the dust clouds and reveal its myriads of stars. "It is only thanks to the outstanding instruments mounted on ESO's Very Large Telescope," says co-author Barbara Lanzoni, "that we have finally been able to 'disperse the fog' and gain a new perspective on the origin of the galactic bulge itself."

A technical jewel lies behind the scenes of this discovery, namely the Multi-conjugate Adaptive Optics Demonstrator (MAD), a cutting-edge instrument that allows the VLT to achieve superbly detailed images in the infrared. Adaptive optics is a technique through which astronomers can overcome the blurring that the Earth's turbulent atmosphere inflicts on astronomical images obtained from ground-based telescopes; MAD is a prototype of even more powerful, next-generation adaptive optics instruments.

Through the sharp eye of the VLT, the astronomers also found that Terzan 5 is more massive than previously thought: along with the complex composition and troubled star formation history of the system, this suggests that it might be the surviving remnant

of a disrupted dwarf galaxy, which merged with the Milky Way during its very early stages and thus contributed to form the galactic bulge.

"This could be the first of a series of further discoveries shedding light on the origin of bulges in galaxies, which is still hotly debated," concludes Ferraro. "Several similar systems could be hidden behind the bulge's dust: it is in these objects that the formation history of our Milky Way is written."

Understanding how galaxies behave and evolve can help astrobiologists determine how galaxies can affect the habitality of the solar systems and planets they contain.

Images: © ESO VLT and Digitized Sky Survey

Upper right—Peering through the thick dust clouds of our galaxy's central parts (the "bulge") with an amazing amount of detail, a team of astronomers has revealed an unusual mix of stars in the stellar grouping known as Terzan 5.

Lower left—Wide-field image, based on data from Digitized Sky Survey 2, shows the whole region around the stellar grouping Terzan 5.

Article based upon a ESO news release.

The photo above showing the Pyramid of Chephren (left) and the Great Pyramid of Cheops (right) was captured on January 4, 2010 from Giza, Egypt. On this clear, moonless evening, the International Space Station (ISS) was visible for two minutes before disappearing behind Cheops. It's shown here gliding over Chephren. Cheops, also known as Kheops and the Great Pyramid of Giza, is the largest of the three pyramids found at Giza – 451 feet (138 m). Primarily constructed of huge limestone blocks quarried nearby, it's the oldest of the Seven Wonders of the Ancient World and the only one of these ancient wonders that appears nearly the same now as when it was constructed approximately 4,550 years ago.

The Sphinx, the largest and most famous, is visible to the front and is now believed to have built "in place" by the people who no doubt built the Pyramid of Cheops and faces due east.

Laser slides are shown nightly at Giza featuring portraits of ancient Egyptian monarchs, renditions of the Sphinx, and religious scenes. On the scene above, a priest dressed up as Anubis, the jackal-headed god, who was one of the gods of the Underworld, mummifies the corpse of a deceased.

Barely visible in the photo are the bright starts that make up the summer triangle—Altair, Denab and Vega can be detected over the Great Pyramid.

Light pollution (sky haze) is from surrounding Cairo, the Giza Plateau, on the west side of the Nile river is an actual suburb of Cairo, the largest city in Africa. Cairo also has some of the highest environmental (air and water) pollution in the world. Fortunately the government of Egypt is now beginning to recognize and correct these problems. Light pollution will no doubt be one of the last areas corrected.

Image Credit: © Aymen Ibrahem

SNAKE RIVER SKIES

Snake River Skies is the Newsletter of the Magic Valley Astronomical Society and is published once a month for both members and non-members and is available via the club website: http://www.mvastro.org/members/index.php and following the link for newsletters.

NASA has set a firm early February launch date for the space shuttle Endeavour to deliver a brand-new room and observation portal to the International Space Station.

The decision, announced in January, officially targets Endeavour for a planned 4:39 a.m. EST (0939 GMT) blastoff on Feb. 7 from NASA's Kennedy Space Center in Florida. The predawn liftoff is expected to be NASA's last ever space shuttle launch in darkness. Top shuttle mission managers met today in a standard review to discuss Endeavour's readiness for the planned 13-day mission. "This is really a complicated mission," NASA's space operations chief William Gerstenmaier told reporters after the review. Commanded by veteran astronaut George Zamka, Endeavour's five-man, one-woman crew will deliver the station's new Tranquility module and a long-awaited observation portal, called the Cupola.

Did You Know

This is Sofia. The Stratospheric Observatory for Infrared Astronomy—this Boeing 747 has a 15 by 14-foot door on it, which opens to reveal a 2.5-meter telescope which went through $500-million in modifications after two decades of engineering—has finally been tested after its construction, flying at 15,000 feet and 415km/h with the door fully open. The test was a complete success, and in February 2010 NASA will start testing the telescope itself. Credit: NASA article and image.