



The Monthly Newsletter of the Magic Valley Astronomical Society

March Events

Mar. 2—**Family Night Viewing**, Centennial Observatory.

Mar. 12—**Astronomy Talk:** Introducing Auriga, the Charioteer. At 7:15 pm in the Rick Allen room.

Mar. 13—**Membership Meeting** and Monthly Star Party. 7:00 pm at the Herrett Center. Topic TBA

Mar. 13—**Monthly Star Party**, which follows our general meeting and begins at 7:45 pm.

Mar. 19th-20th—**Annual Video Messier Marathon** Centennial Observatory and Rick Allen room. Beginning at 7:15 pm with a video presentation about the marathon.

Mar. 20—**International Sidewalk Astronomy Night** downtown Twin Falls on the corner of Main and Shoshone.

Mar 27-**Earth Hour Telescope** Viewing 8:00-9:00 pm at the Centennial Observatory. See the accompanying story for information.

Image Credit: M51 imaged by our club members Ken Thomason and Secretary Rick Widmer using the Centennial Observatory's 24" DFM "Herrett" Telescope and the Apogee Alta E47 CCD "Shotwell" Camera.



Message from the President

March is one of our busiest months. Take a look at the events list on the left of this page and you'll have an understanding. Of course we can always use any club member to assist at these events.

Please join us for our membership meeting on the 13th at 7:00 pm at the Herrett Center, College of Southern Idaho campus—Twin Falls.

Last month's meeting was very well attended by folks who were seeking help with their telescopes. A last minute change in speakers and mostly an impromptu presentation by myself didn't seem to phase the attendee's any. I hope everyone who came seeking help will return and join our club. Club Vice President, David Olsen, stated there were 20 guests in attendance.

Our annual video Messier

Marathon is planned for the 19th with a cloudy sky and rain date the following night of the 20th.

The video marathon showcases our S.H.A.R.E. camera and equipment along with the Centennial Observatories Stellacam equipment to bring a tour of the brightest and best deep sky targets in the sky via a live video feed from the Herrett Telescope.

The event begins at 7:15pm in the Rick Allen Room with a program about the Messier Marathon. This will be followed by live images from the Centennial Observatory. The fun continues in the observatory after 9:00 pm when the museum closes. Free admission. Weather permitting. The Observatory is not heated—dress warmly.

Last month we also heard

back from Chris Anderson on the money he needed to raise for his trip to Egypt. As you may recall, Secretary Rick Widmer made the suggestion we, the club, offer to help raise money for Chris to go to Egypt as a part of his employee of the year award from the college. Several members have pledged and now is the time to turn in your pledge. Contact Jim Tubbs, Treasurer and make your donation to the MVAS. We will then write one check for the entire amount. Any amount donated will help.

Finally, I will be ordering concrete this month to move ahead on the long awaited "telescope pier project." When the weather warms up, the piers will be installed at the Herrett Center.

Until next month—clear skies.

Terry Wofford, President

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 for Arts & Science College of Southern Idaho campus in Twin Falls, ID, USA . Our meetings start at 7:00pm on the second Saturday of the month. 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 (weather permitting) 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 held year round, so please dress accordingly as the Observatory is not heated, nor air conditioned.

Wishing you dark skies and clear nights! Membership information is found on the last page.

The MVAS Board

This Month's Feature, the Star Regulus



Image of Regulus, the brightest star in Leo, the Lion. Image author is unknown Wikipedia Commons use license used.

Regulus (α Leonis) is the brightest star in the zodiacal constellation Leo and one of the brightest stars in the nighttime sky, having an apparent visual magnitude of about 1.35 and lies approximately 77.5 (second Hipparcos reduction), light years from Earth. Regulus is a multiple star system composed of four stars which are organized into two pairs. Regulus lies at 10h98m +11deg 58.

Regulus is a bluish-white B star; its Latin name means "the little king" – the reference to a kingly star going back to ancient times. Regulus marks the bottom of the *Sickle* that outlines the Lion's head, and lies almost exactly on the ecliptic so that it is regularly occulted by the Moon.

Regulus is a main sequence star like the Sun that generates light by converting hydrogen into helium at its core. However, Regulus is more massive, so it shines brighter, hotter, and bluer. With a spectral type of B7 and a distance of 77 light-years, it's the closest B-type main-sequence star to the Sun.

Regulus is orbited by a distant binary pair – an orange dwarf and a red dwarf. These fainter, lower-mass companions go around Regulus at a distance of about 4,200 AU and with a period of at least 130,000 years. They are themselves separated by at least 95 AU in a 1,000-year orbit. Both these companions of Regulus are less mas-

sive and dimmer than the Sun.

In 2008, Douglas Gies of Georgia State University and colleagues found that Regulus also has a much closer, faint companion. This unseen star gave away its presence through its gravitational pull, which causes Regulus to wobble to and fro. The companion has a third of the Sun's mass, orbits Regulus every 40.1 days and is only 52 million km away – slightly closer than Mercury is to the Sun. It seems likely that it is a white dwarf.

Regulus has an extremely rapid rate of rotation. Its equatorial rotation velocity is 317 km/s (709,000 mph), compared with the Sun's 2 km/s (4,470 mph). Whereas Sun takes a month to spin once around, Regulus does the same in 15.9 hours. If Regulus spun just 10% faster, researchers estimate, it would fly apart.

This rapid rotation flattens Regulus into a pumpkin shape. Its equatorial diameter is 32% greater than its polar diameter: the former is 1.65 milliarcseconds and the latter 1.25 milliarcseconds. At Regulus' distance, these numbers translate into actual equatorial and polar diameters of 4.16 and 3.14 solar diameters, respectively. The distortion results in a big difference in surface temperature of the star between poles (15,400 K) and equator (10,300 K). Furthermore, because the poles are so hot, the star shines brightest there. The equator radiates only 20% as much light per square inch as the poles do. Previously, this phenomenon of gravity darkening had been seen only in the case of eclipsing binaries.

The same team that discovered the close companion star in orbit around Regulus also suggested it was the source of the primary's flattening. Material shed by the companion during its red giant phase may have been dumped onto Regulus, giving rise to a large equatorial bulge.

The name Regulus is believed to have originated with the astronomer

Copernicus and means "the little king." In the ancient Sumerian civilization, Regulus was known as the Star of the King. Along the Euphrates, Regulus was known as "The Flame," or the "Red Fire." In the Ancient World, it was believed that this star made a contribution towards the heat of summer.

Around 2300BC, the summer solstice was located near Regulus, meaning that around that period, the Sun was located near Regulus at the start of summer, and the combined heat of the Sun and Regulus was believed to produce the excessive heat of that season. This role later became that of Sirius from the precessional shift of the Earth's axis.

The Sun makes its closest approach to Regulus around August 23 of each year. For most Earth observers, the heliacal rising of Regulus occurs in the first week of September. Every 8 years, Venus passes Regulus around the time of the star's heliacal rising, most recently in 2006. Regulus is one of the four Royal Stars of the ancient Persians. The other three are Aldebaran, Antares and Fomalhaut.

Leo as depicted in Urania's Mirror a set of constellation cards published in London c. 1825. This image is in the public domain because its copyright has expired in the United States and those countries with a copyright term of no more than the life of the author plus 100 years.



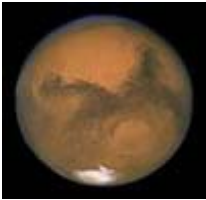
March Observing Highlights



Mercury will be too close to the sun to see early in the month. It will be very good late in the month. It will continue to get higher away from the dusk's glare until the end of the month. On the last day of the month it will be 3° from the much brighter Venus and shining brightly at -1.0 magnitude. The first week in April it will get a little higher and brighter. This will be the best appearance for 2010.



Venus will be climbing higher in the evening sky at dusk all month. It will be shining very brightly at magnitude -3.9 but still low on the horizon at the start of the month. Through a telescope Venus will appear as a nearly full disk all month. It will get higher but not much brighter as the month wears on. On the evening of the 16th the moon will appear as a slender crescent 7° to the north of Venus. Venus will appear white in color.



Mars will still be a must see target this month. It reached opposition at the end of January so it is near its best. It will start the month at around magnitude -0.6 and will fade to magnitude 0.1 by the end of the month. Mars will be up pretty high in the east as it grows dark. Be sure to observe Mars in this season. It will be shrinking in size and brightness in the months ahead. Mars shines red orange in color.



Saturn will reach opposition on the 21st. This is when it is at its biggest and brightest. This makes it a great target this month. It will rise at sunset and set at dawn so the best time to observe it would be around midnight when it will sit high in the sky directly to the south. On the 9th most of Saturn's visible moons will be close to the planet and thus easier to find than usual. Up to seven moons could be visible at once depending on the size of your telescope and seeing conditions. Saturn appears yellowish in color.



Moon Phases

7 **Last Quarter Moon** at 20:42 MDT. (24h clock)

15 **New Moon** at 14:01 MDT. (24h clock)

23 **First Quarter Moon** at 5:00 MDT. (24h clock)

30 **Full Moon** at 18:25 MDT. (24h clock)

Vernal Equinox

March 20th at 11:34 MDT. The time when the Sun reaches the point along the ecliptic where it crosses into the northern celestial hemisphere marking the start of spring in the Northern Hemisphere and autumn in the Southern Hemisphere. The day will be 12 h 26 m long.



The Leo Triplet, with M65 (right top), M66 (right bottom) and NGC 3628 (left). North is to the left. Image Courtesy Hunter Wilson Wikimedia Commons. M65 and M66 are good March targets.

Celestial Events for March

3 **Moon near Spica** (morning sky) at 23h MDT.

7 **Moon near Antares** (morning sky) at 6h MDT.

11 **Mars stationary** at 14h MDT. The red planet ends its retrograde motion and resumes direct (eastward) motion towards a mid-April encounter with M44.

12 **Moon at apogee** (farthest from Earth) at 3h MDT (distance 406,008 km; angular size 29.4').

17 **Moon near Venus** (evening sky, 16° from Sun) at 22h MDT. Best view from northern hemisphere.

21 **Moon very near the Pleiades** (evening sky)

24 **Moon near Pollux** (evening sky) at 4h MDT.

25 **Moon near Mars** (evening sky) at 5h MDT

26 **Moon near Beehive cluster (M44)** (evening sky)

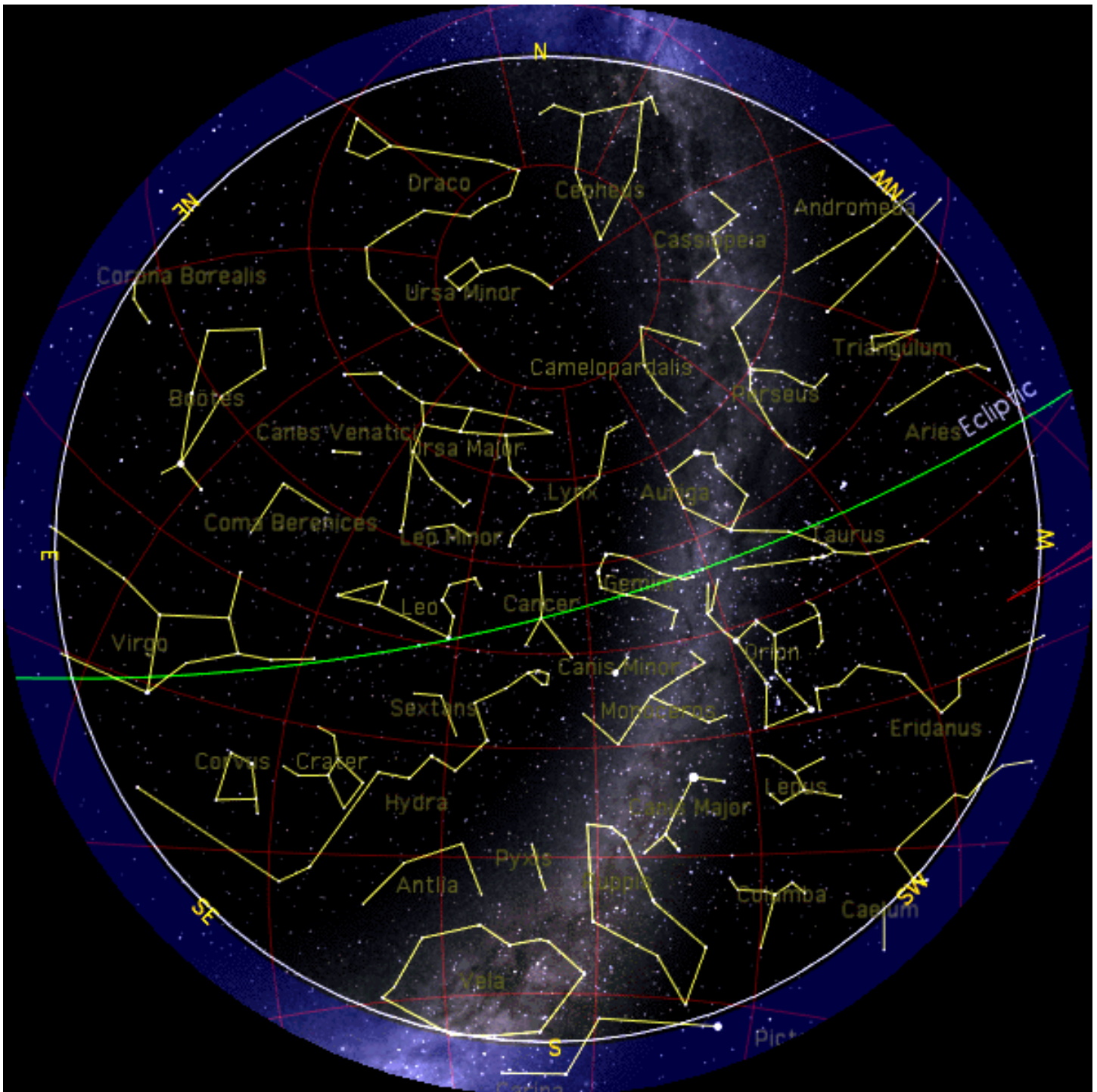
27 **Moon near Regulus** (evening sky) at 4h MDT.

28 **Moon at perigee** (closest to Earth) at 23h MDT

29 **Moon near Saturn** (midnight sky) at 4h MDT.

31 **Moon near Spica** (morning sky) at 18h MDT.

Images used are from the NASA domain except for the Chaco Canyon Sun Dagger and Moon Phases picture. No source information is available. From the public domain.



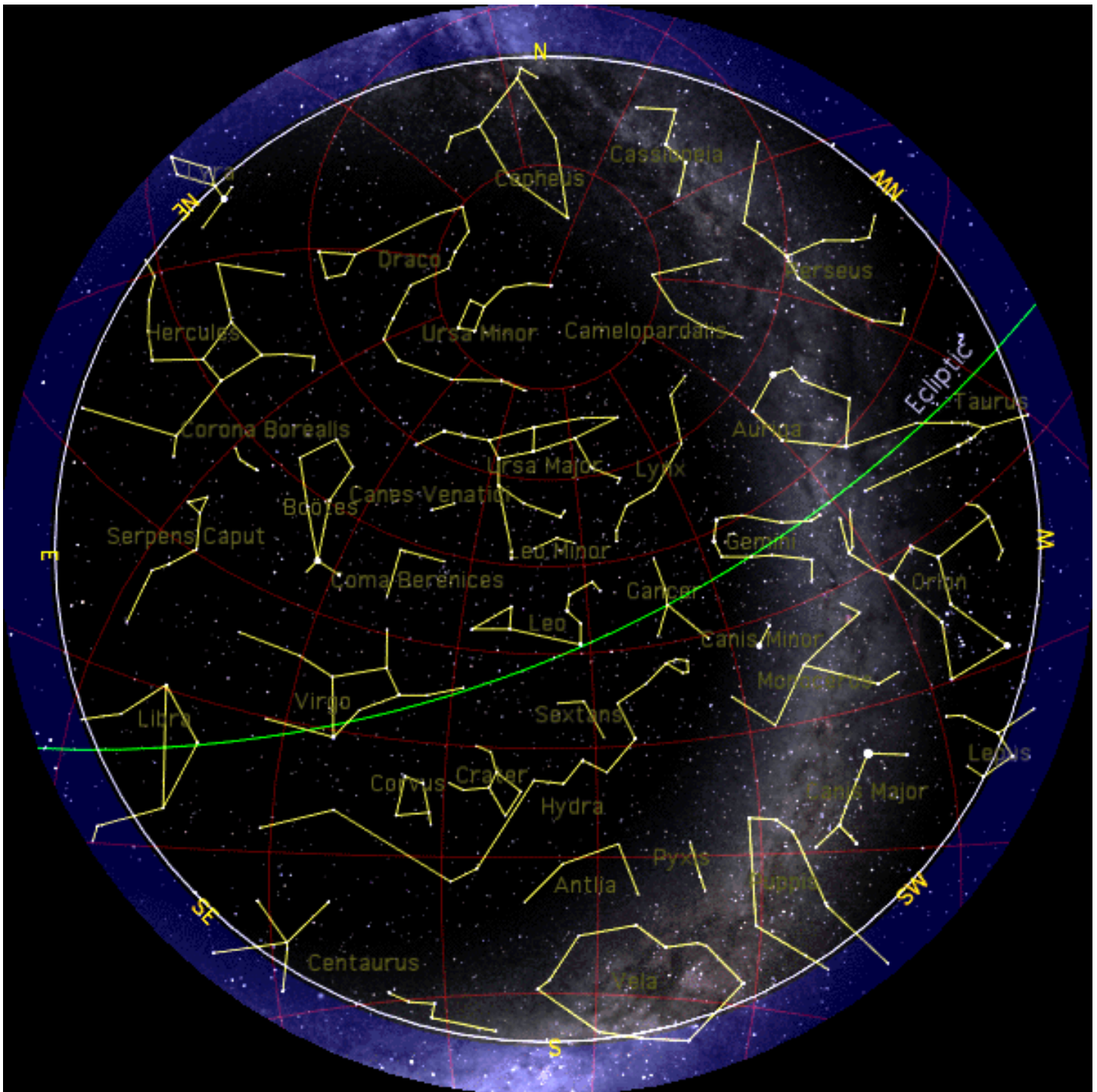
Planisphere for March 2010 early evening.
 Star charts courtesy of Imaginova's Starry Night Pro Software

DID YOU KNOW?

Binoculars are a great way to begin in the hobby of Astronomy and March is a good month to get familiar with the night sky. The planets and the moon are always easily found targets, but the moon will be interacting with the Pleiades this month and is most certainly a great target in the Binocular eyepiece. Even better is the fact that you don't need a real expensive set, unless of course you already have them. All you need is the time to go outside and use your binoculars.

Once you begin finding targets you may want to consider a blanket, chair or another means to steady yourself. With time you'll want to get another pair, or even a telescope. REMEMBER: March can still be cold, so dress warmly.





Planisphere for March 2010 mid-night.
 Star charts courtesy of Imaginova's Starry Night Pro Software

DID YOU KNOW?

The constellations Cancer and the Gemini Twins are difficult to see except for the two twin stars of Castor and Pollux from the light polluted skies of Twin Falls, Jerome and Burley here in Southern Idaho. Found within the constellation of Cancer is M44, the Beehive cluster, or Praesepe, the manger. M44 is a common target for amateur astronomer's and one easily shown at many star parties.

Meade ETX-LS is available for purchase in the Herrett Center store. For more information Please contact Chris Anderson at 732-6663 or via e-mail. canderson@csi.edu



NEWS—What of the Telescopes in Chile?



A collapsed building in the after math of the 8.8 magnitude earthquake in Chile Image from Wikipedia Commons.

There are many international telescopes in Chile making use of the low humidity conditions in the Chilean mountains and high-altitude deserts. But as one of the most seismically active countries in the world, many of these observatories are built on shaky ground.

In the wake of the 8.8 Magnitude earthquake that hit the South American nation on Saturday, Feb 27th 2010 causing a tsunami to rush across the Pacific. How are these sensitive observatories protected from damage? The quake was reported as far away as 1,800 km from the epicenter, so it's little doubt that the Chile-based observatories would have felt it.

Among the international astronomical projects is the Gemini Observatory (South) at 2,700 meters (8,858 ft) elevation on Cerro Pachón (a mountain in the Chilean Andes) and the European Southern Observatory's (ESO) Very Large Telescope (VLT) on Cerro Paranal, a 2,635 meter (8,645 ft) high mountain in the Atacama desert.

Gemini South is approximately 800 km (500 miles) north of the epicenter and the VLT is approximately 1,370 km (850 miles) north of the epicenter. Undoubtedly both locations would have experienced some seismic activity.

But this isn't the first major earthquake

that would have shaken these observatories. According to Anil Ananthaswamy, author of the forthcoming *Edge of Physics* (to be published in March), observatories such as the VLT have some novel anti-earthquake safety measures in place:

The primary mirror is 18 centimeters thick. Because of its weight, the mirror's precise shape can warp when it is tilted, so 150 actuators, upon which the mirror rests, continually push

and pull at least once a minute to ensure that the optimal curvature is maintained. More impressive than the actuators are the clamps around the edges of the mirror, which can, at a moment's notice, lift the entire mirror, all 23 tons of it, off the actuators and secure it to the telescope's support structure in case of an earthquake (moderate quakes, of less than 7.75 Richter, are not uncommon here, thanks to the ongoing collision of the Nazca and South American plates). The entire telescope is designed to swing during an earthquake, and securing the primary mirror prevents it from rattling against the metal tubes that surround it.

Also, in Helen Gavaghan's 2005 article for *Science, People and Politics* she describes what life is like working on Cerro Paranal, a location perfect for astronomy, but not-so-perfect as the foundations for a telescope: Patat has made perhaps 10 trips to Paranal. He is an experimentalist and one of the ESO staff. Most of the time that he is in Chile he is supporting the work of other astronomers, sometimes doing his own work and other times commissioning an instrument.

Though he can almost guarantee clear nights -- the sky is clear for 330 of 365 nights -- he cannot guarantee the site will be free from Earthquakes, and there is a routine for closing down the telescope if

quakes reach more than 6 on the Richter scale. Patat has not experienced one of these, but he has worked through lesser quakes. I asked him what that was like. Safe, he said. Both residence and observatory are designed and built to high standards, something reflected in a special acclamation by the jury awarding the Dedalo Minosse prizes in 2003-2004. According to *Universe today*, Gemini South's servers are back online, but other observatories in the area have experienced power cuts, taking their servers offline.

So it seems unlikely these observatories will have suffered any serious damage in this most recent earthquake, but I wish the same can be said for the populated region surrounding the epicenter in central Chile. There has been severe damage to buildings and infrastructure and over 200 people have been reported dead (at time of press).

Article by Ian O'Neill for Discovery Communications © 2010 Discovery Communications, LLC. Reprinted with permission.

Image, the ESO's Very Large Telescope Array in the Atacama desert. ESO Public Domain.



NASA News—A First View from the Cupola on the Tranquility Module

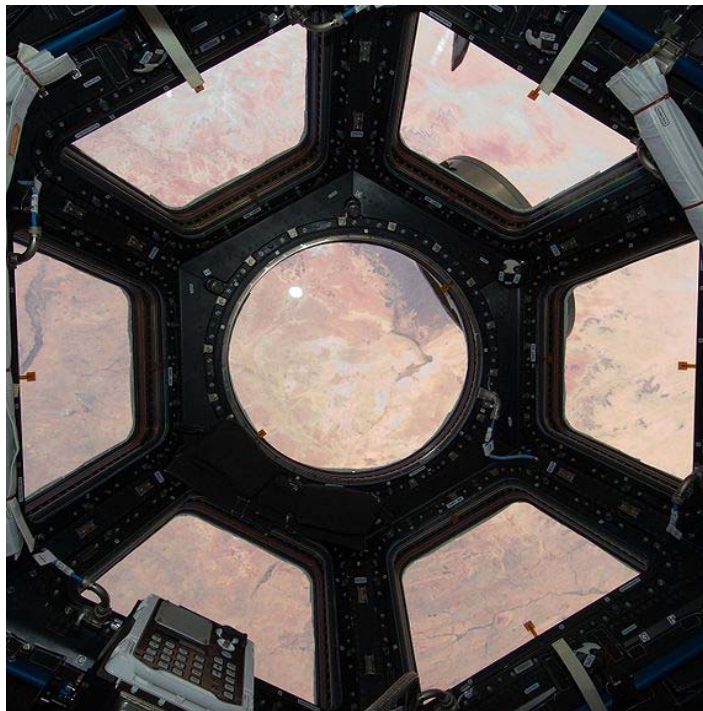
In what was probably one of the most remarkable extra-vehicular activities (EVA) ever, astronauts managed to secure the new NASA module Tranquility to the International Space Station (ISS). They also mounted the window-laden Cupola observation dome, which promises to give those working on the orbital lab the best possible view of the Earth. The spacewalkers that stepped out into space to conduct external work on the new module were as far as one hour ahead of schedule at some points in their mission, which is uncommon for spacewalks, according to reports.

In fact, many an EVA were concluded without some of the tasks allotted to them completed. But this was not the case when NASA astronauts Robert Behnken and Nicholas Patrick, who flew aboard space shuttle Endeavor, STS-130, raced through their appointed task with so much ease that the Mission Control at one point had to instruct them to refill their oxygen tanks. NASA reports that they worked so fast that they even outpaced their colleagues inside the ISS, who were using the station's robotic arms to maneuver Tranquility and the Cupola from the shuttle's cargo bay to the Earth-facing port of the Unity module.

In charge of the robotic-arm operations were NASA astronauts Kathryn Hire and Terry Virts, who did a remarkable job at seamlessly joining Unity and Tranquility. While they did that, their two colleagues outside the station spent their free time performing other tasks, or simply taking pictures of the planet. "You guys are really eating it up," shuttle commander George Zamka said as a praise. While most members of the 11-astronaut crew currently in orbit were busy with the new module and observation chamber, the rest managed to repair the station's urine recycling system, which now guarantees that astronauts will have larger reserves of pure water at their disposal.

In addition to actually connecting the ISS to its new component, the spacewalkers also had to route power and data cables between the two, while at the same time installing some of the equipment they would use during the

next two EVAs of the mission. In addition, they also removed a tool platform that had outlived its usefulness, which was installed on the Dextre maintenance robot. During the second spacewalk, the two astronauts finally stitch up the liquid ammonia cooling hoses connecting the module to the station. This was one of the last modules to be connected.



This image is the first taken through a first of its kind "bay window" on the International Space Station, the seven-windowed Cupola. The image shows the Sahara Desert spread out through the array of windows. The Cupola will house controls for the station robotics and will be a location where crew members can operate the robotic arms and monitor other exterior activities. The white box in the foreground is the robotic arm controller.

Image source— NASA ISS022-E-066972 common use license is used. If you're thinking this is a view from Darth Vader's x1 Advanced TIE fighter above Tatooine then you're a nerd, but in a good way though.

Snake River Skies—Special Announcement

The editor wishes to announce that the newsletter has now become a source for astronomical information for the members and non-members alike. Approximately 1 1/2 years ago, the editor was contacted by the Boise Astronomical Society Treasurer-Barb Syriac to begin sharing our newsletter with the BAS. The BAS Newsletter is shared with us and until recently is was not forwarded on as nobody could open the file. That has changed. This news-

letter is now shared with City of Rocks, NR and Castle Rocks S.P. near Almo. About mid-February, the editor was requested, via e-mail, to begin sharing this newsletter with the astronomy director at Great Basin N.P. near Ely, NV. This is most certainly a milestone for the club and made possible by digital media.

Beginning this month, the newsletter will take on a newer format and may

eventually increase in size. Articles and submissions from club members are always welcome. Don't be shy. Members will be given highest priority followed by others who will be asked to contribute. If you have suggestions please contact the editor. Thank you.

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Image of Centennial Observatory on the front page is courtesy of Chris Anderson, Observatory Manager. The Centennial Observatory is located at the Herrett Center for Arts and Science, College of Southern Idaho, Twin Falls, ID, USA. Shoshone Falls is a major attraction to the Magic Valley and a prominent landmark on the Snake River. Image is public domain

Membership Information

Membership is not just about personal benefits. Your membership dues support the work that the Magic Valley Astronomical Society does in the community to promote the enjoyment and science of astronomy.

Speakers, public star parties, classes and support for astronomy in schoolrooms, and outreach programs just to name a few of the programs that your membership dues support.

Annual Membership will be:

\$20.00 for individuals, families,

\$10.00 for students.



Contact Treasurer Jim Tubbs for dues information via e-mail: jtubbs015@msn.com or telephone: 736-1989 or mail directly to the treasurer at his home address. 550 Sparks Twin Falls, ID 83301

Donations to our club are always welcome. Please contact a board member for details.

Earth Hour at the Centennial Observatory

Earth Hour 2010 takes place on Saturday, March 27th at 8.00pm (local time) and is a global call to action to every individual, business and community throughout the world. For one hour, the world is asked to turn out all unnecessary lights as a gesture of energy conservation. Come join the MVAS at the Centennial Observatory at the Herrett Center and enjoy the dark skies. The admission is free for all.

Earth Hour started in 2007 in Sydney, Australia when 2.2 million homes and businesses turned their lights off for one hour to make their stand against climate change. One year later and Earth Hour had become a global sustainability movement with more than 50 million people across 35 countries participating. Global landmarks such as the Sydney Harbor Bridge, the CN Tower in Toronto, the Golden Gate Bridge in San Francisco, and Rome's Coliseum, all stood in darkness, as symbols for a cause that grows more urgent by the hour.

In March 2009, hundreds of millions of people took part in the third Earth Hour. Over 4000 cities in 88 countries officially switched off lights to pledge their support for the planet, making Earth Hour 2009 the world's largest global climate change initiative. . It is a call to stand up, to take responsibility, get involved and lead the way towards a sustainable future. Iconic buildings

and landmarks from Europe to Asia and to the Americas will stand in darkness. People across the world from all walks of life will turn off their lights and join together in celebration and contemplation of the one thing we all have in common – our planet. It's Showtime! The MVAS has been registered on the Earth Hour website show the world what can be done.



MVAS Purpose

The Magic Valley Astronomical Society was founded in 1976, the Society is a non-profit [501(c) 3] educational and scientific organization dedicated to bringing together people with an interest in astronomy. The society serves as a source of astronomical phenomena, history and lore by providing educational and observing opportunities and information for its members and the general public and promotes viewing of celestial objects with special events for adults and children in south central Idaho.

Membership Benefits

Sky and Telescope group rates. Subscriptions to this excellent periodical are available through the MVAS at a reduced price of \$32.95.

Astronomy Magazine group rates. Subscriptions to this excellent periodical are available through the MVAS at a reduced price of \$34.00

For magazine info. Contact Jim Tubbs, Treasurer

Lending Library: Currently we have no books to lend; sorry!

MVAS Lending Telescopes, the society currently has two telescopes for loan and would gladly accept others. Contact Rick Widmer, Secretary for more info.

Receive 10% discounts on selected Astronomy Publications.

Elected Board

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