Snake River Skies

The Monthly Newsletter of the Magic Valley Astronomical Society

In this Issue

Club Meeting will be Nov. 12th at the Herrett Center beginning at 7:00 pm. Robert Mayer will Present “A Closer Look at the Astronomical League's Observer Clubs.”

Club Star Party on Nov. 18th at the Jerome Gun Club.

Membership Message

Welcome to the November newsletter. November usually brings more inclement weather. As this is being written, it has already snowed on the Eastern Seaboard in the New England States while those of us, locally, are experiencing relatively mild weather.

In October, the general membership in attendance voted to retain the current board by a majority vote. Thank you again one and all for voting.

Our monthly club star party has been planned for November, the 18th (a Friday) and by e-mail vote the club members have decided to return to the Jerome Gun Club. The club is located 11 miles north of Twin Falls off of Hwy. 93 1/4 mile north of 500 N Rd. While this event is not open to the public we have not been too overwhelmed with non-members so far. If you are planning to attend then dress warmly as the weather is known to be bitter cold this time of year.

An impressive and upcoming flyby of an asteroid that’s one of the larger potentially perilous space rocks in the heavens – in terms of smacking the Earth in the future. In early November, this asteroid will approach Earth within a scant 0.85 lunar distances. Asteroid 2005 YU55 a round mini-world that is about 1,300 feet (400 meters) in diameter. See the article on page 8.

Clear skies and good observing until next month.

David Olsen, VP/Editor

MVAS Memberships

Welcome to the Magic Valley Astronomical Society

Welcome to the society and hello. We hope you have a good time, enjoy the hobby, & 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 7:00 pm 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!

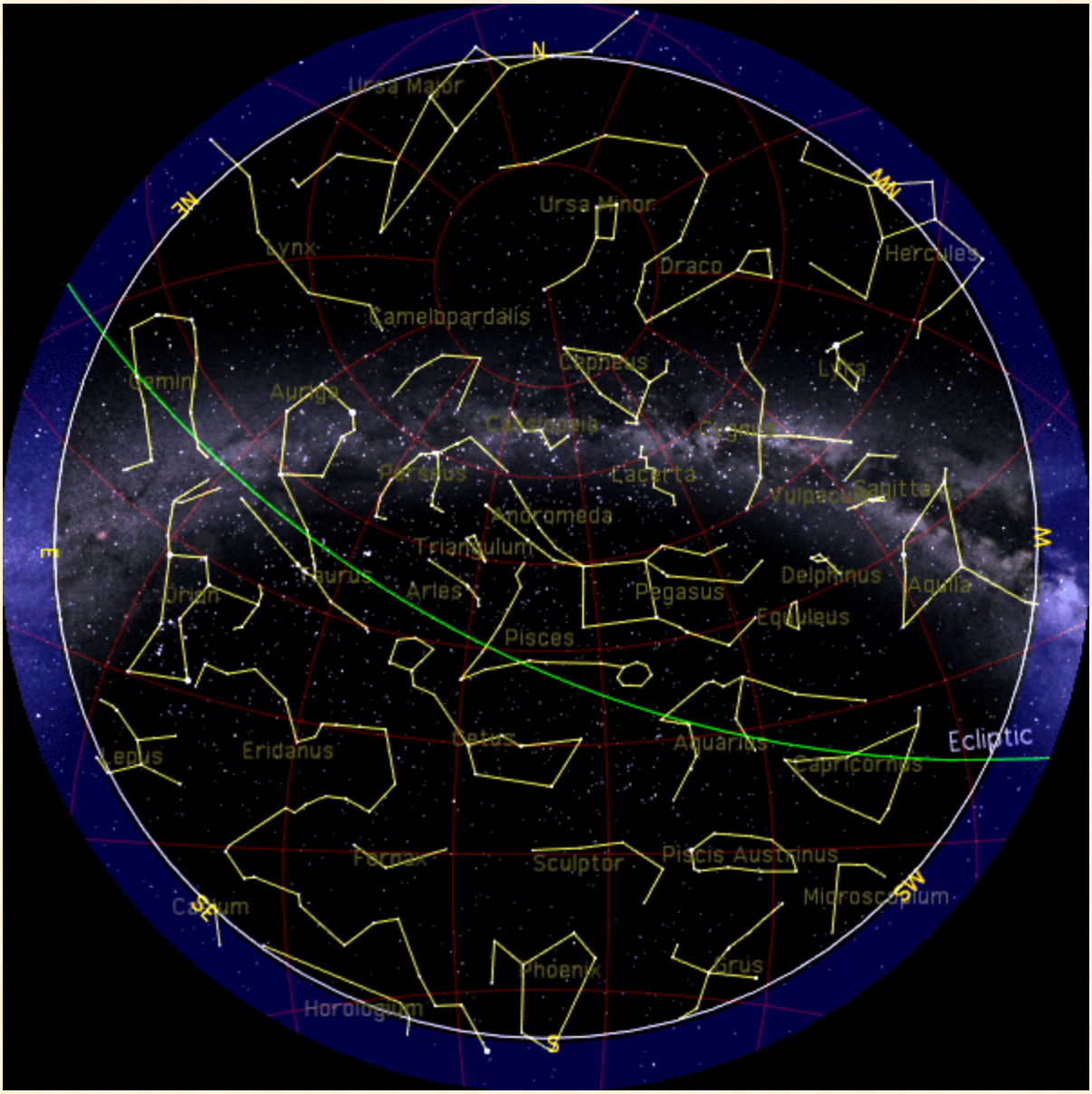
MVAS Board

November Calendar

Sun	Mon	Tue	Wed	Thu	Fri	Sat
		1	2	3	4	5
Announcement: Change your smoke detector battery when daylight saving time changes.			First Quarter Moon 			
6	7	8	9	10	11	12
Daylight Saving Time Ends 		Moon at Apogee Asteroid 2005 YU5 will pass Earth		Full Moon Beavers Moon (Algonquian) 	Veterans' Day  	**Club Meeting at 7:00 p.m. Herrett Center** Public Star Party Telescope viewing (weather permitting). 6:15 PM - 12:00 AM
13	14	15	16	17	18	19
Moon at Greatest North Declination +22.6°	Andromedids Meteor Shower Peaks 			Leonids Meteor Shower Peaks 	**Club Star Party** Jerome Gun Club Last Quarter Moon 	
20	21	22	23	24	25	26
			Moon at Perigee 	Thanksgiving Day 	Last Quarter Moon 	Moon at Greatest South Declination -22.6°
27	28	29	30			
				Thanksgiving Day Image (Freedom from Want) is an original painting by American Artist Norman Rockwell © 1943 by the artist.	Other images (except where noted) on this page are NASA images and are in the public domain.	Image of Faulkner Planetarium at the CSI Herrett Center is in the public domain.

Day	Time	Faulkner Planetarium Show Schedule: November1st – November 25th, 2011
Tuesday	7:00	Two Small Pieces of Glass / Live Sky Tour
Fridays	7:00	Two Small Pieces of Glass / Live Sky Tour
	8:15	Pink Floyd: Dark Side of the Moon
Saturdays 	2:00	Here Comes the Sun
	4:00	Journey to the Edge of Space and time / Live Sky Tour
	7:00	Two Small Pieces of Glass / Live Sky Tour
	8:15	Pink Floyd: The Wall
	Page 4	Holiday Schedule Begins November 25th

Planisphere for November Mid-Month



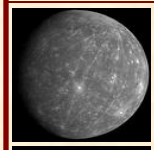
November Mid-Month (approximately) begins at 21:30 (9:30pm) local time, the end of Astronomical twilight.

Did You Know?

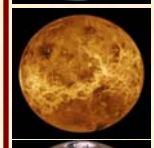
Skylab 4 was the fourth Skylab mission and placed the third and final crew on board the space station. The mission started November 16, 1973 with the launch of three astronauts on a Saturn IB rocket, and lasted 84 days, 1 hour and 16 minutes. A total of 6,051 astronaut-utilization hours were tallied by Skylab 4 astronauts performing scientific experiments in the areas of medical activities, solar observations, Earth resources, observation of the Comet Kohoutek and other experiments. The three astronauts (Gibson, Pogue and Carr) were actually space rookies as none had been to space before. Of the three, Pogue and Carr were to become part of the likely crew for the cancelled Apollo 19. Ultimately none of the crew of Skylab 4 flew in space again, as all three retired from NASA before the first Space Shuttle launch.

NASA image of the abandoned Skylab as seen from the departing Skylab 4 crew.

November Planet / Comet Observing



Mercury will be visible very low on the southwestern twilight horizon 2º below Venus for the first three weeks of the month. It will be hard to spot without binoculars early in the month, being too dim and too low. Around the 11th Mercury may be high enough to be seen without binoculars, still 2º below Venus. On the 14th Mercury will reach its greatest height and be at magnitude -0.3.



Venus will be low in the southwestern sky just after sunset all month. It will be blazing at -3.9 magnitude and climbing higher in the sky all month. Mercury will be 2º below Venus for the first three weeks of this month but hard to see because it is dimmer.

Mars will be above the morning southeastern horizon. It will be shinning at magnitude 1.0 by midmonth. The best time to observe it will be when it is still dark a few hours before dawn when it highest in the sky. Mars' color will set it apart from any stars in the area. It will be close to the blue-white star Regulus. Mars will be growing in size and brightness for the next few months.

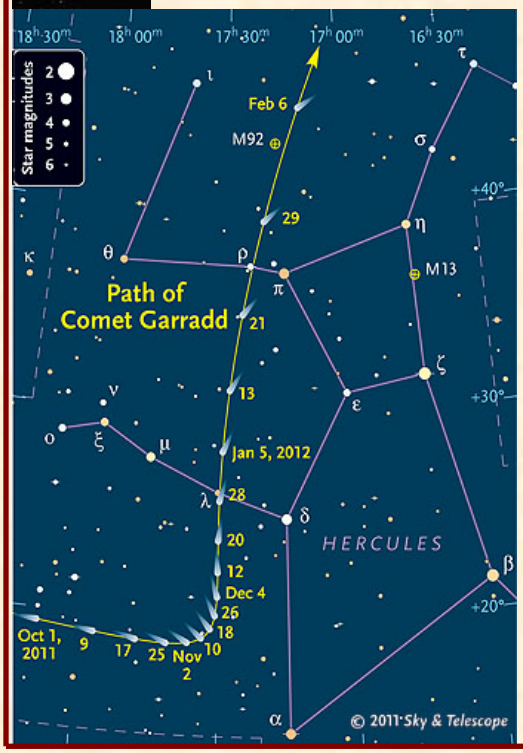
Jupiter will be a great target this month. It reached opposition late last month. It is still nearly at its biggest and brightest of the year. Jupiter will be found in Aries but just look in that area of the sky. It will be hard to miss, being the brightest object in that area. It will be up most of the night but it will be highest in the sky around midnight. Jupiter will be large enough to show detail through even a small telescope..

Saturn was too close to the Sun to see last month. This month it will be will be low on the southeast horizon before dawn. This month Saturn will likely not be a good telescope target due to not being high enough in the sky to avoid excess atmospheric turbulence.

Uranus will be pretty good for observing this month. It will be easy to spot through binoculars and from a dark site it will possible to spot it with just your (good) set of eyes. It will be a good telescope target all month. The best time to observe it will be around 8 PM when it will be high in the sky directly to the south. This would be when you are looking through less of the Earth's atmosphere.

Neptune will be in southern Aquarius, around 1.7º northwest of the 4th magnitude star Iota Aquarii. The best time to observe it would be just as the sky gets completely dark. It will be in the southwest, roughly 1/3rd the way up from the horizon. You will need binoculars or a small telescope to spot Neptune.

Comet Garradd Will be leaving the constellation of Sagitta and entering Hercules where it will remain until February. Special note: The comet is sinking low in the western sky and will still be a good view.



Faulkner Planetarium Show Schedule for the Holidays

DATE	*DAY*	*SHOW*	*TIMES (pm)*
November 25th	Friday	Santa Snork Saves the Seasons	1:30 & 2:30
		Season of Light	4:00
		Santa Snork Saves the Seasons	7:00
		Steamrolling	8:15
November 26th	Saturday	Santa Snork Saves the Seasons	1:30 & 2:30
		Season of Light	4:00
		Santa Snork Saves the Seasons	7:00
		Steamrolling	8:15
November 29th	Tuesday	Santa Snork Saves the Seasons	7:00
		Steamrolling	8:15

Looking through the Eyepiece - Andromeda, The Princess

Andromeda is a constellation in the northern sky. The story of Andromeda, daughter of King Cepheus and Queen Cassiopeia, of Ethiopia, brings together many notable names of legend. Her mother's boastfulness and pride greatly angered the sea gods and this resulted in Andromeda being sacrificed in order to appease them. Knowing full well that she would be at the mercy of the sea monster, Cetus, the King and Queen allowed their young daughter to be chained to a rock on a cliff overlooking the sea. However fate, in the person of Perseus, intervened. Riding home on the winged horse Pegasus, he heard Andromeda's screams as Cetus approached her. Holding high the head of Medusa he charged towards the monster who was instantly turned to stone as he looked upon the severed head. Taking great care to prevent Andromeda from looking at the head, he then released her from her chains. The young couple immediately fell in love and, as Perseus had just saved their daughter's life, Cepheus and Cassiopeia readily consented to their marriage.

The Brightest Stars

HIP	Name	Bayer/ Flamsteed	Mag	R.A.	Declination
677	Alpheratz	alpha	2.07	0h 8m	29° 5'
5447	Mirach	beta	2.07	1h 10m	35° 37'
9640	Almach	gamma[1]	2.10	2h 4m	42° 20'
3092		delta	3.27	0h 39m	30° 52'
7607		51	3.59	1h 38m	48° 38'
113726		omicron	3.62	23h 2m	42° 20'
116584		lambda	3.81	23h 38m	46° 28'
4436		mu	3.86	0h 57m	38° 30'
3693		zeta	4.08	0h 47m	24° 16'
7513		upsilon	4.10	1h 37m	41° 24'
116805		kappa	4.15	23h 40m	44° 20'
5434		phi	4.26	1h 10m	47° 15'
116631		iota	4.29	23h 38m	43° 16'
2912		pi	4.34	0h 37m	33° 43'
3031		epsilon	4.34	0h 39m	29° 19'
4463		eta	4.40	0h 57m	23° 25'

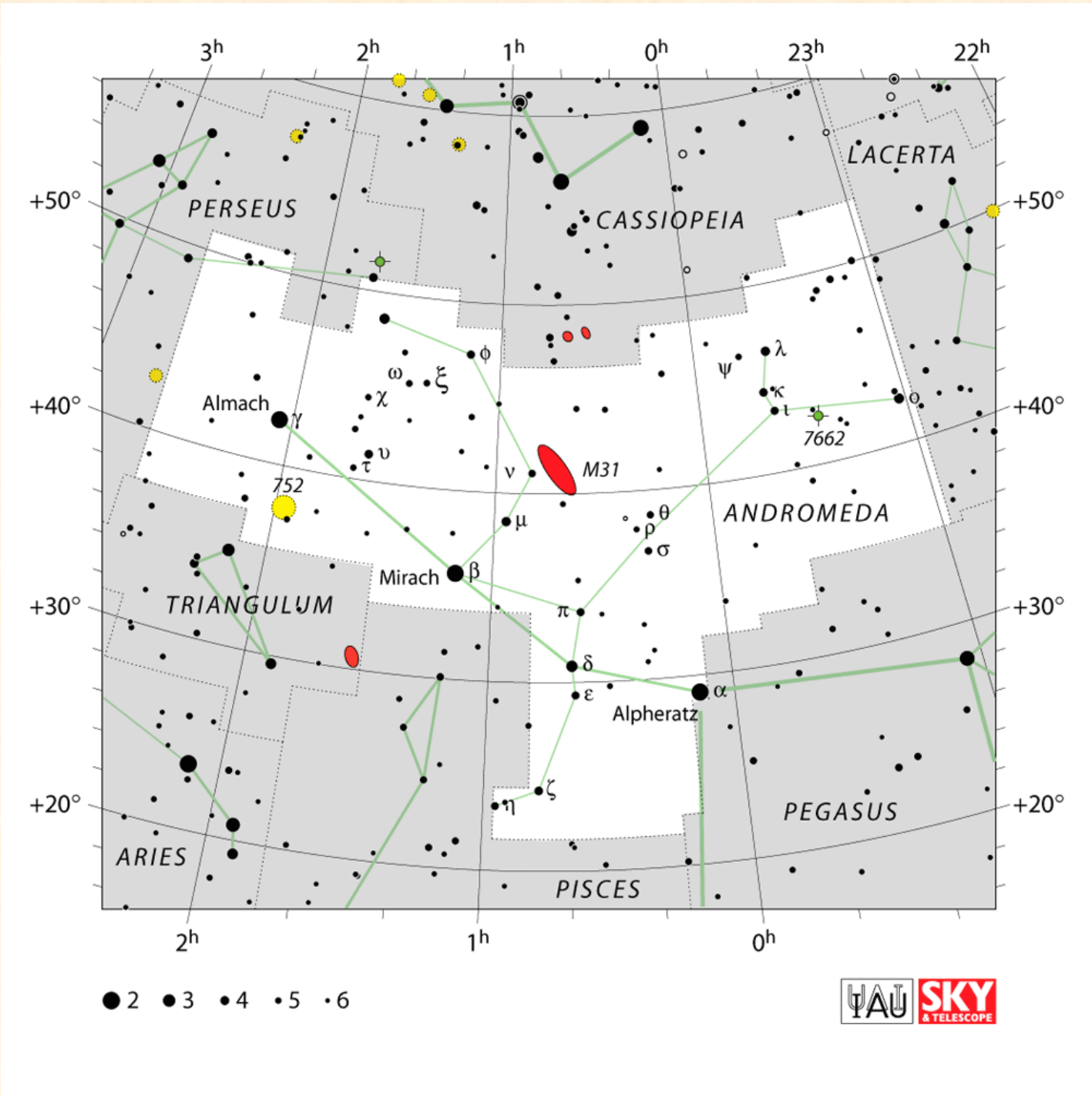
Deep Sky Objects

The most famous deep sky object in Andromeda is the spiral galaxy Messier 31 or the Andromeda Galaxy, one of the most distant objects visible to the naked eye (Messier 33, the Triangulum Galaxy, is slightly farther). It is an enormous spiral galaxy much like the Milky Way. To find the galaxy, draw a line between β and μ And, and extend the line approximately the same distance again from μ And.

Coordinates for M31:
Right ascension $00^h\ 42^m\ 44.3^s$
Declination +41° 16′ 9″
Redshift −301 ± 1 km/s
Distance 2.54 ± 0.06 Mly

Image of Messier 31© Adam Evans (NotFromUtrecht) Creative Commons Attribution - Wikimedia

Looking through the Eyepiece - Andromeda, The Princess



The Persian astronomer Abd al-Rahman al-Sufi wrote a tantalizing line about the chained constellation in his *Book of Fixed Stars* around 964, describing it as a "small cloud". Star charts of that period have it labeled as the *Little Cloud*. The first description of the object based on telescopic observation was given by German astronomer Simon Marius in 1612. Charles Messier catalogued it as object M31 in 1764 and incorrectly credited Marius as the discoverer, unaware of Al Sufi's earlier work. In 1785, the astronomer William Herschel noted a faint reddish hue in the core region of the M31. He believed it to be the nearest of all the "great nebulae" and based on the colour and magnitude of the nebula, he incorrectly guessed that it was no more than 2,000 times the distance of Sirius. When the constellation is envisioned as representing the princess Andromeda, α Andromeda is normally considered to mark her head. However, the star's traditional Arabic names mean "horse" and "navel". Several other nearby constellations are associated with the myth of Andromeda, including Cassiopeia (her mother), Cepheus (her father), Cetus (the monster), Perseus (her savior) and Pegasus (his horse).

Looking through the Eyepiece - Andromeda, The Princess

Messier 110 (also known as M110 and NGC 205) is a dwarf elliptical galaxy that is a satellite of the Andromeda Galaxy. M110 contains some dust and hints of recent star formation, which is unusual for dwarf elliptical galaxies in general. Although Charles Messier never included the galaxy in his famous list, it was depicted by him, together with M32, on a drawing of the Andromeda galaxy; a label on the drawing indicates that Messier first observed NGC 205 on August 10, 1773. The galaxy was independently discovered by Caroline Herschel on August 27, 1783; her brother William Herschel described her discovery in 1785. Coordinates for M110: Right ascension $00^h\ 40^m\ 22.1^s$ Declination +41° 41′ 07″

Images:M110 (Left) and M32 (right) from WikiMedia - Creative Commons license

Messier 32 (also known as *NGC 221* and Le Gentil) is a dwarf elliptical galaxy about 2.65 million light-years away in the constellation Andromeda. M32 is a satellite galaxy of the famous Andromeda Galaxy (M31) and was discovered by Le Gentil in 1749. M32 measures only 6.5 ± 0.2 kly in diameter at the widest point. Like most elliptical galaxies, M32 contains mostly older faint red and yellow stars with practically no dust or gas and consequently no current star formation It does, however, show hints of star formation in the relatively recent past.

NGC 752 - A bright and scattered open star cluster visible with the naked eye. It is composed of over 60 stars of magnitudes 9 and fainter. Seen with binoculars or small telescopes it appears as an obvious glow, with a sprinkling of a dozen or so stars in front. On closer inspection it is resolved into a swarm of stars, spread in a field of over 45 arc minutes. Coordinates for NGC 752 Right ascension $01^h\ 57^m\ 55^s$ Declination +37° 51′ 57″

NGC 891 - A spiral galaxy seen edge-on, located four degrees east of Gamma Andromedae. It is a difficult object for small telescopes because its surface brightness is pretty low, but on clear nights it is visible in a 4.5-inch scope. Coordinates for NGC 891 Right ascension $02^h\ 22^m\ 33.4^s$ Declination +42° 20′ 57″ Redshift 528 ± 4 km/s Distance 27.3 ± 1.8 Mly (8.4 ± 0.5 Mpc)

NGC 7662 (The Blue Snowball Nebula) - An easy planetary nebula for small telescopes, located one degree west of the 4h-magnitude star Kappa Andromedae. At low power it appears as a nearly stellar object of magnitude 8.5. At high magnification the nebula's blue disk becomes obvious, this object is a must see for all amateur astronomers! Coordinates for NGC 7662 Right ascension $23^h\ 25^m\ 54^s$ Declination +42° 32′ 6″ Distance ~2000-6000 ly

Images of NGC 752 (left), NGC 891 (center) and NGC 7662 (right) WikiMedia - Creative Commons License Applied.

Asteroid Set to Pass Close to Earth

NASA scientists will be tracking asteroid 2005 YU55 with antennas of the agency's Deep Space Network at Goldstone, Calif., as the space rock safely flies past Earth slightly closer than the moon's orbit on **Nov. 8**. Scientists are treating the flyby of the 1,300-foot-wide (400-meter) asteroid as a science target of opportunity - allowing instruments on "spacecraft Earth" to scan it during the close pass.

Tracking of the aircraft carrier-sized asteroid will begin at 9:30 a.m. local time (PDT) on Nov. 4, using the massive 70-meter (230-foot) Deep Space Network antenna, and last for about two hours. The asteroid will continue to be tracked by Goldstone for at least four hours each day from Nov. 6 through Nov. 10. Radar observations from the Arecibo Planetary Radar Facility in Puerto Rico will begin on Nov. 8, the same day the asteroid will make its closest approach to Earth at 3:28 p.m. PST.

The trajectory of asteroid 2005 YU55 is well understood. At the point of closest approach, it will be no closer than 201,700 miles (324,600 kilometers) or 0.85 the distance from the moon to Earth. The gravitational influence of the asteroid will have no detectable effect on anything here on Earth, including our planet's tides or tectonic plates. Although 2005 YU55 is in an orbit that regularly brings it to the vicinity of Earth (and Venus and Mars), the 2011 encounter with Earth is the closest this space rock has come for at least the last 200 years.

During tracking, scientists will use the Goldstone and Arecibo antennas to bounce radio waves off the space rock. Radar echoes returned from 2005 YU55 will be collected and analyzed. NASA scientists hope to obtain images of the asteroid from Goldstone as fine as about 7 feet (2 meters) per pixel. This should reveal a wealth of detail about the asteroid's surface features, shape, dimensions and other physical properties

Arecibo radar observations of asteroid 2005 YU55 made in 2010 show it to be approximately spherical in shape. It is slowly spinning, with a rotation period of about 18 hours. The asteroid's surface is darker than charcoal at optical wavelengths. Amateur astronomers who want to get a glimpse at YU55 will need a telescope with an aperture of 6 inches (15 centimeters) or larger.

The last time a space rock as big came as close to Earth was in 1976, although astronomers did not know about the flyby at the time. The next known approach of an asteroid this large will be in 2028. NASA detects, tracks and characterizes asteroids and comets passing close to Earth using both ground- and space-based telescopes. The Near-Earth Object Observations Program, commonly called "Spaceguard," discovers these objects, characterizes a subset of them, and plots their orbits to determine if any could be potentially hazardous to our planet. NASA's Jet Propulsion Laboratory manages the Near-Earth Object Program Office for NASA's Science Mission Directorate in Washington. JPL is a division of the California Institute of Technology in Pasadena.

Image: This radar image of asteroid 2005 YU55 was generated from data taken in April of 2010 by the Arecibo Radar Telescope in Puerto Rico. Image credit: NASA/Cornell/Arecibo.

The Gray Cubicle You Want to Work In

By Dr. Tony Phillips

It's another day at the office.

You're sitting in a gray cubicle, tap-tap-taping away on your keyboard, when suddenly your neighbor lets out a whoop of delight.

Over the top of the carpeted divider you see a star exploding on the computer screen. An unauthorized video game? No, this explosion is real. A massive star just went supernova in the Whirlpool Galaxy, and the first images from Hubble are popping up on your office-mate's screen. It's another day at the office ... *at NASA*.

Just down the hall, another office-mate is analyzing global temperature trends. On the floor below, a team of engineers gathers to decode signals from a spaceship that entered "safe mode" when it was hit by a solar flare. And three floors above, a financial analyst snaps her pencil-tip as she tries to figure out how to afford *just one more* sensor for a new robotic spacecraft.

These are just a few of the things going on every day at NASA headquarters in Washington DC and more than a dozen other NASA centers scattered around the country. The variety of NASA research and, moreover, the variety of NASA people required to carry it out often comes as a surprise. Consider the following: NASA's Science Mission Directorate (SMD) supports research in four main areas: Earth Science, Heliophysics, Astrophysics, and Planetary Science. Read that list one more time. It includes everything in the cosmos from the ground beneath our feet to the Sun in the sky to the most distant galaxies at the edge of the Universe. Walking among the cubicles in NASA's science offices, you are likely to meet people working on climate change, extraterrestrial life, Earth-threatening asteroids, black holes or a hundred other things guaranteed to give a curious-minded person goose bumps. Truly, no other government agency has a bigger job description.

And it's not just scientists doing the work. NASA needs engineers to design its observatories and build its spacecraft, mathematicians to analyze orbits and decipher signals, and financial wizards to manage the accounts and figure out how to pay for everything NASA dreamers want to do. Even writers and artists have a place in the NASA scheme of things. Someone has to explain it all to the general public.

Clearly, some cubicles are more interesting than others. For more information about the Science Mission Directorate, visit science.nasa.gov. And for another way to reach the Space Place, go to http://science.nasa.gov/kids.

Image caption: Some of the employees of NASA's Science Mission Directorate may work in gray cubicles, but their jobs are anything but dull. They get to study Earth, the Sun, the Solar System, and the Universe!

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Snake River Skies is the Newsletter of the Magic Valley Astronomical Society and is published electronically once a month.

Images on the front page: 1. Centennial Observatory 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. Chris Anderson also provides the Planispheres usually on page 3.
2. Shoshone Falls is a major attraction to the Magic Valley and a prominent landmark on the Snake River. Falls image is used under "public domain;" unknown photographer.
3. M-51 on the front page was imaged with the Shotwell Camera and the Herrett Telescope at the Centennial Observatory by club members Rick Widmer & Ken Thomason.

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 dues 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 home 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 and are even tax deductible. Please contact a board member for details.

About the Magic Valley Astronomical Society

The Magic Valley Astronomical Society (MVAS) 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.

In partnership with the Centennial Observatory, Herrett Center, College of Southern Idaho - Twin Falls; we hold regularly scheduled monthly meetings and observation sessions, at which we share information on current astronomical events, tools and techniques for observation, astrophotography, astronomical computer software, and other topics concerning general astronomy. Members enthusiastically share their telescopes and knowledge of the night sky with all who are interested. In addition to our monthly public star parties we hold members only star parties at various locations throughout the Magic Valley.

MVAS promotes the education of astronomy and the exploration of the night sky along with safe solar observing through our public outreach programs. We provide two types of outreach; public star parties and events open to anyone interested in astronomy, and outreach programs for individual groups and organizations (e.g. schools, churches, scout troops, company events, etc.), setting up at your location. All of our outreach programs are provided by MVAS volunteers at no cost. However, MVAS will gladly accept donations. Donations enable us to continue and improve our public outreach programs.

A moon just past full as seen from Earth's northern hemisphere. Credit NASA

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

Receive 10% discounts on other selected Astronomy Publications.

For periodical info. and subscriptions Contact Jim Tubbs, Treasurer

Lending Library: Contact, the current board for information.

Lending Telescopes: The society currently has two telescopes for loan and would gladly accept others. Contact Rick Widmer, Secretary for more information.

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