Snake River Skies

The Newsletter of the Magic Valley Astronomical Society

www.mvastro.org

Membership Meeting

Saturday, October 10th 2015
7:00pm at the
Herrett Center for Arts & Science
College of Southern Idaho.

Public Star Party Follows at the Centennial Observatory

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Magic Valley Astronomical Society is a member of the Astronomical League

M-51 imaged by
Rick Widmer &
Ken Thomason
Herrett Telescope
Shotwell Camera

President's Message

Colleagues,

The most recent lunar eclipse seemed perfectly timed. After all, this October's meeting (Oct. 10) will include the annual year-in-review slide show, and it looks like the show will be capped off with lunar eclipse pictures. If you have any pictures of the eclipse or anything else astronomical, please send them to me at mayerrbrt@gmail.com by Friday evening, Oct. 9.

Not only will we have the year in review in pictures, we will also hold annual officers' elections. We are in need of a vice-president this year, so if you know of someone interested in running, I would encourage you to gently encourage them to run. Of course, if you're interested in running, that's even better. MVAS By-laws suggest I need nominations by Oct. 1.

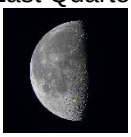
I wanted to also send out a big thank you to David & Pam Olsen, Jim Tubbs, and Jay Naegele, who all went down to Three Creek School to again show the wonders of the sky and help make a teacher's job a little easier.

At this time, we are also working on a star party at the Hagerman Fossil Beds National Monument, either for Oct. 9 or Oct. 16. We should have that set soon.

Clear Skies,
Rob Mayer

Calendars for October

Event Calendar

Sun	Mon	Tue	Wed	Thu	Fri	Sat
				1	2	3
4 Last Quarter 	5	6	7	8	9	10 MVAS General Mtg. at the Herrett Center Public Star Party follows at the Centennial Observatory
11 Moon is at Apogee 	12 Columbus Day Thanksgiving Day (Canada) 	13 New Moon Lunation 1148 	14	15	16	17
18	19	20	21	22	23	24
25	26 Moon is at Perigee 	27 Full Moon  Hunter's Moon	28	29	30	31 Halloween 

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

October Celestial Calendar and Trivia

10/2 The Moon is 0.5 degree north of the first-magnitude star Aldebaran (Alpha Tauri), with an occultation taking place in North America at 19:23h the previous evening.
10/3 Asteroid 15 Eunomia (magnitude +7.9) is at opposition.
10/6 The Curtiss Cross, an X-shaped illumination effect located between the craters Parry and Gambart, is predicted to occur at 21:59 local time.
10/8 Mercury is at the ascending node today; the peak of the Draconid meteor shower (10 to 30 per hour); Venus is 0.7 degree north of the Moon; Mercury is stationary.
10/9 Mars is 3 degrees north of the Moon.
10/10 Jupiter is 3 degrees north of the Moon.
10/11 Mercury is 0.9 degree north of the Moon; the Moon is at apogee, subtending 29'40" from a distance of 406,388 kilometers (252,518 miles), at 13:00
10/12 Mercury is at perihelion today; Uranus (magnitude +5.7) is at opposition at 4:00 UT
10/13 Mars is at its greatest heliocentric latitude north today; Asteroid 471 Papagena (magnitude +9.5) is at opposition.
10/16 Mercury is at greatest western elongation (18 degrees) at 3:00; Saturn is 3° south of the Moon.
10/17 Mars is 0.4 degree north of Jupiter.
10/18 A double Galilean shadow transit (Ganymede and Io) begins at 10:42 UT
10/20 The Lunar X, also known as the Purbach or Werner Cross, an X-shaped illumination effect involving various rims and ridges between the craters La Caille, Blanchinus, and Purbach, is predicted to occur at 3:24 UT
10/21 The peak of the Orionid meteor shower (15 per hour) occurs at 23:00 UT
10/22 Mercury is at its greatest heliocentric latitude north today
10/23 Neptune is 3 degrees south of the Moon.
10/25 Asteroid 29 Amphitrite (magnitude +8.7) is at opposition at 12:00; a double Galilean shadow transit (Ganymede and Io) begins at 12:36 UT
10/26 Venus is at the ascending node today; Venus is at greatest western elongation (46 degrees) at 7:00; Venus is 1.1 degrees south of Jupiter at 8:00; Uranus is 0.9 degree north of the Moon; the Moon is at perigee, subtending 33'03" from a distance of 358,464 kilometers (222,739 miles).
10/29 The Moon is 0.6 degree north of Aldebaran.

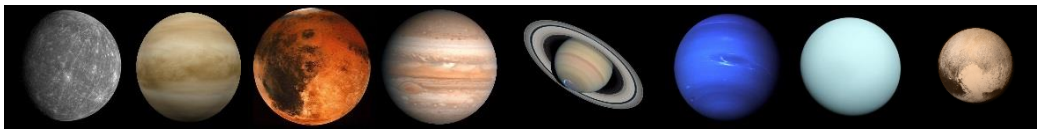
Ejnar Hertzsprung and Henry Norris Russell were born this month. The first recorded solar eclipse took place on October 22, 2136 B.C. Giovanni Cassini discovered Saturn's odd satellite Iapetus on October 25, 1671. Two of the satellites of Uranus, Ariel and Umbriel, were discovered by William Lassell on October 24, 1851. Lassell discovered Triton, Neptune's brightest satellite, on October 10, 1846. Edwin Hubble discovered Cepheid variable stars in M31 (the Andromeda Galaxy) on October 5, 1923.

The Draconid (formerly the Giacobinid) meteor shower peaks on the morning of October. The Draconids are quite variable and have produced meteor storms in 1933 and 1946. Comet 21P/Giacobini-Zimmer is the parent comet of the Draconids. Consult pages 48 and 49 of the October issue of Sky & Telescope or http://earthsky.org/...d-meteor-shower for additional information on the Draconid meteor shower. The Orionid meteor shower peaks on the night of October 21st. A waxing gibbous Moon will not adversely affect viewing the shower during the morning hours of October 22nd. Orionid meteors are fragments of Comet 1P/Halley. Browse http://www.timeandda...er/orionid.html or http://earthsky.org/...d-meteor-shower for more on the Orionids.

During the final two weeks of the month, the zodiacal light may be visible in the pre-dawn eastern sky from a dark site. Articles on the zodiacal light appear at http://www.atoptics....ighsky/zod1.htm and http://oneminuteastr...zodiacal-light/

Zodiacal Light

The Planets



Brightness, apparent size, illumination, distance from the Earth in astronomical units, and location data for the planets and Pluto on October 1st: Mercury (not applicable, 10.2", 0%, 0.66 a.u., Virgo), Venus (-4.7, 33.0", 35%, 0.51 a.u., Leo), Mars (magnitude +1.8, 3.9", 97%, 2.39 a.u., Leo), Jupiter (magnitude -1.7, 31.4", 100%, 6.27 a.u., Leo), Saturn (magnitude +0.6, 15.7", 100%, 10.56 a.u., Libra), Uranus (magnitude +5.7, 3.7", 100%, 18.99 a.u. on October 16th, Pisces), Neptune (magnitude +7.8, 2.3", 100%, 29.25 a.u. on October 16th, Aquarius), and Pluto (magnitude +14.2, 0.1", 100%, 33.11 a.u. on October 16th, Sagittarius).

During October evenings, Saturn is in the southwest, Uranus is in the east, and Neptune is in the southeast. At midnight, Uranus is located in the south and Neptune in the southwest. Mercury, Venus, Mars, and Jupiter can be found in the east and Uranus in the west in the morning sky.

For observers at latitude 40 degrees north at midmonth, Mercury is visible during morning twilight, Venus rises at 3:00 a.m. local time, Mars rises at 4:00 a.m. local time, Jupiter rises at 4:00 a.m. local time, and Saturn sets at 8:00 p.m. local time.

Venus, Mars, and Jupiter reside in the constellation of Leo this month. The three planets form a compact triangle on the morning of October 28th. Venus, Mars, and Jupiter will fit into a circle with a diameter of 3.5 degrees on that date. The three planets constitute a trio, fitting into a five degree circle, from October 22nd to October 29th.

Mercury is readily visible in the morning sky in mid-October. The speediest planet is at the ascending node and is stationary on October 8th, reaches perihelion on October 12th, is at greatest western elongation on October 16th, and is at its greatest heliocentric latitude north on October 22nd. On October 11th, Mercury is less than one degree north of a thin crescent Moon. An occultation takes place in southern South America and parts of Antarctica. Mercury's disk decreases from 10.2 to 5.2 arc seconds in apparent size but increases in illumination to 93% by end of the month.

Venus, Regulus, and a waning crescent Moon form a right triangle on the morning of October 8th. Venus is at the ascending node and is at greatest western elongation on October 26th. The brightest planet also passes within one degree of Jupiter on that date. Venus lies more than 25 degrees above the horizon at the onset of twilight on the morning of October 28th. During October, the apparent diameter of Venus drops from 33 to 23 arc seconds while it increases in phase from 34 to 53%.

Mars, Jupiter, and a waning crescent Moon form a triangle on the morning of October 9th. Mars is three degrees north of the Moon on that date. The Red Planet is at its greatest heliocentric latitude north on October 13th. Mars and Jupiter are in conjunction on the morning of October 17th. Mars (magnitude +1.7) and Jupiter (magnitude -1.8) are less than one half of a degree apart on that date.

Jupiter passes three degrees north of the waning crescent Moon on October 10th. Click on http://www.skyandtel...watching-tools/ to determine transit times of the central meridian by the Great Red Spot. Double Galilean shadow transits involving the shadows of Ganymede and Io take place on the mornings of October 18th and October 25th. Data on Galilean satellite events is available at http://www.skyandtel...watching-tools/ and on page 54 of the October issue of Sky & Telescope.

In early October, Saturn lies about 15 degrees above the horizon an hour after sunset. It is just five degrees in altitude by the end of the month. Saturn's disk spans 16 arc seconds and its rings 36 arc seconds as the month begins. The ring tilt angle is 25 degrees. Saturn is 3 degrees south of the Moon on October 13th. On October 24th, Saturn passes 0.7 degree due north of the second-magnitude binary star Beta Scorpii. For information on Saturn's major satellites, browse http://www.skyandtel...watching-tools/

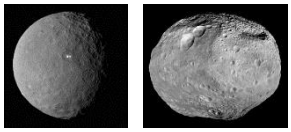
Uranus reaches opposition on October 12th. At that time, the seventh planet shines at magnitude 5.7, subtends 3.7 arc seconds, and is 2.6 light-hours (1.8 billion miles) from the Earth. It is occulted by the Moon from some parts of the world on October 26th. Uranus is located two degrees east-southeast of the fourth-magnitude star Epsilon Piscium on October 1st and travels about one degree westward by month's end.

On October 1st, Neptune lies less two degrees northeast of the fifth-magnitude star Sigma Aquarii and 0.9 degree due east of a seventh-magnitude star. As the month progresses, the planet heads west-southwestward and approaches even closer to that star.

The dwarf planet Pluto is located in northern Sagittarius but is quite low in the sky as darkness falls.

For more on the planets and how to locate them, see http://www.nakedeyeplanets.com/

Asteroids



Asteroid 4 Vesta dims from magnitude +6.2 to magnitude +6.8 as it travels southwestward through Cetus this month. It passes approximately two degrees south of Iota Ceti (magnitude +3.5) on October 21st. A finder chart appears on page 48 of the October issue of Sky & Telescope. The following asteroids brighter than magnitude +11.0 reach opposition this month: 74 Galatea (10/1, magnitude +10.6), 15 Eunomia (10/3, magnitude +7.9), 471 Papagena (10/13, magnitude +9.5), 356 Liguria (10/13, magnitude +10.8), 29 Amphitrite (10/25, magnitude +8.7), 14 Irene (10/29, magnitude +10.4), and 106 Dione (10/31, magnitude +10.8). The following asteroids will occult eighth-magnitude and ninth-magnitude stars from various parts of the United States this month: 675 Ludmilla on the morning of October 5th, 215 Oenone on the night of October 16-17th, and 415 Palatia on the evening of October 29th. Read more about these events on page 51 of the October issue of Sky & Telescope. For information on this year's bright asteroids and upcoming asteroid occultation events respectively, consult http://www.curtrenz.com/asteroids.html and http://asteroidoccultation.com/

Comets

Comet **PanSTARRS (C/2014 S2)** should show up nicely through a 4-inch telescope under a country sky. Glowing around 10th magnitude and with a predicted diameter of three arc-minutes, this visitor from the solar system's icy depths likely will appear similar in brightness and size to some of the fainter elliptical galaxies in the Messier catalog. As October begins, PanSTARRS appears 2.5° south of Polaris. The gap closes to only 0.5° a few days later, on October 5. Under a rural sky, a rich-field telescope will show the 8th-magnitude open star cluster NGC 188 just southwest of Polaris, in the same low-power field.

Short-period comet **22P/Kopff** was last seen in 2009, when it reached 10th-magnitude and developed a coma about 3' across. At this year's return, the comet will pass perihelion on October 25 and is expected to glow around magnitude +10.5.

For further information on comets visible in October, browse http://cometchasing.skyhound.com/

Meteors

One of the best meteor showers to occur each year, the **Orionids** begin on October 2 and last until November 7. This display may produce 10 to 20 shooting stars per hour, but numbers vary greatly from year to year and the shower is above quarter strength for just two or three days centered on October 21.

Carbon Star

Notable carbon star for October: RZ Pegasi Right Ascension: 22 05 52 Declination: +33 30 24

The Deep Sky

Among the stars of Pegasus, the Winged Horse, are some of the fall sky's best galaxy groups for backyard observers. Stephan's Quintet is probably the best-known example of such a compact gathering, comprised of four gravitationally interacting galaxies and a prominent foreground galaxy, projected onto the more distant group by chance. But have you ever heard of the "Deer Lick Group"? No?

Well, read on. A trail blaze on the path to Stephan's Quintet, **NGC 7331** also anchors its own galaxy grouping. It is accompanied by several faint companions, including the smaller spiral galaxies NGC 7335 and NGC 7337, which are probably ten times farther away than NGC 7331. In the 1980s, author Tom Lorenzin bestowed the common name on this galaxy group to honor the Deer Lick Gap, which lies in the mountains of North Carolina. Apparently, Tom had a memorable view of these galaxies from there.

NGC 7335 and NGC 7337 are often erroneously referred to as satellites, but they are not associated with NGC 7331. The two companions glow at around magnitude +14, way too faint for most amateur scopes. NGC 7331, however, can even be spotted with larger binoculars.

Located about 4.5° northwest of Eta Pegasi, near the border of Lacerta, NGC 7331 was discovered in 1784 by William Herschel, and was one of the brightest galaxies overlooked by Messier in his catalog. It appears nearly edge on, tilted at an inclination of 77°. Its structure is remarkably similar to our own Milky Way Galaxy, with a comparable overall mass, spiral structure, distribution of stars, and central supermassive black hole.

Shining with the combined light of a 9th-magnitude star, NGC 7331 appears as a small fuzzy patch when viewed through binoculars. With an 8-inch telescope, a bright core appears and the beginnings of wispy arms. At 12-inches in aperture, spiral patterns emerge, and with good seeing conditions you will observe "patchiness" in the structure. Nebulous areas are revealed and the western half of the galaxy is deeply outlined with a dark dust lane.

NGC 7331 in Pegasus

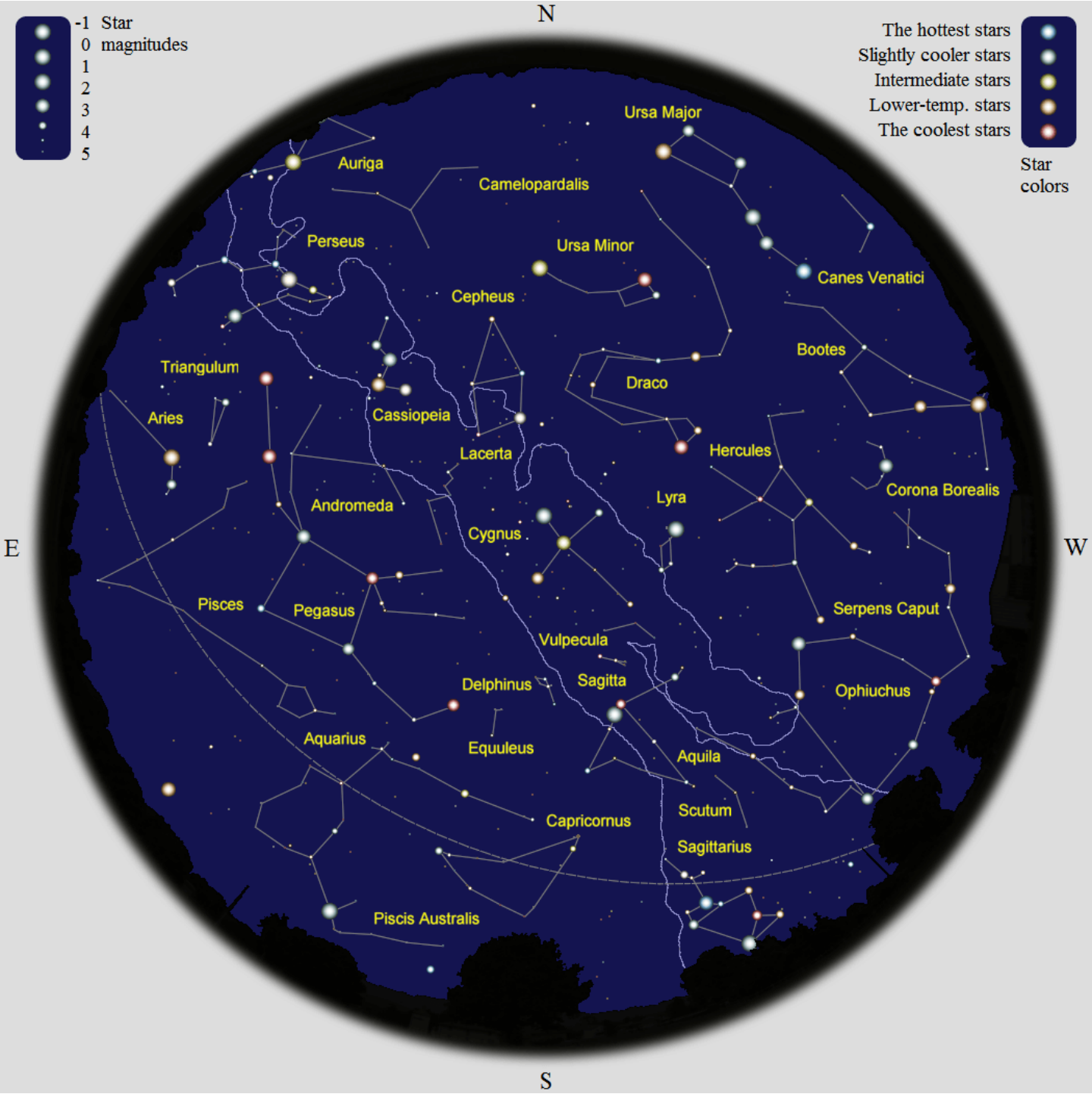
Top ten binocular deep-sky objects for October: M52, NGC 7209, NGC 7235, NGC 7243, NGC 7293, NGC 7510, NGC 7686, NGC 7789, NGC 7790, St12

Top ten deep-sky objects for October: K12, M52, NGC 7209, NGC 7293, NGC 7331, NGC 7332, NGC 7339, NGC 7640, NGC 7662, NGC 7789

Challenge deep-sky object for October: Jones 1 (PK104-29.1) (Pegasus)

The objects listed above are located between 22:00 and 24:00 hours of right ascension.

Planisphere for October



Be Safe – Get Out There – Explore Your Universe

Special Announcement

One of the last true dark skies in America...

On a clear, moonless night in Great Basin National Park, Baker, NV; thousands of stars, five of our solar system's eight planets, star clusters, meteors, man-made satellites, the Andromeda Galaxy, and the Milky Way can be seen with the naked eye. The area boasts some of the darkest night skies left in the United States. Low humidity and minimal light pollution, combined with high elevation, create a unique window to the universe. Join us in October for…

Observatories

Bruneau Dunes Observatory – Bruneau, ID

The Final Weekend the Observatory at Bruneau Dunes will be Open is October 16th and 17th.

Centennial Observatory at the Herrett Center
College of Southern Idaho – Twin Falls, ID
www.herrett.csi.edu

Event	Place	Date	Time	Admission
Monthly Free Star Party	Centennial Observatory	Saturday, October 10th, 2015	8:00 PM to 12:00 AM	FREE

About the Magic Valley Astronomical Society

Magic Valley Astronomical Society
P.O. Box 445
Kimberly, ID, USA 83341

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.

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

Donations to our club are always welcome and are even tax deductible. Please contact a board member for details.

Membership Benefits:
Lending Telescopes: The society currently has three telescopes for loan and would gladly accept others please contact President Robert Mayer, for more information on these and other benefits.

Telescopes are an individual thing and not practical for public use. However, everyone should have the experience of a good look at the moon for at least 5 minutes in their life time. It is a dimension and feeling that is unexplainable. Pictures or TV can't give this feeling, awareness, or experience of true dimension. A person will not forget seeing our closest neighbor, the moon. Norman Herrett in a letter to Dr. J. L. Taylor, president of the College of Southern Idaho, Twin Falls, ID, USA circa 1980.