RVAS August Meeting Report

A South American Eclipse – July 2, 2019

By Mike Hutkin, RVAS Secretary

President Michael Martin called the August meeting to order at 7:30 pm, presented the evening’s agenda, and welcomed the 28 members and 2 guests. Our guests were asked to introduce themselves and they included Kathryn McMurry and Doug Wright. As retirees relocated from Washington D.C. to Moneta, one of their key requirements was to find an area with dark skies and an astronomy club. We may not have dark skies, but we do offer a vibrant club. Welcome. Greg Hemmings was also recognized, not as a new member, but as someone we have missed seeing for a while. Welcome back Greg.

The next agenda item was our observing reports. John Goss kicked things off noting he had been working to refurbish and tune up a telescope that had been donated and which will soon be part of the library loaner program. Harry Kessler recounted his recent visit to Duck, N.C. and shared observations of Jupiter and Saturn with his 3rd grade aged granddaughter in the wee hours of the morning. She was amazed of course, but soon signaled she was exhausted and needed to go back to bed.

Next, Frank Baratta mentioned a viewing he hosted on July 27 which was attended by a large crowd of 24 interested viewers. It’s great to see such enthusiasm in this area for astronomy.

Finally, Michael Martin reported on his recent observation work. He has 2 Messier objects remaining to find in the Deep Sky objects list including the Pinwheel galaxy (M101) in the constellation Ursa Major and one other small galaxy to complete this project.

Michael then told us about his “UFO” sighting July 23. Our ever-vigilant president caught sight of a
The Roanoke Valley Astronomical Society is a membership organization of amateur astronomers dedicated to the pursuit of observational and photographic astronomical activities. Meetings are held at 7:30 p.m. on the third Monday of each month. See calendar on last page of newsletter for location. Meetings are open to the public.

Yearly dues are: Individual, $20.00; Senior Individual, $18.00; Family, $25.00; Senior Family, $22.00; Student, $10.00. Articles, quotes, etc. published in the newsletter do not necessarily reflect the views of the RVAS or its editor.

Officers/Executive Committee/Editor/Webmaster
Michael Martin, President (president@rvasclub.org)
Todd Atkins, Vice President (vicepresident@rvasclub.org)
Mike Hutkin, Secretary (secretary@rvasclub.org)
Larry Hill, Treasurer (treasurer@rvasclub.org)
Ray Bradley, Member at Large (memberatlarge@rvasclub.org)
Dan Chrisman, Immediate Past President (immediatepastpresident@rvasclub.org)
Michael Good, Past President (pastpresident@rvasclub.org)
David E. Thomas, RVAS Newsletter Editor (editor@rvasclub.org)
David E. Thomas, Webmaster (webmaster@rvasclub.org)
RVAS web page: http://rvasclub.org

John Goss discusses observing “the Coat Hanger”, his deep-sky object for August.

Photo by Frank Baratta

The “Coat Hanger” - internet photo

John Goss was then introduced and challenged the group to find his deep-sky object for this month - “the Coat Hanger”. Also known as Brocchi’s cluster, this is a pattern of stars that is not a constellation and is a perfect observing opportunity for beginning astronomers or those using binoculars. Look for John’s instructions for locating this deep sky object within this newsletter.

The next agenda item was the RVAS Outreach program update presented by Ray Bradley. The two items currently on the agenda are an Apollo 11 50th anniversary presentation on 28 September at Thrasher Memorial Church, Vinton, for the Big Lick Stamp Club’s annual show. The second is tentatively set for November 11 at the Natural Bridge state park to observe Mercury’s transit of the sun—the...
first time since 2016. Fingers crossed for firm schedule and clear skies.

Michael next called on Frank Baratta to present our What’s Up sky summary for the coming month. Returning after a month’s meeting hiatus, Frank was ready to oblige. Beginning with some general information for September, Frank noted that Jupiter and Saturn will continue to grace our evening skies. Meanwhile, early risers will get a chance to observe the “false dawn” of the zodiacal light from dark-sky sites. And, of course, it’s the month when we usher in the fall season.

Regarding planning for stargazing, sunsets and ends of twilight will get progressively earlier. By the end of the month full darkness will arrive at 8:31 p.m. Friday and Saturday observing opportunities will come on the 20th/21st and 27th/28th, well aligned with the moon’s last quarter and new phases, respectively.

Frank concluded our What’s Up program with a sampling of the month’s celestial events and a look at the all-sky map for a mid-September evening, including how to find the variable star Algol, in Perseus. For additional details, see the What’s Up Highlights elsewhere in this issue. The complete PowerPoint is available for viewing at our website, rvasclub.org, under “Tips and Topics.”

President Martin then introduced our guest speakers, Dan and Carolyn Chrisman, who gave a wonderful presentation highlighting their trip to Chile for the July 2, 2019, total solar eclipse. Since Chile is not just around the corner, Dan began by explaining how this trip came to be. It started in 2017 at the ALCON conference in Casper Wyoming with a featured presentation by Fred Espenak, Emeritus NASA Astrophysicist who had observed 27 eclipses starting with his first in 1970. Inspired by Mr. Espenak and after observing their first solar eclipse the following Monday, they were hooked and committed to the journey to Chile. Dan continued with additional background information regarding their preparations such as textbook reading on eclipses, noting the various paths this eclipse would take in terms of totality, and accepting the fact that their collective high school French classes would not help them in Spanish speaking Chile. Dan also helped visualize the type of geography to which they were traveling by refreshing our memories about the Chilean mining disaster that occurred in 2010 lasting 69 days and ending in a successful and miraculous rescue of all 33 miners. NASA scientists participating in the rescue reminded the world about the magnificent beauty of the desert sky in the area Dan and Carolyn would find themselves. A photograph from the Internet showed a landscape that closely resembled what we have come to regard as Martian, with its desolate beauty.

The journey began and our presenters recounted the steps of the journey and the various trials and tribulations that accompany such a trip. Through pictures, Carolyn provided insight into the history, art, culture, geysers, flora and fauna, and way of life in cities encountered along the way including Santiago and Vicuña before arriving at their destination of Mamalluca Observatory in the Elqui Valley in central Chile, about a 20 minute drive north of Vicuña.

An interesting item Dan shared was his first encounter with the group of people that made up
their tour group when he discovered that the majority of people assembled were not your average amateur astronomer.

Rather, they were hard core “eclipse chasers” that were similar to Grateful Dead “Deadheads” or tornado chasers that look for every opportunity to be at the center of the event and choose their travel destinations accordingly.

Eclipse day began with Carolyn and Dan performing some outreach and getting to know the Chileans while tour group members were setting up their equipment.

The impressive gear ranged from binoculars to massive amounts of solar viewing, tracking, spectroscopy, filtering, and photography equipment. In his presentation, Dan shared photographs of several group members and their equipment as well as spectacular photographs they collectively produced showing the various stages of the eclipse. This included photographs showing the classic “diamond ring”, solar prominences, Baily’s Beads, and Shadow bands. The pictures Dan shared were spectacular, and what they observed and

This composite image emphasizes the chromosphere/prominences and the inner corona for the 2019 eclipse. The composite was created from one image taken near 2nd contact, and one taken near 3rd contact to maximize the view of the chromosphere near the edge of the sun.

Photo by Dave Kodama (included with his approval)
(Meeting Continued from page 4)

A photo of the Eclipse tour group

Photo by Gary Spears of Spears Travel (included with his approval)

Welcome Mat

The Society bids a warm and cordial welcome (back!) to Brian Bone and family, of Roanoke County, who rejoined with a Family membership as of July. Brian and his wife, Natalie, have two daughters, Milena and Sophia, and a son, Noah, and had previously been members from May 2013 to June 2016. Back in 2013 they had moved here from Albuquerque, New Mexico; in 2016, they moved back there, and now they've returned. Brian notes that he loves Roanoke and always wanted to return. His field is federal credit union management; Natalie's in guest services with Carilion Clinic. Brian's interest in astronomy dates back to a grade school star party, when a science teacher provided his first view of Saturn in a telescope. Now, decades later, he enjoys occasional outings with the family to the Blue Ridge Parkway for naked-eye and binocular stargazing. Brian's also been a Boy Scout leader for over a decade. Last December he took 20 scouts to the National Radio Astronomy Observatory, at Green Bank, West Virginia, where they were treated to some memorable hands-on experiences. Unfortunately, his scout troop meetings are the same night as ours, but he's looking forward to keeping up with the RVAS through the newsletter and getting involved in as many ways as possible.

Brian, we're glad to have you, Natalie, Milena, Sophia and Noah as RVAS members again! Thanks for rejoining. We hope to see you and the family at observing and other club activities. Be sure to mark your calendar for our upcoming annual picnic and star party, scheduled for October 12th!

Use Our Message Line!

Want to check whether anyone is getting out on a scheduled observing session night or share that you're planning to do so? Have questions about the club or need its assistance? Call the RVAS Message Line, 540-774-5651, and leave a message or listen for any information available.
Fellow Virginia amateur astronomers

The Northern Virginia Astronomy Club (NOVAC) is hosting this year’s Virginia Association of Astronomical Societies (VAAS) meeting in the northern Virginia region on Saturday, October 5. We have planned events specific for both club members from around the state, and for public outreach.

Of course, there will be no cost to attend other than your lunch and dinner, nominal parking at Udvar-Hazy, and the county’s nominal admission to the park. NOVAC provides snacks and drinks in the afternoon and evening at StarGaze.

The overall agenda follows, subject to adjustment based on final arrangements and expressions of interest:

9:00-12:00  VAAS business meeting at Centreville Regional Library (near VA 28 and I-66)
            workshops for club members on what works. Suggestions include:
            Public outreach -- starting with help to youth & school groups
            Large amateur star parties -- starting with NOVAC’s Almost Heaven Star Party
            Special Interest Groups (SIGs) -- starting with NOVAC’s astrophotography SIG
            Media & communications
            Telescope lending and handling donations

12:00-3:00  Lunch and tour of Smithsonian Air & Space Udvar-Hazy Center -- astronomy centered

3:00-late  NOVAC StarGaze at C. M. Crockett Park, south of Warrenton, [URL of flyer here]
            Invited speakers in the tent
            recent exo-planet discoveries
            introduction to the gas giant planets
            smartphone nighttime photography
            Observing after dusk https://moon.nasa.gov/observe-the-moon/annual-event/overview/

Additional details will be sent to all clubs and registrants as they are finalized.

An additional feature this year is that NOVAC is culling its extensive library of books and media. We will offer books to other VAAS clubs in the morning. We’ll distribute a list of available books so you can indicate preferences, but all books must be picked up in the morning.

In order to make plans for the pre-StarGaze activities, we are requesting registration of your members who will attend. Registration is on the VAAS web page https://www.novac.com/wp/vaas/

Thanks for your participation, looking forward to seeing many of you in early October.

For NOVAC,
Chris Kagy, President
President@novac.com
Object of the Month

The Coathanger, Brocchi's Cluster, Collinder 399, 4 Vulpeculae

1. Find the Summer Triangle. Vega and Deneb will be nearly overhead in the early evening in late August.
2. Aim binoculars 40% of the way between Altair and Vega. 4 Vulpeculae will be just visible to the unaided eye as viewed from a dark location.
3. Strictly a binocular object.
4. NGC 6802: An open cluster for telescopes.
### Table 1

#### Astronomical League Awards, Youth and Adult Recognition

<table>
<thead>
<tr>
<th>Award</th>
<th>Comments</th>
<th>Eligibility</th>
<th>Administrator</th>
<th>Prizes</th>
<th>Submission Deadline (may vary year to year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>National Young Astronomer</td>
<td>Sponsored by Explore Scientific. Thank you, Explore Scientific! Limited to students 14-19 years of age who are enrolled in a US secondary school but not enrolled in college.</td>
<td>1st place: AL VP Explore Scientific telescope, expense paid trip to ALCom, plaque.</td>
<td>1st place: AL VP</td>
<td>Explorer Scientific telescope, expense paid trip to ALCom, plaque.</td>
<td>January 31</td>
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<td></td>
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<td>2nd place: AL VP Expense paid trip to ALCom, plaque.</td>
<td>2nd place: AL VP</td>
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<td>January 31</td>
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<td>Horshheimer Suite (sponsored by Horshheimer Charitable Fund)</td>
<td>The late Jule Horshheimer wanted to recognize his mentor and his friend, Art Smith. So, he named one Youth Service Award “the Horshheimer Smith Award” and another, but slightly lesser award, “the Horshheimer/D’Auria Award.” In reality, they are first and second place Youth Service Awards, respectively.</td>
<td>Under the age of 19 and must be a member of the Astronomical League. (1st place) AL VP</td>
<td>1st place: AL VP</td>
<td>Trip to ALCom, $1750, plaque</td>
<td>March 31</td>
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<td>(2nd place) AL VP $1000, plaque.</td>
<td>2nd place: AL VP</td>
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<td>March 31</td>
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<td>D’Auria Service</td>
<td>D’Auria Service</td>
<td>Under the age of 19, and must be a member of the Astronomical League. 1st place: AL VP $1000, plaque.</td>
<td>1st place: AL VP</td>
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<td>March 31</td>
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<td>2nd place: AL VP $500.00.</td>
<td>2nd place: AL VP</td>
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<td>3rd place: AL VP $250.00.</td>
<td>3rd place: AL VP</td>
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<td>Journalism</td>
<td>Ages 8-14 and write a 500 word science essay.</td>
<td>1st place: AL VP $1000, plaque.</td>
<td>1st place: AL VP</td>
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<td>March 31</td>
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<td>2nd place: AL VP $500.00.</td>
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<td>3rd place: AL VP $250.00.</td>
<td>3rd place: AL VP</td>
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<tr>
<td>Mabel Sterne NL Editor</td>
<td>Established to recognize newsletter editors who do exceptional work.</td>
<td>Must be a member of the Astronomical League. 1st place: AL VP Plaque.</td>
<td>1st place: AL VP</td>
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<td>March 31</td>
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<td>2nd place: AL VP Certificate</td>
<td>2nd place: AL VP</td>
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<td>3rd place: AL VP Certificate</td>
<td>3rd place: AL VP</td>
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<tr>
<td>Webmaster</td>
<td>Established to recognize club webmasters who do outstanding jobs of website design and administration.</td>
<td>Must be a member of the Astronomical League. 1st place: AL VP Plaque.</td>
<td>1st place: AL VP</td>
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<td>March 31</td>
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<td>2nd place: AL VP Certificate</td>
<td>2nd place: AL VP</td>
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<td>3rd place: AL VP Certificate</td>
<td>3rd place: AL VP</td>
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<td>Putter</td>
<td>Sponsored by Explore Scientific. Thank you, Explore Scientific! Established to honor an amateur astronomer who has contributed observations of lasting significance.</td>
<td>1st place: Putter Committee Chair Very elaborate Plaque.</td>
<td>1st place: Putter Committee Chair</td>
<td>Very elaborate Plaque</td>
<td>June 1</td>
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<td>Astronomies Sketching contests (sponsored by Astronomies)</td>
<td>Sponsored by Astronomies. Thank you, Astronomical! Must be a member of the Astronomical League.</td>
<td>1st place: AL VP $250, Plaque.</td>
<td>1st place: AL VP</td>
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<td>March 31</td>
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<td>2nd place: AL VP $125, certificate.</td>
<td>2nd place: AL VP</td>
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<td>3rd place: AL VP $75, certificate.</td>
<td>3rd place: AL VP</td>
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<td>Astronomy Day</td>
<td>Sponsored by the American Astronomical Society and Sky &amp; Telescope. Thank you, AAS and SST! Any astronomy club or organization. Not for individuals. Best, Large Metro Area Astronomy Day Chair $150.00. June 15</td>
<td>Best, Large Metro Area Astronomy Day Chair $150.00. June 15</td>
<td>Best, Large Metro Area Astronomy Day Chair $150.00. June 15</td>
<td>A 4.5 inch Dobsonian telescope with a zoom eyepiece</td>
<td>June 15</td>
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<td>Best, Medium Metro Area Astronomy Day Chair $150.00. June 15</td>
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<td>Best, Small Metro Area Astronomy Day Chair $150.00. June 15</td>
<td>Best, Small Metro Area Astronomy Day Chair $150.00. June 15</td>
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<td>Best New Idea Astronomy Day Chair $150.00. June 15</td>
<td>Best New Idea Astronomy Day Chair $150.00. June 15</td>
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<td>Horshheimer Library Telescope</td>
<td>Sponsored by the Horshheimer Charitable Fund. One winner drawn from submissions from each of the ten domestic regions and MALs. For clubs that are members of the Astronomical League and for MALs. Up to a total of $1 telescopic eyepieces awarded. Announced at ALCom.</td>
<td>AL VP A 4.5 inch Dobsonian telescope with a zoom eyepiece.</td>
<td>AL VP</td>
<td>A 4.5 inch Dobsonian telescope with a zoom eyepiece</td>
<td>Three weeks before ALCom.</td>
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What's Up Highlights
September 1-30, 2019

(A summary of the What's Up program presented at the August 19th meeting.)

This Month:
This month our planet reaches an equinox, one of four points in its solar orbit of particular interest. Marking the start of fall for the Northern Hemisphere, and spring for the Southern, the Sun shines directly on Earth’s equator. Consequently, both hemispheres briefly experience equal portions of day and night. Hence the term “equinox”. We don’t often think about it, but this alignment of sunlight and equator is a result of our planet being a titled gyroscope: over a year’s time earth’s rotational axis remains relatively well aimed at a certain point in the sky. In about three months this tilted aim will have the direct sunlight falling on a latitude of 23.4° south of the equator, and the Northern Hemisphere will enter winter, as the Southern enters summer. Take a moment and visualize the rest of a year’s cycle of our Gyroscopic Earth!

September Celestial Events:
- Sun., 1st - The Equation of Time is 0; sundials and clocks temporarily agree and then begin to diverge.
- Sun., 8th - Moon at descending node (ecliptic longitude 280°).
- Mon., 9th - Neptune is at “opposition”; rises at sunset, sets at sunrise. Also today, Algol at minimum for 2 hours centered on 10:54 p.m. EDT.
- Fri., 13th - Moon at apogee; 63.71 Earth-radii from Earth.
- Mon., 23rd - Autumnal (fall) equinox, 3:50 a.m. EDT. Also today, Moon at ascending node (ecliptic longitude 108°).
- Thurs., 26th - Zodiacal Light visible for 2 two weeks in the east beginning two hours before the onset of morning twilight (i.e. ~ 3:30 a.m. Yikes!).
- Fri., 27th - Moon at perigee; 56.10 Earth-radii from Earth. (11.9% closer than on the 13th.)

Sunset and Twilight:
Sunset Range: 7:49 p.m. (Sept. 1st) to 7:05 p.m. (Sept. 30th)
Twilight Ends: 9:20 p.m. (Sept. 1st) to 8:31 p.m. (Sept. 30th)

Moon Phases:
- Thurs., 5th - First Quarter
- Sat., 14th - Full Moon
- Sat., 21st - Last Quarter
- Sat., 28th - New Moon

Weekend Observing Opportunities:
- Sept. 20th/21st
- Sept. 27th/28th
Too much good stuff to fit on one page!

Newsletter Articles from September 1994

"Mixer Ushers in Observing Season!!"

The opening article basically defamed the weather from mid-spring through Summer of 1994 as being “the absolute pits”. This observational astronomy weather related funk was about to be resolved with the advent of Fall, “the most favored season of the year here-abouts”. And what better way to celebrate what was to come than the annual fingers-crossed, “Fall Mixer”, munchies and beverages to be provided. Maybe someone who was around in 1994 remembers that fine Fall 1994 observing, hmm?

"RVAS Scraps Statewide Convention Plans"

Following in the footsteps of the Northern Virginia Astronomy Club, who backed out of hosting the 1993 VAAS convention, RVAS faced the same circumstance in 1994 due primarily to a general lack of interest. Despite notices being sent to nearly three dozen Virginia and North Carolina clubs asking for a count of estimated attendees, only three clubs responded at all, and those with virtually no members being interested in attending. Faced with a potentially significant negative financial impact, the RVAS Executive Committee had no choice but to cancel the event.

"One Giant Leap Opening Soon"

On July 20, 1969 millions of people from around the world were glued to their TV’s or radios to witness humans standing on another world for the first time. Twenty-five years later, October 1, 1994, “One Giant Leap, Our Journey to The Moon” was to open at the Science Museum of Western Virginia. The exhibit featured programs, displays and interactive elements including an astronaut speaker, space art, an art contest, Michael Collin’s spacesuit and a flag that “flew” on the Moon.

"Members Convoy to Carter’s Farm Session"

On August 6, 1994, an unusually large gathering of infrequent participants at our regular observing session undoubtedly caused quite a stir at the Carter's Farm site. With members from as far away as Lynchburg and Covington having asked for directions to the site, it was decided to rendezvous at a nearby convenience store. As the “convoy” of cars reached the gate to the farm, the local watchdogs let everyone in the area know something was up. As it turned out not much was up due to the “in and out” cloud cover (really……just so-so observing due to the weather?).

(Past Continued on page 11)
Get Connected!

Want to be more in touch with other RVAS members? Join the RVAS Yahoo Group! Share last-minute observing plans, articles, ideas, astrophotos—you name it. You’ll need to have or create a Yahoo email address. Click the link below. Once logged in, provide the information requested, including your real name since the group is only for members and those invited. You’ll receive an acknowledgement from the moderator. https://groups.yahoo.com/neo/groups/RVAS_Club/info
For assistance, call the RVAS Message Line (540-774-5651). We’ll have you connected in no time!

RVAS 10 Years Ago

(Faced with the daunting task of trying to figure out how to summarize a 20-page newsletter, I decided to just do it and let the Newsletter Editor figure out how to fit the article in to the September 2019 Newsletter…so, here goes….)

“RVAS Treated to an Insider’s View of the Large Synoptic Survey Telescope”

The guest speaker at the August 2009 Society meeting was Matt Cleveland, a 2005 graduate of Roanoke College and in 2009 working with the University of Arizona and hundreds of specialists in IT with dozens of other universities and organizations helped to develop programs to data manage the 30 Terabytes of data to be generated every night by the Large Synoptic Survey Telescope (LSST), under construction in Chile. Once operational the LSST will potentially be able to quantify and discover the nature and properties of dark energy, plot potential convergences of NEOs and KBOs, and “see” ten billion years back in time.

“Mystery Moon Light Flashes”

In this article, Dave Thomas writes of what are now known as “Transient Lunar Phenomena” or “TLP”, brief flashes of light on the Moon’s surface. The flashes are purportedly caused by changes in the Reflective qualities of the lunar surface, outgassing from the Moon’s interior, or small meteorite impacts. Another mystery to ponder or investigate.

“Jazz Under the Stars Becomes Jazz under the Clouds”

A joint community activity at the Gainsboro Library with RVAS providing the opportunity to demonstrate what we observe and the equipment with which we observe turned out not to happen due to cloud cover (getting to be an old story). Is a view of the flashing beacon over Towers Mall and the church steeple at St. Andrews as good as viewing Jupiter through an 8” SCT?

Great articles on “Asterisms, a Prequel” by Jack Gross, “Imaging the Trifid Nebula, M20” by Michael Good, “Summer Nights at Cahas” by John Goss (apparently the one night in August with clear skies), and seven clearly written, well documented and charted pages on “Autumn Sky Constellations” by Jiri Kolejka rounded out a newsletter chock full of Astronomy goodies.

Dreaming of cool Fall nights with clear skies…………………………………………mmmmm!
Welcome Mat

The Society bids a warm and cordial welcome to Nathan, Kimberly and Micah Mason, of Roanoke County, who joined with a Family membership as of July. Nathan's from Salem, while Kimberly hails from the D.C. area. The Masons met at Roanoke College when she was a student and he was an electrician employed there. Nathan’s now a Project Manager with Cline Electric, in Salem, and Kimberly’s a chemist with Integer, a medical device manufacturer, also in Salem. The Masons’ son, Micah, is soon turning 10. They all learned about the RVAS from some of our members who were participating in a career day at his school. Nathan recalls that his own interest in astronomy began when he was a child. He especially remembers selling so much candy for a team he was on that he got to choose his first telescope, a Tasco, from a rewards catalog. Nowadays, he continues to enjoy reading whatever he can about astronomy and bought a Celestron Omni XLT 120 refractor about 3 years ago. In fact, he’s hoping that he can get some pointers from his fellow club members on how to get the most from his scope. Nathan has also used his 80-power spotting scope for viewing night sky objects with the family. An avid sportsman, he enjoys hunting and fishing and has been a competitive marksman. Kimberly enjoys reading and crocheting. Nathan is looking forward to meeting others interested in astronomy, and both he and Kimberly note that Micah is excited about having become a member of the RVAS.

Nathan, Kimberly and Micah, we’re glad to have all of you as members of the RVAS! Thanks for joining. We’re sure you’ll find us a friendly and welcoming group, eager to share our experiences with you and gain from your own. We hope you’ll soon become regulars at our activities!

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2019 RVAS Picnic and Star Party!!!

Saturday, October 12, 2019, 3:00 p.m. to 9:00PM
Apple Ridge Farm, Copper Hill, Virginia

It's time to sign up for an afternoon and evening of food, friends and fun! Our annual Picnic and Star Party for RVAS members and their families is just weeks away, and will be held at Apple Ridge Farm, Copper Hill, Virginia. We’re looking forward to a great turnout. The RVAS is providing the burgers, hot dogs and buns, condiments, soft drinks and bottled water, tableware and charcoal for grilling. Each member/family attending is asked to bring a side dish, salad or dessert (and any serving utensils needed). And we’ll have prize drawings!

Sign up at the September 16th monthly meeting. You can also email picnic@rvasclub.org or call the RVAS Message Line, 540-774-5651, to leave your name and how many adults, teens and children, including yourself, will be attending. More info to come via email.

Special Note: If you have a book, piece of equipment or other item in good condition you’d consider donating for a door prize, email the address or phone number above. Thanks!
SARA at the Green Bank Observatory

By Dave Thomas

I attended the 2019 conference of the Society of Amateur Radio Astronomers at the Green Bank Observatory, in Green Bank, West Virginia, from August 4 to August 7, 2019. This was the eighth SARA conference I have attended in the past 11 years.

The conference included several lectures and hands on programs about various aspects of radio astronomy. The programs covered subjects ranging from the operation of the 40 foot radio telescope to navigating the galaxy using pulsars.

The following photos show highlights from the conference this year, including the tour of the Green Bank Telescope:
Wanted

Astro photos for publication on the RVAS web page, or in the RVAS Newsletter. Send the photos to editor@rvasclub.org. Observing reports and articles are also welcome.
MONTHLY MEETING: Monday, September 16th, 7:30 p.m., Classroom B, 3rd floor, Center on Church, Downtown Roanoke. If you’ve been around the RVAS awhile you know that Past President Michael Good is one of our most experienced and dedicated astrophotographers. At our September meeting Michael will explore optical systems used by amateur astronomers, including eyepieces and filters. He’ll also discuss enhancements he’s made to his telescopes to improve their performance. With his typical self-deprecating humor, Michael quips that once he has anesthetized everyone, he’ll attempt to revive us with some show and tell from his backyard Poages Mill Observatory. Join us on September 16th for Michael’s program and our usual array of observing updates, short programs and other activities.

RVAS WEEKEND OBSERVING OPPORTUNITIES: RVAS members observe from various sites, with Cahas Knob Overlook, at milepost 139 on the Blue Ridge Parkway, being our traditional location. For updates on members’ observing plans, log onto the RVAS Yahoo Group (RVAS members only) and/or call the RVAS Message Line, 540-774-5651, about an hour before sunset on the indicated dates.

-- Friday and Saturday, September 20th and 21st. Sunset is at 7:20 p.m. Astronomical twilight ends at 8:47 p.m. The Moon rises at 11:16 p.m. and 12:03 a.m., respectively.

-- Friday and Saturday, September 27th and 28th. Sunset is at 7:09 p.m. Astronomical twilight ends at 8:36 p.m. The Moon sets at 6:56 and 7:32 p.m., respectively.

-- Future Weekend Observing Opportunities: October 18th and 19th; 25th and 26th.

RVAS ANNUAL PICNIC and PARTY!!! Saturday, October 12th, 3:00 p.m., Apple Ridge Farm, Copper Hill, VA. For RVAS members and their families. See elsewhere in this issue for details.

ROANOKE CITY PARKS and RECREATION PUBLIC STARGAZE: Saturday, September 25th, 8:00 p.m., Cahas Knob Overlook, milepost 139, Blue Ridge Parkway. Nonmembers must register with Parks & Rec. at 540-853-2236. Members can call 540-774-5651 for information. (Next session: October 26th, 7:15 p.m., Cahas Knob Overlook.)

Astro-Quiz

An “occultation” occurs when one object is hidden by another that passes between it and the observer. Discoveries yielded by occultations can be dramatic, as in the 1977 case of one of our solar system’s planets. What was this discovery?

Answer to Last Month’s Quiz: Last month we focused on a definition of a “Blue Moon” that states it is the third full moon in a season (astronomical winter, spring, summer and fall) having four full moons. We asked what, by this definition, are the months during which a Blue Moon can occur? Usually a season only has three full moons, but the lunar cycle can blend with a season such that we experience four full moons. Since the seasons begin and end partially into a calendar month, this type of Blue Moon must occur in the last full month of that season. So, Blue Moons under this definition can only occur in February, May, August or November, the last full months of the seasons. Have an answer to this month’s quiz (or a future question and answer to suggest)? E-mail it to astroquiz@rvasclub.org!

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