President Michael Martin called the June meeting to order at 7:30pm and kicked off the Summer Solstice Social by inviting everyone to indulge in some ice cream and to socialize with the members and guests in attendance. There were many varieties of ice cream to suit every taste and a seemingly endless supply of topping choices at the buffet table. What a spread and what better way to learn a bit about fellow RVAS members.

Once everyone had their fill, President Martin welcomed the 26 members and 6 guests asking our guests to introduce themselves. This included Thania Torres, David Garcia, Bryan Skinnell, Phil Flora, Karen Shelton, and Tom Wise, who joined RVAS at the meeting. What better way to welcome guests to our club than by having an ice cream party. We hope to see them in the future.

The next agenda item was our observing reports and Dan Chrisman began by telling the group about the night of June 1st, when he, Frank Baratta, and Mark Hodges were at Cahas Overlook on the Blue Ridge Parkway. Dan used binoculars for some basic viewing and then his telescope to observe about six items in the Herschel catalog of Deep Sky objects. Frank noted that there were about 14 people at the overlook that night: 6 with his public observing session, including new member Jeni Benos, plus 3 others not associated with our club or the public group, 2 of whom were doing astrophotography.

(Meeting Continued on page 2)
Next, Keith Wimmer mentioned his observation of Saturn, Jupiter, and the Galilean moons of Jupiter (Io, Europa, Ganymede, and Callisto). Michael Malpass also did some observing that included Jupiter and its 4 largest moons. Michael Martin closed this section out by showing his efforts on the Messier objects, noting that he had only 7 left to finish. He has acquired some new equipment in the form of an iOptron SkyGuider Pro EQ Camera Mount and used this opportunity to talk a bit about the basics of leveling, aligning, locating, and tracking. He showed the results with pictures of Messier objects M81 and M82 as well as the Great Globular Cluster in Hercules which is designated M13.

Next, President Martin addressed the election of officers for the coming year by reviewing the process that had been conducted resulting in a proposed slate of officers and its communication to the membership. The slate was presented, seconded for approval, and unanimously accepted by the membership. Your leadership will be Michael Martin, President; Todd Atkins, Vice President; Larry Hill, Treasurer; Mike Hutkin, Secretary; and Ray Bradley, Executive Committee Member-at-Large.

The next agenda item was the RVAS Outreach program update presented by Ray Bradley, Member-at-Large. He began by presenting a proposal for the creation of an outreach “team” to address the increasing requests for community wide programs. His idea, which was endorsed by the RVAS executive committee, was to create a team of 10 - 12 people who were willing to get involved in outreach so that the staffing of the individual events could be spread over a wider base of people. Those on the team would be taught the use of the club’s games and observing equipment so they would feel comfortable in providing instruction and support to
attendees at the scheduled events. Anyone of any skill level is encouraged to consider becoming part of this important team and to contact Ray to show your interest. An email will be sent to the membership regarding the program and to facilitate signup.

Ray then reported on upcoming activities which include several Apollo 11 50th Anniversary Presentations with observing afterwards, weather permitting on June 18 (8-10pm) at Glenvar Public Library, on June 24 (8-10pm) at South County library, on July 6 (7-10pm) at Smith Mountain Lake park, on July 11 (6:30-8:30pm) at Salem Public Library, on July 16 (8-10pm) at Hollins Public Library, and on July 24 - (7:30-9:30pm) at Vinton Public Library, and 28 September (1pm?) at Thrasher Memorial Church, Vinton.

Other outreach opportunities include June 19 (7:30-9:30) - Intro to Amateur Astronomy Presentation with observing afterwards, weather permitting at Vinton Public Library; July 20 (10am-3pm) - Apollo Day activities at Science Museum of Western Virginia and August 12 (Time TBD) - Perseid Meteor Shower and lunar observing at Natural Bridge State Park. Please do what you can to support the outreach program.

Since the Apollo 11 anniversary is fast approaching and will be a frequent outreach topic, Ray closed by mentioning the 50th anniversary mint coins that are available at www.usmint.co.

For the evening’s last activity, Michael asked Frank Baratta for his What’s Up program for July. Frank began, instead, with a brief side excursion: a video on the history of how February wound up with only 28 days, which was the subject of the June news-

RVAS NL—July 2019—Pg 3 of 10
letter’s Astro-Quiz. In just over 4 humorous minutes, the PBS Digital Studios video placed the origins in Ancient Rome, its superstitions and even its political intrigues. To view the video, go to https://www.pbs.org/video/its-okay-be-smart-why-does-february-have-28-days.

Returning to the topic of July, Frank noted that now having past the solstice our sunsets and ends of twilight were getting earlier. Among the month’s celestial happenings, Earth reaches aphelion, the farthest point from the Sun in its solar orbit. Meanwhile, both Jupiter and Saturn will grace our night skies throughout July. And, of course, we’ll be celebrating the 50th anniversary of Apollo 11, humanity’s first steps on another world. Observing wise, the dark-of-the-moon phases are pushing upcoming weekend opportunities to the end of July and the beginning of August.

Frank concluded with another short video, the upcoming week’s StarGazers Online episode about the stars of the Summer Triangle, which can be viewed at http://www.stargazersonline.org/episodes/1924.html.

For additional details, see the What’s Up Highlights elsewhere in this issue.

President Martin then reminded all that the July meeting would be dedicated to the long-awaited Apollo 11 mission anniversary. He then thanked all for attending and adjourned the June meeting of RVAS.

**RVAS EC meeting – June 17, 2019**

Prior to the June meeting an executive committee meeting was conducted and a brief summary follows. The EC meeting was attended by President Michael Martin, Vice president elect Todd Atkins, Immediate Past President Dan Chrisman, Treasurer Larry Hill, Past President Michael Good, and Secretary Mike Hutkin. President Martin offered an agenda which began by discussing upcoming monthly presentations. The July program is set for discussion of the Apollo 11 lunar landing and October is traditionally the fall picnic. Items considered for August and September include a presentation by Dan Chrisman of his Chile stargazing adventure, a presentation by the Science museum regarding the planetarium program, and a “Back to Basics” program. Ray Bradley then discussed his proposal to create an outreach “team” to create a base of people willing to support the growing list of opportunities and the EC approved proceeding with this approach. Concerning the RVAS donation to the science museum, the EC agreed to make the $1000 donation now to the GoFundMe site established by the museum. Club finances were reported to be in good shape and it was noted that the dues to the Astro League were to be paid by month’s end. The meeting was then adjourned.

**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.
Jupiter Image

This was taken Sunday 6/23/19 about 00:30 from my sidewalk. Equipment: 130mm Celestron SLT Newtonian; AZ GoTo mount; Canon D60 with 2x Barlow for video capture. Processing: PIPP to convert to AVI; Registax 6; Photoshop. Post-processing to show moons without over exposure of Jupiter. Image is erect. Moons left to right; Ganymede, Io, Europa, and Callisto.

This is my first effort using my Canon with the scope. I went to YouTube school for planetary imaging. Digital photography is one of my hobbies so the post processing was not quite as daunting as it may otherwise have been.

Harry Kessler

Wanted

Astro photos by members for display on the RVAS web site. Send to editor@rvasclub.org
Observing reports or articles from members about astronomy activities in which they may be involved
E-mail any material you would like to submit for publication to: editor@rvasclub.org
What's Up Highlights

July 1-31, 2019

(A summary of the What's Up program presented at the June 17th meeting.)

This Month:
Everyone knows that July 2019 is historic—the 50th anniversary of Apollo 11 moon landing, when human beings first set foot on the surface of another celestial body, Earth's Moon. As much, if not more, a political undertaking than a scientific one, it's a rare American then and still alive who would not admit to the pride felt at the accomplishment, and relief. In late 1957 the then-Soviet-Union stunned the U.S and the world with the launch of beach-ball-sized sphere called Sputnik, humanity's first artificial Earth satellite. It was the height of the Cold War, and the Soviets had beaten the U.S in this first step to the Moon. Other firsts followed for them. On May 25, 1961, then-President Kennedy committed the U.S. to landing an American on the Moon and returning the astronaut safely, before the end of the Decade. He didn't live to see his commitment achieved.

July Celestial Events:
- Wed., 3rd - Moon at ascending node (ecliptic longitude 107.6°).
- Thu., 4th - Earth at aphelion; 1.016755 au; that is, 94,513,221 miles. (As defined by the IAU, 1 au equals 149,597,870,700 m or 92,955,779 miles.)
- Fri., 5th - Moon at perigee; 57.03 Earth-radii from Earth.
- Tue., 9th - Saturn reaches opposition; visible from dusk to dawn.
- Tue., 16th - Moon at descending node (ecliptic longitude 287.7°). Also, partial lunar eclipse, but not visible in North America.
- Sat., 20th - 50th Anniversary of Apollo 11 (first lunar landing). Also, Moon at apogee; 63.58 Earth-radii from Earth. (11.5% farther than on the 5th.)
- Tue., 30th - Moon at ascending node (ecliptic longitude 107.6°).

Sunset and Twilight:
Sunset Range: 8:44 p.m. (July 1st) to 8:28 p.m. (July 31st)
Twilight Ends: 10:37 p.m. (July 1st) to 10:11 p.m. (July 31st)

Weekend Observing Opportunities:  
July 26th/27th; August 2nd/3rd

Moon Phases:
- Tue., 2nd - New Moon
- Tue., 9th - First Quarter
- Tue., 16th - Last Quarter
- Wed., 24th - Full Moon
- Wed., 31st - New Moon
RVAS July Anniversaries

Membership Milestones

This is the fourth installment of our monthly newsletter item recognizing club members for their continuing membership. Once again we’re spotlighting who among our current members is celebrating an anniversary (whether they know it or not!). This time we want to express our heartfelt thanks to those who joined (or re-joined) in the month of July: Frank and Carolyn Baratta (1986), David and Remona Thomas (1992), Nasser and Kasey Abdelhadi (2013), Hank Simpson (2013), William Hickman (2015), John and Judy Spruhan (2015), Dwight Holland (2016), Judie and Lucas Snipes (2016), Scott Budd (2017) and Eric Shelton (2017).

Especially recognized are Frank and Carolyn for the 33rd consecutive year of membership, second in longevity only to Mark Hodges who joined in January of the same year, 1986! We also note that David and Remona Thomas’ membership has reached 27 consecutive years! Among our honored July anniversaries are two re-joiners: Dwight Holland and Eric Shelton. Dwight had been a member from November 2003 to June 2008. Eric had been a member from July 2010 to June 2011.

Thanks to all our July joiners and re-joiners, and to each and every current member. The RVAS appreciates your support of the club and of amateur astronomy in our area!

Have You Renewed Your Membership?

If you haven’t yet renewed your memberships, please submit your payment as soon as possible. As of July 1st, the following regular rates apply:

- Family -- $25.00
- Senior Family (65 or older) -- $22.00
- Individual -- $20.00
- Senior Individual (65 or older) -- $18.00
- Student -- $10.00

Rosters with your membership type were included in renewal reminders previously emailed to members. Make your check to “RVAS” and mail it to Larry Hill, RVAS Treasurer, 5220 Hawkbill Circle, Roanoke, VA 24018. Questions? Call 540-774-5651, or email info@rvasclub.org.
Welcome Mat

The Society bids a warm and cordial welcome to Samuel ("Tom") Wise, of Roanoke, who joined at the June 17th monthly meeting with an Individual membership. Tom's born and raised in Roanoke, and has lived here his entire life so far. A graduate of Patrick Henry High School and the Governor's School, he pursued electrical and mechanical engineering at Virginia Western C.C. and Virginia Tech. Tom's amply applied those engineering skills during the 23 years he's been with Virginia Transformer, which have also included IT/programming, automation and product development tasks. Astronomy-wise, he traces his interest back to his Boy Scout days as an 8-year-old. Around that time he recalls receiving his first telescope from his dad, a 3-inch orange Tasco refractor, which his grandfather worked on to improve its many limitations. Tom notes that he kept that scope until 5 or 6 years ago, when the ravages of time had rendered it no longer serviceable. More recently, he acquired an Orion XT8 Dobsonian, additional eyepieces and other accessories, and is interested in learning about astrophotography. So he's also looking into building an equatorial platform for his scope. In fact, it was a spinoff of his web surfing for plans for building a platform that Tom encountered information about our club. Now, as a member, he's hoping to benefit from the knowledge of other members to gain understanding about astronomy in general, and astrophotography, in particular. And he's hoping his electrical and mechanical skills can be of benefit to others in return.

Tom we're glad that you found out about the club and that you've become a member. We hope that you'll become a regular at our meetings, events and activities. And we're sure you'll find many of our members ready and willing to share what they've learned with you. Thanks for joining!

RVAS NL—July 2019—Pg 8 of 10
The view from the Onion Mountain Overlook on the Blue Ridge Parkway

By Dave Thomas

On the evening of the first day of July my son, David Jr., drove me to the Onion Mountain Overlook on the Blue Ridge Parkway at mile post 79.7, about 6.3 miles North of the Peaks of Otter Lodge. The sky was mostly clear and darker than in Lynchburg. The view to the South with the lights from the Bedford area was spectacular. Living close to Lynchburg, as I do, and having the sky pollution to contend with, I was amazed at the difference.

As I was preparing to photograph the scene I observed what appeared to be several clouds stretching across the sky. I realized that these “clouds” were actually the Milky Way with the Sagittarius region close to the Southern horizon.

After a photo session of about one hour we departed the overlook for home with several fine images captured on the memory card.

Both photos on this page were made with a tripod mounted EOS Rebel T7i by Canon. Each frame was shot at f/4, 15 second exposure, 18 mm focal length, 3200 ISO.

Wanted

Astro photos by RVAS members.
Observing reports and articles.
Articles about Astronomy related Activities.

E-mail any material you would like to submit to:
editor@rvasclub.org
MONTHLY MEETING: Monday, July 15th, 7:30 p.m., Classroom B, 3rd floor, Center on Church, Downtown Roanoke. In five days, across the U.S. and the world, people will celebrate the 50th anniversary of the July 20, 1969, Apollo 11 lunar landing, when humans first set foot on another celestial body. For our featured program, newly re-elected RVAS Executive Committee Member-at-Large and Outreach Coordinator Ray Bradley will present a short history of the Apollo missions, their major milestones and the technological feats accomplished during NASA’s first decade. Ray will show how that first small step tremendously advanced our understanding of the moon and the history of the solar system. Join us on the 15th for Ray’s Apollo commemorative and our other regular 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, July 26th and 27th. Sunset is at 8:33 p.m. Astronomical twilight ends at 10:17 p.m. The Moon rises at 2:04 and 2:45 a.m., respectively.

-- Future Weekend Observing Opportunities: August 2nd and 3rd; 23rd and 24th; and 30th and 31st.

ROANOKE CITY PARKS and RECREATION PUBLIC STARGAZE: Saturday, July 27th, 9:15 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: August 24th, 8:30 p.m., Cahas Knob Overlook.)

Astro-Quiz

We’re used to seeing the phases of Venus, when the amount it’s illuminated drops below 100%. Is Jupiter ever less than 100% illuminated?

Answer to April’s Quiz: Last month we asked how it is that February has only 28 days. As Astro-Quiz answerer extraordinaire Harry Montoro found, the answer goes back to 8th Century BCE Rome and its calendar of 10 months totaling only 304 days. Even numbers were considered bad luck, so Numa Pompilius, Rome’s second king, removed a day from each of the six months with 30 days, reducing the 10 months to a total of 298 days. But Numa wanted the calendar to cover 12 lunar cycles, which total 354 days. Since that was an even number Numa added a day to make the total 355, or 57 days more than his 10 months. He divided the 57 days into two months, Januarius and Februarius, of 29 and 28 days, respectively. Februarius’ even number of days was tolerated since it was the month of spiritual purification. This 355-day total was still 10 days short of the even–then-known 365.25 days of the solar year. This led to some added fiddling every couple of years until the reign of Julius Caesar, who ditched Numa’s lunar calendar in favor of a solar calendar. But Februarius’ 28 days remained, except for a leap day added every fourth year to deal with that pesky 0.25 day part of the solar year. Confused? Watch this humorous 4-minute PBS video for a clarification: https://www.pbs.org/video/its-okay-be-smart-why-does-february-have-28-days/. Have an answer to this month’s quiz (or a future question and answer to suggest)? E-mail it to astroquiz@rvasclub.org!