

Rappahannock Astronomy Club

Minutes, March 16, 2016, Meeting

In attendance:

Dave Algert
Scott Arendt
Bart & Linda Billard
Don Clark
Rupert Farley
Ron Henke

Glenn Holliday
Jerry Hubbell
Aiden O'Leary
Tim Plunkett
Adam Sweere

The meeting began a little after 7 p.m. Eight members and four visitors were present.

Program

Ron Henke and Jerry Hubbell led the follow-up program on using Sierra Stars Observatory Network (SSON) to obtain astronomical images online using automated remote telescopes. Ron started with an introduction to SSON. The network is run by Rich Williams, and includes telescopes in Arizona, California, and Australia. He then introduced Jerry to review what we did in the January session and show the results, mentioning that Jerry recently published a book with Rich Williams and Linda Billard, *Remote Observatories for Amateur Astronomers*.

Jerry showed the SSON website and reviewed how easily we scheduled a set of images of the Tarantula Nebula. The Warrumbungle 0.51-meter telescope in Australia provided the capability to image the appropriate part of the southern sky, and the automated scheduling took care of getting the images when the nebula was high in the sky. We had chosen 5-minute exposures with red, green, blue, and clear (no filter) filters. The schedule totaled 3 of each for 12 images.

Ron told described features in the Tarantula Nebula. The star cluster at the center, NGC 2070, includes a concentration of stars known as R136, which produces eight new stars a day, compared with eight a year in the Milky Way. R136 is a million years old, and is estimated at a total of 470,000 solar masses. One of its stars, R136 a1, is 265 solar masses and has luminosity a million times that of the Sun. It is only 5000 au from R136 a2.

Jerry then showed how to find out about the SSON telescopes from the SSON website, using the Warrumbungle telescope as an example. He then took us through finding the listing of completed jobs and how to find and FTP the images. The Tarantula Nebula images are already available on the [rac_group website](#). Jerry used Maxim DL to open some images in different filters and showed different features by stretching the grayscale in various ranges. He also showed the stretching can be inverted to make a negative image. Someone asked about the field of view. Jerry said it was fixed by the camera and telescope. This one has a 27.6 by 18.4 arc min field of view, which could just about fit the Moon at first or last quarter. The whole nebula is about 2 full Moons across.

Jerry suggested members should try downloading the images from the rac_group website and try combining them. They are .fit format files, which he said Registax knows how to open. In discussion at the end of the presentation, someone asked how to get true color. Jerry said there are a number of things that one needs to allow for to get the right color mix. It depends on the CCD sensitivity to different wavelengths and the bandwidth of the filters, for example.

The presentation closed with an update on the Mark Slade Remote Observatory (MSRO). Jerry showed galaxy and lunar images from the previous night. He said they were first light images following the repair and upgrade of the mount. He zoomed in on some craters in the lunar images that were just 2 or 3 miles in diameter. Bart Billard asked whether removing the focal reducer would be a possibility for more detailed lunar imaging. Jerry said the focal reducer could be removed, and one could also use a 2x Barlow. Jerry logged into the MSRO computer and showed the desktop. The MSRO is not an automated system like the SSON telescopes. We were briefly able to watch live as Myron Wasiuta did some lunar imaging.

Old Business

- Stargazer and Communications Committee Update—Linda Billard said she was already doing the Marine Corps Museum outreach report with Ron in order to keep up to date better. She said Jerry was doing Lunar Observer articles for the Association of Lunar & Planetary Observers and would do something similar for the newsletter. Tom Watson was also doing an article. Glenn Holliday was supposed to help Linda update the brochure on the club website. He said he tried earlier in the day but had bandwidth difficulties and would try again. (A link he had commented out needed to be uncommented.) Jerry made a motion to allow Linda to spend what she needed to print out a set of the new brochures. One hundred copies was the suggested amount. The motion was passed.
- Marine Corps Museum Event Review—Despite cloudy weather, we had great response even though we could not show anything in the sky. Some 500 people were there, and many lined up to talk, ask questions, or look through telescopes (mostly at the hazard warning light at the top end of the museum spire). We would have been able to see plenty of sky with clear weather. Ron said we will be invited back.
- Treasurer's Report—Tim said he forgot to include Glenn and Bart and Linda in the list of paid members for 2016. He told us he would email an update. The report showed a net increase of about \$44 after dues and reimbursement to Don for the website fee he paid.
- Cub Scout Pack at Caledon—Glenn said a troop asked him about attending one of our meetings. He said he suggested the April 9 star party instead. He had four camping trips scheduled for April and was not sure he would make it to the star party. However, he said he thought he would skip the trip that weekend. He also said this district has some 70 Boy and Cub Scout troops, and he learned they have some resources of interest, including an astronomy/STEM van. Glenn thought it would be possible to form an astronomy youth group.

In addition, Glenn said the Girl Scout Council has two summer events in the works at Northumberland and Richmond. He did not have details yet. Aiden O'Leary suggested that talking about communications and geosynchronous satellites would offer a way to relate astronomy to their cell phones and other devices.

Glenn also noted the Renaissance Faire is coming up. It would be an opportunity for another club member to join him in talking to the Faire-goers and get a chance to see the Faire.
- Raclub.org Status—Don said he had some issues to bring up to the committee. He also planned to work on broken links.

New Business and Astronomy News

- Event Calendar Review—Ron said he had confirmed April 1–2, 2017, for the Stratford Hall weekend outreach event. It will include a dinner-time presentation Saturday evening followed by an evening star party. Three rooms are reserved in Scott Lansdale's name for the overnight stay, with solar viewing the following day.

Curtis Park on April 16 is the next outreach event. Ron said he would do the presentation at the beginning. He said it would be dark after about 9 p.m., and the Moon and Jupiter rise in the afternoon. Ron said he needed to find out about power and whether we need to supply the projector for the presentation. The park is off Hartwood Road, which is a right turn off of Route 17 heading west from Interstate 95.

Astronomy on the Mall is June 10, with a June 11 rain date. Ron noted the rain date conflicts with the June Caledon star party date. Glenn confirmed he would be available for the Caledon event in case other members would like to cover the Mall rain date. This year it would still be on the Mall on the rain date.

Ron said he still needs volunteers for presentations at the July and December meetings.
- We had a few minutes at the end of the meeting to check on the MSRO via the TeamViewer application. Internet problems limited us to seeing the webcam view of the dome room and telescope.

Next Meeting

The next meeting is on Wednesday, April 20, 2016, at the Central Rappahannock Heritage Center.