

Rappahannock Astronomy Club

Minutes, March 15, 2017, Meeting

In attendance:

Bart & Linda Billard
Don Clark
David Hiles
Glenn Holliday

Jerry Hubbell
Scott Lansdale
Tim Plunket
Ryan Rapoza

The meeting began at about 7:00 p.m. Eight members and a visitor were present. The program involved observing with MSRO and was saved for after the business meeting to allow time for it to get dark.

Old Business

- Website Status—Don Clark said he had nearly finished the planned conversion to the new Theme. He also said that he plans to use the authentication service from Cloudflare that is recommended with the new Theme.
- MSRO Update—Jerry Hubbell skipped the MSRO update to combine it with his program for the evening.
- Events—Scott Lansdale said Becky Super thanked us for coming out to the Marine Corps event and told him more than 100 visitors came to the event. Scott suggested trying an event in the fall next year to have more planets for viewing. We only had Venus and the full Moon. Venus was a nice thin crescent and was pretty popular. Scott showed a badge he made for the event with the RAC logo and his name. He also said he thought an A-frame sign (sandwich board) would help let visitors know it was the club who brought telescopes for viewing. We thought there might be a couple of posters already made, and Scott thought he could make the frames. Scott showed us a video that was made of Tom Watson at the event and put on Facebook to let people know the event was going on. Tom, Bart and Linda Billard, Mark Burns, and some others were there with Scott. There was little time for them to talk with each other.
- Treasurer's Report—The February report listed 19 members, with two new dues payments received.

New Business

- Event Calendar, Upcoming Events—Scott said details for Stratford Hall were in the works. He said he made some additional contacts who may be interested in participating. Scott said he had to decline the Salem Church request for the solar eclipse. Jerry suggested Scott could offer contacts for the Richmond club or NOVAC. Scott said he was considering September for the Stafford Parks request. He was also considering June or September for the Embry Mill request. He said it was a good event last year.
- Program Plans for 2017—The April program is still planned to be dry runs for Stratford Hall, so the next programs to be decided were May and June. Glenn read some topic ideas he had from an email exchange. They included follow-ons to Kepler, such as spectroscopy of exoplanet atmospheres, new planetary science out of Messenger, the James Webb Space Telescope, and a proposal for giving Mars an atmosphere by establishing a magnetic field there. He said 15–20 percent of Mars's atmosphere “snows out” twice each Martian year, at one pole then the other. Jerry and Bart offered to report on amateur exoplanet observing in October.
- Astronomy on the Mall—Scott said he had not heard anything from Dr. Lubowich about the event this year and wondered whether it was because we missed last year's event. Jerry said we could volunteer, and he thought we would be welcome to participate. No one seemed keen because of the effort and time required.
- Other Topics—Glenn said he got an email from a work acquaintance of Scott's about a Girl Scout group. He brought up possible programs to present at Caledon star parties or possibly Stratford Hall. He said he could offer “How to Blow up a Star” (about supernovas). He also mentioned solar glasses for Stratford Hall. He said only three or four were left from the Transit of Venus outreach,

and we may need to get more. Jerry wondered whether we should have sold them instead of trying to lend them out. He said we need volunteers for doing Caledon programs.

Program

After the business meeting, it was dark enough for Jerry to demonstrate MSRO. He projected the MSRO computer desktop (viewed remotely via TeamViewer). First, he showed the ASCOM POTH (Plain Old Telescope Handset) and Maxim DL, two of the programs for controlling the telescope and observatory. A webcam view showed the refractor mounted in the dome. Jerry explained he had to add weight to the back of the refractor to get it to balance in the center instead of nearer the heavy objective end. The telescope was only a foot shorter than the dome diameter, and the balancing was necessary to have clearance from the dome at the back of the telescope as well as the front.

Jerry said MSRO was using the refractor to support an Explore Scientific remote observing "Experience" that would provide a fund-raising opportunity. He said the refractor was getting finer focus, which makes up somewhat for the aperture difference. It could get 18th magnitude with 1-minute exposures. Don Clark suggested updating the MSRO web page. Jerry said there were already two customers for the remote observing experience with MSRO.

Jerry next showed the Cartes du Ciel program for navigating the sky. Using the Cartes du Ciel display, he centered on the star Procyon and selected "slew to cursor" to command the telescope to go there. The webcam display showed the movement of the telescope (in glimpses every 3 seconds, because the webcam needed a long exposure in the low light). Next, Jerry used the observatory control in Maxim DL to slave the dome to the telescope. When the dome caught up with the telescope, Jerry started the Maxim DL camera control window and took an image. The exposure caught a satellite, although the projector did not show it well on the screen. Don asked about the size of the Procyon image. Jerry said it looked wider than fainter stars because more of bell-shaped curve of the light distribution shows up in the range of intensities displayed.

Jerry noted that the mount had centered the star well, so that it was unnecessary to calibrate its position with a "plate solve" of the image. He simply confirmed to the Cartes du Ciel program that the telescope was centered on the star. Next he tried moving to M42, which involved a "pier flip" for the German equatorial mount to cross the meridian. The M42 image did not come out well, which Jerry concluded was because it was too close to the tree that blocks some of the western horizon. Instead of trying to get a better image of M42, Jerry selected M67, taking the telescope back east of the meridian. Ryan Rapoza asked whether anyone had tried variable stars. Jerry said not a lot yet. Bart said he and Jerry planned to try some eclipsing binaries as preparation for trying to observe exoplanet transits.

Don asked whether MSRO could be automated with a schedule setup. Jerry said it was more oriented toward teaching with hands-on experience involved. He got an image of M67, then made a longer exposure, 3 minutes instead of 30 seconds, and the stars were pretty round.

Ryan asked about weather apps, and Jerry showed Weatherninja.net, an Internet weather resource, as an example of what's set up on the MSRO computer. The Davis weather station for the observatory was currently not communicating well.

Don asked about how scheduling was handled if more than one person wanted to be on. Jerry said more than one person can be connected at the same time, or the schedule can be based on what they want to observe.

Jerry's next object was M44. He slewed to its coordinates and then slewed a second time. He said he does that to make up for his controller software not yet fully handling the sky movement that occurs during the slew. We looked at the image Jerry then took and tried to match the star patterns with the display in Cartes du Ciel. Ryan eventually worked it out and showed Jerry on his phone. Jerry finished the tour with a visit to a pair of galaxies in Leo. He found three in the image.

Finally it was time to shut down. Jerry demonstrated parking the dome and telescope, turning off the camera cooler, and then disconnecting the camera in the camera control window, followed by the other items in the observatory control window.

Next Meeting

The next meeting is on Wednesday, April 19, 2017, at the Central Rappahannock Heritage Center.