

Rappahannock Astronomy Club

Minutes, October 10, 2012, Meeting

In attendance:

- Bart & Linda Billard
- David Buckwalter
- Scott Busby
- Don Clark
- George Clarke
- Brenda Conway
- Joe & Sherry Francis
- Leigh Gettier
- Glenn Holliday
- Jerry Hubbell
- Dan Lien
- Shannon McCurdy

President Jerry Hubbell began the meeting at 7:00 p.m. Fourteen members were present.

Program

Brenda Conway presented an update on the MESSENGER mission to Mercury. She said the mission has been extended another year as a result of successful conservation of fuel. The spacecraft has returned more than 125,000 images already. Brenda showed a diagram of MESSENGER with the sensors on board. She also passed around a sample of the Sun shield material.

Brenda reviewed some of the questions about Mercury posed near the beginning of the mission. Why is Mercury so dense? What is the geologic history of Mercury? Why is the magnetic field so weak? What are the bright areas on the surface? She invited us to consider what has been learned as she showed images from the mission and videos by some members of the science team. The bright areas turn out to be areas of many coalescing depressions with flat bottoms. They have been dubbed “hollows” and are common all over the planet. They are sometimes near volcanic features, but are found at different elevations and are not all consistent with volcanism. The hollows are suggestive of volatility or erosion. Scott said they reminded him of Devil’s Golf Course in Death Valley, formed where salt eroded away.

Although volcanism was expected on Mercury, calderas are lacking. Volcanic plains cover 6 percent of the surface area, with lavas as thick as 2 km. It appears volcanoes “ate themselves.”

The gamma-ray spectrometer has helped with remotely measuring the surface composition. Abundances found include $1,150 \pm 220$ parts per million (ppm) potassium and 220 ppm thorium. One surprise is the high levels of sulfur found in the x-ray spectrometer data.

Brenda also discussed the fast-imaging plasma spectrometer (FIPS) data, which is characterizing the space environment of Mercury. The FIPS sensor has found particles from the surface are concentrated near the poles where the effects of the magnetic field are weakest. The particles now appear to result from a sputtering process caused by the Sun.

In closing, Brenda showed some webpages, including one for an iPhone app, ACT-REACT Quick Map. She is hoping a Droid version will be out soon. The NASA home page for the MESSENGER mission is [here](#).

Old Business

- Treasurer’s Report—Jerry presented the report that Tim Plunkett sent. Rana and Scott Strickland joined in September, and receipt of their dues was the only change for the month. Paid membership for 2012 has reached 38. Jerry suggested it is time to think about a Club purchase and offered some suggestions. He thought the Club might be able to set up a remote observatory, allowing members to make images of the sky via the Internet. He was thinking of Scott’s place as a location, but Scott

noted the lack of bandwidth in his area would be a drawback. Jerry said the Personal Solar Telescope (PST), the last Club purchase, has been a success and suggested the Club might be able to use a second one.

- **Star Parties, Events, and Meetings**—Last month's primary star party was clouded out, but we had a spur-of-the-moment backup at Caledon the next week. Turnout was reasonable, and Rana and Scott were among those able to attend. Glenn had a training event for Girl Scout leaders the same night, and it was a success, with about 12 Scout leaders learning about and viewing the sky. The Stratford Hall outreach was held the Saturday before the meeting (October 6). Although the weather threatened, and it started out cloudy with a few drops falling on us while we set up, it cleared in time for a half hour of solar viewing. We had about 11 visitors, counting a family of 8. We managed to view the night sky until clouds moved in around 9:30. Glenn said Stratford Hall is programming 2 years ahead, and they are asking about our availability for 2014. Linda said Jon Bachman indicated he could probably squeeze us in next year as well if we were interested.
- **Status of Club Loaner Equipment**—Ben checked out the donated 60-mm Meade wide-field refractor last month. He said one of the clips that lock the tripods legs was broken, and he was able to repair it. There was also an optics problem that made the images unsatisfactory. He found a spacer between the two objective elements had been crushed. He was able to heat the spacer and press it back into shape. His efforts corrected the problem and when he tried it out he was able to get some "wow" views. His assessment is that the telescope is not easy to use and would be best for experienced users. Glenn mentioned we needed a custodian for this new telescope, and Jerry volunteered as temporary custodian. Glenn said that Matt Roles still has the Orion German equatorial mount reflector telescope, and that that he needs to send Matt a reminder to check on the diameter needed for modifying a knob to fit the slow-motion control. Jerry said he brought the PST to the meeting in case someone wanted to check it out this month. Scott asked for it.
- **Nominations for Club Officer Elections**—Glenn said he thought combining equipment manager and even manager roles was too much for a single person. Both are listed in the Bylaws as duties of the Vice President, but they could be delegated. Linda and Scott concurred that we should consider whether we are accepting more distant events than we should. Scott nominated Leigh Gettier as Vice President, with a second by Joe. Jerry nominated Bart Billard to continue as Secretary and was seconded by Brenda. Linda nominated Jerry Hubbell to continue as President. Jerry nominated Ben Ashley for Vice President. Scott nominated Tim Plunkett to continue as Treasurer.
- **Scheduled Star Parties and Outreach Events**—October 13 is the Caledon primary date for the month. The Lake Anna outreach date is October 20. October 20 is also the date for the University of Mary Washington concert outreach.

News/New Business

- **Star Party Schedule for 2013**—Glenn drafted next year's calendar. He said he would put a link up or send it out for comments, and will include a cc to Caledon for their comments. He also had paper copies of the Northumberland newsletter to hand out. He had sent it out electronically earlier.
- **Pizza for November Election Meeting**—Joe volunteered to pick up the pizza from Costco. He said the place he had been using raised its prices too much to suit him and that Costco was the best choice now.

Next Meeting

The next meeting is on Wednesday, November 14, 2012, at the Central Rappahannock Regional Library Headquarters, 1201 Caroline St., in Fredericksburg. We will have pizza and hold elections for Club officers for next year.