

# Rappahannock Astronomy Club

## Minutes, April 16, 2014, Meeting

In attendance:

- Terry Barker
- Dawn Bateman
- Bart & Linda Billard
- Don Clark
- Joe Fordham
- Ranny Heflin
- Ron Henke
- Glenn Holliday
- Jerry Hubbell
- Scott Lansdale
- Tim Plunkett
- Brian Sirnack

President Jerry Hubbell called the meeting to order shortly after 7 p.m. Thirteen members were present.

## Program

Jerry Hubbell presented a version of the talk he recently gave at the NorthEast Astro-Imaging Conference: “How to Obtain Your IAU Minor Planet Center Observatory Code.” The Minor Planet Center ([MPC](#)) is the clearing house for observations of asteroids, comets, and outer irregular satellites of the major planets. He explained assignment of observing codes allows the MPC to establish a certain level of ability for a new observer and also document the location from which amateur as well as professional astronomers make astrometric observations. The observer location is necessary for performing computations of parallax to refer observations to a common Earth-centered coordinate system. The adjustment is necessary before the observations can be used to update orbit calculations. Jerry said currently about 1,800 observatory locations around the world are providing observations to the MPC. Most amateur observations of asteroids help refine orbits. (The current magnitude range for discovering new asteroids is 20–21.)

The observer wishing to obtain an observatory code needs to demonstrate his/her capability by making a set of repeated measurements of 3–5 asteroids over a 2–4 week period. The observer submits these in the required format using the code XXX. The measurements are images with an exposure long enough to record the asteroid, but kept short to minimize trailing. The images need to be calibrated and “plate solved” against a reference star catalogue such as the US Naval Observatory’s (USNO) UCAC4. In response to a question, Jerry said users can find out how to request a free DVD copy of the catalog at the [USNO website](#). He explained calibration entails subtracting a dark frame and then using a flat frame to adjust for variations in detector response. Jerry listed three programs that can be used for the analysis. AIP<sub>4</sub>WIN is a reasonably low-priced choice available from Willmann Bell, and MaxIm DL is a high-end choice. The third program is Astrometrica, which, along with MaxIm DL, will create a report in the right format. These programs help find the adjustments in scale, position, and orientation to fit the stars in the image with the positions of corresponding catalog stars, which then allows the position of the asteroid to be converted into coordinates in the sky.

Jerry had a number of tips from his experience when he obtained his observatory code in 2010 by submitting his 13 observations of 3 minor planets made in 4 sessions during the winter of 2010. He chose asteroids near opposition, when they were brightest. Google Earth is the preferred source for your observatory latitude, longitude, and altitude coordinates. Seeing of 2–4 arc sec is not a bad thing because having more pixels on each star image gives better centroid determinations. To get proper accuracy for the time of observation (less than 1 second uncertainty), Jerry uses a GPS receiver to update his computer clock once a minute. A copy of his presentation is available on the Club website on the [programs page](#).

## Old Business

- Treasurer’s Report—Tim Plunkett presented the March report. It included dues payments from two new members (one a student) who also paid the optional Astronomical League dues. Tim noted the

balance increase from the latter dues is a temporary change that lasts until he sends them in later in the year. Paid memberships for 2014 are now 19.

- Loaners—Ben Ashley made a work-related move to Utah recently. Glenn Holliday will assume his duties in exchange for reduced website responsibility. Ron Henke asked about how to return the telescope he checked out last month and was told he could bring it to the next meeting.
- Star Parties, Events, and Meetings—The Caledon event for April 5 was successful. Glenn said quite a few people attending this club meeting were there, and we had a Girl Scout troop and other visitors. One couple came with a new telescope. We saw an ISS pass and one by the Chinese space station. The 30 percent illuminated first quart Moon just about washed out M42.

Communications Committee Report—Glenn said routine maintenance was all he had to report on the website. Terry Barker suggested the committee should meet by telephone in the next week or so. Scott Busby was not present to report on the club Yahoo group, but Jerry noted that there were a number of new image postings. Glenn and Jerry both said they had changed passwords because of the Heartbleed bug. Glenn recommended others do so and also change website passwords if they have access. Linda Billard reported the newsletter was on target for publication in the next couple of weeks with just a few items left to finish.

- Renaissance Faire Outreach Invitation and other Requests—Glenn said he is planning to go on May 17 and noted that he had not had any other commitments. Jerry, Linda, and Bart indicated their desire to join Glenn on that day. Scott Lansdale said he had an email request about supporting a Girl Scout event near Kilmarnock on May 3. Glenn confirmed it was for the same event he had spoken about previously, which was for a date conflicting with our star party and for which he already had another commitment. Scott indicated he was interested in supporting the event and Glenn gave him some suggestions related to locations for observing and time of day activities could be held.

## News/New Business/Announcements

- Star Parties, Outreach Events, and Meetings—Astronomy Night at the National Mall is June 6 this year. There were some questions about parking. It is best to coordinate arrival or go with more than one person in a car so that equipment can be dropped off and someone can stay with it while the driver parks at a nearby parking garage. Jerry said people driving should keep their parking receipts. Last year, participants with receipts could get reimbursed by the sponsor.

Ron asked about plans for the club picnic because Scott Busby seemed unsure about it when Ron talked to him at the Belmont star party. When Ben made up the star party schedule, he deferred choice of the August date so that Scott could make the call as picnic host, but Scott may not have been aware of that. Glenn said he would make a note to contact Scott and ask him for his preference.

- Other News—Ranny Heflin reported visiting the Very Large Array on a recent trip to New Mexico. He was impressed with the radio telescopes and setting, as well as the dark skies. He plans to return in May with camera and equipment to get some images.

Scott Lansdale said a radio astronomy conference is coming up this summer around the end of July at Greenbank in West Virginia. He said the drive takes 3 hours, give or take a half hour. He also reported visiting the Kennedy Space Center a couple of weeks ago and concluded he could have used 2 days to really be able to see it all.

Jerry said Night on Fan Mountain is another good trip. The spring date is already past, but another is coming up in the fall. It is best to request tickets soon after they are made available, which we thought would be September 1 for the next event. Jerry mentioned some other possibilities, and Glenn added the Naval Observatory.

- Tim asked about whether the website has provision for people wanting a loaner to make arrangements to pick it up at the next club meeting. He noted he has two loaner telescopes and would like to be aware of when he should bring one to a meeting rather than have to take both each time just in case.

## Next Meeting

The next meeting is on Wednesday, May 21, 2014, at the Heritage Center in Fredericksburg.