

Rappahannock Astronomy Club

Minutes, September 8, 2010, Meeting

In attendance:

- Barton Billard
- Scott Busby
- Don Clark
- George Clarke
- Brenda Conway
- Tracy Deitz
- Joe and Sherry Francis
- Glenn Holliday
- Sue Kazanjian
- Mike Masters
- Bruce Mehanes

President Mike Masters opened the meeting at 7:00 p.m. after introductions. Seven members and three visitors attended. One of the visitors became a member that evening.

Program

Mike Masters gave the program. It was the second part of "Measuring the Universe." After a summary of part I, Mike explained astronomical measuring techniques that have been developed as a "ladder" extending measurements to greater and greater distances by moving from one technique to the next in regions where they overlap. The first is parallax, from which the distance unit "parsec" (3.26 light years) gets its name. When viewed from two different positions, closer objects appear to shift in position compared with distant background objects. Astronomers do this by comparing images of stars taken 6 months apart and thus from opposite sides of Earth's orbit. A star that is 1 parsec away appears to shift in position by 1 second of arc relative to distant background stars. Parallax works for about 2,000 of the stars closest to ground-based telescopes, and the resolution of the Hipparcos satellite has extended parallax to about 12,000 stars.

Another step on the ladder is the measuring technique using Cepheid variables, which change in brightness in a pattern that repeats itself. Henrietta Swan Leavitt found these stars to have a fixed relation between their period of variation and their luminosity: how bright they actually are as opposed to how bright they appear. Consequently, astronomers can determine the distance of a Cepheid variable by measuring how bright it appears and comparing with the luminosity found by measuring its period of variation. Edwin Hubble was able to find Cepheid variables in photographs of Andromeda and other "spiral nebulae," as they were known at the time. He thus showed that they are separate galaxies like the Milky Way, millions of light years outside our galaxy. He then found that the distances of galaxies tend to be proportional to their red shift, the Doppler effect in their spectra that measures the speed with which they are moving away from our galaxy. The relation between distance and red shift is now called the Hubble relation, and it has led to the realization that the universe is expanding.

Astronomers continue to push out the distances that we can measure. A recent technique uses type 1a supernovae. A process that gives them a fixed luminosity forms these supernovae. If a distant supernova is measured and identified as a type 1a supernova, its actual brightness is known, and therefore its apparent brightness allows us to calculate its distance.

Treasurer's Report

Tim Plunkett sent the report for August 31, 2010, which Mike presented because Tim had a schedule conflict on the day of the meeting. The number of paid members stands at 27. Those present at the meeting hoped Tim's fantasy football draft went well.

Old Business

- **Club assets**—Scott said he could be custodian for the Club's 8-inch Dobsonian telescope once his move is complete. Brenda has the 6-inch Orion on German Equatorial Mount. We need to check with Tim about the missing slow motion control knobs for the mount. Brenda has also checked out the Club Personal Solar Telescope for a school event. Bart is the NexStar custodian. Folders with observing aids to go with the Club assets have been passed out except for one that was loaned out at the picnic. We discussed Don Clark's information on a Celestron recommendation for a tripod for the Comet Catcher telescope. A motion made and passed authorized up to \$90 for Don to purchase of the tripod. He can then lend it to Brenda to see whether it is also suitable for the Personal Solar Telescope.
- **Star party and picnic reports**—The picnic was August 7. A large number of prizes were awarded in the raffle. We discussed the expenses for the raffle that were not covered by the 50-50 raffle proceeds at the meeting, and a motion was made and passed to reimburse Scott for those expenses. James Bingham brought a group of Cub Scouts for the star party that followed the picnic. Mike presented an accounting of his expenses for food and supplies for the picnic, along with costs for the purchase of 5 copies of *Discover the Stars* for the folders put together to go with the Club telescopes. The costs were partially balanced by his repurchasing of unused supplies, and includes some supplies (charcoal, paper plates, etc. left over for use next year) He further proposed the Club extend his paid membership by 2 years and accept a small donation in lieu of repaying him \$39.16 of his costs. The motion was made and carried to reimburse Mike for the balance of his costs after those adjustments.

The August 14 backup star party was cancelled because we had a successful star party on the primary date. We discussed whether our policy should be to cancel the backup when the primary date is successful. The motion was made and passed to automatically cancel in those situations, with the possibility of members requesting a special event on the backup date and arranging it with Caledon. The September 4 star party was an outstanding evening with 33 people and 13 telescopes on the field.
- **Next star party and other events**—Plans for September 11 at Skyline could be affected by weather, but Joe and Sherry have plans to be there Friday and Saturday. Mike said he would wait until Friday to put out a status message for Saturday. Glenn talked about an "observing the Moon" outreach event planned for September 18. It was agreed that it could be done in conjunction with the Curtis Memorial Park outreach event planned by Myron Wasiuta and David Abbou for that date. Glenn has a request for support of a Girl Scout group on the October 2 star party date. He will be giving them some advance orientation prior to the star party, but he may not be able to arrive for the start. He has informed the group of that possibility.

Mike discussed the Shenandoah River Park request for outreach support on September 11 or October 9. He had told Park representatives we were unable to support the first date and that he would ask whether volunteers were available for the latter date. He said he would have to decline this time unless some members can support the October 9 date. He said he would also provide them contact information for NOVAC and another club that are likely better able to support events at that location.

Joe reported the outcome of discussions with the people at Shenandoah National Park about special use permits for star parties. Ultimately the Park was not willing to allow enough access for setting up our equipment away from the highway. We would not be permitted to use the emergency helicopter landing area or to have sufficient vehicle access on the fire road to set up and take down telescopes. Mike raised the question whether we should change our approach for Skyline Drive star parties. Scott moved, seconded by Brenda, that we remove Skyline Drive from our regular schedule, and only use it for informal/ad hoc events. The Club approved the motion.
- **Club Astronomical League point of contact**—The logical choice to replace Mark Slade as our contact with the Astronomical League is Tim Plunkett. We tabled this item because Tim was not present.
- **Night Sky Network**—A motion was made and passed for the Club to join the NASA Night Sky Network.

New Business

- Glenn told us about the NASA program for teaching astronomy to Girl Scouts. He has volunteered, and NASA is sending him to Tucson for the training that is hooked into the University of Arizona Astronomy Camp program.
- **Problems with the raclub@m31.us mailing list server**—A former Club member was still getting email from the server and was unable to “unsubscribe.” Former member Tom Pendergast maintains the server on his own computer as a courtesy to the Club. We were unable to resolve the problem until someone managed to contact Tom and get him to unsubscribe the email address in question. Mike asked whether anyone had recommendations for any changes. For example, the Club might consider eliminating this mailing list and rely on the Yahoo group (“rac_group”). It does not seem appropriate to continue using a server that is physically on Tom’s personal computer. One suggested action is to phase out the raclub@m31.us list over a period of time to allow members to transition to the Yahoo group. Another suggestion, which Mike will implement, is to add instructions for unsubscribing, along with the subscribing instructions on the Club website.
- **Meeting location suggestion**—Scott suggested the new England Run branch of the Central Rappahannock Regional Library system could be a suitable site for Club meetings. However, it would not provide for a later adjournment time.
- **Star party schedule for 2011**—Mike presented the draft schedule that has been circulated by email. The Skyline Drive entries have to change based on the results of this meeting. Mike also proposed skipping the Club meeting in the month of the Club picnic or having a short meeting at the picnic as we did this year; Scott volunteered his place for next year’s picnic location.

Next Meeting

The next meeting is October 25, 2010, 7:00 p.m., at the Headquarters Branch of the Central Rappahannock Regional Library, 1201 Caroline St, Fredericksburg (meet & greet 6:45 PM).

Submitted by Bart Billard, Secretary