

Rappahannock Astronomy Club

Minutes, January 11, 2012, Meeting

In attendance:

- Benjamin Ashley
- Jim Beavers
- Barton & Linda Billard
- Dan Casciaro
- Don Clark
- George Clarke
- Joe & Sherry Francis
- Rob Friedel
- Leigh Gettier
- Glenn & Mariann Holliday
- Jerry Hubbell
- Bill Krainski
- Melissa Leal
- Shannon McCurdy
- Mike Masters
- Tim Plunkett
- David Simpson
- Gaston Smith
- Josh Smith
- Genette Smith
- Sara Smith
- Robert Younger

President Jerry Hubbell began the meeting at 7 p.m. after introductions. 25 members and visitors were present.

Program

Tom Field presented the program “Amateur Spectroscopy” via the Internet. He has been a computer programmer for decades and an amateur astronomer for 20 years and published an article on amateur spectroscopy in last August’s *Sky & Telescope*. Tom explained spectroscopy, likening it to reading a star’s “bar code.” A simple way to start is by putting a grating on a camera and letting a star drift across to make a spectrum. This technique works by turning the grating so the spectrum is perpendicular to the drift of the star. With such a spectrum, you can make qualitative assessments of the star: a strong H β absorption line indicates a particular temperature range. With software and as little as a NexImage webcam, an amateur can make more quantitative observations with the same grating. More detailed results are possible with a digital single-lens reflex camera and a mechanical mount such as the AstroTrac. Tom showed a Wolf-Rayet star spectrum obtained that way as an example, saying that for him obtaining a spectrum of it was learning by doing and led to a deeper understanding of what such stars are. For nebulae, a slit is needed. He showed a spectrum of M42 and pointed out that it illustrated how filters can help with light pollution. Tom said spectroscopy was easier than making an image and gave several more examples of observations it makes possible, from capturing molecules in a comet to measuring the speed of expansion of a supernova shell or the red shift of a quasar.

Tom listed three books that can be helpful for amateurs: Ken Harrison’s *Astronomical Spectroscopy for Amateurs*, R. Scott Ireland’s *Photoshop Astronomy*, and Richard Walker’s *Spectroscopy Atlas for Amateurs* (available for free download—Tom’s website has a link: <http://www.rspec-astro.com/links/>). He has RSpec software available for purchase or a 30-day free trial, and his site also provides a link for the free software VSpec. One attendee asked what data amateurs can contribute. Tom said the American Association of Variable Star Observers is moving toward adding spectroscopy. He noted that most data needed requires high resolution, but there is some possibility of amateurs helping where quantity of data is a consideration.

Old Business

- Treasurer’s Report—Tim reported receipt of dues for six members plus Astronomical League dues for one. The only expenditure for the month of December was the reimbursement check for the year-end award gifts authorized earlier. The Club had 31 paid members for 2011 and 15 members already renewed for 2012 or longer.

- Star Parties, Events, and Meetings—December had only a primary date at Caledon on the 17th, which had to be canceled. By Mike’s count, only two dates were successful for the year. The next date is January 21 at Caledon, with a backup date scheduled December 28 at Belmont. The program for the February Club meeting is “The Moon” presented by Myron Wasiuta.
- Status of Club Loaner Equipment—The Orion Dobsonian telescope was requested for loan at this meeting, making two telescopes on loan along with the web camera Mike has. We discussed updating an equipment inventory to try to identify parts needing replacement or upgrade. An inventory was started last year but was incomplete. The conclusion was a copy of the form Ranny prepared should be sent out for custodians to fill in for this purpose. Glenn thought he had a copy he could send.
- Star Party Request for St. Margaret’s School—Mike sent the proposal discussed at the December meeting to Susan Foulk. He did not receive a reply about the alternative of attending one of our Caledon star parties and assumed she wanted the Wildlife Preserve event. However, Mike said she also needed to respond to clarify the exact location that would be used and to confirm she was able to obtain the necessary permission from the Wildlife Preserve. Jerry said David Abbou forwarded him a message she sent to him instead of Mike. Mike said he was the Club point of contact with whom she should be communicating to finalize arrangements for this outreach.
- Newsletter Proposal—Linda asked about the proposal Jerry sent out to the Club mailing list about considering a Club newsletter. He said he was thinking further about it and would postpone bringing it up at a meeting.
- Transit of Venus Next June—as discussed at the last meeting, the first part of the transit next June will be visible from this area before sunset. A good view to the northwest would be needed. We discussed some possible locations that might be suitable, including Pratt Park, Duff Green Park, and Patriot Park. Mike said he would check the first two, and Bart volunteered to check the third. Glenn said he would ask Brenda about the location she suggested last month. We have equipment to support more than one location, but it may not be a good idea to try to do so.

News/New Business

- Bart reported some results presented in December at a Kepler conference convened by NASA. The number of candidate planets has grown by more than 1,000 to over 2,300. There are some indications 80 to 90 percent of candidates will eventually be confirmed.
- Glenn discussed an article he saw about the growing volume of astronomical data available for analysis. The internet connection speed of the data servers is beginning to limit access for researchers trying to analyze the data. One possible new approach under consideration is providing a way for some of the processing needed to analyze the data to be done on the servers.

Next Meeting

The next meeting is Wednesday, February 8, 2012, at the Central Rappahannock Regional Library Headquarters, 1201 Caroline St., in Fredericksburg. Introductions will begin at 6:45 p.m.

Submitted by Bart Billard, Secretary