Rappahannock Astronomy Club

Minutes, May 16, 2018, Meeting

In attendance:

Elizabeth Baldwin
Jean Benson
Bart and Linda Billard
Glenn Faini
Glenn Holliday
Jerry Hubbell
Scott Lansdale
Tim Plunkett
Matt Scott
Tom Watson

The meeting began at about 7 p.m. Eleven members were present.

Program

Glenn Holliday presented "Red, White, and Blue Stars." He said he had previously presented a version of it at Caledon for one of the scheduled star parties. Glenn started with discussion of the source of the different star colors, the different black-body spectra for different temperatures. He said stars have different temperatures because of their mass. Stars with more mass have higher pressure to balance the greater gravitational force pulling all of the gas in them toward the center. The higher pressure also results in higher temperature and faster fusing of hydrogen into helium. The lower mass stars have longer lifespans. Glenn said most red stars are red dwarfs, but they are not easy to see compared with red giants like Antares. He showed an image of Antares that resolved patterns on its surface. He said "carbon stars" are especially red. They are stars that have produced a lot of carbon from fusion of their lighter elements. R Sculptoris is an example.

Glenn used Sirius as an example of a blue giant star. He also pointed out the white dwarf companion in the Sirius picture, noting that white dwarfs are truly white, and the Sun is yellow by comparison. Glenn said he was not sure but thought that most white stars are white dwarfs. They make planetary nebulae glow, but Glenn was not sure about what proportion of white dwarfs did so. He said no white dwarf has cooled enough to stop emitting light. Glenn had another resolved image showing the star Altair (171 light years distant). It revealed an oblong shape caused by the star's rotation, and the disk showed a range of blues.

Glenn said there appear to be no green stars, even though some stars radiate more in the green than at other wavelengths. He said the eye still blends all the wavelengths producing the colors we see, and green does not stand out. Glenn said if we get to see a green flash we will know the Sun emits it. He saw it once from the mountains in Arizona.

Glenn's image of Betelgeuse resolved the star's disk and showed a bulge, indicating uneven fusion. He also showed an image of Eta Carinae, estimated to go supernova in about 10,000 years. He said Betelgeuse had about a million years to go. Glenn said he also did a talk on "How to Blow up a Star" recently. He mentioned two supernovas were seen 30 years apart in the 1500s, and both were visible in the daytime. We talked about the supernova in the Large Magellanic Cloud seen in 1987. Bart Billard recalled (from the book *Shadow of a Star*) that detectors on Earth picked up some neutrinos from the 1987 supernova.

Old Business

- Treasurer's Report—Tim Plunkett reported dues payments from two members, one he noted, in Canada. Jerry Hubbell said David Dowhos became a member because he was using MSRO. New member Elizabeth Baldwin asked whether her dues had been received. Tim did not remember receiving them but said he would check and get back to her.
- Communications—Glenn Holliday and Linda Billard were trying to keep the "Don't Miss" post up to date. They were waiting for Don Clark to get back to take on the major update to version 5 of WordPress before doing a lot of posting.

- MSRO Update—Jerry said the telescope was upgraded to a 6.5-inch refractor in January. He was working on some projects he was not ready to talk about yet, but did mention some exoplanet transit observations. The first success was not long after the new telescope was installed.
- Events Held—Caledon was cancelled because of bad weather.

New Business

- *Star Gazer* Update—Linda said the current edition was just out so she did not have a lot about the next issue yet. She did say Tom Watson was likely to write about his new PoleMaster.
- Planned Outreach Events—STEM Night at Dahlgren was scheduled for May 31. Jerry suggested an MSRO demonstration, but there was concern Internet access would be unavailable. A phone hotspot was suggested as a possible workaround. Other suggestions were to try daytime viewing of a bright star or Venus. The Renaissance Faire was coming up at the end of May and start of June. Glenn Holliday said they had stopped having local groups set up booths the way they did when we were first invited. He would be one of the players circulating around as Thomas Digges, the first modern English astronomer. Caledon was celebrating its 200th anniversary the weekend after this club meeting. Scott showed the programs still planned for presentation at star parties, including the one for the recent cancelled star party on May 5. David Hiles would be doing the September Program at Caledon. Scott had not heard yet from Jon Bachmann about making arrangements for the planned outreach at Stratford Hall on November 10.
- Meeting Programs— Scott Busby had volunteered a program for the June club meeting. We did not have a topic from him. Linda said she would email him to ask what to put in the “Don’t Miss” post. We discussed the need to change the date of the November officer election meeting. The third Wednesday would be the day before Thanksgiving, and the room would be unavailable because of early closure of the Library. Jerry made a motion, seconded by Linda to move the meeting to November 14. The motion passed with no objections. Jerry and Bart volunteered for October and December meeting programs. Bart might be able to do one on the TESS mission.

Next Meeting

The next meeting is on Wednesday, June 20, 2018, at the Headquarters Library on Caroline Street, downtown Fredericksburg. We will be in room 2.