

Rappahannock Astronomy Club

Minutes, December 21, 2022, Online Meeting

In attendance:

Bart Billard, Secretary
Glenn Faini, President
Dave Bentz
Mark McDonagh

Troy Major
John Maynard, Web Administrator
Matt Scott, Treasurer
Myron Wasiuta, Vice President

The meeting began with a viewing of the DVD *The Star of Bethlehem* a little after 7:00 p.m. Eight members attended.

Program

We viewed a DVD video on the science of the “Star of Bethlehem.” It was also shown at the September 2009 RAC meeting when Scott Busby presided and is available online at [The Star of Bethlehem](#) website. The website presents the study by Frederick Larson, the narrator of the DVD, on astronomical events that can be calculated precisely with modern planetarium software and appear to fit with the Biblical and historical references to phenomena in the sky around the time of the birth of Jesus. The events he found can be calculated with Starry Night or other planetarium software. In the video, Larson, a lawyer, recounts a last-minute Christmas display he made one year that he decided needed the star to be complete. What he read about it for making the display got him interested in learning more.

Larson presents an interesting discussion of what went into finding what he interprets as the phenomena fitting the Biblical accounts and historical records (and why making those connections has taken so long). First, Kepler’s laws were needed to accurately reproduce the appearance of the ancient skies. Kepler made an attempt, but he had to make voluminous calculations by hand. Also, Larson disagrees with the dates Kepler used from a then widely circulated record of the time of Herod’s death that led him to calculate the sky as it was 2 years earlier than the dates Larson favors. With modern computers and software, many possible dates could easily be considered.

The period starting in September of 3 BC, when Jupiter began a series of three conjunctions with the star Regulus, is what Larson favors. The September conjunction was unusually close. It also preceded Jupiter’s transition to retrograde motion when it appeared to stop its eastward wandering before wandering westward for a period. Larson also found that 9 months later, in June of 2 BC, Jupiter had a very close conjunction with Venus that he says would have looked like a single star, brighter than any other. He suggests the magi would have been interested in astronomy/astrology and aware of these motions of Jupiter. The combination could have influenced their decision to travel to Judea for an audience with Herod, where they related their interpretation that the celestial phenomena suggested a child had been born to be the new king. Larson says Herod then sent them to Bethlehem to search for the child with orders to return to report where he was. In the wee hours of the night in December, 2 BC, the magi would have seen Jupiter in the direction of Bethlehem from Judea.

Old Business

- President’s Report—Glenn Faini said he just had one item that he would report as New Business.
- Treasurer’s Report—Matt Scott said there was one renewal last month and eight more so far this month. He also said he found out our bank does not allow Zelle transactions for commercial accounts like ours, so we would be unable to use that payment option.
- Vice President’s Report—Glenn F. said the November star party was cancelled because of weather. He said Boris Starosta did the outreach at Louisa High School, and Troy Major reported about 75 people attended. He mentioned having to drive around and eventually ask someone before he found the spot. Troy also went to the December 13 Motts Run event with Corey Dallmeyer on December 13. He estimated 20–25 people came through and said they had decent skies and light pollution was not bad. Glenn F. said the December 17 star party was cancelled because no one was available to make it to Caledon. He said Corey had an event planned at Bowling Green for Girl Scouts on Thursday after the current meeting, with Friday as a backup. He

asked Myron Wasiuta, who re-joined via his phone after technical difficulties with his connection, for an update on collaboration with the York County, PA, group and its radio telescope. Myron said he had talked with the group's president, Val Finell, and its radio telescope founder and director, Kerry Smith. Myron learned they would be using sensitive cryogenic detectors in a Faraday shielded room to observe the hydrogen 21-cm emissions. They expected to be able to detect Doppler shifts with enough resolution to measure rotation of the Milky Way. They were still working with Myron to look into how to combine their radio observations with optical observations by MSRO.

- MSRO Report—Myron said the StationTWO computer was not yet fixed. He and Shannon Morgan had saved all the data on the computer to a 2TB external drive and were planning to try installing Windows 10 from a CD ROM. There were some additional anomalies besides the WIFI problem that they hoped a pristine operating system installation might resolve. Myron said that StationONE still required him to manually turn on the TDM and camera because of the Internet power switch problem. StationTHREE is operational, and StationFOUR is in the final phase of automating the roof operation.
- Communications Report—John Maynard had nothing to report about the website. Glenn F. suggested he should look into automating backups of the website. He said the Groups.io list was still working normally. Myron said he wanted to give another University of Florida student a student membership so he could have access to the list.

New Business

- Members at Large for 2023—Glenn F. made a motion that RAC accept his nominations of the members at large for 2023, listing Linda Billard as Stargazer Editor, John Maynard as Webmaster, Scott Busby as Equipment Manager, and Corey Dallmeyer . Myron seconded, and a voice vote resulted in approval with no objections. Glenn F. mentioned a Bylaws review was due in January. He thought recent reviews had them in good shape but said he would look into whether planned changes to star parties might necessitate some Bylaws revisions. This led into the next topic.
- Star Party Locations and Hosts—Glenn F. mentioned the decline in star party participation at Caledon, citing increased traffic on the road and glare of headlights affecting night vision. He said he wanted to propose holding regular star parties at Belmont with Corey hosting star parties at Bowling Green. Caledon would be used for requested outreach events as needed. He also said Myron had mentioned Wilderness Run Winery as a location for possible outreach events. Myron said he had not checked into that with the winery yet but mentioned a couple of areas that could be venues there. These areas were not so dark but okay for planetary viewing or displaying images from cameras on telescopes. Glenn F. said he would not list the winery as a regular event, limiting those to Belmont and Bowling Green. He said the hosts could make the go/no go call, and he would be the host for the occasional outreach at Caledon. He would post status for all events as needed on the website and Groups.io. Glenn F. also said Scott would like to again host the club picnics at Belmont. In all, these were the arrangements that Glenn would be checking for consistency with the Bylaws and propose revisions, if needed.
- Celestron NexStar 80 GT Donation—Glenn F. asked who ended up with the donated telescope and eyepieces. Myron said he got the telescope for the University of Florida chemistry engineering student who was interested in astronomy and had started training on MSRO. He mailed it to her and said she had received it. He said the eyepieces went to Mike Parker. Dave Bentz expressed interest in getting equipment that might become available for the astronomy group at the King George High School.
- RAC Mission: Outreach, IDA?—Glenn F. introduced this topic and asked whether members had any other ideas. Myron said he thought that in the past, outreach was how the club got new members. He talked about doing sidewalk astronomy events in downtown Fredericksburg, showing planets, for example, and also doing programs for Parks and Recreation (P&R) at Motts Run. He said that when that P&R director moved away, RAC ended up not doing those programs. Troy confirmed the woman (P&R representative?) at the recent Motts Run event said she would love to do one every month. Myron thought we could do it with a team of three or four members.
- James River State Park Events—Glenn F. said James River State Park would like to have two events in summer 2023. Myron said he and Corey had committed to two events. He said the park

would let any member who wanted to help out have access and not have to worry about entrance fees or camping fees.

- Additional Items—Glenn F. said Corey was giving a presentation on his night vision equipment at the January meeting. He said Bylaws ratification, if needed, would be at the February meeting, and he mentioned there would be a Messier Marathon in March. Myron said that toward summer, he hoped to do a presentation on what he, Scott, and Boris were doing at the Charlottesville refractor. He mentioned it was a 26-inch $f/15$ achromat, and that he and Boris also had access to the 24-inch telescope at Fan Mountain. They were observing a recurrent nova in M31 (M31N 2008-12a) at Fan Mountain. Myron offered a rule of thumb he had learned for achromat objectives: their focal ratio should be three times the aperture (in inches), so a 4-inch achromat should be $f/12$.

Next Meeting

The next meeting is on Wednesday, January 18, 2022, at 7:00 p.m. It is planned as an online meeting, and Corey will make a presentation on his night vision system.