Delmarva Stargazers

February 7, 2012

Lyle agrees that the hardest part of being president is getting his article ready for the newsletter. (Ed - Jerry Truit, the past President made this identical statement. Coincidence or conspiracy?)

Stargaze: 19-23 of April.

Next month Presentation problems:

- Paul Grey was going to show up for a presentation but has had to reschedule for another time and place. Paul Grey is the father of Kathryn Aurora Gray, who is the youngest person to discover a supernova. (Ed. - This has been rescheduled to the next meeting)

Lightning meteor scatter presentation - Lee Clarke. (Ed - Meteors entering the atmosphere create ionized streams which can have density sufficient to reflect radio waves from 20Mhz to 500Mhz)

Officers will be meeting to discuss the star parties. Time and place to be determined.

Mirror Making Seminar:

- Smyrna diner for Thursday night dinner. Thursday afternoon for the setup.

- Doug and Chuck (members) are working on mirrors. Full house with 17 people including Guy Brandenburg continuing to work on his 16” mirror.

- There will be a meeting third week in February to discuss the mirror making – Don Surles's daughter is having a baby around that time so this may be rescheduled.

Equestrian Center:

- EQ septic system is moving along slowly. Completion TBD.

Membership dues are due:

- You need to fill out the form in the newsletter so we can update your information.

Chuck Jennings presentation on the constellation Orion:

- NGC 2024 (Sh2-277)The flame nebula is near Zeta Orionis (Alnitak) and is part of the Orion molecular cloud complex. The ultraviolet radiation from Alnitak causing it to glow by the recombination of electrons and hydrogen.
- Observing – A sketch of the area shows what can be seen in binoculars at a dark sky. A 6” to 12” can see dark band – suggesting a maple leaf. Nearest bright zone is entirely separated from the other parts.
- 16 inch and greater can make out stars that are embedded.

- The complex is between 1,500 and 1,600 ly away and hundreds of ly across. Parts can be seen by naked eye (M42), binoculars, and telescopes.
- Objects: M43, M43, the Horse Head nebula embedded in IC 434, Barnards Loop, M78, and the Flame Nebula. (Ed. - also Sha2-264 as a huge ball around the open cluster Collinder 69 – Orions 'head')

Star Party idea:

- Scope coat for star party – The usual material is 800 dollar for a roll of aluminized Tyvek is too much so we will try using gray tarp. We will need sewers to make them. Orion charges $80 for a cover, we can probably do it for $20.

Don Surles: Presentation on the GRAIL NASA mission

- Full name: Gravity Recovery and Interior Laboratory
- Both satellites were launched on Sept. 10, 2011.
- Last meeting there was a question why it took much longer than the Moon shots with astronauts. There was no need to keep humans alive so it use a 'low energy trans-lunar cruise' .
- Grace preceded Grail – US-German gravity detector of the earth's movement. This allowed a simplified payload developed for Grace to be used in Grail and gave a good idea of the baseline for Grail.
- It is expected to determine the structure of the lunar interior from crust to core.
- The two satellites are called Ebb and Flow.

Lyle Jones Presentation: Digital Setting Circles

- Came out with setting circles Don says they were around in the late 80’s and Lyle remembers it from earlier.
- Lyle's program used hand entered object tables, needed program to get the lat long, date and time.
- Using cosines you can calculate the pointing of the the star – not difficult for equatorial mounts but harder for altitude-azimuth mounts using horizon coordinates. The software is also required to work in sidereal time.

Presentation by Ryan Goodwin on the GOTO system on his 10 inch SC Meade:

- Demonstrated how the telescope would auto align itself even in the Church using GPS and searching for positioning stars. It set up alright even without finding any stars indoors.
- It took a few minutes with Ryan says is spent doing other related work.
- It demonstrated how easy it was to use at outreaches over conventional star hopping and provided tours.
- This was a hands-on demonstration and so much of the presentation doesn't lend itself to note taking.
- All-in-all it was pretty cool to watch the telescope auto-align itself unattended.

Don Surles presented building early setting Digital Setting Circles using a C64:

- Don brought his old Commodore 64 computer with a special box built by Dave Groski (a plugin module the

C64 used for games and programs) that provided the digital setting circles program and a list of about 800 objects.

- The C64 read the altitude-azimuth coordinates from the high resolution axis encoders (much higher than used now on commercial telescopes).
- After careful alignment the scope could be pushed to the selected object's position using a feedback display run by the C64 comparing the encoder positions to the object's position.
- There were some structural hurdles keeping the vertical axis in place solved by tensioners.
- The C64 fired up perfectly and the software ran. However since the encoders weren't functional any more (sustained some damage) it was impossible to display how aligning and moving the telescope worked. However the ingenuity and precision of the system was hard to dispute particularly with the C64 coming to life.
- There were issues of 12VDC vs 120 VAC to overcome as well but it was able to be powered from a car battery.