

Delmarva Stargazers  
2010-04-06

We were treated to a slide & video show of the MMS including the flooding from the high tides and nor'easter.

Meeting started at 7:04, 17 present.

MMS 15 mirrors attempted completed 14. There were some excellent mirrors produced couple 8's 6's several 10's and a 16".

Don Surles presentation: Mirror coating

- Went to the National Capital Astronomers (NCA) at the Chevy Chase Community Center, Chevy Chase MD, to see how aluminizing is done by Guy Brandenburg.
- Aluminizing machine: The inside has a tungsten coil and the aluminum is placed on it to evaporate. There is a cleaner (high voltage scrubber). There's a thin aluminum blanket to prevent the vacuum connection to the bell from collecting aluminum.
- The mirror is at the top facing down. The coil is loose with a piece of 6 gauge aluminum wire. The mirror does not get hot and the process produces good surfaces. The person that does it says that without the high voltage cleaning the aluminizing doesn't work for long.
- Once the mirror is cleaned it takes time to pull the small vacuum, the electrical charge is running. When the final pumping is done – there is a bright flash and then things go dark in the machine. It takes about a minute to

aluminize. The entire process of cleaning the mirror, pumping down and aluminizing takes about an hour.

- Don paid \$85 for four aluminizing's on three mirrors (one failed due to poor cleaning).

### Stargaze 16:

- Final plans: we don't have our registrar present so we have to organize without Joe Cain.
- Food and Drink: Tom P. will shop, Kathy will pay, There are hot dogs in the freezer (30 per box). Do we have any fish. No. We have enough oil. Two litre bottles of soda.
- Raffle: we're raffling off a 100 deg field ep. TMB 16 mm 100 deg. Ep. To compare with TV Ethos and other ep's. It will be raffled off. There are a number of door prizes about 800\$. Cost a lot less than televuew.
- The belly dancers (Arabian Lights Dance Company) will be there at 4:30 Saturday afternoon. After that we will have dinner. Don has Ham and Lima bean soups for Thursday and Friday.
- Garbage removal – need a MD tag and county sticker for garbage. Keith L will arrange for the port-o-potties.
- Jerry Truit will bring Friday's dinner.

- Lyle will make New England Clam Chowder (or Manhattan Clam Chowder)

#### Politics:

- Nominations: Michael Lecuyer for secretary, Lyle for President Elect.

#### New meeting place for next month:

- Smyrna on S. Street, South at Main. Smyrna Health and Wellness Center building starting in May. Its located on 100 South Main Street, Smyrna, DE.
- The new digs are modern, high tech, with internet access, dual projectors, sound system, and heavy wheelless podium.
- Might try product demos over a video link to our meeting place. Viewing sessions during the meeting?
- The facility is available anytime we want to rent it so we can have special meetings for Internet telescopes usage.
- Cost \$50/session. (about the same as the Mallard Lodge).

#### Jerry Truitt presentation: The Constellation Crater

- Latin for Cup, Apollo's cup.
- Full of galaxies. Between March and June, especially April. Largely dim stars. Next to Corvus.
- Corvus the crow took the cup to fill for Apollo but he stopped at fig tree for a bite to eat and was late getting water. Corvus claimed Hydra attacked him and delayed the journey and Corvus brought back Hydra as evidence of this outrageous claim.

- Location: Find Leo and Virgo, find Spica and locate Corvus and then the two stars making up the cup are found next. The cup has two legs.
- None of the stars are anything to look at being fairly faint. Parts of the legs and cup are visible.
- Objects of note: NGC 3962 elliptical galaxy. NGC 3887 barred spiral galaxy face on with detail. NGC 3511 is another spiral, NGC 3513 is a barred spiral with the last two in the same field. NGC 3672 spiral, NCC 3981 has two spiral arms.

#### Presentation by Tim Milligan: Visual bandpass filters

- Isolate certain ranges of the electromagnetic spectrum to allow enhanced view of deep sky objects.
- Filters reject bad light or allowing good light. (bandpass)
- Objects emitting a continuous spectrum – stars, galaxies, reflection nebula. Bandpass filters don't help here.
- Emission spectrum on the other hand are specific in wavelength. Planetary emission nebula hydrogen ions oxygen OIII (III = Forbidden doubly ionized oxygen lines) Electrons are stripped away by high temperature or specific wavelengths of light. Bandpass works here.
- Picture of emission lines in the spectrum. Showing Hg (mercury) and Sodium lines, airglow (oxygen) which are not passed. H $\beta$  (Hydrogen beta) is actually green. H $\alpha$  (Hydrogen alpha) is red.
- Broad band blocks out manmade light and airglow. Allows other light to pass through, Broadband clips

mercury, sodium and natural air glow. The filters are often called Deepsky or SkyGlow. Fairly affordable.

- In narrow band filters the good light is more restricted therefore they cost more to build.
- Line Filters: only the specific line through like Ha Hb, or OIII only.
- Broadband – general purpose filters for urban or suburban skies. Allows more light through than narrow band so they don't cut too much light. Can slight help contrast with galaxy if there's sky glow. Good for small scopes like 6" or less.
- Passband filters OIII, Hb, Ha
  - Greatly improve nebula, maybe the only way to see them, like the Veil nebulas in Cygnus. Overall image will dim but detail improves. Bright nebula, like the Great Nebula in Orion will bring out fainter wisps.
  - Faint nebula – sometimes the only way to see planetaries and emission nebula. Lumincon UHC, Orion Ultrablock, Astronomic UHC. (Ed -Although most people in the group preferred the Orion Ultrablock, possibly because of the darker sky and better contrast, the Limicon UHC actually passes 10% more light which would account for the apparent difference any explains my preference).
- Line filters only allow the particular lines through like . Hb – these are made by all companies - Lumicon, Orion, Astronomics)
  - OIII planetaries, Veil, Crescent Nebulas.
  - H-beta is for a few objects: Horse Head, California, Cocoon.

Purchase of the Lundt Solar Telescope for the club:

- Single stack was in stock.

Don Surles presentation on Precision mounts for amateurs

- Prevent wobbling (periodic error) They work with auto-guiders to track.
- No hard definition of what a ‘precision mount’ might be. However their general characteristics are: No ferrous metal, aluminum, stainless steel and brass. Large gears typically > 4” and better made. Fully adjustable RA & Dec. Typically will carry a minimum of 20 lbs. A sturdy pier or tripod carries them. Mount is bigger than the scope.
- Buyer should inquire about drive accuracy usually measured in arc seconds. Drive accuracy varies from MFG to MFG (price dependent)
- Astro-Physics, Celestron, Losmandy, Orion, Takahashi and Vixen.
- Each manufacturer has a number of models. They’re good about upgrades you can take old mounts and upgrade them (Astro-Physics is best).
- Optic-Craft Machining has large weights, from 40 to 880 lbs., Seems to have strong mounts for good prices. \$1700 for something that carries 162 lbs.
- Orion atlas mount – pleasure to use, very smooth. Will carry a 10” f4 telescope. It can be obtained with or without GOTO controls. Has fine latitude and RA adjustment.

- Losmandy is up there with Astro-Physics for a well made and wonderful mount – everything was great about it.
- Vixen \$2500 – \$3,000 High precision, with its little driving book available this fall.
- Why? Long exposures used to need precision mounts over long periods. Exposures were several minutes to hours. This is where periodic error was a big problem.
- Today we can take sever shorter duration exposures and stack them with digital camera.
- Why do non-professionals buy them? Could be: Status? Because they are available? Because we like quality.
- Bottom line – these mounts are not necessary for virtual or for short duration digital photography.
- Recommendation
  - Buy a quality mount that will carry your scope + 10lbs
  - Buy a quality drive system, but not stepper motors and an auto-guider port.
  - Spend your money on the best camera and get software to stack images.
- Best camera is the Cannon Rebel. Don't need the latest model.