

## Delmarva Stargazers

March 4<sup>th</sup>, 2012

MM 12 is over.

- ⤴ Great success 19 mirror started and completed.
- ⤴ Rough start with Steve Swayze and Chuck Jennings were in a car accident when rear ended by a fast car that just didn't see the car in front was dead stopped on I-95. Fortunately neither was hurt at all and the Mirror Making Seminar went on.

The Pittsville Library Outreach

- ⤴ went well although the skies were overcast. Jerry Truitt gave a good talk about astronomy including suggesting there were alternative to the Big Bang.
- ⤴ Jerry later receive email from a participant about even mentioning an alternative theory to Big Bang. There are a number of problems with the BB theory that alternative theories are possible.

Doug Towner gave a presentation on his visit to Kitt Peak

- ⤴ This is a national observatory at 6,880 ft altitude in the Arizona-Sonoran desert hosting 24 optical and two radio telescopes southwest from Tuscon.
- ⤴ Can be seen from Tuscon and the Sonaran desert as you drive towards it.
- ⤴ Doug got to work on a AOP (Advanced Observing Program) telescope with a 20" Ritchey–Chrétien (RC) telescope.
- ⤴ Got up there on Thursday and just before they have a group telescope for public viewing. So they were the only ones there with the scientific staff. It turned out to be too windy to get any

- photographs from the southwest (high wind from SW).
- ⤴ There is a consortium of colleges that use the facilities. Requests for time are available.
  - ⤴ There is daily access and if you sign up you can stay during the night to use the scopes.
  - ⤴ There was much more but the Secretary was paying too much attention to the presentation. Really, you've got to be here for these excellent presentations.

### Chuck Jennings on the Winter Star Party:

- ⤴ This is held on Scout Key. The water changes colors as you move outwards on the keys.
- ⤴ The Yard Scope was there – its a 36” Dobsonian which offers the world largest portable observatory used for public education.
- ⤴ Chuck strongly recommends this star party with M42 straight up and 9/10 seeing. NGC 2298 globular cluster Omega Centauri was up every night, the Eta Carina nebula, the GC in Columba NGC 1851, and many exotic items not seen on this side of the Earth. Mars was excellent with good seeing as well as the Jewel Box cluster NGC 4755 at the horizon (at -60 Dec).
- ⤴ Seeing was so good Chuck could see clouds in the great red spot on Jupiter. Not the darkest place he's been to very dark looking south. Crux is visible only 4 deg above horizon.
- ⤴ Drive wasn't bad 16 hours to Titusville, Fla.

### Presentation by Jerry: Newtron star and pulsars

- ⤴ Taurus contains the M1 crab pulsar. 1054 Super Nova was the

source.

- ♣ Supernova 1987A – blue super-giant – wasn't expected that it could become supernova. A burst of neutrinos showed up three hours before visible light.
- ♣ Cassiopeia A (Cas A) supernova remnant - a neutron star and brightest radio source in the sky. Although the brightest extrasolar radio source it's extremely dim optically. Type IIb internal collapse. (Although it was likely observed by Sir John Flamsteed as a star in 1680 it wasn't until 1950 that an optical counterpart was discovered - Ed).
- ♣ Description of general neutron stars. Iron-56 takes energy to fuse and has the highest binding strength of any element. Once a star is reduce to fusing Iron-56 there is not enough energy to support the mass of the star causing gravitation collapse of the interior and a blast of neutrinos that blows away the outer layers.
- ♣ Inverse beta decay is a vague term describing the process of supernova explosions. The core collapse maintains the star's original momentum but becomes quite small resulting in a possible pulsar with a large magnetic field. These can range from only 0.0015 sec to 8.51 seconds per rotation. (PSR B1937+21 is the second fastest pulsar at 642 rotations per second. The fastest (PSR J1748-2446ad) spins at 716 RPS or 42,960 RPM Those with periods less than 1 millisecond are called millisecond pulsars – Ed.)