Reading Under the Stars event at the Navarre Intermediate School

I headed over to the Navarre Intermediate School Thursday evening planning to set up for a “Plan B” event. I arrived around 5:00 PM and met up with the organizer of the event, Linda Matthews. We discussed what kind of options we would have for the evening as we loaded up a cart with my telescope gear and the various hand outs I brought with me. A potential new member of the club, Mr. Colby Vanatta, showed up at this time and assisted us in getting the items inside. The skies were not looking too good as there were thick puffy cotton balls hanging in the air. I anticipated on setting up my 4” refractor in one of the school's hallways and had printed up a couple moon photos to at least give the children something interesting to view. Ms Matthews led us to Ms Glenn Rutland’s room, which could provide access to the Internet and had a computer projection system installed. I gave a copy of the Star Shooting CD to Ms Rutland to run in the projector and set up the handouts on the student desks. The room had an exterior door that led to open area between the school’s wings. I went outside to give the clouds the evil eye and spotted Jupiter through a sucker hole in the clouds. I also noticed a nice clearing heading towards it and the clearing looked like it would last for a while, so I set up the scope and began viewing the planet and the four visible moons. There were a couple times where some clouds rolled through, but we were able to view the planet and moons throughout the course of the event. I would estimate that I had 100 to 150 students, parents and teachers stop by for a view through the scope. Some of the younger children had a little bit of trouble seeing the planet, but their faces lit up with ear to ear grins once they caught site of it. The combination of light pollution in the area I was set up and some thin hazy clouds only allowed for views of Jupiter and a couple stars bright enough to punch through the muck, but it turned out to be a real nice event. The crowd slowly dispersed as the temperature dropped from when we started observing and we wrapped things up around 7:45 PM. What began as a drab evening, turned into something pleasant, and goes to show that we can never be sure how the weather will turn out. I look forward to coordinating gazes with Ms Matthews and Ms Rutland at their school in the future. --Dewey J. Barker

As soon as I download the pictures, I will share them with you. We had an absolutely wonderful time viewing Jupiter. A great BIG THANKS to Mr. Barker for taking the time and energy to do this for us. The students and parents alike were very excited. One little girl couldn’t believe that she didn’t have to pay anything to get to look at Jupiter. You have definitely inspired both young and old to look upward and wonder what’s up there. Have a Very Merry Christmas and a Happy New Year. I'm looking forward to working with you all in the future – hopefully a night viewing at Navarre Beach in the spring. Thanks again --Linda Matthews, Navarre IS
The meeting was called to order by EAAA President, Rick Hogue, shortly after 8:00 p.m.

Three visitors joined us, Michael Wooten and his wife Charlene, and brother Trevor Wooten. Michael was once operator of the old Digistar at the PJC planetarium.

Dewey Barker or Mark Branch will take over the Education program.

Rick Hogue presented the Treasurer report for Jim Larduskey. The club has $2,947.42 in checking, $609.04 in savings, $668.05 cash, for a total of $4,321.51.

OLD BUSINESS:
- Dave Halupowski has EAAA t-shirts and hats.
- Nothing to report for the International Dark Sky report or Observatory.

OBSERVING REPORTS:
- Rick Hogue reported he saw 4 meteors during the Orionid Meteor shower and Dave Halupowski spotted several dozen.
- Dewey reported that the weather was not all that good for the Fort Pickens gaze on October 16th. It was beautiful weather until the scopes were set up.
- Dewey reported that about 500 people attended the Roy Hyatt Open House gaze. A very nice facility and it was mentioned that they would like more star gazes in the future.
- Dave Halupowski reported that every night at the Deep South Gaze was a good one and that about 130 people attended.

OTHER PROGRAMS:
- Dr. Sherrod’s lecture was a good turnout. The topic was “Cosmic Roots: Why Am I Here?” and was held in the PJC Lecture Room, Oct. 9th. In addition to the lecture was a visual trip into the cosmos. Dr. Sherrod has expressed an interest in coming back to Pensacola in April. We had about 200 members, guests, and students come out for one of the best attended and publicized public events the club has put on at PJC in many years. Everyone enjoyed the dinner at Golden Corral as well at 5 PM.
- Our very own Dewey Barker won a blue ribbon for one of his Astrophotos, which he entered in the Pensacola Interstate Fair and was judged by our very own Bert Black.

NEW BUSINESS:
- Future Programs: Exoplanetary discoveries, January 22nd, Wayne Wooten
- Stargazes:
  - Montessori School – Cordova Park, Nov. 19th, 6-8
  - Girl Scout Gaze, Sat., Nov. 21st, 5 p.m. – 7:30 p.m.
  - North Minister Church, near Lowes on 9 Mile Road.
  - Kenwood Elementary, Nov. 19th, Ft. Walton
  - Holley Navarre School: “Reading Under The Stars”, December 10th
  - Ft. Pickens Gazes, March 19th and April 16th, 2010

OTHER:
- We will discontinue the bulk mail services, which will leave us $250 in the bulk mail account. It was suggested we use this money towards a new monitor for the planetarium. This will double the clarity of resolution.
- John VeDepo talked about Mike Davey’s astronomy Equipment. A list of all his accessories has been posted on the EAAA list-serve. Club members mentioned possibly getting together to take a look at the equipment along with a price list.
• The Christmas party held on December 4th will take the place of our regular meeting. A sign-up sheet was passed around for food/beverages.
  - Election of Officers: Tom Dragon assumes the position of President, Steve Self was elected Vice-President, Jim Larduskey is treasurer, and Sharon Bogart is Secretary.

MEETING ADJOURNED: 08:55 P.M.

PROGRAM FOR THE NIGHT:
• Billy Jackson presented the program “Two Small Pieces of Glass”, celebrating IYA with 400 years of the telescope.
  Dr. Wooten pointed out constellations, stars, and planets using Stellarium, a software program showing exactly what you see when you look up. It’s free and easy to use. Just go to www.stellarium.org to download. –Sharon Bogart, Secretary

Thanks to the EAAA

Our December Christmas Party was a time of celebration. We honored retiring officers President Rick Hogue (left), VP Dewey Barker (center) and Bert Black (right) with plaques and Emeritus status for their years of club service. The club also surprised me with a lifetime membership and plaque, and nomination for a national Astronomical League award as well. I tested out the new laser pointer the club gave me, and it can cut through the light pollution of even Best Buy at PJC! Thanks…it will be put to good use! Rick Hogue noted that also we received a letter of appreciation from Dr Bill Waters thanking us for our donation of a new monitor for the planetarium. I was asked to convey their gratitude to all club members. WE welcomed new president Tom Dragon and Vice President Steve Self, and adjourned to our annual Chistmas feast.
Calendar of Events

Jan. 22  First quarter Moon, EAAA meets at 7 PM, room 1779 at PJC, Exploring Exoplanets with Dr. Wooten
Jan. 26  Navarre Library gaze, contact Dewey Barker, 458-1591
Jan. 29  Mars at opposition, rising at sunset in NE, the best viewing of it for the next two years
Jan. 30  Full Moon, the Wolf Moon; Moon is also at perigee, so especially high spring tides as well
Feb.  2  Groundhog Day is a cross-quarter day, midway between Winter Solstice and Spring Equinox
         Waning gibbous Moon passes seven degrees south of Saturn, both rising about 10 PM now
Feb.  5  Last quarter moon
Feb. 12  Waning crescent moon passes two degrees north of Mercury in morning twilight
Feb. 14  New Moon, Happy Valentine's Day.
Feb. 15  Slender crescent moon above close conjunction of Venus and Jupiter, now in SW right after sunset
Feb. 20  Hurlburt Field Stargaze; contact is Dennis Hausch, 678-1597
Feb. 22  First quarter moon
Feb. 26  Gibbous Moon five degrees south of Mars for the EAAA's meeting tonight at 7 PM, room 1779
Feb. 28  Full Moon, the Lenten Moon
Mar.  2  Waning gibbous moon passes seven degrees south of Saturn, both now rising about 8 PM
Mar.  7  Last quarter moon
Mar. 14  Spring forward to Daylight Savings Time
Mar. 15  New Moon
Mar. 19  First Sky interpretation Session of 2010 at Ft. Pickens, Battery Worth, set up about 6 PM
Mar. 20  Vernal Equinox, spring begins at 12:33 PM CDT today
Mar. 22  Saturn at opposition, with the rings now about 10 degrees open
Mar. 23  First quarter moon
Mar. 25  Moon passes four degrees south of Mars
Mar. 26  EAAA meets at 7 PM, room 1775
Mar. 30  Full Moon, the Paschal Moon following the Vernal Equinox, sets next Sunday as Easter

Note: As is our custom, our meetings are held on the Friday which for the year lies closest to the full moon; for 2010, this will be the fourth Friday of the month, unless so changed by the club president.
Please remember to pay your annual dues. Mail check or pay at the meetings to Jim Larduskey, 4660 Shannon Circle, Pensacola, FL 32504. Regular - $24, Student and Senior - $12, Meteor - $10
Messier 37 (also known as M37 or NGC 2099) is the richest open cluster in the constellation Auriga. It was discovered by Hodierna before 1654. This open cluster is roughly 300 million years old - that's fairly young - and contains over 500 stars and contains at least a dozen red giants. Its distance is between 3,600 to 4,700 light years away.

Messier 37 is the brightest of the three open clusters in Auriga. M37 was missed by Le Gentil when he rediscovered M36 and M38 in 1749. Charles Messier independently rediscovered M37 in September of 1764 but all three clusters were recorded by Hodierna before 1654, a century before Charles Messier recorded it in his journal.
I shot this during our recent cold spell. I used John VeDepo’s 4 inch f/5 Celestron refractor, this is a stack of 90 second unguided exposures, total exposure time was a bit over an hour. The scope is an non-ED/APO and has some noticeable CA, I used the Photoshop clone tool to clean up some of the more egregious purple fringes. All in all I was pretty happy to be able to get this from my light polluted back yard.

--Ed Magowan
Great Nebula in Orion by Jerome Klingaman

As you know, when an astro-photographer tells you that he/she has finished processing a particular image, you know that he/she is lying. Nevertheless, the attached shot of M42 is as far as I'm going to take it. I processed this shot from a completely different set of frames, actually the first of two sequences I captured that night.

This set involved many more exposures of much greater duration. The color intensity and sharpness of this version are, I believe, considerably above the previous example I sent you. I also used Carboni’s Astro-Tools and Focus magic to punch it up. Being the first sequence taken that evening, this shot actually represents first light for my APM 105/650 APO.

Cheers,
Jerry
This is one I did in Chiefland last November. Its M33 the pinwheel shot in the 16.5” starmaster prime focus, a series of 30 seconds shots at 1600asa with the Canon 20-Da. The actual picture looks better than the email, not as grainy? haven't figured that out yet? One good thing with all this cold, processing time?

--John VeDepo

M33 in Triangulum is perhaps the most distant object observable by sharp human eyes at about three million light years. It is, like our Milky Way and the famed Andromeda Galaxy, M 31, a member of the Local Group of Galaxies, with about 50 now known smaller member dwarf elliptical and irregulars. While M 31 to the north of it is much larger, closer, brighter, and thuseasier to spot visually, I have on several occasions spotted M 33 naked eye, and from a good dark site, it is easy in binocs as small as 8x21’s. Notice the high rate of star formation in its spiral arms, with many hot pink H II regions, like our own Orion Nebula’ stellar nursery, showing up in larger scopes and in photos like John’s. It is almost overhead in the January sky map attached. This article gives more info on this famed spiral of the autumn sky...http://seds.org/messier/M/m033.html
About 2 weeks ago I had ADM Accessories put together a Side By Side (SBS) rig for me with a Vixen rail saddle on one side and a Losmandy on the other side. I want to experiment with a better guide scope, a recently purchased Williams Optics 70mm Zenithstar APO and imaging through a recently purchased Explore Scientific 80mm APO. The experiment was to see how large an image I could get when stepping down from 106mm to 70mm.

Tonight I spent lots of time of balance and scope syncing before hooking up the electronics. After all of the fooling around I looked around at the clouds that were forecast for tonight and y'know what.......they weren't there. Cold as heck. Sky was black and stars were clear and sharp, great seeing. But no clouds. So, what he heck, I slewed to the next target on my list, up by Sirius, IC 2177 the Seagull Nebula. But I only got about an hour of a planned 4 hour session before the clouds rolled in and cancelled my ticket. So here is what I got of the Seagull with only 10 HA x 300. Sec.

Bob Gaskin
Building a Case Against Ozone

by Patrick Barry

When it comes to notorious greenhouse gases, carbon dioxide is like Al Capone—always in the headlines. Meanwhile, ozone is more like Carlo Gambino—not as famous or as powerful, but still a big player.

After tracking this lesser-known climate culprit for years, NASA’s Tropospheric Emission Spectrometer (TES) has found that ozone is indeed a shifty character. Data from TES show that the amount of ozone—and thus its contribution to the greenhouse effect—varies greatly from place to place and over time.

"Ozone tends to be localized near cities where ozone precursors, such as car exhaust and power plant exhaust, are emitted," says Kevin Bowman, a senior member of the TES technical staff at the Jet Propulsion Laboratory. But the ozone doesn't necessarily stay in one place. Winds can stretch the ozone into long plumes. "Looking out over the ocean we can see ozone being transported long distances over open water."

Unlike CO₂, ozone is highly reactive. It survives in the atmosphere for only a few hours or a few days before it degrades and effectively disappears. So ozone doesn't have time to spread out evenly in the atmosphere the way that CO₂ does. The amount of ozone in one place depends on where ozone-creating chemicals, such as the nitrogen oxides in car exhaust, are being released and which way the wind blows.

This short lifespan also means that ozone could be easier than CO₂ to knock off.

"If you reduce emissions of things that generate ozone, then you can have a quicker climate effect than you would with CO₂," Bowman says. "From a policy standpoint, there’s been a lot of conversation lately about regulating short-lived species like ozone."

To be clear, Bowman isn’t talking about the famous "ozone layer." Ozone in this high-altitude layer shields us from harmful ultraviolet light, so protecting that layer is crucial. Bowman is talking about ozone closer to the ground, so-called tropospheric ozone. This "other" ozone at lower altitudes poses health risks for people and acts as a potent greenhouse gas.

TES is helping scientists track the creation and movement of low-altitude ozone over the whole planet each day. "We can see it clearly in our data," Bowman says. Countries will need this kind of data if they decide to go after the heat-trapping gas.

Ozone has been caught red-handed, and TES is giving authorities the hard evidence they need to prosecute the case.

Learn more about TES and its atmospheric science mission at tes.jpl.nasa.gov. The Space Place has a fun “Gummy Greenhouse Gases” activity for kids that will introduce them to the idea of atoms and molecules. Check it out at spaceplace.nasa.gov/en/kids/tes/gumdrops.

This article was provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration.
Sunglasses for a Solar Observatory
By Patrick Barry

In December 2006, an enormous solar flare erupted on the Sun’s surface. The blast hurled a billion-ton cloud of gas (a coronal mass ejection, or CME) toward Earth and sparked days of intense geomagnetic activity with Northern Lights appearing across much of the United States.

While sky watchers enjoyed the show from Earth's surface, something ironic was happening in Earth orbit.

At the onset of the storm, the solar flare unleashed an intense pulse of X-rays. The flash blinded the Solar X-Ray Imager (SXI) on NOAA's GOES-13 satellite, damaging several rows of pixels. SXI was designed to monitor solar flares, but it must also be able to protect itself in extreme cases.

That’s why NASA engineers gave the newest Geostationary Operational Environmental Satellite a new set of sophisticated “sunglasses.” The new GOES-14 launched June 27 and reached geosynchronous orbit July 8.

Its “sunglasses” are a new flight-software package that will enable the SXI sensor to observe even intense solar flares safely. Radiation from these largest flares can endanger military and civilian communications satellites, threaten astronauts in orbit, and even knock out cities’ power grids. SXI serves as an early warning system for these flares and helps scientists better understand what causes them.

“We wanted to protect the sensor from overexposure, but we didn’t want to shield it so much that it couldn’t gather data when a flare is occurring,” says Cynthia Tanner, SXI instrument systems manager for the GOES-NOP series at NASA’s Goddard Space Flight Center in Greenbelt, Maryland. (GOES-14 was called GOES-O before achieving orbit).

Shielding the sensor from X-rays also reduces the amount of data it can gather about the flare. It’s like stargazing with dark sunglasses on. So NASA engineers must strike a balance between protecting the sensor and gathering useful data.
When a dangerous flare occurs, the new SXI sensor can protect itself with five levels of gradually “darker” sunglasses. Each level is a combination of filters and exposure times carefully calibrated to control the sensor’s exposure to harmful high-energy X-rays.

As the blast of X-rays from a major solar flare swells, GOES-14 can step up the protection for SXI through these five levels. The damaged sensor on GOES-13 had only two levels of protection—low and high. Rather than gradually increasing the amount of protection, the older sensor would remain at the low level of protection, switching to the high level only when the X-ray dose was very high.

“You can collect more science while you’re going up through the levels of protection,” Tanner says. “We’ve really fine-tuned it.”

Forecasters anticipate a new solar maximum in 2012-2013, with plenty of sunspots and even more solar flares. “GOES-14 is ready,” says Tanner.

For a great kid-level explanation of solar “indigestion” and space weather, check out spaceplace.nasa.gov/en/kids/goes/spaceweather.

This article was provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration.

Caption:
X-9 class solar flare December 6, 2006, as seen by GOES-13’s Solar X-ray Imager. It was one of the strongest flares in the past 30 years.