

BACK BAY observer

The Official Newsletter of the Back Bay Amateur Astronomers
P.O. Box 9877, Virginia Beach, VA 23450-9877



EPHEMERALS april 2011

4/2

Nightwatch

Chippokes State Park
Surrey, VA

4/7

BBAA Monthly Meeting

TCC VA Beach
Building J, Room JC-12
7:30 pm

4/8

Garden Stars

Norfolk Botanical Gardens
Norfolk, VA
8:00 PM

4/15

Skywatch

3rd Annual Mt. Trashmore Star
Party
Mt. Trashmore, VB
6 - 11 PM

4/22

Skywatch

Northwest River Park

4/30

Nightwatch

Chippokes State Park
Surrey, VA



Looking Up!

Well, chalk up another first for me. Acting on info in *Sky & Telescopes* e-mail newsletter of March 11, I resolved to watch the occultation on Sunday evening the 13th of a fairly bright star. Mu Geminorum (Tejat Posterior, or "back foot", magnitude 2.9) was due to be winked out by the Moon. The *S&T* article linked to an excellent table produced by the International Occultation Timing Association. The table listed the time for Norfolk as 23:58:28 UT, with the moon at 76 degrees altitude. I had to remember that we had just gone into Daylight Savings Time, so I should deduct 4 hours instead of 5 (I was a Math major in college!).

So at about 7:30pm I set up my big 25x100 binocs on the tripod and parallelogram mount to be able to catch the dark edge of the Moon high in the sky. It was a real neck-stretcher, the top of the binocs were over 7 feet in the air and almost overhead. I had to crank down tight on the locking knobs to keep the binocs from sinking back down toward the ground. The unlit part of Luna was readily visible and I could see Tejat to the east with a noticeable gap between. Over the next twenty minutes or so, I was in and out of the house, monitoring Luna's progress toward the star. At about five minutes before the hour I threw on my coat and went out to watch.

You know, the Moon moves REAL slow! Well, relatively, anyway. I could not make out the star with my naked eye and adjusted the binocs so that most of Moon's sunlit surface was out of the field. Gradually Tejat approached the moon until it looked as if it might be sitting on the limb. Then, suddenly, Blink! It was gone.

When the moon occults a planet, such as Jupiter or Saturn, there is a measureable amount of time from the point when the Moon's limb first "contacts" the planet until it is totally

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GOES-R, Zombie Fighter

by Dr. Tony Phillips

On April 5, 2010, something eerie happened to the Galaxy 15 telecommunications satellite: It turned into a zombie.

The day began as usual, with industry-owned Galaxy 15 relaying TV signals to millions of viewers in North America, when suddenly the geosynchronous satellite stopped taking commands from Earth. It was brain dead! Like any good zombie, however, its body continued to function. Within days, Galaxy 15 began to meander among other satellites in geosynchronous orbit, transmitting its own signal on top of the others'. Satellite operators scrambled to deal with the interference, all the while wondering what happened?

In horror movies, zombies are usually produced by viruses.

"In this case, the culprit was probably the sun," says Bill Denig of the National Geophysical Data Center in Boulder, Colorado. He and colleague Janet Green of NOAA's Space Weather Prediction Center recently led a study of the Galaxy 15 anomaly, and here are their conclusions:

On April 3rd, a relatively minor solar flare launched a cloud of plasma toward Earth. Galaxy 15 had experienced many such events before, but this time there was a difference.

"Galaxy 15 was just emerging from the shadow of Earth when the cloud arrived and triggered a geomagnetic storm," explains Denig. Suddenly exposed to sunlight and the ongoing storm, "the spacecraft began to heat up and charge [up]."

Electrons swirling around Galaxy 15 stuck to and penetrated the spacecraft's surface. As more and more charged particles accumulated,

voltages began to rise, and—zap!—an electrostatic discharge occurred. A zombie was born.

"At least, this is what we suspect happened based on data collected by GOES satellites in the



The Galaxy 15 communication satellite was "brainless" for several months in 2010 after being exposed to a geomagnetic storm. The new GOES-R satellite will warn of such dangers.

vicinity," he says. "We'll be able to diagnose events like this much better, however, after GOES-R is launched by NASA in 2015."

GOES-R is NOAA's next-generation Geostationary Operational Environmental Satellite. One of the instruments it will carry, a low-energy electron counter, is crucial to "zombie fighting." Low energy-electrons are the ones most likely to stick to a spacecraft's surface and cause brain-frying discharges. By monitoring these particles in Earth orbit, GOES-R will provide better post-mortems for future zombie outbreaks. This could help satellite designers figure out how to build spacecraft less

The Back Bay Amateur Astronomer's Observer

The BBAA Observer is published monthly; the monochrome version is mailed to members who do not have Internet access. Members who do have Internet access can acquire the full color version on the Internet at <http://www.backbayastro.org/newsletters/newsletter.shtml>.

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BBAA Meetings

The BBAA meet the first Thursday of every month except for July. While school is in session, we meet at the VA Beach TCC Campus. **The April Meeting will be held at TCC Virginia Beach, Building J, Room JC-12 at 7:30 PM.** Directions available at www.backbayastro.org.

BBAA Internet Links

BBAA Web Site

<http://www.backbayastro.org>

Yahoo! Group

<http://tech.groups.yahoo.com/group/backbayastro>

BBAA Observer Newsletter

www.backbayastro.org/observer/newsletter.shtml

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susceptible to discharges. Also, GOES-R will be able to issue alerts when dangerous electrons appear. Satellite operators could then take protective action—for example, putting their birds in “safe mode”—to keep the zombie population at bay.

Meanwhile, Galaxy 15 is a zombie no more. In late December 2010, after 9 months of terrorizing nearby spacecraft, the comsat was re-booted, and began responding to commands from Earth again.

All's well that ends well? True zombie fighters know better than to relax. Says Denig, “we’re looking forward to GOES-R.”

You and the kids in your life can learn about space weather at <http://scijinks.gov/space-weather-and-us>.

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



Welcome New Members!

Looking Up! Continued from page 1

covered. With a star, the object is so incredibly far away that we cannot detect its diameter and immersion takes place virtually in an instant. I had seen the Moon cover some very faint stars when I first got my 10" Dob, and I had seen it cover a couple of the fainter members of the Pleiades in 7x35 binocs, but this was the first bright one with the big binocs. One odd note: Guy Ottewell's *Astronomical Calendar 2011*, does not list this occultation!

In other news:

A group of members has formed an ad-hoc committee to look into obtaining access to a dark-sky site that could be used by BBAA members. The Dark Sky Site Search Committee (aren't we original?) has had a couple of meetings and discussed some options. No concrete plans have been made, but a day-trip is planned in the near future to look at a site in eastern North Carolina. If you are interested in participating, please contact George Reynolds. No BBAA funds will be expended on this project. More news will follow, as appropriate.

Cloudwatch was March 25th, ask Ted Forte about seeing galaxies in the trees.

Upcoming Events:

The Third Annual Mt. Trashmore Star Party will be held on April 15th, weather permitting, of course. The past two of these events were well attended, with over a thousand people attending each of them. We typically have twenty or more scopes for the public to view whatever we can locate from the middle of the city. If you have never participated in an outreach event, this is a great one to start with. It runs from 7pm to

11pm but you have to get there much earlier if you want to drive in to unload and park near your scope. More information will be available on the Yahoo! Website.

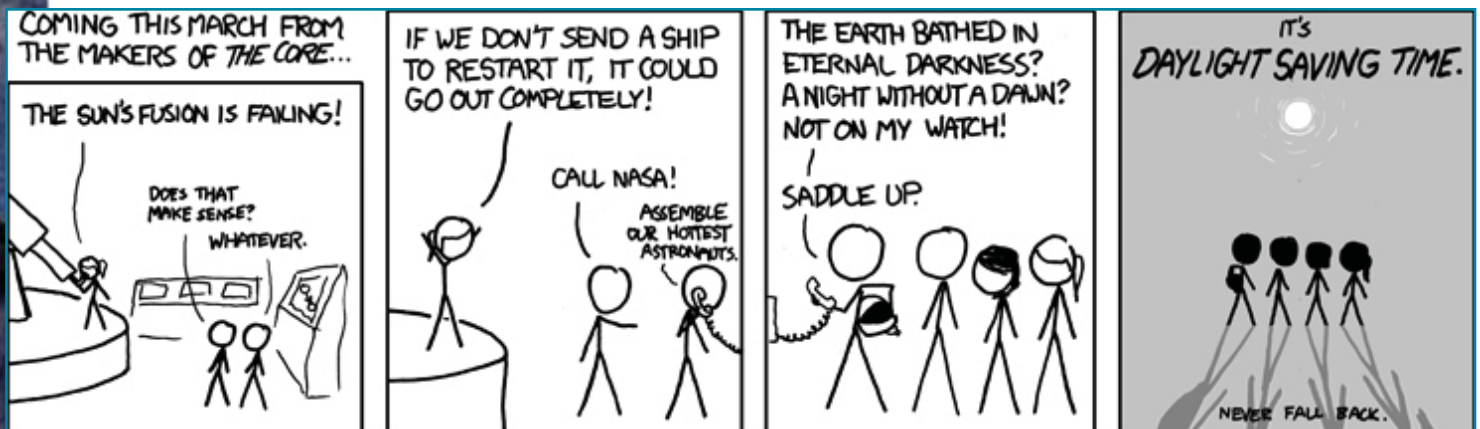
The next night, April 16th, is Yuri's Night, an international party celebrating both Yuri Gagarin, the first Man to venture into space on April 12, 1961, and the launch of the first space shuttle on April 12, 1981. This is the 50th and 30th anniversary of these events and will be celebrated at 198 parties in over 51 countries. The local event is at the Virginia Air and Space Center in downtown Hampton from 7pm to 12 am. This is an adult event, as alcoholic beverages are sold. Some members of BBAA and the VPAS will have binoculars and telescopes on the third floor outdoor landing and on the Observation Deck. Admission is \$10. If you would like to bring a scope (you have to be able to carry it in), contact Lawrence "Bird" Taylor thru the VPAS website. Space for scopes is limited.

Astronomy Day is May 7th at the Virginia Beach Central Library on Virginia Beach Blvd. This is a rain or shine event. More info will be available on our website.

Our first Boardwalk Astronomy event of the summer is scheduled for Tuesday, May 17th with a rain date of Thursday, the 19th. This is another large and enjoyable outreach project that is held on the Virginia Beach Boardwalk around 24th & 25th streets. We usually have hundreds of eager eyes of tourists from all over the US and many from other countries.

I urge our members to join us in these rewarding outreach events. It's really great to have someone look into your eyepiece and go "WOW!" In the meantime, Keep Looking Up!

/\ark Gerlach



xkcd.com

Gardenstars Report

by Bill McClean

What a ball. Bill Newman, Jim Tallman and I were setting up in the World of Wonder area wondering if the sky would clear off as 7 forecast models predicted. Jim noticed it first off to the north- a darkening. It was the edge of the clouds blowing away. Within 20 minutes the sky became totally clear.

In the mean time George 3 was presenting a 30 minute astro media show and talk up in the main building to 15 or so folks. President Gerlach made an appearance up there supplied back up for George 3.

I don't know what exactly they talked about but their audience spoke highly of the presentation.

When the show topside was over they all walked down to us waiting at the scopes. Jim had M37, Bill-the Orion nebula and I the moon in our fields of view. Three vastly different objects for the first round of viewing blew this bunch away. Once everyone had an eyeful, Bill and Jim gave heavenly

tours of other objects including a very low in the sky Saturn, which did what Saturn always does- astounded.

We received many positive and enthusiastic comments on the views and on the whole presentation. At a little after 9:00 Gil, who works at the gardens, rounded everyone up and headed back to the main building.

I am honored and grateful to have like minded astronomer friends like all of you guys and gals- and to think I did astronomy for so long-alone. The fellowship, companionship and fun of observing with others and doing these public outreach events with you guys is absolutely priceless. I love my life! Thank you George 3, Mark, Jim & Bill.

Thank you BBAA.

Carpe Noctem

Bill McLean

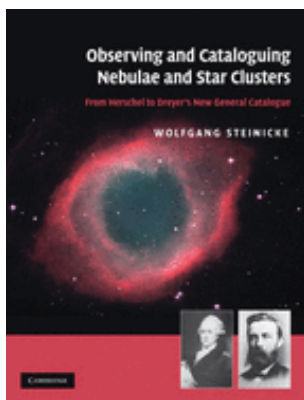
Observing and Cataloguing Nebulae and Star Clusters by Wolfgang Steinicke (Cambridge University Press 2010)

Book review by Ted Forte

There are 13,226 entries in the NGC/IC. It is the principal catalog of non-stellar objects in use throughout the astronomical world. Ever wonder how such a gargantuan catalog came to be?

Wolfgang Steinicke is a core team member of the NGC/IC project and an acknowledged authority on the history of astronomy. This very scholarly work details the century long accumulation and cataloguing of observational discoveries from Sir William Herschel to John Emil Dreyer. It is a comprehensive history of astronomy in the nineteenth century that explores the contributions of both the well known players like Charles Messier, the Herschels, Lord Rosse, Barnard, Pickering, Stephan, Copeland etc. and the obscure and lesser known contributors such as Joseph Baxendell discoverer of the "unphotographable nebula" (NGC 7088). I'll bet you'll have to Google that one. It is an impressive book, but it is not for the faint of

heart. Just lifting this 648-page tome is daunting. There are 242 footnotes and 35 pages of references. I will predict that it will become a standard reference for students of astronomical history, but I doubt many amateurs will actually attempt to read it. If you think it a necessary addition to your library, bring your checkbook, it lists for well over \$100. But for the true astro-history buff, it is a treasure chest that contains the history of the NGC in minute detail; the discoverers, the catalogers, the observatories and the telescopes that built the catalog are all to be found between its covers. I, myself, find it a fascinating read, those with less of a penchant for science history, however, might find it almost punishing.



BBAA Meeting Minutes: March 3, 2011

The March, 2011 meeting was called to order at 7:31 p.m. by President Mark Gerlach in Room JC12 of TCC, VB campus. (This is the FIRST time we have ever met in the room indicated in the newsletter!) Those in attendance were Neill Alford, Bruce Bodner, Kenny Broun, Scott Bough, Tom Flatley, Courtney Flonta, Ted Forte, Amy Koenig Gardner, Mark Gerlach, Jeff Goldstein, Chuck Jagow, Georgie June, Curt Lambert, Ben Loyola, Matt McLaughlin, Bill McLean, Bill Newman, Jeffrey Nicholson, Bill Powers, George Reynolds, Jim Tallman, and Matt Swingle.

Treasurer's report: General Fund, \$3264.20; Scholarship Fund, \$3700.12; total, \$6964.32.

Secretary's report: 103 total members, of which 10 are associate members (students) and 10 are family memberships. The minutes of the last meeting are published on the BBAA Web site and in the March newsletter.

Scholarship committee report: Ben Loyola said that the scholarship announcement has gone out to all Hampton Roads school districts: Hampton, Newport News, Suffolk, Norfolk, Portsmouth, Chesapeake, and Virginia Beach. The deadline for scholarship application submission is May 1st. He lamented that only the Virginia Beach school system has a good scholarship Web site. The others have a word-of-mouth system that may or may not get results. He said there are dozens of scholarship opportunities, and it is sad that more students do not get the word. In the past we have had very few applicants. There was some discussion that, since the BBAA scholarship fund is above \$3000 now, why not give two scholarships this year. Clarification was made that the Scholarship Committee set the rules last fall, and the announcements have all gone out, so it is too late to change for this year, but when they meet this fall, they can decide to change it. Bill McLean expressed an interest in being on the scholarship committee. Mark mentioned that Dale Carey had also expressed an interest.

Old Business

VAAS: BBAA is hosting this year's Virginia Association of Astronomical Societies (VAAS) conference. Chuck Jagow, VAAS committee head, reported that the NASA Speakers' Bureau has been contacted. No response has yet been received. Michelle Shinn has a conflict on that date (1 October, 2011) and cannot attend. George "volunteered" Ted Forte and Bruce Bodner to be speakers. An observing site for the night of Saturday, 1 Oct has yet to be determined. Several suggestions were made at the meeting: Cornland, Chippokes, and Northwest River Park.

Dark Sky Site: There was a spirited discussion of a dark sky observing site. The Secretary contacted some interested parties, and solicited more at the meeting. As he said at the Feb. meeting he would, Ken Broun checked the place he had spoken of, with 15 acres in North Carolina. The land is in Tyrell County, North Carolina, about 12 miles south of Columbia, NC, down highway 94, off Gum Neck Road, then Gum Neck Landing, to Grapevine Landing. The spot is near Pettigrew State Park (to the northwest), and Google Earth, projected on the screen at the meeting, showed it to be almost due east of the dark spot Rob Schonk had found, about five acres near Georgia Road, with the trailer. Ken said the owners had inherited the land, and want to keep it in the family, and are willing to consider a long-term lease to the club (or a consortium of club members).

Ken said it is about an hour and a half from the junction of Ballhack Road and U.S. Route 17. There was once a well and a septic system, which might be re-established. There are tall grass and weeds, small trees and bushes that would need to be cleared. It would be advisable to add a real bathroom, and possibly a shower for extended stays.

An ad hoc committee will meet sometime this month, and plan to go on a "field trip" in early April to visit the property and give it careful consideration (after dark). Members who expressed an interest were Mark Gerlach, Ken Broun, Chuck Jagow, Bruce Bodner, Jim Tallman, Bill Newman, Jeff Goldstein, Bill McLean, George Reynolds, and (in absentia) Dale Carey.

New Business:

The RRRT (Rapid Response Robotic Telescope) on Fan Mountain is working, but not all the time. Ted Forte reported that though it is designed to be automated, they prefer that someone be on site when it is in use, "just in case". The funding for the scope and project was sufficient to build it, but there are no funds for maintenance.

Schedule:

VP Courtney Flonta, BBA outreach coordinator, reported that there are two outreach sessions next week, Monday, 7 March at Deep Creek Elementary School's Science Night, and Thursday, 10 March at Portlock Primary School Science Night. There will be a 4-minute pass of the International Space Station Thursday night.

Nightwatch Saturday, Mar. 5

Garden Stars Friday, Mar. 11

Skywatch Friday, Mar. 25

Mount Trashmore Star Party Friday, April 15

Yuri's Night Saturday, April 16 at Virginia Air and Space Center, Hampton

National Astronomy Day will be Saturday, May 7.

Two events are on tap for June, Field Day at Indian Lakes ES, and Career Day at Tallwood ES. More details will be forthcoming.

Our own Master Observer Ted Forte presented the meeting feature, a very enlightening discussion and slide show of the many "Observing Clubs" available through the Astronomical League. "There is almost something for everybody", Ted said, with more than 30 "clubs", opportunities to observe different objects to earn certificates and pins. Ted highlighted a few of the thirty-some lists, starting with the Messier Club. Observers who log 70 Messier objects get the "regular" Messier Certificate, and those who log all 110/109 objects get the "honorary" certificate and a beautiful pin. Other clubs include the Double Star Club, Lunar Club, "Sky Puppy" Club (our own Taylor Christie was the second one in the nation to earn that pin), Herschel 400 Club, Sunspotter's Club, etc., etc. Something for everyone, even in light polluted skies. The Urban Club lists 100 objects which MUST be seen in light-polluted urban skies. Double stars, the Moon (Lunar

Club and Lunar Club II), the Sun, and the planets can all be seen in light-polluted urban skies.

Several years ago the BBA voted to host a new Planetary Nebula Club, with Ted as the point man. It became a club project, with many members contributing their time and effort to establish the list of planetary nebula, submit astroimages of various PNs, and create the observing manual. An astronomer must observe 60 of the listed objects to earn the basic certificate, and must log all 110 to get the advanced certificate and pin, which features a lovely color image of M27 the Dumbbell Nebula, photographed by club member Richard Dixon.

Ted emphasized that the biggest advantage of the observing clubs is for stargazers to "see new stuff," so we're not looking at the same things over and over. His closing advice: "Get on the Web, read the rules, keep a log, get a certificate." The A.L Web site may be found at www.astroleague.org.

Observer's Corner:

Not many observations, thanks to the bad weather we have had, but there was some discussion about the APOD, Astronomy Picture of the Day (<http://apod.nasa.gov/apod/>). Astroimager Ray Gabany spent 30+ hours imaging each of several galaxies, including M81 and NGC 5655, to show faint streams of stars "flowing" off M81 and the Sunflower Galaxy. It is thought that these are remnants of galaxies that have been consumed by and merged with the existing galaxies. Indeed, it has been suggested that the globular star clusters we see in our own Milky Way Galaxy are the remaining cores of ancient galaxies the MW has cannibalized and swallowed.

The meeting was adjourned at 8:57 p.m. by President Mark Gerlach.



April 2011

BBAA Events	Special Outreach	Astronomical Events
02 Nighthwatch at Chippokes		
		03 New Moon
07 BBAA Monthly Meeting at TCC VB		
08 Garden Stars at Norf. Bot. Gardens		
		11 First Quarter
15 Mt. Trashmore Star Party		18 Full Moon
22 Skywatch at NWRP		
30 Nightwatch at Chippokes		25 Last Quarter



Sneak Peek into May

Thursday 05/05/2011 Meeting at TCC VA Beach, Building J, Room JC-12 at 7:30 p.m.
 Friday 05/13/2010 Garden Stars at Norfolk Botanical Gardens at 8:30 p.m.
 Friday 05/20/2010 Nighthike at Northwest River Park
 Friday 05/27/2011 Skywatch at Northwest River Park