



EPHEMERALS APRIL 2008

DATE	WHEN	WHAT & WHERE
3	7:30p	BBAA Meeting @ TCC in Virginia Beach
5	Dusk	Nightwatch @ Chippokes Plantation
10	6:00p	Science Fair @ Arrowhead School in VA Beach
12	5:00p	Girl Scout Day @ Camp Darden in Courtland
25	Dusk	Skywatch @ NWRP Equestrian Area
NO GARDENSTARS ????		

Looking Up!

One of the principle reasons that makes our club unique and great is our dedication to community outreach. This was made clear recently when Chuck's request for help with the expected large crowd at Nansemond -Suffolk Academy was answered by so many of you. I have seen this outpouring of club esprit de corps and community spirit on many occasions over the years and always been proud of our membership's dedication to our shared goals. We all know it requires time away from home to do these events, but one always comes away with the satisfaction of knowing that he or she may have awoken the science bug in a young mind. Our regular public outreach at NWRP always seems to draw the both young and old. In fact, it is the adults that frequently are inspired and excited more so than youth. Come to think of it, that's how the club relit the passion in me many years ago. Keep it up!

Spring Star Parties are underway already. I just returned from Chiefland Astronomy Village last month and am pleased to report that efforts are underway to restart this large annual late fall SP there as soon as this year. The area and land owners involved are to be expanded from 10-15 acres to as large an area as 45 acres! Horizons approach 10 degrees or better over 360 degrees! This

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can easily accommodate some 350 plus attendees. The Winter Star Party in the Florida Keys will celebrate its 25th year next February and is to be extended to some 10 days in length. I expect that the international presence will increase even more. This is one SP event that everyone should try to attend once. It can be an exciting week with upwards of 600 star gazers attending and many vendors with special pricing on those treasures we all "must have".

At least 5-6 of our members will again make the pilgrimage to the Delmarva Star Gazers Star Party at Tuckahoe State Park on Maryland's Eastern Shore this month. Shouts of "the best I've ever seen" (from guess who?) can already be heard!

And of course the infamous biannual gathering of hearty souls at the East Coast SP in Coinjock, NC is getting nearer in May. So dust off those star charts and clean those eyepieces for some real dark skies fun and friendship.

See you there!

Bruce "Doc" Bodner

The Back Bay Amateur Astronomer's Observer

March's Meeting Minutes

There were 23 members in attendance at the March 6th meeting; held in our new meeting venue, Kenny Brouns' new classroom (Room JC-12) in TCCs' new science building.

Regular members in attendance were:

Neill Alford, Bruce Bodner, Jordan Bramble, Larry Channel, Kelly Creger, Jeff Dunn, Ted Forte, Jay Garrard, Steve Hamilton, Don Ives, Karen Jaffe, Chuck Jagow, Georgie June, Benito Loyola, Matt McLaughlin, Bill Powers, George Reynolds, Chuck Rippel, Kevin Swann, Lawrence Taylor, Kevin Weiner, Larry Wade, Shelton Williams.

Treasurers Report:

\$5881.21 Club Balance

Secretary's Report:

Reading of the February meeting minutes waived due to availability on the Internet.

Astronomical League Coordinators Report:

Cliff Hedgepeth submitted the paperwork for completion of the Caldwell observing award.

RRRT Report:

OGS will install a new RA gearbox and new Bisque card. Ted mentioned the winner of the WHRO silent auction. The winner is receiving a trip to Fan Mountain and a BBAA club membership plus a subscription to Astronomy magazine.

Old Business:

None.

New Business:

Need scopes to participate in Nansemond/Suffolk Academy's Science night, Thursday, March 13. Contact Chuck for details.

Cloverwatch is on hold until further notice.

GardenStars on hold. Waiting on word from Norfolk Botanical Gardens. No program for March.

Ben mentioned that he has registered with Chesapeake and Norfolk in regards to this years BBAA Scholarship.

Ben also mentioned that his new observatory is coming along nicely.

Lawrence "Bird" Taylor asked if BBAA would be interested in helping out with the VAAS conference this year. We could possibly host it as a region with the peninsula club and other clubs in the region.

Club Meeting Presentation:

A video on "Pluto, Eris, and the Dwarf Planets of the Solar System" was the presentation chosen for March meeting.

In Conclusion:

The meeting was adjourned around 9:30 PM.

Until Next Month, Keep Looking Up!!!

Matt McLaughlin

MAP TO THE NEW BBAA MEETING LOCATION

Don't confuse the Adult Learning Center with the Advanced Technology Center, they are **NOT** the same buildings. The Adult Learning Center is the building that will be in front of you when you first turn off of Concert Drive, ignore it and turn right on University Drive and proceed to College Crescent where the parking lots begin. Then just walk South of the ATC and go in the Science Building and find the stairs closest to the planetarium and go upstairs to classroom JC12.



The Back Bay Amateur Astronomer's Observer

NASA's Space Place

Tracking Wildlife from Space

by Patrick L. Barry

It's 10 o'clock, and do you know where your Oriental Honey Buzzard is?

Tracking the whereabouts of birds and other migrating wildlife across thousands of miles of land, air, and sea is no easy feat. Yet to protect the habitats of endangered species, scientists need to know where these roving animals go during their seasonal travels.

Rather than chasing these animals around the globe, a growing number of scientists are leveraging the bird's-eye view of orbiting satellites to easily monitor animals' movements anywhere in the world.

The system piggy-backs on weather satellites called Polar Operational Environmental Satellites, which are operated

by the National Oceanic and Atmospheric Administration (NOAA), as well as a European satellite called MetOp. Sensors aboard these satellites pick up signals beamed from portable transmitters on the Earth's surface, 850 kilometers below. NOAA began the project—called Argos—in cooperation with NASA and the French space agency (CNES) in 1974. At that time, scientists placed these transmitters primarily on buoys and balloons to study the oceans and atmosphere. As electronics shrank and new satellites' sensors became more sensitive, the transmitters became small and light enough by the 1990s that scientists could mount them safely on animals. Yes, even on birds like the Oriental Honey Buzzard.

“Scientists just never had the capability of doing this before,” says Christopher O'Connors, Program Manager for Argos at NOAA.

Today, transmitters weigh as little as 1/20th of a pound and require a fraction of a watt of power. The satellites can detect these feeble signals in part because the transmitters broadcast at frequencies between 401 and 403 MHz, a part of the spectrum reserved for environmental uses. That way there's very little interference from other sources of radio noise.

“Argos is being used more and more for animal tracking,” O'Connors says. More than 17,000 transmitters are currently being tracked by Argos, and almost 4,000 of them are on wildlife. “The animal research has been the most interesting area in terms of innovative science.”

For example, researchers in Japan used Argos to track endangered Grey-faced Buzzards and Oriental Honey Buzzards for thousands of kilometers along the birds' migrations through Japan and Southeast Asia. Scientists have also mapped the movements of loggerhead sea turtles off the west coast of Africa. Other studies have documented migrations of wood storks, Malaysian elephants, porcupine caribou, right whales, and walrus, to name a few.

Argos data is available online at www.argos-system.org.

so every evening, scientists can check the whereabouts of all their herds, schools, and flocks. Kids can learn about some of these endangered species and play a memory game with them at spaceplace.nasa.gov/en/kids/poes_tracking.



Image Caption:

The ARGOS program tracks the whereabouts of endangered migrating animals via miniature transmitters on the animals and the POES satellites in orbit.

The Back Bay Amateur Astronomer's Observer

BBAA INFO

The BBAA meet the first Thursday of every month. While school is in session we meet at the VA Beach TCC campus.

The April meeting will be on Thursday April 3rd at 7:30 PM at the new Science building of the Advanced Technology Center on the Virginia Beach TCC campus in Virginia Beach. The meetings are usually held in classroom JC12 or the Planetarium.

WHERE IS THE MEETING?

TIDEWATER COMMUNITY COLLEGE CAMPUS

The TCC Campus is located in Virginia Beach off of Princess Anne road. The following should help you locate the campus.

FROM Interstate I-64:

Proceed to the I64 / I264 junction and take I264 East .
Take the S. Independence Exit, 17A, right hand lane and proceed (.000000040879639 AU) (3.8 mi).

Turn LEFT onto Princess Anne road and proceed (.000000011833579 AU) (1.1 mi).

Turn LEFT onto Concert Drive and proceed (.000000001426233 AU) (700').

Turn LEFT and then turn RIGHT on University Drive go (.000000002151559 AU) (0.2mi).

Proceed to College Crescent and then park in one of the lots in front of the Advanced Technology Center.

The Science Building is immediately south of the ATC building. Walk toward the ATC entrance, but bear left, the Science building is straight ahead. Find the rounded part, this is the Planetarium. Locate the stairs nearest the planetarium and upstairs you will find classroom JC12 on the next floor.

COX COMMUNICATIONS CAMPUS

The COX Communications Campus is located in Chesapeake's Greenbrier section. The following should help you locate the facility.

FROM Interstate I-64:

Take exit 289B (between the Indian River & Battlefield exits). South on Greenbrier Parkway (.7382 miles).

Turn RIGHT onto Eden Way West (.9231 miles).

Turn RIGHT on Crossways Blvd (.88901 miles).

Turn Right into the Cox Campus

The meeting is usually held in the Silver room located on the North side of the facility. Enter and tell the guard that you are with the BBAA and they will issue a badge and direct you to the room.

BBAA INTERNET LINKS

BBAA WEB SITE

<http://groups.hamptonroads.com/bbaa>

YAHOO GROUP

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

BBAA OBSERVER NEWSLETTER

<http://www.backbayastro.org/newsletters/newsletter.shtml>

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What do you want to do?

OBSERVER INFO

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>

Please submit articles and items of interest no later than the 15th of April for the May issue. Please submit all items to:

ObserverBBAA@cox.net / chuck@jagowds.com

OR

BBAA Observer

P.O. Box 9877

Virginia Beach, VA 23450-9877

The Back Bay Amateur Astronomer's Observer

A NASA Satellite Detects Naked-Eye Explosion Halfway Across Universe

By J.D. Harrington

A powerful stellar explosion detected March 19 by NASA's Swift satellite has shattered the record for the most distant object that could be seen with the naked eye.

The explosion was a gamma ray burst. Most gamma ray bursts occur when massive stars run out of nuclear fuel. Their cores collapse to form black holes or neutron stars, releasing an intense burst of high-energy gamma rays and ejecting particle jets that rip through space at nearly the speed of light like turbocharged cosmic blowtorches. When the jets plow into surrounding interstellar clouds, they heat the gas, often generating bright afterglows. Gamma ray bursts are the most luminous explosions in the universe since the big bang.

"This burst was a whopper," said Swift principal investigator Neil Gehrels of NASA's Goddard Space Flight Center in Greenbelt, Md. "It blows away every gamma ray burst we've seen so far."

Swift's Burst Alert Telescope picked up the burst at 2:12 a.m. EDT, March 19, and pinpointed the coordinates in the constellation Bo'tes. Telescopes in space and on the ground quickly moved to observe the afterglow. The burst is named GRB 080319B, because it was the second gamma ray burst detected that day.

Swift's other two instruments, the X-ray Telescope and the Ultraviolet/Optical Telescope, also observed brilliant afterglows. Several ground-based telescopes saw the afterglow brighten to visual magnitudes between 5 and 6 in the logarithmic magnitude scale used by astronomers. The brighter an object is, the lower its magnitude number. From a dark location in the countryside, people with normal vision can see stars slightly fainter than magnitude 6. That means the afterglow would have been dim, but visible to the naked eye.

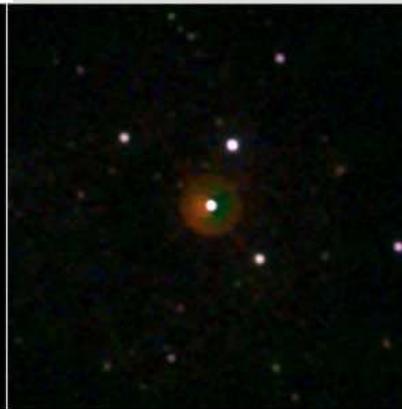
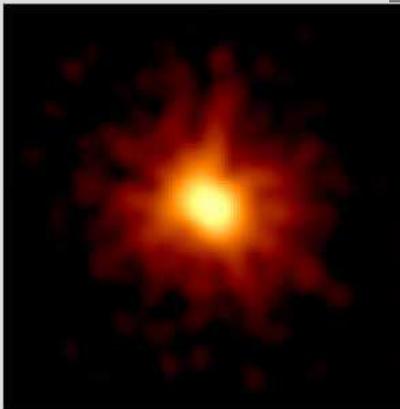
Later that evening, the Very Large Telescope in Chile and the Hobby-Eberly Telescope in Texas measured the burst's redshift at

0.94. A redshift is a measure of the distance to an object. A redshift of 0.94 translates into a distance of 7.5 billion light years, meaning the explosion took place 7.5 billion years ago, a time when the universe was less than half its current age and Earth had yet to form. This is more than halfway across the visible universe.

"No other known object or type of explosion could be seen by the naked eye at such an immense distance," said Swift science team member Stephen Holland of Goddard. "If someone just happened to be looking at the right place at the right time, they saw the most distant object ever seen by human eyes without optical aid."

GRB 080319B's optical afterglow was 2.5 million times more luminous than the most luminous supernova ever recorded, making it the most intrinsically bright object ever observed by humans in the universe. The most distant previous object that could have been seen by the naked eye is the nearby galaxy M33, a relatively short 2.9 million light-years from Earth.

Analysis of GRB 080319B is just getting underway, so astronomers don't know why this burst and its afterglow were so bright. One possibility is the burst was more energetic than others, perhaps because of the mass, spin, or magnetic field of the progenitor star or its jet. Or perhaps it concentrated its energy in a narrow jet that was aimed directly at Earth.



GRB 080319B was one of four bursts that Swift detected, a Swift record for one day. "Coincidentally, the passing of Arthur C. Clarke seems to have set the universe ablaze with gamma ray bursts," said Swift science team member Judith Racusin of Penn State University in University Park, Pa.

Swift is managed by Goddard. It was built and is being operated in collaboration with Penn State, the Los Alamos National Laboratory, and General Dynamics in the U.S.; the University of Leicester and Mullard Space Sciences Laboratory in the United Kingdom; Brera Observatory and the Italian Space Agency in Italy; plus partners in Germany and Japan.

Image Caption: The extremely luminous afterglow of GRB 080319B was imaged by two instruments on NASA's Swift satellite, the X-ray Telescope, left, and the Optical/Ultraviolet Telescope. (Article and images reprinted with permission by NASA)

The Back Bay Amateur Astronomer's Observer

OBSERVERS CORNER

March 2008 - I had a decent nights weather and a really good observing session last night! We started out sort of murky here in Central NC last night, but around 10:30 or so it really cleared out and became transparent. Not superb, but very good. Seeing was so-so, but I was hunting after galaxies so seeing wasn't super critical! I finished off the SAC/RASCI NGC objects in UMA the other night, so it was time to move onto the next constellation on my list: Canis Venatici. Most of the SAC/RASC objects in UMA were nice, but nothing too exceptional, so I had fairly modest expectations for CVN. 4 of the NGC's in CVN are also Caldwell's (with none in UMA, which surprised me), so maybe there would be something different => There are 11 objects, in 7 groupings, all galaxies. I planned on spending a couple of nights working through the list, but once the weather cleared I figured what the heck, I don't have much going on at work on Friday anyway.... => The highlight came at the end of the session with the last two groupings: NGC 5005/ 5033 and NGC 4631/4631/4656/4657 Each group easily fit into the FOV of the 30mm Pentax finder EP and even looked better in the 20mm Pentax. Some texture and structure was visible at the lower magnification, but all 5 really came to life with the 10mm at 125X. NGC 5005 showed definite streaking and banding NGC 5033 was motley and gave hints of outer arms when seeing would firm up NGC 4656/4657 was markedly "odd" shaped that looked straight with direct vision, but averted vision showed it bowing like a hockey stick. Averted vision also made it almost twice as long - very interesting object! NGC 4631/4627 was certainly the highlight of the evening! I've seen quite a few photos of this one, but I was really surprised how much of that photographic detail was obvious at the EP in my 10" dob. The tapered shape as very evident and mottling and streaking was also very obvious. The small satellite above the hump was also plain as day. Remarkable just doesn't do it justice! I REALLY wanted to spend more time with the last one, but I had to get to bed: the alarm goes off at 5:30 AM.... Sometime around midnight the pack of coyotes in the field next to my pasture started up and really sang me quite a serenade! The weather forecast for the next week is poor and I've already started seeing the yellow/green pollen haze on the cars, so its probably going to be a while before I get back to revisit that, but I'm looking forward to it!!!

Rapid Eye

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March 2008 - Finally a great night! We started off with the notable sight of the shuttle and the ISS crossing the sky in formation. What was really neat was watching as they went into Earth's shadow and disappear long before getting to the horizon. They will pass over head tomorrow night at 8:22 higher in the sky so if you didn't see it tonight you can get a chance tomorrow. After the space shuttle transparency dropped significantly with high clouds moving in almost ruining the night but they cleared in a half hour leaving us superb skies the rest of the evening. The sky meter improved from 19 something to 20.2 which is a major difference. Iota Orionis was first on the list. This is a remarkable triple star with a surprise. Your eyes are drawn to the star but if you look away the star is part of a very bright emission nebula that would be a show object if it were not next to M-42. This is the lowest star in the sword of Orion. Give it a visit. We saw several 12th magnitude galaxies in the bowl of the dipper. Even in the 4 inch several extended 12th magnitude objects were easily seen in the super skies. Set a personal visual distance record tonight using the 4 inch to observe the 3C 273 quasar in Virgo. I was not sure if the 12.9 magnitude quasar was observable in the 4 inch but Kent and I were both able to observe the quasar at close to the limit of the scope. Actually I think we could go a bit dimmer but only under ideal conditions. We saw 1/7th of the way across the distance of the universe (2 billion light years). Not bad from a back yard.

Mark Ost

Book Review

Digital Astrophotography

Digital Astrophotography by Stefan Seip

I 'm not a photographer, what am I doing reading a book on astrophotography? Well, the good people at Rocky Nook Inc. were kind enough to provide a couple of copies as ECSP door prizes in return for an objective look at the book and a review in this newsletter. So here I am, novice of novices, offering my opinion for what it's worth.

Actually, in retrospect I guess I am exactly the target audience for this (very attractive) book. While Adam Block's critique declares that this book will be a valuable reference for experienced imagers, I suspect that the more accomplished astrophotographers here will learn very little from this tome. I, on the other hand, found it to be a veritable font of information.

If I were contemplating attaching a webcam or digital SLR to a telescope to capture my first serious image, I think this is just the type of instructive guide I would find useful. That's not to say that I found it to be a page turner. Early chapters were a bit too basic for me; after all even though I'm not a imager I HAVE seen a telescope before. I suppose it's a requirement though, so I'll forgive the primer given that the author must assume total ignorance in a beginner's guide like this. At times the book is *very* basic (did you know that turning the focus knob will affect focus?) but eventually some of the magic is revealed and there is much for a neophyte to appreciate.

A particularly useful exercise for me was a step by step run down of some basic image processing using the freeware program Registax IV. Of course, since Registax V is about to be released I hope there is a new edition of the book ready to print. In fairness though, I think much of the essence of image processing can be gained simply by following along in the book so its usefulness may outlive the current software version.

If you are considering getting started in astrophotography I think this very colorful and easy to read book is worth a look. Perhaps you'll be lucky enough to win one at ECSP.

Digital Astrophotography, A Guide to Capturing the Cosmos, by Stefan Seip published by Rocky Nook Inc. (Santa Barbara CA) and distributed by O'Reilly Media. Translated from the original German by Elke Schulz; 155 pages soft cover ISBN 978-933952-16-1 \$29.95

Ted Forte

The Back Bay Amateur Astronomer's Observer

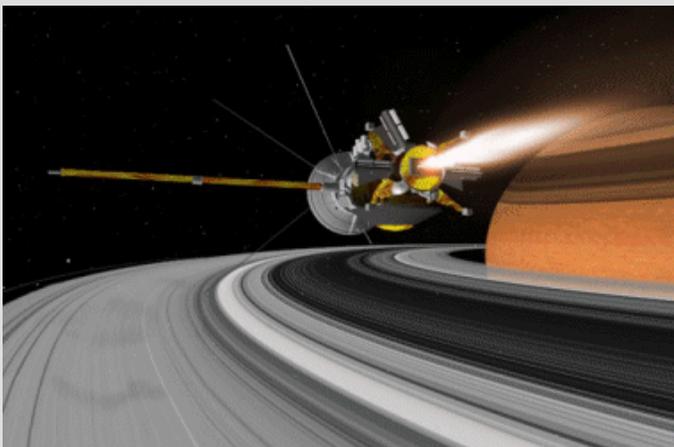
CASSINI PROBE FAILED TO 'TASTE' MOON'S GEYSERS IN FLYBY

By Stephen Battersby

The Cassini spacecraft has survived its passage through the ice plume of Enceladus and sent back close-up images and other data from this mysterious moon of Saturn, but not everything went according to plan. One vital experiment, which scientists hoped would help reveal the origin of the plume, failed to collect any data at the crucial moment.

Flybys of the moon planned for later in 2008 may be able to repeat the plume fly-through to try to collect the observations missed in this attempt.

As Cassini flew over the small moon on 12 March, passing only 200 kilometres from the base of the plume, an "unexplained software hiccup" prevented the

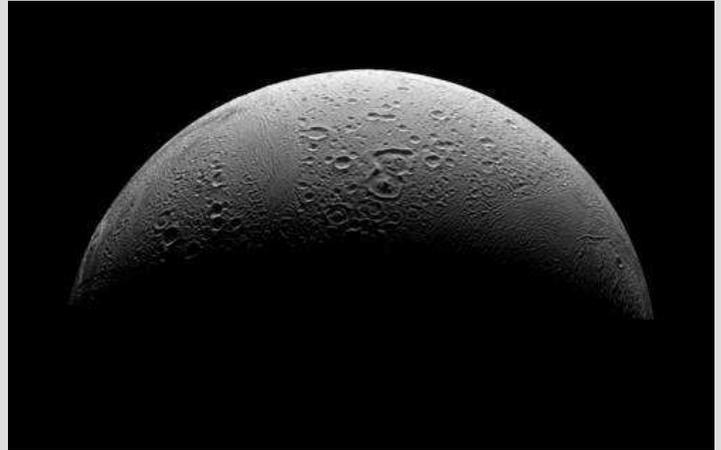


spacecraft's Cosmic Dust Analyzer (CDA) from transmitting data to the onboard computer.

New software, designed to improve the ability of CDA to count particle hits, may be to blame. "We don't know why it did not work," says the instrument's principal investigator, Ralf Srama of the Max Planck Institute of Nuclear Physics in Heidelberg, Germany. "We prepared very carefully."

Among other things, CDA would have been looking for mineral grains, which might act as nucleation points for the ice crystals and could reveal whether the rocky core of Enceladus is connected with whatever drives the geysers.

Other instruments on board were working fine, however. Cassini's cameras captured pictures of the north pole of Enceladus. This northern terrain is old and cratered, unlike the fresh, young, smooth terrain of the south. That may be because the southern regions are



more heavily blanketed by ice from the plume, which is blasted out from fissures near the south pole called "tiger stripes".

Another instrument, the Composite Infrared Spectrometer (CIRS), got a close-up look at the tiger stripes, although some analysis is still needed before any images are released. "We're looking for any kind of changes from the last flyby in 2005," says Neil Bowles of Oxford University, UK, a member of the CIRS team. On that flyby, CIRS found hotspots coinciding with the tiger stripes. The source of this heat is still unknown. If the heat source is powerful enough to melt a watery sea or ocean under Enceladus's ice crust, then electrical currents in that sea could affect magnetic fields near the moon.

During the 12 March flyby, Cassini's magnetometer found that the field of Saturn is bent around the plume. According to magnetometer team leader Michele Dougherty of Imperial College, London, UK, the new data will let them model the magnetic effects of Enceladus much better than before; but it's not yet clear whether they will be able to tease out the small effect of an ocean. Cassini will return in August, perhaps passing even closer to the source of the plumes, and again in October, when the dust analyzer should get another chance to see exactly what is coming out of Enceladus.

(reprinted with permission from NewScientistSpace, Images are courtesy of NASA)

The Back Bay Amateur Astronomer's Observer



APRIL 2008

BBAA EVENTS	SPECIAL OUTREACH	ASTRONOMICAL EVENTS
03 = BBAA Monthly Meeting @ TCC VB Campus, ATC New Science Building, 7:30 PM		
05 = NIGHTWATCH @ Chippokes State Park, Dusk		05= NEW MOON
	10 = SCIENCE FAIR @ Arrowhead School , 5549 Susquehanna Dr, Virginia Beach, VA @ 6:00 PM - POC: Chuck Jagow	
10 = GARDEN STARS @ Norfolk Botanical Gardens, Norfolk, VA @ 7:00 PM - POC: Kevin Weiner ON HOLD Scheduling Issues		12 = FIRST QUARTER
	18 = GIRL SCOUT DAY @ 18406 Darden Scout Drive, Courtland VA@ 5:00 PM - POC: Chuck Jagow/Ted Forte	
		20 = FULL MOON
25 = SKYWATCH @ NWRP, Dusk		28 = LAST QUARTER
26 = CLOVERWATCH @ Franklin Fairgrounds, Dusk CANCELLED Due to Illness		