



EPHEMERALS AUGUST 2008

DATE	WHEN	WHAT & WHERE
1	7:30p	Night Hike @ NWRP
2	Dusk	Nightwatch @ Chippokes Plantation
4	6:00p	Moonwatch @ Nimmo Prky VB Library
7	7:30p	BBAA Meeting @ Cox Chesapeake
8	8:30p	See the Stars @ Fort Story
14	8:00p	Boardwalk Astronomy @ 24th St. Stage & Boardwalk
22	Dusk	Skywatch @ NWRP Equestrian Area
30	Dusk	Nightwatch @ Chippokes Plantation

Looking Up!

Heat, humidity, thunderstorms, and rain – sound familiar? Yet another July & August weather report for coastal Virginia. BBAA'ers are anxious to get out under the stars. The good news is what waits on those good nights other than buzzing vermin. With Virgo setting and the Keystone at the zenith with the summer triangle, one has to wish for what is becoming a rare clear “comfortable” night out with friends to observe. Planetariums are fun places to be but we all long for the view of Sagittarius at this time of year billowing out the Milky Way from the “Tea Pot”. The orphaned planetoid Pluto sits less than 2 degrees above M23 currently in a sky full of wonderful Messier objects so let's get out and try to find it! Look for the Bug nebulae low in Scorpio's tail. It is certainly an appropriate DSO for this time of year! Orion is coming up now with the dawn so cooler weather is approaching for us all.

I am sorry that weather cancelled out two attempts at another successful repeat of Boardwalk Astronomy in July. Let's hope that our August 14th date will give us good weather and further fun with a significant public outreach program.

A special thanks to those club members who were able make our spe-

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cial July meeting at COX communications (thanks again Kevin & Barb).

The third annual scholarship award was given out to a VB senior, Miss Chrissy Barton by Benito Loyola, chair of the scholarship committee.

A detailed discussion of club plans to enhance and assists Norfolk State University's grant application to NASA for public outreach for the International Year of Astronomy - IYA 2009 was held. Thank you to Ted Forte for his hard work in this project to aid Dr Salgado, NSU, and the club. A decision on this grant may come in late September, so stay tuned.

As I write this, the blue sky has clouded over and darkened with sounds of distant thunder. Sigh.....there goes tonight at Chippokes.

But if you're so inclined, check out the replay of the entire solar eclipse from China at <http://www.exploratorium.edu/eclipse/2008/index.html>

Hope to see all of you soon

Bruce "Doc" Bodner

The Back Bay Amateur Astronomer's Observer

July's Meeting Minutes

Members in Attendance:

There were approximately 23 members in attendance at the July meeting of the Back Bay Amateur Astronomers held at the Cox Communications campus in Chesapeake, VA.

Meeting Attendance:

Neill Alford, Bruce Bodner, Jordan Bramble, Larry Channel, Dan Falvy, Courtney Flonta and Tony Flonta, Ted Forte, Jay Garrard, Hunter Hughes, Chuck Jagow, Georgie June, Ben Loyola and Gretchen Loyola, Matt McLaughlin, Jim Miller, Mark Ost, Bill Powers, George Reynolds, Carlos Salgado, Matt Swingle, Larry Wade, Barb Weiner, Kevin Weiner, Shelton Williams

Special Guests: Chrissy Barton and her Mom Betsy.



Treasurer's Report:

None.

Secretary's Report:

Reading of the March meeting minutes waived due to availability on the internet.

Astronomical League Coordinators Report:

Georgie reports that Jordan Bramble is making good progress working towards his Messier certificate.

Old Business:

None

New Business:

The first order of business was the presentation of the 2008 BBAA scholarship to Chrissy Barton. Chrissy is a graduate of 1st Colonial High School and plans to attend Virginia Tech. The scholarship was presented by our scholarship committee chairman, Ben Loyola. Chrissy read her scholarship essay to the club and was presented the scholarship check. Congratulations to Chrissy, BBAA's 2008 scholarship winner!!!

Ted Forte and Carlos Salgado gave a presentation about the 2009 International Year Of Astronomy (IYA). Norfolk State University and BBAA are collaborating on a proposal to NASA for funding to support the IYA efforts. BBAA will participate by sponsoring IYA events, outreach activities, Two Celebrate Astronomy Festivals at Northwest River Park, School Events and other events.

The following is a synopsis of BBAA responsibilities:

1. The club agrees to enter into a collaboration with NSU for the purpose of competing for a NASA EPO Grant.
2. As much as possible, IYA outreach activities will capitalize on existing relationships and regularly scheduled outreach events.
3. Up to 12 Skywatch events. These are our regular NWRP events but will be aggressively advertised.
4. Two "Celebrate Astronomy" events at Northwest River Park (NWP). Tentative dates are May 17 and September 12.
5. Boardwalk Astronomy.
6. From two to nine Boy Scout Events. A special IYA patch will be earned by the scouts.
7. At least two large scale Girl Scout events.
8. At least four Astronomy Day type events at Public Libraries.
9. Fifteen or more school visits.

A motion was presented, seconded, voted on and passed to pursue the NASA grant in collaboration with NSU and to participate as a club in the 2009 IYA.

Carlos Salgado also presented an update along with information regarding the RRRT (Rapid Response Robotic Telescope). The observatory is becoming more and more usable, and Carlos is looking for BBAA'ers to jump in and start submitting observing proposals.

The meeting adjourned at approximately 9:30 PM, Thursday, July 10, 2008.

Matt McLaughlin

The Back Bay Amateur Astronomer's Observer

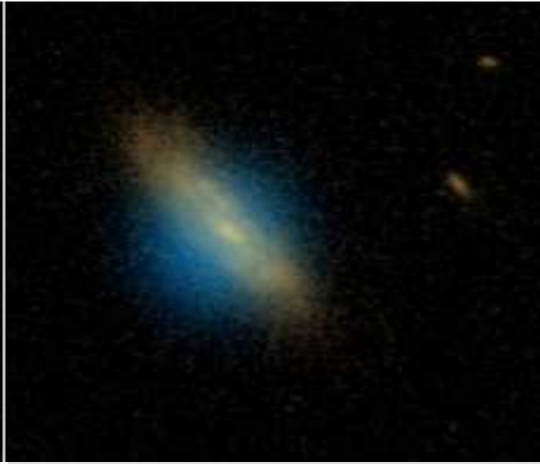
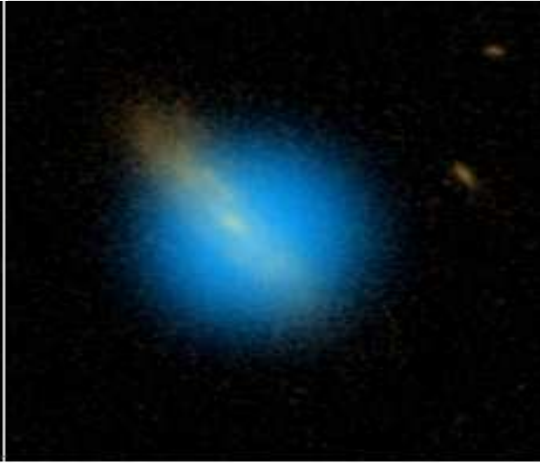
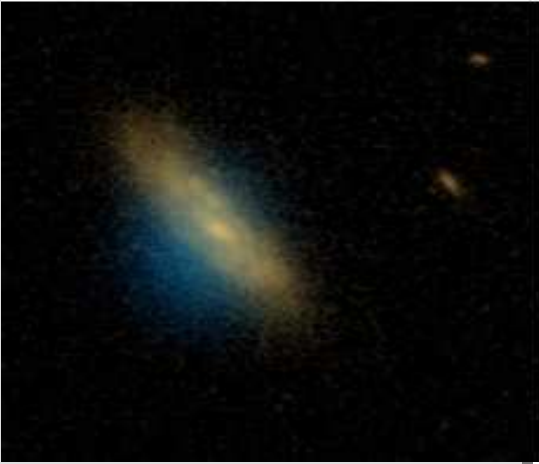


Death of a Supergiant

by NASA & JPL

By all outward appearances, the red supergiant appeared normal. But below the surface, hidden from probing eyes, its core had already collapsed into an ultra-dense neutron star, sending a shock wave racing outward from the star's center at around 50 million kilometers per hour.

The shock wave superheated the plasma in its path to almost a million degrees Kelvin, causing the star to emit high-energy ultraviolet (UV) radiation. About six hours later, the shock wave reached the star's surface, causing it to explode in a Type IIP supernova named SNLS-04D2dc. Long before the explosion's visible light was detected by telescopes on Earth, NASA's Galaxy Evolution Explorer (GALEX) space telescope captured the earlier pulse of UV light — scientists' first glimpse of a star entering its death throes. "This UV light has traveled through the star at the moment of its death but before it was blown apart," explains Kevin Schawinski, the University of Oxford astrophysicist who led the observation. "So this light encodes some information about the state of the star the moment it died." And that's exactly why astronomers are so excited. Observing the beautiful nebula left behind by a supernova doesn't reveal much about what the star was like before it exploded; most of the evidence has been obliterated. Information encoded in these UV "pre-flashes" could offer scientists an unprecedented window into the innards of stars on



the verge of exploding. In this case, Schawinski and his colleagues calculated that just before its death, the star was 500 to 1000 times larger in diameter than our sun, confirming that the star was in fact a red supergiant. "We've been able to tell you the size of a star that died in a galaxy several billion light-years away," Schawinski marvels. "GALEX has played a very important role in actually seeing this for a few reasons," Schawinski says. First, GALEX is a space telescope, so it can see far-UV light that's blocked by Earth's atmosphere. Also, GALEX is designed to take a broad view of the sky. Its relatively small 20-inch primary mirror gives it a wide, 1.2-degree field of view, making it more likely to catch

the UV flash preceding a supernova.

With these advantages, GALEX is uniquely equipped to catch a supernova before it explodes. "Just when we like to see it," Schawinski says.

For more information, visit www.galex.caltech.edu, "Ultraviolet Gives View Inside Real 'Death Star'." Kids can check out how to make a mobile of glittering galaxies at

spaceplace.nasa.gov/en/kids/galex_make1.shtml.

Image Caption:

Sequence of images shows supernova start to finish. The top left image shows the galaxy before the supernova. At top right, the bright UV flash called the shock breakout indicates a red supergiant has collapsed. At bottom left, moments later, the flash is mostly gone. As the debris expands, it heats up again and becomes brighter (bottom right). The supernova became 10 times the size of the original over the following few days, thus becoming visible to supernova hunters.

The Back Bay Amateur Astronomer's Observer

BBAA INFO

The BBAA usually meet the first Thursday of every month. While school is in session we meet at the VA Beach TCC campus. In the summer we sometimes meet at Cox in Chesapeake.

The August meeting will be on Thursday August 7th at 7:30 PM at Cox Communications campus in Chesapeake.

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>

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.

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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 August for the September 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

Spitzer Reveals 'No Organics' Zone Around Pinwheel Galaxy

By Whitney Clavin JPL

The Pinwheel galaxy is gussied up in infrared light in a new picture from NASA's Spitzer Space Telescope.

The fluffy-looking galaxy, officially named Messier 101, is dominated by a mishmash of spiral arms. In Spitzer's new view, in which infrared light is color coded, the galaxy sports a swirling blue center and a unique, coral-red outer ring.

A new paper appearing July 20 in the *Astrophysical Journal* explains why this outer ring stands out. According to the authors, the red color highlights a zone where organic molecules called polycyclic aromatic hydrocarbons, which are present throughout most of the galaxy, suddenly disappear.

Polycyclic aromatic hydrocarbons are dusty, carbon-containing molecules found in star nurseries, and on Earth in barbeque pits, exhaust pipes and anywhere combustion reactions take place. Scientists believe this space dust has the potential to be converted into the stuff of life.

"If you were going to look for life in Messier 101, you would not want to look at its edges," said Karl Gordon of the Space Telescope Science Institute in Baltimore, Md. "The organics can't survive in these regions, most likely because of high amounts of harsh radiation."

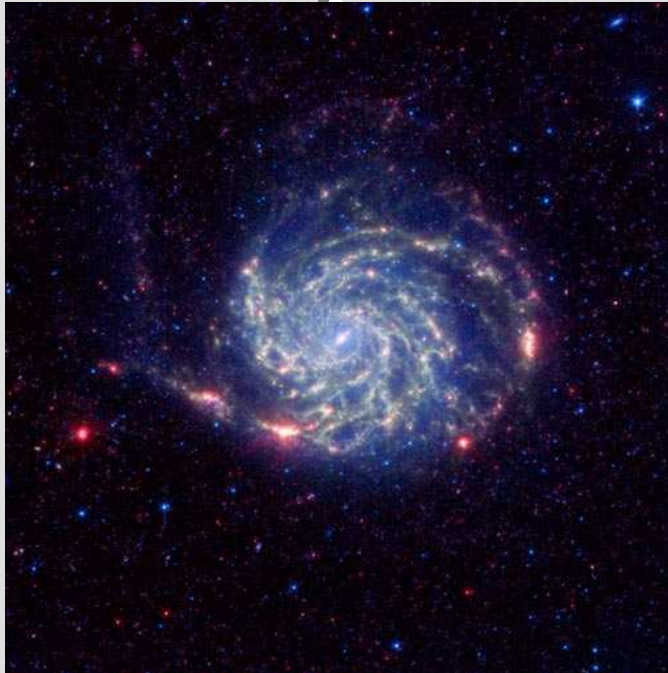
The Pinwheel galaxy is located about 27 million light-years away in the constellation Ursa Major. It has one of the highest known gradients of metals (elements heavier than helium) of all nearby galaxies in our universe. In other words, its concentrations of metals are highest at its center, and decline rapidly with distance from the center. This is because stars, which produce metals, are squeezed more tightly into the galaxy's central quarters.

Gordon and his team used Spitzer to learn about the galaxy's gradient of polycyclic aromatic hydrocarbons. The astronomers found that, like the metals, the polycyclic aromatic hydrocarbons decrease in concentration toward the outer portion of the galaxy. But, unlike the metals, these organic molecules quickly drop off and are no

longer detected at the very outer rim.

"There's a threshold at the rim of this galaxy, where the organic material is getting destroyed," said Gordon.

The findings also provide a better understanding of the conditions under which the very first stars and galaxies arose. In the early universe, there were not a lot of metals or polycyclic aromatic hydrocarbons around. The outskirts of the Pinwheel galaxy therefore serves as a close-up example of what the environment might look like in a distant galaxy.



In this image, infrared light with a wavelength of 3.6 microns is colored blue; 8-micron light is green; and 24-micron light is red. All three of Spitzer instruments were used in the study: the infrared array camera, the multiband imaging photometer and the infrared spectrograph.

Other authors of the paper include Charles Engelbracht, George Rieke, Karl A. Misselt, J.D. Smith and Robert Kennicutt, Jr. of the University of Arizona, Tucson. Smith is also associated with the University of Toledo, Ohio, and Kennicutt is also associated with the University of Cambridge, England.

NASA's Jet Propulsion Laboratory, Pasadena, Calif., manages the Spitzer Space Telescope mission for NASA's Science Mission Directorate, Washington. Science operations are conducted at the Spitzer Science Center at the California Institute of Technology, also in Pasadena. Caltech manages JPL for NASA. Spitzer's infrared array camera was built by NASA's Goddard Space Flight Center, Greenbelt, Md. The instrument's principal investigator is Giovanni Fazio of the Harvard-Smithsonian Center for Astrophysics. Spitzer's infrared spectrograph was built by Cornell University, Ithaca, N.Y. Its development was led by Jim Houck of Cornell. The multiband imaging photometer for Spitzer was built by Ball Aerospace Corporation, Boulder, Colo., and the University of Arizona, Tucson. Its principal investigator is George Rieke of the University of Arizona.

The Back Bay Amateur Astronomer's Observer

OBSERVERS CORNER

July 2008 - Matt, Georgie and I supported the Night Hike at NWRP. We had 13 paying guests, two park rangers, and one security guard which to the " bugz" translates to "smorgasbord". Transparency was poor to very poor, seeing started very good and degraded as the night went on. Before we left, Vega and Antares were dancing like Mexican Jumping Beans.

We started with the moon in early twilight. I don't have to tell you what the reaction is when someone first sees a crescent moon through an 18" telescope. They were just blown away. Matt had his Starblast trained on the moon and then Saturn and got his full compliment of wows. Saturn in early twilight, was tack sharp and steady as a rock, surrounded by a gazillion visible moons. (OK, five or six). It looked superb in the 18 at 260x.

Deep sky, however was a little disappointing. The combination of a moon and poor transparency made our first views of M3 and M13 less than spectacular to my jaded eye. The hikers, however, seemed impressed none the less.

After the hikers departed, we remained behind to observe. Matt came armed with the knowledge that the ISS would make a pass, but the time eluded him so we tried to keep a careful watch. We managed an unexpected "Iridium Flare", one bright object moving the wrong way and several fainter satellites, but no ISS. We did a few galaxies, several globulars and a couple of planetaries in the 18. There are reports of a bear frequenting the south terminal, but the only bear we encountered last night was that big one in the sky.

We had permission to make a night of it, but I have to admit that conditions just made it yucky. Hot, humid air filled with ravenous flying insects. Conceding that this is supposed to be "fun", (but wasn't) we decided to exercise the better part of valor not much after 11. It was just as well; I drove home in patchy fog and the view from my driveway was pretty dismal (NELM about mag 1).

I wasn't even tempted to continue viewing.

Ted Forte

=====

July 2008 - After three days of rain we had a surprising break tonight, with very good skies that allowed lunar, planetary and deep sky work. Was able to observe the Mare Marginis swirls tonight due to a very favorable libration. Chuck Woods has these enigmatic objects as 100 of the lunar 100 list. As the list goes in order of difficulty he considers these bright objects the most difficult observations on the moon. They are difficult because they are far side objects that require the right tilt of the moon. If you get that, observing them is not hard. Actually I would rate several lunar objects harder such as the rille in the Alpine valley which is fiendishly hard to see.

Stan and I observed a shadow transit of Jupiter as Io crossed the face of the planet. Io has the smallest shadow so is the most difficult of the moons to see. It did show up against the very red equatorial band just under the great red oval. The oval appears paler than ever tonight. This has been the trend in the last couple of years as the spot has faded to a Salmon color. IO and its shadow were very close together. The moon itself was not visible against the planets surface being too small to see when on the face of the planet. Seeing was 8 for 10.

I quit at 1130 just as the milky way was getting spectacular as the moon set. Have to get up tomorrow so no point staying out later but what a nice night for a change.

Mark Ost



The Back Bay Amateur Astronomer's Observer

The Aah! Factor Scale

By Alan Dyer

http://blogs.discovery.com/whats_up_astronomy/

With the Olympics just starting and having just come off a “10” experience — a total solar eclipse — I’m reminded of our astronomers’ “Aah Factor Scale.” Terence Dickinson and I developed this for the first edition of our book, *The Backyard Astronomer's Guide*, published back in 1992. The scale has proven a popular talking point over the years and we included it again in the latest version of our book, an updated and expanded third edition just hitting the shops and on-line retailers (a plug from our “shameless commerce” division!).

As we explain in our book, “The Aah Factor provides backyard stargazers with a 1-to-10 scale of celestial exclamation. Factor 1 on the scale is a detectable smile, a mild ripple of satisfaction or contentment. Factor 10 is speechless rapture, an overwhelming rush of awe and astonishment.”

Here are some examples:

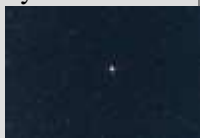


• **One:** Any routine celestial view through binoculars or a telescope (LEFT); a faint meteor; a well-turned phrase in a good astronomy book.

• **Two:** Finding the planet Mercury; sunspots; the Moon's surface through a telescope (RIGHT); discovering how clear things look through binoculars mounted on a tripod; cloud belts on Jupiter.



• **Three:** Saturn or the Orion Nebula through a telescope, even if you have seen them umpteen times before; the starry dome on a clear, dark night in the country (LEFT); Jupiter's Red Spot; a colored double star (RIGHT).



• **Four:** A beautiful sunset or sunrise; seeing a bright Earth satellite for the first time; a partial eclipse of the Moon; a close conjunction of two planets or of the Moon and Venus; Earthshine in binoculars (LEFT); finding the Andromeda Galaxy for the first time.



• **Five:** Identifying Jupiter's moons through binoculars for the first time; a moderately bright comet in binoculars; tele-

scopic detail on Mars; a meteor shower.



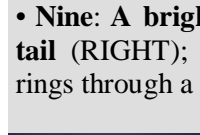
• **Six:** Recognizing your first constellation (LEFT); a bright meteor (RIGHT); a good telescopic view of a galaxy or a globular cluster; the shadow of one of Jupiter's moons slowly crawling across the planet's face; your initial look at your first successful astrophoto.

or a globular cluster; the shadow of one of Jupiter's moons slowly crawling across the planet's face; your initial look at your first successful astrophoto.

• **Seven:** A first view of the Moon through a telescope; a first view of the Milky Way with binoculars; a total eclipse of the Moon; a bolide or a fireball meteor.



• **Eight:** A rare all-sky multicolored auroral display (LEFT); the moment you begin to realize how immense the universe is — that's a tough one, but moments of revelation do happen!



• **Nine:** A bright comet with a naked-eye tail (RIGHT); your first view of Saturn's rings through a telescope; a meteor storm.



• **Ten:** A perfect view of a total eclipse of the Sun (LEFT); discovering a comet or a nova.

In my blogs I try to call your attention to predictable events and sights that will yield anywhere from 1 to 7 on our scale. Hitting an 8 to 10 often requires inordinate good luck or determination. Except seeing Saturn's rings for the first time. That just takes finding someone with a telescope to show you. However, the opportunity for doing that has passed for the season — Saturn is now too close to the Sun — but it'll be back next year. But the season for seeing many of the other “hit list” targets is now upon us. August and September nights bring superb weather for northern hemisphere observers. Lots of people are outside at night, looking up in wonder. This month and next I'll concentrate on pointing out when and where to see the best sights in the sky, the ones that evoke an “aah!”

Photos by Alan Dyer

The American Association of Variable Star Observers collects material from many different astronomical writers and make it available for republication. Each article reprinted with the author's permission and reference to their Internet blog.

The Back Bay Amateur Astronomer's Observer



AUGUST 2008

BBAA EVENTS	SPECIAL OUTREACH	ASTRONOMICAL EVENTS
01 = NIGHT HIKE @ NWRP, Chesapeake, VA @ 7:00 PM - POC: Ted Forte CONTACT TED FIRST as NWRP limits # of people.	04 = Moonwatch @ VB Library, 1444 Nimmo Pkwy, VA @ 6:00 PM- POC: George Reynolds	01= NEW MOON
02 = NIGHTWATCH @ Chippokes State Park, Dusk		
07 = BBAA Monthly Meeting @ Cox Communications Campus, Chesapeake, 7:30 PM	08 = See The Stars @ Fort Story, VB, VA @ 8:30 PM- POC: CONTACT CHUCK FIRST as requires base access.	08 = FIRST QUARTER
	14 = BOARDWALK ASTRONOMY @ 24th Street Stage Boardwalk, Virginia Beach Blvd, Virginia Beach, VA @ 8:00 PM- 11:00 PM - POC: Chuck Jagow	16 = FULL MOON
22 = SKYWATCH @ NWRP, Dusk		
23 = CLOVERWATCH @ Franklin Fairgrounds, Dusk - POC Cliff Hedgepeth ON HOLD ! ! ! !		23 = LAST QUARTER
30 = NIGHTWATCH @ Chippokes State Park, Dusk		30 = NEW MOON