BACK BAY observer

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

EPHEMERALS june 2009

6/3/2009
Boardwalk Astronomy
Virginia Beach Boardwalk
6 - 11:00 PM

6/4/2009
BBAA Monthly Meeting
NSU Planetarium
7:30 PM

6/5/2009
Gardenstars
Botanical Gardens
Dusk

6/12/2009
Skywatch
North West River Park
Dusk

6/20/2009
Nightwatch
Chippokes Plantation State Park
Dusk

6/26/2009
Night Hike
North West River Park
Dusk

Looking Up!

Whew, what a busy month for BBAA in May. Looks like we barely had a week off between any of the events. The Chesapeake Planning Commission and the proposed NWRP/YMCA summer day camp just added politics to our tasks! Interesting that the Planning Commission gave a thumbs down while the Council voted "yea" to have the project proceed. A *Virginian-Pilot* newspaper article revealed that this was a done deal two years ago!

Hopefully BBAA made a good impression, thanks to John Norman's presentation at the meetings and to Ted and George's advocacy in support of best use of NWRP. Our long, 20-plus-year legacy of public service there, proposals for cutoff lighting to allow continued astronomical use of the park, plus a neutral stance on the project put us in a good "light" before the principles involved. Congrats to all on walking a narrow line. I think we succeeded.

Between the annual Astronomy Day at VB Public Library and our 'first' Celebrate Astronomy Festival at NWRP, we stayed involved and increased our public outreach. Thanks to Ted, Chuck, Georgie, George, and Michelle among others who chipped in to make the day a success.

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May Meeting Minutes

Minutes will be added shortly.

The Back Bay Amateur Astronomer's
Observer

The BBAA Observer is published monthy; 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 the month for the next month's edition. Please submit all items to: **BBAAErica@yahoo.com** or **BBAA Observer, P.O. Box 9877, Virginia Beach, VA 23450-9877**

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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. **Instead of the July meeting, there will be a BBAA picnic at NWRP on July 11th.**

BBAA Internet Links

BBAA Web Site
www.backbayastro.org

Yahoo! Group
groups.yahoo.com/group/backbayastro

BBAA Observer Newsletter
www.backbayastro.org/newsletters/newsletter.shtml

Looking Up! *Continued from page 1*

Thank heavens for Kent Blackwell's ECSP at month's end and relatively calm skies to enjoy quiet contemplation of the heavens. As always, Kent was a great host and his support troops came through once again to give everyone a good time. This time even Georgie came to camp! She was sporting a recently acquired camping trailer. Gee, Georgie, now you can't complain about sleeping in a semi upright position in your car and freezing at the same time… ha, ha! Guess all of us are getting wiser… not older!

June brings a busy first week with the first Boardwalk Astronomy session on Wednesday, June 3rd, a special June BBAA club meeting on Thursday, June 4th at NSU's planetarium, and Gardenstars on that Friday. And that's just the first week! As always, please check the calendar on the last page of the newsletter for other repeating events.

See all of you soon!

Clear Skies,

Bruce "Doc" Bodner

Scoring More Energy from Less Sunlight

Helen Johnson, a spacecraft technician at NASA's Goddard Space Flight Center, works on one of the three tiny Space Technology 5 spacecraft in preparation for its technology validation mission.

For spacecraft, power is everything. Without electrical power, satellites and robotic probes might as well be chunks of cold rock tumbling through space. Hundreds to millions of miles from the nearest power outlet, these spacecraft must somehow eke enough power from ambient sunlight to stay alive. That's no problem for large satellites that can carry immense solar panels and heavy batteries. But in recent years, NASA has been developing technologies for much smaller microsatellites, which are lighter and far less expensive to launch. Often less than 10 feet across, these small spacecraft have little room to spare for solar panels or batteries, yet must still somehow power their onboard computers, scientific instruments, and navigation and communication systems. Space Technology 5 was a mission that proved, among other technologies, new concepts of power generation and storage for spacecraft.

"We tested high efficiency solar cells on ST-5 that produce almost 60 percent more power than typical solar cells. We also tested batteries that hold three times the energy of standard spacecraft batteries of the same size," says Christopher Stevens, manager of NASA's New Millennium Program. This program flight tests cutting-edge spacecraft technologies so that they can be used safely on mission-critical satellites and probes. "This more efficient power supply allows you to build a science-grade spacecraft on a miniature scale," Stevens says. Solar cells typically used on satellites can convert only about 18 percent of the available energy in sunlight into electrical current. ST-5 tested experimental cells that capture up to 29 percent of this solar energy. These new solar cells, developed in collaboration with the Air Force Research Laboratory in Ohio, performed flawlessly on ST-5, and they've already been swooped up and used on NASA's svelte MESSENGER probe, which will make a flyby of Mercury later this year. Like modern laptop batteries, the high-capacity batteries on ST-5 use lithium-ion technology. As a string of exploding laptop batteries in recent years shows, fire safety can be an issue with this battery type.

"The challenge was to take these batteries and put in a power management circuit that protects against internal overcharge," Stevens explains. So NASA contracted with ABSL Power Solutions to develop spacecraft batteries with design control circuits to prevent power spikes that can lead to fires. "It worked like a charm." Now that ST-5 has demonstrated the safety of this battery design, it is flying on NASA's THEMIS mission (for Time History of Events and Macroscale Interactions during Substorms) and is slated to fly aboard the Lunar Reconnaissance Orbiter and the Solar Dynamics Observatory, both of which are scheduled to launch later this year. Thanks to ST-5, a little sunlight can go a really long way.

Find out about other advanced technologies validated in space and now being used on new missions of exploration at nmp.nasa.gov/TECHNOLOGY/scorecard. Kids can calculate out how old they would be before having to replace lithium-ion batteries in a handheld game at spaceplace.nasa.gov/en/kids/st5_bats.shtml.

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

observer's corner

Must have been a dry spell because I pulled an all-nighter last night with the exception of a whole 2.5 hours of sleep between 12 and 2:30.

Kent and Stan joined me for the first sitting until midnight. Lunar observation was surperb with very good seeing early on. Nectaris was the center of attention. After that the evening was spent catching what could be seen under the first quarter moon.

The real fun started under clear skies and no wind around 2:30. The Milky Way was blazing as I toured the summer constellations. Targets of note were:

NGC 6522 a small globular in Sgr. This is the center of Baades Window - a one-degree opening to the other side of the galaxy (ours). The globular lies on the other side of the galaxy, just south of the central bulge in a very rich star field. Here the dust is less dense and offers a window to the other side. Small but grainy in the 6 mm Ethos and easily seen in the 17mm type 4 Nagler amidst the background stars.

NGC 6629 a small stellar planetary in Sgr. Fortunately this planetary is located in a good star field of bright stars to help in aquisition. It is dim and stellar at low power but showed well in the 6mm Ethos. I have added a 6mm to up the power a bit for galaxies and compliment the 8mm I bought at the last ECSP. Globulars look great in either.

Jupiter was observed as the sky brightened around 4:30. The wind had picked up and seeing was only fair. The red spot was easily visible at 200x observing straight through without diagonal. Used an 8mm Brandon and a 2x Televue barlow. Good color on the southern band as the sky grew lighter. **Mark Ost**

Oh, tonight was gorgeous. It was the first real clear night without thick fog since the Tuckahoe Star Party a month ago. I set up my 14.5" tonight for a few object run before going to bed for work. Tonight was so great. I had first light FINALLY with my 18mm Meade Series 5000 UWA and it was fantastic. FOV is huge and the stars were sharp 95% of the field in an F/6. I'm very pleased. Can't beat that for $140 on Astromart!

The reason I bought the eyepiece was not just to make it my primary galaxy eyepiece, but to use it when seeing is rough. I have a gap between my 24 Panoptic and 11mm T6 Nagler. Sometimes seeing can be just too rough for 220x and I wish I had something just a little more then my 24 (which is 92x). Tonight was the perfect test as the seeing was just that, although it was tolerable at 220x (stars were slightly mushy). It worked perfectly for what I wanted. I'm so happy about it!

The transparency tonight was excellent. Well balanced the night with the little rough seeing. Sky domes were at a minimum and stars at zenith looked like a snowglobe. I started my night at 10 pm and stopped just over an hour later. During that time I logged several new objects, including Comet Gunn in Leo. **CJ Wood**

CJ's full log notes can be found at the BBAA yahoo group site.

This has to be a good night- not the best, but a good one. The sky is steady but hazy. So far I have observed The "Star Gate" asterism. It actually looks cool, for the first time I've seen it. I have seen NGC 7009, M-104, M-17, M-4, M-8 so far. I'm going to make it a long night scanning Sagittarius to Aquila. Here are my observing remarks for them.

M-104: Bright galaxy. The core is very pronounced and the dark dust lane is barely visible, caused by the high pressure street lights off Shipps Corner Road. Still can be seen but have to use averted vision to see it. Overall, not bad and a good challenge for a city-based observer!

NGC-7009: The use of a O-III filter is *mandatory* to block the sodium lights. You still have to use averted vision and only then can you can see the shape of Saturn, which the Nebula resembles. It is faint but still somewhat easy to make out.

M-17: Again I used the O-III filter. The distinctive shape of a swan is a very faint patch of light but some of the white lights from the strip washes out the Swan. I am waiting for it to get up higher so I can see it very well, but it doesn't look like it will get any better. Oh well, there is Coinjock in two weeks.

M-4: This faint globular is a challenge because it's in a bright patch of light pollution. But I did get a headache trying to pull every ounce of photons out of the C11 to see it. It is a loose cluster and not that bright, but a challenge nevertheless.

M-8: It is still a beautiful nebula. The light pollution washes it out so it's not as bright as one would expect it to be. All you see is the northern part of it. Its lower "Lagoon" part is not visable even with an O-III. I did try an H-beta and only got a very small part of it to show up.

City astronomy is a challenge if you want it to be - and fun. You do draw a crowd. But since this is a great night, it's just so fun to get out! **Garry Mitchell**

BACK BAY AMATEUR ASTRONOMERS

New&Returning Members
Brian Condrey and Jonathan Joaquin

2009 EAST COAST STAR PARTY

May 22, 23 & 24

An observer's journal by C.J. Wood

Man I don't think Disney World is that much fun! This ECSP was the best I've ever seen! So what that the skies weren't the best? How often do you go to a star party and observe every night!? I observed 79 new objects. I also finished observing every NGC galaxy in Lyra that ranged from magnitude 12.4 to 15.7. Below is my write-up of the star party.

THURSDAY, MAY 21

I decided to arrive Thursday because of the promising weather. I arrived just before noon and had plenty of time to set up, get comfortable, and chit chat with everyone I hadn't seen in a while and play a "small" prank on Kent. That was funny- but the best thing that night was Dee's smackin' sloppy joe! Mmm Mmmm!

Thursday was the best night with only a few passing clouds. Transparency varied during the night and the seeing remaining so-so. It did improve very late into the night. I logged the most objects out of the 3 nights on this night: 29 total. About 80% of them were over 14th magnitude. My eyes were sweating that night! I broke my previous record of the faintest object with my scope, IC1170 at magnitude 15.9! I went to bed around 5am. I didn't see very many showpieces that night, only very few were decent. Below are my logs.

NGC6004: Medium sized. Bright, elongated, slightly tilted spiral. Whole surface is seen with averted vision with mottling but no defined spirals. Detail is confirmed by Kent Blackwell.
NGC6106: Bright, medium-small galaxy with a bright core. High surface brightness. Elongated. Makes a triangle with two 8th magnitude stars.

FRIDAY, MAY 22

Friday I tried sleeping in as long as I could, emerging from my cocoon just before noon. My nickname that morning was "Sleepy Head." A lot of people came and set up that day. It was hot, though, and the ticks were never hungry. Camera Concepts set up shop early; we were all glued to all the merchandise they put up. Naglers, Ethos, atlases, and tons of other astro toys. I walked out with two great Arp galaxy atlases that are very helpful. That night we were all treated to Dee's amazing spaghetti and salad. I was stuffe, man.

Nightfall came with passing clouds for most of the night. The "sucker holes" were large enough most of the time to observe through. Seeing was excellent for the most part, although it seemed to slightly decay late in the night. This was my least productive night with 24 logs. Unlike the night before, I saw many showcase objects due to the poor transparent sucker holes. So I observed bright galaxies in Ursa Major, Leo, and Boötes that I hadn't seen before. I ended up crashing around 4:30 am. The logs of my favorite galaxies are below.

NGC3359: Huge, very bright, amazing galaxy. Real high surface brightness. Why I haven't see this or logged this before just boggles me to no end. It looks great, even in the haze. There seems to be some mottling in the surface. Based on the way it looks, it could be one of those spiral galaxies with a lot of little arms (like M63).
NGC3718: Oh man, this galaxy is great. Very large, very bright with real high surface brightness. Bright core with hints mottling on its surface. Star involved on the right of the core. Sits in the same FOV with another very bright galaxy, NGC3729.
NGC3729: Large, Very bright, real high surface brightness. Oval and elongated. Doesn't have a defined core but the center is really bright, brighter then the already very bright surface. Sits in the FOV with another really bright galaxy NGC3718.
NGC3769: Large and bright galaxy with high surface brightness. Looks very near to being edge on. Some hits of mottling around the central region. I can just see its very faint A component just beneath the right tip.
NGC5665: Conditions are hazy but it doesn't matter with this galaxy. Really bright, small, really high surface brightness. Bright core with slightly fainter surface. Spiral structure is easy above the core. I cannot see segments A and B. Looks best at 201x.

SATURDAY, MAY 23

I didn't get very much sleep, but that didn't matter. I was in a good, awake mood for the whole day. In the morning I did some more drooling over at Camera Concepts then went out to the water for a dip. We ended up crabbing for a bit and went for a chilly boat ride around the marsh. Brr! It was good fun though! After the ride we went back up to camp for the Saturday cookout. Cheeseburgers and vegetable salad were excellent. After eating, we all gathered for a group shot then did the door prize drawing. That's where it got to business. We all wanted that 9mm Nagler T6! No, I didn't get it(darrn!) but I did get the Sky Atlas 2000.0

Companion. The book is just loaded with logs for thousands of objects. It's a good read.

The night didn't look very promising early. After Jordan left the skys miraculously cleared up and had a decent night with the best seeing I've seen in a long time. All over the field you heard "wow, look at Saturn!" but just in one spot you hear the famous "Oh, God that is the best I've ever seen it!" Passing clouds came by for the first half of the night but it did clear completely later. Seeing stayed rock steady the whole night. On this night I observed 26 objects. The best object I observed during the entire event, NGC4051, was during this night. I have never seen an NGC galaxy with so much detail. I've seen photographs that looked worse then what I saw. The barred spirals were so strong and appealing with mottling in the surface. Kent put it in the 25" and it was the view to die for. We even suspected an HII region in one of the arms. My log for that galaxy as well as the rest of the favorites of the night are below. I crashed just after 4am.

IC749: Medium-small, elongated oval patch. Surface is low and even. Only very slightly brighter where the core is. Averted vision there's a hint of spiral structure. Sits right next to a 9th magnitude star and very bright neighbor galaxy IC 750. I can also see much fainter IC751 up above the 9th magnitude star.

IC750: Very bright, Elongated near edge on galaxy. High surface brightness. Makes a beautiful pair with IC749. They both sit right next to a bright 9th magnitude star. Above the star I can see it's much fainter neighbor IC751.

NGC3583: Bright, fairly small, elongated. Brightness is irregular. Surface appears brighter above the very bright core with a somewhat hint of a bar. No spirals detected. Surface is pretty high. I cannot see nearby galaxy NGC3577.

NGC4051: This galaxy is fantastic. It's huge, elongated, and extremely bright with very high mostly even surface. I can easily see a bar and 2 strong hook spiral arms. The galaxy sits just outside of a bright 11th magnitude star. I can occasionally glimpse the 13th magnitude star thats embedded in the galaxy.

NGC4814: Quite small, bright, elongated. Hints of spiral structure at 201x. Surface is brighter around it's small core and only slightly fades out. Neat asterism in the FOV.

NGC6646: Quite small, bright with high surface brightness. Bright core with quite easy spiral structure around it. Kent says it reminds him of a tiny M33. The galaxy sits inside a bright triangle asterism. The galaxy forms a pair with IC1218.

Thanks so much, Kent, for another great time! Can't wait until October!

BACK BAY observer

June 2009

BBAA Events	Special Outreach	Astronomical Events
	03 Boardwalk Astronomy at Virginia Beach Boardwalk (Dusk)	
04 BBAA Special Monthly Meeting and Show @ NSU Planetarium (7:30 PM)		
05 Gardenstars @ Botanical Gardens (Dusk)		07 Full Moon
12 SkyWatch @NWRP (Dusk)		15 First Quarter
20 NightWatch @ Chippokes	20 Great Neck Library - Ted Forte (2:00 PM)	22 New Moon
26 Night Hike @ NWRP		29 Last Quarter

Sneak Peak into July:

01 Boardwalk Astronomy

02 No BBAA Meeting because...

11 BBAA Picnic at North West River Park!