

# BACK BAY observer

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



## EPHEMERALS July 2010

07/02

Skywatch  
Northwest River Park  
Dusk

07/10

Nightwatch  
Chippokes State Park  
Surrey, VA

07/16

Nighthike  
Northwest River Park  
7 pm

**07/18**

**Annual BBAA  
Family Picnic  
Northwest River Park**

07/19

Library Astronomy  
Kempsville Library, VB  
7:00 PM

07/20

Boardwalk Astronomy  
24th Street Stage, VB  
Solar Scopes at 5:30 PM  
Telescopes at Dusk



## Looking Up!

Ted Forte gave an interesting talk at Indian River High School on May 26 to about thirty attendees. He had a nice Powerpoint presentation and told them about the sizes of the planets and which ones we would be seeing that night. Chuck Jagow brought his 12" Dob and I had my monster binocs. Ted helped a lady with setting up a tabletop scope that she had bought for her kids. Even though it started a bit early and we had to wait a while for twilight to end, the skies cooperated and we were able to see Venus Saturn Mars and a nearly full moon. The library people said that it was the best attended evening event they have had. I expect they will be asking us to come again.

June 17th was probably the last Bayside Astronomy we will have for a while; the City of Virginia Beach will be closing libraries early to save money. This event was also well attended, with about thirty Cub Scouts and their parents. The Scouts were there to work on their Astronomy belt loops. George Reynolds had handouts for each of the lads that covered the knowledge they need to gain to meet the requirements. My niece's twins are Cubs and they went rode up there with me. We had several Dobs set up and my binocs and were able to spot the currently viewable planets.

Garden Stars was the next night, on the 18th. George gave a presentation while Kevin and I went out to the children's area to set up. Matt brought a Galileo Scope for a door prize which was won by Kevin's daughter. She graciously gave it to one of the attendees. I guess her daddy's big scope has her spoiled ;) It gets fairly dark out there, considering it's in Norfolk and near the airport. I was able to pick out M44 just a little east of Venus. George was showing Venus in her waning gibbous phase. Kevin was able to get M81 and I was actually able to find the Ring Nebula

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## Black Hole, No Joke

by Dr. Tony Phillips

*Kip Thorne: Why was the black hole hungry?  
Stephen Hawking: It had a light breakfast!*

Black hole humor—you gotta love it. Unless you're an astronomer, that is. Black holes are among the most mysterious and influential objects in the cosmos, yet astronomers cannot see into them, frustrating their attempts to make progress in fields ranging from extreme gravity to cosmic evolution.

How do you observe an object that eats light for breakfast?

"Black holes are creatures of gravity," says physicist Marco Cavaglia of the University of Mississippi. "So we have to use gravitational waves to explore them."

Enter LIGO—the NSF-funded Laser Interferometer Gravitational-wave Observatory. According to Einstein's Theory of General Relativity, black holes and other massive objects can emit gravitational waves—ripples in the fabric of space-time that travel through the cosmos. LIGO was founded in the 1990s with stations in Washington state and Louisiana to detect these waves as they pass by Earth.

"The principle is simple," says Cavaglia, a member of the LIGO team. "Each LIGO detector is an L-shaped ultra-high vacuum system with arms four kilometers long. We use lasers to precisely measure changes in the length of the arms, which stretch or contract when a gravitational wave passes by."

Just one problem: Gravitational waves are so weak, they change the length of each detector by just 0.001 times the width of a proton! "It is

a difficult measurement," allows Cavaglia. Seismic activity, thunderstorms, ocean waves, even a truck driving by the observatory can overwhelm the effect of a genuine gravitational wave. Figuring out how to isolate LIGO from so much terrestrial noise has been a major undertaking, but after years of work the LIGO team has done it. Since 2006, LIGO has been ready to detect gravitational waves coming from spinning black holes, supernovas, and colliding neutron stars anywhere within about 30 million light years of Earth.



**Laser Interferometer Gravitational-wave Observatory in Livingston, Louisiana. Each of the two arms is 4 kilometers long. LIGO has another such observatory in Hanford, Washington.**

So far the results are ... nil. Researchers working at dozens of collaborating institutions have yet to report a definite detection.

Does this mean Einstein was wrong? Cavaglia doesn't think so. "Einstein was probably right, as usual," he says. "We just need more sensitivity. Right now LIGO can only detect events in our little corner of the Universe. To succeed, LIGO needs to expand its range."

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# 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>.

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](mailto: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. **The July Meeting will be held at the annual BBAA Family Picnic.** Directions available at [www.backbayastro.org](http://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](http://www.backbayastro.org/observer/newsletter.shtml)

## Looking Up! Continued from page 1

with my binocs. Knowing where it is helps a lot. We had our first uncanceled Boardwalk Astronomy on the 22nd. Several hundred people had the opportunity to see Venus, the Moon and Saturn. George was kidding me because I actually brought out a real scope instead of the big binocs. The sky got more overcast as the night went on and we called it a night a little after 10 PM.

I hope everyone is planning on coming out to the annual BBAA picnic on the 18th. I'm dragging my whole clan out: mom, sis, niece, and her 4 kids. I'm told I have to cook. Nobody told me that when I ran for president. That's ok, I'm a grill guy from way back.

Garden Stars is Friday evening, July 16. I have Kempsville Library on my calendar for the 19, I need to find out the particulars on this one. And the next

Boardwalk Astronomy is July 20, weather permitting. July 28-29 marks the peak of the Southern Delta Aquarids Meteor Shower. This is not a big one, but will have to serve as a small fix for us meteor buffs until the Perseids around August 12.

Our August 5th meeting will be at Plaza Middle School again. Suggestions for a program are welcome. I'd like to have something about meteors/meteorites since it is so close to the Perseids. Or I could do a stand-up comedy routine (just kidding).  
Keep Looking Up!

*Mark Gerlach*

# BBAA Meeting Minutes

## June 2, 2010

The June meeting was called to order at 7:30 PM in the Virginia Beach City Public Schools Planetarium, Plaza Middle School, by president Mark Gerlach.

Those in attendance were Jordan Bramble, Gerry Carver, Cheryl Colvin and daughter Amber, Zachery Colvin, Bryan Condrey & daughter, Elizabeth Danley, Kathleen Danley, Patrick Danley, Chuck Dibbs, Courtney Flonta, Janice Flonta, Mark Gerlach, Dave Hales, Curt Lambert, Bill McLean, Bill Newman, John Norman, George Reynolds, Chuck Rippel, Kevin Swann, "Bird" Taylor, Kevin Weiner, and Shelton Williams.

**Reports:** Secretary's report was waived (on Web site and in newsletter). The treasurer was not in attendance, but he sent a message that the report is the same as last month. Chuck Jagow was in Colorado taking care of family business. ALCOR Georgie June was not in attendance, nor was Scholarship Committee Chairman Ben Loyola.

**Old Business:** John Norman reported that for VAAS, if we have the observing session at TCC, we can petition the city of Virginia Beach to turn off the parking lot lights at Lynnhaven High School. We would need an official representative from TCC (Prof. Ken Broun) to petition the city. John will find out who the point of contact will be.

The membership was reminded that the annual BBAA Family Picnic is scheduled for SUNDAY, July 18th at Northwest River Park. There is a signup database on the backbayastro Yahoo site.

**New Business:** President Mark Gerlach had received a message of the possible donation of a telescope to the club, as long as it would

be used for outreach. He said he initially accepted, but reconsidered the logistic problems of storage and accountability, so he replied that the club would not take the scope.

**Activities Reports:** John Norman and Bryan Condrey reported on the Scout night 15 May at North Landing Park. They said they kept the Scouts mesmerized for two hours with their binoculars and telescopes. Garden Stars on 21 May was very successful. About twenty were in attendance, with several club members setting up five telescopes and a pair of big binos to show the Moon, Saturn, Mars, the Pleiades, and several other celestial objects. Bayside Library Astronomy was also well-attended on 26 May, observing Venus, Saturn, and Mars, and several significant stars, Arcturus, Betelgeuse, and Rigel. After 1 July the Bayside Library Astronomy nights will come to an end, as the Virginia Beach libraries will be closing at 7:00 pm due to budget constraints.

The meeting feature was a NASA documentary movie, "Explorer 1", recounting the origins of rocketry at the Jet Propulsion Laboratory and the Space Race between the U.S. and the former USSR to launch the first satellites into earth orbit. It was a fascinating piece of history. The DVD was provided by George Reynolds and shown by our gracious host, planetarium director Chuck Dibbs.

The meeting was adjourned at 8:55 PM.

# Black Hole, con'd

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So, later this year LIGO will be shut down so researchers can begin work on Advanced LIGO—a next generation detector 10 times more sensitive than its predecessor. “We’ll be monitoring a volume of space a thousand times greater than before,” says Cavaglia. “This will transform LIGO into a real observational tool.”

When Advanced LIGO is completed in 2014 or so, the inner workings of black holes could finally be revealed. The punchline may yet make astronomers smile.

Find out more about LIGO at <http://www.ligo.caltech.edu/>. The Space Place has a LIGO explanation for kids (of all ages) at <http://spaceplace.nasa.gov/en/kids/ligo>, where you can “hear” a star and a black hole colliding!

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

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## Another Great Night

Mark Ost

Well, after whining about observing for the last month we were given three great nights in a row and may have a fourth tonight! What did we do to deserve this?

It was so nice to be at a great sky watch again. The humidity was so low that the normal sky glow was quite muted. That was the best I’ve seen NWRP in quite some time. If you did not get a chance to go out there due to travel or schedule it was great....take my word for it.

Last night I was planning on taking a night off but the conditions were so good I could not let it pass by and this was a chance to get some serious private viewing of difficult objects without having to tour guide, which is quite fine to do, tour guiding that is, except when you want to see some of the objects on your list that require concentration to some degree. Added one more Palomar globular to the list using the 5 inch under super fine skies. There was no sky glow from the back yard and the meter read 20.6 during the darkest part of the night.

Kent was over and he was rather more quiet so I knew he was also trying to get in some time on dimmer objects. Interestingly we looked at the very very blue (green for Kent) planetary in Ophiuchus. In the 25 inch it was an amazing blue (green). At my house in his 14 inch it still retained the color, just not quite as intense. Even the 5 inch shows color on this planetary, though muted due to the size of aperture.

Rarely do we get a dry night during the summer. The high humidity contributes a lot to light diffusion and only nights like last night show the amount of effect that the humidity has on the normal conditions of the sky around here.

We wrapped up around midnight as the sky was starting to wash out. It is amazing how sensitive the eye is to light levels as we could detect the influence of the moon at least 45 minutes prior to moon rise. The eye is capable of detecting surprisingly minute changes in sky magnitude with practice.



Welcome New Members!

April 2010

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## 4<sup>th</sup> Of July Lightshow of a Different Kind

*Ted Forte*

Any astronomer should know better than to set up on the 4th of July. But I couldn't resist. Turning my PVC light block frames upside down turned the sides into pole holders that accepted some fiberglass tent poles. I attached some black sheet plastic to the poles to increase the height of the light-blocks about two extra feet to accommodate using the 18. With an arc of light-blocks protecting the west, my fence extended with tarps to the north, the house blocking the street lights to the south and trees to the east, I produced a rather effective refuge from the light, leaving a fairly decent patch of dark sky to observe. It was darker by a bit than Northwest River Park and worth the trouble of construction I suppose.

I didn't count, however, on the prolific fireworks display that my neighbors one street over had in store. He must have spent a fortune - the show was nearly as good as any I've seen put on by the cities. Of course, they were exploding almost directly over my yard (and my scope); and always, it seemed, in the area of sky I was aimed at. But eventually he, and all the competing neighborhood displays, ran out of rockets, and I

got down to observing and had a good couple of hours until the clouds rolled in about 12:30.

With the exception of M51, I observed only globulars and planetaries. Here are the three (all in Ophiuchus) I'd welcome comments on: Cannon 3-1: (P38.2 +12.0) I tried this one because I saw a note I wrote in my Uranometria - to try an h-beta filter. Sure enough, the h-beta revealed a small round disk that was not visible with the OIII, UHC or without the filter. While not unheard of, this is a rare circumstance, and it was the find of the night. I don't recall when I wrote the note or where I read the tip, but it paid off. Anyone have notes on this one?

I recorded maybes on two Abell Planetaries that are pretty tough. When trying to see extremely faint bubbles of nebulosity, it is always a matter of deciding how much averted imagination comes into play. I try to verify the field, cover my head, and keep my eye to the eyepiece for several minutes. I used the OIII filter and averted vision - the highest confidence glimpses came at 138x for Abell 43 and 107x for Abell 39. I feel a bit more confident (15%) on 43 and much less so on 39. Seen them?

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## Summer Dawn Patrol

*Mark Ost*

I gave up a great looking sky last night in return for dawn patrol, in the driveway using the 10-inch Orion Dob. I haven't really spent any time on Jupiter this year until this morning.

If all I was doing was Jupiter I could have slept in because, while I had some good views of Jupiter before dawn, when I returned to the planet after spending considerable time on the moon, the sun was just breaking the horizon. I was just amazed at the color and definition in twilight. Hali agreed that the image was like a page out of a magazine. I used 133x, 200x and 300x. The SEB is actually visible,

but very subdued. I could see white ovals in the NEB, there was a particularly large one on the leading edge of the belt. There are a number of swirls and festoons visible as well. It remained vibrant in the scope long after it was no longer visible to my naked eye. Well worth the look.

The moon was the main target. The crater chain northwest of Stadium was visible - more than a dozen small craters in a long N-S line that I don't recall seeing before. (But at my age, that doesn't mean I - haven't - seen them before.) Inside Clavius, the whole crater arc within the larger crater was visible (D,

*continued on page 7*

## Chasing Pluto

Mark Ost

Last year Kent and I tried to chase down Pluto but were frustrated by the background stars and some of the problems I alluded to in the last post. I figured as usual you can't get a ticket for trying so I gave it a shot last night.

Using my 5 inch to acquaint myself with the field I had no expectation to see it in the refractor. I have seen 13th magnitude stars but the 14th magnitude planet was most likely beyond the telescope capacity. I tried but no dice.

It took me two attempts to locate B92, the dark nebula in Scutum, with my 12.5 inch dobsonian. The first time it was frustrating as there are many dark nebula in the region and a lot of non descript (read huge number of) stars. Finding a dark patch with a particular pattern was too energy consuming and I gave up after twenty minutes of feeling around. Later that night Jordan and I were able to come to grips with the B92 problem.

Normally you can't claim to see Pluto in one night due to the inability to distinguish it from the million other background stars. You have to track motion over several nights but with a dark nebula hiding background stars and

a simple star pattern with nothing around Pluto it was theoretically possible. I still had reservations about this as we bumped up the power to 200X. I could not see the planet in the 10 inch of Jordan's even though we were in the right spot. In a few minutes I was able to locate the dark nebula in my 12.5 inch by just looking for a concentrated dark spot in the region and then I saw the star pattern around the nebula. Going to higher power in the 12.5 I was able to distinguish a 14th magnitude spot exactly where it should be with absolutely nothing around in the area. I am pretty conservative with Pluto attempts and claims but there could be nothing else but the planet in the view! The right spot, the right magnitude, and nothing but black in the background makes me fairly confident we found the elusive planet.

Finally after several years of attempts we completed our sighting of "all" the planets. This is a great opportunity to do this as easily as it gets. No more free rides after this! All you need is a dark sky and the ability to get to Scutum in the south. I could not do it in the 10 inch but maybe younger eyes can. It took my using the 12.5 to get to the level of detection.

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CB, C, N,J, JA, Y, and a number of small crater-lets leading to Rutherford). This was the first time I had noted the small simple crater C. Herschel (13.4 km). The crater Wolf, the remains of a flooded crater, 25km across with the attached Wolf B was particularly interesting. I had an excellent view of Tycho, a prominent complex crater with concentric rings. there is no hint of the extensive ray system that is so obvious at higher sun angles. It is so odd how differently this crater appears at different phases. Back north, Mons Pico was in high relief and this may have been the first time I carefully considered the odd looking chain of mountains named Montes Recti, this 90 KM long ranges is strangely rectangular; cool! This is probably

the best time of month to view the Straight Wall; it stands out obviously and is unmistakable. All in all, I closely examined more than 60 craters this morning, in wonderfully cool temperatures. I only wish it would last!



BACK BAY **observer**

## July 2010

BBAA Events	Special Outreach	Astronomical Events
02 Skywatch at NWRP		
		04 Last Quarter
10 Nightwatch at Chippokes		
16 Nighthike at NWRP		11 New Moon
18 Annual BBAA Family Picnic at NWRP		18 First Quarter
19 Library Astronomy at Kempsville		
20 Boardwalk Astronomy		26 Full Moon



### *Sneak Peak into August*

*08/05 BBAA Meeting TBA*

*08/06 Skywatch at NWRP*

*08/12 Library Astronomy at Great Neck Library at 7 PM*

*08/13 Nighthike at NWRP*

*08/14 Nightwatch at Chippokes State Park in Surrey, VA*

*08/24 Boardwalk Astronomy at 24th Street Stage on VB Boardwalk*