BACK BAY observer

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

EPHEMERALS march 2015

3/05, 7:30 pm
BBAA Monthly Meeting
TCC Campus, VA Beach
Building J, Rm JC-13
CANCELLED due to snow

3/09, 6:00 PM
Science Night
Deep Creek Elementary School
Chesapeake, VA

3/14, 7:15 PM
Skywatch
Northwest River Park

3/21, 6:00 PM
Nightwatch
Chippokes Plantation
Surry, VA

3/27, 7:30 PM
Garden Stars
Norfolk Botanical Gardens

Looking Up!

Wow, where have the last two months gone, it is March already! I'd like to take the time to ask that whoever is praying for this snow, to cease and desist right away, enough is enough already <grin>.

March is a busy month for the BBAA! It looks like a meeting on the 5th, Observing with VPAS at the GAP on the 6th and 20th, an outreach event at Deep Creek Elementary on the 9th, Skywatch on the 14th, and Chippokes on the 21st. I believe there might also be a "make-up" Garden Stars event as well, due to the event being canceled in February.

On the 8th we have the shift to Daylight Savings Time. Boooooooo! Those who liked early evening observing times will need to stay up later, but this also means that it is easier to get up early and look.

This month's meeting will start with the normal agenda of reports and club information, followed by a presentation in the planetarium by Kenny Broun. The meetings have been well attended lately and this is a good thing. The more folks we have come out, the more we can share our experiences.

The BBAA is coming along very well with getting new people out to events and I hope this continues. Other than this I really do not have a lot to pass on this month, but I'm sure as the weather warms up and we can get out more I'll have more to talk about. Until next month...

Jim Tallman

CONTENTS

Looking Up	1
February Minutes	2
Club Information	3
Observer's Corner	3
Wi-Fi or Bluetooth?	4
Outreach Report	6
Calendar	8

February 5, 2015 Meeting Minutes

The February meeting was called to order at 7:32 PM, in room JC10 at TCC in Virginia Beach, by president Jim Tallman.

- Jim Tallman recommends reading the featured articles on the NSN home page, such as "Introduction to Astronomy" by Phil Plait. Phil Plait will be speaking at the Virginia Living Museum on 3/16.
- Bill McLean asked for members to bring in used magazines to give away to guests at future meetings.

Treasurer's Report:

- Chuck Jagow reported there is $2816.05 in the general fund, $2040.67 in the scholarship fund, for a total of $4856.72. Total of 102 members.

Observing Reports:

- January Skywatch was a success. Leigh Anne Lagoe did the NSN presentation "Cook up a Comet" at the Skywatch.
- Melvin Spruill brought his new iOptron CEM60 to Chippokes and is still learning to use it.
- Bill McLean viewed Jupiter and the Moon.
- Chuck Jagow viewed Jupiter and Saturn in the early morning sky.
- Bruce Powers reported the 4H event in Wakefield went well, with about 48 kids all under 12 years old.
- Mark and Chris Jarvis spotted Comet Lovejoy in a 12 inch dob from Virginia Beach.
- Leigh Anne Lagoe viewed a 0.2 degree conjunction of Mars and Neptune :

New Business:

- National Astronomy Day needs to be coordinated with the Central Virginia Beach Library - rain or shine event.
- Information on the 2015 VAAS is still unclear. They have not released a date or location yet.

Meeting Presentation:

- NASA Langley aerospace engineer, Christopher Jones, gave a presentation entitled, "HAVOC: High Altitude Venus Operational Concept, a new and unusual concept in human spaceflight." During his project, he explored how a manned mission to Venus could be possible. Using an airship similar to a blimp, mankind could explore the upper atmosphere of Venus, where conditions are similar to Earth's. By building a 3D model, Mr. Jones' project explored how the airship would fit into the rocket for launch. It also explored what materials should be used to protect the solar panels in the harsh environment. While this mission is not likely in the very near future, his project showed that it is a feasible concept.

Meeting adjourned at 8:53 PM.

Chris Jones, an aerospace engineer at NASA Langley Research Center, was the featured speaker at the February BBAA meeting. Chris discussed a recent NASA study of a lighter-than-air vehicle concept called HAVOC (High Altitude Venus Operational Concept) that may one day explore the upper reaches of the atmosphere of Venus.

The mission would require less time to complete than a crewed Mars mission, and the environment at 50 km is relatively benign, with similar pressure, density, gravity, and radiation protection as the surface of Earth.

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/observer/newsletter.shtml**

Please submit articles and items of interest no later than the date of the monthly meeting in order to be in the next month's edition.

Please submit all items to: bbaa.newsletter@gmail.com or BBAA Observer, P.O. Box 9877, Virginia Beach, VA

President
Jim Tallman
president@backbayastro.org

Vice President
George Reynolds
vp@backbayastro.org

Treasurer
Chuck Jagow
treasurer@backbayastro.org

Secretary
Leigh Anne Lagoe
secretary@backbayastro.org

Webmaster
Curt Lambert
webmaster@backbayastro.org

ALCOR
Bill McLean
alcor@backbayastro.org

Librarian
Bill Newman
billn59@verizon.net

Scholarship Coordinator
Ben Loyola
benito@loyola.com

RRRT Coordinator
Lawrence "Bird" Taylor
Lawrence.W.Taylor@nasa.gov

Newsletter Editor
Paul Tartabini
bbaa.newsletter@gmail.com

BBAA Meetings

The BBAA meet the first Thursday of every month except for July. While school is in session, we meet at the VA Beach TCC Campus. The April 2, 2015 meeting will be held at TCC in Virginia Beach, Building J, Rm JC-13 (or nearby room) at 7:30 PM. Directions are on our Night Sky Network page.

BBAA Internet Links

BBAA Website
www.backbayastro.org

Yahoo! Groups
tech.groups.yahoo.com/group/backbayastro

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

Observer's Corner

Conjunction Junction

BBAA was out in force on the evening of Feb. 20, 2015 to catch Mother Nature in the act of "hooking up" planets and Moons for our viewing pleasure. This nice image from Jim Tallman faithfully captures the view seen by many on that crystal clear winter evening.

Details: Canon T3i with 250MM lens

Continued on page 5

To Wi-Fi or to Bluetooth? That is the Question!

By Jim Tallman

Do you have a GOTO telescope? Want a quick and easy way to control it from an Android tablet or IPad? Well this review is just for you!

While there are many techie options out there to connect your scope to a device, there are only two different options currently available for controlling your telescope *wirelessly* from that device. Both are easy and straightforward to use.

The first is the Southern Stars SkyFi, a WiFi-to-Serial adapter designed for wireless telescope control. The second is a Plug and Play Bluetooth unit called the SkyBT. Both products are offered by Simulation Curriculum Corp.

The SkyFi unit, which is popular with BBAA members, will work with almost any computing device that can join an ad-hoc network. Because of this, many Android users and Windows 8 (more on window 8 later) are left out in the cold as many Android devices cannot connect to an ad-hoc network. But never fear, Android users can use the SkyBT Bluetooth device to wirelessly control their scope using SkySafari 4. IPad users are stuck with the Wi-Fi unit because of how Apple manages (controls, manipulates, bullies, etc…) device connections (Bluetooth or any peripheral connection device for that matter). Pretty much, if it isn't sold and marketed by or for Apple, you cannot connect it except via Wi-Fi (which cannot be controlled by Apple).

If you have Windows 8, you cannot connect to an ad-hoc network now. Microsoft removed the ad-hoc network connection ability from Windows 8 for some unknown reason. You can use the Wi-Fi unit if you configure the unit to connect to a home network and then your PC can see it as a device on your network. So how do you do this in the field? You will need a power inverter to get 115vac and a standard wireless router, but this is an advanced topic for another time. If you have a PC that you use just for astronomy, I recommend that you stay on Windows 7, and you will be able to use the SkyFi unit. Note that you still cannot use the Bluetooth unit with Windows because you cannot emulate serial over TCP/IP over a Bluetooth connection.

Some time ago I purchased the Orion StarSeek (pictured below), which is the same as the SkyFi unit but licensed to Orion to resell as the StarSeek. StarSeek and SkyFi are the same except for the label on the front so I will just call it the Wi-Fi unit.

The Wi-Fi unit is pretty easy to use although initial configuration requires a little understanding of how to set up a network and security, but you can use it right out of the box if you don't care about security. Normally you would use this with an iPad, or any Android that can get connected using SkySafari, or Orion's StarSeek app, or with a Windows 7 PC using a typical planetarium program like Stellarium.

Orion's StarSeek Model.

The Wi-Fi unit runs on four AA batteries and will work for 6-7 hours. It can also be powered externally using a 6-12V DC power source. I suggest the use of rechargeable batteries if using external power and don't want to have to keep taking out your batteries all of the time. Using standard batteries can result in damage to the unit. I have used mine both ways, but the external power option lets you run the unit a lot longer. There is also a USB port for firmware updates and in some cases, like some iOptron mounts, a USB connection can be made instead of a normal RS-232 Serial connection.

The Wi-Fi unit can be configured to set up its own network or join an existing network. You use the SkySafari app to change the configurations. Connecting to my home network lets me access the internet while connected to the Wi-Fi unit. If not in

Continued on page 7

Observer's Corner, continued from page 3

Conjunction Musings

Hopefully everyone was able to catch the view for themselves as, for once, the skies cooperated in Hampton Roads and were free of clouds all the way to the horizon. The scene was quite beautiful, thanks to a perfect storm of features that combined to make the sight quite pleasing: the attractive right-angle geometric layout of the three celestial bodies that formed a crescendo of light from one corner to the next, a delightful crescent-shaped 'Cheshire smile" Moon complete with some very noticeable Earthshine, and just a hint of reddish color, thanks to Mars. Views like this are among the most beautiful in astronomy, which is fitting, as they are accessible and obvious to all.

- Paul Tartabini

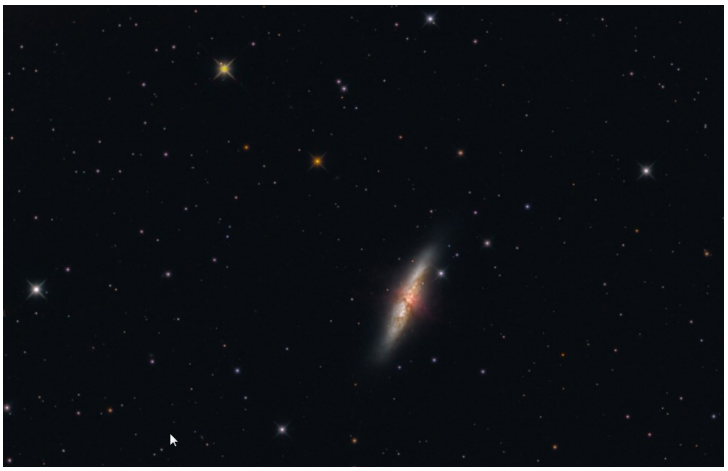
Triple Play ►

"The Moon, Venus and Mars made a beautiful triple conjunction on a frigid 12° evening Feb. 20, 2015."

Details:
Top right : Canon 20Da 180 mm f/5.6
Bottom right: Canon 20Da Sigma 28 mm f/5.6.
Both images by Kent Blackwell.

Galaxy Season Has Arrived

M51 and its smaller companion, NGC 5195, in Canes Venatici. Image taken with a QHY9 monochrome CCD and composed of 3.3 hours of 300 second images (approx. 10 per LRGB filter)..



M82 in Ursa Major. Image taken with a QHY9 monochrome CCD and composed of 9 hours of 600 second images (20-25 per LRGB filter and 15 in Ha).

These incredible images were taken by BBAA member, Josh Frechem, from his observatory in Great Bridge. Josh took the images using an 8" Ritchey-Chretien on a CGEM DX mount. With a QHY9 monochrome CCD camera using LRGB and Ha filters.

Pushing the Outreach Envelope

Sharing a passion for astronomy with preschoolers

By Leigh Anne Lagoe

I was picking up my 4 year old son from his pre-K class and overheard two classroom teachers discussing options for the upcoming curriculum. They were going to be spending some time learning about light and shadows and I heard one of them say, "We can do the sun and the moon..." So of course I stopped abruptly, walked back toward them and leaned in to interrupt, "You know, if you want to do something with the Sun and the Moon, I'm a member of the Back Bay Amateur Astronomers." And it went from there.

The classroom teacher, Mrs. Davio, altered her week of instruction around astronomy. They made paper tube rocket ships and paper plate space helmets, all in preparation for me coming with a presentation.

The preschool teachers insisted that the material I go over with the class be simple. Kids this age can still be confused with simple language, so they were worried an astronomy lesson "would be over their heads".

My search of the Night Sky Network (NSN) and the NASA Langley Educator's Resource Center for some preschool-aged material was unsuccessful. My online searches found lessons that were either too complicated, or so over-simplified a child couldn't really learn from it.

I decided to make my own presentation. My goal was to introduce them to some language associated with astronomy and help them conceptualize what outer space is. I wanted to do something interactive and exciting, using imaginary play and simple language.

After digging through the NSN kits and browsing the NASA website for free downloadable videos, I came up with enough material. I pieced together some video clips and photographs from the NSN *Exploring Our Solar System* tool kit to make an interactive powerpoint presentation.

The students first learned what direction they would have to look in order to find

The opening chart of Leigh Anne's presentation. The chart was a true BBAA effort as it included images of the Sun and Moon taken by fellow member, Dan Pelzel.

outer space. Surprisingly, only a few of the students pointed up. Once they learned the difference between what they see in the sky that is on earth vs. in space, we moved to the adventure.

Students put on paper plate space helmets and we "launched" out of Earth's atmosphere. We explored the Moon and Mars, then flew by the gas giants. After a close approach to the Sun, we re-entered Earth's atmosphere.

They learned that the Sun is really a star that shines on these worlds creating daytime on one side and night time on another. They learned that the stars are always in the sky, but we can't see them during the day. They had an imaginary

Continued on page 7

Leigh Anne leading the kids on an exploratory "mission" across the solar system.

Pre-K Outreach, continued from page 6

moon walk, moon-buggy ride, visited Curiosity on Mars, and experienced zero-G. They touched real meteorites and experienced solar wind and heat with a blow dryer.

I mentioned some astronomical terminology to familiarize them with the language, but to be sure they understood what I was saying, I substituted the terms with easier ones:

meteorites = space rocks
atmosphere = the air on Earth
astronomy = outer space

I think they walked away with a better understanding of what outer space is and they were introduced to some of the language associated with astronomy. If nothing else, they at least got excited about astronomy and space travel!

The event went so well, the teachers asked if I would come back. Now I am organizing an astronomy enrichment program for Malibu Elementary School.

To WiFi or Bluetooth, continued from page 4

range of my home network, the Wi-Fi unit defaults to its internal settings and generates its own ad-hoc network, which you must then connect to with the device you plan to use with the telescope, and then you will no longer be able to get to the internet unless you have a 4G capability or a hardwired network cable plugged in.

Once connected you then have to open SkySafari or StarSeek, and configure the settings for your scope type, and to ensure you have given it a unique SSID (wireless device name) and also set up the access security features to prevent someone hijacking your control.

So how does it work? For me, pretty good. I can use it with my Windows 7 devices when I need the scope to be controlled by a windows program (Stellarium, SkyTools, Etc.). Not much bad to say other than sometimes it can be a little picky about connections but nothing a restart doesn't fix.

Recently my iPad started telling me it was "Too hot" even though it was 17 degrees outside. This happened a couple of time so I decided that the iPad was getting kicked to the curb and I would replace it it with a 10" Android tablet. I did some research and found that Simulation Curriculum now has a Bluetooth unit called the SkyBT that will let you get connected to your scope using ANY Android device that can enable Bluetooth. This unit is very small and is only about a quarter of the size of the Wi-Fi unit. It will run for 10-11 hours on 2 AAA batteries. Again you can apply an external 5.5 V DC power source to extend this time, but you must leave rechargeable batteries in the unit if you want to do so.

The SkyBT Bluetooth unit.

Setup was very easy, and just about the same as "Pairing" a headset to your tablet or phone. All I had to do was configure the SkySafari app to use Bluetooth (one radio button) and off it goes. To be honest though, initially I had a little problem getting the connection but I found that unlike a headset that is connected as soon as the tablet or phone sees that the Bluetooth device is on, this unit only comes on when you tell it to "Connect" from within the SkySafari app. So before you connect to the unit you must make sure that you have just turned it on and the green light is blinking at a rate of 2 flashes per second. The instructions state this but it is easy to miss so read them carefully. Note - If you disconnect the connection for any reason and do not reconnect in less than 3 minutes the Bluetooth unit will turn itself off on its own, which saves batteries, forcing you to restart the Bluetooth unit and connection sequence.

So how does it work? I think it works great. It is not as picky as the Wi-Fi unit and is very easy to set up on your tablet or phone and it works great with the SkySafari app. With this said, it is also limited to what you can connect to your telescope. I've found that I cannot set up my PC because there is no IP address used with Bluetooth. This is fine since I now use a wired network connection to my Losmandy mount and I can save the serial port for the Bluetooth.

So there you have it, both devices work well and the decision of which to choose depends on what you want to connect. Use the Wi-Fi model for Windows 7 PCs, iPads/iPhones, and some Android devices. Use Bluetooth for Android devices. The Wi-Fi model costs $160 and the Bluetooth model costs $130 from Simulation Curriculum.

store.simulationcurriculum.com/collections/skysafari

March 2015

BBAA Events	Special Outreach	Astronomical Events
		3/5 Full Moon
	3/09 Science Night @ Deep Creek Elementary School	3/13 Last Quarter Moon
3/14 Skywatch @ Northwest River Park	3/18 Science Fair @ Plaza Middle School	3/20 Spring Equinox
		3/20 New Moon
3/22 Nightwatch @ Chippokes Plantation	3/27 Garden Stars @ Norfolk Botanical Gardens	3/27 First Quarter

Sneak Peek into April

Thu 4/02/2015 Monthly Meeting, TCC, 7:30 pm
Sat 4/11/2015 Skywatch at Northwest River Park, 7:30 pm
Sat 4/18/2015 Nightwatch at Chippokes State Park, Surry VA.
Fri 4/24/2015 Garden Stars at Norfolk Botanical Gardens, 8:00 pm