



BACK BAY observer

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

EPHEMERALS march 2016

03/04 & 3/11
Cornwatch
Cornland Park

03/08, 1:30 - 2:15 PM
Solar System Presentation
Camp Allen Elementary School
Norfolk, VA

03/14, 6:00 - 7:45 PM
Science Night
Deep Creek Elementary School
2809 Forehand Dr, Chesapeake, VA

03/15, 6:00 - 8:00 PM
Science Night
Deep Creek Central Elementary School
2448 Shipyard Rd, Chesapeake, VA

03/19, 10:00 AM
"Sun" Day
Bells Mill Park
Chesapeake, VA

03/26, 6:00 PM
Skywatch
Northwest River Park



Looking Up!

The inaugural Cornwatch on Friday the 8th of January was a significant non-event. I left my house in Greenbrier about forty minutes before sundown with my trusty Meade 10" LX200GPS loaded up. It was overcast, but I had some misguided hope of a few sucker holes in the clouds. What I did not anticipate was the Friday afternoon commute, made even worse by the seemingly eternal construction on Dominion Blvd. The 15-20 minute drive I had planned for, turned into forty four minutes of sheer frustration. Obviously I chose a terrible path. Perhaps I could do better the next time.

I stayed until it got dark to check on the streetlight situation, while there are some lights on Benefit road and one at the back of the nearby Fire Station, I believe they are manageable through creative vehicle placement. The soccer field goals are all about the field, and the city has carefully placed old telephone poles to discourage driving out of the parking area, I believe we will be able to adapt to whatever we can, as long as we don't muddy up their field and tear up any grass.

The February Cornwatch was on Friday the 5th and I chose a successful route going down Battlefield Blvd. into Great Bridge where I turned right onto Johnstown road. I followed Johnstown road to Benefit road where I turned right which took me all the way out to Cornland park. Four other members made it and enjoyed the skies.

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January 7, 2016 Meeting Summary

Meeting was called to order at the VB Planetarium at 7:30 PM by President Chuck Jagow.

Old Business:

- Constructive changes in the club Constitution are being made, the finished version should be ready for club membership vote by March.

New Business:

- April 16th, Mt. Trashmore Star Party. The date is not yet firm without confirmation from the city of VB. Boardwalk Astronomy Dates being refined for 2016. Still pending approval from the Beach.
- Cornwatch is our twice-monthly observing event at Cornland Park (17 min from Chesapeake). This event is for members and their guests only; it is not an outreach event. Attendance requires a special use permit that is available to club members online via the Night Sky Network. Please don't share this document with the public, the permission took several months to get from the city. Each guest must also have a BBAA ID card that will be emailed by Chuck. The address is 3908 Cornland Rd. There is a Porta-potty on sight.
- It was noted that Nick Anderson's astronomy

site messierrthanacomet.org is still active and is a great resource for observers. It would be great if we could keep it active.

Presentation: Astronomy 101, Lesson 5

- George Reynolds gave the presentation and began with a moment of silence for Nick Anderson.
- George distributed learning materials for Lesson 5, *Finding Your Way Among the Stars*. He also had copies of previous lessons (1. *Basics*, 2. *Best Telescope*, 3. *Using your Telescope*, 4. *The Moon*).
- George covered glossary terms including longitude, latitude, declination and right ascension. He also provided a list of recommended books, and he went over how to interpret a page describing what to see in the constellation Orion from one of the books, [*Objects in the Heavens*](#).
- George noted that astronomy takes patience and encouraged attendees to stick with it as your eyes will eventually get trained on how and what to observe
- Chuck Dibbs provided examples in the demonstration, including what the sky would look like from Cornland Park on Jan. 8.

Meeting adjourned at 9:00 PM.

February 4, 2016 Meeting Summary

Meeting was called to order at TCC, VB at 7:30 PM by President Chuck Jagow. Chuck introduced the newly elected officers.

Old Business:

- The BBAA is testing a new Night Sky Network (NSN) Toolkit. Several clubs all over the country will try out the new kit and test it on audiences. **The new Toolkit: Planetary Investigations**, includes an activity to demonstrate the makeup of the mass of the Solar System, a PowerPoint presentation, and Posters and other educational materials. The BBAA has given our initial feedback based on reviewing the materials, and we will begin to try it out on guests at upcoming events.

New Business:

- A Night Sky Network Award was presented to George Reynolds.

Observing Reports:

- Comet Catalina above Polaris and five planets visible at dawn.

- A spectacular transit of the International Space Station at the last Skywatch event. Also, others noted that they observed a [*Bolide*](#) later on that same night.
- George and Chuck answered a question about a [*Solar Funnel*](#), describing an apparatus that you can make to safely show the sun to guests at outreach events.

Presentation: Making Your Own Dew Heaters

- Chuck Jagow gave a slide presentation on how to make your own dew heater strips. He also discussed the idea of a pulse width modulator to control the voltage and showed how you can use a 12 Volt Golf Cart Battery as a separate power source.
- There is a BBAA workshop planned for April 23 (backup date is April 30) where attendees can learn to make dew heaters as well as a solar filter (in time for the Mercury Transit on May 9).

Meeting adjourned at 8:53 PM.

The Back Bay Amateur Astronomers

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:
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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 April 7, 2016 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



THE FLAMING STAR NEBULA (IC 405)

This dramatic image of the Flaming Star Nebula in the constellation Auriga was taken by Jason Tackett at the Staunton River Star Party in October, 2015. The nebula is named for the 'smoke' surrounding the variable star AE Auriga that is delicately interlaced with the surrounding flame-colored H-alpha emission nebulosity. Jason's image expertly captures the contrasting colors, and the result is wonderful!

Details:

Canon 550D Camera
Explore Scientific ED127
Refractor
ISO 1600
Total Exposure: 3.4 hours

My Flats Light Box Project

A fun and easy do-it-yourself Astrophotography Project

By Jim Tallman

For some time now, I've been getting deeper and deeper into the dark side of astronomy, the realm of Astrophotography.

Up until recently my work with my trusty Canon T3i was moving right along and in most cases, I could turn out a decent end product when I had the skies and time to get out. But recently I changed one of the critical elements in my astrophotography tools -- I had my camera modified to be full spectrum, meaning there was no longer any internal filters that made the camera great for daylight and just so-so for astrophotography. However, making this change turned my entire process of taking the various lights, darks, flats, and biases, which are used to produce a usable deep sky image, into chaos!

Since I was more than a little bit squeamish about tearing my only imaging device apart, I decided to send my camera off to have it modified by Gary Honis, who does a lot of these modifications and has a very good reputation. I got the camera back and had to wait for a couple of weeks to be able to use it. When I did it was at the BBAA's first Corn Watch of 2016 and, while it was really muddy, I had a great time imaging the Horsehead, M99, and The Leo Triplet. Obtaining the lights was the easiest part this time, and disaster was just a day away.

In the past, I was able to get my lights and then shoot everything else, flats included, the next day. I have never had an issue with this process before, so when I finally took the rest of the series of flats, darks, and bias shots and processed the images I found that I had ended up with a lot of dust motes that looked like water drops in the imagery.

So what went wrong? Well, I completely forgot that when a camera is modified for full spectrum imagery, the sensor "self-clean" feature no longer works because the factory glass is removed. This means I would now



The completed Light Box is shown here attached to the end of Jim Tallman's telescope.

An astrophotographer uses a light box to take 'flats'. These are images of a plain white field that are used to correct for imperfections, in the optical path to the camera (e.g., dust motes, etc). The imperfections, which are clearly seen on the flat, can then be 'subtracted out' of the final astro image using image processing software.

have to do my flats at the same time as I do the lights or not rotate the camera if I decide to take a shot of something else that night. I knew the latter choice was not really an option when I image a couple of objects in one night. My only choice was to build a light box to be able to take my lights out in the field, so that I could switch to other objects over the course of my imaging time.

I did some research and found that most designs use white 5/16 in. foam boards to form the basis of the very lightweight box. Next, I researched lighting and settled on bright 12vdc strip lights and a dimmer potentiometer to adjust the light level in the box. I then found a 12 In. X 12 in. square of Plexiglas that was frosted on both sides to defuse the light coming out of the box.

With plans and materials set, I began work on my box. Here are the steps I took:

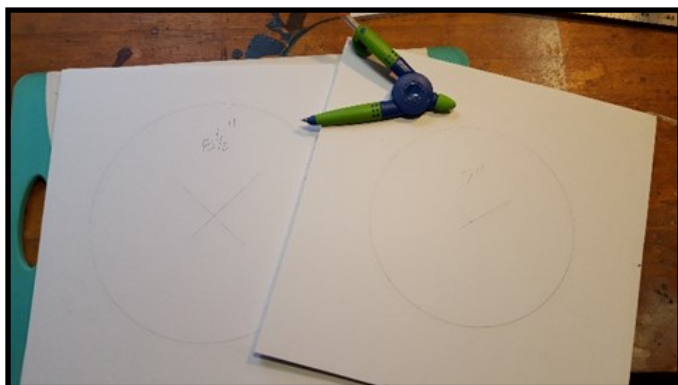
[*Continued on page 5*](#)

DIY Light Box Project, continued from [page 4](#)

1. I began by cutting out all of the foam board parts (12 in. squares for the inside and bottom, and 12 ¼ in squares for the sides and top) and I used scraps to cut 3/8 in. strips to make braces in the box for the various internal parts. Then I set to gluing the braces onto the side pieces.

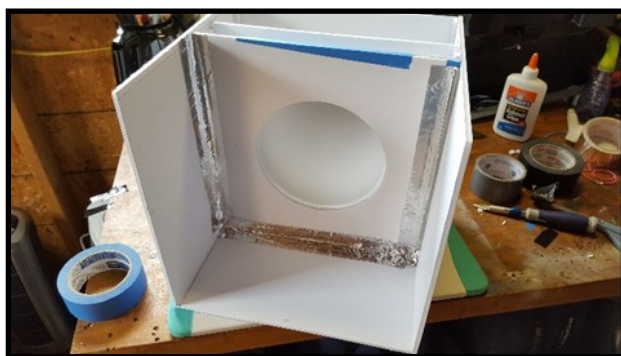
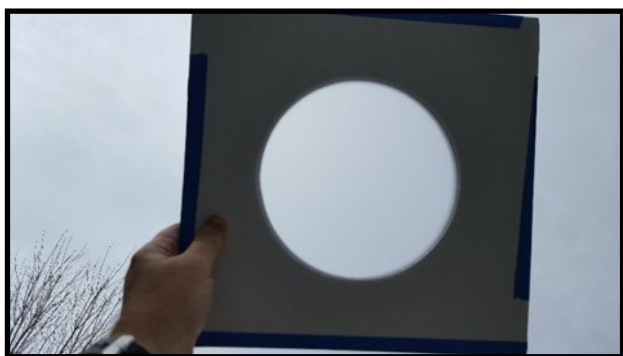
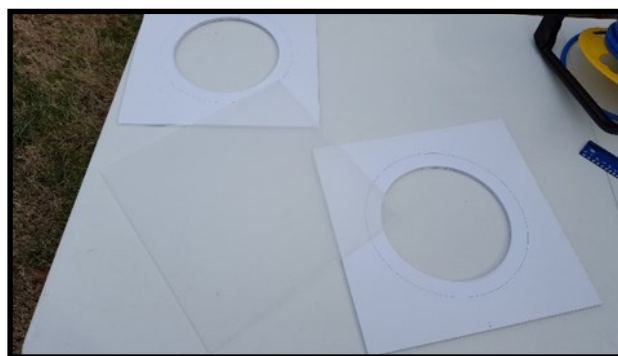


2. With the sides completed I got to work on cutting the circles needed to allow the light box to be placed over the end of the telescope and dew shield, and I glued those into the box framework. My Dremel tool had a circle cutter and rotary saw bit, so that made cutting out circles super easy.



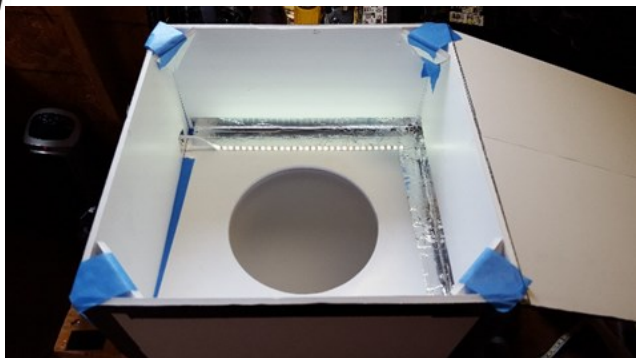
3. Next came the construction of the most critical part of the light box, the diffuser. The diffuser must provide a consistent even flat light across the Plexiglas face so that a good flat image can be taken. The flat image will let an imager remove dust motes from the final light images. This wasn't hard to do with the Dremel. I used glue to set the diffuser panel into place and then used metal vent tape to make a good seal to prevent light leaks.

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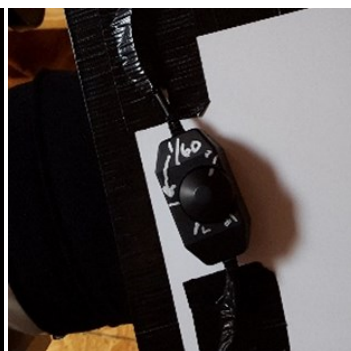
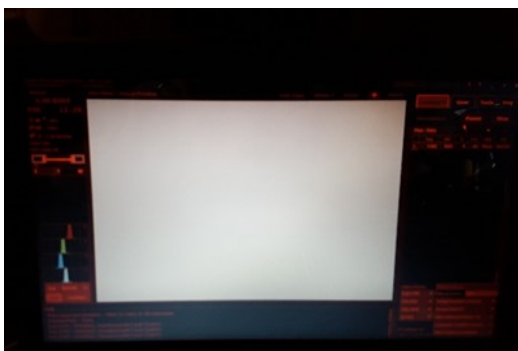
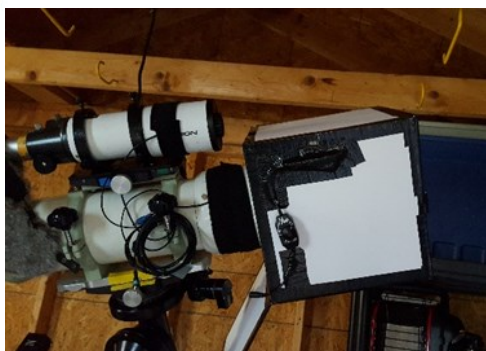


DIY Light Box Project, continued from [page 5](#)

4. Next, I drilled a hole in the side that I will only tape into place (in case of future modifications) and installed a small string of lights. I figured that I could adjust the total light levels later by simply duct taping the lights until the level wasn't blinding, as these little lights are very bright. The small triangles at the edges are to make sure that the light won't bounce out of the corners, not sure if they work, I found the idea in another plan.



5. Next I sealed up the top and put it on the telescope and set up my camera for a few test shots. By taping over LEDs as I tested, I finally was able to get the light lever adjusted and a very nice flat at 800ISO and 1/60th of a second exposure. The histogram puts everything at about mid-way in the spectrum so that was great .



I had a great time with this project and it wasn't expensive, I think I spend about \$40 on parts. I'm really looking forward to using it on my next outing. The nice thing is that this light box runs on 12vdc and I can just plug it into my battery source and get my flats before moving the camera angle for a different object. It also can be used during the daylight hours. It doesn't look pretty but once I put a few coats of black paint on it will block even the brightest sunlight out letting me keep my flats consistent. I think I'll be making two larger ones for the 10" Astrograph and the 10" SCT. What fun! ☺

Don't Miss these Upcoming BBAA Events!!

DIY Solar Filter & Dew Heater Workshop: BBAA members: Be sure to check your email. We have a solar filter & dew heater workshop coming up in April, with limited spots available. Please respond to that email or sign up in the Yahoo Group if you want to attend.

Science Night at Deep Creek Central Elementary School: We can use a few more volunteers for the Deep Creek CENTRAL Elementary School Science Night, **Tuesday, 15 March from 6 to 8 PM**. This is an EXCELLENT venue for newbie members to get their feet wet in outreach.

We will likely have a display table with handouts, and, weather permitting, a couple of telescopes set up outside to look at the First Quarter Moon and anything else we can see in the sky. Sunset is 7:12 pm (darn that Daylight Saving Time!), so the Moon will be it until 7:30 or later. But a closeup view of the Moon and its craters, mountains, and valleys will be impressive for the kids and the adults.

Looking Up, continued from [page 1](#)

I went over and spoke with the Fire Station folks to let them know that the bunch of yahoos next door in the park were just crazy astronomers and not rabble-rousing teenagers. I had to beg out early as I had recently broken my right little toe and it started complaining pretty bad about 8:30 PM. Our next Cornwatch is scheduled for the 4th and 11th of March.

Our second SUNDAY on Saturday was called due to an impending snow storm. Our next Sun Day on Saturday is Saturday the 19th.

The Dibbs/Carey team was negotiating with the city of Virginia Beach for Boardwalk Astronomy dates which are now posted on the NASA Night Sky Network calendar. It looks poorly for a Mount Trashmore Star Party, so we are trying to schedule an event with Chesapeake at City Park on June 18th, more details to follow.

This month's meeting will be in the TCC planetarium to accommodate our guest speaker, Dr. Gene Tracy of William and Mary

who wrote the article "Sky readers" (see <https://goo.gl/IE50cj>). For more on Dr. Tracey, see <http://goo.gl/aICkqT>.

March brings some warmer temps (I hope) and also brings us:

- March 1st – Uranus will be about 20 degrees in the West.
- March 2nd – The moon and Saturn almost rise together about 1-2 AM
- March 7th – The moon and its shadow nearly overlap twice
- March 8th – Jupiter at opposition
- March 9th – Fly to Indonesia to catch a total solar eclipse.
- March 14th & 15th – Double shadow transit across Jupiter

The days are getting longer and the nights shorter, put on some warm clothes and check out the night skies before the darn bugs return. Just remember to keep looking up.

Chuck Jagow

Event Report: Brother Guy Consolmagno Talk

The Back Bay Amateur Astronomers were well represented tonight, Friday, March 4, at the Keane Institute talk by Brother Guy Consolmagno, author of six books, among which are *Turn Left at Orion*, *Brother Astronomer*, *The Heavens Proclaim*, and *Would You Baptize an Extraterrestrial?*

BBAA members and family members I saw there were Bill McLean and wife Annette, Paul Tartabini and wife Cathy, Chuck Dibbs, Bird Taylor and son Ian, Robyn Korn and husband Larry, Kevin Swann and his son, and Kunio Sayanagi. I was there with my granddaughter, Samantha Burris.

Brother Guy is an excellent speaker, using humor, wisdom, and good-natured common sense in his presentation to show that there is no conflict between God and science.

George Reynolds



Paul Tartabini gets his copy of Turn Left at Orion autographed by Brother Guy Consolmagno. Brother Guy was incredibly gracious, spending over an hour after the talk signing books and talking to fans.



March 2016

BBAA Events	Special Outreach	Astronomical Events
03/03 BBAA Monthly Meeting		03/08 Jupiter Opposition
03/04 & 3/11 Cornwatch @ Cornland Park	Mondays/Thursdays thru 3/21 Astronomy Class, Malibu E.S.	03/08 New Moon
03/05 Nightwatch @ Chippokes Plantation	03/08 Solar System Talk Camp Allen E.S.	03/15 First Quarter Moon
03/19 "Sun" Day @ Bells Mill Park, Chesapeake, VA	03/14 Science Night, Deep Creek E.S. (Forehand Dr)	03/23 Full Moon
03/26 Skywatch @ Northwest River Park	03/15 Science Night, Deep Creek Central E.S.(Shipyard Rd)	03/30 Last Quarter Moon

Sneak Peek into April

Fri 4/01/2016 & 4/08/2016 Observing session at Cornland Park
 Thu 4/07/2016 Monthly Meeting, Plaza Middle School, 7:30 pm
 Sat 4/09/2016 Nightwatch at Chippokes Plantation
 Fri 4/16/2016 "Sun" Day at Bells Mill Park, 10:00 am
 Sat 4/30/2016 Skywatch at Northwest River Park, 4:00 pm