



BACK BAY observer

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

EPHEMERALS october 2011

10/06
BBAA Monthly Meeting
TCC VB, Building J, Room JC-12
7:30 PM

10/11
Boardwalk Astronomy
24th Street and Boardwalk
Virginia Beach
Dusk - 11:00 PM

10/29
Nightwatch
Chippokes State Park
Surry, VA
Dusk

Looking Up!

The 2011 Convention of the Virginia Association of Astronomical Societies (VAAS) was this past Saturday, October 1, and was roundly approved as a success. We had a fair turnout of twenty-five members of various astronomy clubs around the state. There were six sessions, separated by a lunch break and the VAAS meeting of club presidents.

Ken Broun did the first presentation at 9 AM, and the final afternoon session, both of which demonstrated the amazing capabilities of the laser planetarium projector. Donnor Grigsby, a NASA engineer, gave a talk about color in astronomical images. Our friend Dr. Carlos Salgado presented us with some state-of-the-art information on the polarization plates that have been installed on the Rapid Response Robotic Telescope (RRRT). In the afternoon, Kevin Mitchell, a graduate of ODU, told us about the methodologies and mathematics used to detect exo-planets, the worlds being discovered around other stars. The presentation by Mark Ost centered on how to use information about the moon to interest members of the public of all ages and perhaps get them more involved in astronomy. Did you know that the material that formed the Maria had the consistency of motor oil?

The Draconids meteor show peaks on the 8th of October. The American Meteor Society (www.amsmeteors.org) reports that there may be a burst of

Continued on page 4



CONTENTS

Ephemerals	1
Looking Up	1
NASA Space Place	2
Meeting Minutes	4
Shuttlegazers	6
VAAS Conference	7

Dark Clues to the Universe

by Dr. Marc Rayman

Urban astronomers are always wishing for darker skies. But that complaint is due to light from Earth. What about the light coming from the night sky itself? When you think about it, why is the sky dark at all?

Of course, space appears dark at night because that is when our side of Earth faces away from the Sun. But what about all those other suns? Our own Milky Way galaxy contains over 200 billion stars, and the entire universe probably contains over 100 billion galaxies. You might suppose that that many stars would light up the night like daytime!

Until the 20th century, astronomers didn't think it was even possible to count all the stars in the universe. They thought the universe was infinite and unchanging.

Besides being very hard to imagine, the trouble with an infinite universe is that no matter where you look in the night sky, you should see a star. Stars should overlap each other in the sky like tree trunks in the middle of a very thick forest. But, if this were the case, the sky would be blazing with light. This problem greatly troubled astronomers and became known as "Olbers' Paradox" after the 19th century astronomer Heinrich Olbers who wrote about it, although he was not the first to raise this astronomical mystery.

To try to explain the paradox, some 19th century scientists thought that dust clouds between the stars must be absorbing a lot of the starlight so it wouldn't shine through to us. But later scientists



This Hubble Space Telescope image of Galaxy NGC 4414 was used to help calculate the expansion rate of the universe. The galaxy is about 60 million light-years away. Credit: NASA and The Hubble Heritage Team (STScI/AURA)

realized that the dust itself would absorb so much energy from the starlight that eventually it would glow as hot and bright as the stars themselves.

Astronomers now realize that the universe is not infinite. A finite universe—that is, a universe of limited size—even one with trillions of stars, just wouldn't have enough stars to light up all of space.

Although the idea of a finite universe explains why Earth's sky is dark at night, other factors work to make it even darker.

The universe is expanding. As a result, the light that leaves a distant galaxy today will have much farther to travel to our eyes than the light that left it a million years ago or even one year ago. That means the amount of light energy reaching us from distant stars dwindles all the time. And the farther

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>.

President

Mark Gerlach
757-434-4220
mgerlach@verizon.net

Vice President

Courtney Flonta
757-553-4418
astrogirl12@yahoo.com

Treasurer

Jim Tallman
757-553-8193
jctallman@cox.net

Secretary

George Reynolds
757-497-0755
pathfinder027@yahoo.com

Webmaster

Chuck Jagow
757-430-9732
chuck@jagowds.com

ALCOR

Bill McLean
preciousmyprecious@yahoo.com

Librarian

Bill Newman
billn59@verizon.net

RRRT Coordinator

Ted Forte
twforte@cox.net

Scholarship Coordinator

Ben Loyola
benito@loyola.com

Newletter Editor

Erica Smith-Llera
BBAAErica@yahoo.com

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

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 September meeting is at the TCC Virginia Beach.** Directions available at 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

Space Place, continued from page 2

away the star, the less bright it will look to us.

Also, because space is expanding, the wavelengths of the light passing through it are expanding. Thus, the farther the light has traveled, the more red-shifted (and lower in energy) it becomes, perhaps red-shifting right out of the visible range. So, even darker skies prevail.

The universe, both finite in size and finite in age, is

full of wonderful sights. See some bright, beautiful images of faraway galaxies against the blackness of space at the Space Place image galleries. Visit <http://spaceplace.nasa.gov/search/?q=gallery>.

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



Welcome New Members!

Looking Up! Continued from page 1

activity this year. Unfortunately the nearly full moon will outshine all but the brightest of them. The Orionids is active through most of the month and should peak on the night of October 21-22. This is described as a "modest" shower by Sky & Telescope but AMS refers to it as a major shower. Up to 20 Orionids per hour have been reported. The radiant lies on a line about halfway between Betelgeuse and Alhena (Gamma Geminorum) at the right (eastern) foot of Gemini.

Comet Garradd (C/2009 P1) has moved into Hercules. It is moving in the direction of the line between Alpha (Rasalgethi) and Beta Hercules (Kornepheros). It will be turning north-eastward in early November and spend the rest of the year and into February in Hercules. I still have not been able to see it, but

then I haven't made a concerted effort to do so.

Our October Boardwalk Astronomy will be Tuesday, the 11, with a rain date of Thursday, the 13th. I can't make this one, I will be in Florida taking a class on a computer system for the City (N.N.). I trust that the usual crew will turn out, weather permitting.

It's time to start thinking about BBAA Offices for the coming year. George, Courtney, and myself have served two years in our current positions and each ineligible to continue another year. Please take a look at your plans for the coming year and see if you can fit in the time to give back to our organization and our community.

In the meantime, keep Looking Up!!

Mark Gerlach

BBAA Meeting Minutes September 1, 2011

The September, 2011 meeting was called to order at 7:35 p.m. in room JC-13 at TCC Virginia Beach Campus by club secretary George Reynolds. President Mark Gerlach was ill and could not attend. Those in attendance were Neill Alford, Kenny Broun, Tom Flatley, Jeff Goldstein, Chuck Jagow, Amy Koenig Gardner, Matt McLaughlin, Bill McLean, Bill Powers, George Reynolds, Kevin Swann, Matt Swingle, Jim Tallman, and "Bird" Taylor.

Treasurer's report: General Fund, \$3065.17; Scholarship Fund, \$3710.12; total, \$6775.29. Secretary's report: George Reynolds read the minutes of the August meeting. They were accepted as read.

This year's BBAA scholarship recipient was announced to be Emily Wiggins, teenage member of VPAS, who is very active and deserving of the scholarship award. Bird Taylor told us a little about her and what she has done for VPAS.

Old business:

Chuck Jagow reported on preparation for the VAAS conference, which is scheduled for Saturday, 1 October at TCC Virginia Beach in the planetarium. He has drafted an event schedule for the conference. Kenny Broun will present a planetarium feature. NASA speaker Donner Grigsby of the NASA Speakers' Bureau, will give a presentation. Dr. Carlos Salgado of Norfolk State University will speak on polarization studies with the RRRT. ODU doctoral candidate Kevin Mitchell will talk about Exoplanets, and our own Mark Ost will speak on Moon geology and meteorites. The planned observing site, York River State Park, has been closed due to damage from Hurricane Irene. Bill McLean and/or Bird Taylor will get in touch with Darrell, the VPAS point of contact for the park, and try to arrange a special dispensation for VAAS. Of course, by October 1, the park may be open again.

Ken Broun will ask his dean if VAAS can use the kitchen area and refrigerator to store food and beverages, and arrange for serving coffee. Kenny

said the person(s) in charge of the refreshments can meet him at TCC the day before the conference to store the food and drinks in the refrigerator. George will send Kenny an email reminder. Lunch will not be provided, but attendees will be directed to local restaurants.

Future schedule items:

The Fall East Coast Star Party is scheduled for the weekend of 21 October. On Friday, 23 September there will be a retreat at Fan Mountain, the site of the RRRT. Several club members are planning to attend. Also on Friday, 23 October, according to Bird Taylor, the American Institute for Aeronautics and Astronautics (AIAA) will conduct a full day of STEM training (Science, Technology, Engineering and Math) at Corporate Landing Middle School in Virginia Beach from 10 am to 4 pm. Bird solicited volunteers from BBAA to participate. Students from all over the Virginia Beach City Public School system will be there for talks, and views through solar-filtered telescopes.

Jim Tallman made a motion that he be authorized to purchase 2012 calendars from Astronomy magazine for all the current members of the club. The motion was seconded, discussed and carried. The cost will be less than \$400, and will benefit the dues-paying members.

Matt Swingle told club members about the upcoming GRAIL mission to the moon. On 8 September NASA

will launch GRAIL (Gravity Recovery and Interior Laboratory), which will consist of twin spacecraft orbiting the moon in tandem. Matt also passed around detailed photos of some features on the surface of Mars, taken by satellites currently orbiting the Red Planet.

Kenny Broun reported that he was at Cape Canaveral for the launch of the final Space Shuttle mission. He went back to the Cape to see the Juno launch on 5 August.

Jim Tallman, Jeff Goldstein, Bill McLean, and others reported that they have seen comet Garradd from their homes. The comet is in "prime time" now, with a 10:00 pm transit.

At 8:17 pm the meeting was moved from the classroom to the planetarium theater, where Kenny Broun put on a fantastic laser light show. The feature event was a mind-bending, three-dimensional, visually stunning presentation, "Natural Selection" by Robin Sip. The graphics were astounding. Though it was not strictly an astronomy presentation, all were awed by the detail and the amazing visual effects which reminded one of an IMAX movie.

The meeting was adjourned at 9:17 pm.

FRANK & ERNEST BOB THAVES



Congratulations to Saul Perlmutter (UC-Berkeley), Brian P. Schmidt (Australian National University), and Adam G. Reiss (Johns Hopkins University) for being awarded the Nobel Prize in Physics for their discovery that the universe is expanding at an ever-increasing rate.

A Letter to Shuttlegazers

Bird Taylor

Shuttlegazers,

The launch was amazing, yet, again. It was very special.

STS-135 t-shirt... \$15

weekly car rental, three nights at hotel, and meals... \$500

viewing the Final Mission with family, friends, and several million people world wide... priceless.

We set up my two pairs of giant binoculars and shared views with several hundred new AstroBuddies on the NASA Causeway while we viewed the full up Atlantis on pad 39A. We got on the Cape so early that we actually had to do a half-an-hour circle around before they'd even let us on with our pass. The sky was total overcast, but our hopes were high even with the 70% no-go weather forecast. Scott, Sara, Sammy, and their buddies were set up right in front of us on tarps and blankets. Since we had six of us in the car, there wasn't room for carpets and other gear besides the giants. I set up about half way up the slope from the water to the roadway. It afforded us a beautiful uninterrupted view of the launchpad across the water. The haze was thick, The lights illuminating the launchpad twinkled in the mist. It was surreal. Humorous, actually.

By that I mean, that everyone on the NASA Causeway had to be total optimists given the weather forecast and the time and energy required to attend even one launch. Just the expected one million observers was enough to keep many away. So there we were standing, waiting to see if it was going to start raining again, or if it would be okay to start setting up equipment. Since we only had the giants, I went ahead and set up the tripods and then the optics, with the knowledge that I could easily throw a jacket or bag over them when the rain came. As it turns out, the expected rain didn't do anything more than a drop or two every now and then.

We did the souvenir run for hats, shirts, patches, and even a coin. My expectations were for a scrub on Friday due to weather, but that could mean one or even two more attempts before hitting the road and heading back home. As the countdown continued, we were constantly updated over the public address system. The NASA Causeway has got to be the world's greatest tailgate party, at least for this space enthusiast. As the scheduled launch time approached, blue skies started popping out from the clouds. We couldn't believe our luck. Thank you NASA for running the clock and getting everything ready to go for the Friday morning launch. Sure enough as the countdown

reached the launch time, there was a buzz among the observers. Nothing but happy sounds and smiles. When the hold was imposed and passed the initial launch time, I sure didn't expect everything to come together in order to launch, but they did release the hold and finally launch, clouds and all, even with a last minute waiver for the external tank oxygen vent arm. Awesome!

As we watched Atlantis roar to life and lift off into the sky on pillars of fire and smoke, our hearts swelled with pride at the magnificence and grace of such pure power and engineering marvel. Zero to orbital in eight and a half minutes. It was such an impact on me that tears were rolling down my face, knowing that this is the last time that we'll ever see such a magnificent machine fly into space, at least in my lifetime. The end of winged space flight will be over in under two weeks. It was and is a very bittersweet event.

It's very difficult for me to accept that this nation can no longer launch their own people into Low Earth Orbit which is what we've been doing for fifty years. And we as a nation did this by choice. No direction ahead. For someone that designs future launch vehicles, this is a very, very, sad time.

I do have hope that this nation continues to support the commercial companies that are slowly moving toward manned orbital spaceflight. It can't come soon enough. I only trust that it does come at some point. Very, very, sad. I'm a very strong believer in human spaceflight and human exploration of space. For me the human space experience is critical. As a species, we must continue to explore the universe first hand.

Sorry for the sad perspective there, but I'm pretty down about it all. Time cures all, but not this week. I will be following our brave astronauts throughout their flight and on into their final landing in a little over a week.

Okay, back on track, please... The drive back home was uneventful and my ears are still ringing from the never ending iPod tunes at too high of a volume. Thank you, Judy, for supporting my obsessions and allowing me the time away from home to experience these once in a lifetime, and one in a million, events. Good bye Space Shuttle. It's been good to know you. Thanks for all the memories. The museums and history books await.

Clear Dark Skies,
Bird Taylor

2011 35th Annual VAAS Conference

Welcome Speech

Delivered by BBAA President, Mark Gerlach

If I could pontificate for a moment, I would like to reflect on the fact that we share the enjoyment of a singularly unique hobby. People from all walks of life and all levels of education can enjoy various aspects of astronomy.

If you are a physicist, you may be involved in the study of the intricacies of the interaction between the Van Allen radiation belts and solar flares and storms.

A small child might be fascinated by the changing shape of the moon across the night and day sky.

A cosmologist is interested in the origins and structure of the universe on both a macro and a micro level.

A school teacher may become awed by the huge variation of all the planets, planetoids, and moons in our Solar System while preparing lesson plans for his or her classes.

A chemist or biologist might find their interest piqued on hearing of organic molecules detected in space, or on an asteroid, or in a meteorite.

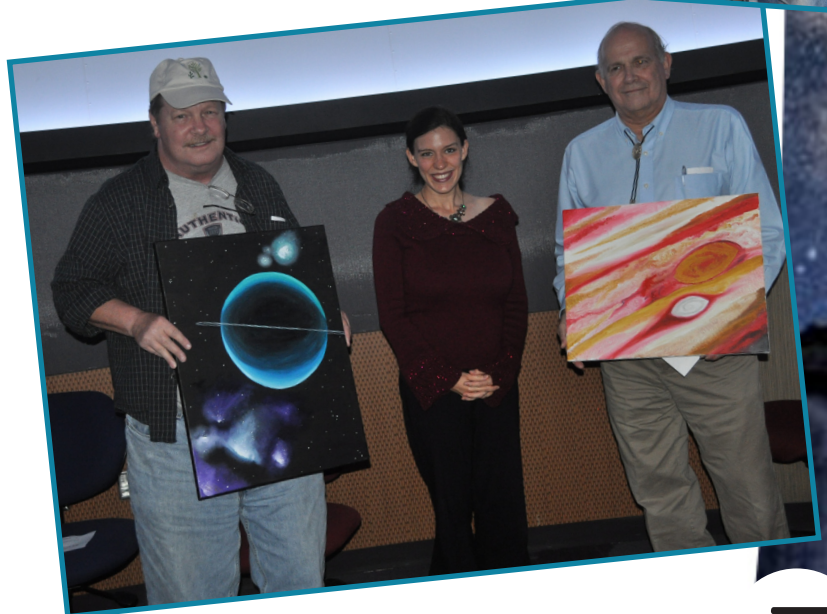
A construction or industrial worker might stand in amazement as our moon darkens to a deep red during a lunar eclipse.

A geologist may spend hours minutely examining the structure of a meteorite that is billions of years old.

A couch potato might happen to stop on the Science Channel and listen as a narrator explains ice volcanoes on a moon half a billion miles away. And you and I, with our outreach and education programs, are in the middle of them all.

We invest many dollars in intricate and delicate equipment and carry it for miles across towns or counties and put it in harm's way where it gets bumped, manhandled, dusty, smeared with fingerprints and ice cream drips, and subjected to the vagaries of the weather. We do this to let the public enjoy whatever sights we can show them.

And I think that the investment and the effort are made worthwhile when someone, who has never before looked thru a telescope, leans over and peers into the eyepiece and says "Wow!"





BACK BAY ***observer***

October 2011

BBAA Events	Special Outreach	Astronomical Events
06 BBAA Monthly Meeting, VB		04 First Quarter
11 Boardwalk Astronomy		12 Full Moon
		20 Last Quarter
29 Nightwatch Chippokes State Park		26 New Moon

Sneak Peek into November

NOVEMBER 2011

Thursday 11/03/2011 Meeting at TCC VA Beach, Building J, Room JC-12 at 7:30 p.m.

Friday 11/04/2010 Garden Stars at Norfolk Botanical Gardens at 7:00 p.m.

Friday 11/18/2011 Skywatch at Northwest River Park

Saturday 11/26/2011 Nightwatch at Chippokes State Park, Surry VA.

