Back Bay Observer

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

EPHEMERALS - DECEMBER 2007

DATE	WHEN	WHAT & WHERE
11/30	Dusk	Skywatch @ NWRP Equestrian Area
1	Dusk	Cloverwatch @ Franklin Fairgrounds
6	7:30p	BBAA Meeting @ TCC in Virginia Beach
8	Noon	BBAA Christmas Luncheon @ Lynnhaven Fish House
8	Dusk	Nightwatch @ Chippokes Plantation
28	Dusk	Skywatch @ NWRP Equestrian Area
29	Dusk	Cloverwatch @ Franklin Fairgrounds

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Looking Up!

This is supposed to be the President's column but I am between a rock and a hard spot. I am leaving on a work trip the day after Turkey-Day for a couple of weeks so I need to finish the Newsletter ASAP and I haven't heard a peep from the President so you get to hear me ramble a bit.

First congratulations are in order for `Doc' Bodner our new President, Matt McLaughlin our new Secretary and Neill Alford our new Treasurer. These fine gents were voted in as new BBAA Officers at the November meeting where I was also voted to the VP spot so the club is stuck with me for a couple more years. And let us not forget to offer a warm thank you to Kevin & Barb Weiner for their many, many years of service and to Dale Carey as well. Thank you.

The East Coast Star Party was a huge social success, the weather managed to hamper some of the observing but not completely, as many still managed some great views, includingf comet Holmes between the clouds. The food was good and as always, the people were great, thanks Kent for a great event. I am sure a fine article will be forthcoming with many pictures for all who were unable to attend.

I hope everyone has had a chance to see probably the greatest comet event of our lifetime, Holmes 17P. It flared up on or about the 26th of October and just keeps growing. I know I will remember it for a long while to come.

The Christmas/Holiday Luncheon is Saturday December 8th at Noon. It is once again back at the Lynnhaven Fishhouse, please RSVP with Georgie June by signing up in the Yahoo database or by slipping her an email.

I am sure the next Newsletter will not be so "hurried" and our New President will have plenty to say, until then,

Keep Looking UP!

Chuck Jagow

CHRISTMAS LUNCHEON!

The Back Bay Amateur Astronomers annual Christmas Luncheon will once again be held at the Lynnhaven Fishhouse in Virginia Beach. And this time we will be in the Starfish Room.

The grand event is planned for Saturday the 8th of December at 12:00 O'clock noon to 3:00 PM. The menu is available online at:

http://www.lynnhavenfishhouse.net/menus.php?menu=lunch

We ask that if you plan to attend to please RSVP to:

http://tech.groups.yahoo.com/group/backbayastro/database

We sure hope to see everyone at the luncheon, it is a very old and dear BBAA tradition!

Chuck Jagow

November's Meeting Minutes

The November meeting of the Back Bay Amateur Astronomers was called to order by President Kevin Weiner on Thursday November 1st, 2007 at 7:46 PM at the Virginia Beach Tidewater Community College Campus.

Members in Attendance: There were only 17 members in attendance at the October meeting. The members in attendance were: Neill Alford, Dr. Bruce Bodner, Kenny Broun, Gerry Carver, Steve Davis, Nick DePaulo, Jay Garrard, Chuck Jagow, Georgie June, James Kresky, Matt McLaughlin, Bill McLean, Randy Paschal, Mike Pereira, George Reynolds, Kevin Swann, and Kevin Weiner.

Treasurer's Report: Treasurer Barbara Weiner was absent, but the report was supplied by Kevin and it was reported that we have $4,500.57 total of which $1,749.80 exists in the BBAA Scholarship fund, leaving $2,750.77 for club operations.

Secretary's Report: Secretary Chuck Jagow reported that the club membership is at 96 members of which there were about 10 delinquent members needing to pay their dues. The reading of the October minutes were waived, as they generally are, because they are posted on the Internet.

Astronomical League Correspondent's Report: Georgie June had nothing new to report for the Astronomical League.

Old Business: The floor was opened for additional nominations for club officers. As it was apparent that none were forthcoming, a motion was made and seconded to close the nominations and take the vote. A brief campaign speech was made Matt McLaughlin and Neill Alford. Then the following people were systematically voted upon for their respectively indicated office. The results of the votes were identical for each, unanimous approval & a landslide victory! Welcome the newest batch of BBAA officers for their new sentence, excuse me, I mean term!

President:	Dr. Bruce Bodner
Vice President	Chuck Jagow
Secretary:	Matt McLaughlin
Treasurer:	Neill Alford

After the obligatory congratulatory sighs were complete, the meeting continued without further fanfare.

New Business: Discussion included next year as the year of Astronomy, Chuck volunteered to investigate registering BBAA on the Combined Federal Campaign, and perhaps getting involved with sidewalk astronomy. Astronomy without Borders was discussed at length as well. Kenny Broun says that we might get a tour of the new facility by the next meeting, and there may be a need for BBAA folks to help with the new TCC facility. It was also brought up by the club Secretary on how to dispose of the ancient computer equipment still in the club's possession, namely an old IBM Thinkpad and an old PC.

Rapid Response Robotic Telescope Project Report: Ted Forte reported that the Slow Response Non Robotic Telescope had been installed and was up and working but with many issues yet to resolve. The first team of BBAA folks were heading up on 11/3 for training on the system. Some of the issues observed were that the scope slews at 25% of the promised slew speed, the dome does not seem to work properly and the software is not operating properly.

Presentation: The evening's presentation was provided by George Reynolds on the joint project between the US and Japan Astro-E2 which was a success and was ultimately named SU-ZAKU by the Japanese.

In Conclusion: The meeting was adjourned at 8:48 PM.

Chuck Jagow

NASA's Space Place

Going My Way?

by Diane K. Fisher

Not many endeavors require that you plan the mode of transportation before you even know what it is you are transporting. But weighing the physics and economics of getting any sort of cargo to space is a major part of designing a space mission.

It's one of the first issues that NASA's New Millennium Program (NMP) considers when planning a new mission. NMP has the forward-looking job to identify promising new technologies for space exploration. It then helps to mature the technology so it will be available to space missions of the future. If the technology cannot be tested adequately on Earth, the last part of this process is to actually send the technology into space. With carefully documented test results, future mission planners can confidently incorporate the new technology into their designs.

But where to begin? On call from the start, Linda Herrell is the New Millennium Program Architect. Given a list of proposed technologies, she has the job of figuring out the feasibility of wrapping a mission around them.

"We might be considering six or more technologies, anything from solar panels to imagers to masts for solar sails to more intelligent software. Of those, we may choose four. My job is to answer the question-can the selected technology be transported to and operated in space within the constraints of a low-cost technology validation project?"

Along with the list of possible mission payloads (the technologies), Linda also has a list of spacecraft to put them on, as well as a list of launch vehicle parameters. All she has to do is try them out in every possible combination (of which there are thousands) and see what might work.

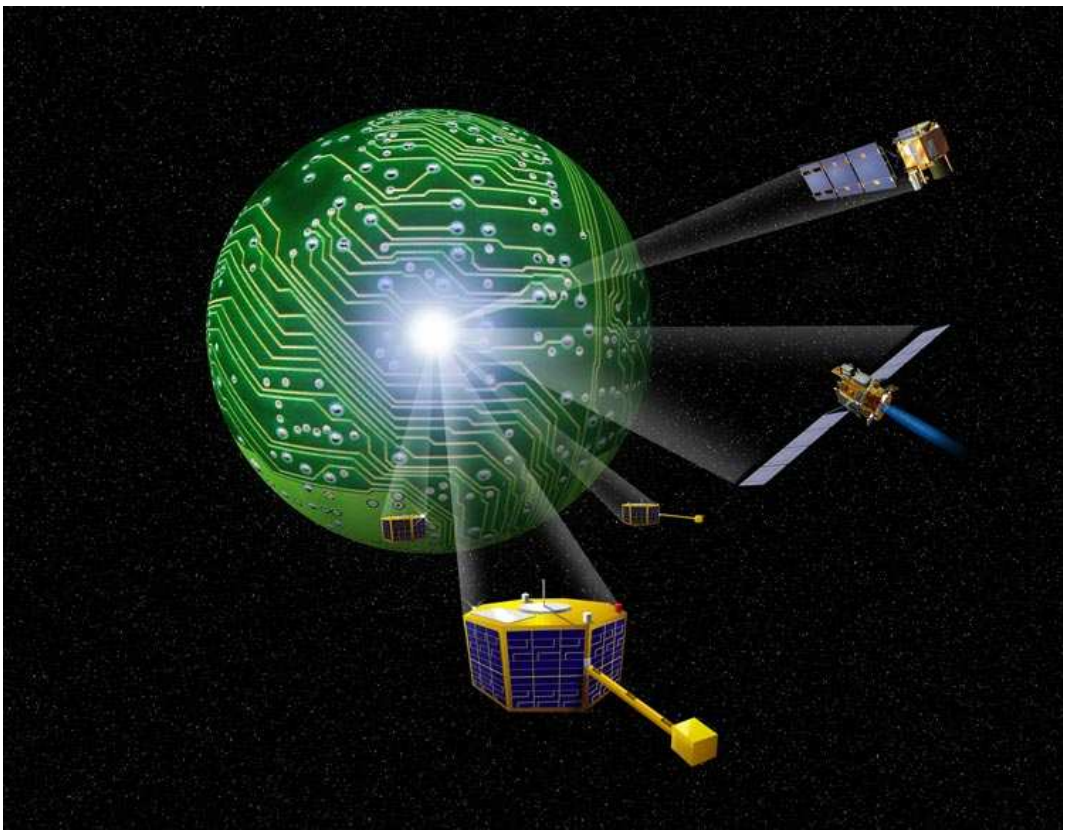
"Fortunately, we have a software tool to help with this analysis," says Linda. When it comes down to it, her job is primarily to figure out how to get the technologies into space.

"Sometimes, it's like figuring out how to get across town when you don't have your own car. You have to get creative."

She keeps a database of all possible options, including riding piggyback on another spacecraft, hitching a ride on a launch vehicle as a secondary payload, or sharing a launch vehicle with other NASA, Department of Defense, or even commercial payloads.

Her assessment is but one of a gazillion factors to be considered in planning a mission, but it is indeed one of the very first "details" that forms the foundation for the rest of the mission.

Image Caption:
NASA's New Millennium Program selects breakthrough technologies that will be of the greatest use to future space and Earth science missions and that are perceived to be risky to the first user.



BBAA INFO

The BBAA meet the first Thursday of every month. While school is in session we meet at the VA Beach TCC campus in the Pungo building. The December meeting will be on Thursday December 6th at 7:30 PM at the VA Beach TCC campus in the Pungo building in the Astronomy classrom.

WHERE IS THE MEETING?

TIDEWATER COMMUNITY COLLEGE CAMPUS

The TCC Campus is located in Virginia Beach off of Princess Anne road. The following should help you locate the campus.

FROM Interstate I-64:

Proceed to the I64 / I264 junction and take I264 East .
Take the S. Independence Exit, 17A, right hand lane (.000000048134 AU).
Turn LEFT onto Princess Anne road (.000000010322 AU).
Turn LEFT onto Community College Place (.000000002131 AU).
At the Stop Sign turn right and follow the road around to the left and park in one of the parking lots.

The meeting is held in the Pungo Building which is on the right hand side of the pathway that splits the two major parking lots. The Astronomy classroom is in the far back right hand corner of the building.

COX COMMUNICATIONS CAMPUS

The COX Communications Campus is located in Chesapeake's Greenbrier section. The following should help you locate the facility.

FROM Interstate I-64:

Take exit 289B (between the Indian River & Battlefield exits).
South on Greenbrier Parkway (.7382 miles).
Turn RIGHT onto Eden Way West (.9231 miles).
Turn RIGHT on Crossways Blvd (.88901 miles).
Turn Right into the Cox Campus

The meeting is usually held in the Silver room located on the North side of the facility. Enter and tell the guard that you are with the BBAA and they will issue a badge and direct you to the room.

BBAA INTERNET LINKS

BBAA WEB SITE
http://groups.hamptonroads.com/bbaa

YAHOO GROUP
http://groups.yahoo.com/group/backbayastro

BBAA OBSERVER NEWSLETTER
http://www.backbayastro.org/newsletters/newsletter.shtml

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What do you want to do?

OBSERVER INFO

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 December for the January issue. Please submit all items to:

ObserverBBAA@cox.net / chuck@jagowds.com

OR

BBAA Observer
P.O. Box 9877
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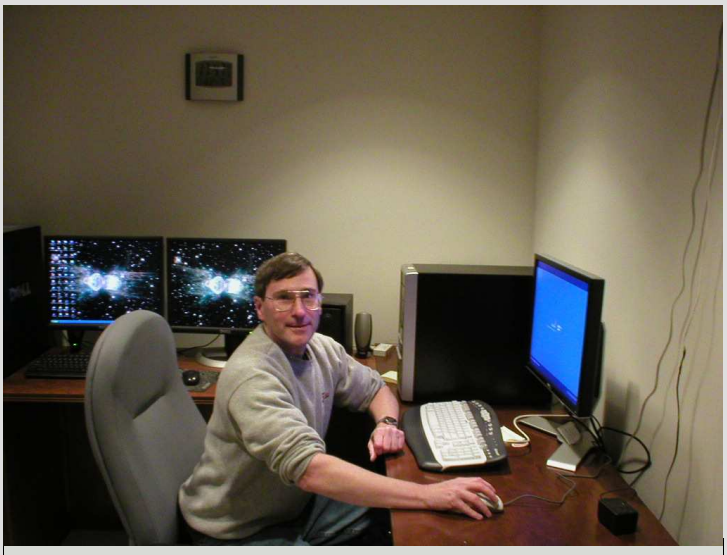
RRRT COMING ALIVE

Finally, NSU's Rapid Response Robotic Telescope at the Fan Mountain Observatory is a reality. The shinny new 24-inch f/8 Ritchey Chrétien telescope is up and running and moving closer to full operability every day. The scope can already take orders (and images) remotely and several of its functions can be controlled via the internet.

24" RC RRRT

There are problems of course and there is more work to do, but we are inching closer and closer to the goal line. Optical Guidance Systems, the scope's manufacturer is still working toward achieving all of the promised parameters. The most significant discrepancy is with the slewing rate. A misbehaving printed circuit card in the telescope control system (TCS from Software Bisque) causes the telescope drives to stall. We have to settle for 25% slew rate for the time being and even at that the scope still stalls occasionally. Software bisque is working on a redesign of the card to correct the problem. There is also a troublesome click in the RA drive that may or may not be an indication of a serious problem.

As I write this we have still to establish the circuit protections and redundancies that we will require before the scope can reliably be operated remotely, and there are several things left to automate or make remotely operated such as the environmental controls and the dome. The polarimeter, which is the heart and soul of the observatory, hasn't been assembled yet. We are, however, making good progress on all fronts. The best news is that the optics are great, the mount is well built and all of the known problems have solutions in sight.



Matt at the helm chasing bugs.

Even with the problems and limitations, we would like to start some observing programs in the very near future. We hope to be joining the AAVSO effort to monitor stars with known exoplanets, collecting the photometric data that can detect the transits and home in on planet masses and orbital periods. We might also begin other variable star observations or NEO programs. Of course we are all working diligently toward that first GRB (gamma ray burst) and especially toward obtaining the polarimetry of one.

You can read about the RRRT and the BBAA's part in the project on our website:

http://groups.hamptonroads.com/bbaa

Just click on Rapid Response Robotic Telescope In the left margin. If you are interested in participating contact me at twforte@cox.net or by phone 757 427 3894.

Ted Forte

BBAA OUTREACH

November 2007, CHESAPEAKE Boy/Cub Scouts - Bruce Bodner, Chuck Jagow, Larry Channel and I supported a Boy Scout group camping out in Chesapeake tonight.
Comet Holmes looked impressive in binoculars and the finder scope, and was big in the eyepiece of my 10" Dob. At 57x I could get it and Mirfak (Alpha Per) both in the FOV, and the big fuzzy cotton ball filled half the eyepiece.
Bruce gave the boys a brief laser-guided tour of the night sky, while Larry, Chuck and I showed them various sights, which included the comet, the Moon, the Double Cluster, the Double-Double, the Pleiades, the Ring Nebula, Albireo, Aldebaran, WZ Cas (carbon star), and a few other things I can't remember. By the time we called it a night at 9pm there was frost on our telescope tubes. The boys were impressed, but as usual, their leaders were more impressed with what they saw.

George Reynolds

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November 2007 - Greenbrier Intermediate School (GBIS) held their Math and Science Night Monday, November 19, and the Back Bay Amateur Astronomers were there, driving people to lunacy. Actually, Dr. Bruce Bodner and Matt McLaughlin manned a table in the gym and kept sending people outside to look at the Moon.
While Bruce and Matt passed out information and answered questions inside, James Kresky and George "3" Reynolds had their telescopes set up on the sidewalk outside the building, playing sidewalk astronomer. "Come look at the Moon", as John Dobson would say, echoed often through the evening as streams of kids, parents, and teachers came out to look through the telescopes at old Luna.
James had his GOTO Celestron 114 zoomed in on some rough, cratered lunar terrain, while George had a wide-angle view of the whole Moon, just past first quarter. The "oohs" and "aahs" and "WOWs" were frequent as more than a hundred children and adults saw the Moon close up and personal. For many it was the first time they had ever seen craters on the Moon. The adults seemed more awe-struck than many of the kids.
At one point George swapped out his 32mm Plossl for his 14mm Pentax, increasing the magnification from 38x to 86x. Viewers were treated to a closeup view of the large southern crater Plato, with its arc of craterlets embedded within. A few stars were visible through the haze and light pollution of the well-illuminated parking lot, and a few visitors got to see the "Double Double" in Lyra. The view was underwhelming.
Throughout the day the sky had been totally overcast, but by the time our intrepid BBAA astronomers got to the school to set up at dusk, the Moon was trying to peek through the clouds. When the event officially started at 7:00 pm, the skies miraculously cleared, and a glorious, brilliant Moon shone brightly in the sky, providing a treat for all to see. About fifteen minutes after the Math/Science session ended at 8:30 pm, the clouds started rolling in again, bringing the curtain down on the Moon's performance .

George Reynolds

First Light: The Search for the Edge of the Universe

First Light: The Search for the Edge of the Universe by Richard Preston. 275 pages. Random House: New York, NY, 1987, Revised and republished 1996.

First Light is the lively story of men and machines of the Palomar Observatory and its historic telescopes in southern California. The star of the tale is the huge 200-inch Hale telescope, which is still being used to probe the depths of the universe. The supporting cast is a litany of strange characters who don't sleep much, who stay up all night in an unheated dome in the frigid San Gabriel Mountains, watching stars go by on a TV screen.

Preston's book is arranged in four parts. Part one is all about "The Big Eye", the 200-inch telescope envisioned and designed by George Ellery Hale, and some of the people who use and operate it. History comes alive as the author recounts the fascinating story of a telescope designed in the 1930s, put into service in the 1940s, still in use today, lovingly maintained by handmade parts fabricated from castoff materials from dumpsters.

Inside its Pantheon-like dome, The Big Eye stands seven stories tall, an intricate balance of tons of metal struts and girders and glass, its massive fork mount floating on a thin layer of Flying Horse oil coating a huge horseshoe-shaped bearing. After the first attempt to cast the immense Pyrex mirror failed, a second attempt in 1934 at the Corning Glass Works in Corning, New York was successful. The glass was kept in the oven and allowed to cool ever so gradually over a period of ten months before it was encased in a steel protective box and shipped on a slow train to CalTech in Pasadena.

It took the next 12 years for a small army of men to polish the huge mirror, with a break for World War II when no work was done on it. The end result was a mirror so smooth that if it were enlarged to the size of the United States, the largest bump would be a mere four inches high. The final polishing was done literally by hand - with the thumbs of master opticians Melvin Johnson and Donald Hendrix. The mirror supports were designed by engineer Bruce Rule, who said, "We didn't give ninety-day guarantees, we built it for life."

Part two is the story of Eugene and Carolyn Shoemaker and their search for asteroids and comets. They operated the cantankerous, spark-throwing 18-inch Schmidt telescope at Palomar, in a dome near the Big Eye. Preston tells of this conversation between Carolyn and Gene Shoemaker.
Carolyn: "A lot of astronomers call asteroids the vermin of the skies. Gene and I regard galaxies as the vermin of the skies."
Gene: "There are far too d**n many galaxies. Carolyn has nearly reported galaxies to the Minor Planet Center."

(Continued on page 7)

THE NEW SOLAR SYSTEM

Every now and then I come upon a science book which merits comment and recommendation. ***The New Solar System*** is one such book. Those who attended the ECSP may remember this book being one of the door prizes. As such it is a great door prize.

Let me tell you; I am disappointed by the vast majority of science writing. These works tend to fall into two categories: coffee table books, which may be pretty and give sweeping generalizations of "oh ah" trivia, or technical tomes which require graduate studies to even access the information (and in the case of professional journals, there may be three people on this planet who can understand what in the devil the author is talking about). The former is like a cake, nice to look at but not very nutritional and soon grows stale and mundane. The latter is fortunately rarely encountered by the general public. What is the reader to do?

Rarest of all is the work which can summarize the real eloquence of science in a form that is current, challenging, and accessible. This book is one of those rare diamonds. The editors have achieved a synopsis of the latest work in planetary science, which until recently long languished in the shadow of astrophysics. Planetary science has enjoyed a resurgence in the past decade. This book provides a much needed, superb synopsis of the state of the science today, presented in a completely accessible manner to the reader who may have limited technical training but some experience as an observational amateur astronomer or interest in space science. It offers enough technical information to stimulate the reader with a background in science and allow them to see the elegance of the modern models of the workings of our solar system (and ones yet to be discovered) and yet remain accessible to the reader with no background in formal science . Rarely does a book come along that can do this. The ***New Solar System*** is that rare book.

If you want a great read that will keep on giving, this book is highly recommended.

Mark Ost

NIGHT SKY GUIDES

The night sky guides we ordered this spring are in and are available for all, and we are asking for a $4.00 donation to cover the cost of acquisition and distribution. Retail price for the guides is $5.95. To see a representation of the Night Sky Guides, zip on over to the files section of the BBAA YAHOO group and look for the C5 NIGHT SKY GUIDE folder. See Chuck Jagow for your copy at the next meeting.

(First Light, Continued from page 6)

Carolyn: They're confusing. The fainties can look like comets. I get so excited. Then I find out it's only a galaxy."

The third part of the book is an intriguing account of the "gadgeteers" who keep the Big Eye running and who devise arcane scientific instruments from spares and junk parts. Most of the parts for the Hale telescope, made in the `30s, were one of a kind. Replacements and enhancements must be fabricated from scratch, a job done by skilful and slightly daft geniuses like "the Jims" - Prof. James Gunn, the late Dr. James Westphal, and JPL's James Janesick.. Jim Gunn has been called "Triple Threat" for he embodies the characteristics of all three types of astronomers: observer, theoretician, and tinkerer, or instrument-builder. He devised and fabricated the "4-shooter" camera used on the Big Eye, which takes four simultaneous images and knits them into a panorama. He and Jim Westphal designed the Wide Field/ Planetary Camera (affectionately known as "Wiffpick" for its acronym WF/PC) for the Hubble Space Telescope. Gunn also built for the Hale telescope the Prime Focus Universal Extragalactic Instrument (PFUEI), known as "Pfooey", especially when it fails to work.

Part four discusses the process of discovery involving Palomar astronomers and assistants. Juan Carrasco, not a trained astronomer, is the senior night assistant, the man who operates the mighty Hale telescope. As the author humorously states, "nobody in their right mind would let an astronomer touch the controls of one of the most powerful telescopes on earth. *** Given half a chance, an astronomer would cleverly destroy the telescope." The patience needed for astronomy is emphasized in the search for quasars at the edge of the universe. Dr. Maarten Schmidt and his team had been searching for years with no success at all. By the end of the book they had found five.

No review can do this little book justice. The stories of the men and machines of Palomar is high drama. Like when a slight astigmatism was found in the mirror, four dime-store fishermen's weights were attached to put seven ounces of pull on the glass, just enough to flatten the warp. That "kludge" saved three more years worth of lens polishing. Every six months the mirror is removed from the telescope, inspected, and carefully washed with a mild Ivory soap solution. Once a year engineers strip off the aluminum coating and inspect the Pyrex glass itself. After a thorough cleaning, the 209-square-foot mirror is placed in a vacuum tank where aluminum is vaporized to recoat the mirror.

Though it was written twenty years ago and revised eleven years ago, this book, like the 200-inch telescope, will live on. Though it is no longer the largest, or best, or most advanced, the 200-inch Hale telescope still performs valuable scientific feats today. Just as the Big Eye has outlived those who created it, the characters in Preston's must-read book will live on through his words. Jim Gunn, Juan Carrasco, Maarten Schmidt, the Shoemakers, and George Ellery Hale himself, who died 10 years before his dream ever saw its first light, will continue to inspire and amaze us as we read the tale of their efforts in First Light.

George Reynolds

DECEMBER 2007

BBAA EVENTS	SPECIAL OUTREACH	ASTRONOMICAL EVENTS
30 = SKYWATCH @ NWRP, Dusk		
01 = CLOVERWATCH @ Franklin Fairgrounds, Dusk		**01** = LAST QUARTER
06 = BBAA Monthly Meeting @ TCC VB Campus Pungo Building, 7:30 PM		
08= BBAA Christmas Luncheon @ Lynnhaven Fish House, Noon - 3:00 PM		
08 = NIGHTWATCH @ Chippokes State Park, Dusk		**09**= NEW MOON
		17 = FIRST QUARTER
		23 = FULL MOON
28 = SKYWATCH @ NWRP, Dusk		
29 = CLOVERWATCH @ Franklin Fairgrounds, Dusk		**31** = LAST QUARTER