

Southern Skies

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Fall 2013



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Credit: Tycho Brahe. Engraving, ink on paper

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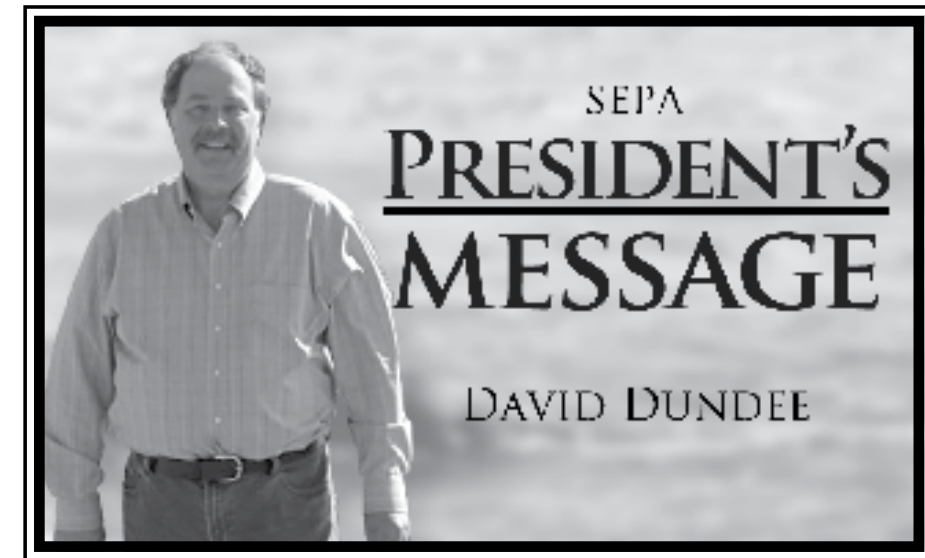
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David Dundee
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After a rainy, cloudy summer it's great to have some clear, low-humidity starry nights. It is always gratifying when each visitor puts his eye to the eyepiece of our telescope and exclaims, "Oh, wow," even for something we might find mundane, like the Moon. The fact that you are seeing a celestial object with

your eye, not on a monitor or a photograph, seems to have such an effect on our visitors. You see it in the planetarium, too, when the theater goes dark and the stars come on, and you hear the universal "Ooohh. Ahhh."

"Astronomy is useful because it is beautiful," the French astronomer Camille Flammarion said. We do engage in a business of showing great beauty around us. Often it is hidden until revealed by ground-based or orbiting telescopes. But the stars are our gateway to all of it. It's great to be in the business operating this gateway. We are able to take visitors out among the stars.

I just finished Jordan Marche's book, *Theaters of Time and Space*, which is a history of American Planetaria up until about 1970. I really recommend it for all us in the business. It gives an interesting insight into how the workings of planetarium became a profession, including all the early development of how to display the stars, from pin holes in a metal sphere to the early digital years. It's kind of interesting to see the evolution of our industry from five major planetaria to hundreds of star theaters that have sprung up all around us.

This brings me to SEPA 2013; it was such a joy, as it always is, to see all the creative talent in all the different shows presented in the planetarium and paper sessions. In the old days, and I can say this with some authority being old myself, your sources for show material were slide sets from only a few

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IPS REPORT

John Hare
ASH Enterprises
Bradenton, FL

The 2013, off-year IPS Council meeting took place in South Tyrol, Italy, August 9 and 10. As is always the case, the two days were jam packed with long sessions that included various reports and decisions. There were breaks that were organized by our hosts but even they tended to be extensions of the formal sessions.

Conferences

Foremost among the business was the selection of the 2016 IPS Conference site. President Thomas Kraupe declared a closed session of Council to allow for discussion and voting on the Conference bids. After much discussion and review, Council voted to accept the bid from the Copernicus Science Center, Warsaw, Poland for IPS 2016 Conference.

Exact dates and conference details are still being worked on.

Council thanked the unsuccessful presenters from Edmonton, Canada and Toulouse, France for their efforts, and expressed the hope that they would submit bids for a future IPS Conference.

Jon Elvert, Conference host for the IPS 2012 Conference, presented the final report for that conference. This was the largest conference in IPS History with 701 registrants from over 45 countries. Council discussed Jon's detailed report, which will serve as a model (as was the Melbourne Report) for future hosts' final reports. The post-conference evaluation meeting at Baton Rouge provided an opportunity to evaluate the conference and set up a "best practices" document to be used in the revision of the IPS Conference Guidelines. Council expressed appreciation to Jon and his team for an outstanding conference.

(Continued on page 18)

Paul Campbell Fellowship Award Nomination Form

Nominees must have been a member of SEPA for at least ten years, and they must display qualities in each of five areas, as represented by the five-pointed star shaped award: integrity, friendship, service, knowledge, and vision. Please submit this form to any SEPA Council member.

Nominee's Name: _____
 Qualifications: _____

Editor's Message

(Spring), July 1 (Summer), October 1 (Fall).

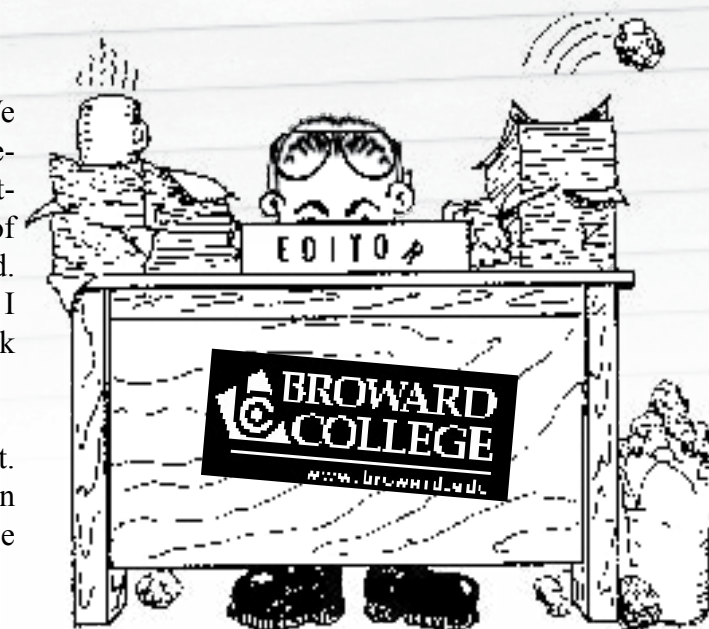
James Sullivan
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Thanks to Broward College and its wonderful printing department for assistance.

In this issue, we say farewell to Gary Meibaum. We never know how many lives we impact. As planetarians, we hope to touch the lives of the people sitting in our shows. As we remember Gary, I think of how we impact and inspire each other in this field. Thanks to Phil Groce and John Hare for sharing. I hope that you all take the opportunity to say thank you to someone while they can appreciate it.

We can receive electronic files in most any format. Also, graphics can be received electronically or in hardcopy, including slides or photos, and will be converted to digital with sufficient resolution.

Submission deadlines: January 1 (Winter), April 1



SEPA Membership Form

Please send your check to SEPA, c/o Patsy Wilson, 140 Lyn Road, Salisbury, NC 28147

_____ One Year, \$25 (\$15 outside SEPA geographical region)

_____ Two Years, \$40

Name _____
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 IPS Member? Yes _____ No _____
 Contribution to Scholarship Award Account: \$ _____

Choice for a New Era



In 1974, the city of Cottbus, Germany opened Raumflugplanetarium "Juri Gagarin." It celebrated the Soviet space pioneer, and welcomed visitors into its 12.5 meter dome to see the wonders of space. Over the years, thousands of students and families enjoyed the sky and the wonderful stories the staff could tell about it. But of course in the past 4 decades, the Soviet era ended and new technologies developed.

The Cottbus planetarium director, Gerd Thiele, is also president of the GDP, the German-speaking association of planetariums. As such, he and his team had the opportunity to see many examples of planetariums, to speak with colleagues, and to learn all about the realities of new systems. He did his homework regarding the fabulous capabilities of the new HYBRID systems, but also asked about real world issues such as long-term operational and maintenance costs, spare parts availability beyond the 10 years that some companies now offer, a strong European service and support system, and ultimately, the lifetime costs of systems.

The GOTO CHRONOS II HYBRID offered what he was looking for. He found a full-dome system that he really liked in RSA Cosmos, and after several European scouting trips, he chose RSA Cosmos to supply his future digital system and theater integration services. And after seeing a demonstration of a GOTO opto-mechanical sky in his own dome, he knew that the CHRONOS II was the right choice. This opto-mechanical projector was much more accurate and energy conserving than his old machine, has a more comprehensive control system, and a gorgeous sky.

And so on June 19, 2013, Europe's first GOTO CHRONOS II HYBRID planetarium opened to rave reviews. It won't be the last! Already, another CHRONOS II HYBRID opening is scheduled this fall, and more are to follow.

Each one is making the choice of the GOTO CHRONOS II HYBRID to begin a new era for their planetarium. When does your planetarium's new era begin?



Cottbus Planetarium Director Gerd Thiele (left), RSA Cosmos president Benjamin Cabut (center), and GOTO INC president Nobutaka Goto (right)

* Photos by RSA Cosmos

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GOTO HYBRID PLANETARIUM
CHRONOS II

Gary Meibaum: A Tribute

Phil Groce
Helping Planetariums Succeed
Macon, GA

It is with great sorrow that I report the passing of Gary J. Meibaum on October 7th. Gary was former Director of the St. Charles Parish Planetarium in Luling, Louisiana, Past President of the Pontchartrain Astronomy Society (1980), and recipient of the 2004 Paul Campbell Fellowship Award, South-eastern Planetarium Association.

These few words do not begin to express the impact Gary had on many planetarians over the last 25 years. He was as generous with his time as he was jovial. For most of us, he was a reminder that kindness is a better legacy than any planetarium accomplishment. He always made sure that the rest of us in the planetarium business never believed our own press. He once told me that sometimes planetarians take their role too seriously: "after all we don't own



the stars, we just get to borrow them every night."

Gary was a native of New Orleans, Louisiana, and grew up with a keen interest in astronomy, getting his first telescope at the age of eight. According to Gary, it was a three inch Newtonian with a "ball and socket" mount. His fascination with the heavens never ceased.



He graduated from the University of New Orleans in 1972 with a degree in engineering and worked for a time as regional service and technical manager for the South Central Region of the Heath Company of Benton Harbor, Michigan—a producer of electronic kits for the public owned by Zenith Corp. He volunteered at the St. Mary's Dominican College Planetarium in New Orleans for a number of years, and that led to a three-year term as Planetarium Director at the thirty-foot domed facility. That planetarium was later moved to the Louisiana Nature and Science Center. Gary was instrumental in the re-installation of this planetarium. Gary also began volunteering at the St. Charles Parish Library's Planetarium in Luling, LA., when the position of Director at St. Charles became open in 1984, he filled the position and, as he put it, "left his electronic endeavors for the stars." After 17 years of nursing an aging Viewlex Apollo, Gary had the opportunity to remake the planetarium into a digital star theater, the first one in the state, and one of the first full-color, full dome digital planetariums in the Southeast.

Gary took to making full-dome shows like a duck to water, even after poor health forced a reluctant retirement. Jason Talley, who was Gary's planetarium

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Small Talk

Elizabeth Wasiluk
Berkeley County Planetarium
Hedgesville, WV

You know, even though I never got to see you this summer at the SEPA meeting in Jacksonville, FL, I did have a great summer. Missing the SEPA meeting was the only low point. My adventures at Space Camp which I related in my last installment of "Small Talk" just started the summer. Later on,



That is me at Space Camp wearing my flightsuit on the multi axis trainer. Made me very dizzy.

I took a student to the National Radio Astronomy Observatory at Green Bank, WV for the Summer Pulsar Institute. Since the program no longer has funding, I was told that I would not be paid if I attended, but I did not care. The National Science Foundation is definitely phasing out funding to the National Radio Astronomy Observatory (NRAO) in Green Bank, West Virginia in a four year time span. Their survival at this point is up in the air. West Virginia University, whose professors in the astronomy department use the telescopes with great frequency, gave a token amount of one million dollars to NRAO in a hope to keep it afloat. (For More Information on that, go here: <http://www.wvexecutive.com/teenage-radio-wave-hunters-futures-begin-at-green-bank-telescope/> as well as here: <http://wvutoday.wvu.edu/n/2013/08/23/rockefeller-says-wvu-agreement-on-green-bank-telescope-good-news-for-pocahontas-county-facility>)

This is all good, however, but it takes about ten million dollars to keep the observatory open on NSF funding. (See article at [http://www.skyandtelescope.com/community/skyblog/newsblog/Green-Bank-](http://www.skyandtelescope.com/community/skyblog/newsblog/Green-Bank-Telescope-Secures-1-Million-Boost--221358811.html)

[Telescope-Secures-1-Million-Boost--221358811.html](http://www.skyandtelescope.com/community/skyblog/newsblog/Green-Bank-Telescope-Secures-1-Million-Boost--221358811.html)) So as you can see from the article, astronomers are not very optimistic about the observatory staying open. When I was at Green Bank in July, (more about that later) Sue Ann Heatherly, the Education Coordinator at NRAO in Green Bank, West Virginia said that she feels more optimistic now than she did when NSF first announced that it was cutting funding to the observatory; however, the online petition to keep it open, only garnered 3,657 signatures at last look. (Did you sign? If not, and you still want to, go here: <http://www.change.org/petitions/national-science-foundation-continue-to-fund-the-green-bank-telescope> Not a lot of public support. It would be a shame to see all the great public outreach as well as the terrific discoveries done at the observatory go down the tube, due to lack of funding. Only time will tell what the outcome will be here.

With the impending closure of the National Radio Astronomy Observatory at Green Bank, WV, I took advantage of a refresher class offered this summer to me and my students in the pulsar search program. Originally I was to go attend on my own, but after my pulsar search student, Saira Blair, attended the Capstone program at West Virginia University in May to deliver our team's poster paper, she had such a great time, she was inspired to attend the pulsar search summer institute held each summer at the National Radio Astronomy Observatory in Green Bank, WV. We traveled to the observatory which is about a four hour drive from Hedgesville, and stopped at the infamous Seneca Rocks, a great place for rock climbing. (If you are unfamiliar, go look here: http://www.fs.usda.gov/wps/portal/fsinternet!/ut/p/c5/04_SB8K8xLLM9MSSzPy8xBz9CP0os3gDfx-MDT8MwRydLA1cj72BTJw8jAwgAykeaxc-N4jhYG_h4eYX5hPgYweSJ0G-AAjoR0h4Nci-992sAm4zffzyM9NIS_IDY0wyDJRBABZRw4s/dl3/d3/L2dJQSEvUUt3QS9ZQnZ3LzZfME80MEkxVkFCOTBFMktTNURLMjAwMDAwMDA!/?ss=110921&navtype=BROWSEBYSUBJECT&navid=11016000000000&pnavid=null&position=BROWSEBYSUBJECT&recid=7051&groupid=9521&ttype=generalinfo&pname=Overview/Background We looked around and ate at the "Front Porch Restaurant" with their famous view of Seneca Rocks as well as home baked bread: http://www.tripadvisor.com/Restaurant_Review-g59512-d1880004-Reviews-

[Front_Porch-Seneca_Rocks_West_Virginia.html](http://www.tripadvisor.com/Restaurant_Review-g59512-d1880004-Reviews-Front_Porch-Seneca_Rocks_West_Virginia.html) Then on to The National Radio Astronomy Observatory at Green Bank. You can see the towering Robert C. Byrd Green Bank Radio Telescope from far away (See: http://www.flickr.com/photos/harry_hunt/2951008682/in/photoalbum/)

It is about the size of the Washington Monument in height: http://spie.org/Images/Graphics/Newsroom/Imported/242/242_fig1.jpg



That is me and that is not a funny hat I am wearing, that is the Robert C. Byrd Radio Telescope at the National Radio Astronomy Observatory in Green Bank, WV. It is about three miles from where I am standing.

Once there, we both got into the places where we were staying, Saira in the bunk house and me in the dormitory. We ran into former team leader from the Hedgesville Pulsar Search team, April Liska who was a mentor leader for summer institute. She is currently a junior in physics at West Virginia University and hopes to do her senior year in an exchange program at Max Planck Institute in Germany. Mentors are usually college students or seniors who graduated from high school and have



Former Hedgesville Team Leader, April is a junior physics major at West Virginia University and works with astronomer Duncan Lorimer as an undergraduate assistant. Here she tries to mentor students at the pulsar summer institute.

previously attended the summer institute. They help train students in the ways to analyze the data gathered from the telescope. There were about twelve students from Kentucky, Virginia and West Virginia attending the week long pulsar institute. This qualified them in to be team leaders at their respective schools' pulsar search team. While there, students made electronic devices to blink and make noises, found candidates of pulsars in the database to do further observations of, did leadership activities, created posters of their research, used both a forty foot and twenty foot radio telescope to gather data and interpret it, got a behind the scenes tour of the



That is my new pulsar search team leader, Saira, at the control board of the Robert C. Byrd Radio Telescope at the National Radio Astronomy Observatory in Green Bank, WV. She is actually moving the giant telescope using the computer control.



The Film crew records a pulsar search team as they receive data from the Robert C. Byrd Radio Telescope.

Small Talk (Continued from page 9)

National Radio Astronomy Observatory at Green Bank, and listened to some great talks by many professional astronomers. The highlight of the seven days was actually getting time to investigate potential pulsars on the Robert C. Byrd Radio Telescope. Actually feeding commands to the telescope and making something that large respond to your commands really gave you the feeling of power. While there, two film crews filmed the students participating and using the telescopes for two different documentaries. It was not all work and observing at the Institute. We also enjoyed, a cookout, swimming, Frisbee tossing, a bonfire and just laying down looking up at meteors, stars, constellations and planets under the shadow of the GBT. I even got to show the students how to use Right Ascension and Declination in a planetarium program in the NRAO's starlab planetarium. Saira and I went home tired but happy from the experience ready to bring home what we learned to our own pulsar search team at Hedgesville High.

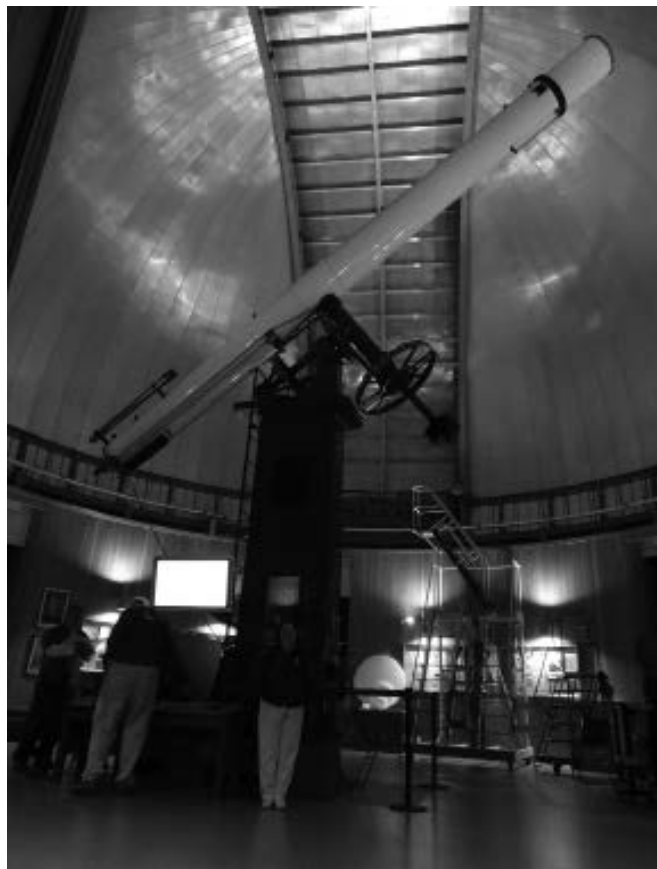


While at Green Bank for the Summer Institute the Pulsar Search Students paused to Wave at the Cassini Spacecraft taking a picture of Earth. We are in front of the famous historical radio telescope built by radio astronomer; Grote Reber in Wheaton, IL in 1937. Did your facility do a "Saturn wave"?



NRAO educator, Sue Ann Heatherly shows us what makes a radio receiver work at the pulsar summer institute.

In early August, I travelled to visit friend Conrad Jung, staff astronomer at Chabot Observatory in Oakland, CA. The weather was not very cooperative to stargazing, only managing to look at M13,



Here I am under the 20" Warner and Swasey Telescope at Chabot Observatory in Oakland, CA nicknamed "Rachel."

the globular cluster in Hercules in the twenty inch refracting telescope that is nicknamed "Leah." Most of the time, I enjoyed eating great food, touring Oakland's Chinatown, catching up on Bay Area music lore and doing some reading. It was a relaxing time and I was able to talk to the educators at Chabot about the teacher workshops they were doing regarding how to incorporate astronomy to meet the new science common core standards.



Comet Ison. Taken September 8, 2013 from Chabot Observatory, by staff astronomer, Conrad Jung, using the 36" reflector nicknamed "Nellie."



Another image from Conrad Jung at Chabot Observatory, this time of Mars passing through the Beehive star cluster in Cancer.

I was back in school and the planetarium on August 14 and as I write this, I have already done a planetarium program on Mythology for the Harper's Ferry Job Corp Group and held several meetings of the pulsar search team. They want to meet this week on both Thursday and Friday this week to train some new members to look at data.

We have had our first parent/teacher night and both

the secretary and outreach coordinator of the Tri-State Astronomers came out with telescopes and solar filters. They came down just before sunset and showed people the sun and then showed visitors to the parent teacher night along with security guards, students, teachers and staff the planet Venus in gibbous phase, Saturn, clearly showing the rings, despite being so low in the sky. They even caught Mercury and Spica low in the sky before setting. People were amazed despite the great amount of light pollution around the high school, proving that you can do astronomy in an urban environment. We were fortunate to have exceptionally clear skies that night.

So things seem positive here, despite the old equipment, low budget and the sometimes depressing days when things do not work the way they should. (Like that slide projector that just will not advance, not from the button on the projector, not from the button on the console board.

I was reading the September issue of *The Planetarian* and came across a comment from Sharon Shanks, its editor from the Ward Beecher Planetarium in Youngstown, OH, regarding the Smith Middle School Planetarium in Vandalia, OH. Both the town and school system is cash strapped and planetarium director, Scott Oldfield often resorts to his own pocketbook. Actually he has a bigger dome than I have, and a different star projector, but otherwise it could be similar to my set up and non-existent budget. To quote Sharon:

"...so we do the best we can and carry on. And as I wrestle with today's world, it seems all too possible that 99 percent of us, the planetariums who have a harder time every year finding funding, will be Vandalia one day operating by passion and duct tape alone, until the passion is beaten out of us or our equipment fails."

She claims it is pessimism, I claim it is reality.

Hey, your thoughts are always welcome in this forum for small planetaria, regardless of how you define "small"; small budget, staff or size. E-mail me at isbeth4@hotmail.com or ewasiluk@access.k12.wv.us to turn my monologue into a dialog.



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BOOKENDS

Robin Byrne
Bays Mountain Planetarium
Kingsport, TN

Apollo EECOM - Journey of a Lifetime by Sy Liebergot

At this year's SEPA conference, the keynote speaker was Sy Liebergot, who brought along copies of his book to sell. As several people rushed to get in line, I was fortunate to be close enough to get a copy. I'm glad I did.

Like so many books written by people involved in the Apollo program, Liebergot's book gives wonderful insights into a particular portion of the program, as well as his own personal story. Written, mostly, in chronological order, we begin with Sy's childhood. His father was constantly on the run from his gambling debts, drank heavily, physically abused Sy, had several affairs, and left his wife for one of his mistresses who had become pregnant. His mother was mentally unstable, and ultimately had to be institutionalized. A very bleak existence for a young child.

Sy's first dream was to be a photojournalist, and after high school, he got a job at the Philadelphia Enquirer. However, it wasn't as a photographer, but as a copy boy. Seeing no hope of moving up the ladder, Sy decided to join the Army. It was in the Army that he got his first training in working with electronics and a variety of equipment as part of the Army Weather Observers Corps (AWOC). After completing his tour of duty, Sy moved to California and worked several jobs while attending college to obtain his degree in engineering. With a recent marriage, a growing family, plus the responsibilities of work and school, Sy's life was filled with stress.

His final year in school came with a new job, working at North American Aviation, which got the contract to build the second stage of the Saturn V rocket, as well as the Command and Service Modules (CSM) for the Apollo flights. This led to a position with the Flight Operations Support Group and a move to Houston. Sy quickly realized that he was essentially a go-between for NASA and the contractor. He wanted more. When the opportunity arose, Sy switched to NASA's Manned Spacecraft Center's Mission Operation Control Room (MOCR). He was on his way to becoming a flight controller.

Sy eventually was given the position of EECOM (Electrical, Environmental and Communications). Although the Communications portion was later separated off into a different position, the acronym stuck. The EECOM was responsible for all life support systems, including electrical power, heating and cooling, atmospheric pressure, oxygen supply, and the fuel cells containing liquid hydrogen and oxygen. Essentially, the EECOM was responsible for about half of the systems on board.

Although involved with all of the Apollo missions, Sy is best remembered for his role during the Apollo 13 disaster. With only one hour left in his shift, the fateful words "Okay Houston, we've had a problem here" were heard. With data streaming in that seemed impossible, Sy's first thought was that there was something wrong with the instrumentation. When it quickly became evident that it wasn't a faulty sensor, the next step was to try to isolate the problem and save whatever power and oxygen they could. After unsuccessfully trying to stop the loss of all power, it was decided to move the crew to the Lunar Module and power down the Command Module so that there would be enough power left for reentry. Even though the flight crew on duty during the start of the disaster was well immersed in addressing the problem, the next shift was on hand and providing support already. So the decision was made to proceed with the handover to the next shift

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Archeo- astronomy

Meteors from a Forgotten Constellation

Woodrow W. Grizzle III
Elizabeth City State University Planetarium
Elizabeth City, NC

In keeping with the meteor theme started in last quarter's article, I decided to write this time about the Quadrantids of January: a prolific, if scantily-viewed, meteor shower, which is unique among the classical meteor showers in that its radiant constellation is not one of the 88.

The Quadrantids meteor shower occurs each year in January. Most are surprised to learn that it is as reliable and prolific as the Perseids of August or the Geminids of December; the zenithal hourly rate can be as high as either of the aforementioned showers. Its grand nature is less-known likely because it occurs in January, when it is typically freezing outside in the northern hemisphere, and because its peak occurs during a very narrow span of time: sometimes no more than a couple of hours. That narrow-range peak occurs because, as you may have already guessed, the source debris field through which Earth passes is itself quite narrow.

The parent body of the Quadrantids' debris field is thought to be an asteroid designated 2003 EH₁. Peter Jenniskens put this body forward as the parent body to the Quadrantids in 2004 in a paper appearing in *The Astronomical Journal* [Jenniskens 3018-22]. In his paper, Jenniskens states that 2003 EH₁ is likely an extinct comet, and that it may have a relationship with comet C/1490 Y1. (More on this comet in a later article.) 2003 EH₁ has an orbital period of

5.52 years, an aphelion of 5.0569 AU, perihelion of 1.1898 AU, and a semi-major axis of 3.1233 AU. It comes to perihelion again on 12 March 2014.

The Quadrantids' radiant, and therefore its name, comes from a disused constellation called *Quadrans Muralis*, the Mural Quadrant. A mural quadrant, or mural instrument (they could be quadrants or sextants) is a celestial observation instrument that is used to precisely measure the declination and right ascension of objects in the sky. The term mural comes from Latin, literally meaning "wall." These are instruments that are mounted or built into a wall, and they are precisely aligned to a meridian. Though mural instruments are seldom seen today, they were used extensively in the pre-telescopic era, and even into the 19th century.

To work properly, mural instruments must be used in conjunction with an accurate and precise sidereal clock. An observer views an object through a sight in the instrument, and, at the instant an object appears at an indicator within the sight, the observer

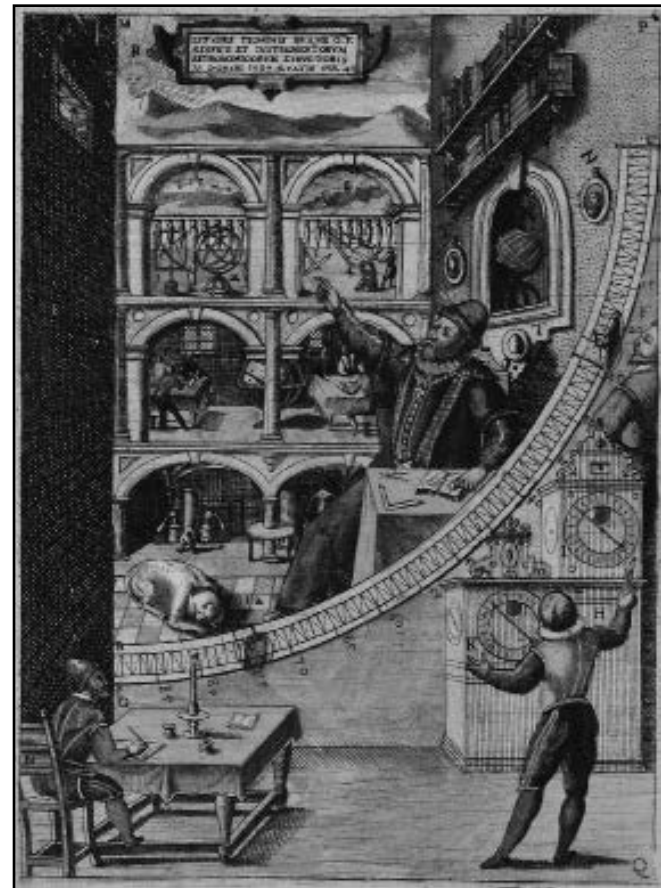


Figure 1: *Astronomical Instruments and Structures of Tycho Brahe. Engraving, ink on paper. Nordisk familjebok, 1876.*

records both the angle shown on the instrument and the time on the clock. The indicator shows when an object transits the meridian. The mural instrument's angular measurement gives the celestial object's declination, and the time on the sidereal clock gives its right ascension. The famous engraving of Tycho Brahe's observatory that first appeared in *Nordisk familjebok* (Nordic Family Book) in 1876, showed Brahe at his mural quadrant. (see Fig. 1)

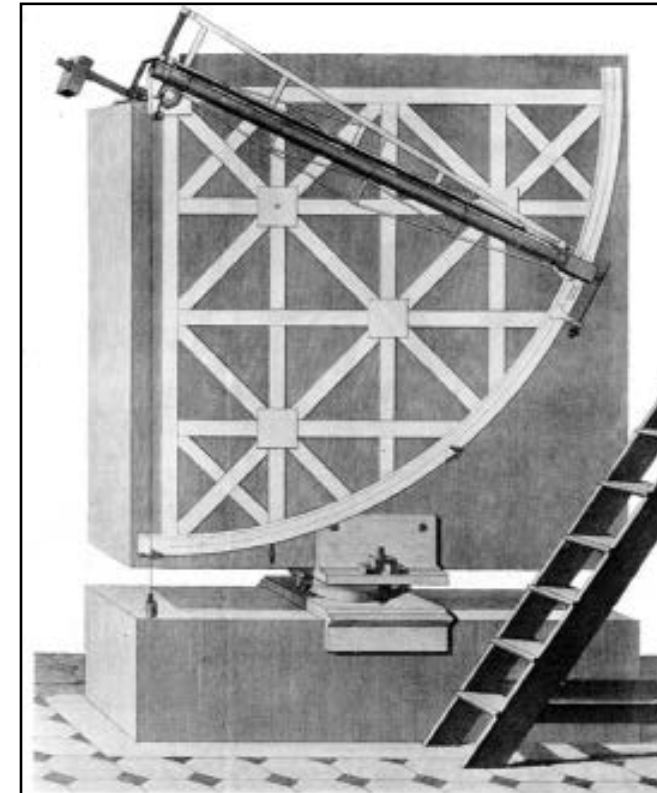


Figure 2: *Mauerquadrant von Bird, ca. 1770. Engraving, ink on paper. Geschichte der Astron. Messwerkzeuge, 1907.*

Quadrans Muralis, the constellation, was created by French astronomer Joseph Jérôme Lefrançois de Lalande in 1795. He took a page from another French astronomer, Lacaille, who named several new constellations at this time in honor of scientific instruments that had contemporarily been used to make advances in a number of fields. *Quadrans Muralis* existed near the tail of *Ursa Major*, between *Draco* and *Boötes*. Lalande was an astronomer of extreme talent, but an equally difficult personality, so it is no small wonder that he is not a household name. Despite this ascorbic fact, his story is worth looking into, especially his relationship to Lacaille's observations at the Cape of Good Hope, correcting

Edmund Halley's tables, and publications about the 1769 transit of Venus. He even had papers recording observations of a celestial object that moved between two nights in 1795, which turned out to be the planet Neptune - 51 years before that world's official discovery. At the time, the position shift was thought to be an observation error. Lalande's records were later used to refine Neptune's orbit. If ever there was a case for perpetual record-keeping, that is it.



Figure 3: *Illustration showing Quadrans Muralis, Boötes and other constellations. Engraving, ink on paper. Bode, J.; Uranographia, 1801.*

The Quadrantid meteor shower was first noticed and reported in 1825 by the Italian Antonio Brucalassi, who said, "the atmosphere was traversed by a multitude of the luminous bodies known by the name of falling stars." [Herrick, 334]. In 1839, independent observations were published by Adolphe Quetelet of Brussels Observatory in Belgium and Edward C. Herrick in Connecticut that suggested that the Quadrantids were an annual meteor shower. [Herrick, 334]. During the International Astronomical Union's (IAU) inaugural General Assembly in Rome in 1922, a formalized list of 88 constellations was proposed that did not include *Quadrans Muralis*. At the 1930 meeting in Paris, Eugène Delporte put forward the 88 "modern" constellations on behalf of IAU Commission 3 (Astronomical Notations), in *Délimitation scientifique des constellations*. The list was fully ratified and adopted by that meeting's end, and we still use that constellation list today. However, the name Quadrantids remained affixed to the meteor shower, providing

Archeoastronomy (Continued from page 15)

us a peek into the past where curiosity can bloom.

References:

Jenniskens, P.; 2003 EH₁ Is the Quadrantid Shower Parent Comet. *The Astronomical Journal*. 2004, 127 (5), 3018.

Herrick, E.; Observations on the Shooting Stars of August 9th and 10th, 1840. *Amer. Jour. Science & Arts*. 1840. 39. 328.

Delporte, E.; Délimitation scientifique des constellations. Report/Commission 3 of International Astronomical Union. 1930, 1, 1.



President's Column (Continued from page 3)

vendors. Now there is so much available from all over the world. You don't have to wait a week or more for material to arrive, then to mount and load your slide trays. Now in minutes shows are uploaded and downloaded, then installed, and you are ready to go. Just being free of slide trays is such a wonderful thing. We old folks can appreciate that.

So let us revel in being gate keepers to the stars young and old.

Book Review (Continued from page 13)

to keep everyone fresh. Although only involved for one hour, the work of Sy and the other flight controllers is what saved the lives of the Apollo 13 crew. Sy calls it "the longest hour of his life."

Liebergot remained with NASA into the beginning of the shuttle era, but felt the need to move on. He found a variety of positions that kept him happy. He also found a relationship that would finally last. He found the balance that had been missing all along.

Written in the abrupt, conversational style you would expect from someone who went through the military and had worked at Mission Control, "Apollo EECOM" is an enjoyable, quick read, with plenty of anecdotes about the people and events of the Apollo era. I highly recommend it.

Apollo EECOM - Journey of a Lifetime by Sy Liebergot with David M. Harland; Apogee Books, 2006



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Photo courtesy of Louphelm Planetarium.

IPS Column (Continued from page 9)

IPS 2014 is scheduled for Beijing, China. Dr. Jin Zhu, IPS 2014 Conference host, presented a report on the plans for the conference. The Conference is scheduled for June 23-27, 2014, preceded by the Council Meeting on June 21-22. President Thomas Kraupe and IPS 2012 Conference host Jon Elvert met with the 2014 Conference team in Beijing this spring to review plans. Travel to China for US citizens requires a visa so be sure to allow enough time for the required application process which can take up to a month or more.

Other Business

A *Vision 2020* initiative will address how IPS can reach the goal of being leaders in the fields of education and inspiration- not abdicating this role to others. Part of this process requires a reorganization of the committee structure and a more active Coun-

cil participation throughout the year.

The 2013 edition of the *IPS Directory* (which includes the *IPS Directory of the World's Planetariums* - the "white pages", and the *IPS Resource Directory* - the "yellow pages") has begun and will be distributed later this year. The Directory has been moved from the Members' Only area of the IPS Website to the public area, thereby making this valuable resource more widely available.

IPS general information, membership information and 2014 IPS conference details are available at <IPS-planetarium.org>

Fernbank Science Center's Public Events: Fun Stuff at Fernbank

April Whitt
Fernbank Science Center
Atlanta, GA

Fernbank Science Center, near Atlanta, Georgia, is part of the DeKalb County Public School System. At the end of the 2011-12 school year, budget deficits threatened to close the center. A third of the staff is gone, twelve-month instructional employees are now on ten-month contracts (prompting one to wonder if a pay cut every year is some kind of record), but we're still functioning.

In efforts to raise both public awareness of our programming, and some much needed funds, Fernbank offered fun and educational events during the past year. Here are highlights from several of them.

Halloween Fun with Flashlights

What's better than small children, in adorable costumes, in the planetarium? How about small children, in adorable costumes, armed with flashlights?

Steve Fentress at Strasenburgh in Rochester, NY sent me this idea and an outline. In late October 2012, young children and their parents brought small flashlights into the planetarium for a special program.

They practiced turning the flashlights on and off, pointed the beams to different parts of the dome,

made the lights move to music (fast and slow), shone the lights on a large sheet of glow-in-the-dark stars to watch the effect, and got to wear their Halloween costumes another time.

Each child received a glow-in-the-dark bracelet. One activity was to shine their flashlights at their bracelets, then turn off the flashlight and "OOOOohhhhhhhhhhhhh!" If you present this activity, don't buy the cheap Oriental Trading bracelets. Get some good ones.



Fun With Flashlights: Halloween festivities in the planetarium.

I spent quite a bit of time organizing this event, selecting music and programming a simple show. And after hours of work, I discovered that the children would have been happy to just wave their lights around in the darkened dome, activities or music or not. If you'd like a more detailed outline of the program, send me an e-mail message.


Mayan Chocolate: It's not the End of the World

All kinds of programming were scheduled for the 2012 December solstice (and end of the world). Once again, the Sun rose on the 22nd and the end-of-worlders did not hold a press conference to explain.

Fernbank's event premiered our new "full dome" system in the planetarium, with the "Mayan Prophecy" show from Houston. When we discussed what should be offered for the Friday night festivities,

(Continued on page 20)

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Fernbank (Continued from page 19)

one administrator suggested “the second best thing the Mayans left us: chocolate.” (I consider that the first best thing.)

One of the advantages of working in a school system is the incredibly talented people in the district.

Elementary students from the performing arts school gave a concert of holiday tunes. If you don’t have a good auditorium space for this (we didn’t – parents were crowding everywhere), set up a video camera, and send the video to a large screen. The makeshift stage next to the Apollo 6 space capsule is popular, but a small venue.

Students from the Warren Tech culinary school in the county created and served chocolate desserts, along with other sweets.

We ran two extra planetarium programs to accommodate everyone, and the weather even cooperated to allow telescope viewing in the observatory.



Mayan Chocolate: Culinary Arts students present my favorite food.

National Chemistry Day

Maybe the coolest thing about teaching astronomy is that it includes just about every other science we study: physics, biology, or chemistry. A family event for National Chemistry Day included demonstrations of “Chemical Magic” (who doesn’t like dry ice?), a “Periodic Table of Cupcakes” with a frosted cupcake decorated as each element, and the “Sky Tonight” planetarium program.



Chemistry Day: Visitors built atomic models from gum drops and toothpicks.

Bite-size Science (for pint-sized scientists)

At the end of January 2013, Fernbank set up “science centers” around the building on a Saturday afternoon for young children and their parents. Children were invited to explore constellations, plants, birds and reptiles, with activities for each topic.

Students from our Science Tools and Techniques (STT) program for ninth graders staffed the tables for the event. They were a great help!



Bite Size Science: The flight simulator was a big hit with small people.

National Astronomy Day

Many of us do some sort of presentation for National Astronomy Day. At Fernbank, we are short-staffed (single staffed, actually – me alone for this event) and I needed help.

The local Atlanta Astronomy Club responded with solar filtered telescopes. These were set up on the front sidewalk, and people could observe the Sun before entering the building.

Thank heaven for volunteers! They greeted visitors, offered safe solar viewing, answered questions, and were an all-around God-send.

If you haven’t hosted an IRIS speaker, check with Pat McQuillan. The Incorporated Research Institutions for Seismology provide free speakers for public events. We have hosted several of them; they’re terrific. The web site is http://www.iris.edu/hq//programs/education_and_outreach/distinguished_lectureship, and these speakers have been our featured Astronomy Day Lecture for the past several years.

Our National Astronomy Day activities include several door prize drawings throughout the day. Rather than set up the prizes in the lower exhibit hall, as in past years, this year’s drawings were held in the theater, at the end of each planetarium program. A poster with an image of the perforated show ticket was supposed to help visitors get their ticket stubs into the box for a drawing, without me having to give individual directions to each visitor. Despite multiple copies of the poster, displayed in several places on the way to the planetarium theater, guess what each visitor asked? Hint: it wasn’t directions to the restroom.



Astronomy Day: Directions for entering the prize drawings, using show tickets.

Georgia RockFest

We are fortunate to have staff members who have published books. Geologist Dr. Bill Witherspoon and local community college professor Dr. Pamela Gore collaborated on a book about Georgia geology. Georgia RockFest provided the perfect venue for launching *Geology of Roadside Georgia*.

And the event was packed. The book’s authors identified rocks visitors brought in, answered questions, hosted a mineral ID session, and presented some of their work as a powerpoint/GoogleEarth presentation in the planetarium. They also signed copies of the book (and sold out of every copy they had).



RockFest: Author Bill Witherspoon answers another hard question.

Cree and Scooter

Tammy Sutton-Brown, creator of these two characters, is a Women’s National Basketball Association veteran and two time all-star. Her experiences traveling the world were the inspiration for these stories. She wants to encourage early literacy in children, and give them an appreciation for the global community. In addition, parents are encouraged to read to their children, to follow safety rules (“Mom and Dad, when you text and drive, think of me”) and to support their children’s learning.

Cree and Scooter is geared toward children pre-school to 8 years old and exposes its audience to various cultures in an age appropriate manner. This series connects kids to the two main charac-

Fernbank (Continued from page 21)

ters, Cree and Scooter, as they navigate their way through many countries across the globe while Cree dreams in her bed at night. Cree is a 7 year old African-American girl and Scooter is her toy chameleon that comes to life in her dreams. Together Cree and Scooter travel to countries such as China, Egypt, Canada, Kenya, Russia, Australia, India, Japan and many more places to experience the richness and uniqueness of many cultures of the world. Check the web site at <http://creeandscooter.com>

For our event, the author read from her newest volume in the planetarium theater, the illustrator provided some images to show how the illustration process goes, and a character in costume entertained the audience.

Destination Station: Sharing the Wonders of Your Space Station

The title says it all. This exhibit is free from NASA, requires a large volume of space to set up, and was very popular for the month it was here. School groups were encouraged to tour the exhibit, parents brought children on weekends, and it was popular with our SEMAA (Science, Engineering, Mathematics and Aerospace Academy) students.

We augmented the exhibit with a display case of Shuttle tiles.

One of the “perks” of Destination Station is the



Destination Station: Part of the exhibit package allowed students to ask questions of ISS astronauts on orbit.

opportunity for students to speak live with astronauts aboard ISS. Our group spoke with astronauts Chris Hadfield, Tom Marshburn and Roman Romanenko. The students asked excellent questions, and the event ended with their enthusiastic applause.

NanoDays

NanoDays is a nationwide festival of educational programs about nanoscale science and engineering and its potential impact on the future. NanoDays events are organized by participants in the Nanoscale Informal Science Education Network (NISE Net) See their web site at <http://nisenet.org/nanodays>

Our trusty STT students staffed the activity tables, answered questions, and gained some experience in working with the public.

Hydrophobic sand is an example of science on the nanoscale. Treating the surface of individual grains produces a new type of sand that behaves very differently from regular beach sand. This product is sometimes marketed as “Mars sand.”



NanoDays: Assembling Buckyballs and temporary tattoos were part of the fun.

Sid the Science Kid

Sid the Science Kid is a PBS presentation, produced by Jim Henson’s Digital Puppet Studio. With the release of the new movie – it follows Sid and his friend Gabriela through their adventure in The Super Ultimate Science Museum – Fernbank

sponsored a Sid look-alike contest, with the winner receiving a giant Sid cut-out from the studio.

After previewing the movie in the planetarium, fair weather allowed us to do all the Sid the Science Kid activities out of doors. Bubbles are always a favorite.

We’re working on more public events for the fall and for next year. For the September equinox, we host a fundraising collaboration between Fernbank and the Southern Order of Storytellers. We do the night sky and science, they provide the star stories. Should be fun!

REMEMBER YOUR STATE COORDINATOR!

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Gary Meibaum (Continued from page 7)



2004 Paul Campbell Winners: Jon Bell, Kris McCall, Gary Meibaum

assistant of seven years, took over as the planetarium’s Director. Gary couldn’t have been happier with the choice of his successor. As Jason told me, “Gary was more than a mentor, he was a friend and a father figure to me.”

I will miss exploring the culinary arts of the city with Gary as my guide. He loved New Orleans’ restaurants and always knew the best places to eat. Many were “off-the-beaten-path,” and like Gary, a treasure to be discovered. I am sorry that more of my fellow planetarians didn’t get chance to know him better. Gary once wrote, “My most pleasurable activity is watching the beautifully-colored leaves fall under a ‘Kodachrome Blue’ sky.” It seems only fitting that Gary passed away peacefully on such a fall day.



All images courtesy of John Hare and Phil Groce.

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News From SEPA Region

FLORIDA

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Buehler Planetarium Broward College Davie, FL

Susan J. Barnett reports: The Buehler Planetarium & Observatory is running public shows four days a week. The weekend shows and monthly specials include *Infiniti Express*, *Amazing Stargazing*, *MoonWitch*, *The Future of Space Exploration*, and *'tis The Season*.

The Buehler Observatory has viewing four times a week. It has free public observing Wednesday, Friday, and Saturday evenings. In addition, we observe the Sun on Wednesday afternoons.

GEORGIA

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Fernbank Science Center Planetarium Atlanta, GA

April Whitt reports: Fernbank Science Center had a great summer, using our new mirror projection system in the planetarium. Visitors were treated to a live current night sky tour, followed by a “full

dome” presentation - We Choose Space, Molecularium, or Saturn - the Ring World.

We’ve offered lessons in the new format this fall, for school groups, and have received rave reviews. While Fernbank is part of the DeKalb County Public School District, a number of out-of-county schools are booking programs as well.

A group of teachers from the Metro area meets with Georgia Institute of Technology astronomy professor Dr. James Sowell to work with his new project - remotely operating a telescope on Maui. Teachers and their fourth and sixth grade students will be touring the last quarter moon from their own classrooms, and the group is working on lesson plans, demonstrations and planetarium visits to enhance student learning.

Stories Under the Stars, a collaboration between Fernbank Science Center and the Southern Order of Storytellers was a huge success. Several hundred people participated in the science and listened to the stories of the September equinox in the planetarium. Even rainy weather didn’t keep them away! By the end of the presentation, plans were already being made for a Vernal Equinox version of the program.

October will be a busy month. Fernbank hosts Fossil Day, National Chemistry Day, SEMAA (NASA’s Science, Engineering, Mathematics and Aerospace Academy) closing ceremonies, Halloween Fun with Flashlights for young visitors and their parents, and a Halloween Fun at Fernbank event. See our web site for details :)

Planetarium Tellus NW GA Science Museum Cartersville, GA

David Dundee reports: We had a very busy summer. All the rain made for excellent museum and planetarium attendance. We ran our third roller coaster show in the planetarium (Planetary Thrill Rides III) thanks to our friends at SpacePark 360. Also running concurrently we ran Heart of the Sun & Solar Storms in anticipation of Solar Max. Well the Sun didn’t cooperate with us on that plan. In August

we had our fifth Night At the Museum, hosting a cast of characters from Klingons to Einstein and from Galileo to Dr. Who and his Tardis. This event attracted over 2,000 visitors. Our NASA fireball camera captured two very bright fire balls over the Southeast. (Picture attached) We just opened “To Space and Back” in the planetarium that has been very well received. School group bookings for the museum are doing well again with nearly 30,000 students booked so far. We anticipate that this fall we will receive our own Moon rock from NASA. We just got in the Space Shuttle Nose cap from the Space Shuttle Columbia. That should go on display early next year. We look forward to a great fall of many visitors and hopefully a bright comet.



August 28 fireball

KENTUCKY

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Golden Pond Planetarium Land Between the Lakes Nat’l Recreation Area Golden Pond, KY

Ross Workman reports: don’t know about you, but this summer seems to have passed by quicker than most. I don’t know if it’s age or because it was so fun.

Summer started with a great trip the SEPA conference in Jacksonville. It was great seeing old friends

and making new ones. Tom and his staff at Bryan Gooding did a wonderful job hosting the conference. I’m sure everyone who saw Atlantis will agree when I say that it was an emotional and powerful experience. If you have not had the opportunity to visit Kennedy Space Center and see Atlantis, it’s well worth the trip.

We had another successful and busy summer here at Golden Pond. The daily show schedule and evening laser schedules are now being scaled back with the seasonal decrease in general public visitation. But like most everyone who is reading this, we are now into the fall field trip season. For our facility, we add fall breakers, the seasonal senior tours, and snowbirds who are getting an early start on their annual trek southward into the visitation mix.

After the success of the Choosing and Using Binoculars and Telescopes program the Planetarium and West Kentucky Amateur Astronomers presented last year, we will do it again on November 9. If you have an astronomy club that is associated with your facility, or one that may be in your area, this is a program that you should consider. It’s great exposure for the planetarium and the supporting club.

Until next time, that’s news from The Pond.

East Kentucky Science Center & Planetarium Big Sandy Community and Technical College Prestonsburg, KY

Steve Russo reports: During the Summer of 2013, the East Kentucky Science Center and Planetarium hosted a total of 123 students ranging in age from pre-K through 8th grade for ten camps. Topics of the camps were in all areas of science, including color, physics, animals, geology, and astronomy.

The two Astronomy camps attracted 20 students who saw planetarium shows, learned about comets and meteors, made craters, and built and launched model rockets.

Summer also saw the return of the exhibit; ENERGEE. The only in-house built exhibit returned to the EKSC after a year of storage. Built at a cost of \$600,000, ENERGEE is a highly interactive exhibit



consisting of 10 kiosks plus and introductory “what is energy” and “the future is now” wall.

Visitors are introduced to energy concepts including topics on coal, natural gas, potential and kinetic energy, light, thermodynamics, atmospheric gases, generating electricity and energy conservation.



It has been a pretty successful year at the EKSC with an increase in attendance of 12 percent for the second year in a row.

Until next time, “Look To The Skies!!!!”

NORTH CAROLINA 

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**Morehead Planetarium
 Morehead Planetarium and Science Center
 Chapel Hill, NC**

Mickey Jo Sorrell reports: On August 26th and 27th,

Morehead Planetarium and Science Center, in Chapel Hill, NC, hosted the 9th annual meeting of CAPE - Carolina Association of Planetarium Educators.

Twenty-five educators, representing eleven planetaria in North and South Carolina, gathered for inspirational sharing and fine company. Participants enjoyed tours of the Science Center, Morehead production studio, and the Morehead Observatory, as well as presentations on the role of the Rosman tracking station (now PARI) in the NASA Apollo-era missions, an interactive ISS show, inquiry learning, outdoor Solar System exhibit, creative teaching with astronomically inspired music, and NASA MAVEN resources. Activities included a video teleconference about the MicroObservatory Program with Harvard educators and two of Morehead’s original fulldome shows (The Longest Night and Solar System Odyssey) PLUS the maiden voyage of the brand new Morehead center-theater console on a live tour of the Universe.

The 10th annual CAPE conference will be held at Ingram Planetarium at Sunset Beach, NC, in early September, 2014. Please plan to join us.

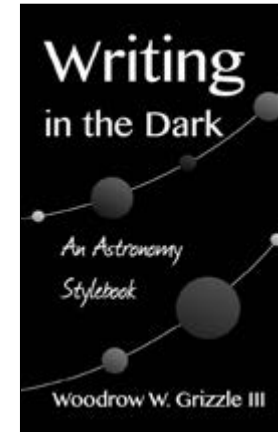


**Planetarium
 Elizabeth City State University
 Elizabeth City, NC**

Woodrow W. Grizzle III reports: This fall has been busy, busy, busy. Lots of change abounds on campus at Elizabeth City State University. Budget cuts have taken their toll on us, add to that lower than expected enrollment, and we are facing more

meager times than anyone here can remember. Unfortunately, 46 of our colleagues and coworkers were laid-off in September. No faculty lost their jobs, but we have been told to expect some faculty cuts next semester. For now, the Planetarium is still up and running, and there are many new programs!

October 29 saw the inaugural lecture in our Planetarium Lecture Series. I started the series off with a lecture about sky lore, astronomy writing and Ancient Greek language in speaking about my new book, *Writing in the Dark: An Astronomy Stylebook*. This lecture was also the first stop as I embarked upon a lecture tour with the new book.



This year, we hosted a new event, Autumn Nights at the Planetarium. Autumn Nights is designed to be the continuation and counterpart to the Summer Sunset Stargaze in our chest of seasonal goodies. It’s an evening of night sky tours, sky lore and discussion about astronomical events and observation methods and tactics for all ages and backgrounds. The program stressed the good quality of autumn air for observing, as well as the simplicity of using an humble pair of binoculars to discover celestial wonders.

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While writing this piece, I am putting the finishing touches on a “Planetarium Club Interest Meet-

ing” poster. I am holding an interest meeting soon to see what interest there is among our students to learn basic observational astronomy and planetarium operations. We do not have formal astronomy classes at ECSU, nor do I have help in the planetarium. If there is interest, I figure this Planetarium Club is a way to kill two birds with one stone: teach astronomy to kids who want to learn it, and identify some talented young people who are willing and able to help me to grow the Planetarium into the fantastic outreach program that ECSU and our community deserve.

**Robeson Planetarium and Science Center
 Lumberton, NC**

Ken Brandt reports: The Robeson Planetarium has just completed the Fall semester with our 4th, 5th, 6th and 9th grade students. As always, the kids are great!

My latest projects include aligning our show content to the NC Essential Science Standards. I have given presentations at CAPE, the North Carolina Astronomer’s Meeting, and the Regional NSTA Conference in Charlotte. I am also redoing our science center as kids are interacting with the exhibits, deciding what to keep, and what to switch out for other things.

**PARI (Pisgah Astronomical Research Institute)
 Rosman, NC**

Christi Whitworth reports: The dominant event this fall at PARI is the 50th Anniversary of the Rosman Tracking Station that is now known as PARI which originally opened October 26th 1963. On Friday and Saturday, October 25 and 26, 2013 we will celebrate the fifty years of the site and its three exciting and unique missions. During the celebration, we are honoring the history of the facility and specifically the two 26M dishes (NASA called them 85-1 and 85-2 using SAE units), dedicating them back to NASA to recognize its first proud epoch. Just as during the original dedication of this facility 50 years ago we will be hosting federal, state and local government dignitaries during the celebration.

During the 1960's, Under the Goddard Space Flight Center, the Rosman Facility served as a key element of the world-wide Satellite Tracking and Data Acquisition Network (STADAN) supporting the Gemini and Apollo missions, including the Apollo-Soyuz mission in 1975 and Skylab missions. We will host a panel of people who worked for NASA during that time to discuss the groundbreaking achievements that occurred at this facility.

In 1981, the facility was turned over to the Department of Defense, where it performed its second mission - national security. During those years the site went dark. But now that information is being released about the operations on the site during that time, the important nature of the national security mission is becoming very clear. The national security mission ended in 1994 following the closure of the facility during a Federal Base Realignment.

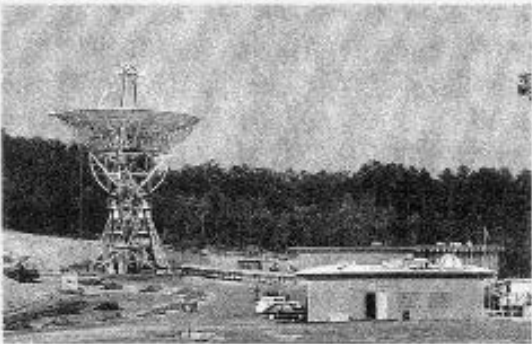
In 1998, the facility was acquired from the Federal Government by a not-for-profit foundation, the Pisgah Astronomical Research Institute (PARI), focused on Science, Technology, Engineering and Math (STEM) research and education. During this third mission of the facility, we are developing and supporting the

next generation of scientists, engineers and mathematicians. Literally thousands of students now come to PARI to learn science by doing science.



We currently host an all sky camera in support of the NASA Meteoroid Environments Office managed out of the Marshall Space Flight Center. We are also proud that we were selected by NASA as one of the museums to receive and display Space Shuttle Artifacts. We already have a very impressive gallery of Space Shuttle Artifacts on display for our many visitors. Remarkably, the original antennas NASA installed have been working for fifty years as Tracking, Telemetry and Commanding (TT&C), national security and now as astronomical radio telescopes. Through grant support from your agency, the National Science Foundation and others, these 26M dishes have been refurbished and upgraded and are among the finest such instruments in the world. The same antennas that were used to communicate with our astronauts during the early missions and help protect our nation during the Cold War are being used by young people, from middle schoolers through graduate students, to study the universe.

We believe there is no facility with such a rich history and with these three noble missions. All of us at PARI hope that you can help us make our 50th anniversary a very memorable event. If you would like more information about our plans, feel free to contact Dr. David E. Clavier, Vice President of Administration and Development at dclavier@pari.edu or (828) 966-4097. You can also find out more about us on our website at www.pari.edu.

**Dedication of the Rosman
Satellite Tracking and
Data Acquisition Facility**




Rosman, North Carolina
October 26, 1963

*A program from the original dedication and an
annual report from the Pisgah Astronomical
Research Institute.*

**SOUTH
CAROLINA**

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DuPont Planetarium, Aiken, SC
SennG@sc.edu*



**DuPont Planetarium
Ruth Patrick Science Ed. Ctr., USC Aiken
Aiken, SC**

Gary J. Senn reports: The DuPont Planetarium at the Ruth Patrick Science Education Center (RPSEC)

on the campus of the University of South Carolina Aiken (USCA) participated in the Carolina Association of Planetarium Educators (CAPE) conference August 26 & 27. Planetarians from North and South Carolina converged at the Morehead Planetarium and Science Center at UNC Chapel Hill where they had a great time of networking and exploring opportunities for education in planetariums.

We had a successful Observe the Moon Night on September 14. Members from the Astronomy Club of Augusta (ACA) set up telescopes on the lawn for our visitors to view the moon. Of course, the club members did not limit viewing to the moon, so the patrons were able to see a number of other objects in the sky. The 16" Meade LX-200 Bechtel Telescope was available in the RPSEC Observatory. We held our Moon night a month early because our annual Science Education Enrichment Day (SEED) is the same day as International Observe the Moon Night. Our sponsors decided that holding the two events on the same day would be too much. We still had a Moon focus as the ACA had sessions focused on the Moon during our daytime SEED celebration.

In September, the planetarium presented a local production, *Dark Shadows*. *Dark Shadows* explores the Sun, Moon, Earth system and demonstrates how shadows in space create eclipses and moon phases.

In October, we showed *Larry Cat in Space* by Lochness Productions and the local production, *To the Moon and Beyond*. In November, the planetarium will feature *In My Backyard* from the Calgary Science Centre and *More Than Meets the Eye* from Lochness Productions.

With the arrival of school groups, football and cooler weather, we are looking forward to our Christmas season. Once again, we will feature our Christmas favorite, *'Tis the Season* from Lochness productions and the Taylor Planetarium.

**The Settlemyre Planetarium
Museum of York County
Rock Hill, SC**


Jim Greenhouse reports: After opening a renovated Settlemyre Planetarium one year ago, Jim Green-

house is moving on to become the Space Science Coordinator at the New Mexico Museum of Natural History & Science in Albuquerque. His last day in Rock Hill was October 4.

The planetarium had to undergo a major cleaning after the HVAC system and roof were replaced. The current shows are *Legends of the Night Sky: Perseus and Andromeda* and *We Choose Space*.

TENNESSEE

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**Bays Mountain Planetarium
Kingsport, TN**

Adam Thanz reports: Greetings All! You'll read this near the winter, but Fall is greeting us in the heart of the Appalachians with a colorful splendor. We're also days away from our 30th anniversary of StarFest. This is our annual astronomical convention/star gathering that attracts amateur astronomers from the Southeast US. Six keynote speakers are highlighted that range from Cherokee star lore with Gayle Ross to a planetarian's personal cometary journey with Martin Ratcliffe. Five great meals, a special fleece jacket, observing, and much more abound. Dates for next year's event are already posted on our Park's website of www.baysmountain.com.

Our current main show that will run to the end of the calendar year is our own production, 'Comets & Discovery.' We've been showing this to the public and school groups, third grade and above, to great success. The format is structured to enhance retention, break misconceptions, provide an active learning environment, and best of all, have lots of fun. The last issue of this journal included my article about making your own comet with two retractable tails. This activity is a highlight due to its interactivity and ability to transform a basic knowledge of facts into a spatial understanding of the path and tail emanation of a comet nucleus.

As you read this, we should be very close to open-

ing up our latest in-house production, ‘Discover the Stars.’ Visitors will learn all about stars, what they are, and much more. True to Bays Mountain fashion, a live sequence is designed to highlight the key attributes of stars to increase visitor retention. The show will be open for distribution as well at a very reasonable cost. Please visit our production site: <http://www.baysmountain.com/planetarium-productions/>

Our secondary show, shown at 2 p.m. on the weekends, is currently finishing up with “Appalachian Skies - Fall.” It is a live format program that tours the fall skies and also includes detailed, interesting information about some of those objects. The next secondary show, which runs this Nov. & Dec., will be “Cosmic Colors.” This is GLPA’s very good show that looks at how we learn about celestial objects by looking at certain ‘colors’ (wavelengths).

Sharpe Planetarium Memphis, TN

Dave Maness reports: I want to start by telling you what I did over the summer. I did something I rarely do. I took a vacation. There was a good reason for this change of routine. First, the fact that I graduated college 5 years after high School meant that certain reunions would occur the same year. A happy coincidence of scheduling put them on adjoining weekends. So it was an opportunity that I could not pass up. Besides, I have some siblings nearby, whom I hadn’t seen in over 5 years. A visit was long overdue.

So in mid-July I set out to visit family and both of my Alma Maters. The distance was only about 1,500 miles, but because of bad weather the journey (via USAirways) took over 12 hours. A planned 2 hour layover at Reagan International turned into 5 hours. Fortunately I was able to catch up with former colleagues Ken Moore and then Pat McQuillan by phone, to pass the time. They both now live in the DC area.

The weather cleared as I arrived at Burlington, Vermont at 3:00 a.m. and was quite nice for the rest of my vacation. Stop number one was the facility that gave me my first taste of planetarium work; the State University of New York (SUNY) at Platts-

burgh. The North Country Planetarium has been through many changes since I was a freshman, but it looks very much the same from the outside. It was good to see it in the summertime, since most of my memories of the place involve slogging through several inches of snow.



I next made my way to my brother’s house for a long overdue visit with family. While there, I was able to enjoy fairly dark skies, although the moon was up every night. But that couldn’t be avoided and still attend the planned reunion events. I was pleasantly surprised to see that the local US Post Office (three doors away) had replaced all the hideous wall-pack lights with full cut-off fixtures. After years of light trespass, the back yard I studied the sky from decades ago, was again nearly as dark as I remembered it.

At my high school reunion, I shouldn’t have been as surprised by the changes over so many years. Still it was good to catch up with a few friends. One girl’s story stood out above the rest. After graduation she literally ran off and joined the circus! I also discovered that one of my classmates lived in Virginia Beach while I was in that area a few years ago and another of them has actually done business just a few blocks from where I now work in Memphis. It is, as they say, “a small world.”

With only a couple of days left of my vacation, my sister wanted to do a hike. So off we went to the Lake Placid area to climb not one but two of the 46 high peaks in the Adirondacks. Since they were nearby each other we did Mt. Esther and then Whiteface on the same day. Here we are at the top,

happy with the accomplishment but dreading the eight or nine mile hike back down.



The building behind me is a weather station and visitor center. Whiteface, I believe, is the only one of the high peaks that you can drive nearly to the top and then take a 20 to 30 story elevator ride (through a shaft of solid rock) to the top. But I assure you we didn’t cheat. We hiked the entire way. My sister is well on her way to being a “46er” a term you get to call yourself, if you have hiked to the top of all 46 of the Adirondacks’ high peaks. In fact, she has less than a half dozen left to climb. We tried to beat the sunset on the way down, but it was mostly a rocky trail, and achy knees kept the pace slow, especially after dark. The nearly full moon was never high enough (of course) to help light the trail, so we had to make do with flashlights. It was after 11 p.m. when we finally reached the car at the trail head. If you ever try this, I recommend you start such a trip much earlier in the day and limit your sightseeing time at the top. Two days later, I was back at work in Memphis and still very sore from the hike.

Our summer feature show was a favorite from Loch Ness; ***Light Years from Andromeda*** while our standard seasonal show was ***Starlit Nights***.

We had originally expected to be shutting down for much needed renovations at this point and I had wanted our “classic” theater to go out with our most lively and special-effect laden show. So I chose to run ***WSKY: Radio Station of the Stars*** along with our seasonal show ***Autumn Nights***. As it turns out, our

project has been delayed a few months in order to **not** lose income from an entire school year. The current plan is to close for renovations when most of the tourism is done, on or around August 1, 2014. We should then be able to re-open in time for plenty of school visitation, long before the end of the next school year.

As I write this we are again planning for our big Crafts Fair that begins on October 10 and runs through the weekend.

This week I am working to create a new table display that should include NASA photos, sundial crafts, meteorites, and safe solar observing, if the weather permits.



Lastly, we are looking forward to hosting former Sharpe Planetarium Director, Jim Greenhouse for a short visit next week, as he crosses the country with a moving van, on his way to his new job in Albuquerque, NM. We wish him the best of luck at his new adventure.

VIRGINIA
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 Virginia Living Museum
 Newport News, VA
 Kelly.Herbst@thevlm.org*



**John C. Wells Planetarium
 James Madison University
 Harrisonburg, VA**

Shanil Virani reports: The last several months have

been an extraordinarily busy one for the John C. Wells Planetarium at James Madison University!

Given the close proximity in dates between Astronomy Day and Earth this past April, we decided to make it a month-long celebration! We called it "EARTH & SPACE AWARENESS MONTH: Celebrating our Campus, Our Planet, and Our Universe." Events included "Bad Science Movie Nights" on the big dome. We showed really, really bad Hollywood films like "2012," "Armageddon" and "The Core" on the big dome and then spent time afterwards debunking some of the really bad science, really bad physics presented in these films. Nearly all movies like these require some suspension of disbelief, but these 3 in particular, take it to a whole new level! JMU is the first university to acquire Science on the Sphere and so we opened that facility to the public and gave several presentations using it on the water cycle, our finite resources, climate change and light pollution. Of the latter, we again hosted a week-long series of screening of The City Dark at the Planetarium that brought in capacity crowds. The marquee event for our month-long celebration was a special screening of Saving Hubble with the director David Gaynes in attendance. After the screening, we had a lively, engaging discussion with the Director & 3 astronomers from the Dept. of Physics & Astronomy, with me moderating the conversation. Saving Hubble documents the successful fight to save the Hubble Space Telescope from becoming space junk. The film deconstructs the proposed cancellation and the grass roots & scientific movement to save it. Nearly 500 people from the community came out to a large campus auditorium to see the film and in engage in the conversation afterwards. Like everything we do, all these events are FREE. To round out the month, we hosted our monthly star parties and hosted an "Astronomy at the Farmer's Market" event where we take our solar telescopes, hands-on activities for kids to do, and engage whoever stops by in some Saturday morning astronomy. What a great month for science!

Even though we are a University-affiliated planetarium, and the academic year ends in May, we continued to offer our free Saturday afternoon public shows through until the end of June. On Saturday afternoons that were sunny, we took out Coronado

PSTs and Solar Max 2 to provide visitors with views of the Sun like they've never seen before! As I like to tell visitors, you get to see the Sun as the active,

dynamic star that it is rather than the pale, yellow dot drawn by school children in their pictures! The 2012-2013 year was the best year on record for us. We had nearly 20,000 visitors come to one of our events, and our presence online has only grown. We now have more than 1400 "likes" on Facebook (<http://www.facebook.com/jmu.planetarium>) and ~1000 "followers" on Twitter (@jmuplanetarium)! If you're online, please let me know and please like and follow us!



The end of June brought a significant change to our hybrid Planetarium: we upgraded our digital system to Evans & Sutherland Digistar 5. To my knowledge, we are now the ONLY planetarium in the world running both E&S Digistar 5 with a Goto Chronos starball. Audiences love the new digital system, the brighter picture, the higher resolution, but they also love the gorgeous, authentic night sky provided by the Goto Chronos starball! As we like to say, the John C. Wells Planetarium is now a \$2M, state-of-the-art hybrid facility, the only one like it in the world. If you haven't seen our facility recently, please stop by and I'd love to give you a personal tour as Dr. Paul Knappenberger, Jr (IPS President-Elect) did this summer!

In July, we hosted our first ever summer Space Camp! Leveraging JMU's \$2M state-of-the-art hybrid planetarium and JMU's installation of Science on the Sphere at Memorial, we sought to attract area middle-school students to excite, inspire and motivate them about science and to consider careers in science & engineering as they move forward through school.

Our approach is 3-pronged effort: 1.) provide robust, hands-on activities that allow students to be the scientist or engineer for a real-world problem they must solve, 2.) provide real-world experiential opportunities for JMU's pre-service teachers so they are better prepared for teaching science when they have their own classrooms, 3.) provide a week-long teacher's workshop prior to space camp for area teachers where they would learn content, pedagogy and be provided with NASA materials that they can take back to their classrooms in the fall. Because we also wanted to ensure that ALL students had an opportunity to attend our Space Camp, and not just those who could afford to do so, we received significant funding from NASA/Langley that allowed us to offer tuition waivers to about 1/3rd of our "explorers" from under-represented groups (defined broadly; included ethnicity, gender, home schoolers & socio-economic status).

Our inaugural Space Camp was a great success. We had 81 explorers (participants). Of these, 21/80 participants were from a visible minority and 26/80 were female. We also had 21 students enroll from Page County (a noted disadvantaged area). Our explorers had the opportunity to engage in a conversation with Dr. Franklin Chang Diaz, the first Hispanic-American astronaut in space and who also holds the record for most times flown on the Space Shuttle (7!). They also spoke to NASA/Langley engineer Dr. Jennifer Prince, who is part of the Entry, Descent & Landing team for NASA's Mars Curiosity rover that landed on Gale Crater on August 6, 2012. You can see more about this year's camp activities, including a short video highlighting the activities our explorers were engaged in (as well as pictures, a very cool, very short video, and the significant media interest we received) via the planetarium's website: <http://www.jmu.edu/planetarium/SpaceCamp.shtml>



Whew! Now Fall is here and classes are in full

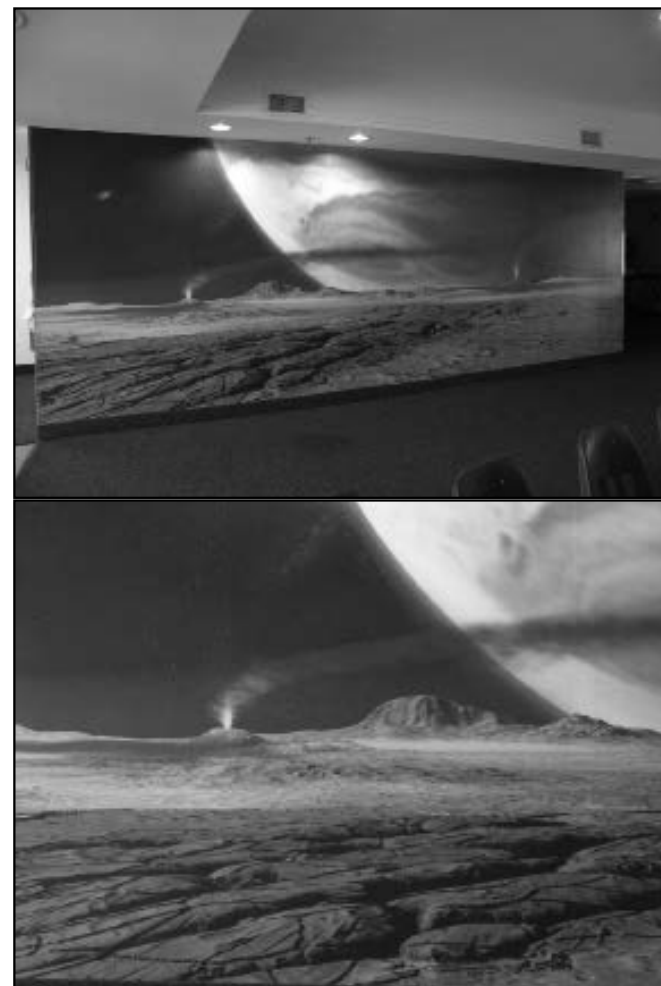
swing! Where did my summer go?!?

**Abbitt Planetarium
Virginia Living Museum
Newport News, VA**

Kelly Herbst reports: Fall is in the air, and tomorrow the Abbitt Planetarium gets back to doing shows after a month of cleaning, repairing, replacing and upgrading. It's going to be a busy October!

We'll reopen with three offerings in the theater: *Kaluoka'hina* for the little ones, *Abraham Lincoln: The Case of the Missing Moon* for our local history buffs, and of course, *Virginia Skies*. School programs are beginning to appear on our calendar again, and we'll be hosting events in October for the AIAA, International Observe the Moon Night, and two events for Halloween. A very busy month indeed!

Over the summer, however, we did indeed get to put up a fabulous new landscape of Io in our lobby.



It's incredible! People really seem to love it. Many thanks to the wonderful guys at NASA Langley for their creation of this exquisite wallpaper.

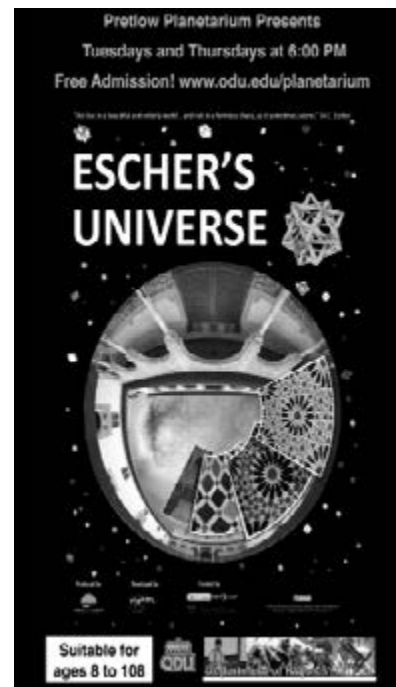
Late in November will arrive the glorious holiday season. Once again, *Star of Wonder: Mystery of the Christmas Star* and *Laser Holidays* will become regular features in the planetarium from Thanksgiving through New Year's. We're looking forward to an update of *Laser Holidays* thanks to AVI. The holidays also never fail to keep us busy, and we've already got a few tour companies on the schedule for Christmas programs. Also in November we'll be taking another special group of high school students to the NRAO in West Virginia to work with the radio telescopes there. Always a great experience.

The new year will see some new shows hitting the schedule, including Dark. We're very excited.

Me? I'll shortly be heading to some advanced training in graphics design. I'm throwing everything I've got into a reproduction of a classic school show we loved back in the day...a homegrown program called *Stacey Stormtracker*, about weather in the solar system. I figured it was high time to amp up the production capabilities here...and that means amping up my skills! Can't wait! Hope all is well under your dome!

**Pretlow Planetarium
Old Dominion
University
Norfolk, VA**

Declan De Paor reports: Here's our Fall poster.



**Planetarium
Children's Museum of Virginia
Portsmouth, VA**

Dan Borick reports: It was a busy summer. Our numbers were off the charts. Over 15,000 visitors attended planetarium shows at the Beazley. Many of them were first time planetarium visitors as we tend to cater to a younger crowd and families. The admission to the planetarium is included with the purchase of a ticket and I am sure that was a great opportunity for families to experience the wonder that a digital planetarium offers. We offered several tried and true titles (*One World One Sky*, *Oasis in Space*, *Zula Patrol – Down to Earth*) and one that has become a new favorite (*Stars – Powerhouses of the Universe*).



We instituted a summer planetarium internship for Portsmouth Public Schools high school students in July. Fifteen rising ninth through twelfth grade students were selected through the application process. The students received daily astronomy lessons, as well as instruction in digital sound editing, and show production. They also built two 4 meter planetarium domes. Student production teams brainstormed possible show topics, performed research on the topics, gathered appropriate graphics, constructed story boards, recorded narration, and programmed a show using the World Wide Telescope. The students also served as planetarium operators; greeting guests, introducing shows and running the SciDome projector in our main planetarium. They also served as interpreters and astronomy ambassadors in the My Backyard exhibit in the museum. They interacted with guests and did a live sky



show using iPad and apps like Sky Map and Solar Walk. The culminating activity was opening their 5 minute planetarium shows to the public. Their shows focused on the Voyager Mission, Life Cycles of Stars, Deep Space Objects, and The Drinking Gourd. We were duly impressed with the work of these wonderful students.



We are currently running our two newest shows: *Stars – Powerhouses of the Universe* and *To Space and Back*. *To Space and Back* seems to be very timely with Virginia's recent launch activity from the Mid Atlantic Region Spaceport on Wallop's Island. The show's focus is on the transference of technology from space to our everyday lives (some really cool looking imagery). *To Space and Back* is really current and even refers to Superstorm Sandy.

Of course, fall means school groups. We serve various school groups from the region, specifically the Portsmouth Public Schools division. We offer SOL driven offerings for all students grades 3 – 6 as well as all Earth science students from the city's 3 high schools. Instruction time occurs during the morning hours and we are still open for public shows in the afternoons and all weekend.

In November, our intrepid summer interns will be assembling their dome one more time at the Virginia Association of Science Teachers conference in Norfolk and presenting their shows.

We will be getting ready for the holiday season with two seasonal offerings: Mystery of the Christmas Star and an in house produced show The Sights and Sounds of a Winter Wonderland: Featuring the full dome Nutcracker Suite. We show the latter one during our "Snow Wonders" activities. We have snow machines that go off on the hour outside the museum and our led lights dance to the music.

Planetarium
Thomas Jefferson HS
Richmond, VA

Leslie Bochenski reports: As of September 30, I'm still busy scheduling programs for the school year. My first classes of first-grade students will be visiting the Planetarium this week and throughout October; followed by third-grade in November and December.

Eric Melenbrink from ASH Enterprises was here last week performing the overdue maintenance on my little GOTO, and according to Eric she's still going strong after 40-plus years (that makes two of us!). And speaking of old Planetariums, my predecessor, Jane Hastings, has asked me to pass along greeting and best wishes to all her SEPA friends.

I have a new volunteer helping me with programming this year. His name is Alan Sturgis, and he is a structural engineer with NASA. He will be helping me integrate NASA educational resources into my programs, and he will be working with the Robotics team at Thomas Jefferson HS.

WEST VIRGINIA

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Planetarium, WV Wesleyan College
Buckhannon, WV delaney_t@wvwc.edu



Planetarium
West Virginia Wesleyan College
Buckhannon, WV

Tracy DeLaney reports: We're very excited at the West Virginia Wesleyan College Planetarium in Buckhannon, WV -- we have received a \$5000 grant from the NASA West Virginia Space Grant Consortium to purchase supplies and educational planetarium shows for outreach to local elementary and middle schools. We'll have a student worker put together presentations primarily directed at grades K-6. Over the summer, we typically had about 10 audience members, but our last few shows have had double the audience size. Our attendance usually picks up with the new academic year and it is always wonderful to have a room with more kids -- they're much more willing to interact with us and get everyone laughing.



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