

# Southern Skies

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Journal of the Southeastern Planetarium Association

Winter 2013



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*Moon over Church Island    Credit: Woodrow Grizzle III*

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**David Dundee**  
**Tellus Science Museum**  
**Cartersville, GA**

If you are reading this column, we have escaped the Mayan apocalypse. But be on guard, rogue planets and asteroids are lurking everywhere!

It is an honor to assume the role of SEPA president; I am really excited for this new adventure. I have

been in the planetarium business for nearly 40 years and have loved planetaria of all shapes and sizes.

I love the magic of the planetarium. Sometimes we get lost in minutia of budgets, projectors, resolution, etc. But if you take a step back you realize what magic places the planetarium and your museum are. They have the power to transform people and lives.

Years ago at Fernbank Science Center we had a mentally challenged young man who came to every one of our planetarium show openings. He was fascinated with how all our projectors worked. On his birthdays, he would ask his parents to bring him to the planetarium. Our planetarium tech would often invite him to come watch the Zeiss projector be serviced, as well.

When this young man graduated high school, he asked for his astronomer friends to come as the only guests to his party in his home. We wrapped up an old Zeiss star lamp as a present (the one that is the size of a child's head). His bedroom was set up like a mini planetarium; he had dissolve projectors, a small star toy ball and space pictures on the wall. During the party he opened his present, and by his reaction you would have thought we had given him pure gold. His mom and dad were in tears, as was I. It was one of those magic moments.

Billy is approaching 40 now, but I would bet he still has his planetarium lamp. You never know what magic is occurring out there under your dome, but it happens every day somewhere out there in SEPA land.

Rates and submission formats for advertising space in SEPA's quarterly journal *Southern Skies* are:

Rates	Dimensions
\$100.	Full-page 7" wide x 10" high
\$50.	Half-page 7" wide x 4.5" high
\$25.	Quarter-page 3" wide x 4" high

These rates are per issue and in B&W copy. The back cover, inside back cover or inside front cover of our journal is also available either in B&W for \$125, or in color for \$150. A 10% discount to any size ad can be offered only with a year's (four issues) commitment of advertising. Ads accepted on a space available basis. Ads must be camera ready and conform to dimensions listed. Payment must accompany advertisement order, made payable to the Southeastern Planetarium Association (send payment to Secretary/Treasurer Patsy Wilson). The underlying mission of our advertisements is to promote resources, products, and services related to the planetarium profession. SEPA reserves the right to refuse advertisements.

# IPS REPORT

**John Hare**  
**ASH Enterprises**  
**Bradenton, FL**

Edmonton, Canada  
 Toulouse, France  
 Warsaw, Poland

The results of the IPS election are in and the winners are:

President Elect- Paul Knappenburger  
 Secretary- Lee Ann Hennig  
 Treasurer- Shawn Laatsch  
 Hennig and Laatsch were reelected unopposed.

Dave Weinrich moved to the position of Past President and Thomas Kraupe assumed the position of President, all effective on 1 January.

Three sites are competing for the 2016 IPS conference:

All three sites made presentations at the business meeting at the 2012 conference in Baton Rouge. The site selection will be determined by IPS Council at the summer 2013, off-year, Council meeting. The meeting will be held August 9-10 in South Tyrol, Italy. More information concerning the 2016 bids will be furnished in the next issue of *Southern Skies*. I will also make a presentation at the 2013 SEPA conference in Jacksonville.

As always, I urge you to join and actively participate in IPS. Dues are \$65 for a 1-year membership and \$100 for 2-years. You can obtain membership forms from IPS Treasurer, Shawn Laatsch [slaatsch@imiloahawaii.org](mailto:slaatsch@imiloahawaii.org), myself at [johnhare@earthlink.net](mailto:johnhare@earthlink.net), or on line at [www.ips-planetarium.org](http://www.ips-planetarium.org)

## 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: \_\_\_\_\_

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**GOTO**

## Lens Making at GOTO INC

GOTO INC has been in the lens grinding business for nearly a century. In fact, even before there was a GOTO INC, there was a Goto grinding glass for a famous Japanese camera company. That man was Seizo Goto, founder of GOTO INC. Seizo soon mastered the skills necessary to grind quality lenses and set off to start his own business - making telescopes.

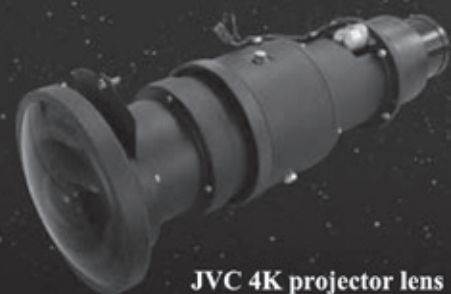
Over the years, GOTO moved from telescopes, to periscopes, to planetariums and fisheye movie camera and projection lenses. Today, one of the main lines of business for GOTO is the production of quality video projection lenses. This business is so good that GOTO's optical lab is working full time to keep up with video lens orders!

The dome environment is a challenging one for most lens manufacturers. Especially at the outer edges of a projected image, many dome systems show lack of focus, asymmetrical star images, or chromatic aberration. Likewise, internal reflections can cause contrast loss, and a poorly designed lens can lose light output.

All of these challenges have been met by GOTO for decades now, since GOTO began designing and manufacturing wide angle and fisheye lenses for GOTO Astrovision large format film projectors. In fact, every lens produced for use inside a planetarium is optimized for use on spherical, not flat, surfaces.

Special anti-reflective coatings and internal, motorized irises keep contrast extremely high, and help realize GOTO's goal of inky-black skies with tiny, beautiful stars.

GOTO's line of video projection lenses include models designed for the latest SONY and JVC 4K projectors, as well as many projectors which can be used in 2K applications. Future lens development continues, so users are encouraged to contact GOTO if they have specific questions or requests for lenses to match any new projectors.



JVC 4K projector lens



CHIRON II star plate



Mr. Ikeda has been grinding and polishing lenses at GOTO for 40 years. From roughing out shapes to final testing and polishing, he and several other optical craftsmen do it all.

### To learn more, contact:

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# Editor's Message

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

**James Sullivan**  
**Buehler Planetarium & Observatory**  
**Davie, FL**

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

As we were putting this issue to bed, I received the following news from Dave Hostetter: on January 16, "Dexter LeDoux, long-time planetarium technician at the Lafayette Science Museum in Lafayette, LA, passed away after a long illness. He was a good friend to many in SEPA and will be greatly missed." From our community, we send our condolences to his family, his friends, and his dome.

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, Margaret C. Woodson Planetarium, 1636 Parkview Circle, Salisbury, NC 28144.

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

\_\_\_\_ Two Years, \$40

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City \_\_\_\_\_

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Email Address \_\_\_\_\_

Staff Position \_\_\_\_\_

IPS Member? Yes \_\_\_\_\_ No \_\_\_\_\_

Contribution to Scholarship Award Account: \$ \_\_\_\_\_

# Small Talk

**Elizabeth Wasiluk**  
**Berkeley County Planetarium**  
**Hedgesville, WV**

As I write this, I am in the typical pre/post holiday funk. Thanksgiving is over along with Black Friday, Shop Local Saturday and Cyber Monday. The Christmas rush is about to begin and I am on the prowl to find boxes to ship gifts to the far corners of the US.

I have already gone to see the annual SOB program, "Tis the Season" at the William Brish Planetarium in Hagerstown, MD. Chris Kopco, planetarium director is the guy who replaced Rod Martin, who retired over a year ago, they were already showing the program the week before Thanksgiving.

What kept me sane during the pre-holiday count down was logging into Winterscapes on-line radio. (Never heard of it? Neither did I. I found it while hunting for some music to fill the planetarium while working late one night. It is part of the Radio 365 on-line network. People can use this service to broadcast their own on-line radio station. Find out more by going to: <http://www.live365.com/index.live> ) Listening to soft, soothing music while getting work done about the planetarium was just the ticket and I hung around to finish stuff and this last quarter of the year, I really had a lot of stuff to do.

I took advantage of the morning conjunction of Venus and Saturn, as well as the opposition of Jupiter to do a couple of public programs for the general public, something I do not regularly do, since I do not get paid for anything I do out of the regular school day. It was pretty successful, with a small crowd of folks bringing a group of family and friends for stargazing under the starry skies. I make it kind of hands-on with people getting my long sticks with red laser pointers attached via hardware clamps and after teaching visitors how to use a star map, they go at it finding planets, stars and constellations and

the asterism or two in the sky and identifying them. Afterwards, I show them how to find areas of interest, to turn a small telescope or pair of binoculars to find "hidden treasures" and show them what they look like with a small telescope and through the large observatory scopes, such as Hubble, Kitt Peak etc. Whenever I seem to do this program, everyone who attends seems to have a great time. If it is clear, I go outside with a telescope to show them what is up, and/or visible. Often, since I am only one person, I enlist the aid of the Tri-State Astronomers to help out. They came in November for the parent/teacher meeting and compromised position, moving away from the dark side of the school, and some areas around our rural school is pretty darn dark, and going to the well lit areas around the front entrance to attract a bigger crowd. And attract it, they did. Record numbers were wowed by views of Jupiter and the ET cluster. Do not know what the ET Cluster is? Check this out:

<http://www.dl-digital.com/images/Astronomy/Mess-Clusters/ET-Cluster-12-2007-3fr.jpg>

I wound up my astronomy class for 2012 with a star gazing session in the planetarium. I take grades for my astronomy class from keeping a notebook for the class, and doing a project. This grading period's project was researching a constellation of their own choosing. They also created a constellation projector using a toilet paper tube or aluminum paper tube. Pringles cans work well, too. They projected their constellation on the planetarium dome using flashlights as well as their cell phones on flashlight mode and told students one fact they remember about their constellation. Then, we played Christmas music in the background and checked out the early evening sky for late December using star finders they created from on-line's "Uncle Al's Starfinders" downloaded from the web and printed out on tag board. For those who do not know, Uncle Al is really Alan Gould from the planetarium at the Lawrence Hall of Science in Berkeley, California. They used the laser pointers on the long white sticks to identify stars in the sky.



(Continued on page 18)

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*Background is First-Light photograph of starfield by Konica Minolta's GEMINISTAR III on 18.3 m dome at Vanderbilt Planetarium, Centerport, NY, USA*

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# Comets & Discovery



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# BOOKENDS

**Robin Byrne**  
Bays Mountain Planetarium  
Kingsport, TN

## *Return to Earth* by Buzz Aldrin, Jr and Wayne Warga

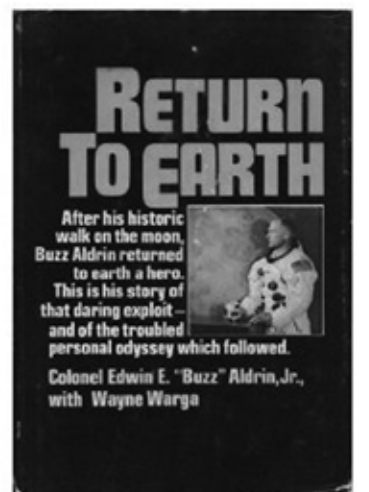
At this last year's StarFest, I picked up a used copy of "Return to Earth," since it would fit in well with my collection of astronaut biographies and space program history books. Published in 1973, it is outdated in one sense. However, this book provides nice insights not only into the life of Buzz Aldrin up to that point, but also a look at the space program from Mercury to Apollo while the events were still very fresh.

The look at Buzz Aldrin's early life is much as would be expected. Although an average student at first, summers at a military camp instilled a tremendous sense of drive, both academically and physically, and this drive would define his life for decades to come. Buzz wanted to be the best. Couple this desire to achieve with a father for whom nothing was good enough, and it is easy to see why Buzz made the choices he did.

Despite his father's wishes for Buzz to attend Annapolis, Buzz chose West Point. His summers at military camp prepared him well for the discipline, and he thrived in that environment. Following graduation, he entered the Air Force and served in Korea. After returning from the war, he met Joan Archer, and a short time later, they married. As Buzz's military career proceeded, so did his family, with the birth of three children in short order. When he and Joan realized how easily she could get pregnant, he made the decision to have a vasectomy. Quite an unusual move for men in that era.

As Buzz's career continued, he found himself torn between two choices: graduate school or test pilot school. He chose graduate school and was accepted to MIT - his father's alma mater. His area of study was the field of astronautics. Originally planning only to get a Masters degree and then go to test pilot school, Buzz decided to stay and pursue a PhD as well. His thesis studied the procedures necessary for two spacecraft to rendezvous in orbit. It's not as straight forward as you might think. Suppose you want to catch up with a vehicle ahead of you in orbit. If you were to speed up, this would put you into a higher orbit, where you would move slower, and the vehicle would move farther away from you. Instead, you need to slow down to move into a lower, faster orbit. Once caught up, you can speed up to raise your orbit back to where you were, and then perform small changes to finally dock up. Never one to be shy about extolling his own virtues, when Buzz worked at NASA, the combination of having a PhD and the topic of his thesis were frequently mentioned, ultimately giving him the nickname "Dr. Rendezvous." Despite the sarcasm behind the title, it was appropriate.

Buzz's career at NASA was one of many accomplishments. Many of his rendezvous techniques became standard practice. His Gemini flight was noteworthy because he was the first to truly understand how to maintain stability while performing tasks during a spacewalk. If this, seemingly, simple achievement had not occurred, the missions to the Moon would have been delayed. And then, of course, the Moon landing itself. Of interest to me were the ideas about



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# Archeo- astronomy

## *Moon Letters: Meaningful Experience and Its Vital Role in the Planetarium Arts*

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

*Stand by the grey stone when the thrush knocks, and  
the setting sun with the last light of Durin's Day will  
shine upon the keyhole.*

*~ Moon Letters on Thrór's Map  
J.R.R. Tolkien, **The Hobbit***

Many will say that J.R.R. Tolkien is the greatest fantasy author of all time. His principal books, *The Hobbit* and *The Lord of the Rings* present a fantastic world full of magic, love, and fear, and the deeds and cultures in the books are described in such detail as to come alive in a way that few works of fiction are able. This article opens with a passage from *The Hobbit*. Our celestial neighbor, the Moon, plays an important role in J.R.R. Tolkien's *The Hobbit*. In the book, Thorin and Company, a group of thirteen dwarves, Bilbo Baggins the Hobbit, and Gandalf the Grey set out from the Shire on a quest to retake the treasure and throne of Erebor, the Lonely Mountain from a fearsome dragon called Smaug. Before embarking upon this quest, Gandalf produced Thrór's map, which led to the Lonely



Mountain. There also was a key that opened an alleged secret entrance. The Company later learned that such an entrance did, in fact, exist, and the key to finding it was written on the map in moon letters: special runes that can only be read by moonlight. Smaug was ultimately removed and the Company prevailed, more or less (no major spoilers here for those who have not read the book). Through it all, the Moon showed the way.

This piece is not about Tolkien, though, or his fantasy world. It is about the fantasy that is reality. It is about telling stories about the real world, and how we, as planetarians, have opportunities to have a meaningful impact on members of our audience.

People practicing our profession are often outside at night. We study the sky and interpret its splendors to those who visit our workplaces. Not all nights are created equal: some are cloudy, some have awful seeing, and some are nearly ideal. Every once in a while, though, a starry night can be absolutely breath-taking, and witnessing such spectacle can change one's life forever. That recently happened to me.

The Moon was stunning on Christmas night. The lunar disk was nearly full, the air was cold, crisp, and clear, and ice crystals floating in the atmosphere bent the Moon's light into a wondrous halo, which hung in the winter air high above the tall pecan trees that stand between my humble house and the sprawling, chill waters of the Currituck Sound. Across the sound lie the Currituck Banks, home



*Feral Banker horses strolling the beaches of  
Corolla, North Carolina.*

*Photograph. Kevincollins123. 28 June 2007.  
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*Currituck Beach Light.*

some 162 feet high. This tower houses the Currituck Beach Light, which stands guard of ships plying the stormy Atlantic that stretches many leagues into the darkness beyond.

I stood outside, upon the cold Earth and I gazed up at the silvery Moon. I felt the breeze, chilling my face. I heard the ocean in the distance; the surf churned upon the beach. After some time had passed, my ears picked up a new sound: the at first distant, but soon nearby, honking of snow geese on the wing. A few dozen of the creatures glided through the cold winter night, flying from the sound over my



*Snow geese in flight.*

*Photograph. Cephas. 01 May 2010. Used  
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head and house before disappearing into the western marshes. The word Currituck comes from the Indian word Carotank, which means "land of the wild geese." The name seemed perfectly fitted on that cold Christmas night.

After the geese had gone, I was again alone with the Moon. The sound of waves beyond seemed to be those of the celestial sea rather than the earthly one, and I found myself utterly carried away. The motions of Earth and Moon, the waters, the flight of



*Moon with halo over Church Island,  
North Carolina.*

*Author's own photograph. 25 December 2012.  
©2012 Woodrow W. Grizzle III.*



the geese and the swirling breeze opened my mind. Something deep within me stirred. I was so acutely aware of everything that was going on around me that I felt as if I was truly able to hear the music of the spheres.

The Moon, the Sun, and Earth: they all speak to us through their motions. We know the time, we know where we are and, to some extent, where we are going by watching them, and the stars and planets, too. Constant motion, constant flow: the many worlds circle tirelessly. And the geese, too, whose atoms and essence are no less a part of the Cosmos than the grandest star, fly to and fro by bright day and starry night as they have done for millenia: as they did on that cold Christmas night. And what would that moment have been had I not been there to see it? Certainly, the geese would argue that it would have been no less real, and I would counter with the point that they are highly unlikely to have written an account of it.

A great talent of humans is our ability to sense, analyze, and comprehend the world around us in ways unique in the animal kingdom. Great also is our penchant for sharing information with one another: the essence of education. Perhaps humankind's greatest role in the Cosmos is that of witness. Through our eyes, the universe is self-aware. We, along with other matter and luminous beams, are as organelles in a great cosmic cell, with each form having some vital part to play. The wonders of the many worlds and unknowns undreamt of may as well not exist without this self-awareness.

Humans have stood witness to the natural world since their own beginning. The stories that we tell are bits of our personal memory extended into the collective consciousness. I would argue that memory is the single most important aspect of humanity, both as individuals and as a collective. It is through memory that we are able to learn, to grow (psychologically), and to love: it is a primal thing. As planetarians, we do well to remember that. The experiences that we create or facilitate in our theaters must be memorable to be any good. Equally important, such experiences must also be meaningful. This criterion eliminates whizbang-ery for its own sake, such as that seen in many films released

of late that are little more than special effects reels filled with explosions and particle effects. I remember these films well enough to evoke them here, but did they change my life? No; not for the better, anyway. Planetarians must strive to do better. We owe it not only to ourselves as professionals, but to every person and student that sits under a planetarium dome. We have a solemn duty to interpret the wonders of the universe to those who may not yet have had their own "Moon moment."

I may have precious little to show for many experiences at the movies, but I do remember Bilbo, Smaug, and the moon letters. Even more than that, I remember this past Christmas because I was there. Now more than ever, we have the power to transport our audiences: to put them there, to the place and time of our choosing. Let us, then, always be mindful to put them someplace worth being, and to do our best to create memorable and meaningful moments such as was my time in the moonlight, when I stood by the sea and became carried away by the wind, the waves, and the wings of wild geese.



Map showing Currituck Banks and the village of Waterlily, where the story takes place.  
Digital image. Bing Maps. ©2012 Nokia, ©2013 Microsoft Corporation.



Patsy Wilson  
Margaret C. Woodson Planetarium  
Salisbury, NC

## 2012 Year End Financial Report

Southeastern Planetarium Association  
Submitted by Patsy Wilson  
January 11, 2013

All funds held at Branch Banking and Trust Company, Chapel Hill, North Carolina.

### Balances as of 12/31/12:

Operating	24,753.68
Savings	25,609.24
Scholarship	<u>6,966.19</u>
Total	57,329.11

### Operating Account

Balance (as of 1/1/12)		<b>23,159.99</b>
Income:		
Full Membership	1,510.00	
Associate Membership	240.00	
Journal Ads	3,260.00	
Conference 2011	6,946.66 **	
PD Fund Donations	160.00 ++	
Transfer from PD Fund	4,000.00	

Total Income	<b><u>16,116.66</u></b>
Total credits	<b>39,276.65</b>

### Disbursements:

Journal (three issues)	1,370.53
AVI-ad reimbursement	90.00
Mickey Jo Sorrell	118.35
(Campbell stars/postage)	
Transfer to PD Fund	3,522.00
(Vendor Support-2011)	
Crown Trophy	32.70
(2012 conference host plaque)	
Belle of Baton Rouge	2,197.63
Hotel (2012 conference costs)	
IPS 2012	4,000.00
(\$200 support for 20 SEPA members)	
Drew Gilmore	191.76
(BlueHost renewal for website)	
MOSH	3,000.00
(Seed money for 2013 conference)	

Total Debits	<b><u>(14,522.97)</u></b>
<b>Balance (as of 12/31/11)</b>	<b>24,753.68</b>

\*\* This total includes 2011 Conference profit, Vendor Support for PD Fund and Membership Renewals received with registration.

++ PD Fund donations were transferred at the beginning of the 2013 fiscal year and will be reflected on next year's report.

<b>Savings Account (as of 1/1/12)</b>	<b>25,555.01</b>
Interest earned	<u>54.23</u>
<b>Balance (as of 12/31/12)</b>	<b>25,609.24</b>

<b>Professional Development Scholarship Account (as of 1/1/12)</b>	<b>7,444.19</b>
Income:	
Vendor Support 2011 Conference	3,522.00
Total Credits	<u>10,966.19</u>

Disbursements:	
IPS Professional Development	(4,000.00)
(20 @\$200.00)	
<b>Balance (as of 12/31/12)</b>	<b><u>6,966.19</u></b>

I give extra credit on their class totals if they correctly identify at least a star or sky object such as a planet or the Milky Way, (1 point extra credit), 2 pts. for an asterism such as the Big or Little Dipper, and 3 pts. if they identify a constellation. A student was doing a fund-raiser by selling homebaked cookies, and I shared sugar cookies I got with poinsettias on them with my students and Santa showed up at the end of the program with candy canes, holiday keychains with snowmen and Santas on them as well as erasers with snowmen, elves, Christmas trees and Santas on them. There were also holiday cards with Hubble images on them.

Teachers came in for a half a day on the Winter Solstice and we had a Christmas brunch with great food and held a silent auction to raise money for a faculty scholarship. A great way to get last minute Christmas gifts. I donated something as well as bought something.

I spent the weekend before Christmas wrapping and packing gifts for friends and relatives in two countries and several states. Christmas Eve found me getting packages to the post office before they closed at 12:30 p.m. including some movie passes for Harry, my mailman. As I stopped by the local Walmart to get milk before going home, I looked up and it began snowing. It was going to be a white Christmas in Martinsburg, West Virginia, where I live, after all.

As the New Year draws near and we edge closer to falling off the fiscal cliff, my heart goes out to those who have lost loved ones as well as those who have lost planetarium jobs. May they remain domeless for only a brief time.

Got some concerns or info to share with small planetaria in any way shape or form regardless of how you define small planetaria? Phone, write, fax or e-mail me and you can see it here in this column. All the best in 2013 under your dome.

the Moon still not understood at the time of the writing. The moon rocks and data were still being processed, so the concept of the moon forming from a collision was still not being discussed. The unmanned missions to the outer planets were just beginning, and it was still thought that our moon was the largest satellite in the solar system.

But, at the same time, the publication date had its advantages. Because this book was written only four years after the landing, the memories were very fresh. Details abound about the preparation, the flight itself, and, as the title emphasizes, the events after coming home. This was the part for which Buzz was not prepared. All his life, he had been goal-oriented. Now, he had achieved his goals, so what was left? For two years, his life was primarily devoted to public appearances, which he hated doing. The strain of feeling rudderless and being forced into situations that were uncomfortable took their toll. His marriage suffered. Infidelity made it worse. He and Joan even considered divorce. Underlying all of this was a case of severe depression. This downward spiral ultimately led to Buzz being hospitalized to treat the depression. With a tremendous amount of help from doctors and medication, Buzz slowly pulled his life back together.

For Buzz Aldrin, the desire to write his autobiography was partly due to his accomplishments with NASA, but it was also to go public about his struggle with depression. He wanted to help remove the stigma associated with mental illness by putting himself forward as an example that anyone can be a victim of mental illness - even heroes. And to also show that there is hope for those in the clutches of depression. Buzz Aldrin was a true pioneer in more than one way. He was a pioneer in space, but also a pioneer as a champion of mental health issues. "Return to Earth" gives a wonderful glimpse at both aspects of this very complicated man.

*Return to Earth* by Colonel Edwin E. "Buzz" Aldrin, Jr., with Wayne Warga Random House 1973.

# REMEMBER YOUR STATE COORDINATOR!

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# Yet Another Addition To The Astronomers Songbook

Jon U. Bell  
Hallstrom Planetarium  
Fort Pierce, FL

So I have this show coming up in a couple of weeks called, *SPACE SONGS, the Musical*. It's like the last couple of *Space Songs* shows I've done here before, but this time I'm enlisting the singing talents of some of our college students. I've had several rehearsals with a half-dozen of them, and it looks like things will turn out well. The list of songs in the show so far is, *Universe Calling!; Eclipses, Transits and Occultations; Ode to Planet Number 9; The Ballad of the HR Diagram; Constellation Barcarolle; Betelgeuse; Jocelyn Found a Radio Star; There Are Plenty of Stars in the Sky*; and maybe one or two others, we'll see how the time works out in order to make it a good 35 minute show.

The way I've done this show in the past, I welcome the audience, I introduce the idea that it's a mixture of a planetarium lecture with some karaoke singing, and then I go through the numbers until I decide they've had enough, and then I let them go. Oh, and I try to get them to sing along on the choruses. It's not essential that they sing too, but I find it to be very therapeutic. For me, not them, of course. This time around I'm working students into the routine, so I've written a dialogue script based on the premise that these are some of my astronomy students who've come in for some last minute help before an exam, and we use the songs, complete with illustrations and planetarium special effects and star-field,

to teach the concepts.

Some of the music will be a cappella, but I've also utilized the incredible talents of one of our music faculty, Dr. Dale Rieth, who is an incredible pianist, able to sight-read music as well as arrange and transpose music and also play by ear. Dr. Rieth recorded piano accompaniments for me at Indian River State College's radio station, WQCS, (and with the help of another remarkably talented individual, Joe Lenartiene, who did the recording work.)

So like I say, I think it'll go over well. But one of the pieces that Dr. Rieth arranged and performed, the Largo from Antonín Dvořák's *New World Symphony* – well, I asked for two full stanzas of the song, but he just kept on playing, and his embellishments were so wonderful I didn't have it in me to tell him I had enough music for the lyrics I'd written. (I imagine something similar must have happened with Schubert's *Unfinished Symphony*; he was probably winding up to really let loose on the last movement when his publisher came in and said, "Yeah, that's all I need for today.")

So I ended up writing some more lyrics in order to fill out the music that Dr. Rieth had provided me. If you have a copy of the 2011 Astronomers Songbook\*, go to page 17 and look at "*Eclipses, Transits and Occultations*," which I'm now calling, "*Phases, Eclipses, Transits and Occultations*." Thanks, Dale!

\*If you don't and are interested in getting one, I'm working on the 2013 edition and hope to be able to bring them to the SEPA conference in Jacksonville in June.

Anyway, here's a bit of the dialogue, plus the new song lyrics.

**Planetarium Director:** Oh, don't forget, we also covered the chapter on moon phases and eclipses. You need to know that the moon, and all of the planets for that matter, shine by reflected sunlight, which means that they cast shadows on other objects, and

also on themselves. As the moon goes around the earth, it moves about thirteen degrees a day against the background stars, causing it to rise almost an hour later each day. So when a lunar month begins, you'll find it low in the west at sunset as a thin crescent. A week after that it's in the south at sunset, and its phase is half, more formally known as a first quarter moon, since the moon's travelled one-quarter of the way along in its orbit. Then a week after the quarter moon it's a full moon in the east at sunset. Those are the waxing phases of the moon; from that point on it begins to wane as its shadow moves across its own face again.

**Student 1:** You know, I think I understand about crescent moons and half moons, plus solar and lunar eclipses, but I get confused when we're talking about transits and occultations.

**PD:** Hmm, remember we had a transit of the planet Venus, not too long ago. That's when you see the planet pass directly between us and the sun. Using protective filters of course.

**Student 2:** I missed it.

**PD:** That's okay, there'll be another Venus transit in about a hundred and five years.

**S2:** Umm, I might be busy that day.

**PD:** Oh, too bad. I'm looking forward to it. Now an occultation happens when, for instance, the moon passes in between us and a star or distant planet and blocks our view of it, which happens quite often, as the moon makes a complete circuit of our skies every month. And all of these events - eclipses, transits and occultations - tell us a lot about the moon and the sun and the planets, their sizes and distances, their orbital speeds, not to mention -

**S1:** Stop, stop, it's T.M.I.!

**PD:** T.M.I.?

**S2:** (confiding to PD) Too much information.

**PD:** Well, that's why we write songs to explain the concepts.

## PHASES, ECLIPSES, TRANSITS AND OCCULTATIONS

By Jon U. Bell, 6/5/04; 4/6/11; 12/30/12  
(music from the Largo movement of the *New World Symphony*, by Antonín Dvořák, 1893)  
Audience: All Ages

1. See the moon in the west  
At the close of day,  
Slender crescent in the west  
Waxing on its way.  
  
Quarter moon in the south  
At the close of day,  
A week since new, half a moon  
Waxing on its way.  
  
Moon now full in the east  
At the close of day,  
Bright full moon sets at dawn,  
Waning starts today.
2. Shadows fall out in space  
Cast by worlds alight,  
Sunlight shines on those worlds  
Making day and night.  
  
When the earth's shadow falls  
Upon our moon it slips,  
Earth between moon and sun –  
Lunar eclipse.  
  
When the moon's shadow falls  
Upon our planet slips,  
Moon between earth and sun –  
Solar eclipse.
3. Transits rare do occur -  
Inner worlds aligned,  
Silhouettes on the sun  
Years apart in time.  
  
As the moon sails along  
Passing 'cross the sky,  
Blots stars and planets from our view –  
Occultation's nigh.  
  
Shadows fall on our path  
Darkness fills our sight,  
(But) high above, looking down –  
Stars shine in the night.

# News From SEPA Region

## FLORIDA

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GeoGraphics Imaging and  
Consulting, Bradenton, FL  
Jetson1959@aol.com



### Florida Planetarium Association (FLORPLAN)

Contact George Fleenor for details.

### 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 *Solar System Odyssey*, *Magic Sky*, *Clouds of Fire*, *African Skylore*, and *Women Hold Up Half The Sky*.

We continue to rotate shows on Wednesdays, and these shows include *The People*, *The Mars Show*, *The Voyager Encounters*, *Dawn of Astronomy*, *A Dozen Universes* and *Astrology: Fact or Fiction?*.

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. We usually have one telescope set up to view sunspots, and watch flares through a Hydrogen-Alpha filter on another.

### Hallstrom Planetarium Indian River State College Fort Pierce, FL

Jon U. Bell reports: It's been a while since I've submitted an update for Indian River State College's Hallstrom Planetarium; I feel a little like Commander Tebok of the Romulan Star Empire when he tells Captain Picard, "matters more urgent caused our absence." Of course, I haven't been off fighting aliens like the Borg ("Fighting?" More like "being assimilated!") But perhaps a better analogy is when in the *Princess Bride*, Fezzik tells Miracle Max that he's on the Brute Squad, Max responds, "You ARE the Brute Squad." That's how it is to be a one-person planetarium operation, something a LOT of you can identify with.

So in between school group visits, public shows, college classes to teach, production and maintenance work, and a great many time-consuming administrative tasks (Hey, the *Southern Association of Colleges and Schools* is coming to evaluate us again, what fun!), it's hard to keep up good communication with colleagues.

Here are a few highlights from the past year.

In early 2012 I presented a couple of basic public shows, "Winter Skies," and "Spring Skies," as a large part of my audience is interested in learning the constellations and hearing some of the stories about them. And since last year's budget had almost no funds for production work, this seemed to work out well all around. I took the opportunity to add several more all-sky constellation figures from my dwindling Kodalith collection too.

Last May I taught several of my astronomy students about Inca astronomy, and through the College's *Study Abroad* program, had the opportunity to visit the ruins of Machu Pichuu, Ollantaytambo, Sacsayhuaman and Cuzco. Some great astronomy, (and like the Aztec and the Maya, a lot of attention paid to the position of the sun,) but I've discovered that the two-mile high elevation of Cuzco is now too high for me; the last time I was there, in 1986, I had a little headache for a couple of hours and then I was fine. This time around, I found myself waking up every ten minutes gasping for air. So I'm

either going to have to limit myself to a mile-and-a-half from now on, or take some oxygen – which they sell in the pharmacies in Cuzco for about \$15 a bottle, thankfully.



*Machu Pichuu has both a solar temple and, at the summit, a solar noon marker for both the world equinox and the local equinox.*

Saw a lot of you folks in Baton Rouge in the early summer at the SEPA/IPS conference in Baton Rouge. Thanks so much to Jon Elvert and the staff of the Irene Pennington Planetarium (and the museum staff as well!) for a great week of talks and events!

As summer ran out, our college students came back and classes got underway. A few years ago I began writing my own astronomy textbook. It gets printed in color at IRSC's print shop and is sold by our bookstore for just \$16 a copy, quite a savings over other introductory books which cost over a hundred!

School groups came in for field trips too, and our local county found funding to pay for the buses for the kids this year. The following statement is probably true for your facilities too – the programs we offer are not just supplements to the class curriculum, they're often the backbone of their astronomy education; planetariums provide teachers as well as students with activities, observation opportunities,

and lots of just good basic information about astronomy.

For the autumn public program, I gave another live lecture and star talk, "The Goldilocks Planet," which I decided to do instead of a show about Maya astronomy and the supposed end of the world. I had a good story outline, starting with a Maya creation myth, and going through the various meso-American constellations, etc., but as I started doing the storyboarding, I realized I needed something like an immersive video system, or at least a lot of great all-sky artwork that was not in my possession. Since my production budget this year is essentially zero again, I decided to talk about the Kepler spacecraft results, as well as work in the Drake equation and the search for extraterrestrial life – a topic that's great to put out as a slide show type program, along with an identification of some of the stars being discussed (did you know that Kepler 10b is at the third point of an equilateral triangle that includes the star Vega and the star Eltanin in Draco? Well, now my audiences do!)

This December saw the twentieth annual presentation of "Star of Wonder," at the Hallstrom Planetarium. This is the show I wrote back in 1989 and co-produced with the folks at the Bishop Planetarium in Bradenton when John Hare was the Director. It and earlier versions of it had run at the Peninsula Planetarium at what's now the Virginia Living Museum in Newport News when I worked there from 1979 through 1992, plus I had done lots of these presentations of the "Star of Wonder" program which Dr. Ken Franklin wrote for the Hayden Planetarium during the couple of years I interned there. The earliest record I can find of this topic being treated in a planetarium was going back to live lectures in 1938, again at the Hayden. As Dr. Franklin used to observe, "We're locked into a great tradition." I know that I see many of the same faces every year that we present it, so it's kind of up there with such traditions as caroling, going to see *The Nutcracker*, and so on. I am looking at a re-write of this classic program which I hope to introduce in the coming season.

On December 12, I presented, "The Last Lecture," debunking the supposed Mayan prediction of the end of the world. No one in my audience believed in

this latest of the Chicken Little series, but they were interested in how it all came to be. If you're still wanting to talk about this subject (hard to believe, but you never know,) check out Dr. Ed Krupp's (Griffith Observatory), "Time's Up" on YouTube, which gives an excellent synopsis of the predicted event.

On December 15, Jonn Serrie came in to perform *Yuletides* in our theater, which played to a full house and gave me a chance to throw whatever planetarium special effects and lighting I could come up with to go along with this beautiful seasonal music that Jonn played for us on his many, many keyboards!



*In his 2011 appearance, Jonn set up eight different keyboards, making for a very crowded console area! This year he only brought six...*

On December 21<sup>st</sup> the world did not end, just as I predicted!

Next up after the Christmas break, we have a new production of "Space Songs," (see elsewhere in this Journal.) Then we'll bring back *The Planets* with Kate Mulgrew, (spring star id version,) which was funded and produced by SEPA and also features Jonn Serrie's adaptations of Gustav Holst's composition, *The Planets*. This is about the fourth time I've run the show as a public program (and it's always available to upper elementary – high school groups the rest of the time,) but we keep getting requests for it!

**The Bryan-Gooding Planetarium / Alexander Brest Space Theater  
Jacksonville Museum of Science and History  
Jacksonville, FL**

Thomas Webber reports: Now that we know the world did not end, those of us at the Bryan-Gooding Planetarium have only one thing on our minds: SEPA! We are looking forward to hosting the 2013 SEPA Conference (June 25 – 29) and have already been laying some groundwork for what we know will be an outstanding and rewarding event.

Arrangements have been made with the Crowne-Plaza Hotel in downtown Jacksonville, which is right across the street from the Museum of Science & History. Since plans are being made to shuttle guests to and from the airport, no rental car will be needed for your visit! A day-trip to KSC and several speakers are also planned, so mark your calendars. The website and registration information will be available soon.

**GEORGIA**  
 contact: David Dundee  
 Tellus Museum  
 Cartersville, GA  
 DavidD@tellusmuseum.org



**Fernbank Science Center Planetarium  
Atlanta, GA**

April Whitt reports: Fernbank hosted a Jonn Serrie concert in early December, to a packed house. Jonn's music and the Zeiss sky made a great duo, as evidenced by enthusiastic audience comments afterward. The NASA exhibit "Destination: Station" will be here at Fernbank during April and May 2013. An interactive exhibit with a number of elements, the exhibit showcases and celebrates the achievements and innovative discoveries made aboard the International Space Station. Everyone is invited to come participate in the exhibit, and see if it's something your institution might want to consider hosting. It will be our focal point for Astronomy Day .

An exhibit of images "From Earth to the Universe" that was displayed at Hartsfield-Jackson International airport here in Atlanta has a new home at Fernbank Science Center. The images were part of the International Year of Astronomy celebration, and can be viewed at [http://www.fromearthtotheuniverse.org/DigitalFETTU\\_Visitor.php](http://www.fromearthtotheuniverse.org/DigitalFETTU_Visitor.php)

The panels will rotate through an exhibit space here. Here's another opportunity - anyone interested in borrowing some of the images, send me an e-mail message. We're more than happy to share.

And we're experimenting with "experiences." Given the high cost of transportation to the science center, we'll be offering several-hour to day-long sessions for elementary students: a planetarium lesson followed by several classes in life and physical science, aligned with curriculum standards by grade level, allowing teachers to get multiple field trips in one visit.

Spring planetarium programs for the public include our adaptation of "Beyond the Pyramids" from the planetarium in Cape Town, South Africa for the general public, and our own "Stars over Africa" for family audiences.

Plans for summer include the latest Ring World release from NASA featuring the Cassini mission.

The observatory and its incredible volunteers have been busy. A run of clear nights brought Jupiter-watchers out in force.

And we welcomed ePlanetarium's full dome projection technology into our planetarium theater with an end-of-the-world party on December 21st. Oh wait. If you're reading this....

**Planetarium  
Tellus NW GA Science Museum  
Cartersville, GA**

David Dundee reports: This past fall has been an exciting one for us: We launched our first capital campaign for a new planetarium projector and more interactive exhibits in the museum. We utilized a

grant through our partnership with the Smithsonian to hold our first digital workshop. This trained participants to use the robotic telescopes out in Arizona, take images and learn how to process the images. The final part of the program was to have an exhibit in the museum of workshop participants processed images. It was great experience and we have applied for another grant to do it again. This fall in the planetarium we featured the program "Wildest Weather in the Solar System." We also rented a laser system from AVI to do Halloween laser shows. With the help of Georgia Tech we did a Family Science Night featuring lasers, interactive laser exhibits and laser shows in the planetarium.

**Smith Planetarium  
Walker County Science and Technology Center  
Chickamauga, GA**

Jim & Shirley Smith report: The Smith Planetarium reopened on October 2, 2012 with a new Konica Minolta MediaGlobe II projector. Attendance as of mid-December 2012 has been just over 2,000 with 25% being adults. We are mainly serving Walker County students but have had some groups from bordering counties. School groups pay \$4.00 per student for admission. Public programs are provided free on the first Sunday afternoon each month and the last Tuesday evening each month.

All planetarium programs begin with a live survey of "the sky tonight" followed by a seasonal STAR-GAZING program that highlights the most prominent and easy-to-find stars and constellations of the season. This is followed by one of several full dome programs such as: "Season of Light," "One World One Sky," "Kaluoka'Hina, The Enchanted Reef", or "Two Small Pieces of Glass".

Slowly but surely, our building is getting better after the storm damage that occurred just after our first opening in May 2011. The lobby now has photos from Space Images and the display area is being remodeled. Our rock and mineral collection is being unpacked and prepared for display. We are in full recovery mode!

**Georgia Southern Planetarium  
Georgia Southern University  
Statesboro, GA**

Becky Lowder reports: Becky Lowder reports: 2012 brought an exciting year of astronomy/space education and fun at our newly renovated planetarium and we're looking forward to the new year ahead. Our university students, physics faculty, and staff are continuing to create new short presentations as we also continue to learn all the scripting and capabilities of our Digistar 4 system. The university students, visiting K-12 school groups, and the public really like the full-dome immersive and interactive experience as we take them live anywhere they'd like to travel within our solar system, Milky Way Galaxy, and even out to the edge of the known universe. Being able to immerse your students and visitors into the basic astronomy concepts so they have a better understanding is so very important. Yet sparking that sense of wonder, to feel a connection with the sky and to want to learn more is priceless to me and what we strive to do.

In addition to our live interactive star shows with hands-on activities and presentations, we've added some new shows we share with the university students, public, and school groups at no charge while we teach our university ASTR 3790 students during their directed study class time:

Planetary Visions – A Solar System Adventure (Produced by Bays Mountain Planetarium)

Stars: The Powerhouses of the Universe (Produced by the Sudekum Planetarium at Adventure Science Center)

Two Small Pieces of Glass: The Amazing Telescope (Produced by Carnegie Science Center, 'Imilao Astronomy Center, and Interstellar Studios)

Ice Worlds (Produced by Evans and Sutherland Productions)

IBEX: Search for the Edge of the Solar System (Produced by the Adler Planetarium)

And coming soon - Life: A Cosmic Story (Produced by the California Academy of Sciences)

Along with members of the Statesboro Astronomy Club, we did a LOT of outreach at public school science nights with our telescopes and hands-on NASA Night Sky Network activities. We hosted a "scout Saturday workshop" for girl scouts and boy

scouts as well at the planetarium.

The Georgia Regional Astronomy Meeting (GRAM) was held at Georgia Southern University in October and the attendees were treated to a demo of our D4 system.

For the first time ever we gave a "rock show" in our planetarium, Dark Side of the Moon (Produced by Starlight Productions), and it was a huge success, especially with the university students and us older Pink Floyd fans. In December 2012 we showed Let it Snow - A Holiday Music Adventure (Produced by the Clark Planetarium) to the delight of about 600 visitors that one day/night. We had long lines of visitors waiting and ended up giving 10 shows back to back instead of the planned 5. The skies cleared and we also gave telescopic viewing of Jupiter and more after dark. We're looking into how visitors can make reservations online to avoid all the long lines and waiting.

In 2013 we are planning on more monthly public evenings showing Life, Ice Worlds, Stars, and two new "rock show" productions from Starlight Express: Wish You Were Here and The Wall. We're looking forward to sharing views through our telescopes, especially when Comet PANSTARRS appears around March, so until next time, wishing everyone clear skies.



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

Ross Workman reports: We have wrapped up a successful Christmas season here at Golden Pond. With Season of Light, Laser Holidays, and our live interpretation of the Star of Bethlehem, we were able to

satisfy our visitors who wanted a Holiday program.

November saw a very successful first try at a program geared toward choosing and using a telescope. With the help from the Western Kentucky Amateur Astronomers, we were able to demonstrate, answer questions, and suggest ideas to over 50 people! This program is already planned for November 2013!

We had a Geminid Meteor Shower Party planned for the weekend of December 15, but clouds and drizzle knocked out of that opportunity.

We are going to try a first at Golden Pond. The Planetarium will be open during January and February. These were typically our production/maintenance months, but with the installation of the Mediaglobe II last February, our downtime will be minimal.

Our observatory has received a much needed facelift. The old, weathered siding has been replaced, new doors, and other needed upgrades were completed in mid-December.

Both the Planetarium and Western Kentucky Amateur Astronomers are making plans and gearing up for the 50th Anniversary celebration for Land Between The Lakes in 2013. We are seeing this as wonderful outreach and public education opportunity.

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

Steve Russo reports: As I am writing this on January 2nd, we apparently survived another "end of the world"!

Fall and Early Winter has been very busy here at the EKSC; busier than last year.

School attendance, special weekend public programs for Halloween, birthday parties, and the annual science fair, all added to an increase in attendance over last year at the same time.

Our exhibit hall now has new exhibits about telescopes, the Orion Nebula, and waterways. Our latest

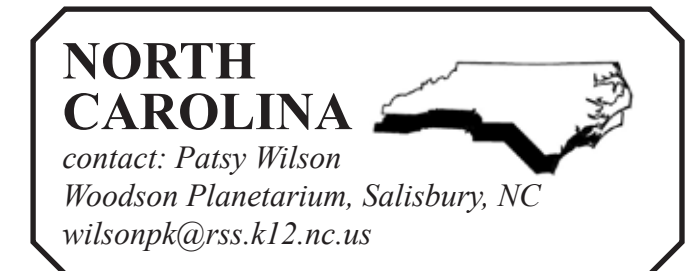
exhibit is a Hurricane Simulator which is popular with kids and adults. This will be expanded into an exhibit about hurricanes in general.

During December, our Star of Bethlehem Christmas show, the only program produced totally in-house, was so popular that we had to add several night and weekend programs, along with our Laser Holidays laser show.

We are looking forward to 2013, with new exhibits and planetarium shows for the new year.

And please don't forget, that I am the contact for the state of Kentucky for the News From SEPA Region. I want to hear from all of the Bluegrass State planetariums. E-mail me [srusso0002@kctcs.edu](mailto:srusso0002@kctcs.edu) or [srltts@suddenlink.net](mailto:srltts@suddenlink.net)

Until next time, "Look To The Skies!!!!"



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

Amy Sayle reports: The state school science curriculum in North Carolina has been revised this year. In addition to solar system content, the 6th grade science standards in astronomy now include content on seasons, lunar phases, tides and eclipses. To support learning in these areas Morehead has developed demo sequences for the dome using the powerful real-time visualization tools provided in our Sky-Skan DigitalSky fulldome software. For seasons, one of the live-presented sequences shows the Earth-Sun system from space, displaying how Earth's tilt influences how high or low in the sky the midday Sun appears to observers in the northern and

southern hemispheres. Another cluster of sequences displays the Sun's apparent paths and durations across the sky as experienced from Earth's surface at various times of the year as seen from locations in the northern and southern hemispheres as well as from the equator.

Additionally, Morehead has developed a new seasons-related interactive "Discovery Class" for interested teachers called "Built to Tilt." It includes a variety of hands-on activities. One includes a Sun lamp and small Earth globes with special pins inserted to represent gnomons (or people) in the northern and southern hemispheres. In the activity, students can see how high or low the Sun will appear in the sky based upon the length of shadows cast by the inserted pins. Another particularly fun activity in the class incorporates small solar-powered cars designed to show how different angles of incoming sunlight result in greater or lesser amounts of energy during the seasons.

**Jams H. Lynn Planetarium  
Schiele Museum of Natural History  
Gastonia, NC**

Jim Craig reports: Beginning in January, the James H. Lynn Planetarium will present "The Voice of the Night: American Indian Star Legends." This is an original production created by Jim Craig, planetarium director. It's actually a reworking of an older program with a new voice track and computer animated characters. It focuses primarily on legends of tribes native to North Carolina such as the Cherokee and Catawba. Slated to run for the public in January and February, we plan to include it in our catalog of programs offered to school groups throughout the year.

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

Dave Clavier reports: In the early morning of Christmas Eve, the Pisgah Astronomical Research Institute was burglarized. The perpetrators stole in excess of \$80,000 worth of electronic equipment, scientific instruments and meteorites.

For fourteen years we have worked hard, with limited resources, to provide Science, Technology, Engineering and Math (STEM) education and research to students and visitors from around the world.

If you go to our website at [www.pari.edu](http://www.pari.edu), you can read about this event and see some pictures. Two suspects have been identified and some of our property has been recovered. Some items are still missing and some of the recovered property is damaged beyond repair.

We will now work hard to find new funding and resources to be able to repair our facilities and to replace the items that are gone or unusable.

We would like to thank the Transylvania and Henderson County Sheriff Departments, all the local media and members of the meteorite collectors' community for all they have done to help us during this sad event. The PARI staff and volunteers have been working tirelessly during the holidays to deal with this situation.

**Margaret C. Woodson Planetarium  
Horizons Unlimited, Rowan-Salisbury Schools  
Salisbury, NC**

Patsy Wilson reports: Changes are in the air at the Woodson Planetarium. On May 31<sup>st</sup>, Patsy Wilson will close the door on twenty years of service to Horizons Unlimited and the planetarium. She plans to retire from teaching, but not from her affiliation with SEPA and the many wonderful people in our special field. In a unique proactive decision, the school superintendent has graciously agreed to hire her replacement now so that a detailed, thorough training and indoctrination period can happen. It is with great pleasure that we introduce Jennifer Barbee to SEPA. (see photo) She will begin work at Horizons Unlimited on January 23<sup>rd</sup> and will spend all of second semester learning the ropes. Plans are being made to have Jennifer at SEPA with Patsy so that all of you can meet her and properly welcome her into our midst.

Our public opening in January will feature our yearly salute to the winter skies with **Starry Winter**



*Jennifer Barbee - Welcome to  
the Woodson Planetarium and SEPA*

**Nights.** In February, we will resurrect **Daughter of the Stars**, an old slide-based show we've recently had converted to digital format.

Sixth graders in our school system are participating in a lab-based program called **Thermal Insulators: What to Wear to the Moon and Beyond**. They work in teams using knowledge of energy transfer, properties of matter and characteristics of Mars to work to design a bio-suit for future exploration of Mars. They test their suits in a simulated Martian environment (a cooler with ice) on model astronauts (small water balloons with faces drawn on them). The challenge is to design a suit that will closely maintain the initial temperature for ten minutes. It has been well-received by students and teachers alike.

## TENNESSEE

contact: Kris McCall  
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**Bays Mountain Planetarium  
Kingsport, TN**

Adam Thanz reports: Greetings All! We're all a buzz about the two new, hopefully great, comets coming this year. And true to Bays Mountain fashion, we're creating a new, unique full-dome show about comets. It is called "Comets & Discovery." It is not dated in any way and will be usable for years. It should be ready for distribution this Spring. The show is much more than a straight narrative about comets. The show takes the viewer on a journey of discovery. We follow two intrepid comet hunters in first-person. One, a modern explorer. The other, Caroline Herschel. The famous 18th century huntress that ruled the skies for many generations. With both, we learn how they each searched the skies, made their discoveries, and reported them for other astronomers to bear out. We also learn about how, depending on the century of the observer, what people thought comets were and their importance to them. We are using green-screen technology, 3-D environments, and good ol' fashioned still art. Together with a captivating script and sumptuous score, this will be a great show for the whole family or school group.

We are also incorporating two live sequences to enhance the learning and fun. The first will be an activity to involve and engage the audience to learn more about the parts of a comet, the path a comet takes, and the dust and ion tails that splay out in their correct directions as the comet orbits the sun. The second sequence will use a facility's star projection system and focus on any upcoming comets to see in the sky and how to view them.

For the Spring, we will be running NSC's "Astronaut." It will be interesting to see how our audience likes this show. I think it will work well. We'll also



be bringing back “Connections” as our 2 p.m. show in the Spring. This was our premier show for our theater when we opened four years ago. It is still extremely popular with the public.

On a personal note, how much snow did you get in mid October 2012? I received about 12” at my house! Robin & I also went to NYC this winter and braved Times Square on New Year’s Eve. This was quite an experience. Two million were estimated to be in attendance. Lots of running about trying to get “in” to then be put into holding pens that held a few thousand people each. We were on our feet for ~12 hours or more, many miles of streets covered, and no bathrooms of any kind. We ended up just past 50th on Broadway, about eight blocks from the ball. There were twice as many people behind us that wrapped around buildings well out of eye-shot of the ball. The scariest part was when stanchions were opened up for people to go into a pen, the whole crowd of people all around us moved at the same time to get in. I held a tight grip on Robin to make sure we didn’t fall or get separated. This mass movement occurred twice. The second time, we moved towards the side railings as those people weren’t moving with the flow and were in a safer environment. Who says you don’t apply fluid dynamics in your daily life?

We visited with some family while there and mentioned that we saw They Might Be Giants in Brooklyn. Upon discussing this, their version of “The Sun Song” came up and I said that it was written by Hy Zaret. Here’s where it becomes a small world. The husband of one of my cousins grew up in a professional musician’s home and Hy was a family friend! “The sun is a mass of incandescent gas, a gigantic nuclear furnace.É”

In addition to all the other cool NYC things to do, Robin & I visited the first mathematics museum in the US. It is called the National Museum of Mathematics, is in the midtown area across Madison Square Park from the famous Flatiron Building, and opened on Dec. 15th, 2012. Lots of adults and kids were there, all engaged in mathematical frivolity! The exhibits are all hands-on and cover all sorts of math concepts. The designs were very nice and there was interpretive material, but off to the side. The only thing I would suggest to them is to defi-

nately have docents help with each of the exhibits so visitors not only knew how to use the exhibit, but also what to learn from it. I’m not complaining as they were less than two weeks old and they’ll have a learning curve for the new facility. I wish them a great future and a high time for pi.



*The entrance to the Museum of Mathematics in New York City.*

### Sharpe Planetarium Memphis, TN

Dave Maness reports: As I write this, I can hear the wind howling outside due to a pre-winter cold front coming through. The weather in the mid-south (as this area calls itself) is volatile this time of year. Temperatures were in the low 70’s yesterday and will likely be down in the 20’s tonight.

The autumn season began with our annual Crafts Fair. Our display was a little different this year as I was put under the same tent with all of the Pink Palace operations. Normally I would have had

the telescope set up for safe solar viewing, but no luck on this day. Also the wind was blowing things around a bit.



*I took this picture during the few seconds of clear sky we had that day.*

*In keeping with tradition, Santa arrived via helicopter on the day after Thanksgiving.*



He took his seat in the exhibit gallery near the Festival of Trees in order to talk with children a bit and offer Holiday photo opportunities.



*The trees in the juried decorating competition were very creative this year. One was decorated with medical instruments and another made up to look like a snowman.*

If I judge correctly from our growing stack of ticket stubs, it looks like December will be a good one for attendance. But by the time you read this, the Holidays will have come and gone and we will be settling in to the winter schedule with *Wonders of a Winter Night* as our seasonal program. For the feature show in the first week of the New Year, I will be doing some live tours of the current night sky that I call *Under Memphis Skies*. After that, *The Cowboy Astronomer* returns for a winter engagement. I am a fan of Baxter Black and this is one of my favorite programs. It has several good winter-related stories that fit well with the season. In March, I plan to bring back *Bear Tales and Other Grizzly Stories*, another great family program.

Plans are still moving toward renovations. I expect that about this time next year, we should be about to close for a complete overhaul of the Sharpe Planetarium. It will then become the area’s newest Full Dome digital facility. In addition to that change, we plan to replace the carpeting, clean and repaint the dome, add a cove trough and LED cove lighting, replace the seats, carpeting, and upgrade the sound system. There are likely a few other details that have escaped my mind for now. Unfortunately, the fate of the big Konica/Minolta Series IV projector has not been determined as yet. I am hoping it can

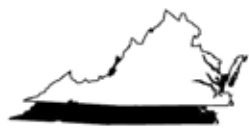
at least be displayed along with our little Spitz A1, and Astro-Dome Model 5100 planetariums (see below).



It isn't too early to start thinking of items for the SEPA Silent Auction. Instead of re-gifting some of your "white elephant" holiday gift items, you might consider bringing them to the Jacksonville conference. No, I won't be bringing these projectors for the auction.

## VIRGINIA

contact: Kelly Herbst  
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Newport News, VA  
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### John C. Wells Planetarium James Madison University Harrisonburg, VA

Shanil Virani reports: 2012 was an enormously busy and productive year for the John C. Wells Planetarium at James Madison University. At the start of the year, Shanil Virani was appointed Director of JMU's state-of-the-art hybrid facility, one of only 6 like it in the entire USA. Shanil came to JMU from Yale where he did PhD studies with Dr. Meg Urry on hidden populations of supermassive black holes in the nearby and distant Universe. Prior to Yale, Shanil spent 5+ years as part of the ACIS and Science Operations team of the Chandra X-ray Observatory which is operated and managed by the Smithsonian Astrophysical Observatory located at the Harvard-Smithsonian Center for Astrophysics in Cambridge, MA.

When Shanil took over as Director, typical annual attendance at the Planetarium was ~8,000 people per year. During the 2011-2012 academic year, our attendance was just over 12,500 people! Our regular Saturday afternoon public shows at 2:30 and 3:30 were near capacity so we added a 4:30 show! At each presentation not only do we present a full dome video in HD and 5.1 surround sound but we also raise our Goto Chronos and do a live star talk featuring the beautiful Shenandoah Valley night sky. Increased attendance and community connections were enabled via many successful initiatives. We now hold monthly public star parties where we setup several of the Department of Physics & Astronomy's Meade 10" telescopes on campus and invite the Shenandoah Valley community to look up! Our monthly star parties nicely complements our weekly solar observing observing done every Saturday afternoon (when it is clear!) using the Planetarium's several Coronado PSTs! We have

also made an effort to connect with the community by hosting "Astronomy at the Farmer's Market" on the last Saturday morning of every month where do more solar observing, kids make their own comets and then eat them, and market visitors get the opportunity to talk to real astronomers and scientists!

We have also started a somewhat regular series of public presentations on Thursday or Friday evenings. Our inaugural speaker was Dr. David Leisawitz who is the Project Scientist of NASA's WISE Observatory. He spoke to us about "Reaching for the Stars: Space Exploration & Humanity's Quest to Understand Everything". Last semester also saw JMU's own Dr. Jennifer Mangan, who spoke about climate change, and Dr. Matt Chamberlin who spoke about the Mayan calendar. Obviously, the whole 2012 doomsday nonsense was a critical part of our public science engagement as it was everywhere else too. At the start of the year, Shanil authored his own "Debunking 2012 Doomsday Prophecies" for the Planetarium's website which reached audiences as far as South Africa and Poland! At the end of September, Dr. Phil Plait -- the one and only "BAD ASTRONOMER" -- gave



Dr. Phil Plait gave a public presentation at JMU entitled "2012: We're All (NOT) Gonna Die!" on Thursday evening, September 27, 2012. The "BAD ASTRONOMER"'s talk drew more than 700 JMU students, faculty and area residents for his entertaining debunking of all the 2012 doomsday nonsense. Pictured here is JMU Planetarium Director Shanil Virani, second from right, with Dr. Phil Plait (middle). Surrounding Phil Plait are the incredible student operators of the John C. Wells Planetarium at James Madison University!

a public presentation entitled "2012: We're All (NOT) Gonna Die!" to an audience of ~700 JMU students and area residents!

Note that ALL these presentations were recorded and are available as podcasts via our website (<http://www.jmu.edu/planetarium>). To that end, our electronic footprint is getting larger and larger by day! Our Facebook page (<http://www.facebook.com/jmu.planetarium>) now has 656 "likes" while our Twitter feed (<http://www.twitter.com/JMUPlanetarium>) has 625 "follows"! Growing our presence online has really allowed us to initiate online community learning to improve science literacy. Our "Why Physics?" YouTube video has already been seen more than 2,500 times from people around the world! Lastly, we have been working with local groups on preserving our gorgeous Shenandoah Valley night skies by increasing awareness of light pollution and fixes community members can implement to preserve our night sky where we are fortunate that we can still see the Milky Way on a Moon-less night. To that end, on Saturday evenings this past March and April we screened the acclaimed documentary "THE CITY DARK" which profoundly demonstrated how light pollution is not simply a problem for astronomers. 2013 has just begun and we can't wait to see what's in store for us this year! Please join us online via our Facebook and Twitter communities!

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

Kelly Herbst reports: The Virginia Living Museum is back up and running with our lower level open! Guests were welcomed back into the lower level in mid-December, and we're very glad to be fully open again. Sadly, due to some negative press coverage, many locals thought the museum went completely out of business after the flood. Our attendance has been markedly down, and between the fiscal damage from the flood and the still struggling economy, 2013 is looking to be a very difficult year for us. But we remain hopeful that things will improve now that word is spreading that we've successfully recovered from the flooding.

Staff areas are still under reconstruction, however, and that means that we're all still kind of piled on top of each other. But that's okay – many of us remember the days before the new main building opened when we were all always crammed on top of each other! It's like old times! January should see the completion of staff areas, and everyone moving into their own spaces – or into new ones as we take this opportunity to repurpose some areas.

January will also bring a little closure to the planetarium – literally! We'll be closed all of January to make up for having to remain open in September, our usual maintenance period. So John and I will spend January fixing seats, cleaning, and programming shows. Fun!

In February we'll reopen on the 2nd to a Groundhog Day celebration! We'll feature our home-grown show starring a woodchuck (Go SEPA!) called *Assignment: Earth*, and hopefully explain to all the groundhog fans that the happy little rodent has nothing to do with the seasons changing. After that, we get back into standard programming with *Legends of the Night Sky: Orion* for the preschool set, our live show *Virginia Skies*, and the beautiful *Oasis in Space* from Spitz. *Oasis* hangs around for only a couple weeks until our next exhibit "Through the Eyes of the Eagle" opens. This series of paintings dealing with childhood diabetes will be paired with *InnerSpace* in the planetarium – focusing on the human body, how it functions, and how medicines can help the body stay healthy. 2013 is bringing a new focus on human health to the museum, and we're excited to be a part of it.

Our End of the World party on December 21st was fabulous! We spent a fun evening running planetarium and laser shows, screening a variety of doomsday films in the café (while munching on a delicious sampling of popcorn!), and of course, watching the skies for incoming meteors. We also made tin foil hats to keep the alien mind control rays out, and covered ourselves zombie tattoos, just in case it turned out to be a zombie apocalypse. All in all, we had over 400 very happy people turn out to celebrate Mayan New Year with us.

But what about the End of the Universe? Meh. It's nothing but a gnab gib.



*Alien Hat (above) and Zombie Tattoos (below)  
VLM/Judy Triska*

**Radford University Planetarium  
Radford University  
Norfolk, VA**


Rhett Herman reports: I had a photography group (Exposure Roanoke) come in and they used the planetarium to get some practice/insight on taking astrophotos. They captured some really nice images, at least to my untrained eye. They have placed these images here: [http://www.exposureroanoke.org/photos/all\\_photos/?photoAlbumId=11451612](http://www.exposureroanoke.org/photos/all_photos/?photoAlbumId=11451612)



*Tom Cerul of Exposure Roanoke*

**WEST VIRGINIA**

contact: Tracey DeLaney  
Planetarium, WV Wesleyan College  
Buckhannon, WV [delaney\\_t@wvwc.edu](mailto:delaney_t@wvwc.edu)



**Planetarium  
West Virginia Wesleyan College  
Buckhannon, WV**

Tracy DeLaney reports: It's new arc-lamp time for our old Spitz A3P! Having meticulously tracked the hours on our last new bulb, we now know that 100 hours takes about 1.5 years for our use. We have 3 cup assemblies, one of which, I just learned, is an old model that Spitz no longer services.

For the first time since I've been planetarium director (3.5 years), we had no requests from school groups for shows this fall. Perhaps business will pick up in the spring.

Our attendance is hit or miss. For some shows we have a nearly full house and for others we have only a few people. We only run shows on the 1st and 3rd Saturday's of each month. Our shows aimed at young kids do quite well, but we have so few programs for that age range. Our foremost goal next year is to find more shows aimed at kids.



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