

Southern Skies

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Table of Contents

SEPA Officers.....	3
President's Message	4
IPS Report	7
Editor's Message	8
Bookends: The Book Nobody Read	12

Classroom Comments:

Negotiate Your Syllabus with Your Students	15
News from SEPA Region.....	20

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Ken Brandt
Robeson Planetarium
Lumberton, NC

“...Earth is where we make our stand...”
- Carl Sagan, *Pale Blue Dot*

You see it almost everyday. It has been coined “the Overview Effect”, and it is here that my message is themed. Earth as a planet. We have that perspective gifted to us in most of the planetarium programs we present to our audiences. Seeing the world as it is, without borders or nations. Mecca, Jerusalem, Rome are all indistinguishable from space. Our curse and exhilarating freedom is that we are privy to both views of Earth - the fearful local one, and the uplifting global perspective.

I always point out this global perspective, stopping in mid-program when necessary, to try and bring it

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.



home, a square peg into the very small round holes of audience experience. In the long-range views, such as earthrise from lunar orbit, my audience is bidden to do the “Tom Hanks maneuver” - cover up the Earth with the thumb. Many exclamations of “Wow,” and “Ooh” issue forth. Then I say, “wouldn't it be great if all 7+ billion of us would just get along?”

It colors my worldview. It causes me to treat my fellow humans with more compassion and with peace in my heart. What it also does on most days is cause me to weep. And then I'll be witness to some random act of kindness, often making one of my own. Then I remember hope.

Although it isn't holiday time usually, I'll also tell my audiences: “peace on earth. That (circle image with laser pointer) causes me to see the world a little differently-without all the petty divisions.” Not exactly happy fluffy bunny time in the dome, but screw that. It's a perspective people desperately need to be exposed to.

And so my recommendation to you -spend some time with that overview image, if you don't already, and make sure your audience sees it for what it is also. It may open the door to bigger appreciation of the perspectives you are trying to get them to see in space during your presentation.

(Continued on page 14)

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IPS REPORT



John Hare
ASH Enterprises
Bradenton, FL

I will represent SEPA at the upcoming IPS Council meeting to be held on June 18 and 19, immediately before the IPS conference. Please contact me if you have any business to be brought before Council as well as any other business regarding IPS. An ongoing initiative, Vision 2020, is chaired by Jon Elvert. The results of the Vision 2020 initiative are intended to revamp IPS and to give IPS a more vital role in the future of planetariums. Visit the IPS Website for further information on this as well as a multitude of other planetarium related topics.

2016 IPS Conference
IPS 2016 will be held in Warsaw, Poland. The dates are June 19 to June 25.
Early Bird registration runs through March 30 and is \$420. Standard registration is \$475 and runs

through April 30. Late registration is \$525 and runs through May 31. On-site registration is \$550. The banquet is separate at \$80 per person.

The money you save by registering early will go a long way in Warsaw as well as other Eastern-European locations that tend to be priced much lower than Western-European destinations.

Be sure to book your airline ticket early since June is high-season for European travel, and cheap seats will sell out quickly.

Follow this link for registration and further information for the conference, <http://www.ips-planetarium.org/?page=ips2016home> You must be an IPS member to attend as a delegate. Spouse and guest registrations are also available.

You can obtain membership forms from IPS Treas-

(Continued on page 14)

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

James Sullivan
Buehler Planetarium & Observatory
Davie, FL

I love being in a planetarium. I love the general excitement of children when they sit down. And I am mildly amused by the predictable questions the adults ask. Where is the best place to sit? Will you be able to run the show tonight – it's cloudy outside? Followed closely by, when will you be opening the dome. Mostly, I am amused by the sarcastic answers I run through only in my mind.

The one thing I love, however, is the way people react when they realize how far the planetarium has come since they were the third grader sitting and watching a show that I very well may have given. I love the oos. I love the wows. But somehow I am still a little heart-hurt by people's parting comment, "wow, planetariums are one of the best kept secrets, aren't they." Just a thought.

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

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



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)

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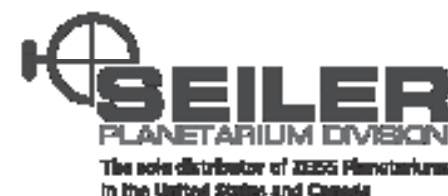
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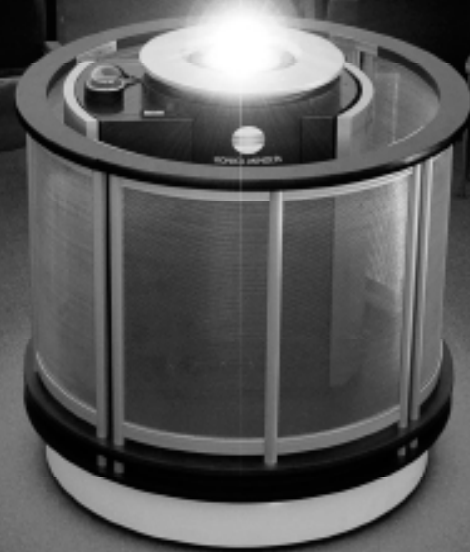


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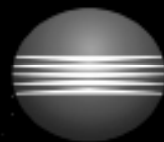
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BOOKENDS

Robin Byrne
Northeast State Community College
Blountville, TN

The Book Nobody Read: Chasing the Revolutions of Nicolaus Copernicus by Owen Gingerich

“The Book Nobody Read: Chasing the Revolutions of Nicolaus Copernicus” by Owen Gingerich refers to Nicolaus Copernicus’ book “On the Revolutions of the Heavenly Spheres.” In 1959, Arthur Koestler wrote a history of early astronomy and said that nobody had actually read Copernicus’ book. Gingerich set out to see if that was actually true.

The story begins in 1970 when Gingerich was asked to be part of a committee making plans for the upcoming 500th anniversary of Copernicus’ birth, which would be the focus of many celebrations in 1973. Talking with others on the planning committee, Koestler’s comment about nobody reading “De Revolutionibus” sparked an idea. Find as many copies of the first and second editions to see if there are notes in the margins (a pretty good indicator of having actually read the book).

That seemed simple enough... Three decades later, Gingerich completed “An Annotated Census of Copernicus’ De Revolutionibus.” “The Book That Nobody Read” chronicles those 30 years and many of the surprising events along the way. As a collector of rare books, Gingerich was a natural for such a project. He had connections, both in academia and in the book collection circles, to help him get started. He had the credentials to get access to rare book collections in many universities and museums. And he knew the kinds of things to look

for when studying the books, including the type of paper used and how the binding was made. When *De Revolutionibus* was published, books were not sold already bound, but as loose sheafs of paper. It was up to the purchaser to have the pages bound, so the variety of bindings are as extensive as the number of books sold.

What makes this book so interesting are all of the unexpected twists and turns Gingerich encountered. For many books, there is not enough information to determine the original owner. But with others, some detective work revealed who first bought the book and was responsible for the marginal notes. The process of figuring out who bought the books is fascinating, frustrating, and, in some cases, disheartening when discovering that they were on a completely wrong trail.

In his quest for finding the owners, Gingerich became quite an expert at identifying handwriting, and could quickly recognize certain people from just a few words. However, in one case, he was stumped until he realized that the person was using a new font that he had personally created. Many books were passed on between people, so there would be multiple hands to decipher. Add to that the tendency for students to copy word-for-word what their professor or mentor had written in their own copy, and you will find the exact same notes in multiple books, but in vastly different styles of handwriting.

Some of the books could be placed geographically due to how they were edited. The Catholic Church had sent out a list of parts to be crossed out and changed, to keep the text in line with the current geocentric view of the heavens. A picture of one section from Galileo’s copy shows that he did dutifully cross out the offending lines, but did so lightly enough that the words could still be easily read. Interestingly, only copies in Italy had the “required” edits, while other Catholic countries, such as France

(Continued on page 13)

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Bookends (Continued from page 12)

and Spain, ignored the edict.

As Gingerich continued his quest to find all known copies of the first two editions, he, naturally, became an expert on *De Revolutionibus*. As such, he found himself involved in more than one case of investigating stolen books. With his extensive list of each book, which includes measurements of page size, type of paper, binding, and, of course, the annotations that were made, he was an invaluable source for identifying specific copies. He could also find when copies had been altered. If a few pages were lost, it was not uncommon to borrow pages from another, incomplete, version, to create a single complete copy. Unfortunately, this also means that it ends up mixing versions from more than one owner. One more difficulty when trying to determine original ownership.

When Gingerich began his hunt for these books, the iron curtain was alive and well. His description of his adventures in the USSR and East Germany are

not only interesting concerning the book, but also as a glimpse of our recent political past.

If you enjoy the history of science coupled with a detective story, then you will certainly enjoy “The Book Nobody Read: Chasing the Revolutions of Nicolaus Copernicus.”

References:

The Book Nobody Read: Chasing the Revolutions of Nicolaus Copernicus by Owen Gingerich, Penguin Books, 2004.

President's Message (Continued from page 4)

As you read this, Rick Evans is making the preparations for what will be an outstanding conference. Please extend a warm and felicitous welcome to our friends from WAC, who will be joining us at conference this year.

I'll leave you for now with a quote from Apollo XIV moonwalker Edgar Mitchell: "You develop an instant global consciousness, a people orientation, an intense dissatisfaction with the state of the world, and a compulsion to do something about it. From out there on the moon, international politics look so petty. You want to grab a politician by the scruff of the neck and drag him a quarter of a million miles out and say, 'Look at that, you son of a...'"

Peace on Earth.

IPS (Continued from page 7)

sure, Ann Bragg at ann.bragg@marietta.edu, myself at johnhare@earthlink.net, or at the IPS Website, www.ips-planetarium.org

IPS 2018

Toulouse, France will host IPS 2018. Conference dates are July 1-6. Details will be available as the dates draw closer.

IPS 2020

Invitations are now being accepted to host IPS 2020.

Interested parties should submit their invitations to IPS no later than the 2016 IPS Council meeting to be held on June 18 and 19. See the IPS Website for hosting details. The 2020 site will be chosen at the 2017 IPS Council meeting.

Classroom Comments

Negotiate Your Syllabus with Your Students

Tim Slater
University of Wyoming
Laramie, WY

Many astronomy teachers dread spending time going over the course syllabus. That's OK, because students usually hate hearing us read the syllabus to them too! But, what if the first day of class could be different? What if instead you could have a different scenario, one in which students are deeply engaged with your explanation of the syllabus?

We all know what a syllabus is, but we too often forget that your syllabus really is a vitally important foundation for your class. Sure, the syllabus provides a course description (important for transfer students who need to get credit for your class), the required textbooks (important to demonstrate both the level of the class for colleagues and to let students know what materials they will need to purchase), and provides your course policies on office hours, attendance, plagiarism, and equal opportunity statements.

What if instead you thought about your syllabus as the scholarly and intellectual design of how you intend to coach your students through demonstrating mastery of the course topics? Unfortunately, when dealing with human beings, one size definitely doesn't fit all. And, as with any collaborative team you are responsible for coaching to top performance, your players will have varying strengths and weaknesses. The best coaches know how to leverage what players do well and compensate for players' weaknesses in order to build a winning program. In other words, if a one-size-fits-all plan

doesn't work to bring out the best performance of a collaborative team of individuals, why would a one-size-fits-all syllabus work for your class?

Consider instead of using a one-size-fits-all syllabus, to adopt a 'negotiated syllabus.' A negotiated syllabus provides critical flexibility to account for your students' academic (or pragmatic) strengths and weaknesses.

Possible Negotiated Grading Scheme:

- Attendance – 5% to 20%
- Homework – 5% to 20%
- Term Paper #1 – 5% to 15%
- Term Paper #2 – 5% to 15%
- Exam #1 – 5% to 20%
- Exam #2 – 5% to 20%
- Final Exam – 10%-30%
- TOTAL MUST EQUAL = 100%**

In the case of a negotiated syllabus, students can tweak their grade calculation to play to their strengths and compensate for their weaknesses. Imagine a student who has trouble with consistent childcare->they should reduce their grade's reliance on attendance. Consider a student who believes they are a strong writer but a lousy test taker->they could reduce their grade's weighting on exams and increase it for homework and term papers. Because most of us calculate student grades in a spreadsheet or online course management system, it requires surprisingly little time to create a specific grade-calculation-formula for each student based on their choices.

It is important to emphasize that this negotiated formula is to be agreed upon during the first month of class, and not allowed to be revisited later in the semester. Otherwise, this approach is nothing more than an optimized grading scheme students. I recommend repeated announcements that the negotiated syllabus cannot be renegotiated after the first month.

The goal here is to enhance students' buy-in and build their ownership in the course and, in particular, to encourage them to understand the course requirements in the syllabus from the very first day of class. Used in this way, the negotiated syllabus can build a cooperative team mentality emphasizing that you want every student to be successful in your class.



Throughout Earth's violent history, impacts from comets and asteroids have mercilessly shaped its surface.

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Life on Earth owes its very existence to these denizens of the solar system, yet it could all be wiped out in an instant.

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It's not a matter of if, it's a matter of when...

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News From SEPA Region

FLORIDA

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Jetson1959@aol.com



Buehler Perpetual Trust Planetarium Seminole State College of Florida Sanford, Fla.

Derek Demeter reports: "The Emil Buehler Planetarium at Seminole State collaborated with local master storyteller "Country Joe" Rosier for a mixed medium program featuring live ghost stories under the dome for Halloween. The program featured about 8 stories done in candlelight and starlight projected from our MS-8. Afterwards we presented our "Into the West: Astronomical Origins of Halloween" which explored the origins of Halloween connected to the rising of the Pleiades in ancient Celtic tradition. In November we featured neuroscientist Max Jackson from the University of Central Florida for our fall "Dome Designers" program. Mr. Jackson showcased his brain sensor device known as "Cortex" which converts brain waves into digital signals. Using "Cortex" we were able to create abstract art projected onto the dome surface. The photo below shows a guest connected to the device and watching her brain waves displayed on the dome. The second picture what it looked like projected on the dome.

Our very popular program "Star of Bethlehem" for the holiday season was highly praised and sold out every showing. We also had a great end of semester program featuring holiday singing, storytelling, and a winter sky tour in our "Very Special Planetarium Holiday Special." Lastly it is with great sadness to inform you all that my colleague and best friend



Michael McConville, who has been working along side me for the past eight years, will be leaving the planetarium early spring and presented his last shows in December. He will be greatly missed as he moves onto other endeavors. His legacy and hard work will truly be remembered and remain integral in making this planetarium successful moving forward.

GEORGIA

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



Fernbank Science Center Planetarium Atlanta, GA

April Whitt reports: Fernbank Science Center offered several special events during the fall. October 29th brought the Navy STEM truck with a huge Dive Tank for students and the public to experience. Fun with Flashlights, our Halloween program for our youngest visitors and their parents, brought superheroes and fire dogs (in costume) to an interactive program that was well received. The fall Cosmic Camp-in featured chemistry activities at the end of Chemistry Week. Jonn Serrie's annual "Upon A Midnight Clear" concert in the planetarium was a beautiful start to the holiday season.

DeKalb teacher Susan Oltman and April Whitt have offered Science Night programs about their experience with NASA's SOFIA mission, and their presentation proposal has been accepted for the Georgia Science Teachers Association conference in February 2016.

We're looking forward to continued growth in our Fernbank Experiences program - combining a planetarium lesson with instruction in a variety of science areas, and to RADIANT Technology's Prismatic Magic laser presentations for Black History Month at the end of January 2016.

Best wishes to all for a safe and happy holiday season, and clear dark skies.

Planetarium Tellus NW GA Science Museum Cartersville, GA

David Dundee reports: This fall has been very busy. In fact the museum is having the best attendance year we have ever had, edging close to the 200,000 mark as I write this. The planetarium also has had a

good year seeing over 20,000 for school programs and about 70,000 public so far this year. We opened "Solar SuperStorms" in September along with an encore performance of "Wildest Weather in the Solar System." We host a nice crowd for the International Moon Watch in the observatory in September. In fact in spite of all the rain this year we have hosted over 5,000 visitors to the observatory. For Halloween we did our first "Spooky Night" in the museum and we had lots of happy costumed visitors in the observatory and planetarium. November we opened "Star of Bethlehem" and "Santa's Secret Star". This is the first time we have offered a children's Christmas show.

I just learned that John Burgess died. He was one of the founders of SEPA. Hosting the first SEPA conference in Atlanta in 1970 at Fernbank Science Center. I worked with John for many years at Fernbank. He retired from Fernbank some twenty years ago and worked for a short time at the planetarium at Agnes Scott College in Decatur. He was a wonderful planetarian, teacher and friend. He will be missed.

Smith Planetarium Walker County Science and Technology Center Chickamauga, GA

Jim & Shirley Smith report: "Out of the ashes"..... or storage room..... come surprises. Items were quickly packed away after the gustnado of 2011, some just dumped into storage boxes and stacked away out of the damaging weather. New director John Hart has been unpacking and sorting through the packages where one day to his delight, he found a Peace Pole! He immediately recognized the pole having seen many of them during his Army days in Europe. Peace Poles are recognized as the most prominent international symbol and monument to peace. Peace Poles bear the message, May Peace Prevail on Earth, in a different language on each of its sides. Now, the Peace Pole has been placed in front of the Smith Planetarium entrance. Pictured with the pole from the left are Shirley and Jim Smith, Director John Hart and wife Carmen. The Peace Pole generates questions from students and public alike and acts as a photo memory spot. Speaking of memories, on December 4, 2015, a group of Girl Scouts were working to earn their



Now, the Peace Pole has been placed in front of the Smith Planetarium entrance. Pictured with the pole from the left are Shirley and Jim Smith, Director John Hart and wife Carmen.

Astronomy Merit Badges at the planetarium. They were viewing the Pleiades through a telescope when they witnessed a large bright fireball low in the eastern sky! The sighting was verified by Dr. Bill Cooke of the Meteoroid Environments Office at the Marshall Space Flight Center. A stargazing experience not to be forgotten! Otherwise, activities continue with planetarium presentations for school groups and the public.

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

Dillon Marcy reports: It has been a busy year here at the Planetarium. We have had a lot of exciting Public Evenings and groups this year. Since the last journal we had are popular “Pink Floyd: Dark Side of the Moon” show which once again all 5 showings went sold out. Our Holiday show also received a large audience as both community members to hear the songs of the season, and University students came to unwind between studying for Finals. We have had around 10,000 visitors this year, and

with all the excitement that we have had it is time to look towards the future.

This coming spring we will of course have our Public Evenings once a month starting with “Ice Worlds” this January. We will follow it up with “Back to the Moon for Good” in February, “Wonders of the Universe” in March, and lastly to finish the Season off as we head to summer we will finish with “Lichtmond.”

Along with our Public Evenings we have partnered with the Department of Music here at Georgia Southern University to host the “Society for Electro-Acoustic Music Annual Conference.” During this Conference Musicians will compose music and pair it with visuals, and then present them mid-February at many venues around Statesboro and our own Planetarium!

We are also proud to be once again participating in the annual Science Olympiad. The Olympiad brings in students of all ages from the surrounding counties to test them in their knowledge of science. We will be assisting in the Astronomy section. Students will be tested on the names and identification of Stars, Constellations, and Astronomy concepts.

We will be kept busy this coming year, and we are looking forward to the fun we will have teaching and being taught by our visitors.

LOUISIANA 

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**Lafayette Planetarium
Lafayette Science Museum
Lafayette, LA**

Dave Hostetter reports: Autumn was an interesting time in Lafayette, a little quiet following one of the busiest summers in our Museum’s history but with some good highlights.


Bays Mountain Park Planetarium was kind enough to donate to us some great models of the Shuttle and a Gemini spacecraft, the Shuttle being about 7 feet tall and the Gemini being about 5 feet tall. Working on it a little every day we’ve gotten repairs and repainting completed on all of it but the Orbiter, and work is happening on that as the year ends. Once that’s done, we’ll get the Gemini ready. Current plans are to hang both of them in our Museum lobby.

We were partially successful in livestreaming the September lunar eclipse in conjunction with NASA TV. They used our rooftop camera to show the clouds that blocked the view of the eclipse for so many people around the country, and when our clouds broke as totality began they showed our image for over an hour. It was also picked up by the Los Angeles Times web site and by CNN, and we were really pleased to get that type of exposure!

In December we had beautiful weather to stream the daytime occultation of Venus. With only local advertising we had far fewer viewers than for the eclipse, but since the main purpose was for us to learn more about how to do such things, that was OK. Both the eclipse and the occultation videos are still available on YouTube by searching for the Lafayette Science Museum. We hope to do similar streaming for the transit of Mercury in May, possibly again in conjunction with NASA TV (weather permitting, of course!). Both the occultation and the eclipse were part of the development of our new rooftop observatory, currently under construction.

We haven’t abandoned our sidewalk astronomy events and still think it’s very important to have people actually look through a telescope rather than simply look at images on the Internet. Unfortunately many of those events were clouded out this year, but we were successful during the local December Festival of Lights (kind of ironic!) when nearly 300 people looked through our telescope.

Oh, yes, there’s also a planetarium here! We expect to end the year very close to last year’s public program attendance, the best in our planetarium’s history and double the attendance we had before our full dome upgrade.

NORTH CAROLINA 

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

Amy Sayle reports: DISCOVER YOUR UNIVERSE: Thanks to funding from the Carolina Parents Council, this academic year Morehead Planetarium and Science Center is offering a free program called “Discover Your Universe” for UNC-Chapel Hill undergraduates. In the first two events, 565 students attended live Carolina Skies planetarium shows, and about 700 participated in telescope observing at the Morehead Sundial. Morehead also collaborated with UNC’s Maker Network on a telescope build project, in which Raleigh Astronomy Club member Jim Pressley guided a team of undergraduates in designing and building an 8-inch f/5.7 Newtonian reflector on a Dobsonian mount. The students painted the tube to resemble a version of Van Gogh’s Starry Night, with UNC’s Bell Tower painted into it. The telescope saw first light at the second Discover Your Universe event on November 19, 2015.



UNC students show off their “Starry Night” telescope at their capstone event at Morehead Planetarium. Credit: S. Brian Owen.

NC STATEWIDE STAR PARTY:

Morehead is gearing up to coordinate the 4th annual North Carolina Statewide Star Party, which (we think) is the first and only statewide star party in the universe and which is a signature event of the NC Science Festival, produced by Morehead (www.ncsciencefestival.org). More than 40 public sky-watching sessions will be hosted across the state on April 8 and April 9, 2016, with the help of other planetariums (including some SEPA members), as well as observatories, parks, nature centers, colleges, and astronomy clubs. Thanks to funding from NC Space Grant, each host will receive a star party kit.

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

Jim Craig reports: We are moving forward with the upgrade and renovation of the James H. Lynn Planetarium. The first of the construction began on December 7. The last program with our Spitz 512 planetarium projector will be on January 3 after which we will close for two months for dome cleaning, seat repair, carpet replacement and installation of the new Spitz SciDomeXD Touch system. This will be our first major upgrade in 25 years so it's a very exciting time for us here.

PARI (Pisgah Astronomical Research Institute) Rosman, NC

Christi Whitworth and Bob Hayward report: PARI's New Executive Director: We are pleased to announce that the Pisgah Astronomical Research Institute has selected Stephen F. Saucier to serve as our new executive director.

Steve comes to PARI from the North Carolina Grassroots Science Museum Collaborative, where he served as executive director for the past four years. The NC Grassroots Science Museums Collaborative is a statewide network of 35 science centers, museums and children's museums dedicated to advancing STEM education.

"PARI is an active member of the NC Grassroots Science Museums Collaborative, so many of us

here have worked with Steve for several years," said Don Cline, PARI's president and founder. "We are delighted to now have him as a full-time, dedicated member of our team. Steve is intimately acquainted with PARI, our operations and our mission, and shares our passion for STEM education.

"He is also an ideal fit for the aggressive growth plans we are developing. In addition to supervising the day-to-day operations at PARI, Steve will be tasked with overseeing the development of a master plan for PARI that will encompass all aspects of our initiatives in science, education and public outreach. We are confident he is the right person to guide us into an even greater presence locally, regionally and nationally."

Prior to joining the collaborative, Steve founded Executive Vision Consulting, a museum consulting practice focused on interactive museums. Previously, he also served as founding executive director of KidSenses Children's InterACTIVE Museum in Rutherfordton, NC, head master/director of education at Waldo Burton Memorial School in New Orleans, and outreach director/science education coordinator at the Louisiana Children's Museum in New Orleans. Steve attended the University of New Orleans, where he was awarded a Master's of Educa-



*Steve Saucier, PARI's new Executive Director.
Credit: Alex Armstrong.*

tion degree and a Bachelor of Arts degree in anthropology and biology. He also earned a certificate in nonprofit management from Duke University. Ken Steiner, who has been serving as Interim executive director for 13 months, will remain at PARI working on special project such as the 12-meter radio telescope project. (See the Winter 2015 issue of *Southern Skies*.)

Public Attendance: Attendance at PARI's public programs, especially the monthly Evening at PARI programs has been growing very nicely. While attendance in the past was typically 30-40 for the second Friday evening programs, recent programs have hosted 80-90 and sent staff scurrying throughout the building to find more chairs for our guests. Attendance is especially good when skies are clear and the new "outdoor planetarium" (See the Winter 2015 issue of *Southern Skies*.) has served well as a venue for public observing sessions.

Observing Sessions for the Public: A comprehensive plan for public observing sessions in 2016 has been developed, the highlight of which will be the transit of Mercury on May 9. For that event, PARI staff and volunteers anticipate setting up a public observing area on the lawn of the Transylvania County Library in downtown Brevard as we did for the June 6, 2012 transit of Venus.

3D Planets opportunity for your educational program: PARI received funding from Oceanside Photography and Telescope's Southern California Astronomy Expo in July 2015 to take the 3D Planets program outside the state of North Carolina. If your educational program can bring together 16 middle school aged girls that are interested in designing tactile models of the Moon and Mars for people with visual impairments, contact Christi Whitworth for an application at cwhitworth@pari.edu. This program provides funding for staff time, meals and facility usage while your institution hosts the program. We are also looking for more partners in North Carolina as well.

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

Neil Pifer reports: Hello all! My name is Neil Pifer and I am the new planetarium director at the Margaret C. Woodson Planetarium in Salisbury, NC. The first 5 months on the job have been a whirlwind, to say the least. After 17 years in the classroom as a middle and mainly high school earth science and AP environmental teacher, I am excited to teach and work in this very special planetarium. We will be celebrating our 50th year of operation in 2017! I replaced a legend in our neck of the woods in Patsy Wilson. She has been such a wonderful resource about the equipment and the community. My first weeks would have been a colossal failure if it wasn't for her. Thanks Patsy!

As a new planetarian, I thoroughly enjoyed going to CAPE this past fall! Clay Anderson, a real, live astronaut, spoke and his story has reached past our facility into our middle schools and the kids love Clay's book. I always warn them how much bathroom humor is in it, but that seems to make the book even more interesting! The connections I made during CAPE have transformed the Woodson, as we are now a full-dome facility. We had 2 theaters filled to the brim with first graders and their parents to enjoy "Max the Dog Goes to the Moon." It was so exciting for the kids and for me! This couldn't have been possible without the knowledge and guidance of my new friends, Jack and Liz Dunn. Jack spent numerous hours on Skype talking me through the process of setting up a homemade mirror dome system for about \$900 and some scrap wood! Thank you, Jack and Liz!

Finally, if any of you are ever passing through Salisbury, NC and want to tour our 71 unidirectional seat, 30 ft dome, and the rest of our facility, please email or call anytime! I loved visiting Ken Brandt's facility in Robeson County earlier this semester. I learned a ton and he was so helpful. Can you believe our facilities were built the in the same year, renovated the same year (1986), both have a one-room schoolhouse on the property, and have the EXACT same star ball and control system? It was cool and weird at the same time.

I hope to meet many of you over the years, and as Jack says... Clear Dark Skies!

SOUTH CAROLINA

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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) enjoys using the oldest active full-dome system in our solar system. Our Digistar II system celebrated its 20th year of operation in 2015. To help the planetarium continue to be viable with increasing difficulty in finding repair and replacement parts, we were able to obtain some equipment from the Roper Mountain Science Center before they surplused old equipment after upgrading their planetarium system. Many thanks to the T. C. Hooper Planetarium Staff and Greg Cornwell for thinking of us.

In December, the planetarium enjoyed a successful Christmas season with its annual presentation of *Season of Light* from Lochness Productions. This holiday favorite continues to be one of our more popular shows with people in our area making it an annual event to celebrate the season.

In January, we presented *Ancient Sky Lore* and *Digistar "Laser" Fantasy*. *Ancient Sky Lore* is a live presentation that takes the planetarium visitors on a tour of the heavens as we discuss the history and stories of constellations from a variety of cultures. *Digistar "Laser" Fantasy* presents soothing music and a parade of shapes that dance on the dome during this laser-like program. Some of the shapes pick up speed and give people the sensation that the planetarium is in motion! This show includes a tribute to American astronauts and ends with a patriotic display of fireworks. We give a warning that the fast-paced motion makes a few people slightly queasy. Both of these shows are local productions.

In February we will show *Follow the Drinking Gourd*, based on the program by the New Jersey State

Museum Planetarium and the Raritan Valley Community College Planetarium. We updated the script somewhat to make it a little longer and to include some more astronomy. We also address some of the concerns that others have expressed about the accuracy of the facts in the show surrounding the song and the Underground Railroad. Also in February, the planetarium will present *The Explorers of Mauna Kea* produced by the Bishop Planetarium in Hawaii.

In March, the planetarium will offer *Engineering the International Space Station*, a local production, and *Blown Away: The Wild World Of Weather* from The New Detroit Science Center. *Engineering the International Space Station* is an interactive show that describes how 15 nations worked together to create the International Space Station (ISS). A rap and animations explain how weight, mass, gravity and speed are related, and why astronauts are weightless on the ISS even though there IS gravity in space. Benefits of the ISS to humanity is also discussed.

BlueCross BlueShield of South Carolina Planetarium South Carolina State Museum Columbia, SC

Liz Klimek reports: At the beginning of October South Carolina experienced catastrophic flooding unlike anything the area has experienced before. Fortunately, in spite of being right next to an overflowing river and breached canal, our museum fared well. By being up on a hill, the building was safe from the rising waters. However, the neighboring canal was a major concern, as it feeds the water processing plant responsible for most of Columbia's drinking water. Thus, while the museum itself sustained no damage, it remained closed for a week while the National Guard and various work crews scrambled to find a way to repair the canal. For days you could see and hear Chinook helicopters flying low over the building, carrying one-ton sandbags that were being filled in an adjacent empty lot and dropping them into the 60-foot breach. During this time, most of the museum's Education staff worked on what we could from home, but the weeklong closing definitely has impacted the museum as a whole.

Once the breach was sealed (a temporary solution

for now; the canal will have to be reengineered and rebuilt), it was great to be able to get back to work. Many of the school groups originally scheduled to visit during the closing were rescheduled into November and December.

Public attendance was unsurprisingly slow after we re-opened, as much of the community was still dealing with the aftermath of the disaster. However, we still enjoyed a happy Halloween, again featuring a fun Halloween laser show during the day and *Dark Side of the Moon* on Tuesday evenings, when the museum is open late. *Dark Side* was also featured once again as part of *Growl at the Moon*, the museum's special Halloween-themed evening event, as well as the Boston Museum of Science's artistic piece *Waiting Far Away*. Thanks to a local A/V lighting company, the outside of the planetarium was transformed into a giant jack-o-lantern that grinned mischievously at the city every evening after sunset from mid-October until November.

Despite the floods, the winter holidays have been pleasantly busy and attendance has been healthy. Our mornings have been filled with school groups, our afternoons with public shows, and many of our evenings with holiday rentals and special events. Similar to last year, we ran the Eugenides Planetarium's *Star of Bethlehem* and AVI's *Laser Holidays* quite heavily. On Tuesday evenings, we featured FirstLight's *Mannheim Steamroller Christmas Laser Show*. All three holiday offerings were very popular, and *Steamroller* even sold out one night! We've also started using our Digistar 5 system to add a few live special effects to our laser shows, which has kept things fresh for audiences and presenters alike.

As the holidays wind down, we're busy developing activities for astronomy-themed spring break and summer camps. Then there's also Astronomy Day to plan for and look forward to!

Looking back at 2015, the planetarium's first full year of operation, I'm incredibly proud and amazed at all we were able to accomplish. The planetarium's success is due to the support and combined efforts of everyone on our museum's Education team. The fact that we have such a creative and dedicated staff embedded within a strong and resilient community makes me excited about the year ahead!

TENNESSEE

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Bays Mountain Planetarium Kingsport, TN

Adam Thanz reports: Greetings Fellow Planetarians! The last time I wrote this article, we were getting ready to host 82 delegates to our annual StarFest event held each October. StarFest is now in the past and has proceeded swimmingly. Great speakers, activities, food, and even a clear sky on the Friday night of the event! I am now cogitating next year's event and working on another great theme. I may have to submit this to "Deep Thought" and wait 7.5 Myr to get the answer. Hmm..., "Tricky." We had a little excitement regarding our planetarium's media server. As you know theaters with full-dome use hard drives to play back full-dome content (of course you know!). Our system has an NAS device with three hard drives running with RAID 5. Well, we had some weird playback problems during one weekend. It was our intern's turn to work then, but I was there to do some training on a new show and for training on our evening StarWatch programs. It was good that I was there because we had to act fast to determine what was happening and how to fix it, or at least how to work with it. When we went to the display for the media server (the NAS), it had a black screen with some DOSsy text saying that it couldn't find the OS. [Bug-eyed emoticon here.]

When we designed the new theater a number of years ago, we wanted both full-dome and an optical star projector. So, our fallback position for that day was to do free, live star ID shows until we could figure out what was going on. [Not bad, since most folks want a show like that anyway.] After the evening's StarWatch viewing, I came back to the theater with a co-worker of one of our club members who works on repairing computers. He was serendipitously there for the viewing. He knew more than I about how to check the right areas in the NAS server and determine what was going on. As you've probably guessed, it was a hard drive. Actually, it was two of

the three. One was bad, the other was dying. This was not good as it needs n-1 drives to not lose data. We were approaching n-2! I know from experience that heat is the worst thing for drives. If it isn't able to have air to circulate about it or even a way to cool it down, it will fry up in its own juices and roast away. In the meantime, I called Jason at home to see if he knew anything to check. He suggested the same things as I, but he sent off a quick message to all the good folks at Zeiss to see if they could tell us what to look at or what to do. Luckily, he received a message a little later to document everything, especially from the logs, and send it on. I eventually shut the server down to not make things worse and went home very late that night. The next week was spent (mostly by Jason) copying files and transferring our most important shows to the slave computers that connect to each of the five projectors. If a slave computer has the show files and the correct file address is used for the new placement of said files, then the slaves don't need to look at the server. This was a good thing and it kept us running while we worked out this problem.

After a few weeks of lots of details that I won't bore you with, we were up and running. We were impressed that the drives had been used many hours each day, every day, for about seven years! And this was our only problem with the server. The moral of the story is to keep your drives cool, back up your files, and check your system occasionally if errors have been logged. Side note, I raise my external hard drives off the desktop to make sure air can flow all around it to keep it cool. You can actually feel that the drive is cooler.

We're still working on a few shows at this time. One will open in February. It is entitled "The Transit of Mercury - Featuring 'Solar Quest.'" I think you can guess what it's about. Jason has been working really hard on the show and I think, like always, that it will be a good one.

See you at the next article and at the upcoming SEPA conference in Alabama.



I'm already excited about it! I know it's going to be a good one.

Sharpe Planetarium Memphis, TN

Dave Maness reports: Dave Maness reports: By the time you read this the newly renovated Sharpe Planetarium will have been open for business for a couple of months. It has been a long and hard journey to get to this day. If a fire hadn't put a kink in our plans, we would have been open at least 6 months ago. But we have come through that adversity and I believe with the addition of a brand new dome from Astro-Tec, we have a much better result. As I write this, the new sign which pays homage to our major donor (Memphis-based) AutoZone, is being mounted above our entrance. We have a new name and are now known as **The AutoZone Dome at the Sharpe Planetarium**.



Our Grand Opening took place on January 30 at 9:00 a.m. with City dignitaries present including the Honorable Mayor Jim Strickland as well as representatives from our architectural firm Askew, Nixon, Ferguson, Konica Minolta, Asto-Tec, Magna-Tech and the production crew for our opening show. For our premier I chose **Firefall**. It seemed a natural choice for more than the obvious reason. It was produced by SEPA's own George Fleenor with artwork by former Sharpe Planetarium artist Joe Tucciarone. It is based on a script by architect's consultant Phil Groce and has an original score and sound design by frequent SEPA conference attendee Troy McClellan. I made sure that special invitations went out to the many crewpersons who worked on the project, to join us for the early morning celebration, so they could see the results of their work.



*Out with the old
In with the new!*



Along with the feature program we will offer **Seasonal Stargazing** with a live segment that will help give us some practice with the new system. The older favorite **Astronaut** is set to fill out the planetarium public offerings. In addition, we will add a children's feature on Saturday mornings. We expect that **One World, One Sky** will do as well for our community as it has in others. I also have a slate of programs that teachers can book for their classes. They include **The Secret of the Cardboard Rocket, Life: A Cosmic Story, Earth, Moon, and Sun**, among several others.

Needless to say we are all excited to get to work serving the community again with all new equip-

ment. I want to thank all of the people who worked hard to get back on our feet, the architect firm of Askew, Nixon Ferguson, Consultant Philip Groce, the good folks at Magna-Tech, Bowen Technovation, Astrotec, and Barnes and Brower general contracting to name a few. And of course all of you who supported us either in person, via social media, or simply wishing us well through silent prayers or contemplation. I appreciate all of it.

On a sad note, I need to report the passing of long time staff member William "Bill" Wood. While I was greeting a contractor to supervise our audio system connection and testing, a phone message from Bill's landlord reported the shocking news that he had passed away in his sleep on Monday morning, December 7 after working his shift at his other job with Fed Ex. Bill was here from my first day, working the weekend public shows. He adjusted to increased hours as we reopened to seven day per week operations. He helped with offsite events like our annual Coon Creek Members Day. In the late 1980's he was credited with setting up and conducting a safe public viewing of a partial solar eclipse at the famous Liberty Bowl stadium. More recently he donated much of his time working with a local school to build a model rocketry club that competed nationally. Bill was a big man with a big heart, and a winning smile. He lived a tough life. His health was never very good but he never complained and tried to keep positive at every setback. Just over a year ago, he buried his mother (his last direct relative). While the renovations were ongoing, he conducted flat-screen astronomy programs. He always asked me how the project was coming along and he watched it come together step by step. He was excited as any of us, anticipating the opening of the new planetarium. Very sadly he passed away less than a week before he was to have started to train on the new facility. He will be greatly missed.



VIRGINIA

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Chesapeake Planetarium Chesapeake, VA

Robert Hitt reports: The Chesapeake Planetarium is replacing its 53 year old Sptiz planetarium projector with a new digital system. The new system will be cove mounted allowing for additional seating when the new building is constructed in a few years. In preparation for the new installation the interior dome is being painted and the electrical circuits in the building are being updated. The new digital system will be unique in that a duplicate set of computers will be installed offline to facilitate production of new programing. The duplicate computers will allow program development without interrupting programs in progress in the planetarium theater. Installation should be completed in the spring.

Abbitt Planetarium Virginia Living Museum Newport News, VA

Kelly Herbst reports: Winter has finally arrived in Virginia along with the new year. Hope everyone enjoyed their holidays!

The Virginia Living Museum is celebrating 50 years in 2016 and we've opened the lovely program Stars to Starfish to mark the occasion. The mix of incredible nature photography and space science is perfect for us as a nature and science center. We've also brought back the very popular **Legends of the Night Sky: Perseus and Andromeda** for the preschool set and of course we have our live show, **Virginia Skies**. We're looking forward to a wonderful 50th year of operation.

There are numerous events planned for 2016 to celebrate our 50th anniversary, including, but not limited to, visits from Bright Star Children's Theater, a special event with Jack Hanna, themed Star Party

events, a masquerade ball, and many more. Plus the winter brings us our usual Groundhog Day event, special showings of **Follow the Drinking Gourd** for Black History Month, Reptile Weekend, and many other exciting things. So we will be busy in the coming months, that's for sure!

I have to share a couple of the beautiful photographs taken by my friend Wendy Nelson in the planetarium. She was working on a photography challenge and shot these amazing pictures as part of it, then kindly gave them to us to use in advertising and the like. Photography in the planetarium is notoriously tough, and I think she did a great job!



May 2016 be a happy and prosperous year under all our domes!

Radford University Planetarium Radford University Norfolk, VA

Rhett Herman reports: Radford University has a new planetarium! It will be open for everyone sometime in mid-February, although it's fully installed now. The delay is simply because the new lab science building in which it is located is in the process of having its final details completed. More details to come!



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