

Southern Skies

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Journal of the Southeastern Planetarium Association

Fall 2014

LUNAR ECLIPSE

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David Dundee
Tellus Science Museum
Cartersville, GA

For my last presidential column, I thought I would drift into something a bit more esoteric. I went to a lecture recently given by a local archeological society about Civil War activity on Hilton Head Island. It was on Hilton Head that the town of Mitchelville was established in 1862. This was a town for

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\$100.	Full-page 7" wide x 10" high
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freed slaves and at its height, a few thousand people lived there. It was named Mitchelville for Ormsby Mitchel, a major general for the Union army. Before the war he was an astronomer, and his nickname was "Old Stars." In fact, he had two towns named for him, as well as an observatory, some mountains on Mars and even a crater on Mars bear his name. So who was Ormsby Mitchel?

Mitchel was born in Kentucky in 1810. He graduated from West Point in the same class as Robert E. Lee. After graduating, Mitchel became an assistant professor of Mathematics at West Point.

Later, he moved to Cincinnati, passed the bar and became an attorney. He then joined the faculty of Cincinnati College becoming a professor of mathematics, philosophy, and astronomy. Ormsby Mitchel built the Cincinnati observatory, established the Cincinnati Astronomical Society, established a law school and in his spare time he was chief engineer of the local railroad. (Did this guy ever sleep?) He was a famous lecturer in astronomy; his lectures at first attracted a dozen or so people, but in a few years his lectures typically attracted over 2,000 people. His lectures were considered the most brilliant in America.

He moved on to Albany, New York as the astronomer at the Dudley Observatory. Mitchel then helped establish observatories for the United States Navy and at Harvard University. He also published the first monthly magazine in the United States devoted to astronomy.

(Continued on page 20)

SAVE THE DATE JUNE 23-27



SEPA CONFERENCE 2015



SEPA 2015 is HERE at the

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IPS REPORT

John Hare
ASH Enterprises
Bradenton, FL

You can obtain membership forms from IPS Treasurer, Shawn Laatsch slaatsch@imiloahawaii.org, myself at johnhare@earthlink.net, or at the IPS Website, www.ips-planetarium.org.

Congratulations to Joanne Young for her election as IPS President Elect. Joanne assumed the vacant position on her election in September. She will automatically move into the position of IPS President on January 1, 2015.



The 2016 IPS conference will be held in Warsaw, Poland, June 19-25. The conference hosts announced that they intend to put out an early call for papers. Conference details will be included in a future issue of *Southern Skies*.

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.

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: _____

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Editor's Message

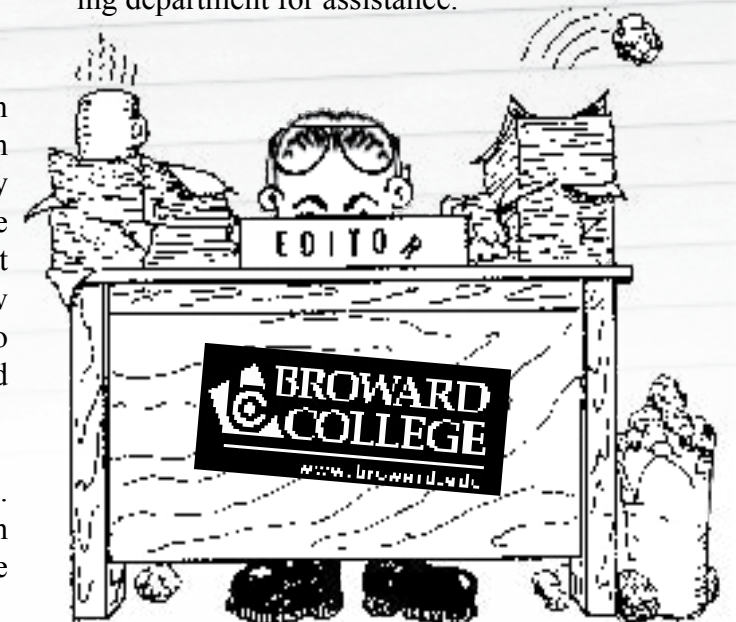
Submission deadlines: January 1 (Winter), April 1 (Spring), July 1 (Summer), October 1 (Fall).

James Sullivan
Buehler Planetarium & Observatory
Davie, FL

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

With great thanks, I'd like to welcome Robin as an Associate Editor. Her *Bookends* column has been a regular fixture for a long time. She was finally gracious enough to accept the title for the work she has been doing for many years. So, please reach out and thank her for her participation. I don't know about you, but finding time to read is difficult. So having someone who suggests good things to read is invaluable. Now, how about you?

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.



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Small Talk

Elizabeth Wasiluk
Berkeley County Planetarium
Hedgesville, WV

Hey where did the summer go? Whoosh, and it was over.

Since I had to get my last edition of "Small Talk" in before July happened, I thought I should tell you of my adventures at both McDonald Observatory and SEPA 2013. Who out there does not like "Stardate"? Did you know that McDonald Observatory in Ft. Davis, Texas has some of the best teacher workshops each summer? I was fortunate to attend two of them, one on Infrared Astronomy as well as one last July on Stardust, Linking Galaxies to Us. It was great fun and who can resist the dark skies of Ft. Davis, TX? But unfortunately, we did not have very dark skies due to a very bright moon. We still got to use a great observatory style telescope and had great talks and did a kinesthetic astronomy activity by creating an H-R Diagram. The best part was getting tours of all the telescopes and learning how they are readapting the Hobby-Eberly Telescope for searching for dark energy. Our guide for the week was Dr. Keeley Finklestein and she also had her husband talk to us via Skype. We packed a great deal into three and a half days. If you get a chance to get away in the summer, I highly recommend a workshop at McDonald Observatory. Apply early, I think the cutoff date is sometime in February. Here is a link: <http://mcdonaldobservatory.org/teachers/profdev>



Left: This is where we stayed while at McDonald Observatory

Above top to bottom:

** Me on the telescope deck with the Hobby-Eberly telescope in the distance*

** The participants of the "Stardust: Connecting Galaxies To Us" Workshop in front of the Hobby-Eberly telescope*

** Me at the cool retro control board at one of the telescopes.*

(Continued on page 19)

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BOOKENDS

Robin Byrne
Bays Mountain Planetarium
Kingsport, TN

The Elusive Neutrino: A Subatomic Detective Story by Nickolas Solomey

This month, I'm back to ye olde bookshelf for another book review. This book is "The Elusive Neutrino: A Subatomic Detective Story" by Nickolas Solomey and was published in 1997.

Solomey gave a series of lectures in 1994 as part of his role as the 39th Compton Lecturer of Physics at the University of Chicago, Enrico Fermi Institute. His lecture series was about the neutrino, and from those lectures, he created this book. From the date, this is obviously going to be a little dated (he briefly discusses the "future" Large Hadron Collider toward the end of the book). However, the information about the history of neutrinos, which is the majority of the book, is as relevant today as it was 17 years ago.

Solomey begins with the discovery of radioactivity and the work by the Curies. He moves on to the work by various scientists, including Bohr and Rutherford, who ultimately determined the structure of the atom. Then we venture into the world of quantum mechanics, with Fermi, Pauli, and Feynman and their contributions. The different types of radioactive decay are discussed, as well as the production of neutrinos during the decay process.

Solomey's area of expertise is instrumentation, so his descriptions of the various theories of physics leave something to be desired. He means well, but it just doesn't come through. Living in the South, the phrase "Bless his heart" comes to mind. He

does a much better job describing the various techniques and apparatuses used to detect neutrinos and other subatomic particles through the ages. This is clearly where his passion lays. Thumbing through the book, you will see loving images of equipment and spray patterns from atomic particle collisions.

However, where I really cringed was when he ventured into the world of astronomy. He clearly didn't understand all of the astronomical concepts he wrote about, and often made them much more complicated than necessary to get his point across. Not being a nuclear physicist, it makes me wonder how much of his discussion of quantum physics was equally distorted.

Is this a book worth reading? If you are interested in the history of our understanding of neutrinos, then yes, but be prepared for a slog to get to where you want to be. If you are looking for a quick read on the beach, then an unqualified "no" would be my answer. All in all, the best part of "The Elusive Neutrino: A Detective Story" was the title.

The Elusive Neutrino: A Detective Story by Nickolas Solomey; Scientific American Library, 1997.



A New Planet

April Whitt
Fernbank Science Center
Atlanta, GA

This is a speech given by Mark Twain. It was originally published in Harpers' Weekly on January 30, 1909 and reprinted in his book "Europe and Elsewhere."

I figure it's timely for the New Horizons mission arriving at Pluto next year.

THE NEW PLANET

Speech by Mark Twain

(The astronomers at Harvard have observed "perturbations in the orbital movement of Neptune," such as might be caused by the presence of a new planet in the vicinity.)

I BELIEVE in the new planet. I was eleven years old in 1846, when Leverrier and Adams and Mary Somerville discovered Neptune through the disturbance and discomfort it was causing Uranus. "Perturbations," they call that kind of disturbance. I had been having those perturbations myself, for more than two months; in fact, all through watermelon time, for they used to keep dogs in some of the patches in those days. You notice that these recent perturbations are considered remarkable because they perturbate through three seconds of arc, but really that is nothing: often I used to perturbate through as much as half an hour if it was a dog that was attending to the perturbating. There isn't any Neptune that can outperturbate a dog; and I know, because I am not speaking from hearsay. Why, if there was a planet two hundred and fifty

thousand "light-years" the other side of Neptune's orbit. Professor Pickering would discover it in a minute if it could perturbate equal to a dog. Give me a dog every time, when it comes to perturbating. You let a dog jump out at you all of a sudden in the dark of the moon, and you will see what a small thing three seconds of arc is: the shudder that goes through you then would open the seams of Noah's Ark itself, from figurehead to rudder post, and you would drop that melon the same as if you had never had any but just a casual interest in it. I know about these things, because this is not tradition I am writing, but history.

Now then, notice this. About the end of August, 1846, a change came over me and I resolved to lead a better life, so I reformed; but it was just as well, anyway, because they had got to having guns and dogs both. Although I was reformed, the perturbations did not stop! Does that strike you? They did not stop, they went right on and on and on, for three weeks, clear up to the 23d of September; then Neptune was discovered and the whole mystery stood explained.

It shows that I am so sensitively constructed that I perturbate when any other planet is disturbed. This has been going on all my life. It only happens in the watermelon season, but that has nothing to do with it, and has no significance: geologists and anthropologists and horticulturists all tell me it is only ancestral and hereditary, and that is what I think myself. Now then, I got to perturbating again, this summer — all summer through; all through watermelon time, and where, do you think? Up here on my farm in Connecticut. Is that significant? Unquestionably it is, for you couldn't raise a watermelon on this farm with a derrick.

That perturbating was caused by the new planet. That Washington Observatory may throw as much doubt as it wants to, it cannot affect me, because I know there is a new planet. I know it because I don't perturbate for nothing. There has got to be a dog or a planet, one or the other; and there isn't any dog around here, so there's got to be a planet. I hope it is going to be named after me; I should just love it if I can't have a constellation.

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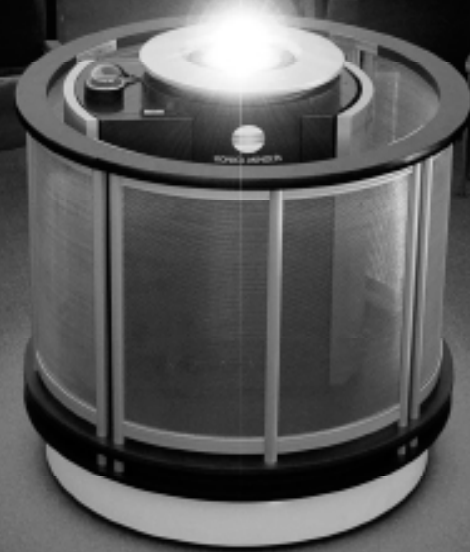
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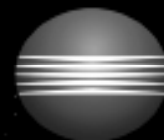
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SEPA Business Meeting

**Sanford/Lake Mary,
FL - July 18, 2014**

Patsy Wilson
SEPA Secretary

President David Dundee called the meeting to order at 12:04 pm with a quorum present.

Minutes of the 2013 business meeting were distributed and approved. (Fleenor/Brandt).

The treasurer's reports for the 2013 fiscal year and the first half of 2014 were distributed and approved. (Whitt/Groce). The current balances are as follows: Interest bearing checking, \$45,134.63; Operating, \$14,151.08 and Professional Development Fund, \$10,086.56.

Website: Drew Gilmore asked to be replaced as webmaster. He described the nature of this task. Phil Groce asked about the cost of paying for this service considering the financial status of SEPA. Gilmore mentioned that the amount of time needed is minimal, but added that the website is in need of a redesign that enhances the functionality. Groce suggested adding information about state meetings and astronomy resources. Brigit Collins estimated that updating costs would be \$1,200 to \$2,500. It was suggested that a small group of people should

look at what functions are desired and what costs would be involved. Gilmore will be a part of the transition.

Southern Skies: Dundee asked members to make an effort to communicate and report to their state coordinator whose names are printed in each journal. NC is currently looking for a new coordinator. Anyone interested should contact James Sullivan, editor.

IPS Report: John Hare reported on Vision2020, an IPS initiative to look at the organization and how it might grow in the 21st Century and be more viable to its membership. Paul Knappenberger, current President-elect, has resigned. Members have until August 11st to vote in a special election between Joanne Young and Steve Savage to serve as his replacement. The regular election will be held from September-November. Candidates include: Thomas Kraupe-Past-President, Shawn Laatsch-President-Elect, Lee Ann Hennig-Secretary; Ann Bragg-Treasurer. IPS 2016 will be held in Warsaw, Poland. Invitations for IPS 2018 are closed and Salt Lake City, Utah is the only site that made a bid. IPS Council will make the final determination on the site.

Election of Officers: Candidates were introduced as follows: President – Kris McCall and Derek Demeter; IPS Representative – John Hare; Secretary-Treasurer – Patsy Wilson. No nominations were received from the floor. Motion made and approved to close nominations. (Bochenski/Collins) Demeter, Hare and Wilson were elected.

SEPA 2015: Dundee reported that conference will be held June 23-27, 2015 at Tellus Science Museum in Cartersville, GA. The museum has adequate meeting and banquet facilities that can be used at no charge. Holiday Inn next to the museum would serve as conference hotel at a cost of \$70 to \$80 per night including breakfast. Registration would be \$145 and all meals will be provided. A field trip to the U.S. Space and Rocket Center in Huntsville, Alabama will take place on Thursday. This will include a visit to the Redstone Arsenal, dinner at Monsanto State Park, home of the Von Braun Planetarium.

(Continued on page 18)

New Business: Holly Hennessey reminded members of the opportunity to apply for a Thomas Hamilton Planetarium Fund Scholarship (planetariumscholars.web.com). Awards range from \$500 to \$5000. She received one that paid her IPS and SEPA dues.

Joanne Young asked how new members were being recruited. Discussion followed regarding how members should be recruiting as they interact with others in the region, how vendors with up-to-date information about new staff and facilities could help promote SEPA and how keeping social media avenues open and current would spread the word. Several ideas for making membership more attractive included: paying dues for the first year, offering travel assistance to conference, online training or programs, a LIPS-type event, and live streaming of conference. Ken Brandt will coordinate a committee to begin looking at ways to increase membership. Those interested in working on this were asked to see him. A committee on the increased

use of technology to benefit members will also be formed and coordinated by Brandt with a chairman selected from those interested in working on this project.

There being no further business, Dundee adjourned the meeting at 1:20 pm. (Groce/Fleenor)

**Patsy Wilson
Salisbury, NC**



The balances in our accounts as of October 1, 2014 are:

Checking	\$9,526.20
Business Checking	\$42,131.30
Professional Development Fund	\$10,373.56

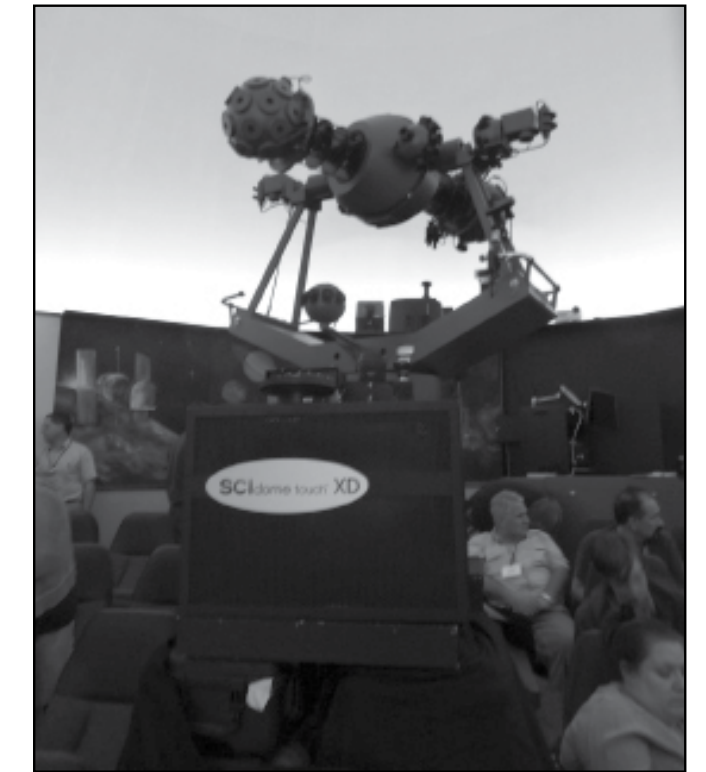
All funds are held at Branch, Banking and Trust (BB&T)



Top: Here I am at a milestone marker at McDonald Observatory
Middle: Dr. Finkelstein's husband talked to us via Skype
Bottom: A panoramic shot of Hobby-Eberly's insides. We got to remotely spin the 'scope!
Below: Me awarded a certificate of participation from Dr. Keely Finkelstein



And who can forget the wonderful time Michael and Derek threw for us in Sanford? We had three deserving members added to the Paul Campbell Fellowship Award. I got to visit with a friend I had not seen in over thirty years. Some of you got to meet my friend, Bob Skillman, who works at Disney. He had a marvelous time gazing at all the wonders people put up in the vendor's area. And



Top: Checking out the star projector at Sanford State, SEPA 2014
Bottom: George Fleenor gets the Paul Campbell Award, as did Patsy Wilson. Dave Maness gets a hockey stick and the Paul Campbell Award.

The Alien Who Stole Christmas
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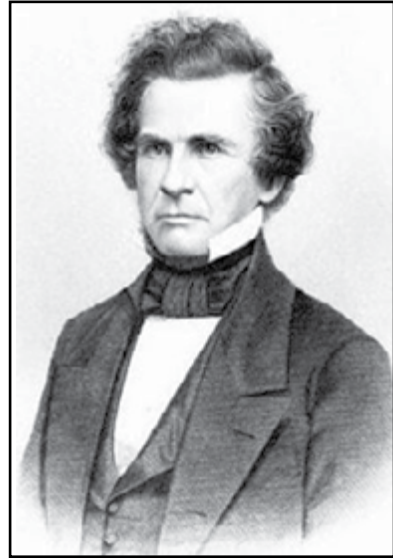
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At the outbreak of the Civil War, Mitchel enlisted and was commissioned as a brigadier in the Union army. He helped plan to steal a train from behind enemy lines. (This was the great locomotive chase that came through Northwest Georgia.) He and his troops seized Huntsville, Alabama, and he was

promoted to major general. It was in 1862 that he assumed command of the community on Hilton Head Island, South Carolina.

Shortly after speaking at the establishment of the first free African Baptist Church on the island, he died of yellow fever in 1862. But the residents there held him in such high esteem, they renamed the community Mitchelville.

Unfortunately, Mitchel is not available for a keynote address at SEPA 2015; can you imagine a SEPA conference with 2,000 people?

As for me, I have enjoyed serving as SEPA president the past two years. I know we're looking forward to the next two years with Ken Brandt as your new president.

who can forget the great food truck? What a great idea Derek and Michael had about getting it to come to planetarium and stargazing nights. Every-



Top: Robin shows off the vender's area for Bays Mountain

Middle: It is hard to believe that my friend, Bob Skillman had never been in a portable planetarium, so he took full advantage of the portable in the vendor hall

Bottom: April Whitt and Mark Perkins really enjoy the air boat ride

one loved the dinner and airboat ride. Everyone had a perfectly wonderful time.

There is a new school year and more students than I have had in years in astronomy class at the high school. Surprisingly, I have more males this year than in past years. What is that all about? I just finished reading about how the pulsar search program I have been working with has been attracting many females to physics and astronomy. My very first female team leader from pulsar search is enjoying spending her senior year at the Max Planck Institute in Germany.

We have been busy enjoying the show that Mars is doing with its rival, Antares. This brings back fond memories of viewing the two together in my childhood back yard and saying, "Yup, they do look similar in color." I even got a photo, since I do not know when the two will be back together again.



Mars and its rival, Antares in conjunction over a neighbor's home.

The first of October finds nearly everyone getting ready to explain viewing the total lunar eclipse as well as the partial solar eclipse. I hope you have clear skies and lots of visitors to share either or both of the eclipses together.



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News From SEPA Region

ALABAMA

contact: Mitzi Adams
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Mitzi Adams reports: The Christenberry Planetarium of Samford University in Birmingham, Alabama is open and presenting planetarium shows as of September 25, 2014. The new planetarium director is A. David Weigel. He may be contacted in the following ways:

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Planetarium
University of North Alabama
Florence, AL

Mel Blake reports: The summer ended off busy and things will stay busy well into the fall. The first week of August I volunteered at the Pisgah Astronomical Research Institute (PARI) in North Carolina for their Earth and Sky summer science program. PARI supported nine students over three days who learned about ecology, earth science, and astronomy. It was a very successful program and I learned a lot about the local ecology and had fun teaching the children about telescopic observations using the Skynet telescopes (see <https://skynet.unc.edu/>). The students were able to request data from telescopes in Australia. The images were received in the middle of the day in North Carolina, but it was dark in Australia! I enjoyed the experience and hopefully will be able to take part in a training ses-

sion to make the Skynet telescopes available to students in Alabama.

On September 6th we participated in the annual Observe the Moon Night. We first did an interactive program about impact craters, how to identify meteorites, and then let people take photos of the Moon through our 0.35 m telescope. This program benefited from the "Space Rocks" activity kit created by NASA's Night Sky Network.

We have continued to partner with the Shoals Astronomy Club for *First Fridays' Sidewalk Astronomy*. The First Fridays' festival is a street festival held each month in the summer that allows local artists and other groups to display and sell their work. This effort has been very successful, with more than a hundred people a night able to view Saturn, the Moon, and Albireo. We have had close to 250 people look through the telescopes in August and September. On September 8th we partnered with the Shoals Astronomy Club and the Florence Public Library for our first "Telescope Night." The library used its large mailing list to invite people to come with their telescopes and do a training session on how to use them. This was in response to a request from the library for adult learning programs. We met with many people who said they own a telescope but don't know how to use it. The event was a great success and hopefully nine telescopes are now being used on a regular basis to view the sky. We plan to repeat this



Here I am instructing a member of the public on her German-mounted Celestron telescope at Telescope Night at Florence Public Library, Sept 8th, 2014. Photo by Scott Aldridge, Shoals Astronomy Club.

event in the New Year after people have received as Christmas presents telescopes they don't understand. Our regular tours continue with our weekly public nights drawing more visitors, and the summer-tour bookings are also increasing. We may see our highest attendance this year since I started at UNA in 2008. October and November should prove to be busy, with two eclipses, Earth Science week, the BEST Robotics completion and the University's International Week all taking place. I look forward to reporting on those events.

FLORIDA

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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 three days a week. The weekend shows and monthly specials include *Solar System Odyssey*, *Magic Sky*, *Footsteps*, *Hello? Are you there, ET?*, and *The Lifecycle of Stars*.

We are thrilled to have been part of the production of the new planetarium show, *Space School*. What part? Well, inspiration and consultation. But we are hosting the world premiere here in January.

Jonathan Bird is the creator and host of *Jonathon Bird's Blue World*, an educational television program about the underwater world. This award-winning series has aired for four seasons on PBS as well as on the web. After consulting with the staff of the Buehler Planetarium, Bird decided to create a

fulldome film for planetariums.

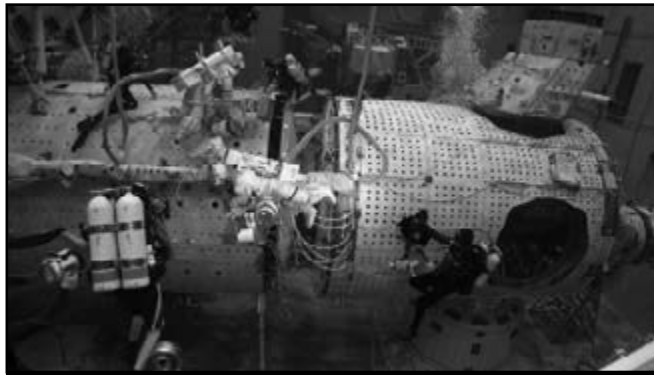
Space School follows the training of astronauts as they practice for space in underwater environments. The production team worked with NASA and filmed in the Neutral Buoyancy Lab in Houston, TX, and in the Aquarius Reef Base 62 feet underwater and 3.5 miles off Key Largo, FL. The film was shot with the latest technology to create a film with sufficient resolution for the planetarium dome. The newest camera from RED Digital Cinema, the 6K RED Dragon, was used.

NASA astronauts were filmed in the NBL as they practiced at the simulation of the ISS. At the Aquarius Lab, they were filmed during NEEMO 19, the 19th NASA Extreme Environment Mission Operations. The astronauts lived in the underwater lab for a week, while practicing EVAs.

Look for *Space School*!

Images from the production of *Space School*.
Pictures from *Oceanic Research*.





Above: Neutral Bouyancy Lab, Houston, TX
Below/Right: Aquarius Lab, NEEMO 19



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

Derek Demeter reports: The Emil Buehler Planetarium at Seminole State College in Sanford has been busy bees after hosting a successful SEPA 2014. We appreciate those who came out to support the conference and hope everyone had a great time. Beyond SEPA 2014, planetarium staff this summer travelled to Wyoming and Montana to document full dome content for a new dinosaur show entitled “Cretaceous Countdown: Investigating the Extinction of the Dinosaurs.” Locations included Yellowstone National Park, Museum of the Rockies, Hell Creek State Park, and Makoshika State Park. Derek Demeter participated at the Live Interactive Planetarium Symposium at Mystic Seaport in Mystic Connecticut. He presented a workshop entitled “The Great Astronomy Mixer” where delegates came up with impromptu presentations based on a set of random astronomy pictures. The response from the workshop was very well received. The planetarium was also represented at the Great Basin National Park Astronomy Festival in mid September. Planetarium staff provided astronomy talks, constellation tours and hosted a workshop on photographing the night sky. We also hosted our Fall Star Festival on September 27, which featured food trucks, space story time, astronomy talks and planetariums shows. Unfortunately, the weather didn’t cooperate but we did see over 500 people in attendance. A new planetarium show was produced called “Sci-Fi Science” which will be presented during our Saturday public shows for the months of October and November. “Sci-FI Science” explores the real science in topics such space travel and the search for extraterrestrial life.

GEORGIA

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**Fernbank Science Center Planetarium
Atlanta, GA**

April Whitt reports: Fernbank Science Center began the 2014 – 15 school year with some new programming. “Fernbank Experiences” allow an entire grade level from one elementary school to visit at one time. Beginning with a lesson in the planetarium, the group breaks into teams for hands-on activities. And there’s even time for lunch built into the schedule.

The first groups came through the program in early fall, and the evaluations were great. New programs are in development for the spring semester.

We were fortunate to have interns from Agnes Scott College to run summer planetarium and observatory sessions. When twelve-month staff positions were cut to ten-months a few years ago, the astronomy and astrophysics majors from area colleges and universities were a great help. Several of the interns took some of the evening and weekend sessions during the fall, leading audiences into *Black Holes*, or chasing *The Ghost Particle*. Younger visitors flew *Molecularium* into spaces large and small, or helped to correct Coyote’s misconceptions about *Earth, Moon and Sun*.

Our Saturday morning live star talk, *The Sky Tonight*, is growing in popularity as well. Urban audiences never get to see the real night sky (unless there’s a power outage, when the sky is usually cloudy) and continue to ooh and ahhh at the beautiful Zeiss night sky.

Fernbank hosted plenty of special events this fall. September brought the Plant Sale of native varieties, October’s Fossil Day and the Halloween Fun With Flashlights planetarium offering for our youngest visitors were popular, as was Jonn Serrie’s

annual “Upon A Midnight Clear” concert in early December.

We’re gearing up for the second annual Atlanta Science Festival next March, and another Cypress South concert in May. Wishing everyone a safe and happy holiday season!

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

David Dundee reports: We had a very busy summer; our biggest event was the “Night at the Museum” where we had everyone from Darth Vader to yours truly as Galileo live and in person. It was a fun night of famous scientists and science fiction characters attracting over 1800 visitors. We played Space Park Infinity this summer in the planetarium our third summer of virtual roller coasters in the planetarium. Our day campers built and launched rockets all summer and we conducted another all day workshop on rockets for families. We opened the ever popular model train exhibit again this past summer. I gave the opening lecture (being a model train buff) for a special members night opening attracting over 200 members. CSX was on hand with a special talk and give aways. The trains will be running here through March of 2015. The museum hosted the 24th annual rockfest in June. Beginning of September we hosted the 2nd annual International Moon Watch in the observatory and the weather was clear! By the end of the summer 60,000 visitors have come through the planetarium this year so far.



Galileo with Da Vinci, Newton
and Othniel Marsh.

More pictures from the Night at the Museum



**Planetarium
Oatland Island Wildlife Center
Savannah, GA**

Max McKelvey reports: Fall planetarium programming for 4th grades has been very strong with the alignment of the Georgia Standards. Our 2 Starlabs™ have been in demand for school rentals and evening Science and Math nights.

Oatland Island Wildlife Center celebrated its 40th year of operation with an adult only Cocktail and Dance party on 30th of August. A family celebration took place on the 31st. Activities included animal encounters, zoo keeper talks, animal enrichment; boat rides through the marsh, live planetarium programs, snacks, cake and soft drinks. Funds raised went to the capital campaign “One Thousand give a Thousand.”

LOUISIANA 

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**Irene W. Pennington Planetarium
La. Art & Science Museum
Baton Rouge, LA**

Jon Elvert reports: We started our mid-year off right by upgrading our Sky-Skan Definiti System with 64-bit computer architecture, which is really a step up in loading program content. Our late summer astronomy camp was again a success due in part to the integration of art and science related activities – how artists interpret astronomy and astronomers art. This past summer also saw the completion of two school shows that were totally reanimated by in-house staff.

Although our current public programming includes play back shows (*Dinosaurs @ Dusk*, *The Great Planet Adventures*, and *Super Volcanoes*), we’re treating these audiences to pre-show live segments that require audience engagement, or at least some

feedback...even if it’s nodding the head or raising an arm, or stomping feet. We’re also including a verbal description of the discovery or picture of the day (or celestial events such as the eclipses in October). And our presenter-led school show operators are using an iPad in school shows with positive results – the presenter has the flexibility to respond to students’ interest by selecting a pre-programmed destination for a particular show. The intent is not to make the show linear or repetitious for the presenter.

Kyra Elliott, our talented animator, returned back to Connecticut to be closer with family. As of this writing, she’s working for Apple Computers, but I hope to see her eventually reemerge in the planetarium field. We hired Josh Peebles to replace Kyra. Josh comes from Virginia (Virginia Tech) and in addition to assisting in the production of shows; Josh will interpret concepts used in shows by performing science demonstrations in our galleries.

Along with Dave Hostetter and Greg Andrews, I attended the Kavli short course on cosmological physics at the University of Chicago. Different this time was a practicum where all participants had to develop ideas related to course content and be used in planetarium shows. Back in Baton Rouge, we were able to implement many of the suggested ideas, as well as update our own tour-de-force universe show Digital Universe. My only regret is forgetting to take a photo of Dave, Greg and myself in Chicago.

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


Dave Hostetter reports: The Lafayette Science Museum and Planetarium had its best summer in years in 2014! In fact, by the end of August, we had already surpassed the planetarium attendance for all of 2013. In addition to our regular planetarium programs, shortly after the SEPA conference we had a planetarium marathon featuring 21 programs in three days. Since we repeated only the regularly scheduled, live *The Sky Tonight* program at 4.00 pm. each day, we presented 19 different titles during that time. Attendance was over 600 people, and while that may be normal for some domes, it

was a *lot* for us! Our three day marathon attendance was larger than the public attendance in three different months in 2013. Between our full dome planetarium and much improved exhibits, we feel as if the Museum is really turning a corner and becoming more relevant for the people of Lafayette.

Planning has started for placing our old Spitz A4 on display. The exhibit will also include typical special effects projectors and other equipment from the “good ole days,” and that equipment (and much more) will go into our Museum’s permanent collection to document that era of our facility and the planetarium profession.

Planetarium Curator Dave Hostetter attended the 2014 Cosmology Short Course at the University of Chicago’s Kavli Institute for Cosmological Physics. It was a pretty intense three days, but worth it! It was nice to see a lot of other SEPA people there, too.

As for now, among other programs we are running the full dome Definiti/Interact version of Stonehenge from the Lawrence Hall of Science. Like the rest of you, we are also making plans for the October solar eclipse. Looking a little farther into the future, we will be having a viewing site for NASA for the first launch of the Orion spacecraft on December 4.

NORTH CAROLINA 

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**Planetarium
Fayetteville State University
Fayetteville, NC**

Jonathan Breitzer reports: The Fayetteville State University Planetarium, www.uncfsu.edu/planetarium, seats 55 and has a Spitz 512 projector. We give shows for schools, homeschool groups, church groups, volunteer organizations, and behavioral health centers. Groups reserve shows, but families and individuals are welcome to join. Free public

shows are offered one Saturday morning per month. The planetarium director is a chemistry professor here. He is assisted by a group of enthusiastic student volunteers. The planetarium is also a registered service-learning center for students, so students who are enrolled in classes with a service-learning component can fulfill that requirement here.

When groups are too large to be accommodated in the theater, we offer an accompanying activity and split the group. We are now working with an art professor, Dr. Socorro Hernandez-Hinek, to integrate visual art into that activity, modeled after NASA's Art and the Cosmic Connection initiative. If the show is in the evening and the weather is good, we go up to the roof for the observatory, run by Dr. John Mattox.

One of the first things I did when I became director in 2012 was to promote the idea of a planetarium being a type of sanctuary. Anybody who has ever been to a planetarium (or, for those who are planetarians themselves in somebody else's planetarium!) knows how relaxing it can be, with the soft lighting and stars, often with new-age music. So this fall, after some failed starts earlier, I have enlisted the services of Dr. Michael Devalve from Criminal Justice who is trained in the art of meditation. We have guided meditation every week now, and would like to expand from our core of "regulars" on campus to the community.

Hopefully, the funding will come through to renovate the Lyons Science building, in which the planetarium is located, as well as the Planetarium itself. We definitely need new seats, and we've been looking at vendors for fulldome digital technology, a couple of whom have already visited and demonstrated their wares. Some pointers from other planetarians are greatly appreciated!

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

Jim Craig reports: We have had a great summer with a tremendous growth in attendance for the last two years.

This fall, we're featuring our original presentation, **How Big? How Far?** written and narrated by our planetarium director, Jim Craig. This program features original artwork and animation to talk about how we've determined the size of the universe starting with measuring the size of the Earth to the size of the known universe. The program also features a "hold up your thumb" segment to demonstrate using parallax to determine the distance to nearby stars.

**The OmniSphere
Greensboro Science Center
Greensboro, NC**

Roger Joyner reports: The OmniSphere, as well as the rest of the Greensboro Science Center, has just finished up a very busy summer season. We've had lots of traffic with summer programs and tourists. This was our first full summer with the new Sci-Quarium and we just finished a run of the traveling exhibit **SHIPWRECK! Pirates & Treasure**, that was a big hit.

The OmniSphere is just switching over to the Fall schedule and school groups are just starting to come in. We recently installed the full-dome show **Dream to Fly** that will open as our feature public show on September 18. **Dream** promises to be a crowd pleaser. It is a well-produced show and looks great on the dome.

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

Ken Brandt reports: We provide space exploration programming for fourth, fifth, sixth, and ninth graders.

Our Fourth graders in Robeson County are learning about the Google X Prize, and enjoying **Back to the Moon: for Good** narrated by Tim Allen. If you're a small dome/portable system, this program is free! In addition to recalling the glory days of Apollo, this program features teams of mostly amateur design teams building a rover that can travel 500 meters on the moon, and then beam back images and other data. It is very timely and inspiring featuring many 'non-traditional' participants in STEAM endeavors.

Our Fifth grade students are seeing **Galileo and the Power of the Telescope**, produced by the Milwaukee Science Center, and narrated by Dava Sobel. Because our fifth grade science standards focus on force and motion, who better than Galileo? Besides, the common core connections to ELA and Math are too obvious to talk about!

Our Sixth grade students are seeing Cal Academy's **Fragile Planet**, narrated by Sigourney Weaver. This program is delightfully outdated, so segue to recent data from the Kepler mission! "How many planets are there?"

Of course, our Ninth graders get a healthy dose of evidence-based science in Robin Sip's production, **Natural Selection**. Since my wife and I wrote the educator's guide that accompanies the show, finding pre and post lesson plans is easy!

By the time you've read this, we will have participated in programs celebrating World Peace Day, and World Space Week

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

Christi Whitworth reports: Pisgah Astronomical Research Institute is excited to have opened an outdoor planetarium space for dark sky observations (photo at right). This space was officially opened on September 12, 2014 at the annual Friends of PARI Symposium. The weather didn't cooperate with viewing but the glimpses of stars and the plane of the Milky Way were enough to keep several people outside watching in the fall air until late



that evening.

PARI will be hosting our Homeschool Day on December 4, 2014 and co-hosting SciGirls Training at Cherokee Youth Center on October 2 and Hands On! A Child's Gallery on November 3. Evening at PARI on the second Friday of each month continue and docent led tours are held every Wednesday at 2 PM.

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

Jennifer Barbee reports: What an exciting start to the school year it has been as we welcome the daily arrival of first and sixth grade students to the planetarium! Children from both Rowan and Davie public school systems, local private schools and special request groups create our full schedule of programming each week. **Sky News** and **Earth: Our Place in Space** are directly aligned with NC Essential Standards for science and aim to support teachers in their delivery of astronomy topics for young learners.

Sky News (60 minutes) allows first grade students to assume the important role of a Sky News reporter as they interview eyewitnesses, observe various objects, record their findings, sort through evidence files and report only the facts.

Earth: Our Place in Space (90 minutes) encompasses the NC Essential Standards for 6th grade. Students compare Earth to other terrestrial planets in our solar system as they address how systems of air, water and sun interact to support the variety of lifeforms on Earth. We'll identify critical challenges that face the future of our planet and evaluate how advancements in space exploration allow us to use improved telescopes, probes, rovers, aircraft and satellites to better understand Our Place in Space.

Classes are enhanced by the use of iPad minis, utilizing star gazing and sky pattern apps such as Planets and Star Chart. Offerings provide opportunities for young learners to interact with each other using kinesthetic activities. Curriculum support ideas are emailed to teachers prior to each visit.

The Margaret C. Woodson Planetarium takes pride in partnering with institutes of higher education including Catawba College and Livingstone College. Some of these sessions have included providing an overview of our solar system, comparing the size of various objects within our solar system and beyond, updates on recent missions, and light pollution. Each session is accompanied by a live sky portion that includes a review of seasonal patterns and unique opportunities for monthly sky-gazing.

We extend a special thanks to the Margaret C. Woodson Foundation. Grant funding for 2014 allowed us to purchase a new star lamp for our original Spitz AP3, as well as yearly maintenance, keeping the planetarium in excellent working condition. Thanks to the Robertson Family Foundation, the planetarium received a new and greatly improved Pleiades cove lighting system in August. This grant made it possible to bring advanced technology into our special space! An additional thank you to ASH Enterprise for their efforts throughout the installation process.

Public openings are held the second Saturday of each month, serving audiences of all ages. We are pleased to announce additional programming offered by the Horizons Unlimited Science Specialists. We now have multiple offerings designed for scouts and look forward to providing our audiences with the best that the Margaret C. Woodson Planetarium has to offer.

SOUTH CAROLINA
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 SennG@sc.edu



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

Gary J. Senn reports: The DuPont Planetarium at the Ruth Patrick Science Education Center (RPSEC) on the campus of the University of South Carolina

Aiken (USCA) participated in the Carolina Association of Planetarium Educators (CAPE) conference on August 25. Planetarians from North and South Carolina did not physically converge at a location, as has been the tradition in the past. Instead, CAPE had a virtual meeting. It was a good time to renew acquaintances, “meet” some new people and catch up on activities for the upcoming year. While this venue was quite successful, CAPE does plan to meet in a traditional manner in August 2015.

We had a successful Observe the Moon Night on September 6. The planetarium presented a local production, *Dark Shadows*. *Dark Shadows* explores the Sun, Moon, Earth system and demonstrates how shadows in space create eclipses and moon phases. Members from the Astronomy Club of Augusta (ACA) set up telescopes on the lawn for our visitors to view the moon. Of course, the club members did not limit viewing to the moon, so the patrons were able to see a number of other objects in the sky. The 16” Meade LX-200 Bechtel Telescope was available in the RPSEC Observatory. The weather was not great, but a good time was still had by all.

In September, the planetarium showed *Mission to Mars*, and *Ancient Sky Lore*. Both of these shows are local productions. *Mission to Mars* has a live night sky presentation that ends with the presenter identifying the location of Mars. A pre-recorded show then takes over from the live presentation and uses a “conversation” between a “presenter” and an “audience member” to guide the audience through highlights of planet Mars.

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

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

TENNESSEE
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**Bays Mountain Planetarium
 Kingsport, TN**

Adam Thanz reports: Greetings All! In my last TN News offering, I wrote about our upcoming annual StarFest event that had since run mid October, 2014. The event was a full success. Our attendance was 99 putting us at capacity. The speakers were great. They were interesting, educational and entertaining. Our first attempt at running a dramatic reading of a play by Mark Littmann entitled “Little Lessons for Lina” went very well with lots of live cues to keep us on our toes. In addition to all of the speakers, the food and camaraderie was excellent. If you are interested in signing up for our StarFest e-mail list (with only a few e-mails per year sent), drop me a line.

Our current main show that will run to the end of the calendar year is “Chasing the Ghost Particle.” It has received a good response from the public. We’ve also added a live tour of the night sky and we then take everyone down under to 90j South with our Carl Zeiss ZKP-4 optical star projector to the South Pole, the location of the “Ice Cube” detector observatory. Since we started the show in September, we’ve been watching the sun creep higher in altitude as we have been sailing into the southern hemisphere’s spring season.

Our secondary show shown at 2 p.m. on the weekends, is currently finishing up with “Appalachian Skies - Fall.” It is a live format program, that tours the fall skies and also includes detailed, interesting information about some of those objects. The next secondary show, which runs this Nov. & Dec., will be “Connections.” This was our premier show that well over 50,000 patrons have seen in our first eight months after our refurbishment 5.5 years ago. It is still our most popular show.

**Sharpe Planetarium
 Memphis, TN**

Dave Maness reports: The Sharpe Planetarium is currently closed for renovations. While that takes place, we are offering a program using *Seasonal Stargazing* from Loch Ness and *Starry Night Podium* software for a look at the current night sky. All this is presented on a flat screen in the Pink Palace Mansion Theater, but I am already missing access to the dome.



At this writing, we are removing projectors and preparing city property for an auction at some point in the autumn. Soon after that, I expect a contract to be signed and the room turned over to the subcontractors who will be transforming it into a modern digital theater. We hope to re-open in the spring.

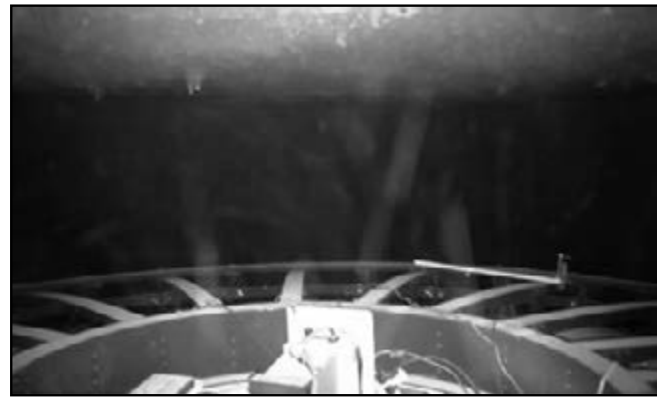
As I proceed with the task of removing and sorting through years of technology, I become nostalgic and introspective. The process seems a bit like an archeological dig. I find myself sifting through layers of technology very familiar to me. Several items remind me of moments in my own career. I’m removing everything from the most recent and advanced systems I have ever used; like the **ECCS Automation** and audio by **Bowen Technovations**, to the simplest of home-made special effects like those using rotating baby food jars, colanders, mirror balls, crystal doorknobs, polarizers, rotating wheels, and small plastic domes. I recently removed homemade lights that represented the sun’s seasonal paths, lots of Christmas lights, power supplies, extension cords, and Single Shot projectors. Most of what I found was (no doubt) related to laser

shows that were a staple here up to around 2005. I suspect that they were all still in working order. Like most planetariums the Sharpe lived by the old adage “if it ain’t broke, don’t fix it.”



In preparation for eventual dome cleaning and painting, I knew I would need to climb the dome. I have an **Astro-Tec** dome with a strong rigid framework. The fact that I could see some crossbeams attached for that purpose, gave me the courage to make the attempt to scale the peak in search of obstacles to refurbishment. [BTW - I don’t recommend anyone try this unless you have no fear of

heights. Mountain climbing experience would definitely be helpful. Also do not exceed your dome’s weight tolerance!] After several practice attempts, and several minutes of careful climbing, I finally made it to the top.



There I found a surprising mass of extension cords, Christmas lights, power supplies, a Singer Single Shot pointing down from the zenith, and an Audionics Light Image Translator. As I unplugged and removed each component, I regretted that I had never seen any of this in operation, mainly because our laser projector died shortly after I came to the Sharpe. Among the items at the top of the dome, I found a box of Domino Diamond wooden matches and a 1976 D Lincoln penny. Those last two items made me think of the history here. I wondered if either of the late, former Sharpe Planetarium Directors George Brown or Kathy Nix had ever climbed this peak, and what would they think of all this change?

Over my last 6 years here, I have seen many signs that the end of this classic operation was near. First the mixer died, then the VCR, followed closely by a series of replacement CD players. Next the bright star projectors needed new lamps because the old ones were no longer available. Replacing malfunctional slide projectors became a weekly task. Soon I noticed that parts of the sky didn’t look quite right, compared to the real sky or even to other star field projections. I had no Algol or Mira, which forced us to point out empty spaces or nearby stars as the next best option (hoping that no one would notice). I also discovered that the type of star cells used in this projector was subject to rotation due to periodic heating and cooling from daily operation, requiring frequent adjustment. At times I’ve

had new stars appear, when the glue attaching diffusion filters (to project faint and fuzzy blobs for star clusters) finally gave out, allowing the filter to slip out of place. In one notable incident, I needed to contract for hazardous materials clean up, after a glass switch filled with mercury was crushed by the analog gears of a planet projector. In spite of all that, it never failed to show stars and inspire people of all ages to look up.

Finally after all the years of fixes, we faced up to the fact that the time had come to retire this grand old workhorse of a star projector. I hesitate to mention that it was installed shortly before I myself entered the planetarium field professionally. I don’t want to explore that analogy too far, but I actually attended my first SEPA conference right here at the Sharpe Planetarium, just a couple of years after it opened. Now, here I am overseeing the next step into the future.

On the last day of full operation, I invited current staff and former staff for pizza and one last show at the end of the day. I chose **WSKY: Radio Station of the Stars**, one of my all-time favorites. One line got to me near the end: “And now, my friends, we have come to the end of our star-studded show.” Fortunately the mood was shifted quickly by the uplifting tune of “**Children of the Stars**.” I thought it was fitting to end on a positive note.



It isn’t easy to set aside all sentimentality to make way for the steamroller of progress. I keep telling myself that what I am gaining in an accurate star field, a fully explorable 3D representation of the known universe, along with innumerable new functions, is well worth the loss of a somewhat realistic-looking star field. I really hope that Kathy and

George would say “go for it!”

Sudekum Planetarium Adventure Center Nashville, TN

Kris McCall reports: The Sudekum Planetarium at the Adventure Science Center has been busy since the SEPA conference in July.

Early in September, a man walked in and said he had found a meteorite. Most of us have heard this before, and it turns out to be slag from iron smelting, pretty, sparkly pyrite, or just a really interesting rock. After 38 years, this is the first one to actually be a meteorite. The Superintendent at Vanderbilt’s Dyer Observatory and an Astronomer from Austin-Peay State University both agreed that it is probably the real thing. The owner has not had it tested yet. We’ll see what happens next. I would include a picture, but it’s hard to photograph.

In mid-September, the Sudekum upgraded from Digistar 3 to Digistar 5. Being a fully integrated hybrid system with lots of programs made this conversion a little more challenging. Drew Gilmore, Assistant Director, spent part of the summer rescripting programs, including laser shows, on a D5 workstation so the changeover could occur as quickly as possible.

The theater was closed just five days for GOTO and E&S to work their magic. Thanks to Ryan Kolar of E&S and In-san from GOTO of Japan for making it all work - and their patience. A testament to the skills of E&S, GOTO, and especially Drew Gilmore is that our complex hybrid production of Adler’s Skywatchers of Africa looked pretty good on the first run. Drew has some minor tweaking to do, but overall, a successful conversion.

The planetarium had to be up and running for the upcoming weekend because Adventure Science Center was hosting the Nashville Mini Maker Faire. To avoid pulling out all our grey hairs, we chose to run only prerendered content that first weekend. As a salute to the Maker movement, we presented Home Grown Dome, which consists of selected DomeFest winners from 2004 to 2009. We also had

three different laser shows ready to go for that Saturday evening courtesy of Drew Gilmore's master programming abilities.

The following week, the planetarium was closed for another five days so Drew Gilmore could test and tweak our extensive catalog of school and public programs. David Binnewies of Bowen Technovation in Indianapolis came down to upgrade our AstroFX Commander cove lighting control software. Also, thanks to Mark Zellers of Audio-Visual Imagineering for helping get midi time code out of the ADAT 24, that drives our SkyLaze full-color system, converted to SMPTE time code needed to work with the Digistar 5.

Ms. Theo Wellington, Planetarium Educator for 10+ years, presented the first live program during this same week for an astronomy class from the local, high-achieving, Academic (college preparatory) Magnet High School. Needless to say, flying a new spaceship where the controls are in new and interesting places and sometimes do different things made this an "exciting" program.

Celeste Holliman, Planetarium Educator for three years, spent time in the dome trying to prepare for her first live presentation of Skies Over Nashville using the new system. Even before the first show, she was preparing custom control panels and making a list of all the new content she wants to have prepared and incorporate into all our programs.

While all this was going on, we were also planning for Astronomy Day, which was scheduled for Saturday, October 4. (Whoever scheduled a major upgrade and event so close together should be shot.) The theme was Asteroids, Meteors, and Comets, small bodies of the solar system. It was a beautiful, sunny day with a major cultural festival going on across town, pumpkin patches, and college football as competition. The event was only modestly attended, but everyone seemed to enjoy the activities.

In the meantime, the Science Center was nominated and won two awards. The local paper runs the Toast of the Town contest for everything from pediatricians to sports teams. Adventure Science Center won "Best Place to Take the Kids," beating out the Nashville Zoo and Chuck E. Cheese. We've won

"Best Place to Go When It's Raining" several times in the past, so this was quite an accomplishment.



Also in Nashville, there is an organization called the Center for Non-Profit Management that gives twelve awards in categories such as Best CEO, Fundraising, Accounting, Volunteer Program, etc. This year, there was a new category called the Diversified Trust New Generations Award for "the effective utilization of social media and other focused marketing to reach the next generation of their constituents, stakeholders, and supporters."

The Science Center was "competing" with the Hands On Nashville Youth Leadership Program and the W.O. Smith Music School FireBall, a New Year's Eve event. The Science Center won the award for Way Late Play Date, a quarterly, 21+ evening with a different theme each time. Themes have included spies, superheroes, Star Trek vs. Star Wars, Game of Thrones, Doctor Who, and Zombies. There are science activities in the exhibit areas, food trucks, a costume contest, adult



beverages, and planetarium shows.

While the crowd of 800+ people can be a little unruly, many are interested in science. Drew found a way to turn the planetarium dome into a giant TARDIS. People will stay through a full length planetarium program, even though they are not allowed to bring food or drink in with them.

Most schools are on fall break right now. The planetarium staff is trying to catch their breath. Theo, master photographer, will be attending an astrophotography workshop later this month. Drew continues D5 programming and adaptations. Celeste is refining her Skies Over Nashville, and it will most likely be cloudy for the lunar eclipse on the morn-

ing of October 8, 2014.

But the break won't last long. Starting October 16, 2014: What happens when you turn art and music loose... in a planetarium? To find out, the Sudekum Planetarium at the Adventure Science Center is opening Dome Club – Nashville. This monthly event will showcase immersive programs and artistic experiences designed to envelop visitors within the unique full-dome planetarium environment.

Wait, what's "fulldome"? "Full-dome" refers to technologies that cover the entire surface of a planetarium dome with graphics. Seated within our 63-foot diameter dome, you'll be surrounded by visuals in front of, above, and even behind you. Without the rectangular frame of a TV or movie screen, you'll feel a part of the scene. Powerful surround sound adds to the effect.

The Sudekum Planetarium presents full-dome science experiences every day. Dome Club provides a venue for alternative programs. These may include immersive cinema or visualization projects, dance, games, or concerts ... anything that takes advantage of the full-dome environment. Dome Club is also a place to connect and enhance the lines between the art of science and the science of art.

Please contact us if you have content that would be appropriate for Dome Club or you have ideas for how to build awareness and attendance for such a series. Any suggestions and shared experience would be much appreciated.

VIRGINIA
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Abbutt Planetarium
Virginia Living Museum
Newport News, VA

Kelly Herbst reports: Today (September 30) is our last day of maintenance – tomorrow we reopen for

the fall season. 2014 seems to have flown by!

We'll feature three different shows through the first part of Fall. Preschoolers will have the opportunity to enjoy *The Zula Patrol: Under the Weather*, while on weekends we'll again be featuring the fulldome program *Dark. Virginia Skies* rounds out our offerings as always. November will see *Dark* replaced with *Kaluoka'hina* as a beautiful art exhibit comes to our changing exhibit gallery for that month – all about deep sea creatures as seen from the ALVIN submersible. But all in all, Fall is a fairly slow time of year...at least until we get to the holidays.

Once Thanksgiving rolls around, we'll be running *Star of Wonder: Mystery of the Christmas Star* and *Laser Holidays* virtually around the clock! Both programs have proved to be perennial favorites, with some version of *Star of Wonder* having run in our theater at holiday time every year since we first opened in 1965.

It's hard to believe that by the end of next year our theater will be 50 years old, and the entire museum will turn 50 in 2016. Plans are already underway for exciting things for our Golden Anniversary year. Stay tuned!

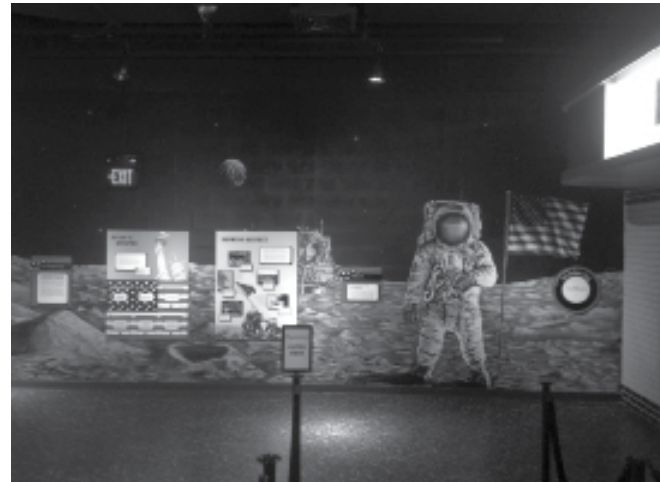
October will bring our annual Night of the Living Museum event, which is always incredibly popular. The theater will feature the Halloween-themed laser show *Fright Light*. It's always tons of fun, and with the recent tune up of the show by AVI, we have lots of options to keep families happy and entertained.

Here's hoping that we all have a wonderful holiday season and a happy and healthy start to 2015!

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

Dan Borick reports: The Beazley Planetarium has upgraded the system to include Layered Earth for the dome and the handheld Scitouch system. I am still waiting on getting a dedicated internet connection and the city is kind of being very inflexible on how the network will work. Typical IT wait and think about it...they are really good at Metacogni-

tion. Anyhow, another change was getting a mural and flag exhibit in the lobby in front of the planetarium. The tie is a life sized Neil Armstrong planting the flag on Tranquility Base.



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