

Southern Skies

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Venus Transit - see Archeoastronomy

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April Whitt
 Jim Cherry Memorial Planetarium
 Atlanta, GA

It's the usual sweltering Southern summer as I write this (in early July). The SEPA/IPS meeting in Baton Rouge is a few weeks away, and the transit of Venus is in the past. Colleagues fortunate enough to have attended the conference will have

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met, discussed issues, heard excellent papers, raised a Woodchuck, made new friends and kept the old. For those of you lucky enough to score one of the professional development grants, congratulations!

What did you do for Curiosity's Mars landing? Did you host a public event? Build a model? Set up an exhibit? Collect web sites and share them? Prepare a powerpoint presentation? Host a reading of War of the Worlds? Bake Curiosity cookies? I vaguely remember a

set of cookie cutters in the shapes of various space craft – perhaps at one of the silent auctions?

Planetarians are a creative bunch. Solving problems with a few lines of code, duct tape and a wad of chewing gum is ingrained in us. New technology brings out new ideas (for those of us fortunate enough to have new technology), and for those of us with "classic" theaters, it seems there's always someone with a box of slide mounts they no longer need, or a single shot projector to trade for a cold one.

As we gear up for the September equinox, keep in touch. If you need something, let us know – the dome-L group is an excellent listserve/clearinghouse. If you have an extra something, let us know that, too, or bring it to Jacksonville for the silent auction in 2013.



Transit of Venus cupcakes were a big hit.

IPS REPORT

John Hare
ASH Enterprises
Bradenton, FL

By the time you read this, IPS 2012 will be history. Hopefully, you were one of over 600 delegates in attendance. If you didn't attend, it's not too late to benefit from the conference.

IPS members are furnished copies of all current publications and as such the proceedings of this year's conference are included. The proceedings are quite complete and will allow you to vicariously experience the conference and derive many of the benefits from various papers, workshops, and speakers. You will also receive the latest edition of the Planetarium Directory. That publication alone contains a wealth of information about other members, planetariums, and suppliers of technology.

Dues are \$65 for a 1-year membership and \$100 for 2-years.

You can obtain membership forms from IPS Treasurer, Shawn Laatsch slaatsch@imiloahawaii.org or myself at johnhare@earthlink.net.

I will furnish a comprehensive report on this year's IPS conference in the next edition of *Southern Skies*.

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

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

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Small Talk

Elizabeth Wasiluk
Berkeley County Planetarium
Hedgesville, WV

As I write this, the Earth has passed the Vernal Equinox in its orbit and we are hurtling toward the spot which will coincide with the upcoming gathering of SEPA/IPS members in Baton Rouge, LA this summer. I am looking forward to it, so hopefully I will see you there and will maybe gather some more interesting information about your "Small Planetaria" whether it be small in size, staff or budget.



Venus joins Jupiter and the Moon over a neighbor's home earlier this Spring.

For now, I am coming off of a busy week. Just this morning I participated in a live observing session via the web with the people at the National Radio Astronomy Observatory at Green Bank, WV. They were doing a monthly check of the pulsars discovered by high school students around the country in the pulsar search collaboratory which I have told you about periodically here in "Small Talk". Students use an on-line database to analyze plots of random regions in the sky taken by the 300 meter Green Bank Telescope in Green Bank, WV. If they find something that looks interesting, they check it using the Australia Telescope Facility Catalog. If it is not

listed as a known pulsar, they go to the pulsarsearch-collaboratory website and check its Dispersion Measure. Space is a vacuum, however, between us and a pulsar in space we will pick up stray electrons in between us and the pulsar. Since we only can detect pulsars within our galaxy, using the right ascension and declination of a unknown signal, we can determine if the measurement to the supposed pulsar is reasonable. Students have an app on the website to input astronomical coordinates as well as the DM reading on the plot. If the plot's DM comes back as reasonable, then there is a good chance that the plot could represent an undiscovered pulsar. Students post it on: <http://pulsarsearchcollaboratory.com> and let astronomers comment on it. If they think it looks promising, the students get to watch as the telescope reobserves the sky in those coordinates. Students can either observe live from the control room of the telescope in Green Bank or they can watch via the internet. If the plot reappears as a pulsar, their discovery is confirmed and they get official credit for their discovery. Sometimes it takes a while to find the location of the pulsar, due to the beam width of the telescope being so tiny. They have to do a process called "gridding" which literally means that the telescope observes in five places around the coordinates of the suspected pulsar to make sure they have either eliminated the possibility that the signal came from a pulsar, or they pick up the pulsar's signal completely. Using this method, five pulsar candidates have been found so far in the database, by twelve high school students. One object has been found that is a RRAT, which is a rotating radio transient, a bizarre object we think is a transitional stage in a pulsar which



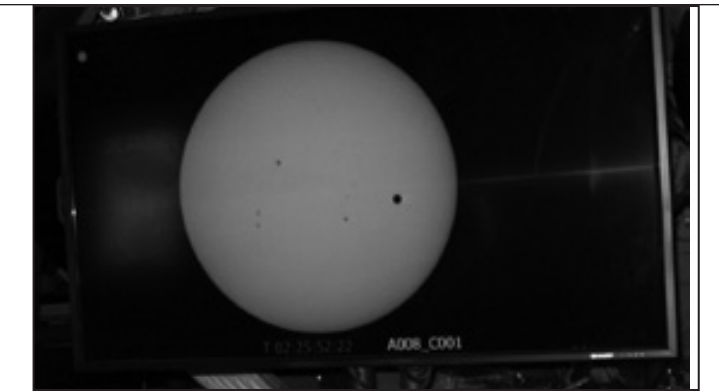
The Hedgesville High School Pulsar Search Team nervously await judges viewing the poster paper they created from data they analyzed this school year on the database of the Robert C. Byrd Radio Telescope earlier this Spring.

might signify a pulsar which gives off a signal irregularly, having to store up energy after many rotations before it can give off a radio signal. Read more about this sort of object here: <http://www.skyandtelescope.com/news/3310901.html?page=1&c=y>



Staff at the National Air and Space Museum are being interviewed by a local radio station during NASA's live webcast of the Transit of Venus that they presented on big screens in their "Moving Past Earth" Gallery.

The lady who made the discovery in the article, Maura McLaughlin is one of the astronomers who



My last view of the Transit of Venus before heading home from the Air and Space Museum after hearing a great lecture about "Searching For Earth-like Planets" with the Kepler Space Telescope.

mentor us in the pulsar search collaboratory. This morning's observation showed the pulsar again in a monthly monitoring of the pulsars discovered in the program. It was kind of fun to chat with "Joseph Swiggum" the astronomer observing and running the observation from Greenbank on the 300 meter and Jessica Pal, the high school student who made the discovery from Rowan County High School in Kentucky.

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Archeo- astronomy

So, I've been thinking ...

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

In the course of research for a previous article, *A Black, Round Spot that Moved the World*, I came across a bit of information that sparked my curiosity and culminated in my thinking about the universe in a different way. It began as a subtle thing, beginning first as a slow, glowing ember and growing into a roaring thought-fire.

Transits of Venus are rare events. My research for, *A Black, Round Spot...* got me thinking about the notion of a "rare event," and I began to wonder what rare really means in the context of our star system, if not the universe as a whole. What I mean is I began to contemplate the history of the distant past and the forecast of the far future. Thinking about astronomical events outside the context of human history gives the philosopher a uniquely non-anthropocentric perspective. Stepping back to look at events in the cosmos in a non-anthropocentric way offers new insights to how we think about and relate to the universe.

What follows is discussion of three remotely timed events: moments in time, moments of ponderance.

Moment I: Coincidental Transits of Mercury and Venus

Simultaneous transits of both Mercury and Venus are possible, but they are extremely rare: far rarer than single transits of either planet. This syzygy will again occur on July 26, A.D. 69,163, and again on March 29, A.D. 224,508. To put these time frames

into perspective, looking the other way, into the past, 69,000 years ago was the midst of the Paleolithic. Humans were nomadic hunter-gatherers thousands of years from developing pottery, agriculture, or writing. Cave paintings, a scarce few carvings and charnel are all that they left to history.

The last time both Mercury and Venus transited the Sun was September 22, 373,173 B.C.: some 170,000 years before the emergence of Homo sapiens.

Simultaneous transits will again occur on March 29, A.D. 224,508. Will H. sapiens then still rule (or ruin) Earth? Will hominids even be around to see the transits, or will some other type of being gaze knowingly upon those two planetary dots? The passing of epochs will likely have erased all evidence of humanity's existence in such a world.

Moment II: Ka-boom!

In 100,000 years, the hypergiant VY Canis Majoris will likely have exploded as a type 1c supernova, which is sometimes referred to by the somewhat sensational term of hypernova.

VY Canis Majoris is the largest known star and one of the most luminous. Its size is a matter of some debate, with estimates ranging from 3.1 to 9.6 AU in radius. In other words, the star is somewhere between the sizes of the orbits of Mars and Saturn in terms of diameter. Stars of this great size are exceptionally rare, and the supernovae they ultimately become are similarly great in effect. Hypernovae are so energetic as to directly collapse the associated stellar core into a black hole. There is so much energy that it is sort of a "do not pass GO, do not collect \$200" effect from the core's perspective. As collapse occurs, two highly energetic streams of plasma will begin to eject along the new black hole's rotational poles at barely sub-light speeds, sending out huge gamma ray emissions in the process. Hypernovae are, therefore, one possible source of long-duration gamma-ray bursts. Another, more famous, candidate for possibly becoming a hypernova one day is η Carinae. Earth lies some 7,500 light years from η Carinae: is that a safe distance when the star obliterates? It is hard to imagine an event so violent as to have an appreciable negative affect across such a distance, though astronomers have proposed that η Carinae's hypernova could

be energetic enough to cause appreciable damage to the ozone layer and artificial satellites, including orbiting humans. Earth's magnetosphere will protect everything under blue sky from ionizing gamma rays. Of course, at the moment, η Carinae's rotational poles do not point toward Earth, therefore it would be impossible to observe gamma ray bursts originating from η Carinae – unless its orientation changes. Though it is unlikely that gamma-ray bursts from η Carinae will be observed, there will be lots of visible light produced. According to Dave Pooley at the University of California, Berkeley, "it would be so bright that you would see it during the day, and you could even read a book by its light at night."

Supernovae have always been whimsical events to me. These incredible events rend stars and planets alike into base gas and dust. This star dust releases the elements needed for life. I find it fascinating that it requires such violent destruction to give rise to eyes and minds through which the cosmos can become self-aware. Or, at least as far as we know.

Moment III: Sol's Racepath

In 240 million years, Sol will have orbited the Galactic center once; 240 million years ago was the beginning of the Triassic epoch, wherein nearly all of Earth's landmasses were joined together in the supercontinent of Pangaea. The Triassic began with the Permian-Triassic extinction event, or "The Great Dying." It is so named because it is thought to have been the most severe of Earth's extinction events, with up to 96% of marine species and 70% of terrestrial vertebrates vanishing. The cause of the Permian-Triassic event is the subject of much debate, with leading theories implicating meteorite impacts, increased volcanism, changes in ocean chemistry, the formation of Pangaea, as possible culprits, either alone or in combination. Since that time, the persistence of life, bolstered with evolutionary power, repopulated this world with countless species, which have been eliminated and been re-forged several times hence. This biological persistence is our legacy.

When will the next such event occur on Earth? How many other extinction events are occurring throughout the Milky Way? On how many worlds is life just now emerging from its native oceans? With

our current knowledge, it is impossible to answer these questions scientifically. However, considering such philosophical questions opens one's mind to the greater reality that exists beyond the Terran atmosphere, an understanding that enables us to ask new questions in our scientific pursuits.



The Inner Planets transit. Computer rendering, artist's impression. © David Cortner, used with permission.

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BOOKENDS

Robin Byrne
Bays Mountain Planetarium
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The Construction of the Heavens: William Herschel's Cosmology by Michael Hoskins

If you are like me, when you think of William Herschel, you think of a purely observational astronomer. However, after reading "The Construction of the Heavens" by Michael Hoskins, I have discovered that there was much more to Herschel than I originally thought.

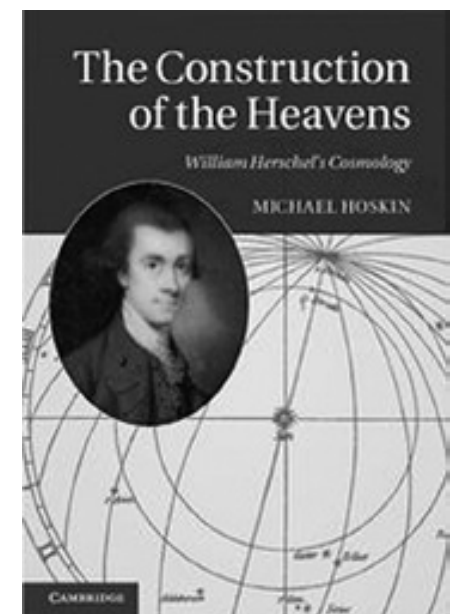
The book itself is divided into two parts. The first section provides a brief biography of Herschel, but primarily focuses on his astronomical research. The second half of the book is a sampling of papers Herschel wrote from 1783 - 1814. From the biography, you get a glimpse of Herschel's observational side, with mentions of his discovery of Uranus, large telescopes, and catalogues of celestial wonders found in the night sky. This is the side of Herschel that most readily comes to mind.

The remainder of the book exposed me to new insights regarding Herschel. His interest in cataloging deep sky objects went beyond purely amassing a collection of discoveries. Herschel was trying to understand the nature of the universe. His quest for ever larger telescopes was more than "aperture fever." Herschel was hoping to resolve these objects with greater clarity in order to better understand what he was observing. He reasoned, at first, that all nebulae would resolve into collections of stars, if only he could see them in more detail. However, he later decided that some nebulae were composed of some substance other than stars, although he could not understand what would make them glow. This discovery led Herschel to conclude that the objects he

catalogued, from nebulae to star clusters, were representing various stages in the development and life of stars. Surprisingly close to the truth, in some cases.

While the book covers a very interesting subject, I was slightly disappointed by Hoskin's writing style. In particular, when summarizing Herschel's writings, Hoskins chose to use Herschel's original terminology, rather than more current wording. As an example, when Herschel described his telescopes, he referenced them by their length, rather than their aperture, as is the modern standard. Rather than including their apertures, Hoskins perpetuated Herschel's style and primarily included only the length. In another instance, Herschel explains why stars in a cluster don't all gravitationally coalesce due to "projectile forces" keeping them in motion. Once again, Hoskins duplicates this strangely archaic terminology, instead of a more accurate description of the stars' motions.

Reading Herschel's original papers, on the other hand, was fascinating. Although not reproduced in their entirety (some of the papers were originally over 100 pages in length), each one helps to illuminate Herschel's thought processes. It was also interesting to see which ideas required extensive explanations, rather than being considered common knowledge. Something as simple as concluding that stars in a cluster are truly associated with each other in space, rather than being a random alignment of disparate bodies,



(Continued on page 12)

page 11

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required an extensive statistical analysis to support the conclusion.

All in all, If you enjoy the historical development of ideas in astronomy, and don't mind slogging through some difficult reading, you will likely appreciate "The Construction of the Heavens" by Michael Hoskins.

The Construction of the Heavens: William Herschel's Cosmology, Michael Hoskins, Cambridge University Press, ISBN 978-1-107-01838-9

ODE TO WOODCHUCK

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*Question: How much cider would a SEPiAn sip,
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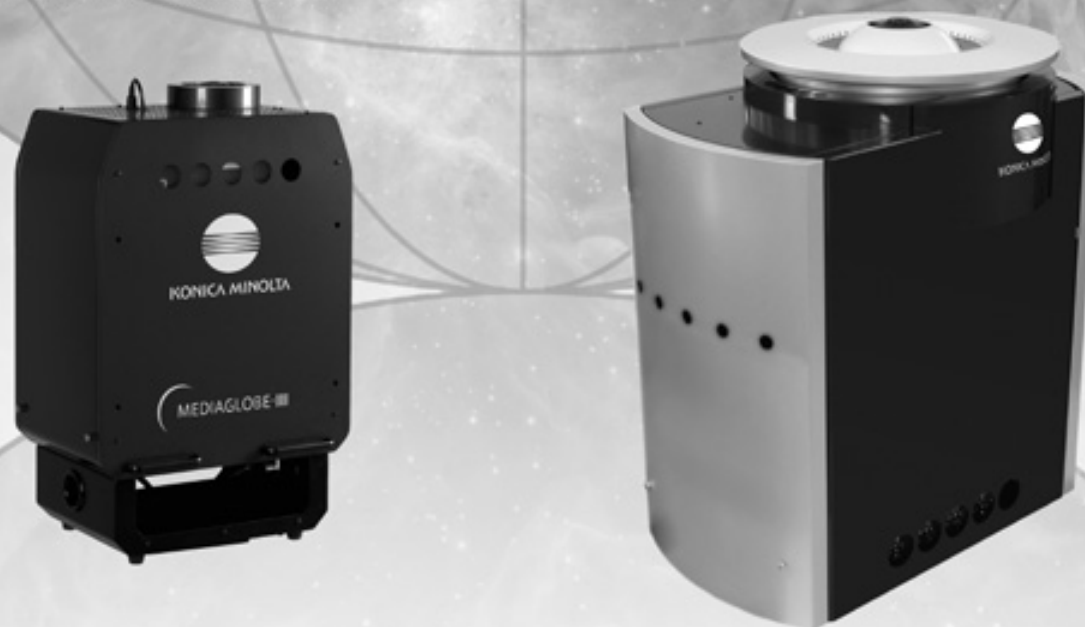
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Buehler Planetarium
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Susan J. Barnett reports: Although we were completely clouded over and couldn't see it live, we had a great time during the Transit of Venus. Over 700



people came and stayed for several hours, enjoying live feeds of the transit and several soldout shows.

The Buehler Planetarium & Observatory is running public shows four days a week. The weekend shows and monthly specials include *Infinity Express*, *Earth, Moon & Sun*, *Footsteps*, *Explorers of Mauna Kea* and *Skywatchers of Ancient Mexico*.

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

The Buehler Observatory has viewing four times a week. It has free public observing Wednesday, Friday, and Saturday evenings. In addition, we observe the Sun on Wednesday afternoons. We usually have one telescope set up to view sunspots, and watch flares through a Hydrogen-Alpha filter on another.

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

Thomas Webber reports: We had great success with their Sci-Fi Day hosted June 23, 2012. Approximately 1,868 people attended. 846 people attended planetarium shows.



GEORGIA
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Tellus NW GA Science Museum
Cartersville, GA**

David Dundee reports: We are have the best attendance year ever at the Tellus planetarium. This spring we opened “Enchanted Reef” for children and “Planetary Thrill Rides II”. More rides from SpacePark 360 with great music from Burning Century. Meanwhile Astronaut Storey Musgrave spent a few days with us and did a public program for over 400 people. We had an awesome Venus transit event with over 1,000 folks coming to see it through our telescopes and seeing the transmissions from further west. We ran the “Transit of Venus” show from Bays Mountain in our planetarium for about three weeks as well it’s shorter 4 minute sister show from Konica-Minolta. We are saving them for 2117. Our theme for our summer groups is rockets; we are launching air rockets all summer (only a few on the roof so far).

We just got word from Smithsonian that we are getting an Apollo Lunar Ascent Engine from the Lunar Lander for our exhibit hall.

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

Jim Smith reports: I know that you will be interested to know that the Smith Planetarium (of Walker County Georgia Schools) will be ready for students by mid September. The razing of the old building is almost complete. The new Konica-Minolta Media-Globe II planetarium projector is scheduled to be installed on June 25th & 26th. We hope the control console will be installed by July 9th. The old building (Pond Springs School) should be completely gone by then. We have been able to keep the old cafeteria which is attached to the planetarium. At some point, I hope the cafeteria will get a make-over with the outside covered in a metal covering to match the planetarium building. There will be a parking lot where the old school building was. The parking lot will be gravel at first but I hope it will be paved by early 2014. As y’all know the planetarium will have 92 seats and with space for several wheelchairs, under a dome of 40’ (12.2 meters).

I am 74 years old and am not running for re-election



Phil Groce reports: I took this photo last week of Jim & Shirley Smith during the installation of the MEDIAGLOBE II. The real story is that this planetarium survived a tornado. It destroyed all of the surrounding classrooms but left the planetarium standing. The new Walker County Science Center Planetarium will be ready to go this fall for area students.

Jim and Shirley have participated in some way in every SEPA state (except delusion). They just look so darn happy!

tion to the school board but I trust the board will continue to focus upon the needs of students & teachers. Meanwhile, I will be serving as the planetarium educator until the school system can afford to employ a full time person to fill that position. Keep us in your prayers.

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

Becky Lowder reports: We had a fantastic spring semester teaching with our new Digistar 4 digital planetarium system. Our university students, especially our planetarium directed study students LOVED it! Every day we discovered more ways to immerse our students into astronomy using the planetarium instead of using a PowerPoint lecture in a classroom. I was even able to do some of our night time astronomy observing labs indoors during the day labs by using our new digital sky.

The school groups attending during our directed study classes really enjoyed the live tours of the Solar System and night sky, live demos of astronomy concepts, as well as our new full dome shows: **Wonders of the Universe**, **Lamps of Atlantis**, and **One World, One Sky: Big Bird’s Adventure**.

We had one huge public event on Saturday, April 14, 2012, unveiling our new digital system with multiple showings of **Wonders of the Universe** including live star shows and astronomy demos in the afternoon. Dr. Clayton Heller, Planetarium Director, gave multiple presentations of **Lamps of Atlantis** along with his own brilliant Digistar 4 presentation, **The Antikythera Mechanism**. Clear skies allowed us to share views through our telescopes of Venus, Mars, Saturn, and more with the public.

On April 20, 2012 we took our telescopes again out to the Georgia L. Smith State Park with the Statesboro Astronomy Club and shared views through our telescopes with a very delighted public and campers there at the park. It’s so nice to experience dark skies similar to what we see in our planetarium daily.

This summer brings more renovations to our 30 foot

dome planetarium with new carpet and seating. The new Greystone Kingston seats are being installed as I type. We'll be using the planetarium again daily to teach the ASTR 1000 university summer sessions as soon as all the work is completed. We also have a Digistar 4 work station in my office for teaching and creating new astronomy presentations. Our ViewSpace exhibit was moved from the planetarium wall to the front entrance of our lobby, allowing visitors to enjoy it even from outside the glass entrance doors. The Transit of Venus on June 5 was a washout here due to the clouds and severe thunderstorms moving through our area. I was lucky enough to catch a brief glimpse of it through a break in the clouds that only lasted a minute. I'm looking forward to sharing our new planetarium with everyone as soon as I get the approval to plan our upcoming public events. Until next time, wishing everyone clear skies!



KENTUCKY
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East Kentucky Planetarium
Prestonsburg, KY
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Golden Pond Planetarium
Land Between the Lakes Nat'l Recreation Area
Golden Pond, KY

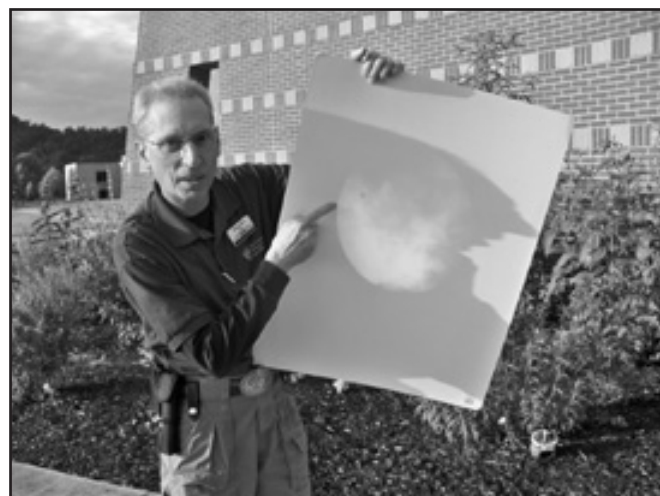
Ross Workman reports: We are well into our Summer Schedule here at Golden Pond. Our daily

show schedule runs from 10am through 4pm. The Laser Lights & Summer Nights programs are well received. We are offering an 8pm planetarium show every other Saturday night followed by observing at the observatory in the backyard of the visitors center. Members of the West Kentucky Amateur Astronomers have been graciously volunteering to help out with the program.

The Venus transit was enjoyed by well over 100 people. We used the Coronado solar scope along with the Mallincam to project the Sun's image on our LCD TV. It was well received.

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

Steve Russo reports: We just finished the last of our Summer Camps, enjoyed by over 125 kids. Topics included were Geology, Chemistry, Biology, and Astronomy. Under mostly cloudy skies, our Venus Transit drew around 50 people who watched the transit via a webcast in the dome. The East Kentucky Science Center and Planetarium was also the recipient of the Floyd County Leadership Award for an organization. The award is given to recognize groups that have organized to provide a needed service to the region.



Steve Russo, Director of the East Kentucky Science Center and Planetarium, points out Venus under the partly cloudy skies during the Venus Transit.

NORTH CAROLINA
contact: Patsy Wilson
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Planetarium
Elizabeth City State University
Elizabeth City, NC

Woodrow Grizzle reports: Spring 2012 brought many groups to our theater doors. We saw an increase in the average number of people per show, with the number of shows decreasing ever so slightly. The relative rarity of empty seats comes directly from our efforts to concurrently book small groups with mid-to-large-sized ones.

April saw the second North Carolina (NC) Science Festival come to Elizabeth City. On April 13 (which happens to be the birthday of Thomas Jefferson, father of my *alma mater*, and the date in 1960 when Transit 1-B, the world's first satellite navigation system, was launched), we hosted *The Truth Behind 2012* as Elizabeth City State University's official event for the NC Science Festival. The program examines the Mayan long-count calendar and some of the many of the "theories" put forth to explain the mechanisms by which the world will come to an end on December 21, 2012. Morehead Planetarium and Science Center produced the program and graciously shared it with us especially for the NC Science Festival. April 13, 2012 was a Friday, so we had the added auspices of examining the apocalypse on such a superstitiously unlucky day.

Work continues on revamping our program offerings. I just finished digitizing all of our "keeper" slides mere days before writing this update. The digital files will be used to create three-screen video versions of shows. We are counting the days until we are slide projector free! If anyone is interested in learning more about the digitization process, I will be glad to share: just call or e-mail.

We are also working on supplemental classroom and lab exercises to enrich the planetarium experi-

ence for local students. I mentioned this process in last quarter's journal, but I can never overemphasize the value added in offering pre- and post-visit activities and assessment as supplemental material to planetarium visits. We have completed the packet for *The Little Star That Could*, and we are now moving on toward completing the supplements for *In My Backyard*, with the completion goal of August 15, 2012. A brand-new planet show is in the works, too, and I hope to have the show itself ready to run during the fall field trip season of November and December.

June 5, 2012, of course, was the transit of Venus date. The sky was quite cloudy that day, and observing was touch and go. We did get to see the event, however, and I took some decent photographs: one of which is included with this write-up.



We are also excited to offer a new program this summer. Dubbed *Summer Sunset Stargaze*, the program is a live tour of the current evening sky inside the theater, with an outdoor observing session immediately afterward, weather permitting. This program marks the first time we have used our brand-new telescope, an 8" Meade LX200. *Stargazes* are offered on the third Thursdays of June, July and August. They are timed so that guests enter the theater at sunset, stay for about an hour, and then emerge as the planets and brightest stars become visible. We just had the first one on June 21, and we had a full house, but the real sky was not favorable for observing that evening. Media attention has been fantastic. The local newspaper ran two major stories about the program and the new telescope, and each story featured large, full-color photographs of our staff and equipment. Public response was great before the articles came out, but, since then, response has been huge and now

both our July and August dates are nearly sold-out already. Stargaze was conceived as a pilot to determine public interest in expanded programming, and it looks like we will add additional dates in the fall. We could not be more pleased.

Unfortunately, we will be unable to attend the SEPA/IPS conference in Baton Rouge, but we look forward to hearing and reading about how it went.

**Robeson Planetarium and Science Center
Public Schools of Robeson County
Lumberton, NC**

Ken Brandt reports: Here in Lumberton, we have been doing summer programs for many interested kids and parents. We've opened a new exhibit, **Esmerelda**, featuring the emeralds of North Carolina. We have some excellent specimens from both the North American (Hiddenite) and Crabtree (Little Switzerland) emerald mines. I have also acquired several hundred pounds of matrix from these localities, which is being sprinkled liberally in the mineral flume we operate in our science center.

Curiosity is hopefully doing her post-landing check-outs, and our programs this year will focus on her efforts.

I have borrowed a 1/3 scale model of Opportunity, because that story is still being written as of this report. 8.5 years on Mars and counting!

If you haven't yet joined the Museum Alliance, you should definitely consider doing so, as the pipeline of raw images and processed landing products (images, video, updates, etc.) from Curiosity will keep you busy alone. The updates and telecons from NASA, JPL, and other explorers keep rolling on, at least 3 per month. And you get an inside track on grant opportunities, reviewing materials for later use, etc. Contact Anita Sohus at JPL for more information: anita.m.sohus@jpl.nasa.gov

Penultimately, a thank you to one of my favorite and most formative influences: Ray Bradbury. His short stories filed my teenage brain with wild and crazy ideas, and helped form my curiosity for space and what we might discover there. To paraphrase some-

thing Ray said in 1971; 'I hope Curiosity crests a ridge, and is greeted by Martians holding banners proclaiming "Bradbury was right!"' "...I work for that. Small man, large dreams..."

Finally, what do you tell your kids about 2012? I don't know about you, but I have had a steady stream of questions from kids in the 'tweens' who are genuinely anxious about this. I share an article with teachers and parents, written by Sunshine Simmons, in the Portland Parent Observer, Sept. 14, 2009: link is here: <http://www.examiner.com/article/how-to-talk-to-your-kids-about-2012>

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

Patsy Wilson reports: Summer brings a lull to the day-to-day programming in our planetarium. There are a number of day camps and other child-care facilities that have booked visits throughout the summer months. These groups will see a show that combines the various technologies available to us. The show begins with "**More Than Meets the Eye**", then moves into "**Summer Skies**" a live sky of the area, and ends with a 15-minute laser experience created using AVI's Skylase library of family friendly songs.

Later this summer rising 3rd and 4th graders will attend, **Rockets and Stars and Kids Camp**. Students will learn the principles of rocketry by experimenting with various simple rockets. The highlight of the week will be the launch of their model rockets for parents. These budding astronomers will use the planetarium, the full-dome laser system and other hands-on activities to learn familiar constellations. Students will use computers and telescopes to observe the Sun. Students will make sundials, planispheres, moon phasers and other astronomy tools. All activities will use hands-on, inquiry style learning. The goal is to increase interest and enthusiasm for science. This camp falls during the landing of Curiosity on Mars so we hope to watch another historic event happening on that frontier.



**DuPont Planetarium
Ruth Patrick Science Ed. Ctr. , USC
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) had a very successful National Astronomy Day on April 28 when it hosted what is called, "Earth & Sky Night" for 342 people. Since National Astronomy Day is usually close to Earth Day, we combined the two into one celebration, although the astronomy side is certainly the highlight and the driving force behind the event. A variety of hands-on activities were available from 7:00 - 9:30 to help people understand the wonders of earth and space science. The Astronomy Club of Augusta was on hand to provide glimpses of the heavens through a variety of telescopes.

A highlight for us was the Transit of Venus on June 5, 2012. We had 271 people come to campus for the event. We presented a planetarium show about Venus and the transit that was adapted from the show released in 2004 by Great Lakes Planetarium Association (GLPA). The skies were cloudy all day leading up to the event. At 6:05 p.m., there was a slight break in the clouds that provided a handful of visitors an opportunity to see Venus as it began to cross the disk of the Sun. That window lasted only about 90 seconds, however. Fortunately, another hole opened up about 20 minutes later and lasted for about an hour. Everyone was able to view the Transit via a variety of solar viewing instruments provided by the planetarium and the Astronomy Club of Augusta. Inside of our building, we had a couple of live feeds from other locations across our fair planet so that our visitors had a number of viewing options. Clouds obscured our viewing of the 2004 Transit, so no one at our site was able to see it first hand. There were a number of people

who were at both the 2004 and 2012 events and commented about how excited they were to have a successful viewing this time. On a historical note, a team of German scientists came to our city, Aiken, South Carolina, to view the 1882 transit. The frame of one of their observatories is at the nearby historical museum.

In May, we began our summer hours in the planetarium by opening an hour later at 8:00 and 9:00 p.m. to accommodate the use of the observatory after sunset. We presented the planetarium show about Venus and the transit that was adapted from the GLPA show. In June, We showed *More than Meets the Eye* by Lochness Productions and the local production, *Digistar Virtual Journey*. In July, the planetarium presented *In My Backyard* from the Calgary Science Centre and *Digistar "Laser" Fantasy*, which is a local production. In August, we will present *Digistar "Laser" Fantasy* again and also present our enhanced version of *Follow the Drinking Gourd* based on the program by the New Jersey State Museum Planetarium and the Raritan Valley Community College Planetarium. We provide some additional information to make people aware of some of the concerns that have been raised regarding the history of the show.

On August 27-28, 2012, we are looking forward to attending the annual Carolina Association of Planetarium Educators (CAPE) at Roper Mountain Science Center in Greenville, SC. This will be a wonderful time for all CAPERs and anyone else who might be interested. Please plan to attend.

**Hooper Planetarium
Roper Mountain Science Center
Greenville, SC**

Charles St. Lucas reports: We hope you will attend the CAPE Conference (Carolina Association of Planetarium Educator's) at the Roper Mountain Science Center on August 27th and 28th of this year. The RMSC is located in lovely Greenville, SC, near the junction of Interstates I-85 and I-385.

The conference will start early Monday morning, last the entire day and Tuesday till early in the afternoon. The conference will focus on "Full-Dome

Video Uses for Teaching”. We look forward to seeing you in August.

TENNESSEE

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Bays Mountain Planetarium Kingsport, TN

Adam Thanz reports: Our primary summer show is GLPA’s “Cosmic Colors.” It looks at how we learn about what is in outer space, and on earth, by looking at their “colors” i.e. spectral signature. It is fun, informative, and decently written. I only wish it was about five minutes shorter so that we could add a live star tour and relate colors in the sky with what those objects are. But, our scheduling doesn’t allow us to go past 45 minutes total time.

Our secondary show, shown at 2 p.m., is currently finishing up with “Appalachian Skies - Spring” created by Jason Dorfman. A good show that is live in format, that tours the late spring/early summer skies and also includes detailed, interesting information about some of those objects. An example is, when talking about Mars, a brief overview of the planet is provided, but then followed by an update on Curiosity, the car-sized rover that will land on the red planet in August. “Appalachian Skies - Spring” will be followed with a two-month run of our ever-exciting “Planetary Visions.” Also written and produced by Jason, it’s an adventurous tour of the Solar System.

Our Venus transit planetarium show and June 5th viewing were smash successes! Our own full-dome (and classic format) production, “When Venus Transits the Sun,” has been distributed throughout the world to 56 planetaria! 27 states and 12 countries! To better serve the planetarium community, we are proud that we didn’t charge much at all and did what we could to provide the show to other theaters. Even though we were intending the show to

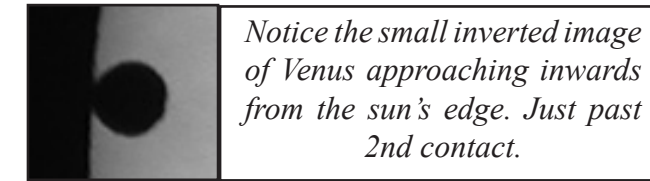
be distributed only in a frame-sequence format, it became clear that some theaters needed the show formatted for their own full-dome system. So, we had some quick learning to do. All those projection systems with all their differences in format!

Our public viewing session was a big hit as well. About 2,000 syzygy gazers (syzygists?) gathered on the athletic fields of a local university, East Tennessee State University (ETSU), with over 25 telescopes to view the transit. Partnering with ETSU was a great boon for Bays Mountain Park, the Bays Mountain Astronomy Club, and the public. Gathering that many telescopes meant that lines could be kept short. We had partly cloudy skies, but the sky itself was very clear and blue. Seeing was quite good as well. The result of all the planning and public announcements was probably the best public viewing event Bays Mountain ever had. Everyone was having a great time, no one was upset to wait in line (in fact they were downright cordial), and the views were spectacular. A number of the press attended and did live broadcasts and took lots of photos. A gaggle of nice sunspots and a clearly defined silhouetted disk of Venus. At the end, the sun was still clearly visible going behind the trees on the horizon.

I think I may have been the one to witness the closest to first contact. Just seeing the tiny notch appear was great, especially since I didn’t know exactly where on the sun’s limb the transit would start. I think it also had something to do with using, possibly, the best scope on the yard. An Astro-Physics 130 GT. Those of you who attended my workshop during last year’s conference and saw the sun knows what I’m talking about. See the photos of the event and the sun in this journal. (All photos by Adam Thanz.)

Other big news at the Park is that our entrance road is being repaired. After 20+ years of slow creep, a section is being replaced with a bridge. That means the Park is being closed during the weekdays for a few weeks in June/July. By the time you read this, the job should be done, but it’s unfortunate that it is occurring during the busiest time of the year for us. We are using the time to do some long-term projects in the theater and taking some personal time off. For those of you who know about our log house project, we’ve got some workers here fixing and doing

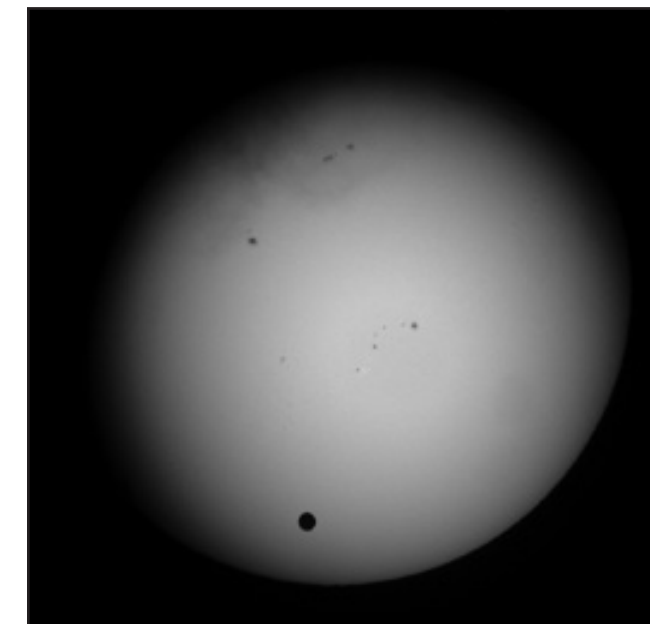
work that the original builders never did. Like fully caulk the house (very hard for a log home), insulate around some of the windows, fix the paint job on the doors, seal the crawl space, get some built-ins done, etc. Most of our possessions are still in boxes and it would be nice to unpack after all these years.



Notice the small inverted image of Venus approaching inwards from the sun’s edge. Just past 2nd contact.



About 2,000 kindly folks witnessed the transit in East Tennessee.



The sun, Venus, and nice sunspots.



A conga line of telescopes!

Sharpe Planetarium Memphis, TN

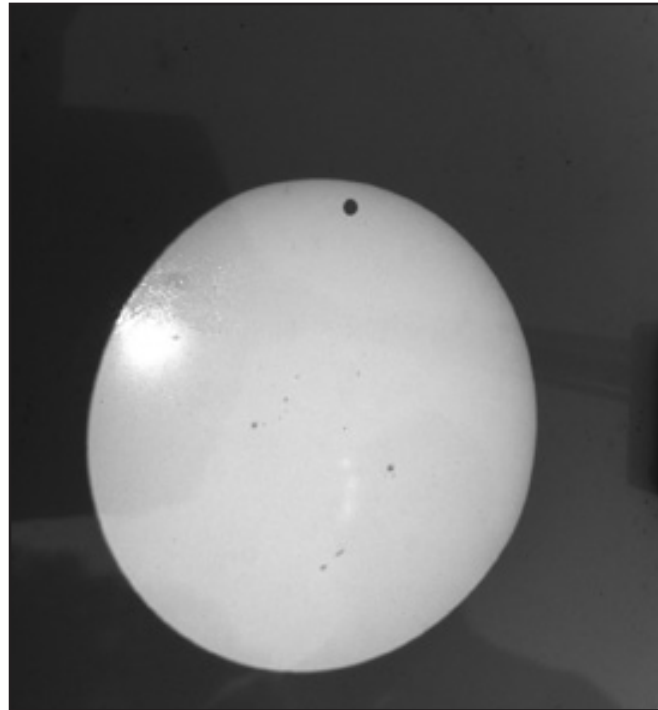
Dave Maness reports: The summer tourist season begins early in the south, as most of you know. But I have come to think of our annual Members’ Day at the Coon Creek Science Center as the start of summer weather at least. I was there on April 27th to show safe views of the sun and promote the planetarium while people dug for 70 million year old fossils that (unless they were scientifically important) they could keep.

Public school classes in Memphis end well before the month of May does. I believe that is partly to save the considerable expense of air conditioning the schools during the sometimes brutal summer heat. The short break from school programs fortunately gave me a little time to prepare for the Transit of Venus. On that day, we had people lined up at three solar-filtered telescopes as early as a couple of hours before the start. Traffic cones mark the beginning of our scale model solar system. (See photos - photos by Roy Foppiano.)



I was watching the time as people were looking at the sun when one young man (the one in the blue T-shirt and solar glasses) exclaimed "I see it, I see it!" Thinking we had another couple of minutes, I shushed him and took a look. Sure enough, I saw a good part of Venus cutting into the edge of the sun. I will not trust my watch for precision time keeping in the future.

One volunteer brought a refracting telescope to use as a projector. As you can see here, it provided a very good image.



Later, as the shadows grew longer and the sun inevitably dipped behind trees we still had some die-hards trying to see Venus' shadow against the sun.



We estimate that we had over 1,000 visitors come by the museum to look through telescopes and buy solar glasses from the gift shop. Just in case the weather did not cooperate the planetarium was open for alternate views from some reliable internet sources.

I had the rest of the week to put the finishing touches on the Hubble Vision 2 program from Loch Ness, which opened on June 9 and will run through September 8. After that, Bad Astronomy returns for the autumn. Also running is the Sharpe planetarium's very own production called Starlit Nights.

Since as I write this, it hasn't happened yet, I hope we all had a great time at the conference in Baton Rouge.

**REMEMBER YOUR
STATE COORDINATOR!**

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