GLPA Newsletter

2016

4 issues — 172 pages
The current design of the GLPA Newsletter incorporates small sections of several Hubble Space Telescope images for its page mastheads. These and other images can be accessed from the Hubble Heritage Project website at heritage.stsci.edu or the HubbleSite Gallery website at hubblesite.org/gallery. And because the photos are from NASA, they are free to use (with proper credit).

Cover Illustration: Comet Halley as seen from Kitt Peak, Arizona. Photo was taken by Bart Benjamin between April 6 and 10, 1986 during the hours of 2 and 4 a.m. He used a Pentax SP-1000 SLR camera with an f/1.8 135mm lens mounted on a Purus clock driven tripod. Hypersensitized Ektachrome 400 slide film was exposed between 4 to 10 minutes. His article, which remembers Comet Halley on the 30th anniversary of its 1985-86 apparition, begins on page 21.

Credit: Bart Benjamin

Cover Masthead: Hubble Wide Field Camera 3 Image Details Star Birth in Galaxy M83
Masthead: Credit: NASA, ESA, and the Hubble Heritage Team (STScI/AURA)

Image Credits page background image: Abstract Art Found in the Orion Nebula
Credit: NASA, ESA, and The Hubble Heritage Team (STScI/AURA)

State News Masthead: Prototypical Barred Spiral Galaxy NGC 1300
Masthead: Credit: NASA, ESA, The Hubble Heritage Team (STScI/AURA)

Masthead: Credit: NASA, ESA, R. Windhorst (Arizona State University) and H. Yan (Spitzer Science Center, Caltech)

IPS Update Masthead: August 29, 2011 GOES East Full Disk Satellite Image
Credit: NASA/NOAA GOES Project Science website

Articles Masthead: A Giant Hubble Mosaic of the Crab Nebula
Credit: NASA, ESA, J. Hester and A. Loll (Arizona State University)
I’d like to take a moment to congratulate Dale Smith on the successful completion of his 28th Conference Proceedings. All 32 of GLPA’s Conference Proceedings can not only be found on his mailed DVD disc, but may also be downloaded from glpa.org/proceedings.

In related news, Kenny Cott and I have been working to obtain a higher resolution group photo than the very small (747 x 500 pixel) version that the Grand Rapids photographer provided to GLPA for its Proceedings DVD. Although the photographer has been a challenge to reach and work with, our hope is to obtain his original images and combine them to create the finished product. [You may recall that the group photo is actually a composite of two photos — the GLPA Founders in the front row, and everyone else behind them]. When we have secured and posted a better group photo, we will notify the membership via email, Facebook, and Twitter. Stay tuned.

Spring is the time for GLPA state meetings, and I encourage you to attend yours. The dates, locations, and contact names are given at the beginning of each state’s report in the State News section, or by visiting GLPA’s State Organizations webpage at www.glpa.org/states.

Please note that the deadline for the summer issue of the GLPA Newsletter is May 1, 2016. Please submit your facility reports to your State Chairs by late-April. Have a wonderful spring and enjoy your state meeting!

(continued on page 17)
EDGE OF DARKNESS

Narrated by Hayley Atwell

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5
The Cernan Earth and Space Center at Triton College in west suburban Chicago just wrapped up a public run of *Back to the Moon For Good* and is opening Mirage3D’s *Dinosaurs at Dusk* in February and Sudekum Planetarium’s *STARS* in April. The last license agreement for fulldome content was signed on February 2nd, allowing the Cernan Center to make a clean break to all fulldome programming. A beautiful new Group Program Guide now highlights their new catalog of dome experiences. Next on their staff agenda is the task of removing all their legacy equipment from the theater. Once that is accomplished and after the College approves the disposal of each individual item, High School Gadget Girls and Engineering Technology college students will have the chance to take apart a wide selection of fine mechanical devices. The staff will likely be posting to eBay and Dome-L the availability of a 35mm movie projector and platter system. [Ed. See Bulletin Board notice on page 19]. Finally, please remember that everyone, regardless of state of residence or employment, is welcome to attend the Illinois State Meeting at Triton College on April 30th.

In 2015, Chicago’s *Adler Planetarium* welcomed over 550,000 guests through their doors, more than any other year in the last twenty. By now, you’ve hopefully heard about Mike Brown’s exciting announcement of a potentially new planet in our Solar System. Adler is collaborating with Mike Brown and his research team on a new sky show about this object and the other mysterious bodies that populate the...
outer Solar System; it will open in late May. In mid-January, the Adler was fortunate to host the global launch event for the Air Jordan XXX basketball shoe. [Ed. See photo below]. Local students and global media were on hand to experience an out-of-this-world tour of the astronomical and basketball universes, under the dome in their historic Sky Theater.

The William M. Staerkel Planetarium at Parkland College in Champaign will be showing their live Spring Prairie Skies constellation show, along with Dawn of the Space Age and Flight Adventures for the kids. Girl Scout “Sky” badge workshops return in April along with Boy Scout “Astronomy” badge workshops scheduled for May. Their last “Head Start Science Night” occurs on May 19th. There are observing events at the Middle Fork Forest Preserve on May 7th and at the Camp Kiwanis Girl Scout Camp on May 21st. Otherwise, the staff is praying for Illinois to approve a state budget!

The Elgin School District’s U-46 Planetarium is on track to see about 16,000 school groups this year and another 1,000 scouts and public visitors. Tweaks and adjustments to the school presentations to better align with the NGSS have been a focus this year. The Gail Borden Library in Elgin is one of seven libraries to host “Discover Space: Exploring the Solar System and Beyond.” The U-46 Planetarium is coordinating events with Gail Borden during the exhibit this spring to bring space science alive to the entire community.

In Peoria, the Dome Planetarium at the Peoria Riverfront Museum had a busy season of special events this winter, with one sold out “Wine and Cheese Under the Stars” event in December, and two sold out “Space Cantina: Pub Night in a Galaxy Far, Far Away” events. The museum’s Giant Screen Theater showed Star Wars: The Force Awakens to popular delight, and Planetarium Curator Renae Kerrigan spoke before the premiere about real space places that mimic the Star Wars universe. In February, they hosted two “Romance Under the Star” events, and they are planning a “Yuri’s Night” celebration and more yoga events in the dome for the spring.
HST IMAGES

If you would like to download beautiful Hubble Space Telescope images like the ones that are found throughout the GLPA Newsletter, all you need to do is visit:

Hubble Heritage Project
heritage.stsci.edu/

or

HubbleSite Gallery website
hubblesite.org/gallery/

And the best news of all? Since the photos come from NASA, they are free (with proper credit)!
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Indiana Spring Meeting
Date: Saturday, April 23, 2016
Location: Jefferson High School Planetarium, Layfayette
Contact: Bill Huston (whuston@lsc.k12.in.us)

At the Koch Immersive Theater in Evansville, Mitch Luman and his staff have created a live, Native American show that utilizes their Digistar 5. The show will be offered to school groups. His team has also been experimenting with the creation of open captions for their fulldome shows. Life: A Cosmic Story, produced by the California Academy of Sciences, was completely captioned last year and presented by invitation to Evansville’s deaf community. The captioning was so well received that the captioned version now runs regularly in their line-up of shows for 2016. In addition to its live shows and children’s offerings, Evansville is currently running National Geographic’s Wildest Weather in the Solar System and Evans & Sutherland’s Microcosm: The Adventure Within. Kara Tynes, a long-time volunteer at the Koch Immersive Theater, is now attending Ball State University and is a student worker at the Charles W. Brown Planetarium.

Dan Goins, retired from Martinsville, is recovering nicely from January neck surgery, but still has a way to go before he is allowed to drive. Like a the true planetarian and scale model railroader, Dan explained that he “managed to get it [the surgery] postponed so I could get through all the Christmas trains I set up during the season.” Dan also wondered “if 17 years of looking up in a 20-foot dome had anything to do with it.”

Dayle Brown, GLPA’s incoming GLPA President from South Bend, has 44 of her watercolors on exhibit at the Buchanan Art Center in Buchanan, Michigan. During a week in March, Dayle will be giving presentations to the school children of Buchanan in her Starlab set up at the Art Center. The schedule is for one grade level a day plus one day/night for families. Best of luck, and loads of energy to Dayle!

The Schouweiler Planetarium at the University of Saint Francis in Fort Wayne had another very successful “WinterFest” in February. The first weekend consisted of 11 music laser light shows from AVI using their RGB SkyLase system. The second weekend offered three evening programs and two family matinee programs from the planetarium’s current show catalogue, in addition to two Valentine Evenings. Both events featured breaks for sweets and beverages and both concluded with the Schouweiler’s signature “strolling under the stars with charts and red flashlights.” Director Pareis reports that the “stroll” improves one’s nighttime hazard avoidance skills given the planetarium’s 60 Spitz fiberglass seats. The February 13th event featured the AVI SkyLase Beatles program and JHE’s Welcome to The Universe. The February 14th event featured the Minneapolis Planetarium’s Aurora show and occasional aurora effects during the “stroll.”

DON’T MISS OUT
To be included in the summer issue’s State News column, please forward news from your facility to your state chair in the latter half of April. If you have a digital picture of a newsworthy event held at your planetarium, please e-mail it to Bart Benjamin for possible inclusion in the IPS Planetarian’s “International News” column.
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In Bay City, the Delta College Planetarium has organized a number of new special events as a way to diversify its offerings and increase visibility. Their monthly Gateway to the Stars show hosted by Mike Murray has drawn near or at capacity crowds, and other presentations called The Native Skywatchers and Alien Civilizations bring in new interests. A new fulldome version of Led Zeppelin is bringing sell-out audiences, and attendance for feature shows continues to grow as well. New shows include From Earth to the Universe, Cell-Cell-Cell, and Edge of Darkness. A new in-house live narrated production called Dateline Mars will run in April and May to take advantage of the opposition of Mars. The planetarium will be participating in Statewide Astronomy Night on April 15th coordinated out of Michigan State University. A new monthly series called “Sky Treasures” is a joint project between planetarium manager Mike Murray and the local PBS affiliate at Delta College called Q-TV. Episodes can be found at www.youtube.com/user/DeltaCollegeMI. New marketing and advertising efforts are underway, including survey and polling data, to help guide future directions of the facility.

The Kalamazoo Valley Museum is pleased to announce that Mark Reed (formerly of the Peter F. Hurst Planetarium in Jackson, Michigan) has been hired as its Planetarium Manager. Mark, along with Planetarium Technician LaRue Russell, have been entrusted to maintain and operate the planetarium following the retirement of Eric Schreur this past summer. Programming for spring 2016 includes Invaders of Mars as their feature show about the “red planet.” For the seasonal stargazer, The Artist’s Sky discusses how the grandeur of the night sky has influenced various works of art, music, and literature over time. In addition, the music-light show Led Zeppelin is featured on Art Hop Friday’s at the museum while Joe Hopkins Engineering’s classic program Bear Tales makes a return this spring as their family show with all its “grizzly” puns included.

The Longway Planetarium is beginning work on their first full production with their new Digistar 5 system. The show discusses forces aimed at a 3rd to 5th grade level — including kinematic forces, magnetism, and gravity. Their entire campus is also doing a free day for Earth Day on April 23rd and Longway will be joining in with free shows.

In Ann Arbor, twin ten story cranes have been assembled and have begun their work on the new building site. Plans are developing for how the staff will slowly empty this building, and what will happen to all the various items that they keep and get rid of. Little is happening now related to dome content, other than seating. The staff is narrowing down what they will pick. Their winter theme semester is “time and scale,” and these topics (along with examples) are being worked into the live star talks. Light Years From Andromeda is playing as well.

The Abrams Planetarium at Michigan State University will be adding a new display of meteorites from China to celebrate MSU’s theme year on China. They just received a grant from the Dart Foundation to install and build content for three interactive kiosks. They are also bringing back their Pink Floyd show for six more nights in March because of its popularity in November. On April 15th, they will be hosting a lecture, planetarium show, activities, and observing as part of the first annual “Statewide Astronomy Night” being organized by the MSU Science Festival. The staff is happy to be participating with their fellow Michigan planetarians in this endeavor. Abrams’ current feature show is Skywatchers of Africa and their family show is Perfect Little Planet.
They are also going to be offering free showings of *Natural Selection* three times in February for the MSU Museum’s “Darwin Discovery Day” that happens every February.

Last fall, the **Eastern Michigan University Planetarium** piloted a new program called *Date Night* at the planetarium. This winter, they added this program to their show lineup. They now use a live polling system whereby the audience chooses the show based on receiving information about different options during the pre-show presentation.

In Detroit, the **Michigan Science Center** underwent a reorganization at the beginning of the year. Education and theaters are now combined into one department. Paulette Auchtung received a promotion from Planetarium Coordinator to Planetarium and Live Theaters Manager.

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**Ohio State Meeting**

Date: Saturday, April 23, 2016  
Locations: Erie and Edinboro, Pennsylvania  
Contact: The Erie contact is Jim Gavio (jvg10@psu.edu).  
The Edinboro contact is David Hurd (dhurd@edinboro.edu).

Jon Marshall has reported some late-breaking sad news. Longtime Cleveland area planetarium Bud Lindermann has passed away. Bud had been retired from the **Midpark High School Planetarium** in Middleburg Heights for many years.

Curt Spivey reports from the **Ward Beecher Planetarium** at Youngstown State University that Tiffany-Stone-Wolbrecht has joined their “little family” as the new Planetarium Lecturer. Born and raised on the Mississippi Gulf Coast, Tiffany ventured north for school and completed her physics degree at Penn State, The Behrend College in 2013. During her time at Penn State, she conducted research on exoplanets using the emerging data from NASA’s Kepler mission. Tiffany worked through graduate school at the Edinboro University Planetarium where she discovered her passion for astronomy education and graduated from Edinboro University of Pennsylvania with a M.Ed. in Secondary Instruction in 2015. The YSU team will be growing again soon as they begin a search for a Digital Content Designer as part of their NASA CAN grant for the CosmoQuest website.

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Here is the whole YSU team (L-R): Jill Mogg, Administrative Assistant; Curt Spivey, Planetarium Engineer; Dr. Patrick Durrell, Planetarium Director/Astronomy Faculty; Dr. John Feldmeier, Astronomy Faculty; Tiffany Wolbrecht, Planetarium Lecturer.
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MTE proudly serves as the exclusive North American distributor of Konica Minolta Planetarium systems.
Laura Megeath reports that the Appold Planetarium at Lourdes University and the Toledo Symphony Orchestra will begin a new collaboration. Prior to each planetarium show, visitors can now enjoy the sounds of the Toledo Symphony! The Symphony will provide recordings from their performances to correspond with each show.

In the Vandalia Planetarium at Smith School near Dayton, Scott Oldfield soldiers on hosting his astronomy class twice a week and producing community shows once a month. This season began with a special on Pluto, followed by constellations and most recently Celebrating VII, The Dome Awakens. Upcoming titles in production include I Heart Aliens, Will the Sun Explode?!?, Cosmic Jams, and Walk the Planets. The Dome is also proud to make space for the occasional request show for groups such as pre-schoolers, 5th grade science classes, and the Latin Field Trip Group. Attendance skews directly proportional to advertising effort; and The Dome continues to be on the lookout for news of any regional facility upgrades that might beget donations of constellation overlay slides and/or special effects projectors.

At the Westlake Planetarium, Jeanne Bishop has been working on making a videotape of teaching seasons utilizing simple model materials to show the from-space view, and the planetarium to show the from-Earth view. GLPA’s “Live from the Planetarium” was the inspiration for her starting the IPS Education Committee project to collect videotapes showing how people teach an astronomy concept. When Geoff Holt and others produced “Live from the Planetarium,” they used an infrared camera. Since Jeanne does not have access to such a camera, she devised a special method to show planetarium projections: time exposures. Jay Reynolds, who teaches astronomy at Cleveland State, is videotaping her as she teaches with model and planetarium views. They are nearly finished taping, and Jay then will edit the work. They also will make a short video explaining techniques of preparing the parts of the seasons video. Jay and Wes Orloff have prepared a short list of tips about how to make the video and upload it to YouTube. Jeanne will send written details to the GLPA Newsletter Editor when this video is completed and hopes that many others will plan, tape, and submit video to the project. It does not have to be professional; the purpose is to show what is done in a particular classroom or planetarium. [Ed. See Bulletin Board notice on page 19].

The current public show at the BGSU Planetarium is Dawn of the Space Age from Robin Sip and Mirage 3D.

Wisconsin / Minnesota State Meeting
Date: April 29 and 30, 2016
Location: University of Minnesota-Duluth
Contact: Jim Rock (rockx016@d.umn.edu)

Plans are moving forward for the opening of the new Bell Museum and Planetarium on the University of Minnesota’s St. Paul campus in 2018! Architectural designs are complete, groundbreaking is planned for Earth Day 2016, and exhibit design and development continues through the fall.

The Gary E. Sampson Planetarium is pleased to report that it will be getting new seating during the summer.

The Buckstaff Planetarium at the University of Wisconsin-Oshkosh will be undergoing renovations and is scheduled to reopen in September of 2016.

Community programs at the Charles Horwitz Planetarium in Waukesha, Wisconsin have included Galileo in February, Saturn, Jewel of the Heavens in March and The First Stargazers in April.
Some years ago, an advertisement similar to this one announced installation of the world’s first GOTO CHRONOS HYBRID planetarium, at the College of San Mateo near San Francisco, California. It was a fantastic system that for the first time, brought the perfect synchronization of a state of the art opto-mechanical planetarium projector with a fulldome digital video system. Instructors Darryl Stanford, Mohsen Janatpour and astronomy technician Dean Drumheller loved working with the system to teach college astronomy courses and to inspire visiting school students.

Then the unthinkable happened. Only a few weeks after the planetarium’s dedication, the fire suppression sprinkler system in the new building accidentally went off, flooding the entire planetarium with water! The CHRONOS HYBRID equipment was ruined. But Darryl, Mohsen, Dean had enjoyed working with the system so much that they immediately ordered another one.

Fast forward to today, when funding became available to add upgrades to many of the college’s science facilities. Since the planetarium was so tremendously successful in not only educating but also inspiring current and future students, the decision was made to once again continue investment in the planetarium. And once again, the choice was GOTO.

So in January 2016, Darryl, Mohsen, and new astronomy technician Justin Slevick began using a brand new system. The new system includes a second generation CHRONOS II, which replaces earlier incandescent lamps with new high-output, high-efficiency LED illumination, and brings even more reliability. Dean says that the new CHRONOS II stars, sun, moon, and planets are so much brighter he actually has to dim them down a bit for some scenes. And Justin will never have to replace another burned-out lamp.

The fulldome video system was updated with new computers and software, and video projector resolution was improved from 2K to 4K. The full, synchronized system continues to be controlled by the HYBRID manual control console, which makes teaching live lessons easy, accurate, and fun.

So yet again, a new GOTO state-of-the art planetarium is in place, and ready to go. And the College of San Mateo becomes the first planetarium in the world to have had three (3!) GOTO HYBRID systems installed.

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The Manfred Olson Planetarium at the University of Wisconsin-Milwaukee is celebrating its 50th anniversary this year! To mark the event, there will be “A Celestial Celebration” on April 23rd in the new Kenwood Interdisciplinary Research Complex. The UWM Planetarium is hosting “A Night under the Caribbean Sky,” which will feature music, culture, and stars.

Marc Seigar and Jim Rock at the Marshall W. Alworth Planetarium from the University of Minnesota Duluth are hosting WIMPS, which might include a tour of their VR labs.

Paul Larson, the new Planetarium Director at the Mayo High School Planetarium in Rochester, Minnesota has been learning and adjusting all the content Mr. Mascotti developed during his tenure. The school presentations are completely digital now and guests are immersed in a fulldome environment with a 360-degree projector and a new Alienware computer. Paul is working on developing video games that will display properly on the dome so students can come and hang out in the planetarium during their free periods.

The Minnesota State University Moorhead Planetarium hosted “Stars of PBS,” an event in cooperation with PBS and Prairie Public Television on January 30th that attracted more than 500 people. The event featured One World, One Sky running in the planetarium as well as many activities and resources for families provided by Prairie Public. Clifford and Emily Elizabeth were on hand to meet the children and take pictures. Even their mascot, Scorch, was there to meet the little future Dragons! In addition, the MSUM Planetarium recently was awarded $58,000 for a hardware upgrade to include a new, higher resolution digital projector as well as the necessary laptops and projectors to permanently support Artemis Spaceship Bridge gaming and team-building in the planetarium.

The Soref Planetarium in Milwaukee is running its original production Did An Asteroid Really Kill the Dinosaurs? It features footage from Gubbio, Italy, where the iridium layer was first discovered back in 1977 and the Museum’s very own K-Pg rock from Hell Creek, Montana.

President’s Message
(continued from page 3)

I am extremely pleased with all of the new, young faces in the Executive Committee!! With Dan Tell as Secretary, Cheri Adams as Treasurer, and the others continuing with the Executive Committee, we have the fresh ideas of the young and the wisdom of the old timers. GLPA remains a powerful resource as well as a source of guidance and inspiration to all members.

The GLPA Conference this year will take place at Longway Planetarium in Flint, Michigan. This is the same location for our Spring Executive Committee meeting on April 16th. If you have any questions, issues, or concerns, please let me or any member of the Executive Committee know before April 16th. I can be reached at dayledavid@comcast.net.

It is our hope that you, the members of GLPA, follow in the footsteps of the young and not so young. Contribute your skills and insights. Take part in your conferences by presenting a paper, poster, or workshop. By doing this, you keep GLPA strong for all!!

Happy Spring!
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ANOTHER RESOURCE FOR THE 2017 TOTAL SOLAR ECLIPSE


Jay has lately come out of “retirement” to help promote the 2017 U.S. Total Solar Eclipse. The site is AmericanEclipseUSA.com. This site is intended to be a “user-friendly” resource that educators and astronomy enthusiasts can share with their friends and family to promote awareness and participation in the upcoming eclipse. Jay notes that we all appreciate how this eclipse is an unparalleled opportunity to promote astronomy, and can hopefully inspire young Americans to careers in STEM fields.

The media won’t cover the eclipse until it’s “news,” so it’s up to us to spread the word! Please check out American Eclipse USA, and tell your friends! This site is just launching, and will grow with added resources, but any comments for improvement are welcome! Please send your comments to Jay at jay@classicalastronomy.com.

GLPA CONFERENCE SCHOLARSHIP

Each year since 2011, GLPA’s Executive Committee has awarded a pre-determined number of scholarships for the next fall conference. Each scholarship waives the registration fee and meal package for the award recipient.

Complete rules and procedures for the GLPA Scholarship are provided on the following web document: www.glpa.org/sites/default/files/glpa-scholarship-info.pdf. The application form can be downloaded from www.glpa.org/sites/default/files/glpa-scholarship-form.pdf. The deadline for scholarship applications is September 1st.

ANOTHER REASON TO “LIKE” FACEBOOK

Here’s another reason to join Facebook and “like” the GLPA Facebook page. In early February, GLPA’s Facebook administrator Renae Kerrigan posted all 547 photographs from the recent conference in Grand Rapids to a GLPA Conference 2015 photo album and invited members to tag themselves and share. Other recent posts by her and others include news and member discussions about Pluto and Charon photos, an astronomer’s video explanation of gravity waves, the possible new planet in our solar system, reminders of pending sky events, and the return of astronaut Scott Kelly from orbit. Check it out for yourself at www.facebook.com/ glpapltms/.
Cosmic Colors: An Adventure Along the Spectrum is a dynamic new planetarium show from the Great Lakes Planetarium Association (GLPA) that will take you on a wondrous journey across the entire electromagnetic spectrum. Get ready for an amazing adventure under a rainbow of cosmic light!

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Target audience: 5th grade and up

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- $300 for a full dome masters at 4K x 4K (need 1 TB hard drive)
- $250 for full dome masters at 2K x 2K (need 500 GB hard drive)
- $200 for full dome masters at 1K x 1K (need 100 GB hard drive)

For FullDome versions, each planetarium must ship an appropriate hard drive to GLPA. Show encoding is the responsibility of each planetarium.

TRADITIONAL VERSION: $100 for traditional version with two discs -- a playable Cosmic Colors show DVD and a DVD data disc containing all-sky images, digital JPEG images, audio tracks, flattened video scenes, teacher guides, and documentation.

Order Cosmic Colors through the GLPA Online Store at glpa.org/online-store.

A COMET ANNIVERSARY ‘TALE’
Bart Benjamin

Thirty years ago this spring — to great fanfare — the world witnessed the generational return of Halley’s Comet. Although astronomers cautioned that Halley’s 1985-86 apparition would be far less favorable than its spectacular 1910 flyby, it was still a remarkable time for planetariums and astronomy clubs throughout the world. The mainstream media and telescope salesmen further amplified the furor to levels we’ve not seen since.

Most astronomers older than 40 remember Comet Halley... and the cottage industry of comet-related products that it generated in the mid-1980s. [See page 23]. As one would expect, the planetarium community produced many slide-based shows about Edmond Halley and his comet and sold more telescopes and binoculars in six months than they normally did in six years. Eager parents attended telescope viewing sessions and held up their young children to eyepieces so that they might have the rare opportunity to see Halley’s Comet twice in their lifetime. And who can forget the t-shirts, posters, and bottles of “comet pills” that many planetarium and science museum gift shops stocked?

So follow me now as I re-tell this 30-year-old comet tale. Bear in mind that this all occurred before the Internet and email. Planetarians communicated with one another via long distance telephone calls, faxes, and snail mail. Schools proudly lauded their computer labs replete with Apple II computers and dot matrix printers.

HALLEY’S 1985-1986 APPARITION

Sadly, Comet Halley’s 1985-86 apparition was the least favorable on record. The Earth was on the opposite side of the Sun when Comet Halley passed through perihelion in February of 1986, creating the worst viewing circumstances in historical times. That said, Comet Halley still ranked as one of the better comets visible in the last 50 years.

Comet Halley had been re-discovered by the 200-inch Hale Telescope in October of 1982, when it was located just outside the orbit of Saturn. *Sky & Telescope* offered its first article detailing Halley’s Comet upcoming apparition in September of 1983, and in August of 1985, *S&T* began a monthly series of comet updates that they called “Halley Notebook.”

Many amateur astronomers first glimpsed the comet in mid-November of 1985, when the Moon was absent and the comet (mag. 7.4) passed just south of the Pleiades. During December and the first half of January, Comet Halley brightened to become a binocular object in the early evening sky. It disappeared into the glare of evening twilight in late-January, en route to its perihelion passage on February 9, 1986.
HALLEY AFTER PERIHELION

Comet Halley entered the pre-dawn sky in early March of 1986. However, the waning Moon ruined any dark sky viewing of the comet until March 6th, as the comet traversed the Teapot of Sagittarius. From the central United States, Comet Halley was best seen between March 15th and 22nd. Thereafter, the return of the waxing Moon and the increasingly southern declination of the comet made observation difficult for northern observers.

That fact did not deter the more dedicated astronomers, who followed the comet southward in early April. *Sky & Telescope* advertised several trips to the southern hemisphere to see Halley’s Comet nearly overhead. [See page 23]. For those fortunate enough to head south, the “sweet spot” for Halley’s Comet observation took place between April 4 and 10, 1986, as it ‘touched’ the tail of Scorpius and continued through the constellations of Lupus and Centaurus. Its closest approach to Earth occurred on April 11th, when it passed 0.42 A.U. from our planet.

Although I didn’t make it to the southern hemisphere, I did travel with a few Cernan Center colleagues to Kitt Peak, southwest of Tucson, Arizona. Our group obtained permission to observe from a south-facing turn-off leading up to the summit. This location was actually better than being on the top of the mountain, since the southern face of Kitt Peak shadowed the lights of Tucson to the north, allowing our eyes to remain dark adapted as we gazed southward over the dark abyss of southernmost Arizona. By happenstance, one of our group members had an astronomy buddy in Tucson who had traveled to New Zealand to observe the comet and loaned us his 12-inch Dobsonian in his absence. That would turn out to be a much bigger deal than the comet itself!

Two of us had brought clock-driven camera platforms for our 35mm (film) cameras. The cover photograph of this newsletter was one of my many exposures. When not photographing the comet or Milky Way star fields, we observed the sky with our loaner 12-inch telescope. Ironically, our views of the southern nebulae and star clusters far exceeded our views of the comet and kept us busy until the onset of morning twilight. Omega Centauri, which none of us had ever seen before through a telescope, was especially mind-blowing! Since Halley’s Comet was similar in shape, brightness, and proximity to that great globular cluster, we visually confused the two several times during our observing session.

For Comet Halley

and BEYOND!

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RFT-8 from Barr & Stroud, 12200 W. Olympic Blvd., Los Angeles, CA. — The 8-inch f/5 reflector for the small backyard with a price tag of $750. It is a high-quality instrument with a sturdy mount and a wide selection of accessories.

RFT-6 from Barr & Stroud, 12200 W. Olympic Blvd., Los Angeles, CA. — The 6-inch f/5 reflector for the small backyard with a price tag of $500. It is a high-quality instrument with a sturdy mount and a wide selection of accessories.

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

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TWO OTHER COMETS

2016 marks another cometary anniversary. Forty years ago this spring, Comet West made an appearance in the morning sky that was as unknown to the general public as Comet Halley was hyped. Discovered by Richard West of the European Southern Observatory in August of 1975, it came to perihelion on February 25, 1976, and brightly shone in the pre-dawn sky as it emerged from the solar glare in the first two weeks of March. My black-and-white photograph was taken during that time from my parent’s backyard in Peoria, Illinois.

Despite its spectacular appearance, Comet West went largely unreported by the popular media, largely because of the disappointing performance of yet another comet 2½ years earlier. That was the infamous Comet Kohoutek, which had universally been proclaimed by both astronomers and the mainstream media as the “Comet of the Century” in mid-1973. Instead, Comet Kohoutek will always be remembered as the comet that fizzled: it never brightened much above the naked eye threshold. But as fate would have it, Comet West did the opposite of Kohoutek and brightened much more and much faster than predicted. However, without the Internet, there were few ways for that breaking news to be widely shared, so many skywatchers missed the show entirely. For those who did make the attempt, Comet West was well worth getting up early to see!

LOOKING FORWARD TO 2061

Comet Halley will reach its aphelion point in late-2023, then begin its 38-year inbound trek. Those of you too young to have seen Halley’s Comet in 1985-86 will ultimately get the last laugh, since your opportunity to see the most famous of comets (45 years from now) will enjoy a much better set of orbital circumstances. The next predicted perihelion of Halley’s Comet is in July of 2061, when it is expected to be much better positioned for observation than during the 1985–86 apparition. [See page 27]. It is expected to have an apparent magnitude of -0.3, compared with only +2.1 for the 1986 apparition.

We can only imagine what planetariums will be like — and what programming and educational opportunities they might offer — when Comet Halley once again turns the world on its ‘tail.’
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Halley's Comet in 2061

Comet Halley orbital diagram and sky simulation calculated for 3:07 a.m. CDT on July 7, 2061 from Chicago, Illinois. Images were rendered using Starry Night Enthusiast 7.

Comet Halley orbital diagram and sky simulation calculated for 8:42 p.m. CDT on July 10, 2061 from Chicago, Illinois. Images were rendered using Starry Night Enthusiast 7.
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To watch the trailer and for information on ordering the show, visit www.calacademy.org/licensing or contact your local distributor.

This program is funded in part by the Gordon and Betty Moore Foundation.
Free and Open Source Production Resources
of Particular Interest to Planetarium People
Waylena McCully  wmccully@parkland.edu

Links I have found helpful, both before and after our change from “classic” to digital planetarium. Several of these resources were shared with me by fellow planetarians, so please do pass this on!

Software (mostly multiplatform):

● Blender - 3D graphics and animation - http://www.blender.org/
● G’MIC - image processing tools, can also be used with Gimp - http://gmic.eu/
● Audacity - audio recording and editing - http://audacityteam.org/
● Inkscape - vector graphics - http://inkscape.org/
● VLC - media player - http://www.videolan.org/vlc/
● Handbrake - video transcoder- http://handbrake.fr/
● Hugin - great for stitching images - http://hugin.sourceforge.net/
● FFmpeg - command-line video encoding and conversion tools - http://www.ffmpeg.org/
● Natron - node-based compositing - http://natron.fr/

Sites - lots of freely usable content - ALWAYS check licensing requirements:
Some sites are more user-friendly than others, but I’ve found the resources to be of value. I also keep individual mission and telescope links in my bookmarks, but haven’t listed them here. - Waylena

● openclipart.org - clipart in both SVG and PNG formats
● NASA 3D resources - http://nasa3d.arc.nasa.gov/
● Celestia Motherlode - lots of models and textures - http://www.celestiamotherlode.net/
● NOAA Science on a Sphere - http://www.sos.noaa.gov/Datasets
● Blendswap - for use with Blender, requires free account - http://www.blendswap.com/
● AstroPix - images with useful metadata for digital domes - http://astropix.ipac.caltech.edu/
● The Gateway to Astronaut Photography of Earth - http://eol.jsc.nasa.gov/
● BodyParts3D / Anatomography - http://lifesciencedb.jp/bp3d/

Do you have a useful link not listed here? Drop me a line to share… Thanks!

Waylena McCully - Production Designer - William M. Staerkel Planetarium - wmccully@parkland.edu
We are looking forward to seeing all of you at the 2016 GLPA conference in Flint, Michigan. This will be the 52nd conference in GLPA history and will run from October 19th through October 22nd. It will take place on the park-like campus of the Flint Cultural Center. For those that don’t know it, the Cultural Center is a wonderful gem that includes not only the Longway Planetarium, but also the Flint Institute of Arts, the Flint Institute of Music, the Flint Youth Theater, the Sloan Museum, the Buick Gallery, the Whiting Auditorium, Applewood Historic Estate and the Flint Public Library. Rarely do you find such a group of cultural institutions clustered together on a beautiful campus in a city the size of Flint. It should provide a great backdrop for the conference.

The conference hotel will be the Holiday Inn Express, located within a short walk of the Cultural Center and all of our facilities. We have booked the entire hotel for the conference, with 120 rooms available with very reasonable rates for delegates ($79/night), so be sure to get your reservations in early. Overflow accommodations will be at the Wingate Hotel, located about a short 10 minute drive down I-475. A complimentary shuttle will run from both hotels for conference delegates.

The Longway Planetarium, your host facility, is the largest planetarium in Michigan, with a 16 meter dome (52.4 feet). In the summer of 2015, it finished a $2.0 million dollar renovation, installing new Christie Boxer projectors, becoming the first planetarium theater in North America to utilize these new 30,000 lumen projectors. We look forward to showing off the incredible brightness, clarity, and color saturation that these projectors provide. The renovations also included new seating, new sound system, new Astrotech Premium Seam dome and a new Digistar 5 system from Evans and Sutherland. Conference activities, vendors’ hall and meals will take place in the various museums and venues on campus. Most lunches will be held in the next door Flint Institute of Arts. The opening reception and Friday banquets will be in the Sloan Museum. Paper

(continued on page 35)
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Hi everybody! My name is Mike Smail and I’m the newly-elected IPS Representative for the GLPA region. I’m thrilled to have the opportunity to build from the solid work performed by my predecessor, Jeanne Bishop, and would like to thank her for her continuing service to GLPA, and for her help in getting up to speed on my new role and responsibilities.

Growing up in Columbus, Ohio, I was fortunate to have darkish skies that piqued my curiosity about Jupiter, Halley’s Comet, and a slew of other celestial bodies I was able to observe. In the summer of 1995, I started volunteering in the Battelle Planetarium at COSI. It didn’t take long for me to realize that turning the knobs of that Spitz A3P console, and opening the public’s eyes to the wonders of the universe was the rewarding sort of career that I wanted to be involved in. The volunteer work led to a part-time gig in college, and eventually a full-time position in the new COSI planetarium that opened in 1999. In 2005, I left Columbus for a position at Baton Rouge’s Pennington Planetarium. The highlight of my time there was hosting the IPS2012 conference, where I was able to meet many of you. After that conference, I returned north to join Mark Webb, Mark SubbaRao, and the other familiar GLPA faces at Chicago’s Adler Planetarium.

If we haven’t had the chance to meet at any of the past few GLPA conferences or Illinois State Meetings, I look forward to rectifying that! I’ll be at the Illinois State Meeting on April 30th and hopefully either the Indiana or Michigan meeting on April 23rd. I will also be representing our region to the IPS Council at the IPS2016 conference in Warsaw, Poland in late June. If you have any questions, comments, suggestions, or concerns about IPS, GLPA, or the relationships between them, please get in touch with me. My email address is msmail@adlerplanetarium.org, and I can also be reached on Facebook and Twitter.

If you haven’t considered attending IPS2016 in Warsaw, Poland, please give it another look. The conference organizers have planned a very thorough event covering all aspects of work in the planetarium field, from live presentation to fulldome production, management, and everything in between. I cannot overstate the significance of interacting and exchanging ideas with colleagues from around the world that you can best experience at an IPS conference. Conference registration is $420 until March 30, $475 until April 30, and $525 until May 30. There are several conference hotel options, starting at under $80 a night. Airfare searches from a sampling of GLPA cities show rates averaging around $1,200, with a 20% discount available when using the Star Alliance booking tool on the conference website, ips2016.org. The currency exchange rate is very favorable, currently sitting at four Polish Zloty to one U.S. Dollar, so once in Warsaw, your costs for food, transportation, and incidentals will be quite low. U.S. citizens require no special visas or certifications beyond a passport to gain entry to Poland. I’m looking forward to re-connecting with my international colleagues and walking in the footsteps of Copernicus; I hope to connect with each of you at IPS2016 as well.

**WHO DO I CONTACT?**

If you ever have a GLPA-related question, but are not quite sure to whom you should direct that question, GLPA may have your answer. The GLPA website has a page that provides a helpful way to determine who best could answer your question. To use it, please visit glpa.org/contacts
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Jeanne Bishop, Outgoing IPS Representative

I am very glad to have served GLPA as IPS Representative for the last six years. It is now time for Mike Smail to take over this role. I have been in close touch with Mike since last fall’s conference, and I feel certain he will be a great person to fill this role.

IPS is at a crossroads in its development as an organization. We have just approved a plan for continued exploration by the Vision2020 team for the future structure and Jon Elvert will continue to lead the effort. Mike Smail will see that GLPA is well represented in determining the direction of IPS. Our GLPA Secretary Dan Tell also will be highly involved in this effort, as he is now on the Vision2020 Committee. We are fortunate to have these people helping to steer decisions.

I will continue to be very involved in IPS as Education Chair. At this summer’s conference in Warsaw, Poland, I will lead a workshop on teaching moon phases in the dome, as well as participating in two other education workshops. I will continue to lead the education column in *Planetarian*, “Seeking what Works.”

I hope to see many other GLPA members in Warsaw, both giving papers and attending sessions. Registration can be found online, having started in late February. A fulldome session in Brno precedes the conference, and there are interesting IPS pre- and post-conference tours available. The hosts have been working very hard on topics under the umbrella theme of “Revolve,” ensuring that this event will have exceptional organization and offerings. The venue, including the Heavens of Copernicus Planetarium, is state-of-the-art. Although there is a major expense for airfare, other costs of the conference will be relatively low. Transportation within Poland and hotels are not expensive. Please strongly consider coming to the historical region which was once the home of Nicholas Copernicus.

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Conference Update  (continued from page 30)

sessions and the vendor area will be in the Longway Planetarium itself, providing very easy access for all conference delegates. We’ll do our best to order up some pleasant fall weather, but you might want to pack those nice umbrellas you got in Grand Rapids, just in case, as late October weather in Michigan can get a bit dicey at times.

We have had a few questions about the Flint Water Crisis and how that might affect the conference. Although the lead-in-water issue is serious for young children that were exposed before the problem was discovered, realistically it has not impacted the city nearly as much as you may have seen on the national news reports. All public water sources are filtered and there is free bottled water available everywhere. All public facilities such as restaurants, hotels, and museums addressed this issue early when it was discovered, and all residents of Flint have free filters and bottled water.

So come join us in Flint! We are looking forward to providing delegates with a great conference and of course the wonderful networking with all your colleagues that we look forward to every year. Clear Skies!

Todd K. Slicher  Jeffrey (Buddy) Stark
Executive Director  Planetarium Manager

35
GLPA’s 32nd newsletter and the first issue of 1976 contained the following articles and columns:

★ Incoming President Dave DeBruyn offered his thoughts in his first President’s Message: “I approach the presidency with determination, but also with some apprehension. I sometimes wonder if I will be up to the task. The GLPA is the original regional group of planetarium educators and their associates. It is, to my knowledge, one of the largest, and certainly one of the most active. Having been with it since its inception, I can take some pride in having contributed something to its growth to prominence.” [Ed. Dave DeBruyn, GLPA’s sixth President, expressed many of the same observations and concerns as the other 24 presidents that comprise GLPA’s history. Dayle Brown, GLPA’s 26th President, begins her two year term this month].

★ Dave Hoffman submitted an interview that he conducted with Duane Stanley, the Director of the planetarium of the Metropolitan School District of Pike Township in Indianapolis. Duane drew that newsletter’s cover cartoon and described his use of cartoons to tell stories in the planetarium. Duane explained that “directions, day and night, earth movements, simple constellations, and celestial body movements are learned by following Mr. Farmer and his Cow through a 24-hour day. Baron von Snoopy gives the students a guided tour of the moon and planets. . . Chief Likem Bull tells it like it is when he presents some of the scientific knowledge and mythology of the American Indians.”

★ Mark Perkins, then serving as Planetarium Coordinator at the Southwest Iowa Learning Resource Center, wrote an article titled “Multi-Channel Sound via Stereo System” in which he described a technique for converting any stereo system to a multi-channel system for the planetarium theater.
Outgoing President Dave Batch expressed surprise that his two-year term as President was ending in his final President’s Message, which began: “I’m glad the U.S. Naval Observatory keeps track of the speed of the Earth around the Sun, and I can depend on them to alert us should there be any sudden acceleration. Otherwise, I would doubt that two whole revolutions could have elapsed since I officially became responsible for writing the President’s Message column. Can it be time already for me to pass the quill to April Whitt?” [Ed. On March 20, 1996, April Whitt became GLPA’s first woman President and GLPA’s first President who resided outside the Great Lakes states. Fast forwarding to 2016, Dayle Brown becomes GLPA’s fourth woman President on March 19th].

The staff of the Minneapolis Planetarium was making plans to host the 1996 GLPA Conference. Bob Bonadurer and Rod Nordahl would serve as Conference Hosts.

The spring issue included one page devoted to paid advertising. Bowen Productions, Castle Lane Productions, Seiler Instrument, and Laser Fantasy International were the four advertisers who each purchased a quarter-page advertisement. [Ed. Twenty years later, the GLPA Newsletter contains 14½ pages devoted to advertising, much of them full page ads. Thanks again to all our vendor members!]

Eighteen companies were listed as Patron Members of GLPA, which in 1996 meant financial support of $200 or greater. [Ed. Twenty years later, GLPA has 28 vendor members, divided into five levels of support].
The Great Lakes Planetarium Association acknowledges the following companies and organizations for their generous support in Fiscal Year 2015-16:

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UPCOMING GLPA CONFERENCES:
2016 October 19 - 22
Flint, Michigan
2017 October 10 - 14
St. Louis, Missouri

☆☆ Executive Committee (Elected)
☆ Executive Committee (Appointed)

Astronomical photographs used within the GLPA Newsletter are courtesy of NASA and the Space Telescope Science Institute (STScI).

PLEASE NOTE:
The GLPA Newsletter is printed and mailed from:

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For a replacement copy of this newsletter, please contact Dale Smith at dwsmith@bgsu.edu.

GLPA Home Page:
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GLPA WELCOMES SPRING WITH EVENTS AND FELLOWSHIP
The current design of the GLPA Newsletter incorporates small sections of several Hubble Space Telescope images for its page mastheads. These and other images can be accessed from the Hubble Heritage Project website at heritage.stsci.edu or the HubbleSite Gallery website at hubblesite.org/gallery. And because the photos are from NASA, they are free to use (with proper credit).

Cover 

Solar Dynamics Observatory Captures X1.9 Class Solar Flare  
(Dec. 3, 2011)  Credit: NASA/SDO

Masthead:  

Image Credits page background image: Abstract Art Found in the Orion Nebula  
Credit: NASA, ESA, and The Hubble Heritage Team (STScI/AURA)

State News  

Prototypical Barred Spiral Galaxy NGC 1300  
Credit: NASA, ESA, The Hubble Heritage Team (STScI/AURA)

Masthead:

Bulletin Board  

Hubble Ultra Deep Field (STScI-2004-28)  
Credit: NASA, ESA, R. Windhorst (Arizona State University) and H. Yan (Spitzer Science Center, Caltech)
Hopefully, summer has finally arrived!! It’s 56 degrees here in South Bend, Indiana on the first day of May. Perhaps by the time you read this it will be warmer. Let's hope.

Several events are happening this summer. I'm sure that you observed or attempted to observe the Transit of Mercury on May 9th. As I write this, the planet Mars is nearing its closest approach to Earth in more than a decade. The Red Planet will remain a good telescopic target throughout the summer. And on August 21st, we reach the T-1 year for the Great American Eclipse! Now is the time to start making your plans to witness the grandeur and beauty of a total solar eclipse and/or prepare your audiences for what most in our region will see as a significant partial eclipse. If you're thinking about traveling to totality, be aware that hotel rooms along the umbral path are already filling up!

On April 16th, the GLPA Executive Committee met in Flint, Michigan. Todd Slisher, the Executive Director of the Sloan Longway Museum, and Buddy (Jeffrey) Stark, the Director of the Planetarium, were there. They gave us a tour of the facility. You will all enjoy coming to the 2016 GLPA Conference there! We also approved the 2018 Conference site at the Abrams Planetarium in East Lansing, Michigan.

This spring, I tried to attend as many GLPA State Meetings as possible. I was fortunate to attend three (Indiana and Ohio State Meetings will have to wait until next year). On April 23rd, I attended the Michigan State Meeting at the Abrams Planetarium. Shannon Schmoll is the Director there and reported that plans are already underway for a conference at Abrams in 2018. On April 29th, I attended the WIMPS meeting in Duluth, Minnesota. It was hosted by Marc Seigar and Jim Rock at the Alworth Planetarium on the campus of the University of Minnesota-Duluth. On April 30th, I attended the Illinois State Meeting at the Cernan Earth & Space Center in River Grove, Illinois. It was hosted by Director Kris McCall. I am still a little punchy from all that driving, but it was well worth the effort. Read on to find out what was presented at these meetings.

As you register for this year’s conference at the Longway Planetarium in Flint, Michigan, please also submit a proposal for a paper or poster. We would love to see what you’re up to in your facility or neighborhood. GLPA is made up of folks just like you. We depend on your enthusiasm for telling the world about the night sky.

Please remember the GLPA Scholarship if you need financial assistance to attend this conference. The deadline for scholarship applications is September 1st. More information can be found in the Bulletin Board notice on page 18.

Have a great summer and see you all in Flint!!

Whenever planetarians gather, I enjoy conversing with colleagues and learning the circumstances that led them to the planetarium field. Some knew at a very young age that they would seek a career in science. For everyone else, it took other influences to bring them to the same conclusion. For me, observational astronomy was the pathway to the planetarium profession. I had been a very active amateur astronomer in high school and college, but it was only when Sheldon Schafer asked if I would consider learning to operate the planetarium that my future career path sharpened into focus. Thank you again, Sheldon!

Fast forward to today, as my fellow backyard astronomers start a summer journey of truly superior planets. Always reliable Jupiter, which has been an excellent target since spring, will continue to shine over our summer evenings. Nearly as bright, Mars now appears larger when viewed through a telescope than it has since November of 2005. And last but not least, Saturn — with its rings tilted 26° to our line of sight — shines brighter than it has in years only 20° degrees to the east.

As summer begins, I wish you all clear skies as you enjoy and share these and many more celestial gems. Nothing turns on a young mind more than the experience of seeing Saturn with his or her own eyes. I encourage you to become their planetary tour guide . . . and perhaps they too will someday follow their own pathway to our wonderful planetarium profession.

(continued on page 18)
Experience 8K with DIGISTAR

Milwaukee, Wisconsin

The Milwaukee Public Museum’s Daniel M. Soref National Geographic Dome Theater replaces their 1570 film system with Digistar in 8K and joins the expanding list of revolutionary 8K Digistar theaters around the world.
The Adler Planetarium in Chicago recently wrapped up the test run of REEL Science, a program that paired the screening of a popular movie with a discussion about the scientific concepts in the movie. Audiences enjoyed the opportunity to geek out with Adler astronomers about time travel, exoplanet habitability, warp speed, and more! The test dates saw such a strong turnout that they'll be continuing the program this fall. Adler hosted the second Kavli Fulldome Lecture on May 5th. These talks occur in the Adler’s historic Sky Theater, but are ‘domecast’ live to locations around the globe via the Uniview software package. For this presentation, University of Chicago astronomer Michael Turner took audiences from Anchorage to New York City and over 15 domes in between on a tour of the history of our universe.

Dramatic changes have taken place at the Illinois State University Planetarium in Normal, Illinois since this time last year. Over the summer, the ISU Planetarium replaced its aging Lumiline dome lights with East Coast Control Systems’ Pleiades LED lighting system. Meanwhile, Ash Enterprises’ John Hare gave the planetarium’s 52 year-old Spitz A3-P/A4 hybrid a careful going over to keep the star projector at its best. During the winter, Free Fall Technologies cleaned and beautifully repainted the planetarium’s 30-foot diameter dome. Afterward, Free Fall’s Mark Perkins installed an elevator, allowing the Spitz to be lowered to the floor and raised to its normal operating height. In turn, Mark installed Free Fall’s new spherical mirror fulldome video system. The system is working great and the planetarium immediately began presenting public and school fulldome video programs, even as ISU continues to offer its older multimedia style shows. The spring public offering was Back to the Moon for Good, narrated by Tim Allen. This ran weekends through April, along with a Saturday children’s matinee Bear Tales and Other Grizzly Stories. Additionally, the live children’s play “The Princess Knight” was performed in the planetarium the first three Fridays in April. The show was produced by the Illinois State Theatre Outreach Program (ISTOP) and the ISU Planetarium. This summer, the ISU Planetarium is offering GLPA’s fulldome video program Cosmic Colors.

The Elgin School District Planetarium is planning a press release and public evening show titled “364 days
and counting” on August 22nd to kick off a year of promotion, excitement, and safety tips for the solar eclipse. Also in planning is a project with Joanne Young at AVI to obtain teacher sets of moon phase flashcards and little notebooks to give to first graders after their visit to the planetarium. The notebooks will have graphics that match the program The Moon and allow the little ones to become observant astronomers at home. The matching flashcards will be for the teachers to use at learning centers and/or during classroom lessons.

The Strickler Planetarium will be premiering The Dark Matter Mystery to the public this August. The Dark Matter Mystery is a fulldome planetarium show produced and distributed by the Laupheim Planetarium in Germany that explores the nature of dark matter, including some fantastic visualizations of the formation of structure in the early universe. Director Stephen Case participated this April in the “Two Weeks in Italy for an American Planetarium Operator” experience, presenting lessons in Assisi, Brescia, and Gorizia. A full report of this trip will be published in the upcoming issue of The Planetarian.

The William M. Staerkel Planetarium at Parkland College in Champaign will again run children's matinees in June and July. In My Backyard and Earth, Moon & Sun will be shown on Tuesday afternoons and Thursday mornings. Friday nights will feature their live Prairie Skies show and From Earth to the Universe. In July, Amazing Stargazing will replace In My Backyard. Staerkel returns to its regular schedule in August with GLPA’s own Cosmic Colors. The staff is looking forward to opening Solar Superstorms in September since this is the 30th anniversary of the National Center for Supercomputing Applications on the University of Illinois campus.

The Dome Planetarium at the Peoria Riverfront Museum is gearing up for a busy summer of space. Their feature exhibit this summer is “Be the Astronaut,” allowing the planetarium to go all out with space programming. In the dome, they will present Living in Space, a live show using Uniview to illustrate how astronauts lived in space in the past, present, and into the future. They also plan to call the ISS via HAM radio as part of the ARISS program, and are planning several EM spectrum related activities, including building an Itty Bitty Radio Telescope. We have invited an astronaut for an in-person appearance – keep your fingers crossed for us! Evening events and rentals continue to be popular. “Yoga Under the Stars,” a bimonthly event, sells out in a matter of days. New programs include trivia nights and events featuring a planetarium show, drinks, and exhibit tour — a mini version of some institutions’ “After Dark” programs.

DON’T MISS OUT

To be included in the autumn issue’s State News column, please forward news from your facility to your state chair in the latter half of July.

If you have a digital picture of a newsworthy event held at your planetarium, please e-mail it to Bart Benjamin for possible inclusion in the IPS Planetarian’s “International News” column.

Michael Turner holds a basketball used by University of Chicago athlete Edwin Hubble during the 1908-09 Big Ten championship season. In 2009, NASA astronaut John Grunsfeld took this basketball to space onboard STS-125, the final Hubble Space Telescope servicing mission.
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In addition to precise positioning and movements of the sun, moon, and planets, GOTO also takes care to represent the features on the moon, and the correct intensity representation of all moving objects, even down to varying planet magnitudes as they move about the sun from opposition to conjunction. So students can do sundial activities using light from the dome’s bright sun, and when Venus rises there is absolutely no need to put a label next to it to identify it as a planet, or to make excuses for a fuzzy, dim, video blob. And when these precise opto-mechanical projectors are synchronized with fulldome video in GOTO HYBRID Planetariums, the effect is magical.

Sharp, bright, and in the right place at the right time. Just as we hope you will be on August 21, 2017. Oh, and good luck with that weather!

For Planetarium Educators:
GOTO’s “Greatest Eclipse Hits”

From its extensive library of solar eclipse fulldome videos, still photos, and movies GOTO INC has assembled a deeply discounted set of solar eclipse resources to help planetarians teach America about the upcoming eclipse. This set of materials can be used to create your own show or to accompany a live lecture in your dome. Please go to https://www.domenavi.com/en/SearchResults.php?search_word=2017+USA to preview or purchase the materials. Or contact Yuka Sato at <y0807sat@goto.co.jp> for more eclipse clip information.
INCOMING!

Asteroids, Comets, and the Hard-Hitting Stories of Our Cosmic Origins

Narrated by George Takei

Explore the past, present, and future of our Solar System in a new planetarium show, now available for licensing.

For info on ordering the show, visit www.calacademy.org/licensing or contact your preferred fulldome film distributor.
Indiana State Chair Alan Pareis writes “Kudos to Bill Huston and the Lafayette Jefferson High School for a fantastic state meeting, great papers, and great day on Saturday April 23rd. The food was good too. Special thanks to Bowen Technovation of Indianapolis for the continental breakfast and GOTO Inc. and their USA liaison Ken Miller of Indianapolis for the lunch. Also thanks to Ash Enterprises and Jason Statham for being present and demonstrating their latest Warped Media version.”

The **Koch Immersive Theater** in Evansville used its Digistar 5 system to bring together both art and technology when local artist Jenna Citrus (University of Southern Indiana graduate and Efroymson Bridge Year Fellow) presented a fulldome art display on the dome. [See cover photo]. The artist’s works (photographic designs, paintings, and artwork) were displayed during a 22-minute evening program that also featured an original musical score. Images of paintings, photographs, and tessellations, some reminiscent of rotundas, fractals, and abstract imagery, were utilized. Director Mitch Luman reports that he and his staff are currently running several fulldome films from National Geographic including *Forces of Nature, Sea Monsters, and Wildest Weather in the Solar System*, California Academy of Science’s *Life a Cosmic Story*, plus daily presentations of its live, local feature *Skies over Evansville*.  

Ball State University’s **Brown Planetarium** had a busy end of the semester with two “surprise” music events. One event included a performance from the student-driven Chamber Choir, who sang their pieces a cappella under fulldome visuals. The other performance was from senior Peyton Cox in the music department at BSU who wanted to sync the electronic music she wrote and produced to fulldome visuals. She worked with Assistant Planetarium Director Dayna Thompson to find visuals that would go well with excerpts from her album “Pendulum.” The final product was well received and an encore presentation is planned for the fall. These performances, along with the Muncie Symphony Orchestra’s two performances at the beginning of the year, expanded their music events by specifically incorporating Ball State student’s projects in the dome. Additionally, the Brown Planetarium still focuses on astronomy education and is offering three astronomy programs over the summer, including their new production *Black Holes, Wormholes, & the Movies* written by Planetarium Director Ron Kaitchuck.

At the planetarium in **Tipton, Indiana**, funds became available to purchase a fulldome projector. Director Sueanne Esposito is looking forward to additional training to learn how to better use the new projection systems.

In Merrillville, Director Gregg Williams reports that middle school students who are members of the planetarium club are working on slide shows for the planetarium waiting area. The planetarium has a display case with hand-painted scale models of the planets. The display is being updated with slide shows that run on Raspberry Pi computers attached to older computer monitors. The slide shows feature images plus captions and they complement the realistic planet models. There are going to be three slide shows running on three monitors when the project is complete. The first monitor will be about the inner planets. The second monitor will feature the outer planets. And, the third monitor will cover everything else, including the Sun, asteroids, comets, and dwarf planets. Anyone interested in using Raspberry Pi computers and old monitors to make a “picture frame” slide show may contact technology volunteer Tom Dobes at t.dobes@mcpstars.org.

There is sad news from the **Edwin Clark Schouweiler Memorial Planetarium** in Fort Wayne. On April 22nd, one day before the Indiana State Meeting, Director Alan Pareis was summoned to a meeting without explanation and told that the planetarium was being closed at the end of May. As he writes, “Staff would be paid through the end of June and the planetarium theater was being repurposed as a student lounge as the first part of their new additions to the Science Building. Those of you who have been through this and/or watched it happen to colleague planetariums know it is a long and convoluted road from initial announcement until it is over. (And remember Yogi Berra’s famous quote). The staff is still on that convoluted road and most likely will be for most of the summer. If I were to write anything more at this time it would be stale and probably incorrect by the time you read it.”

“Our university administration at this point does seem committed to make sure as much of the Schouweiler’s equipment gets to other functioning or start up planetariums that could use it. And they are beginning to realize that will take time. Our staff is committed to stay involved as long as we are allowed, to help make sure that the Schouweiler in its closing brings continued life to other planetariums.”

“It is premature to say anything about the deaccessioning of equipment at this writing, although by the time you read this you may see more current information on Dome-L as appropriate. Also the administration and I have a strong desire that Indiana Planetariums receive first consideration, so I will let Indiana GLPA know as soon as I have anything to share.”
It’s All About The Stars!
(whether it is optical-mechanical, digital, or both)
Background is First-Light photograph of starfield by Konica Minolta’s GEMINISTAR III on 18.3 m dome at Vanderbilt Planetarium, Centerport, NY, USA

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“Sydnee and Jackie, the other two of our planetarium management troika, send their greetings and please keep them and our three recent recruits Brad, Elizabeth, and Nannett in your continued thoughts, and if you are a praying person, include us all.”

The John Glenn High School Planetarium in Westland, Michigan, which closed for business approximately five years ago, is once again opening. They have upgraded from their Spitz A3 to the Digitarium Epsilon fulldome projector. The staff will once again be bringing the students of their district into the planetarium, with plans to open it to the surrounding districts in the near future. They will be opening to the public for evening shows in the fall. They had some incredible sponsors who raised the money, allowing the staff to upgrade and reopen their facility.

The Delta College Planetarium in Bay City has been developing some new programming opportunities, from guest lecturers on intelligent life in the universe to an original live-based program called “Dateline Mars.” Its experience with the new “Statewide Astronomy Night” on April 15th was phenomenal, with a great response by the public. Kudos to Michigan State University for the fine organizational effort. In July, the planetarium will bring in The Wayfinders show from Hawaii’s Bishop Museum to coordinate with the Tall Ships Festival. The show recounts the ancient methods of navigation used by Polynesian sailors to explore the Pacific. Live “specials” continue to do extremely well and more are being planned. After 17 years with the Delta College Planetarium, Bill Mitchell retired on April 30th. Bill had an amazing influence on the programming of the planetarium, particularly when it came to hands-on activities and demonstrations with schools, scouts, and summer camps. His special skills will be sorely missed. Bill has many projects in store for his next life chapter and the staff wishes him the best!

The Longway Planetarium in Flint recently enjoyed some good views of the transit of Mercury with the public. The staff noticed via Facebook that many of you did the same. Longway ran its second, updated version of our Choose Your Own Adventure program, this time complete with mini-map and special items to find as the audience journeys through space. The staff is still working on an educational show about forces and are beginning work on a Halloween light show for this October as well. October will be a busy month this year!
In early May, I drove north to visit Garry and Janet Beckstrom and observe the Mercury Transit. Here are a few photos from that visit. Thank you, Beckstroms!

Bart Benjamin
Greater Ohio planetarians gathered for their annual spring meeting at Erie and Edinboro, Pennsylvania on Saturday, April 23rd. In Erie, the Penn State Behrend campus is home to the new Yahn Planetarium, directed by Jim Gavio. After a breakfast buffet, Jim and volunteer John Martin showed the Spitz 512 star projector and their custom-built fulldome system using mirror projection. In the papers that followed, Jason Heaton and Joe Childers of the Boonshoft Museum described their Geek Fest event, Pat Durrell of YSU explained the Ward Beecher Planetarium’s CosmoQuest fulldome resources available to all, and Sue Campbell of Erie showed the effects of light pollution. The meeting then moved to the Edinboro University Planetarium. Following lunch sponsored by Spitz and East Coast, EUP Director David Hurd described Edinboro’s student organization CHAOS, Jon Frantz showed the services East Coast Control Systems offers, and Edinboro students Justin Greenly and Alexa Alpern showed a delightful night sky video they had created for preschool and kindergarten visitors. Then Bruce Bream of Cleveland showed his 3-D constellation guide and David Hurd showed his new eclipse guide, both resources for blind and sight-impaired visitors. Finally, Cheri Adams from Boonshoft described the Night Sky Network of astronomy clubs, Dale Smith from Bowling Green outlined his efforts to encode classic shows into SciDome, and Katy Accetta talked about programming at the Schuele Planetarium with attention to understanding the youngest visitors. Both sites gave tours of their observatories.

Two Ohio planetarians have been recognized by their universities for exemplary work. In Edinboro, Dr. David Hurd was recently named the University’s Professor of the Year. In Bowling Green, Dr. Dale Smith has been awarded a Professorship of Service Excellence for his decades of service to BGSU, GLPA, and IPS. [See photos on page 15].

The Bowling Green State University Planetarium recently had a lift system installed on their Minolta star projector by Mark Perkins of Free Fall Technologies. BGSU’s Transit of Mercury observing session was clouded out, but...
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a trickle of visitors attended a webcast in the planetarium. In April, the planetarium cooperated with the University’s Philharmonia Symphony by showing photos of the planets during a performance of Holst’s “The Planets.”

Gene and Pam Zajac (Put-in-Bay) have used a large pizza circle cardboard as the Sun and magnetic disks for planets to demonstrate transits and Lois Wolf (Sandusky Planetarium) has used a posterboard Sun and tiny planets to show the scales to a large group of fifth graders.

The Bell Museum of Natural History held its groundbreaking ceremony on Earth Day, April 22nd and work began in May. The new building will open in 2018 on the University’s St. Paul campus. Beautiful exhibits with cutting edge technology, nature dioramas, landscape views, and a 120-seat planetarium all make for an exciting community destination and event venue. The museum’s mission is to ignite curiosity and wonder, explore our connections to nature and the universe, and create a better future for our evolving world.

The Manfred Olson Planetarium at UW-Milwaukee celebrated its 50th anniversary on April 23rd and it will celebrate Juno’s arrival at Jupiter with an ice cream social and special planetarium program titled Journey to Jupiter in July.

The Soref Planetarium in the Milwaukee Public Museum will run its original production Did an Asteroid Really Kill the Dinosaurs this summer and in September it will install five Christie Boxer projectors and upgrade to Digistar 5 from Evans & Sutherland. The new digital video system will replace both the IMAX film projector and the current planetarium Sony SRX projectors.
REMEMBERING BUD LINDERMAN
submitted by Jon Marshall

It was in early March that we members of the Cleveland Regional Association of Planetariums received the sad news that our longtime colleague, Bud Linderman, had passed away on February 27, 2016, following a short illness and a fall in his home. He is survived by his wife, Leda, and their son, Todd.

Bud had been retired since 1992, after some 28 years as Director of the planetarium at Midpark High School (now Midpark Middle School) in Middleburg Heights, Ohio, and was one of the earliest members of the Cleveland Regional Association of Planetariums who continued his active interest and attendance at our meetings even after retiring. For many years, Bud maintained the C.R.A.P. mailing list and sent out the notices of our meetings, which were always printed and mailed out (before email, obviously!), a task which he handed over to me quite a while ago.

Those of us who knew Bud will always remember his smooth, deep, commanding voice, as will his many students and audiences in the planetarium, along with his quiet, droll sense of humor. We’ll also remember his creativity in developing not only effective programs and demonstrations for the planetarium (back in “the days” of slides and special-effects projectors, etc.), but also lessons and lab activities for the classroom. One example of his lab lessons was based on two sequences of actual sky photographs taken from a local backyard by one of his friends over several months, which “revealed” two very different retrograde loops of Mars. Bud generously gave me a set of the original photo prints which I used for many years with my own classes.

The memorial service for Bud was attended by a large gathering of family and friends, teacher colleagues, former students, and fellow planetarians. Some former students spoke of Bud with particular warmth as they related memories of their sometimes hilarious adventures over several years, during the excursions when they piled their camping equipment and telescopes into Bud’s station wagon for some long trips to observe solar eclipses and other astronomical events. Their heartfelt reminiscences from years ago clearly conveyed that for them — as well as many others — Bud Linderman truly embodied the spirit and meaning of that famous quotation: “A teacher affects eternity; he can never tell where his influence stops.”

Other speakers shared their personal memories and experiences from Bud’s life in very moving and touching ways which will help to keep alive our own recollections of our friend and fellow planetarian, Bud Linderman.
ECLIPSE-ORIENTED COMIC STRIP
Creative cartoonist Jay Ryan has created a new eclipse-oriented educational comic strip to help promote the 2017 eclipse. He hopes that planetariums and astronomy clubs will use the strip in their newsletters and that schoolteachers will use it in their classes. You can find this excellent resource at americaneclipseusa.com/generation-eclipse-its-coming/.

GLPA OBITUARIES PROJECT
The GLPA Obituaries page, which can be found at glpa.org/obituaries, contains written obituaries of past GLPA members. The GLPA Historian welcomes submissions to this GLPA Obituaries Project to document the professional contributions of past GLPA members. Please send information about member deaths (both recent and past) to Garry Beckstrom at garrybeckstrom@comcast.net.

GLPA CONFERENCE SCHOLARSHIP
Each year since 2011, GLPA’s Executive Committee has awarded a pre-determined number of scholarships for the next fall conference. Each scholarship waives the registration fee and meal package for the award recipient.

Complete rules and procedures for the GLPA Scholarship are provided on the following web document: www.glpa.org/sites/default/files/glpa-scholarship-info.pdf. The application form can be downloaded from www.glpa.org/sites/default/files/glpa-scholarship-form.pdf. The deadline for scholarship applications is September 1st.

EDITOR’S MESSAGE
(continued from page 3)

Please note that the deadline for the autumn issue of the GLPA Newsletter is August 1, 2016. Please submit your facility reports to your State Chairs by late-July. Have a wonderful summer!
HST IMAGES

If you would like to download beautiful Hubble Space Telescope images like the ones that are found throughout the GLPA Newsletter, all you need to do is visit:

Hubble Heritage Project
heritage.stsci.edu/

or

HubbleSite Gallery website
hubblesite.org/gallery/

And the best news of all? Since the photos come from NASA, they are free (with proper credit)!

LETTER TO THE EDITOR
submitted by David Parker, Greentown, Indiana

[The spring GLPA Newsletter] gave me another chance to relive (similar to Bart’s adventure) the Parker family 10-day excursion to southwest Texas to see Halley’s Comet in the spring of 1986, [with] Sondra and I traveling in our VW Rabbit with kids ages 3 and 7, observing equipment, luggage, and picnicking-food supplies. The highlight of our trip across southern Texas, where we dodged bad, cloudy, spotty weather, was our call to McDonald Observatory. They invited us to come up to the observatory where we spent the whole day being escorted around the mountaintop, checking out the observatories, looking at the equipment (telescopes, computers, astronomers projects, the Laser Raging Station), talking with astronomers (trying to figure out what in the world they were talking about)! Then we took a break late in the afternoon for a few hours rest and went back up the mountain around midnight. Of course, their telescopes were all looking at other more highly prized and fabulous targets, but we pulled our observing equipment out of the car and watched Halley’s Comet for a few hours. I remember seeing my shadow on the ground and wondering what light was causing that. Turns out, it was the light of the Milky Way.
Impress your guests from the moment they enter your planetarium.

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COPERNICUS SCIENCE CENTRE
WARSAW, POLAND
IPS2016.ORG
GLPA Executive Committee Meeting
Sloan Museum/Longway Planetarium
Flint, Michigan
April 16, 2016

Present: Dayle Brown (President), Geoff Holt (President-Elect), Garry Beckstrom (Past President), Dan Tell (Secretary), Cheri Adams (Treasurer), Mike Smail (IPS Representative), Sue Batson (Education Chair), Bart Benjamin (Publications Chair), Dayna Thompson (Technology Chair), Dave Leake (Development Chair), Paulette Auchting (Membership Chair), Gary Tomlinson (Conference Planning Chair). This certifies a quorum with 12/12 officers attending.

Observers: Janet Beckstrom (GLPA Registrar), Dale Smith (Proceedings Editor), Buck Batson, Buddy Stark (Conference Host), John Potts, Cathy Gentry (Sloan/Longway).

Call to Order: The meeting was called to order at 8:06 a.m., Saturday April 16, 2016, Dayle Brown presiding.

Secretarial Report (Dan Tell): No electronic votes occurred between the fall, 2015 meeting and the spring, 2016 meeting. Garry Beckstrom moved that the committee accept the minutes from the fall meeting. Sue Batson seconded. The motion carried.

Dan Tell presented new language for GLPA awards and scholarships, in an effort to align awards with similar language and provide new guidelines for scholarships. Small revisions to the language were discussed and added to the text. Geoff Holt moved to accept the new awards language. Dave Leake seconded. The motion carried.

Treasury Report (Cheri Adams): Cheri Adams gave the current balance of GLPA accounts.

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Cheri Adams has set up the 2016 conference hosts to use the conference accounts. GLPA’s tax filings have been handled and are in good order.

At the fall meeting, Cheri Adams was asked to go through the conference budget very carefully and clarify expenses and revenue. The total expense for the fall 2015 GLPA conference was $56,041.09 and revenue was $72,202 ($34,922 in delegate registrations and meal packages; $37,280 in vendor registrations and sponsorships). This is net revenue of $16,160.91 on the 2015 conference.

The question was raised if this is too much net revenue. Dan Tell read from the fall minutes on the topic:
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the apple didn’t fall far from the tree

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Thanks to Dave Leake’s refinement of the budgeting spreadsheet, Gary Tomlinson noted that the organization is getting closer to knowing the true costs of GLPA conferences. Gary Tomlinson expressed the budget plan has been to lose money slightly on delegates and have that slightly supplemented by vendors, but due to excellent work by development, GLPA has been making more money than intended. Gary Tomlinson would still like to err on the side of caution going forward, noting GLPA made about $10,000 on the 2015 [sic, should be 2014 – DRT] conference. Dan Tell expressed this is too much profit, and many members of the Committee agree. The Committee feels GLPA should try to get as close to breaking even as possible — ideally budgeting to make no more than $5,000. Garry Beckstrom noted that the organization could compensate for excess profit in the past in upcoming years, and aim for tighter budgeting with cheaper registration fees to benefit the membership.

Garry Beckstrom noted that GLPA has a strong cushion if it were to end up with a loss. Paulette Auchtung felt it would be especially good to subsidize registration fees for the 2016 conference due to its reputation from the Flint Water Crisis.

The Water Crisis was discussed and Dayle Brown asked Buddy Stark if the matter would be addressed in the conference registration and that the safety and health of attendees be assured in an evidence-based manner. Buddy Stark assured her this would be the case. Janet Beckstrom also affirmed that GLPA could communicate with all caterers and restaurants too.

Cheri Adams returned the conversation to the budget, noting that the budget approval in the fall of 2015 had been deferred to analyze conference expenses. The budget is now updated and expenses were aligned with the budget, with revenues and expenses correctly handled.

Dan Tell inquired: GLPA is budgeting well, but are conferences more popular than expected? Dan Tell reminded the committee, based on previous discussion, that the budget was based on delegates covering most expenses, accounting for less vendor income, and he feels this needs to be the revision, with a reduction of registration fees to turn more revenue back to the members.

Cheri Adams suggested that the revenue from the previous year’s conference could be applied to the subsequence conference. Dayle Brown suggested applying the revenue from 2015 to the 2016 conference. Dayna Thompson inquired as to the effect of a deficit in the budget in doing so, but Garry Beckstrom affirmed he felt GLPA had an effective cushion. Mike Smail agreed, noting the organization could plan around that in the future.

Sue Batson asked when GLPA last suffered a loss. Gary Tomlinson and Bart Benjamin expressed, to the best of their recollection, that it was in 1982. Sue Batson noted that worrying about a loss seemed like a non-issue.

Dan Tell moved that GLPA apply $10,000 of 2015 conference profits to registration cost deferment for 2016. Geoff Holt seconded the motion.

Discussion: Paulette Auchtung pointed out that a lower registration fee would likely encourage more registrants. Sue Batson also expressed that GLPA should clearly notify the membership that excess revenues from the previous conference were being used for this purpose, as it clears up perceptions about GLPA making excess revenue. Cheri Adams also added that GLPA should be clear it has large variables in expenses and revenue, with Geoff Holt noting some of these revenues go to improvements for GLPA and other projects. Geoff added, though, that it will go a long way to point out that the net revenues from conferences are going back to the membership. Gary Tomlinson further added that it should be clarified the major support of the vendors is a big part of this. The motion carried.

Cheri Adams reminded the committee that GLPA’s costs do differ from year to year, citing the CiviCRM website upgrades.

Details of GLPA’s insurance policy were clarified: the Executive Committee has a liability policy, covering libel, and actions undertaken on behalf of the Committee, for Committee business. GLPA has a general liability policy, which covers GLPA possessions (very few) at Executive Committee meetings and Conferences. These cover liability in events where the Committee or GLPA causes an incident to happen. Host institutions need to have their own liability policies. GLPA is responsible when a GLPA member is the cause of an incident and is at fault, but hosts need to be responsible for issues when they and their facilities are at fault.

Cheri Adams asked GLPA’s insurer how to handle the 2017 Pleiades Conference. The recommendation was for all regionals to hold their own liability policies. These policies are inexpensive—GLPA pays $589 annually for $1 million in coverage. Policies can also be purchased for only one week of coverage. Dan Tell affirmed this information should be passed on to 2017 conference host, Anna Green.

Dayle Brown inquired that Sloan/Longway carried liability insurance and Buddy Stark affirmed this is the case.

Small revisions were made to GLPA’s budget: an additional $100 was added for storage. Gary Tomlinson inquired if any additional was needed for website work, Dayna Thompson said additional funds might be needed, but Gary noted the
committee could approve additional expenses later. Sue Batson noted that The StarGazer project might require additional funds to cover licensing of some images in the program — possibly $500. Cheri Adams notes in the budget that GLPA has paid Ken Murphy and his students $2,934 for equipment and $1,000 in labor for the project. Sue Batson affirmed she would like to increase this by $500 to cover licensing. Dan Tell noted this may not be the correct licensing fee for the images in question, and may only cover a site license — not one for GLPA’s needs and that the organization needs to make sure Ken Murphy is in the clear with all licenses.

Gary Tomlinson asked about budget for NSTA travel. Sue Batson stated NSTA did not accept her workshop proposal, so she did not attend. Gary Tomlinson asked if this should be left in GLPA’s budget. Sue Batson felt it would be good to have for smaller educator meetings on the state and regional level, but not in the 2016 budget — it would be useful for next year. Cheri Adams will leave the budget item in as Sue Batson provides 2015 receipts. Sue Batson also noted there are individuals this year who intend to submit proposals for GLPA-funded projects.

Dan Tell moved GLPA accept the proposed budget for the GLPA 2016 fiscal year. Bart Benjamin seconded. The motion carried.

President’s Report (Dayle Brown): Following the elections at the 2015 conference, the following officers joined the Executive Committee: Geoff Holt (President Elect) and Mike Smail (International Planetarium Society Representative).

The following Committee Chairs were appointed: Dave Leake (Development) and Paulette Auchtung (Membership).

President-Elect’s Report (Geoff Holt): Geoff Holt noted the new scholarship language, approved during the Secretary’s report. Geoff Holt deferred discussion of handbook updates to later in the meeting.

Following the tie in the 2015 election, Gary Tomlinson asked how GLPA should handle tie votes. Geoff Holt suggested the President not vote in the first round, then vote as a tie-breaker. The committee objected, as the President’s ballot would not be secret. Dan Tell advocated for a complete redo of the vote in the event of a tie. Logistically, Mike Smail also noted that the South Eastern Planetarium Association only permits registered members to attend the business meeting to ensure accurate votes. Garry Beckstrom suggested delegates could trade in their name tag for ballots in election years. Mike Smail also noted there is no chance for candidates to address the membership during the business meeting: in the event of a tie, the candidates in question should do that.

Geoff Holt agreed with the proposal to do a second vote and that “GUEST” could be added to non-member tags to assist with ballot distribution. It was inquired, “what if a member has lost their name tag?” Garry Beckstrom felt it would be fair for that member to not be able to vote. Garry Beckstrom added candidate statements should be in the conference notebook.

Dayle Brown affirmed that candidates in a tie should speak before the assembled membership in the event of a tie and before a second vote. The Committee agreed.

Dave Leake asked how many ballots should be prepared for the election? The Committee agreed enough for two rounds. This will be added to the handbook and the President needs to mention on Friday that members must bring their name tags to the business meeting in order to vote.

Geoff Holt moved that GLPA accept the proposed election procedures for tie-breaking: GLPA will require name tags be handed in, in exchange for a ballot. Non-member’s tags will identify them as such. GLPA will re-run the tied vote in the event of a tie, repeating until a tie is broken. Candidates in contest will make a statement to the assembled membership before the second-round vote. Mike Smail seconded the motion. The motion carried. GLPA will update its election procedures.

Past President’s Report (Garry Beckstrom): Garry Beckstrom made the following statement: “I’d like to thank the members of the Executive Committee for your support during my time as President. GLPA is fortunate to have such a dedicated group of people managing its affairs. As I leave the office of President in the very capable hands of Dayle Brown, I’m happy to say that I believe GLPA is a healthy, growing and vibrant organization with a bright future. I look forward to continue working with all of you as Past President.”

Garry Beckstrom noted Gary Tomlinson and Dayna Thompson are engaged in a “moderate revision of the handbook” focused on new formatting which will be further elaborated on in later reports. Garry Beckstrom reminded new members to review the handbook and submit any proposed changes to him, following new procedures to be outlined shortly.

Historian’s Report (Garry Beckstrom): Website information will be brought up to date over the summer. Photographs from previous conferences will be added to the website, per investigation with Dayna Thompson.
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MTE proudly serves as the exclusive North American distributor of Konica Minolta Planetarium systems.
**International Planetarium Society Representative’s Report (Mike Smail):** Mike Smail will attend the 2016 International Planetarium Society Conference in June. Mike Smail called attention to IPS’s free content for planetariums and suggested State Chairs notify the membership of it at state meetings.

Some follow-up discussion was held on the nature of IPS Vision2020 and its intended goals.

Mike Smail notes GLPA member Stephen Case of the Strickler Planetarium in Bourbonnais, Illinois is the 2016 winner of the IPS-endorsed ‘Two Weeks in Italy for an American Planetarium Operator’ professional development opportunity. I’ll be encouraging Stephen to discuss his experiences via paper session at our fall conference. The application deadline for next year’s opportunity is September 15. Interested parties can obtain additional information at [http://bit.ly/TwoWeeksInItaly](http://bit.ly/TwoWeeksInItaly) and applications should go to Loris Ramponi at megrez58@gmail.com.

**Membership Report (Paulette Auchtung):** GLPA currently has 226 members (compared to 281 in the previous year). Of these, 85 are IPS members, 76 are fellows of GLPA, 23 identify as retired, and 52 are new members. The membership is predominantly regular members, 111. There are 63 vendor members, 27 Honorary members, 12 students, and 13 seniors.

Institution type is diverse, with 48% belonging to a museum, nature center or standalone planetarium. 26% belong to a college or university, 13% as belonging to a school, 11% as independent or as business, and 29% reported institution type as “other.”

GLPA’s membership primarily is primarily from the Americas: 179 gave their location in North or South America. 4 in Europe & Central Asia, and 1 in Asia or the Pacific Islands.

Michigan has the highest number of GLPA members with 28, followed by Indiana and Ohio with 25, Illinois with 24, Wisconsin with 10, and Minnesota with 8. 58 members gave a location outside of the Great Lakes.

The committee discussed candidates for GLPA awards.

The Committee discussed the structure of the standing committees of GLPA and identified that committee chairs should identify committee members. This would highlight those who have made contributions to GLPA, as well as make new members aware of opportunities to support the organization. Publications was encouraged to recruit new individuals as assistants with newsletter layout.

**Development Report (Dave Leake):** Dave Leake thanked his predecessor: “I wish to publicly recognize the work of Bob Bonadurer, who served as Development Chair for 7 years of service to the Executive Committee, to GLPA and to our vendor partners. My feet are too small for his shoes, but I’ll try. Thank you, Bob!”

The 2015 conference had a record 28 vendors (up two from 2014). This resulted in $37,280 in revenue, 5.3 hours of plenary time, and 2 hours of dedicated vendor hall time. The conference featured 5 Parallel Universe sponsors, 4 Universe sponsors, 5 Galaxy sponsors, 7 Solar System sponsors, and 7 Planet sponsors.

Issues were reported with vendor placement and limited access to electrical power. These items will be noted for improvement in future conferences.

The Committee returned to the discussion of allowing vendors to add items to conference packets, rather than just giveaways at the booth. Following feedback from the conference, the Committee considered revising its policy to add it as a benefit at higher sponsorship levels.

Dan Tell moved that GLPA allow vendors to add items to delegates’ conference packets as a benefit for Galaxy-level sponsors and up. Sue Batson seconded. The motion carried.

Partial payments were discussed, citing that some conferences permit this. The Committee decided against this — GLPA's sponsorship levels seem low enough they do not require partial payments.

The deadline for delivery of fulldome content was discussed. It was clarified that GLPA has a delivery deadline, but it needs to be consistently enforced, and a greater effort will be made at this for the benefit of conference hosts.

GLPA having a table in the vendor area was discussed again, where the organization can place information about GLPA resources and shows. The Committee favors this, when space is available, consistent with the decision from the previous meeting.

Dave Leake proposed a new system for vendor registration: rather than the set sponsorship levels, GLPA could offer à la carte selection of desired features to vendors. The Committee encouraged further exploration of this as possible. Dan Tell proposed that the base registration fee for vendors not exceed the delegate registration fee and that all vendor-related pricing should be related to the à la carte features [Although this idea seems favorable to vendors and the Committee alike, in post-meeting emails it was determined there was not opportunity to enact this new system for the 2016 conference. It may be postponed until 2018 (how vendors will be handled in 2017 remains undecided)].

The vendor deadline for registration was discussed, as there were some late registrants last year. The Committee agreed that vendors must register by the early registration deadline to guarantee all benefits.
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Mike Smail asked about the GLPA practice of separating meal packages from registration, noting that most conferences do not separate them. Dan Tell notes that Gary Tomlinson has previously stated some institutions only reimburse registration and not meals. Gary Tomlinson mused that combining them might not matter. The matter was deferred to the Conference Planning Report.

Proposed vendor hall areas for 2016 were reviewed.

**Publications Report (Bart Benjamin):** The *GLPA Newsletter* is doing well and receiving consistent advertiser support.

Following the fall, 2015 Executive Committee Meeting, Bart Benjamin and Dale Smith agreed to investigate color printing for the newsletter. 88% of subscribers get a digital version of the newsletter (full color). 27 people (12% of the membership) get printed only, and are the only ones who do not see a full color newsletter. Color printing would likely triple the cost (but still be well within ad revenue). Mike Smail suggested a small fee could be attached to requesting the printed newsletter on top of membership. This would encourage use of the digital-only subscription option. Dale Smith and Bart Benjamin will talk to the printers about the costs of a smaller, full-color print run. Dayna Thompson feels the print-only subscription cost would be a minor addition to the website. The Committee supports this proposal.

The quality of the 2016 group photo was discussed — it seeming likely the degradation was caused by the photoshopping of the charter members into the photograph by the photographer. GLPA clarified that it needs a standard quality request from photographers, Dan Tell proposed the exact language be: *a photograph suitable for printing at 8”x10” at 300 dpi.*

The Publications and Technology committees are still searching for a digital photo solution to move from a printed to an all-digital *Proceedings.* Facebook has been discussed as a possible solution, as it has all the desired features with none of the hosting or website integration burdens for GLPA. Renae Kerrigan has experimented with uploading some photos to demo this. Bart Benjamin notes this does not have to be the ultimate solution for conference photos, but is very useful now and GLPA will keep original photographs. Mike Smail notes this saves GLPA substantial hosting costs. The Committee confirmed non-members can still access the photos, leaving no barrier to entry. The Committee agrees this is a good, workable solution, and thanks Renae Kerrigan for her work so far. Dale Smith will send Renae Kerrigan discs with all historical photos for uploading.

Dayna Thompson notes the *Proceedings* can also be made easier to compile. The narrative text can also be submitted through the website and auto-compile into a draft for the Editor. Dale Smith expressed his concern: as Editor, he still does a great deal of editing and formatting. Dan Tell suggests that the digital flexibility would still allow the Editor to put up the delegate section of the *Proceedings* ahead of the invited speakers, as the latter are often the source of delays. Bart Benjamin asked Dale Smith how long it might take to edit and upload *Proceedings* of just the submitted talks. Dale Smith feels this could be done within 4-6 weeks of the conference. Bart Benjamin proposes trying this solution following the 2016 conference. Dale Smith agreed this would be doable without any invited speaker delays. Dan Tell suggests adding invited speakers later if they are delayed, but to upload the submitted delegate talks as soon as editing as soon as they are done.

Gary Tomlinson inquires if a disc of the *Proceedings* will be made for 2016. Dan Tell notes that given the above discussion, this may be the first year a disc could be skipped. Bart Benjamin says instead GLPA can prepare an email to point members to the new resources.

Gary Tomlinson asks if this plan will include the photos. Dan Tell and Dale Smith confirm this. Dayna Thompson asks the Committee to confirm that Facebook is the desired hosting plan for the photos, and the Committee agrees. Dayna Thompson asks if members who wish to order the disc can have one special printed? Dale Smith agrees this could be done on a case-by-case basis, but this may increase the disc cost. The Committee agrees this cost should be no more than $10.

**2016 Conference Host Presentation (Todd Slisher, Cathy Gentry):** Todd Slisher and Cathy Gentry of Sloan/Longway present the idea for a conference app, developed by DoubleDutch, that would allow for better connection between delegates, an interactive agenda, and resource availability. It also includes the ability for hosts to push messages to attendees and quickly handle changes, and is available for Android, iOS, and via an html webpage.

Todd Slisher notes that ASTC used a similar app in 2015 and the map and schedule were very useful. The scheduling includes the ability to create a customized schedule with desired papers and reminders. This is especially useful for concurrent sessions. The cost for the app is $5,000, but Sloan/Longway negotiated two years at $4,100. The Committee found the idea intriguing. Dayna Thompson advocated GLPA's funds are better spent permanently improving the website with responsive design. Sloan/Longway will research lower cost options, and GLPA will focus on website improvements.

The Committee toured the conference site, reviewed the conference schedule and conference budget.
EDGE OF DARKNESS

Narrated by Hayley Atwell

Now Available
Dan Tell moved that GLPA raise the limit on trinket cost to $15 to account for inflation. Paulette Auchtung seconded. The motion carried.

Sloan/Longway’s conference costs included a banner to be hung on Longway’s dome during the conference. Members of the Committee suggested it could be made a generic banner, then reused by GLPA. Dan Tell felt in this case it would be appropriate that GLPA take on the cost.

Dan Tell moved that GLPA take on the cost of the vinyl GLPA banner for 2016 and future conferences. Sue Batson seconded. The motion carried.

Todd Slisher will pass banner verbiage by the Committee for approval before production.

Todd Slisher asked for confirmation the $50/delegate meal subsidy would still be in place. This is affirmed, and that Sloan/Longway may also budget for the paid-forward $10,000 from the 2015 conference.

The Committee discussed how to handle the Saturday breakfast, including possibly moving the money previously budgeted for the banner to add a catered breakfast for the Saturday morning State Meetings. Dan Tell reminds the hosts that one of the lunches should include meeting time for the Special Interest Groups of GLPA: Technology, Educational Standards, and History.

Education Report (Sue Batson): NSTA did not accept Sue Batson’s proposed workshop on teaching science using planetariums. She will attempt to propose the workshop at other, smaller conferences. The committee did not travel to NSTA.

The Project Review Committee is expecting two proposals by the 2016 Conference: Buck Batson’s “Peek-a-boo Star,” a preschool-aged eclipse show and an unknown student project from Steve Case.

Ken Murphy’s work on the fulldome update of The StarGazer is mostly complete and will be ready for Flint, where it will be shown partially during a paper session. A closed-captioned version will also be developed, and an educator’s guide and poster. Ken will have 1k and 2k frames, encoded videos for single-channel playback, and 4k frames by the fall.

The standards subcommittee (Sally Brummel, Jean Creighton, and Shannon Schmoll) met with astronomy researchers who use planetariums, and the team will focus on producing a new, shorter document than GLPA’s Astronomy Literacy document. The new document will be paired with the Next Generation Science Standards. The group also plans (as of publication this was completed) to do a survey for the membership to see what they desire from such a document. The subcommittee has the following goals for the project:

- shorten the introduction
- reorganize the document into a more readable table
- reorganize the discrete facts and ideas into larger concepts that progress over grade bands to align more with current educational theory and research
- create a column that offers clear suggestions of how a planetarium can be used to help students learn those concepts and apply science practices. One of the strengths of the planetarium is allowing students to make observations and measurements of the sky
- use the concepts and suggestions of the Next Generation Science Standards (NGSS) as a guide in organizing and to have the ideas aligned with NGSS performance expectations. The list of facts in the original document includes many important ideas for astronomy literacy that are not included in NGSS or other state standards. We can show alignment with physical science, life science, and engineering standards, supporting astronomy literacy despite the lack of emphasis on it in curricula

Dan Tell suggests that the next project for the committee should be preparing a document on using domes to teach other topics than astronomy.

Technology Report (Dayna Thompson): Gary Tomlinson and Dayna Thompson reviewed new procedures for updating the electronic version of the GLPA handbook via the website and demonstrated this procedure to the committee.

The Committee is working on 2017 conference registration, as well as liaising other options than hosting through the GLPA website, depending on preferences.

The responsive “themedev” mobile-friendly theme developed by Adam Leis is currently being tested by the committee and Tom Dobes with the intent it be launched by the time 2016 conference registration is ready.

Dayna Thompson has added a Facebook widget to the main page, as well as cleaned up several menu items.
Cosmic Colors: An Adventure Along the Spectrum is a dynamic new planetarium show from the Great Lakes Planetarium Association (GLPA) that will take you on a wondrous journey across the entire electromagnetic spectrum. Get ready for an amazing adventure under a rainbow of cosmic light!

31 minutes in length  
Target audience: 5th grade and up

Ordering information:

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$300 for a full dome masters at 4K x 4K  (need 1 TB hard drive)
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For FullDome versions, each planetarium must ship an appropriate hard drive to GLPA. Show encoding is the responsibility of each planetarium.

TRADITIONAL VERSION:  
$100 for traditional version with two discs -- a playable Cosmic Colors show DVD and a DVD data disc containing all-sky images, digital JPEG images, audio tracks, flattened video scenes, teacher guides, and documentation.

Order Cosmic Colors through the GLPA Online Store at glpa.org/online-store.
Dayna Thompson, with Waylena McCully, are still researching options for a graphics bank/repository, but have yet to decide on an appropriate web-based application. They are currently looking for a volunteer with some experience to assist with this project.

Facebook and Twitter subscriptions continue to increase.

Adding email listings to the membership directory on the site was discussed. Committee members felt the current “contact member” button may be sufficient, but the conference delegate list could be hosted on the site as a PDF.

It was previously discussed that glpadomes has not had its membership kept up to date. Paulette Auchtung sent Dan Tell and Dayna Thompson a list of all new members and their emails to populate GLPA domes. The Committee suggested Paulette Auchtung craft a welcome message for the new admissions.

The Committee expressed support for the work done on the website, and its overall improvement in layout and content.

**Conference Planning (Gary Tomlinson):** The workload for the videographer was discussed. The Committee expressed the interest in having more content available more quickly. Tom currently does significant editing to the paper session recordings. The Committee expressed that it would be preferred if delegate talks were streamed and the stream were immediately hosted for viewing, with no additional editing. If Tom Dobes desires, he may further edit the invited speakers, but the Committee does not feel this is necessary.

Gary Tomlinson notes that updates have been made to the conference guidelines. This includes that scholarship winners are only required to do one service to the organization.

The committee discussed Spitz Lecturers for 2016.

The Astronomy Update Lecturer was discussed. Dan Tell moved that Ron Kaitchuck be pre-approved as Astronomy Update Lecturer for GLPA until such time as he or the organization decides otherwise. Dayna Thompson seconded the motion. The motion carried.

The 2017 Pleiades conference was discussed. GLPA has offered several services to conference planning and organization, but negotiations remain active between the St. Louis Science Center and the other regionals, some of which have not been very responsive.

GLPA received an invitation for the 2018 conference from the Abrams Planetarium, in East Lansing, Michigan. The conference would be in mid- to late-October, depending on football schedule (two weeks were proposed). Dan Tell moved to accept the invitation from the Abrams Planetarium for the 2018 GLPA Conference. Garry Beckstrom seconded the motion. The motion carried.

Gary Tomlinson suggested that the membership renewal form should include a question on fulldome theater or traditional planetarium to ensure that GLPA is representing the membership well with future content and conferences. Paulette Auchtung will add this to the renewal form.

Gary Tomlinson noted that most of the state meetings were on the same day this year and asked if anything could be done. The Committee agreed nothing could be done, more than suggestions, and this only affects the President, who often intends to travel to each state meeting.

The issue of adding an extra day to the conference was addressed. Gary Tomlinson asked about hosting another survey on an added day. Dan Tell observed several surveys have been conducted already, including the straw poll in Grand Rapids. The idea has consistently had majority support, with a few strong objectors, but GLPA has not acted on this yet. Dan Tell proposed that since 2017 will already include an extra day, GLPA should consider extending the 2018 conference by a day.

**Old Business:** There was no old business.

**New Business:** The location for the 2017 spring meeting was discussed, likely a central location. In subsequent discussion, St. Louis was also considered as a possibility, given the amount of planning needed for the conference.

**Adjournment:** Dan Tell moved that the meeting be adjourned. Garry Beckstrom seconded the motion. The motion carried. The meeting was adjourned at 5:23 p.m. on April 16, 2016.
The cover article was “Planet Survival: An Astronomy Game” by John Schutter. The premise of the game was that your spaceship has crash landed on an alien planet, and you only had a specified survival time based upon the cards you selected, which described the characteristics of your planet. The object of the game was to survive as long as possible.

Dave Hoffman wrote an article titled “A Conversation with Ken Perkins,” in which Ken described a number of planetarium-related experiences, including a week-long workshop at the Viewlex plant in New York, how an astronomy professor at Miami University changed how he would have otherwise taught junior high science, and how one of his school’s bus drivers — who was also an amateur radio operator, amateur astronomer, and telescope maker — greatly impacted his ultimate career path toward the planetarium profession.

Dave Sanford (Shaker Heights, Ohio) described how to build an electronic pulsar, variable star, and/or nova projector. Jeanne Bishop (Westlake, Ohio) described that “a new and exciting major undertaking of the [Education] Committee is the preparation and publication of a series of ‘Tips’ resource booklets, directed to different aspects of planetarium operation and to particular planetarium needs.” [Ed. The TIPS booklets were born!]

In April, a planning meeting was held at Chicago’s Adler Planetarium, host of the 1976 GLPA Conference. Activities planned for the October 28-30 conference included a tour of Yerkes Observatory, a visit to the [original] Cernan Space Center, and a “night on the town in bustling Chicago.”

Dr. Bruce Stephenson recently spoke in Cleveland about astronomy 100 years ago (i.e. 1876). The speaker reminded his audience that Ulysses Grant was then President, dry photographic plates were just being used, and although hydrogen was recognized as the main constituent of stars, their temperature was unknown, with a prize offered to the astronomer who uncovered that figure.
In his Editor’s Message, Bart Benjamin wrote “I am very pleased to announce several changes to the GLPA Newsletter that should make it easier for all GLPA members to submit news items, notices, and articles. Beginning with this issue, I am now producing the GLPA Newsletter using the MS-DOS (Windows 3.1) platform instead of Apple II. Even more exciting is the news that I am now linked to the Internet through Triton College.” [Ed. It’s hard to imagine performing the duties of a planetarian without online connections with our colleagues, but that was the norm 20+ years ago. With long-distance phone calls often limited by our parent institutions, many planetarians were quite literally the only “space person” in their local Universe. We should all be thankful that being a planetarian today isn’t nearly as isolated a feeling as it once was].

Newsletter Editor Bart Benjamin conducted an interview with GLPA’s first woman president, April Whitt, who had started her term a couple of months before. When asked to describe her first visit to a planetarium, April replied, “On the first day of classes as an undergraduate at the State University of New York at Fredonia, I was wandering through the wrong building, looking for a class, and saw the planetarium doors. I’d never been inside one (we grew up in the country and had the real sky) but, I knew what one was. A poster was up, announcing the need for planetarium operators. For pay! Since I was the usual poor freshman I applied, proved that I could tell which one of those dots was Jupiter and was on my way. The 30-foot dome and Spitz A3P were (quite literally) heaven to me!” Whitt also suggested to the members that they should do their part to keep the GLPA Executive Committee informed about relevant issues. She requested that members “take a minute to write a postcard (paper, electronic, anything) to any of us on the Executive Committee, with suggestions or concerns.” [Ed. April’s suggestion is just as true today. Please feel free to direct any suggestions or concerns to the current members of the Executive Committee].

Previews were offered for the 32nd annual Great Lakes Planetarium Association (GLPA) Conference, which would be held at the Minneapolis Planetarium from October 23-26, 1996. The Minneapolis Planetarium was built in 1961 and housed a very unique Spitz Model C projector that hung suspended by the ceiling. Conference highlights would include speaker and comet discoverer Alan Hale of Hale-Bopp fame and John Hare as the Spitz lecturer.
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UPCOMING GLPA CONFERENCES:
2016 October 19 - 22
Flint, Michigan

2017 October 10 - 14
St. Louis, Missouri

Executive Committee mailing addresses and phone numbers can be found by visiting glpa.org/exec.

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For a replacement copy of this newsletter, please contact Dale Smith at dwsmith@bgsu.edu.
UPDATE YOUR UNIVERSE

AT THE 2016 GLPA CONFERENCE
OCTOBER 19-22
The New Autumn Cover Masthead: Martian Impact creates Crater and Landslide.

Description: Landslides are common features in canyons on both Earth and Mars, and they happen the same way. Erosion undermines a canyon wall until abruptly millions of tons of rock come crashing down. In the case seen here, the impact of a meteorite landing near the edge of the canyon may have done more than just blast a crater 6.5 kilometers (4 miles) wide. The impact may also have triggered the massive landslide, either at the time of impact or shortly after. Credit: NASA/JPL-Caltech/University of Arizona/HI-RISE.

All other celestial images on the cover are courtesy of NASA, except for the Michigan map, the photograph of Longway Planetarium, and the total solar eclipse corona, which were taken or created by Bart Benjamin.

The current design of the GLPA Newsletter incorporates small sections of several NASA images for its page mastheads. These and other images can be accessed from NASA websites such as Mars Exploration at mars.nasa.gov/multimedia/images/, Scientific Visualization Studio at svs.gsfc.nasa.gov/Gallery/, and Hubble Space Telescope websites at www.spacetelescope.org/images/, heritage.stsci.edu, and hubblesite.org/gallery. And because all these photos are from NASA, they are free to use (with proper credit).

Cover Masthead: Martian Impact creates Crater and Landslide
Credit: NASA/JPL-Caltech/University of Arizona/HI-RISE

Image Credits page background image: NGC 2074 in the Large Magellanic Cloud
Credit: NASA, ESA, and M. Livio (STScI)

Image Credits page inset image: M96: A Galactic Maelstrom
Credit: ESA/Hubble & NASA and LEGUS Team

State News Masthead: Young stars in the “wing” of the Small Magellanic Cloud
Credit: NASA, ESA, CXC and University of Potsdam, JPL-Caltech, and STScI

Credit: NASA, ESA, and Hubble Heritage Team (STScI/AURA)

Articles Masthead: Newborn stars within the Prawn Nebula
Credit: European Southern Observatory

Conference Update: M106: Composite of Amateur and Professional Astronomer Images
Credit: NASA, ESA, Hubble Heritage Team (STScI/AURA), and R. Gendler (Hubble Heritage Team)
Sitting on the shores of Lake Michigan with one granddaughter with me and three more grandchildren on their way (three can’t make it), it’s hard to put my mind on autumn. Nevertheless, it will come and with it the changing of the leaves and crisp, cool air. Autumn means one thing in GLPA Land: It is time to plan on attending the next GLPA conference!! This will be held in Flint, Michigan at the Robert T. Longway Planetarium. Todd Slisher, the Executive Director, and Buddy (Jeffrey) Stark, the Director, are hard at work (along with all the GLPA folks) to make this the best conference yet!

As you register for this year’s conference, please consider a proposal for a paper or poster. We would love to see what you’re up to in your facility or neighborhood. GLPA is made up of people just like you. We depend on your enthusiasm for teaching the world about the night sky.

Happy pumpkin-gathering and I hope to see you all in Flint!!
Denver Museum of Nature & Science has selected Digistar 6 with a 5K DLP projection system for the Gates Planetarium.

Congratulations and welcome to the Digistar family!
With generous donations by Joanne Young of AVI and the Elgin School District U-46 Education Foundation, the Elgin Planetarium will be handing out moon flashcards and notebooks to complement the fulldome program The Moon. The materials were made to replicate scenes from the program and allow the students to do science at home by carefully recording sky observations. The Elgin Planetarium is also hosting a series of public show this school year to prepare the community for the 2017 total solar eclipse.

It’s been a strong summer at Chicago’s Adler Planetarium. Their new production Planet Nine has been running since May, exposing audiences to stunning visualizations of astronomer Mike Brown’s search for new worlds in the outer solar system. The show is available for purchase; learn more at #GLPA2016 in Flint! Adler is also pounding the pavement this summer with the #AdlerSpaceExperience truck. Making appearances all around Chicago, they’re engaging the public with hands-on activities, science demos, astronomers, and free astronaut ice cream! [See photos on the next page].

The William M. Staerkel Planetarium at Parkland College in Champaign replaced their nearly 30-year-old seats with Irwin Seating’s planetarium chairs. They have been saving for this purchase since they went digital in 2010! The seats will be arranged in more of an epicentric arrangements to be more conducive to fulldome programming. Speaking of fulldome, Staerkel is proud to open Solar Superstorms this fall, with visualizations created by NCSA. NCSA celebrates their 30th anniversary on the University of Illinois campus this fall. Staerkel will also be showing Solar System Safari, Fall Prairie Skies, and Two Small Pieces of Glass: The Amazing Telescope. The AVI SkyLase laser system will return for Halloween laser shows. Santa’s Secret Star and Season of Light will return for the holidays. Their “World of Science Lecture Series” is set for the academic year. The line-up, which includes astronomer Jim Kaler, is posted to their website. Finally, if anyone has experience in “encouraging” state legislators to pass a budget, give us a call.

The staff has been busy in Peoria with the Peoria Riverfront Museum’s “Summer of Space” programming. Their feature exhibition “Be the Astronaut” is bringing in
Adler Planetarium’s summer of activities.

Upper L and Lower R: Planetarium views of Adler’s Planet Nine program.

All other photos: Adler’s Space Experience Truck made stops throughout Chicago this summer.

All photographs submitted by Mike Smail.
Follow Mike Brown and his team at CalTech as they discover evidence of a Kuiper Belt object 10 times more massive than Earth, and embark on the search for a true ninth planet far beyond the orbit of Neptune.
INCOMING!

Asteroids, Comets, and the Hard-Hitting Stories of Our Cosmic Origins

Narrated by George Takei

Explore the past, present, and future of our Solar System in a new planetarium show, now available for licensing.

For info on ordering the show, visit www.calacademy.org/licensing or contact your preferred fulldome film distributor.
space fans, so the planetarium has had lots of special events to capitalize on the excitement. To cross promote the exhibition, they made the live show Living in Space using Uniview, showing how humans entered space, where they are living and working today, and where we might travel in the future. In September, retired astronaut Scott Altman from Pekin, Illinois speaks at the museum for two events. The highlight of their summer programming was a live call to the International Space Station as part of the ARISS program. [See photo below]. Students in their “Space to Ground” club had a 10-minute question and answer session with Astronaut Jeff Williams as he orbited over Italy. Over 350 people came to the museum for the lecture on the ISS and the live call, but the museum’s Giant Screen Theater only seats 200! Guests were sitting and standing in aisles, and about 100 people watched their online broadcast of the event in a smaller room elsewhere. Find Renae at #GLPA2016 to ask about the program if you are interested – she got the idea from the 2013 GLPA conference!

Indiana’s state bicentennial celebration has started, complete with an Indiana Bicentennial Star! Please make efforts during this year and specifically this fall to help your visitors learn how to find Sheat (Beta Pegasi). Of course GLPA’s own Indiana astro-educator Chuck Bueter is the driving force behind Indiana having a Bicentennial Star. Check out Chuck’s website at www.nightwise.org/#!bicentennial-star/c1ekh for helpful resources.

This past summer, the Koch Immersive Theater in Evansville executed another in its series of five planned Moon Festivals. Meant to raise awareness for the 50th anniversary of the moon landings in 2019, their second annual event featured the fulldome movie Back To the Moon for Good, a live show about the Moon that they created with their Digistar 5, the licensing and screening of the movie Apollo 13, children’s activities and a presentation by a master storyteller entitled "One Small Step." Mitch Luman reports that they are currently running National Geographic’s Flight of the Butterflies and Wildest Weather in the Solar System and Michigan Science Center’s Sunstruck. Their museum conducted a media event in August to formally announce its plans for next year’s total solar eclipse. Master storyteller Susan Fowler [See photo →] was the headliner at Evansville’s Moon Festival.

The Edwin Clark Schouweiler Memorial Planetarium at the University of Saint Francis in Fort Wayne formally closed on June 30, 2016, after nearly 45 years of operation. Normally closed during the month of June, the planetarium staff ran several free shows in June so that those wishing to have a “Schouweiler Experience” one final time could do so. As it had for many years, the planetarium financed its yearly star machine maintenance, show updates, new show production, and other yearly operational and production expenses entirely from receipts, private group show bookings, and four seasonal multi-weeks of public shows. The University funded the part-time and hourly wages and utilities. The comforting news is that by the conclusion of the second week in August, 99% of the Schouweiler equipment and other physical assets were transferred to other “new–old style” classic planetariums in northeast Indiana. The Science Central of
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Fort Wayne received the Spitz A4, dome, and original brute force SFX projectors for its facility. A group based in Bluffton, Indiana that acquired the Norwell High School Spitz AP3 and dome a few years ago received the bulk of the Schouweiler equipment. In the process of organizing as the Upper Wabash Conservation and Science Center, the Bluffton organization hopes to run Schouweiler shows in their initial years.

Former Schouweiler Director Alan Pareis credits the success of this five-week planetarium equipment relocation to former Schouweiler Technician Sydnee Hamrick and former Schouweiler Artist Jackie Baughman, who Pareis says "dismantled the entire planetarium piece by piece and guided the disposition of assets to the recipient organizations." Sydnee and Jackie were also on hand to assist with the A4 and dome removal by Ash Enterprises when requested. Unfortunately, Pareis spent most of the last crucial two weeks of July in the hospital recovering from surgery. Ask Sydnee and Jackie during the conference if Alan in a morphine/codeine haze made any sense!

On Wednesday, September 7, the Vollbrecht Planetarium in Southfield begins a fall series of eight 90-minute live audio visual lectures on consecutive Wednesday evenings. Topics cover a wide array of subjects, including stellar evolution, solar system, cosmology, and observational astronomy.

The Abrams Planetarium just got a fresh coat of paint in its theater and lobby. They are also getting handicap accessible doors. Abrams received a grant from the Dart Foundation to install three touch screens in their lobby in advance of their public reopening in late-September. Their new season will open with Back to the Moon for Good and One World One Sky: Big Bird’s Adventure.

The Delta College Planetarium in Bay City is premiering some new productions. The Dark Matter Mystery from Planetarium Laupheim will debut in September for general audiences, followed by Pink Floyd The Wall in October. In November, a beautiful new film called Life Under the Arctic Sky opens for families and adults. Produced by Winner Pictures, BTS Media, and Mirage 3D, Life Under the Arctic Sky uses a combination of live video capture and animation to follow the peoples of northern Scandinavia who still move with the migration patterns of caribou and includes striking footage of the northern lights. Life Under the Arctic Sky is also bringing back two popular shows — Edge of Darkness and The Wayfinders. A series of new workshops for children and families is underway, from Mars to telescopes to star gazing. A major rebuild of the planetarium (and college) website is set to debut in October, allowing the staff to rework their educational portal for teachers.

The Longway Planetarium is busy planning for the fall conference. They are already answering many vendor questions, figuring out where to put paper sessions and workshops, and of course choosing the color of the binder. They are going with a daring white this year. Longway just opened Asteroid: Mission Extreme narrated by Sigourney Weaver and in December they will be opening Mysteries of the Unseen World. They are also deep in the throes of creating a Halloween show for their system. They’re using some methods learned from Grand Rapids, some methods with Magic Visualizer (courtesy of Abrams), and of course some of their own design. They’ve also created an interactive Jeopardy game using Xbox controllers for buzzers. Finally, they installed a generic version on the D5 cloud a while back if anyone’s interested. It went over really well here; they bribed people with candy. The Longway staff looks forward to seeing everyone in October! [Read more in the Conference Update on page 29].

The Besser Museum Planetarium will soon be a proud venue for digital programming! Spitz, Inc. put in their A3P fifty years ago and has been chosen to install new digital equipment this summer. They will have a whole new audience for the planetarium. In addition to astronomy programming and/or entertainment for schools and the public, they will be drawing in ACC (their junior college next door), Mid-Michigan Medical Center (their hospital next door), and other businesses and groups interested in better visualizations for training purposes. Planetarians who still have optical-mechanical equipment are welcome to contact us for projectors, etc. that you may need for operations. The staff will be keeping their A3P star projector operational for its historical value. But, it will be used without additional projectors, etc.

On July 20th, the new Biological Science Building (the BSB), in which the University of Michigan’s Museum of Natural History will be housed, was “topped off.” The traditional beam signing and the attachment of a live tree took place, representing a milestone in construction. The building will be closed in sometime this fall. Some significant schedule changes have taken place, not the least of which is the installation of the dome systems in the fall of 2017, well
It's All About The Stars!
(whether it is optical-mechanical, digital, or both)

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

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over a year before the museum opens. This is great news for the planetarium staff, but created a new timeline to fit their plans into. The first half of 2017 is the last time that the museum will look familiar, as items thereafter will begin to disappear for conservation and in preparation for eventual installation in the new museum.

After almost 10 years with the Michigan Science Center, most recently as the Director of Business Operations and previously as Senior Manager of Theaters, Fred Huebener recently accepted the position of General Manager of the Belle Isle Aquarium. The Belle Isle Aquarium is America’s oldest aquarium, having opened in 1904 and operating out of the same historic gem of a building on Belle Isle State Park in the Detroit River only 10 minutes from downtown Detroit. With over 142,000 visitors last year, the aquarium is Southeast Michigan’s fourth most visited museum/cultural institution. Please join in wishing Fred the best of luck in his new adventure.

In April, the Roger B. Chaffee Planetarium debuted a live astronomy update show, Breaking News From Outer Space, which changes monthly with the most recent news and goings-on in the universe. Over the past few months, they’ve covered topics such as Scott Kelly’s year in space, gravitational waves, Planet Nine, exoplanet discoveries, and Juno’s arrival at Jupiter. This summer, they hosted their first ever “Planetarium Masters” summer camp, in which middle school-aged campers spent the week developing short astronomy programs on the topic of their choice, using Digistar 5 effects to present the shows to their families. One of their staff members, Jim Foerch, has also been working with young interns from their museum school to teach them how to use the planetarium and ultimately present short live star shows. The staff is also in the midst of planning some events for the future that explore alternative uses of the planetarium. . . so stay tuned! At the end of this month, they’ll sadly say goodbye to staff member Brooke Bacigal, but she is staying within the GLPA family and will be working at the University of Michigan Museum of Natural History Planetarium while attending college.

The Kalamazoo Valley Museum will present Mirage 3D’s Dinosaurs at Dusk and From Earth to the Universe, a beautiful free show made available by the European Space Observatory. Plans are underway to tie From Earth to the Universe with a live tour of the night sky as part of their Seasonal Stargazing offering. In addition, The Secret of the Cardboard Rocket returns as their family show along with Starlight Production’s Pink Floyd’s Dark Side of the Moon and Wish You Were Here. Both of these music light shows be will presented each weekend and on Art Hop Fridays.

Finally, the 20th annual “Kensington Astronomy at the Beach” event, hosted by Kensington Metropark and the Great Lakes Association of Astronomy Clubs (GLAAC), will be held September 9 and 10, 2016. Included in the list of topics this year is next year’s Great American Total Solar Eclipse. For more information, visit glaac.org.

Jeanne Bishop of the Westlake Planetarium attended the IPS 2016 conference in Warsaw, preceded by Fulldome 2016 in Brno and followed by the post-conference tour “In the Footsteps of Copernicus.” Next, Jeanne and Sue and Buck Batson toured Scotland with a small group. Near Glasgow, at the Paisley Museum, they were fortunate to explore the museum’s observatory and very interesting small fulldome planetarium. With practically no money, enthusiastic staff first re-built an old optical-mechanical projector and then received a grant to buy a second-hand small digital projector. An impressive recognizable Paisley skyline wraps around the interior of the dome. After getting back home in early July, Jeanne gave a second summer of programs for Westlake’s summer school camp. She prepared and presented a series of different programs for different ages, noting that it is challenging to adapt the same topic to students who are age 5-6, 7-8, 9-11, and 12-14. Her program topics included Ancient Egyptian Sky, The Milky Way and Beyond, and (to celebrate the Rio Summer Olympics) Ancient Greek Constellations and the Olympians, Planets and the Olympians, and Sky over Rio de Janeiro.

Jay Ryan continues work on “Generation Eclipse”, a FREE educational comic strip for helping Americans understand and prepare for the 2017 total solar eclipse. Read more about this in Dale Smith’s Bulletin Board notice on page 21.

Bryan Child from the Shaker Heights Planetarium attended the Spitz Institute over the summer, and he is currently going to each elementary school in his district and scheduling their field trips for the year.

Under director Scott Oldfield, the Vandalia Planetarium at Smith Middle School opens its 46th year of continual operation this September with a show focused on constellations, more specifically the identification of the Summer
Triangle members and their lore. The October show will fall on International Observe the Moon Night (InOMN) and, weather permitting, will be an observation event, but will retreat under the dome if necessary. All public shows this year will be on the second Saturday of each month and reference the Great American Eclipse, with the year concluding with a dedicated show. In an attempt to build momentum for the hopeful reinstatement of elementary programing, Scott will author a monthly “What’s Up” column in the local newspaper; as of now the dome is only in operation two periods a week for the high school astronomy class.

From the Bowling Green State University Planetarium, Dale Smith also attended the IPS conference in Warsaw and enjoyed the post-conference tour “In the Footsteps of Copernicus.” This tour included special stops at the planetariums in Torun and Frombork where the hosts went out of their way to give their IPS colleagues a special time. While in Frombork, the tour group met up with Martin George and snapped a picture of five former IPS Presidents. [See photo →]. At home, Dale completed the encoding of thirty years of classic shows into the Spitz SciDome XD system; this labor-intensive work ensures that all prior programs will be available to visitors for years to come. Dale was also able to purchase a substantial roster of full dome shows. This purchase was made possible by combining carryover funds accumulated by years of careful budget management, unspent funds from the renovation budget, and a substantial gift by Dale himself, matched with funds from the Provost and Arts & Sciences Dean. With full dome and classic shows together, the BGSU Planetarium now has nearly 100 programs available to its visitors, besides live and workshop style programs. Off-duty, Dale reunited with classmates at a 50th high school reunion and escaped for a couple weeks under the southern skies of Australia.

The Bell Museum’s Minneapolis location will close on December 31, 2016 to prepare for their move to a brand new home on the St. Paul Campus of the University of Minnesota in 2018. They will continue portable planetarium and natural science outreach experiences, as well as display pop-up museums at community events. If you will be in the Twin Cities before New Year’s Eve, come see the current museum one final time!

The Buckstaff Planetarium is still closed. Renovations have been delayed.

The Gary E. Sampson Planetarium is getting new carpeting and 60 new Irwin planetarium seats installed in late August. These will replace the original black/dark blue fiberglass seats that were installed when the planetarium was new in 1970!

The Marshal W. Alworth Planetarium is doing its regular public service by opening the planetarium to the public every Wednesday, Friday, and Saturday evening along with an afternoon children’s show on Saturday. Current projects include making the website more user-friendly, incorporate Uniview into their programming, planning potential bimonthly free stargazing sessions, and installing an elevator for their Spitz star machine so it will no longer cast a shadow during full dome movies, thereby creating a larger viewing space.

The Southwest Minnesota State University Planetarium has been presenting the fulldome version of GLPA’s The Stargazer show. The show will be running this summer and fall. The Stargazer will be presented this fall at the GLPA conference in Flint, Michigan and will be made available to members.

The UW-Milwaukee Manfred Olson Planetarium has two new programs: Nightmares in the Sky, a show about
“Space Next looks fantastic on our dome.”
Peter Bak-Larsen, Chief Executive Officer,
Tycho Brahe Planetarium

“Based on current science and using the giant screen 3D format to full effect, Space Next was an easy choice for our grand re-opening as a 6P laser projection theater.”
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all the Greek monsters in the sky told from the point of view of the monsters, and *Northern Lights* in November and December. As part of the celebration of its 50th anniversary, the UWM Planetarium will host a *Rock 'n Rockets* event on November 13 to combine stars and music from the 60s.

The Barlow Planetarium at the UW-Fox Valley had one of its best years ever, generating nearly $150,000 in program revenue and over $9,000 in net revenue. Needless to say, the staff is exhausted and looking for their maintenance break in September before they launch into their seasonal laser shows on September 30. The Barlow Planetarium will also be launching its latest annual Groupon on September 7.

### NOT GOING TO THE CONFERENCE?

### YOU STILL NEED TO RENEW YOUR MEMBERSHIP

Members not attending the GLPA conference should still renew their annual GLPA membership by visiting [glpa.org/membership](http://glpa.org/membership) and follow the instructions in the Membership Sign-up and Renewal section.

### DON’T MISS OUT

To be included in the winter issue’s State News column, please forward news from your facility to your state chair in the latter half of October.

If you have a digital picture of a newsworthy event held at your planetarium, please e-mail it to Bart Benjamin for possible inclusion in the IPS *Planetarian*’s “International News” column.

### WHO DO I CONTACT?

If you ever have a GLPA-related question, but are not quite sure to whom you should direct that question, GLPA may have your answer.

The GLPA website has a page that provides a helpful way to determine who best could answer your question. To use it, please visit [glpa.org/contacts](http://glpa.org/contacts)
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MTE proudly serves as the exclusive North American distributor of Konica Minolta Planetarium systems.
Jay Ryan continues work on “Generation Eclipse,” a free educational comic strip for helping Americans understand and prepare for the 2017 total solar eclipse and eclipses in general. Planetarians and astronomy enthusiasts are encouraged to include “Generation Eclipse” in their eclipse outreach efforts. A growing collection of these strips is available at Jay’s website. The plan is to release at least two new strips every month, and to have at least 20 on hand well ahead of Eclipse Day 2017. You can peruse the strips at the following link: americaneclipseusa.com/category/generation-eclipse/

The title is dedicated to today’s young generation of Americans, who can expect to see five total solar eclipses here in the U.S. over the next 35 years. It’s especially hoped that schoolteachers will use “Generation Eclipse” in their classrooms with their students, to help prepare them for their lifetimes ahead of domestic eclipse chasing. The strip can be used in online and print newsletters, and with flyers or any other printed handouts. Some local community newspapers have expressed interest in using “Generation Eclipse.” A print-worthy 300 dpi file is available upon request. Please visit their website for more information.

FREE LUMILINE COVE LAMPS!
Submitted by Alan Pareis

Now’s your chance to receive free Lumiline cove lamps, courtesy of Alan Pareis and the now-closed Schouweiler Planetarium. Alan reports that there are enough yellow and blue Lumilines to equip a 30-foot dome, as well as spares of various Y/B tint and white plus sleeves. For years, the Schouweiler Planetarium ran on donated Lumilines. Here is your chance to continue the tradition with the entire Schouweiler stock.

Furthermore, Alan is offering free delivery in Indiana, or within a 100-mile radius of Fort Wayne in the states of Michigan and Ohio. If you’re interested, please contact Alan Pareis, GLPA Indiana State Chair, to make arrangements for pickup or delivery. If they have to be shipped, you’ll need to pay the freight. If there are no takers before the annual GLPA meeting in Flint, Alan will bring the Lumilines to Flint. If they are not gone by the end of the meeting, they will be trashed.
GLPA NEWSLETTER IS SHARPER THAN EVER!
by Bart Benjamin

As mentioned in this issue’s Editor’s Message, this newest version of the GLPA Newsletter is rendered with much higher resolution and fewer compression artifacts than previous versions. The images below demonstrate this difference. For this visual comparison, I chose the smallest detail that I could find, which turned out to be a section of vendor member GeoGraphic’s current half-page ad, which appears on page 18 of this issue. When a small portion of the ad is magnified by 300% in a PDF viewer, the new version appears significantly better than the old. Its small type is far easier to read, and the artwork is much clearer with fewer compression artifacts. All this extra eye appeal is rendered in a document that’s still reasonably sized for downloading and storage on your computer, tablet, or phone!

Technical Specifications of the GLPA Newsletter, eighth generation:
Operating System: OS X El Capitan. Text was edited with Pages 5.6. Images were edited with Adobe Photoshop Elements 14.1. Page layout and PDF conversion were completed using Swift Publisher 4.0. Bookmarks were added with JPdfBookmarks 1.0. PDF metadata was added with PDFInfo 2.2. PDF compression was completed using PdfCompress 6.3.
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EDGE OF DARKNESS

Narrated by Hayley Atwell

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BOOK REVIEW
by Francine Jackson


Some of us were fortunate to have met the author at the 2014 IPS conference, where he mentioned this book was going to be published fairly soon. The "fairly soon" turned out to be a year and a half, but The New Cosmos was worth waiting for. Each chapter clearly and concisely highlights a certain aspect of astronomy, and explains as simply as can possibly be, especially considering how technical and "brainhurting" some of the topics are known to be.

Eicher’s chapters include information on why we have a Moon, why we only see just a tad more than half of its surface, and what was learned from the Apollo visits decades ago. Where did all the water on Mars go? Is there still enough left for us not to have to bring lakes-worth of it with us when we finally decide to travel there? And, speaking of water, what happened to Venus? Why, instead of looking up at the most beautiful planet in our sky, are we looking up at one of the best images for Hades?

Of course, as the good science writer he is, Eicher must bring in the question of Pluto, and exactly where it fits in the scheme of the solar system. And then, we also must move forward with the potential end of our galactic home, as we become merely a member of giant Milkomeda, the inevitable linking of two beautiful galaxies. Also, what exactly is dark matter? And, is it the same as dark energy? These questions and many others are answered in this interesting-to-read volume.

As I was reading it myself, it did occur to me that The New Cosmos would make a good choice for an adult education introduction to astronomy. With each chapter independently written, the instructor could quite easily select the topics desired for each week. Also, the instructor should make sure each student reads the author’s preface, where he explains why and how he became so absorbed in the subject of astronomy as a young child that he wrote his hero, Carl Sagan, a letter. Surprisingly for Eicher — although we now know Carl Sagan did this quite often — Sagan not only replied to his letter, but also continued a correspondence for many years, a feat many of us should consider if we ever find ourselves receiving mail from young people seeking astronomical knowledge.

Several months ago, I was privileged to hear a talk by David Eicher on his continuing interpretations of the future of our science. At the Q&A session, one young girl, a true budding astrophysicist, asked the author if he planned to write a second edition of his book, which she loved, and, if so, how would it change. His answer to her, as we are probably all aware: astronomy is so rapidly changing, and we are learning so much that’s new all the time, he would most likely have to start from scratch. In the meantime, though, read this edition from one of the premier astronomy writers of our day. You’ll be happy you did.
Cosmic Colors: An Adventure Along the Spectrum is a dynamic new planetarium show from the Great Lakes Planetarium Association (GLPA) that will take you on a wondrous journey across the entire electromagnetic spectrum. Get ready for an amazing adventure under a rainbow of cosmic light!

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TRADITIONAL VERSION: $100 for traditional version with two discs -- a playable Cosmic Colors show DVD and a DVD data disc containing all-sky images, digital JPEG images, audio tracks, flattened video scenes, teacher guides, and documentation.

Order Cosmic Colors through the GLPA Online Store at glpa.org/online-store.
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October is just around the corner and we here at Longway are knee-deep in preparation for the conference. It was about six months ago that we began to think about the specifics. Where is the vendor hall going to be? Where do we put the paper sessions, workshops, and banquet? After a series of long debates and many meetings, it was finally decided to house the conference indoors. Once that point was settled, it took mere minutes to figure out how best to use the facilities scattered around our campus. During this year’s conference, delegates will be able to see the interior of the Flint Institute of Arts during the paper sessions and meal time. They will be inside of Sloan Museum for the banquet. The workshops will be held inside of the Flint Institute of Music. Various events will be held within Flint Youth Theater and of course there will be plenty of time inside of Longway Planetarium to show off our 30,000 lumen Christie boxer projectors.

It may sound like this year’s conference will be filled with walking irritating distances and perhaps driving from one building to another. Fortunately, the Flint Cultural Center Campus houses all of these wonderful facilities (and more) all within one city block. The farthest walk is from the hotel, which is situated half a mile from the planetarium. In case of inclement weather, or for those who do prefer a nice short drive, there are large free parking lots throughout our campus, which will make driving a car a much more viable option than at most conferences. This creates a very unique area that we think will make for an excellent conference in 2016. We can’t wait to show off our beautiful campus. We’re looking forward to seeing all of you.

Buddy Stark
bstark@sloanlongway.org
GLPA’s 34th newsletter and the third issue of 1976 contained the following articles and columns:


★ Abstracts from eleven papers presented at the ISPE conference were published in the newsletter. Familiar names such as Jeanne Bishop, Alan Friedman, Bill Gutsch, and John Hare were presenters.

★ A preliminary agenda for the GLPA Conference at the Adler Planetarium in Chicago included local tours of the museum campus, a visit to the [original] Cernan Space Center in suburban Chicago, and a hands-on workshop of Adler’s collection of antique astronomical instruments.

★ Ruth Howard, Curator of Education at the Kalamazoo Public Museum, reviewed *The Dark Night Sky* by Donald G. Clayton. That book chronicles the impact that different cosmological theories have made upon mankind.

★ Herb Schwartz, Planetarium Director at the Sargent Planetarium in Des Moines, Iowa, wrote an article titled “The Kodalith Movie Projector.” In his article, he described making a projector that displays a Kodalith animation sequence that illustrates the orbiting Galilean moons of Jupiter.
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★ Twenty years after the ISPE conference in Boulder (described on the “40 Years Ago” page), Dale Smith reflected upon the 1996 IPS conference in Osaka, which was the first IPS conference held in Asia. As Dale proudly described, “it can [now] be said . . . that the sun does not set on the planetariums of our empire, the International Planetarium Society, that girdles the globe today. At almost every hour of almost every day, an IPS planetarium somewhere on the earth is teaching the wonders of the cosmos. The ‘I’ in IPS has finally and firmly and forever come to mean ‘International.’”

★ The autumn, 1996 issue provided a look ahead to the 1996 GLPA conference in Minneapolis. Speakers that year would include Alan Hale (of Comet Hale-Bopp fame), astronomy writer Deborah Byrd, Spitz lecturer John Hare, and Dr. James Kaler from the University of Illinois.

★ Newsletter Editor Bart Benjamin published the first “chapter” of a GLPA email directory that listed planetarians from his home state of Illinois. As he explained in his Editor’s Message, “by publishing this and subsequent chapters, I hope to assist the growing number of online GLPA planetarians to ‘reach out and e-mail someone.’” [Ed. my idea would “die for lack of a second,” as similarly detailed state directories were never submitted. However, my idea became moot as IPS and Loch Ness would fill this niche for comprehensive directories of email addresses (and much more) in subsequent years].

★ Page 23 of the Autumn, 1996 newsletter had two Starman educational comic strips from Jay Ryan. The first of these strips described the circumstances of the winter solstice, while the second one described Orion and surrounding winter constellations. [Twenty years later, Jay Ryan now has a series of “Generation Eclipse” educational comic strips that describe different aspects of next summer’s total solar eclipse. They can be found online at americaneclipseusa.com/category/generation-eclipse/. Please read Dale Smith’s Bulletin Board notice on page 21 for more information].
The Great Lakes Planetarium Association acknowledges the following companies and organizations for their generous support in Fiscal Year 2015-16:

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UPCOMING GLPA CONFERENCES:
2016 October 19 - 22
Flint, Michigan
2017 October 10 - 14
St. Louis, Missouri

Executive Committee mailing addresses and phone numbers can be found by visiting glpa.org/exec.

GLPA Home Page:
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Astronomical photographs used within the GLPA Newsletter are courtesy of NASA and the Space Telescope Science Institute (STScI).

PLEASE NOTE:
The GLPA Newsletter is printed and mailed from:
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For a replacement copy of this newsletter, please contact Dale Smith at dwsmith@bgsu.edu.
HIGHLIGHTS FROM A
“FLINT-ASTIC”
GLPA CONFERENCE
IMAGE CREDITS

Cover Photographs: Conference Photographer Dan Goins took five of the cover images at the recent conference in Flint, Michigan. Newsletter Editor Bart Benjamin took the other two images and then combined all seven to create the cover montage.

The current design of the GLPA Newsletter incorporates small sections of several NASA images for its page mastheads. These and other images can be accessed from NASA websites such as Mars Exploration at mars.nasa.gov/multimedia/images/, Scientific Visualization Studio at svs.gsfc.nasa.gov/Gallery/, and Hubble Space Telescope websites at www.spacetelescope.org/images/, heritage.stsci.edu, and hubblesite.org/gallery. And because all these photos are from NASA, they are free to use (with proper credit).

Cover Masthead: Saturn as imaged by HST in 2004
Credit: NASA, ESA and E. Karkoschka (University of Arizona)

Image Credits page background image: NGC 2074 in the Large Magellanic Cloud
Credit: NASA, ESA, and M. Livio (STScI)

Image Credits page inset image: M96: A Galactic Maelstrom
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State News Masthead: Young stars in the “wing” of the Small Magellanic Cloud
Credit: NASA, ESA, CXC and University of Potsdam, JPL-Caltech, and STScI

Credit: NASA, ESA, and Hubble Heritage Team (STScI/AURA)

Articles Masthead: Newborn stars within the Prawn Nebula
Credit: European Southern Observatory

IPS Update Masthead: Big Blue Marble Earth
Credit: R. Stockli, A. Nelson, F. Hasler, NASA/ GSFC/ NOAA/ USGS
Soon the snow will be falling, but right now we have gorgeous colors. The other day it was 75 degrees! It must be “Indian Summer.” By the time you read this message, many of you will be digging out from under the snow. Glorious snow!

The conference in Flint, Michigan was a huge success! At my last count, we had about 170 people (delegates and sponsors) there. We have 34 new members. All but six were there at the conference. I am pleased to report that there were nearly 40 papers given — so many that we had to have triple concurrent sessions. We also had 10 workshops on topics as varied as an “…Eclipse Workshop” to “Astronomy in the Stratosphere.”

We are so grateful for your enthusiasm for teaching the world about the night sky!

Another GLPA Conference has concluded. . . and it was awesome! Three cheers to Buddy Stark, Todd Slisher, and the staff of the Longway Planetarium and Sloan Museum whose efforts made it such a great success. Although the conference has concluded, there is still much that delegates and non-delegates alike can do to benefit from this stellar event:

★ The conference photographs have been posted to the GLPA Facebook page at bit.ly/2gUqiBX. [Thanks to photographer Dan Goins and Facebook administrator Renae Kerrigan!] You don’t need a Facebook account to view them. And GLPA will soon offer its members the opportunity to download his entire collection of conference photos as a Zip file to their computers. Stay tuned!

★ Most of the conference was video recorded and is now available for viewing at glpa.org/conference/2016. [Thanks to Tom Dobes, Steven Sumichrast, and John Foerch. Read more about their work on page 21].

★ Early in 2017, the Conference Proceedings will be completed, allowing members to read the paper presentations that they were unable to hear. This will be the first time that the Conference Proceedings won’t be mailed as a DVD disc to members. When Proceedings Editor Dale Smith completes the next edition, it will be posted as a PDF file to the GLPA website and members will be notified by email. This completes the transition of GLPA’s Conference Proceedings from DVD-based to all digital.

Please note that the deadline for the spring issue of the GLPA Newsletter is February 1, 2017. Please submit your facility reports to your state chairs by mid-January. On behalf of GLPA’s Executive Committee, I wish you all a happy holiday season and a wonderful start to Eclipse Year 2017!
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The GLPA Illinois Spring State Meeting will be held on Saturday, May 13 at the Strickler Planetarium at the Olivet Nazarene University in Bourbonnais, Illinois. Host: Stephen Case at scase@olivet.edu.

The William M. Staerkel Planetarium at Parkland College will open the new year with their live Winter Prairie Skies program; One World, One Sky: Big Bird’s Adventure; and GLPA’s own The Stargazer. Jim Kaler himself previewed the new fulldome version of the show in October and was very pleased! Calgary’s In My Backyard replaces Big Bird in March. The planetarium’s “World of Science” Lecture Series continues on the first Fridays of each month. And last, but not least, the planetarium dome now has 127 new Irwin seats!

The Peoria Riverfront Museum’s Dome Planetarium completed a successful run of Halloween programing with a live Halloween Astronomy show, a Spooktacular Science Show, and Laser Fright Light. To accompany the museum’s feature exhibition this winter (Titanic: the Artifact Exhibition), the planetarium will be performing a live show Uniview: Sailing to Ocean Worlds exploring Europa, Enceladus, and other ocean moons. Special events continue to sell well, including their Wine and Cheese Under the Stars, Yoga, Pub Nights, and their new Museum After Dark program.

In October, Chicago’s Adler Planetarium hosted their third set of Kavli fulldome lectures. These lectures harness a special feature in the Uniview software package, allowing Adler to ‘domecast’ these lectures live to other planetariums around the globe. The invited speaker was MIT’s Dr. Nergis Mavalvala (see photo on page 13), who discussed LIGO and the history of the search for gravitational waves. Audiences from as close as Peoria and as distant as
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Moscow, Russia were able to watch and listen to the lecture and to participate in a post-lecture Q&A with the speaker. This lecture also served as a beta test for streaming these lectures to VR devices using YouTube’s 360-degree video functionality. Connection information for future lectures will be shared broadly with the planetarium community.

In mid-October, the Cernan Earth and Space Center provided an illustrated Guide to the Planets filled with general information and fun facts and set up a scale model of the solar system to accompany the season opening concert of the DuPage Symphony Orchestra (DSO) and their performance of Holst’s “The Planets.” A week later, they set up again for two performances of “Out Of This World: A DSO Family Halloween Concert” featuring excerpts from The Planets, Star Wars, E.T., and more! Featured programs in November included The Best of Pink Floyd cosmic light show, One World One Sky for Early Explorers, and Nine Planets and Counting with an update on the latest news from lovable Pluto. In December, Stars of the Pharaohs, a Holiday Lights laser show, and Our Place in Space will be offered. Laser Motown will replace Holiday Lights in January.

The GLPA Indiana Spring State Meeting will be held on Saturday, April 22. The meeting will be held at the Merrillville Community Planetarium in Merrillville, Indiana. Hosts: Gregg Williams at gwilliam@mvsc.k12.in.us and Barb Williams at b.williams@mcpstars.org.

Thank you to Alan Pareis for 25 years of service as GLPA Indiana State Chair! At the Indiana Meeting in Flint, Alan stepped down and Barbara Williams of the Merrillville Community Planetarium was elected as the new GLPA Indiana State Chair.

Indiana is celebrating its 200th birthday with three astronomy-themed projects. The Bicentennial Star is Scheat in the Great Square of Pegasus, which is 200 light years away. Anniversary solargraphs are capturing sunlight over a long duration. The Bicentennial Anthem is “Indiana Moon” by the Hunter Smith Band. More bicentennial news and details can be found at www.nightwise.org.

The Merrillville Community Planetarium was well represented at the recent GLPA Conference. Fourteen members of the Merrillville Community Planetarium attended the GLPA Conference in Flint, Michigan, including ten student assistants, two former student assistants — now adult volunteers — and Planetarium Director Gregg Williams and his wife Barbara Williams. The ten student assistants are members of the planetarium club that Gregg sponsors. Gregg has more than 60 students in the club this year. The students attending the conference ranged from 7th to 10th grade. Five of the students were female, six were high school students, four were from middle school, and four had previously attended GLPA conferences. As in prior years, the Merrillville group was instrumental in live streaming/video recording the conference. You can read more about their efforts on page 21.

The Koch Immersive Theater in Evansville hosted a series of very well attended Community Cultural Conversations, including a night of open, friendly conversations about what it is like to be Muslim in Indiana. The planetarium invited the Iman of the local Islamic Center to talk about the Reclamation Studios video project, which provides specific evidence proving that the perverse acts carried out in the name of Islam by ISIS and other groups are in total violation of the tenets of Islam. See photo on page 13. The planetarium is running Sunstruck from the Michigan Science Center and Let It Snow from the Clark Planetarium. Mitch Luman and his team are planning a mini-conference, a viewing location, and tours to next year’s solar eclipse.
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The GLPA Michigan Spring State Meeting will be held on Saturday, April 22. The meeting will be held at the Kalamazoo Valley Museum in Kalamazoo. Host: Mark Reed at mreed@kvcc.edu.

Matthew Linke is stepping down as Michigan State Chair. Shannon Schmoll, Director of Abrams Planetarium at Michigan State University, has agreed to succeed him. Matt comments, “It has been a pleasure to serve as the State Chair for the past few years. I also congratulate Shannon Schmoll in her taking on this role. The next couple of years are going to be really crazy for us as the new museum looms next door. I am pulling in a bit to be able to focus on what’s about to happen.” Thank you for your service, Matt!

The Delta College Planetarium in Bay City is in the planning stages for a 20th anniversary event tentatively scheduled for May of 2017. The celebration will honor many of the original planners, donors, and staff, and feature some new programs and exhibits. New this winter will be Black Holes Revisited, a 10th anniversary edition of Clark Planetarium’s original Black Holes show with completely new visuals. In the spring will be Eclipse: The Sun Revealed from the Sudekum Planetarium and will include a number of live presentations about the upcoming August eclipse. Music show enthusiasts will get a new version of Pink Floyd’s Dark Side of the Moon, as it will feature content from several different producers as well as in-house Digistar programming and new intelligent lighting effects.

There was much to be thankful for at Thanksgiving this year at the Kalamazoo Valley Museum (KVM) Planetarium. Just prior to the holiday, the planetarium theater was updated with a Digistar 6 system, two new JVC projectors, a new sound system, and RGBW LED cove lights. In addition, an interface was added that enables their facility to control a limited number of legacy devices, special effect projectors, and equipment located around the dome. And just like one of the many commercials that says “Wait! There’s more!” KVM has also added “Science on a Sphere” just outside the entrance of the planetarium as a permanent exhibit. In short, November and December were very busy for Mark, LaRue, numerous KVM employees and their vendors as these projects were implemented during and around the holidays. It was rumored that there were a number of folks who were too tired to assemble any toys or gifts on Christmas Eve! As the lake effect snow blankets the land near Kalamazoo, Ice Worlds (feature show) will discuss the importance of water both on Earth and throughout the Solar System in its solid form. For young families, In My Backyard returns to highlight things that can be observed in and above Fred Penner’s backyard. This is a great show that encourages young children to observe nature and make connections with things that they might have already experienced in their young lives. As excitement for the first total eclipse in the U.S. since 1991 mounts, Eclipse 2017 will be presented as their “Seasonal Stargazing Show” for this winter and next summer. This show was written and produced by former Planetarium Coordinator Eric Schreur. We anticipate that this show will be seen by many between January and September. And finally, Starlight Production’s Wish You Were Here will be offered as one of two music light shows offered this winter and on Art Hop Fridays. The second, is Mediendom Kiel’s Magic of the Otherworld where audiences are immersed within virtual landscapes that are accompanied by the beautiful harp music of Christine Högl.

On Black Friday, the Roger B. Chaffee Planetarium is hosting “Dark Beer, Dark Side,” a beer tasting event paired with their original production Dark Side: The Light Show. A new live music series, “Concerts Under the Stars,” will begin with its first performance on January 19, featuring local Grand Rapids musicians and a video artist curating live visual effects on the dome. The first installment of “Concerts Under the Stars” will run from January through April, with four performances planned. In early February, the Grand
Rapids Public Museum will partner with Grand Valley State University to host a two-day conference celebrating space exploration and honoring Roger B. Chaffee just weeks after the 50th anniversary of the Apollo 1 accident.

The Michigan Science Center participated in “Astronomy at the Beach” in September of this year. Educational efforts were put forth through the use of the Starlab portable planetarium. Throughout both evenings, 28 presentations were given in the portable dome where a total of 580 visitors gazed upon the night sky thanks to their star projector. Attendees participated in hands-on activities such as learning about gravity with their gravity well and discovering the challenges of working in space while observing objects in a vacuum chamber. Paulette Auchtung spoke at TEDxDetroit on October 6 with a talk titled “How to Inspire Curious Minds.” The video should be posted sometime in November on the TEDx YouTube page.

At the University of Michigan Museum of Natural History/Planetarium, Matt Linke is stepping down as Michigan State Chair as the new museum takes shape. Matt adds, “I have a cool picture taken from the vantage point of standing in what will eventually be the server room (no walls yet) and looking out into the open space that will be the dome. The circular base of the dome is in place, waiting to receive the concrete base elements very soon.” Although their focus is this new structure, the staff is still busy with public, school, and University programs. . . plus a new Mammoth exhibit. In late-October, Matt took their mini-dome to the Crisler arena to participate in the President’s homecoming tailgate reception for several thousand donors and their families. Matt quipped, “they spent more money on food than I do for movies over several years!”

The GLPA Ohio Spring State Meeting will be held on Saturday, April 8 at both the Ritter Plm. on the campus of the University of Toledo and the Sidney Frohman Plm. in Sandusky. Hosts: Alex Mak at amak@utnet.utoledo.edu and Lois Wolf at lwolf@scs-k12.net.

The Ward Beecher Planetarium at Youngstown State University will celebrate its 50th anniversary next year. This fall, the staff has been running a rotating schedule of Legends: Perseus and Andromeda, their Halloween show Nightlights, and STARS, all about stars and featuring the voice talent of Mark Hamill. On the year’s opening weekend in late September, they let the audience choose the show, taking full advantage of the miracles of fulldome technology that allows the staff to store and play shows at will with the press of a button!

The Sidney Frohman Planetarium, which is is operated by the Sandusky school district, recently had a service call from Ash Enterprises. While there had been some recent uncertainty about future support for the facility, this service call bodes well for the planetarium’s future. Director Lois Wolf also is a curator at the Edison Birthplace Museum in Milan, Ohio, the site of Edison’s birth. Interestingly, there’s another connection in GLPA-land with the famous inventor — The Henry Ford museum near Detroit has the original Edison laboratory, moved there from Menlo Park.

The Cleveland Regional Association of Planetariums (C.R.A.P.) met at the Lake Erie Nature and Science Center’s Schuele Planetarium on September 29, hosted by Katy Accetta and Nick Anderson.

The Bowling Green State University Planetarium has been running Back to the Moon for Good as its main fall show. Short encore runs of Secret of the Cardboard Rocket preceded and followed the moon show. For BGSU’s family weekend, Oasis in Space was the show. BGSU director Dale Smith recently attended the retirement dinner of his undergraduate mentor Dr. Anthony Aveni at Colgate University and he was one of a few select alumni invited to make after-dinner remarks. Dale was in the Colgate class of 1970. Tony is one of
the world’s leading archaeoastronomers. The welcome sign to the dinner listed his starting and retirement dates in Mayan. For those who can read the Mayan calendar, the first five lines of each date give the date in the Long Count, the sixth line is the date in the 260-day Tzolkin calendar, the seventh line is the date in the 365-day Haab, and the last line is the Lords of the Night glyph for the day. The Ho Tung Visualization Lab is Colgate’s planetarium and Coordinator Joe Eakin served as media mogul for the dinner.

The GLPA WIMPS Spring State Meeting will be held on Friday-Saturday, May 12-13 at the planetarium of the Wausau School District in Wausau, Wisconsin. Host: Chris Janssen at cmjanssen@yahoo.com.

The Charles Horwitz Planetarium in Waukesha, Wisconsin will install new lobby and display lighting this winter and are very hopeful for a fulldome system update in the 40-foot theater in the spring of 2017.

The Soref Planetarium in Milwaukee will open its original production Defying Gravity: It IS Rocket Science in December. The UW-Milwaukee Manfred Olson Planetarium is wrapping up its 50th anniversary with Northern Lights and Rock & Rockets.

In September, the Bell Museum and Planetarium kicked off their fall observing season with near record attendance at their semi-monthly star party — a joint program with the Minnesota Institute for Astrophysics that included a public lecture followed by telescope observing at the museum. On October 12, the Adler Planetarium’s “Galaxy Ride” visited the Bell Museum. The successful event attended by local middle school students included two astronomy labs, hands-on activities, and an “Ask an Astronomer” talk by two of Adler’s astronomers. The current Bell Museum will close at the end of the 2016 calendar year as they prepare for their move to the St. Paul campus of the University of Minnesota. Construction on the new facility is well underway with the planetarium at the heart of the building. For a look at the progress, access the construction webcam at www.workzonecam.com/projects/universitya/bellmuseum/workzonecam and be sure to click on the “Time Lapse Movie” button!

**DON’T MISS OUT**

To be included in the spring issue’s State News column, please forward news from your facility to your state chair in the latter half of January.

If you have a digital picture of a newsworthy event held at your planetarium, please e-mail it to Bart Benjamin for possible inclusion in the IPS Planetarian’s “International News” column.

**WHO DO I CONTACT?**

If you ever have a GLPA-related question, but are not quite sure to whom you should direct that question, GLPA may have your answer. The GLPA website has a page that provides a helpful way to determine who best could answer your question. To use it, please visit

[glpa.org/contacts](http://glpa.org/contacts)
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Just imagine what we can do together.
Above: In October, Chicago’s Adler Planetarium hosted their third set of Kavli fulldome lectures. M.I.T.’s Dr. Nergis Mavalvala discussed LIGO and the history of the search for gravitational waves. Read more in Illinois State News. Photo provided by Adler Planetarium.

Above and Left: The Koch Immersive Theater in Evansville recently hosted a series of very well attended Community Cultural Conversations that addressed the issue of Islam and misinterpretations of their faith through a series of “webisodes” produced by the Indiana-based Reclamation Studios video project. Read more in Indiana State News. Photo provided by Mitch Luman.

Above: In mid-October, the Cernan Earth and Space Center provided an illustrated Guide to the Planets filled with general information and fun facts and set up a scale model of the solar system to accompany the season opening concert of the DuPage Symphony Orchestra (DSO) and their performance of Holst’s “The Planets.” Read more in Illinois State News. Photo provided by Kris McCall.
NANCY FRANKLIN OBITUARY

Nancy Franklin, a former GLPA member from the Elgin Observatory and Planetarium, died on November 8, 2016.

Nancy assisted with the production and mailing of the GLPA Newsletter from early 1975 until the summer of 1990. In the early years of this timespan, Nancy received the edited articles from the Newsletter Editor and literally typed, cut, and pasted them to create a master copy, which she then photocopied, collated, and mailed to GLPA members from Elgin, Illinois. During her planetarium tenure, Nancy worked under two planetarium directors (Don Tuttle and Gary Kutina), ten GLPA Presidents, and five Newsletter Editors. At the 1989 conference in Champaign, Illinois, Nancy was presented with an award of recognition for her many years of service to the organization.

Nancy Topolewski-Franklin was born in 1924, started working at the Elgin Planetarium in 1964, and retired from there about 1990. She possessed an expertise in the visual arts that was used to enrich Don and Gary’s programming. Nancy was not only a secretary, but also answered their many telephone calls, scheduled and greeted visitors, and was an avid astronomy buff who truly loved astronomy and passing that passion to the next generation of schoolchildren.

Nancy is survived by a daughter, three sons, and one stepdaughter, as well as 15 grandchildren and 12 great-grandchildren. Nancy was a wonderful person and a delight to work with. She will be missed.

NIGHT SKY STAR STENCILS

Bridgeway, a not-for-profit agency in Galesburg, Illinois that provides a variety of services to disabled persons, sells a product called Night Sky Star Stencils that helps to fund its programs.

Night Sky Star Stencils can create accurate displays of the sky at night in most any darkened room with the glow in the dark paint that is included. They are produced in two sizes featuring either the winter or summer night time displays over the Northern Hemisphere. A corresponding star map is also included. Additional glow in the dark paint is also available for additional applications.

Purchases can be made through ursamajorstencils.com or from other retailers. Nonprofit organizations or institutions who wish to sell this product qualify for wholesale pricing without sales tax. To apply, simply click on “Request Retailer Account” on the home page of their website. As you complete the form on the following pop-up, place your non-profit certificate in the section labeled “upload reseller certificate.” After approval, you will be able to view their wholesale price list.

For more information, please contact Dick Shimmin at dshimmin@bway.org.
MUSEUM ALLIANCE AND ECLIPSE GLASSES

Attention Informal Educators: NASA has created a community called the Museum Alliance. The Museum Alliance’s “About Us” page at informal.jpl.nasa.gov/museum/About describes the “community of practice” in this way: “The Museum Alliance was created to be the ‘front door’ to NASA for the world of informal education. Likewise, for NASA programs, the Alliance is the ‘front door’ to access the world of informal education.” Many of our fellow GLPA members have found the alliance to be extremely helpful for their work. It’s free to join. Just follow the link on this same “About Us” web page.

The second opportunity is currently being offered by the Museum Alliance to its members. They are gathering orders for eclipse glasses in preparation for the 2017 total solar eclipse. They’ve already reached their goal of gathering enough orders to bring the cost down to $0.25 per unit. Please fill out their contact form (goo.gl/CeWyrP) and see the organizational results (goo.gl/8uGZNJ) for more ideas on collaborations.

A REQUEST FOR INDIANA PLANETARIANS

The following request has been made by the Illinois Department of Natural Resources in Sparta, Illinois:

“My name is Monica Brackman and I work for the Illinois Department of Natural Resources at the World Shooting & Recreational Complex (WSRC) in Sparta, Illinois. Sparta is located 50 miles southeast of St. Louis.”

“I pulled your name from the GLPA State Organizations page. I am curious if there are any planetariums within Indiana that would be interested in coming to our complex for a stargazing event the weekend prior to the solar eclipse next year. Our site will be in the path of totality during this spectacular event.”

“The WSRC is a 1,600 acres facility with many benefits of hosting large events. This location has 1,001 campsites currently available on reserveamerica.com. These sites were recently released and I hope to see the bookings increase over the next couple of months.”

“Stargazing parties Friday and Saturday (maybe Sunday) night would be a great activity for all the campers and locals in the area. I plan to reach out to a number of astronomical groups to promote these gatherings as well. Recently the Adler Planetarium has agreed to be on site Friday Aug. 19th. Again, multiple nights of stargazing would be ideal, so adding several planetariums would be a great boost. I am still in the early stages of planning this weekend event and am open to suggestions/ideas/comments to accommodate your schedule. Thank you very much for your time. Please feel free to reach out to me at your earliest convenience.”

You can reach Monica Brackman, Executive Director, World Shooting and Recreational Complex at monica.Brackman@illinois.gov or by telephone at (618) 295-2700, Ext. 304.
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**THE STARGAZER RETURNS!**

Thanks to a team led by Ken Murphy at Southwest Minnesota State University and funding from GLPA, *The Stargazer* is now available as a fulldome show.

Dr. Jim Kaler, professor of astronomy at the University of Illinois, was introduced to GLPA in 1989 when he gave the first Astronomy Update in Champaign, Illinois. Little did he know that he’d be asked to give the update for many years thereafter! In 1999, Dr. Kaler was GLPA’s Spitz Lecturer. His talk was so inspiring that Dave DeRemer and Bob Bonadurer decided to build a show around it. They received a NASA IDEAS grant to produce the show in 2001 and *The Stargazer* premiered to delegates at the 2002 conference in Menasha, Wisconsin (using 35mm slides). The show went digital not long after that.

Dr. Kaler himself and Nichelle Nichols (Lt. Uhuru from the original Star Trek) narrate this personal look at skywatching. The show begins with a child’s curiosity, moves on to the science of gravity, light, the spectrum, and how they help us decipher the lifestyles of the stars, then ends with reflections on the deeper meanings of astronomy in our own lives. The 37-minute program is aimed at 4th grade and up but it also serves as a wonderful public show. And thanks to Ken, you actually will receive two programs, one being captioned.

To order *The Stargazer*, simply visit the GLPA online store at glpa.org/online-store. Member prices are $150 for 4Kx4K dome masters and $100 for 2Kx2K frames. For $50, Ken can supply a playable movie file for your system. 4K and 2K frames will need to be sliced and encoded for your dome. You can pay by credit card and then send Dave Leake a hard drive to transfer the masters. GLPA will cover the cost of return shipping.

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**THE STARGAZER AND COSMIC COLORS JOIN 50+ STREAMING FULLDOME TITLES**

GLPA’s *The Stargazer* and *Cosmic Colors* join 50+ titles available from Loch Ness’ *Full Dome on Demand* online service for streaming to your audiences or to preview. Their rental cost is $30 for three days. To find out more, go to fulldomeondemand.com/, select Browse Shows from the Site menu, and then select All titles - A to Z to see the full menu of fulldome shows.

---

**ECLIPSE MERCHANDISE ON ZAZZLE**

Gary Tomlinson recently reported that the online store Zazzle offers a number of items for sale that are specific to the 2017 Total Solar Eclipse. If you’re interested, please visit www.zazzle.com/s/2017+solar+eclipse.
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PROJECT DRAGONFLY GRADUATE COURSES

Project Dragonfly, which is offered by Miami University in Oxford, Ohio, is once again accepting applications for 2017 Earth Expeditions graduate courses that offer extraordinary experiences in 15 countries throughout the world. New in 2017 are courses in Brazil. More info at EarthExpeditions.MiamiOH.edu/16-17_news.

Earth Expeditions can build toward the Global Field Program (GFP), a master’s degree that combines summer field courses worldwide with web learning communities so that students can complete the GFP master’s part-time from anywhere in the United States or abroad. More info at GFP.MiamiOH.edu/16-17_news.

Project Dragonfly also offers graduate courses and the Advanced Inquiry Program (AIP), a master’s degree that combines web-based graduate courses through Miami University with face-to-face experiential and field study at one of eight AIP Master institutions in Chicago, Cincinnati, Cleveland, Denver, New York, Phoenix, San Diego and Seattle. More info at AIP.MiamiOH.edu/16-17_news.

Graduate tuition for all programs is greatly reduced because of support from Miami University.

GLPA AWARDS

At the recent annual banquet of the GLPA Conference in Flint, Michigan, GLPA bestowed two Honorary Life Memberships, one Mentor Award, one Service Award, and two Fellow Awards. The list of recipients can be found on page 53.

If you would like to nominate someone for GLPA Fellow, Honorary Life Member, Service Award, Mentor Award, or Galileo Award, please visit glpa.org/awards to download the PDF nomination forms and/or read the award guidelines.

THANK YOU, GLPA SPONSORS AND DONORS

In addition to the tireless work of the conference hosts and member volunteers, GLPA’s 51st annual conference was made possible by the generosity of 26 conference sponsors (listed on page 54) and 23 individual members and vendors who donated door prizes (listed on page 53).
GOTO Gets Ready!

Since our founder Seizo Goto filmed a total solar eclipse in Japan in 1936, GOTO INC has been fascinated by eclipses. Today, as millions of Americans prepare for the 2017 eclipse, the country’s planetariums are acting as important resources for their communities. Curious and eager audiences are flocking to local school and public programs to learn about moon phases, solar science, eye safety, and the history and cultural importance of eclipses. The months leading up to a total solar eclipse are perhaps astronomy’s most “teachable moments.”

Here are a few examples of the ways GOTO INC is helping to bring the eclipse to America:

**Installed Model : CHRONOS II HYBRID**

Installed Model : CHRONOS II HYBRID, They are using the precise positions and motions of their GOTO CHRONOS II HYBRID’s sun, moon, and planets to teach K-12 students about the eclipse. Planetarium director Paul Zeleski says, “Since we’re about 97% eclipsed here, I plan to do some public outreach in Gillette with solar telescopes and some planetarium presentations to get people informed and then get them down to Casper for the main event.”

**Installed Model : CHIRON HYBRID**

Planetarium director Derrick Rohl says, “Our activities build up to a 3-day Eclipse Science Festival we’ll be hosting on eclipse weekend here in Music City, … and our CHIRON projector is still looking as stunning as the day we opened. Not only do we use the CHIRON HYBRID system for pre-produced content like our new “ECLIPSE: The Sun Revealed” show, but we also use the system’s realtime features 365 days a year to show off the night sky in “Skies Over Nashville.”

**Installed Model : GSS-CHRONOS**

(The world’s first CHRONOS site) is planning for its moment in the shadow with programs director Steve Morgan says, “… include a live-narrated segment focusing on local eclipse circumstances and information. The CHRONOS is useful for teaching about moon phases and showing the motion of the Moon in its orbit. We also can run the CHRONOS to the time of the eclipse and show the position of the planets and brighter stars in the sky in relation to the eclipsed Sun’s position.”

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E-Mail: gotousa@earthlink.net
Contact: Ken Miller
GLPA VIDEO CONFERENCING: BEHIND THE SCENES

At the recent GLPA conference, two former Student Assistants at the Merrillville Community Planetarium — Tom Dobes and Steven Sumichrast — worked with John Foerch from Grand Rapids to live stream and record the invited talks and paper presentations. Their recorded videos are available at glpa.org/conference/2016.

The GLPA videoconferencing effort has grown considerably since its inception in 2012. It involves a great deal of equipment and hard-working volunteers. In addition to transporting the students to the conference, Director Gregg Williams helps provide transportation for the video equipment. According to Gregg, there were four wagons of video equipment used at this year’s conference — one wagon for each of three independent video set-ups and the fourth wagon for shared cables and equipment. Tom, Steven, and Gregg began preparing the equipment and wagons six weeks before the conference. The difficulty, Gregg says, is providing portability while bringing enough equipment to handle all contingencies during the four day conference. The benefit for GLPA members is that they can see every paper presentation, even when there were three concurrent sessions at the conference.

Thanks to all who worked very hard to make GLPA’s videoconferencing effort such a stellar success!

Left: Steven Sumichrast live streams and records one of the concurrent paper sessions.

Lower Left: John Foerch from Grand Rapids runs one of the video set-ups used to live stream and record conference activities.

Below: Some of the ten Student Assistants from the Merrillville Community Planetarium.

Photos provided by Barb Williams.
BOOK REVIEW
by Dan Goins

Spaceman: An Astronaut’s Unlikely Journey to Unlock the Secrets of the Universe
by Mike Massimino.

I just finished reading Spaceman, the autobiography of Mike Massimino, who dreamed of becoming an astronaut since age 7 while watching Neil Armstrong walk on the moon. The book follows his many ups and downs along the way to becoming the astronaut he dreamed of being. The book is insightful, inspiring, and informative. He had a humble beginning with dreams of having the “right stuff” for being an astronaut. We follow his astronaut training to his becoming a spacewalker on two Hubble repair missions.

He grew up in New York and was a Mets fan. As he grew up, he would spend hours throwing a ball against a wall or steps pretending to pitch for the home team. The astronauts are permitted to bring along personal items to become mementos. He took a Mets jersey as one of his items on his first flight. Later he presented the Mets jersey to the team and he got to throw out a first pitch for the Mets against the Yankees. One of his dreams came true.

His path to NASA had many turns and as he states, he had many doubts as to the right path to achieve that goal. There were times when he lost direction, but somehow he managed to be in the right place at the right time or had unwittingly placed himself in the right place at the right time. His many struggles are well documented throughout the narrative.

I believe this book can inspire many readers, especially young readers, not to give up a dream. Dreams are achievable. Many of us planetarians can attest to that. The just completed Flint GLPA Conference was an example of what this book is all about. We may not be astronauts, but we show our enthusiasm for space and all that goes into reaching space. We try to touch young minds and inspire them to reach for goals. It can be space, engineering, medicine, or some other endeavor. It doesn’t matter as long as we keep trying, just as Mike Massimino did.

This book is about the human side of an astronaut. It is not crammed with technical terms. It is about highs and lows, wrong turns, right turns, and having the “right stuff” when the time came to put his experiences to use. Every school library should have this book, which should not be on the shelf for long. Planetarium Directors should also read it.
Cosmic Colors: An Adventure Along the Spectrum is a dynamic new planetarium show from the Great Lakes Planetarium Association (GLPA) that will take you on a wondrous journey across the entire electromagnetic spectrum. Get ready for an amazing adventure under a rainbow of cosmic light!

31 minutes in length
Target audience: 5th grade and up

Ordering information:

**FULLDOME VERSION:**
- $300 for a full dome masters at 4K x 4K (need 1 TB hard drive)
- $250 for full dome masters at 2K x 2K (need 500 GB hard drive)
- $200 for full dome masters at 1K x 1K (need 100 GB hard drive)

For FullDome versions, each planetarium must ship an appropriate hard drive to GLPA. Show encoding is the responsibility of each planetarium.

**TRADITIONAL VERSION:**
- $100 for traditional version with two discs -- a playable Cosmic Colors show DVD and a DVD data disc containing all-sky images, digital JPEG images, audio tracks, flattened video scenes, teacher guides, and documentation.

Order Cosmic Colors through the GLPA Online Store at glpa.org/online-store.
IPS 2018: PLANETARIUM LIVE!

The 24th International Planetarium Society (IPS) conference will take place in Toulouse, France from July 1-6, 2018. Our host will be Cité de l’espace (City of Space), a space-themed museum similar to the Visitor Center complexes at Kennedy and Johnson Space Centers in the U.S. Spread over nine acres, Cité de l’espace is home to two planetaria (a 133-seat 15m dome and a 280-seat 20m dome), a 300-seat IMAX flat-screen theater, 25,000+ square feet of space exploration and astronomy exhibitions, full-scale models of rockets and spacecraft, and an astronomical observatory.

The conference theme is ‘Planetarium Live! In and outside the dome’, which will highlight and investigate best practices in the live presentations we do under our domes and out in our communities. As with all IPS conferences, the papers, workshops, panel, and poster sessions come from the membership, so this is a great opportunity to share your innovative presentation methods with the world and to learn from your global colleagues.

Toulouse is the European hub of aerospace and astronautic research and activity. Conference tour options include the Airbus A380 Factory and assembly line, Pic du Midi de Bigorre observatory, Aeroscopia Museum, Toulouse-Latrec Museum, historic Jolimont Observatory, and the old city center. The conference will include a reception at the Salles des Illustres and the banquet will take place in the stunning Cloitre des Jacobins. Learn more about Toulouse at www.toulouse-visit.com.

Toulouse is reachable by air from a wide range of cities in Europe, North Africa, and the Middle East. 400 hotel rooms have been prebooked, ranging from €50-100/night. Most of these hotels are adjacent to Cité de l’espace, but all are within a 15 minute walk. There are also numerous AirBnB options in Toulouse. Early delegate registration is only $367 and banquet tickets are $90. Vendor sponsorship options will range from $1,500-35,000.

Both the IPS 2018 host team, and the IPS Council will be attending the 2017 Pleiades conference in St. Louis to learn from the amazing things we do in GLPA. I strongly urge each of you to consider ‘returning the favor’ by not just attending the IPS conference in 2018, but presenting a paper, poster, or other session so that we can continue to inspire the world.

(continued on page 49)
planet nine

the search is on.

Follow Mike Brown and his team at CalTech as they discover evidence of a Kuiper Belt object 10 times more massive than Earth, and embark on the search for a true ninth planet far beyond the orbit of Neptune.

For more information and a preview contact Mark Webb at Adler Planetarium, mwebb@adlerplanetarium.org
GLPA Executive Committee Meeting

Sloan Museum/Longway Planetarium
Flint, Michigan
October 19, 2016

Present: Dayle Brown (President), Geoff Holt (President-Elect), Garry Beckstrom (Past-President), Dan Tell (Secretary), Cheri Adams (Treasurer), Mike Smail (IPS Representative), Bart Benjamin (Publications Chair), Dayna Thompson (Technology Chair), Dave Leake (Development Chair), Paulette Auchtung (Membership Chair), and Gary Tomlinson (Conference Planning Chair). This certifies a quorum with 11/12 officers attending.

Observers: Janet Beckstrom (GLPA Registrar) and Todd Slisher (Conference Host).

Call to Order: The meeting was called to order at 8:04 a.m., October 19, 2016, with Dayle Brown presiding.

Approval of the Minutes: Dan Tell referred to the minutes from the April Executive Meeting as distributed to the Executive Committee and published in the summer GLPA Newsletter. Garry Beckstrom moved that the Executive Committee accept the minutes from the spring meeting. Mike Smail seconded. The motion carried.

A discussion on voting procedures was held. It was determined that the Secretary will record vote counts on motions when votes are not unanimous.

Treasury Report: Cheri Adams. The balance of GLPA as of September 30th was:

<table>
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<tr>
<th>Account</th>
<th>Amount</th>
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</thead>
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<tr>
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<td>Conference</td>
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<tr>
<td>Image Bank</td>
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<tr>
<td>Gift Shop</td>
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<td><strong>$169,442.02</strong></td>
</tr>
</tbody>
</table>

Cheri notes that the only major transfer was a large transfer from PayPal into the main checking account. It is noted that many of the conference expenses were not yet paid (as is typical for the fall meeting). Expected are in the low $30,000s per Todd Slisher. The known cost for catering is about $28,000. Todd Slisher adds that expenses slightly increased because there were more delegates—the original estimates were for 125 and final count was 181 (including sponsors).

Cheri reminds the committee that GLPA’s fiscal year, per the by-laws is October 1st – September 30th. However, when GLPA restored its 501(c)6 status a few years ago, it was set up with a different fiscal year (April 1st – March 30th). Cheri Adams thus provides different dates to the IRS than to GLPA, however, she notes these dates are actually better as the conference’s revenues and expenses aren’t split across the fiscal year.

Dan Tell presented a report on GLPA’s year-over-year net revenues and growth from the conference. Dan Tell noted that GLPA’s growth since 2008 has been robust, but has likely exceeded operating costs and conference costs should be restructured to better match its expenses while keeping appropriate pace with inflation. Historic budgeting procedure has been to divide all conference costs among delegates and use sponsorships to subsidize the delegate registration. Reports show a consistent level of sponsorship, and thus that GLPA could budget for an assumed level of support and reduce overall costs for attendees and reduce excess revenues to match the organization’s actual needs.
Committee agreed that GLPA has a strong, secure treasury but does not need to continue to grow at this pace.

Dan Tell suggested to start, since GLPA appears to need about $5,000-6,000 from the conference revenues for operating expenses, and should also maintain an inflationary growth with room for future projects, $15,000 of sponsor income should be assumed as part of the conference budget to be paid to conference expenses (this leaves the appropriate revenue for the organization’s expenses). Garry Beckstrom, reviewing the reports, agreed, but noted that if recent years of sponsorship continue, GLPA would be able to increase this budgeted revenue.

Gary Tomlinson noted that 2017’s budget would, naturally, be different. Dan Tell observed that it is known that this is the budgeting procedure for the other regionals, however, so GLPA would be in line with them to budget smartly using these numbers.

Mike Smail stated that although this is a good baseline, there are reports of smaller sponsors leaving the other regional conferences. MAPS 2016 had 48 attendees, 22 of whom were sponsors and 8 of the remaining delegates were retired. He notes although GLPA is in a healthy place with sponsorship, but this is not universal among the U.S. regionals.

Dayle Brown inquired if any votes on conference budgeting procedures would be tabled until the spring. Mike Smail expressed there was general assent for the new procedures and there would be time to sort out the details. Geoff Holt agreed that everything should be set up going forward to provide the right amount of income for GLPA.

Mike Smail also noted that the current practice of separating the meal package and registration cost creates some confusion, since most of the conference expense is the meal package and it may not be possible to evenly reduce both registration and meal package cost while having delegates pay their straight share of the meal package. Smail feels they should be grouped together going forward.

Bart Benjamin inquired if Dan Tell felt GLPA should spend down the excess of the budget. Dan Tell clarified the treasury balance is healthy and should be grown in parallel with inflation and future projects amortized over several years. GLPA should budget smartly, but maintain a healthy balance since it covers conference self-insurance, among other things.

Dan Tell also expressed that he does not advocate for a vote on this change on this procedure to allow for maximum budget flexibility going forward — the committee should not be locked into having to vote to change specific dollar amounts in the budgeting procedures, and should just vote on the budget overall, year-by-year, as it does now, keeping the President and Conference Planning Chair empowered to make budgeting decisions for the conferences as appropriate. There was general assent that GLPA will accept these procedures going forward and assume a base level of sponsor support for the conferences.

Geoff Holt thanked Dan Tell for preparing the report.

Gary Tomlinson still requested that the Committee consider a vote at the next spring meeting on what the assumed sponsorship amount should be.

President’s Report: Dayle Brown thanked the conference host and conference committee.

President-Elect’s Report: Geoff Holt presented the election procedures, as discussed at the spring meeting, for review.

- The President-Elect is responsible for running the election at the Business Meeting. Two sets of paper ballots will be brought to the meeting, in anticipation of possible ties.
- The Nominations Committee will distribute ballots in exchange for nametags [in subsequent discussion, they may just check nametags]. Non-member’s tags will identify them as such and they will not be given a ballot.
- The President-Elect will re-run the election for the relevant office in the event of a tie, repeating until the tie is broken. Candidates in contest will make a brief statement to the assembled membership before the second-round vote.

Dayle Brown asks if GLPA has allowed non-member guests to receive door prizes. Dan Tell notes this has been allowed in the past, and adds it seems fair if the guests sat through the Business Meeting.

Geoff Holt noted it would be good for the President-Elect to work with the Membership Chair during the business meeting so delegates who have forgotten or lost their nametag can be verified and receive a ballot. Paulette Auchtung states she is working on the verification process to ensure attendees are members and will be adding this to the handbook so future Membership Chairs will know the procedure (GLPA by-laws require conference delegates and sponsors are
members*). Dan Tell notes that this process was not consistently done in the days of paper registration, Geoff Holt affirms that it will be in the handbook for future Membership Chairs to reference.

The Scholarship Committee approved 10/10 applicants for the conference scholarship. Gary Tomlinson asks if they were all full scholarships. Holt notes that the vote to approve partial scholarships occurred after some applications had already been received, so that procedure was not implemented for this conference. It would not have been fair to offer partials mid-stream. Geoff Holt notes scholarship wording on the website was also not yet updated for the same reason.

Geoff Holt expressed that in reviewing applicants he felt the guidelines were not sufficient for making good decisions. Dan Tell feels the revised wording for next year already may have better metrics. Cheri Adams asks if age is an appropriate factor. Todd Slisher noted that applicants under 18 years old could be a liability when awarded scholarships. The intent/interest of the applicant in pursuing the planetarium profession was discussed. The existing interest was discussed, as Holt notes there are planetarians who say they would not have pursued the career had they not attended a GLPA conference. He felt a good addition to the scholarship form would be a write-in question: “what is it about the planetarium/astronomy education field that inspires you to attend?” and that this could be used as a metric. Dan Tell vouched for this idea.

Geoff Holt also suggested updating the wording for eligibility to say “adult students” — to mean individuals of 18 years old or greater. The Committee concluded this would mean high school students and college students under 18 years of age would not be eligible to apply.

Geoff Holt asked to eliminate the requested letter from a supervisor. Dan Tell agreed it is not a helpful metric, especially for applicants who do not have institutional support, and was not mandatory to begin with.

It was asked if any other preferential treatment exists in the scholarships. Dan Tell noted the wording says those who have been members for five years are given precedence. Tell also suggested that first time applicants should be given preference over repeats. Geoff Holt agreed these were good criteria. Holt also asked the Committee if they were fine, overall, with repeat applicants. Bart Benjamin asked if a record was being kept of repeat applicants vs. first-timers. There is no current record as it moves from President-Elect to President-Elect. Todd Slisher asked if anyone felt the current system was being abused. It was noted that use of the webform will create a record going forward into the future to track applicants year-by-year.

Geoff Holt and Gary Tomlinson summarize the discussion: the desired scholarship recipient is interested in pursuing the planetarium or astronomy education field, 5-year and longer members are prioritized over newer members, and new applicants are prioritized over repeat applicants. So the highest preference is given to a 5-year member who is a new applicant.

Dayna Thompson will remove the paper application since the webform will be more useful in the future.

Geoff Holt asked if the requirement for the letter from a supervisor would also be removed. The Committee agreed. Geoff Holt will revise the wording for the guidelines and present them to the Committee. Dan Tell notes that because every previous change of scholarship language has involved a vote, we have the precedent that we will need to vote once this wording is finalized.

Geoff Holt inquired on partial scholarships: how will this be factored, especially if we combine meal packages and registration? Gary Tomlinson feels it should be based on the equivalent dollar amount of meal and registration, so if budgeted for 10 full, GLPA could award the equivalent dollar amount in partials and full scholarships combined. Geoff Holt noted a large number of applicants are college students and recent graduates and feels this is a group that we want to encourage to apply for scholarships and attend GLPA. Dan Tell also expressed that with reduced registration costs in future years, we may also reduce the number of applicants, as the conference will be more affordable. Cheri Adams suggested we keep to Gary Tomlinson’s suggestion, and Tomlinson noted the Scholarship Committee could always ask the Executive Committee for additional approvals.

Geoff Holt also noted that the application deadline for a scholarship is very late: it currently says “by September 1st” to get full consideration, but August 15th would be preferable. The Committee agreed it should be moved forward to August 15th.

* This was the Committee’s interpretation of Article 4, Section 1 & 3 in light of Article 3, Section 4, Item F. Geoff Holt and Gary Tomlinson advocated that this was the correct interpretation of the by-laws in October 2014 and the committee agreed and developed policy based thereupon.
Discussing deadlines in general: Paulette Auchtung addressed that paper presentation approvals weren’t sent out until October 3rd, and final text was due on the 13th. Geoff Holt notes these dates are usually based on the host. However, Todd Slisher said the general schedule was set in July, with the number of available paper session timeslots decided by then. It was agreed the approval deadline could be earlier. Geoff Holt also notes we have discussed extending the conference to give more room for papers.

Gary Tomlinson notes that the early registration deadline for the conference is in mid-September and can’t be made earlier because of teachers who need to get approval in that time frame.

Mike Smail also observed the later registration deadline doesn’t line up with the other GLPA deadlines. Geoff Holt asked if the paper text deadline could be later. Mike Smail notes at IPS2012 there was not as much of a restriction on paper deadlines, and they did not get all papers for the Proceedings. Dan Tell suggested it could be set to the weekend before the conference — the Proceedings Editor still has time to ask for late paper texts at the conference. Geoff Holt asked if Paulette Auchtung thinks this would have made a difference. Auchtung says it would have.

Geoff Holt asked if paper submitters were emailed about their paper acceptance. Todd Slisher confirms they were emailed. Mike Smail notes that the form only says the submitted will be notified, but not by when. Gary Tomlinson asked what would be a good time for acceptance to be confirmed? Todd Slisher says the earliest date is the paper submission form’s deadline. Paulette Auchtung agreed, adding even a week after that deadline would be appropriate, as that would’ve still extended the notification-to-due-date gap by a week this year. Gary Tomlinson asked if a week was an appropriate time for a host to make these decisions. Todd Slisher says that would have been no problem — a week was actually overly generous.

Geoff Holt reminds the Committee we should update the important dates webpage with revised dates for reference by hosts and delegates.

Past-President’s Report: Garry Beckstrom. Gary Tomlinson, Dayna Thompson, and Bart Benjamin are working on major revisions to the handbook. Gary Tomlinson has been referring to it as “version 3.” Although it is an evolving document, this will still be a substantial rework. Geoff Holt and Bart Benjamin expressed that the website handbook should also be considered the Master Copy, and not a physical version. Geoff Holt also asked who makes suggested changes to the website version. Bart Benjamin said the system is that the officer suggesting a change leaves a comment on the page, the Past-President then replies with approval and a notation should be added when the change is made in the text. Dave Leake notes there is a difference between grammar changes and changes that require Executive Committee review and approval. It is the Past-President’s duty to report the latter to the committee when relevant. Gary Tomlinson feels this is especially important when a change affects multiple sections of the handbook.

Gary Tomlinson says the biggest change in this addition is that it will correctly include the duties officers have been doing that were not previously recorded. Gary Tomlinson also says this will include the Conference Planning Handbook being published on the site. Tomlinson wants this all on the website by February. Dan Tell says this is good, because it will be available by the next Committee meeting.

Geoff Holt says there should be clear documentation for updating procedures. Dayna Thompson directs the Committee to a section: “How to Update the Handbook” that has the appropriate instructions.

Garry Beckstrom drew the Committee’s attention to a few notable revisions:

a. Awards: Under Conference Scholarship, Section 2 – Expectations of Successful Applicants – add awardees are ineligible to claim poster, paper or workshop credit on their registration. (Should also be added under Annual Conference section of the GLPA website.)

b. President: Under “Banquet”- add 1. That the President should allow the nominator of the Mentor Award to speak. 2. The President should read selected parts of the Galileo Award nomination letter, and allow the winner to speak.


Historian’s Report: Garry Beckstrom asked if the Committee wanted to continue to use Facebook for hosting conference photos. He has many of the historical photos, and can also post them there. Mike Smail affirmed this. Garry Beckstrom asked if Renae Kerrigan was the appropriate person to take care of this. Dayna Thompson confirmed she is. Gary Tomlinson asked if the GLPA website should have multiple links to photos from each conference year. Dayna
Thompson said it would be better to have one link to the Facebook, then each year will just be its own album, and this is easy enough to browse. Garry Beckstrom says he has the album for each of the conferences so they can be uploaded soon.

Garry Beckstrom also notes the 2012 conference in Pittsburgh had a welcome video — can this also be hosted? Dayna Thompson said this would be easy to do with Facebook, and better than hosting anywhere else. Dan Goins entered and photographed the meeting at this time and asked: what about those who do not release photo rights? There was one such individual last year. Janet Beckstrom and Garry Beckstrom noted the registrar and photographer need to be aware of that, and will have to redact such individuals. Most members, however, sign a photo release.

Garry Beckstrom will go through the files for old group photos to provide them for the website. Garry Beckstrom will also redact individuals who should not have been photographed.

**Secretarial Report: Dan Tell.** The following votes were held electronically between the Spring 2016 Executive Committee Meeting and the Fall Exec Meeting:

- Geoff Holt moved that GLPA shall provide funding for up to 10 scholarships to the fall conference, consistent with previous years. Sue Batson seconded the motion. The motion carried.
- Gary Tomlinson moved that GLPA modify the scholarship program to create partial scholarships. Dave Leake seconded. The motion carried.
- Dan Tell moved that GLPA shall change the scholarship wording from "I certify I would be unable to attend the conference without financial assistance" to "I certify I would experience a financial hardship to attend the conference without financial assistance." Geoff Holt seconded the motion. The motion carried.

Dan Tell updated the scholarship language with the above changes.

**Treasurer’s Report, Non-financial: Cheri Adams.** GLPA’s insurance policies were paid. Cheri Adams also brought and presented GLPA’s tax filings. As GLPA has now exceeded $50,000 in earnings, it no longer has a simple “postcard” form. Since greater than $60,000 were collected through PayPal, PayPal generated a tax document that was automatically sent to the IRS. GLPA’s CPA is a former IRS agent and did not bill GLPA this year, but Cheri Adams continues to keep appropriate CPA fees in the budget. Because GLPA’s IRS fiscal year is April 1st - March 31st, IRS filings are due in August, so the numbers look different from the financial report above. Cheri Adams also refilled GLPA’s business incorporation paperwork with the State of Michigan, as she does every year in September.

Cheri Adams asked if we could adjust GLPA’s budgeting procedures from the stated fiscal year to the calendar year, which would help move the conference away from the end of the fiscal year, which has made budgets and comparisons difficult. Dan Tell expressed, since the by-laws require the Oct 1 - Sep 30 fiscal year for GLPA, we should update the by-laws (requiring a vote of the membership) and not just adopt different procedures. Cheri Adams also notes our CPA also advised GLPA not to change our IRS fiscal year to avoid raising attention. Geoff Holt asked if instead of using the calendar year, GLPA could adopt its IRS fiscal year as its official fiscal year. Cheri Adams also feel this would work well. Adams asked if she could budget for the next year offset to that and GLPA would vote on formalizing this in the by-laws at the next election. The Committee agreed.

Gary Tomlinson suggested that the Committee get together any other desired by-law changes.

The Committee will propose a by-laws change on the fiscal year for the next election at the 2017 conference.

Gary Tomlinson asked about membership: will the length of a membership need extended by a few months? Dan Tell notes the by-laws have the membership year as separate from the fiscal year already. Paulette Auchtung and Cheri Adams say it would be best to leave membership as it is, and only change the fiscal year. Cheri Adams also would not change the state of Michigan tax fiscal year. Michigan also asks to list six board members of the organization; Adams currently lists the President-Elect, President, Past-President, Secretary, Treasurer, and Technology Chair.

Cheri Adams will proceed with April 1 – March 30 budget for 2017 with a planned addition of October 1, 2016 – March 30, 2017 to accommodate for the conference of this year.

Geoff Holt requested a clarification of the by-laws: GLPA votes on changes at the 2017 conference. Notification is required to be 30 days before the vote. How is notification handled? Dan Tell notes this has always been done via the summer newsletter. In the case of by-law changes, all proposed changes were published in the newsletter, and then the vote was for the membership to accept all of the proposed revisions or not — it is not a line-item vote. The Executive Committee will prepare proposed revisions at the Spring Meeting.

Cheri Adams will work in six-month increments for the budget in preparation for the transition. She anticipates this
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will make our conference budget information much more useful in the future.

After a discussion of budget line items, Dayna Thompson said everyone should look at their section of the budget and wipe the lines for one-time expenses to clean up the spreadsheet for future years.

On by-law related changes, Mike Smail notes that holding the state caucuses early morning the day after the banquet (that is, Saturday morning) is not necessarily good for attendance and participation. He asks if it would be better to move the state and business meetings from the last day to earlier in the conference, noting that IPS does its business meeting before its banquet. Dan Tell reviewed GLPA documents and found no published requirements, agreeing that Friday afternoon would be a great time to do the business meeting, moving more papers and workshops to Saturday. Dan Tell also notes that state caucuses could be held Friday at lunch, followed by the business meeting. Geoff Holt and Mike Smail agree that is a great idea.

**Conference Host Report: Todd Slisher.** There are 141 delegates and 40 sponsor representatives for a total of 181 attendees at the Flint conference. Rough revenues are $28,662 from registrations and $35,708 from sponsors for $64,370 in total revenue. Expenses are still fungible because all bills are not paid, but are expended to be in the low-to-mid $30,000s. The original budget was $21,000, but food costs increased because of higher-than-expected delegate registration. The conference was in good shape and all planned events ready-to-go.

All 36 submitted papers were accommodated. Todd Slisher thanked his local planning committee for their awesome work, as well as Garry Beckstrom and Janet Beckstrom. Todd Slisher was also host 12 years ago, in 2004, and expressed the Executive Committee has made hosting much easier, especially thanks to the Registrar. Dayle Brown thanks Janet Beckstrom for her service as Registrar, and Todd Slisher for hosting.

Janet Beckstrom notes one additional sponsor registered the previous night, and one more that morning. The likely attendance would now be 183 persons.

Janet Beckstrom also added that PayPal has made refunds much more convenient for individuals who initially registered but were unable to attend.

Dayna Thompson adds that an upgrade was done to the website that allows export of information with the same column organization into Excel and has allowed creation of templates for reliable reports of meal packages, workshop attendance, etc. Dayna Thompson feels like this helped a lot, but has yet to be fully utilized and will address that more during the Technology Report. This was added for the low expense of $360 and is as good as Gary Tomlinson’s dreamed of export “button” for the website.

**IPS Report: Mike Smail.** The Warsaw IPS conference was well attended, especially by GLPA members. GLPA members presented approximately three dozen paper and poster sessions.

Mike Smail notes that a lot of the Vision 2020 work done with the IPS Council has been better clarified with all members. The Council voted to authorize the Vision 2020 committee to keep working on its big picture strategies.

The IPS Historian is seeking to do a better job recognizing deceased planetarians. Mike Smail would like to formalize a process by which the GLPA Historian or IPS Representative passes on the info of deceased GLPA members. Garry Beckstrom notes this info is available on the GLPA website, but Garry Beckstrom or Mike Smail can send it to the IPS Historian, too.

Mike Smail introduced two new IPS projects: “Voices from the Dome” encourages planetarians to make recordings on various topics and submit them to a website for download and use by other planetariums. Almost 70 recordings are available currently. “A Week in the United States” is a parallel program to “An Astronomical Experience in Italy for an American Planetarium Operator.” The Program will give international planetarians a chance to visit a facility in the United States. Sue Button and Loris Ramponi have developed this opportunity, which will provide for two planetarians in 2017 and two in 2018. Sue is looking for one more host for 2017 and two hosts for 2018. Sue Button also inquired if GLPA would contribute $500 seed funding to this project.

IPS’s election is underway. Two candidates are GLPA members: Mark SubbaRao for President-Elect and Ann Bragg for Treasurer. Dan Tell reports that Vision 2020 asked about the possibility of candidate endorsements. The Committee agrees that it is not GLPA’s place to endorse IPS candidates.

IPS has selected St. Louis as the location for its 2017 Council Meeting, to be held the days before the 2017 Pleiades Conference. IPS has expressed GLPA is doing a lot of things right, and the entirety of the IPS council is being encouraged to observe the Pleiades Conference as a positive example.

IPS 2018 will be held in Toulouse, France. Early registration will start at $367, 400 rooms are being held at nearby
hotels for 50-100 Euro/night. Many AirBnBs are also available in the area.

IPS 2020 has three bids: Bogota, Columbia; Edmonton, Alberta; and Houston, Texas. Edmonton would be in June 2020, Bogota in July, and Houston in August. The Houston conference would be the entire Houston Museum of Nature and Science, while the other two would rely on convention centers in addition. Mike Smail will make presentations to the membership via a poster session and has an iPad for GLPA members to vote for their preferred location, which he will use to inform his vote at Council. Bart Benjamin inquired about IPS location voting procedures. Mike Smail explained Council members vote for their first choice, the site with the lowest number of votes is dropped out, and then the Council votes on the remaining two.

Dayle Brown asked how many GLPA members attended IPS 2016. Mike Smail was unsure, as he does not have a complete delegate list. There were 530 attendees, but he definitely noted a strong GLPA turnout.

Conference Planning: Gary Tomlinson announced that Dan Goins intends to retire as Conference Photographer after the 2017 Conference.* Dan Tell suggested GLPA should start recruiting volunteers to succeed him at the current conference. Dan Tell also asked if GLPA would consider providing a camera for the conference photographer. Gary Tomlinson feels many photographers might not want to change cameras from one they feel comfortable with. Geoff Holt asked about the possibility of funding two photographers. Gary Tomlinson felt this could be a possibility. It was also agreed that more delegate’s photos could be collected for the Facebook page. Gary Tomlinson confirmed: should we ask for volunteers to succeed Dan Goins at the Business Meeting? Dan Tell and Garry Beckstrom affirmed this, feeling that the next photographer should begin training under Dan Goins at the 2017 Conference. Bart Benjamin also agreed that the Committee should encourage all members to submit photos to the Facebook page.

Todd Slisher noted that at many conferences, the pictures tagged for the conference are automatically added to a photostream. It was agreed that collecting pictures from the #glpa2016 tag would be a great way to gather additional pictures. Gary Tomlinson asked if an official photographer was still necessary if GLPA was crowdsourcing pictures. The Committee agreed that an official photographer is still necessary.

Gary Tomlinson addressed one-day registration policy: GLPA preference has generally been to encourage delegates to attend the entire conference, especially as GLPA’s expenses are the same regardless of how long an individual attends. Currently one-day registration is set at 60% of full registration. Registering for two days is thus 120% of the registration fee and more expensive than registration for the entire conference. Geoff Holt noted that as we start utilizing more of Saturday, GLPA may incorporate a new audience of delegates who can’t attend during weekdays, and a reasonable one-day registration may encourage new attendees. Dan Tell asked what if it were a set package (i.e. the full conference or a Friday-and-Saturday combination package)? Geoff Holt feels like encouraging lower costs this way could be good, and that organizing the content of the days of the conference could also be used to smartly arrange these packages. Geoff Holt also adds that since the Committee is looking at budgeting closer to costs in the future, rather than using subsidies, it’s not a question of denying partial registrations the subsidy for the conference. Dayna Thompson added that currently, one-day registration does not add significant savings. Geoff Holt observed if it were a two-day registration package and were still 60% of the full registration that would be a better deal. Gary Tomlinson asked if policing attendance would be necessary. The Committee felt this might be an issue, but Dan Tell pointed out that name badges could have an identifier for full registrants vs. partial. It was also agreed the costs for a partial registration should be slightly more than the proportionate cost for that portion of the conference. The Committee agreed it would work on producing an appropriate partial registration package.

Janet Beckstrom also brought up the late registration fee. Dan Tell asked if the Committee feels it is fair, or too severe? The Committee agreed it was fair. Dan Tell asked, for comparison, what the late fees were for IPS 2012. Mike Smail confirmed: early registration was $400, with a $50 late fee and an additional $50 very-late fee as the year progressed. Anyone registering after the very-late deadline had to pay a further $50 fee and was not guaranteed meals.

The sponsor guest policy was discussed. Gary Tomlinson wanted to add some language to clarify what the definition of a guest is: a potential client of a vendor who exclusively wishes only to see the products and services of the vendor. Geoff Holt expressed displeasure with the entire concept of a guest — all delegates are at the conference to spend time with sponsors, including learning about their products. Holt feels it is inappropriate if he, as a paid delegate, misses

* In subsequent discussion, Dan Goins expressed he may be willing to stay on through 2018.
out on that experience; but that is what guest are also signing up for. Holt asks why is there a vendor guest policy at all? If there were a unique situation it could be handled as a one-off. Dan Tell agreed. Todd Slisher said he assumed the guest policy was for spouses attending the conference/banquet. Gary Tomlinson clarifies there are different policies related to delegate guests and vendor sales guests. Gary Tomlinson asked if the consensus is there should be no guests, other than, for example, spouses at the banquet? The Committee agreed: the partial registrations could be used for guests like that, but there will not be sales guests.

Gary Tomlinson says more workshops were submitted than could be accommodated at the 2016 conference. There are three sessions of three parallel workshops. The GLPA banner is up and hanging on the Longway Dome. Arrangements are being made to store and ship the banner to the next location. It will not be used in St. Louis, so it will next be featured in East Lansing.

Geoff Holt states he would like to be sure GLPA is transparent about any deals being made at conferences: when behind-the-scenes staff are being given free registration or meals, etc. This way it will be known what compensations are being made at each conference and this can correctly inform future hosts. Gary Tomlinson said the host always has some discretion on compensating meals and registrations for local staff. Geoff Holt asked this be indicated in the handbook. Gary Tomlinson says the Conference Planning Committee already has some guidelines for this.

The 2017 Spring Executive Meeting dates were discussed. Gary Tomlinson no longer feels it necessary the committee go to St. Louis. Dan Tell asked if Gary Tomlinson feels he personally needs to go to St. Louis ahead of time, as he requested at the 2016 spring meeting. Gary Tomlinson is uncertain at this time. The Committee agrees it will not go to St. Louis and that a two-day meeting is not necessary. The Committee will seek out a central location for the meeting. April 8th is tentatively floated as a date for the meeting. This was later confirmed as May 20th, 2017 in Merrillville, Indiana.

The Committee recessed for lunch at 11:57 a.m.

The meeting resumed at 12:40 p.m.

Dayle Brown decided Dan Tell will oversee by-law edits for the 2017 ballot proposal, consistent with the Secretary-Treasurer having overseen previous edits. Dan Tell said he will form a committee with Garry Beckstrom and Dave Leake.

Gary Tomlinson says he sent a 34-item list related to conference planning to Anna Green. However, he highlighted a handful as truly important: the written paper credit, the conference proceedings, videographer, and group photo key. Geoff Holt said if the other regionals are used to doing things in a different way from GLPA, GLPA should not twist any arms to force them to adopt GLPA procedures. Mike Smail asked if the paper credit should apply to only GLPA members if the other regionals express disinterest. Dan Tell and Dayna Thompson felt the credit should be available to anyone, regardless of regional membership, if they submit written text for the proceedings.

Gary Tomlinson asked if GLPA will pay for a videographer regardless of if the other regionals want it. Mike Smail said GLPA would do this if it were just a GLPA conference, so yes; GLPA should cover a videographer if necessary. Janet Beckstrom asked if videography will be more expensive. Gary Tomlinson felt it might. Tomlinson added that since net revenues are to be divided by delegates-per-organization, GLPA is likely to be reimbursed the most, which will help with the organization providing any missing services from the Pleiades Conference.

Options were weighed for the Spitz Lecturer, but this may need consultation with the other regionals.

Hotel information was reviewed. It was confirmed a contract was signed with the hotel. The Pleiades conference will be October 10-14, 2017.

The GLPA Registrar will not be available for on-site registration in 2017, but GPPA will step in to handle on-site registration. GLPA will still handle online registration.

GLPA has agreed to provide access to its instructional materials during the conference. Dave Leake asked if this would include the member price for GLPA shows. Gary Tomlinson said yes, that is what has been done at previous joint conferences. Paulette Auchtung and Dayna Thompson expressed that there may be some difficulties developing the database for price checking. Possibly adding a generic login to allow for member price purchasing. Dan Tell asked if a coupon code could be used instead. Paulette Auchtung said maybe, but Dayna Thompson thinks this may be difficult. Paulette Auchtung and Dave Leake are also concerned about collecting correct contact info from a generic login. Dayna Thompson agreed a 10% discount code a checkout is probably the correct solution.

GLPA 2018 will be hosted by the Abrams Planetarium in East Lansing, Michigan. Shannon Schmoll, Director of
If you would like to download beautiful Hubble Space Telescope images like the ones that are found throughout the GLPA Newsletter, all you need to do is visit:

Hubble Heritage Project
heritage.stsci.edu/

or

HubbleSite Gallery website
hubblesite.org/gallery/

And the best news of all? Since the photos come from NASA, they are free (with proper credit)!
the Abrams, is already assuming that GLPA will be a longer conference, but is waiting on GLPA’s final decision. The generally agreed on plan was extending through Saturday night or Sunday morning, redistributing mostly the same amount of events over the added day to allow for more networking and exhibition hall time, also ensuring quality content on Saturday night to encourage attendance. Mike Smail asked if preparing a draft schedule well ahead of the conference would be useful. Gary Tomlinson agreed it would be a good idea. Dan Tell read from the 2015 Business Meeting minutes to provide suggestions from the membership:

Dan Tell reported that some members had expressed interest in extending the conference, which was a question not in the conference survey this year, and asked to hold a straw poll. Most members expressed interest in extending the conference; only three in attendance staunchly opposed. Garry Beckstrom noted an extension would have to be planned around accommodating teachers.

John French expressed that he (and others) would prefer adding extra time at the beginning, rather than the end of the conference. Another straw poll was held, with the majority of members preferring to add time at the end of the conference, going into Sunday. Dan Goins pointed out these extensions may affect flight prices to the conferences.

Garry Beckstrom encouraged more comments and suggestions on the topic and the other “growing pains” of GLPA — but it will keep growing.

Gary Lazich thanked John Hare for his organization of the Hospitality Suites at GLPA and added it would be nice to have quieter social times for networking at the conference as well.

Chuck Rau observed that trips in the middle of the conference are more disruptive than pre- or post-conference trips. Ken Miller agreed, noting that it is good to put optional events at the start and end of the conference, with core business in the middle.

Keith Davis asked if, due to the tight schedules, some of the vendor time could be non-plenary, as he would prefer more importance being given to the delegate sessions. It was noted that vendor time could not be made non-plenary, but Dan Tell observed that there have been reductions in plenary vendor time (and fees). There has been a continued increase of delegate presentations.

Susan Button suggested that perhaps, as in GLIPSA, vendors could be more focused on educational presentations than just advertising and could partner with members to create better demos.

Chris Janssen noted that, per his calculations, far more time is spent on invited speakers (7 hours in 2015) than vendor sessions (5.5 hours) or delegate sessions (3.5 hours with concurrent sessions). He asked if the conference would consider fewer invited speakers to give more time for non-concurrent paper sessions. He likes the invited speakers but prefers member papers. Garry Beckstrom felt this might be possible.

Geoff Holt asked if there had been any progress on posting the raw, unpolished videos from the conference on the website immediately. Gary Tomlinson noted that Tom Dobes does want to do a quality job and was unsure. Geoff Holt reiterated his request is for the raw footage of exactly what is streamed to be available immediately with a note a polished version will be added eventually. Tomlinson asked what if a polished version was never made available or posted? Holt stated he felt that would be acceptable, and most of the Committee agreed.

Mike Smail asked if any sites had volunteered for 2019 yet. He said Notre Dame had expressed interest, and that the site has new administration since last hosting and feels better set up for GLPA. Gary Tomlinson says there have been two other potential hosts expressing interest.

**Development Report: Dave Leake.** GLPA 2016 features 26 sponsoring vendors, totaling 5 hours of plenary presentation time and producing $27,250 in sponsorship funds for the organization. 1.75 hours of dedicated exhibition hall time were arranged and five full shows (including The Stargazer) were arranged to be screened in the evening.

Discussion ensued on the host’s attempt to charge for slicing of fulldome content and whether it is possible for vendors to slice for other systems. Mike Smail notes that it is the dome masters that can be shared and distributed, but a producer can’t slice for another site and slices for one system are often incompatible with another, even with similar projection.

Gary Tomlinson asked what the procedure needs to be: dome masters being delivered a month ahead of time for slicing? Mike Smail felt that even more time than that was probably preferable; maybe two months for dome master deliver. Smail also advocated a priority order: plenary time segments should be sliced first, then full evening shows. Dan Tell notes this is inline with how fulldome festivals handle it.

Gary Tomlinson asked what if it is not possible for the host to handle the slicing? Dave Leake expressed that in
2010, GLPA paid an outside agent for slicing. Mike Smail says the host should be in touch with their vendor and if they need to budget for slicing with help from their system vendor, then that needs to be part of the conference budget.

Dave Leake noted that vendors who wanted to present a show but did not attend the conference had to pay the Solar System sponsorship level. But this may not be an issue by 2018 if the la carte sponsorships are introduced.

The question was raised of what restrictions exist on the “item” in the bag for Galaxy and above sponsors. Mike Smail noted that IPS has had very explicit definitions and will send them to Dave Leake for reference.

The nomenclature of “vendor” versus “sponsor” was discussed. It was generally agreed that sponsor is preferred when relevant and in public. Geoff Holt asked if this was clear for new delegates — is it obvious that the conference “sponsors” are also “vending” materials? Bart Benjamin suggested they clearly be called sponsors when thanked. Geoff Holt expressed his feeling the exhibition hall should be called the vendor exhibition hall. Dave Leake said the Committee could be more explicit so the membership knows they are sponsoring the conference. But it will still be plenary vendor time and the vendor exhibition hall.

Education Report: Dayle Brown and Gary Tomlinson, reporting for Sue Batson in absentia. Work has advanced on the Astronomy Literacy Document with input and feedback from the committee, developing it into a document focused on working within the NGSS standards. There will be a SIG meeting during the Thursday lunch.

Dave Leake reported on The Stargazer: the program will be shown Thursday night. Leake is happy to report it was presented to Jim and Maxine Kaler and the Staerkel Planetarium will also do a special viewing for Kaler’s assisted living facility. Dave Leake says Ken Murphy did a marvelous job on the production.

GLPA will make the show available for $150 for 4k frames, $100 for 2k frames, and playable 1k movie files for $50. A $25 discount will be available for those who already have the show in its traditional format. Non-member prices will be 10% higher. The show is already available through the GLPA store. Dayna Thompson will add a shortcut on the main page.


There was discussion of the ongoing search for a solution for the image bank, including just hosting everything via the GLPA site. Paulette Auchtung noted slide film is no longer available to produce slides with. Dave Leake added that many of the files in the slide bank are missing documentation for licensing and should not be included.

Mike Smail, noting GLPA has produced two fulldome shows, asked if there would be interest in distributing them via Loch Ness Productions “Fulldome on Demand” streaming service. For comparison, he said Adler has been doing so with success. Dave Leake will investigate this with the Petersons. Two Small Pieces of Glass may represent a similar example to GLPA’s productions, and is available to rent for $5.

Membership Report: Paulette Auchtung. GLPA membership is at 275 individuals. Of these, 53% are regular members, 20% are sponsors, 10% are Honorary Life Members, 10% are students and 7% are senior members.

Most members are part of a Museum/Nature Center or Standalone Planetarium (25%), College or University (28%) or School (18%). 16% are independent/businesses and 13% are listed as “other.” GLPA includes members from four continents, but primarily North America. Of the core GLPA region Illinois reports 25 members; Indiana, 42; Michigan, 38; Minnesota, 9; Ohio, 35; Wisconsin, 15. 110 of GLPA’s members hail from outside the core GLPA states.

75 of GLPA’s members report having a fulldome theater, and 46 as being traditional planetariums. 12 identify as “other” and 20 have no planetarium theater

Paulette Auchtung notes not all numbers may add up, due to members in their grace period and some missing information for Honorary Life Members.

Publications Report: Bart Benjamin is appealing to the membership, especially younger planetarians, for ways to make the newsletter more valuable. He is also trying to figure out where the membership stands on the value of the newsletter and proceedings. Benjamin would like to see the newsletter grow into something better than it is now.

2016 will be the first year the conference proceedings are not distributed via DVD. They will be available for download from the GLPA website and the photos will be hosted on Facebook.

Following up from an email discussion, Dan Tell asked if Dale Smith is planning to cease working as Proceedings Editor after retirement. Bart Benjamin was uncertain. Dan Tell asked if we should find out from Dale Smith and, if necessary, start transitioning to a new Proceedings Editor who can apprentice Smith. Bart Benjamin agreed the
organization needs to look ahead — on the newsletter as well. Bart Benjamin expressed all GLPA publications need longevity plans.

Bart Benjamin has completed his 115th edition of the newsletter as Editor.

Discussion ensued on the color version of the newsletter. Bart Benjamin and Dale Smith’s investigation led them to the conclusion this was not an optimal use of GLPA funds: printing costs would increase to $3,451.68 from $1,205.28 (this is still within the revenue of $4,745). Bart Benjamin also observed that once the organization starts producing a color newsletter; it would be difficult to go back to black and white. There is also interest in seeing if the membership wants to go digital-only. Mike Smail observed that SEPA already has a full-color newsletter, and that the organization may need to strongly consider this as a service to the advertisers and sponsors. Dan Tell asked about partial color? Mike Smail, checking the SEPA website, confirmed their newsletter is actually partial color.

There is a question in the conference survey, and the Committee is encouraged to use this data for discussion in the spring.

Dan Tell also pointed out that GLPA may need to find a new print shop when Dale Smith retires from his university and asked if GLPA should start looking at the prices of new print shops now as a factor in this decision.

Geoff Holt reiterated that the material GLPA produces should reflect what GLPA wants to convey, regardless of the volume. Holt observes that the GLPA logo in the conference notebooks is printed in color. The organization should put out material at the right caliber.

The remainder of the discussion is tabled until the conference surveys are returned.

Technology Report: Dayna Thompson. GLPA’s website saw 765 unique visitors initiating 1,514 visits and 8,609 pageviews in the month before the conference. However, these numbers are slightly down from the same months in 2015 (possibly from simplified layout). GLPA’s Twitter and Facebook follows have continued to increase. As of the meeting, there were 374 Twitter followers and 399 Facebook likes; a 20% and 13% increase from the spring (respectively). Dayna Thompson recognizes Renae Kerrigan, Bart Benjamin, and Geoff Holt for their work on the Facebook; and Mike Smail and Geoff Holt for their Twitter administration.

Facebook will be the conference photo distribution method for 2016. Renae Kerrigan is also posting all photos from 2010-2015 to the Facebook currently.

Adam Leis is no longer developing the responsive theme for the GLPA site. Dayna Thompson and the Technology Committee are researching new available themes. Dayna Thompson and Tom Dobes met about the future development of the website and feel it was very productive.

Graphics Bank solutions were discussed: namely seeking out a repository solution to allow for downloading media. Dan Tell inquired if this might be an effort where GLPA could integrate with/cooperate with a similar IPS effort.

GLPA currently maintains glpa.org, glpa.us and glpaweb.org to protect its web presence.

It was asked that the Technology Committee be provided with conference schedules and paper abstracts as soon as they are available for addition to the conference pages of the website.

Bart Benjamin asked about the function of the drop-down menus. Dayna Thompson advocates for no drop downs and everything being a single button for ease of navigation.

Dayna Thompson informs the Committee that there has been difficulty in the past of getting some desired reports and templates from the website. The website team got assistance in producing a calculating document that can be used for these tasks, which was procured by an outside contractor for $360. Gary Tomlinson asked who the user of the document is? Thompson reports it is offered to hosts, but has the highest use by the Registrar and works well for her, helping with the big picture of conference management.

Janet Beckstrom intends to stay on as Conference Registrar for the foreseeable future, but the Committee is aware future plans will need made eventually.

Old Business: No old business.

New Business: Dayna Thompson requested the start time for the meetings be moved back to 9:00 a.m. in the local time zone. The Committee agreed.

Adjournment: Bart Benjamin moved to adjourn the meeting. Paulette Auchtung seconded. The motion carried. The meeting was adjourned at 4:18 p.m.
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THE 2016 GLPA CONFERENCE
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All photographs taken by Dan Goins unless otherwise noted.
EDGE OF DARKNESS

Narrated by Hayley Atwell

Now Available
GLPA Annual Business Meeting
Sloan Museum/Longway Planetarium
Flint, Michigan
October 22, 2016

Call to Order: The meeting was called to order at 10:53 a.m. on October 22, 2016, with Dayle Brown presiding.

Financial Report: Cheri Adams reported on GLPA’s funds. There is currently $153,069 in the checking account and $169,442 between all GLPA accounts. She cautions that not all conference expenses have been entered, so the balances will be reduced. Adams notes that GLPA’s fiscal year runs from October 1 - September 30, but this does not match GLPA’s IRS reporting. GLPA will approach the membership in 2017 to address this. The current fiscal year cuts right through the “conference year,” which makes budgeting difficult.

Keith Davis asked if GLPA had positive net revenue from the 2016 conference. It was confirmed that the conference had positive net revenue.

Approval of the minutes: Dan Tell presented the minutes from the 2015 Business Meeting as published in the winter 2015 GLPA Newsletter. Waylena McCully moved to accept the minutes from the 2015 Business Meeting. Francine Jackson seconded the motion. The motion carried.

President’s Report: Dayle Brown thanks the local hosting committee.

President-Elect’s Report: Geoff Holt reminds the membership that the President-Elect chairs the Scholarship Committee. Holt thanked the members of the 2016 committee: Paulette Auchting, Garry Beckstrom, Peggy Hernandez, and Nick Anderson. It was also announced that in 2017 it will be possible to apply for partial scholarships to attend the conference.

The President-Elect also chairs the Nominations Committee. Geoff Holt announced that the 2017 committee will consist of Tiffany Stone-Wollbrecht, Mark Webb, Keith Davis, and April Whitt. Members interested in running for office are encouraged to contact the committee.

Past-President’s Report: Garry Beckstrom had nothing to report in his capacity as Past-President.

Historian’s Report: Historian Garry Beckstrom has a collection of photos from GLPA history, and it has been determined that the best place for digital storage is Facebook. Renae Kerrigan will not be uploading all photos as once, but will gradually be adding them to the site. Members are encouraged to seek them out, and assist with tagging. The membership was reminded that they do not need an account to view the photos. Not all images are digitized yet, but the process is in progress.

Garry Beckstrom added that the history section of the GLPA website has not yet been updated, but will be shortly after the conference.

Secretary’s Report: Dan Tell noted that the minutes from the 2016 Spring Executive Committee Meeting were published in the summer newsletter. The minutes from the 2016 Fall Executive Committee and Business Meeting will be published in the upcoming winter newsletter and the membership is encouraged to review them.

IPS Representative’s Report: Mike Smail is introduced as GLPA’s new International Planetarium Society Representative. IPS’s last meeting was the 2016 conference in Warsaw, Poland. The conference was well attended by GLPA members, who contributed nearly three dozen papers and posters.

IPS 2018 will be in Toulouse, France, at the Cite d’l’Espace. The theme is “Planetarium Live, in and outside the Dome.” Early registration will start at $367 and 400 rooms are being held at nearby hotels for 50-100 euro/night. Many
AirBnBs are also available in the area.

IPS 2020 has three bids: Bogota, Columbia; Edmonton, Alberta; and Houston, Texas. Edmonton would be in June 2020, Bogota in July, and Houston in August. The Houston conference would be the entire Houston Museum of Nature and Science, while the other two would rely on convention centers in addition. Mike Smail reviewed the other details of the proposals to the assembly.

The IPS 2017 Council Meeting will be held before the 2017 Pleiades National Conference in St. Louis and the council members are being encouraged to attend the conference and learn how the U.S. regionals pull of their high quality conferences.

IPS is initiating two new projects: “Voices from the Dome” encourages planetarians to make recordings on various topics and submit them to a website for download and use by other planetariums. Almost 70 recordings are available currently. “A Week in the United States” is a parallel program to “An Astronomical Experience in Italy for an American Planetarium Operator.” The program will give international planetarians a chance to visit a facility in the United States. Sue Button and Loris Ramponi have developed this opportunity, which will provide for two planetarians in 2017 and two in 2018. Sue is looking for one more host for 2017 and two hosts for 2018. IPS is also seeking a $500 donation to fund a portion of this program, although GLPA may be assisting with this.

IPS Elections are underway for President-Elect, Secretary, and Treasurer. GLPA members who are also IPS members are encouraged to log into the IPS site to vote.

IPS has been working with its Vision2020 Committee to help IPS grow and better plan for the future. Vision2020 has made several recommendations and a roadmap for IPS and there will be an upcoming vote related to that. There will be a paper ballot mailed to IPS members that needs to be returned in order to move forward with some Vision 2020 recommendations.

Membership Report: Paulette Auchtung reports GLPA membership is doing very well. 2016 saw 32 new members, 28 of whom attended the conference. GLPA membership is at 275 individuals. Of these, 53% are regular members, 20% are sponsors, 10% are Honorary Life Members, 10% are students, and 7% are senior members.

Most members are part of a museum/nature center or standalone planetarium (25%), college or university (28%) or school (18%). 16% are independent/businesses and 13% are listed as “other.” GLPA includes members from four continents, but primarily North America. Of the core GLPA region, Illinois reports 25 members; Indiana, 42; Michigan, 38; Minnesota, 9; Ohio, 35; and Wisconsin, 15. 110 of GLPA’s members hail from outside the core GLPA states.

Dan Tell asked if most of the assembled membership were using the GLPAdomes listserv, which is the primary means for notification about GLPA events and deadlines. Many were not. Chuck Bueter asked if GLPA could send an email to the listserv to help members see if they were on it. Dan Tell and Paulette Auchtung sent out emails, and those who did not receive them were encouraged to join the listserv via the website or emailing Paulette Auchtung to be invited directly.

Development Report: Dave Leake reports that GLPA 2016 features 26 sponsoring vendors, totaling five hours of plenary presentation time and producing $27,250 in sponsorship funds for the organization. 1.75 hours of dedicated exhibition hall time were arranged and five full shows (including The Stargazer) were arranged to be screened in the evening. Dave Leake and the Executive Committee thanked the sponsors for their support.

Publications Report: Bart Benjamin encouraged the membership to look at the questions related to the newsletter on the conference survey. Since GLPA is in good financial health, a color printed newsletter is being considered. After the results of the survey, GLPA will keep the membership informed of its decision.

Bart Benjamin also puts out a request for content submissions to the newsletter to make it more relevant to 21st century planetarians. He would especially welcome individuals who are willing to author regular columns for the newsletter.

The newsletter is on its 8th generation after recently moving to a new desktop publishing platform. Bart Benjamin does this periodically to keep the programs used up-to-date to allow for easier future transitions.

The newsletter continues to attract advertisers. 14 contractual advertisers occupy 15¾ pages generating $4,750 in
revenue for the organization. Keeping a good mix of content is part of Bart Benjamin’s request for more editorial content.

Bart Benjamin also thanked Dale Smith for his contributions to GLPA as the Proceedings Editor. Dale Smith informed the membership there will be no disk mailed this year, the Proceedings will be available on the GLPA website while the photos will be on Facebook. Bart Benjamin adds the organization is looking at also hosting a zip file that would contain the Proceedings and photos for those who want to bulk-download everything.

Alan Pareis asked if only this year’s Proceedings would be on the website, or all years. Dale Smith confirmed that all historical Proceedings are already on the website.

**Education Report: Sue Batson.** The report was not delivered in Sue Batson’s absence.

**Technology Report: Dayna Thompson** gave a big thanks to Tom Dobes and his team for their service as videographers. Tom Dobes is also the GLPA site manager and hosts the server for the website and is constantly improving the website, visually and on backend support. GLPA is currently searching for a responsive website theme to purchase and exploring solutions for a graphics bank and data repository.

Facebook likes are up 13%, for which Dayna Thompson thanks Renae Kerrigan, GLPA’s Facebook manager. Twitter followers are up 20%, and Dayna Thompson thanks Mike Smail, who runs GLPA’s Twitter account.

GLPA’s Technology Special Interest Group met during the Thursday lunch at the conference. Dayna Thompson will send an email to all who attended that meeting with updates on the digital repository.

**Audio-Visual Report: Dave Leake** informed the membership that GLPA now has two fulldome shows it distributes. Cosmic Colors, which has seen over 85 kits distributed and is also distributed by five vendors, including one in Europe. The newer one is The Stargazer, Ken Murphy’s fulldome update of a classic GLPA show. Jim Kaler did his first Astronomy Update for GLPA in 1989, and was later Spitz Lecturer in 1999, which inspired Bob Bonadurer and Dave DeRemer to write The Stargazer based on Jim Kaler. The show will be available at very low cost. It will also be the first GLPA show that has captioning available for the hearing impaired. The show is available for order from the GLPA website.

Alan Pareis asked if it is possible to still order the slide kit for the original version of The Stargazer. Dave Leake responded that the digital images exist for distribution, but slide film is not available to produce slides with. Paulette Auchtung added that available stocks of slide film were depleted two years ago. Alan Pareis states he may have a source on some film and is working with Gamma Tech, although the remaining film is difficult and expensive to obtain.

**Conference Planning Report: Gary Tomlinson** added the historical note to the preceding topic that Jim Kaler was GLPA’s second Astronomy Update lecturer.

Gary Tomlinson thanked the local conference committee for planning and hosting the 2016 GLPA Conference. Gary Tomlinson alerted the membership there was an addendum to the delegate list in the binder due to some late registrations. Janet Beckstrom added that most members already had this added to their binder. Gary Tomlinson also noted that most of the 28 new members did not attend the new member orientation and offered the “Getting the most out of GLPA” document to those interested, as well as the GLPA pins distributed at the orientation. Tomlinson also offered the “Top 10 things to get out of a GLPA conference” document for those who need to justify the conference to administration.

Anna Green was invited to speak about the 2017 Pleiades Conference. Anna said she was very excited to have GLPA join the other six U.S. regionals in attending the Pleiades Conference in St. Louis. The conference will run from October 10-14, 2017. Rooms will be available in November 2016 for $109/night. Pleiades has booked an entire hotel, but may run out of rooms. Conference registration will open slightly later.

Anna Green is looking to bring customs from every regional organization to the meeting. A post-conference trip is also planned to Cahokia Mounds. Green is also negotiating deals to enable families of delegates attending the conference to easily vacation in St. Louis.

The St. Louis Science Center recently made some upgrades to its Zeiss Mark IX star projector and added new LED cove lights. The 24-meter/80 ft. dome will ensure sponsors are able to install and demo any material and equipment desired and the theater has no fixed chairs or fully encircling walls.

There is a website at www.pleiades2017.org but there is no content yet. There are also Facebook and Twitter accounts dedicated to the conference.

Gary Tomlinson noted that there will be local tax on top of the hotel room cost. Registration is targeting at $175,
It's All About The Stars!
(whether it is optical-mechanical, digital, or both)

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

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including all meals other than the banquet. Workshop submissions should be sent to the Workshop Coordinator as soon as possible to allow for registration to be open soon.

GLPA 2018 will be October 10-13, 2018, in East Lansing, Michigan, at the Abrams Planetarium. GLPA will be experimenting with a longer conference, running through Saturday night, but trying to end all sessions by 9 p.m. without adding content. Gary Tomlinson asked for a response to this from the floor. The membership enthusiastically called this a good idea. Gary Tomlinson asked how many members would plan to stay through Saturday night on this conference: a majority of the membership said they would. Dan Tell encouraged consideration of a social brunch on Sunday morning to close the conference.

Alan Pareis requested the conference be careful in filling the mornings of the last day to allow adequate time for hotel checkout and packing.

Dan Tell adds that the Executive Committee has discussed moving the business meeting to Fridays and possible the state meetings to Friday lunch.

State Meetings and elections: Illinois will meet May 13, in Bourbonnais, Illinois. Renae Kerrigan was re-elected state chair. Indiana will meet April 22 at a to-be-determined location. Barb Williams was elected state chair. Alan Pareis thanked the Indiana Planetariums for his 20+ years of service. Michigan does not have a date or location yet. Shannon Schmoll was elected state chair. Ohio will meet at Toledo-Sandusky, on a to-be-determined date. Dale Smith was re-elected state chair. WIMPS will meet May 12 & 13 in Wausau, Wisconsin. Jean Creighton was re-elected state chair.

Old Business: There was no old business.

New Business: There was no new business.

Adjournment: Dan Goins moved to adjourn the business meeting. Alan Pareis seconded. The motion carried. The meeting was adjourned at 12:01 p.m.

IPS PROJECTS

The IPS-endorsed “Voices from the Dome” project is now underway. This is an international effort to encourage planetarians to record and share short audio clips describing various astronomical events or phenomena. These recordings can then be utilized by other planetaria around the world. Nearly 70 audio files in seven different languages have already been uploaded. For more information, or to participate, please visit bit.ly/IPSvoices.

The IPS is also endorsing a new professional development and cultural exchange opportunity, A Week in the United States. Modeled on the long-running Astronomical Experience in Italy for an American Planetarium Operator, this new project will give international planetarians the opportunity to spend a week educating and interacting with American planetarium audiences. IPS has initially agreed to provide funding for two planetarians to visit the U.S. for the next two years. The Casper, Wyoming planetarium has volunteered to host a visiting planetarian in 2017, but the organizers are still looking for a second site to host in 2017, and for two to host in 2018. For more information on the program or hosting a planetarian in your dome, please visit bit.ly/IPSweek.
GLPA’s 35th newsletter and the fourth issue of 1976 contained the following articles and columns:

★ The cover of this issue was a collage of photographs taken at the 1976 GLPA conference at the Adler Planetarium in Chicago.

★ The newsletter contained two tables of celestial positions gleaned from the American Ephemeris and Nautical Almanac. The first table was “Positions of the Planets in Their Orbits, 1977” and the second was “Apparent Positions of the Sun and Planets, 1977.”

★ George Reed from the West Chester State College shared a paper titled “A Visual Literacy Approach to Teaching Astronomy,” which described how astronomy could be used to improve observational skills and “return the charisma of the night sky to the astronomy classroom.”

★ Dave Hoffman from the Reiser Planetarium in Wyoming, Michigan shared a paper titled “How a 360° Panorama Projection System is used in a High School Planetarium,” which described the author’s home-built panorama projection system and how he has created his own panorama photographs at a much lower cost than those commercially available.

★ Jeanne Bishop from the Westlake Public Schools in Westlake, Ohio shared a short paper titled “A Perception and Values Clarification Experience Adapted for the Bicentennial,” which describes a student activity for identifying constellations in the planetarium.

★ Derrick Owen from the Edinboro State College in Edinboro, Pennsylvania shared a short paper titled “A Planetarium Laboratory on Sidereal and Mean Solar Time,” which describes a lab exercise on sidereal and mean solar time using the planetarium and stop watches.
Twenty years ago — in late 1996 — astronomers were patiently waiting to see whether Comet Hale-Bopp (discovered in mid-1995) would live up to its lofty predictions. Its great distance at discovery (7.2 AU) and surprising activity at that distance suggested that Comet Hale-Bopp might become very bright when it reached perihelion in early April of 1997. Hale–Bopp had indeed become visible to the naked eye in May 1996, and although its rate of brightening would slow considerably during the latter half of 1996, astronomers were still cautiously optimistic that it would become the Great Comet of 1997.

This issue reflected upon a very successful conference in Minneapolis, hosted by Rod Nerdahl and Bob Bonadurer. Notable speakers included Earth and Sky’s Deborah Byrd, comet co-discoverer Alan Hale, and Minneapolis astronomer Larry Rudnick. John Hare was Spitz Lecturer.

This issue carried a notice by Wess Plastics that it would no longer carry certain styles and apertures of slide mounts unless 20 boxes were ordered. Since 20 boxes is more than one planetarium can generally use or afford, Gregg Williams offered to place one large order and coordinate the sale of smaller orders to individual planetariums.

This issue included a preview of the 109th Annual Meeting of the Astronomical Society of the Pacific, which would be held in Chicago in the summer of 1997. Highlights included an astronomy exposition and fair (dubbed Universe ’97), tours to Yerkes Observatory, a three-day “Astrophysics from Antarctica” symposium, a two-day community college symposium, and a two-day history program.

GLPA and its Education Committee (chaired by Dave DeRemer) recently completed Solar System Adventure Tour and have begun shipping show packages. Five new TIPS booklets were described, included the titles “Preparing and Presenting School Planetarium Programs,” “TIPS for Writing Planetarium Scripts,” “TIPS for Portable and Small Planetarium Users,” and two others addressing the needs of the physical challenged in the planetarium and plans for simple and inexpensive special effects devices for the planetarium.
INCOMING!
Asteroids, Comets, and the Hard-Hitting Stories of Our Cosmic Origins

Narrated by George Takei

Explore the past, present, and future of our Solar System in a new planetarium show, now available for licensing.

For info on ordering the show, visit www.calacademy.org/licensing or contact your preferred fulldome film distributor.
DOOR PRIZE DONORS

Thank you to members and vendors for contributions to this year’s GLPA Door Prize Program. Small prizes, large prizes, single prizes, and multiple prizes are all welcome and greatly appreciated. Thank you for adding to our 2016 conference finale fun!

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Staerkel Planetarium - Waylena McCully and Cindy Reynolds
Wolfram Research - Jeff Bryant

GLPA AWARDS

At the Annual Banquet of the GLPA Conference in Flint, Michigan, the Great Lakes Planetarium Association bestowed the following awards:

Honorary Life Members:
  Garry Beckstrom
  Eric Schreur

Mentor Award:
  Randy Olson

Service Award:
  Bob Bonadurer

Fellow:
  Jim Gavio
  Scott Huggins

Congratulations to the GLPA award winners for 2016! If you would like to nominate someone for GLPA Fellow, Honorary Life Member, Service Award, Mentor Award, or Galileo Award, please visit glpa.org/awards to read the award guidelines and download the PDF nomination forms.
The Great Lakes Planetarium Association acknowledges the following companies and organizations for their generous support in Fiscal Year 2016-17:

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2018 October 10 - 14
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