



# CONSTELLATION

June 2007, No. 2



*"No known roof is as beautiful as the skies above."*

*- Michael O'Muirheartaigh*

## Save the Date

**Triple Conjunction  
October 9-13, 2007  
Wheeling, WV**

**See page 3 for details**



Artist's rendering of Dawn spacecraft, with asteroids. Largest are Vesta and Ceres. Credits: Dawn spacecraft—Orbital Sciences Corporation; background art—William K. Hartmann, courtesy UCLA.

## The Ions of Dawn

by Patrick L. Barry

This summer, NASA will launch a probe bound for two unexplored worlds in our solar system's asteroid belt—giant asteroids Ceres and Vesta. The probe, called Dawn, will orbit first one body and then the other in a never-before-attempted maneuver.

It has never been attempted, in part, because this mission would be virtually impossible with conventional propulsion. "Even if we were just going to go to Vesta, we would need one of the largest rockets that the U.S. has to carry all that propellant," says Marc Rayman, Project System Engineer for Dawn at JPL. Traveling to both worlds in one mission would require an even bigger rocket.

This is a trip that calls for the *unconventional*. "We're using ion propulsion," says Rayman.

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# CONTACT!

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# A Note from the President

## TRANSITIONS

Solstice. A time for the sun to "stand still". In reality, it is a time for transition, as the sun begins its journey back southward in the sky, shortening the days for us in the Northern hemisphere. I think the theme of transitions is a good one for us right about now. In schools, we're transitioning from spring semesters, the end of school years, and preparing for the fall. In museums, we're transitioning for the influx of visitors during summer vacations. For our Society, we're transitioning this year from a conference in the spring to a major conference in the fall. As we journey through this transition, let's take advantage of the collaboration of others outside our society and really transition our theaters to wherever our budgets allow. Budgets may be limited, but our imaginations are not! We have the capability to transition our programs whether it's through the infusion of new technology or simply the infusion of new ideas! So enjoy this solstice, persevere through the September Equinox, and we'll see you shortly thereafter in Oglebay! (Details are on the next page, and as always, available online!)

*Patty*

Patty Seaton,  
President

## New & Returning Members

Welcome (or Welcome Back) to the following:

Reed Varian  
Learning Technologies, Inc./ East Canton, OH

Edward Gleason  
Southworth Planetarium/ Portland, ME

Paul Budmen & Scott Fauteux  
Franklin Institute/ Philadelphia, PA

### RETURNING:

Mark A. Bowman & Jeff A. Grills  
Earth & Space Science Laboratory  
Frederick, MD





**Delegate Information & Conference Program  
(Registration limited to 300 persons)**

**Conference Hosts**

Oglebay Resort and the Benedum Planetarium located in Wheeling, West Virginia, welcome the Great Lakes Planetarium Association, the Middle Atlantic Planetarium Society and the Southeastern Planetarium Association to the Triple Conjunction Conference, October 9 through 13, 2007. This conference represents a historic first gathering of all three of the planetarium regions east of the Mississippi River for one conference.

The Oglebay Resort is a 2,000-acre, scenic resort offering many recreational and educational opportunities for the entire family. Technically a municipal park, Oglebay is a non-profit organization run by the Wheeling Park Commission. Wheeling, West Virginia is located on the eastern banks of the Ohio River which is the natural boundary separating all three of the planetarium regions, MAPS to the east, GLPA to the west and SEPA to the south.

The Benedum Planetarium was made possible by a grant from the Benedum Foundation of Pittsburgh, PA and funds from the Wheeling Park Commission. The facility opened its doors to the public on May 26, 1978. Steven Mitch is the Director of the Benedum Planetarium and is the host for the conference. The planetarium houses a 40-foot, tilted Spitz dome, 133 unidirectional seats, a Spitz 512 star instrument and a JHE, ScreenMaster 3 automation system.

James Hughes and the Carnegie Science Center's Buhl Planetarium in Pittsburgh, PA will be the co-host for the conference on Thursday, October 11. Vendor demonstrations and conference sessions will take place at the facility during the visit, as well as a chance to explore the science center. A visit to the Carnegie Museum of Natural History in the Oakland section of Pittsburgh is planned for the evening with a buffet dinner in the Hall of Ancient Architecture.

**Conference Lodging**

The conference hotel is rustic Wilson Lodge on the grounds of Oglebay Resort. A block of 185 standard

*(Continued on page 4)*

**Note: By the time you read this Conference Registration Packets will already be in the mail. Keep an eye on your mailbox!**

and intermediate rooms is being reserved for the conference, **but only until August 9<sup>th</sup>**. These rooms will be released for other guests after that date. Delegates are encouraged to room with colleagues in order to keep rooms available for other planetarians. Several 4-bedroom cabins are also being held; however, they are not physically connected to Wilson Lodge. All the cabins are reasonably close to Wilson Lodge, ranging from a couple hundred yards to a half-mile. You may reserve a room or cabin by phone, **(800) 624-6988**, and ask for reservations. Please indicate that you will be with the Triple Conjunction Conference, October 9 - 13. Room rates are \$99.00/rm/night for standard rooms and \$129.00/rm/night for intermediate rooms, plus 13% tax. Cabins are \$325/cabin/night, plus 13% tax. Wilson Lodge has an indoor pool and sauna, exercise room, resort shop, Glassworks Lounge and a very nice dining room. The entire facility is **non-smoking**. Additional information about Wilson Lodge, cabins and Oglebay in general can be found at [www.oglebay-resort.com](http://www.oglebay-resort.com)

#### Triple Conjunction Speakers

- ◆ David Levy
- ◆ Dr. James Kaler
- ◆ Charles Wood
- ◆ Banquet Speaker - Dr. James Sweitzer

**Alternate lodging may be available**, though could be difficult to secure with competing activities in town. Wheeling also has a dog racing track and slots facility, which draws from a wide area. If the table gaming vote wins in early June, hotel rooms will be more difficult to secure.

A Hampton Inn **(304) 233-0440** is located 3 miles from Oglebay, on National Road, next to the Bob Evans restaurant. The Wheeling Island Race Track and Gaming Center Hotel **(304) 232-5050** is approximately 6 miles from Oglebay. The Hampton Inn is \$109-\$114/night. The Wheeling Island Track and Gaming Center is \$112/night, Sun. through Thurs. and \$139.50/night, Fri. and Sat. A 17% tax is added to both rates. Although not as convenient, other hotels are in the area.

#### Getting Here

**By Auto** – The best on-line map is [www.maps.live.com](http://www.maps.live.com). Go to this site. Click on the “X” in the upper right of the ad to get a larger image. Place the cursor in the map and roll the cursor scroll wheel “up” to reduce the map area (wider view) and roll the cursor scroll wheel down to enlarge the map area (better local view). To print out the driving directions, click on “driving directions”. On the left side, type the city or town and state you are departing from in the “start” box. Type in “Wheeling, West Virginia”(no quotes) in the “end” box. Choose the shortest time or shortest distance option and click on “get directions”. The route summary will appear in the lower, left column. Click on the down scroll arrow to reveal the printed directions. A map of the local area is included showing exits, intersections and local road numbers.

**Flying In??** Several major airlines service the Greater Pittsburgh International Airport through direct flights or commuter connections from all of the major hubs and cities in the U.S. US Airways has the greatest number of daily flights into and out of Pittsburgh. The Pittsburgh Airport has all of the major car rental companies on or close to the property. There is limousine service to Wheeling and Oglebay Resort via the Airport Limousine Service, Inc. of Wheeling. Prices vary according to the number of people brought at the same time. To inquire about these prices or to make reservations, please call **800-326-2907** or reserve on-line via e-mail to [info@wheelinglimo.com](mailto:info@wheelinglimo.com)

If you are driving to Oglebay from the Pittsburgh Airport, take Route 60 toward downtown Pittsburgh. Take the I-79 south exit and follow I-79 south to I-70 west at Washington, PA. Take the Oglebay exit (exit 2A) off I-70. Turn right onto US Route 40 east at the second light off the exit ramp. Travel on Route 40 east for a half mile and turn left at the 3<sup>rd</sup> light, onto state Route 88 north. You will see a Sheetz Brothers service station on the left corner. Follow state Route 88 north for 3 miles. At the top of the hill, you will see a sign for the Wheeling Country Club and a sign for Oglebay just beyond it. Continue on Route 88 north and follow the park road signs to Wilson Lodge.

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## MEMBER NEWS



### Noreen Grice

Astronomical Society of the Pacific Announces 2007 Award Winners in Astronomy Research and Education

The Klumpke-Roberts Award, for contributing to the public understanding of astronomy, was awarded to Noreen A. Grice, President of You Can Do Astronomy, LLC, and Planetarium Operations Coordinator, Museum of Science, Boston. Ms. Grice has a deep commitment to making astronomy accessible to people with disabilities, and unique creative talents to apply to the task. She is best known as the author of the book, *Touch the Universe: A NASA Braille Book of Astronomy* that couples Hubble Space Telescope images with Braille, tactile imagery, and large print format to bring the wonder of new astronomical discoveries to an audience previously excluded from participating.



### Spitz' Charlie Holmes Retires

Charles H. Holmes Jr., former CEO of Spitz, will retire in late June, after 45 years with the company. Charlie notes that he started work at Spitz on a Friday the 13th in 1962. He spent many years in the installation, service and contracts departments before becoming Spitz' President in 1988, and Chairman of Spitz in 2001. Working for Spitz, Charlie traveled to 44 of the 50 states, three territories, and 29 foreign countries. He sold 29 planetariums and installed 48 personally (many of the latter were A3Ps), and participated in the expansion of the industry at a time when hundreds of planetariums opened world wide.

He was involved with the first non-earth-bound, computerized planetarium – the STP, and the first tilted dome planetarium - the STS, and he positioned Spitz for the digital projection age and new product development in the 1990s.

Congratulations, Charlie!

## DAWN

*(Continued from page 1)*

The ion engines for the Dawn spacecraft proved themselves aboard an earlier, experimental mission known as Deep Space 1 (DS1). Because ion propulsion is a relatively new technology that's very different from conventional rockets, it was a perfect candidate for DS1, a part of NASA's New Millennium Program, which flight-tests new technologies so that missions such as Dawn can use those technologies reliably.

"The fact that those same engines are now making the Dawn mission possible shows that New Millennium accomplished what it set out to," Rayman says.

Ion engines work on a principle different from conventional rockets. A normal rocket engine burns a chemical fuel to produce thrust. An ion engine doesn't burn anything; a strong electric field in the engine propels charged atoms such as xenon to very high speed. The thrust produced is tiny—roughly equivalent to the weight of a piece of paper—but over time, it can generate as much speed as a conventional rocket while using only about 1/10 as much propellant.

And Dawn will need lots of propulsion. It must first climb into Vesta's orbit, which is tilted about 7 degrees from the plane of the solar system. After studying Vesta, it will have to escape its gravity and maneuver to insert itself in an orbit around Ceres—the first spacecraft to orbit two distant bodies. Dawn's up-close views of these worlds will help scientists understand the early solar system.

"They're remnants from the time the planets were being formed," Rayman says. "They have preserved a record of the conditions at the dawn of the solar system."

Find out about other New Millennium Program validated technologies and how they are being used in science missions at [nmp/TECHNOLOGY/infusion.html](http://nmp/TECHNOLOGY/infusion.html). While you're there, you can also download "Professor Starr's Dream Trip," a storybook for grown-ups about how ion propulsion enabled a scientist's dream of visiting the asteroids come true. A simpler children's version is available at [spaceplace.nasa.gov/en/kids/nmp/starr](http://spaceplace.nasa.gov/en/kids/nmp/starr).

*This article was provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration.*

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URL: <http://www.konicaminolta.us/>



 **KONICA MINOLTA**

*(Continued from page 4)*

### **What to Pack**

Eastern Daylight Savings Time will still be in affect during the conference, but sunsets come early and evenings are often chilly. The state's notoriously variable weather can bring cold winds, and rain in early and mid-October. If the weather cooperates, Indian Summer conditions will bring warm, sunny days with temperatures in the mid 60's and 70's and the area will be very close to the time of our annual peak fall foliage, so be sure to bring along a camera. Medium jackets, hats & rain gear are recommended. Don't forget comfortable shoes for a refreshing stroll along the many walkways throughout the park when you get a chance.

Planetarians express their characteristic "individuality" by typically attending sessions in jeans, tee shirts and other casual wear. The banquet is a more formal affair, so it is recommended that appropriate attire be considered. Jackets and ties and dresses are the norm for this occassion. This is the one event of the conference, where we recognize the accomplishments of our colleagues and collectively reflect upon our profession.

### **Added Attractions to Consider**

There are many other attractions around Oglebay and in the area that delegates, spouses and guests can enjoy. For advanced planning purposes, these are all described in detail, on-line, at [www.oglebay-resort.com](http://www.oglebay-resort.com) or [www.wheelingcvb.com](http://www.wheelingcvb.com)

Delegates are encouraged to come early, build in some "escape time," or stay over and enjoy the great variety of attractions in the Wheeling area. Guides to Oglebay and area attractions and restaurants will be included in your conference registration package when you arrive.

### **Registration & Meals**

Basic non-vendor registration fee is \$245, with an added **\$35 Late Fee for any registration postmarked September 12 through September 30, 2007 and a \$50 Late, Late Fee to any registration faxed on or after October 1, 2007.** Any registrations submitted after the **Late, Late Registration Deadline of October 1<sup>st</sup>** should be **faxed to (304) 243-4110, not mailed** to the Conference Host as indicated on the registration form instructions. On-site registration is intended only for extreme hardship cases and may result in conference meals being unavailable.

**Annual Dues for your primary region membership** must be paid in addition to the Conference Registration Fee in order to attend the conference. Members not attending the conference, **in order to receive a free copy of the 2007 Conference Proceedings**, must be current with their primary region Annual Membership Dues by November 1, 2007.

**The meal package** is included in your registration fee and covers all major conference meals except for Wednesday evening, which is dinner on your own. Your registration fee also covers food for the opening reception and breaks. (See Tentative Conference Agenda for details). Spouses or guests may purchase the opening reception, Thursday boxed lunch, dinner and bus transportation and the Friday banquet. Please see details for these items on registration form.

Cash bars will be available at the opening reception and prior to the banquet.

### **Questions or Concerns??**

#### **Conference Host/General Questions**

Steven Mitch, Benedum Planetarium  
Oglebay Resort  
Wheeling, WV 26003  
(304) 243-4034  
[smitch@oglebay-resort.com](mailto:smitch@oglebay-resort.com)

## PIPS MEETING REMINDER

The Suits-Bueche Planetarium at the Schenectady Museum will be holding a PIPS Meeting on Monday July 23rd, 2007. For more information go to: [www.look-to-the-skies.com/new\\_page\\_10.htm](http://www.look-to-the-skies.com/new_page_10.htm)

## NASA RESOURCES

### Dawn Mission Poster

The Dawn Mission Events calendar is a six-year wall calendar from the years 2007 to 2012. The calendar highlights major events that will take place during the mission. The calendar can be downloaded from the following link:

[www.nasa.gov/audience/foreducators/topnav/materials/listbytype/Dawn\\_Mission\\_Events\\_Calendar.html](http://www.nasa.gov/audience/foreducators/topnav/materials/listbytype/Dawn_Mission_Events_Calendar.html)

## DomeFest 2007

I'm proud to announce our plans for DomeFest 2007. The July 20-22 festival is presented by the University of New Mexico's ARTS Lab and LodeStar Astronomy Center with profound support by Sky-Skan and Sony. The festival will feature the western hemisphere premiere of stereo (3D) fulldome visuals featuring Sky-Skan's definiti 3D system and the world premiere of renowned digital performance artist J. Walt Adamczyk's first work in the fulldome medium. The heart of the festival is still the traveling juried show featuring the best and most innovative fulldome productions.

Please have a look at [www.domefest.org](http://www.domefest.org) We'll be posting more news there soon. If you have questions, suggestions or want to get more involved, please contact me directly at [dbeining@unm.edu](mailto:dbeining@unm.edu).

David Beining  
LodeStar Director  
DomeFest Producer

## COSMOLOGY COURSE

**Chicago Maps the Cosmos**  
**A Cosmology Short Course for Museum & Planetarium Staff**  
**December 7-9, 2007**

This three-day, intensive short course will highlight cartography on the grandest scales: mapping the cosmos. It will explore the ethereal science of cosmology in the concrete terms of the observed hierarchical structure of the universe - which we have only recently come to understand. Chicago Maps the Cosmos will explore our current understanding of the cosmos from the perspective of those who are at the forefront of investigating it, and it will provide participants with the tools they need to bring the excitement of discovery back to their home institutions. Chicago Maps the Cosmos will also encompass the broader themes of Festival of Maps: Chicago - cartography, discovery, exploration, inspiration and showcasing the local riches of the city of Chicago.

Course Description and On-Line Registration can be found at: [kicp.uchicago.edu/maps2007](http://kicp.uchicago.edu/maps2007)

Looking for planetarium slide shows?

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Paulucci Space Theatre -- 218-262-6718  
<http://www.spacetheatre.hibbing.edu/shows.html>

## TRIPLE CONJUNCTION : Important Dates to Remember!

- ♦ **August 9** - Last Day for room reservations at Wilson Lodge, the conference hotel. Reservations can be made by calling **1-800-624-6988**. A one-night deposit on your credit card will guarantee your room for late arrival. Ask reservation staff about the cancellation policy if in doubt.
- ♦ **August 9** - Postmark deadline for workshop submission forms. All workshops and information will be posted on the websites after August 17. Interested parties will contact workshop presenter directly. Workshop presenter is responsible for collection of any fees.
- ♦ **September 1** - Postmark deadline for paper/poster submission forms in order to guarantee inclusion in printed conference program.
- ♦ **September 1** - Early Registration Deadline. Registrations postmarked between **Sept. 12 and Sept. 30** will be assessed a \$35 Late Registration Fee.
- ♦ **October 1** - Late, Late Registration Deadline. Any registrations submitted on or after this date (form must be faxed, not mailed, to 304-243-4110 - attention Steve Mitch) will be assessed a \$50 additional fee. Persons registering after Oct. 1 may jeopardize being able to purchase meal packages and those registering upon arrival definitely will not be able to purchase a meal package. There will be no refunds for registrations after this date.
- ♦ **October 1** - Last Day to cancel registration and receive full refund if notification is made before 4:00 pm. Call or E-mail Steven Mitch (304) 243-4034.; [smitch@oglebay-resrot.com](mailto:smitch@oglebay-resrot.com)
- ♦ **October 1** - Deadline for submitting paper/poster electronic text, per "Instructions to Authors" to Dale W. Smith; [dsmith@newton.bgsu.edu](mailto:dsmith@newton.bgsu.edu). in order to avoid cancellation of paper or poster.

In This Issue...



Constellation  
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