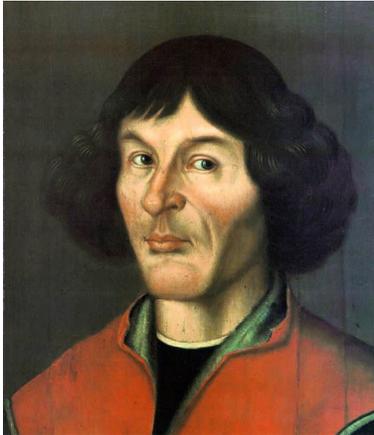




CONSTELLATION

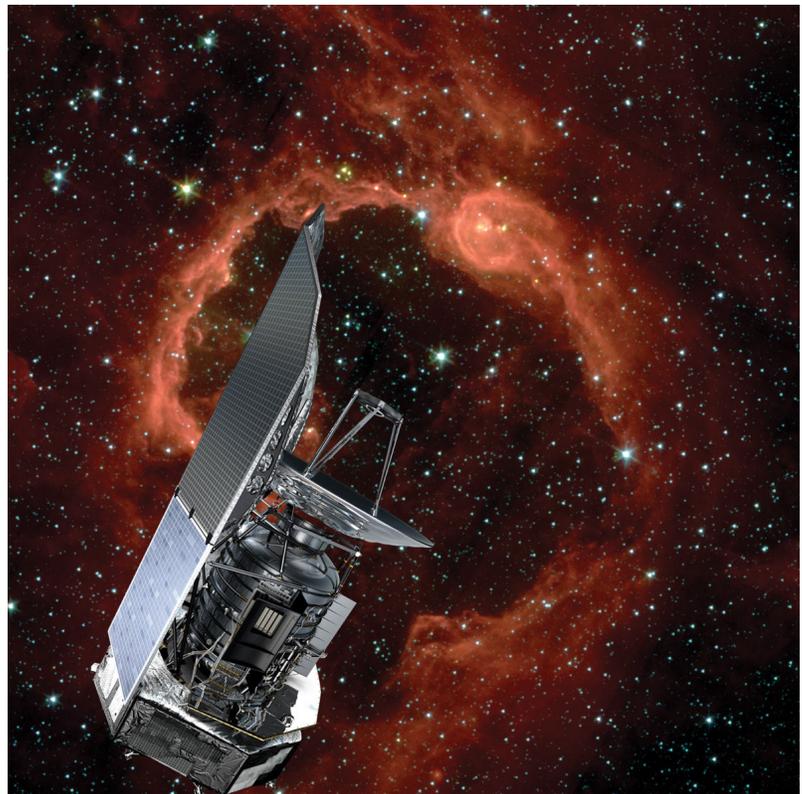
Spring 2010, No. 1



"This art [astronomy] which is as it were the head of all the liberal arts and the one most worthy of a free man leans upon nearly all the other branches of mathematics. Arithmetic, geometry, optics, geodesy, mechanics, and whatever others, all offer themselves in its service."

— *Nicolaus Copernicus*
De Revolutionibus, 1543

Contents	
<i>MAPS Conference</i>	<i>2</i>
<i>President's Note</i>	<i>6</i>
<i>Education Committee</i>	<i>7</i>
<i>How I Got Started</i>	<i>11</i>
<i>Planetarium News</i>	<i>13</i>



Flipping the Lights on Cosmic Darkness

Exploring the universe is a bit like groping around a dark room. Aside from the occasional pinprick of starlight, most objects lurk in pitch darkness. But with the recent launch of the largest-ever infrared space telescope, it's like someone walked into the room and flipped on the lights.

Suddenly, those dark spaces between stars don't appear quite so empty. Reflected in the Herschel Space Observatory's 3.5-meter primary mirror, astronomers can now see colder, darker celestial objects than ever before—from the faint outer arms of distant galaxies to the stealthy "dark asteroids" of our own solar system.

Many celestial objects are too cold to emit visible light, but they do shine at much longer infrared wavelengths. And Herschel can observe much longer infrared wavelengths

(Continued on page 3)

Tentative Schedule
MAPS Conference 2010
 Southworth Planetarium
 University of Southern Maine

You are invited to attend the annual MAPS Conference at the Southworth Planetarium in Portland, ME. Our hosts will be Jerry LaSala, Edward Gleason and Steve Innes.

The Southworth Planetarium is located at the University of Southern Maine. It features a Zeiss ZKP2 star projector and 62 seats under a 30-foot dome. The conference hotel will be the Eastland Park Hotel in downtown Portland. Room rates are \$99 per night plus sales tax and parking fees.

For more information and registration details see the MAPS website: www.maps-planetarium.org

Wednesday, May 19

3:00 pm (?)	Hotel Check in
3:30-5:30 pm	Conference registration
6:00-10:00 pm	Welcoming reception
7:00-8:00 pm	Astronomy/science trivia game show
8:00-9:00 pm	Southern Maine Astronomers and Astronomical Society of Northern New England presentations
10:30-12:00 pm?	Vender setup at Southworth Planetarium

Thursday, May 20

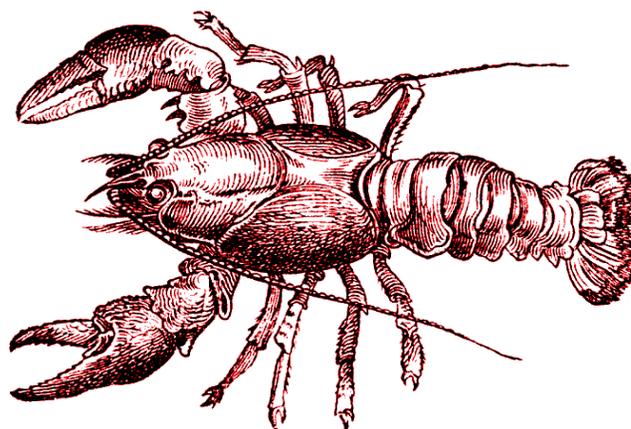
7:00 am-2:00 pm	Vendor setup at Planetarium
7:00- 8:30 am	Breakfast
8:45-9:00 am	Opening remarks by Executive Director
9:00 am-5:00 pm	Vendor Hall open
9:00-10:00 am	Paper Session I
10:00 -10:30 am	Break
10:30 am-12:00 pm	Paper Session II
12:00-1:30 pm	Lunch
1:45 pm	Board bus/ shuttle to Planetarium
2:00-3:30 pm	Vendor Demonstrations – Group A (Planetarium) FREE TIME – Group B
3:30-3:45 pm	Break (Planetarium Gallery)
3:45 – 5:15 pm	Vendor Demonstrations – Group B (Planetarium) FREE TIME – Group A
5:30 pm	Board bus/ shuttle to hotel
5:45-8:00 pm	Dinner on your own
8:15 pm	Board bus/ shuttle back to planetarium
8:30-10:00 pm	Vendor dome time (Planetarium)
10:15 pm	Board bus/shuttle back to hotel
10:30-????	Hospitality room opens

Friday, May 21

7:00-8:30 am	Breakfast
9:00 am-12:00 pm	Vendor hall opens
8:45-10:00 am	Paper Session III
10:00-10:30 am	Break & Group photo
10:30 am-12:00 pm	Paper Session IV
12:00-1:30 pm	Lunch
2:30-3:30 pm	Paper Session V
3:30-4:00 pm	Break
4:00-4:30 pm	Paper Session VI
4:30-5:30 pm	Workshops
6:30-7:00 pm	Banquet reception
7:00-9:30 pm	Banquet dinner and Margaret Noble address
10:00-????	Hospitality room opens

Saturday, May 22

7:00-8:30 am	Breakfast
9:30-10:30 am	Business Meeting
11:00 am-12:00 pm	Closing remarks
	Door prizes (Must be present to win)
12:00 pm	Conference closing
	Hotel checkout



Flipping the Lights on Cosmic Darkness

(Continued from page 1)

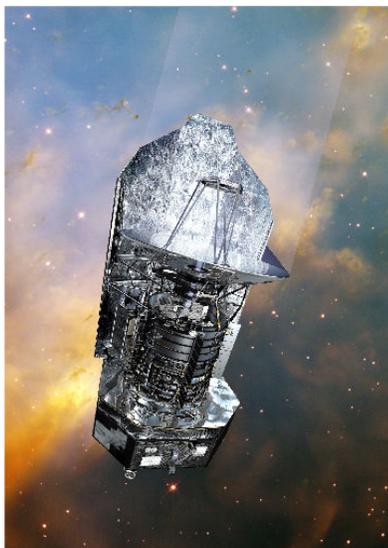
than any space telescope before (up to 672 microns). Herschel also has 16 times the collecting area, and hence 16 times better resolution, than previous infrared space telescopes. That lets it resolve details with unprecedented clarity. Together, these abilities open a new window onto the universe.

"The sky looks much more crowded when you look in infrared wavelengths," says George Helou, director of the NASA Herschel Science Center at Caltech. "We can't observe the infrared universe from the ground because our atmosphere blocks infrared light, and emits infrared itself. Once you get above the atmosphere, all of this goes away and suddenly you can look without obstruction."

Herschel's primary objectives are to:

- ◆ Study the formation of galaxies in the early universe and their subsequent evolution
- ◆ Investigate the creation of stars and their interaction with the interstellar medium
- ◆ Observe the chemical composition of the atmospheres and surfaces of comets, planets and satellites
- ◆ Examine the molecular chemistry of the universe

With its ability to observe across the far infrared and submillimetre wavelengths (55 - 672 μm), Herschel will furnish observation data that has previously been unobtainable.



Herschel launched last May from the Guiana Space Centre in French Guiana aboard a European Space Agency Ariane 5 rocket. Since then, it has expanded the number of distant galaxies observed at far infrared wavelengths from a few hundred to more than 28,000. And with the instrument testing and system check-out phases finally completed, the discoveries are only now beginning.

Beyond simply imaging these dark objects, Herschel can identify the presence of chemicals such as carbon monoxide and water based on their spectral fingerprints. "We will be able to decipher the chemistry of what's going on during the beginnings of star formation, in the discs of dust and gas that form planets, and in the lingering aftermath of stellar explosions," Helou says.

And those are just the expected things. Who knows what *unexpected* discoveries may come from "flipping on the lights?" Helou says "we can't wait to find out."

Herschel is a European Space Agency mission, with science instruments provided by a consortium of European-led institutes and with important participation by NASA. See the ESA Herschel site at sci.esa.int/science-e/www/area/index.cfm?fareaid=16.

Also, see the NASA sites at herschel.jpl.nasa.gov, www.herschel.caltech.edu, and www.nasa.gov/mission_pages/herschel.

Kids can learn about infrared light by browsing through the Infrared Photo Album at The Space Place, spaceplace.nasa.gov/en/kids/sirtf1/sirtf_action.shtml.

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

Professional Space Music

- * 20 CD Production Music Library created for the Planetarium Industry
- * Styles include Space, Ambient, World, Native American, Classical, Sacred, Holiday, Chill, Jazz and Sound Design
- * Lifetime in-house License with Royalty Free Show Sales included

presenting
The Jonn Serrie
Album Portfolio

For Further Information: jserrie@bellsouth.net (770) 339-8869

Superior Products

MEDIAGLOBE II



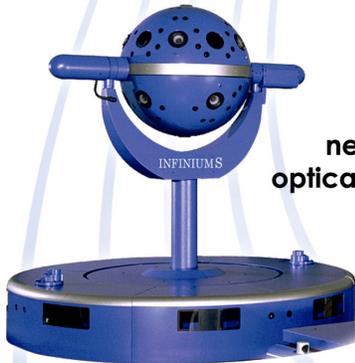
The most reliable and easiest-to-operate single-projector digital planetarium

SUPER MEDIAGLOBE II

The brightest and highest resolution single-lens, single-projector for medium to large domes



INFINIUM



The next generation optical-mechanical star projector



GEMINISTAR III

The newest planetarium combination system utilizing the INFINIUM and full dome digital projection

Exceptional Support From People You Trust



Representatives of AVI and Konica Minolta Planetarium Co., LTD.

KONICA MINOLTA PLANETARIUM CO., LTD. Your full-service planetarium provider

In North America Contact:

Audio Visual Imagineering
6565 Hazeltine National Dr., Ste. 2
Orlando, FL 32822
Tel: 407.859.8166
Fax: 407.859.8254
www.av-imagineering.com



KONICA MINOLTA

All Other Inquiries Contact:

Konica Minolta Planetarium Co., Ltd.
2-3-10 Nishihonmachi, Nishi-ku
Osaka, 550-0005 Japan
Tel: +81.6.6110.0570
Fax: +81.6.6110.0572
www.konicaminolta.com/kmpl/

CONTACT!

MAPS Executive Committee

Officers (2009-2011)

President

Steve Mitch
 Benedum Planetarium (retired)
 Wheeling, WV
 srmgm@verizon.net
 304-242-7614

President Elect

Patty Seaton
 H. B. Owens Science Center
 Prince George's County, MD
 pxts13@yahoo.com
 301-918-8750

Past President

Gloria Villalobos
 Novins Planetarium
 Toms River, NJ
 gvillalobos@ocean.edu
 732-255-0400 X 2111

Secretary

Sam Storch
 483 North 4th Street
 Lindenhurst, NY 11757-3331
 liskies@aol.com
 631-956-0992

Treasurer

Keith Johnson
 Edelman Planetarium
 Glassboro, NJ
 johnsonk@rowan.edu
 856-256-4389

Board Members (2008-2010)

Lee Ann Hennig
 Thomas Jefferson High School
 Alexandria, VA
 lahennig@earthlink.net
 703-750-8380

Steve Russo
 Suits-Bueche Planetarium
 Schenectady, NY
 russo@schenectadymuseum.org
 518-382-7890 x 253

Ted Williams
 Mallon Planetarium
 Norristown, PA
 twilliams@methacton.org
 610-489-5000 X30208



A Note from the President

Greetings from what seems to be the frozen tundra. I haven't experienced a winter like this since I was in grade school back in the early '60's. The Vernal Equinox is just three weeks away at the time of this writing and I can't wait for warmer temperatures to return and make things green again. I would imagine many of you are thinking the same thing.

The annual MAPS Conference is rapidly approaching and conference planning is proceeding smoothly. Most of you should have received your conference registration packets by now. A tentative schedule can be found on page 2 of this issue. You can also get the conference registration forms and information on the MAPS website.

Susan Reynolds Button will be the Margaret Nobel Speaker for our banquet this year. Susan is a long-time MAPS member. She served on the Executive Council of the International Planetarium Society as President Elect, President and is currently serving as Past President. She has served as Portable Planetarium Chair since 1988. Susan has also served on the IPS Council as GLPA representative for two terms. Susan is the founder of "Powerful Interactive Planetarium Systems" (PIPS) professional development meetings in the USA and co-founder of European Meetings for Small and Portable Planetariums. As an associate editor for the IPS quarterly journal "Planetarian", she has written numerous columns for mobile and small planetarium directors since 1990. She has also written two handbooks for IPS: "IPS Portable Planetarium Handbook" (English) and "Tips for Portable and Small Planetarium Users" (Spanish). Susan has provided valuable teacher training and assistance to educators involved in lesson and curriculum development in 15 countries around the world as a consultant through her business, Quarks to Clusters.

The results of the recent MAPS Board elections are in and congratulations are in order for Lee Ann Hennig, Paul Krupinski and Michael Smith. Their term of office will begin at the close of the business meeting at the Spring Conference. I look forward to working with them.

At the Fall Board meeting in Portland, Maine, I set up a Strategic Planning Committee, a volunteer ad hoc committee comprised of Patty Seaton, Lee Ann Hennig, Gloria Villalobos and myself. The purpose of committee is to begin the process of strategic planning for MAPS for both short and long term planning. This process will establish critical goals and objectives for the organization that will be reasonable, achievable and measurable. The committee met in Gettysburg, PA January 29-31. A situational analysis was performed for both internal and external factors affecting eventual outcomes for short and long range planning. From this analysis, after much discussion and re-discussion, four critical areas were identified as a place to begin. More meetings are planned for the next several months in order to place MAPS in the best possible position to serve its members for years to come.

I hope to see you in Portland, Maine May 19-22.

Steven Mitch
 President

EDUCATION COMMITTEE

Calling all teachers! MAPS is looking to you to help revive the original spirit and intent of our organization - a means of networking among professionals who find themselves isolated and too busy to constantly “re-invent the wheel”. We are looking for members willing to SHARE their experiences, lessons, activities, techniques, and successes - that is what MAPS is all about! Please read the information about our upcoming May conference in Maine, and make a decision to contribute from your deep well of expertise.

Along these same lines, we would like to update our committee roster. Any members of MAPS who would like to be included on the Education Committee to foster the concept of sharing and contributing to the understanding of astronomy to learners of every age are asked to contact me at jscala@lvhs.org. Your role as a committee member is easy-share what you do so that others may benefit!! See you in Portland.

John Scala, Lenape Valley HS Planetarium
Stanhope, NJ, jscala@lvhs.org



Teachers! Time to Shine!

At the upcoming MAPS conference in Maine this May we are looking to get back to our roots. MAPS was founded for educators to network with each other, sharing lessons and activities for use under our domes. Would you PLEASE consider making a brief 7-10 minute long mini-presentation on one of your favorite class activities? Access to the planetarium will be difficult, so your “lesson” should be one which does not require the planetarium as part of your presentation. In this manner we can fill an hour with several of your ideas which can be shared in classrooms across the MAPS frontier. Please respond to John Scala at jscala@lvhs.org if you would be so kind as to act as a presenter. Lesson/activities can be for any aged learner, on any topic- please consider sharing your expertise for the benefit of astronomy education.

Weighty Matters

Happy Equinox!! I have been on a personal quest to lose some weight, and thought that this might be a good lead-in for this quarterly lesson. Mass & weight concepts have been brilliantly delineated at several major museums through use of scales adjusted to reflect your weight on the various planets. Short of having such scales available, students can calculate their weights on the various worlds of the Solar System by using the gravity factors listed below. Students begin by placing their current Earth weight on the top of their paper. (Be sure to reassure them that NO ONE but you is going to see these weights, and that you have no time or interest in memorizing them). The assignment requires this number to be of any value. Certain students will provide a false number, and some, despite your reassurance, might choose not to comply. Over the twenty-plus years I have been doing this, however, I have found that far and away most students will provide their actual weights without concern.

Introduction: As you travel through the Solar System gravity acts as a universal force. You never escape from its grasp. However, the strength of gravity’s pull (your weight) does vary from world to world. Although your overall total body mass remains the same, the tug of gravity upon that mass depends on several factors.

(Continued on page 8)

Weighty Matters

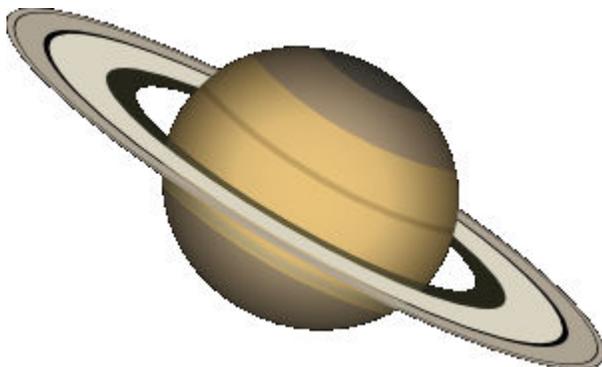
(Continued from page 7)

Listed below are the gravitational factors each world exhibits. Begin by placing your current Earth weight at the top of your paper. Then, simply multiply your weight by the factor for each world. Your answer will be how much you would “weigh” on that object.

Using the provided factors, student now simply multiply their current Earth weight by the gravity factor. The needed factors are listed below:



Body	Gravity
Sun	27.9
Mercury	0.39
Venus	1.12
Earth	1.0
Mars	0.67
Jupiter	2.64
Saturn	1.16
Uranus	1.14
Neptune	1.13
Pluto	0.09
The Moon	0.16



Once these weights have been calculated, follow up questions can be included, such as:

- ◆ On which body would movement be the easiest?
- ◆ On which body would your weight be closest to your normal earth weight?
- ◆ On which body could you jump the highest?
- ◆ On which two bodies would your weights be closest to being identical?

Extensions and enhancements (the “how’s” and “why’s”) depend next on the grade level of your learners. This could be a simple math assignment, extended into a graphing exercise. Physics classes could discuss the acceleration due to gravity and how it affects motion on the different worlds. How would this affect the game of baseball played on Mars, or golf on Mercury? (Great time to break out the Apollo 14 footage of lunar golf and the dropping of the feather & hammer from Apollo 15). If they are up to the challenge, you can continue to explain that while astronauts seem to ‘float’ in space, they are actually in the process of ‘falling’- and what creates ‘falling’? GRAVITY!!!

The Little Star That could



Sometimes, being average can also be special.



Available in Full Dome and Standard Video formats
For licensing information please contact:

Joanne Young
407-859-8166
joanne@av-imagineering.com

www.av-imagineering.com



Space Flights Now Departing

E&S EVANS & SUTHERLAND
Digital Theater

www.es.com
digistar4@es.com

How I Got Started

Steven LJ Russo
Planetarium Manager
Suits-Bueche Planetarium
Schenectady Museum

Well, since it was my Assistant Planetarium Manager Megan Dominguez who was asking me one day about how I got into the planetarium field, I guess I should weigh in on the subject.

I first got into the field at the age of five. OK, I am exaggerating a bit. But at that age, my parents took me to the Old Hayden in NYC to see one of those great live star shows narrated by the Late Dr. Fred Hess. When the program was over, my parents asked me what I thought about it. I remember to this day, 48 years later what I said: "This is what I want to do when I grow up!" The seed was planted. So at the age of five, I started my career.

Whenever we went on vacation, my parents and I went to planetariums. So even before I was in high school, I had seen a variety of planetaria and star machines.

In 1970 at the age of 15, I started taking classes at the Hayden. My first Astronomy instructor was Tom Carey. He was the one who would guide me more towards my career than anyone else. But it was also that top notch staff at the Hayden who helped me too. Dr. Fred Hess, Hank Krull, Lew Thomas, Roy Gallant, and the director of the Hayden, Mark Chartrand, gave me the run of the place whenever I wanted. Even the doorman, a gentleman by the name of Bob Martin, would let me in to wander around the building before it was open to the public early on Saturday mornings.

They even let me play in the dome. Imagine the feeling of a fifteen year old, as he stood behind that Zeiss Console. Imagine the thrill I had when I turned the knob, and all of those stars came up on the dome. How many fifteen year olds get to light up the sky with the best star machine that was ever built; the Zeiss VI? To this day, it puts a lump in my throat.

So at one of my classes in 1972, Tom Carey got me a copy of the Planetarian. It was Volume 1, Issue 1 from an organization then known as ISPE, the International Society of Planetarium Educators; now known as IPS. There was a directory of institutions offering coursework in planetarium education. One of those places was Wagner College in Staten Island, just a stones throw over the bridge from where I lived in Brooklyn. I applied, but my grades were not quite good enough to get in, until the head of the Physics Department found out that I wanted to run the planetarium. I was accepted!

I spent the next four years working on a "planetarium degree" under the direction of Tom Hamilton. Along with Planetarium and Astronomy courses, I took all the usual science subjects. My first "official" planetarium show was in October of 1973. To make a long story short, due to a "glitch" in the curriculum at the college, I ended up with a BA degree in American History and Political Science. If you are interested in how this happened, ask me in person! I then went back to Wagner for another year to get certification in science education.

Enter Sam Storch and the Hubble Planetarium. I spent a few years with Sam as his student teacher, substitute teacher, and sidekick, helping him set up his planetarium, and getting an education as well. If you think that Sam and I are "crazy" together at a MAPS conference for three days, try to imagine what it was like when we were together for four years! I actually did the very first show in his place before it was opened. Just the dome, and a Spitz Junior and his Advanced Astronomy Class while he was out West chasing a Solar Eclipse.

So my education groundwork was laid out. I interned for a year at the Vanderbilt Planetarium, doing

(Continued on page 12)

(Continued from page 11)

show production, running the observatory, and doing school programs. I had the privilege to work with Tom Carey who was the Education Director at the time. It was also very special to work with the largest star machine ever built; that massive GOTO JHS Custom; the only one in the world.

I then spent two years at the Bishop in Bradenton, Florida with John Hare, and learned a heck of a lot about planetariums from him. After a year in the Bronx with Steve Lieb and Terry Buchalter, I was ready to have my own place. For the next 14 years I was the Director at the Southern Cayuga Atmospherium Planetarium up in the Finger Lakes Region of New York State. It was there that I “came of age”. With the help of Quent Carr, I re-vamped the entire program at the SCAP. During those years with the help of the local office of the National Weather Service, I became a meteorologist on several radio stations and had my own TV weather and Astronomy program. I also did climate studies with the NWS and the Cornell research farms, specifically related to the Sunspot Cycle and its effect on climate and weather. While at SCAP, I received my Masters Degree in Science Education with a concentration in Astronomy education. My Master’s thesis was “An Evaluation of the Effectiveness of a Planetarium Education Program”.

In 1998, I took over the directorship of the Plainedge Planetarium, from its former Director, Tom Carey. But five years later the planetarium was about to close due to the opening of a new school without a planetarium. It’s at that point I ended up where I am now, at the Suits-Bueche Planetarium at the Schenectady Museum.

So from my first visit to a planetarium at the age of five, my career path was set. And after 36 years of standing behind a console teaching folks about the cosmos, I know that the decision I made at that early age, was the right one.

Out of this world experiences...

AstroFXAudio

- AstroFXAudio digital 5.1 / 7.1 audio systems have been developed by BT for the special requirements of domes, 3D theaters, and exhibits.
- System packages are available for all dome sizes and interface with all astronomy projection systems.



LED and Theatrical Lighting

- 16-bit control for smooth fades.
- LEDs minimize power consumption and heat generation.
- Bowen tri-color LED chip eliminates scalloping and provides perfect color blending.



AstroFXCommander Control Systems

- Quite simply the world’s easiest to use, yet most powerful theater and exhibit control system.
- Control for all your theater functions AND all your lobby/gallery exhibits simultaneously and independently from ONE SYSTEM.



- Manual control via motorized fader/button panel, mouse/keyboard, touchscreen, or wireless tablet PC.

Real Time Video Systems

- No Rendering!
- AstroFXMediaManager video systems with real time image warping, geometry correction, and motion effects.
- Eliminate slides and use with one projector or three.
- Resolution up to 2048 x 1536 per screen.
- Perfect for use with your optical projection equipment.



Exhibit Technology

- Reliable and innovative interactive solutions for any exhibit space.
- Digital surround sound exhibit soundscapes.
- We accept contracts for Exhibit Technology design or design with provision, installation, and support.
- Certified for high tech exhibit design and installation by some of the world’s leading manufacturers and exhibit design firms.



Theater Design

- BT helps you get it right before it is too late.
- Get us in on the ground floor of design to save \$\$, time, and delay with a BT theater design and specification package for dome structure, seating plans, cooling, electrical & wireways, projection technology, acoustic control & isolation, and audio system geometry.



PLANETARIUM NEWS



Asteroid 4897 Tomhamilton

The minor planet (4897) Tomhamilton was announced on MPC 67215 on Oct. 4 (the 52nd anniversary of Sputnik 1), with the following citation:

(4897) Tomhamilton = 1987 QD6
 Discovered 1987 Aug. 22 by E. F. Helin at Palomar.

Thomas William Hamilton (b. 1939) determined radar and fuel requirements for the Apollo Project. Later he wrote shows (in a dozen languages and also for the deaf) for programmable planetaria, taught astronomy for 32 years and trained students to enter the planetarium field.

Tom was a student of Jan Schilt (asteroid 2308 Schilt), who was a student of Jacobus Kapteyn (asteroid 818 Kapteynia); and Fred Espenak (asteroid 14120 Espenak) was a student of mine. Brian Marsden (director of the Minor Planet Center (MPC)) stated he didn't know of any similar chain that is as long or longer.

In Memoriam: Arthur W. Gielow, Jr. March 1, 1947 – January 30, 2010

The planetarium community is truly saddened by the passing of a friend and colleague, Arthur W. Gielow, Jr., director of the Buffalo State College Whitworth Ferguson Planetarium, who died in Buffalo, New York on January 30, 2010. Art, who earned an M.S.Ed. in secondary education in the geosciences, joined the Buffalo State College community in 1970 as a technical assistant in the General Science Department. He became assistant director of the Ferguson Planetarium in 1980, associate director in 1982, and director in 1984. He also served as an instructional support specialist from 1995 to 1998.

Art fostered the participation of students in all aspects of the planetarium, and he assisted them in the creation and presentation of programs. He organized and oversaw many planetarium programs annually, with more



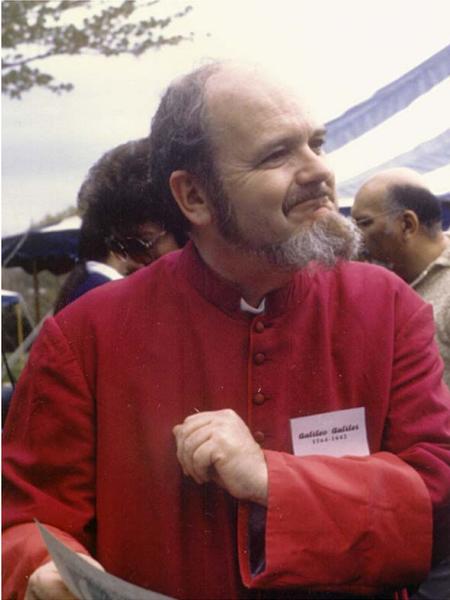
than 8,000 visitors and students attending each year. Art also served as the adviser to the Buffalo State Astronomy Club and the Buffalo State Alumni Astronomy Club, and he was a generous contributor to many campus fundraisers and events.

In the Western New York community, Art served on the boards of the WNY Science Congress, Science Exploration Days, and the Museum Education Consortium of Buffalo. He was also an active member of the Geological Society of America. He taught courses and presented programs at the Buffalo Museum of Science and for the Office of Continuing and Community Education in the Kenmore-Town of Tonawanda School District. Art was very proud to serve his country and was a former quartermaster with the United States Navy from 1967 to 1973 and with the Naval Reserves from 1973 to 1997.

On a personal note, Art was one of the most kind and gentle individuals I've ever known on this good earth. I will sincerely and truly miss the many times Art and I stood under the stars together on the rolling hills of the Southern Tier here in Western New York. We'd gaze in sheer amazement, just wondering about the secrets and mysteries the heavens had to offer...those were indeed memorable times, with a very special person. May Art Gielow rest in peace among the beauty of the stars.

Paul J. Krupinski

In Memoriam: James H. Sharp



Jim starring as Galileo at the U.S. Naval Observatory's Astronomy Day Open House in 1988.

11,369. A number that forever will live on in my head. All because of one person. One of our colleagues who just passed away. James H. Sharp.

I only met him once, maybe twice, in person, but through a planetarium he helped build, I felt as if I worked with him. In June of 1971, the planetarium that he designed, the Vanderbilt, opened to the public in Centerport, New York.

I had the privilege to work at the Vanderbilt as an intern back in the early 1980's, and as an adult education instructor in the early 2000's. This planetarium, even though it was designed and built in the early 1970's, is still in many ways superior to those built today. When Jim designed it, he designed it with not only the public in mind, but also the staff.

The building was totally self-sufficient containing wood shops, art studios, photo studios, electro-mechanical shops, classrooms and offices. The workspace behind the dome was so designed so that you could have all the lights on and it would not be noticed in the 60 foot dome. All projectors could be serviced from the walkways without using a ladder. Even the HVAC system was designed to almost immediately change the temperature in the theater by many degrees to simulate different temperatures of outer space. Everything was done in house from start to finish. Even the star machine was "custom made" to his specs by GOTO and supplied by Viewlex.

Jim Sharp wanted a star machine that would produce the sky as accurately and as realistic as possible. That's where the 11,369 comes in. The number of stars, according to Jim, that a person could see who had perfect vision, no light interference from the Moon or lights, and no clouds. I heard two stories on how this number was arrived at, but honestly don't know which one, or if either are true. One story was that he spent a year or so before the GOTO was built traveling around the globe actually counting stars. The other story is that he did it all mathematically and came up with the number of stars that could be seen down to 6.75 magnitude.

It doesn't really matter how he derived this number, but the end result was a star field that would rival today's planetarium technology. The planets Mercury through Uranus were projected and Jupiter and Saturn had built in 1:6 zoom capability. Variable stars such as Mira and Algol actually varied their magnitude. And Sirius, although slightly exaggerated, showed the star's parallax-aberration ellipse. The Pleiades had six stars visible to the naked eye, but if you looked through binoculars, you could see 21 of them. Even the GOTO's Moon projector was able to show perturbations. Solar and Lunar Eclipses could be projected, and the Sun could travel around the entire ecliptic in only 20 seconds! Twenty-one deep sky objects were projected. Due to some "custom-designed" features that Jim wanted, the machine, actually a model GOTO GL-20, was known as the GOTO JHS Custom; the JHS standing for James H Sharp.

Now I know what you are all thinking. Heck, we can do all of that stuff with today's digital/video star machines. But remember folks, this was all done with just the star projector, back in 1971! This 13 foot long, almost four ton projector was way ahead of its time.

Such was the mind of Jim Sharp, to design a planetarium that even by today's standards, Four decades later, could hold its own in the field of Astronomy education. A long time member of our profession, he will be missed.

Rest in Peace Jim.

Steven LJ Russo
Planetarium Manager
Suits-Bueche Planetarium
Schenectady Museum

SciDome HD - It's more **POWERFUL** than you might think

The Spitz SciDome HD is not only the best educational planetarium, it's also incredibly powerful. With 2K x 2K resolution, over 13,000 lumens, 7,500 to 1 contrast, and newly redesigned lenses that deliver astonishing brightness and clarity, it's the perfect choice for domes up to 55-feet. Thanks to SciDome's **Auto Warp** feature - a fisheye camera system that captures the projection geometry in seconds - SciDome's two-projector edge blend doesn't rob the projection of its punch. Auto Warp performs a self-alignment at the push of a button - and it's perfect every time.

Of course, SciDome also delivers powerful education capabilities. Teaching resources come standard - including elementary, middle school, high school and college curriculum for the planetarium and the classroom. Contact Spitz to learn about the strengths of SciDome HD.



powered by **starry night™**

TEACH bigger



www.spitzinc.com



GeoGraphics Imaging & Consulting
www.geographicsimaging.com



*Providing stunning, yet astronomically accurate animations
for domes of all sizes and capabilities*

7803 25th Ave W. Bradenton, FL 34209 Ph: (941)920-0246 Fax: (941)794-6877



Constellation
c/o Kevin Conod
The Newark Museum's
Dreyfuss Planetarium
49 Washington Street
Newark, NJ 07102