



CONSTELLATION

Spring 2009, No. 1



A Note from the President

In recent weeks, I've had the privilege of visiting several different planetariums. It's always a treat to see colleagues in action in their domes. At a time when we can have sometimes heated debate about things like digital vs. traditional projection (and believe me, I've heard some venting from all sides), these visits also reminded me of how much we have in common. Among these visits, two stuck out for both their differences and their similarities. One was a live lecture in a small traditional theater where the presenter worked wonders with everything from the pictures on the walls to the show itself and spent time fielding questions from his audience. The other was a presentation in a digital dome where the presenter used that technology to teach an interactive lesson using everything from hands-on activities to some really cool visuals, and spent time fielding questions from his audience. Both resulted in happy audiences that left the theater understanding a little more than when they arrived.

Whether you have the latest and greatest technology, a traditional theater, or a flashlight and tin can with holes in it, it's still possible to

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The Chariot Lunar Truck is one idea for a vehicle equal to the lunar terrain. Each of the six wheels pivot in any direction, and two turrets allow the astronauts to rotate 360°.

Apollo Upgrade

The flight computer onboard the Lunar Excursion Module, which landed on the Moon during the Apollo program, had a whopping 4 kilobytes of RAM and a 74-kilobyte "hard drive." In places, the craft's outer skin was as thin as two sheets of aluminum foil.

It worked well enough for Apollo. Back then, astronauts needed to stay on the Moon for only a few days at a time. But when NASA once again sends people to the Moon starting around 2020, the plan will be much more ambitious—and the hardware is going to need a major upgrade.

"Doing all the things we want to do using systems from Apollo would be very risky and perhaps not even possible," says Frank Peri, director of NASA's Exploration Technology Development Program.

(Continued on page 2)

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Apollo Upgrade

(Continued from page 1)

So the program is designing new, more capable hardware and software to meet the demands of NASA's plan to return humans to the moon. Instead of staying for just a few days, astronauts will be living on the Moon's surface for months on end. Protecting astronauts from harsh radiation at the Moon's surface for such a long time will require much better radiation shielding than just a few layers of foil. And rather than relying on food and water brought from Earth and jettisoning urine and other wastes, new life support systems will be needed that can recycle as much water as possible, scrub carbon dioxide from the air without depending on disposable filters, and perhaps grow a steady supply of food—far more than Apollo life-support systems could handle.

Next-generation lunar explorers will perform a much wider variety of scientific research, so they'll need vehicles that can carry them farther across the lunar surface. ETDP is building a new lunar rover that outclasses the Apollo-era moon buggy by carrying two astronauts in a pressurized cabin. "This vehicle is like our SUV for the Moon," Peri says.

The Exploration Technology Development Program is also designing robots to help astronauts maintain their lunar outpost and perform science reconnaissance. Making the robots smart enough to take simple verbal orders from the astronauts and carry out their tasks semi-autonomously requires vastly more powerful computer brains than those on Apollo; four kilobytes of RAM just won't cut it.

The list goes on: New rockets to carry a larger lunar lander, spacesuits that can cope with abrasive moon dust, techniques for converting lunar soil into building materials or breathable oxygen. NASA's ambitions for the Moon have been upgraded. By tapping into 21st century technology, this program will ensure that astronauts have the tools they need to turn those ambitions into reality.

Learn more about the Exploration Technology Development Program at www.nasa.gov/directorates/esmd/aboutesmd/acd/technology_dev.html. Kids can build their own Moon habitat at spaceplace.nasa.gov/en/kids/exploration/habitat.

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



MAPS ELECTION RESULTS

The following are the results of our election for the positions of President-Elect, Secretary, and Treasurer of the Middle Atlantic Planetarium Society, effective at the end of our business meeting Thursday, May 14, 2009.

- ◆ For the office of President-Elect - Patty Seaton
- ◆ For the office of Secretary - Sam Storch
- ◆ For the office of Treasurer - Keith Johnson

Congratulations to our winners and many thanks to Ted Williams, Don Knapp, and Mike Smith for running for a seat on the Executive Board of MAPS! See everyone in Maryland this May.

Paul J. Krupinski
Audit Committee Chair

Spitz Summer Institute '09

This summer's Digital Institute in Chadds Ford, PA is July 20-24.

Session 1, held July 20 and 21 will feature comprehensive courses on astronomy education for beginners and advanced digital planetarium users alike. These include teaching to standards, new curriculum for planetarium education, introduction to elementary, secondary, and college astronomy lessons and Starry Night desktop software. This year we'll also offer sessions for sites who are just beginning their new project or upgrade: planning and theater design, budgeting and fundraising, preparing specs, and more.

Session 2, July 22, 23, 24 focuses on production, programming and presentation in the digital planetarium. Detailed workshops will include realtime astronomy simulation, show automation, digital photo manipulation, panoramic photography, and digital audio creation/editing.

For most thorough learning, development, networking and exposure to colleagues and their creative efforts, consider attending the entire event. Attendees are asked to bring a laptop computer to use during sessions.

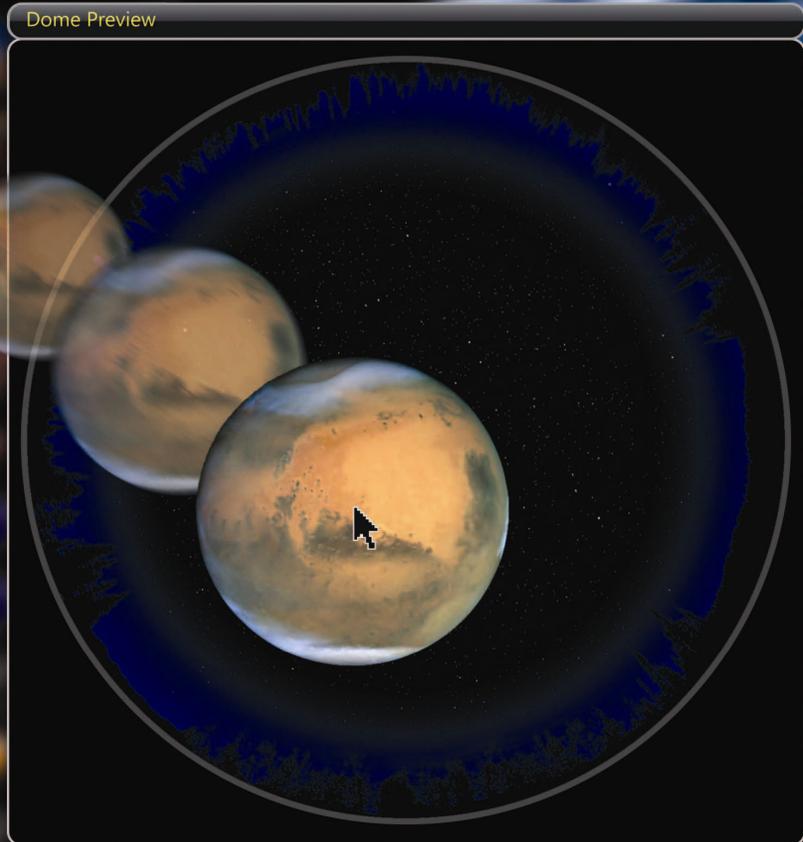
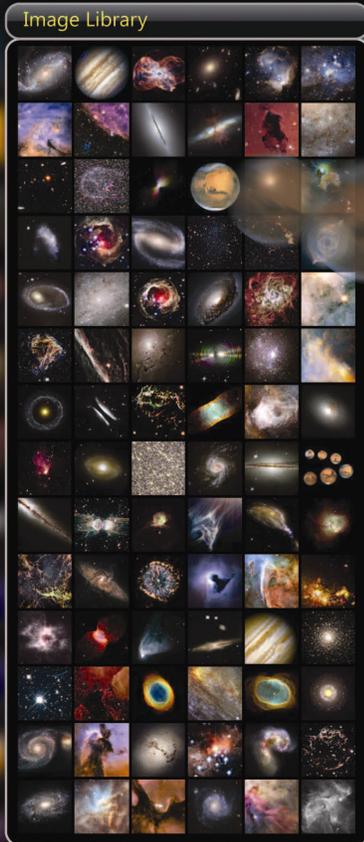


The Institute is recommended for teachers and planetarians wanting to learn more about educational resources for the planetarium, administrators planning to build or upgrade a planetarium, sites using Starry Night software (in the dome or classroom), and those who want to experience what other astronomy educators are doing at their facilities.

Staff from Starry Night (now called Simulation Curriculum) will be on hand to lead software sessions, as will David Bradstreet of Eastern University, Spitz instructors and some special guests.

Register by May 22; space is limited. Contact Spitz at 888-778-7253 if you have not received an Institute mailer with registration form by March 31.

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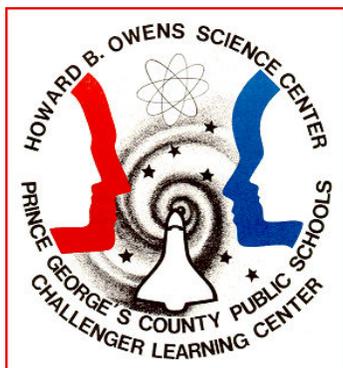
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MAPS CONFERENCE UPDATE

H.B. Owens Science Center, May 13-16, 2009
 Prince George's County Public Schools
 Lanham-Seabrook, Maryland

Our conference host discovered a glitch in her mailing label generator... apparently none of the zip codes that have preceding "zeros" in them printed out correctly. If you did not get a registration packet, contact Patty. She will send you one and extend the deadline for any of you who did not receive the mailing. Complete registration materials are also on the MAPS website at www.maps-planetarium.org.

Patty Seaton, Planetarium Director
 H.B. Owens Science Center, Prince George's County Public Schools, MD
 301.918.8750, pxts13@yahoo.com

Tentative Schedule for MAPS 2009

Wednesday, May 13

3:00 p.m. – 6:00 p.m. Registration table open in hotel lobby (rooms also available)
 6:00 p.m. – 10:00 p.m. Opening Reception with Vendors – Vendor Scavenger Hunt!
 8:00 p.m. Executive Board Meeting. Location TBD.

Thursday, May 14

6:30 a.m. – 9:30 a.m. Continental Breakfast available for hotel patrons
8:00 a.m. – 1:00 p.m. Registration table open in hotel lobby
 Vendor hall OPEN
8:30 a.m. – 10:00 a.m. WELCOME followed by paper sessions
 10:00 a.m. – 10:30 a.m. BREAK in vendor hall
 10:30 a.m. – 11:45 a.m. Paper sessions*
 * OPEN vendor time as paper sessions allow.
 11:45 a.m. – 12:00 noon. Quick break to reset room for buffet lunch
 12:00 a.m. – 1:15 p.m. Buffet lunch with special guest speaker:
 Glen Fountain, Johns Hopkins University Applied Physics Lab
 1:15 p.m. – 1:30 p.m. Group photo
 1:45 p.m. – 3:15 p.m. Paper sessions
 3:15 p.m. – 3:45 p.m. BREAK in vendor hall
 3:45 p.m. – 5:00 p.m. Business Meeting
 5:00 p.m. – 7:00 p.m. Dinner on your own
 7:00 p.m. Board buses for Howard B. Owens Science Center
 7:30 p.m. – 9:00 p.m. Delegate presentations in the planetarium
 9:15 p.m. Buses leave for conference hotel
 Later (9:30 or 10:00 p.m.) Taurus Incident

Friday, May 15

6:30 a.m. – 9:30 a.m. Continental Breakfast available for hotel patrons
8:00 a.m. Opening comments
8:15 a.m. All groups board buses for Goddard Space Flight Center

8:30 a.m. – 1:00 p.m. Registration table open AT OWENS SCIENCE CENTER lobby
8:45 a.m. Security Check at Goddard for all groups – ***NOTE: Any non-American citizens wishing to participate in the tour must contact the conference host at least 60 days in advance to secure necessary paperwork for security clearance!***

9:00 a.m. – 11:00 a.m. Group A – Goddard tour
Group B – Education Resource Center/SOS (Science on a Sphere)/Exploradome
Group C – Owens demos
11:00 a.m. – 1:00 p.m. Group A – Owens demos
Group B - Goddard tour
Group C – Education Resource Center/SOS (Science on a Sphere)/Exploradome
1:00 p.m. – 2:00 p.m. Lunch at Owens
2:00 p.m. – 4:00 p.m. Group A – Education Resource Center/SOS (Science on a Sphere)/Exploradome
Group B – Owens demos
Group C – Goddard tour
4:00 p.m. – 4:15 p.m. Regroup at Owens
4:15 p.m. – 4:45 p.m. Presentation of Howard B. Owens’ production, “New Horizons: Bridge to the Beginning”
5:00 p.m. Buses leave H.B. Owens Science Center for hotel
6:30 p.m. Banquet / Margaret Noble Address Speaker: Lee Ann Hennig
10:00 p.m. Taurus Incident

Saturday, May 16

8:30 a.m. Board bus for Howard B. Owens Science Center *
9:00 a.m. – 11:00 a.m. Paper presentations in planetarium
11:00 a.m. – 12:00 noon. Door prizes/farewells
12:00 noon Bus leaves for Conference hotel

***NOTE: Checkout time is before noon, so you either need to check out before you take the bus, ask for an extension, or place your bags in the secure area provided in their lobby area. Please make those arrangements directly with the conference hotel!**

Upcoming Conference Deadlines

- ◆ **April 3—Early Registration Ends**
- ◆ **April 3—Paper & Workshop Proposal Deadline**
- ◆ **April 17—Hotel Deadline**

HOTEL ROOMS

Book your hotel room NOW at the Bowie Comfort Inn and Conference Center, located at 4500 Crain Highway in Bowie, MD 20716. Their phone number is 301-464-0089. We have rooms blocked off until April 17, 2009 under the group name “Mid Atlantic Planetarium Society”. The room rate is \$121.49/night for single or double occupancy. This price includes a continental breakfast. For any specific hotel questions, please contact Cathy Martin at the number above.

Pre & Post Conference Activities

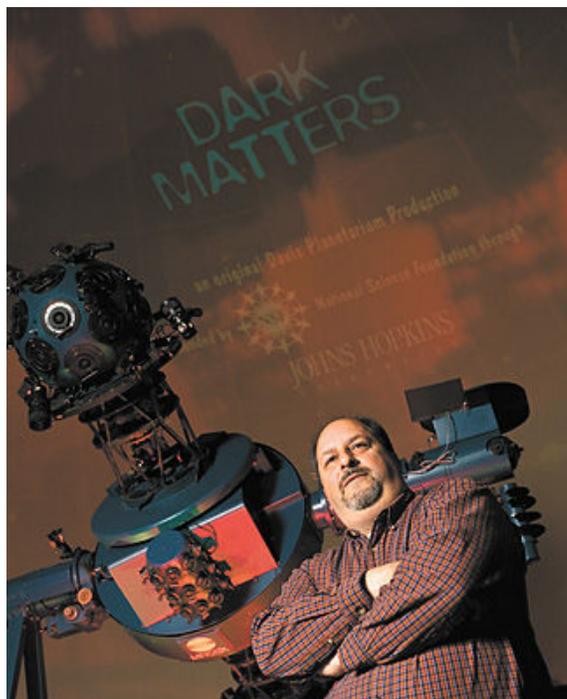
Arriving before check-in time on Wednesday, May 13? Staying for an extra day after the conference ends on Saturday, May 16? Our planetarium colleagues at nearby facilities have offered to open their doors to MAPS members, with special discounts available. A couple of options:

Albert Einstein Planetarium National Air and Space Museum Washington, D.C.

Their programs include **Black Holes: The Other Side of Infinity** and **Cosmic Collisions**.

For more information on show schedules, visit their website at www.nasm.si.edu/visit/theaters/planetarium/.

Show your MAPS badge or mention MAPS for free admission to the planetarium!



Davis Planetarium Maryland Science Center Baltimore, MD

Keep in mind that the Maryland Science Center's Davis Planetarium at Baltimore's Inner Harbor is less than hour's drive from the conference site.

The current show schedule includes an original feature, **Dark Matters**.

For directions and show schedules, visit them on the web www.marylandsciencecenter.org

If you'd like to include a stop in Baltimore, MD on your way to or from the conference, please contact Wendy Ackerman for discount admission wack@marylandsciencecenter.org or 410.545.5978.

MAPS 2009!

See the **NEW Digitarium Epsilon** at

The image shows a black Digitarium Epsilon planetarium projector on a stand. To its left is a circular dome projection showing a night sky with a bright star and a blue vertical line. The projector has the 'Digitarium Digitalis' logo on it.

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EDUCATION COMMITTEE

From the Education Committee Chair:

Thanks to those who found & took the time to respond to the IPS request concerning what we present to our grade school visitors. Your responses will be collated and sent on to the IPS Education Committee. As we are now into the "International Year of Astronomy" we are seeking out any programs/activities/presentations you might be making to celebrate this year long event. Let us know of any outreach programs, telescope star parties, speaking events, etc that you are involved with to help spread the awe and wonder of the stars to the public. Hope to see you at MAPS in Maryland!



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

Bar Harbor Summer Program for Teachers

The College of the Atlantic in Bar Harbor, Maine, offers annually a summer program for teachers. Visiting teachers can opt for a complete package that includes room and board as well as graduate credit. Courses are taught in the former billiard room of the only Victorian-era mansion on Mt. Desert Island open to the public, and the classroom offers a stunning view of Frenchman Bay. Bar Harbor itself is a short walk away. The campus is just a few miles from Acadia National Park, with attractions of its own, and a site from which, weather permitting, participants will make observations of the sky, which is always stunning.

Introduction to Astronomy is a two-week, four graduate credit course that emphasizes activities that teachers upper elementary to high school can use in their classrooms virtually from the first day of school.

Teaching from a Portable Planetarium is a one-week course, offering two graduate credits, also activity-based, that provides both instruction in the uses of a portable planetarium and activities that explore a variety of activities that demonstrate the uses of a portable planetarium across the curriculum.

The College also offers a program for families, so the visit can be very friendly to those who wish their families to enjoy Mt. Desert Island.

More information can be obtained at: www.coa.edu/html/summercoursefacultybios.htm

Or you can speak directly with the Associate Director, Jean Sylvia, at: 800-597-9500

Hank Bouchelle, Ed.D., Manager
Mt. Cuba Astronomical Observatory
Greenville, Delaware 19807



Earth-Moon Institute

Earth-Moon Institute for Teachers:
www.lpi.usra.edu/education/workshops/earthMoonInst/

Teachers for 5- 8th grade (both in-service and pre-service) are invited to register for this week-long summer institute investigating the Moon, July 27-31, 2009. Participants discover tools to address student misconceptions, use hands-on activities modeling science concepts, bridge content from the Moon to Earth's geology and environment, and experience authentic inquiry.

Journeys to the Stars

Posed by Megan Dominguez, Assistant Planetarium Manager at the Suits-Bueche Planetarium
Compiled by Patty Seaton, Planetarium Director at the H.B. Owens Science Center

One day Megan Dominguez, Assistant Planetarium Manager of the Suits-Bueche Planetarium Schenectady Museum, asked Planetarium Manager Steven LJ Russo how he got his start in the planetarium field. She was interested in learning the stories of other colleagues: how many of us knew it was our life's dream; how many were simply thrown into the position? How neat it would be to trace each others' roads to where we stand under our planetarium star fields today!

Steve Russo posed Megan's question at the last Executive Board meeting, and I offered to publicize it and compile the stories. So, in their own words, here are a few of your colleagues' accounts of their personal journeys to the stars!

Harold Geller, GMU

I guess I thought about being an astronomer or planetarian ever since I was 5 years old. I still recall the first time, after turning 5, that I was allowed to go to the Hayden Planetarium in Manhattan, NYC. I still recall the amazement with my view of the night sky as I'd never seen it before (living in Brooklyn, NY). Ironically, I've never visited the new Rose Science Center that was built after they demolished the old Hayden Planetarium. I just couldn't forgive them for tearing down my memories. However, I must admit that I didn't just want to be an astronomer or planetarian. I can still distinctly recall how much I wanted to be in law enforcement, specifically the FBI, having been influenced by Efrem Zimbalist, Jr. and his series on the FBI. Oh, by the way, at one point I did end up with the FBI, but it wasn't what I thought it would be, go figure. I guess things are never what we expect them to be, and that was the case for me with the Einstein Planetarium, especially after they went with the business venture. And now, here I am with a doctorate and all, after so many years of blood, sweat and tears, running a portable planetarium system on demand for classes, and acting as observatory director.

John Scala

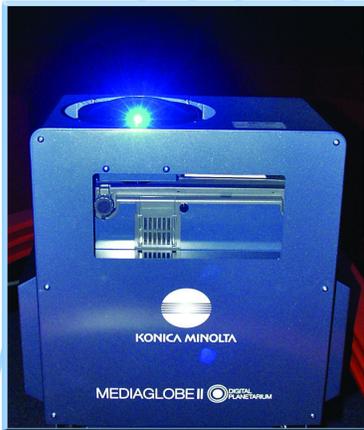
I went to Lycoming College in Williamsport, PA to major in astronomy. The degree program there was two-tiered, one towards graduate work, and one toward planetarium education. The Detwiler Planetarium housed a Spitz A-3-P. My student teaching was at the Williamsport Area High School, which had an A-4. Upon graduation I could not find a position, so I taught Science, bidding my time. I actually left full time education, but was invited to be an adjunct instructor & community outreach educator at the County College of Morris, in Randolph NJ (twin to the Ocean County College facility in Toms River). I made my way back not only into education but full time into the planetarium field here at Lenape Valley HS, operating a Spitz 512. I continued on at CCM, teaching at two planetaria with two different projectors, for several years. I am now in my 22nd year at Lenape Valley.

(Continued on page 12)

Sometimes, when it comes to planetarium systems, it's best to be single-minded!

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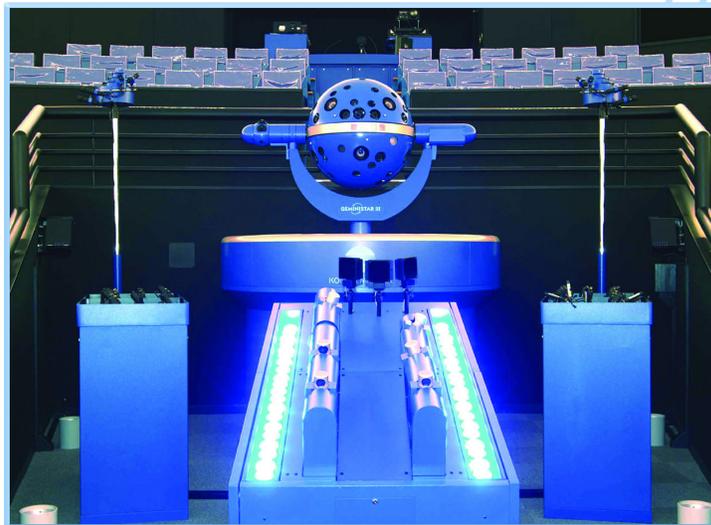
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Dr. Rhett Herman, Associate Professor of Physics and Director, Radford University Planetarium

My path was a little weird. I'll try to compress things.

When I arrived at Radford University in 1996 I discovered they had a planetarium. A small one (24-foot diameter dome) with eggshell white walls, light tan carpet, no real sound system and no other projectors at all. And of course the last SG-8 star projector installed in North America (according to Eric Melenbrink). And a homemade solid dome made of industrial-strength chicken wire and plaster. The older (much older) faculty member who was still there from the university's buyout used it about twice per year. You see, he didn't want to break it so he never used it. He wasn't thrilled with me using it because I might break it. Then he wouldn't have it next year to not use for most of the time. So I ignored him and used it. I didn't think much about it at first but I thought that this might become something. Eventually, I started trying to do something, anything with it. I snagged some very old slides and invited scout groups to come by and just have a sky tour. Worked OK, but no great shakes. Worked for a few merit badges.

Then in 1999 a couple of faculty members from other science departments really started vulturing over the place. That's when I figured I'd better find a way to use the place or we'd lose it. About that time I heard about the Bishop Museum Planetarium in Hawaii offering a free show called "The Explorers." Turns out that my information was kinda old because, when I called them they had run out of free shows to distribute. Bummer. But I persuaded them to give a last looksee and lo and behold they found one last show. Presto! I had something to show!

So now I had to scrounge around for a slide projector. Took me a bit but I snagged an old one. I got a laptop computer (all 160MHz of it) down there to play the soundtrack CD through the fairly above-average-sized computer speakers. I had the slides in one projector propped up on the star projector control console. I started giving these shows to scout groups, school groups, most anyone I could, and things started taking off. Slowly, but it eventually happened.

Many things have happened since then including black paint (what a crazy idea), new carpet, recycled computers, lotsa duct tape, hand-me-down really nice speakers from my brother's attic (honkin' big), more slide projectors and now hand-me-down digital projectors (the shows are multiple PowerPoint slide shows!), better sound system, etc. All on no budget, no formal assigned time for me, etc. But it works. Now I have over 2,500 people per year attending our little place and we're still growing. And did I mention the no budget thing?

So in a way, I'm in the business but not really in the busi-

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ness. By accident at first, but it's become my hobby. Not a part of my job but a part of what I do. We even have "Science Day" tours with K-12 school groups coming in from all over this area. I've even snagged the other science departments to help with this.

If you want to know more, let me know. I've left a lot out. My story is probably different in that my background in astrophysics (relativity theory) led me to the job first, and then I found the planetarium. And to get here...I actually went the premed route, going to medical school for 3 years until realizing I hated it and just had to walk out of that and into grad school in astrophysics. Convolved path...

Jeffrey L. Smith, Planetarium Director, SMPP (ret.)

I have been asked that question by students who thought I had an extensive background in science, which I did not. My actual degree was Social Studies with a minor in Sec. Ed. I used to tell the students that if you are a good teacher you can teach most anything. After graduating from Elizabethtown College in 65, I went into VISTA and taught remedial reading and math at Wolf Creek Job Corps Center in the middle of Umpqua National Forest in Glide, Oregon. It was a great learning experience for me. I had all intentions of going into social work. Just by chance I interviewed with Eileen Starr for a planetarium assistant position at the State Museum of PA. We both had good feelings about each other and the position had all the attributes that I was looking for. Six months after I began, Eileen left and I was in charge. Several months later Dr. S.K. Stevens, executive director of the PHMC, told me that they had made the decision when Eileen left to let me sink or swim and he felt that I swam. I considered him to be the benchmark of a mentor and good supervisor. May he rest in peace. Well, I swam for 39.5 years before retiring at the same place I started. I did many career days for schools and my advice was to look for a job you love rather than the money or prestige, otherwise you will be spending the extra money on shrinks to find out why you don't want to get up in the morning and always unhappy.

Tom Hamilton

I was into astronomy before I started school, in fact I learned to read by having adult relatives read me astronomy books, while I looked over their shoulders. Thus it was natural for me to take astronomy in college, although it was sheer luck I was taking intro astronomy when Sputnik 1 was launched.

After college and some graduate work I was briefly with a major computer company, and VERY unhappy. A lawyer I knew socially told a recruiter at Grumman he knew an astronomer looking for a new job at the very time Grumman was hiring for Apollo. The recruiter called and asked if I would be interested in working on Apollo. After thinking about it for perhaps as long as a nanosecond, I replied "I can't afford much, but whatever it takes I'll do." There was a moment's silence, and then he said "I guess you're interested."

After working on Apollo for several years it was clear jobs would soon be ending as the contract Grumman had with NASA was completed. I saw an ad in the NY Times for someone to write canned planetarium shows at Viewlex, and got the job. After a couple years there I heard through the mother of a friend that Wagner College wanted someone to run their planetarium, which had been virtually unused in the two years they had it. The rest is history.



A Note from the President

(Continued from page 1)

give an outstanding presentation. No technology or style is better than any other as long as the audience is happy. Our theaters are what we make them. May you make yours a place of "magic" that will be long remembered by your visitors.

Gloria Villalobos
President



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