

President's Message

There are a couple of reasons why I always look forward to this time of year. No, it's not the changing season with the leaves turning to shades of orange, yellow, and red, slowly dying and falling off their branches. I long for such beauty, but unfortunately it cannot be found in Florida. Some of the reasons are due to seasonal changes, but they have nothing to do with the trees directly. This is the time when we, as Planetarians, begin a new school year and are presented more opportunities to inspire children and their teachers in the wonders of the universe.

To see the glow on children's faces as they indulge in their educational journey and then follow it up with enthusiastic, well-thought questions, no matter how trivial, seems to make all the troubles in the world disappear, if only for a minute or two. To touch a life with the joy of the cosmos is truly one of my favorite passions. Isn't this what it's all about? Isn't it our job to do the best we can to explain the wonders of the universe? Isn't this why we put so much emphasis on technological advances in the planetarium? We suit up in technology that helps us capture the imagination of our visitors, as we grasp for the wow experience that excites our audiences.

It really doesn't matter, however, what your planetarium arsenal has in it as long as you are enthusiastic. You can have all the technology in the planetarium world, and it will be useless without an enthusiastic, writer, producer, artist, educator, presenter, or lecturer. The best planetarium is inside each planetarian.

One of our members has proven that. She has poured so much of her heart into what she does that another large educational group, The Astronomical Society of the Pacific (ASP) has recognized her for.

It is my great pleasure to congratulate Ms. Elizabeth (Betty) Wasiluk as recipient of the 1999 Thomas J. Brennan Award. This award, established by the ASP in 1993, recognizes excellence in astronomy teaching at the high school level in North America. I am sure Betty will agree that sharing your knowledge and touching the sole of your visitor is one of the great

est feelings imaginable. Congratulations Betty!

This is also the time of year I look forward to when the Sun sets earlier each day, nights lengthen, and temperatures drop, providing cooler nights and better visibility for stargazing. If only for a few minutes, each clear night, I try to take a few moments to enjoy the real sky from my backyard. On these nights I step outside only to be reminded that the stars do not seem to shine quite as brightly as they once did, thanks to the effects of light pollution. Who knows if anything can be done to reverse the environmental polluter that seems to be continuously growing.

An important thing to remember, however, is that a child never walks without taking the first step. This is the reason for our work on the light pollution infomercial. Hopefully, over time, we will begin to see better sources of illumination and intelligent lighting techniques that don't pollute the night sky.

David Levy completed the script for our show in early September, and the Script Review Committee worked hard offering suggestions and script changes. Hopefully, when finished, we will have a production we can run before or after star shows that will help make people more aware of the issue.

We all do things differently under our domes, but we all share the common goal. Hopefully what we end up with will be a useful tool for all of us to share with our

George Fleenor

President

Bishop Planetarium

Bradenton, Florida



IPS Report

John Hare
IPS Representative

The IPS council just concluded two intense days of meetings at the Lowell Observatory in Flagstaff. I'll touch on the most important business now and address the remaining issues in the next edition of *Southern Skies*.

The slide distribution service from JPL and the Space Telescope Science Institute will be centralized through IPS. This means that 1999 and earlier images previously sent to SEPA and presently made available through Duncan Teague will no longer be furnished effective January 1, 2000. [Images received before that date will still be available from me and listed in *Southern Skies*. Ed.] Anyone wishing to subscribe to new images from JPL or STScI must send in a form to IPS by January 15.

The cost structure will be \$39 for IPS members and \$59 for non members. Slides will be furnished until the subscription amount has been reached (about 60 slides) at which point it will be time to renew and, only then, possible to sign up for new subscriptions. Subscription forms will be available from Duncan Teague or myself.

A new Directory of World Planetariums will be mailed to current IPS members

sometime near year's end. This will be the last issue in print form as council made the decision to publish future editions in electronic format, probably CD ROM. It was decided that there would be an option available for those that required a printed copy. The IPS Resource Directory, scheduled for publication late in 2000, will possibly be issued in electronic form subject to council approval.

Council revised the timetable for submitting invitations for future IPS conferences. The previous schedule of five years prior for invitations and four years prior for council decision has been shortened by one year. This means that the invitation deadline for the 2004 conference has been extended to next year's council meeting to be held in Montreal in conjunction with the IPS conference. Interested?

Don't forget, the 2000 IPS Conference will be held in Montreal next July. This will be the first time IPS has met on the North American continent since the Cocoa conference of 1994 and offers a convenient opportunity for SEPA members to participate in what may possibly be the largest planetarium conference to date. I'll be including updated conference information along with other IPS topics of interest in

President's Message
continued

visitors.

I am also happy to announce, in addition to Magnaray International, Meade Instruments Corporation; the world's largest manufacturer of telescopes, has become a major sponsor. Meade's donation will help underwrite the costs of the production, making it possible for us to make it available on a global scale at a reasonable price.

I attended the Desert Skies conference (October 11-18) in Phoenix, Arizona and presented a paper on our project. The project was well received, and many Planetariums were interested in obtaining a copy for their dome.

While on a post trip to Tucson, I recorded David Levy's narration for the show at the Flandrau Planetarium. The folks at Flandrau made our recording session a success.

Special thanks to Flandrau Planetarium Manager Michael Mage for all his hard work. Former SEPA member Mike Murray, current president of RMPA, sat in on the session and offered valuable input also.

The edited narration track will be handed over to John Serrie for him to record the musical score. Edwin Faughn of the Sharpe Planetarium at Memphis Pink Palace Museum has agreed to help with some of the needed artwork. Edwin is a talented artist, and I look forward to his inspiring work. I am sure you will enjoy it also. We are still targeting a spring 2000 release.

On a final note: Ken Moore has been hard at work on the SEPA Web site. Please take a few minutes, the next time you are surfing the Web, and check it out at <www.sepadomes.org>. Until next time clear dark skies.

Auld Lang Syne

SEPA celebrates more than a new millenium

With this issue of Southern Skies I'm including your Y2K dues notice/ invoice. Please place this in your to do pile and remit your dues by the end of the year.

SEPA is going to have a banner year with the completion of the production of our light pollution mini show. It will include a script written and narrated by nationally reknown science writer/ astronomer David Levy, music by Jonn Serrie, original artwork by Ed Faughn, and archive images from the International Dark Sky Association. Companies have stepped forward to help finance this project so our treasury doesn't have to fund the entire cost.

Speaking of our treasury, a number of delegates who attended the SEPA conference in Jacksonville, including some notorious individuals, did not pay their required dues to SEPA. They should not have been allowed to attend the conference without taking care of this obligation. Their future participation in SEPA events and projects, like receiving the mini show, is in jeopardy until and unless they meet their financial responsibilities for 1999.

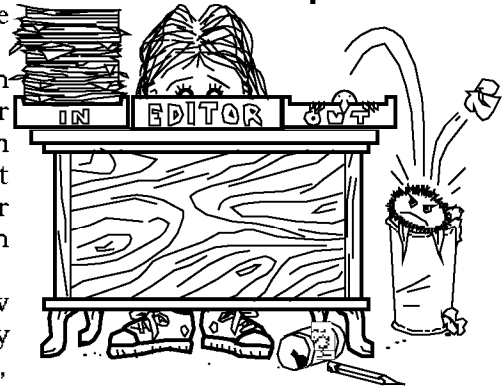
I want to thank Dave Hostetter for his long service to Southern Skies as associate editor for the Featured Planetarium column. Read his last submission on pages 4-5.

Our new associate editor for the Featured Planetarium column is Kelly Stammer of the Hallstrom Planetarium in Fort Pierce, Florida. Her first column is on pages 6-7.

We have a new column, edited by Thomas Webber, which highlights a Featured Vendor. Our first vendor to be so recognized is Bowen Productions. See pages 8-9.

Please note my new home e-mail address: <dteague2@midsouth.rr.com>. This cable RoadRunner service is 80 times faster than my old 33.6 modem. I'm still

Duncan R. Teague
Secretary/Treasurer
Southern Skies Editor
Craigmont Planetarium
Memphis, Tennessee

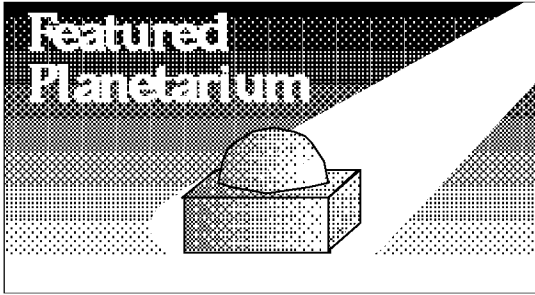


Mike Cutrera

Send your \$25.00 check made payable to SEPA to the following address:
Craigmont Planetarium, 3333 Covington Pike, Memphis, TN 38128 3902

Name		
Planetarium		
Organization		
Address		
City		
State	Zip	
Area	Voice	
Area	Fax	
Position		
E-mail address		

Featured Planetarium: W. A. Gayle Planetarium, Montgomery, AL



Dave Hostetter
Featured Planetarium Ed.
Lafayette Planetarium
Lafayette, Louisiana

Author
Rick Evans
Director
W. A. Gayle Planetarium
Montgomery, Alabama

Left: Exterior view of the
W. A. Gayle Planetarium.
Right: "rocket exhaust"
above the gift shop

The W. A. Gayle planetarium officially opened its doors to the public on September 25th, 1968. The planetarium was named in honor of one of Montgomery's best loved and most distinguished citizens

and city Mayor for many years, Mr. W. A. Gayle.

Dedication speaker Attorney T. B. Hill Jr., described Gayle as a dedicated public servant who contributed much to Montgomery's development and as a man who loved nature's great outdoors. The planetarium brings much of that great outdoors all of the beautiful heavenly bodies inside and projects them in an awe inspiring fashion on a 50 foot dome. The planetarium is beautifully situated in Oak Park, just off Interstate 85, in downtown Montgomery.

The planetarium's mission has remained the same throughout the years. Managed and operated by Troy State University Montgomery for the city, the planetarium annually hosts 25,000 - 30,000 visitors. Many public and private schools, colleges, community centers, veterans hospitals, and scouting organizations from throughout the state routinely schedule field trips to the planetarium each year.

For many visitors, this trip represents a significant part of their educational curriculum in science. Space science is a significant part of the educational curricula for school children of all ages, and the planetarium has proven to be an invaluable

tool to assist the teachers throughout the state in meeting this objective.

The W. A. Gayle Planetarium star chamber is designed especially for simulating the natural sky by projecting images of the Sun, Moon, planets, stars and other celestial objects on a 50 foot domed ceiling. The planetarium has 235 theater style seats. The superbly designed and versatile Spitz Space Transit instrument can project the positions of over 5,000 stars and the Milky Way as it would appear from any place on Earth at any time in the past, present, or future.

I retired from the United States Air Force in 1996, after almost 21 years as an air traffic controller. I was hired by Troy State University Montgomery in September of 1996 to work part time in their Institutional Effectiveness department. A week later, the individual who had been running the planetarium got married and moved away. Planetarium staffing consisted of a Director and a secretary. Schools were booked to come to the planetarium, but without a Director there was no one to do the shows. Still possessing that military volunteer spirit (and the fact that my Vet Will Work for Food sign was wet from standing in the rain at the exit ramp of Interstate 85), I raised my hand and asked for directions. My first thought after arriving at the planetarium was that I was glad my knees bend the way they do. I could kick myself without assistance.

The planetarium left much to be desired. Shows were presented with the use of a single pair of cross fading projectors aimed at the front center of the dome. The sound system consisted of 8 home style speakers



strategically placed behind the dome. All shows were presented using a cassette recorder as the media driver. There were a few special effects such as shooting stars, a bolide projector, and a cloud projector. The rest was left to the imagination of the audience. I explained to my audiences that the cracks in the walls were from meteors. The paint was chipping because it was left over from the original Saturn V. My second thought was that there was no place to go except up. And so the task of rebuilding began.

I was very fortunate that the Mayor of the city of Montgomery, Emory Folmar, was committed to education. This became evident when his administration committed to revitalizing the planetarium. While other major cities such as Chicago, Pittsburgh, New York, and Columbus have torn down classic facilities and replaced them with multi million dollar structures, Montgomery has invested in renovating and preserving this landmark. To this end, the planetarium recently completed its first major renovation in 30 years of existence.

Joe Hopkins Engineering (JHE) was contracted to bring the planetarium out of the dark ages. The renovation consisted of adding sixteen slide projectors: 6 projectors (Elmo) mounted as a 30 spacing (with 25% overlap) panorama system centered on the front of the theater; six additional projectors (Elmo) mounted on 60 centers to produce a complete dome coverage all sky system; and 4 projectors (yes, Elmo) mounted to display imagery on various portions of the dome. A Sony video projection system was mounted in the cove of the dome to facilitate the projection of laser disc images and VHS presentations, as well as for viewing the NASA channel live within the theater.

The sound system was upgraded to include state of the art recording and reproduction of theater shows. In addition, a pair of ADAT recorders were installed. A multi colored laser unit was installed which enables the planetarium to produce and display laser light shows in the theater. Our console was retrofitted to install the new JHE Bright Star control panel and JHE Screen Master computer system. We also purchased the JHE AudioStar system to enable us to update and of course create our own productions.

Our renovation was phased in over a three year period. At this point if your

question is what did they have when the upgrade was started? the answer would be: not much.

The planetarium facility is not very big. I have therefore attempted to maximize every available inch of real estate. In the lobby adjacent to our modest gift shop, we installed in the ceiling what is supposed to look like the bottom of a Saturn V. Engine cones (constructed out of dryer pipe reducers) hang from the recessed cove and smoke (from a fog generator tucked away in an adjacent restroom ceiling) flows over the heads of the children.

The hallway ceiling leading to the restrooms was replaced with a peg board painted black. I then inserted white Christmas lights through the peg board holes to represent the stars. The sidewalk leading to the planetarium has the planet distances painted with their spatial relation to the Sun.

As you pass through the entrance hallway to the star chamber, you will go on a journey through time. Ultraviolet lighting adds vivid depth and realism to an extensive mural illustrating the history of astronomy and the space age. This beautiful mural is unique to the Gayle Planetarium and was painted by Larry Godwin.

Did I mention that my staff still only consists of a full time administrative assistant, two part timers, and myself? Despite having to learn how to construct a show (silly me, I thought when you ordered a

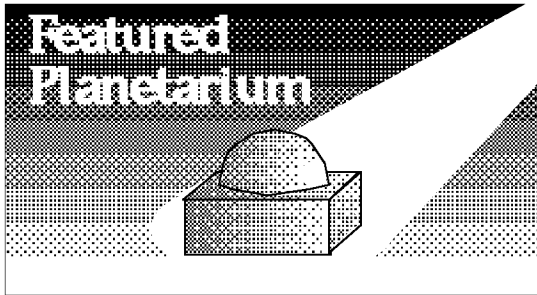
complete show kit the work was done), present a show, change bulbs, mask slides, operate the equipment, fix the equipment I break, climb and descend ladders without incident, manage a gift shop, learn to solder, learn to unsolder, pronounce astronomical terminology, and be the source reference for every fourth grade child in the state of Alabama who has to turn in his science/ astronomy project tomorrow, I still find this to be less stressful than my

Featured Planetarium
continued

Top: Planetarium Director
Rick Evans at his desk
Bottom: console view of
the star chamber housing
the Spitz Space Transit
star projector



Featured Planetarium: Cybersphere Planetarium, Dickson, TN



Kelly Stammer
Featured Planetarium Ed.
Hallstrom Planetarium
Indian River Comm. College
Fort Pierce, Florida

Authors
Kevin Scott, Director of
Digital Theatre Produc-
tions
and
Terry Johnson,
Planetarium Operator/
Assistant Producer
Cybersphere Planetarium
The Renaissance Center

Left: The big ball is the
Cybersphere Planetarium
Right: entrance to the
Renaissance Center

When people on the street find out I work at the Renaissance Center in Dickson, Tennessee, they always want to know, What's in the big ball? The ball, of course, houses our planetarium, and no, we're not

going to roll down the hill. Cybersphere is a 60 foot dome set on a 20° tilt with unidirectional seating for 138 guests. The Cybersphere is the most prominent feature of the Renaissance Center, a state of the art facility offering unprecedented learning opportunities in the arts and sciences.

We're about 40 minutes west of Nashville and have been open since August 4, 1999. During our grand opening weekend, we attracted over 10,000 visitors (6,500 to the Cybersphere alone) with demonstration classes, shows, an art exhibit, musical concerts, and live community theater presentations. We are currently running weekend programs for the general public. Field trips should be in full swing by mid October. We expect school visits from Dickson and surrounding counties to make up the largest portion of our attendance. Some of you may be wondering about the close proximity between The Sudekum Planetarium and The Renaissance Center. Our two staffs have met on a number of occasions, and we're looking forward to a good working relationship and possibly some joint projects. I'm very lucky to have Kris nearby as a resource.

Given our focus on the integration of technology and the arts, we chose to install an Evans and Sutherland Digistar II

planetarium instrument. As you probably know, Digistar II can display a three dimensional view of the starry sky as well as any object or scene representable by a computer. While most every Digistar facility boasts of being able to use the instrument for much more than just the star field, we've actually participated in meaningful (and somewhat lucrative) real world visualization exercises. We are currently working with Tennessee State University (via our animation department) to create visualizations of several new construction projects on their downtown campus. One of our artists in residence has also found the Digistar to be quite an exciting tool for creating original objects and scenes for our educational programs. Finally, we have been working closely with our facilities design architects on future expansion projects for the Renaissance Center.

Adjacent to the Digistar II system is the Audio Visual Imagineering Omniscan laser graphics projector. AVI is now shipping the model 2020, with a spherical projection head about 11 inches in diameter. I've been very pleased with the quality of engineering going into this second generation projector.

The internal mechanisms are well designed and quite stable now. The lens produces far less aberration and distortion, and the new laser tube was specifically designed for balanced, white light performance. The laser, a 5 watt water cooled unit made by Spectra Physics, feeds the projection head via a single fiber optic. The electronics are nicely modularized and require almost no maintenance.



I've been enamored with the selection of filter effects built into the system. We've created some wonderful full color auroral effects, realistic clouds, and fantastic lightening bolts. Most modern white light laser projectors use a PCAOM for color picking and blanking. The Omniscan is no different, but with our particular brand of laser we can pick off a nice cyan line and a very deep blue line, giving us some of the most intense blues and purples I've ever seen.

Gone are the days of programming the Omniscan with Visual Basic. Pangolin's Showtime and Laser Show Designer fully support all the features of Omniscan and make show production straightforward. We use Omniscan in all of our educational programs as an integral part of the theater.

Other devices include a large Barco projector, a small Barco on a pan/tilt mount, four laserdisc players, DA 88 for soundtracks, ADAT for laser entertainment programs, a Betacam deck, two Roboscan moving mirror spotlights, and a few incandescent effects all tied through SPICE automation.

We have six pan projectors (25% overlap, 180 horizontal FOV), six allsky projectors, six dissolve screens, and a slew. Our six channel, 14,000 watt sound system uses eleven speaker enclosures behind the dome and a dual sub bass enclosure embedded in concrete in the floor. When appropriate, our audience can feel a big bang explosion.

A unique feature of the Cybersphere is the way it derives support from the larger Renaissance Center. The Center offers a wide range of courses, and has a variety of professional production facilities. Painting, photography, pottery, music, drama, vocals, sound engineering, video editing, networking, and animation are just a sampling of the courses offered here, and each is supported by first rate facilities. I'm taking advantage of the opportunity to receive training in such an array of valuable fields.

It's also great to have so many experts on staff for production. For instance, we needed a high resolution rotating Moon undergoing phase changes for our opening feature program. One of our 3D animators was able to produce an excellent rendition and handed it to us the next day.

Using instructors as provisional staff gives us the ability to create almost every

facet of a quality program in house. If we need a musical score, we contact the music director; if we need a live performance in a show, we go to the theater director. We have to allow for the fact that each department has its own work to do, but so far we've had no real hang ups in getting folks to help out from time to time.

The staff consists of Kevin Scott, productions director, and Terry Johnson, planetarium operator and assistant producer. Kevin started as a volunteer in Bozeman, Montana with Jim Manning. He has a strong computer background and heads the IPS Technical Committee. Kevin has nine years experience in the planetarium community, including a stint at the Coca Cola Space Center.

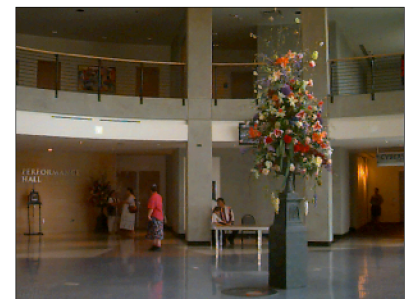
Terry majored in astronomy/astrophysics at Central Arkansas University, did some work on brown dwarfs, and worked as teacher and planetarium educator prior to joining Kevin. Terry and his wife, Geneva, along with their son Garret, just welcomed baby Miles into the family. Congratulations to you all.

We are currently in production for a Millennium show with Hansen Planetarium entitled 20th Century Universe, which will feature a look back at the most important scientific discoveries of the past century and a look ahead at what the next century might bring. We are also working on a seasonal holiday feature and Where in the Universe is Carmen Sandiego for the kids. We have been hard at work ever since we began programming in July with In My Backyard and Journey to Infinity our current features. As a fledgling facility, we are still working out the occasional bug, but we are offering excellent programs. We are very excited about the possibilities here, and look forward to creating first rate astronomy programs in the next few years.

[Kelly's Note: I asked Kevin what unique feature of the Cybersphere no planetarium should be without; he immediately described a wonderful fiber optic lighting system which consists of two fiber optic cables attached around the dome at a two to three foot level. The fiber optics provide a low intensity light (less intrusive on the planetarium experience than coves) that

Featured Planetarium
continued

Top: Renaissance Center lobby entrances to the Performance Hall and the Cybersphere Planetarium
Bottom: Terry Johnson in the star chamber which houses the Digistar II and Omniscan II projectors



Featured Vendor:

Bowen Productions, Indianapolis, Indiana

Tom Webber
 Featured Vendor Editor
 Heritage Planetarium
 Maryville, Tennessee



Bowen Productions is dedicated to developing an advanced level of interesting and entertaining programs, systems, and environments for planetarium, space theater, and museum experiences.

Since 1985, Bowen Productions staff members have advanced new concepts in time code synchronized audio and video for museum exhibitry; planetaria, educational video production; and film. The Bowen staff has served as one of the developers of many new studio production methods and was one of the first sound studios in the nation to incorporate computers, surround sound, and SMPTE time code into audio production.

Bowen Productions has two individuals honored as Fellows of the International Planetarium Society, Jeff Bowen and Tom Hocking. Awards include the 1999 Emmy for Educational Television, the 1997 National 1st Place Vision Production Award, the 1996 ITVA Meritorious Service Award, the 1994 International Video and Film Festival Silver Screen Award, the 1993 CINDY Gold Award, the 1992 CINE Golden Eagle, and the 1991 New York Film Festival Bronze Apple.

We invite you to meet our primary staff.

Jeff Bowen

Jeff has authored a 400 page book in English and Spanish with an interactive CD ROM for Macmillan Computer Publishing entitled *Becoming a Computer Musician*. His book sold over 30,000 copies. He once authored a regular column titled *Sound Advice* in *The Planetarian*, journal of the International Planetarium Society.

Jeff often speaks to student groups, and he conducts sound design workshops at numerous planetarium, video production, and museum conferences. Jeff also is Past President of the International Television Association, Indianapolis Chapter.

Jeff has designed sound or video for over 400 planetarium, film, and video productions, including nationally and internationally acclaimed works. Jeff also was 1994-95 President of the International Television Association, Indianapolis Chapter.

Tom Hocking

A Fellow of the International Planetarium Society, Moderator of Dome L, and Webmaster of the IPS Web site, Tom has been involved in Planetarium Education for nearly all of his adult life. During his 20 year career, Tom has served on the education staffs or as director of planetaria in Michigan, Indiana, North Carolina, Louisiana, and California. Tom has received awards for science education, and continues to be active in several nationally sponsored science education projects. A graduate in Telecommunications from Michigan State University, Tom serves as a liaison to the planetarium and museum communities as well as a trainer for AstroFX and ExhibitFX installations. Tom also is a licensed Barco installation technician.

Craig Back

Graduating from Berklee College of Music distinguished Music Production Engineering program in 1993, Craig spent time as a live sound reinforcement engineer, as an A/V technician at Indiana



Top to bottom: Jeff, Tom, Craig, Sean, and Ed

University School of Medicine, and at Paramount Kings Island as a sound and lighting technician for live performances. He furthered his education by earning a degree in Electrical Engineering Technology from Purdue University, Indianapolis, in 1995.

A member of the Bowen Productions team since August 1996, Craig has been working on system design, installation, and repair of sound and video equipment. Also a recording engineer, he has been involved in several planetarium sound tracks. Craig is a licensed Barco service technician.

Greg Ooley

A graduate of Indiana University, Greg's focus is computer based visual imaging, in both still and motion formats, and development of interactive digital properties for our AstroFX library. His tools are After Effects, Final Effects, Media 100, Photoshop, Painter, Illustrator, 3 D animation packages, and all desktop publishing software. He creates special effects 3 D and 2 D animations, photo edits and retouches, and composites special effects video sequences.

Ed Pritz

California native Ed Pritz joined the staff in 1998 with a focus on 3 D animation and computer graphics. In 1994 he attended the University of Illinois in Champaign Urbana and worked toward a degree in Electrical Engineering. He transferred to Indiana University in Bloomington, Indiana. The University was so impressed with his animation capabilities and communications skills that he spent the last year of his undergraduate degree teaching an advanced level Digital Video/ Animation class. Ed designs our pans, all skies, and 3 D AstroFX animations and instructs clients in the use of AstroFXCreator work stations.

The team is supported by the following:

- Ted Gregorek, B.A., Audio Engineering
- Jason Rowland, B.A., Audio Engineering
- Audio and video installations, sound effect design, equipment repair
- Diana Bowen, Director of Finance, co owner

Our newest innovations are our Bowen developed AstroFX digital video players, AstroFXCreator audio/ video editing systems, and AstroFX animation library. These hard disk based systems are ideal for laserdisc replacement as they offer several obvious advantages over laser disc players. They are easily updatable by you with no more need to master laser discs. The hard disk media is rewriteable and removable, the quality is as good or better than DVD, and you can play material from multiple laserdiscs from one player. Some models also feature a built in audio/ video fader developed by Craig.

See <www.bowenproductions.com/planetarium> for more information.

Many theater upgrades are scheduled for 2000, and most of these include our AstroFX digital video servers and AstroFX Creator audio/ video editing workstations. Development of content for the AstroFX library continues at an aggressive pace.

Bowen Productions will provide free AstroFX and AstroFXCreator users group workshops at MAPS, SEPA, Texas 2000, and GLPA Conferences in the year 2000.

Bowen Productions is sponsoring and providing the North American Distribution of Educational Materials for the International Planetarium Society Slide Subscription Service beginning the year 2000.

Bowen soundtracks, video productions, shows, products and installations are featured at the following planetarium sites: Sharpe Planetarium, Memphis, TN;

Featured Vendor
continued

Top: Moonwitch title slide
Middle: lunar eclipse demo
Bottom: lunar eclipse from space



Opposite page: views of Bowen Productions studio
Left: an all sky effect inside a star theatre
Right: custom video incorporated into a panorama



Small Talk

Elizabeth Wasiluk
Small Talk Editor
Berkeley County Plan-
etarium



I feel fortunate this year that I won two very special awards. One was the 1999 Celebrate Women's Award in Science, given by the West Virginia's Women's Commission in Charleston on June 3, 1999 at a special dinner in the University of Charleston Rotunda. The Rotunda is a large ornate building that overlooks the Kanawa River and the state capital building which has a huge gold dome. There were twelve different categories for awards and almost better than getting the award itself, (a lovely handcrafted wooden box made by a woman in Morgantown, WV with the award information handcarved in the lid) was getting to meet some of the other women who won the award. In the government category was a female pilot; in human service, a missionary to poor Appalachian people; in sports, the first woman trainer for the Glenville State Football Team; in industry, a woman construction worker; and in business, a woman restaurant owner from Berkeley Springs (the only other woman chosen from the Eastern Panhandle). West Virginia's own first lady, Hovah Underwood, won the award for public service and received it just before I got my award. Needless to say, the tv cameras left when she got off of the podium. It was a lovely evening, and I was thrilled to meet the other woman and pick up my award and tell people about my planetarium. An interesting sidelight was that they had seated me next to a woman picking up an award for someone

who couldn't be there.

They thought we'd hit it off because she was interested in astrology and did her own charts. Shows you the need for public awareness. When I filled out the paperwork in February, I never dreamed I'd win the award. I asked my principal at the time if he would sponsor my nomination and his words to me were "Go for it!", so I did.

One interesting sidelight was that no one from my entire county school district attended the event. The Eastern Panhandle of West Virginia is closer to five other state capitols. Part of the reason was that it was the day before Hedgeville High School's graduation and my colleagues couldn't be there. A big problem occurred with the organizing staff of the West Virginia Women's Commission. They needed to find someone to read Mr. Warrenfeltz's nominating speech. The task fell to a woman, I thought I didn't know, Ms. Jean Jacobs, but as it turns out, I have met her.

She taught at Martinsburg High School, one of the three in our county. It's located in the town of Martinsburg, where I live, and is the central of our three high schools. Hedgesville is at the far Northern end of our county.

Anyway, she related that she taught English at Martinsburg High School and that she has children who attend Hedges

Left: Next to Betty (left) is Jeanne Bishop, West-lake (Ohio) Planetarium. Ms. Bishop was a previous Brennan Award winner.

Center: Betty received the '99 Brennan Award from ASP President Frank N. Bash, and ASP Executive Director Robert Havelan in Toronto, Canada last July.

Right: Betty received the '99 Celebrate Women Award in Science in Charleston, West Virginia.



ville High School. One night on her way to attend a parent/ teacher s night at Hedgesville High School, she passed by me, shivering near the planetarium s Celestron 8 while it was pointed at Saturn. I asked her to come look, and she tried to brush me off, saying she wasn t interested and didn t have time. As she related it, I wouldn t let her just walk by. I insisted she look, and as she happily related that she was thrilled and amazed to see Saturn, and she never expected it to be so spectacular. She said it truly allowed her to realize that her petty earthly problems were pretty insignificant in contrast to the scope of the Universe. It goes without saying, sometimes you have to force people to do some astronomy.

The second award was given to me by the Astronomical Society of the Pacific (ASP) at their joint meeting with the American Association of Variable Star Observers (AAVSO) and the Royal Astronomical Society of Canada (RASM), in Toronto, Ontario, Canada. AAVSO are the people who donated the posters and videos to supplement my talk at SEPA 99 in Jacksonville. If you received these, I hope you fired off a thank you to addresses in the last issue.

The Brennan Award is given for outstanding astronomical education at the 9-12 level. It was established by Terry and Cindy Brennan for their deceased father who taught astronomy at the high school level in Mesa, Arizona. Our new athletic director nominated me. I d been nominated before, so I never expected to win.

I received a plaque, and I was officially recognized at our very first faculty senate meeting at Hedgesville High when school resumed. I also received a check for \$250.00 and all expenses paid to the meeting to pick up the award in Toronto. I thought Toronto was a most appropriate place because of its close proximity to my home town of Buffalo, NY and because I spent so much time in Toronto growing up.

The meeting was fabulous, I met so many amateurs on the cutting edge of astronomy such as Paul Boltwood who gets 23rd magnitude on his CCD in downtown Kingston, Ontario. Also I got congratulations from our IPS president, Dale Smith, and the first time Brennan award winner, Gary Samson, of the planetarium in Wauwatosa, Wisconsin with whom I went to Harvard for Project SPICA in 1989 (SPICA stands for Support Program for

Instructional Competency in Astronomy.) and another past Brennan winner, Jeanne Bishop, from Westlake Planetarium in Westlake, Ohio, who serves on the ASP board of directors.

One night, Dale, Jeanne, and I and other planetarium people from Oregon, Chile, and Argentina and a couple of amateur astronomers from France and San Francisco descended on a Chinese restaurant on Spadina Avenue and toasted to the fellowship of amateurs and professionals.

The meeting was like a who s who in astronomy education today: David Levy, Harry Shipman, Sally Baliunas, Rocky Kalb, Alexei Filippenko, and Geoff Marcy were some of the big names present.

The best part was having breakfast each morning with some of the AAVSO die hard observers who had done eight to twelve observations the night before, with binoculars in the light polluted skies of downtown Toronto.

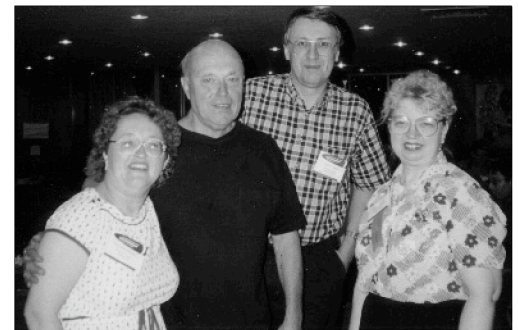
One sad note was hearing a planetarium talk by Ian McGregor from the Royal Ontario Museum and the details of that place s closing. Often our travels across the University of Toronto campus led us past the now empty McLaughlin Planetarium dome. Their facility closed and was replaced by a Starlab. Hats off to Ian for single handedly resurrecting the astronomy program at the Royal Ontario Museum. He opted to remain with the Starlab, because, if he didn t, there would be no astronomy program at the ROM. Not everyone could survive such a downgrade; he s truly an unsung hero of the planetarium field.

Why am I telling you about these awards? With hopes that you will try to go for some yourself. Sure it takes time to fill out all the lengthy paperwork, and you do have plenty to do already. It does, however, bring prestige to your dome and credibility to your program, and it offers some free publicity. So if you do win, don t forget to take pictures and write press releases.

And if someone in a humble dome like mine can win not one but two of them, then all of you in much snazzier places should have a much easier time. In the words of my former principal, Mr. Warrenfeltz,

Small Talk
continued

Left to right: Betty, Russ Harding, current IPS President Dale Smith, and Jeanne Bishop met at the ASP conference in Toronto, Canada.



Digital Cosmos

Magic School Bus Explores the Solar Sys-



Erich Landstrom
Digital Cosmos Editor
South Florida
Science Museum
West Palm Beach, Florida

Overview

Go on an interplanetary adventure on the magic school bus. Find clues as you travel from planet to planet, and discover Ms. Frizzle's hiding place in the solar system.

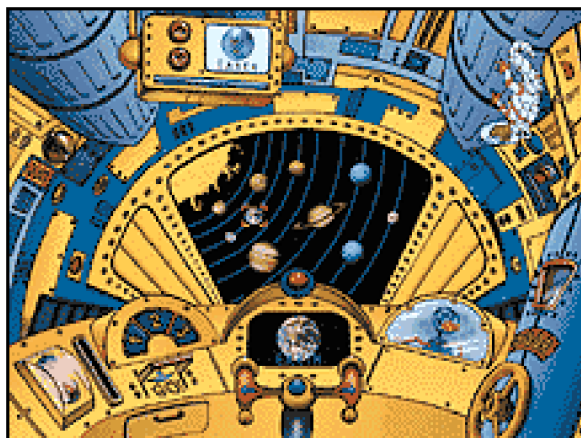
Features

- Real NASA videos
- Online help system
- Three dimensional space travel
- Ten multimedia class reports
- Interactive science experiments

Cost

- Suggested retail price: \$19.95

You're in the driver's seat for a magical field trip through the solar system.



PC requirements

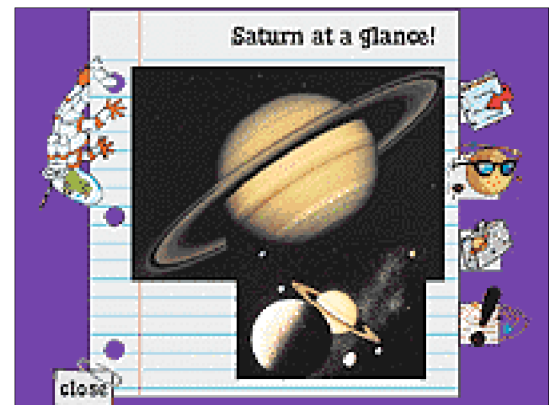
- 486SX or higher processor, 25 MHz or faster, 33 MHz recommended
- 4 MB RAM, 8 MB recommended
- 5 MB available hard disk space
- double speed CD ROM drive; 8 bit sound card (16 bit suggested)
- SVGA display with 8 bit color
- DOS 5.0 or later; Windows 3.1 or later
- Mouse; headphones or speakers

If you thought studying about the planets was fun, imagine how exciting it would be to take a field trip on a magic school bus to all of the planets in our solar system. You can go on a thrilling journey with Ms. Frizzle and her class.

When you first start The Magic School Bus Explores the Solar System, the program introduces all the major characters: the teacher, Ms. Frizzle; the children of her class; and the helpful assistant Liz, the lizard. Liz serves as the program's help system. If you aren't sure what you're supposed to do next, just click on Liz, and she'll tell you how to proceed.

After a brief introduction, you go to the classroom where you can click on different objects around the room. There are reports on the wall about each of the planets in our solar system, our Moon, and the Sun. You can click on the report, and it will give you important facts about that planet that

Multimedia reports on each planet are available both in your classroom and on the school bus during your adventure.



will help you later in the game.

There are many other objects that you can click on like the students themselves, desk drawers, books, a fish bowl, and a telescope. The result of clicking on a certain drawer, for example, is that a guitar plays a song for you. These surprises have nothing to do with the object of the game, but they keep young explorers interested in using the program. If you would like to quit at any time during the game, you can just go to the classroom bell. It will ring and ask you if you want to quit.

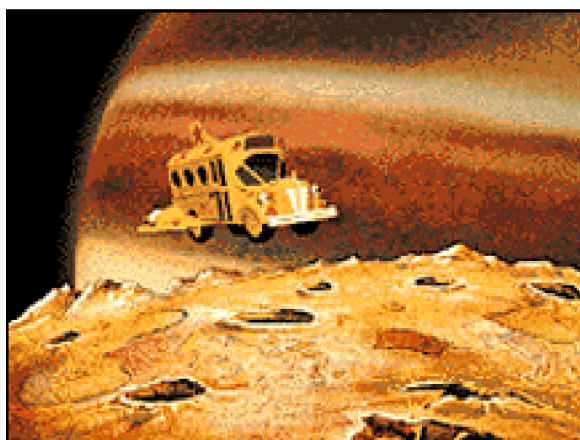
When you are through exploring the classroom, just point and click on the school bus, and you will start the real adventure. After the kids pile onto the bus, it magically transforms into a space ship right before your eyes.

You get to sit in the driver's seat and decide where you would like to travel first. While the bus is in space, it hits something like an asteroid, and Ms. Frizzle becomes lost on one of the planets. Or is she hiding? The point of the game is to find Ms. Frizzle.

When you arrive at your first destination, you can get out of the bus and do some exploring. If you forget what you read at school, you can review the reports again on the bus to refresh your memory. There is a game that you can play at each planet or moon, and if you win, you receive a coin. You can exchange each coin you acquire for one clue about where Ms. Frizzle is. It takes three clues to find her location.

Once you receive all of the clues, you travel to the planet where you think Ms. Frizzle is. When you arrive at the planet, you push a red button on the left side of

The magic school bus sprouts wings and fins for its voyage of discovery and recovery through the solar system.



the screen to see if you are right. If you are correct, then you return to the school where you can start over and play again.

Magic School Bus Explores the Solar System is a lot of fun. It's geared towards younger children like kindergarten through fourth grade. It is excellent, educational, and easy to use. I highly recommend this program for any children wanting to learn about the solar system.

[To find out where to purchase this software in our location, we looked up Scholastic's Web site for the Magic School Bus CD ROM at the URL <<http://www.scholastic.com/magicschoolbus/cdrom/index.htm>>. There we found a toll free number to call

to find retail stores in our area that might carry MSB Explores the Solar System. We did call that number, and there were none.

We found, however, that it's possible to order the CD ROM online if you are extremely patient and don't mind waiting forever for the graphics on the page to display.

Go to the Microsoft Kids Web page at <<http://www.microsoft.com/kids/ordernow.htm>> and click on the order now button near the top of the screen. You must have cookies turned on in your browser to use the Microsoft Web site to order the CD ROM.

You need a Microsoft Online ID to process the order. If you don't have one, you must request one before you can check out. Enter your Online ID and password to complete the order. If you forget your password, ask to have it e-mailed to you. I never was able to complete this transaction. For some reason, Microsoft never did recognize

Magic School Bus Explores the Solar System CD ROM



Reviewer
Rebecca Ann Finley
Sophomore Intern
Craigmont Planetarium
Memphis, Tennessee

Book Review

Celestial Harvest

Patrick McQuillen
Book Review Editor
Alexander Brest
Planetarium
Jacksonville, Florida



Anyone who has counted himself or herself among the astronomical intelligentsia in the last 20-25 years should recognize the author of this booklet. James Mullaney is the coauthor with Wallace McCall of the very popular *The Finest Deep Sky Objects*. This booklet was first published in 1966 by Sky Publishing and had subsequent reprintings in 1972 and 1978. It lists 105 objects the authors had selected for public viewing at Allegheny Observatory in Pittsburgh, PA, while they were on the observatory staff and conducting tours. This booklet

has found its way into many observatories, including Mt. Palomar, and into the hands of such famous people as Johnny Carson and the late John Denver.

Jim has served on the editorial staffs of *Sky & Telescope* and *Astronomy* magazines, and has penned over 500 articles and three books. He was a contributor to Carl Sagan's *Cosmos* series, and has logged over 20,000 hours of observing. He is a self-described celestial evangelist who has served as Curator at Pittsburgh's Buhl Planetarium and Director of the DuPont Planetarium. In these capacities he has promoted the inclusion of public observing sessions as part of all planetarium presentations. After all, what can be better than looking at the real sky after you've seen a presentation under the artificial sky.

Celestial Harvest is a self-published booklet that is best described by the subtitle, *300 Plus Showpieces of the Heavens for Telescope Viewing & Contemplation*. The 342 objects—if I counted them correctly—cover the entire gamut of things that the public wants to see and should see. The objects listed are visible in telescopes from 2-14" aperture. There are stars of all colors, double, triple, and quadruple

stars, galaxies, clusters, nebulae, and some other unusual things.

It's great if your projector shows Antares as a red star or Capella as a golden yellow. Every one I've seen has been a bit exaggerated, and the public scoffs at it; doesn't believe it. There is nothing that compares with hearing a non-astronomer exclaim, "Hey!!! It really is red!" when showing him Antares, or having her see the actual blue and orange of the pair of stars that comprise Albireo.

Granted, some objects don't compare to their photos, but there is still something awe-inspiring about seeing the Pleiades, or looking at M31 and knowing that you are looking through 2 million plus light years of space and time. All of the popular deep sky objects are listed.

The booklet is spiral bound with clear plastic front and back protectors. There are front and back card stock covers inside the plastic and the remainder of the book is printed on heavy paper. It feels quite durable and should last for many years of regular use.

Following the Introduction is a brief description of Solar System objects followed by notes and definitions of the columns in the list. The objects are listed by constellation, followed by the Right Ascension and Declination (Epoch 2000.0), the type of object (stars, asterisms, doubles/multiples, galaxies, etc.), the magnitude and spectral type, size or separation for multiple stars, and the popular or common name(s) and remarks.

As I already stated, the objects are listed in alphabetical order by constellation. It might be easier for unseasoned observers if the objects were listed by their Right Ascension or by season or month in which they cross the meridian. The position information makes it easy to find the object if the telescope has electronic setting circles. (This is one of the few times I feel that it is acceptable to use these devices, and especially for novice planetarium assistants who might not be familiar with the night sky.)

There are 12 classifications of type making it easy to find a variety of objects to observe. The magnitude and size columns

Reviewed by Dan Fundo
Secretary-Treasurer,
Memphis Astronomical
Society
Memphis, Tennessee

Celestial Harvest
self-published by
James Mullaney
P.O. Box 1146
Exton, PA 19341
\$33.00 + 5.00 shipping
and handling

will let you pick an object within the range of your instrument. The remarks column takes up half the width of the page (It's printed in landscape mode.) and can run from two lines to more than a page.

Jim doesn't give just his impressions, but adds comments by other famous observers although credits are not listed for those. The list is included in the description section at the start. An entire program could be made up from just these remarks. For many objects there are extensive historical, scientific, and mythological data provided as well as the distance in light years.

The last four pages of the book are unexpected, but appropriate. The title, *Some Thoughts for Contemplation* says it all. There are 64 quotes from a broad cross section of authors, poets, scientists, famous people, and even an advertisement or two. You can read the thoughts of John Dobson, or Richard Berry, Ralph Waldo Emerson or Longfellow, Abraham Lincoln or Albert Einstein, the 200 inch dedication or an old Unitron ad. It provides a fitting ending for the book and a source for many quotes to end planetarium programs.

I have known Jim for over 40 years. He was my mentor when I got started in astronomy. He taught me most of what I know about observing technique, and showed me how to grind my first mirror. He has always been an advocate of observing the wonders of the night sky.

The book is available directly from James Mullaney, P.O. Box 1146, Exton,

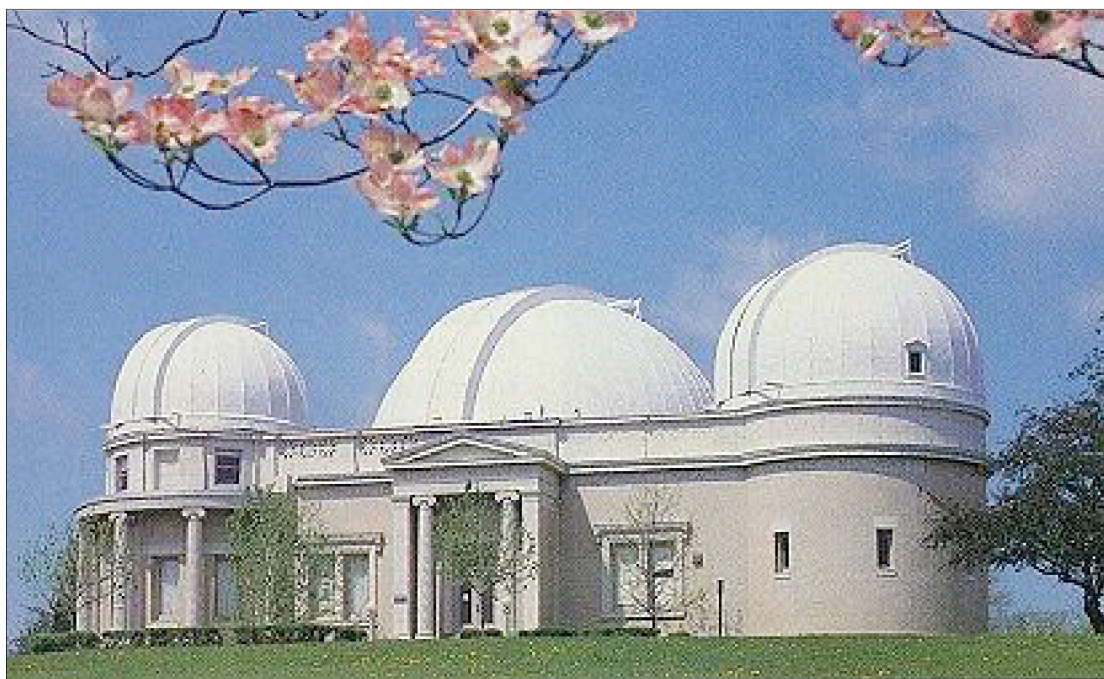
PA 19341. The cost is \$33.00 plus \$5.00 shipping and handling. E mail him at <jimullaneysm@msn.com>

[My sincere thanks to Dan Fundo. This is the second time I've called on him to submit a review for publication in *Southern Skies*. His first review was *Observer* for Macintosh computers.]

Celestial Harvest
continued



Carnegie Science Center's
Buhl Planetarium



Allegheny Observatory on
the campus of the University
of Pittsburgh

News from SEPA States

Alexander Brest Planetarium, Jacksonville

Patrick McQuillen reports: This fall the Alexander Brest Planetarium is running Light Years from Andromeda as our public program. It has gotten good response from the public in the opening days.

We are also, at the time of this writing, gearing up for school programs. We have several new programs this year. As luck would have it, those are the first ones on our schedule in the first week of school programs. None of the shows that are already installed are scheduled for a few weeks! But hey, it makes life fun.

A Zeiss technician was in for a few days to look over our planetarium projector in July. We are waiting patiently for word from Zeiss as to what repairs they can effect for us. If you attended the SEPA conference this summer you know that our projector has a few slight problems. We need things that make us go (à la Star Trek). It will be enjoyable when we can set procession back to the current date and actually have the North Star not move.

We are also starting a new series of Saturday morning workshops this fall for elementary school children. Topics include The Solar System, Toys in Space, and Rockets. I will let you know how they fare.

Bishop Planetarium, Bradenton

George Fleenor reports: We were glad to see summer come to an end. Like most Planetarians, you can only watch a specific star show so many times! Don't get me wrong, they were great shows, we just needed a change of dome scenery. After Labor Day, each year, the South Florida Museum & Bishop Planetarium close for two weeks to do annual maintenance. This year was no different.

Upon close scrutiny of our dome, we noticed it was beginning to grow hair! Dust was penetrating the perforations and was gently hanging into the theater. Normally we used to use small vacuums attached to staff members and clean the dome ourselves. Since the dome was built in 1966 some other problems, recently deteriorating, prohibited us from doing

that. We contracted a licensed company to come in and vacuum our dome after they had wrapped our theater in plastic. It took them 3 days and the dome looks great once again. It is amazing how much dust can cut down on the reflection of a star lamp and other projectors.

While attending the conference in Jacksonville and seeing how great AllSkys look, I decided we must have a set. Like many planetariums we have to worry about little things like... money. I looked around and realized that we had enough spare projectors, lenses, and stackers to account for most of the needed equipment. The only thing we had to buy was the automation equipment, one lens, and two Chief stackers. The purchase of the needed parts was just under \$1000. Thanks to Jon, Marsha, and Drew at ECCS, the installation went smoothly. We purchased our alignment slides and 4 sets of images from LM Images. Laura Misajet has some really nice AllSkys and pans to choose from. We chose the clouds, Classical Greek star map, a compass, and the Sistine Chapel for our first group. The museum staff and public audiences have loved them. The Sistine images were for our Board of Directors to give them an idea of what we can do. They still don't know how we painted it! <Grin>

Currently we are running Phil Groce's Firefall. Firefall is a program Phil produced years ago on the topic of meteors and meteor showers. We felt that it was a fitting show to run for the upcoming Leonid meteor shower. I had planned on writing and producing an updated, more current show, but we are still short two staff members. Hopefully in January we will be able to fill those much needed positions. Our matinee laser show continues to be Space Rock that will run until December. Starting December 1st the matinee show will feature Holiday in Lights, our seasonal holiday show. This program will run until the New Year. Also starting December 1st will be the star shows Tis the Season and Star of Wonder. Both of these shows will run until January 1st. Our current Saturday morning family star show is The Starry Night Sky and The Moon Witch for the month of October. The Starry Night Sky is a brief

George Fleenor
Bishop Planetarium
Bradenton, Florida

constellation tour we added to Bowen's Moon Witch star show. The total length of the combined programs runs around 30 minutes. In November we will be running Rusty Rocket's Last Blast followed by The Alien Who Stole Christmas in December.

Our observatory is about to receive its encoders for the telescope mount. When completed, the computer will follow the telescope across the sky. This should help in locating deep sky objects more quickly. Thanks to the Bradenton Herald newspaper, we now have a new 486 computer for the project. Yes, that's right, I said 486! It seems that Pentium processors do not like hot environments, so we had to scale back to a slower machine. This should not be a problem with The Sky software that we will be using. Temperatures in an observatory, located on top of a building in Florida, can get pretty hot. The newspaper donated three really nice computers for us to use however we choose. We always welcome gifts people are willing to distribute our way. See us on the Web at <www.sfmnp.org>.

Brevard Community College, Cocoa

Mark Howard reports: This has certainly been a hectic year for us here at the BCC Planetarium. Ian Griffin has recently taken a position elsewhere, and Mark Howard has been named interim planetarium director. Our operation has continued to run very smoothly during this transition period, and the future is bright and very busy.

On July 30th, we opened an all new laser production of Pink Floyd's The Wall. Our newest production opens October 1 when we will present Hubble Vision. It remains to be seen whether the upcoming Hubble servicing mission will launch in time for us to ride the wave of public interest which is expected to be high, especially locally here on the Space Coast.

We are presently gearing up for our holiday schedule, beginning with our annual Fright Night laser show on October 15. This popular show will run through Halloween weekend. Coming in mid November, we will be presenting our in house productions of The Alien Who Stole Christmas and A Fresh Aire Christmas laser show featuring the music of Mannheim Steamroller. We also will present Strassenburgh's The Story of the Star.

We are planning for an early Spring opening of Planet Safari a new planet

show written and produced in house by renowned space artist Joe Tucciarone. Joe is taking a fresh approach to the planets by developing a laser animated alien cartoon character. This wacky alien guide will take audiences on a fast paced tour through the solar system. We expect this to be a visually entertaining show and educational too!

In November, we will be hosting the IPDC for an evening reception. Dave Menke will bring this distinguished group to our facility for a brief tour and dinner and we are looking forward to being a part of this event.

Buehler Planetarium & Science Center,
Fort Lauderdale

Dave Menke reports: Broward Community College's Buehler Planetarium & Science Center has been preparing for the 13th Triennial International Planetarium Directors Congress conference, November 2 - 9, 1999. Directors from all over the world shall be in attendance: 40 from North America (including Mexico & Canada), and the remainder from South America, Spain, Germany, Austria, Italy, Russia, Hungary, Czech Republic, Ireland, Scandinavia, the Middle East, India, China, Japan, Australia, South Africa, and other places. Twenty seven languages from 24 nations will be represented. The previous IPDC Conferences have been in Vienna Prague Budapest (1996); Madrid Pamplona (1993); Washington Baltimore Philadelphia New York (1990); Moscow (1987); Stuttgart Bochum Berlin (1984). The next IPDC, in 2002, will be in either Mannheim or Calcutta. IPDC is the oldest Planetarium organization (1959) and is not affiliated with IPS or SEPA.

In addition to our regular schedule of public, school, and college shows, we have installed new shows for IPDC XIII: Secrets of Mars 2061, produced by the Zeiss Planetarium, Jena, Germany, and by the Budapest Planetarium; Lunar Odyssey, by Nashville's Sudekum Planetarium; The Explorers Project by Hawaii's Bishop Planetarium, and Mystery of the Missing Seasons, by Bowen Productions. Demonstrations by Mega Systems, AVI's OmniScan, LM Images, and other companies shall be done. The conference is underwritten by grants from the Emil Buehler Trust, Carl Zeiss Optics, the BCC Foundation, Minolta, Mega Systems, Evans & Sutherland, AudioVisual Imagineering, Bowen Produc

George Fleenor
Bishop Planetarium
Bradenton, Florida

tions, LM Images, and other companies in the field.

The Buehler Planetarium changes weekend public shows once a month, and changes the children's weekend shows about every three-four months. During the Christmas holidays, theme-oriented shows are presented. In addition, astronomy-related special lectures are presented once a month.

Finally, the Emil Buehler Observatory will break ground in autumn 1999 with completion scheduled for September 2000. A 16-inch reflector will be installed in the new observatory, to be built near the Planetarium building.

Buzz Aldrin Planetarium, West Palm Beach

Erich Landstrom reports: The looming Y2K problem has the Department of Astronomy Education in the throes of great excitement. The problem? With only one month left to go in our fiscal year, we have had only 22,251 people come to see public planetarium presentations on either astronomy or laser light concert. The previous best attendance recorded was 19,832 people in 1996-1997. We hope to crack 23,000 people before September 30th. In order to achieve this, the Science Museum is again hosting Free Frydays. During September and October, we are charging no general admission from 5 PM

10 PM. The first three Fridays only have brought in over 1,555 people. With more people in the museum with more money in their pockets, the result has been enough tickets purchased to sell out planetarium shows and laser light concerts in what had previously been slow month. I am confident we can break 25,000 before the end. (If I factored in school groups, we had well over 25,000 kids many months ago, but the thought of counting all those middle graders makes my head ache.)

Other bright spots include the success of the museum's exhibit Not of This World: A Journey to the Planets observing the 30th anniversary of Apollo 11. Of course, to avoid confusion with the 30th anniversary of Apollo 12, we have to take the exhibit down in November. None of the participants of the IPDC will get to see the 38-foot model of the Saturn V rocket, the eight-foot models of the lunar module Eagle and command modules Columbia, an Apollo era space suit, and a lunar sample rock. The journey to the planets was expanded into the planetarium with

an in-house overview of the history of rocketry and moon exploration, craters and meteorites, and manned and unmanned missions in a program titled Ready? Set? All Systems Go!

Ready? Set? All Systems Go! will run until October 30th. For the next two days all we'll run are Laser Lunacy light shows during our Halloween Spooky Science Wacky Bones Bash weekend. On November 1st we will start to run Bishop Planetarium's (editor's note: Bishop South) The Explorers to coincide with our Ocean Encounters exhibit. Dozens of spectacular marine aquariums on display should bring in nautically minded folk who are interested in celestial navigation. And speaking of animals, on Saturday, November 13th, the first veterinarian in outer space visits the Aldrin Planetarium. Dr. Martin Fettman, was a payload specialist on the Space Shuttle Columbia during the Spacelab Life Sciences 2 mission in October 1993. Dr. Fettman will talk to students about his experiences and sign autographs.

About mid-November, we hope to run Hubble Vision to coincide with the servicing mission on the space telescope. But as the dates for this mission have already changed twice, we may keep running Explorers until December 3rd when we premiere Destination: Mars from Spitz to coincide with the Mars Polar Lander touchdown. Usually, we would run Star of Wonder from Bishop/VLM from early December through mid-January, but I think people are getting tired of the same old SOB story.

We have confirmed with Dr. Buzz Aldrin's office to have our namesake as a guest of honor via speaker phone at the Science Museum during the total lunar eclipse on Thursday, January 20, 2000, which coincidentally is the same date with Dr. Buzz Aldrin's 70th birthday. (Man! I'm just full of coincidence!) That way, even if the eclipse is clouded out, we still have a backup attraction. But if all goes well, at the moment museum visitors blow out the candles on the cake, the Earth will put out the lights at Tranquility Base. Two weeks after the eclipse, we open our winter 2000 exhibit Star Trek: Federation Science to museum members, and on Saturday the exhibit opens to the general public. Thus, along with a special midnight showing of Dark Side of the Moon, I may also preview my collaboration with Jon Bell on the 20th of January. Boldly Go examines the sci

ence of Star Trek in a semi satirical show. Will all these shows, I am hoping next fiscal year presents us with a Y3K problem. Calusa Nature Center and Planetarium, Fort Myers

Jill Evans reports: After a busy summer, the staff is taking the next two months to get the planetarium into better shape. Painting and cleaning are two priorities!

Laser shows are doing extremely well and we are getting good support from local newspapers and radio stations to advertise even more. We will be showing Firefall next month to get the public in the mood for the Leonids and we are doing a special showing and sky watching on the peak night. Our Executive Director is busy raising money so we can purchase a new automation system. We are all looking forward to that!

Hallstrom Planetarium, Fort Pierce

Jon Bell reports: a new season of star shows is under way at the Hallstrom Planetarium. The first presentation is It's About Time, which will be a live, multimedia enhanced talk about time keeping, the new Millennium, and all that timely stuff.

Star of Wonder will be returning in December. Jon wrote this show back in 1989, and is now getting ready for a fresh rewrite, which may debut, sometime in the next year or two. Another project that he is working on involves collaboration with West Palm Beach's Erich Landstrom. Boldly Go! will be shown in both the Hallstrom Planetarium and the Aldrin Planetarium this winter. The program will discuss the science of Star Trek.

Museum of Arts & Sciences Planetarium
Daytona Beach

Roger Hoeffler reports: they are currently featuring Lunar Odyssey as their public show. Installation of The Explorers is un-

derway with a planned opening in October. The program schedule for Volusia County Schools is filling rapidly, and is expected to fill completely as it did last year.

SEPA Planetarian Wanna Be, Davie

Marc Rouleau reports: Greetings, fellow SEPA planetarians. It was a great pleasure to meet some of you at the recent conference in Jacksonville. Thanks to Pat and his crew for such a great week. At the conference I heard a lot of new ideas, and I met a lot of really great people there.

As I have finished my internship at the Buehler Planetarium and now still waiting on some applications I have active (I may actually end up in another region for next year's conferences), I look forward to the time I can attend another SEPA conference and renew some friendships I made this year.

A few weeks ago I heard from Laurent Pellerin at Seminole Community College in Sanford, FL. He was planning the October FlorPlan conference and he wanted to know if I could make a presentation. I thought about it and remembered some Physics Carols I had gotten from my high school physics teacher. Christmas songs with physics words instead. I planned to bring my guitar to the FlorPlan to sing the Physics Carols.

After deliberating further I decided that Physics Carols might not fit well with our planetarium profession. I'm rewriting those words to fit a more planetarium/ astronomy slant. At the time of the writing of this article I have reworked a few songs, and a few are still in progress. Elsewhere I give a couple of the songs I have put together. I figure fellow planetarians may use some of these songs in parts of their presentations during the winter solstice season, or perhaps during other times of the year. These songs should be considered works in progress. I might tweak them fur-

Georgia Southern University Planetarium
Statesboro

The Georgia Association of Planetariums (GAP) met on September 24, 1999. A huge thank you to host Becky Lowder for all of her hard work and preparations. She even baked homemade muffins. Planetarians from Statesboro, Atlanta, Columbus, Lilburn, Oatland Island, Marietta, and Macon were in attendance, as well as from Cocoa and West Palm Beach, Florida and

Chattanooga, Tennessee. The day began with refreshments and a sharing session of news at each of the planetariums. Jim Greenhouse showed off the GAP Web site <www.masmacon.com/gap.htm> with its links to other Georgia planetarium Web sites and a place for planetarium news and events. Bobby Thompson gave a demonstration about light pollution and shielded vs. unshielded lighting. Thanks to his efforts all Tennessee State Parks use only shielded lighting. The group then

News from SEPA States
continued

George Fleenor
Bishop Planetarium
Bradenton, Florida

J. Greenhouse & C. Helper
Mark Smith Planetarium
Macon, Georgia

headed to the GSU Wildlife Center for a live bird of prey show and tour and to lunch at the historic Beaver House Restaurant. NASA Educator Jim Gerard gave a Lunar Sample and Meteorite Briefing Workshop, and participants were given certificates enabling them to request Moon rocks and meteorites from NASA. The day ended with door prizes and Bishop Planetarium's The Explorers, which is currently GSUP's public show.

Jim Greenhouse
& Carole Helper
Mark Smith Planetarium
Macon, Georgia

On October 1, Dr. Ben Zellner presented The Third Millennium? to the public, followed by a star show of the current night sky and telescope viewing.

Walker County Science Center, Chickamauga

Bobby Thompson had good news regarding their attempts to get the Alexander Brest Planetarium's old dome from Jacksonville. It took Vicker's Steel Erectors 2.5 days to remove it at a cost of \$9000. The company did a good job of labeling parts, so they should get the dome back up with no problem. The transport was in three semi's at \$320. Still, the cost was well below 1/4 that of a new one. The dome and seats are now at the Science Center and in good shape. They are waiting on the architect to finish the building specs. The hope is to move in the new building by spring and be up and running in the fall. The star projector will be back under a 40 foot dome as it was before it was moved from Macon. This will be the only 40 foot Observadome in the U.S. Unfortunately, the Spitz console got wet while in storage, and the severity of the water damage has yet to be determined.

Fernbank Science Center, Atlanta

David Dundee says that their 36 inch telescope is now automated. They hope to

become part of the Telescopes in Education Network. They also upgraded their Zeiss V to take a new lamp that is manufactured locally. Thanks to a two year, million dollar grant from NASA, on October 2 the center began SEMAA: Science, Engineering, Mathematics, and Aeronautics Academy. Also on October 2, the new children's show Cherokee Moon premiered. They are also showing Millennium Countdown.

Oatland Island Education Center
Savannah

Max McKelvey reported that the planetarium projector from the former Savannah Science Museum was given to the Ogeechee Canal Society. They are now looking for a planetarium site and for funds. Oatland Island Education Center is now open to groups of school children, but it is still closed to the general public until the DDT dump is cleaned up. The center offers programs with a 16 inch Newtonian, an 8 inch scope in a small observatory, and a Starlab.

Perimeter College, Atlanta

Jim Guinn reported that the college is purchasing a Starlab. He is now also an adjunct professor at Agnes Scott College, where they have just signed a contract for a new Zeiss ZKP3.

Marietta

Brooke Skelton recently moved to Georgia. She has her Ph.D. in astronomy and is looking for a job in a science center.

Mark Smith Planetarium, Macon

Carole and Jim are still recovering from laser shows. They will soon upgrade their ECCS automation from an Apple IIe to a PC, and they are getting a new zoom/slew projector. They will start Sudekum's

Freeport McMoran Planetarium and Observatory, Kenner

Since its opening, Space Station Kenner has been a big success. Even though late summer tends to be our slowest time of the year, we are still seeing hundreds of people a week through the museum. The facility opened this past July 20, and due to its nature, changes are ongoing. If anyone in SEPA is in our location, please feel free to stop in for a view.

The City of Kenner has now received approximately \$2.5 million from NASA grants

and private donations for the construction of the 50 foot planetarium project. I am hoping that things get moving in January and will keep everyone posted.

As I reported in the last edition, we have started a meteorite collection. We have acquired a 72 pound Gibeon and other specimens are on the way. There seems to be a trend with Louisiana planetariums in putting together meteorite displays. If anyone from other facilities has any pointers on these types of displays, please pass the information on to me.

Michael Sandras
Freeport-McMoran Planetarium
Kenner, Louisiana

In the planetarium, we are currently showing HPS's *The Sky Tonight*, *Autumn Stars*, and our own productions of *Our Neighbors in Space* and *The Quest for Space*. The planetarium is also putting together workshops in conjunction with the Lunar and Planetary Institute.

Louisiana Nature and Science Center Planetarium, New Orleans

Mark Trotter and Dennis Cowles are as busy as ever. They offer regular weekend shows for the public. The current lineup includes *The Sky Tonight*, *The Family Laser Show*, and *Cosmos*. They continue to offer monthly topical programs on astronomy and the physical sciences. Recent topics have included the Perseid meteor shower, Meteorites, and a program on SETI.

They also offer weekend laser shows on Friday and Saturday nights. Current offerings include *Metallica*, *Pink Floyd's The Dark Side of the Moon*, *Led Zeppelin*, *The Alternative Show*, *Laser Thrash*, *Rush 2112*, *The Best of Pink Floyd*, and *Pink Floyd's The Wall*. Mark is busy working on a new laser show, which will have premiered by the time you read this.

John Hare of Ash Enterprises paid a visit in September to work on the aging Spitz A4 projector. The stars have never looked better, and the projector has never been so reliable. Thanks John!

Mark purchased a new clock for the LNSC planetarium's front door, but this isn't just any clock. The new clock synchronizes itself with the cesium clock at the National Institute of Standards and Technology in Ft. Collins, Colorado.

Mark hopes that the new clock will eliminate problems with visitors who claim that they have missed planetarium shows because they started too early. The clock is prominently displayed by the door, as there is a sign that explains why the time on the clock is correct.

Dennis continues to do programs at a local library every other month. The most recent was a program on the search for life in the solar system. The Nature Center just added a Gibeon slice to its meteorite collection, and Mark and Dennis now offer a program on meteorites to school groups.

St. Charles Parish Library Planetarium, Luling

Here at the Saint Charles Parish Library & Planetarium, we await the approval of a new annual budget. A budget which

includes (perish the thought) upgrading our planetarium projector. Well not really replacing, but fixing up and adding automation to an old Viewlex Apollo installed in 1977. Possibly by the next issue I will be reporting of a newly painted dome and dreams of computers controlling video projectors. Maybe the years of twiddling knobs and pushing buttons like mad during a show will finally come to an end here in south Louisiana. We can only hope for the best.

Presently our schedule includes *The People* and *Autumn Skies*. We will be using *Once In a Blue Moon* from the Minneapolis Planetarium for our Saturday kids show.

Lafayette Natural History Museum Planetarium, Lafayette

The planetarium has held a series of workshops and hosted a field trip to Space Center Houston for Space Frontier Week that coincided with the 30th Anniversary of the Apollo 11 flight. In addition, the planetarium was involved in a 30th Anniversary Apollo 11 show on a local cable television broadcast.

The facility was also involved in National Aviation Week held in August. During this week, rocket launching and a public solar viewing session were held in which 450 people attended.

Currently the planetarium is showing the production *Light Years from Andromeda*.

Plans are nearly finished for the new museum building.

News from SEPA States
continued

Michael Sandras
Freeport-McMoran Planetarium
Kenner, Louisiana

THE DEADLINE FOR THE NEXT ISSUE OF SOUTHERN SKIES IS JANUARY 1. SEND SUBMISSIONS ON A 3.5 DISK OR VIA EMAIL ATTACHED FILE TO DTEAGUE2@MIDSOUTH.RR.COM OR TEAGUED1@TEN.NASH.TEN.K12.TN.US

Patsy Wilson
Woodson Planetarium
Salisbury, North Carolina

Discovery Place, Charlotte

Coming soon to the Omnimax Theater, Olympic Glory (previewed by SEPA 99 conference participants in St. Augustine) and Dolphins, an underwater adventure to study communication and behavior of these wonderful animals and featuring music by Sting. Picabo Street, a 1998 gold medalist in the Winter Olympic Games will be on hand October 8th for the premier showing of Olympic Glory.

Young Astronaut Training is a component of the Outreach program. It explores basic skills necessary for successful space missions, including communication (Tinker Toy Communication), coordination and teamwork (Radioactive Clean up). The program participants also experience the launch of model rockets.

SciWorks, Winston Salem

They are currently running Stardust, a program which gives information about the importance of NASA's Stardust Mission; Rusty Rocket's Last Blast, and Lords of the Night, which discusses the ancient Mexican sky as seen by the Mayan and Aztec cultures.

Morehead Planetarium, Chapel Hill

The Morehead planetarium welcomes a new business manager, Sara Malone, who comes with a background in accounting and finance. Our current school brochure has a color cover for the first time in several years thanks to the generous underwriting of MINDSPRING Internet Services.

New Science Curriculum Standards in North Carolina limits astronomy and

space science topics to 3rd and 6th grade. In answer to that mandate, the Morehead Planetarium has created a new show addressing the Earth Moon Sun system called Earth, Moon and Sun. It features a trickster character, Coyote, who is borrowed from Eagle and Coyote Steal the Sun, a Zuni Native American folk tale.

Children Giving to Children is a special event Morehead will co sponsor with the NC Children's Hospital and local storytellers. This one hour event for elementary age children will feature live storytelling under the stars, panoramas, all skies, and special effects of the star theater. Admission to the event is by bringing an item from the NCCH's Wish List of needs for children receiving care at the hospital.

This fall the staff has begun production of Search for the Edge of the Universe, scheduled to open January, 2000. The cosmology oriented show is based on a script written by Steve Morgan while in Columbia.

Woodson Planetarium, Salisbury

A full school schedule of shows for grades K-6 is now in progress and we are looking ahead to the holidays when we will begin the annual run of the ever popular shows, The Alien Who Stole Christmas and Star of Wonder.

Plans are underway to implement a regular set of public shows separate from those curriculum based offerings that we present to school audiences. These public shows will be used by special request from community groups as well as on the regular Sunday afternoon openings which are held four times during the school year.

M.T. Brachbill Planetarium Harrisonburg

Joe Mast sent me word about an interesting program he is designing for the new year called Signs of the Millennium. This Live program highlights the interesting events in the astronomical world for 1999

2000 such as: two blue moons, Pluto becoming the most distant planet again, the Venus Jupiter conjunction, an eclipse of the Sun, the transit of Mercury, the Leonid meteor shower, and the configuration of the planets in April, 2000.

Virginia Living Museum Planetarium Newport News

In the Autumn The Great Dino Caper: A Mesozoic Murder Mystery was replaced

with a timely in house production about meteors, meteor showers (especially the Leonids), asteroids, and comets titled The Night the Stars Fell. This program also talks about the power of impacts on the Earth and other objects. In November we will install our annual favorite Star of Wonder. Will someone please write a new version of this? Hint, hint.

Plans for building a new theater and museum are still being formulated. Fund raising continues. If there is something about your theater that works especially well, I would like to hear about it. Also, if there is some aspect about your theater that you think could have been done better, I would like to hear about that too. Ground breaking is expected for some time

Dave Maness
Virginia Living Museum
Planetarium
Newport News, Virginia

in the next couple of years.

In October we conducted another Backyard Astronomy workshop. This class is designed primarily for adults who are interested in adding to their basic understanding of astronomy. Like the energizer bunny, this class just keeps on going and going. A more advanced level class we will call Observational Astronomy is being planned for early 2000.

There have been some changes in personnel at the VLM. Our Deputy Director was promoted to Director and the former Director of Education was promoted to Deputy Director. We are now in the final selection process for a new Director of Education.

Hopkins Planetarium Roanoke

We were saddened to hear of the untimely loss of former Planetarium Director Britt Rossie in an electrical accident. With the recent illness of new Director Leslie Bochenski, it seems that Roanoke has had more than its share of hard times. I felt the need to get some good news from Roanoke for a change, so I called Dave Godman. He says that Leslie is doing much better and has begun working part time until the Doctors give her the okay to return to full activity. Great news! Keep us posted.

Dave also told me that they have added wide format movies to the theater's opera

tions. They chose Mega Systems. This is the one that SEPA conference attendees saw demonstrated at the 1999 conference hosted by Jacksonville, Florida. Now showing are The Mysteries of Egypt and Grand Canyon: The Hidden Secrets.

Current planetarium shows are Autumn Skies and Moonwitch. In December they will be replaced by Jewels of the Night.

Ethyl Universe Planetarium Richmond, VA

Eric Mellenbrink says theater renovations are complete but other museum renovations and new office construction continues. Those should be ready for occupancy by April of 2000.

The upcoming films will be Mysteries of Egypt; Africa: the Serengeti, which runs through December 31, and a movie of the ballet The Nutcracker. January through April 30 Disney's Fantasia 2000 will be shown. In December the planetarium show will be Stardate: Ancient Horizons. This has an Egyptian focus to go along with the Mysteries of Egypt Imax movie. After that, WSKY: Radio Station of the Stars begins in mid April.

Eric also wanted me to mention that Ned Van Sant has resigned to go into another enterprise. So their facility is taking inquiries for the position of Special Effects Technician.

Wheeling Planetarium, Wheeling

Steve Mitch of the planetarium at the Benedum Natural Science Center in Oglebay Park, Wheeling, West Virginia did a star talk under the stars at the Albert Einstein Planetarium in Washington, DC on Sept. 25.

[Editor's note: Sincere congratulations to Elizabeth Wasiluk for the Brennan Award she received from the Astronomical Society of the Pacific and the 1999 Celebrate Women Award in Science, given by the West Virginia's Women's Commission. We're extremely proud of you, Elizabeth.]

The Science Center of Pinellas County in St. Petersburg, Florida is designing and building a new planetarium. Our current facility is an outdated Apollo/Eros system that seats thirty students. We are hoping for a planetarium that will accommodate 120 people. One of the designs that caught our eyes is the Goto Virtuarium.

If you have suggestions, feedback, or any other ideas, please call, write, fax, or e-mail me. Your assistance will be very much appreciated.

Wayne D. Tripp

News from SEPA States
continued

Dave Maness
Virginia Living Museum
Planetarium,
Newport News, Virginia

Elizabeth Wasiluk
Berkeley Co. Planetarium
Hedgesville, West Virginia

Wayne D. Tripp
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HST's Greatest Hits of '96

Duncan Teague
 DT Publishing
 3308 Bluemont Drive
 Memphis, TN 38134-8454

The Space Telescope Science Institute (STScI) provides slides of Hubble images to individuals within regional affiliates who arrange to duplicate and distribute them. At our '96 conference, I was designated to receive and coordinate STScI materials and make them available to SEPA members.

Below you'll find a brief description of all 40 images distributed in 1996. Numbers next to the descriptions are shortened versions of STScI press release numbers, e.g., 21a refers to PR 96 21a.

The entire set of 40 slides is \$50, including postage and handling. Send your check or purchase order to the address at left.

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| <p>01.a Hubble's deepest ever view of the universe, revealing 1,500+ extremely faint galaxies in various stages of their development</p> <p>01.b Sample galaxies from the same Hubble deep field</p> <p>02 The inner region of a warped dust disk around Beta Pictoris once hidden because of the star's glare</p> <p>03 An image of the Egg Nebula taken by WFPC2; it shows the emergence of mysterious searchlight beams from behind a dying star</p> <p>04 The first direct image of a star other than the Sun: Betelgeuse.</p> <p>05 In more detail than has ever been seen before, the process a star like the Sun goes through when it dies</p> <p>09.a In clear, detailed pictures the first ever images of Pluto's surface; four views</p> <p>09.b Pluto surface map</p> <p>10 Gravitational lens effect captures image of primeval galaxy</p> <p>11 Images of globular cluster Mayall II, consisting of 300,000 old stars, in orbit around the Andromeda galaxy</p> <p>13.a The Helix Nebula, NGC 7293 showing collision of gases near a dying star</p> <p>13.b Helix Nebula detail with cometary knots surrounding the dying star</p> <p>14 A view of Comet Hyakutake that focuses on the near nucleus region of the comet</p> <p>15 Three layers of Uranus's atmosphere</p> | <p>taken with infrared filters; both clear and hazy layers created by a mixture of gases</p> <p>16 Image taken of Saturn where its rings appear edge on because of the position of the Earth in Saturn's orbital plane</p> <p>17 A view of several star generations found in the central region of the Whirlpool Galaxy</p> <p>18.a A rare view of Saturn's rings seen just after the Sun had set below the ring plane</p> <p>18.b A series of 10 images of several small moons orbiting Saturn</p> <p>21.a NGC 1365, a barred spiral galaxy located in the Fornax cluster</p> <p>21.b NGC 4639, a spiral galaxy located in the Virgo cluster</p> <p>22.a The Crab Nebula and a detail of the pulsar in its center</p> <p>22.b Sequence of three images showing changes in the Crab Nebula pulsar</p> <p>23.a Huge, billowing pair of gas and dust clouds in Eta Carinae</p> <p>23.b Expansion of Eta Carinae debris</p> <p>25 Hubble's 100,000th exposure captures an image of a distant quasar</p> <p>27 A vast nebula, NGC 604, which is known for a great starbirth region</p> <p>29.a 18 gigantic star clusters which may be building blocks for a new galaxy</p> <p>29.b Blue sub galactic clumps which may be galaxies under construction</p> <p>30 Jupiter's moon Io passing above turbulent clouds</p> <p>31 Clusters of stars and a fishhook shaped cloud of gases found in NGC2366, a giant star forming region</p> <p>32 Changes in Jupiter's auroral emissions</p> <p>33 Views of weather on opposite hemispheres of Neptune</p> <p>34 A Martian dust storm around the edge of the north polar cap</p> <p>35.a A survey of quasar host galaxies</p> <p>35.b A quasar caught in the act of colliding with its companion galaxy</p> <p>36.a Supersonic comet like objects in the Cartwheel Galaxy</p> <p>36.b Cartwheel Galaxy composite image</p> <p>36.c Cartwheel Galaxy illustration</p> |
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HST's Greatest Hits of '97

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The entire set of 39 slides is \$48.75, including postage and handling. Send a check or purchase order to the address

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| <p>01 Central supermassive black holes in galaxies NGC 3377, NGC 3379, and NGC 4486B:</p> <p>03 SN1987A Fireball: One tenth light year long dumbbell structure expanding at six million miles per hour in supernova 1987A</p> <p>08 Changes in the nucleus of Comet Hale Bopp as it moves closer to the sun beginning in September 1995</p> <p>09.a Transition from spring and summer in Mars's northern hemisphere; photo taken shortly before opposition</p> <p>09.b Three photos of Mars taken six hours apart with 90° difference between images; photos taken shortly before opposition</p> <p>11 The Egg nebula in which stars are born and die violently; photo shows jets of gas being blasted into space</p> <p>12 A supermassive black hole located in galaxy M84</p> <p>13 NICMOS captures region of the Orion nebula filled with action as a center for the birth of new stars</p> <p>14 Supernova 1987A: different colors represent different elements in the ring</p> <p>15.a A view of Mars's cloud cover</p> <p>15.b Seasonal changes in Mars's north polar ice cap</p> <p>15.c Four views of Mars rotated 90° between images during summer in Mars's northern hemisphere</p> <p>16 The Cone Nebula: six baby sun like</p> | <p>stars surround their mother</p> <p>17 A collision between two spiral galaxies in the heart of galaxy Arp 220</p> <p>18 Fireworks near a black hole in the core of Seyfert galaxy NGC 4151</p> <p>19 STIS reveals an invisible high speed collision around a supernova</p> <p>20 Hubble pinpoints the optical counterparts of a gamma ray burst in a distant galaxy</p> <p>21 Hubble captures a volcanic eruption plume from Jupiter's moon Io</p> <p>22 A gamma ray burst blazes from a titanic explosion in deep space</p> <p>23 Hubble's look at Mars shows a canyon dust storm, cloudy conditions for Pathfinder's landing in July 1997</p> <p>24.a Dissipation of a large dust storm on Mars</p> <p>24.b Hubble shows dust and water ice clouds exhibit substantial daily variations</p> <p>25 Powerful telescopes discover the largest galaxy in the universe</p> <p>26 Hubble separates components in the Mira binary star system</p> <p>27 Hubble reveals huge crater on the surface of the asteroid Vesta.</p> <p>28 Hubble finds a bare black hole pouring out light.</p> <p>29 Hubble shows blobs of gas formed by some nova outbursts.</p> <p>30 Hubble keeps track of a fading gamma ray burst.</p> <p>31 Mars at the beginning of autumn in the Martian northern hemisphere.</p> <p>32 Hubble sees a neutron star alone in space.</p> <p>33 Hubble identifies what might be the most luminous star known.</p> <p>34.a Hubble reveals stellar fireworks accompanying galaxy collisions.</p> <p>34.b Detailed images of colliding galaxies.</p> <p>35 Hubble shows images of a blue straggler star.</p> <p>36.a Hubble tracks clouds on Uranus.</p> <p>36.b Hubble spots northern hemispheric clouds on Uranus.</p> <p>37 Hubble shows infrared view of moon, ring, and clouds of Jupiter.</p> <p>38.a Hubble sees supersonic exhaust</p> |
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01	COBE's infrared view of the Universe: three maps of the full sky seen in infrared light
02	Distant supernovae: light sources determine universe's expansion rate
03	Beta Pictoris: disk indicates planets, possible brown dwarf companion
04	Jupiter aurorae: a curtain of light extends several hundred miles beyond Jupiter's limb
05	Saturn's aurorae: curtains of light extend 1,000 miles above cloud tops
08	Supernova 1987A: a collision between the expanding blast wave and circumstellar ring
10	Serendipitous asteroids: HST images show curved trails of asteroids
11A	Planetary nebula NGC 7027: a brief stage in the evolution of a medium mass star
11B	Cotton Candy Nebula and Silkworm Nebula: phases of stellar burnout
12	Star birth in barred spiral galaxy NGC 1808 possibly due to interaction with NGC 1792
14A	Centaurus A: nearest active galaxy to Earth shows turbulent firestorm of starbirth
14B	Centaurus A: tilted disk of gas at galaxy's core surrounds suspected black hole
15	Stingray Nebula: Henize 1357, the youngest known planetary nebula
16	NGC 1818: globular cluster of over 20,000 stars in the Large Magellanic Cloud
17A	GRB 971214: gamma ray burst is most energetic event in the universe
17B	GRB 971214: gamma ray burst; comparison of Keck Telescope and HST views
18	Saturn: details of the clouds and hazes in atmosphere of ringed planet
19	Possible first extrasolar planet ever
20	to be imaged orbiting about a new born binary star
20	Four of NASA's proposed designs for the Next Generation Space Telescope (NGST)
21	Galaxy NGC 4314: bright ring of starbirth around the galaxy's core
22	NGC7052: galaxy with 300 million solar mass black hole in its center
25	N81 in the Small Magellanic Cloud: a celestial maternity ward
26A	Galaxy Cluster MS1054-03321: thousands of galaxies 8 billion light years from Earth
26B	Supernova 1996CL: a March 1996 exploding star in galaxy cluster MS1054-0321
27	Distant galaxy clusters: left, in Virgo; upper right, in Andromeda; lower right, in Taurus
28	NGC7742: a small Seyfert 2 active galaxy probably powered by a black hole in its core
29	Saturn: pastel yellows, browns, and greys distinguish cloud differences
30	Sagittarius Star Cloud: HST peers into the heart of the Milky Way
31	NGC7635, the Bubble Nebula: an expanding shell of glowing gas surrounding a hot star
32A	Infrared views: left: faintest galaxies ever seen; right: objects 12 billion light years away
32B	Deep field galaxy: left: visible light areas of starbirth; right, infrared disk structure
34	Neptune: a look at the eighth planet's stormy disposition
35	Uranus, August 8, 1998: its four major rings and 10 of its 17 known satellites; false color
36	NGC6210 planetary nebula described as looking like a turtle swallowing a sea shell
37	Quasar PG1115+080 and gravitational lens effect:
38	Nebula M1-67 around star WR124: gas ejected into space at 100,000 mph
39	NGC3132: southern hemisphere's Eight Burst or Southern Ring Nebula
41A	HST deep field south: thousands of

JPL '98 Slides

NASA JPL has sent us the following slides for the Galileo Mission and others. Slides are \$1.25 each.

P 35036B	Launch of Galileo on STS 34 Atlantis	P 47935	Io Glowing in the Dark
P 35213	Deployment of Galileo and IUS	P 47961	Ganymede s Nippur Sulcus
P 37218	Venus Colorized Clouds	P 47970	Ganymede Color Global
P 37327	Moon: Western Hemisphere	P 47971	Io in front of Jupiter
P 37539	Infrared Image of Low Clouds on Venus	P 47972	Changing Volcanoes on Io
P 37593	Earth: Ross Ice Shelf, Antarctica	P 48035	Stereo View of Ganymede s Galileo Region
P 37630	Global Images of Earth	P 48040	Natural and False Color Views of Europa
P 40449	Gaspra: Highest Resolution Mosaic	P 48063	Thunderheads on Jupiter
P 41383	Gaspra Approach Sequence	P 48112	Ganymede Uruk Sulcus High Resolution Mosaic Shown in Context
P 41432	Moon: North Pole	P 48113	Ganymede Galileo Regio High Resolution Mosaic Shown in Context
P 41474	Earth: Northeast Africa and the Arabian Peninsula	P 48114	Jupiter s Great Red Spot
P 41493	Earth: False Color Mosaic of the Andes	P 48122	Two views of Jupiter s Great Red Spot
P 41508	Earth: Moon Conjunction	P 48127	Ridges on Europa
P 42501A	South Polar Projection of Earth	P 48145	Io: Volcanically Active Regions
P 42964	Asteroid Ida: Five Frames Mosaic	P 48188	The Main of Ring of Jupiter
P 44130	Asteroid Ida: Limb at Closest Approach	P 48231	Callisto Crater Chain at High Resolution Shown in Context
P 44131	Ida and Dactyl: Enhanced Color	P 48236	Europa: Ice Floes
P 44297	High Resolution View of Dactyl	P 48293	Callisto: Scarp Mosaic
P 44520	Asteroid Ida Rotation Sequence	P 48294	False Color Mosaic of Jupiter s Belt Zone Boundary
P 44542	Comet Shoemaker Levy 9 Fragment W Impact on Jupiter	P 48299	Asgard Scarp Mosaic
P 47058	Ganymede: Comparison of Voyager and Galileo Resolution	P 48445	True Color Mosaic of Jupiter s Belt Zone Boundary
P 47065	Ganymede: Mixture of Terrains and Large Impact Crater in Unuk Sulcus Region	P 48496	Color Global Mosaic of Io
P 47162	Full Disk Views of Io (Natural and Enhanced Color)	P 48526	Europa Ice Rafts
P 47179	Three Views of Io	P 48527	Closeup of Europa s Surface
P 47182	Jupiter s Great Red Spot	P 48532	Mosaic of Europa s Ridges, Craters
P 47183	Dark Bands on Europa	P 48584	Io s Sodium Cloud
P 47194	Live volcano on Io	P 48698	E4 True and False Color Hot Spot Mosaic
P 47196	False Color Great Red Spot	P 48700	Jupiter Equatorial Region
P 47903	NIMS Ganymede Surface Map	P 48952	Jupiter s White Ovals, True and False Color
P 47905	Five Color Views of Io	P 48954	Ancient Impact Basin on Europa
P 47906	Europa In Color	P 48956	Active Volcanic Plumes On Io
		P 48439A	The Mars 98 Lander
		P 48440A	The Mars 98 Lander
		P 48494A	The Mars 98 Orbiter/Lander
		P 48495A	The Mars 98 Orbiter/Lander
		P 48567	Dr. Peter Tsou holds Aerogel
		P 48589	Stardust Spacecraft
		P 48691	Deep Space 1 Spacecraft

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Amateur Astronomer Revealed

Zakiya Larry
junior intern
Craigmont Planetarium



Summer slowly came to an end. The brilliant rays of sunlight that once stretched to tickle the tiny noses of jubilant children slowly pulled away its golden fingers, and assumed its place among placidity. And the bells rang. Suddenly the doors of educational establishments flung open with a gust, and the winds hastily ushered idling students in.

Once the previously vibrant children were imprisoned, the age old question arose: What did you do over your summer vacation? And the tales unfolded. Being presented with that classic question, I immediately thought of my once in a lifetime experience at Phillips Exeter Academy as a summer session student. Then my mind searched its archives and found remnants of wonder and excitement in my first class of the day, Astronomy.

Observational Astronomy was in a class all by itself. Using an observatory worth over a million dollars, the class utilized personal telescopes by Questar to set the right ascension and declination, focusing on the north star. Then we used those measurements to find the altitude and azimuth figures of main points of interest planets and major stars in a constellation. We as students also used a large telescope inside of a dome to observe the Moon's surface and take close up pictures of its features. Using a projecting telescope and a paddle (a remote control to command the motion and direction of the telescope), we tracked the Sun and projected the image onto a screen. Then we counted and recorded the relative sunspot number to send in to an organization called the AAVSO, or the American Association of Variable Star Observers.

The AAVSO is a team of astronomers who collect data on sunspot counts from amateur and professional astronomers.

Sunspot counts and graphs are important to astronomers because the relative number of sunspots affect the climate. The various number of sunspots that are present, the warmer/ cooler the Earth will generally be over a period of time. Sunspots kind of show how the Sun is slowly burning itself up. The lesser the number of spots, the better.

We also did in class assignments such as creating a story and constellation by picking any group of stars in the night sky, and making a picture out of them. Constellation projects were presented by each student on a constellation of their choice. Shared information included how large the constellation is in reference to the immediate galaxy around it, the given names of the stars of which it is composed, when and where it is best seen, kinds of globular clusters and Messier objects in the figure, and the myth behind the constellation.

Utilizing celestial spheres, we found the right ascension and declination not only of stars on the sphere, but also specific locations on Earth, even down to a specific region! Just when we thought we had enough, instructors handed to us an angular distance formula and some figures. They instructed us to calculate the distance to the Sun and a chosen planet from a particular spot on Earth!

When the subject of the Sun was thoroughly exhausted, we moved on to a study of the Moon, including its phases and what time they occur. Still concentrating on the Moon, we mapped craters and river beds using closeup pictures we took with a telescope and developed ourselves, and studied the orbit and contemplated the origin of the Moon.

Though I am by far incomparable to Galileo, I too have made discoveries. Before my amazing experience at Exeter, I generally viewed observational astronomy as leisure recreation. From waking at the crack of dawn, to staying out to observe at all hours of the night, I've come to realize that the pursuit of brilliance nor the attempt at discovery is an easy task. A new sense of wonder and appreciation has bloomed in me, not only for astronomers and their work, but also for astronomy in general. I too have fallen captive to the alluring presence of the heavens.

This past summer was jampacked full of wonder, observations, and newly found knowledge, along with brain overloads. Astronomy has started to grow on me, and I wouldn't trade my galactic experience for the world!

Photograph of the Moon
by Zakiya Larry



AstroWeb Review

Bad Astronomy <www.badastronomy.com>

Working in a nature center and planetarium allows me to do double duty, and I tell people that I do programs about everything from the sky above you to the ground beneath your feet, and everything in between. The challenge is that I often get asked questions that are equally as broad.

I chose to review the Bad Astronomy Website for the simple fact that I use it. When people come in and ask me, or tell me, that the world is going to end because of some giant asteroid or planetary alignment, I go to Bad Astronomy for a quick, simple explanation that the visitor will understand.

Bad Astronomy Webmaster, Phil Plait, is a professional astronomer who has set out personally to right the wrongs of misguided astronomy related reports, products and even commercials!

It is not a fancy site, because Plait does not use many graphics. He has a few main categories with many subcategories that tackle issues such as bad astronomy on television, in the news and movies, and popular misconceptions.

He often presents the information in a question and answer format and explains things well. There are many links to other sites, and it is easy to maneuver around due to menus on every page.

If a question has not been answered that I am looking for, Plait has a link to e mail him or post something on a bulletin board very handy. He also posts questions and answers, but only from 1996 1998, nothing more recent yet.

All of the information has dates listed, but it would be nice if it were updated more frequently than it is. One other aspect that I did not like was on many of the pages, the information was in a column that was quite small, so it required a lot of scrolling.

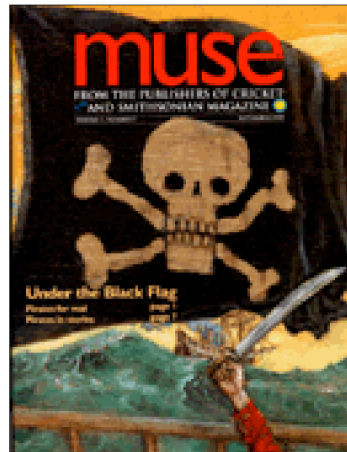
Plait does have a search page, and you can access it from any other page on the

site. He also has something called bitesize astronomy, and you can select an assortment of snacks from the pantry that give you a brief explanation, critique, or direction on just about anything.

He has a feature topic on the home page and it usually is something big in the news. Currently it is about the decrease in funding of NASA.

Other topics have included planetary alignments that people thought would bring about the destruction of the Earth. I find this very helpful because if someone has not already asked me about it, they soon will.

I like this site because it tackles questions that would otherwise stump me or make me wonder how the visitor even thought of it. Even if you know the answers to the bizarre questions, you should visit this site just because it's fun!



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Bad Astronomy
<www.badastronomy.com>
August, 1999

Reviewed by Jill Evans
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Webmaster Plait has
written an article for the
November issue of Muse
magazine.

Plait highly recommends
the Fox Family Channel
Tuesday evening program
"Exploring the Unknown"

BAD ASTRONOMY

In Memoriam

Britt Rossie, 1963 – 1999



Former SEPA member Britt Rossie wrote and produced several planetarium shows for the Hopkins Planetarium. Some are still being used today. Britt and Gary Close worked on the beginning of the renovations in Hopkins Planetarium.

From Hopkins Planetarium he went to Salem High School as an earth science teacher. Britt was a member of the Blue Ridge Bicycle club, the Astronomical Society of Roanoke, the Archaeology Club, and the Blue Ridge Grotto.

Britt was also active in native American research. He produced a short video documentary about the Tutelo Indians.

We'll miss you, Britt.

Southern Skies

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The Southeastern Planetarium Association wishes to acknowledge the organizations which so generously sponsored our conference in Jacksonville. Thank you.

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Astro Carols



Luna s Coming Out Tonight

by Marc Rouleau

(Sung to the tune of Here Comes Santa Claus)

First comes crescent Moon,
Then comes quarter Moon,
Then it s gibbous and full.
No matter how hard we may try
We can t escape its pull.

The Moon pulls on all our oceans.
That s what makes the tides.
So finish your homework,
And get outside
Cause Luna s coming out tonight.

When it s a full Moon,
It is a bright Moon,
And we see its face.
After the millennia
That side came commonplace.

Earth keeps pulling on the Moon,
So we only see one side.
So turn off the TV,
And go outside
Cause Luna s coming out tonight.

After the full Moon,
Luna gets smaller
Til the cycle is done.
Then we get what s called a new Moon
Between the Earth and Sun.

Luna orbits round our planet.
She s our satellite.
Turn off the computer,
And get outside
Cause Luna s coming out tonight.
Cause Luna s out tonight!

Frosty, the Comet

by Marc Rouleau

(Sung to the tune of Frosty, the Snowman)
Frosty, the Comet

Was a mass of dirty ice
With a nucleus
And a coma bright
And a long tail stretched out nice.

Frosty, the Comet
Orbits round and round the Sun
In a stretched out path
Which brings it near
Then out to oblivion.

There must have been
Some seeds of life
Within that block of snow,
For organic compounds
Brought to Earth
Made all the life we know.

Oh, Frosty, the Comet
Knew the Sun was hot that day.
So he said, Let s run
Past perihelion
Now before I melt away.

Past the inner planets
With its tail up in the lead,
Not really free,
It s held by gravity,
But from Earth it shall recede.

Traveling round its orbit
Just as fast as it s allowed,
And it won t turn back
Round again
Till it sees the Oort Cloud.

Oh Frosty, the Comet
Had to hurry on its way.
It ll be years until
But its orbit will
Bring it back round here someday.

Thumpity Thump Thump,
Thumpity Thump Thump,
Look at Frosty fly.
Thumpity Thump Thump,
Thumpity Thump Thump,
Fast across the sky!



MERRY CHRISTMAS