

Southern Skies

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The deadline for the next issue of *Southern Skies* is July 1. Send your submission either on a 3.5" disk or *via* email attached file to <dteague2@midsouth.rr.com> or <teagued1@k12tn.net>.

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Featured Planetarium

vacant

Small Talk

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President's Message

For many of us, February 1, 2003 will be one of those days that we will always remember for what we were doing and where we were. The Columbia accident was one of those events that will stay with us for a long time and rightfully so. For many of us on that day, seven heroes gave their lives in the pursuit of space travel, and I hope that all of us in his/her own way will remember the sacrifice of the Columbia crew on that day.

It is unfortunate that it seems as though the only time the media covers space exploration is when there is either an accident or a failure. I guess, like many of you, how different the public perception of the space program and science in general would be if the media had the same zeal when it came to reporting successes and discoveries in these fields. I hope all of you will honor these heroes by not letting the public forget the discoveries and successes of the space program.

I do hope that everyone is planning to attend this year's SEPA conference which will be held in Baton Rouge, Louisiana from June 17 – 21. I think this will be a great conference for many reasons.

First of all, we will have the chance to see four planetariums including the host facility, the Irene W. Pennington Planetarium and ExxonMobil Space Theater. We will also be visiting the planetariums in Kenner, Lafayette, and Luling.

The theme of this conference will be "Building Planetariums for the 21st Century." Among the highlights include the chance

to see star projectors from Goto, Minolta, Spitz, and Zeiss along with equipment from many planetarium vendors. There will also be two noteworthy speakers: astronomer and author, David Levy and planetarium artist/photographer, George Murphy. There will also be field trips to the

BREC Observatory and to the Laser Interferometer Gravitational-Wave Observatory (LIGO).

There will also be lots of food and a chance to visit New Orleans. We will also have some additional features including a silent auction managed by SEPA Past President David Maness. (See his article in this *Southern Skies* journal.) Numerous paper sessions, workshops, and other activities are also planned.

Phil Groce and the Baton Rouge planetarium staff have done a tremendous job in organizing this conference. I don't think you will be disappointed, so don't forget to register!

While we are on the subject of conferences, I want to ask that all SEPA members consider hosting our conference in 2005. Keep in mind that the 2004 conference will be held in Richmond, Virginia.

You may remember in an effort not to repeat the problem we had with last year's conference cancellation, I appointed George Fleenor to head a conference site committee. This committee will evaluate potential host sites and make recommendations and possible suggestions for future conferences.

If your facility is interested in hosting, please contact George at <jetson1959@aol.com>. We would much rather have someone volunteer than to have George start knocking on doors. Remember we would like the bidding facilities to make their presentations at this year's conference.

I would like to thank all of you who answered Duncan's and my pleas for more involvement with *Southern Skies*. Keep in mind that this is our journal, and to make it a success, we should all contribute to keep us all informed of what is going on in the southeastern planetarium community.

I would also like to ask that someone consider helping Duncan with a featured planetarium article. It has been quite a while since this has been a regular feature in the journal, and I know many of us would appreciate its return to the pages of *Southern Skies*. If you think you could help out by asking colleagues to contribute

to this feature or with any other type of submission, please get in touch with Duncan Teague.

At this point, I have to assume that there aren't many problems going on within SEPA because I haven't heard from many of you. I guess I can look at this as a good thing, but I'd also like to hear from you so I can better handle my responsibilities as President. If you have any questions, suggestions, or constructive criticisms, please do not hesitate to contact anyone on SEPA's Executive Council or myself. Remember, all you need to do is look on the inside cover this journal to find out how to contact any of us.



Michael Sandras
President
Kenner Science Center
Planetarium
Kenner, Louisiana

"It is unfortunate that it seems as though the only time the media covers space exploration is when there is either an accident or a failure."

Godspeed, Columbia

Patrick McQuillan
Alexander Brest
Planetarium
Jacksonville, Florida

In the days and weeks after the Columbia disaster I was amazed at the depth and breadth of emotional outpouring from all walks of life supporting the Columbia crew. Many of these same people could not have told you the name of any of these astronauts prior to February. Most did not even know that a shuttle mission was in progress.

I don't think this means that people have no interest in the space program. I think more accurately it reflects the fact that space travel has become something that most people feel is routine. The International Space Station (ISS) has been permanently staffed for over two years. The Russian Mir space station was in orbit for fifteen years prior to ISS. Never in the forty-two year history of the U.S. space program had a mission been lost on reentry.

On a Saturday morning in February, we were reminded that the space program is at the cutting edge of science, technology, and exploration. Sometimes that edge is narrow and sharp. Seventeen years prior, Americans experienced the same almost unbelievable loss when the Space Shuttle Challenger was lost on liftoff.

In 1986 I was attending the College of William and Mary in Williamsburg, Virginia. I was busy planning my senior research project in the area of astronomy. Challenger's launch was scheduled for a Thursday morning. I had late classes that day and was asleep at the time of the launch. Even then spaceflight seemed routine. One of my good friends began knocking on my door, frantically yelling that I needed to watch the news. I did, and I stared in disbelief.

On February 1, 2003, at the time Columbia was scheduled to land, I was also asleep. Our young son had not yet awoken, and I was trying to get a few more minutes of sleep in before beginning a long day of errands. Shuttle landings were routine. Again, I was not watching. Shortly after nine the phone rang. It was a call asking if I was watching the news. I turned the television on and again stared in disbelief.

Among the crew of Columbia was Mission Specialist David Brown. He was a medical doctor tasked with monitoring many of the research

experiments on this flight. He was also a graduate of the College of William and Mary. I didn't know him personally, but since the college is relatively small, the list of alumni who have become famous is short. The list of alumni who have been in space is but one name.

That connection, among other things, really made me feel a personal loss. One evening in early February, I was outside after sunset trying to put the loss of another crew of astronauts into perspective. It was crystal clear and the stars overhead stretched off to infinity.

Just then I noticed a small dot moving across the sky. As it got higher, it got brighter. I remembered that the International Space Station was to pass overhead this evening. On that ship, three astronauts were doing research that might ultimately lead to new medicines, better ways of growing food, and smaller/faster/cheaper electronic parts. Many of those experiments could not be done without people present to monitor and adjust them.

After the ISS passed from view, another dot steadily moved across the vault of the night sky. It was the Hubble Space Telescope (HST). Hubble is the perfect example of a robotic explorer. It would also have been useless if we didn't have the ability to send humans to repair it. When HST was launched, it quickly became evident that a flaw in the main mirror rendered its photos no better than ground-based telescopes. During a shuttle mission, astronauts installed corrective lenses that gave the telescope near perfect vision. The wonders of the universe have been revealed to us in the years since. Columbia's prior mission was another HST servicing mission. Astronauts installed a new camera that has moved the telescope's vision from that of a 35 mm camera to the view of an IMAX film. Recent photos have even amazed astronomers.

The pure excitement of exploration will drive humans to leave the Earth and examine the Universe. Who wouldn't want to be the first to visit Mars? Astronaut Dave Brown was enjoying his trip into space so much that on the last day of the mission, he jokingly asked, "Do we have to come home?" No, they didn't. But we all wish they had.



Editor's Message: Thanks for your Support

In this issue of *Southern Skies* we have some new contributors. We actually have a Featured Planetarium for the first time in a good long while. A new SEPA member has taken over the reins as associate editor for the Astro Video Review column.

Past-President Dave Maness follows through on a proposal brought up at last year's substitute SEPA meeting at the IPS conference in Wichita, Kansas. Paul Trembley reviews the latest version of an already excellent astronomy program for both Macintosh and Windows™ users. Patrick McQuillan not only reviews two books, but also shares his thoughts in the aftermath of the disintegration of the Space Shuttle Columbia on February 1.

This issue's Featured Planetarium is Chattanooga's Clarence T. Jones Observatory. It's an arm of the Department of Physics and Astronomy at the University of Tennessee-Chattanooga. Even though the facility is billed as an observatory, there is indeed a planetarium on the premises. Read all about it on page five.

Priscilla Bernardo of the Orlando Science Center steps forward to share with us what new analog and digital video resources show promise for our education programs and lobby displays. She reviews a DVD from <Discovery.com> entitled *95 Worlds and Counting*.

Dave Maness spells out what a silent auction is and how we hope to use this medium to help fund the SEPA Scholarship Award. He has also created an auction form for members to display artifacts and services they're willing to donate for the benefit of this worthy cause.

Paul Trembley revisits *Starry Night Pro*, but this time he takes a look at the recently released version 4 of this super software. Patrick McQuillan outdoes himself by reviewing not one, but two books about a subject to which we all feel close, the Space Shuttle. One book is a valuable reference; the other, a poignant collection of personal remembrances.

The state news section has lots of surprises. With the hard times so many states seem to face in terms of austere budgets, it's amazing how many new planetariums are being built and how many older facilities are being upgraded.

Enjoy reading the excellent material found in these pages. Then consider what you could contribute, what stories you can share, what expertise you have that would help your colleagues do their jobs better.

My summer will be filled with wonder. I wonder what name my daughter and son-in-law have chosen for my new granddaughter to be born in July.

Duncan Teague
Secretary-Treasurer
Craigmont Planetarium
Memphis, Tennessee

SEPA Membership Form

Please send your check for \$25 (or \$15 if outside the SEPA geographical region) to SEPA, c/o Craigmont Planetarium, 3333 Covington Pike, Memphis, TN 38128-3902

Name _____

Organization _____

Planetarium _____

Address _____

City _____

State _____ Zip Code _____

Voice Phone _____

Fax Phone _____

E-mail Address _____

Staff Position _____

IPS Member? Yes _____ No _____

Contribution to Scholarship Award Account: \$ _____

Small Talk

Elizabeth Wasiluk
Hedgesville High School
Planetarium
Hedgesville, West Virginia

Hey, everybody! Hope everyone is well and happy and survived the winter snows well. Here in West Virginia the winter was snowier than we have had in a while. For a time, roofs were collapsing, but luckily, nobody was hurt.

February is normally a short month, but this year it was even shorter due to a massive amount of snow days that kept us out of school. I got lots of reading done and now you can see the floor in my bedroom.

Unfortunately, February 1st, a Saturday, started out on a bad note with the downing of Columbia. I was listening to NPR as a normal Saturday morning ritual. I think Click and Clack, the car guys were on. That was when they broke in with the news that communication with Columbia was lost and at that moment, I didn't need to be a NASA scientist to know, things were pretty bleak. NASA doesn't easily lose contact with astronauts. I had just covered with students about Challenger and had a moment of silence for those seven astronauts on the anniversary date and was shocked to learn that the Apollo 1 fire date was around the same time of year, as if NASA hadn't enough bad memories to think about.

The NPR coverage was fabulous. They had interviews with Canadian astronaut Roberta Bonadour and NASA historians, James Oberg and Andrew Chatkin. I heard later on another NPR program, "On The Media," that that wasn't the case on most automated radio stations who are computerized and had difficulty interjecting news stories into their programming because the stations had no living person there.

So much for big conglomerates overtaking the nation's radio stations and effective news coverage. I read on a non-space related message board on the Internet, many comments from the general public about not believing that they would ever see another shuttle disaster in their lifetimes. How complacent we have become towards space flight, taking it as routine.

Also in the NPR coverage, much was made about the fact that the shuttle mission was not really paid attention to until it was determined there was a problem. Unfortunately, things haven't changed that much since Apollo 13. If you remember after Challenger, ripple effects occurred all through out the space program. Remember how long Hubble was delayed? Remember the antenna that wouldn't open properly and data lost from the Galileo probe? And what about those sickos flaunting they had Columbia pieces on eBay?

We all must wait to see what might happen in the future and to how long the investigation might take. ready we are concerned about the future of the International Space Station. Thank goodness for the Russians being involved. But will this continue under

the climate of an English/American war in Iraq?

February was also Black History Month, and to celebrate, I hung the Black Stars In Orbit poster I got from NASA in my classroom. On it, it lists the contributions of blacks in the space program. There is an excellent book with the same name. You may also wish to check out a video from NASA called NASA and the Underground Railroad. You can get it through NASA CORE. NASA CORE's contact information is:

NASA CORE

Lorain County Joint Vocation School

15181 Route 58 South

Oberlin, OH 44074

Website: <http://core.nasa.gov/>

e-mail: nasaco@leeca.org

Toll free ordering line: 866-766-CORE

Toll free fax line: 866-775-1460

It features former shuttle pilot Frederick Gregory narrating and shows NASA in a role you might never have encountered before. Here you see them studying Underground Railroad sites from satellite photos and using technology to study old cemeteries without digging them up. It would be great to have for overflow crowds you might have for your *Drinking Gourd* star show. Speaking of drinking gourds, Jeanne Bishop gave me some drinking gourd seeds. I live in a small apartment. If anyone who gardens, would like to grow some, drop a line or send an e-mail and I can ship some off to you.

My astronomy class also had a visitor, Dr. Jason Best, who teaches astronomy at Shepherd College. He came in and talked about his research in cataloging galaxies and studying their structure with stuff such as the Cave which is virtually an 8 ft by 8 ft virtual reality thing that allows you to see galaxies in 3D. Then he showed a diagram from Thomas Diggs and explained that he and his wife researched 80 textbooks over the last 80 years and found out that no one mentions the significance of this diagram attributed to Thomas Diggs that was the first to describe that stars were not at a fixed distance. Dr. Best and I team taught cosmology last year, and I quipped that here it is Black History Month and I've got a black guy discussing history.

Students wound up the month reading an interview with Ben Peery, astronomer at Howard University and watching the episode with him in the astronomy series *The Astronomers*.

It is now March and Women's History Month, and there are women in astronomy profiles hanging in the classroom. Students are reading interviews with

Featured Planetarium

Clarence T. Jones Observatory, Chattanooga, Tennessee

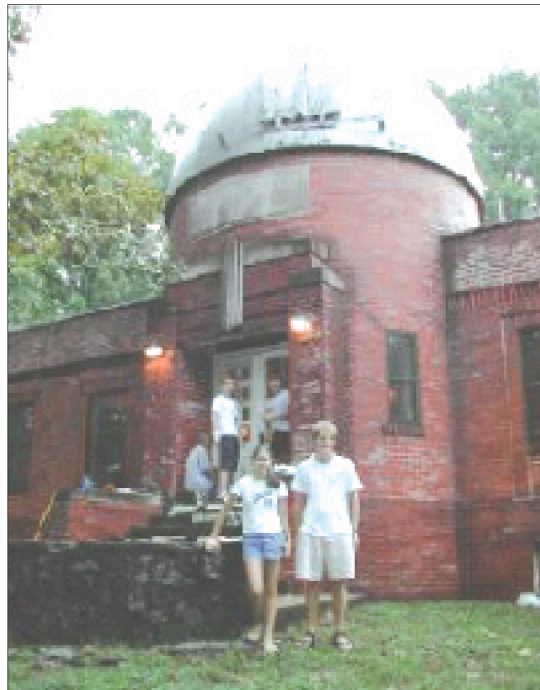


The Clarence T. Jones Observatory is the first, large public observatory in the South. It serves as an outreach and resource program to the public and educational community. The general public can gaze through the 20.5" Cassegrain telescope at the Moon, the planets, and other astronomical attractions.



We also offer a planetarium show featuring constellations and lectures concerning introductory and amateur astronomy. As a general rule we are open every other Sunday from 5:00 P.M. – 8:00 P.M. The planetarium show begins around 5:30 P.M., and we usually offer public viewing through the telescope after that.

We are operated by the UT-C Physics, Geology, and Astronomy Department in conjunction with some volunteers from the Barnard Astronomical Society. Admission is free.



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Left: Several visitors tour
UT-C's Clarence T. Jones
Observatory
Right: Young skywatchers
pose outside the largest
public observatory in the
South

Carolyn Porco, the JPL head of the imaging department with space probe Cassini and Sandra Faber, who studies galaxies and helped discover The Great Attractor with her observing team. We will view video footage on these astronomers in action at the end of the month.

I am also beginning to gear up on Mars, anticipating all the coverage it should be getting this summer. I was fortunate enough to see Dr. Ken Edgett from Mars Global Surveyor at Sean and Cheryl's Albert Einstein planetarium at the Air and Space Museum in Washington, D.C. His talk was called Post Cards From Mars and I never heard so much "We don't know what is going on here" in my life. The pictures, however, were great.

Dr. Edgett says that there are over 112,000 images currently accessible to us on the Internet with another 130,000 more coming very soon—plenty to fascinate

your interested audience this summer. Check out the two great articles on March 2003's *Astronomy* magazine to learn a great deal of what was passed along in the lecture.

I particularly asked Dr. Edge about dust devils and tornadoes on Mars. He says that from pictures they have received they have discovered Mars has its own Tornado Alley. During dust devil season they detected a big dust devil almost every day in this Martian region. This is obviously a place to mark on your Mars map as "Don't land here."

I was also intrigued that when asked he said he feels that because of September 11th and war with Iraq, he said he feels that a manned Mars landing could be over a century away.

Well, folks, here's hoping that the next time I see you, we are *Bon Temps Rouletting* it down in Baton Rouge. I hope to see you there!

Small Talk
continued

Digital Cosmos: *Starry Night Pro, 4.0.5*

Paul Trembley
Orlando Science Center
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Orlando, Florida



I backtrack and revisit a program I reviewed a few issues ago: *Starry Night Pro*. Space Holding Corp. last fall released version 4.0 of their premier astronomy software. In reviewing version 3.12c I said that “If you are in need of a good astronomy simulator, this is one worth buying. End of story.” This still holds true. For version 4.0, however, while there are a number of improvements which are great features, they “fixed” a few things that weren’t broken.

The list of features for the new version is just amazing—too long to list here—but take a look online at <http://www.starrynight.com/new_snprox.html>.

As with the prior version, you perform an automatic update of the object files, and then a screen asks you to input your home location. In 3.12c this was a very easy task to do. You could add your city name, its latitude, longitude, and time zone without problem. In version 4.0 they tried to improve this and failed.

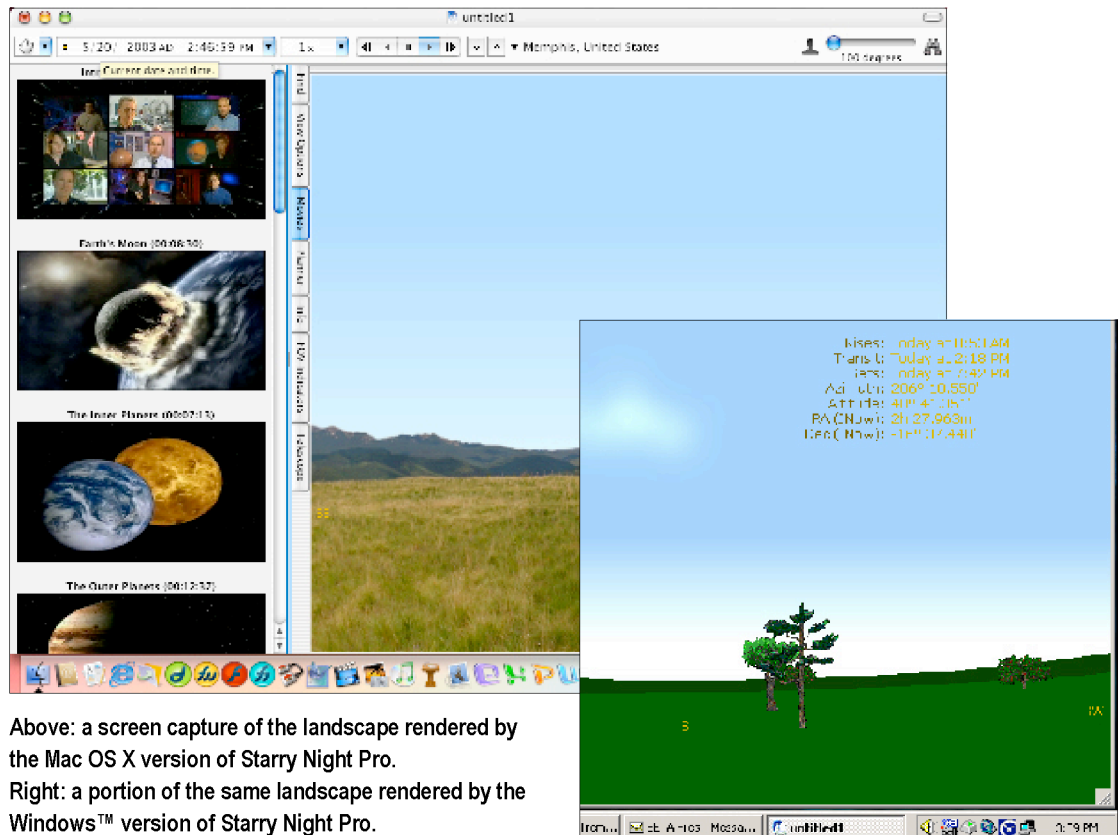
You get a very extensive list of cities from around the world, from New York City to Kizyl-Arvat, Turkmenistan, but of course no Orlando, Florida. Click on the tab for entering latitude and longitude, and there is an option for looking up latitude and longitude on Internet. Clicking this takes you to <zipinfo.com> where you can enter your zip code and get your latitude and longitude.

This is useful, perhaps, if you don’t already know this information, but there is no way to transfer that information except by copy and paste. When I entered my latitude and longitude, the program comes up with the city name of “Near Kissimmee.” Now for those of you not familiar with Central Florida, to say that Orlando is near Kissimmee is like saying that Boston is near Brookline. Both are about the same distance, 40 miles give or take.

In version 3.12c I could at least enter the city name. Now I have to be content with simply being “near” some other city. This label also shows up on printed star charts, making them rather useless if you don’t already know for what location the map was being printed.

Now, I will admit this is a minor issue, and the sky for the most part looks the same here as it does 40 miles down the road. My problem is that I used to have the ability to specify my location by name. Now I don’t. A change that weakens an otherwise good program. Checking the Web site, however, showed that a program update was available. Once I updated to version 4.0.5, I was once again able to enter my city name. This update included 186 fixes in all, some of them critical fixes, so check the Web site and be sure to get the most current updates.

Right: *Starry Night Pro* renders a very realistic landscape with beautiful textures if your computer has sufficient video RAM. Note the pull out tab at the left side of the screen. This tab shows thumbnail frames that represent the Quicktime™ movies stored on the second CD ROM “Atlas of the Sky”



Above: a screen capture of the landscape rendered by the Mac OS X version of *Starry Night Pro*.

Right: a portion of the same landscape rendered by the Windows™ version of *Starry Night Pro*.

The printed charts are some of the most detailed I have seen, but they still lack a good legend. There is no indication of which size dot is which magnitude, and you have limited options for changing the chart.

The new user interface builds on the strength of the early version. In addition to the normal menus across the top of the screen, there is now a new set of slide out tabs along the left side of the screen. These contain frequently used items such as objects, field of view markers, constellations, *etc.* Each of these is broken down into sub categories so that displaying just what you want to see and how you want to see it is incredibly easy.

There are other very good improvements, *e.g.*, a new option that plots stars in their correct location in 3D space. This is useful only when viewing from outside the solar system but is a very good educational tool for isolating a star cluster for further study. In the user's guide are examples for almost every feature. For the 3D option, there is even a six-step example on isolating the Hyades Cluster from the rest of the stars.

Another improved feature is a new HUD or "Heads Up Display." Hover your mouse over any object, and all sorts of information will appear: altitude, size, Bayer designation, *etc.* All of this can be set by the user to be as detailed or as simple as you wish. Sometimes it is a bit annoying to have stopped moving the mouse as you are looking at something and have text pop up over what you are trying to look at, but you get used to it.

One of the best features ever put into any astronomy software is an "Upcoming Events" screen. Opening this option presents you with a list of upcoming eclipses and transits for the next few years. If the event is visible from your home location, you will be given the option of viewing it from either your home location or from the "Best View" location. If it's not visible from home, you'll only be offered "Best View."

This is a wonderful tool, but there is one problem with it in version 4. "Best View" will only work for lunar eclipses and planetary transits. For a solar eclipse, when I clicked on "Best View," I was always taken out to space to watch the eclipse from the surface of the Moon. I would have preferred to be taken to whatever city offers the best view, so I can call my travel agent.

This is not a bug. It clearly states in the manual that this is what the program is supposed to do. The program will allow you to view solar eclipses from the Earth's surface, but it is a very convoluted process to do so.

The ability to use the Digitized Sky Survey has been enhanced as have the number of databases available. Just about every Deep Sky and Stellar catalog that is in use today is included in the new version. Comet hunters will find this to be very useful. There are also many special tools that have been either added or improved, such as an Observation Planner, Telescope Control, and Graphing of an object's properties.

This last one had me a bit confused for a while as to what use it could possibly be. After some playing around with it, I discovered that I could create a fairly good rise/set chart for the Sun and Moon, a brightness chart for an approaching comet, or an elongation chart for Mercury. As odd as it seemed at first, this turns out to be a very good feature. You do have to understand the different properties of an object to get anything useful out of it, but it is very easy to set up once you have a grasp of the data.

Integration with the SETI@home screen saver has been improved, now allowing the signal strengths to be displayed as well as the section of sky being searched. As with previous versions, you can save your settings to unique file names, open multiple windows, and export simulations as movies or graphic files. You can also export data as a text file for use in other programs.

No astronomy program would be worth anything if you were unable to add your own data. This is another area that has been greatly improved. Orbital elements can be either imported from text files, or entered by hand. The manual interface is very easy to use, and the users guide is very clear about what each element is and its common abbreviation.

This by itself would have been enough, but the authors have taken it a step further. You can also enter a surface map for the new object. So, when we get those new detailed pictures of Saturn from Cassini, you can update the look of the planet in Starry Night Pro.

In addition to the program CD ROM there was a second CD ROM labeled "Atlas of the Sky" which is full of nearly 90 minutes of multimedia files. After installation, these files are available through the side bar menus. The movies are excellent and have good content. They do require QuickTime 6.0, but that is included on the CD.

The user guide is fantastic. It is one of the best that I have seen in recent years, and despite being 144 pages long, everything is explained in a very clear manner and backed up with examples.

Starry Night's Pro version costs \$179.95 and will run on Win 98/ME/2000/XP or Mac OS X. The 4.x.x versions will not run on a Mac with anything less than OS X. I tried to install it on one of our Macs using OS 9, and it refused to load. The trade off, however, is that if you are running Win XP or OS X the program will use Open GL 3D video drivers. Comparing the image on my Dell PIII 900MHz running 2000 Pro and my Gateway P4 2.8GHz running XP Pro, I could see a remarkable difference in image quality. *[The program looks better on a G3/400 Blue and White (16 MB of video RAM) than it does on a Macintosh G3/300 (6 MB of video RAM). The amount of video RAM matters as much as processor speed. —Ed.]*

Starry Night Pro needs a 700 MHz Wintel machine with 256 MB of RAM and 1.5 GB of drive space. Even at that, the program ran sluggish on everything except my Gateway P4. *[It runs on a Mac G3/300/128 MB with 1.1 GB of drive space for the full install. —Ed.]*

Book Review: *Space Shuttle: The First 20 Years*

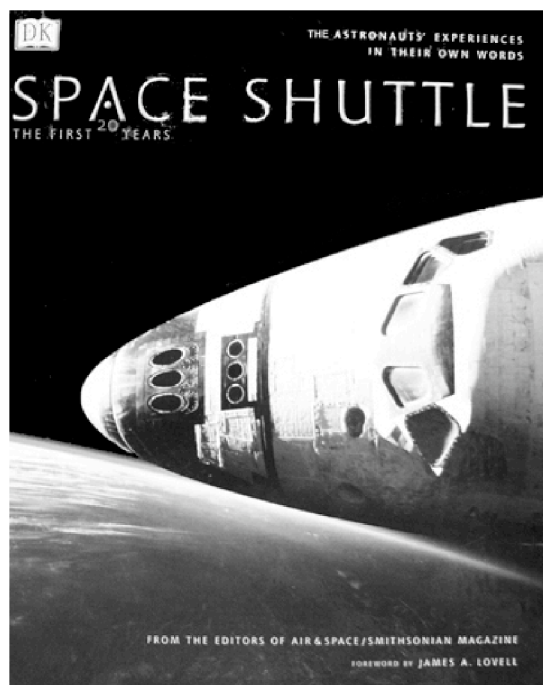
Space Shuttle:
The First 20 Years
Edited By Tony Reichhardt
320 pages
ISBN 0-7894-8425-0
Copyright 2002
DK Publishing
New York, New York 10016

The events of February 1, 2003 will be remembered by every one who works in this profession. We will remember where we were, what we were doing, or what we had to do after the event. Some things will have different meanings. One I look at differently is the subject of this review. This book was in my stack to review a few months before February. I didn't read it as soon as I received it. This isn't a book you read from cover to cover like you would a novel. It is a cross between a coffee table book and a half hour of CNN Headline news.

This book chronicles the first 20 years of the Space Shuttle program. As the cover states it tells "the astronauts' experiences in their own words." The editors of the work wrote to nearly every one of the more than 250 people who have flown on the shuttle since 1981 to ask them to recount their most memorable experiences on the Space Shuttle. Some astronauts recounted their favorite experience; others, some moving sight that stuck with them. A few told stories of events that they wish had never happened or at least would be forgotten.

The book also has some great photos throughout. Many photos are from NASA archives and have never been published. This gives the book the feel of a photo album. It's neither a technical journal, nor a political history. It's a personal perspective of the Shuttle program.

Many stories are fascinating. Even more fascinating is that the most memorable event during a mission isn't what you might think. Few astronauts listed launch, weightlessness, or a view out a window. When that is your job, you take incredible things as merely the baseline for the rest of the awesome things you get to do.



Gordon Fullerton missed the whole first part of Free Flight #1 on Enterprise due to a failed computer that left him pulling circuit breakers and flipping switches most of the flight. Mike Coats recalls the abort on STS 41-D. A cracked hydrogen line meant they weren't going to launch for a while. He took his family to Disney World. Four hours after launch time he was in line at Space Mountain. His wife said, "Well, this isn't quite what you thought you'd be doing today, is it?"

Rhea Seddon, Hoot Gibson's wife, got to talk to her 9-year-old son's class *via* ham radio during her 1991 flight. It was the first time her son realized his parents did something special for a living. Press showed up, fellow students were excited, but at the same time he didn't want to be singled out. He was afraid his mom would embarrass him. When it was his turn to ask a question, mom answered him just like every other student. As they were losing communication Seddon thanked the class for their questions and said goodbye. Just then she heard a little voice say, "Mom, have a safe trip home, I love you."

As we know, it isn't just safe trips home. Twice in the history of the Shuttle program a crew has not returned. Hoot Gibson recounts how his class of astronauts (1978) had a 20-year anniversary party in 1998. Almost all of the 35 members of that class were there, except the four lost on Challenger. He says, "We had five of the six original women astronauts, and they posed for a picture. I'll never forget the depressing feeling we had, because it was so very apparent that Judy Resnick, who'd been on Challenger, wasn't in the photo."

John Young recounted how on STS-1 the shuttle slipped sideways 4°. Software cancelled it, or that crew wouldn't be here. Bob Cabana tells how ISS was almost destroyed on the first construction mission. They had gotten to within three feet of Zarya so they could grab it with the robot arm when the orbiter automatically fired its jets to maintain attitude. The shuttle moved towards Zarya. Cabana switched modes and moved the shuttle away as quickly as possible.

Rick Husband recalled the Shuttle punching through a cloudbank during launch on STS-96. He planned to look out a window as they approached the clouds to get a good visual feel for how fast they were moving. "I timed my crosscheck of the main engines and other systems to look out the front window for a few seconds just prior to passing through the cloud layer. Fortunately, I looked just in time to see the layer coming. As we punched through, it went by in the blink of an eye. Very impressive."

The first 20 years of the Shuttle program has gone by in the blink of an eye. Every planetarian should have this look at the program from a human perspective on their shelf. If you ever question why humans explore space, the stories in this book will remind you.

Astro Video Review: *95 Worlds and Counting*

Move over Captains Kirk and Picard. John Lithgow is in charge of this fascinating trip beyond the third rock. *95 Worlds and Counting* takes you on a visual treat through some of the most bizarre moons in our solar system. Stops include Io, Titan, our Moon, and more. With the aid of computer graphics mixed with video and historical footage, the viewer gets a good idea of what we have already encountered on another world and what we might expect on others.

This is a presentation that is packed full of facts. Interviews with various scientists set an excellent example for anyone wishing to dedicate oneself to the study of a particular moon. All of this is choreographed to constant stream of visuals that keeps the pace quick and boredom at bay.

Interspersed with visits to the moons are other segments that highlight topics such as how craters are made and what moons may have life on them. Some of the best animation is used to highlight what sports a person could engage in on other worlds. Unfortunately, the budget for this project must have been all but consumed by the production of these segments. The over use of the clips throughout the presentation causes them to lose their impact by the show's end.

Combine this with a layout that clearly divides the program into segments, and you are often left with the feeling that you have already seen this before, especially if you are watching the entire program in one sitting.

It is also clear that the animation budget overwhelmed the budget for the rest of the program's visuals. I found some of the video sequences to be either out of step with the rest of the presentation, edited in such a way as to possibly confuse the viewer, or as in the case of the moon Phobos, to imply an incorrect fact. In several shots, we are walking across Phobos while looking at Mars in a beautiful blue sky with clouds.

This being said, I still would highly recommend this program for use in most any venue provided you use only one or two segments at a time. The format of the program lends itself well to both exhibit and planetarium productions (with permission of course), and the segments could be used to highlight studies in the classroom setting. The fast pace of the segments and well-scripted incorporation of facts, along with the entertaining visuals, makes this program a good addition to anyone's library.

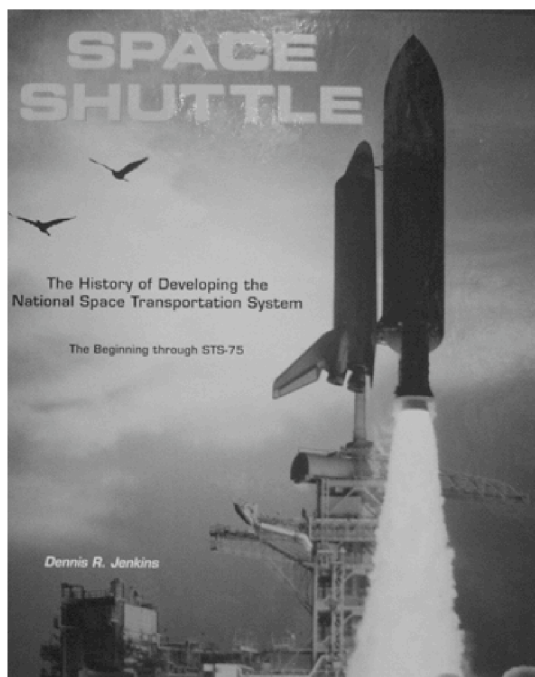
Priscilla Bernardo
Orlando Science Center
Planetarium
Orlando, Florida

95 Worlds and Counting
Narrated by: John Lithgow
Length: 50 minutes
Price: \$21.95 on DVD
\$19.95 on VHS
<www.discovery.com>

Book Review: *Space Shuttle: The History of Developing the National Space Transportation System, The Beginning through STS-75*

I am not going to give you a very long review of *Space Shuttle: The History of Developing the National Space Transportation System, The Beginning Through STS-75*. That isn't because the book isn't worth reading. It is worth reading. This book, however, is rather technical. It discusses shuttle systems in great detail. If you want to learn more about what each part of the orbiter does, then this is the book for you. If you want a fun, easy to read non-fiction piece about the shuttle's development, find another book.

You probably won't want to read this book from cover to cover in one sitting. It is a great reference book on shuttle systems. It became very useful (unfortunately) in early February for details on the thermal protection system. It is also interesting to see how the shuttle developed from concept to reality. This really is a fascinating book; so don't discount it because of its technical nature. You may find that you refer to this book again and again to answer some visitor's question about how the space shuttle works.



Space Shuttle: The History of Developing the National Space Transportation System, The Beginning Through STS-75
By: Dennis R. Jenkins
324 pages
COPYRIGHT 1996
ISBN: 0-9633974-4-3
Published by: Walsworth

News from SEPA States



George Fleenor
Geographics Imaging
Bradenton, Florida

Alexander Brest Planetarium, Jacksonville

Patrick McQuillan reports: The Alexander Brest Planetarium at the Museum of Science and History in Jacksonville is busy with laser shows, new staff, school shows, public shows..., shows, shows, and more shows. Currently running for public audiences are two programs: *What's Up?* and *A Trip Thru Space*. *What's Up?* is the standard live night sky show. *A Trip Thru Space* is family oriented trip through the solar system and galaxy. *A Trip Thru Space* is an in-house production that has been a perennial favorite.

The spring laser show run includes *Led Zeppelin's Greatest Hits* and *Pink Floyd: Dark Side of the Moon*. Both of these programs do well no matter when we run them. Saturday nights continually do better than Friday nights for attendance. The afternoon matinee program is *The Beatles: Greatest Hits*. We are working on summer laser programs that will include *Elvis' Greatest Hits*. All of our original productions are ILDA format and available on ADAT. If you are looking for some new laser programming, we invite you to give us a call.

In early March, Marty Crandell-Grela joined the planetarium staff as Planetarium Educator. She replaces Sarah McDonald who moved on to the interesting (slightly better paying) world of the public school system. Marty has prior experience working at the Copernican Space Science Center in New Britain, Connecticut and the Don Harrington Discovery Center in Amarillo, Texas. We are looking forward to working on some longstanding projects now that we have full staff.

Upcoming events include International Astronomy Day and a Saturday workshop on the upcoming Mars Rover mission with the help of Erich Landstrom, NASA Solar System Educator. If you are going to be in the area near the end of April/beginning of May, give us a call for details.

Buehler Planetarium & Science Center, Davie

Susan J. Barnett reports: The Buehler Planetarium & Observatory is running public shows four days a week. The weekend shows and monthly specials include *Comets Are Coming*, *In My Backyard*, *The Explorers Project*, *2061: The Secret of Mars*, and *Light Years from Andromeda*. We continue to rotate shows on Wednesdays, and these shows include *The People*, *Ancient Horizons*, *The Explorers*, *Astrology: Fact or Fiction*, *Clouds of Fire*, *The Origin of Stars*, *The Voyager Encounters*, *The Secret of the Cardboard Rocket* and *The Mars Show*.

Buzz Aldrin Planetarium, West Palm Beach

Leslie Bochenski reports: We've been undergoing some personnel changes here in South Florida. After a protracted search effort, we've hired a new Planetarium Outreach Educator, Chris Pagan. Chris recently graduated from Valparaiso University in Indiana, with a B.S. in Physics and a concentration in Astronomy. While at Valparaiso, he conducted a senior research project on H- α and OIII emissions from nebulae and served as a research assistant on a project involving variable stars. Chris gained some public performance skills in the University's planetarium. Here at the Aldrin Planetarium, Chris is responsible for three outreach programs; *StarLab*, *Rockets are a Blast*, and telescopic observing; along with performing shows in the planetarium and developing classes.

Our new Planetarium Educator is Derek Calzadilla. Derek is responsible for presenting shows in the planetarium, developing classes and new programs, and show production. Because Derek speaks Spanish, we are now showing *Fito Gato En El Espacio* (Spanish *Larry Cat in Space*), and he is developing a live current sky show in Spanish. Thanks to Derek, we are better able to serve the Spanish speaking community of Palm Beach County. Please join me in welcoming these two talented individuals to the community of planetarium professionals!

On February 7 Apollo 14 astronaut Dr. Edgar Mitchell spoke at the Museum about the importance of space exploration and space-based research. After the tragic loss of the Columbia and her crew just a few days before, his talk was very inspiring. Dr. Mitchell stressed the importance of global cooperation in the exploration of space. He also stated that all astronauts know the risks inherent in their work, but because of their dedication to the pursuit of knowledge they are willing to accept the risks.

On May 31, June 1, 7, and 8, the Museum will be holding "Living and Working in Space" days. Visitors can investigate how astronauts protect themselves from radiation, try on a spacesuit, sample astronaut ice cream, and try to repair a satellite while suspended to experience some of the difficulties encountered while working in microgravity.

Science Center of Pinellas County, St. Petersburg

Wayne Tripp reports: We are offering public the Planetarium show *Winter Tales* Wednesday afternoons at 2:30 P.M. and three shows on Saturdays. We have finished the renovation of our Planetarium where we have raised the floor and changed the seating arrangements to better accommodate our new Mediaglobe projector, at the same time allowing for handicapped

accessibility. We are awaiting a new show featuring the spring skies and our still learning how to make (program) original shows.

One Saturday night a month we open the Carol Samuel Observatory and offer the public a chance to view astronomical objects through our 16" Meade LX-200. Many members of the St. Petersburg Astronomy Club bring out their telescopes as well and share views with the public. Times have been tough here and recently I was dropped to part-time status. I don't know how long I can survive with this loss of income. (Does anybody know of any planetarium positions open?)

The Orlando Science Center, Orlando

Paul Trembly reports: As I write this, it is currently 46° in sunny Orlando. So much for spring. Speaking of spring, we have opened our new planetarium show, *Just Imagine*, from Sudekum Planetarium. In addition we, have just opened our new large format film,

Coral Reef Adventure. We will be joining forces with the Central Florida Astronomical Society (CFAS) for the May lunar eclipse. We have also started to have local scientists come in once a month for a new lecture series. Dr. Humberto Campins, of UCF's Physics and Astronomy Department will be speaking for Astronomy Day. In addition to Dr. Campins we will be having observing and other activities throughout the center.

In the observatory, we have joined with our Nature Works staff to educate our visitors about Osprey. There is a mated pair that has built a nest on a nearby cell tower. The birds are a great telescopic treat for our visitors as they wait for it to get dark. Watching the parents feed their young and watch them grow has become almost as much of a draw as has the night sky. Saturn and Jupiter have delighted not only our regular visitors but also hundreds of girl scouts and boy scouts who are diligently working on merit badges.



George Fleenor
Geographics Imaging
Bradenton, Florida

Agnus Scott College Planetarium, Decatur

Chris Dupree of reports: We have our regular spring series of Open House events, listed below.

March 28, 2003

William A. Calder Equinox Concert
Bradley Observatory (Co-sponsored by the Department of Music)

April 11, 2003

Guy Consolmagno (Vatican Observatory):
Astronomy, God and the Search for Elegance
Bradley Observatory (Co-sponsored by the Department of Religious Studies)

May 9, 2003

Chris Dupree (Agnes Scott College):
You are Here (The Big Picture)
Bradley Observatory

Valdosta State University Planetarium, Valdosta

Ken Rumstay reports: Renovation of Nevins Hall (home to the Valdosta State University Planetarium) has begun. Mike Simms from Spitz, Inc. was here

March 10 – 11; we disassembled all of the planetarium components and crated them for storage. We expect to be out of commission for approximately two years.

Fernbank Science Center, Atlanta

David Dundee reports: Fernbank is preparing for a busy summer. Our main planetarium show is *Spaceflight* which will include the new ISS show. For children we will be running *The Flying Saucer Mystery* just in time for the big Mars Close approach.

Speaking of Mars we will be adding extra observing nights at the end of August and the beginning of September. We will have two NASA funded programs running this summer: SpaceStation Fernbank for three weeks in June and SEMAA (Science, Engineering, Mathematics, Aeronautics Academy) one week in June and four in July.

Our very own astronomer Angela Sarrazine has observing time this summer on the Keck telescope on Mauna Kea. April Whitt is hoping to return to Sri Lanka for an astronomy conference. So far 2003 has been a good year attendance wise. School groups continue to come despite high fuel costs and security concerns. (We are only about a mile from CDC).



David Dundee
Fernbank Science Center
Atlanta, Georgia

Kenner Science Center, Kenner

We have a lot going on here at the Kenner Science Center. The 50' planetarium that I have been telling you about for years is still under construction, and for those of you attending this year's SEPA conference, you should have a chance to see the facility. It has been officially named the Louis Roussel Planetarium.

The building itself is basically complete. The dome and projectors will be going in shortly. In our current planetarium we continue to show our normal array of presentations. Recently our Planetarium Assistant, Heidi Ransom, has been converting some of

our planetarium shows to electronic presentations so that we may offer them in other areas of our museum complex.

Our Young Astronaut Program continues to do well and we are about to bring this group to the NASA Stennis Space Center in Mississippi.

Recently our facility in conjunction with the Louisiana Nature Center, the University of New Orleans (UNO), and the Pontchartrain Astronomy Society held a night of Saturn observing at UNO. This event turned out to be a great success and we are planning similar events later this year. Our Science Center is



Dennis Cowles
Louisiana Nature Center
New Orleans, Louisiana



Dennis Cowles
Louisiana Nature Center
New Orleans, Louisiana

getting ready to undergo its second renovation in four years. As you can tell, our facility has a lot of construction and thus quite a mess.

Lafayette Natural History Museum and Planetarium, Lafayette

The year so far has been incredibly busy in Lafayette. With the museum and planetarium open, it seems like the learning curve for our new equipment has become even steeper! More equipment is being installed throughout the planetarium and its support areas, too, as the staff begins to establish a daily routine and think up improvements. The place gets to be more and more like a real planetarium every week.

The museum is featuring the traveling exhibit *Titanic Science*, bringing a lot of school groups and public visitors into the building. School programs are booked up for virtually the rest of the school year.

At the same time that anywhere from 5 – 7 school and public programs were scheduled per day, production began for installing Adler's *Clouds of Fire: The Origin of Stars*, the first public program installed by the staff without equipment vendors on site using the installation as a teaching tool. (Only a relatively small number of panicky phone calls were required!) After a couple months of work, installation was completed a full three hours before the first presentation, which went smoothly.

This summer's planned program is *Secrets of the Southern Skies*, produced by the French planetarium association APLF and the European Southern Observatory. Plans call for installing the program in both French and English, which should be an interesting challenge!

St. Charles Parish Library Planetarium, Luling

The Saint Charles Parish Library Planetarium in

Luling, Louisiana is proud to announce the re-opening of our theater. Equipped with a new state of the art Minolta MediaGlobe Digital Planetarium, our 20 foot dome shines with a multitude of stars rarely seen from these parts.

We now have the ability to show full dome high resolution video images and special effects without the need for any additional projectors. Included in the renovation project were new seating, carpeting, sound system, graphics workstation, and a remote control system.

Fortunately due to the low cost of the equipment we are still able to produce and present sky shows for the schools and public at no charge. We feel very fortunate to be able to offer this service to our community. Check out our Web site at <www.stcharles.lib.la.us> and navigate to the planetarium page to see what we are presently up to.

Audubon Louisiana Nature Center, New Orleans

Things are gearing up for summer at Audubon Louisiana Nature Center. Dennis Cowles reports that school group attendance shot up immediately after the end of state-mandated tests. The new managing director of the Nature Center has decreed that an increased emphasis will be placed on the planetarium department because of its unique position within the umbrella organization: only three people out of 650 work in the planetarium, the only department within Audubon Nature Institute that does not concern itself with life sciences. The planetarium staff is, of course, grateful for the new attention within the organization.

Dennis and his staff, Marc Magisana and Hollie Boylston, are currently working on a new planetarium program entitled *Calendar, Clock, and Compass*, which will premier in October.



Glenn Dantzer
Settlemyre Planetarium
Rock Hill, South Carolina

Roper Mountain Science Center, Greenville

As with many other facilities, budget constraints are making life difficult. We are able to maintain and do some production, but the purchase of new digital audio equipment is on hold. We are in the planning stages for a "whopper" Mars program to open this summer. Since we operate the "War of the Worlds" telescope here at Roper Mountain, we will playing up the historic/sci-fi angle on Mars, as well as updating audiences on recent and on-going exploration.

We are also enjoying our new "Universe Classroom" which is optimized for the teaching of astronomy. A new telescope shop provides for large and small telescope maintenance, and our new large telescope deck adds observing opportunities for visitors.

Dupont Planetarium, Aiken

The Dupont Planetarium at the University of South Carolina Aiken began its newest show, *Cruising Through the Constellations* for school groups. The

program begins in our lobby area where the students take part in an activity that introduces them to the *ecliptic constellations*. We use the term ecliptic constellations instead of the zodiac to differentiate between the science of the ecliptic and the pseudoscience (or non-science or nonsense) of the zodiac. The classes then enter the planetarium and cruise through the constellations as they are displayed on the dome. Constellation stories from different cultures are described. The ecliptic is described again and the path of the Sun and planets is demonstrated. In addition to this show, school groups could choose to see *Larry Cat in Space* or *More Than Meets the Eye* during the month of March. In April student groups could choose to see *The Voyager Encounters*. In May the choice was *Magellan: Report From Venus*.

On May 10, 2003, the Augusta Astronomy Club, the Dupont Planetarium, and the Ruth Patrick Science Education Center will host the spring Earth and Sky Night. Club members will have a variety of

telescopes available for visitors to view the heavens. A special new show will premiere in connection with the lunar eclipse of May 15. The show *Shadows in Space* will explore the causes of solar and lunar eclipses. Additionally, the show explores the phases of the moon and how they relate to eclipses. A variety of hands-on activities will be available to help people understand the wonders of earth and space science.

Settlemyre Planetarium

We here at the Settlemyre are preparing for the

onslaught of all the summer campers and visitors. We will be offering both films and planetarium shows for children as well as hosting the Winthrop University Jr. Scholars Space Camp.

Our current line up of shows includes *Star Stealers* and *Explorers of Mauna Kea*. In addition we offer two live sky programs on Saturday and Sunday. This double offering of a live sky show has resulted in an increase in weekend attendance.

That's it from South Carolina. I hope you all have a nice summer



Glenn Dantzler
Settlemyre Planetarium
Rock Hill, South Carolina

Sudekum Planetarium, Nashville

Kris McCall reports: First, everyone needs to make sure they have the correct fax number to reach the Sudekum Planetarium directly. That number is 615-401-5102. This comes straight into our office, increasing your chances of reaching us quickly.

Second, we now have video for all of our Planetarium show packages available on DVD. In fact, the DVD has video segments for seven different shows for the incredibly low cost of only \$75. What a deal! In case you didn't know, all our soundtracks are available on CD. If you already have some of our shows, you can purchase replacement CDs for just \$20 for each disk.

That's the business highlights. It has been quite a while since there has been any news from the Sudekum Planetarium in Nashville. That is because we have been terribly busy. A major reason for our silence has some recent staff changes.

JanaRuth Ford, Planetarium Educator, left the Planetarium in September 2001 to work on her Masters in Astronomy and spend more time with her family. The administration asked us not to fill the position.

Longtime artist and Production Designer Patricia VornDick left the Planetarium in May 2002 to pursue her freelance graphic arts and exhibit design practice. She had been an employee of the Cumberland Science Museum for sixteen years, and her presence in sorely missed in many ways. Patricia has assisted Drew and me on several occasions since her departure, and we hope to work with her again on future productions. Her position is also temporarily suspended.

The current staff of the Sudekum Planetarium consists of Kris McCall, Drew Gilmore, and part-time technician and occasional public program presenter Chuck Mendonsa. The Mendonsa name will sound familiar because his wife Sharon used to work in the Planetarium until she moved to the Education Department in 1999.

In July of 2002 the Cumberland Science Museum opened a huge new exhibit area called the Adventure Tower. This is a 68 foot tall structure comprised of seven levels, interactive exhibit units, and climbing opportunities. For those who have been to our Museum, the Center Court was a thirty foot tall, two story open

area in the center of the building. To accommodate the Tower, contractors had to cut a 40 foot square hole through the third floor and then through the roof which was capped off with a glass pyramid. Suffice to say, the Tower was the major focus of all efforts for many months.

The Adventure Tower has been quite popular, and while many institutions are reporting falling attendance, the Science Museum is currently exceeding projections. That being said, we are also working hard to keep the momentum going with new traveling exhibits and events and plans for future growth of permanent facilities.

Another exciting recent event is that in November 2002 we became the Adventure Science Center. The name was changed to better reflect what we are and what we do. "Cumberland" sounded too regional, and "Museum" has connotations of looking at dead stuff in cases. It tends to be rather noisy here with people interacting with the exhibits. I especially enjoy watching seniors zip down the DNA slide. We are still the Sudekum Planetarium. We are just at the Adventure Science Center.

The first Sudekum Planetarium was dedicated on March 3rd, 1952, and to celebrate our 50th anniversary, the Sudekum family surprised us with a gift. It was announced in early March 2003 that the Sudekum family has given \$1.76 million to the Planetarium in order that we may explore the possibilities for the next 50 years of the Sudekum Planetarium. I was absolutely speechless when I found out because neither I nor our CEO Ralph Schulz knew this was coming. I'm not sure what we are going to do, but I am excited by the challenge. Read more about the gift at <www.tennessean.com/local/archives/03/03/29604850.shtml?Element_ID=29604850>.

As I write this, one reporter from the Tennessean is working on a short article about the history of the Planetarium. Another is working on a feature article about me. It is hard to believe that I have been here sixteen years. It is absolutely crucial that everyone understand that I have not done all this myself. I have had the pleasure of working with some of the finest people in the business and that I have ever known: Bill Bradshaw, Phyllis Kirkpatrick, Sharon Mendonsa, Jim Chapman, Shawn Laatsch, Waylena McCully,



Jim Greenhouse
Sharpe Planetarium
Memphis, Tennessee



Jim Greenhouse
Sharpe Planetarium
Memphis, Tennessee

Patricia VornDick, JanaRuth Ford, and Drew Gilmore to name a few. We have accomplished a lot in that time, and there is still more to be done.

Sharpe Planetarium, Memphis

Jim Greenhouse wrote: We are all missing Kathey Nix. Kathey battled cancer for several months, undergoing doses of chemotherapy, radiation, and several pain medications. She kept working the whole time. Kathey was last at the museum on March 20, saying that she felt tired when she went home. None of us knew that her condition deteriorated over the weekend, and her brother called us on the morning of the 25th to tell us she had passed away in the night.

Longtime staff members Alex Eilers, Roy Foppiano, and Edwin Faughn, have had more than their fair share of tragedy. They were all here when Kathey's predecessor, George Brown, died in a motorcycle accident in 1996. Read more about Kathey's career at the Pink Palace on her memorial page.

We kept the planetarium going by cycling through the seasonal shows: *Wonders of a Winter Night* and *Visions of a Spring Night*. *Sol & Company* was presented for family audiences. *Follow the Drinking Gourd* is the family show starting in June.

I finished work on an original feature called *Coming to a Sky Near You*. It is a show about astronomical special events: conjunctions, meteor showers, comets and eclipses. It is produced so that each segment of the program can be presented by itself when that particular kind of phenomena occurs. The show runs throughout the summer.

The planetarium hosted special events of its own in the spring. Yuri's Night, on April 12, was a lot of fun for the public, but kind of bitter/sweet for us considering we had lost Kathey just a few days before. About 300 people enjoyed the "Space Party," and we even made some money for the planetarium by selling snacks.

I was lucky to have two talented coworkers who were willing to provide music for the event, but I was really lucky that one of them was in a band named "Roger, Houston." How perfect was that? After looking at Jupiter, Saturn, and the Moon through telescopes, people were dancing in the dark on the lawn at the Lichterman Nature Center.

We had all kinds of other things to do: space puzzles and mazes, quizzes about the history of space flight, and activities where teams had to work together to land space shuttles and explore the solar system. Folks could also see Edwin's works of art and even draw their own planet with sidewalk chalk. We were able to talk to people all over the world in the chat session. Look for pictures from the event at yuridrive.yurisnight.net/.

We also had a special observing event for Astronomy Day on May 10, which included several activities including an old favorite here: the solar system walk. Telescopes were set up to see the lunar eclipse on May 15.

I hired two new people to present public shows. Augusta Akpotu is from Kenya and Ramakrishnan (he said we can call him Rama, thank goodness) Menon is from India. I like having an international staff!

Our second run of the laser show *Pink Floyd's Dark Side of the Moon* in February far exceeded all of our attendance and income estimates, doing much better than during its first run last year. In fact, all of the laser shows we have presented over the last fiscal year have done really well.

The IMAX is showing *Kilimanjaro: to the Roof of Africa* and *Lewis & Clark: Great Journey West*, which turned out to be a block-buster movie. We are getting a movie about pandas this summer so that we can surf off of the excitement caused by the local zoo's new panda display.

Despite the success of the IMAX and planetarium, everybody at the Pink Palace is currently having to ask for permission to spend money, but at least we still have some. The museum system hired a new director, named Steve Pike, from West Virginia.

After Columbia was lost, we put up a small memorial outside the planetarium. People were invited to write notes to the families of the astronauts, which we passed on to NASA. I was surprised to find that one of the messages was from a man who identified himself as one of Willie McCool's flight instructors.

I was particularly interested in STS-107 because the commander, Rick Husband, is from my hometown of Amarillo, Texas. My brother went to middle and high school with him. It was weird to see old pictures of Husband in my brother's high school year book when I went to visit him in April.

It's been a tough Spring. Please keep the planetarium staff in your thoughts as we adapt to life without our boss and friend, Kathey Nix.

Craigmont Planetarium, Memphis

We had a nice turnout for the May 15 lunar eclipse. We presented Sudekum's Lunar Odyssey for a very appreciative crowd inside the star theater. While the audience asked questions, members of the Memphis Astronomical Society set up telescopes in our parking lot.

We had to keep the lights on until our night school classes dismissed at 9:15, and just about the time the building engineer turned off the lights, the clouds dispersed as well. We had great fun observing the eclipse's subtle colors, and we also observed Saturn low on the horizon and Jupiter shining brightly high in the west.

One of the most gratifying things an educator can hear is the voice of a middle school student declaring, after she viewed Saturn and its rings for the first time through a telescope, "This is so cool!"

One of our guests was a photographer who had shot more than 600 images of events at Craigmont High School for the Tennessee book in the series *America 24/7* to be published in 2004.

Falls Church High School, Falls Church

Gary Purinton's information reflects the far-reaching effects of our Commonwealth's financial condition. He writes: The nine Fairfax County Public Schools planetariums have all been cut to half time. We are all now teaching various subjects in the classroom half time. The school administration decided to handle the cuts by eliminating half of the elementary sequence. We now present programs for the fifth grade and as many of the fourth grade classes as we can fit into our schedules. The sixth grade program is out. Because we are teaching classes during several periods, presentations for high school classes have pretty much halted, too. Of course, the budget crunch hasn't stopped the administration from introducing new programs like the Student Accountability Program. I don't know what they're doing with that money. I haven't seen anything about the program all year, but I guess I should count my blessings.

The budget appears to pretty stable for next year. Barring any unforeseen circumstances, the planetariums should remain half time, but we can always hope.

The way the planetarium cuts were instituted was rather underhanded. After telling the public that the planetariums would be fully funded and that the public didn't need to speak to the issue at the public budget hearings, the school board turned around a week after the hearings and cut the program by half. Some of the board members expressed a twinge of guilty conscience, but it didn't stop them from doing it.

Chesapeake Planetarium, Chesapeake

Dr. Robert Hitt is winding down to the end of the year. After all the work to complete his Phd. he is looking forward to a more relaxed schedule. He plans to paint the dome and building, streamline his Sky Skan automation system, and other general maintenance. Then he'll take life easy for the rest of the summer except for work on his "100 year old home".

Radford University Planetarium, Radford

Dr. Rhett Herman, Associate Professor of Physics and Director of the planetarium writes: I went to the MAPS meeting a couple of years ago, but that was only because of the timing of the SEPA conference that year didn't work out for me. Also, we don't have any travel funds here at Radford University, but I'm sure that's no surprise to you since you're in Virginia. I'd love to go to a conference since I benefited greatly from the MAPS meeting, but it will be contingent upon at least some funding from Radford University (or some mystery inheritance of which I'm not aware yet).

I run the Radford University Planetarium. I can tell you that we're in a unique position in that the state budget crunch did not affect us in any way, shape or form. And that's because... we have exactly zero budget! Now, I know that's not totally the case, but Radford University pays the light bill without

hesitation since this planetarium is used in classroom instruction for our astronomy and a couple of other courses here. The RU planetarium has an interesting history, and that might be something that people might like to read about. For example, our dome is actually "homemade" and is a solid, 24-foot dome. If you could give me some guidance as to what people might like to read, or provide editor services, I'd do my best to help out with a contribution. *[So..., write it up and send it in to your editor, Rhett. —Ed.]*

I'll be running the RU planetarium for years to come. You can read more about it on the planetarium Web site <planetarium.radford.edu>.

Virginia Living Museum Planetarium, Newport News

While the memorial service for the Columbia Astronauts was taking place in Washington D.C. we were raising our new observatory dome into place on the new exhibit building, a sad occasion juxtaposing a hopeful one. In the next year, we will be setting up the observatory equipment (undetermined as yet due to funding issues.) For the time being, we may transfer our current Celestron 14 scope to the new Abbitt Observatory until funding allows an upgrade.

Winter is unpredictable here in Virginia at least weather-wise. Some are warm and mild others cold and snowy. This one has been a bit of both. Our scenic pond behind the museum froze over solid for the first time in a couple of years.

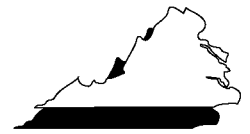
For a while, we get to watch the ducks "hoof it" across instead of float and paddle.

Winter also give us great opportunity for variety in programming. On January 24, we held our first of five scheduled Evening Under the Stars events for 2003. Nearly two hundred folks came out to join us and learn about our featured object Saturn. A guest lecturer from NASA Langley, R. Brad Perry came over to give us an update on the Cassini mission. The Abbitt observatory and several of the local astronomy club members were available with live telescopic views. We also offered planetarium programs and children's craft activities. Our next one is scheduled for May 15 featuring the total lunar eclipse.

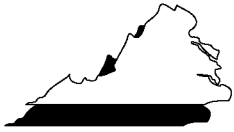
Our public program is Planet Patrol 2: The Star Stealers from Sudekum. During February we will add a few performances of our own variation of Follow the Drinking Gourd in honor of Black History month.

Next we wanted to do something to tie in the upcoming lunar eclipse. So by the time you read this we should be running Footsteps. But our copy of the soundtrack has degraded over time. We dusted off the script and rerecorded narration and mixed in production music from Loch Ness and Castle Lane productions.

In addition, we had three special weekends, one that featured Groundhog Day (on February 1-2), another focused on Reptiles (on February 15-16), and the latest one (March 22-23) is our Spring Earth and



Dave Maness
Virginia Living Museum
Planetarium
Newport News, Virginia



Dave Maness
Virginia Living Museum
Planetarium
Newport News, Virginia

Sky Safari weekend. Each special weekend is complete with live animal demonstrations and children's activities.

Hopkins Planetarium, Science Museum of Western Virginia, Roanoke

Hopkins Planetarium & Mega Dome Theater

Mark Hodges and his two part time staff are showed at their winter show, *Jewels of the Night* in the Planetarium. This program ran through March at 11:15 on Saturdays.

The current Mega Dome film offerings are *Michael Jordan to the Max* through June 30th, and *The Human Body* through May 31. *The Human Body* is shown Tuesday through Friday at 3 and 4 p.m. *Michael Jordan To the Max* can be seen on Saturdays at 1, 2 and 3 p.m., and *The Human Body* at 4 p.m. On Sundays *Michael Jordan to the Max* can be seen at 1:45 and 3 p.m., and *The Human Body* at 4 p.m. The museum is closed on Mondays.

School planetarium programs are scheduled and run every Tuesday through Friday, but reservations are required. General public and groups are welcome to attend these with prior notice.

Time of Your Life is the current traveling exhibit. It deals with the biological clock, and visitors can learn how ancient cultures measured time.

For more information contact Mark *via* email at <mhodges@smwv.org>.

Ethyl Imax Dome and Planetarium, Richmond

Eric Mellenbrink reports that the planetarium theater is running a new in-house program called *Dark Matter*. I guess the title says it all, or does it? This program runs two times each day through the end of the school year.

IMAX Dome movies include *Jane Goodall's Chimpanzees* and *The Old Man and the Sea*, an Academy Award winning animated short film dealing with the Hemingway story of the same title. Another popular film called *Dolphins* runs on the weekends.

Coming later in the year will be an IMAX film called *Lewis and Clark* following their historic journey

of exploration.

The museum is hosting a new traveling exhibit, from OMSI called Engineer-it.

Virginia Beach City Public Schools Planetarium

Charles Dibbs, Director writes: Outgoing Director Herb Teuscher retired in June of 2001 after 32 years of service for the school system. Since the planetarium here opened in September of 1969, Herb was the only Director the planetarium has ever had. His presence and style have been missed, but he still stops by occasionally to check up on me.

The Virginia Beach City Public Schools Planetarium has successfully completed one full year with a new Director and administrative assistant. Marla Frye was hired to give the planetarium a presence on the Internet. Her skills as a Webmaster have given this planetarium another avenue to reach students, teachers, and the general public at large. Her creativity can also be seen throughout the planetarium in the form of displays, brochures, and other electronically generated forms.

The major task of improving our digital equipment and upgrading and automating our star ball was completed last year. With the addition of another Sony CRT projector, several DVD players, a new faster computer, and software to bring it all together, the planetarium has greatly enhanced its ability to deliver stimulating lessons to the students of Virginia Beach City Public Schools and those of neighboring cities.

Weekly public presentations have seen a rise in attendance this past year, and the trend looks as though it will continue. Presentations are educationally driven.

Children's programs are combined with presentations suitable for older viewers throughout the year, but all who come seem to learn something from their visit.

While stepping back somewhat from the repeated delivery of "canned shows," I try to mix slides shows with live talks with scheduled speakers or events, *etc.* Themes vary, of course, but sticking to educational presentations seems to draw the most visitors. And, of course, we do not charge anyone for admission.

In Memoriam

Kathey Nix, Manager of Theaters, Pink Palace Museum

Longtime Pink Palace staff member and current Manager of Theaters, Kathey Nix, died Monday night, March 24, 2003 after a short illness. She died of cancer that had recently recurred. Kathey had been a Pink Palace staff member for almost 20 years.

Kathey Nix started part time at the Pink Palace Planetarium, as it was then known, in June 1983 as

a Planetarium Coordinator. She lectured in the Planetarium and presented public and school planetarium shows. Kathey was promoted to Associate Manager of the Planetarium in January 1986 and to the position of Planetarium Director in October 1994. After the untimely death of Theaters Manager George Brown in a motorcycle accident in December 1996, Kathey filled

Dan Hope
Community and Public
Relations
Memphis Museums



Kathey Nix
Manager of Theaters
Pink Palace Museum
Memphis, Tennessee

the Manager of Theaters position temporarily from January – November 1997. She was promoted to that position permanently in December 1997. Kathey's responsibilities included oversight of the Union Planters IMAX® Theater, the Sharpe Planetarium, and the Pink Palace Mansion Theater, all located at the Pink Palace Museum. Soon after becoming Theater Department manager she directed the renovation/modernization of the renamed Sharpe Planetarium.

Kathey was well-known around Memphis. Local media often tapped her as an astronomy expert when celestial events occurred or there was news about new discoveries. She appeared many times on local television and radio as an astronomy expert or

in interviews concerning presentations in the many theaters at the Pink Palace. She was always present at the Planetarium's Observing on the Lawn events and at the Pink Palace Crafts Fair with the Solar System Walk and telescopic observing of sunspots when there were clear days at the Crafts Fair.

Funeral services were held March 29 at the Church of the Holy Spirit, 2300 Hickory Crest Drive, Memphis. Kathey left her parents, Bill and Jane Hayden, and four brothers, James, John, Robert, and Timothy Hayden. The staff of the Pink Palace Family of Museums will sorely miss her smile and positive attitude, her knowledge of celestial events and astronomy, and her good humor and gentle nature.

HST's Greatest Hits '96

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The Space Telescope Science Institute (STScI) provided slides of Hubble images to individuals within regional affiliates who arranged 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 \$50.00, including postage and handling. Send your check or purchase order to the address at the left.

- 01a___ Hubble's deepest ever view of the universe, revealing 1,500+ extremely faint galaxies in various stages of their development
- 01b___ Sample galaxies from the same Hubble deep field
- 02___ The inner region of a warped dust disk around Beta Pictoris once hidden because of the star's glare
- 03___ An image of the Egg Nebula taken by WFPC2; it shows the emergence of some mysterious searchlight beams emanating from behind a dying star
- 04___ The first direct image of a star other than the Sun: Betelgeuse.
- 05___ In more detail than has ever been seen before, the process a star like the Sun goes through when it dies
- 09a___ In clear, detailed pictures the first ever images of Pluto's surface; four views
- 09b___ Pluto surface map
- 10___ Gravitational lens effect captures image of primeval galaxy
- 11___ Images of the globular cluster Mayall II, consisting of 300,000 old stars, in orbit around the Andromeda galaxy
- 13a___ The Helix Nebula, NGC 7293 showing the collision of gases near a dying star
- 13b___ Helix Nebula detail with cometary knots surrounding the dying star
- 14___ A view of Comet Hyakutake that focuses on the near-nucleus region of the comet
- 15___ Three layers of Uranus's atmosphere taken with infrared filters; both clear and hazy layers created by a mixture of gases
- 16___ Image taken of Saturn where its rings appear edge-on because of the position of the Earth in Saturn's orbital plane
- 17___ A view of several star generations found in the central region of the Whirlpool Galaxy
- 18a___ A rare view of Saturn's rings seen just after the Sun had set below the ring plane
- 18b___ A series of 10 images of several small moons orbiting Saturn
- 21a___ NGC 1365, a barred spiral galaxy located in the Fornax cluster
- 21b___ NGC 4639, a spiral galaxy located in the Virgo cluster
- 22a___ The Crab Nebula and a detail of the pulsar in its center
- 22b___ Sequence of three images showing changes in the Crab Nebula pulsar
- 23a___ Huge, billowing pair of gas and dust clouds in Eta Carinae
- 23b___ Expansion of Eta Carinae debris
- 25___ Hubble's 100,000th exposure captures an image of a distant quasar
- 27___ A vast nebula, NGC 604, which is known for a great starbirth region
- 29a___ 18 gigantic star clusters which may be building blocks for a new galaxy
- 29b___ Blue sub-galactic clumps which may be galaxies under construction
- 30___ Jupiter's moon Io passing above turbulent clouds
- 31___ Clusters of stars and a fishhook-shaped cloud of gases found in NGC2366, a giant star forming region
- 32___ Changes in Jupiter's auroral emissions
- 33___ Views of weather on opposite hemispheres of Neptune
- 34___ A Martian dust storm around the edge of the north polar cap
- 35a___ A survey of quasar host galaxies
- 35b___ A quasar caught in the act of colliding with its companion galaxy
- 36a___ Supersonic comet-like objects in the Cartwheel Galaxy
- 36b___ Cartwheel Galaxy composite image
- 36c___ Cartwheel Galaxy illustration
- 38a___ M8, the Lagoon Nebula showing giant "twisters" and star wisps
- 38b___ M8, the Lagoon Nebula detail showing eerie funnels and twisted-rope structures

HST's Greatest Hits '97

The Space Telescope Science Institute (STScI) provided slides of Hubble images to individuals within regional affiliates who arranged 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 39 images distributed in 1997. Numbers next to the descriptions are shortened versions of STScI press release numbers, *e.g.*, 09a refers to PR 97-09a.

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

- 01___ Central supermassive black holes in galaxies NGC 3377, NGC 3379, and NGC 4486B:
- 03___ SN1987A Fireball: One tenth light year long dumbbell structure expanding at six million miles per hour in supernova 1987A
- 08___ Changes in the nucleus of Comet Hale-Bopp as it moved closer to the Sun beginning in the September of 1995
- 09a___ Transition from spring and summer in Mars's northern hemisphere; photo taken shortly before opposition
- 09b___ Three photos of Mars taken six hours apart with 90° difference between images; photos taken shortly before opposition
- 11___ The Egg nebula in which stars are born and die violently; the photo shows jets of gas being blasted into space
- 12___ A supermassive black hole located in galaxy M84
- 13___ NICMOS captures a region of the Orion nebula filled with action as a center for the birth of new stars
- 14___ Supernova 1987A: different colors represent different elements in the ring
- 15a___ A view of Mars's cloud cover
- 15b___ Seasonal changes in Mars's northern polar ice cap
- 15c___ Four views of Mars rotated 90° between images during summer in Mars's northern hemisphere
- 16___ The Cone Nebula: six baby sun-like stars surround their mother
- 17___ A collision between two spiral galaxies in the heart of galaxy Arp 220
- 18___ Fireworks near a black hole in the core of Seyfert galaxy NGC 4151
- 19___ STIS reveals an invisible high-speed collision around a supernova
- 20___ Hubble pinpoints the optical counterparts of a γ -ray burst in a distant galaxy
- 21___ Hubble captures a volcanic eruption plume from Jupiter's moon Io
- 22___ A gamma-ray burst blazes from a titanic explosion in deep space
- 23___ Hubble's look at Mars shows a canyon dust storm, cloudy conditions for Pathfinder's landing in July 1997
- 24a___ Dissipation of a large dust storm on Mars
- 24b___ Hubble shows dust and water ice clouds that exhibit substantial daily variations
- 25___ Powerful telescopes discover the largest galaxy in the universe
- 26___ Hubble separates components in the Mira binary star system
- 27___ Hubble reveals a huge crater on the surface of the asteroid Vesta
- 28___ Hubble finds a bare black hole pouring out light
- 29___ Hubble shows blobs of gas formed by some nova outbursts
- 30___ Hubble keeps track of a fading γ -ray burst
- 31___ Mars at the beginning of autumn in the Martian northern hemisphere
- 32___ Hubble sees a neutron star alone in space
- 33___ Hubble identifies what might be the most luminous star known
- 34a___ Hubble reveals some stellar fireworks accompanying galaxy collisions
- 34b___ Detailed images of colliding galaxies
- 35___ Hubble shows images of a blue straggler star
- 36a___ Hubble tracks clouds on Uranus
- 36b___ Hubble spots northern hemispheric clouds on Uranus
- 37___ Hubble shows infrared view of a moon, the ring, and the clouds of Jupiter
- 38a___ Hubble sees a supersonic exhaust from a nebula
- 38b___ Hubble's planetary nebula gallery

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HST's Greatest Hits '98

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Below you'll find a brief description of all 40 images distributed in 1998. Numbers next to the descriptions are shortened versions of STScI press release numbers, *e.g.*, 26a refers to PR 98-26a.

The entire set of 40 slides is \$50.00, including postage and handling. Send your check or purchase order to the address at the left.

- 01___ COBE's infrared view of the Universe: three maps of the full sky seen in infrared light
- 02___ Distant supernovae: light sources determine the universe's expansion rate
- 03___ Beta Pictoris: disk indicates planets, and 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 its 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___ The Cotton Candy Nebula and The 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 the turbulent firestorm of starbirth
- 14b___ Centaurus A: tilted disk of gas at the 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: γ -ray burst; most energetic event in the universe
- 17b___ GRB 971214: γ -ray burst; comparison of Keck Telescope and HST views
- 18___ Saturn: details of the clouds and hazes in the atmosphere of the ringed planet
- 19___ Possibly the first extrasolar planet ever to be imaged orbiting about a newborn 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 eight billion light years from the 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: shows 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 currently known satellites; false color image
- 36___ NGC6210 planetary nebula described as looking like a turtle swallowing a sea shell
- 37___ Quasar PG1115+080 and the 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 galaxies in Tucana, near the South Celestial Pole
- 41b___ HST deep field south: infrared, visible light, and ultraviolet views of distant galaxies
- 42___ NGC253 galaxy: edge-on spiral galaxy just beyond our Local Group

HST's Greatest Hits '99

The Space Telescope Science Institute (STScI) provided slides of Hubble images to individuals within regional affiliates who arranged 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 42 images distributed in 1999. Numbers next to the descriptions are shortened versions of STScI press release numbers, *e.g.*, 43a refers to PR 99-43a.

The entire set of 42 slides is \$52.50, including postage and handling. Send your check or purchase order to the address at right.

- 01___M57 Ring Nebula: the sharpest view yet of this planetary nebula
- 02___Combined deep view of infrared and visible light galaxies
- 03___HD141569: stellar dust rings of a star in the constellation Libra
- 04___SNH1987A: the self-destruction of a massive star in the Large Magellanic Cloud
- 05a___Six images of a young stellar disk found in the constellation Taurus
- 05b___Four images featuring disks around various young stars in Taurus
- 06___NGC1316: the silhouette of dark clouds against a glowing nucleus of an elliptical galaxy
- 07___Mars: visible, infrared light images; evidence of water bearing minerals
- 08___Proxima Centauri: a detailed image of the Sun's nearest stellar neighbor
- 09___GRB990123: fading visible light fire ball in a γ -ray burster
- 10___Six images showcasing different views of spiral galaxies
- 12___Tarantula Nebula: multiple generations of stars in the brilliant cluster of Hodge 301
- 13___Jupiter: images of the volatile moon Io sweeping across Jupiter's face
- 14___Copernicus: the 58 mile wide (93 km) impact crater on the Moon
- 16___NGC4650A: a polar ring galaxy
- 18___Rings, arcs, and crosses as seen in Hubble's top ten gravitational lens effect images
- 19___NGC4603: magnificent spiral galaxy associated with the Centaurus cluster
- 20___NGC3603: various stages of the life cycle of stars in a giant galactic nebula
- 21___AB Aurigae: a swirling disk of dust and gas surrounding a developing star
- 22___Mars: a colossal polar cyclone
- 23___N159: a turbulent cauldron of starbirth in the Large Magellanic Cloud
- 25___NGC4414: magnificent details in the dusty spiral galaxy
- 26___NGC6093: a stellar swarm in a dense globular cluster
- 27___Mars: the red planet at opposition during April – May, 1999
- 28___MS1054-03: galaxy collisions in distant clusters
- 29___Jupiter: an ancient storm in its atmosphere (The Great Red Spot)
- 30___Giant star clusters near the galactic center
- 31___HCG 87: a minuet of four galaxies
- 32___HE2-104: small, bright nebula embedded in the center of a larger nebula
- 33a___R136 in 30 Doradus: a grand view of the birth of stars
- 33b___R136 in 30 Doradus: two detailed views of a highly active region of star birth
- 34a___NGC1365: a barred spiral galaxy reveals a bulge in its center
- 34b___Eight different views of the central bulges of spiral galaxies
- 35___HH32: a magnificent example of a "Herbig-Haro object"
- 36___NGC2261: Hubble's variable nebula illuminated by R Monocerotis (R Mon)
- 37___NGC2346: a butterfly shaped nebula
- 38___NGC2440: planetary nebula ejected from a dying star
- 39___OH231.8+4.2: the "rotten egg" nebula
- 40___M32: hot blue stars deep inside a dwarf elliptical galaxy
- 41___NGC2207 and IC2163: two spiral galaxies passing by each other
- 42___M20: Trifid Nebula reveals stellar nursery torn apart
- 43a___M87: the jet near the galaxy's central black hole

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JPL's Best Images of '98

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| | |
|---|---|
| NASA JPL has sent us the following slides for the Galileo Mission and others. Slides are \$1.25 each on both the current page and the following page. | |
| P-35036B | Launch of Galileo on STS-34 Atlantis |
| P-35213 | Deployment of Galileo and IUS |
| P-37218 | Venus Colorized Clouds |
| P-37327 | Moon: Western Hemisphere |
| P-37539 | Infrared Image of Low Clouds on Venus |
| P-37593 | Earth: Ross Ice Shelf, Antarctica |
| P-37630 | Global Images of Earth |
| P-40449 | Gaspra: Highest Resolution Mosaic |
| P-41383 | Gaspra Approach Sequence |
| P-41432 | Moon: North Pole |
| P-41474 | Earth: Northeast Africa and the Arabian Peninsula |
| P-41493 | Earth: False Color Mosaic of the Andes Mountains |
| P-41508 | Earth: Moon Conjunction |
| P-42501A | South Polar Projection of Earth |
| P-42964 | Asteroid Ida: Five Frames Mosaic |
| P-44130 | Asteroid Ida: Limb at moment of Closest Approach |
| P-44131 | Ida and Dactyl: Enhanced Color |
| P-44297 | High Resolution View of Dactyl |
| P-44520 | Asteroid Ida Rotation Sequence |
| P-44542 | Comet Shoemaker-Levy 9 Fragment W Impact on Jupiter |
| P-47058 | Ganymede: Comparison of Voyager and Galileo Resolution |
| P-47065 | Ganymede: Mixture of Terrains and Large Impact Crater in Unuk Sulcus Region |
| P-47162 | Full Disk Views of Io (Natural and Enhanced Color) |
| P-47179 | Three Views of Io |
| P-47182 | Jupiter's Great Red Spot |
| P-47183 | Dark Bands on Europa |
| P-47194 | Live volcano on Io |
| P-47196 | False Color Great Red Spot |
| P-47903 | NIMS Ganymede Surface Map |
| P-47905 | Five Color Views of Io |
| P-47906 | Europa In Color |
| P-47935 | Io Glowing in the Dark |
| P-47961 | Ganymede's Nippur Sulcus |
| P-47970 | Ganymede Color Global |
| P-47971 | Io in front of Jupiter |
| P-47972 | Changing Volcanoes on Io |
| P-48035 | Stereo View of Ganymede's Galileo Region |
| P-48040 | Natural and False Color Views of Europa |
| P-48063 | Thunderheads on Jupiter |
| P-48112 | Ganymede Uruk Sulcus High Resolution Mosaic Shown in Context |
| P-48113 | Ganymede Galileo Regio High Resolution Mosaic Shown in Context |
| P-48114 | Jupiter's Great Red Spot |
| P-48122 | Two views of Jupiter's Great Red Spot |
| P-48127 | Ridges on Europa |
| P-48145 | Io: Volcanically Active Regions |
| P-48188 | The Main of Ring of Jupiter |
| P-48231 | Callisto Crater Chain at High Resolution Shown in Context |
| P-48236 | Europa: Ice Floes |
| P-48293 | Callisto: Scarp Mosaic |
| P-48294 | False Color Mosaic of Jupiter's Belt-Zone Boundary |
| P-48299 | Asgard Scarp Mosaic |
| P-48445 | True Color Mosaic of Jupiter's Belt-Zone Boundary |
| P-48496 | Color Global Mosaic of Io |
| P-48526 | Europa Ice Rafts |
| P-48527 | Closeup of Europa's Surface |
| P-48532 | Mosaic of Europa's Ridges, Craters |
| P-48584 | Io's Sodium Cloud |
| P-48698 | E4 True and False Color Hot Spot Mosaic |
| P-48700 | Jupiter Equatorial Region |
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A Silent Auction: For the SEPA Scholarship Award Account

Dave Maness
SEPA Past President

You may already know that at the business meeting in Wichita, Kansas SEPA authorized a Scholarship Award account. The funds raised will eventually be used for awarding grants to help deserving SEPA members attend a conference or an approved workshop. Now the real work begins.

We need to start filling this account so that we can offer an award sometime in the future. This will be an ongoing effort, and it will likely take a couple of years or more before we can announce an award opportunity. We can and will do what it takes to get this program funded.

One of the best ideas to come from brainstorming sessions was a silent auction. This summer at the conference in Baton Rouge, we plan to put this idea into action. We will have a table set up for small displays of items, services, or talent that you might like to auction. Many SEPA members have craft skills or hobby specialties like collecting, woodworking, sewing, *etc.* Consider donating a duplicate item from your collection, producing a custom item, or offering a bit of your time, some event, or service for the person with the highest bid.

Maybe you are a vendor and provide a service to the planetarium community, or perhaps you produce items for planetarium use like show kits, special effects, artwork, or music. Donating an item or a limited amount of your services to this cause would be a great way to advertise your service or product. Please consider sharing something with SEPA. Some minimum bids might be allowed within reason depending on the item or service.

We will provide sheets on which to write the bids. Please bring the item with you to the conference or specify shipping arrangements. To allow for limited space, please bring a 3.5" x 5.25" or a 4" x 6" photo (if possible) representing the item or skill you wish to auction as well as a brief description clearly describing the item or skill. Include any reasonable limits and a minimum bid. We would like to know as soon as possible what and how many items will be offered to auction. This will give us an idea of the display space needed. Please contact

me if you have any ideas, questions, or comments about the program.

We welcome other ideas to continue with this program. Put your thinking caps on, and consider serving on the committee. Here are a few of the ideas that the committee and others came up with so far. I'm sure there are others out there. Please feel free to contact me with your thoughts and suggestions. As always, contributions are also welcome.

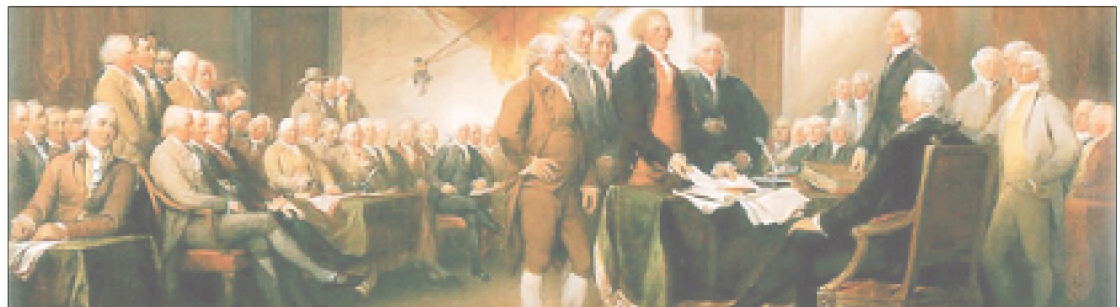
1. Place a check box on the conference registration form to indicate if you want a certain amount to go to the fund.
2. Place a space on the membership renewal form to add a tax-deductible donation to the account.
3. Hold a silent auction of donated items during a conference with all proceeds going to the SEPA Scholarship Award Account
4. Hold a talent night at a hospitality suite (possibly for a small cover charge) with proceeds going to the account.

The first two items will soon be put into place. Note: The last I heard about this is that, just like the box for presidential election funds on the U.S. tax form, checking this box will NOT increase your registration fee. The last item on the list sounds like a lot of fun but may take a little more time and planning. We'll let you know as plans develop.

Once again, we hope to hold a silent auction at the conference in Baton Rouge. What I would like you all to do is think about what you might have to contribute to the cause. Do not limit it to physical items (although that is fine); think also about what unique skills or talents you have that you might want to offer. Some examples might include music or a musical performance, artwork, or crafts.

I happen to know that there is a great, untapped resource of talent in SEPA and it is not limited to things astronomical. So be creative and use some of your talents to help your colleagues. Thanks for all your help.

SEPA members stand patiently, waiting to make a bid on a very popular item in the Silent Auction to benefit the Scholarship Award Account
(Artwork by John Trumbull)



SEPA Silent Auction Item

Place a photo, draw a picture of the item,
or write a brief description in the space provided.

Item: _____

Description: _____

Offered by (Your name): _____

Preferred mode of contact information (Phone, Mail, Email, Fax, Telegram, Pony Express, or other):

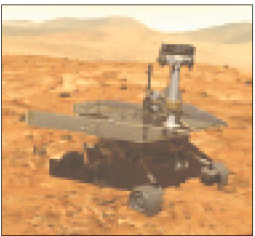
Summer Rendezvous with Mars

Andrea Finley
Senior Intern
Craigmont Planetarium
Memphis, Tennessee



Above:
Artist's drawing of
Earth and Mars

Below: One of two Mars
Exploration Rovers on the
surface of the Red Planet



In the summer of 2003 Mars will be much brighter and bigger in our night sky than at any other time in the last 60,000 years. Mars will be at *opposition*—the moment when the Sun and Mars are on opposite sides of the Earth—on August 28, 2003; since Earth is moving faster around the Sun than is Mars, this is also when we are overtaking Mars.

Mars is at opposition about every 26 months. Because of the elliptical orbits of Earth and Mars, not all oppositions are equally interesting. Favorable oppositions occur when Mars is near the point in its orbit called *perihelion*, its closest approach to the Sun, and Earth is at the point in its orbit called *aphelion*, its greatest distance from the Sun.

“Perihelic oppositions” of Mars are infrequent, occurring only about every 15 – 17 years. The last time Mars was at a close opposition was September 1988. Mars passed within 36.5 million miles of Earth that summer.

Mars was very bright in the evening sky. Through a 6 – 8 inch telescope, observers could see the polar ice caps and some dark features on the surface of the planet. Such detail is hard to see most of the time. Ordinarily what you see through a small to medium sized telescope is just a bright red disk.

Though Mars's opposition comes on August 28, it will actually be closest to the Earth on August 27. At this close approach, the Red Planet will be even brighter than Jupiter and all of the stars in the night sky. Only the Moon and Venus will outshine Mars.

To prepare for this awesome skygazing event, reacquaint yourself with one of our closest neighbors. Mars was out of sight in 2002 because it was on the other side of the Sun. During the latter part of September 2002 it began to come back into view in the morning sky and is now in full view. Rising after midnight, it appears low on the horizon and rather small in the sky.

By late August 2003, the reddish point of light in our sky will appear more than six times larger and shine about 85 times brighter than it appears now.

At 4:51 a.m. CDT on August 27, 2003, Mars will be within 34,646,418 miles of Earth. This will be the closest that Mars has been to our planet in about 60,000 years. Don't miss it this summer. It will be a long time before Mars is this close to Earth again.

On May 30 NASA launched the first of two Mars Exploration Rovers, robot geologists, which will search for answers about water on Mars. On July 12 NASA will launch a second rover. The two rovers will land on separate sites in January 2004.

Paul Campbell Fellowship Award Nomination Form

Nominees must have been a member of SEPA for at least ten years, and they must display qualities in each of five areas, as represented by the five-pointed star shaped award: integrity, friendship, service, knowledge, and vision. Please submit this form to any SEPA Council member.

Nominee's name: _____

Qualifications: _____
