President's Message

David C. Maness
President
Peninsula Planetarium
Newport News., Virginia

I wanted to wait until after the confer ence to compose this message so I could write about the conference itself while it is still fresh in my mind (and give people a little more time to get home and send in articles themselves.) I hope everyone who attended had a safe journey to and from Richmond, Kentucky.

I said in my closing remarks something like: after this conference I feel I can go back to work with a renewed vigor. Af ter I made that statement intended to send people out on the road with a good feeling I think I heard someone yell, Oh yeah? What conference did you attend? Thanks for keeping me honest.

My true feeling was one of exhaustion, and going back to work seems like a picnic by comparison. Maybe that is as it should be. Those administrators who worry that this is an all expense paid vacation for staff should attend one of these and see what it is really all about.

Then again maybe not. There are many of us who are self employed or who work at a facility that otherwise does not support its staff with professional development funds. In that case I don t think they have any say in the matter anyway. Either way, our conference experience is always full of useful activities.

After we got a call from Jane Hastings, my Assistant Ken Moore and I decided to try and recreate a trip that another group of us (including Jane) made several years earlier. I wrote about that in a previous message. So we travelled to Richmond, Virginia and picked up Jane Hastings who offered the use of her husband s car for the trip. Thanks again, Jane and George (for the use of your car, etc).

It was a pleasant drive from Richmond (Virginia) to Richmond (Kentucky). In talking with Jon Bell at the conference (one of the drivers on our original trip), I discovered that our first group trip was to the conference at Land Between the Lakes, Kentucky and not Richmond as I had thought. It just goes to show you how the mind can play tricks on you over time, or maybe it s just age.

Unfortunately we arrived too late to at tend the Gheens Science Hall and Rauch Planetarium open house. Many folks said that it is a wonderful facility, and Sean should be proud. Thanks, Sean, for set ting that up, and best of luck in your new position.

Later that day, I attended the new member orientation arranged by Carole Helper. I think we gave all the new members a warm welcome, a few words of advice, and a good feeling to start the con ference. Thanks again, Carole, for heading that meeting.

There were over 165 del egates in attendance this year, possibly a new record for SEPA. We even had one person who hailed from South Africa. She felt that our joint conference would give her the best opportunity to meet with the greatest number of planetarium professionals and vendors. She was also looking for ways to improve the live pro gramming at her home planetarium. The vendors were there in force, and I m sure she wasn t dissappointed.

There were plenty of planetarium shows and workshops. I attended the binocular mount workshop hosted again by Adam Thanz. I came away with a new mount that will be handy in demonstrating to the general public the value of binoculars for night sky observations.

There were about 30 paper sessions, 11 workshops, and 22 vendor presenta tions several of which were planetarium programs not to mention a trip to the Shaker Village, Jon Bell s constellation shoot out, and time to wind down and en joy each other s company at the hospitality suite later in the evening.

At the business meeting we took care of a few housekeeping amendments, passing some and rejecting others for further re view and revision. Comittees were formed as well. One will look into the possibility of establishing an endowed grant to help some needy colleague (probably deter mined by comparing copies of pay stubs from applicants) to either attend our con ference or a production workshop.

My thinking on this is if we can help one of the lowest paid of our colleagues to make

President's Message
continued

the contacts and get the information and training he or she needs to compete for a higher paying position, then we help all of us by raising the average salary of plan etarium professionals. Funding for this account could come from private dona tions or a variety of different ways: raffles, silent auctions, or even talent shows at conferences. We are a talented and creative group. I m sure that many other ways will pop up from year to year.

I gave a report on the research I have done in contacting respected production folks about the cost of a program dealing with the Galileo mission to Jupiter. We are hoping to capture the excitement and enthusiasm of Nagin Cox who gave us the wonderful talk at the conference banquet in Winston Salem. My contact at JPL was interested and will pursue sources of fund ing. In the mean time, I ve been directed to ward the IDEAS Grant program for funding as well. Several people have volunteered to help us write a grant proposal and seek information on the production costs in hopes of lowering the estimates.

We presented several awards to deserv ing members. George Fleenor was given a plaque in thanks for his exemplary service as president of SEPA. Jane Hast ings received a unique award created in the southwest region. It consists of a very large, sparkly, blue Mexican hat. This Good Neighbor award is presented each year by the previous recipient, to a person attending a meeting outside his or her region who epitomizes the qualities of a good neigbor.

Then we presented the Paul Campbell Fellowship award to not one but two mem bers who have worked very hard for many years on behalf of SEPA: Duncan Teague and John Hare. They are both fine roll models for all of us. Council could think of no more deserving candidates and we could not see presenting the award to one and making the other wait another year. My only regret is that I didn t regale the crowd about the accomplishments of Duncan Teague, former President of SEPA, long time editor of our journal, Southern Skies, and long time holder of the office of Secretary Treasurer, one of most dif ficult and most important offices in our organization.

Fortunately, I had asked George Fleenor to make the presentation to John Hare, also a former SEPA president, IPS rep resentative, friend, and colleague to all in the profession. I even got choked up slightly just reading the description of the award. (This is kind of ironic, since last year I had laryngitis and couldn t speak much at all.)

The description of the award is a moving statement of the ideal that these two men have achieved. If you don t believe me, open up your Member s Guidebook and read it for yourself. It still makes me choke up a bit. Thanks go to Mike Chesman who handled the engraving and who helped to keep this year s recipients a secret.

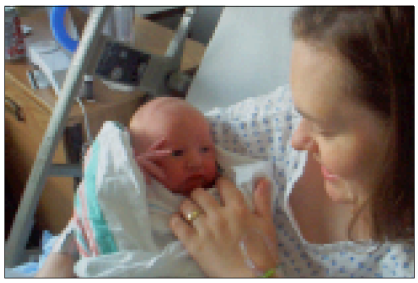
By the way, you may still be able to reserve a Member s Guidebook by con tacting Mike and following his simple instructions.

Last, but not least, we gave a plaque to Jack Fletcher and his staff for organizing such a terrific conference. I want to give my sincere thanks again to Jack, Corey

IPS Report: It's a Boy!

John Hare
IPS Representative

John returned from a trip to Ohio late Wednesday in time to hear the news of the imminent arrival of the newest member of the SEPA family his and Linda s first grandchild James Henry Howard. Thurs day morning, after catching four hours sleep, he headed to Cocoa Beach. The family s sixth floor hospital room faced north, and Kennedy Space Center was easy to see. James et al. had a fantastic view of the Space Shuttle launch which happened a little after 5 p.m. Somehow John doesn t think James will remember it.



James Henry Howard
Parents: Mark Howard, Page Hare How ard
Born: 12:10 a.m. August 9, 2001

Help Wanted

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

SEPA needs your help.

Southern Skies hasn t published an AstroVideo Review in nearly two years. The journal hasn t featured a vendor in almost as long. I asked Joanne Young to submit her own story about the formation and development of AVI. Nine months ago your publication lost its Digital Cosmos editor when he left the planetarium field.

I heard second hand that someone thought I shouldn t publish material whose source was my own planetarium interns. Well, when the professionals don t get the job done, someone else has to contribute.

I refuse to mail out a thin publication with only a President s Message, an IPS Report, an Editor s Message, Small Talk, and eight pages of state news. By the way, I thought SEPA included more than the six states who regularly contribute news.

Yes, it s true that your journal often has book reviews, Web site reviews, and an occasional technical article. It s also true that some regionals choose to distribute a newsletter composed of officers messages, job openings, and a few press releases.

Southern Skies, however, has a long, grand tradition of support by the SEPA membership. This publication represents you, your regional association, and the quality of your work.

Mike Cutrera

Our jobs are demanding, and they keep us very busy. But... the best person to ask to take on some additional responsibility is a busy person.

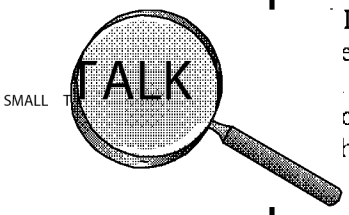
When I was honored by be ing a recipient of the Paul Campbell Fellowship Award for 2001, I said it was difficult to understand how SEPA would give such recognition to the person whose job it was to nag the membership about dues and participation in the journal. Now I ve done my job of nag ging. It s time for you to do yours.

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

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

Small Talk

Elizabeth Wasiluk
Small Talk Editor
Berkeley County Planetarium



I really don t know how you people who get a two week vacation a year do it. Perhaps because I teach as well as run the planetarium, I m more tuckered out, but here I am happy the school year has ended, I can come and go as I please.

espite its being summer, the halls t empty as I write this. Porterfield s ce Company are busy preparing for heir year end gala. They rent out the school s auditorium and get ready for a week to present this year end show. The rest of the school is being used for the Tri County Institute, a year end program where people from the school system take an intense week of classes for graduate credit. By rights I should be taking that too, but I have a great number of loose ends to tie up here in the planetarium, and I can t seem to justify taking a class I will never use, even if it is for graduate credit.

When they first established this In stitute, I used to teach at it in the plan etarium, exposing classroom teachers to how to use the planetarium. But the person who established this sort of thing doesn t feel going to the planetarium is useful, so I don t get to teach at the insti tute anymore.

I took the Institute for credit once. But I haven t done that for a while. Instead I am content to get my staff development programs done. These are programs I of fer to teachers each year on specific topics of interest, so they can get staff develop ment credit. We need so many hours a year to avoid a dock in pay, and people enjoy coming to these. A little while ago I opened these sessions to the general public as well.

I got an article from Astronomy maga zine that highlights upcoming sky events each year until 2017 when the long awaited total eclipse should be visible in the U.S. and I am eligible for retirement. Usually I pick something coming up that people can experience for themselves, but often I choose something that isn t occurring from our location, so I can attempt to recreate it in the planetarium, such as the total eclipse in Africa on the first day of sum mer this year. I play music from that area, put on a pan that looks like this area, and try to recreate the mood of actually being there using the star projector.

This year was a good year. I had students who chose to work for me more than the kids I had last year. Maybe having to have three science courses instead of two had something to do with this. Lots of other things got resolved as well. For example, I got an e mail account at long last.

Despite having e mail, it took me weeks to learn how to read my e mail. I am one of those people who doesn t check it each day. It wasn t until the end of the year when I figured out how to read it. Imagine my surprise when I d finally discovered that there were 18 messages in my in box.

I have e mail now... , <ewasiluk@access.k12.wv.us>.

Computer students set up a Web site for the high school. I will have to petition to add a page for the planetarium.

I know it is the end of the school year because I presented my annual year end planetarium programs. Astronomy stu dents presented their final projects. One of them did a project on Pluto s moon Charon and used PowerPoint to present it in the planetarium.

After exams school is essentially fin ished, but some students still show up. We do a laser disk request program where stu dents try to out do one another with more and better images from the planetarium s collection of laser disks.

With some of the disks having hundreds of thousands of images on them, I haven t seen every image and the students try to out do one another in selecting images to

compete for a Milky Way or Mars Bar or some Sun chips or a Moon Pie or some Starburst candies as prizes.

The last day I do a School s Out For Summer program with music by Janis Joplin, Billy Stewart, and Alice Cooper. I include video footage of what some kids are doing for the summer (swimming, surfing, playing guitar, etc.) and give a list of things to look forward to such as Mars brighten ing in the southern sky.

This year I got to fire up my new hy perdrive projector, and that was a nice addition. Before school let out for the summer I had my yearly service call from Ash Enterprises and had a visit from the new guy on the team called Steve. He got annual motion going and supplied a new kodalith for the Moon. It looks much bet ter. I am looking forward to firing it up come the new school year.

The seniors took off, and I handed out 2001 buttons I had gotten a double order of when I originally ordered them for my homeroom.

Speaking of 2001, I will be looking forward to hearing of the adventures of those who took off for Sri Lanka during the spring equinox and got to meet Sir Arthur in person. I had to settle for the June 6th Werner von Braun lecture at the Air and Space Museum. I got to see astronaut Gene Cernan and Ben Bova and a slide of Sir Arthur C. Clarke not a video phone image as protrayed in the film 2001: A Space Odyssey.

Sir Arthur talked about writing a story about performing a ballet in Russia s equiv alent of the Vomit Comet. When some one commented it ll be extremely short, Sir Arthur mentioned that any ballet over 30 seconds is too long anyway.

Some of those e mails I mentioned earlier were from Flavio, the educa tion coordinator at the Maryland Sci ence Center in Balti more, Maryland. My students had asked about a field trip to go either there or to the Air and Space Museum in Wash ington, D.C.

Neither of these panned out, but I was lucky enough to discover the Teacher Thursdays at the Maryland Science Cen ter while searching the Web for field trip information. Teacher Thursdays consist of special on space topics programs created especially for teachers.

I got to see one on the HST and one on space suits with a guy who is the public relations director for the company in Do ver, Delaware where they actually make the space suits astronauts wear. I ll have to e mail that guy (if I figure out how) to see if I can get some samples.

I also saw a program on Mars by Bob Craddock, geologist at the Air and Space Museum. I learned he was the model for the geologist in the Kim Stanley Robinson science fiction book Red Mars.

Mars was brighter than I had seen it for quite some time and was looking rather red. It was nice to compare it to Antares which was near by and clearly a rival.

I learned a lot about the International Space Station at another Teacher Thurs day program. I also fit in a visit to see the 30 foot model of the Naboo starfighter at the Smithsonian s Science and Industry Building.

Here is wishing you good box office receipts for that summer star show and some time for some summer fun.

Hedgesville High School, home to the Berkeley County Planetarium

Featured Vendor: Audio Visual Imagineering

Joanne Young, Owner

Still serving the planetarium community after 22 years, Audio Visual Imagineering, Inc. (AVI) extends enormous gratitude to the Southeastern Planetarium Association and to the first planetarian who saw our potential and gave us a chance Jack Horkheimer. If it weren t for Jack, AVI would not be here today.

Here s the story: In order to fund the business in 1978, I sold my house and all my furniture, and I emptied my savings account. I handed every cent over to the guy I was dating, Doug McCullough, a 60s light show artist, to start his business, Audio Visual Imagineering. I then asked Doug to give me equal partnership and marry me. Ward Davis, another 60s light show artist and engineer, joined AVI. The three of us worked long and hard hours for no income to build a multimedia laser light show.

In the spring of 1979, our money was quickly running out and Doug suggested that I call directors of planetariums throughout North America. Every director I spoke to was kind and helpful and happy with Laser Images (Laserium), Eye See The Light Show, or Heavy Water. Each politely

Left: Joanne Young and Rob Sparkes in 1979 at the laser show console in the Miami Space Transit Planetarium

told me to call back when we had some experience.

Not totally discouraged, I called the Miami Space Transit Planetarium and asked to speak with Jack Horkheimer. He answered and a miracle happened! He was interested!

Jack flew up from Miami to our little studio in Springfield, Virginia, saw our potential, and invited us to work for him the summer of 1979 under the condition that he direct our first show entitled La serdrive. We were thrilled!

The new problem was that AVI didn t have enough money to make the trip to Miami. Scared and wondering what to do next, I received my first credit card in the mail. Our second miracle! We were off to Miami!

Thanks to Jack s theatrical flair and his magnificent marketing skills, the shows met with great success. We had some really good times, and it was the beginning of a new and adventurous life.

The following fall, Paul Knappenberger gave us a job at the old Science Museum of Virginia which was housed in an old train station. Although it did not have a planetarium at the time, AVI fabricated a 40 x 90 screen and hung it in the cavernous space. The Museum handled all the advertising and promotion and, once again, the show that Jack had helped us build met with great success.

From there we went back to Miami for a second summer where we enjoyed creating a new show, The Laser Dream, with Jack. Jack then introduced us to Don Knapp of the Jackson, Mississippi Russell Davis Planetarium and Tony Jenzano of the Morehead Planetarium in Chapel Hill, North Caro

Above Right: Doug and Joanne at the laser show console at the Fernbank Science Center in 1982

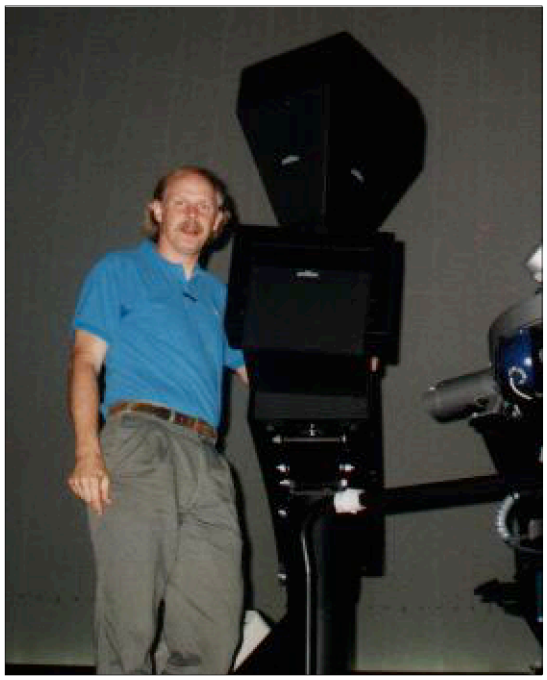
Below Right: Doug, Joanne, Ward, Aron, and Susan at the Salt Lake City IPS meeting after introducing ChromaDepth 3-D and Omniscan

lina. Jack cut the umbilical and sent us on our way to learn and grow on our on.

We did grow and continued to learn from different experiences with the planetariums that graciously hosted us. We designed new equipment, and our staff grew. We developed new technologies to increase show attendance.

Above Left: The AVI Team holding the 1991 IAAPA First Place Award for New Technology for ChromaDepth 3-D

At the 1992 IPS Conference in Salt Lake City, Utah, AVI introduced Chromadepth 3D in LASERDRIVE 3D. At the same conference we also introduced our Omniscan full dome laser projector. With about 20 projectors sold, AVI continues to develop Omniscan technology.



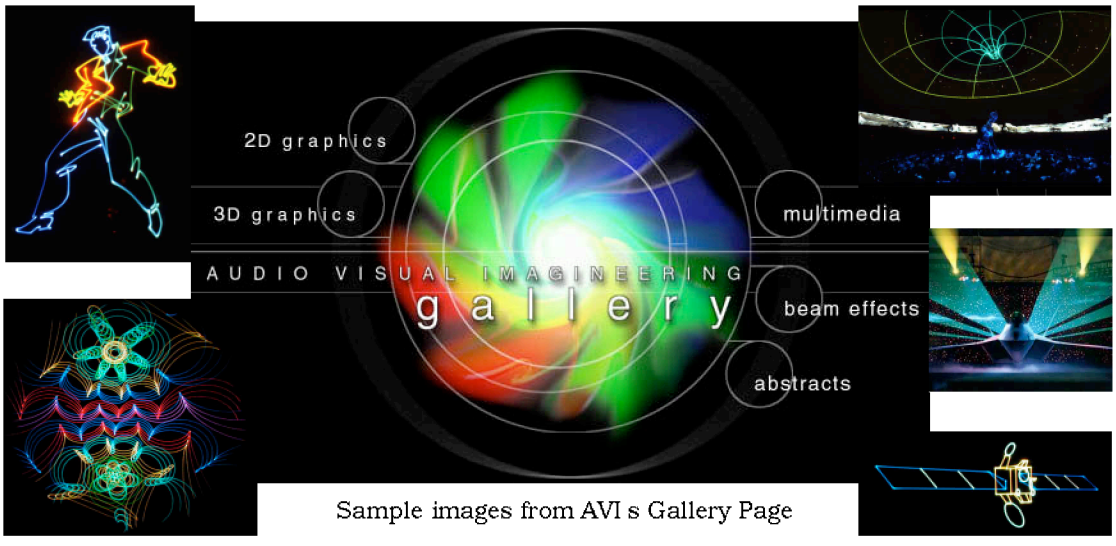
Below Left: Ward Davis with the 2010 Omniscan Model at the 1996 IPS meeting in Japan

AVI s most recent product for the planetarium community is Legends of the Night Sky, a fully animated constellation series. Many of you saw our first production, Perseus and Andromeda. Currently in production is the story of Orion.

Throughout the past 22 years, AVI has also provided shows for corporate meetings and trade shows, fairs and festivals, concerts and amusement parks. In November of 2000 the International Laser Display Association awarded first place for new technology to AVI for Omnistar, a laser show displayed inside a translucent balloon.

We owe a great debt of gratitude to Jack Horkheimer and the others from SEPA who gave us an opportunity to work, educated us and encouraged us. Thank you all for what you ve done and continue to do for AVI. We will continue to do our best to serve you.

Audio Visual Imagineering is located at 10801 Cosmonaut Boulevard, Orlando, Florida 32824. You can contact us by telephone at 407 859 8166, or you can visit us on the Internet at our Web site <www.avimagineering.com>.



Sample images from AVI s Gallery Page

Take Control... of Your VCR

Duke Johnson, Director
SciWorks Planetarium
Winston-Salem,
North Carolina

As with any endeavor, there are many paths that finally lead to success. I present one economical approach to obtaining VCR control through your automation system. The approach is mechanical rather than electronic, costs about $50, and takes less than a day to complete.

When our computer controlled VCR died, we were sad. We reflected on its years of reliable service and then imagined what the future would be like as we selected a replacement. The whole thing is not unlike getting a new pet although the exact pro cess may be a bit different! What follows is the beginning of the process. You may have gone through one like it before.

Step 1	Decide to purchase a computer controlled VCR.
Step 2	Evaluate your budget.
Step 3	Wonder what I was thinking in Step 1.
Step 4	Make a new plan.
Step 5	Decide to enable Play and Stop functions.
Step 6	Fill out an exhibits request; state problem and desired outcome.
Step 7	Wait for the laughter to subside, and then proceed even after you re told, It won t work!
Step 8	Decide to do it myself.
Step 9	Assemble tools:
(a)	vise grip
(b)	drill
(c)	hacksaw
(d)	screwdriver
(e)	pencil
(f)	pliers
(g)	tape measure
(h)	wire strippers
(i)	file
Step 10	Assemble supplies:
(a)	box of bolts
(b)	angle aluminum
(c)	flat aluminum
(d)	project box
(e)	small feet
(f)	AC wire
(g)	AC plug
(h)	2 springs
(i)	$\frac{3}{4}$ board slightly larger than the VCR
(j)	VCR (check button placement)

This approach is probably best used by those like me who are not confident in their ability to pick out the right traces on the circuit boards and do not want to risk frying their VCR. By the time you have completed this project, you may have a renewed appreciation for Rube Goldberg! (There is actually a reason this device is built exactly like it is.)

This project utilizes two solenoids which have arms that will be pulled in when an electromagnet is energized. The solenoids are ultimately connected to two levers. When electricity is applied to the solenoid, the arm moves in and depresses either the PLAY or the STOP button on your VCR. This device can give you remote computer control of a video source, and it will work for a wide variety of applications. All you have to do is solder two wires to each of the solenoids and then anchor the levers appropriately!

Note: To use this device, you must have at least two computer controlled switched electrical lines. You must also be careful if you select a solenoid different from the one specified at the end of this article because they come in both AC and DC varieties. The solenoid you chose will depend on which type of switched line you have available.

When finished, the project should look something like figure 1.

Note: It is important to select a VCR that has its buttons positioned so that lever arms can press them individually and easily.

I really do mean what I say when I tell you that you are building something that will work. All you have to do is get close using these directions, and build it while it sits in front of you. The key is to recheck each time a new piece is assembled by placing the piece into its proper position.

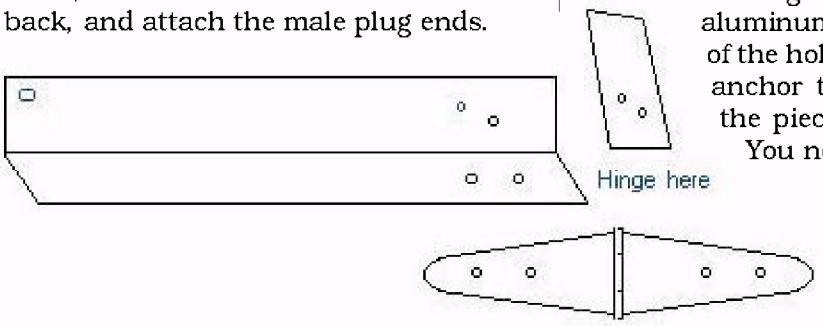
Place the solenoids[1] in a project box, and mark the place the on the box where the holes are to be drilled so that the arms can come through. At the same time mark the holes that will hold them down to the proj ect box. Drill the holes at least three sizes larger than the solenoid arms so there will be plenty of room for motion, and drill the holes that anchor the solenoids one size larger than needed to give yourself a little

extra room when assembling.

Place the solenoids in the box and attach. Do not attach the project box to the top of the VCR at this time. You will need to be able to make last minute adjustments. You may, however, prepare for this by drilling two holes in the back of the project box, away from the solenoids.

At this time, you also have other holes to drill. On the back drill a hole the same size as the strain relief you are planning to use for the cord. We will make holes to anchor the springs to the front after everything is assembled.

When you are done, solder the leads of your 110V cord to the ends of the solenoids, run the other end out the hole in the back, and attach the male plug ends.



Take the rubber feet, and place them on each button that will receive a lever. It is important to do this in the beginning so the measurements are as close as possible. Next, take a piece of aluminum angle (See Figure 2.), and measure it so that it is about the same length as from the top of your VCR to the mounting board about three inches for most VCRs. Drill two holes in the narrower side that will allow you to attach it to the hinge. Then drill one hole on the other end as far away from the bend of the angle as possible to allow more room for movement. Attach the angle to the hinge. Try positioning the assembled piece in front of the stop or play button and get a measurement of how long the arm that will impact the button needs to be, and note the approximate angle at which it will need to be attached.

Cut off a short piece of the flat aluminum stock, and drill two holes where it will attach to the angle. While holding it in place in front of the VCR, draw pencil lines on the top and bottom to mark its position and angle relative to the angled aluminum. Mark the positions of the holes, drill them out, and anchor the short flat piece to the piece of aluminum angle. You now have one lever! Just repeat the above process for a second or third lever. Note: due to space constraints, I had to make the second lever a mirror image of the first so they could be placed closer together.

It is now time to make the lever arm (See Figure 3.) that will connect the solenoid arm to the angle arm. Using flat stock, cut

off two pieces (for two levers) about three inches long. Drill a hole in the middle of the piece very near one end; then cut off the corners at an angle from the hole on both sides. Use a file to dress up this and all the other pieces as well.

For the next step drill a very small hole the same diameter as the holes in the end of the solenoid. Drill it close to the corner on the opposite end from the first hole but leave a little room to round the edge of the piece as this will aid movement.

Connect the flat lever to the aluminum angle with a small bolt, and make sure to double nut the bolt. By tightening the two nuts against each other, you allow for free movement of the levers. It also provides a good place to anchor one end of the spring. Put the solenoid and the flat lever together with a small piece of wire. A paperclip works well.

Finally, it s time to put it all together. (See Figures 4a and 4b.) Line up everything so the solenoids have about a quarter inch or less of travel left when current is ap plied. Hold pieces in place, mark the holes and try it. If it doesn t work, just move everything around a bit and try it again.

Bolt the hinges in place on the board first. Then move to positioning the VCR and the box containing the solenoids. Try actuating them again and then bolt the box to the top of the VCR if everything is working.

Note: Attaching the box in this way will probably void the warranty. If you want to keep the warranty in place, you will have to experiment with alternative ways of clamping both the VCR to the board and the box to the VCR.

After all pieces have been bolted in their final resting position, hold the springs up to the box and mark the attachment points.

Note: It is important that the springs be neither under tension nor compressed. It is their job to provide stabilization in both directions of travel. This prevents bounce. It keeps the solenoid in a good position for actuation and keeps the arm from flying out!

Finally, drill your holes and attach the springs.

The last thing to do is to anchor the VCR to the board. I just took the top off, held it down, and drilled two holes on the inside and two on the outside where there was a slight lip on the base. By waiting until now, you have given yourself one last possibility of adjustment if you still need it.

Now, don t you feel good? You have spent about $50.00 and in less than a day, assembled a few parts that will let your automation system control play and stop. It s better than paying the $1,500 for a computer controlled VCR!

When programming, it is important as always to cue the tape and program the

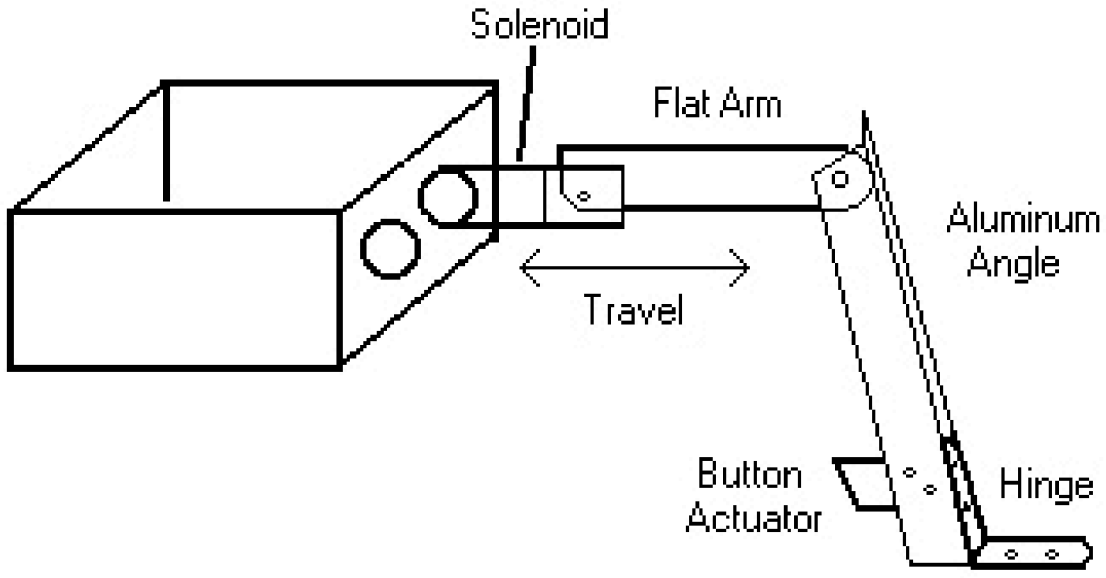


Figure 4a. This picture is drawn as the mechanism would appear just prior to put ting it on the VCR. The flast arm will come down as it swings into its final position. (See photo, Figure 4b.)

VCR the same way every time. You will have to determine how long a pulse to send to your 110V relays to actuate them.

My VCR has been operating this way for the last year, and we have encountered no problems. It works without fail and is always within a second or better of keeping the video synced.

I hope if you chose to undertake this project, you will have as good luck as we have had. If you have any questions, please feel free to call me at work (336) 767 6730, ext. 130 or you can e mail at <djohnson@sciworks.org>. I ll be happy to give you any assistance I can.

[1] (Dormeyer Products # C34 19 M 33, 110V) I chose these solenoids because they have a long effective working distance, and they cost $7.50 each. If you elect to go with other solenoids, make sure that they have enough pull and a large effective range of at least $\frac{1}{2}$ $\frac{3}{4}$ of an inch. We purchased ours from the Grainger Catalog.

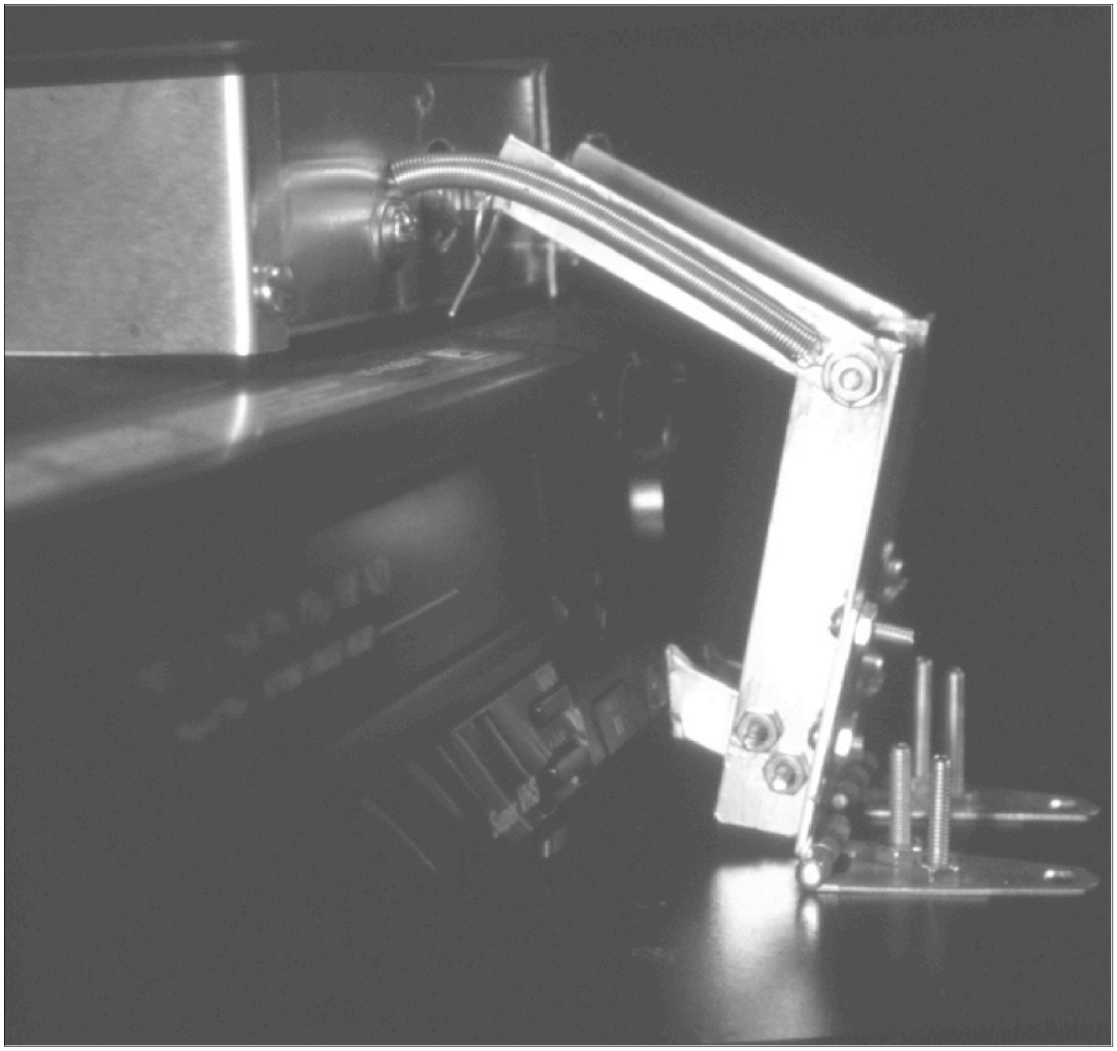


Figure 4b. The finished project, side view.

SciWorks is the science center and environmental park of Forsyth County, North Carolina. It s located in historic Winston Salem. Duke Johnson is director of the SciWorks Planetarium. This is his first article for Southern Skies. Let s hope it won t be his last.

News from SEPA States

George Fleenor
Bishop Planetarium
Bradenton, Florida

Astronaut Memorial Planetarium and Observatory, Cocoa

Mark Howard reports the gang at the Astronaut Memorial Planetarium and Observatory in Cocoa, Florida is staying very busy this summer. A new family laser show Star Spangled Spectacular, debuted in July to enthusiastic audiences. Unfor tunately, its premier was delayed slightly due to a runaway elevator ride piloted by our very own Bob Tuck. Luckily none of the ten or so passengers were injured (including Bob, thank goodness) when the rising platform in front of our theater failed in spectacular fashion. One of its four spiral screw jacks collapsed leaving the two ton platform dangling precariously nine feet in the air! Planetarium engineer Chuck Greenwood dubbed the event One of the ten least likely things will probably ever happen in your planetarium theater. Repairs were made swiftly but still ended up taking two and a half weeks, during which time we suffered through an un scheduled shutdown. Needless to say our Iwerks film projector got a hefty workout in the meantime while we substituted films for star shows.

Once things get back to normal, we ll soon begin working on a new show, Space Adventures, which will feature lasers and music, combining the fun of laser shows with the excitement of astronomy. Space Adventures will cover basic backyard astronomy while also exploring the latest astronomical discoveries. Target opening date for this show is spring 2002.

In the planning stages are two new laser show productions. Pink Floyd s Dark Side of the Moon and the Jimi Hendrix Laser Experience.

In addition to working on these in house projects, this fall we will be running AVI s educational laser show Legends of the Night Sky Perseus and Andromeda. We ll also be showing In My Backyard a preschool/ kindergarten show from the Calgary Science Center Planetarium.

Alexander Brest Planetarium, Jackson ville

Patrick McQuillen reports: Make no bones about it, this past summer was busy and noisy! The giant robotic dinosaur exhibit packed visitors to the museum and thus the planetarium. The numerous visitors made the museum noisy, as did the roaring dinosaurs. (The dino exhibit sat just outside the planetarium and my office! I m glad they are gone.)

This fall we ll be running The Explorers from the Bishop Museum in Hawaii. Dur ing the summer we ran The Explorers of Mauna Kea from Bishop, and it was very well received. Visitors especially enjoyed the live interactive part in the middle of the program. We have not been able to run The Explorers previously due to the problems with our planetarium projector s slip rings. The live part in The Explorers requires use of daily motion and latitude to point out how Polaris does not move. Before our repairs in January 2001, our precession was set 3000 years in the future. This made nothing the North Star.

We ll of course continue to offer The Sky Tonight, the live tour of the current night sky each weekend. With the increased con struction load on the International Space Station, visitors have been interested in learning where they can find the ISS in the night skies over Jacksonville.

Our evening laser show run ended on Labor Day, so we get a break until the holiday season during Thanksgiving/ Christmas/ New Year s Day. We will be running daily matinee laser shows how ever. This fall the program will be Laser Fun 2, a collection of family oriented rock songs produced by Mike Dunn at First Light Laser.

By the time you read this, we should have finished giving the planetarium theater a new look. We are replacing both the carpeting in the theater as well as the seat covers. New cushions and fabric color choices should make the planetarium a more comfortable place for both the visi tor s eyes and behinds.

Bishop Planetarium, Bradenton

George Fleenor reports: We would like to extend special kudos to our Planetarium Educator and Producer Kelly Quinn. As tronomy Magazine asked Kelly to review five books in less than 30 days and write

a review for each. All five of her reviews were published in the August 2001 issue. Congratulations Kelly!

The Planetarium and Museum are en joying larger visitation during the month of July. This is the second busiest time of the year for our facility, in addition to weekly camp sessions offered by our museum education staff.

We are gearing up for our yearly shut down the first two weeks of September. Like most attendees, we returned from the SEPA conference in Kentucky rejuve nated and full of ideas. We have ordered two new Virgo video switcher/ faders from East Coast Control. We also upgraded our previous Virgo from a four input to ten. Combining these units with two Sony Video projectors we had on hand will give us two additional video screens in the the ater. We currently have a single screen that yields an image over 40 feet in diagonal. We look forward to the completion of the project and the additional programming capabilities it will give us. We will keep you posted on how the system works in the next issue of Southern Skies.

John Hare of Ash Enterprises is also scheduled to come in and help give our Spitz STP projector a much needed clean ing. Renovations in the museum have stirred up a lot of dust in the planetarium theater that keeps us continually blowing off projectors.

We have also been busy completing our internal computer network and are happy to report that we all have Internet capabilities now. We have also acquired two new URLs: <www. bishopplanetarium. org> and <www. southfloridamuseum. org> Our old URL will still point to our site but we hope that the addition of the new ad dresses will help make it easier for us to be located on line.

Currently we are running Splendor in the Sky from the Bays Mountain Plan etarium, daily at 1 p.m. The New Cosmos from Henry Buhl Planetarium is presented at 4:00 p.m. daily. Our new matinee laser show, Fun N Sun, is presented daily at 2:30 p.m. The show features happy, up beat tunes generally associated with sum mer. Everyone seems to love the ending that features the title song from Grease.

Our Saturday morning family star show for July features Sol and Company from the Morehead Planetarium. Trip Thru Space will be featured in August followed by Lifestyles of the Stars the last two weeks in September.

Our nighttime Skies Over South Florida features More Than Meets The Eye followed by a live tour of the evening sky. The Tonite Show, the observatory/ telescope program, follows at 8:30 p.m., weather permitting.

On the light pollution front: I am still working with our City Council to produce a lighting ordinance. We have also been working with city officials on the refurbish ment of our street in front of the facility. They have torn down the three full cut off, fully shielded fixtures that they so gener ously replaced for us and are replacing them with eight more of those FGB (glare bombs) fixtures that they have used every where else downtown. Not to worry though; they promise to shield them just like the others, and we should not have any up ward lighting disturbing our observatory or the sky. Light pollution education is a continual process and you have to be will ing to ride out the issue until death! But, isn t it worth it? Keep the faith!

George Fleenor
Bishop Planetarium
Bradenton, Florida

Buehler Planetarium & Science Center, Davie

Susan J. Barnett reports: As of the summer solstice, we moved into our new observatory. It is so much nicer than our previous facility, which was torn down several years ago. Now we get the fun of unpacking and setting up all the equip ment. We have new purchases and older equipment that we can finally use.

Our weekend public shows are Galax ies and The Little Star That Could. The weekday rotation includes The Explorers, The People, Ancient Horizons, Magellan: Report from Venus, Voyager Encounters, The Mars Show, and The Secret of the Cardboard Rocket. New shows we are in troducing this summer are Lunar Odyssey, 3 2 1 Blast off, and The Mystery of the Missing Seasons.

Calusa Nature Center and Planetarium, Fort Myers

Jill Evans reports that by the time this goes to the printer I will be settled in at my new position with the U.S. Forest Service in California. I will be working in the Los Padres National Forest continuing my career in interpretation and environ mental education. It was a hard decision to leave, especially the planetarium, but I felt like the time was right. I have learned so much in the past three years. Coming into something like a dome is very intimi

dating for someone without any technical background, but with the help of SEPA members I was able to do more than I ever thought possible. Thank you for your guidance and help. I want to give special thank yous to people who were continually pestered with my phone calls and ques tions. Without your help, the dome would not be even close to where it is today! Thank you George Fleenor for too much to mention, Jon Frantz and Drew from ECCS, John Hare of Ash Enterprises, and Michael Mocherman who let me into his dome to ooh and aah! I know things will only improve at the Calusa Nature Center and Planetarium as the plans are already in motion, and I m confident that when I go back to visit, things will only be better and I ll be able to ooh and aah there as well.

George Fleenor
Bishop Planetarium
Bradenton, Florida

Thank you all for your help and sup port and I promise to continue teaching astronomy in the mountains of California. If any of you find yourselves in the Los Padres in Santa Maria, California, don t hesitate to look me up!

The Orlando Science Center, Orlando

Paul Trembly reports: We just completed showing Loch Ness s MarsQuest. It was well received and will remain available to school groups for next year. A new pro gram, SunWatch, has been started in the observatory. The observatory will be open the first Saturday of each month for solar viewing. Orlando by Night will be making its return under the DigiStar starting in October. OBN is a live star show and will run on the first weekend of each month. WSKY: Radio Station of the Stars will open in October, and the search is on for a spring show. Our Try before you buy telescope program is still well liked. Visi tors, who are interested in buying one of the Meade scopes on sale in our store can try out their selected model on any Friday or Saturday evening during SkyWatch tele scope viewing. The observatory has one of each model available for use, and in many cases people have realized that they would be better off with good binoculars rather then a telescope.

The Poinciana Planetarium, Boynton Beach

Jim Cherry Memorial Planetarium, Atlanta

David Dundee and April Whitt report Fernbank is enjoying good crowds for the summer show Georgia Before Columbus, and they re presenting Campfires in the Sky as their children s show. They con tinue to run SEMAA classes and SpaceSta tion Fernbank space camp. There has been lots of interest in Mars in the observatory. Please check out the observatory s new Web site at the URL <fsc.fernbank.edu>. Their two new fall shows will be Between the Planets, and for children, Small Stuff.

Jim Greenhouse
& Carole Helper
Mark Smith Planetarium
Macon, Georgia

Georgia Southern University Planetarium, Statesboro

The planetarium will feature the follow ing fall 2001 planetarium public evenings: Friday, September 21 at 7:30 p.m. Wel come to Outer Space by Becky Lowder; Friday, October 26 at 7:30 p.m. Explora tion of Mars by Dr. Ben Zellner; Friday, November 16 at 7:30 p.m. The Secret Lives of Galaxies by Dr. Clayton Heller; and Fri day, December 7 at 7:30 p.m. Christmas Sky Show by Becky Lowder. A star show of current night sky and telescopic observ ing (if skies are clear) follows each of the presentations.

Coleman Planetarium, Dahlonega

Joe Jones reports: The new science building, which will house the planetari um, is currently scheduled for completion sometime during spring semester 2002. The first classes will not be held in the facility until fall of 2002. However, if the reinstallation of the planetarium goes smoothly, perhaps we could begin shows during the summer of 2002.

The Spitz 512 projector and 30 foot dome is currently in storage and will be reinstalled in the new planetarium space. There are no plans for new equipment. In fact, when we got to see the final plans, there was no provision for the dome catwalk, a projector elevator, or a prep room.

We now have some funds to complete the interior of the planetarium, includ ing a catwalk and a small prep space and perhaps even allow for the projector elevator. We would like to try a tilted dome and maybe stadium seating using a false floor in the new space. Funds are limited, however, and the space in which the planetarium must fit is set. If anyone has any preexisting plans for tilted dome planetariums or other ideas, we could use the help.

We will be attempting to get new video/ data projectors and a new sound system, so any thoughts about the best equip ment for that would also be appreciated. Finally, since we use the planetarium as our astronomy classroom, we are planning to incorporate educational technology from the beginning like smart boards and maybe even feedback keypads at the seats. We believe we ll end up with a facility at least as good as the original planetarium, and hopefully a little better.

Nathan Patterson Planetarium,
Columbus

Clay Powers reports: Well, here at that other planetarium in Columbus, which is on Georgia s west coast, we are keeping busy during the summer doing our usual newspaper reading and watching Gilligan s Island on the dome. But when we aren t do ing that, we are having our sound system totally replaced with a custom built digital 5. 1 surround system. This is a ground up replacement. Actually I guess it is a ceiling down replacement of every part of our sound system, including the wiring.

Maybe our biggest news is that I have gotten permission from the school system to cater primarily to elementary grade levels. As a demonstration that low tech, basic electrical systems utilizing solenoids and PR12 lamps will generally outlast high tech, nobody can fix it if it goes out systems, our Spitz 512 just passed its 24th birthday, and it still works. I don t even think anybody has ever changed the oil in that thing.

But forget all that. My big news is that on June 2, our first child, Rebekah Marie Powers was born. Mom and baby continue to do very well and to conspire against Daddy to prevent him from watching The Weather Channel for hours at a time. I guess I ll just do that at work.

Delafield Planetarium,
Agnes Scott College,
Decatur

Chris De Pree reports that on October 12, 13, and 14, the Delafield Planetarium will host a unique audio/ visual experi ence called Space: A 2001 Sound Odyssey by Atlanta artist John Otte. The evening performances on October 12 and 13 will be at 8 p.m.; the matinee performance, on October 14 will be at 2 p.m. For more information, and for the rest of the fall pro grams at our facility, please visit the URL <bradley.agnesscott.edu/ events.html>.

Mark Smith Planetarium, Macon

On May 27, a young man in Macon named Curt rented the Mark Smith Plan etarium to ask his girlfriend, Brandi, to marry him. So that Brandi would not be suspicious, Jim invited his friends and fellow museum employees to be a mock audience for the event. Jim had never met Curt or Brandi face to face but identified them because they were the only people in the planetarium that he didn t know. The hardest part of the program was keeping a straight face during the introduction.

Jim did a brief night sky tour, then invited the audience to use their imagi nations and look for any pattern in the sky that represented something they had been hoping or wishing for. As Canon in D played, the dome began slowly filling with marriage related icons. The final slide, that appeared inside a giant heart, read Brandi, will you marry me? As the cove lights came up, Curt was already down on one knee, and Brandi was already in tears. Of course, she said, Yes! (Who could turn down a planetarium proposal under the stars?)

Jim Greenhouse
& Carole Helper
Mark Smith Planetarium
Macon, Georgia

Afterwards, Curt said he wanted to pro pose in the planetarium because he and Brandi had their first date there. Brandi said that everything was perfect, right down to the selection of one of her favorite pieces of music. The couple will be married in a park in Macon next summer.

Jim hosted Mars Mania on June 22 to highlight Mars close approach, the solar eclipse, and summer solstice. The public enjoyed a special showing of The Mars Show, and children who signed up for a class sent their names to Mars, looked at the surface of the Red Planet in 3 D, and made models of spacecraft that will explore the surface of alien worlds in the future.

Jim was awake all night for two Dinos nores sleepovers that were held during the robotic dinosaur exhibit. One was sched uled for the night of the Perseid Meteor Shower on August 11, and the other will be during the vernal equinox on Septem ber 22. The Great Dinosaur Caper will be shown throughout the run of the exhibit until October 21.

The next show is In My Backyard, which started on October 26. The Story of The Star will also be part of the schedule in November and December. A Leonid meteor shower watch will be held at the museum s Brown s Mount site on November 17.

Freeport McMoRan Planetarium and Observatory, Kenner

Michael Sandras
Freeport-McMoran Planetarium
Kenner, Louisiana

The planetarium is currently running several shows including HPS The Sky Tonight Summer Colors. We are also cur rently working with the University of New Orleans on its SpaceQuest program. It s a camp for children from third eighth grades, and as the name implies, it deals with space related topics.

The City of Kenner has finally chosen a contractor for the new planetarium. The construction was slated to begin in early August of this year, and the facility is scheduled to open by the middle of next year. For those who don t know, it will be a 50 planetarium with a Zeiss Starmaster, AVI Omniscan, Sky Skan systems, and a MegaSystems 8/ 70 projector. I hope many of you have a chance to see it at next year s SEPA conference, as we are hoping that it will be included as a side trip.

St. Charles Parish Library Planetarium, Luling

As I recover from the wonderful SEPA/ GLPA conference that Jack Fletcher host ed, I reflect on the genuine warmth of the planetarium community. From the large to the small domes, we all had a wonder ful time. Here at the St. Charles Parish Library & Planetarium we are presenting The Mars Show by Loch Ness. With Mars shining brightly in the evening sky, we are seeing crowds that we haven t seen since our Christmas programs. It looks like it will be a good summer. Upcoming shows will include Light Years from Andromeda for the beginning of the new school year.

Lafayette Natural History Museum Planetarium, Lafayette

Our building project has been keeping us busy. Construction is well underway, and the planetarium structure is becoming recognizable. The walls are going up for offices and work areas, the catwalks are in, and the projection booths are under construction. In July we will select and purchase our opening star shows for the new place, and do as much of the local production as possible before final pack ing begins. We still hope to be open in late spring, 2002.

Applications have been accepted for our new museum administrator, a staff posi tion that has been empty for nearly three years. We expect to have someone hired by the end of the summer.

During the spring we were able to do a limited amount of public programming by presenting day and evening sidewalk astronomy at the local Barnes and Noble bookstore, and through participation in the kick offs of the ssummer reading programs at two local libraries. At one we did presentations about rockets and space flight; that same night we held a star party at the other, more rural library (highlighted by a flyover of the International Space Station).

Highlights for this summer included a public field trip to Space Center Houston and a model rocket launch demonstration at a local park. On July 17 we conducted a daylight tour of the solar system for the occultation of Venus; solar viewing with visual and H α filters; a telescope for the Moon; another telescope with a video monitor for viewing the occultation itself; and another instrument for Jupiter. (That last one was a challenge.)

Our Museum Association has selected Gallagher and Associates of Washington, D.C., and 1220 of Nashville, Tennessee, as the exhibit design and construction firms, respectively, for our new building. Among Gallagher and Associate s credits are the Hope Diamond exhibit, the Gems and Minerals exhibit, and the new Mete orite exhibit at the Smithsonian National Museum of Natural History.

1220 has built exhibits throughout the South and indeed all over the world. We are very pleased to be working with both groups. Depending on fund raising, the exhibits will not be installed until 2003 2004, and we will use local and travel ing exhibits until then. We have recently contracted to have the MarsQuest exhibit and planetarium program October De cember 2002.

Audubon Louisiana Nature Center Planetarium, New Orleans

Dennis Cowles reports that he feels overwhelmed. He returned from a leave of absence in France to find that he was the de facto curator of the planetarium, since Mark Trotter accepted a position as Op erations Director with a local audio video production company. Mark still works for the planetarium on a part time basis.

Due to all of the changes at the facility, neither Mark nor Dennis could be at SEPA 2001. Dennis has decided to step off the cliff, however, and becomes Planetarium Curator as of the first of July.

The time between Mark s departure and Dennis s return was difficult, but the planetarium educators really came through and kept things going. Even the Director of the Nature Center, Bob Marye, ran planetarium shows! Since his return, Dennis has been busy catching up on maintenance, looking for more meteorites, and playing with new planetarium toys.

The Nature Center currently offers The Sky Tonight, and a Family Laser show for the public on weekends. During the summer, The Sky Tonight was offered on Wednesday and Friday afternoons as well. For groups, they are offering Planet Patrol, Discovering the Sky, Little Star That Could, Kids Laser Show, Meteorites, Mark s new program Wonderful Sky, and a program on lasers.

Within two days of returning to North America, Dennis had already booked sev eral programs at public libraries, continu ing a series of presentations that began a couple of years ago. In addition, he has started working on a couple of articles for Southern Skies.

Michael Sandras
Kenner, Louisiana

Ruth Patrick Science Center, Aiken

Big news from Gary Senn. On March 21, 2001, there was an official dedication of the new Bechtel Telescope in the Ruth Patrick Science Education Center Obser vatory. The public opening of the observa tory was during the annual Spring Star Party on National Astronomy day, April 28. The telescope is a 16 Meade LX200, Schmitt Cassegrain telescope. Additional components for the telescope include a video camera, ST9E CCD camera with a color filter wheel from SBIG, an electronic focuser, a flip mirror, and a number of eyepieces.

The Bechtel telescope is mounted on a permanent, equatorial pier. It is currently attached to a temporary base awaiting a permanent mounting. Currently, the telescope cannot view objects below 35 above the horizon because of the height of the observatory walls. The permanent mounting will elevate the telescope above the walls of the observatory.

During August the planetarium will present Through the Eyes of Hubble produced by the Buhl Planetarium. In September, the planetarium will debut the Explorers of Mau Kea star show produced by the Bishop Planetarium in Hawaii.

Settlemyre Planetarium

Here at the Settlemyre we are wind ing down from our summer camps and weekday programming schedule. We are currently offering eight school programs and will soon be adding and four additional shows for the weekend visitors. Our fall show line up will feature The Search for Life in the Universe. Explorers of Mauna Kea will be our winter offering along with Bear Tails. It s been a busy summer and I am actually looking forward to the regular routine of school shows.

Glenn Dantzler
Settlemyre Planetarium
Rock Hill, South Carolina

Bays Mountain Park Planetarium, Kingsport

All this summer Bays Mountain Park ran a new in house production, Journey To Saturn. The program began with an historical overview of Saturn observations. This led to discussions of the Voyager and upcoming Cassini rendezvous. Discussion of ring formation, moons, and asteroid capture allowed many other solar system objects to be included in the show.

Student summer intern Mark Streeter had a blast with this summer s day camp program. In addition to our usual plan etarium and observatory activities, Mark added an activity featuring Film Can nister Rocketry which someone in SEPA presented during a workshop a few years back.

Recently, Mars observing has been a popular activity among our club members and volunteers in the Bays Mountain Astronomy Club. Preparations are being made for our late September annual Star Fest weekend at the Park. The access to our observatory has been enhanced with new parking areas and a general fixing up of the surrounding grounds.

In August, we hired a third planetarian for our staff. We would like to welcome Mark Provence to the SEPA region. Mark is escaping California where he had worked at several planetariums including River side Community College and the Chabot Science Center. Mark brings many skills with him and we are glad to have him on our team.

Last, but not least, Bays Mountain Plan etarium would be interested in obtaining some programs from other facilities to

Todd Slisher
Sharpe Planetarium
Memphis, Tennessee

show in our dome. If you have something that you have complete rights to, and you think might be worthwhile, please contact us. We re looking for stuff in the under $500 range or might possibly work out some trading.

Todd Slisher
Sharpe Planetarium
Memphis, Tennessee

Sharpe Planetarium, Memphis

Todd Slisher reports that he, Edwin, Roy, and Alex had a busy spring and an ticipated just as busy a summer. Spring saw Explorers of Mauna Kea open in the planetarium, and work has progressed through the summer on the Hansen Plan etarium production Supernova: Seeds of Creation. This is in addition to the normal seasonal star shows, school programs, and children s shows that have been well re ceived. In fact, the planetarium attendance for the fiscal year increased 8% over the previous year.

In addition to the shows, a public Mars observing session held at the Lichterman Nature Center and several other observing sessions provided some real sky interest, even through partially cloudy skies.

New part time laserist Adam Culpepper joined the staff and is getting his first dose of lasers with Elvis: Legacy in Light which will open in August. This show is being produced for the 19th consecutive year).

Adam joins part time staff members Chandrika Achar and Shane Horvatin who have been handling many of the public shows and contributing to show produc tion. Shane is currently looking for a full time position in the field. If any of you have job openings, now is your chance.

Todd announced this summer at the Richmond conference that he would be leaving his position as Manager of the Sharpe Planetarium to take a new job as the Director of the Detroit Science Cen ter Digital Dome Planetarium Theater. (How s that for a mouthfull?) The new 50 foot Digistar II facility is currently under construction at an all new science center in Detroit, Michigan. His decision to leave Memphis was extremely difficult, since it meant leaving behind an incredible staff and a wonderful planetarium, but both Todd and his wife have family in Michigan which mean a lot to them.

The chance to work on and open a new facility was also a dream. He ll miss all his fellow SEPAns a ton, but he still plans to make it back to an occasional conference. Just save some Woodchuck for him!

By the way, there will be a job opening in Memphis at a great facility and with a wonderful staff. In addition, Todd will be hiring in Detroit, so anyone interested can contact him there after August 1st. Postings for these positions will appear on Dome L as well as the other usual places.

Craigmont Planetarium, Memphis

With the beginning of the new academic year, the staff is faced with a few items of maintenance to handle. We need help from Spitz to restore our blue cove lights. We ll be modifying our projection gallery to ac comodate some new slide projectors.

A new DVD player will take the place of our CD changer that s moving to our production room. A DV camcorder and our computers will allow us to create, edit, and display digital video in our star theatre and on our Web site. We ll be mailing out some beautiful two sided, full color posters to advertise our planetarium to more than 250 schools in the area.

Instructor Donna R. Thomas will expand her outreach programs with a new iBook. We also look forward to receiving our sec ond star show from JHE, Bear Tales.

Chesapeake Planetarium,
Chesapeake

Dr. Robert Hitt Says that he is doing lots and lots of school programs. He recently came back from a trip to South America where he visited several Mayan ruins. I am hoping that he can put together an article about that trip soon If we are lucky, it may appear elsewhere in this issue. He is also starting work on his third book. This one will be a basic star gazing book for middle school age children. The first two were volumes one and two of a Grolier s Ency clopedia called Outer Space for Children. He expects to be in Africa for the eclipse. Then it is on to a visit to China. That s the way to get a life, Bob.

Dave Maness
Virginia Living Museum
Planetarium
Newport News, Virginia

Virginia Living Museum Planetarium
Newport News

As summer began, we closed the com memorative Cosmos program and replaced it with The Mars Show from Loch Ness. We worked in some current Mars location information and the 3D slide set from MMI Corporation.

We are now gearing up for our third quarterly evening event scheduled for

Friday, July 20. This year marks the 25th anniversary of the landing of the Viking spacecraft on the red planet, so our theme is Mars, of course.

Our planetarium program will be The Mars Show, and the scheduled guest speaker from NASA is Paul Tartabini. As always we will include some children s activities and special displays. We are keeping our fingers crossed that the weather will be good enough to view Mars through our telescope.

Fund raising continues for a new museum building. Work on the additional trails is nearly complete. Our new additional outdoor aviary is scheduled to open at the end of July and include Pelicans.

We are still waiting for the city to begin installing the new turning lane and traffic control light which they now say will commence right in the middle of our busiest period.

Please visit our Website at <http://www.valivingmuseum.org>.

Planetarium at the Edge of the Universe
Thomas Jefferson High School,
Richmond
and
Starlab
Mathematics & Science Center,
Richmond

George and Jane Hastings are now officially retired. But don t think they will just spend their time relaxing.

George and Jane agreed to co teach a college level class on astronomy and have several other plans in the works proably including a bit of travelling.

Hopkins Planetarium,
Science Museum of Western Virginia,
Roanoke

As a result of Virginia budget slashing, Exhibits Manager Mark Hodges now adds Planetarium Manager to his title. He may have one or two staff who work in the planetarium part of their time along with a few volunteers.

In the Mega Dome they are showing Lost Worlds: Life in Balance.

The planetarium will have regular Saturday morning children s programs, a seasonal star show, and a general public program to be announced.

Ethyl Imax Dome Planetarium,
Richmond

Eric Mellenbrink reports that the Science Museum of Virginia will remain closed on Mondays except for holidays for the foreseeable future. Also the state has a hiring freeze in place.

In the planetarium they are running Stardate: Native Skies. This star show is a joint production of the Ethyl Imax Dome and Planetarium and the MacDonald Observatory in Austin, Texas.

The show was written and narrated by Sandy Wood. It was co produced by the same people who produce the informative and entertaining Stardate program on Public Radio.

In September the new program will be about our star, the Sun. It will be called Solar Showroom. This is an interesting new in house production whose narrator is a used star salesman. Solar Showroom will open September 22, and it will run through January 6.

In the Ethyl IMAX Dome they will be showing the film Super Speedway, which opened April 28 and runs through September 14, and Journey Into Amazing Caves, which opened June 9 and will be running through October 19.

The return of the very popular movie Everest will begin a run through the end of the calendar year. A new program entitled China: The Panda Adventure will also make its debut in September.

Also they offer a seasonal constellation sky show called Hubble: Night Skies through summer and into next year.

Museum staff member Ken Wilson chose to pass up SEPA this year in favor of taking a trip to Africa to see the eclipse. Maybe he will come back with some pictures to share and/ or an article for the journal.

Dave Maness
Virginia Living Museum
Planetarium
Newport News, Virginia

THE DEADLINE FOR THE NEXT ISSUE OF SOUTHERN SKIES IS OCTOBER 1. SEND SUBMISSIONS ON A 3.5 DISK OR VIA EMAIL ATTACHED FILE TO DTEAGUE2@MIDSOUTH.RR.COM OR TEAGUED1@K12TN.NET

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

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

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

01.a Hubble s deepest ever view of the universe, revealing 1,500+ extreme ly faint galaxies in various stages of their development
01.b Sample galaxies from the same Hubble deep field
02 The inner region of a warped dust disk around Beta Pictoris once hid den because of the star s glare
03 An image of the Egg Nebula taken by WFPC2; it shows the emergence of mysterious searchlight beams 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
09.a In clear, detailed pictures the first ever images of Pluto s surface; four views
09.b Pluto surface map
10 Gravitational lens effect captures image of primeval galaxy
11 Images of globular cluster Mayall II, consisting of 300,000 old stars, in orbit around the Andromeda galaxy
13.a The Helix Nebula, NGC 7293 show ing collision of gases near a dying star
13.b 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 Whirpool Galaxy
18.a A rare view of Saturn s rings seen just after the Sun had set below the ring plane
18.b A series of 10 images of several small moons orbiting Saturn
21.a NGC 1365, a barred spiral galaxy located in the Fornax cluster
21.b NGC 4639, a spiral galaxy located in the Virgo cluster
22.a The Crab Nebula and a detail of the pulsar in its center
22.b Sequence of three images showing changes in the Crab Nebula pulsar
23.a Huge, billowing pair of gas and dust clouds in Eta Carinae
23.b Expansion of Eta Carinae debris
25 Hubble s 100,000th exposure cap tures an image of a distant quasar
27 A vast nebula, NGC 604, which is known for a great starbirth region
29.a 18 gigantic star clusters which may be building blocks for a new galaxy
29.b 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 emis sions
33 Views of weather on opposite hemi spheres of Neptune
34 A Martian dust storm around the edge of the north polar cap
35.a A survey of quasar host galaxies
35.b A quasar caught in the act of collid ing with its companion galaxy
36.a Supersonic comet like objects in the Cartwheel Galaxy
36.b Cartwheel Galaxy composite image
36.c Cartwheel Galaxy illustration

HST's Greatest Hits of '97

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

Below you ll find a brief description of all 40 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.

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01 Central supermassive black holes in galaxies NGC 3377, NGC 3379, and NGC 4486B:

03 SN1987A Fireball: One tenth light year long dumbbell structure ex panding at six million miles per hour in supernova 1987A

08 Changes in the nucleus of Comet Hale Bopp as it moves closer to the sun beginning in September 1995

09.a Transition from spring and summer in Mars s northern hemisphere; photo taken shortly before opposi tion

09.b Three photos of Mars taken six hours apart with 90 difference be tween images; photos taken shortly before opposition

11 The Egg nebula in which stars are born and die violently; photo shows jets of gas being blasted into space

12 A supermassive black hole located in galaxy M84

13 NICMOS captures 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

15.a A view of Mars s cloud cover

15.b Seasonal changes in Mars s north polar ice cap

15.c 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 galax ies 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 coun terparts of a gamma 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 can yon dust storm, cloudy conditions for Pathfinder s landing in July 1997

24.a Dissipation of a large dust storm on Mars

24.b Hubble shows dust and water ice clouds 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 huge crater on the surface of the asteroid Vesta.

28 Hubble finds a bare black hole pour ing out light.

29 Hubble shows blobs of gas formed by some nova outbursts.

30 Hubble keeps track of a fading g 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 luminmous star known.

34.a Hubble reveals stellar fireworks ac companying galaxy collisions.

34.b Detailed images of colliding galax ies.

35 Hubble shows images of a blue straggler star.

36.a Hubble tracks clouds on Uranus.

36.b Hubble spots northern hemispheric clouds on Uranus.

37 Hubble shows infrared view of moon, ring, and clouds of Jupiter.

38.a Hubble sees supersonic exhaust

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01 COBE s infrared view of the Uni verse: three maps of the full sky seen in infrared light
02 Distant supernovae: light sources determine universe s expansion rate
03 Beta Pictoris: disk indicates planets, possible brown dwarf companion
04 Jupiter aurorae: a curtain of light extends several hundred miles be yond Jupiter s limb
05 Saturn s aurorae: curtains of light extend 1,000 miles above cloud tops
08 Supernova 1987A: a collision be tween the expanding blast wave and circumstellar ring
10 Serendipitous asteroids: HST images show curved trails of asteroids
11.a Planetary nebula NGC 7027: a brief stage in the evolution of a medium mass star
11.b Cotton Candy Nebula and Silkworm Nebula: phases of stellar burnout
12 Star birth in barred spiral galaxy NGC 1808 possibly due to interac tion with NGC 1792
14.a Centaurus A: nearest active galaxy to Earth shows turbulent firestorm of starbirth
14.b Centaurus A: tilted disk of gas at galaxy s core surrounds suspected black hole
15 Stingray Nebula: Henize 1357, the youngest known planetary nebula
16 NGC 1818: globular cluster of over 20,000 stars in the Large Magellanic Cloud
17.a GRB 971214: gamma ray burst is most energetic event in the uni verse
17.b GRB 971214: gamma ray burst; comparison of Keck Telescope and HST views
18 Saturn: details of the clouds and hazes in atmosphere of ringed planet
19 Possible first extrasolar planet ever to be imaged orbiting about a new born binary star
20 Four of NASA s proposed designs for the Next Generation Space Tele scope (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
26.a Galaxy Cluster MS1054 03321: thousands of galaxies 8 billion light years from Earth
26.b Supernova 1996CL: a March 1996 exploding star in galaxy cluster MS1054 0321
27 Distant galaxy clusters: left, in Virgo; upper right, in Andromeda; lower right, in Taurus
28 NGC7742: a small Seyfert 2 active galaxy probably powered by a black hole in its core
29 Saturn: pastel yellows, browns, and greys distinguish cloud differences
30 Sagittarius Star Cloud: HST peers into the heart of the Milky Way
31 NGC7635, the Bubble Nebula: an expanding shell of glowing gas sur rounding a hot star
32.a Infrared views: left: faintest galaxies ever seen; right: objects 12 billion light years away
32.b Deep field galaxy: left: visible light areas of starbirth; right, infrared disk structure
34 Neptune: a look at the eighth planet s stormy disposition
35 Uranus, August 8, 1998: its four major rings and 10 of its 17 known satellites; false color
36 NGC6210 planetary nebula de scribed as looking like a turtle swal lowing a sea shell
37 Quasar PG1115+080 and gravita tional 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
41.a HST deep field south: thousands of

JPL '98 Slides

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

P 35036B	Launch of Galileo on STS 34 Atlantis
P 35213	Deployment of Galileo and IUS
P 37218	Venus Colorized Clouds
P 37327	Moon: Western Hemisphere
P 37539	Infared 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
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 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 to (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 Resoution 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
P 48952	Jupiter s White Ovals, True and False Color
P 48954	Ancient Impact Basin on Europa
P 48956	Active Volcanic Plumes On Io

P 48439A	The Mars 98 Lander
P 48440A	The Mars 98 Lander
P 48494A	The Mars 98 Orbiter/ Lander
P 48495A	The Mars 98 Orbiter/ Lander
P 48567	Dr. Peter Tsou holds Aerogel
P 48589	Stardust Spacecraft
P 48691	Deep Space 1 Spacecraft

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01 M57 Ring Nebula: the sharpest view yet of this planetary nebula
02 Combined deep view of infrared and visible light galaxies
03 HD 141569: stellar dust rings of a star in the constellation Libra
04 SNH1987A: self destruction of a massive star in Large Magellanic Cloud
05.a Six images of a young stellar disk found in the constellation Taurus
05.b Four images featuring disks around various young stars in Taurus
06 NGC 1316: silhouette of dark clouds against a glowing nucleus of an el liptical galaxy
07 Mars: visible, infrared light im ages; evidence of water bearing miner als
08 Proxima Centauri: a detailed im age of the Sun s nearest stellar neigh bor
09 GRB990123: fading visible light fire ball in a gamma ray burster
10 Six images showcasing different views of spiral galaxies
12 Tarantula Nebula: multiple genera tions of stars in the brillant 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 gal axy associated with Centaurus clus ter
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 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 em bedded in the center of a larger nebula
33.a R136 in 30 Doradus: a grand view of the birth of stars
33.b R136 in 30 Doradus: two de tailed views of a highly active region of star birth
34.a NGC 1365: a barred spiral galaxy reveals a bulge in its center
34.b 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 nebu la illuminated by R Monocerotis (R Mon)
37 NGC2346: a butterfly shaped nebula
38 NGC2440: planetary nebula eject ed from a dying star
39 OH231.8+4.2: the rotten egg nebula
40 M32: hot blue stars deep inside a dwarf elliptical galaxy

JPL '99 Slides

JPL 19 12	NASA/ JPL
JPL 25125	Model of Sojourner
JPL 27089AC	Cassini arrival and orbit
JPL 27089BC	Cassini interplanetary trajectory
JPL 27748	Thermal vacuum testing
JPL 28046BC	High gain antenna
JPL 28162AC	Cassini assembly
MGS 001	Scientists assemble MGS
MGS 002	Scientists assemble MGS
MGS 003	MGS configuration
MGS 004	MGS orbit around Mars
MGS 005	Launch of MGS
P 23062	Saturnian clouds
P 23209	The Saturn System
P 23925	Saturn ring spokes
P 41101	Huygens descent profile
P 42810AAC	Huygens, exploded view
P 42810AC	Huygens probe interior
P 43538	Saturn: Rings and Moons
P 43560	Mars global view
P 43836	Scientists home countries
P 43862	Pathfinder landing
P 43966AC	Spacecraft, country flags
P 44233	Mars landing area
P 44293Ac	Cruise stage
P 45424	Hugens probe release
P 45893AC	Saturn, Titan s landscape
P 46225AC	Mapping Titan
P 46278	The Cassini mural
P 46356	Cassini with Huygens
P 46427	Petal deployment, Mars Yard
P 46428	Airbag inflation test
P 46506AC	Saturn as seen from Rhea
P 46507	Saturn orbit insertion
P 46507AC	Cassini enters Saturn orbit
P 46586	Cassini orbital tour
P 46620	Pathfinder landing
P 46655	Science targets
P 46656	Enceladus and Iapetus
P 46898BC	Cassini s trajectory
P 47340AC	Propulsion module
P 47936CC	Huygens probe installation
P 47991	Pathfinder arrival at KSC
P 47992Ac	Cruise stack arrival at KSC
P 47992Bc	Sojourner checking at KSC
P 48012DC	Transporting Cassini
P 48045BC	Cassini fully assembled
P 48045CC	Ready for transport
P 48154Bc	Pathfinder mated to rocket
P 48155Ac	Launch 12/ 4/ 96, 2: 11 a.m.
P 48155Bc	Petal closing at KSC
P 48156	Full stack mated to booster
P 48313BC	Cassini in the space center
P 48505AC	Huygens probe
P 48505BC	Huygens probe
P 48565	Titan IV launch
P 48597	Cassini ready for shipment
P 48630	Saturn tour trajectory
P 48664	Cruise stage at KSC
P 48702	Pathfinder on Mars
P 48707	Cruise stage, spacecraft
P 48753	E.D.L. sequence
P 48824	Sojourner and Pathfinder
P 48827	The airbags by Sojourner
P 48841	Sojourner touchdown
P 48842	APXS studies Barnacle Bill
P 48845	Twin Peaks
P 48847	The rock Yogi
P 48866	Barnacle Bill mosaic
P 48871	Rover s APXS at work
P 48877	Wedge and Flattop
P 48878	Near Barnacle Bill
P 48889	Barnacle Bill and Yogi
P 48891	360 b&w panorama
P 48893	Yogi and rover tracks
P 48894	Sagan Memorial Station
P 48901	Sojourner wheelie on Yogi
P 48902	Rover s view of rocks, lander
P 48908	The Rock Garden
P 48909	Martian terrain, Wedge
P 48911	Sojourner, Wedge
P 48912	Forward ramp Twin Peaks
P 48913	The Rock Garden
P 48914	A closer view
P 48915	The rover petal
P 48916	Twin Peaks
P 48917	Martian terrain
P 48918	Barnacle Bill, Yogi, Couch
P 48919	Sojourner, Barnacle Bill
P 48920	Couch on the horizon
P 48921	The rock Yogi

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NASA JPL has sent us the following slides for the Mars Pathfinder and Cassini/Huygens missions. Slides are $1.25 each

AstroWeb Review: <www.spaceweather.com>

Denis Cowles
AstroWeb Review Editor
Audobon Louisiana
Nature Center Planetarium

This is a site most of you already know about. If not, you should. The site has news about the Sun Earth environment (thus space weather) and science news.

Spaceweather.com is devoted to the near Earth environment and things that affect it, viz., Sun, comets, and asteroids. The site is updated each day with current information on solar flares and the solar wind, daily pictures of the Sun with infor mation about sunspot groups, holograms of the solar far side, the current sunspot number and radio meteor rate, interplan etary magnetic field data, and coronal holes. The site offers NOAA forecasts on solar flares and geomagnetic storms.

Spaceweather.com features links to sites such as the NOAA Space Environ ment Center and SOHO. There is a gallery section with links to other pages on recent news events, such as the fireball over the Northeast, Comet LINEAR, and an archive of Space Weather Headlines. One section of the page lists encounters with Near Earth Asteroids (NEAs) that occur each month, and the total number of known NEAs 312 as of July 31.

Following the links from the page takes us to lesson plans, pages that explain what space weather is, glossaries, etc. There is even a link to listen to streaming audio from the meteor radar at Marshall Space Flight Center.

This is a useful site for planetarians. There is a lot of information here that we all need at some time or another. I suggest that if you haven t been to this site yet, go there immediately, and bookmark it.

Sites briefly noted:

The Britney Spears Guide to Semicon ductor Physics <britneyspears.ac/ lasers. htm>.

Go look at this site. Seriously there is some really fine physics here.

Moonhoax <www.redzero.demon.co.uk / moonhoax/ >

A great page! If you re pestered by a hoaxer, point him or her to this site.

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: integ rity, friendship, service, knowledge, and vision.
Please submit this form to any SEPA Council member.

Nominee s name: _____

Qualifications: _____

_____

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_____

Southern Skies

VOLUME 21, NUMBER 3 JOURNAL OF THE SOUTHEASTERN PLANETARIUM ASSOCIATION SUMMER 2001

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