

President's Message

Greetings Fellow Dome dwellers,

As I write this in mid October, I am preparing to go to the GLPA conference in Grand Rapids. I don't often get to the other regional meetings, but it's good to be exposed to the many different manifestations of the Planetarium conference. Any time you have the chance to meet new people or see another dome, it's possible to learn something new or maybe even start a lifelong friendship. The exchange of ideas and learning from others is what makes journals and conferences so valuable to SEPA professionals.

According to Mark Petersen (Boulder, Colorado), there are about 1400 permanent and portable planetariums in the United States alone. All of these people are not affiliated with a planetarium or organization. They don't attend any of the multitude of meetings held every year on the regional, state, or local level. If you should get the chance, extend a hand to one of these people.

Case in point: Dave Van Hoven is the Director of the McGavock High School Planetarium here in Nashville. He has never been to a planetarium conference that I know of, but I am going to encourage him strongly to attend SEPA next summer. Gary Likert is the President of the Home Planetarium Association, and he lives just a short distance from here. I have already asked him to come to SEPA, and he was very enthusiastic about the possibility. You might want to check out his article in the September, 1995 issue of *The Planetarian*.

While I'm at GLPA, I hope to give a talk about our plans for SEPA '96 in Nashville in June. Many of those folks are not as far from me as the gang from Florida. I think this conference has the potential to attract a good number of people from our neighboring regions. I like the idea of a little cross pollination.

But you don't even have to look outside of our own region to reach out to other planetarians. The other day I got a call from Erich Landstrom, the new Planetarium Director in Savannah, Georgia. Unfortunately Erich's new job isn't full time. So

he's part time Planetarium Director and Police Dispatcher. He will be joining SEPA in 1996 and is looking forward to meeting all of us next summer.

Once again the importance of communication is highlighted. Most of the time we all operate as private, little island universes with only the occasional telephone or email contact with similar creatures like ourselves. It sounds cliché, but I always enjoy talking to someone else in the profession.

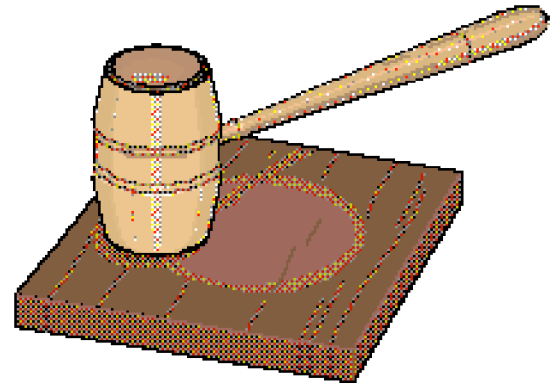
Speaking of talking, there is an important question that needs to be discussed over the next several months...

As was mentioned in the last *Southern Skies*, Mike Chesman (Kingsport, Tennessee) is chairing a committee to re-evaluate the current membership structure and privileges of SEPA. There has been a LOT of debate on this subject and related issues in recent years, and I personally am tired of it.

Elsewhere in this issue you will find an open letter from Mike Chesman on behalf of the committee. This letter solicits your opinions and your input about who can and who should be members of SEPA, what their respective rights should be, if everyone should pay the same dues, and more.

I said it before: speak now or forever hold your peace. I know some members of SEPA have very strong opinions about this. There are also some people who are currently outside of SEPA who may want to provide their comments. If so, you and they and everyone should put those thoughts in writing, and get them to Mike as soon as possible. Let's settle this matter once and for all and get back to the important things like good astronomy and space science education.

Kristine K. McCall
President
Sudekum Planetarium
Nashville, TN



Nashville in '96: SEPA Conference Update

Kristine K. McCall
President
Sudekum Planetarium
Nashville, TN

Plans are well underway for the SEPA conference that will be held in Nashville, Tennessee, June 18 through 22, 1996. Activities will start Tuesday evening and conclude Saturday at about lunchtime. It looks like the registration fee will be between \$125 and \$140.

In addition to shows, papers, vendor displays, and social opportunities, we are planning a field trip to the Arnold Engineering and Development Center on Thursday, June 20. AEDC features some of the largest space chambers, wind tunnels, and engine test facilities in the world. It's a NEAT tour.

Wednesday night we plan to take a private, scenic, sunset cruise on the Cumberland River. Dinner will be on the boat, and families are invited to join us. However, it would be very helpful if we had some

indication of how many people are really interested in the cruise. Delegates fees will be included in the registration. Additional tickets will be available for \$28 to \$30. Please drop me a note soon because you would be helping us plan accordingly.

We think it is going to be a fun and productive meeting. I would like to suggest that you invite everyone you talk or write to in the next six months to attend SEPA 96. If they are not a member of SEPA already, ask them to send me a business card or email so we can add them to the mailing list for pre conference packages.

SEPA is people. That's what makes it so exciting. I am looking forward to seeing all of you and a few new faces in Nashville next summer. We thank you for your support.

Please answer the following

questions, make a copy, and send or fax it TODAY. This input from the SEPA membership would be greatly appreciated.

Are you interested in the river cruise?..... yes no

If yes, how many additional spaces will you need on the cruise?.....

What specific workshops would you like to see presented?

Would you like to present a workshop and on what topic?

Are you interested in a digital video editing workshop?..... yes no

Are you interested in a Starlab workshop?..... yes no

Your Southern Skies isn't Typewritten; it's Typeset

This fall I received a very thoughtful inquiry from one of our regular contributors concerning how he could format text he sent on disk to keep me from having to do a lot of reformatting for Southern Skies.

I very much prefer to receive submissions on disk, whether it comes on a PC disk or a Mac disk. Text I receive via America Online often imports into my word processor with a carriage return at the end of each line and lots of spaces where tabs may have been at one time.

In addition to the minor but tedious things I have to do to some text files are a number of typography considerations I wish contributors knew. It would save me much of the time I spend correcting inappropriate typography. Some of these things are very different from what your high school typing teacher taught you. But remember, when I layout Southern Skies I'm not typing I'm using typography.

Typesetting machines computers with a graphical interface use proportional typefaces. The letters take up a different amount of space depending on the shape of the letters, i.e., letters like i and l take up less width than letters like m and w. Type

writers use monospace fonts. All the letters take up the same amount of space.

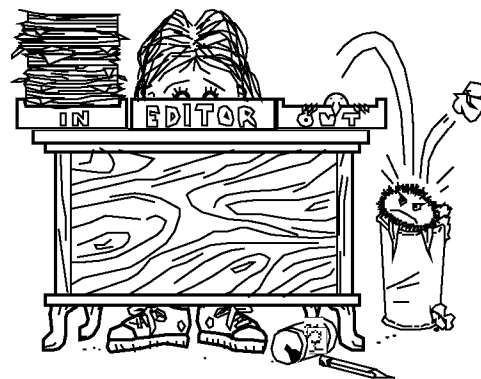
With typewriters, we were taught to use two spaces after all punctuation. This was to help the reader's eye find the ends of sentences more easily. With proportional typefaces, text is already more readable, since the letters take up an appropriate amount of space.

Double spacing after punctuation is neither required nor desired. So single space after all punctuation. Nor should you put two spaces between a state abbreviation and a zip code.

About spaces... , never, ever use the space bar to format text. Learn to set tabs, center text, and right or left justify text with your word processor. If you need to reformat text set with tabs, you only have to move one tab marker to do so.

(continued on page 16)

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



Mike Cutrera

IPS Report

The long awaited 1996 IPS Conference information has finally been received from Osaka. Conference dates are July 12-16 at the International House in Osaka, Japan. A Pre Conference Tour to Kyoto and Nara is scheduled for July 11 and 12, and a Post Conference Tour to Nagoya, Nobeyama, and Tokyo is scheduled for July 17-20. Registration costs in Yen are as follows: Conference, ¥20,000; Pre Conference Tour, ¥15,000; Post Conference Tour, ¥50,000.

Approximate cost in US dollars is \$200.00, \$150.00, and \$500.00. This of course is subject to fluctuations in the Yen/Dollar exchange rate.

Registration forms will be available in January 1996, and they will solicit paper abstracts at that time also. To receive your

registration form contact: Secretariat of IPS 96, Inter Group Corporation, 3-7-3 Natatsu, Kita Ku, Osaka 531, Japan. Phone: 81 6 372 9345

By the time you read this, the IPS Council will have met in San Diego. I represented SEPA at that meeting Friday, October 13. I should have more information to report on upcoming IPS Conferences, as we are to be given reports from both Japan and the 1998 host site, London. The IPS Council will also hear from several institutions vying for the 2000 conference.

Finally, all current IPS members should have now received a copy of the new planetarium directory. The next directory won't be published until 1997, so you may want to consider joining this year, if you aren't already a member.

John Hare
IPS Council Representative
Bishop Planetarium
Bradenton, FL

Open Letter from Mike Chesman, Membership Committee Chair

Mike Chesman
President-Elect
Bays Mountain Planetarium
Kingsport, TN

To the membership and friends of SEPA,

After the 1995 SEPA business meeting in Macon, a number of concerns arose over the time allotted to conduct business. In particular it was felt that the discussion regarding membership policy was not given adequate time or representation in discussion. In fact, the group most affected by the action, the vendors that do business within our region, were totally excluded from the discussion. This was the result of an oversight and not an intentional maneuver by anyone. No vendors were notified of the pending discussion or that their input or opinions would be welcome even if they weren't able to cast a vote in the matter. So basically the membership at large voted on an issue without hearing from the group that most wanted to be included in the business of the organization.

During last day activities, Kris McCall convened an emergency meeting of council to discuss the situation. At that time it was decided that, to be fair, a committee should be formed to look at our membership policies in total. As President Elect and new face on the council, I volunteered to take on the task of heading this committee. The council decided that four other people would comprise the committee: Jim Hooks, Britt Rossie, Dave Hostetter, and Gary Lazich. These folks were picked because

they fairly represented differing views on the membership issue and were felt to be people that could work constructively together. Since October the group has been in dialog about possible proposals to bring before the membership.

First, the group is looking over the membership policies of all the other regional planetarium groups in the United States. This information was gathered for the committee by John Hare, and we thank him for this support. Second, the group needs to hear input from SEPA members. To that end, committee members will be contacting some of their colleagues to get opinions and ideas. If you are called, please give them your complete cooperation. Finally, we on the committee need to have the input from vendors and other groups (such as people who live in a non SEPA state) to find out your feelings on this issue. Again, the committee will make some contacts, but we want to let everyone know that their input is wanted and needed. If you have an opinion, please contact any of the five people working on this issue.

Information can also be sent to bay smtn@tricon.net, and it will be distributed to all the committee members.

Thanks,
Mike Chesman

Galileo's Excellent Adventure

Salman Sattar
Astronomy Intern
Craigmont Planetarium
Memphis, TN



Galileo's second flyby of Earth did much more than just boost the spacecraft on its way to Jupiter. On December 8, 1992 two years after its previous pass by Earth and the Moon the spacecraft paid a return visit to pick up a few kilometers per second velocity. On its 23 hour dash across the Earth-Moon system, Galileo imaged the north polar region of the Moon, and on its way out, the spacecraft looked back to make a spectacular movie of the Moon passing the whirling Earth.

This encounter with the Moon provided

a look at its north pole, a region hard to view from Earth and little seen by previous spacecraft. Scientists also viewed ringed impact basins there and found giant impacts on the surface of the nearside hemisphere.

Galileo also gave a new view of Earth. Mission scientists looked for clouds in the stratosphere over the south pole. This is where the hole in the ozone layer opens up each southern spring.

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Women of Astronomy

Women hold up half the sky.

Astronomy has been recognized as a man's job for more than 200 years, but today things have drastically changed. Now about 15% of all astronomers are female. Some famous women in the field of astronomy are Maria Mitchell, Vera Rubin, Carolyn Shoemaker, and Margaret Geller.

Maria (pronounced Ma-rye-ah) Mitchell lived during the 1800s. She is credited with being the first woman astronomer in the United States. For many nights, she lay awake tracing the path of a comet she discovered. This work distinguished Maria as a serious astronomer. She now has a crater on the Moon named for her.

Dr. Vera Rubin is credited with discovering dark matter, unseen mass not including what is observable, such as stars and planets. In 1993 President Bill Clinton awarded Dr. Rubin the National Medal of Science for her work in a ceremony at the White House.

Carolyn Shoemaker, along with her husband and colleague David Levy, was a primary discoverer of Comet Shoemaker Levy 9 which collided with Jupiter in July of 1994.

Margaret Geller is an astronomy professor who, along with other colleagues and university students, is working on mapping out the universe one tiny slice at a time. She is famous for her finding of the stick man, a large scale structure of galaxies in the universe.

Women should encourage each other to take as many science and mathematics courses as we can take in school. The only way that we can get ahead in life is to study hard and make good grades just as these astronomers did when they were in school.

Don't listen to those who say, "You can't." Look them right in the eye and say, "I can, and I will!" Remember your dreams, and always reach for the stars. You are the only



Space for Women brochure, Harvard Smithsonian CfA

Nicole Hassold
Astronomy Intern
Craigmont Planetarium
Memphis, TN



Small Talk

Betty Wasiluk
Small Talk editor
Berkeley County
Planetarium
Hedgesville, WV



Welcome again. I hope those of you who do not get the summer off had a really great summer anyway. Hopefully it was a quieter one than the summer of 1994 when Comet Crash mania hit the airwaves. (Check out the Sky and Telescope issue for October, 1995. It has some of the information on the crash that scientists are just beginning to find out now. Time to update those programs!)

It was really sad not to see you at SEPA 95 in Macon. No one has sent me any news, and all I've heard about it is from reading Southern Skies. If you have any personal recollections, do send them to me to use in the column.

I chose to attend the Universe 95 Education conference Astronomy Education: Current Developments, Future Coordination sponsored by the Astronomical Society of the Pacific at the University of Maryland's College Park Campus on June 24th and June 25th. This was because I had received a travel grant to attend this event.

Attending this conference was a diverse audience of professional astronomers in university and observatory settings; school teachers from K-12; staff of science centers and planetariums; and representatives of government, scientific, and educational societies. Many of the participants were involved in several different aspects of astronomy education. Noticably lacking were representatives from industry and publishing.

There was a section for oral invited talks and poster papers. (For those people who don't know what poster papers are, this is a common technique used at professional meetings, although not used at SEPA or IPS meetings. Here people post their information in rooms with bulletin boards. Some people include handouts and others pictures, color photocopies, slides and/or videos.)

The poster papers included many representatives of planetariums including Noreen Grice of the Charles Hayden Planetarium in Boston. She did a paper with useful tips called Making Planetariums and Science Museums More Accessable to People With Disabilities. Noreen, if you

remember, has put together the great astronomy book for the visually limited and the blind that you can get from the ASP.

Gary Sampson, a fellow 89 Project SPICA participant and also the director of the planetarium at Wauwatosa West High School in Wauwatosa, Wisconsin had a paper that I found useful entitled A High School Astronomy Course for a Wide Range of Student Abilities. Dale Brown of the planetarium at Bowling Green University in Ohio gave another useful paper on Interdisciplinary Astronomy.

I also found useful the paper by Sallie Teames, an educator from Texas who attended Project SPICA in 1993 with me. It gave details on how students can submit proposals for amateur viewing time on the Hubble Space Telescope. Kirsten Vanstone from the planetarium at the Ontario Science Center in Toronto, Canada had a whimsical paper on playing Planet Twister.

Many of the formal astronomy education programs had posters on them including projects CLEA, ASTRO, STAR, PASS and the Wright Center for Innovative Science Education.

Janet Mattei of the American Association of Variable Star Observers even brought her laptop computer to demonstrate the hands on software her association uses to analyze data.

There were several poster papers that I needed an interpreter to understand. SEPA 95 keynote speaker Jeanne Bishop of the planetarium in Westlake, Ohio had a paper entitled, The Development and Testing of a Participatory Planetarium Unit, Emphasizing Projective Astronomy Concepts and Utilizing the Karpus Learning Cycle, Student Model Manipulation, and Student Drawing With Eighth Grade Students. This kind of stuff made me glad I wasn't an education major.

Some of the invited talks were very good. Despite our own IPS President Jim Manning of the planetarium in Bozeman, Montana giving a lovely talk on The Role of Planetariums in Astronomy Education, I also enjoyed the talk by Julieta Fierro of Mexico about professional astronomers getting involved with the symphony and

giving a radio play by play of pieces such as the theme from Star Wars to creating an interactive display where people could actually smell the sulfur coming from Io erupting volcanoes.

A heartwarming talk was given by Neil Tyson, a professor from Princeton University who had the opportunity to work with homeless children at a special astronomy program given at Bill Gutsch's Hayden Planetarium.

(Editor's note: I believe Bill told me at SEPA 95 that he was no longer with the Hayden Planetarium.)

There was a big concern over underrepresented groups. Although there seemed to be an equal number of women to men participants, Phil Sakimoto of NASA and Neil Tyson seemed to be the only representatives of minorities present at the meeting. There was no one with a disability there to give their insight into the problems they were having.

One unique aspect of this conference was small discussion groups that took part in discussing certain topics. I sat in on one called "The Role of Informal Institutions in Supporting Formal Education."

We discussed the fact that amateur astronomers, planetariums, and science centers play an important role in astronomy education and need to communicate more with professional astronomers, and currently no direct method can be used to communicate effectively between these three groups.

The evidence of the three groups not tallying being in agreement with one another was easily seen at the meeting.

Educators cried foul when the American Astronomical Society spoke of plans to hire an Education Coordinator with a Ph.D. in astronomy but requiring no education credentials.

Similarly, a protest was made by elementary educators and secondary educators when no representative from either category was asked to speak at the conference.

Although most in attendance agreed they liked the interactive/manipulative labs and material developed by many of the formal astronomy programs such as Project STAR, there was a gentleman from the University of Hawaii who was very much against this method of instruction, and he felt the method of classroom lecture to large groups of (200 or more) students was one he preferred and wished to con-

tinue using. This showed that many of the hands on methods of astronomy instruction still need to filter into the university community.

Another complaint was that the Astronomical Society of the Pacific had scheduled this conference at the same time as their Universe 95 National Astronomy Festival, and we lost many potential participants to the other event. For example, Rod Martin of the Washington County Planetarium in Hagerstown, MD chose to attend the other conference. He said it was fabulous!

He especially enjoyed hearing Heidi Hammel (of last year's Hubble Comet Crash Team). Having seen her at the Air and Space Museum last year, I can attest to Rod Martin's claim that she is just as exciting and enthusiastic as she was on TV last summer. Comet Crash Fever has not yet died with her!

Despite the few shortcomings, I was glad I took time to attend this conference. John Percy of the University of Toronto did a fabulous job coordinating this event and took time to document it quite well. For your information, the International Planetarium Society was listed as a Sponsoring Organization for this event.

The Astronomical Society of the Pacific will be selling copies of the proceedings of this conference, although I do not know when or at what price. You can obtain a copy of it and the book I mentioned earlier by Noreen Grice by contacting the ASP at the following address:

Astronomical Society of the Pacific
390 Ashton Avenue
San Francisco, CA 94112
1 800 335 2624 (U.S.)
1 415 337 2624 (outside U.S.)
1 415 337 5205 (fax)

Do contact me with information on what you've been doing. I would love for you to share it with everyone through this column. Call me at (304) 754 3354 or send a fax to (304) 754 7445.

Digital Cosmos: Planetary

Mike Cutrera
Digital Cosmos Editor
Bishop Planetarium
Bradenton, FL



Mike Cutrera

Planetary Taxi is a CD ROM about the solar system. Part of Voyager's Visual Almanac Series, it tries both to entertain and to teach third sixth graders about astronomy in an innovative way.

The player enters the game as a taxi driver on the planetary highway through the solar system. You pick up passengers who present riddles to reveal their destinations: the Sun or one of the planets. Three levels of difficulty are available: rookie, cruiser, or expert. Rookie level provides a basic introduction to the planets physical

characteristics and location in the solar system. The player picks up passengers who ask fundamental questions about the planets. Cruiser and expert levels employ the same methods of learning with harder questions.

You can look up information in several resources: educational charts, graphs, and tables dealing with the planets. If you answer the questions correctly, you receive cash tips from the passengers. The object of the game is to complete as many of these missions as possible before you have to retire from your job.

Planetary Taxi has impressive video and fun sound effects, but some inaccuracies do exist. Younger children will find it entertaining; older children and teens, only mildly amusing even redundant. I recommend this CD ROM for children ages eight twelve. You can order Planetary Taxi for \$27.95 from EduCorp. Call



Above: Rita dispatches Planetary Taxi drivers on missions to take passengers through the solar system.



Reviewed by
Stephanie Lim
Astronomy Intern
Craigmont Planetarium
Memphis, TN

Right: Passengers give clues about their destinations, the Sun or one of the planets. Take them to the correct destination and receive a tip. Collect tips during your 50 year long career.



Five Characteristics of an Excellent Planetarium

Attracting Visitors and Holding onto Them

In many markets throughout the Southeast and the nation, planetaria are becoming a little sought after appendage to our schools and communities. When children, teens, young adults, and families plan an outing for fun, entertainment, and recreation, they choose theme parks, movie theatres, the beach, rock concerts, parasailing, hang gliding, water skiing, dance clubs, and many other recreational and fun sights often at considerably more expense over a visit to their local planetarium. Why?

We have to face it, how many people, when visiting Nashville or Atlanta or Miami are thinking about taking in the current show at the local planetarium? How many even have it on their list of the top 5 or 10 things they would like to do? How many residents of towns with planetaria consciously think about taking their visiting friends and relatives to see the local planetarium? And last, among those of us who are residents of towns with planetaria, how often do we ourselves take our families or dates to the planetarium (unless it is because it is a cheap date?)

We can't honestly compete with everything around our town. Rather, we must fight for parity an equal place with the many other interesting attractions. As they say, if you cannot fight them, join them. But we have to earn our place among the others; it is not our birthright.

The best planetaria exhibit a number of characteristics that help them achieve excellence and earn them a deserved place in their community. It should be the goal of every planetarium to achieve excellence in each of these 5 C's: Community based, Caring environment, Cost consciousness, Competent professionals, and Quality programs.

The first of these characteristics is to become community based. Identify and use the strengths and resources of our local community, such as the community college, local youth groups, city department of recreation, and others. What could such places offer us? How would we work

with them to increase our audiences? Give talks, get PR in flyers, newspapers, go out and meet with them, do things on their campus, at their meetings, at their parks, etc.

Develop a close working relationship (or partnership) with the local schools (public and private). Get to know the superintendent, the principals, the curriculum directors, and the science advisors. Invite teachers to see your place at a discount with their families. Offer to train the teachers to use your equipment. Allow these teachers to bring their own students into the planetarium while they themselves give the shows. Give selected students the chance at creating their own shows. This will give opportunities for students, teachers, and the planetarium to benefit.

In a similar fashion, develop a close working relationship (or partnership) with local businesses. Offer the planetarium as a backdrop for staff development and corporate workshops. Ask the businesses to print flyers and distribute them. Offer corporate memberships. This will give opportunities for both business leaders and their employees to benefit.

The second of these characteristics is to create a caring environment. To do so, you will need to develop a spirit of teamwork that will make full time and part time staff feel like they belong. Be user friendly for staff. Introduce new staff to everyone. Give informal birthday parties. Invite all staff to attend the meetings, retreats, and team building exercises. Treat all staff members with respect. Never criticize in public, but rebuke, if necessary, behind closed doors, while at the same time complimenting them on the good things that they do. Praise the staff in public.

Make sure that customer service is a priority; make visitors feel welcome. Be user friendly to all visitors. As soon as a person walks in, it takes less than a minute for him/her to formulate an opinion and decide whether he/she will stay or go. Make the place look appealing, and sincerely greet each patron as an old friend (as a long term friend, not as an octogenarian).

A third characteristic is to be cost con

David H. Menke, Ph.D.
Buehler Planetarium
Davie, FL

scious and exhibit financial awareness. Be ever mindful of the budget. Keep a tight rein on spending, and buy only the most critical items. Have economical and competitive prices for your programs. Offer discounts and packages to your patrons.

Fourth, make every effort to employ competent professionals. Hire staff members who are creative, competent, and connected within the field. Continue the training and development of staff through inservice, travel to other planetaria, work shops, conferences, and further academic education. Be sure that the staff are up to date in their respective areas.

Finally, after all is said and done, if your product is not up to a certain level of critical review, you will fail. Therefore directors must ensure that their planetarium presentations are of high quality (quality). To effect this characteristic, the planetarium staff must be up to date on the latest astronomical information. This can be done by having a professional astronomer on the staff, or regular input and review from competent astronomy educators. To be trusted with a high level of credibility, you must be certain that each show has a minimum level of accuracy, quality, and professionalism.

Next, you must give shows that are fun and entertaining. How many of us are aware of academically sound shows chocked full of scientific information, but which act as a cure for insomnia for most of our visitors?

Finally, you should make a variety of programs available for all ages and tastes. The most popular of shows are those for

the very young ages 4 to 8. Very few children of these ages come to the shows alone and by themselves. They almost always bring an adult or two. And parents are looking for such fare.

Another level of show would be for ages 8 and older. Some can be animated; others, a little more sophisticated. Generally, however, these are ideal for a family audience.

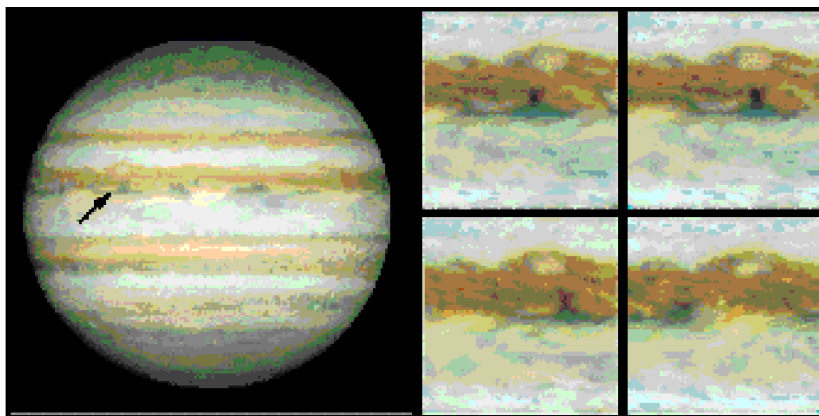
The highest level of presentation, although still below a college class, would be a special astronomical presentation designed for ages 12 and older. These programs have more meat in them, and sometimes they can be labeled illustrated lectures. Invite local (and, if you can afford it, distant) experts to participate in the presentations. Give these only once in a while, say, every month or so. Your serious astronomy buffs will come out to see these programs, even if there are only 100 in your community.

How each of these 5ive characteristics is achieved (i.e., what tasks and behavioral objectives are there to make these happen) is the purview of individual staff members, who must be trained properly and given a certain sense of professional achievement.

Following this simple outline can increase a planetarium's attendance and hold on to regular visitors already coming. Having a handsome budget wouldn't hurt, either.

After increasing its velocity by 3.7 km/sec, Galileo embarked on its mission. Its stuck high gain antenna posed a problem for project engineers. They pulsed the drive motor to get it open. After unsuccessful attempts, a low gain antenna was the last resort.

Galileo is scheduled to arrive at Jupiter on December 7, 1995.



Galileo will penetrate Jupiter's atmosphere December 7. This Hubble Space Telescope photograph shows the location the probe will enter. Enlargements to the right show the dynamics of the Jovian atmosphere over time.

Christmas Star:

The Mystery of the Star of Bethlehem

Christmas Star: The Mystery of the Star of Bethlehem is a 50 minute long video explaining and expostulating on proposed theories about the celestial activities surrounding the birth of Jesus. One thing almost everyone agrees on is the fact that there was unusual activity in the sky that lead the Wise Men to Bethlehem, the birthplace of Jesus, Savior of the world to Christians.

This movie presents both discarded and still current views of what actually happened in an interesting and unbiased manner. A wide range of sources is used, from the recordings of ancient Babylonian skywatchers to the Gospel of St. Matthew in The Bible.

We all know the basic story, right? A virgin conceived and bore a Son during the days following the 8 BC tax decree of Caesar Augustus. A strange astronomical phenomenon led the Wise Men, also

known as the Magi, to believe that this newborn stood for something worth a six month odyssey. So the big question is, what happened?

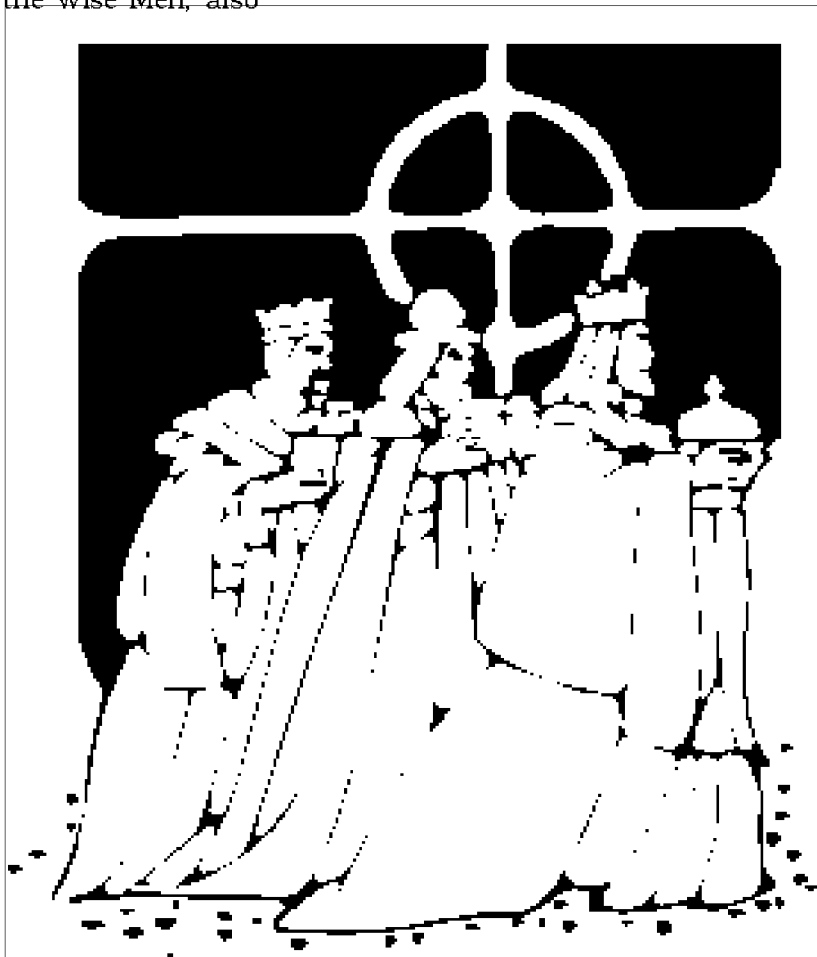
Was Jesus really born on December 25th 1995 years ago? December 25th was actually a pagan holiday early Christians used to disguise the fact they were celebrating Jesus's birth. The monk who converted an older calendar to our AD calendar was way off! In the video, astronomers agree that Jesus was probably born between 8 BC and 1 BC.

Meteors, supernovas, comets, and UFOs are some of

the flashier Christmas Star theories, but it's pretty much been narrowed down to planetary conjunctions. There was a planetary conjunction of Venus and Jupiter in 2 BC around June 17th. The movie concludes (Did I mention it was unbiased earlier?) a triple conjunction involving two planets Jupiter and Saturn between May and September, 7 BC was what led the Magi toward Bethlehem. The conjunction happening in the constellation of Pisces, the sign of the Jews, increased the rare phenomenon factor.

So there it is. You must decide for yourself what the real birthdate of Jesus is, what the Christmas Star was, and whether you even believe there was a Star of Bethlehem. But watch the movie. Its good! It's available for \$14.95 from Acorn Media Publishing, Inc. You can reach them at 800 999 0212.

Grace Korzekwa
Astronomy Intern
Craigmont Planetarium
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News from SEPA States

The Savannah Science Museum, Savannah

The Savannah Science Museum begins 1995-1996 with a new planetarium director and new programming. Erich Landstrom assumes control of the Spitz A3P console following the departure of Vickie Watson. Erich worked at the Wagner College Planetarium in New York City while studying physics in 1988-1989, moved to Savannah following graduation, volunteered, and was hired as a planetarium assistant at the museum since March. With Mrs. Watson's leaving, he steps in to fill the void.

To our youngest audiences, we're showing Strasenburgh Planetarium's Space Bus, while middle and upper grades have Hansen Planetarium's Adventures Along the Spectrum and Cosmic Catastrophes, and our own Rob and Ed's Excellent Cosmic Adventure. Public programming in October has Worldviews, a dusted-off Hansen's The People (American Indian Skylore) in November. December will focus on the Galileo Mission to Jupiter, and January

will commemorate the tenth anniversary of the Voyager 2 Uranus flyby and the Challenger accident. Currently four new shows are being developed: The Jupiter Express, OG (Zero Gravity), Alight in the Dark Ages, and Space Sleuth.

Our special event activity for children ages five-twelve this winter is hosting a mini contest warm up to the LEGO Space Challenge (sponsored by LEGO Toy Company and Space Center Houston). The contest is to design and construct models of shuttles, space stations, and other spacecraft or space-themed inventions out of LEGO bricks; our mini contest in the Discovery Room will have kids bring their own Legos to get their creative juices flowing.

We're also developing an exhibit called The UV Universe for our Exhibit Hall, and inspired by the Louisiana Nature & Science Center Planetarium and the Rainwater Observatory & Planetarium (in the last issue of Southern Skies) are seriously considering obtaining a meteorite to add to our collection.

Russell C. Davis Planetarium, Jackson

Davis Planetarium is showing Fleet Space Theater's To Worlds Beyond as its main feature and Loch Ness Productions' Larry Cat in Space with The Magic Egg: A Computer Odyssey as its family feature until Thanksgiving. Season of Light, also from Loch Ness, will return for Christmas along with Brevard Community College's The Alien Who Stole Christmas and Laser Visions: A Fresh Aire Christmas. The LaserDome series will continue in October with programs leased/purchased from Jack Dunn while the production staff works on an original spring feature. Educational activities include several school programs and a new advanced version of Backyard Astronomy. (The Student Space Station™ program will resume next summer in its full two-week format.) The Davis Planetarium Foundation is seeking funding for an 8-perforation/70mm film system for wide screen or hemispheric projection and hopes to have the system operational in time for a spectacular exhibit on The Palaces of St. Petersburg opening in a

nearby pavilion next spring.

The Rainwater Observatory and Planetarium, French Camp

Rainwater Observatory has already hosted some 20 school groups so far this year. A donated seven-year-old Celestron C8 Compustar complete with pier awaits an instruction manual. The Meade 12 LX200 works like a microwave oven. Enter the coordinates, activate, wait for the beep, and feast on a tasty deep sky object. New exhibits include a rare Georgia tektite, an armillary sphere sundial, and a lawn sundial set up with instructions from San Francisco's Exploratorium in which the observer acts as the gnomon. The planetarium will open to the public for live programs in December. The next Mid South Regional Star Gaze will take place April 17-20, 1996.

Erich Landstrom
Savannah Science Museum
Savannah, GA

Gary M. Lazich
Russell C. Davis Planetarium

Woodson Planetarium, Salisbury

Director Cyndi Zeger reports Woodson Planetarium has begun its new school year with Patsy Wilson directing the educational program of the planetarium. Fall shows include Larry Cat in Space, More than Meets the Eye, and Day and Night. Morehead Planetarium, Chapel Hill

Planetarium Director Lee Shapiro says Morehead Planetarium is running a variety of shows for the fall season including Through the Eyes of Hubble, Orion Rendezvous, Star Tales, Sky Rambles, and Space Pioneers.

News from SEPA States
c

Cyndi Zeger
Woodson Planetarium
Salisbury

Settlemyre Planetarium, Rock Hill

Glen Dantzler has some encouraging news coming from up in Rock Hill. Last year's attendance figures were over 20,400, a new record for their 64 seat facility. School shows for this fall began on Sept. 18, and bookings are up for them as well. Glen attributes this success partially to their efforts to integrate their shows with the curriculum of the surrounding schools. Their parent facility, The Museum of York County, has added to this effort, involving many areas of the science curriculum.

They've been busy with several other projects. Earlier this year they participated in a state wide Sierra Club retreat by providing several lectures on astronomy. These lectures were combined with an observing session which the club enjoyed. Glen is hoping to squeeze in time this fall to install a new ECCS automation system.

In addition to the educational programs offered at the Settlemyre Planetarium, public offerings will include, Carolina Skies, The Secret of the Cardboard Rocket, The Magic Space Bus, and, later in the season, their annual Christmas program.

Stanback Planetarium, Orangeburg

Jim Brown has finished his summer maintenance and launched back into the shows in September. His school shows begin a bit later in October. Some of the many shows offered are The Magic Sky, The Little Star That Could, and Larry Cat in Space.

Much of Jim's time is spent working on a \$3.15 million dollar grant (funded by NASA) to bring SCSU up to full Internet capacity. The money will also be used to provide Internet connections for universities and school systems around the state. Once this is taken care of, Jim plans a WWW home page for the planetarium.

DuPont Planetarium, Aiken

Things progress at Jim Mullaney's facility. Jim reports that he has had a few problems with the software of their new Digistar II, but these are being ironed out.

Currently the planetarium plans several opening ceremonies in October to show off their new facility and equipment. One opening will be more for the VIPs; the other, in conjunction with Science Education Day. Several thousand visitors are expected.

The opening show combines a Digistar Demo program with video sequences from Sky Skan. It lasts approximately 35 minutes. For the holiday season, Jim will unveil a Christmas/ Star of Bethlehem type show. Since he is currently the only staff member at this facility, he reports being so busy he hasn't had time for observing (practically sacrilege for him). He hopes to get back to it as the year progresses.

Hooper Planetarium, Greenville

The Hooper Planetarium has added a new staff member. I'm sure everyone will join me in welcoming Jim Flood to the planetarium ranks. Jim is the new production specialist for the facility, joining Rex Smith (Planetarium Curator) and Doug Gegen (Space Science Coordinator). Jim's primary responsibility will be programming the Digistar system. According to Doug, he has already produced a number of exciting sequences.

In addition to live star talks, production is in process on a new original show on Saturn's edge on rings. The program is entitled Queen of the Solar System. I, for one, am looking forward to seeing what the crew in Greenville comes up with.

Gibbes Planetarium, Columbia

Here in Columbia our school season starts up October 3rd. The successful summer feature show, How's the Weather Up There? is being converted into our newest addition on the school show schedule. It will be replaced by several fall offerings. In October restless spirits infest the planetarium as a revamped The Nights of Halloween comes back to haunt us. This show will wrap up with a special showing and costume party on Oct. 30th for all those little ghosts and goblins.

Todd K. Slisher
Gibbes Planetarium
Columbia

Todd K. Slisher
Gibbes Planetarium
Columbia

Starting in November the public show will shift to StarWalk, a version of Sudekum's The Light Hearted Astronomer. In conjunction with this program, two events will be held. The first is a district wide astronomy night for Lexington district 1 including constellation stories, astronomy lore, and observing. Last spring we had over 350 students and parents in attendance, and more are anticipated this time around. In order to help out all those budding astronomers of the community, we will also be holding a Telescope Buyer's

Workshop later in the month. StarWalk will be followed by Season of Light as the holidays approach.

Work is also progressing on the Gibbes Planetarium WWW home page. It should be up and running sometime during October. I don't have the URL yet, but look for us on the Loch Ness list of Planetarium Web pages. With the new web page come several new (easier to use, thank goodness) email addresses. You can now reach us individually at either jguill@scsn.net, slisher@scsn.net or sdawkins@scsn.net.

Bays Mountain Park Planetarium, King sport

After a fun summer presenting Adam's humorous sky show Night Zone the staff at Bays Mountain dusted off an old copy of Hansen's The People for the fall. Mike edited the show into a 35 minute version, and new artwork was produced for two segments. Bays Mountain's 12th annual StarFest convention for amateur astronomers took place in October. The StarFest included two days of talks and fun activities. The popular event was again an early sellout. Highlights this year were featured speaker Rob Landis and the comedy revue Starry Nite Live. Regular items included the Io pizza party, stargazing, an astronomy themed laser show, and the ever popular commemorative T shirt.

With all this good stuff going on in King sport, it was discovered that the roof on the Bays Mountain Park Nature Center was in serious need of repair. Consequently, the staff was praying that it would not rain as different areas of the roof were removed and replaced. The work also added some additional sound effects to planetarium shows. They hope to be finished before winter.

Craigmont Planetarium, Memphis

Director Duncan Teague is producing Hubble: From Here to Eternity, an original star show written and narrated by his four high school astronomy interns Shari Busch, Riki Haley, Matt Haney, and Elizabeth Shelly. The show features remarkable images from the newly repaired Space Telescope downloaded from America Online and output to film recorder and employs numerous video sequences from one of Sky Skans Special Effects disks.

Craigmont is also showing Sudekum's Our Place in Space and Hansen's The Se

cret of the Cardboard Rocket in modified form. Soon the staff will install Craigmont's original production of The Star of Bethlehem and Bays Mountain's Torten, the Elf Who Cared as Christmas programming. This year's interns are also corresponding with high school students who work with Elizabeth Wasiluk in Hedgesville, West Virginia.

Instructor Lisa DuFur continues to pursue a grant for a satellite dish so Craigmont can resume offering interactive video teleconferences for teachers and students. Lisa has also just conducted a sky interpretation program for a huge group of excited Boy Scouts in nearby Nesbit, Mississippi. (Sorry, Gary, we were closer.)

Craigmont also recently entertained a meeting of the local UFO study group. Things went pretty smoothly as the participants learned how to recognize constellations so they'd know for sure if there were any objects in the sky that were not naturally occurring phenomena. The post show questions did get a little bizarre with a discussion of alternate dimensions. Duncan remarked that Einstein thought there were other dimensions but that we could not perceive them directly. The audience member replied, "Some of us can." Duncan was anxious to get home after that comment.

Sudekum Planetarium, Nashville

In January, 1995, there were four and a half people working in the Sudekum Planetarium in Nashville, Tennessee. By mid September, it was down to two. Times have been tough, but this was depressing. However, there is a happy ending to my story. As of October 6th, the Sudekum Planetarium team is back to full strength.

Pashur House (that's right, it says Pa

shur) graduated from the Memphis College of Art in May of 1995. He replaces Jim Chapman as Planetarium Art Director, and while we thought it would be hard to fill Jim's sockless shoes, Pashur has already hit the ground running. He has completed work on the brochure for the 1996 Visions of Space Student Art Contest and the mailing elements for the Planetarium's national sales efforts. His next major project is to complete artwork for Rusty Rocket's Last Blast which is slated to open early next year. You will all be seeing his exciting new style in many different places.

Then there was Shawn Laatsch, who gave us four days notice that he was leaving. Shawn was hired to be Director of the Arthur Storer Planetarium in Prince Frederick, Maryland. Luckily it was September, and the schedule was not too full yet. In addition to local advertising, the job announcement was posted on the Internet. Within days I had several, good, email inquiries.

After extensive phone interviews and checking of references, Waylena (No way?

Yes Way!) McCully visited Nashville and accepted the position of Astronomy Educator. She came from a planetarium outside Cleveland that she managed by herself for fifteen months. She has a B.S. in Environmental and Technical Geography in addition to four years experience under the dome. She started work at Sudekum in mid November.

Sharon Mendonsa is our other Astronomy Educator. She has been teaching in the dome here for more than four years. Eleanor Williams, the Exhibits Technician, now provides support for the Planetarium as well. She served the Planetarium back in 1988-89 until restructuring had her working on exhibits full time.

201 and counting: Kris McCall reports that sales of shows from the Sudekum Planetarium continue to be strong with 25 shows already sold this fiscal year since July, '95. This gives us a grand total of 201 shows placed worldwide. We can legitimately say worldwide, since two shows are in Australia. Another copy of Planet Patrol will be going to Wollongong,

Virginia Living Museum Planetarium,
Newport News

After a record breaking summer we held over our show titled The Great Dinosaur Caper: a Mesozoic Murder Mystery. This was one of our most popular shows ever. It comes from the McLaughlin Planetarium in Toronto, Canada. Incidentally, I just heard that they are being shut down by the Canadian version of our budget cutters in Congress.

The show is excellent and in spite of the metric units and slight Canadian accent, eh, attendance was up by more than five thousand over last summer. Best of luck to this very creative and dedicated staff. Toronto's loss will most certainly be some one else's gain.

We are now gearing up for the full slate of seven public school show offerings, as well as weekend workshops. In November and December we run the Hampton Schools planetarium as well, giving programs to every third and seventh grade class in the district. It's no small task to go from a Spitz A3P with unidirectional seating to a Minolta with concentric seating, every day.

On four consecutive Thursday nights an adult class called Back Yard Astronomy was held in October. Students learned

about telescopes, became familiar with the night sky in the planetarium, then spent an hour or more scanning the real skies through the C 14 in our observatory. The class was well attended, and we were fortunate to have four good nights of observing out of four!

Plans are in place to celebrate the 30 year anniversary of Star of Wonder. I have to say though, that we haven't been running the same Christmas show for 30 years, just the same title. Either way, it has become a holiday tradition that we will likely continue for years to come. In addition, we will run (for the first time) a Christmas laser show from Audio Visual Imagineering titled Laser Holidays.

Our interactive home page is still under construction but you may visit it at <http://www.pinn.net/~vlm>. As always, if there are other Virginia Planetarians who would like me to include information about their facility please contact me (Dave Maness) before the deadline for the next issue of Southern Skies at (804) 595 1900 or via email at Pegasus321@aol.com.

Hopkins Planetarium, Roanoke

Britt Rossie tells me that they are running Moonwitch from Jeff Bowen Productions and an in house production called

News from SEPA States
continued

Kris McCall
Sudekum Planetarium
Nashville

Dave Maness
Virginia Living Museum
Planetarium
Newport News

Dave Maness
Virginia Living Museum
Planetarium
Newport News

Autumn Skies. They have purchased a new Astro Physics refractor telescope for use in their SKYWATCH programs. I understand this is a fine program that includes hiking the participants and a telescope or two out to an ideal observing site. What could be a better place for that than the mountains of western Virginia? He also reports that renovations at his museum and planetarium are continuing at a steady though sometimes frustrating pace.

Portsmouth Children s Museum Plan etarium, Portsmouth

Mike Nold has finally settled into the new museum. It s a big change from a Goto Venus to a Spitz 512 in a new 30 dome with 67 unidirectional seats. It sure beats the back seat of my car, he says.

In the first 10 months they had about 100,000 visitors at the museum compared with 8,000 per year at the old Manor High School site. He is currently running Partnership Earth from the Davis Planetarium in Baltimore and Welcome to the Universe written by Jon U. Bell and distributed by Joe Hopkins Engineering. Daily showings have been nearly continuous. The museum is open Tuesday Sunday each week.

Virginia Beach Planetarium, Virginia Beach

Herb Teuscher called in to give me his report of activities at his Plaza Middle School Planetarium. He is running a show called Icy Wanderers free to the public by reservation.

One of the most interesting projects he has been working on may interest many other planetarians too. He is developing a captioned program for hearing impaired using laptop computers. Apparently he puts a filter on them so the mainstreamed students can enjoy the show along with their hearing classmates. The slides appear on the laptop screen with some key concepts. He says he is still working out some bugs but tells me he would be interested in writing an article about it when he is satisfied the bugs are gone. For more information call him at (804) 431 4067. Herb has a Spitz A4RPY in a 40 foot dome with 120 seats.

Ethyl Universe Planetarium, Richmond

The Richmond folks are showing From Horoscopes to Telescopes, a show from the Strasenburg Planetarium designed to compare and contrast astronomy vs. astrology. The IMAX film offering until the end of December is Destiny in Space. After that they re preparing for an IMAX Film Festival including several past favorites as well as one or two new shows. Ethyl also offers a monthly live show on the current

Berkeley County Planetarium, Hedgesville

In the annual rivalry between the football teams of Larry Brown s Dwight O. Connor Planetarium at Parkersburg High School and Elizabeth Wasiluk s Berkeley County Planetarium at Hedgesville High School, Parkersburg beat Hedgesville 14 7. Looks like senior planetarium assistant

Elizabeth Wasiluk
Berkeley County
Planetarium
Hedgesville

Frank Aliveto of Berkeley County Planetarium, who plays on Hedgesville High s team will have to graduate before he ll see a Hedgesville victory over Parkersburg.

Planetarium directors Larry Brown and Elizabeth Wasiluk were colleagues at the 1993 Project SPICA program at the Center for Astrophysics at Harvard University in Cambridge, MA.

There are a few special characters which don t appear on any keyboard layouts but which are available via the PC s alternate characters or the Macintosh KeyCaps desk accessory. Learn to use them correctly.

The en dash is so called because it s the same width as the capital letter N in the font you re currently using. On the Mac it s produced by typing option hyphen. The en dash is used to separate words that refer to a duration of time or a sequence, e.g., 7 8 p.m., April May issue. A space is used before and after an en dash.

The em dash is so called because it s the same width as the capital letter M in the font you re currently using. On the Mac it s produced by typing shift option hyphen. The em dash is used to separate phrases which indicate an abrupt change of thought in a sentence, e.g., in Southern Skies I m not typing I m using typography. A space is not used either before or after an em dash.

The en dash is slightly longer than a hyphen; the em dash, longer still. And this is long enough to discuss typography

AstroVideo Review:

Sky-Skan and Planisphere Laser Discs, et al.

Where can I find video to use in my planetarium shows? That's a question often asked by planetarians. Most of the material I review in this column is material suitable for reference or classroom viewing. It's good as a loaner library item or a program for the local astronomy club.

However, you can't include such sources as part of your regular planetarium programs. About the only videotape I have ever received permission to use in a planetarium show was space program footage retrieved directly through a NASA educational office.

Fortunately, a few folks out there are helping planetarians with the specialized video needed for the planetarium theater. Sky Skan was first on the scene with their series of special effects laserdiscs. From planet zooms to exploding stars, the discs provide a large variety of well produced material.

These items are not cheap, but, in Sky Skan's defense, the market is limited, and they need to make a profit after their development costs. Since the average disc is about \$800, you'll want to make your selections carefully.

You can probably forget disc one which seems primitive compared to their later discs. It consists mostly of planet zooms that have since been done more creatively and pleasing through computer imaging on disc four. By the way, disc four is the "bread and butter" item in our school solar system show. Disc two, with its rotating galaxies, black hole effect, and Hubble telescope animations is also a favorite of ours.

This summer Sky Skan introduced a disc of spacecraft models that should prove especially effective when combined with a facility's flying mirror or zoom slide projector. If your budget can handle it, you can't go wrong getting the entire series of eight discs.

At the SEPA conference in Macon, we heard from Tony Butterfield of Planisphere Productions. He has been providing custom video animation sequences for planetariums for more than two years now. His pricing is quite reasonable for custom video tape work. A typical price

is about \$60 per animation. If you need something special not available in the Sky Skan library, Tony is a good resource to contact.

I might mention that by the time you receive this newsletter, his first laserdisc should be available. Tentative pricing was to be \$539 prepaid. I received a demo tape with excerpts of a few effects, and they should find good use in shows.

Although there is some repetition with subject material in the Sky Skan library, a number of new effects appear here for the first time. Tony has been very responsive to requests for subject content. I personally asked for slower planet rotations, image size differences (so the Mars zoom doesn't fill the screen as much as the Jupiter zoom, etc.), and my biggest hope—a random display of meteors. I can't wait to get a copy of the new disc to see if any of these made it into the project.

Both the Sky Skan and the Planisphere products can replace dozens of individual special effects projectors. When thought of that way, they can be considered quite a bargain. Even if you have the resources to install a dozen new effects in your latest production, consider the convenience and savings in time when these video effects prove to be appropriate.

To request detailed information or to purchase materials contact...

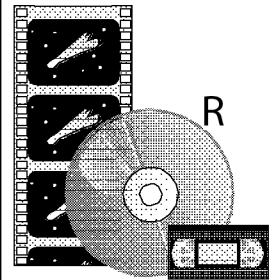
Sky Skan
51 Lake Street
Nashua, New Hampshire 03060 4513
Tel. 603 882 8500
73700.110@compuserve.com

Planisphere Productions
1117 Leahy Road
Monterey, CA 93940
Tel. 408 649 4361
71514.3145@compuserve.com

Lastly, although not directly related to the content of this column, I couldn't resist telling you all about a product that I am delighted with. It is a CD ROM program entitled Arts & Letters SpaceAGE. It's designed for the PC (Sorry, Mac users.).

(continued on page 20)

Mike Chesman
AstroVideo Review Editor
Bays Mountain Park Planetarium
Kingsport, TN



Mike Cutrera

Meteorites in the Planetarium

Dennis J. Cowles
Louisiana Nature Center
New Orleans, LA

Last summer, we did a show on the then upcoming impact of Shoemaker Levy 9 into Jupiter, and our show discussed the importance of impacts in shaping the solar system. (A note of thanks to my boss, Mark Trotter, who basically gave me free reign to design the Jupiter Watch program as I saw fit.) We included a slide of Barringer Crater, and then I'd show the audience a piece of the impactor. (We have a piece weighing almost one kilogram.) Showing your audience a picture of a terrestrial impact crater can be impressive, but letting them hold an actual piece of the impactor will leave an impression that they will never forget.

We can talk about the death of the dinosaurs and show them one of the smoking guns for the impact hypothesis: the iridium rich sediment from the Cretaceous Tertiary (K/T) boundary.

We can talk about the early solar system and show materials that are basically unchanged since that time. We can show various types of meteorites as examples of materials found within the solar system, or show them as a petrologic series to show how various degrees of heating can change a material in important ways. We can tie them into the various layers of the Earth and tell how scientists can use meteorites to determine conditions deep within our planet.

Scientists think that the iron meteorites are representative of materials found at the core of the Earth. The achondrites represent the crust, the stony irons are the mantle materials, and the chondrites are probably the original building block from which the planet formed. One can even be more specific: the pallasites are probably the material from the core mantle boundary, the diogenites are material from the upper mantle or the crust mantle interface, the soils (or regolith) are the howardites, the eucrites are lava flows, etc.

One can even discuss their contribution to the U.S. manned space program! When engineers were designing the heat shielding for capsules, they looked to meteorites for information about the shapes most likely to minimize heating. Since meteorites had already made a fiery plunge through the atmosphere, they could (and did) offer vital

clues as to the necessary shape that the entering capsule should have to ensure a safe return for the astronauts inside.

★★★★★★★★★★★★★★★★★★★★

There are many good books out on meteorites. I strongly recommend *Rocks from Space* by O. Richard Norton. He gives very good coverage of meteorites. I also admit a bias toward him, since he was a planetarian (Fleischmann Planetarium at the University of Nevada, and Grace Flandrau at the University of Arizona). The book has great illustrations (done by his wife Dorothy). I originally found the dealers mentioned below through this book, as Norton has thoughtfully included a list of commercial meteorite dealers. In all, a great book for novice meteoriticists (like me).

For a planetary sciences slant, I recommend *Worlds Apart: A Textbook in Planetary Sciences* by Guy Consolmagno and Martha Schaefer. (How loudly can I beat the drum for this book? Until everyone on the planet has a copy.) The authors refer to evidence gained from the study of meteorites. They also include some neat information about the delivery of meteorites to the Earth from the asteroid belt through orbital perturbation. Plus lots of other information that will keep you busy for years. Great book.

★★★★★★★★★★★★★★★★★★★★

Where do you get meteorites? The easiest place to look is the local rock shop. All of the ones that I have looked into only carry iron meteorites, but you might luck into something. Some do carry very nice specimens. Another place to look is commercial dealers. I normally order mine through dealers. At the end of this article, I have included information on some dealers that I have dealt with. All three have been quite helpful, and I think that you will find them easy to deal with. The three that I have listed can handle fairly small meteorite samples, which is not true of all dealers. (Some won't even talk to you if you're not spending over \$1,000.) There

are, of course, other meteorite dealers out there, but I have personal experience with the three mentioned, and I would not want to include anyone with whom I have not personally dealt. You might also try to see if a local museum has any that they might loan to your facility. If you are a part of a university, go talk to the geology department. If you are part of a museum with a geology collection, go talk to them. If you're none of the above, talk to a local university or maybe even a private collector about a loan to your planetarium. You'll never know unless you try!

Should you get meteorites for your planetarium? Of course. They are useful in illustrating points that we wish to make. If you can afford a larger specimen, it will make a nice display piece. If you have the budget for it, you can even make a display of different types of meteorites, to show the different types of materials that we find in the solar system.

Meteorites in the planetarium will go quite nicely with the upcoming Near Earth Asteroid Rendezvous (NEAR) mission, slated for launch next February. The NEAR mission will help to solve one of the outstanding problems in planetary science: do the most common types of meteorites (the ordinary chondrites) really correspond to the most common type of asteroid (the S type)? Even though the Galileo spacecraft flew by asteroid 243 Ida, which is an S type asteroid, there was not enough time or the necessary equipment on board to determine this. The mission's objective is to place the craft in orbit around the S type asteroid 433 Eros. Along the way the craft will pass close to the main belt C type asteroid 253 Mathilde (The C type are believed to be carbonaceous in composition.) and get a gravity assist from the Earth. The NEAR mission is the first of the Discovery missions. I was fortunate enough to hear a lecture given at the Lunar and Planetary Science Conference last March on this mission from one of the NEAR Mission Science Team members, Andrew Cheng. Check out the Lunar and Planetary Institute's homepage for a nice article about the mission (LPI Homepage: <http://cass.jsc.nasa.gov/lpi.html>).

Look for the Spring 1995 issue of the Lunar and Planetary Information Bulletin. (And since you're already net surfing, send an email to LaBecca Simmons at simmons@lpi.jsc.nasa.gov, and ask to be placed on the indication of interest list for

the next conference in March 1996, so I won't be the only SEPAite there. Please, I'm begging you. Send an email to me (CowlesD@aol.com) if you're going.

Now go get a meteorite. Or better, several meteorites.

☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆

Dealers

Blaine Reed
907 County Road 207, #1
Durango, CO 81301
(970) 259 5326 (voice/ fax)

Blaine is very nice, and makes every effort to see that I get a good specimen. I shop around quite a bit for good prices, and he is absolutely unbeatable. Nobody has better prices than Blaine Reed. I got a nice 176g Odessa iron, and a diogenite from him, as well as several other pieces. If you are buying from a dealer, check him out first.

Robert A. Haag
P.O. Box 27527
Tucson, AZ 85726
(602) 882 8804 (voice)
(602) 743 7225 (fax)

Robert Haag is the dealer in meteorites. He is one of the best hunters of them as well. The knock out Gibeon piece mentioned above came from him. Personal testimonial: I ordered a 52 gram Gibeon piece from him (at \$1.00 per gram a fair price). What I received was an 85 gram piece. If there is an error, it almost always goes in your favor. The book *Rocks from Space* gives a fascinating account of Haag's adventures searching the world for meteorites. Most of the pictures of meteorites in the book are from the Haag collection. Order his *Field Guide of Meteorites*. It costs only \$5.00. It is the documentation on his extensive collection and gives good information about meteorites and his experiences looking for them. You can

THE DEADLINE FOR THE NEXT ISSUE OF SOUTHERN SKIES IS JANUARY 1. PLEASE SEND YOUR SUBMISSIONS ON A 3.5 DISKETTE OR VIA ELECTRONIC MAIL TO {STARMANTNG@AOL.COM}.

order the book *Rocks from Space* from him, as well.

New England Meteoritical Services
P.O. Box 440
Mendon, MA 01756
(508) 478 4020 (voice)
(508) 478 5104 (fax)
nemsusa@delphi.com (e mail)

NEMS has a wonderful selection of meteorites, tektites, books, educational materials, and laboratory services. I ordered the Tunguska bark and the K/T boundary sediment from them. I had the good fortune to meet the director and the educational coordinator of NEMS at the Lunar and Planetary Science Conference this year. Definitely look at their selection. They sell slide sets featuring meteorites and their characteristics. Good stuff. One time, there was a small specimen missing from my order (Sikhote Alin, Siberia, iron, fell in 1947). When I called to ask about it, the director of NEMS, Russell Kempton, apologized profusely. They

sent me a replacement piece immediately. Expecting a small (circa 2 gram) piece, imagine my surprise when I found that they had sent me a 25.7 gram end piece! Nice people indeed.

Remember, if you make a purchase through any of these dealers, make sure that you tell them who sent you!!

☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆

To all of you who just nod and smile when I take out my space rocks and gloat, thank you. Your tolerance of my little hobby is duly noted and appreciated.

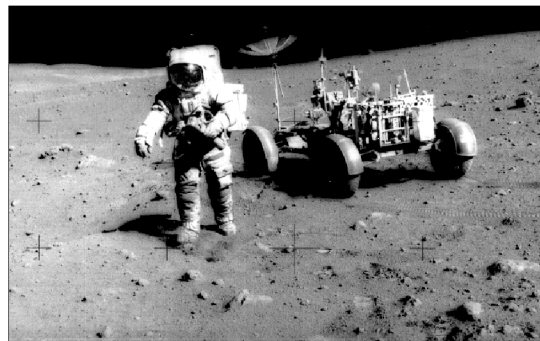
The program is a comprehensive encyclopedia of space flight. It's loaded with text, and the wealth of photo images is simply astounding.

You won't believe how much audio is on this disc. You can listen to the crew of Apollo 13; hear Neil Armstrong, Werner Von Braun, or dozens of other space pioneers. After a year of use, I'm still discovering new material on this disc.

Even better, there are slide shows and video programs on a number of special topics. These can be set up for automated viewing. At Bays Mountain we are developing a display that will present a different slide show each week from the CD ROM.

Whew! If that's not enough, the disc also includes a draw program with hundreds of full color space related clip art. We use this program to make flyers for all our special events. This product truly takes advantage of a CD ROM's multimedia capabilities.

The disc is endorsed by the National Space Society and received high marks from NASA and other sources. It normally retails for about \$60 (that is, if you can find it). It doesn't seem to be a widely distributed title. If you contact me, I can provide you with a special order blank to receive the latest edition for just \$31.95 directly from the producers.



(Editor's note: Although the CD ROM Mike is reviewing is for PCs only, the graphics likely could be used by Mac users. There's a utility available on many online services called Graphic Converter. It will make conversions between some three dozen or more file formats, e.g., PC GIF to Mac PICT. It's in the must have category.)

Southern Skies

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