

# STARLAB News

A free, biannual newsletter for users of the STARLAB Portable Planetarium

## Reaching to the Stars! Outstanding STARLAB Outreach Programs

by Gary D. Kratzer

CARA STARLAB Outreach  
CARA (Center for Astrophysical Research in Antarctica) is an outreach program operated by the Adler Planetarium in Chicago. With the help of an Adler astronomy educator, this novel program solicits secondary students to be members of an elite group known as The Space Explorers.

The group's celestial assignment is to take the STARLAB and the excitement of astronomy into approximately 20 Chicago grammar schools. The program has reached an average of two thousand grammar schools students on the South Side of Chicago in each of the three years of its existence.

The Space Explorers have experienced very promising and encouraging results.

Success is attributed to these local high school students acting as facilitators and motivators of the younger students. It has been reported

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The success of CARA's Space Explorer

program has organizers looking to expand to different audiences. Sights are now set on the teachers of the schools in the program service area. Additionally, CARA has targeted a school district in Wisconsin to replicate the outreach program.

### How it Works

Principals and at least one teacher are recruited from each school. After the selection is made, participants are required to experience the STARLAB program. After agreeing to participate in the program, Adler Planetarium schedules a visit.

Various planetarium educators pitch in to help with STARLAB training and basic astronomy and Antarctic science classes.

The Space Explorers receive credit for the training classes from the Chicago School System. Under supervision of Adler's Outreach Astronomer, Charles Brass, the Space Explorers are

put in charge of conducting classes. As a result of these young educator's efforts, many of the teachers in the participating



schools are becoming more formally involved by creating astronomy clubs. These clubs allow their students to take their STARLAB experiences a bit farther.

The Space Explorers Outreach program is an innovative idea for bringing the ex-

*(article continued on p. 2)*

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citement of astronomy to minorities who are underrepresented in the technological work force. It is also a program that is incredibly unique due not only to its broad spectrum of participants — student educators, parents, and scientists — but also due to the nature of its educational activities.

### Effects of the Program

The interest generated by the CARA outreach program has spawned a number of spin-off programs. In addition to the creation of astronomy clubs in participating schools monitored by Space Explorers, a program called Young Astronomers was created. Currently, there are over 60 Young Astronomers taking basic astronomy classes at the Office of Special Programs. If it were not for the STARLAB, these programs would not have come into existence.

The Space Explorer program has now taken root in schools near Yerkes Observatory in Williams Bay, Wisconsin. Since 1992, the State of Wisconsin has provided start-up funds for teachers in the Big Foot Area District to create their own program modeled on the Space Explorers. CARA educators assisted in planning this new program as well as training the teachers. This program uses the STARLAB of George Williams College and relies heavily on the experiences gained in the past three years.

The CARA outreach program has received accolades from participating schools as well as the Chicago Board of Education. Most of all, Adler Planetarium has seen a new atmosphere in the schools served. A new astronomy community has been created in Chicago.

### Lessons Learned

Much of the success of the CARA project is due to the efforts of a knowledgeable educator employed to coordinate the efforts of the volunteers and partners. The CARA program has also uncovered a persistent need of teachers for a broader astronomy content. Teachers need help preparing lesson plans and accessing astronomical teaching materials. With this in mind, plans are being put in place to enhance and improve the CARA project by working closer with the teachers already being served. The 20 veteran program participants will conduct six one-hour training sessions and teach hands-on activities and the construction of lesson plans to the teachers. In turn, each participant in the workshop will be required to facilitate staff

development in their school setting. Additionally, the CARA program plans to offer increased support for the Space Explorer institutes held at Yerkes Observatory.

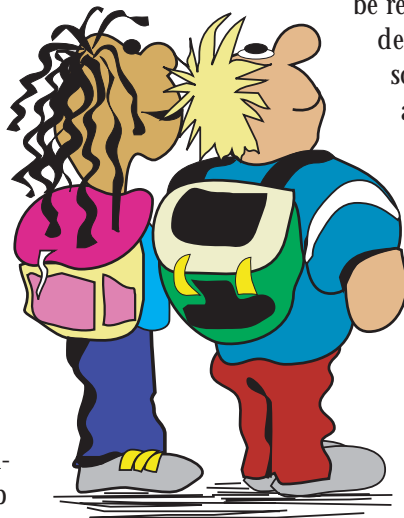
### Evaluation

Success of the Space Explorers Outreach program will be judged by the increase of participants. Other indicators of success

will be the number of high schools and grammar schools participating, the number of students attending the outreach program, and progress in establishing astronomy clubs and enlisting sponsoring teachers in host schools.

Note: a complete outline of the actual STARLAB program conducted by the Space Explorers at host schools can be found at: <http://astro.uchicago.edu/cara/outreach/se/starlab/>.

**Read about more great STARLAB outreach programs on page 4!**



## STARLAB News

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Edited by Gary D. Kratzer

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### STARLAB in Costa Rica!

A recent e-mail from Marco Avalos Dittel brought us up to date on the latest happenings in Costa Rica! He has been entertaining numerous audiences with a STARLAB that was purchased by a Science and Space Education Foundation seven years ago. Marco just moved into a new position as president of a multimedia productions society called AMTEC, S.A. and was able to keep the STARLAB with him.

In this capacity, Marco along with others from the society, want to start incorporating some new multimedia technology into their STARLAB programs. They plan to put a computer inside the dome which will allow them to have a four-point audio surround system, a low-intensity lamp projector which will include the capacity to run videos and interactive multimedia programs along with the STARLAB starfield projection.

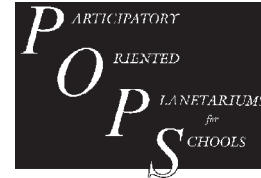


As they have always run every aspect of their programs by themselves to this point without any prerecorded presentations, they are excited that they will soon have the capability to process everything digitally.

In addition to the exciting new technologies that they are incorporating, the society is also creating a new STARLAB Website which can be viewed at: [www.amtec.co.cr/planetario](http://www.amtec.co.cr/planetario).

For more information and/or questions, contact Marco at his e-mail address: [maualos@amtec.co.cr](mailto:maualos@amtec.co.cr).

For the latest  
information, visit  
the STARLAB  
Web page:  
[www.starlab.com](http://www.starlab.com)



*POPS Solutions is dedicated to the continued communication*

*among educators who attended the POPS Institutes held at the Lawrence Hall of Science, University of California, Berkeley. Any of the 249 participants would agree that the experiences there changed the way one thinks about, and teaches astronomy and space sciences.*

### Robert Jesberg (POPS '89)

Bob has recently assumed the position of Education Product and Training Specialist for K'NEX Industries in Hatfield, PA. Bob is looking for professional development trainers interested in putting on workshops for K'NEX. The K'NEX Education Division Construction Sets include many math, science, and interdisciplinary topics such as Simple Machines, Forces, Motion and Energy, Bridges, Solar Energy, Transportation, Computer Control Technology, Math, and Roller Coaster Physics. For more information about this great opportunity, e-mail Bob: [RJesberg@KNEX.com](mailto:RJesberg@KNEX.com).

### Jim Beaber (POPS '89)

Jim is working on his master's degree in astronomy through the Sydney Western University in Australia. Jim reports that much of his work is done online and is quite affordable. He emphasizes that the reason for pursuing the higher degree is to become a better teacher. Last year, Jim presented papers at the ASA/RASNZ meeting in Sydney. Jim can be reached at: [jbeaber@sni.net](mailto:jbeaber@sni.net).

### Patrice Saucier (POPS '89)

Patrice was recently promoted to Grants Consultant for the Calcasieu Parish School System in Lake Charles, LA. Colleagues and students will sorely miss her presence in the classroom. To wish her success in her new position, contact Patrice at: [psaucier@hal.cal.k12.la.us](mailto:psaucier@hal.cal.k12.la.us).

## More Great STARLAB Outreach Programs!

### The Kidzeum

The Kidzeum is a 2500 square foot children's museum located in Grenada, Mississippi. The development of the museum came as the result of a local bond issue for schools with additional support from grants. STARLAB quickly became an integral part of the museum.



In addition to traditional STARLAB programs that focus on the seasons, rotation, revolution, and constellations, the Kidzeum has developed some rather unique programs for their visitors. The following descriptions are of activities conducted in STARLAB.

### The Awesome Color Adventure

The students are brought into STARLAB and are given a brief explanation of its unique environment. Also discussed are behavior and performance expectations of the stu-

dents. The instructor begins the lesson by asking the students, "What gives us light?" After the students discuss responses, a compilation of answers is written on a large chart. The students are then asked, "Did you know that you must have light to see colors?" The use of a videotape on colors and light is shown to the students.

To demonstrate the concept of light traveling in straight lines, the instructor shines a flashlight through a water-filled aquarium (1' x 2'). The dark environment proves ideal for students to clearly view the concept.

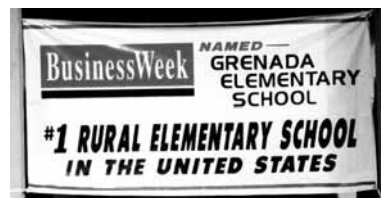
Next, the instructor puts an object, such as a pencil, into the water to demonstrate that light travels in straight lines but can be bent (refraction). Shining a flashlight at an angle into the aquarium further emphasizes this concept. The next concept deals with light bouncing off of things that it hits (reflection). The instructor uses

a mirror and a board to demonstrate which is the better reflector of light. After the STARLAB lesson is complete, the students exit the planetarium and report to various activity centers for follow-up reinforcement of the concepts of color and light. The students participate in a variety of activities that clearly demonstrate the nature of colors in light and dark situations, the bending of light, and reflection.

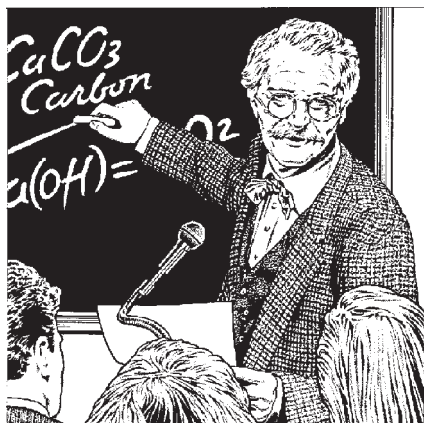
### Breaking Light into Colors and Blending Colors

Part two of the study of color and light also begins with a discussion of the STARLAB environment and expectations of student behavior and performance. The lesson then

moves on to a discussion of white light. To reinforce this concept, a flashlight is shown through a prism to create a rainbow on the dome. The students are clearly able to see that when the light is bent, it also breaks into the colors of a rainbow. The question



(continued on p. 5)



## ASK THE EDITOR

usually does the trick. A little experimentation with the projector lamp intensity will reveal a reasonable level of brightness for your dark-adapted students. This technique should increase projection lamp life span by approximately five times.

## IS THERE ANY WAY TO INCREASE THE LIFE OF A PROJECTION LAMP?

When students first enter STARLAB dark adaptation of the human eye begins. Within a matter of 10 to 15 minutes, the pupil of the eye opens to approximately 7mm. At this point, we are said to be fully dark-adapted thereby being able to see the faintest stars projected in STARLAB. Until this time, it is necessary to operate the projection lamp at full power resulting in maximum brightness. This is of extreme benefit to the observer. After dark adaptation is reached, usually within 10 minutes or more, the projection lamp can be reduced without a noticeable loss of star brightness.

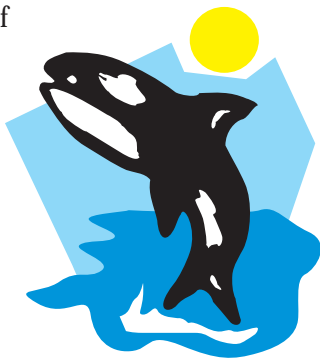
STARLAB's halogen projection lamp is designed to last many hours. As you may have noticed, the lamp becomes very hot at full brightness. The best way to increase the life of the lamp is to reduce the amount of energy to the lamp, which in turn increases the lamp's life span by "burning" at a cooler temperature. One-quarter of a full turn of the projection lamp knob on the projector in a counterclockwise direction



is asked, "What colors are in light?" Red, blue, and green light are shown on the STARLAB walls. A blending of the colored lights will create white light. It is explained to the students that all colors are in light and that

we are only able to see them when they are broken apart by some sort of prism.

To further reinforce the concept of colors blending to make white light, a three-blade fan with the blades painted vivid shades of red, green, and blue, is turned on at full speed to reveal a distinctive white. Additional time is spent explaining that the mixing of paint (pigments) will produce various colors as well. Time is spent demonstrating colors produced by light and from pigments. After completion of the STARLAB lesson, the students again exit and report to activity centers in the museum. Students can then experience learning reinforcement



by mixing colors of flood-lamps to generate colors, producing rainbows with mirrors in water, and making spinning color wheels to create white light.

Another program generating enormous excitement is called "Whale Tales." A local artist painted a "bottom of the ocean" panorama on a STARLAB Transparent Cylinder. Included in the mural are a whale and other sea creatures. This special effect creates an outstanding learning environment for students to learn about life in the sea.

A five-year old girl summed up her experiences in STARLAB by placing her hands on her hips and exclaiming, "this is absolutely awesome!"

To find out more about the Kidzeum and its use of STARLAB, contact Eloise Portera, The Kidzeum, Grenada Elementary School, 22315 Highway 8 East, Grenada, MS 38901. Phone: 662-226-8900, Fax: 662-227-4497, E-mail: portera@watervalley.net.

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### Carole's Suggestions for Current Sources of Funding

► **Citigroup Foundation** ◀ Charles V. Raymond, President and CEO, 153 E 53<sup>rd</sup> Street, 3<sup>rd</sup> Floor, New York, NY 10043, Phone: 212-559-9163

"The companies that comprise the Citigroup and the Citigroup Foundation have established the following guidelines for their strategic philanthropy. Grants are made to strengthen K-12 education in low-income neighborhoods so that all children are learning at high levels. The Foundation supports innovative teaching strategies that increase student performance, technology-based curriculum resources and teacher training."

► **Rohm and Haas** ◀ Corporate Social Investment, 100 Independence Mall West, Philadelphia, PA 19106, Website: www.RohmHaas.com

Rohm and Haas Company supports educational organizations. "Most of our investments are focused on Education and Health and Human Services. Although a significant level of our funds is provided for operation support, we prefer to support discrete programs and projects."



### National Science Teachers Association Conventions:

2000 NSTA National Show\*  
Orlando, FL — Apr. 6-9

2000 NSTA Area Shows\*  
Boise, ID — Oct. 5-7  
Milwaukee, WI — Oct. 19-21  
Baltimore, MD — Nov. 16-18  
Phoenix, AZ — Dec. 7-9

2001 NSTA National Show\*  
St. Louis, MO — Mar. 22-25

### Other 2000 Conferences:

MAPS (Mid-Atlantic Planetarium Society)\*  
Solomons, MD — May 3-6

AYM (Association of Youth Museums)\*  
Baltimore, MD — May 11-13

SEPA (Southeastern Planetarium Association)\*  
Winston-Salem, NC — June 20-21

IPS (International Planetarium Society)\*  
Montreal, Canada — July 9-13

ASP (Astronomical Society of the Pacific)  
Pasadena, CA — July 13-18

GLPA (Great Lakes Planetarium Association)\*  
Chicago, IL — October 11-14

ASTC (Association of Science-Technology Centers)  
Cleveland, OH — October 14-17

\* STARLAB will be there!

# STARLAB Users News & Contributions

## Portable Planetarium Information Needed

The International Planetarium Society is compiling a handbook that will serve as a valuable resource to the portable planetarium community. Susan Reynolds Button, IPS Portable Planetarium Committee member, is requesting the following types of resources and information:

- Quality audiotapes of presentation topics such as; the seasons, the moon, celestial motion, mythology, the planets, navigation, and related titles. The contributing presenter must include the audiotape plus information about the source of the presentation(s), goals and objectives of the presentation, list of equipment and materials needed, a correlation to National or State Standards, presentation sequence outline, a list of pre/post activities used with the presentation(s), evaluations used after the presentation.
- A signed release form giving permission to share the presentation or tape with planetarium educators.
- Tips and ideas detailing effective teacher training programs.
- Samples of brochures and other advertisement techniques used to promote a program.
- Forms used to evaluate planetarium programs.

For more information about the handbook project, contact: Susan Reynolds Button, International Planetarium Society, Portable Planetarium Committee, OCM BOCES Planetarium, P. O. Box 4754, Syracuse, NY 13221, or send e-mail to: Sreynold@cnyric.org

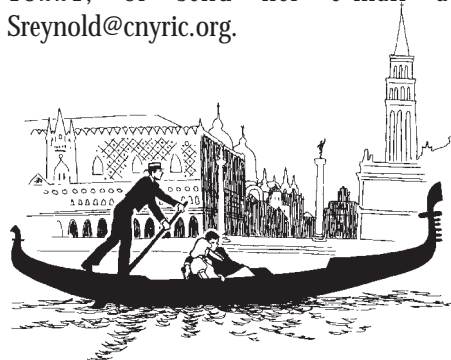
## A Week in the North of Italy

Each year the Serafino Zani Astronomical Observatory in northern Italy, in collaboration with the International Planetarium Society's

Mobile Planetarium Committee and with the support of Learning Technologies, Inc., hosts an American planetarium educator who will present lessons to high school students of English. Lessons will be presented in the itinerant planetarium's STARLAB. Round-trip transportation from the United States will be provided, along with bed and meals.

Perspective educators must submit an application accompanied by a resume or curriculum vitae, and a tape-recorded lesson as presented to students.

For more information or application forms, contact: Susan Reynolds Button, International Planetarium Society, Portable Planetarium Committee, OCM BOCES Planetarium, P. O. Box 4754, Syracuse, NY 13221, or send her e-mail at Sreynold@cnyric.org.

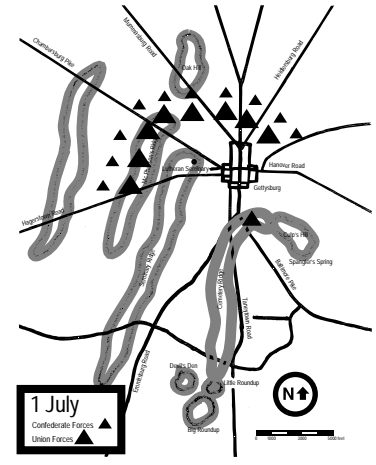


**Attention STARLAB Users!**  
Tell us about your STARLAB program, or your ideas that pertain to STARLAB. Maybe you'll see your name in print in the next issue!

Send your news to Gary Kratzer c/o Learning Technologies, 40 Cameron Avenue, Somerville, MA 02144 or via e-mail: gkratzer@rocketmail.com.

Thanks to Several Innovative STARLAB Users, a Transparent Cylinder Curriculum Guide is Born!

Kudos to the following STARLAB users whose award-winning ideas have been featured in the new *Collection of Curriculum Ideas for the Transparent Cylinder*.



Scott Beyer, an independent STARLAB owner, contributed an activity entitled "The Skies of Gettysburg: July 1-3, 1863," which gives students a basic understanding of the Battle of Gettysburg, Pennsylvania and the associated night skies seen by the combatants during the fighting and maneuvering. Scott also drew three battle maps that can be used on the Transparent Cylinder that demonstrate placement of the troops on the three key days of the battle.

Linda K. Johnson of Waldron Elementary School in Waldron, Indiana uses her Transparent Cylinder for literature, storytelling, myths and star location. She contributed several sample story illustrations to demonstrate how the cylinder can be used to colorfully illustrate a story. In her story she describes how the main character, a shepherd, spends his evenings gazing at the stars and describing which constellations are his favorites.

The Hamilton County Park District Naturalist Staff from Cincinnati, Ohio



contributed two wonderfully illustrated activities. The first, "Pond Life," demonstrates that ponds, although they may seem to be peaceful and serene to the casual observer, actually are a place with an incredible amount of activity beneath the surface and along the edges. Their detailed illus-

trations depict the vast array of life — insects, birds, fish, frogs, tadpoles and more. The second activity, "Nature at Night," is a fascinating depiction of the animals of the night.

The activities give students a general understanding of diurnal and nocturnal animals, the characteristics of various groups of animals — mammals, reptiles, amphibians, birds and insects. The illustrations feature creatures ranging from katydids to flying squirrels to white-tailed deer to great horned owls.

Scott Negley, an independent STARLAB user, created an activity for the Transparent Cylinder entitled "Stellar Evolution." This activity discusses the theory regard-

## STARLAB Users News & Contributions



ing the dramatic changes the sun will experience beginning in 5 billion years as it first swells to a red giant then collapses to a white dwarf. His illustrations excellently portray the extremes the solar diameter will encounter.

Other helpful tips and ideas were contributed by Susan Reynolds Button, excerpted from TIPS Booklet #18, and Steve Berr, our very own STARLAB representative from Pennsylvania.

Thanks to all of the contributors!



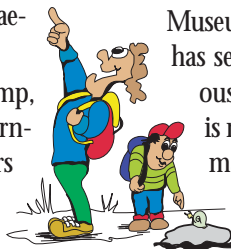
### Discovery Channel Camp at Atlantis!

The Discovery Channel Camp at Atlantis is an educational outreach program located within Sun International's spectacular Atlantis, Paradise Island resort in the Bahamas. The camp takes full advantage of the Discovery Channel's internationally acclaimed reality-based programming concepts and resources as well as the imaginative attractions at Atlantis as it immerses children in an interactive, in-depth exploration of the wonders of the natural world.

The multimillion dollar Discovery Channel Camp is geared toward children ages 5-12 who are guests at the re-

sort. Discovery Channel's credo, "Explore your World," is taken to new levels of educational entertainment by drawing on children's endless fascination with the world around them and to put them nose to nose with real world adventure. The camp is in operation year round and offers morning, afternoon, and evening sessions that are fully supervised and packed with entertaining educational programs in the areas of science, technology, nature, archaeology, and the arts.

As an integral piece of the camp, STARLAB provides a unique learning environment in which campers have the opportunity to explore the heavens, literally putting the universe at their fingertips. Students develop a deeper understanding of the objects found in the night sky including the moon, planets, and the constellations. By exploring the mythology of ancient cultures, students discover how people of the past used the sky as a time-



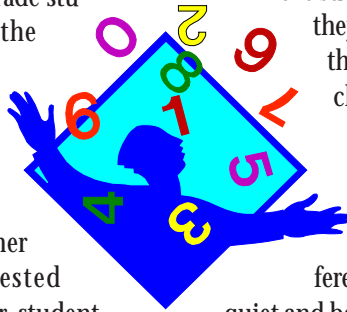
keeper and calendar. Under the sky, they recreate the legend of Atlantis and discover how everyone from Columbus to space shuttle pilots use the stars to navigate around the Earth.

The camp's format was developed by Michael DiSpezio, who has developed curricula for dozens of organizations ranging from the Children's Television Workshop to the Cape Cod Children's Museum, and Stephen Tomecek, who has served as consultant for numerous PBS children's programs and is noted for his uncanny ability to make science and technology fascinating for children.

For more information about the Discovery Channel Camp at Atlantis, contact Sun International at 1415 East Sunrise Boulevard, Fort Lauderdale, FL 33304 or phone 954-713-2500. Or, visit them online at: [www.sunint.com/atlantis](http://www.sunint.com/atlantis).

## STARBASE ROBINS

Funded by the United States Air Force Reserve, STARBASE ROBINS is a unique program that involves 5<sup>th</sup> grade students and STARLAB in the study of mathematics and science. Elvira Flagg, STARLAB educator, found presenting the same lesson eight times a week to be very challenging. Mentor teacher Peggy Kendrick, suggested audiotaping the lessons for student presentations. After identifying the program objectives, Flagg wrote out the script and recorded a ten-minute presentation. Elvira found *Astronomy and More* to be extremely helpful for script information on constellation mythology. In addition to the taped mythology presentations, she uses an activity in which each student refers to his/



her head as the earth and nose as a mountain on which two sleepy children live. With the addition of a bright light to represent the sun, the students are asked how they can make it nighttime on the mountain so the two sleepy children can fall asleep.

Student preparation for the STARLAB visit includes a discussion of how sound travels in a dome, the difference between being quiet and being silent, and removing their shoes before entering the dome. After assigning two students the task of being "door holders," the students enter the planetarium four at a time. This technique allows for greater teacher control of seating arrangements. Elvira assigns the girls to one side of the

dome and boys to the other.

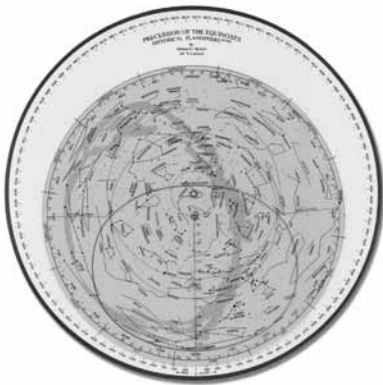
The lessons begin with *Star Wars* music while the daily motion of the projector progresses slowly from east to west. As the taped presentation begins, Elvira facilitates the lesson by pointing out the various stars and constellations. She uses transparencies of constellation patterns and mythological figures to reinforce the lessons.

Elvira reports that the use of tape recorded presentations has allowed her co-workers to facilitate consistent, uniform lessons to all students participating in STARBASE ROBINS.

For more information contact Elvira Flagg, STARBASE ROBINS, Museum of Aviation, P. O. Box 2469, Warner Robins, Georgia 31099.



## The Precession of the Equinoxes Historical Planisphere



Now available for the northern and southern hemispheres!

*"... an ingenious product that offers a new twist... a planisphere that can precess!... it's cool, and the nearest thing yet that I've seen to a flat planetarium! I think the Heifetz "Historical Planisphere" is wonderful — a true innovation in planisphere design and one that teaches new concepts in the process."*

— *Planetarian, Vol.28, No. 1, March 1999*

The Precession of the Equinoxes Historical Planisphere (now available for each hemisphere) is a unique, handheld device that shows which stars are visible at any hour, day or month, thousands of years in the past and thousands of years into the future. It also illustrates precession in a way that can otherwise only be duplicated using a computer and a planetarium. This planisphere demonstrates the change in declination over the millennia and shows which star will be the pole star of the future!

### Precession of the Equinoxes Historical Planisphere — 30° N. Latitude

Item #LT-50 (10" diameter), \$12.95 plus \$3.00 shipping/handling (for one planisphere).

Also available!

### Precession of the Equinoxes Classical & Historical Planisphere for the Southern Hemisphere — 30° to 40° S. Latitude

Item #LT-55 (10" diameter), \$21.95 plus \$3.00 shipping/handling (for one planisphere).



For more information or to order, contact Learning Technologies, Inc. • 40 Cameron Avenue • Somerville, MA 02144 • USA  
Phone: 800-537-8703 or 617-628-1459 • Fax: 617-628-8606 • E-mail: starlab@starlab.com • Web: www.starlab.com



## How to Make Red-Covered Flashlights for Use in STARLAB

All STARLAB educators eventually understand the concept of dark adaptation and how important it is to protect it once achieved. Once the human eye settles into a dark environment, the average pupil expands to approximately 7mm. This is the normal maximum opening in the eye that allows the participant to achieve what is known as "night vision." To protect that precious night vision, many of the student-centered activities designed for STARLAB strongly recommend that students use red-covered flashlights. This is due to the fact that once the human eye is dark-adapted, the use of soft red light has a minimal effect on adaptation yet provides adequate reading light for the student.

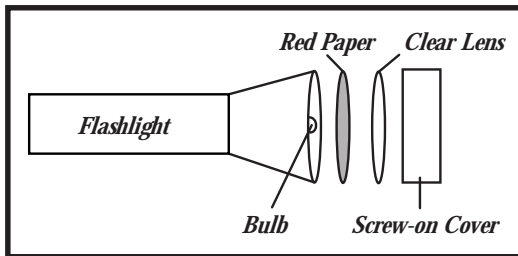
Making your own red-covered flashlight can be as simple as draping red construction paper over the head of the flashlight and taping it on to prevent it from falling off. But, while this works well for temporary use, it falls short of being a permanent solution for providing red light in STARLAB. Instead, we suggest that you follow these steps to construct a useful and more permanent red flashlight:

- Unscrew the head of the flashlight and carefully push out the plastic lens and reflective bulb housing.
- Trace the circumference of the plastic lens onto red construction or bulletin board paper. Red plastic or red velvet

## New Ideas Under the Dome

Christmas ribbon can also be used. **Do not use red cellophane** — it is too thin and lets through too much bright light.

- Cut out the traced lens circumference.
- Position the red paper or red substitute between the reflective bulb housing and the plastic lens.
- Replace the reflective bulb housing, red paper, and lens back into the head of the flashlight and screw it back onto the body of the flashlight.



Now you have a reliable red-covered flashlight that can serve as a permanent source of red reading light in STARLAB!



Got Any Great STARLAB Ideas You Want to Share With Us?

We would love to include your ideas in the next issue of the *STARLAB News*. Contact us and tell us what works well for you in terms of activities, gadgets, etc.

Contact Gary Kratzer, c/o Learning Technologies Inc., 40 Cameron Avenue, Somerville, MA 02144 or via e-mail: [gkratzer@rocketmail.com](mailto:gkratzer@rocketmail.com)

Visit These Great Websites for Astronomy and Lots More!

Do you know of any great Websites that may be of interest to other STARLAB users? We thought you might enjoy these:

<http://www.earthsky.com>

### *The Earth & Sky Radio Series*

This site includes Skywatching Center, Kids Earth & Sky, Feature Articles, Teacher's Lounge, and a Young Producer's Contest. It is an offspring of the *Earth & Sky Radio Series*.

<http://www.currentsky.com>

### *Que Tal in the Current Skies (An Earth in Space Online Monthly Newsletter)*

This site is a great source of astronomical information, star maps, activities, etc. One can sign up for periodic updates of neat things happening in the night sky. This site is operated by longtime planetarian and astronomy educator, Bob Riddle.

<http://walt.stcloudstate.edu/dome/>

### *The Dome of the Sky*

This site gives information on tonight's sky, this week's sky, a view of today's moon, information on eclipses, equinoxes and solstices, the rising and setting of the sun and moon, an astronomical calendar and dome (astronomy) news. It also features a section on constellations (by season) with a photo and outline of the constellation, the related mythology and primary star information. For even more detailed constellation, mythology, history and star information, visit:

<http://winshop.com.au/annev/cons.html>

These sites represent just a sampling of the many sites available to all on the Web.

To share your list of great Websites with other STARLAB users, send an e-mail to:

[GKratzer@rocketmail.com](mailto:GKratzer@rocketmail.com).



## The Inside Scoop



## News from LTI



### The Project STAR Diffraction Grating Gains Attention!

The Project STAR Diffraction Grating was an integral part of an activity entitled "Demonstrating the Relationship between the Energy and Frequency of Light" by Adolf Cortel from Barcelona, Spain in a recent article in *The Physics Teacher* (Vol. 38, March 2000).

Cortel devised a very simple way to demonstrate the concept that the energy of a photon is proportional to its frequency. He "strongly recommend[s] the PS-08A grating from Learning Technologies . . . because of its very bright first-order spectrum."

The specially developed, high-efficiency Project STAR Diffraction Grating is 100 times more efficient than acetate gratings. For more information or to order, contact LTI at the address below.

For more information on any of these news items contact:

Learning Technologies, Inc.  
40 Cameron Avenue  
Somerville, MA 02144 U.S.A.

Phone: 800-537-8703 or 617-628-1459  
Fax: 617-628-8606  
E-mail: starlab@starlab.com

New Curriculum Guides are Now Available!

LTI is please to offer new curriculum guides for the following cylinders:

- Greek — (28 pp.) includes three additional activities written by Gary Kratzer.
- Constellation — (22 pp.) includes drawings of each of the 48 constellations, information on the primary stars, their spectral class, visual magnitude, and distance in light years, and noteworthy remarks about the constellation.
- Transparent — (46 pp.) includes "Transparent Cylinder Tips" from Sue Reynolds Button; "The Skies of Gettysburg: July 1-3, 1863" by Scott Beyer; "Using Literature, Storytelling and Mythology to Teach Star Location" by Linda K. Johnson; "Pond Life" and



"Nature at Night" from the Hamilton County Park District; "Evolving Solar System" by Scott Negley; and "Other Clever Ideas" by Stephen Berr. (See pages 6 and 7 for detailed descriptions).

The following curriculum guides are available for \$3 each (to cover printing and postage costs): Constellation, Celestial Coordinates, Solar System & Galaxy, Greek, African, Native American, Chinese Seasons, Chinese Legends, Ancient Egyptian, Earth, Plate Tectonics, Ocean Currents, Weather, Transparent. The Starfield, Deep Sky Objects, Biological Cell, Hindu, and Lapp curriculum guides are available at no charge.

Please send a check payable to Learning Technologies, Inc. for \$3.00 for each of the above guides you would like to receive. No phone calls please.



### STARLAB Hall of Fame!



Thanks to all of the STARLAB users who helped to spread the word about STARLAB through workshops this fall and winter (September 1999 to February 2000):

*Walter Piippo — "Using a STARLAB and Music to Motivate School Students to Learn Astronomy," National Science Teachers Association, Detroit*

*Joan Skoda — "Using the STARLAB and Hands-on Activities to Teach Basic Astronomy to Younger Grades," National Science Teachers Association, Detroit*

*John Land — "STARLAB Portable Planetarium — Gateway to the Universe of the Imagination," National Science Teachers Association, Tulsa*

*Carole Allen — "Writing a Winning STARLAB Proposal," National Science Teachers Association, Tulsa*

*Kathie Beal — "Using the STARLAB and Stargate 2000 to Open the Universe to Children Approaching the Millennium," National Science Teachers Association, Reno*

*John Gallagher — "Teaching the Astronomy Standards in STARLAB," Washington Science Teachers Association*

*Susan Reynolds Button, Jeanne Bishop, Gene Zajac, Barbara Nissen, Cheri Adams — (various topics), Great Lakes Planetarium Association*

*Gary Kratzer — "STARLAB and the Standards: New Ideas Under the Dome," Louisiana Science Teachers Association*

*Pat Bown — "STARLAB: Myths of the Constellations," Utah Science Teachers Association and Utah Association for Gifted Children*



# Carole's Corner

The Road to STARLAB Funding Success

Congratulations to a Recent Funding Success!

The following Q & A session took place with Jim Merk of West Aurora School District #129 in Aurora, Illinois.

**Q** When did you first see a STARLAB and what excited you most about it?

**A** I first saw STARLAB at the Illinois Scientist Teachers Conference. I thought it was a "unique" teaching tool — one that could cover many different concepts in science but could also be used in other classes like English, history, etc.

**Q** Did you think at that time that you would ever own one?

**A** No. We have Regional Offices of Education here in Illinois. Our ROE happened to own two STARLABs and our district is able to rent one. Each building had it available to use for about three days, but never when we needed it. That isn't a problem now that we own our own STARLAB.

**Q** What kind of help did you need to get the ball rolling on finding grant money?

**A** A number of years ago some teachers got together and wrote a grant to get a STARLAB. We were turned down. After I had used the STARLAB in my science classes last year, I decided to try to get a STARLAB for the district. The students enjoyed being in the STARLAB so much that I just had to try to write a grant. I then called Learning Technologies, received the *STARLAB Funding Packet* and then started the writing process.

**Q** Did you have support from other administrators or teachers?

**A** Yes! Carolyn Kerkla, one of our Assistant Superintendents, helped in the writing of the proposal. I have been going to all the schools within the district "showcasing" STARLAB. We have also set up training sessions after school that will give teachers in the district credit. They are very impressed with the versatility of STARLAB.

**Q** What was the most difficult part?

**A** Researching possible corporations or foundations. You're never sure if you have chosen the correct one. Also, waiting to find out if they've accepted your proposal.

**Q** How did you decide where to apply?

**A** When I contacted LTI, they sent me the Funding Packet followed by a letter from the grants specialist who suggested that I apply for a grant through the Toshiba Foundation.

**Q** Is there anything that you would recommend to others seeking corporate or foundation support for a STARLAB?

**A** 1. Use the ideas from the *STARLAB Funding Packet*.

2. Take any advice the grants specialist can give you. (Without Carole's suggestion, we would still be looking for some organization to fund us.)

3. Find another teacher(s) or administrator(s) to help write the proposal. With more than one person working on the grant proposal, the writing is much easier.

4. Don't lose faith — it took us two different attempts before we were accepted and others have persevered through many more than that.

## Common Funding Questions



Since I wrote about the "ever growing" LTI database of funding sources many of you have asked what information is available. We have compiled a searchable database of hundreds of funders including 159 educational foundations. All of the corporate, government, private and educational funders in the database will potentially fund the purchase of a STARLAB.

We also have common grant applications that are being used by consortia across the country to streamline the process of applying for grants. Over 300 foundations are currently participating in these programs and the numbers are expected to keep growing.

In keeping with the rest of the business world, many foundations and government programs are using internet technology to make grant-seeking easier. From organizations that allow you to view or print their guidelines online to those who require online applications, the philanthropic community has entered the 21<sup>st</sup> century. Our list of funders with Websites is updated monthly — they are good targets for submitting a STARLAB grant.

If you would like me to search the database, provide a grant application, or send you the current list of online resources, please send an e-mail with your name, organization, mailing address and phone/fax numbers. As always, I will respond to individual fund raising questions as they arise.

*See page 5 for Current Funding Suggestions from Carole.*

Carole Allen is the in-house Grants Specialist for LTI. She can be reached by phone on Thursdays at 1-800-537-8703 or any time by E-mail: [callen@starlab.com](mailto:callen@starlab.com)

## Newsletter Highlights . . .

- Reaching to the stars! Outstanding STARLAB Outreach Programs (feature story)
- Ask the Editor — Increase the Life of Your Projection Bulbs! (p. 4)
- Convention Calendar — Come see STARLAB! (p. 5)

### Moon Phases — April to September 2000



Phase:	New Moon	First Quarter	Full Moon	Last Quarter
Apr	4th	11th	18th	25th
May	4th	11th	18th	25th
June	2nd	9th	16th	23rd
July	1st	9th	16th	23rd
Aug	29th	7th	15th	21st
Sept	27th	5th	13th	19th

### Planet Positions — April to September 2000



	Mercury	Venus	Mars	Jupiter	Saturn
Apr	Pisces	Pisces	Aries	Aries	Aries
May	Taurus	Aries	Taurus	Aries	Aries
June	Gemini	Taurus	Taurus	Taurus	Taurus
July	Gemini	Cancer	Gemini	Taurus	Taurus
Aug	Cancer	Leo	Cancer	Taurus	Taurus
Sept	Virgo	Virgo	Leo	Taurus	Taurus

(based on mid-month positions at 9 pm.)

### Plus . . .

- STARLAB Users — News & Contributions (p. 6)
- New Ideas Under the Dome (p. 9)
- The Inside Scoop — News from LTI (p. 10)
- Carole's Corner — STARLAB Funding Information (p. 11)

The latest news on the STARLAB  
portable Planetarium!

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