

# Link2Liftoff

Our Mission is to inspire, excite, and educate people of all ages about the mysteries and wonders of space, science, and the universe in which we live

Summer 2003

## Encounters

### Space available in Summer Camps—Register Now!

See flyer inside for details!

### Family Fun Nights

#### including Stargazing

June 13, Friday, 6:30 pm  
July 12, Saturday, 6:30 pm  
Sept. 13, Saturday, 6:30 pm  
Free with admission to the Center, which is \$6 for adults; \$4 for seniors and children ages 6-18; free for children under age 6. Hot dogs, chips, and soda are an additional nominal fee.

### StarLab Indoor Planetarium

All shows at 10:30 am, 11:30 am and 12:30 pm  
June 7 & 21  
July 5 & 12  
August 2 & 16  
\$4 in addition to admission to the Center. Members are admitted to Stargazing and StarLab shows for free.  
*Stargazing activities and the StarLab Indoor Planetarium are presented at the Challenger Center by Tony and Carole LaConte of Stargazing for Everyone.*

## FALL EVENTS

### Challenger/Phoenix Symphony Event

September 6: A ticketed event celebrating the fact that Mars has not been this close to Earth in tens of thousands of years. Sponsored by Northern Trust Bank featuring the Phoenix Symphony String Ensemble/Quartet. Watch for your invitation later this summer.

### Farewell to Galileo

September 20  
A NASA Mission Celebration

## SUMMER EXHIBITS

Access to all exhibits is free with general admission to the Center

## SPACE WEATHER CENTER

On display through August 31

To introduce the public to space weather, the Challenger Space Center is currently hosting a traveling science exhibition called the Space Weather Center. The exhibit, developed by the Space Science Institute of Boulder, Colorado, uses interactive components for hands-on learning, interesting graphics, and video displays to explore the Sun-Earth



connection. The Space Weather Center also demonstrates how scientists use a variety of tools, including satellites, to forecast storms in our near-space environment.

Youth group tours are currently being scheduled. For information, call Denise at 623-322-2037.



On display July 1-31 to help celebrate the Challenger Center's third anniversary

## NASA EXTRAVEHICULAR MOBILITY UNIT (EMU) SPACE SUIT AND MOON ROCKS REPLICAS

**EMU SUIT:** Astronauts who walked on the Moon during the Apollo program (1969-1972) wore multi-layered suits designed for comfort, utility, and protection from the harsh environment of space. Special outer gloves, boots, and a helmet were also needed. A life support backpack was worn to provide cooling, oxygen, and communications for the suited astronaut.

**MOON ROCKS REPLICAS:** Between 1969 and 1972, 843 pounds of lunar surface material were returned to Earth during the six manned Apollo missions. Much has already been learned about the Moon and our solar system from these materials, and scientists continue to study them for more information. The exhibit contains seven moon rock models from the Apollo 11, 15, 16, and 17 missions with descriptive captions.

## SPACE TOYS: ON LONG-TERM LOAN FROM MR. ARMANDO BRAS

An exhibit featuring nearly fifty "Space Toys" from the collection of Mr. Armando Bras is currently on display in the Center's second floor gallery.

Over the last five decades, society's enthusiasm for exploring the unknown led to the mass production of a number of consumer items that capitalize on the wonder and danger associated with space and space travel. Movies, television shows, and books have been populated with all kinds of heroic adventurers in their space-exploring vehicles, fabulous alien creatures, and of course, robots. Mr. Bras owns literally hundreds of items pertaining to space, including toys that commemorate particular NASA projects, books, autographed pictures of astronauts, rocket-shaped banks, robots, and even a lunch box that features the famed Apollo moon landing of 1969. The Challenger Center is honored to be temporary home to a portion of his outstanding collection.

# Giving

The following individuals, corporations, foundations, organizations and groups have made financial gifts to the Challenger Space Center since our last newsletter. We thank them for their generous support:

American Legion Post 115, Scottsdale  
Arizona Humanities Council  
Thomas and Linda Bromert  
Mary Bovard  
James Bruner  
J.D. and Colleen Campbell  
City of Peoria  
Ruth Daly  
Marie DeLorenzo  
Steven Duffy  
John and Stefanie Evans  
Barbara Fennema  
Leslie Fountain  
General Dynamics  
Charles and Patti Herf  
John Hess  
Sandi Hicks  
Honeywell  
Patricia Horton  
Intel, Corp.  
Mary Lynn Kelly  
Dave Kleinz  
Lou Ella Kleinz  
Jerry Lewkowicz  
Lockheed Martin Management & Data Systems  
James Manker  
The Kemper and Ethel Marley Foundation  
Donald Marshall  
Larry and Sheila McCreery  
Medical Group 56, Luke AFB  
Earl, Barbara and Kevin Moses  
Kristina Murray  
The Phelps Dodge Foundation  
Harold Porter  
Dick Quinn  
Bob and Margaret Schulke  
Warren Scott  
Sun City West AAUW  
Sun Country Credit Union  
Gene Taylor  
Antoinette Todd  
The Arizona Republic/12 News Season for Sharing  
The United Federation of Phoenix  
Mary Vore  
Edwin Walker  
West Valley Amateur Radio Club  
Ruth Whiting  
Libby Williams  
The Windermere Foundation

We would also like to thank those who have made a gift to the special mission scholarship fund that has been established at the Challenger Space Center in memory of the Shuttle Columbia and the crew of STS-107.

George and Gretchen Dempsey  
Karl and Betty Eklund  
Katherine Fancher  
Mr. and Mrs. Richard Faytinger  
Medical Group 56, Luke AFB  
Mary Radocchia  
Mr. and Mrs. Pio Salvati  
The United Federation of Phoenix

## SUMMER ADVENTURES IN SPACE!

Setting the stage for an out-of-this world adventure, Challenger Center *Adventures in Space* are go-for-launch! Whether it's learning how astronauts live and work in space, launching rockets, building robots, or learning and exploring adventures related to the history of flight, there's a summer camp session just right for everyone!

*Adventures in Space* runs June through August, and each week-long Adventure features age-appropriate space-related activities for young astronaut wanna-be's. Schedules vary throughout the summer, and include **Space Place Adventure** for preschoolers through kindergartners; **Andromeda Adventure** for kindergartners through 2nd-graders; **Polaris Adventure** for 3rd- through 5th-graders; and **Antares Adventure** for 6th- through 9th-graders.

Prices range from \$100-\$200 per Adventure, for half and full day sessions. Registration is on-going, and classes fill quickly, so register early to avoid disappointment. Classes will be cancelled if there is insufficient enrollment. To register or for more information, call 623-322-2001.

### EDUCATION FEATURE

#### e-MISSION: OPERATION MONTSERRAT

An electrifying new distance learning scenario!

Will island residents need to be evacuated?  
Will the hurricane make landfall?

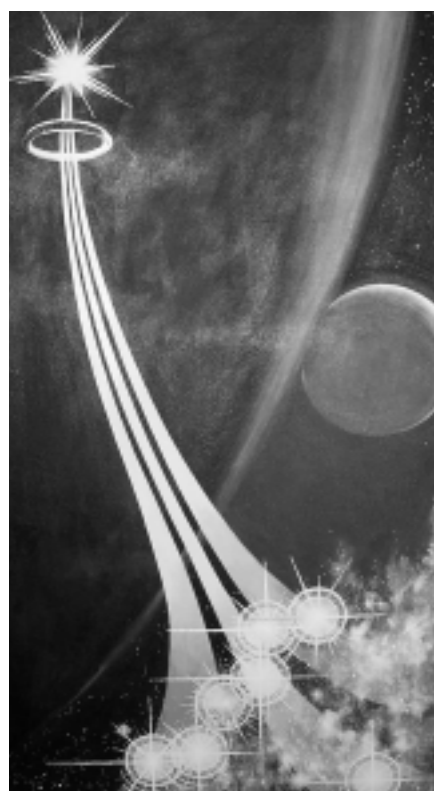
A classroom equipped with three computers, Internet connectivity, and a web cam is transformed into Emergency Command Central. Three teams of students nervously surround maps and worksheets, ready and waiting to predict the patterns of both a violent hurricane and an angry, erupting volcano. These young scientists must work together as a team to determine the evacuation of 8,000 island inhabitants.

Operation Montserrat Island connects a Flight Director at the Challenger Space Center with a classroom anywhere in the world for a unique learning adventure. With the help of computers, the Internet, and a small video camera, students interact with a Challenger-based Flight Director to track the hurricane, predict volcanic rock fall, and determine how these conditions will impact the island's air, land, water, and vegetation.



**Cartwright Gifted students plotting the hurricane's course during their e-Mission**

This unique distance learning program meets state and national education standards in the areas of mathematics and science for students in 6th through 12th grade. **e-Mission: Operation Montserrat** has been made possible for Arizona's students with a grant from the Kemper and Ethel Marley Foundation, with additional support from Target General, Inc., Cox Communications, and Intel. To schedule a classroom for an e-Mission call Denise at 623-322-2037.



#### "NIGHTFALL" BY MICHAEL VINCENT

In an emotional response to the Columbia tragedy, Flagstaff artist Michael Vincent created this beautiful painting entitled "**Nightfall**". Mr. Vincent then generously donated "**Nightfall**" to the Challenger Space Center. This is the second painting that Mr. Vincent has donated to Challenger, the first being "*Rising Phoenix*."

Mr. Vincent's design for "**Nightfall**" was inspired by elements of the Columbia crew patch, with seven shining stars representing the seven brave astronauts who lost their lives during re-entry into Earth's atmosphere on February 1, 2003. Mars is represented, since many of Columbia's crew aspired to be among the first to visit the Red Planet, and the Earth and Moon in the backdrop are aligned in the proper phase for the time of Columbia's scheduled landing. "**Nightfall**" is dedicated to the courageous crew of Columbia, including NASA astronauts Rick Husband, William McCool, Michael Anderson, Kalpana Chawla, David Brown, Laurel Clark, and Israeli astronaut Ilan Ramon.

## UNIQUE AVIATION DONATIONS MADE BY PEORIA RESIDENT

Peoria resident Larry Helser has donated over 50 aviation related lithographs and other valuable items, many of them signed, to the Challenger Center. His contributions will amaze and inspire people of all ages because of their unique historical value. Thank you to Larry and Maxie Helser for all they've done to continue on with Challenger's education mission. Here are a few highlights of Larry's extensive contributions to the Center. We invite you to come in and see the entire collection.



- *Canceled check, dated March 15, 1919, signed by Orville Wright*
- *December 3, 1928 Time Magazine cover, featuring Orville Wright*
- *Actual front page of The San Francisco Bulletin reporting Lindberg's New York to Paris flight, dated May 21, 1927*
- *Numerous signed and unsigned art prints*
- *Several Ernie Rickenbacker news articles and photos*
- *Autographed photograph of Mercury astronaut, and future Senator, John Glenn*
- *Autographed photo of Paul Tibbets standing beside B-20 "Enola Gay"*
- *Piece of fabric from the Vega 5-B aircraft flown by Amelia Earhart*
- *Copy of the book "Yeager", autographed by Chuck Yeager*

## SPOTLIGHT ON COX COMMUNICATIONS

Cox Communications has been a partner since the opening of the Challenger Center, donating the equivalent of well over a half million dollars in goods and services. Herb Dougall, Director of MTC Engineering and Operations for Cox in Phoenix, represents Cox on the Challenger Center Board of Directors (and serves as the Secretary). Herb is one of our most active Board members, and among many other supportive activities for Challenger, provided significant emotional support to Challenger staff during the Columbia tragedy last February.

In addition to financial contributions and event sponsorships, in-kind and equipment donations include: Original equipment infrastructure for computers cabling; Video room; Shuttle landing computer simulation station; e-Mission equipment; two Education of the Future kiosks; and Cox Education Network partnership to provide science content.

"I am very proud of my role on the Challenger Board of Directors," says Mr. Dougall. "From the commitment to education and technology on the part of both Challenger and Cox Communications, to the dedication and professionalism of the staff and its leadership, the opportunity to play a small part in the success of this organization continues to be a great experience for me."



## RONALD McDONALD OUT-OF-THIS-WORLD PATIO DEDICATED

Preschoolers from the Desert Gardens Preschool in Glendale, officials from Ronald McDonald House Charities (RMHC), and Challenger Executive Director Sandi Hicks cut a celebratory ribbon to open the new "Ronald McDonald Out-of-this-World Children's Space Patio" at the Challenger Center. RMHC's \$9,200 donation enabled the non-profit Center to purchase a retractable sun awning and sturdy, outdoor tables. The Ronald McDonald patio provides a much-needed shaded outdoor area where students can eat lunch or participate in activities.



## FORMER MEMBER OF THE THUNDERBIRDS DONATES TO THE CENTER

Mr. J.R. (Jim) Roberts, a former member of the USAF Thunderbirds, has generously donated a Thunderbirds uniform, along with several photos of the famed Thunderbirds, to the Challenger Center. In addition, J.R. donated the framing for many of the lithographs and other historical memorabilia currently on display in the Center's hallways and Theatre. Asked why he became involved with the Challenger Center, J.R. replied, "It seemed the right thing to do to help add to the Center's already fantastic aviation memorabilia. I wanted to add to the enjoyment of all the visitors, especially the kids. I am proud of my time on the Thunderbirds and what better way to show it than to donate some items related to that time in my life. I met my wife (Jody Roberts, President of Fighter Country Partnership) while on the team so it was a very important part of my 23 years of service."

## Kalusa Miniature Airplane Exhibit

On special loan through September 13 from Embry-Riddle Aeronautical University, Prescott, AZ

The world's largest collection of miniature airplane models is housed in the library at Embry-Riddle Aeronautical University. The Kalusa Collection is comprised of over 5,000 pre-flight, private, commercial, military, experimental and rocket aircraft models from all over the world. A small portion of this collection, about 250 pieces, is on special loan to the Challenger Center to help celebrate the Centennial of Flight year 2003.

On display are miniature models representing aircraft from the early 1900s through 2001. Each model is built to 1/18 inch-to-a-foot scale. Consistent use of this scale provides all aircraft in the collection with accurate size relationships to one another. Each model is also hand-painted with the detailed markings characteristic of the aircraft.

Mr. John W. Kalusa was a man who painstakingly handcrafted this collection over much of his life. In 1987, Embry-Riddle became a permanent home for his entire collection, where it is on public display in the University's library. Mr. Kalusa continued to carve and paint an average of two models a week at his home in Mesa until his death last year at the age of 80. Come in and see this unique aviation display.



Challenger Executive Director Sandi Hicks and Director of Marketing

Mary Lynn Kelly sign the "Signatures in Space" poster that will be sent on a shuttle mission. The "Signatures in Space" program is sponsored by Lockheed Martin.

## FACULTY ADVISORY BOARD

The Challenger Center depends on the skills of several education professionals to help us assess our programs and ensure we are meeting the needs of Arizona's children and teachers. Our Faculty Advisory Board meets quarterly with Challenger's Education staff, and consists of the following individuals:

**David William Hill**  
Peoria Unified School District

**Margaret (Peg) Mosely**  
Peoria Unified School District

**Terri Matteson**  
Liberty School District

**Richard Wagner**  
Washington School District

**Dr. Ellie Perry**  
College of Education, ASU West

**Len Pameditis**  
Madison School District

**Jeff Collins**  
Paradise Valley Unified School District

**Harold Porter**, Arizona School Administrators Association, Phoenix

**Jim Manley**, Clinical Instructor, NAU Center for Excellence in Education

## LEAVE A LEGACY

Leaving a Legacy Gift to the Challenger Space Center is easy. Simply consult with your professional financial advisor or attorney to determine what property to contribute and how best to take advantage of the tax benefits to you and your heirs. When you have made your decisions, contact the Challenger Development Office at 623-322-2041, so that you can be included and recognized as a charter member of our new Legacy Society. Remember, by "Leaving a Legacy" your gift will continue to live on to help the Challenger Center and children for many years to come.

## VOLUNTEER SPOTLIGHT: KRISTI McCRERY

The June volunteer spotlight is shining bright on 33-year-old Kristi McCrery, who volunteers two days a week at the Challenger Center supporting programs for young children. Kristi especially enjoys working in the Flight Directors' office, and does a terrific job making space helmets and photo frames-literally hundreds or even thousands to date! Kristi also likes to work on special projects in the Education office, including organizing packets to send to teachers and



**Kristi McCrery and her nieces**

laminating posters and name badges. Thank you Kristi for being such a terrific part of the Challenger volunteer team!

## CHALLENGER VOLUNTEERS TOUCH THE FUTURE-RECOGNIZED BY GOVERNOR'S OFFICE

Just like clockwork, six days a week, you can find members of the Challenger Space Center's dedicated team of volunteers sharing their knowledge of space, science, and the universe in which we live with wide-eyed youngsters and oldsters, too! Volunteers truly keep the non-profit Center operational, doing everything from giving guided tours, helping with special events and programs for children, working in the gift shop, answering phones, providing technical support, preparing information for students and teachers, and so much more.

In recognition of their efforts, this enthusiastic group

was recently recognized by Governor Janet Napolitano's office for their service to the community and to the state of Arizona. In addition, the group was cited for the deep commitment and outstanding devotion to the Challenger Center by AVACA, the Association for Volunteer Administration of Central Arizona. They truly touch the future.

- **Hours donated: 12,881**
- **Equivalent labor cost: \$178,391**
- **Real value: PRICELESS-an unwavering dedication to Challenger's education mission**

For more information on how you can volunteer at the Challenger Center, contact Janet Humphrey, at 623-322-2040 or email [jhumphrey@azchallenger.net](mailto:jhumphrey@azchallenger.net).



## MISSIONS, MOVIES AND MUNCHIES!

Throughout the summer, the Challenger Center offers a fun, 3-hour experience called Matinee Missions, Movies, and Munchies! For just \$15, you and/or your child or grandchild can enjoy a 2-hour simulated space mission, a space-related movie, and delicious munchies. Missions launch each Tuesday and Thursday at 12:30 pm, and "return to Earth" at 3:30 pm. Missions are also available on Saturdays. Call 623-322-2001 to make your reservation.

Summer Adventures in Space Registering Now  
SEE INSIDE FOR DETAILS!

Link2Liftoff is a quarterly publication of the Challenger Learning Center of Arizona.  
Admission: \$6 Adults, \$4 Seniors and children; free for age 6 and under.  
Hours: Monday-Friday 9 a.m. - 4 p.m.; Saturday 10 a.m. - 4 p.m.  
Information: 623-322-2001 or [www.azchallenger.org](http://www.azchallenger.org)

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