AD ASTRA

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so, where are all the tourists?

TO THE STARS

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AD ASTRA

FEATURES

SPECIAL ISSUE:

SPACE TOURISM

ON THE COVER:

Pack your bags and head for space!
Suitcase photo: PhotoDisc. Photo illustration by Andrew Ladson.

DEPARTMENTS

AD ASTRA, which means "to the stars" in Latin, is the motto of the National Space Society, an international membership group dedicated to furthering the exploration and development of space. Our bimonthly magazine ***AD ASTRA*** is only one of many NSS activities aimed at creating a spacefaring civilization. For more information on NSS call 1-202-543-1900 or visit www.nss.org

The Class of 51-L

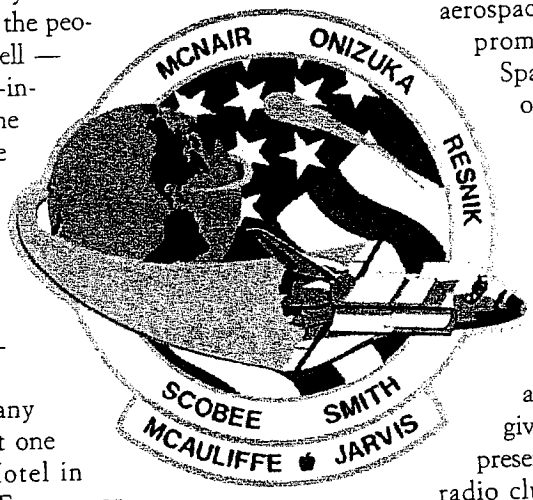
STILL TOUCHING THE FUTURE

by Patricia Palazzolo

28 January 2001.

It is Super Bowl Sunday. The television news anchors speculate at length on the Ravens' chances and on which commercial will be this year's hit. Little mention is made of the fifteenth anniversary of the Challenger accident.

I check my e-mail and find, as I always do at this time of year, dozens of messages from the people who *do* remember this date so well — my colleagues from NASA's Teacher-in-Space program. NASA refers to us, the state finalists from that project, as the Space Ambassadors. We have always thought of ourselves, however, as members of the "Class of 51-L," the designation of the shuttle mission which counted teacher Christa McAuliffe among its seven remarkable crew members.



It is hard to believe that so many years have passed since we first met one another at the L'Enfant Plaza Hotel in Washington, DC, in June 1985. From over 11,400 applicants, through a long and grueling selection process, two teachers had been chosen to represent each state and US territory, as well as the Bureau of Indian Affairs and overseas Department of Defense schools. Although many of us came from science teaching backgrounds, our certifications ran the gamut from music to home economics. This diversity of experience is what first we made us realize how space could truly be used as the great interdisciplinary motivator.

NASA certainly did an amazing job of motivating *us* during that wonder-filled week in DC. Astronauts Judith Resnik, Michael Smith and Joe Allen shared their training and spaceflight experiences, the men and women of the education division provided us with loads of materials, President Reagan praised us at the White House, and our "judges" at this level included former astronauts, German rocket scientists, and even a movie star. As the week came to an end, we were on such a high that we could have put ourselves into orbit without a shuttle. Realizing they now had a network of enthusiastic, experienced educators, NASA appointed us "Space Ambassadors," assigned us the task of promoting aerospace education in our home states, and promised to bring us all to the Kennedy Space Center to witness the launch of the one among us who would become America's Teacher-in-Space.

We returned to our schools as heroes, more eager than ever to begin the academic year. In the months leading up to the launch I, like the rest of the Teacher-in-Space finalists, received requests to drive ever farther across the state to conduct school assemblies, run teacher workshops, and give speeches. The groups requesting my presentations ranged from Cub Scouts to ham radio clubs and from the Society of Women Engineers to the Mothers of Twins and Triplets Association! The public was definitely caught up in the dream.

The nightmare came that January.

United Airlines had donated airfare to fly all the Space Ambassadors to Florida to view the launch. Since most of us had to connect through O'Hare, the final leg of the journey was more like a party than a flight. This was our "pay-off"; we were going to see a real shuttle launch — the launch of our "classmate," Christa McAuliffe.

The party didn't stop with the first launch delay, nor even the second. However, as the launch date continued to slip, NASA's budget for us ran out and so did the patience of many school superintendents. A number of teachers had to

return to their classrooms. Others began bunking together to save on the cost of a room. Free hot dogs in the hotel lounge during the Super Bowl served as dinner. Yet, a delay on 27 January, caused in part by a problem with the hatch, found most of the Teachers-in-Space departing. Weather predictions for a launch the next morning did not seem promising. Only about 20 of the original 112 in our group remained on Tuesday, 28 January.

Once again, NASA had us up before dawn and on our way from Orlando to the Kennedy Space Center. As the sun rose, we saw a brilliant blue sky marked by the black smoke from the smudge pots in the orange groves. It was freezing.

The VIP viewing area seemed bare. The atmosphere was subdued as we collected in small groups, stamping our feet and rubbing our hands together for fear of frostbite. We had been asked to wear our "teacher clothes"; only Rich Houghton, Alaska Teacher-in-Space, seemed to have clothing warm enough for the unexpected temperatures and we envied him. A reporter from the *Boston Globe* took pity on me and loaned me his gloves. As the ice team checked the launch structure, we were certain that this would turn out to be yet another delay.

Our hopes rose when we heard a voice announce the end of the nine-minute hold. We began gathering together on the bleachers and, to our amazement, the countdown continued. *Those teachers who left will sure be sorry!* we thought. *We're going to see a launch!*

One of us started a cheer: *Give me a C! Give me an H! Give me an R!*

We continued to spell out "CHRISTA" as we passed the one-minute mark.

3—2—1—Liftoff! Challenger, brighter than the sun, rose slowly into a cloudless sky. The sound then rolled across the water and reverberated within our chests. We responded with childlike smiles of delight. And then, a gentle puff of creamsicle-colored smoke appeared and the boosters separated. We looked at the clock — too early. Most of us had never seen a launch, but from all we had learned over the past few months, this just did not look right. Finally, the words we had never imagined hearing: *Obviously a major malfunction.... The vehicle has exploded.*

I returned to Pennsylvania and a blur of phone calls, cameras in my face and questions — questions as to possible damage to children's psyches, questions as to whether the Teacher-in-Space Project had been nothing more than a PR gimmick, and always questions as to whether a teacher should have been part of the crew in the first place. As I look back, I am astonished to think how relatively few missions must have been flown before NASA made the decision that they were ready to fly a private citizen. Certainly, mistakes had been made that needed correction, but those mistakes had risked the lives of all the crew, not just the teacher. The past fifteen years have confirmed my belief that the *concept* of sending a private citizen — a teacher — into space was right on target. I have seen the learning, imagination and accomplishments of my students ripple out to touch others in wider and wider circles, like the rings of water from the proverbial pebble tossed in a pond.

At the time, I was teaching in a very poor school district in a mill town near Pittsburgh. I had always encouraged my students to realize that they were part of the world. As they watched me go through the Teacher-in-Space experience, they were inspired to pursue their dreams and to realize that they were part of the universe. Not long after the Challenger accident, the Young Astronaut Council announced an opportunity for students to compete to become one of ten children to travel to the Soviet Union. One of my students, Amy Grubb, a reserved 13-year-old who had experienced the tragic deaths of her mother and stepfather, sought and won one of the coveted positions. Upon her return, she conducted a student session of the National Space Development Conference and, by so doing, inspired over 400 young people. Today, Amy continues to inspire children in her role as both park ranger and teacher.

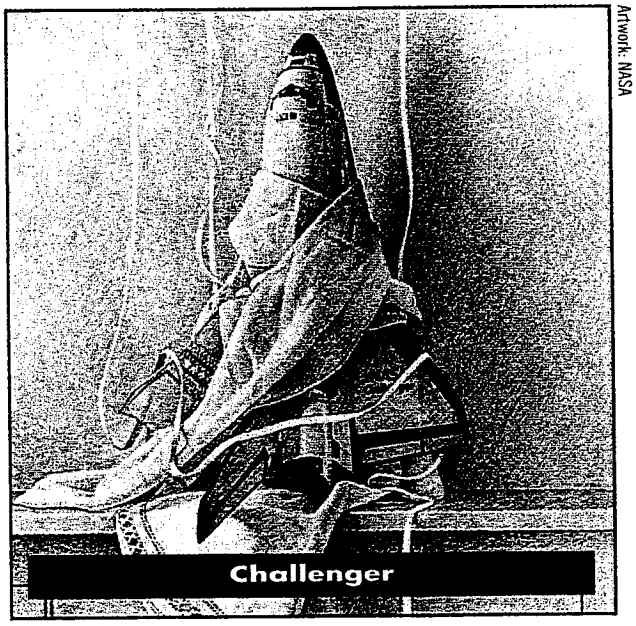
Perhaps the true Challenger legacy is the pool of young people for whom "28 January" may be just another date, but who have been inspired by those whose lives changed on that fateful day.

As the years continued, so did the ripples-in-the-pond effect. The students in my current school district served as "Mission Control" as they tracked a crew of middle schoolers traveling across the Commonwealth in a shuttle-turned-van (complete with 40,000 cubic feet of non-toxic smoke fired out the back!) The help we received on this project from ham radio volunteers led to my "next generation" of students tracking the real thing; we were selected to do a SAREX contact during which several students were able to ask questions of the STS-60 crew on orbit. The crewmember who answered the questions was Cosmonaut Sergei Krikalev who, several years before, had been adopted by western Pennsylvania as "our" cosmonaut. He had visited the area in 1989 in response to a letter from the Mars Area School District to Gorbachev inquiring, "Wouldn't you like the Russians to be the first to visit Mars — Pennsylvania, that is!" The students then wrote to NASA and said, "You're not going to let the Russians beat us to Mars, are you?" And so it was that Astronaut Mario Runco, Jr. joined Krikalev for the first US-Soviet mission to Mars (Pennsylvania)!

The students involved in these projects continued the ripple effect, expanding even more the horizons of the newest students. Amy Paige Snyder, who as an eighth-grader

tracked the shuttle-van and as a twelfth-grader selected the SAREX participants, went on to receive a Masters in Space Policy from George Washington University. As a graduate student, she was instrumental in making my middle school students aware of an opportunity which culminated in their flying an experiment on the mission with John Glenn. Today, she is part of the "space community," working in the FAA, Division of Commercial Space.

What is the legacy of Challenger? What is the legacy of its educational mission and the Teacher-in-Space program? Multiply the children and teachers I have touched and those they, in turn, have touched, by all the Space Ambassadors and the work they have done. Alan Ladwig, President of To Orbit Productions, was in charge of NASA's Space Flight Participant Program when we gathered in Washington in 1985. "To me," he reflects, "the legacy of Teacher-in-Space will always be the creation of the network to promote aerospace education."


Artwork: NASA

Challenger

The passion for aerospace education links the members of the network, but our means of touching the future are as diverse as our backgrounds. Some, like myself, are still using the classroom as the base from which they work to inspire. Minnesota's Steve Brehmer's students, for example, are about to send up their second GAS can experiment. Other Space Ambassadors operate from larger bases. For Sue Darnell Ellis, Kentucky Teacher-in-Space, Challenger "changed the direction of my career and sent me on a journey for which I never would have written the script!" Now a full-time NASA contract employee, she works daily to support education reform. As Executive Director of the Chabot Space & Science Center, Space Ambassador Mike Reynolds is able to reach learners of all ages. Kansas Teacher-in-Space Wendell Mohling has served as President of the National Science Teachers Association and is the NSTA Project Director for the NASA Educational Workshops (NEW), which provide two-week experiences for educators at each of the ten NASA field centers.

Several Teacher-in-Space finalists have developed incredible programs in their states. Dr. Freda Deskin, in Oklahoma, and Dr. Stephanie Wright, in Delaware, have established high tech facilities to excite thousands of children about science. Art Kimura is Program Director of Future Flight Hawaii, which will begin its eleventh year providing aerospace education workshops for teachers, children, and families. In Vermont, Space Ambassador Gail Breslauer operates the Vermont Space Education Program. The children of that state are fortunate indeed to have her, for so dedicated was she to establishing an aerospace education program that, having left the security of the classroom to be able to do so, she initially found herself waitressing in between grants in order to pay the bills.

"From tragedy," says Kansas' Wendell Mohling, "there is often inspiration and motivation." Such was certainly the case when the families of the 51-L astronauts founded the Challenger Center for Space Science Education to continue the educational mission of the crew. Today, over 40 learning centers engage students in problem solving and hands-on learning as they transform them into scientists, engineers or researchers on simulated space missions. The state Teacher-in-Space finalists merged with the Challenger Center as International Faculty and, in that capacity, have worked to develop science literacy throughout the United States and Canada.

Alan Ladwig finds the continued involvement of the Space Ambassadors remarkable. "In developing the educational goals for Teacher-in-Space, I don't think any of us who were at NASA at the time ever imagined that the momentum and enthusiasm would continue so many years later."

28 January 2001. Fifteen years after the accident, the Vermont Teacher-in-Space trudges through thigh-high snow at the state capital to lay seven apples on the Challenger memorial there. At the same time, Space Ambassador Wendell Mohling places a wreath at the Challenger memorial in Arlington National Cemetery. "In loving memory to the Challenger 7," reads the tag, "From NSTA and the Class of 51-L. The Dream is Alive."

In part, the Dream is alive in the form of Barbara Morgan, the Idaho Teacher-in-Space who became Christa McAuliffe's back-up. After years on "hold," she is closer than ever to her chance to fly. But, she will not fly as a private citizen-in-space; she is now training as a member of NASA's Astronaut Class of 1998. Alan Ladwig feels the space program should be farther along by now in opening up space to the public. "You shouldn't have to be a government employee to experience a dream that has been held by humanity for centuries."

For now, given the tight schedules and heavy workloads in space station construction, I will be happy enough just to see Barbara fly. Yet, the rest of us want to go, too, and her flight will serve to fan that flame. Her abilities as an educator will keep it burning brightly long after touchdown. Perhaps the true Challenger legacy is the pool of young people for whom "28 January" may be just another date, but who have been inspired by those whose lives changed on that fateful day. Having already accepted working in space as a career option, they are the future scientists, engineers, politicians, businessmen — and teachers — who will commit to making it a reality. ☆