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The Living Legacy of the Challenger Mission and the Teacher in Space Program Continues

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During the past few days, Vermont's newspapers have carried Associate Press articles. Television and radio stations have included live coverage of yesterday's memorial service at NASA's Kennedy Space Center, special broadcasts on CNN and National Geographic stations, and other news segments, making many people aware that Saturday, January 28, 2006 marked the 20th anniversary of the Challenger tragedy.

Like the day President Kennedy was killed, or September 11, 2001, many can recount where they were and what they were doing when they heard about the Challenger tragedy. Personally, I was there, on the stands, watching that launch. While I can't say I knew any of the crew very well, I had spent some time with three of those who were on board Challenger. They were very real people to me.

While the AP articles in Vermont's newspapers remind us of the tragedy, I'd like to make readers more aware of the many positive effects from that mission that continue to this day. They are what we need to remember and focus on as well as remembering the special people we lost in the tragedy. That is what the Challenger crew and their families would want.

Challenger's mission, designated in "NASA speak" as STS 51-L, did not end on that cold day in January. In fact, that mission--commonly called the Teacher in Space mission--continues, each and every day, in Vermont, the United States, and globally.

This was the education mission. The entire crew, not just Christa, was dedicated to education and the importance of including space education during their flight along with all the other work of their mission tasks.

The legacy of 51-L is education and is evident in each classroom and with every teacher who includes space education, aerospace, astronomy, and related content and activities in her or his classroom. 51-L's mission continues with educators expanding their knowledge of, gaining expertise in, and feeling comfortable with space education.

Twenty years ago, the family members of the Challenger crew gathered together after the loss of Challenger and created a living legacy, the Challenger Center for Space Science Education (most commonly called Challenger Center.) The 113 remaining Teachers in Space had previously been bestowed with the honorary title of NASA Space Ambassadors in June of 1985 during the selection process, charged with sharing space education with our colleagues in whatever manner we chose to do so. Post-Challenger, we had formed the Teacher in Space Education Foundation (TISEF) and had been publishing a journal, "Educators Today Touching Tomorrow" (ET3), but decided to disband both of those efforts and join with the Challenger families. We became the founding members of Challenger Center's International Faculty.

Challenger Center has created numerous education programs and resources, including over 51 Challenger Learning Centers (CLC) that offer educator workshops, training, and hands-on activities as part of simulated space missions for middle school-age students. The missions are flown in facilities that are complete with a very NASA-like mission control and space station environments to set the mood. These Challenger Learning Centers are located throughout the United States, Canada, and Great Britain, with more opening every year.

Vermont does not yet have a CLC. The most recent effort was to have a CLC in the proposed Burlington-Essex Regional Technical Academy. Efforts were made to have a CLC open elsewhere in the Burlington area, before the Regional Tech. Academy was to be built, in an attempt to simultaneously help students and educators while generating more enthusiasm and additional funding for the creation of the Regional Tech. Academy. Unfortunately, those CLC development efforts were squashed—but that's another story. However, that dream still lives on and like the phoenix, will perhaps rise again some day.

The Christa McAuliffe Center, on the campus of Christa's alma mater, in her hometown of Framingham, Massachusetts, is the home of the closest Challenger Learning Center (CLC) for Vermont students and educators. The next closest CLCs are in Bangor, Maine and Hartford, Connecticut. Concord, NH might someday have one as well.

This past week, the McAuliffe Center hosted a week of 20th anniversary commemorative activities honoring Christa McAuliffe and the crew of Challenger's mission 51-L. Various events were held for invited guests, the college community, the local community. Area school students who had been "in training" "flew" *Return to the Moon* missions at the CLC, saw the new full-scale Mars rover model, and attended the planetarium show. Framingham's local newspaper has had daily coverage, and those articles can be viewed at http://www.metrowestdailynews.com/challenger/

Our group, the Teachers in Space/NASA Space Ambassadors (TIS-SAs), have continued the Challenger crew's education mission in many ways. Some still continue the very important, challenging, and wonderfully rewarding work of teaching in their own classrooms as well as reaching out and beyond.

Michael Metcalf at Hazen Union High School in the Northeast Kingdom is one of those educators I honor and admire for the tenacity of remaining in their classrooms. Mike is my fellow Vermont Teacher in Space. We represent, remember, and honor each of the 50-plus Vermont teachers who also applied for the Challenger flight. We represent and honor all of Vermont's educators.

Mike was lucky enough to have made it to Houston and the Johnson Space Flight Center for the final selection process. He was selected for the final “top ten” group along with Christa and her back-up Barbara Morgan. His students are fortunate to have him as their teacher.

Post-Challenger, Barbara Morgan returned to her classroom while continuing to do educational outreach for NASA as the Teacher in Space designee, continuing the mission of 51-L and still wanting to fulfill our shared dream—to fly in space. She is on track to reach that goal.

Barbara Morgan is now an official, full-fledged astronaut. She was selected as the first Educator Astronaut, a new category of astronaut. She is a member of the astronaut class of 1998 and is scheduled to fly to the International Space Station as a Mission Specialist during mission STS-118—hopefully in 2007. She is brilliant, exuberant, and a wonderful person and role model. I will be there to see my friend’s launch whenever it occurs.

Other TIS-SAs have continued the education mission of 51-L for the past twenty years as well. Some truly boggle my mind with all they have accomplished. We network together, strategizing, sharing ideas and resources via e-mails, phone calls, and face-to-face gatherings when we can. They serve as inspiration for all that I still hope to achieve here in Vermont.

I believe in dreaming—dreaming large—and persevering, trying to find a way to achieve those dreams during a tight economy, in our wonderful small rural state where we have so many competing needs, interests and desires with limited financial resources available to be divided among so many. We all know taxes are already high enough for all of us who are struggling, working multiple jobs in order to make ends meet—I’m one of them. But dreams don’t cost a penny--and as a former classroom teacher, I know that if you don’t ask, you don’t get. Folks can only say no, and someone may say, “Yes.”

Some of our TIS-SA group have created and established inspiring and ongoing education programs that will be sustained long after they retire—or what our group calls being “redirected” after leaving one’s classroom.

In Hawaii, the 20th anniversary of Challenger coincided with their 6th annual Astronaut Onizuka Science Day, honoring Challenger’s Mission Specialist Ellison Onizuka, a native of Hawaii. The day was organized by their TIS-SAs in conjunction with the folks in programs they created, numerous colleagues and organizations they collaboratively work with: Future Flight Hawaii, their Challenger Learning Center, Hawaii Space Grant, and the University of Hawaii.
They had over 600 participants (students, teachers, and families), and 160 volunteers hosting 22 workshops and 20 displays. Their keynote speaker was Astronaut Robert Curbeam, and they had a special video welcome from Barbara Morgan. Their day concluded with the singing of a song, “Challenger,” written on the day of the tragedy by an elementary music teacher as a way to sooth the emotions of the students. I’m told it was an inspiring day, but in fact it is Hawaii’s TIS-SAs, Art Kimura and Joe Ciotti, who inspire me—and the state of Hawaii who initially funded their positions and much of their work for awhile. Eventually they needed to find other funding sources to continue their work—which they were able to do.

Oklahoma’s and Delaware’s TIS-SAs are also inspiring. In Oklahoma, Dr. Freda Deskin’s ASTEC programs have had a permanent home for many of these twenty years, complete with an enormous full scale model of a Space Shuttle Orbiter. Eventually, she left that particular

program for other educational endeavors, but the space education program she created has been sustained, providing programs and academies for students and educators for all these years and more to come.

Delaware's students and educators have similarly been fortunate as Dr. Stephanie Wright's position as Founder and Director of the Delaware AeroSpace Education Foundation has continued to have been funded by her state's legislature. This support has enabled her to do extraordinary things for Delaware's students and educators. This Earth Day, April 22, will see the grand opening of their new facility—ITEC: Innovation Technology Exploration Center. ITEC will be a permanent home for her exemplary programs as well as a hands-on museum and learning center.

The list of accomplishments goes on and on as I look at the TIS-SA list, state by state, and reflect on what each of those folks has been doing. Like the ripples in a lake, the concentric circles expand—reaching further out and touching the broad expanses. In this case, educators reach out, sharing the excitement of space education content information and related activities with more educators who bring it back to their students. The impacts are still being compiled, but some of the TIS-SAs share that some former students have continued their interest in space exploration and have obtained degrees and positions in the space industry. At least one we know of now works for NASA.

In Vermont, some of the ripples I know include one former elementary student in Richmond who was so enthusiastic and inquisitive that he made "sales pitches" to secure his own funding in order to attend Space Camp in Huntsville, Alabama so he could continue to learn more. Upon his return, he then gave presentations in his community. (I'd love to know what he is doing now.) Some middle school girls I met attended Space Camp as well. I wonder what they are doing now.

A team of Vermont "fifth grade" home schoolers won first place in a former NASA education program for their research project related to Mars exploration. They contacted and met with some science folks at the University of Vermont as part of their research for their winning topic.

And educators? A teacher from Lincoln attended a workshop I offered, then created a space education learning unit for her students. She submitted her related classroom work with sample lessons and garnered a high level, prestigious education award.

A former Brattleboro teacher's enthusiasm after working with me in her classroom inspired her to obtain more space education knowledge. I shared more resources, wrote her a letter of recommendation, and she was accepted to a former NASA education program that included an intense two-week education learning experience at one of NASA's field centers. She returned to her Vermont classroom brimming with ideas and lessons. Her knowledge and lessons are having their own ripple effect wherever she is now teaching and working with educators.

Other Vermont educators I know of still include space education programs and activities in their classrooms and schools. These are more ripples extending outward.

Presently, the Christa McAuliffe Center staff in Framingham and I are discussing plans to bring some of their professional development programs and workshops *here* to Vermont's educators. More information will be announced when details are arranged. Additionally, I am in planning

discussion with the filmmakers who created the new documentary about Christa McAuliffe. You might have seen excerpts of that film on CNN Presents during this past week and weekend. We are planning a special Vermont screening of their film for Vermont educators and the general public.

The legacy of the Challenger crew's Mission 51-L is perpetuated through all the inspiring teachers who include aerospace, astronomy, and space education in their classrooms. I will continue to share resource information and bring space education learning opportunities to Vermont educators and students.

"The greatest risk is to take no risk."--June Scobee Rodgers, January 28, 2006 at the Challenger Memorial service, NASA KSC.