



THE SPACE EXPLORER

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Kazakhstan Prepares for XVII Congress Environmental Protection a Primary Focus

The international Executive Committee of the Association of Space Explorers met April 16-17 and approved a preliminary program for the XVII Planetary Congress. Hosted by Kazakh flier Tokhtar Aubakirov (Soyuz TM-13) the theme of the Congress will be "Gateway to Space Exploration and Environmental Protection;" the Congress will be held September 26 – October 2 in Almaty, Kazakhstan.

In addition to the traditional Crew Safety and International Space Programs Review sessions, the Congress will feature several sessions dedicated to the environmental challenges faced by Kazakhstan and regional efforts to quantify and mitigate the damage; of particular concern to ecologists is the gradual dessication of the Aral Sea, soil pollution from overuse of agricultural chemicals and salinization from underdeveloped infrastructure and wasteful irrigation practices. It is hoped that the fliers will contribute a global perspective that may in turn increase public awareness of these critical issues.

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The Time for Space Station Science? Now! *Owen K. Garriott*

This article has been submitted to Space News for possible publication in their "Commentary" section. See additional recent articles on this subject in "References."

The cancellation or indefinite postponement of a Crew Return Vehicle (CRV) has forced NASA to limit the crew size on the International Space Station (ISS) to only three persons. With one or two of these considered necessary to maintain the Station itself, there remains little opportunity for a very long time for the conduct of science experiments. If no science can be performed, it then follows that the expense associated with building experiment hardware should be delayed or canceled. The monies saved, of course, would be used to continue work on the Station infrastructure.

see Science, pg. 4

President's Report *by Bo Bobko*

In April I traveled to Almaty, Kazakhstan, along with John Fabian and Andy Turnage, for a meeting of the ASE international Executive Committee. I didn't really know what to expect from the trip, and I wasn't sure how I was going to get there. My travel agent didn't know where Almaty was located – for that matter, she didn't even know where *Kazakhstan* was located. I had been to Baikonur during preparations for the Apollo - Soyuz mission, but that was a long time ago and Baikonur is undoubtedly a different place today. I was pleased to find that Almaty is very close to the Zailiysky Alatau mountains – Almaty's proximity to the mountains is similar to that of Denver...except the mountains in Kazakhstan are much bigger. While we were there the weather was pleasant and I am told it should be that way during the Congress.

I had missed a connection in Amsterdam and arrived in Almaty a day late and unannounced, at 2:30 in the morning. After wandering about for several minutes trying to get my bearings, I decided to catch a taxi to the Hyatt and sort it all out the next morning. The good news is the Hyatt is like any other Hyatt that I have stayed in. The best news is the hotel they hope to have the Congress in is much nicer than the Hyatt. Luckily for me, the local organizing committee found me the next day and took me to where I was supposed to be.

We spent several days in Almaty and had several very productive planning sessions. We also had the opportunity to look around Almaty and visit some of the Congress venues. There is a Congress program included in this newsletter, and you can keep track of updates on the ASE web site. Because of resource limitations in Kazakhstan ASE-USA will be limited to 25 fliers and their guests – so don't wait to sign up.

This year the association is struggling financially. A significant portion of our income is from corporate members, and the general economic downturn has impacted our revenue flow. We need to be more proactive in identifying and pursuing sources of funding, and we would ask for your help in this area. If any of you can suggest a corporation that we might bring on as a member please let us know; if you can help in bringing a corporation on board, that would be even better.

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Goodbye to a Friend

For Paige and all the Dogs

by Bob Cabana

I think that it's very appropriate that we're planting a tree in memory of Dave Walker today. Dogs love trees, and I think Red Dog would really appreciate the symbolism that planting this tree represents. Trees provide shade on a warm summer day, comforting us from the heat. Dave was always willing to stand up and take the heat, protecting those around him from the troubles of the day. They are a symbol of strength. Dave never took the easy way out, he was strong in his beliefs and always fought for what he felt was right. They protect our environment much the way Dave protected his crews, his friends, and his loved ones. They open their arms to us and welcome us in to rest in comfort, the way Dave opened himself to anyone who was close to him. He couldn't do enough, or give enough to make you comfortable. Yes, trees are really special to a Dog with a big heart, and I know Dave would appreciate this very much.

There was no half way with Dave. It was all out, all the way, or nothing. He was impulsive at times and he liked living life on the edge. Dave made life fun. You could feel his energy and enthusiasm. But what I remember most about Dave is not his many accomplishments and his drive, but his genuine concern for those close to him. He really cared. To be Dave's friend really meant something.

Dave was a team builder who made work fun. Thus came the "Dogs of War," the first Dog Crew on STS-53, a classified DOD mission that Dave commanded. When asked how we would get our dog names Dave replied, "If we build them, they will come." And thus the Red Flash was transformed into Red Dog. The Dogs of War gave way to the Dogs of Summer on STS-69 and the Dogmobile was transformed for the personality of a new crew as Red Dog built another team on this successful theme. Dave knew you didn't have to be extremely gifted in your own right, if you could get a team to pull together toward a common goal. And Dave was a great team builder.

I'm going to really miss Dave, he was like a big brother to me. The one that always got away with crazy things that you didn't quite dare to do, but you loved him and knew he'd always look out for you. The world is going to be a little less lively without Red Dog around, there'll be an emptiness that's hard to fill. The love that Dave had for his friends is not easily replaced. When you shared a hug with Dave, you knew you were loved. If Dave were here, he'd tell us to look after one another in his absence, and he'd tell us not to be sad, but to remember the great times we had together and to treasure them, for they were very special.

I'm really going to enjoy this tree, because dogs love to lie under the shade of a tree, and they're ever faithful to their friends, and it will always help me remember Dave. He was a lot of things to a lot of people, but most of all, he was a faithful friend, loyal to the end, and I'll never forget him.

Woof, Mighty Dog

ed. note: This tribute was prepared by Bob Cabana and read at Dave's JSC memorial service. Dave Walker was buried at Arlington National Cemetery on May 24, 2001.

Science (cont'd from pg. 1)

But are we really forced into this scenario of a \$30 billion Station, with few crewmembers, too little crew time and a skeleton suite of instruments for fully two decades after contracts were first awarded in 1987? Fortunately the answer is a resounding, NO! An old idea, once rejected as unnecessary, can now be resurrected to enable realization of "real science" in the near term. This plan would use Long Duration Orbiter (LDO) visits to the ISS, lasting several months and bringing as many as seven additional crewpersons to work at the Station (see Commentary, Space News, April 9, 2001, pg. 33). No additional CRV is needed since the Orbiter accommodates the entire visiting crew upon its return. As Arnold Aldrich, a past space shuttle program Director has noted (Space News, April 30, 2001, pg. 14), "Rockwell International was able to readily define mission extension modifications, which could support 30 and 60 day on orbit stay times, and it appeared that a capability for up to 90 days might well be achievable".

It appears that NASA is taking a serious new look at this option. Michael Hawes, Deputy Associate Administrator (OSF) is quoted in Florida Today (May 17, 2001) as saying "We're looking at the potential for shuttle flights that are based on research that come and dock at the Space Station and spend longer than the standard shuttle flight may". NASA spokesman James Hartsfield lists the three major considerations which could limit the duration of a shuttle mission.

These are (in italics):

1. *Electrical power.* Even in a quiescent mode, it may be desirable to transfer 5 to 10 kW of power from the ISS to the Orbiter. This will also depend on the minimum power level achievable by the Orbiter fuel cells and perhaps their ability to be restarted on orbit. However, with a soon-to-be installed ISS power capability of up to 66 kW (two 33 kW photovoltaic arrays), it does not seem excessive to use such a modest portion for the Orbiter, to achieve the primary goal of the whole ISS program, e.g., on-orbit research.

2. *Certify shuttle safety for longer missions.* This issue was raised earlier when Orbiter flight durations were first increased from the original 7 to 10 days up to 18 days, using the

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On a more positive note, we have several items in the works that will be good for us, both programmatically and financially. We are continuing to organize technical interchange meetings at JSC (we have decided to open them up to everyone in order to enhance attendance – look for announcements of upcoming events on the ASE web site), we are developing a public service announcement campaign and are exploring a partnership opportunity with Space Center Houston. Recently, Andy met with Jim Reinhartsen at the Clear Lake Economic Development Foundation (CLAEDF) to discuss ways that we might contribute to the community while leveraging the community's resources in support of our own needs. We are optimistic that the upcoming fiscal year will be more fruitful than the outgoing one.

As always, in order for us to be successful we need you to participate. There are many ways you can contribute. Make a cash donation and ask your company to match the gift; identify or solicit a prospective corporate member; make an appearance and contribute a portion of the proceeds to ASE (remember, contributions are tax-deductible); contribute a little of your time to one of our committees; write an opin-

see *Report*, pg. 6

Astronaut Scholarship Foundation Announces First Shuttle Astronauts To Be Inducted Into The U.S. Astronaut Hall Of Fame

Titusville, FL - Four veteran shuttle commanders - Robert Crippen, Joe Engle, Rick Hauck and Richard Truly - have been selected as the first Space Shuttle astronauts to be inducted into the U.S. Astronaut Hall of Fame.

The selection was made by the Astronaut Scholarship Foundation at its recent Board of Directors meeting.

"The Astronaut Scholarship Foundation is honored to be part of this legacy," said foundation chairman James A. Lovell, a Gemini/Apollo astronaut who himself was inducted into the Hall of Fame in 1993.

"Not only does the foundation provide scholarships to deserving students, we also honor deserving astronauts by enshrining them in the Hall of Fame. These four men will join the ranks of some of America's finest astronauts."

To date, 44 astronauts have been inducted - from the Mercury, Gemini, Apollo, Skylab and Apollo-Soyuz programs.

Because there have been so many shuttle fliers, the foundation decided to narrow this first selection to the shuttle pioneers, those who flew in the program's first three years, 1981 through 1983. Twenty-one were eligible, and their names were submitted to a select, outside committee of former NASA flight directors and officials, news media representatives familiar with the program and a space historian.

The new inductees will be enshrined in the U.S. Astronaut Hall of Fame in a public ceremony later this year. Date and details will be announced.

Under an agreement with the U.S. Space Camp Foundation, the Astronaut Scholarship Foundation participates in a facility in Titusville, Fla., that houses the U.S. Astronaut Hall of Fame and Space Camp Florida. Space Camp manages the Hall of Fame while ASF is responsible for selecting astronaut inductees.

For more information call (321) 269-6119.

ASE-USA Pursues Enhanced Outreach

ASE-USA is developing a public service announcement campaign designed to utilize the Association's unique resources in addressing issues critical to the future of human space exploration.

The campaign will have three primary themes: to encourage children to stay away from drugs, to stay in school and to encourage female and minority students to pursue technical careers. The public service announcements will initially be broadcast in the Houston-area and will be distributed to schools, youth groups and other educational organizations following distribution to the national broadcast media. It is envisioned that the first spots will begin airing in mid-2002.

ASE-USA has received commitments from Houston-area broadcast stations to air the spots and is soliciting proposals from local production companies for creative concepts, script development and filming. The Association is currently seeking funding for the campaign in the form of grants and corporate contributions and is awaiting approval from the Johnson Space Center to utilize NASA facilities and active astronauts in the campaign.

Science (cont'd from pg. 4)

“cryo pallet” to bring additional cryogenics to supply the fuel cells. Of course, this has been successfully accomplished. No further major hurdles should be expected, as was discovered more than a decade ago in the Rockwell studies mentioned by Mr. Aldrich.

We also have a long history of extended qualification of redundant systems, by simply flying them longer, repairing in space when necessary and returning home when and if required redundancy is lost. Consider the Apollo Command and Service Module (CSM) designed for about a 10 day lunar voyage. It successfully underwent an untold number of in-flight repairs or work-arounds and eventually flew extended missions of 28, 59 and 84 days in space on Skylab. Consider the Skylab space station itself, designed for 28 and 56 day missions which survived an almost unbelievable series of in-flight near catastrophes, and was still functioning at its orbital decay some 6 years later. (The back-up flight unit, now in the Smithsonian Air and Space Museum in Washington, could have provided much longer visits and a quarter-century earlier than the current ISS!) It seems true that “space” may be the most safe and benign environment in which to store a space vehicle—no dropped wrenches to cause any damage!

3. *Concern for the commander and pilot re-adapting to gravity while trying to land the 110-ton glider.* Of course, the Orbiter has always had an “autoland” capability, but the crew has preferred to take over manually for the final flare and touchdown. (Typically, control is switched back and forth between manual and autoland during the atmospheric portion of each reentry.) In addition to autoland, however, there are other ways to accommodate these crew concerns.

First, Orbiter visits could be scheduled to overlap, with two “fresh” commanders brought up on each new flight, one of whom would come back as Commander of the returning vehicle. Secondly, we should consider the third seat on the Soyuz replacement missions, scheduled for twice a year. As we know from extensive press coverage, the Russians are anxious to sell their third seat to whomever is willing to pay them \$20 million. We should pay them that rate (or deduct it from any bills they may owe the ISS program) in return for flying up a fresh Commander to return in the Orbiter after its

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ion, article or recent mission report for the newsletter, the list goes on and on. If you want to participate but aren't sure how, please give Andy a call and I'm sure he'll be happy to provide you with some alternatives.

A closing thought: there has been quite a bit of discussion about Dennis Tito, his flight to the Space Station, and whether ASE should extend him an invitation to join our association. The consensus of the membership and of the Board of Directors is that he should be invited to join. I believe Andy said it best when he stated: “The Association of Space Explorers is an organization of people that have shared a common experience, although not necessarily a common job title.” I believe we need to be an inclusive organization and should extend an invitation to anyone who flies in space. Perhaps when and if the time comes when hundreds of tourists are flying into orbit we will re-evaluate our criteria for membership, but for now it seems premature. Our Charter mentions that we should endeavor to bring greater awareness and understanding of space exploration to the public. What better way is there than to allow some of the public to fly in space?

Science (cont'd from pg. 6)

stay of several months. With the third seat filled, this would also defuse any future misunderstanding about flying unprepared tourists to the ISS.

How do we get from here to early science on ISS? First a short list of things "to do":

1. NASA and the science communities should define their priority list of currently approved experiments for early flights for durations of 1 to 3 months.
2. NASA should proceed to fund the continued development of any hardware required and plan for the early operation of these experiments.
3. Declare the ISS Program operational and successful, even if not yet fully complete. This will elevate the research goals to prime objectives and allow completion of the infrastructure to proceed at its own pace. It is time for science to take the lead priority.

Finally, an even shorter list of what "not to do":

-Do not barter away the very limited crew time now reserved for the U.S. science and technological communities. They and our public have too much time and money invested to see it frittered away permanently in order to meet short term financial goals.

References:

- 1 – "Long Shuttle Missions Are Possible", by OKG, Space News, p33, 4/9/01
- 2 – "Consider Long Duration Orbiter", by Arnold Aldrich, Space News, p14-15, 4/30/01
- 3 – "Now Is The Time To Utilize The International Space Station", by Chris A. Barker, Space News, p19, 5/14/01
- 4 – Interviews with Michael Hawes and James Hartsfield, NASA, appearing in "Florida Today", 5/17/01
- 5 – "Longer Visits Could Be The Solution", by OKG, Space News, p15, 6/4/01

ASE-USA Welcomes New Members

Tammy Jernigan

Pamela Melroy

Jeff Wisoff

XVII Congress Program

Wednesday, September 26

All Day Arrival and Check-in
 1800 Opera & Ballet (optional)
 2000 Reception and dinner (hotel)

Thursday, September 27

0730 - 0900 Breakfast
 1000 -1200 **Opening Ceremony**
 1230 -1300 Press Conference
 Group Photo
 1300 -1400 Lunch (hotel)
 1400 -1700 **Crew Safety & Technical Issues**
 1800 -1930 Concert (Kamerata of Kazakhstan)
 2000 Dinner (hotel)

Friday, September 28

0730 - 0900 Breakfast (hotel)
 1000 -1230 **40 Years of Earth Observations**
 @ Kazakh State University
 1230 -1330 Lunch with students
 1400 -1700 Poster signing/free time
 1700 -1800 **Executive Session (Part I)**
 2000 Dinner (hotel)

Saturday, September 29

0715 Depart for Airport
 0915 Arrive Baikonur
 1015 -1700 **Baikonur Tour and Briefings**
 1030 -1300 Public events (selected fliers)
 1800 -1900 Reception with Mayor of Baikonur
 2000 Depart for Almaty

Sunday, September 30

0800 -1030 Breakfast
 1100 -1600 Excursion to local mountain resort
 or free time
 2000 Dinner (hotel)

Monday, October 1

0730 - 0830 Breakfast
 1000 -1300 **International Space Flight Updates**
 @ Academy of Sciences
 1330 -1430 Lunch (hotel)
 1600 -1730 **Ecological Problems of Kazakhstan**
 @ Academy of Sciences
 2000 Dinner (hotel)

Tuesday, October 2

0730-0830 Breakfast (hotel)
 1000 -1200 **Executive Session (Part II)**
 1200 -1300 Lunch (hotel)
 1230 -1330 Press Conference
 1330 -1730 Free Time
 2000 **Closing Ceremony and Banquet**

Companion Program

Thursday, September 27

(p.m.) Excursion to "Bobek" Orphanage and Children's Village

Friday, September 28

(a.m.) Tour National Historical Museum
 (p.m.) Excursion to Kasteev Art Museum

Saturday, September 29

Baikonur Cosmodrome (with fliers)

Sunday, September 30

Excursion to mountain resort or free time

Monday, October 1

(a.m.) Fashion show at San Bell Modelling Agency
 (p.m.) Shopping/free time

Tuesday, October 2

(a.m.) Almaty school visits and talk show appearances

Roy Bridges, Jr. Honored with Debus Award

Roy Bridges was honored as the 2001 Dr. Kurt H. Debus Award Recipient on April 6 in recognition of his progressive, visionary leadership and contributions to space technology and exploration.

The Florida Committee of the National Space Club presented the award during the Twelfth Annual Dr. Kurt H. Debus Award Dinner held at the KSC Visitor-Complex Debus Conference Facility.

The Debus Award was first given in 1980. Created to recognize significant achievements and contributions made in Florida to the American aerospace effort, the award is named for the KSC's first Director, Dr. Kurt H. Debus.

"I am honored to become a recipient of this award," said Bridges. "A number of space program pioneers and innovators I greatly admire have received the Debus Award over the years and I count myself fortunate to be listed among their company. Any success that I have had I attribute to the great team here at Kennedy Space Center and our partners in industry and academia."

During Bridges' tenure as Director, he has created a vision for KSC 25 years into the future; reorganized the management structure to better posi-

tion KSC for spaceport technology research and development; created and strengthened strategic partnerships with the State of Florida, the 45th Space Wing, academia and industry; and introduced world-class safety practices to the Center.

"Roy Bridges was an easy choice," said Ed Gormel, Executive Director of the Spaceport Florida Authority and chairman of the National Space Club Florida Committee. "I have worked professionally either for or with Roy for some 15 years and have always been impressed by his talents, initiative and vision."

"The Debus Award honors significant contributions to our nation's space program by someone living and working here in Florida, and that's exactly what Roy Bridges is doing every day as the director of the Kennedy Space Center," Gormel said.

"His commitment to making the Cape Canaveral Spaceport a world-class launch operations center for commercial, government and military users will ensure Florida's leadership in space for many years to come, and that's something the National Space Club Florida Committee is happy to recognize," Gormel said.

*Flight Anniversaries
2001*

10th

- STS 37 (4/05)
- STS 39 (4/28)
- Soyuz TM-12 (5/18)
- STS 40 (6/05)
- STS 43 (8/02)
- STS 48 (9/12)
- Soyuz TM-13 (10/02)
- STS 44 (11/24)

20th

- Soyuz T-4 (3/12)
- Soyuz 39 (3/22)
- STS 1 (4/12)
- Soyuz 40 (5/14)
- STS 2 (11/12)

30th

- Apollo 14 (1/31)
- Soyuz 10 (4/23)
- Soyuz 11 (6/06)
- Apollo 15 (7/26)

40th

- Vostok 1 (4/12)
- MR-3 (5/05)
- MR-4 (7/21)
- Vostok 2 (8/06)

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