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Spaceport News

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John F. Kennedy Space Center

Mission update

Mission: STS-79 on Atlantis.

Launch date, time: Target date of Sept. 12, 6:26 a.m. from Launch Pad 39A.

Mission Synopsis: STS-79 is the fourth in a series of NASA docking missions to the Russian Mir Space Station, leading to the construction and operation of the International Space Station. As the first flight of the Spacehab Double Module, STS-79 encompasses research, test and evaluation of ISS as well as logistics resupply for the Mir Space Station. STS-79 is also the first NASA/Mir American crew member exchange, with astronaut John Blaha replacing Shannon Lucid aboard the Mir.

Landing date, time: Target date of Sept. 21, 11:30 a.m. at KSC's Shuttle Landing Facility.

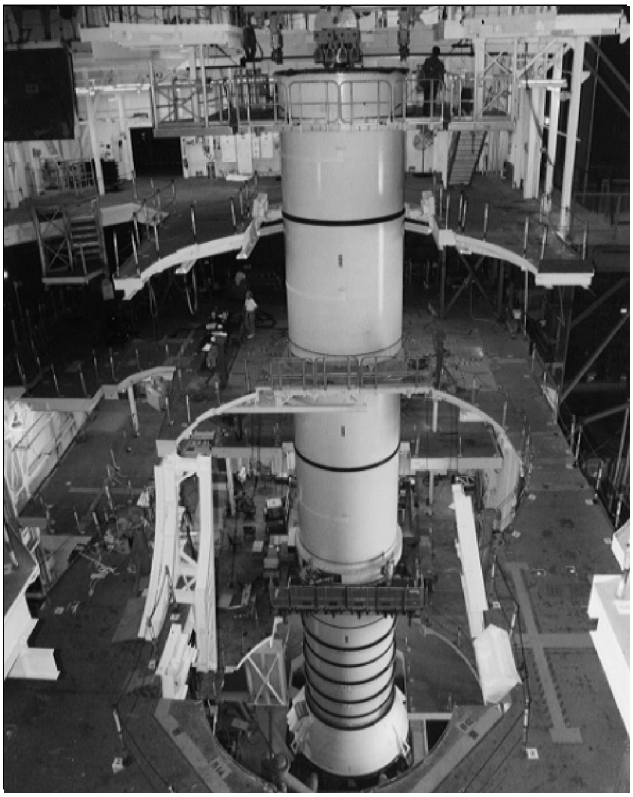
Multi Payload Processing Facility.

Mission: STS-80 on Columbia.

Launch date, time: No earlier than Oct. 31 at 2:40 p.m. from Launch Pad 39B.

Primary payload: ORFEUS-SPAS-2, Wake Shield Facility-3.

Landing date, time: No earlier than Nov. 16, 7:25 a.m. at KSC.



WORK CONTINUES AT KSC to restack and mate the solid rocket boosters originally scheduled for use on STS-80 to the orbiter Atlantis for use on STS-79. At press time the external tank was scheduled to be mated to the boosters no earlier than today and the launch vehicle moved out to the pad Aug. 20. The switch was made due to concerns about the adhesive used on the original boosters.

Ukranians prepare for place in history

The first Ukranian cosmonaut to fly on the Shuttle can anticipate a place in his national history comparable to that the Mercury astronauts hold in the United States.

Although Ukranians have flown in space before, it has always been as Soviet cosmonauts — never as representatives of their own country.

"Overall it is a social uplift that a Ukranian will be flying in space again soon," said Col. Leonid Kadenyuk, one of two candidates from the National Space Agency of Ukraine vying for the position of payload specialist on Space Shuttle Mission STS-87 in October 1997.

The cosmonaut will be performing biology experiments that will study the effects of microgravity on plants. Scientists from five U.S. institutions and six Ukranian institutions are involved in the project which was initiated in May 1995 with the signing of a Joint Summit Statement in Kiev, Ukraine by U.S. President Bill Clinton and Ukranian President Leonid Kuchma.

(See UKRAINE, Page 6)

Employees, celebrities spread word during space week

Space Week was celebrated at the Kennedy Space Center Visitor Center and beyond last month with exhibits, book signings, guest appearances by astronauts and an actress, and a week's worth of model rocket launches at EPCOT.

The Visitor Center kicked off a week of activities July 16 with a talk and book signing by Buzz Aldrin, the second man to walk on the moon, and the opening of the "Mission to

(See WEEK, Page 4)

ACTRESS BARBARA EDEN attracts fans of all ages as she signs autographs at the Space Shop at the KSC Visitor Center.

NKMA presents awards honoring contributions

The NASA Kennedy Management Association recognized the outstanding achievements and contributions to work related activities and outside community involvement by its members during an awards ceremony June 28.

Awards were presented to both NASA and contractor employees and recipients were awarded certificates. Recipients' names will also be listed on a permanent plaque to be displayed at prominent locations throughout the Industrial and Launch Complex 39 areas.

Education Outreach

Helen (Cindy) Coddington of Shuttle Processing received the Education Outreach Award. She has coordinated education outreach programs with the Brevard County and Florida state science fairs; has supported KSC tutoring programs for area students and has worked with the Unique Resident Tutoring For Up and Coming Replacement Engineers (NURTURE) program, sponsored by the NASA's Public Affairs Education Branch along with the Brevard County school system; and she helps provide mentors for Shuttle Operations programs.

Community Service

The NKMA Community Service Award was presented to Larry Schultz of Engineering Development for numerous community service activities. He has served as chairman of the Florida League of Cities Ethics Committee and the Lutheran Church School Board, and president of the Space Coast League of Cities.

Leadership

Deborah Bitner of Payload Processing received the Leadership Award in recognition of her role in the successful development of the capability to perform a vertical Spacehab module payload installation in the Shuttle Payload bay at the pad. She was also recognized for assisting in the integration of a standard Spacelab tunnel with a special Spacehab tunnel extension to support mission STS-76, the third Shuttle docking with the Mir Space Station.

Teachers, students learn through doing at KSC

KSC IS HOSTING 22 faculty from universities across the country this summer as they take part in the Summer Faculty Program sponsored by the Administration Office. The faculty members spend ten weeks working in technical areas on problems of interest to KSC's mission. Twelve students, also pictured, are assisting the faculty members.

A NEW PROGRAM started by the Administration Office's University Programs division establishes an internship program with Brevard Community College students. One student per semester will work at KSC in areas of interest to them and KSC will send experts in various fields to BCC to work with students there. Pictured, from left, are Dennis Chamberlain of the Biomedical Office; Tyrone McCarty of BCC, the first intern; Bruce Lockley of the Logistics Office, McCarty's mentor; Debbie Houston of Biomedical and Dr. Irene Long, director of the Biomedical Office. Standing are Gregg Buckingham, university programs manager, and Jim Jennings, director of the Administration Office.

Special awards

Center Director Jay Honeycutt and Public Affairs Director Hugh Harris were recognized for their leadership and support of NKMA and Al Parrish, associate director, received a special plaque in recognition of his continuous and outstanding leadership.

Others recognized include:

Michael Del Vesco, president; Catherine Alexander, vice-president; Robert Gerron, secretary; Laurel Lichtenberger, treasurer; Miguel Rodriquez and Susan Kroskey, scholarship committee; Ramona Rogers, support to the programs committee; Vanessa Stromer, recognition and awards committee; Max Farley and Kathleen Harer, network teams; Tammy Conway and Leslie Alderman, brown bag sessions; Vickie Hall, special projects; Gale Allen, community outreach committee; Clara Anderson, membership committee; Louis Boyd, professional development committee; Darleen Hunt and Dian Hardison, publicity committee; Audrey Silipo, boosters committee; Jay Gurecki, awards & programs; Shawn Quinn, awards committee; LaVerne Dobbs, Roelof Schuiling, Joel Reynolds, Cheryl Hurst and June Perez, programs committee; Chris Del Vesco, Bennie Bell, and Karen Iftikhar, dunking booth; and Tim Greer, NKMA Golf Tournament.

Property awareness emphasized at KSC from August 12-16

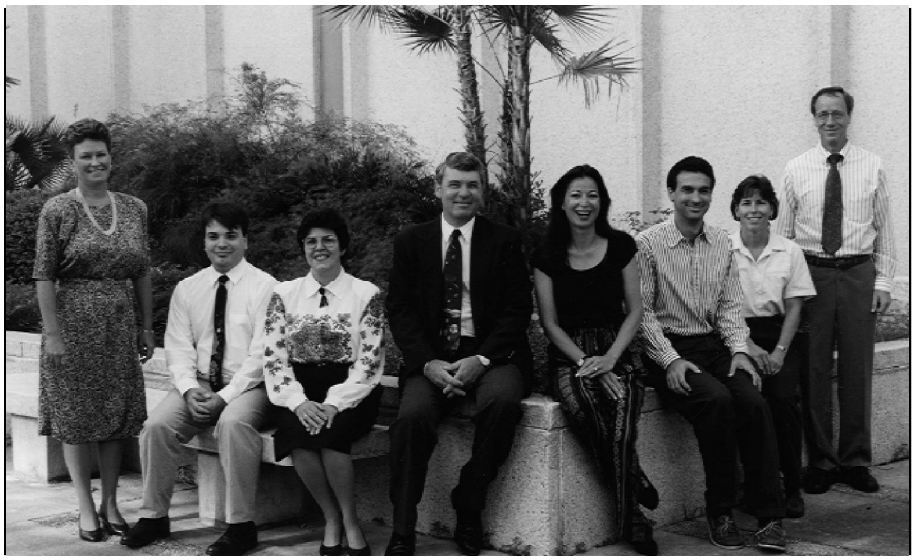
August 12-16 has been designated Property Awareness Week at Kennedy Space Center.

The purpose of the week is to make all KSC personnel more receptive to property management issues and concerns and to provide increased visibility to property custodian functions and responsibilities.

Since KSC controls and maintains approximately 120,500 items of personal property valued in excess of $6.4 billion, property losses have become an important concern to all employees at the Kennedy Space Center.

A highlight of the week will be the presentation of property awareness awards by Center Director Jay Honeycutt on Aug. 14 at the KSC Visitor Center. A new award, added this year, will be given to a single organization within each company (NASA and contractor) for its dedication in making property a priority throughout the year.

Employees of the month



HONORED IN AUGUST, are, from the left, Beth Smith, Installation Operations Directorate; Matthew Verdier, Engineering Development Directorate; Georgina Barrial, Office of the Chief Financial Officer; Ron Kent, Administration Office; Tina Pechon, Public Affairs Directorate; David Nardino, Payload Operations Directorate, Lori Thurow, Safety and Mission Assurance Directorate; and Charles Klein, Shuttle Processing Directorate. Not pictured are Debbie Folmar of the Logistics Office and Dave Reeves of the Procurement Office.

KSC teams with industry to develop super cryogenic cooler

By Chuck Weirauch

For years, the superconducting electronics industry has been stymied by the lack of an affordable means to accurately calibrate voltage levels in this type of high-performance circuitry. NASA and Hypres, Inc., Elmford, NY will jointly develop a product that is expected to be a breakthrough for the industry.

The device, known as a compact cryogenic cooler, will provide a supercold environment for superconducting electronic circuitry, said Kristen Riley of the KSC Technology Programs and Commercialization Office. The cryocooler will be a key element in the development of a portable Josephson Junction Voltage, or J-Volt Standard system to be used in the calibration of highly accurate electronic instruments.

NASA plans to use the technology at its eight field centers throughout the country.

Agreement to lead to prototype

Under a recently signed 13-month Space Act agreement, Hypres will develop a prototype of the cryocooler along with NASA, the Department of Energy (DOE)'s Sandia National Laboratories and the National Institute of Standards and Technology (NIST). KSC will also fund a portion of the development costs and provide facilities for final testing.

This effort is a part of KSC's Dual Use Program, where the center partners with industry to develop technology for use by the space agency that also has potential for the commercial market.

The cryocooler chamber, about the size of a standard television, will allow the J-Volt Standard unit to be light and compact enough to be easily shipped to any field location," Riley said.

"Once at the site, the system could be readily mounted in a standard electronics test rack."

Size is prohibitive

Present-day J-Volt Standard systems are about 6 feet tall and are prohibitively expensive to build and too large to ship. Much of this expense and size is the result of reliance on a chamber that must be filled with liquid helium to supercool the electronic circuitry to the temperatures that they would operate in a superconducting electronics system.

"The compact cryogenic cooler, or cryocooler, will take the place of large 100-liter liquid helium containers now used at permanent electronics testing sites," Riley said. "Currently there are about 40 fixed sites in the country that are only used by companies and institutions that can afford them. The portable unit will drastically lower the cost of a J-Volt system. We expect the superconducting industry to be revitalized once the portable system is commercially available."

Components depend on cold

Electronics components based on the superconductivity principle must operate at supercold temperatures to maintain the flow of electrical current with little or no resistance through their circuitry.

This low-resistance technology allows electronic equipment to process data at speeds higher than those possible with conventional hardware and is now being used in some mainframe supercomputers.

Research is underway to develop such next-generation devices as high-speed digital switchers for communications equipment, digital spectrum analyzers and other scientific research tools.

"There are many other potential commercial and military applications of this technology, including improved ship-borne and ground-based radars," Riley said.

KSC engineers transform EPCOT into launch site for Space Week

THE LAUNCH CREW performs final positioning of the 20-foot gantry tower. The launch pad, built on an automobile transporter, is equipped with red rotating hazard lights and a water deluge system. Personnel from KSC's Education Branch and EG&G Florida, Inc. assisted with the construction of the launcher.

Photos provided by Rosemary Todd

THE LAUNCH CREW proudly pose with the EPCOT Explorer rocket. The team consisted of engineers from KSC, Cape Canaveral Air Station and Patrick Air Force Base, students from University High School and personnel from Walt Disney World/EPCOT. Disney provided the flight suits. A total of 92 people worked on the project.

(Continued from Page 1)

Mars" interactive exhibit commemorating the 20th anniversary of the Viking probe.

Astronaut/artist Alan Bean signed posters of his work on July 22 and on July 23 Barbara Eden, star of the television series "I Dream of Jeannie," thrilled hundreds of fans with her appearance at the Visitor Center.

KSC also contributed to the celebration of the nationally recognized week off-center. EPCOT sponsored exhibits and programs in the Future World section of the theme park from July 14-20. Among the displays were booths highlighting space spin-offs, NASA life sciences and the International Space Station. NASA and contractors including Dynamac, McDonnell Douglas Space and Defense Systems, Rocketdyne and Rockwell International assisted with those and other displays. But one of the biggest contributions of KSC employees was the commitment of a team of engineers who worked with 59 University High School students to develop for EPCOT six 14-foot model rockets and two prototypes. A rocket was launched twice daily every day of the celebration.

The engineers donated more than 2,500 hours of time to work with the students on the project.

"You've got to love working with the students and the hardware," said Dave Sollberger, the NASA engineer who coordinated the project.

After each launch, which took place over the lake at the center of EPCOT's World Showcase, students and engineers in a pontoon boat would retrieve the floating launch vehicle and prepare it for its next mission.

Thousands of spectators viewed the launches and many approached the group afterward seeking more information on the project.

"If the crowds were any indication, it speaks well for our future in space," Sollberger said.

In addition to Sollberger, engineers assisting in the project are Mike Haddad of NASA, James VanGaasbeck, Interface and Control Systems; Steve Pollak, Computer-Sciences Raytheon; Lee Riley, CSR; and Marc Lavigne, McDonnell Douglas Astronautics.

THE EXPLORER lifts off with 93 pounds of thrust provided by its ammonium perchlorate rocket motor. The motor burns for 3.1 seconds, accelerating the vehicle to more than 150 mph and a maximum altitude of 875 feet.

THE WATER recovery team, positioned in a pontoon boat with one of EPCOT's international pavilions in the background, pulls the 24-pound Explorer rocket from the Showcase Lagoon after splashdown.

Business Incubation Center plans open house August 6

By Joel Wells

The Florida/NASA Business Incubation Center (FNBIC), a team effort by NASA, the state of Florida and Brevard Community College (BCC), will hold an open house Aug. 6 to celebrate its official opening.

The incubator is intended to reduce many of the costs associated with establishing and operating a new business. "Our support facilities and programs will train and nurture entrepreneurs and help them to have the best possible chance of success," said Maria Clark, FNBIC's executive director.

The incubator program will offer up to 20 start-up businesses the opportunity to rent furnished office space in a 10,000-square-foot facility on BCC's Titusville campus for a minimal fee. Tenants, who can stay at the center for up to two years, will have access to BCC equipment such as computer labs, libraries and shops as well as maintenance and security services.

The NASA partnership and the incubator's proximity to Kennedy Space Center also gives participating firms access to NASA expertise and laboratories. "Our participation accelerates KSC's technology transfer mission and supporting small businesses with our high technology infrastructure could lead to new products and jobs in Brevard County," said Kathleen Harer, KSC program manager.

According to Frank Kinney, executive director of Florida's Technological Research and Development Authority (TRDA), NASA and TRDA decided on the incubator concept while searching for ways to help Brevard businesses deal with the aerospace and defense industry's local downsizing.

"With a high-tech business foundation already established in the area, we're making good use of existing resources and it's a win-win proposition for the small business and the local economy," said Kinney.

"BCC has been a community leader in economic development efforts and we're looking forward to another chance for community outreach," said Dr. Joe Lee Smith, President of BCC's Titusville campus.

Lt. Governor Buddy MacKay and Congressman Dave Weldon are among the state and local officials that will address open house visitors.

Attendees will briefly tour the facility and meet representatives of six small businesses that are already participating in the program. FNBIC and NASA representatives will also be on hand to discuss the program.

Companies, entrepreneurs, and business mentors interested in the program or attending the open house, scheduled from 9-10:30 a.m., should call (407) 383-5200.

Tenant application forms are available on the Internet at http://technology.ksc.nasa.gov/FNBIC/.

Applications taken for business expo

Exhibitor applications for the seventh annual KSC Business Opportunities Expo are being taken through Aug. 23.

The expo gives businesses the opportunity to interact with buyers and engineers from Kennedy Space Center and other government organizations.

Approximately 200 exhibitors and 1000 attendees are expected attend the event Nov. 13 at Port Canaveral's new Cruise Terminal 10. The Small Business Administration, KSC prime contractors and the Florida/NASA Business Incubation Center are among the organizations that will provide one-on-one counseling during the event.

A registration fee of $75 includes an 8 ft. table top display, a continental breakfast and a box lunch.

To receive an exhibitor application fax your company name, address, point of contact, and phone number to (407) 867-7999.

For more information call the NASA Central Industry Assistance Office at (407) 867-7353.

PILOT JON JOHANSON, wearing his flight suit adorned with the names of his sponsors, downplayed his accomplishments during his recent stop at KSC but reveled in the success of the space program.

Australian pilot stops at KSC on second trip around globe

Jon Johanson, an Australian midwife who built his own plane and is in the process of flying it around the world for the second time, can't help but feel an affinity with the Space Shuttle program. So he made a point of visiting Kennedy Space Center last week as he worked his way from Adelaide, Australia to Oshkosh, WI, for the the world's largest airshow.

Johanson said the magnitude of the accomplishments of the space program made visiting KSC an awe-inspiring experience.

"It shows how amazing the human race is," Johanson said. "It's mind boggling what humanity is capable of."

Johanson said he decided to build the plane because he had discovered his passion for flying and couldn't afford to buy one ready-made.

The RV-4 single engine craft arrived in a kit and Johanson modified it to meet the needs his journey would place on it.

He spent nearly 2,000 hours over two and a half years working on the plane during the day and serving duty as a midwife by night to pay for his expensive hobby. Once the plane was complete Johanson tested it out by becoming the first person to fly a single-engined aircraft non-stop from Adelaide to Auckland, Australia.

Johanson first flew around the world last year, heading west from Australia. This trip he started at the same point but is headed east. He said although there are places he would think twice about landing again, in general he has found people around the world are supportive of his venture.

Johanson was escorted around KSC by NASA employee Bryon Maynard, who is also constructing his own kit plane made by the same company.

Johanson said although he will go back to midwifery when he returns to Australia, he will have a harder time working within the structured parameters of a regular job.

"Traveling around the world puts everything in a different perspective," he said.

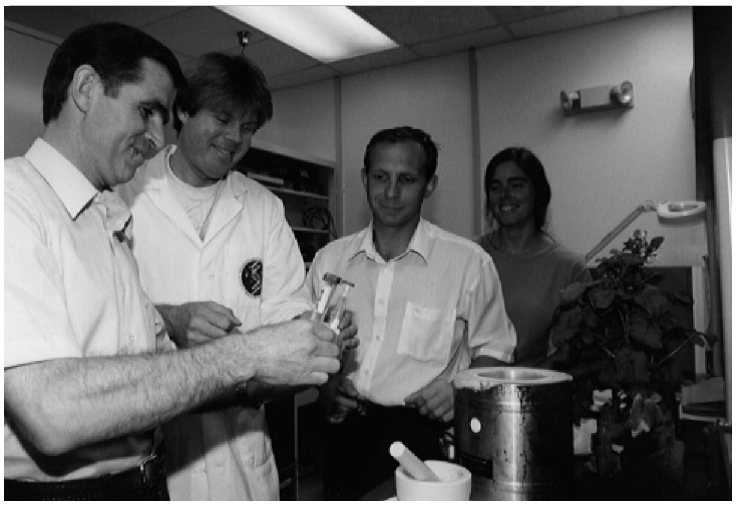
Ukraine. . .

(Continued from Page 1)

Kadenyuk and fellow candidate Dr. Vyacheslav Meytarchan visited Kennedy Space Center in June to learn more about the experiment from KSC management and researchers. It was the first time either of them had been in the country. They talked with Spaceport News *about some of their impressions of KSC and the differences and similarities between the space programs here and in their country. Questions and answers were translated by Peter Chetirkin of Dynamac.*

When did you first decide to become a cosmonaut?

Kadenyuk: On April 12, 1961, my interest began. That was the first time Yuri Gagarin flew in space. Since then I have wanted to visit space. Flying on the Shuttle will certainly fulfill my interest.



PLANT PHYSIOLOGIST Bill Piastuch, second from left, and microscopist Liz Styjewski, both of Dynamac, give cosmonaut candidates Col. Leonid Kadenyuk, left, and Dr. Vyacheslav Meytarchan basic life sciences training.

Meytarchan: In 1978 when I first met a cosmonaut in Ukraine. It motivated me to study various programs in aerospace.

What are your impressions of the Kennedy Space Center?

Meytarchan: I'm amazed at the nature you have in this country. To see rockets launched here amidst birds flying and other species is indeed incredible.

What type of training are you receiving for this mission?

Kadenyuk: There are five major steps in our preparation. First is a rigorous medical exam performed in Ukraine. Next we are trained in stress situations and vestibular preparation. We also have linguistic/technical preparation and finally materials training at KSC. This has been a great help.

What is the historical perspective of this mission for your country?

Kadenyuk: Seventeen Ukranians have flown in space but they were considered Soviet cosmonauts.

Since the time Ukraine became independent we have not had cosmonauts. So this will be the first cosmonaut for Ukraine.

What implications does this mission hold for the future?

Meytarchan: Flying on the Shuttle is going to provide a basis where the world will see our ability to prepare with other countries space programs that will provide for the future.

These first steps will be the basis for a closer collaboration. It will give us the ability to open channels of friendship.

Kadenyuk: We feel it is important our collaboration is based on life sciences.

It is important that countries focus on these types of sciences.

Biological sciences are a priority for human existence.

Meytarchan: These first steps for Ukraine inspires further integration to the world of the future.

THE STS-77 crew drew a crowd when they presented their post-flight briefing at the Training Auditorium July 17. The mission was highlighted by the Spartan 207/Inflatable Antenna Experiment in which a 48-foot-wide antenna was inflated and jettisoned after operations.

John F. Kennedy Space Center

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