Gravity Probe-B team tests two of Einstein's theories

NASA mission slated for April 17 launch at Vandenberg A.F.B.

By Linda Herridge
Staff Writer

The excitement level is high at Kennedy Space Center as the Gravity Probe-B launch date nears. Several GP-B launch team members from KSC arrived at Vandenberg Air Force Base in California last month.

Workers at VAFB are preparing the science payload and the Delta II vehicle for its April 17 launch from Space Launch Complex-2. Others from KSC will travel to California very soon to help lead the mission to a successful conclusion.

The GP-B spacecraft will test two extraordinary predictions of Albert Einstein’s general theory of relativity that he advanced in 1916: the geodetic effect (how space and time are warped by the presence of the Earth) and frame dragging (how Earth’s rotation drags space and time around with it).

Chuck Dovale will finish two years of work on the mission as GP-B launch director. His primary responsibilities include ensuring the GP-B launch countdown is performed properly and the launch vehicle and spacecraft are ready for lift-off.

“This mission has been around for so long and has been a program that people dedicated their entire professional lives to,” Dovale said. “That is a very significant aspect of the mission.”

Wanda Harding, mission integration manager, will lead the team focused on spacecraft-to-launch vehicle integration. She also led the payload processing activities at the launch site.

“The mission is significant because of the outstanding technology developed to implement the on-orbit experiment,” Harding said.

Debus Award surprises Talone

JOHN “TIP” TALONE (left), the 2004 Debus Award honoree, and George English, a NASA retiree who hired Talone at the Agency 39 years ago, reminisce at this year’s banquet.

At the recent Debus Award Banquet, 2004 recipient John “Tip” Talone Jr. was humbled to see his name added to the trophy bearing past honorees.

(See TIP, Page 8)
Greetings, friends! What a super couple of weeks for the Center since my last column. Primarily, two big events were held that give me pride in the way our people pulled together and made them both a success.

It’s great to work with a first-class organization that can handle any task, no matter how large or small, although there doesn’t seem to be many small tasks coming our way these days!

First, my hat is off to everyone who played a part in launching the Florida quarter Wednesday. For those who didn’t hear, Gov. Jeb Bush asked KSC to host this event as the U.S. Mint launched Florida’s quarter into official circulation. It’s the 27th in the very popular series that started in 1998 and ends in 2008 with Hawaii.

Joining the governor and his wife, Columba, was our own NASA Administrator Sean O’Keefe; Samuel Bodmon, deputy secretary of the Treasury; and Henrietta Holsman Fore, director of the U.S. Mint. They were joined by approximately 4,000 people at our Visitor’s Complex celebrating the unveiling of the quarter.

It was only fitting that KSC, known for its numerous inaugural launches of space vehicles, served as the launching point for the quarter. This is especially true since our Space Shuttle is prominently displayed in its design.

I know we have many coin collectors at the Center who probably already have a quarter safely secured in their collections. But if not, our own KSC Federal Credit Union has them for exchange. It sure was neat to see all the students receive a free coin at the event. I’m sure it’s a keepsake they’ll treasure forever!

Speaking of treasured events, that is exactly how I feel about our KSC picnic held Mar. 27 at KARS Park. What a fabulous day for our community as approximately 7,500 workers and their families came out to enjoy some fun in the sun.

This was the largest crowd anyone can remember in years. At times, I couldn’t keep up with all the fun between handing out candy during a parade, talking to children with Sparky, judging the chili cook-off, listening to great music and having some great food and drink.

A day like this just doesn’t happen through magic, even though the results were magical. About 30 committee members, supported by 260 volunteers that day, made our picnic a complete success.

The committee was lead by Pam Biegert and the External Relations directorate and joined by other offices and directorates, such as the Chief Financial Officer, Procurement, Chief Counsel, Workforce and Diversity Management and the Cape Canaveral Spaceport Office.

Other organizations, such as IT, and contractors, such as All Points Logistics and SGS, were instrumental in pulling it all together, whether it was arranging for food and drink for thousands of people, or simple but monumental tasks, such as picking up trash and keeping plenty of ice in the bottled water bins.

This picnic committee gave us a super example of teamwork as they worked together to handle anything thrown their way.

I’m particularly proud of the way they handled the unexpectedly huge crowd. With only 5,000 tickets purchased beforehand, the team had to handle a surprising 2,500 person “walk-up” crowd.

By far, it was the biggest total ever seen based on the history of the event.

Many volunteers took their own cars to grocery stores to keep water in supply and the food line stayed open later than scheduled to handle the crowd. Many volunteers ended up working the entire day.

I just can’t thank them enough for their selflessness so the rest of us could enjoy a pleasant day. Everyone might want to circle next year’s date when it’s chosen so we can all come out and partake in another great day of fun.

Next week, I head off with our launch services team to Vandenberg Air Force Base, California, as the Center works the final details to launch Gravity Probe-B on April 17. I can’t wait to see our professionals in action while they write another success story for our Agency’s storied history. I wish them the best of luck!

Have a great week everyone and I hope to see you around the Center.

Join KSC Center Director Jim Kennedy in an All-Hands Meeting on April 22 at 9:30 a.m. Broadcast from the Training Auditorium, the event can be viewed on NASA TV or click on the link in the KSC Internal Home Page at http://www.ksc.nasa.gov/nasa-only/internal.html

April Employees of the Month

Make plans for Astronaut Hall of Fame Induction

The Kennedy Space Center Visitor Complex will host the induction of the third class of Space Shuttle astronauts into the U.S. Astronaut Hall of Fame on May 1. Five Shuttle astronauts will be inducted at the event, which highlights a full day of space-related activities. Inductees include: Kathryn D. Sullivan, the nation’s first woman space-walker; Richard O. Covey, pilot of the return-to-flight mission following the loss of Challenger; Frederick D. Gregory, three-time Shuttle astronaut; Norman E. Thagard, four-time Shuttle astronaut; and the late Francis R. “Dick” Scobee, pilot of the first Shuttle mission to repair an orbiting satellite and commander of the Challenger mission in 1986. For information, call 449-4444 or visit http://www.kennedyspacecenter.com.

FROM LEFT, Marion Page, Spaceport Services; Sena Jones, Chief Financial Office; David Brink, ISS/Payload Processing; Denise Travers, Information Technology Services. Not shown are: Paige Kelley, Workforce and Diversity Management; Nathan Taylor, Shuttle Processing; Dave Collins, Safety, Health and Independent Assessment; Tom Reinarts, Launch Services Program; Robert Mueller, Spaceport Engineering and Technology.
Morgan strives to make visual aids of future

By Jennifer Wolfinger
Staff Writer

Paul Morgan isn’t going to let his blindness stop him from helping the Agency achieve its vision. Legally blind for more than 22 years, the KSC employee is working to create visual aids for people with sight disabilities. The current device that Morgan and a team of research partners hope to create would help millions of people worldwide and further advance NASA’s progresses in science and technology.

This invention is being designed to resemble a pair of sunglasses that would enlarge and enhance images, provide wayfinding, hazard warnings and much more.

“The device would be stylish and reasonably unobtrusive,” said Morgan, who’s been with NASA for 16 years. “It would be easy to use, very versatile, portable and reasonably priced.”

Morgan, a Spaceport Engineering and Technology project manager, said the ideal “ultimate visual aid” would recognize speech, speak text to the user, and use a combination of these features with GPS and wireless Internet services to guide visually impaired people, place phone calls and magnify images.

Some may hesitate at even imagining such an overwhelming technology. But for more than a year, Morgan and his primary research partners, West Virginia University and Georgia Institute of Technology, have willingly embraced this challenge.

“To do this, we need GPS, wireless internet, lots of computing power, speech recognition, speech synthesis and image processing, all in a tiny package,” he said. “That’s a lot! But, one step at a time.”

The innovations also would help Morgan, who has Stargardt’s Syndrome, a form of macular dystrophy that begins early in life. The condition affects more than 25,000 Americans and often impairs vision.

Regardless of personal benefits, the Center is sure to gain from the project too. The visual aids aim to increase NASA exposure and allow visually impaired people to directly access NASA’s scientific, engineering and educational information.

Supporting safety, this technology can enhance NASA’s visual inspection systems, too.

He explained that a non-reimbursable Space Act Agreement between NASA, Enhanced Vision Systems in California and Georgia Tech allowed for the initial work. Technology for mass consumer markets, such as smaller computers and lighter batteries, is also easing the development of this device.

“We are trying to ‘ride the wave’ of technology currently being pushed by the large consumer market,” Morgan explained. “These and other factors are fueling major technical developments and driving down prices on hardware. This will greatly enable what we are trying to accomplish without us having to pay for all the research.”

Supporting this project, the team attends related conferences, tests models such as computing and head-mounted display technology, and works with exceptional partners such as Dr. Lawrence DeLucas, the only visual specialist to visit space.

NASA mentor receives first 'PRISM' Award

Michelle Amos, an electronics design engineer in Spaceport Engineering and Technology, received the Federal Women’s Program Working Group’s first annual Peer Recognition for Integrity, Support and Mentoring (PRISM) Award. Amos was recognized for her work as a mentor to young girls, inspiring them to study math, science and engineering.

Amos received the award during the KSC group’s Women’s History Month event at the Training Auditorium.

“Thank you for this beautiful PRISM award,” said Amos. “It is both physically and spiritually a beautiful recognition.”

The award was created in 2001, according to Federal Women’s Program Chairwoman Kim Boatright. Nominations are open to all KSC civil servants who are not in a lead, supervisory or managerial position. Visit http://www.ksc.nasa.gov, click on the Internal Home Page and proceed to the Equal Opportunity Office page for future voting.

Michelle Amos (right), an electronics design engineer in Spaceport Engineering and Technology, accepts the PRISM Award from Cindy Gooden, Federal Women’s Program manager.
With an estimated record crowd of more than 7,500 people, attendees at the 2004 Kennedy Space Center All-American picnic enjoyed a chance to meet their co-workers’ families and friends while basking in perfect Florida weather.

“The chairperson position is the easiest job of all after seeing how hard each of you had to work on Saturday,” said Pam Biegert, picnic committee chairperson and chief of the Education Programs and University Research Division.

“No words can express the appreciation for the work all of you did in preparing and pulling off the best picnic yet!” she said. “Thanks again, and I am proud to have been part of such a great team of folks who did this on top of their already overburdened schedules.”

The Chili Cookoff “Best of Show” was awarded to the ELV Rocketeers, with runner-up honors going to the BAliens. Winner of the “People’s Choice” award and “Best Storefront” went to the BAliens. The USA Chili Boppers and UB Fluids Team also provided some tasty competition. The event raised $560 for the American Cancer Society, the BAliens’ charity of choice.

The dunking booth gave employees a chance to sink members of management, as well as raise money for charity. The Spaceport Engineering and Technology directorate, with the help of Barry Braden, deputy associate director, raised $318 for the American Cancer Society. That total included tips from the Press Site team, who donated their unsolicited tips from the beer booth toward the charity.

Other popular games included the egg toss, pie eating, horse-shoes and fishing.

Seventy-one unique automobiles and motorcycles were on display at the Car Show. Winners included:

- Director’s Choice - Kim Shiflett’s Harley Heritage
- Deputy Director’s Choice - Ray Smyth Jr.’s 1966 Ford Mustang
- Astronaut’s Choice - Howard Van Sciver’s 1957 Pontiac GTO

ABOVE (THEN CLOCKWISE), the 2004 KSC All-American Picnic saw a record crowd. (left) Kay Hire, Ron Garan, Nicole Stott, Steve Frick along with Center Director Jim Kenn Hattaway, Judy Hattaway and Sparky, the KSC Fire Department mascot. At right, the NASA astronaut Steve Frick chatted with the crowd on the status of lions, tigers and other “big cats.” Next, David Penca, Web editor, and various children’s games kept the young ones busy throughout the day.
At the 2004 KSC All-American Picnic

VAB doors undergoing renovations

By Jennifer Wolfinger
Staff Writer

W e travel through doorways every day without even thinking about their condition. This is fine for entryways to offices and homes, but the doors to our future require careful maintenance.

After 35 years of service, several of the Vehicle Assembly Building’s doors are getting a needed face-lift. The North Transfer Aisle and the High Bay 3 Vertical and Horizontal doors are entering a 13-month restoration period. There is an option to extend the work for another year, if needed.

While the new face will appear the same, heavier coatings and improved hardware offer advanced protection.

“The things we humans love the most, sunshine and ocean, are the things that destroy structures,” said Mark Sortman, United Space Alliance (USA) project manager. “The current condition of the doors is basically due to prolonged exposure to the Florida environment, one of the most corrosive in the nation.”

Also unlike typical doors, these range in size from 75 ft. by 50 ft. to 40 ft. by 110 ft. According to Sortman, workers will refurbish the High Bay doors from 400 feet in the air while battling the Space Coast’s moody weather.

“The purpose of the renovations is to repair the extensive damage on the doors,” said Oliver Rye, USA subcontract administrator. “There is extensive corrosion damage on the interior of the framework of the existing doors in both locations.

“The siding on the outside has deteriorated around all the mounting bolts and requires replacement,” he said. “All exterior siding is to be replaced, as well as all the hardware.”

Return to Flight goals present the possibility of project changes, however. The RTF requirements may lead to High Bay 1 improving before High Bay 3. Regardless, it is anticipated that the renovations will be completed in April 2005.

According to Rye, the changes will support one of the Center’s guiding principles. He said, “In my opinion, the greatest benefit is continued safe operations within the VAB.”

Space Congress addresses future vision

T he 41st Space Congress will take place April 26 through 30 at the Radisson Resort at the Port in Cape Canaveral.

The event, sponsored by the Canaveral Council of Technical Societies, teams a large portion of the aerospace community to discuss the status and future of space activities around the world.

This year’s Space Congress, titled “Determination: Meeting Today’s Challenges, Enabling Tomorrow’s Vision,” will open with an annual Congressional Dinner on April 26. Three panel sessions, a luncheon and evening reception will follow on April 27.

Panel sessions include “The Future of Space Exploration” and “Return To Flight.” Two more panel sessions will be held April 28, followed by a luncheon and two paper sessions, with a Gala Reception in the evening.

The fourth panel session will take place April 29, with the final paper session in the afternoon and a special “Evening with the Astronauts.” Also, a “Technicians Recognition Night” reception will be held from 5:30 to 7:30 p.m.

Space Congress finishes on April 30 with a golf tournament, followed by a “Missile, Space And Range Pioneers Annual Banquet” later that evening.

There will not be an exhibit hall this year. For a complete schedule, visit http://www.spacecongress.org.

Financial presentation, payload conference slated for mid-April

M ark your calendars now for two informative events scheduled for mid-April:

April 15 - The Federal Women’s Program Working Group is hosting a 45-minute financial planning presentation on “Long-Term Care” presented by Nicki Biamonte, a financial services executive with Metropolitan Life, at 1 p.m. in the O&C Mission Briefing Room.

Learn about things to consider when looking at long-term care protection, why it is so important now and how much it costs. Also learn what Medicare and Medicaid cover. Contact Kandy Warren at 867-7711 for more information.

April 19-22 - The Payload Safety and Mission Success Conference in Cape Canaveral will discuss the latest developments and opportunities associated with the safe and successful acquisition of science in low-Earth orbit.

The Radisson Resort at the Port in Cape Canaveral is hosting the event, which is targeted for spaceflight personnel, ISS/Shuttle payload developers and customers in the international human space flight community.

For conference information, visit http://jsc-web-pub.jsc.nasa.gov/psrp. If you have any questions, contact John Dollberg, 867-5926 or Maxine Daniels, 867-5976.
Discovery maintenance from nose cap to body flap

Part 3 of 3
By Anna Heiney
Staff Writer

Have you ever wondered where the Shuttle orbiter gets its black and white coloring?

That comes from the black and white tiles, gray Reinforced Carbon-Carbon (RCC) panels and white thermal blankets that make up its Thermal Protection System, which protects the orbiter from the extreme temperatures of launch, space and entry.

“On each orbiter, there are about 24,000 tiles,” said Stephanie Stilson, NASA vehicle manager for Discovery. “Because every single tile is unique, they are manufactured with a serial number that identifies that tile’s size, shape and location on the orbiter.”

The orbiter’s nose cap and wing leading edges are covered with RCC, providing protection from the 3,000-degree Fahrenheit heat of re-entry. Workers use non-destructive engineering methods, such as CAT scans, to evaluate the RCC panels before installation.

While the RCC panels are removed, the bare metal of Discovery’s wing leading edges are exposed for corrosion repair.

When every inch and rivet of the leading edge has been inspected and repaired, two coats of an anticorrosive compound and one coat of gleaming white paint are evenly applied with a spray gun.

Another “first” is happening beyond Discovery’s wings. For the first time in Shuttle history, work is underway to remove the parts that drive the rudder speed brake’s movement. Located in the back of the tail, the rudder speed brake comprises four panels that open outward during landing, creating drag and slowing the vehicle.

Four unique rotary mechanisms, called actuators, control the RSB panels, and workers are carefully lifting them onto twin scales joined together, in order to determine the actuators’ center of gravity.

“Because Discovery’s main engine compartment is so crowded with hardware, workers have to get into some pretty creative positions to open and inspect bundles of wires enclosed in protective black tubing,” said Carol Scott, NASA chief engineer for Discovery.

The lines that feed Discovery’s three main engines are color-coded to indicate a precise manner for tiny changes in the direction of spin from a 400-nautical-mile-high polar orbit over a 16-month period.

GRAVITY . . .
(Continued from Page 1) flew to VAFB on March 22 to oversee mechanical integration of the spacecraft to the rocket. Approximately 16 hours before launch, Fergil will work pad closeouts, including an engineering walk-down of the vehicle, installation of fairing doors, tower roll and associated pad activities.

Tracy Post, launch operations manager with Analex Corp., will provide technical support to Dovale and the spacecraft customer. Three days prior to launch, he will provide a briefing to the entire launch management team to ensure NASA, GP-B Spacecraft, Boeing and the Western Range are “all marching to the same beat.”

George Haddad, an integration engineer, is at VAFB to ensure all technical requirements between the spacecraft and the launch vehicle interface are met during the mating. Shelly Whittaker, launch service manager, provides overall business management responsibility for medium expendable launch vehicle missions.

The Gravity Probe B mission was developed by NASA’s Marshall Space Flight Center, Stanford University and Lockheed Martin. The probe consists of four sophisticated gyroscopes that will provide an almost perfect space-time reference system.

The mission will look in a precise manner for tiny changes in the direction of spin from a 400-nautical-mile-high polar orbit over a 16-month period.

Senior Resource Day enables you to find out the latest on elderly care

It’s never too early to plan for the future. All Spaceport employees can attend Senior Resource Day from 11 a.m. to 3 p.m. on April 14 in the Training Auditorium for the latest information about services and programs available to the elderly. William Johnson, an attorney specializing in estate planning, will give a presentation from 11 a.m. to noon, followed by Melissa Otto from the state of Florida Attorney’s Office, who will address elderly abuse from noon to 1 p.m. Sandy Rutherford, a representative from adult daycare center The Embers, will speak from 1 to 2 p.m.

Ask questions from these companies about how to make the senior years more enjoyable for yourself or your loved ones: Department of Elder Affairs, Social Security Administration, Florida Department of Children and Families, Easter Seals, Parrish Medical Center, Comforts of Home and more. Visit http://www.ksc.nasa.gov/nasa-only/seniors/index.htm for information.
Several events celebrating the annual Environmental and Energy Awareness Week will take place April 20 through 22, including guest speakers, exhibits and presentations.

* April 20 - An opening ceremony will kick-off the week at 10 a.m. in the KSC Training Auditorium. The guest speaker will be Joan Deming, vice president of Archaeological Consultants, Inc. in Sarasota. She has managed the company’s work on behalf of NASA at KSC and for the U.S. Air Force at Cape Canaveral Air Force Station.

Deming is a registered professional archaeologist, director of the American Cultural Resources Association, treasurer of the Florida Archaeological Council and a former president of the Florida Anthropological Society.

* April 21 - More than 40 exhibitors will set up in the O&C front parking lot to offer information and services that help preserve energy and the environment. Exhibitors include the Brevard County Natural Resources Management Office, Florida Department of Environmental Protection, Florida Solar Energy Center and the NASA Transportation Office.

Also, presentations will be offered in the tent area, including: “Cost Effective Solar Applications for Florida” by Henry Healey, Florida Alternative Energy Corp.; “Historic Changes in KSC’s Ecosystems” by Carlton Hall, Dynamac; and “Canaveral National Seashore” by Jim Egan, Marine Resources Council, among others.

* April 22 - The exhibition tent moves to Parking Lot E of the Vehicle AssemblyBuilding, where more games, drawings and presentations will take place. Nine different field trips, such as boat tours of the KSC lagoon and the photovoltaic system at field mill site 18, will be available to employees who have permission from their supervisor.

The winners of the 2004 EEAW Poster Contest have been announced. They are: Chris Ehrenfeld (United Space Alliance), Mary Sharpe (All Points Logistics) and Ron Woods (NASA), who designed a poster around the winning slogan, “Today’s Conservation Defines Tomorrow’s Future.” The group will be recognized at the April 20 opening ceremony.

Visit www.eeaw.ksc.nasa.gov for a complete schedule. Contact Barbara Naylor (867-8452) or John Ryan (867-8413) for information.

Don't miss Environmental and Energy Awareness Week

TIP . . .

(Continued from Page 3)

“I’m really honored to be on that list, and I’m not convinced I belong on there, particularly when I see number one on the trophy,” George Page (launch director for the first Space Shuttle mission in 1981), who set a standard for all us that few could live up to,” said Talone. “Dr. Debus was the boss when I was first hired. I planned to stay a couple of years and move on to other exciting things, but here I am 39 years later. The real history is in the names that are on this trophy.”

The award was created by the National Space Club Florida Committee to recognize significant achievements made in Florida to American aerospace efforts. The April 3 event was held at the Dr. Kurt H. Debus Conference Facility in the Visitor Complex, also named after KSC’s first director.

Talone is director of the International Space Station/ Payloads Processing directorate at KSC. At the award banquet, he credited past and current colleagues for his success.

“I work for the finest people I could ever work for, and I work with the finest people I could ever work for,” he said. “I believe in my heart that everybody that has gotten me, and all of us, to where we are, are standing up here with me now. I was raised right when I came from Tennessee and hopefully I haven’t forgotten it. Thank you very much for this honor.”

KSC Director Jim Kennedy was able to consult his wife Bernadette, who worked for Talone in the mid-1990s, about what to say about the honoree.

“I asked her if she could give me one word to describe Tip. She said he has heart,” Kennedy remarked. “In addition to the integrity and teamwork and all of the values you demonstrate, you care about each and every one of us. You have a heart, and we do indeed love you, Tip Talone.”

PICTURED FROM LEFT are recipients of the Debus Award: Forrest McCartney, former KSC Director; Lee Solid, former vice president of Rockwell Florida Operations; Dr. Maxwell King, retired Brevard Community College president; John “Tip” Talone, director of the International Space Station/Payloads Processing; Bob Sieck, retired director of Launch Processing and Operations; Ernie Briel, president of BRPH Architect and Engineering Co.; Adrian Laffitte, director of Atlas launch operations at CCAFS for Lockheed Martin Space and Strategic Missiles.

THIS BABY eagle recently hatched in its nest off Kennedy Parkway. This is an example of how nature coexists at KSC, which will be discussed during Environmental and Energy Awareness Week.