

Low cost, big return

RapidScat mission to continue key wind measurements

By Mark Whalen

Ocean winds play a critical role in regional weather and climate across the globe. JPL, at the forefront in studies for more than 30 years, will again answer the call with an upgraded instrument aboard a new platform.

The RapidScat mission, set to launch as soon as Friday, Sept. 19 from Kennedy Space Center on a SpaceX Dragon vehicle, will observe ocean winds from the exterior of the International Space Station, the first scientific instrument to observe our planet's winds from that lofty perch orbiting more than 200 miles above us.

The instrument, assembled at JPL, will help improve weather forecasts, hurricane monitoring and our understanding of how ocean-atmosphere interactions influence Earth's climate. The two-year mission replaces JPL's QuikScat scatterometer, which far exceeded its planned mission by operating for more than a decade before it stopped collecting ocean wind data in 2009.

The \$25 million RapidScat instrument represents a massive cost savings compared to traditional spacecraft missions, said Project Manager Howard Eisen. "By leveraging the capabilities of the International Space Station and recycling leftover hardware, we will acquire good science data at a fraction of the investment needed to launch a new satellite."

"We're running about 20 percent the cost of doing a brand new, from-scratch payload because we have a lot of leftover hardware and are executing a lean development," said Eisen. "We're saving another half of that again since we don't need our own launch vehicle and spacecraft."

As its name implies, RapidScat was developed in a hurry. In 2012, the Space Station program offered JPL a berth in 2014. The SpaceX Dragon was already scheduled for a resupply mission to the station, so RapidScat is getting a free ride.

The leftover flight spares and engineering model hardware used for RapidScat come from the QuikScat satellite and its SeaWinds instrument, some in storage for more than a decade. Interfacing the instrument with the Space Station required new structures, an antenna, power systems and avionics.

Once RapidScat arrives at the station, it will be installed robotically controlled from an operations center at NASA's Johnson Space Center, which will be staffed by a JPL team.



Aside from the cost savings, the space station offers technical advantages as well, said Project Scientist Ernesto Rodriguez. The station's orbit "will allow RapidScat to observe not only the tropics but everywhere in the world during all times of day," he explained. "We can start to get a handle on the systematic changes that happen as a function of time of day."

At the end of the mission, the instrument will be put in the trunk of a Dragon spacecraft that will be targeted to burn up on entry.

"There's no re-fly of this hardware; it will burn on its way down," said Eisen. "That's a fitting end for hardware that's been in storage for 13 years."

Convenience at work

By Mark Whalen

Star Tracker will aid recruiters as well as job seekers

JPL hiring managers are always on the lookout for the best available talent. At the same time, recent college graduates and other outstanding candidates search for the best opportunities to start a promising career.

Now, taking advantage of the state of the art in talent management technology, a new application tracking system, Star Tracker, has gone online to simplify the task of matching up job seekers to opportunities at JPL.

Star Tracker will offer many advances for new job candidates as well as JPL recruiters, said Kim Jones of Human Resources' Talent Acquisition Group. The system will also aid JPL employees who search for internal openings through JPL Jobs.

Social media will play a major role in the new system, as it is designed for smart phones, tablets and laptops as well as desktop computers. "We are going to a more contemporary version that will feel much more familiar to those who are accustomed to using apps and mobile devices," said Jones.

Job candidates will be able to receive alerts when positions they're interested in are posted. Features for internal candidates include tips on how to improve a résumé and advice from hiring managers about how to prepare for an interview.

Star Tracker users will be able to update their résumés and create a personal profile, noted Jones. "The system creates a space where hiring managers and candidates can collaborate virtually about available opportunities," noted Jones.

For the benefit of JPL hiring managers, Star Tracker will include an upgraded traffic management function, which

The screenshot shows the JPL Star Tracker website interface. At the top, there's a header with the NASA logo and 'Jet Propulsion Laboratory California Institute of Technology'. Below that is a large banner image of JPL staff in a control room, with the text 'The Opportunity Launchpad' and a tagline: 'We are looking for explorers and bold pioneering spirits to join The Laboratory to help us do things never done before and to go places few can go.' Below the banner are five main categories, each with an icon and a brief description: 'Student Employment' (Find employment opportunities for students in various fields of study, including business, engineering and technology), 'Internships & Fellowships' (Apply for internships and STEM research opportunities for students and faculty offered year-round by the JPL Education Office), 'Postdocs' (Discover postdoctoral research opportunities covering all aspects of Earth, planetary, astrophysical, and technology research), 'New Grads' (Explore entry-level career opportunities for recent graduates offered through JPL's Early Career Hire Initiative), and 'Experienced' (Discover mid- to senior-level career opportunities in fields, including science, engineering and business). At the bottom, there are two sections: 'Get the Newsletter' with an email input field and 'Follow JPL' with social media icons for Facebook, Twitter, YouTube, and LinkedIn, plus an 'All' link.

will allow quick content updates. "So when something we didn't plan for pops up, we edit it directly from our desktop and it changes in an instant," she said. "This is going to be a major timesaver."

The system is highly customizable, explained Jones. Instead of a single portal, experienced candidates, interns and early

career hires will be directed into customized portals tailored for them.

"Having the ability to keep our website current at a moment's notice allows us to compete better in attracting candidates, and that's vitally important for us," Jones said. "It allows us to level the virtual playing field."

More information on Star Tracker is available on the Enterprise Business Information Services site (<http://ebis.jpl.nasa.gov>) under the JPL Employee Toolkit.

JPL team wins international trajectory design contest

Proving their mettle in the sophisticated realm of trajectory design, a JPL team for the third time has won a contest between the best spacecraft navigators in the world.

The team's design of a complex asteroid rendezvous mission was judged the best entry in the 7th Global Trajectory

Optimization Competition, organized by a group of researchers at the European Space Agency.

In the seven years that the contest has been held, JPL has competed five times, winning three—the only organization ever to score that many wins. This year, JPL's competitors included

27 teams from Europe, Japan, Russia, China, two other NASA centers, and a variety of companies and universities around the world.

The 2014 competition called on teams to design a mission that would send a mothership with three descent probes to visit as many of the 16,000 main-belt asteroids as possible during a 12-year mission. Contestants had four weeks to solve the problem and submit their entries. JPL's winning entry allowed a total of 36 asteroid visits; other entries

achieved from 13 to 35 rendezvous.

Led by the Outer Planet Mission Analysis Group (392M), the JPL team consisted of Anastassios Petropoulos, Gregory Lantoine, Damon Landau, Daniel Grebow, Try Lam, Nitin Arora, Drew Jones, Juan Senent, Mark Jesick, Juan Arrieta, Aline Zimmer, Eric Gustafson, Julie Bellerose, Thomas Pavlak, Mar Vaquero, Jeffrey Stuart, Gregory Whiffen, Paul Finlayson, Jon Sims and Eugene Bonfiglio.

New parking options coming up

By Mark Whalen

Dedication ceremonies for new structure set for Sept. 23



Many veteran JPLers may hardly believe it. After being in JPL's master plan for close to 50 years, a new parking structure is about to debut in JPL's West Arroyo lot.

The new structure will be dedicated in a ribbon-cutting ceremony Tuesday, Sept. 23. JPLers can access the structure starting Friday, Sept. 26.

The structure will be available to all JPL employees who currently do not have on-Lab parking, as well as affiliates and interns.

Security Operations Group Supervisor Jim Chaffee urged patience during the structure's first few days of operation.

"This is going to result in a complete shift in traffic patterns on Lab and, particularly since we have a lot of pedestrians, JPLers should be extra cautious," said Chaffee, who added that an enhanced presence of security officers would be on hand for assistance.

JPLers can access the structure from Windsor Road, as before for the East Lot. The access road from the east gate into the site has been widened as a dedicated access road to the new structure. A second option for drivers is to enter JPL's south gate, Chaffee said.

Drivers will be alerted at JPL's main checkpoint if the West Lot is full and will be diverted to the South Gate for parking structure access. Conversely, if the structure is full, drivers will head back toward the South Gate for West Lot parking.

The current shuttle bus service schedule to the East Lot will cease when the structure opens Sept. 26, said Chaffee. JPL Transportation is determining plans

for buses to run a continuous loop throughout JPL to and from the structure, he said.

The five-story, 900-foot parking structure will have 1,450 spaces. Parking stalls will be 9 by 18 feet, with a 25-foot-wide drive aisle. The structure will have three elevators.

To be able to park in the structure, you must have on orange (employee) or yellow (affiliate) hangtag. If you forget your

hangtag, the West Lot is the only option. New hangtags will soon be issued to those eligible.

The structure is an \$18 million NASA-funded Construction of Facilities project, designed and built by prime contractor Swinerton Builders.

For more information about the structure, please visit <https://psd.jpl.nasa.gov/site/parking>.



Arroyo Road will travel through the parking structure's first floor.

News Briefs



Ed Stone



Amy Mainzer

Lifetime achievement honors for Stone

Former JPL Director Ed Stone has been honored with a lifetime achievement award from the American Astronomical Society.

Stone, who since 1972 has served as project scientist for the Voyager missions to the planets, received the honor "for sustained and extraordinary contributions to America's space programs, including innovative planetary missions in support of unmanned exploration of the solar system," the society said.

The award is given every 10 years on the occasion of the society's anniversary. Previous recipients include former JPL Director William Pickering and rocket development pioneer Wernher von Braun.

Mainzer to serve on NASA board

JPL researcher and astrophysicist Amy Mainzer has been appointed to the Planetary Science Subcommittee of the NASA Advisory Council. Effective Sept. 1, she will serve a three-year term.

Mainzer joined JPL in 2003. She serves as deputy project scientist for the Wide-field Infrared Survey Explorer (WISE); principal investigator for NEO-WISE, a WISE enhancement that will facilitate solar system science, including discovery of new asteroids; and principal investigator for the Near Earth Object Camera, a proposed Discovery mission selected for technology development funding in 2011. Among her awards is the NASA Exceptional Scientific Achieve-

ment Medal (2012).

The NASA Advisory Council advises the agency's senior leadership on challenges and solutions for exploration.



Andrea Donnellan



Jonathan Jiang

Donnellan, Jiang will edit journals

JPL researchers Andrea Donnellan and Jonathan Jiang have been appointed editors of "Earth and Space Science," a new open-access journal of the American Geophysical Union.

The peer-reviewed journal (<http://publications.agu.org/journals/earth-and-space-science>) publishes articles and technical reports related to science disciplines. It is now accepting papers

for its inaugural issue, noted Donnellan, a geophysicist.

Jiang, a JPL senior research scientist, said the site welcomes high-quality, original research papers spanning all of the Earth, planetary and space sciences, including related fields in environmental science, geo and space-engineering, and biogeochemistry.



Goutam Chattopadhyay

Indian honor for Chattopadhyay

Goutam Chattopadhyay of JPL's Submillimeter-Wave Advanced Technology Group has been awarded a prestigious honor from the Institution of Electronics and Telecommunication Engineers, the engineering professional body in India.

Chattopadhyay received the Prof. S N Mitra Memorial Award for "seminal contributions to the area of terahertz science and technology and its implementation in radiometers, spectrometers, ultra-high speed communications and astrophysics, planetary science and Earth science instruments." The award is given for outstanding contributions and leadership roles in radio broadcast science and technology.

Chattopadhyay, a JPL principal engineer, is also a visiting associate at Caltech's Division of Physics, Mathematics and Astronomy.



Marco Velli

Velli named AGU fellow

JPL researcher Marco Velli of the Space and Astrophysical Plasmas Group has been named a fellow of the American Geophysical Union.

The honor is given to members who have made exceptional scientific contributions and attained acknowledged eminence in the Earth and space sciences.

A 10-year JPL employee, Velli's research focuses on space plasma physics and solar magnetic activity. He has taught mechanics, electromagnetism, astrophysics and plasma physics courses at the University of Florence's Department of Astronomy and Space Science.

The American Geophysical Union elected 62 fellows this year. They will be recognized at the organization's fall meeting in San Francisco.

Passings



Arvydas Vaisnys

Arvydas Vaisnys, 75, a retired technical group supervisor, died April 27.

Vaisnys joined JPL in 1962 and retired in 2008. He was instrumental in original research in diverse fields of telecommunications, including spacecraft telemetry systems (Voyager, Galileo, Mars Observer, Mars Global Surveyor, Mars Odyssey and others), digital audio broadcasting and mobile communications.

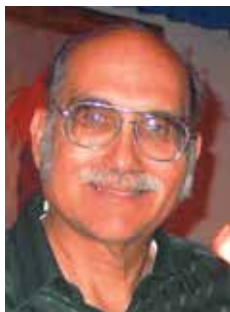
He is survived by his wife, Ona, and daughter Ruta.

Neil Herman, 80, a retired pioneer and leader of JPL radar science, died June 15.

Herman joined JPL in 1958. His first managerial post was the Flight Computers and Sequencers Section, followed by the Spacecraft Measurements Section. In the 1980s Herman led the Radar Science and Engineering Section; in the 1990s he managed the Spaceborne Imaging Radar Projects Section

before becoming deputy manager of the Shuttle Imaging Radar-C (SIR-C) Project. Herman later took the helm at the Shuttle Radar Topography Mission, which in 2000 produced the most accurate and complete global topographic map of Earth.

Herman is survived by his wife, Carole, three children and seven grandchildren. The family requests that contributions in Herman's memory be directed towards your favorite charity, the Children's Hospital of Los Angeles or the Stroke Recovery Center of Palm Springs.



Mark Cooper

Mark S. Cooper, 70, an engineer in the Parts Engineering and Reliability Office, died July 14.

Cooper had been with JPL since 2002. He is survived by children Benjamin and Karen, sister Merri-Ann, daughter-in-law Veronica, companion Robin Covey and grandchildren Abigail, Alexander, Benjamin II, Matthew and Sydney.

Services were held July 21 at Mount Sinai Cemetery in Simi Valley. The family requests consideration of donations in his name to the Leukemia & Lymphoma Society.

Retired engineer **Jack Rupe**, 94, died July 20.

Rupe joined JPL in 1949. He received NASA's Apollo Achievement Award and Exceptional Achievement Medal for his contribution to the perfection of Apollo rocket engines. He received a NASA Certificate of Recognition in 1976 for his work in hydrogen-enriched combustion. He also developed a system for extracting and then injecting hydrogen

gas into gasoline that dramatically increased mileage while reducing emissions in automobile engines.

Rupe is survived by daughters Jacqui and Barbara; sons Bret and Wade; 11 grandchildren and 12 great-grandchildren. A private memorial will be held at a later date. In lieu of flowers, the family requests consideration of donations in his name to the Disabled American Veterans.

Letters

On behalf of myself and family, we want to thank JPL for the beautiful plant sent in memory of the recent loss of our dear brother Dexter Quock on July 31. My sincere thanks to my JPL colleagues for their expressions of sympathy and condolences.

Magdalene Chang

We would like to thank JPL for the beautiful plant that was sent to us after the passing of our daughter. The concern shown by our JPL colleagues helped us to bear our loss.

Arvydas and Birute Kliore

I want to take this opportunity to thank my many friends in Property Accountability and throughout Section 272, Division 27 and the Lab for their kind words, cards, generosity and beautiful plant on the recent passing of my beloved mom. In times like these, you really come to appreciate the good folks here at JPL all the more.

Rory Carey

Retirees

The following employees retired in July: **William Weber**, 47 years, Section 108; **Neil Toy**, 38 years, Section 312F; **James Constantine**, 36 years, Section 2662; **Catherine Lemaster**, 35 years, Section 251; **Jeffrey Schroeder**, 35 years, Section 383C; **Mona Jasnow**, 34 years, Section 321; **John Tullius**, 32 years, Section 314D; **Cheryl Hillhouse**, 26 years, Section 901; **Edwin Upchurch**, 22 years, Section 393K; **Barbara Gaitley**, 18 years, Section 329N; **Burt Zhang**, 12 years, Section 3821; **Debbi Dachinger**, 11 years, Section 3914.

The following employees retired in August: **George Wells**, 45 years, Section 356E; **Pearline Johnson**, 43 years, Section 252D; **Johnny Kwok**, 35 years, Section 3000; **Robert Risher**, 30 years, Section 2111; **Farid Amoozegar**, 14 years, Section 332.



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Universe is published by the Office of Communications and Education of the Jet Propulsion Laboratory, 4800 Oak Grove Drive, Pasadena, CA 91109.