

NPS New Home for Giant Segmented-Mirror Space Telescope

By Barbara Honegger

The Naval Postgraduate School is the proud new home for the Segmented Mirror Space Telescope (SMT), designed and developed for the National Reconnaissance Office (NRO) as a technical demonstrator and experimental testbed for cutting-edge space imaging technologies.

The ribbon cutting for the 10-foot-diameter telescope, whose hexagonal mirrors unfold like the petals of a giant flower upon reaching orbit, was attended by NPS and NRO leadership, including the satellite reconnaissance agency's then Deputy Director and Commander of the Air Force Space Command Element Maj. Gen. Ellen Pawlikowski, and senior representatives from the aerospace industry, national laboratories and other academic institutions.

The new multi-million-dollar acquisition represents a quantum leap in the research and educational capabilities of NPS' Spacecraft Research and Design Center (SRDC), Department of Mechanical and Astronautical Engineering (MAE) and Space Systems Academic Group in the fields of high resolution adaptive optics, active vibration and jitter control, space system design and distributed satellite systems.

Pawlikowski keynoted a series of briefings on the technical aspects of the telescope, its history of acquisition by NPS, and plans for its use in teaching and research prior to the unveiling ceremony.

"It's a thrill to welcome the telescope here to NPS, which is the ideal place, as you're our future generation of space scientists and engineers," Pawlikowski told the audience of Space Systems Engineering and Space Systems Operations students in the Mechanical Engineering Auditorium. "NPS is the heart

and soul of what it's all about – having science and technology research and education all in one place.

"At NRO, we look to the Naval Postgraduate School to help us develop new technologies and integrate them in new ways to meet our ever-changing mission," Pawlikowski added. "This telescope being here represents the next phase of your helping us to become more flexible. It's a great accomplishment to successfully move something of this scale and complexity

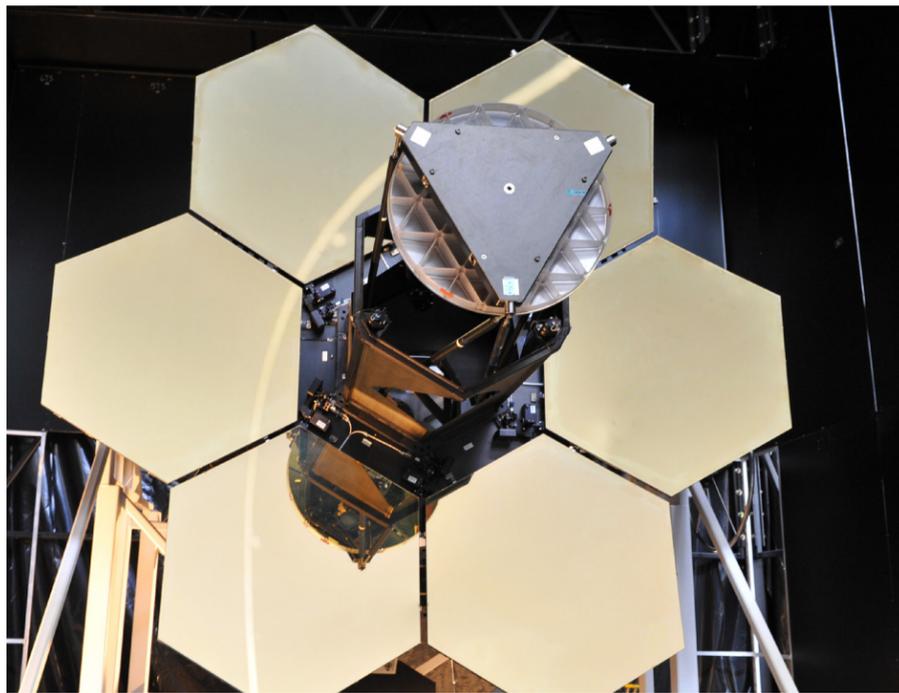
all the way across the country, and I congratulate you all on a great success."

"The Segmented Mirror Telescope is a national treasure and the crown jewel of the Spacecraft Research and Design Center that will give our faculty and students unique and unprecedented experience in the design, analysis and testing of the most advanced space systems," said SRDC Director and MAE Distinguished Prof. Brij Agrawal, who oversaw the four-year effort that brought the

high-tech system 3,000 miles from Rochester, N.Y. to Monterey. "This was a huge project that required many highly skilled people from NPS, NRO and ITT [International Telephone and Telegraph] coming together and working like clockwork to make it happen. It also opens up a huge potential for collaborative research and educational ventures with other academic institutions, the national labs and the aerospace industry."

"It took hardheadedness and a lot of perseverance to get the telescope to the Naval Postgraduate School," said NRO's SMT Program Manager Lt. Col. Andy Adams. "It was very important that it not get boxed up and left to gather dust in a warehouse some where, but be where S&T [science and technology] faculty and students can really use it for education and research. We looked at all the places where it could go, and decided NPS was the ideal place for research on the military applications of adaptive optics over the next 10 to 20 years."

"These are exciting times at the Naval Postgraduate School," Executive Vice President and Provost Leonard Ferrari told the Space Systems students and VIP attendees at a briefing before the ribbon cutting. "Today, the National Reconnaissance Office is placing the most advanced and innovative of tools in the hands of military students who have come from, and will be returning to, operational assignments. This kind of facility takes NPS to a whole new level in the breadth and scope of research that can happen here, and for collaboration with the rest of DoD and the entire defense and national security community. It's a really great time in our history, and it makes for a great 100th birthday present for the School."



The National Reconnaissance Office's Segmented Mirror Space Telescope – a state-of-the-art experimental testbed for space-imaging education and research – was officially received by its new home, the NPS Spacecraft Research and Design Center (SRDC), early this year and represents a quantum leap in the research and educational capabilities of the SRDC.

FAOweb Launches for Warrior-Diplomats Worldwide

By Dale Kuska

Foreign Area Officers (FAOs) across all of the services now have immediate access to educational resources and community networking exactly where they need it, in the field, thanks to the recent launch of FAOweb.

Created by NPS' Joint FAO Skill Sustainment Pilot Program (JFSSPP) office, with technical development by Information Technology and Communications Services (IT-ACS), FAOweb offers myriad professional networking and cultural education programs previously unavailable to this rapidly expanding community of warrior-diplomats.

According to Dr. Tristan Mabry, Executive Director of the JFSSPP, FAOweb is one part of a comprehensive FAO educational program underway at NPS. Through JFSSPP's in-residence and in-country educational programs, FAOs gain a deeper understanding of the region they operate in. But often they need immediate access to resources and knowledge while operating in country.

"This is what FAOweb is all about," Mabry said, "providing critical resources to Foreign Area Officers in the field."

Some of FAOweb's primary customers were on campus last week for several days of detailed courses as part of the Joint FAO Skill Sustainment Pilot Program. While the courses offer in-depth cultural education for these Foreign Area Officers, FAOweb provides immediate access to a wide variety of educational and community-building resources where they need it most, in the field.

Foreign Area Officers are DoD service members who serve overseas as defense attachés, security assistance officers and intelligence analysts. They often serve in embassies alongside State Department diplomats and provide critical guidance on regional, cultural and linguistic knowledge to U.S. officials working in the country. And according to a seasoned FAO, this new Web portal fills a critical gap.

"FAOweb is a breakthrough. It is exactly the right catalyst to create a Joint community for Foreign Area Officers," said Army Col. Mark Chakwin, U.S. Army Foreign Area Officer Chair and NPS' senior FAO. "At last, all FAOs from all services in all duty assignments, anywhere, can access our professional world – for language, for professional exchanges, for education, or even for fun," he continued.

"We are global and operate in foreign cultures to shape or support U.S. defense efforts. We need a common digital space to share best practices, to train at different paces, and to network our profession. Until now, FAO skills and knowledge were acquired only through long years in diverse assignments, this will raise the over-

all awareness and skills level of FAOs and we can start creating a common operating picture of our entire career field," added Chakwin.

From the IT development team's perspective, FAOweb provided a unique aspect to the work ITACS typically provides while supporting the educational quality at NPS.

"In IT's role of supporting the educational mission of NPS, we often see the rewards for our efforts on campus, but are rarely in the position to see the benefits of our services with officers operating out in the field," said Jon Russell, NPS Director of Academic and Media Systems. "FAOweb was an exciting contrast to this. We were able to create something that provided immediate impact to people performing critical work in some of the world's most tumultuous regions. Before we even launched, FAOs operating in Afghanistan and Pakistan contacted us, imploring us to launch their portion of the site early. We were fortunately able to do that, and being able to support these officers was very satisfying for our team."



IN BRIEF

- ◆ Preparations are underway for the second visit in the WASC accreditation process. Following the successful first visit in March 2009, faculty, staff and administrators from across the campus have been working to get ready for the Educational Effectiveness visit in October 2010. The visit will again be structured around three themes – strategic planning, educational effectiveness and support for the academic enterprise. Committees for each of these themes are led by, respectively, Dr. Rob Dell, Dr. Doug Moses and Ms. Colleen Nickles. The activities of the committees have been regularly briefed to the Executive Council, the Strategic Planning Council and Deans/Chairs.
- ◆ A Memorandum issued by the Under Secretary of the Navy in mid-February noted that in the past year, the Department of the Navy (DoN) has experienced repeated inadvertent releases of personally identifiable information (PII) for Navy and Marine Corps military and civilian personnel and their dependents, the most common of which was the unauthorized release of personal Social Security Numbers (SSNs). The continued loss of this data directly impacts the morale, security and financial well-being of personnel; therefore, a DoN-wide plan is being implemented to reduce the collection and use of SSNs, to accelerate the implementation of data-at-rest (DAR) encryption software and to employ the use of new software tools to restrict the use and display of sensitive privacy information. Stricter procedures for the disposal and accountability of all electronic media capable of PII data storage, and training of personnel who routinely handle PII are also being enhanced. Leadership has been asked to take immediate, corrective action to mitigate further data losses and to ensure that DoN guidance and policies are consistently and diligently followed.
- ◆ With the pilot change to the Academic Calendar now underway, there are now several opportunities for educational enrichment activities beyond the classroom. The revised academic calendar places NPS' academic schedule more aligned with other universities that employ a quarter system, and the campus has embraced the opportunity to offer various scholarly activities during this first Enrichment Week, March 22-26. For a list of available opportunities, check out <http://intranet.nps.edu/Academics/EnrichWeek/index.html>.

Message From Dr. Christine Flaska
Vice President for Information Resources/CIO



The Naval Postgraduate School is celebrating its ongoing strategic partnership with the Corporation for Education Network Initiatives in California (CENIC) by participating in the CENIC 2010 Annual Conference from March 8-10, 2010, held at the Hyatt Hotel in Monterey. CENIC designs, implements and operates CalREN, the California Research and Education Network, a high-bandwidth, high-capacity network that is specifically designed to meet the unique requirements of California's education and research communities.

Not only does CENIC connect the vast majority of the state's K-20 educational institutions, it also provides tiered levels of network access providing advanced networking capabilities to research institutions such as the University of California institutions, Cal Tech, USC and Stanford. CENIC also facilitates collaboration in education and research by providing connectivity to non-California institutions and industry research organizations with which our researchers and educators are engaged. CalREN provides peering to global high-speed networks as

well, crucial to our work with researchers around the world. Governed by its member institutions, representatives also contribute expertise through their participation in various committees designed to support the continued evolution of the network as technology advances.

NPS support for the CENIC Conference includes breakout sessions led by Drs. Alex Bordetsky, Simson Garfinkel, and Tristan Mabry and Mr. Jon Russell, who will speak on Testbed for Tactical Networking and International Collaboration in Maritime Interdiction Operations, Fast-Disk Analysis with Random Sampling, and Building the FAOweb, respectively.

On Monday, March 8, the campus will host the participants of the CENIC conference with a special afternoon session featuring a tour of the MOVES Institute, and an afternoon of demonstrations and presentations in the MAE Auditorium, followed by a reception and poster session on the Quarterdeck. Dr. Karl van Bibber will provide the plenary address, and presentations will be given by Dr. Paul Sanchez on Data Farming; Jeff Weekley and Dr. Jeff Haferman on using RenderMan™ on the Hamming supercomputer; Dr. Donald Brutzman and Lt. Dale Tourtelotte on the X3D Earth project; and Laurin Herr, President of CineGrid, and Jeff Weekley on their highly-successful and innovative 4K streaming event at the CineGrid 2009 Workshop.

Industry partners Cisco and Brocade will sponsor the reception on the Quarterdeck, with opening remarks by Executive Vice President and Provost Ferrari. The Research Office will showcase a variety of posters highlighting NPS re-

search efforts accompanied by neighboring higher education and research institutions such as the University of California Santa Cruz, California State University Monterey Bay, the Monterey Institute of International Studies, Monterey Peninsula College, Defense Language Institute and Monterey Bay Aquarium Research Institute. We are all proud to participate in the CENIC conference and to showcase the many strengths of our higher education and research institutions. During this, our Centennial year, we at NPS are especially glad to have this opportunity to have CENIC visitors to our campus.

Vital partnerships, such as those with organizations like CENIC, enhance the opportunities available to NPS researchers to not only meet the university mission, but to advance it. The success of those external partnerships has its roots in the collaborations forged and fostered within the campus community and throughout our region. An event like the planned afternoon at NPS for CENIC attendees could not happen without the support of campus leaders, the willingness of faculty to share their time, talent and expertise, the cooperation of the Research Office, and the enthusiastic participation of our neighboring institutions. Just as CENIC provides the cyber-infrastructure that makes possible NPS education and research, our other strategic partnerships make many other goals achievable demonstrating that collaboration is a profound resource multiplier.

If you are interested in participating in the CENIC conference, please contact Michele Merenbloom. The program for *Full Speed Ahead*, the 2010 CENIC Annual Conference, is provided at <http://cenic2010.cenic.org>.

Faculty Notes

Routledge Press recently published the paperback and Kindle versions of *Military Advising and Assistance: From Mercenaries to Privatization, 1815-2007*. This was edited by **Donald Stoker** of the Naval Postgraduate School's Naval War College faculty, and includes articles by Doug Porch of the National Security Affairs Department, as well as a number of former NPS students.

Associate Professor Rene G. Rendon of GSBPP participated as a panel member at the Institute for Supply Management's Hispanic Supply Management Summit in San Diego in early February. The theme of the conference was *Alimentando la Recuperación Económica - Latinos Mejorando la Cadena de Suministro*. Rendon's panel featured Executive Perspectives on Supply Chain Management.

NPS Celebrates 15 Years With HOPE

By Dale Kuska

Thanks to a little-known federal program, HOPE Services was awarded a contract in 1995 to provide janitorial services to the Naval Postgraduate School. Now 15 years later, HOPE and NPS celebrate a partnership that is serving more than 20 people with developmental disabilities from Monterey and Salinas. The result has been much more than just clean facilities, it has been long-standing employment for people who often become marginalized, despite their capabilities.

HOPE Client and NPS janitor, Chris Rubrecht, has been with the university since the contract's inception 15 years ago. Rubrecht says that one of the biggest benefits is that he likes the people

he works with and they are good to him. "They have changed my life. I have a better job than before with more hours and more money," Rubrecht added that this allows him to be more independent.

Another HOPE Client, Dylan Copeland, said, "This job has helped me to become more responsible. I am part of a team. My job is keeping the child development center area clean. I like my job and I like coming to it every day." Copeland has been employed at NPS for seven years.

"HOPE Services has been an outstanding partner for the Naval Postgraduate School! The HOPE clients take tremendous pride in their work, and are very responsive to the needs of this great university," said Pete Dausen, NPS Base Director and Director of Naval Support Detachment Monterey. "Commensurate with the stand-up of the Naval Postgraduate School as a Navy Flagship

Institution, we have seen a real re-dedication of HOPE's custodial efforts. It is truly special to have HOPE Services here on the job, and for us to be able to participate in this fine federal program."

"Employers like the Naval Postgraduate School bring these programs full-circle from concept to reality," says HOPE Services President and CEO Joe Campbell. "The school has been an outstanding leader in helping our clients achieve full inclusion in their communities. Their partnership promotes quality of life for our clients and enriches the fabric of our community by allowing people with disabilities to lead productive and meaningful lives," says Campbell.

During the average workweek, HOPE Clients assist with cleaning about one million square feet of office space, classrooms, and common areas on the NPS campus. Services provided include mopping, vacuuming, dusting, carpet cleaning, stripping and waxing floors and trash/recycling services.

Celebrating its 15-year anniversary, the contract between HOPE Services and NPS employs more than 20 people with developmental disabilities from Monterey and Salinas, including Dylan Copeland, left, and Chris Rubrecht, right.



CALENDAR

March 1-5

Dr. Brian Maher
President, Joint Special Operations University
SOF Education Council
POC SOF Chair Ext. 3799

March 2-3

Ms. Gladys Commons
Assistant Secretary of the Navy (Financial Management and Comptroller)
Site visit
POC Protocol Ext. 2048

March 4

Gen. Stephen Lorenz
Commander Air Education and Training (USAF)
Secretary of the Navy Guest Lecture
POC Protocol Ext. 2048

March 8

Corporation for Education Network Initiatives in California
2010 Annual Conference
POC Joan Ackerman Ext. 3078

March 16

Winter Quarter Awards Ceremony
POC Sonya Solomon Ext. 2075

March 17-19

General Apichart Penkitti
Permanent Secretary General, Ministry of Defense Thailand
NPS Hall of Fame Induction
POC Vickie Hoy Ext. 7748

March 18-24

Rear Admiral Robin R. Braun
Director, Total Force Management (OPNAVN2/N6)
IP Senior Officer Course/Naval Intelligence Business Executive Course
POC Protocol Ext. 2048

March 26

Honorable Juan Garcia
Assistant Secretary of the Navy (Manpower & Reserve Affairs)
Keynote Speaker: Winter Quarter Graduation
POC Sonya Solomon Ext. 2075

HISTORICAL HIGHLIGHTS

NPS faculty and student research projects were center stage in the 1987 publication *Naval Research Reviews* by the Office of Naval Research.



With several contributions by NPS faculty, the quarterly journal also profiled computer science professor Richard W. Hamming, who had been honored by the Institute for Electrical and Electronics Engineers (IEEE) through the establishment of the Richard W. Hamming Medal.

Hamming was the first NPS professor to have a major scientific medal named in his honor. Last year, ITACS unveiled its new supercomputer, named Hamming, to recognize the world-renowned mathematician and computer science pioneer.

Historical Highlights are provided by the Dudley Knox Library.