Orbiter
November 2015

Awards and Recognitions, December 2015

by Matthew Kivel
November 30, 2015

Aerospace employees frequently earn recognition for their professional accomplishments. This Orbiter feature will acknowledge those honors and awards, including the publication of books. To nominate someone for consideration in this section, send details of the award in a timely fashion to orbiter@aero.org, or contact Matt Kivel at matthew.k.kivel@aero.org. Include a photo related to the award, if available.

Dr. William Ailor

Dr. William Ailor, distinguished engineer, Vehicle Systems Division, has been selected as a member of the North Carolina State University Mechanical and Aerospace Engineering Hall of Fame.

The MAE Hall of Fame was established to inspire current students and to celebrate the accomplishments of the extraordinary graduates who have used their education to excel in a profession, career, or service. Ailor's nomination is based on professional and service achievement, entrepreneurship, and contributions to professional societies.

Charles Gustafson

Charles Gustafson, senior vice president, Engineering and Technology Group, has been awarded the Chief of Staff of the Air Force Award for Exceptional Public Service. Gustafson was recognized for the leadership roles he has taken on and the substantial added responsibilities that have come along with his efforts as part of the U.S. Air Force Scientific Advisory Board.

The U.S. Air Force Scientific Advisory Board is a federal advisory committee that provides independent advice on matters of science and technology relating to the Air Force mission, reporting directly to the Secretary of the Air Force and Chief of Staff of the Air Force.

From left, Cheryl Dematteis, Charles Gustafson, Travis Driskell, and Kevin Gaab. (Photo: Eric Hamburg)

Travis Driskell

The 2015 Wintroub Fellowship has been awarded to Travis Driskell, Advanced Degree Fellow, Photonics Technology.

The Wintroub Fellowship, established through a gift from the family of longtime Aerospace employee Herb Wintroub, provides financial assistance to employees in the corporate fellowship program who are working on advanced degrees in science and engineering.

Since joining the Aerospace Photonics Department, Driskell has contributed significantly to several projects involving atomic clocks and semiconductor photonics.

Dr. James Womack

Dr. James Womack, director, Reliability and Statistics Department, Systems Engineering Division, has received the NASA

Engineering and Safety Center Engineering Excellence Award. The award was presented during a ceremony at Kennedy Space Center on Nov. 3.

Womack was honored for exceptional statistical analysis support to the Multi-Purpose Crew Vehicle Avcoat team, leading to the identification of causes of critical issues during EFT-1 heatshield production.

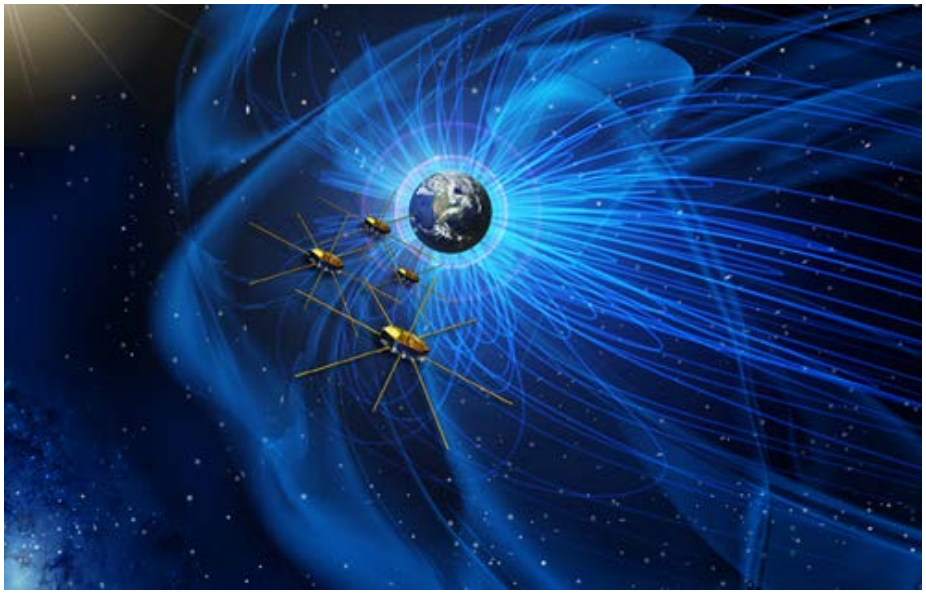
Sonia Henry

Sonia Henry, associate director, Acquisition Support and Information Department, received the 2015 Special Recognition Award at the 20th Annual Women of Color STEM Conference, which was held from Oct. 15 to Oct. 17 in Detroit, Michigan.

The Women of Color STEM Conference brings together industry professionals, students, recruiters and corporate leaders to discuss and learn about the issues facing women – both past, present, and future – in science, technology, engineering, and math (STEM) fields.

Aerospace Getting Huge Amounts of Data from FEEPS

by Lindsay Chaney
November 10, 2015



Artist's rendering of the satellites with the FEEPS instruments aboard. (Photo: NASA)

Aerospace's FEEPS instruments (Fly's Eye Energetic Particle Spectrometer), recently began transmitting data for scientists to analyze.

The eight FEEPS instruments and their mission were originally proposed in 2005 and, after some program delays, were launched from Cape Canaveral, Florida earlier this year as part of NASA's Magnetospheric Multiscale (MMS) mission.

The primary job of FEEPS is to obtain nearly instantaneous all-sky measurements of how many electrons of different energies and different arrival directions are present. The four satellites containing the FEEPS instruments are flying in a tetrahedral formation around an elliptical orbit to investigate a phenomenon called magnetic reconnection in the Earth's magnetosphere.

"We're getting really huge amounts of data," said lead investigator Dr. J. Bernard Blake, Aerospace distinguished scientist in the Space Science Applications Laboratory.

Blake explained that analyzing the data is complicated because FEEPS data must be melded with data from other sensors on the satellites in order to produce measurements that will be scientifically useful.

Magnetic reconnection is a little-understood phenomenon in which magnetic fields disconnect and reconnect, rapidly transferring energy between the fields and the ambient charged particles. It is thought to be a universal process, occurring in the atmosphere of the sun and other stars, in the vicinity of black holes and neutron stars, as well as near the Earth. Magnetic reconnection is also an important driver of space weather events that affect space systems, navigation and communication networks, and electrical power grids.

On the sun-side of Earth, reconnection can link the sun's magnetic field lines to Earth's magnetic field lines, allowing material and energy from the sun to funnel into Earth's magnetic environment. On the night side of Earth, reconnection is believed to help trigger aurora, also known as the Northern or Southern lights. Reconnection occurs when magnetic field lines cross and release a gigantic burst of energy. Due to the limits of observing instruments, magnetic reconnection can only be studied in our solar system and it is most accessible in near-Earth space, where MMS will study it.

No Scare in Penultimate GPS IIF Launch

by Randy Kendall
November 02, 2015

An Atlas V launches the GPS IIF-11 satellite from Cape Canaveral Air Force Station on Saturday, Oct. 31. (Photo: United Launch Alliance, LLC)

Trick or treat? They say that launch is the scariest event in the life of a spacecraft, but there was nothing scary about this Halloween launch.

The GPS IIF-11 satellite was treated to a very smooth countdown and a very accurate orbit injection. After a one-day delay to resolve an issue with a ground system valve that activates the acoustic suppression water system, the Atlas V 401 vehicle lifted off right at the beginning of the window Saturday at 12:13 p.m. ET (9:13 a.m. PT).

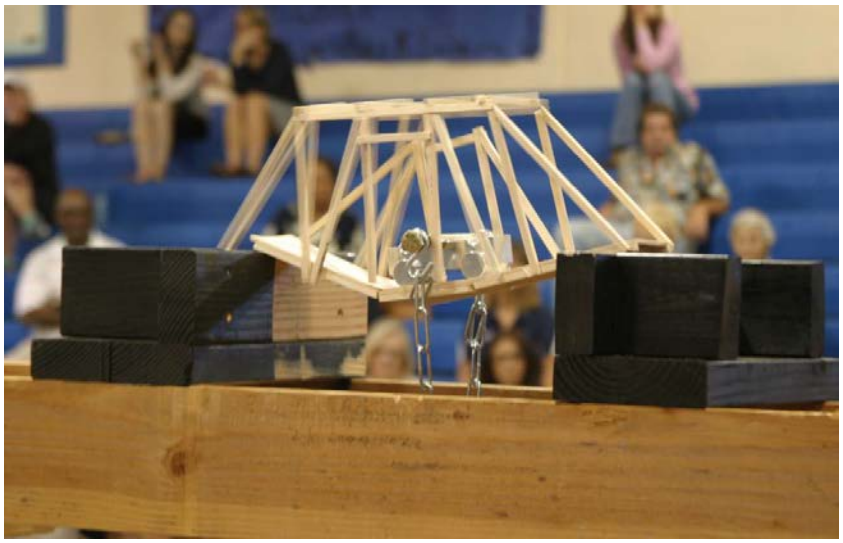
Congratulations to both the spacecraft and launch teams and special thanks to the Atlas team, which executed a perfect launch for the third time in one month, following the Morelos-3 commercial launch on Oct. 2 and the NROL-55 launch from Vandenberg AFB on Oct. 8.

This was the 59th Atlas V launch, 102nd consecutive successful United Launch Alliance launch, and the penultimate 11th launch of a GPS Block IIF satellite.

Randy Kendall is Aerospace vice president of Space Launch Operations.

Bridge-Building Competition Spurs STEM Summit

by Bryan K Tsunoda
November 18, 2015



A competition bridge is on the verge of failing under load. (Photo: Bryan Tsunoda)

Forty eager middle school students arrived early Saturday morning, Nov. 14, at St. Bernard High School in Playa del Rey to compete in the second STEM Summit. This annual event to promote science, technology, engineering, and math (STEM) coincides with the school's open house and connects their students with the some of the brightest 8th-grade students in the area.

The main feature of this year's STEM Summit was a competition to build a bridge made of balsa wood that could hold up the greatest amount of weight. Each team of middle school students was joined by two or three high school mentors who gave them instruction about bridge structural design.

Aerospace engineers Henry Bazak and Luke Chiang acted as technical consultants for six of the ten teams. Monica Maynard, Aerospace STEM coordinator, was also on hand to provide assistance and to answer questions.

Materials provided to each team included: balsa wood, super glue, razor knives, rulers, protractors, pencils, graph paper, foam board and pins, and wax paper. Two hours

were allocated to the bridge-building process and each bridge would be tested using a load-creating device.

Aerospace senior project engineer Henry Bazak provides advice to one of the bridge-building teams. (Photo: Bryan Tsunoda)

Aerospace board of trustees member retired Air Force Gen. Kevin Chilton, who is also a former NASA astronaut; Ellen Beatty, vice president and chief financial officer; and Dr. Willie Krenz, vice president and chief information officer, were on hand to walk through the classrooms and to support the students' efforts.

"Leadership is a valuable skill to learn and … having freshman teach … is quite admirable of St. Bernard High School," Chilton said to the group of students.

Each team spent a significant amount of time designing its bridge. Paper and pencils were used instead of computers. Protractors helped to determine the angles necessary for the bridge trestle. The use of quick-drying super glue required each team to be careful about measuring and assembling.

The event culminated in the load-bearing test, which was emceed by Chilton. Prior to the test of each team's bridge, Chilton asked questions of each student to learn about their future aspirations. When one student responded that her goal was to pursue political science, Chilton responded, "I was originally interested in pursuing geology. It wasn't until I took my first engineering course in college that I realized how much I enjoyed engineering."

Each bridge was placed under a gradually increasing load until the bridge splintered and became structurally unsound. The designs varied widely. Some of the teams used long verticals and diagonals to create a tall bridge. Others were more compact and slightly resembled an overhead railroad bridge. The winning bridge withstood eighty pounds of load while others resulted in what looked like an explosion of splintered fragments.

Medals were awarded to the teams that finished first, second, and third place.

After the event was over, Chiang was talking to two of his students, explaining how the load acts on components of the bridge after part of the structure fails. Despite only being an Aerospace employee for a month, Chiang sought out this opportunity, he said, because he wants to positively contribute to society. "I enjoy doing STEM in my spare time. It's what makes me happy."

CDC Marks 20th Anniversary with Awards, Open House

by Kimberly Locke
November 20, 2015

The Concept Design Center (CDC), an elaborate network of computers and design software used for space and ground system conceptual design, celebrated its 20th anniversary Tuesday, Nov. 17, with more than 350 studies to its credit.

The milestone was commemorated by a dual celebration at Aerospace offices in Chantilly, Virginia, and El Segundo, California, as employees integral to the CDC's past and present were lauded for their efforts.

Rob Stevens, director, Model Based Systems Engineering Office, which includes the CDC, welcomed attendees to the event. "It's fascinating how you can take one part of a system, tweak it, and then see how that change ripples through the entire system," said Stevens. "That's what this center enables us to do," he added.

He then touched on the three components that make up the CDC, located in the basement of the

Allan Cohen, left, and David Lussier received CDC awards at the Chantilly event. (Photo: Kelly Hart)

Lauritsen Library in El Segundo — the people, place, and process. “Of these three elements, it’s the people who are the key ingredient.”

Stevens also talked about the close relationship between the CDC and the corporation’s Engineering and Technology Group (ETG). “We can reach out and touch just about any subject matter expert we need throughout ETG,” he said.

These experts cover such areas as architecture design and analysis, launch vehicle design and integration, satellite design and orbital systems, systems engineering and architecting, and guidance and control.
The center has adapted its tools and processes to address three emerging needs: small satellite design performance, existing spacecraft system modeling, and concept design rapid turnaround, explained Stevens. “The CDC eliminates holes in your thinking and helps ferret out the blind spots,” he added.

CDC anniversary coffee mug. (Photo: Walt Sturrock)

Todd Nygren, general manager, Systems Engineering Division, ETG, also welcomed those on hand and thanked the team that coordinated and implemented the celebration as well as the open house. “What makes the CDC special is not just the tool. The CDC is made up of people, expertise, and the many different personalities that come together to create diverse and highly credible solutions,” said Nygren.

Current and former CDC employees were then recognized with a plaque for their efforts in at least one of the following four categories: Sponsors Award, Founders Award, Leads Award, and Above and Beyond Award. Current CDC employees also received an anniversary coffee mug.


CDC history display in the Lauritsen Library. (Photo: Walt Sturrock)

CDC’s customers include the Air Force Space and Missile Systems Center, Air Force Research Laboratory, Jet Propulsion Laboratory, National Aeronautics and Space Administration, and the National Oceanic and Atmospheric Administration. Some of the programs that have benefitted from CDC studies include the Air Force Satellite Control Network, Communication/Navigation Outages Forecasting System, Geostationary Operational Environmental Satellite, and the Global Positioning System.

A reception followed both the East and West Coast awards ceremonies, complete with an array of donuts. After all, it’s estimated that during the past 20 years, the CDC team has consumed more than 10,000 donuts. It was only fitting that donuts be a part of the celebration.

Additionally, the center was open to all and displays of various writeups in the corporation’s employee newsletter Orbiter and Crosslink magazine along with various photographs and reports were showcased in the library.

For a complete listing of all those recognized, click here.

Austin Says STEM Needs a Better Sales Pitch

November 03, 2015

In an address to students and faculty at Clarkson University in Potsdam, New York, recently, Dr. Wanda Austin provided statistics showing that STEM jobs – science, technology, engineering, and math – are expected to have strong growth in the coming years and pay 70 percent more than the average job in this country.

“With strong wages, and tremendous growth potential, the question remains: why do we even need to motivate our young people to take an interest in STEM? Shouldn’t STEM sell itself,” she asked. “In America it is clear that we celebrate our sports and entertainment heroes at a greater level than we do our STEM professionals.

“Simply put, we do a bad job of marketing science and a great job of marketing sports in this country,” Austin said.

Austin noted: “As young people, when we think of becoming athletes we think of glory, sponsorships, and fame. When we think of STEM, we think of difficult equations, confusing lectures, and endless study sessions. We need to change the STEM sales pitch.”

Dr. Wanda Austin talks about how to make STEM interesting at a Clarkson University speech. (Photo: Clarkson University/ Ting-Li Wang)

Austin suggested that educators and those working in scientific fields need to better communicate the excitement, wonder, and connection to everyday activities of STEM work. It isn’t enough to let students play video games as a reward for finishing their homework. Designing a video game should be part of the homework, she said.

She also proposed that space was a great way to engage young people with STEM concepts, pointing out that the movie “The Martian” was a perfect advertisement for STEM professions and made STEM and space compelling, relatable, and very exciting.

Austin’s presentation was part of Clarkson’s New Horizons in Engineering Distinguished Lectureship Series.

Click here to see a video of Dr. Austin’s speech.

Bullett Promoted to Principal Engineer

November 20, 2015

Deborah Bullett has been promoted to principal engineer, National Systems Group (NSG). In this position, Bullett is assisting the senior vice president in formulating NSG business strategies, compiling NSG inputs in response to customer and corporate actions, and writing and coordinating corporate reporting.

She is also monitoring legislative activities, organizational policy changes, and national level technical decisions that impact support to the intelligence community and Aerospace.

Bullett joined Aerospace in 2004 as a senior project engineer in the NSG program office. Since 2010, she has provided direct technical support involving signal intelligence for a national security customer.

Bullett earned a bachelor of arts in mathematics and economics degree from Sweet Briar College and a master of science in electrical engineering with a concentration in computer science from George Washington University.

Deborah Bullett

Eastman Selected Principal Engineer

November 02, 2015

Margherita Eastman

Margherita Eastman has been selected as principal engineer, Software Engineering Subdivision (SES), Computers and Software Division, Engineering and Technology Group (ETG). In her new position, Eastman is responsible for providing leadership to the growing East Coast-SES team by mentoring and leading several projects for Aerospace customers.

Eastman joined the corporation in 1998 as an engineering specialist in ETG. Her most recent assignment was principal director in the Systems Engineering and Launch Division.

Prior to joining Aerospace, Eastman worked for the Central Intelligence Agency and the Naval Research Laboratory developing ground systems.

She earned a bachelor of science degree in electrical engineering from Pennsylvania State University.

Aerospace Pays Tribute to Veterans and Diversity

November 05, 2015

David Mayo gives a poignant, lone-trumpet rendition of Taps to close the Chantilly veterans tribute. (Photo: Kelly Hart)

Programs to honor veterans and diversity were held at Aerospace offices in Chantilly and El Segundo this week.

On Wednesday, Nov. 4, Aerospace Military Veterans held their 15th annual tribute to veterans in the Gambit Auditorium of the Aerospace Chantilly Campus. The program featured Bernard “Barney” Nolan, a World War II B-17 and B-24 bomber pilot, who described his experiences flying 33 combat missions over Europe.

The El Segundo program on Thursday, Nov. 5, featured a talk by retired Air Force Col. Thomas Fitzgerald, acting executive director of the Space and Missile Systems Center. He described growing up during an era when his part-Cherokee father gave him the advice to never let anyone know about his Native American heritage. The event was cosponsored by the Aerospace American-Indian and Alaskan-Native Council and Aerospace Military Veterans.

Keynote speaker Thomas Fitzgerald holds a photo of his father at the El Segundo veterans event. (Photo: Eric Hamburg)

November 2015 Obituaries

by Elaine Young
November 01, 2015

Sincere sympathy is extended to the families of:

James Benning, director of security and safety, hired July 6, 1960, retired Jan. 01, 1987, died Sept. 22, 2015.
Alfred Bluntschli, member of the administrative staff, hired Aug. 27, 1962, retired July 01, 1990, died July 04, 2015.
Louise Buck, office technical support, hired Jan. 29, 1962, retired Feb. 1, 1989, died Oct. 6, 2015.
James Egan, principal director, hired March, 30, 1971, retired Oct 1, 1986, died Aug.28, 2015.
Richard Elet, member of technical staff, hired Sept. 21, 1987, retired July 1, 2013, died Sept. 30, 2015.
Frances Hanson, office support, hired Sept. 15, 1980, retired Nov. 1, 1989, died Oct. 9, 2015.
Susan Lee, office support, hired April 17, 1978, retired April 1, 1986, died Sept. 15, 2015.
Claude Spotwell, senior clerk, hired May 21, 1973, retired Jan 1, 1983, died, Oct. 12, 2015.
Edna Weathers, senior clerk, hired March 6, 1979, retired Sept. 1, 1995, died Oct. 20, 2015.
Jean Wingard, office of technical support, hired July 7, 1964, retired Aug. 1, 1984, died Sept. 30, 2015.
Thelma Thiede, office of technical support, hired Jan. 02, 1961, retired Oct. 1, 1988, died Sept. 26, 2015.

To notify Aerospace of a death and have it included in the Orbiter, please contact Cynthia Johnson in Human Resources at 310-336-5806.

November 2015 Notes

by Elaine Young
November 01, 2015

Notes of appreciation to fellow employees and Aerospace for thoughtfulness and sympathy have been received from:

Kathleen Hoke, on the recent passing of her father-in-law, Charles Hoke.
Terri Davis, on the recent passing of her sister, Brenda Horner.

To submit a note of appreciation to Aerospace, please contact Valerie Jackson in Human Resources at 310-336-0891.

November 2015 Anniversaries

by Elaine Young
November 02, 2015

5 Years

Engineering and Technology Group

Adrian Sun, Chester Woodson, Sallie Gregor

Space Systems Group

Alan Rowland, Jeffery Cox, Kenneth Harris, Navneet Mezcciani, Robert Erickson, Steven Callaghan

Office of the General Counsel

Sandra Kellenberger

Program Assessments

Howard Mitchell

10 Years

Engineering and Technology Group

Dean Bucher, Eric McDonald, Robert Crawford

Enterprise Information Services

Wing Hsieh

Operations and Support Group

Monica Miller

Space Systems Group

Keith Bankey, Kenneth Girardi, Michael Dalziel

Systems Planning, Engineering, & Quality

Kevin Wilson

Vaeros

Russell Persinger

15 Years

Engineering and Technology Group

Kendricks Behring II, Scot Osburn,

Operations and Support Group

Jean Baer, Ricky Nettles

Systems Planning, Engineering, & Quality

Barbara Braun, Michael O’Brien

25 Years

Engineering and Technology Group

Daniel Byrne

Systems Planning, Engineering, & Quality

Arthur Menichiello

30 Years

Engineering and Technology Group

Lisa Wintroub

Enterprise Information Services

Maryann Trozzo, Maxie Asato

35 Years

Engineering and Technology Group

Rodney Morehead

Space Systems Group

Robert Abernathy