



RESEARCH & EDUCATION AFFILIATES NEWSLETTER

Fall | October-December 2013

CSF REM Affiliates,

We are excited to launch our new REM Affiliates program! Thank you for your patience as we worked with our [Suborbital Applications Researchers Group](#) to better serve your organization. Everyone should have received an email regarding the new REM Affiliates program; please contact Sirisha at sirisha@commercialspaceflight.org if you haven't.

In addition to these quarterly newsletters, we plan to have quarterly calls with the Affiliates and are aiming to have the first one in November. As we progress with the program, your feedback is very important to us. Please let us know if there is any thing you would like to see added to the program, or what items we can improve to serve our REM Affiliates better. Our upcoming events section in this newsletter has conferences that CSF staff will be attending. Please reach out to us if you will be attending as well. We are very pleased to have you all on board at this exciting time in the industry!

Sincerely,

EDUCATION NEWS AND CONTESTS

[NASA's Fifth Annual Robotic Mining Competition](#)

NASA has launched their 2014 Robotic Mining Competition, with a new twist, whereas previous contestants focused on the robotic mining of the lunar surface, this year's contestants will focus on methods of mining asteroids and Mars. Students will need to design and build a mining robot that can traverse a simulated Martian chaotic terrain, excavate Martian regolith and deposit the regolith into a Collector Bin within 10 minutes.

[SARG Ambassador](#)

Professors and researchers, become a Suborbital Applications Research Group Ambassador! A SARG Ambassador works to increase the awareness of the potential of commercial suborbital vehicles for use in science, R&D, and education communities. Learn more about becoming a SARG Ambassador [here!](#)

POLICY UPDATE

The news in Washington is all about the government shutdown today. We don't know when that will be lifted, but the longer it lasts, the more concerning it will be for commercial space companies, who depend on regulators to approve licenses and NASA funding for some projects.

In the meantime, we are focused on what will happen next: The House and Senate committees have each passed NASA Authorization bills that largely continue policies from the last such bill in 2010. Both include strong support of commercial space funding, though the House bill has much lower funding in general and some policy provisions that are concerning. The House and Senate appropriations committees have also passed funding bills that include NASA funding, with the Senate bill much more generous both for NASA overall and for commercial space in particular.

Unfortunately, the difference between the bills means that we are unsure of whether or when they might be reconciled. We continue to also push for a reauthorization of the Commercial Space Launch Act that would extend some vital provisions and provide regulatory certainty.

Finally, the Administration is now working on a final rules for the export of satellites and spacecraft, and we have been working to ensure that rule provides as much flexibility as possible for advanced spacecraft and commercial space vehicles. We hope to see a final rule released by the end of the year.

It's going to be an unpredictable Autumn here in Washington, so let us know if you have any questions about what's going on! We're here to keep you informed.

-Alex Saltman

UPCOMING EVENTS AND DEADLINES

[October 3, U.S Naval Academy in Annapolis, MD.](#) The U.S Naval Institute and the U.S Naval Academy will host a day-long conference on 3 October to address: Past, Present, and Future of Human Space Flight. The event will gather influential and experienced figures in human space flight history to examine where we have been, where we are, and the course that will best shape future success. Confirmed speakers include MajGen Charles Bolden Jr., USMC (Ret.), Administrator of NASA; CAPT Robert Crippen, USN (Ret.) pilot, STS-1, the first space shuttle flight; CAPT Michael Lopez-Alegria, USN, (Ret.) President Commercial Spaceflight Federation; CAPT James A. Lovell, USN (Ret.), Commander, Apollo 13; Mr. Mark Sirangelo, Corporate Vice President, Sierra Nevada Corporation; Mr. Tim Hughes, Chief Counsel of SpaceX and others.

[October 29-30, London: The ISC 2013 Summit](#) provides a unique opportunity for both European and international companies to collaborate and network whilst keeping up to date with the latest developments in the space industry.

[October 24, Washington, D.C: Space & Satellite Regulatory Colloquium.](#) Space and Satellite Regulatory Colloquium at the Jones Day law firm near Union Station in Washington, DC. This all-day Colloquium will focus on emerging space law and regulatory issues facing the U.S. Administration and International governments.

[SpaceVision 2013.](#) SpaceVision is the largest student-organized space conference in the nation and is orchestrated by the Students for the Exploration and Development of Space

(SEDS) as the SEDS-USA annual national conference. SpaceVision is dedicated to facilitating networking between college students, professionals, and the public, and furthering the development of the organizations goals.

If your organization would like to have your event posted, please email us at: REM@commercialspaceflight.org

RECENT AND UPCOMING CSF ACTIVITIES

In June Michael L-A testified before the U.S. Senate Committee on Commerce, Science and Transportation Subcommittee on Science and Space at a hearing entitled, “Partnerships to Advance the Business of Space.” Dr. Steven Collicott, a CSF SARG member, Wayne Hale, Director of Human Spaceflight at Special Aerospace Services, Patti Grace Smith, an aerospace consultant at Patti Grace Smith Consulting, also testified. At the hearing, Chairman Bill Nelson expressed his excitement about the industry's growing capabilities, and immediately after the hearing issued a [press release](#) praising the prospect of university students conducting research on suborbital vehicles.

In June, SARG and the Southwest Research Institute organized another successful Next-Generation Suborbital Researchers Conference. The conference brought together researchers, vehicle providers, and representatives from the private and government sectors, and featured exciting announcements from many organizations, including NASA's Flight Opportunities program.

On July 1st, Dr. Steven Collicott became the new chairman and Dr. Makenzie Lystrup became the vice-chair of SARG, CSF's Suborbital Applications Researchers Group, following Dr. Alan Stern, who has stepped down after the completion of his term as founding chairman.

CSF submitted comments to the State Department and the Department of Commerce on the proposed revisions to the USML Category XV items, and subsequent revisions to the Commerce Control List for items removed from the USML. Please let us know if you would like a copy of the comments.

CSF submitted comments to the Federal Communications Commissions regarding a Notice of Proposed Rule-Making for future commercial launch spectrum. A copy of our comments can be found [here](#).

CSF Held their Semi-Annual Members Meeting September 4-6 in Houston, TX. This meeting brought together our Executive and Associate Members for a productive meeting discussing upcoming issues and featured presentations from guest speakers such as Houston's Mayor and JSC Director, Dr. Ellen Ochoa.

Michael L-A moderated an all astronaut panel at Space Center Houston in conjunction with our Members Meeting. A recording of the panel is available to watch [here](#).

CSF announced that Planetary Resources, Inc., the asteroid mining company, has joined CSF's Executive Membership. The company had been an Associate Member since January 2012. Planetary Resources' President and Chief Engineer Chris Lewicki will be the newest addition to CSF's Board of Directors.

RECENT INDUSTRY NEWS

[PURDUE UNIVERSITY](#) and [JOHNS HOPKINS UNIVERSITY](#) are among ten selected universities whose early stage technology innovation proposals have been provided one year grants by NASA.

Former Astronaut Clayton Anderson will join [IOWA STATE UNIVERSITY's](#) Aerospace Engineering Department.

[UNIVERSITY OF CENTRAL FLORIDA](#) hosted their Space Tech Conference on September 5, reaching out to scientists, researchers, businesses and entrepreneurs to showcase available space technology.

[PURDUE UNIVERSITY](#), [IOWA STATE UNIVERSITY](#) and [ARIZONA STATE UNIVERSITY](#) were three of the 16 institutions selected to form a new FAA Air Transportation Center of Excellence for general aviation. The Center of Excellence Partnership to Enhance General Aviation Safety, Accessibility, and Sustainability (PEGASAS) aims to enhance the future of general aviation and will cover many aviation safety issues, such as airport technology, airworthiness, flight and fire safety, human factors, weather, and propulsion and structures.

Researchers at [SOUTHWEST RESEARCH INSTITUTE](#) revealed findings that [plastics are more effective than aluminum](#) at shielding astronauts from hazardous radiation in deep space.

[ASTRONAUTS4HIRE](#) announced the selection of its fourth group of commercial scientist-astronaut candidates. The six new recruits were selected through a rigorous process from

a pool of 85 highly qualified applicants from 14 countries who responded to the nonprofit organization's [March 2013](#) call for applications.

On Thursday, Oct. 17, Raisbeck Aviation High School (RAHS), in collaboration with [THE MUSEUM OF FLIGHT](#) and Highline Public Schools, will celebrate the grand opening of its new campus on the grounds of The Museum of Flight.

If your organization is in the news, let us know by emailing us at:
news@commercialspaceflight.org

CSF MEMBER INDUSTRY NEWS

Virgin Galactic's SpaceShipTwo reached supersonic speeds of Mach 1.43 in the ship's second powered test flight. [Video](#)

XCOR Aerospace and **United Launch Alliance** announced the successful operation of their liquid hydrogen pump at full design flow rate and pressure conditions in their Liquid Hydrogen Engine Development Program (LH2).

Boeing Space Systems and **Aerojet Rocketdyne** completed several tests on the CST-100's thrusters, to simulate how the thrusters will react to speeding up and slowing down and maneuver in outer space.

SpaceX's 'Grasshopper' vehicle tested a hard lateral deviation, rising to 250m then performing a 100m lateral maneuver before landing. [Video.](#)

Sierra Nevada's Dream Chaser passed its tow testing requirements and now awaits its approach and landing test at Dryden Flight Research Center. [Video](#)

Boeing demonstrated that astronauts in CST-100 will be able to safely exit the spacecraft in an emergency water landing. [Video](#)

Steve Isakowitz was recently appointed as the new President of **Virgin Galactic**.

Moon Express announced the opening of a propulsion facility in Huntsville, AL.

MDA Corporation announced a contract with **Sierra Nevada Corporation** to develop the onboard communication system for the Dream Chaser Crew Transportation Vehicle.

Spaceflight Inc. completed a design review on their SHERPA system, their in space tug

and hosted payload platform, and announced hosted payload services beginning in 2015.

Space X conducted a launch of their new upgraded Falcon 9 v.1.1 vehicle from Vandenberg Air Force Base, and successfully deployed the CASSIOPE satellite built by **MDA Corporation**.

RECENT LAUNCHES

Sep 29: [SpaceX](#) launched its upgraded Falcon 9 v1.1 rocket carrying the CASSIOPE satellite built by the [MDA Corporation](#) for the Canadian Space Agency.

Sep 29: An International Launch Service Proton Rocket with a Breeze M Upper Stage deployed the Astra 2E Satellite.

Sep 25: A Russian Government Soyuz rocket launched the manned Soyuz Spacecraft to the ISS with members of the next expedition crew.

Sep 23: A Chinese Long March 4C rocket launched the Fengyun 3C polar-orbiting weather satellite.

Sep 18: The [ULA Atlas 5 rocket](#), designated AV-041, launched the third Advanced Extremely High Frequency (AEHF) Satellite.

Sep 18: The Orbital Sciences Antares rocket launched the first Cygnus cargo freighter on a test flight to the ISS. Orbital Sciences developed the Cygnus spacecraft to deliver supplies to the space station.

Sep 14: Japan's Epsilon Rocket Launched the SPRINT-A Satellite with a small space telescope to observe Mercury, Venus, Mars and Jupiter, focusing on the interaction between the planets' atmospheres and the solar wind.

Sep 11: A Russian government *Rockot* vehicle launched three Gonets M communications satellites

Sep 6: A U.S Air Force Minotaur 5 rocket launched the Lunar Atmosphere and Dust Environment Explorer, or LADEE, mission for NASA

Sep 1: A Chinese Long March 4C rocket launched the Yaogan 17 payload for the Chinese Military

Aug 31: A land launch Zenit 3SLB rocket carried into orbit the Amos 4 communications satellite.

August 29: Arianespace used an Ariane 5 ECA rocket, designated VA215, to launch the Eutelsat 25B and GSAT 7 satellites.

August 28: A [United Launch Alliance Delta 4-Heavy rocket](#) launched a classified spy satellite cargo for the U.S. National Reconnaissance Office.

August 22: A Kosmotras Dnepr rocket launched the KOMPSAT 5 Earth observation satellite for the Korea Aerospace Research Institute.

UPCOMING LAUNCHES

Oct 17: A [ULA Delta 4 Rocket](#) will deploy Air Force Fifth Block 2F Navigation Satellite for the Global Positioning System.

Oct 28: India's Polar Satellite Launch Vehicle (PSLV), flying PSLV-C25 mission, will launch the Mars Orbiter Mission, India's first mission to the red planet.

Nov 4: A U.S Air Force Minotaur 1 rocket will launch Operationally Responsive Space 3 (ORS3) mission.

Nov 6: A Russian government Soyuz rocket will launch the manned spacecraft to the International Space Station with members of the next expedition crew.

Nov 14: A Eurockot Rokot vehicle will launch the Swarm mission for the European Space Agency

Nov 18: A [ULA Atlas 5](#), designated AV-038, will launch the Mars Atmospheric and Volatile Evolution (MAVEN) Mission.

Nov 20: An Arianespace Soyuz rocket, designated VS06, will launch on a mission from Guiana Space Center in South America.

Please send any company news to news@commercialspaceflight.org.

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