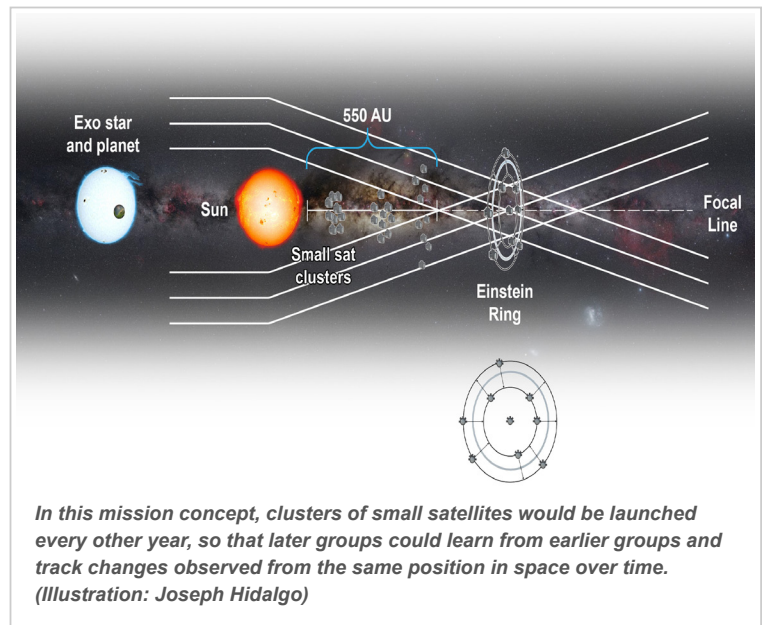


Aerospace and JPL Propose Lens for Distant Planets

by **Gabriel A Spera**
November 19, 2018

When Galileo pointed his homemade telescope at Jupiter and its moons more than 400 years ago, he fundamentally changed how humanity viewed its place in the cosmos. Since then, astronomers have learned to peer farther and farther into the reaches of the universe, first by building better telescopes, then by launching them into space. These efforts have resulted in the discovery of thousands of planets orbiting distant stars. Each tantalizing discovery has spurred a desire to know more about these exoplanets — but their incredible distance makes it hard to get a clearer view.

Scientists at NASA's Jet Propulsion Laboratory (JPL) have proposed a different approach: rather than launch a telescope into space, why not use the properties of gravity as a telescope? [Click here](#) to read full story.

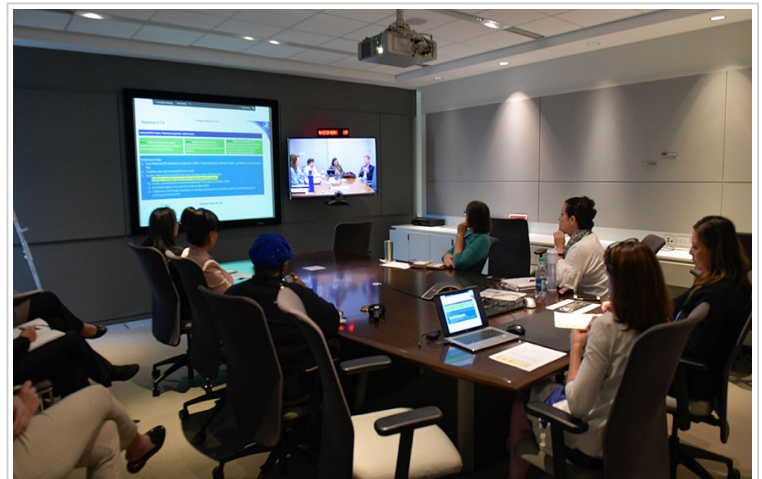


One Aerospace Site Council Initiative Facilitates Cross Collaboration

by **Wendy O'Dea**
November 27, 2018

In an effort to foster a culture of One Aerospace and encourage collaboration between sites, a One Aerospace Site Council has been established, which kicked off its first meeting on Nov. 15.

In addition to providing a platform for two-way communication between sites, the site council, which includes representatives from numerous Aerospace locations, will help ensure a consistent roll-out of programs, provide a platform for sharing best practices, and ensure flow-down and understanding of corporate communications.



El Segundo employees meet for the first One Aerospace Site Council meeting in November (Photo: Elisa Haber).

Local site councils are also being established to help create events to boost morale, bring people together, and provide an opportunity for employees to learn beyond their daily work activities.

“We want to look at what we can do to celebrate each site while still creating an environment of One Aerospace,” said Dr. Willie Krenz, senior vice president and chief velocity officer, who kicked off the site council’s first meeting. “There are many things that can be done locally that help establish and present One Aerospace.”

The monthly, one-hour site council meetings are participant-driven, with support from functional leaders. While these are virtual meetings, participants are encouraged to meet in groups, where possible, to reinforce the One Aerospace culture.

The council's first meeting was attended by 40 people and included an update by Senior Vice President of the Engineering and Technology Group (ETG) Chuck Gustafson on the National ETG initiative.



One Aerospace Site Council team members at the kick-off meeting in Chantilly (Photo: Elisa Haber).

Local Site Councils

Local site councils, which will serve as an ongoing resource locally while also providing input to the larger One Aerospace Site Council, are in the process of being created. These councils are intended to serve as a bridge to the larger corporation while also planning local events, intern activities and celebrations, and competitions such as pingpong tournaments.

The first active local site council, which served as a prototype of sorts, is in the El Segundo D8 building. Council members include strategic people partners from People Operations, business managers, managers, non-management representatives, and representatives from Facilities, Corporate Communications, and Enterprise Information Systems.

One of the first activities planned by the D8 Site Council was an open house held on Nov. 1 in the D8 lounge.

Attendees, which included Aerospace President and CEO Steve Isakowitz, were treated to complimentary drinks and harvest-themed snacks, as well as technical demonstrations and presentations from teams based in D8.

Press Release: CSPS Unveils a New Series of “Game Changer” Papers for the Space Sector

November 29, 2018

The Aerospace Corporation's [Center for Space Policy and Strategy](#) (CSPS) has released two papers that are part of a new “Game Changer” series. This new publication series provides valuable insight into new and emerging breakthrough technologies that could introduce significant advancements and portend transformative implications for the space sector.

“We’re pleased to offer the Game Changer series at a time when the space industry is undergoing rapid change,” said [Jamie Morin](#), vice president and executive director for CSPS. “This new series provides factual and timely analysis of market trends, lifecycle, and technology triggers to advance maturity in the market.”

The first paper, [Neuromorphic Computing: The Potential for High-Performance Processing in Space](#), focuses on the latest developments in neural processing units, which mimic certain functional aspects of the human brain. The brain-inspired architecture enables autonomous analysis of a vast array of incoming information from multiple sources, data retention in case of power loss, and reduction of power consumption.

Authors Dr. Gennadi Bersuker, Dr. Maribeth Mason and Karen L. Jones explain that neuromorphic computing has demonstrated the potential to overcome constraints on power and speed to enable autonomous sensing and intelligent operations without internet connections. “Neuromorphic computing will eventually prove to be a game changer for edge computing capabilities and space is the ultimate edge environment.”

Bersuker said that he and the other co-authors assessed the neuromorphic computing market of hardware innovators in both the R&D and commercial sectors. “We also identified triggers that could advance or mature neuromorphic hardware from a technology demonstration phase to rapid growth and broader market adoption,” he said.

Jones emphasized that there is no easy path to adopting neuromorphic computing in the space sector. “The successful introduction of neuromorphic computing to space systems will depend on the space sector’s ability to “spin in” neuromorphic computing innovations from the commercial and the R&D sectors.”

The second paper, [Cost Reductions and Fuel Efficiency: High-Power Solar Electric Propulsion in Space](#), explores the impact of high-power solar electric propulsion (HPSEP) on the future of space from satellite acquisition and space architecture perspectives.

Authors Joshua P. Davis, John P. Mayberry and Jay P. Penn identified and assessed various types of space propulsion systems that could replace some or all of the traditional chemical propulsion systems used for orbit raising. The paper also highlights how HPSEP could significantly reduce launch capacity needs by allowing multi-manifesting of spacecraft or the use of smaller launch vehicles to lower launch costs.

“The HPSEP thruster and solar array technologies are poised to take electric propulsion from a technology relegated to stationkeeping and orbit maintenance duties,” said Davis. “It has the potential to take over a significant portion of the orbit-raising function that is currently done by launch vehicle upper stages and chemical propulsion systems.”

To learn more, download both Game Changer papers from www.aerospace.org/policy.

About the Center for Space Policy and Strategy

The Center for Space Policy and Strategy is dedicated to shaping the future by providing nonpartisan research and strategic analysis to decisionmakers. The Center is part of The Aerospace Corporation, a nonprofit that provides objective advice to the government on complex space enterprise and systems engineering problems. To read the latest publications related to space policy matters, visit www.aerospace.org/policy.

Press Release: The Risk of Launch Delays to Satellite Constellations, New CSPS Study

November 26, 2018

The Aerospace Corporation's [Center for Space Policy and Strategy](http://www.aerospace.org/policy) (CSPS) analyzes the risks that launch delays pose to large satellite constellations in a policy paper released today, [Launch Uncertainty: Implications for Large Constellations](#).

Mega-constellations consisting of tens, hundreds and even thousands of satellites in non-geostationary orbits (NGSOs) are now being proposed to bring affordable broadband and other services to the world. However, investors in and operators of such constellations must clear multiple hurdles before getting their hardware off the ground, including rounds of technical reviews, securing financing and gaining regulatory approvals.

“Right now, it seems that everyone from private industry to the national security sector to high school engineering programs wants to get more into space,” said Dr. Grant Cates, lead author on the study. “This paper explores what could happen with far greater launch demand and what might be done to mitigate risks and negative impacts.”

Even after receiving orbital and spectrum licenses, these proposed mega constellations risk significant delays because they must be deployed within a defined period and failure to do so has onerous consequences.

“A proposed constellation of 100 satellites that manages to launch only 40 by a given regulatory milestone might have to start the licensing process for the remaining 60 satellites all over again,” explained Cates. “This becomes a significant investment risk, especially for startup companies that may have limited early revenues and small capital reserves.”

Once regulatory approvals have been met, constellation operators may still face a shortfall of launch vehicles, satellites and ground systems or launch site processing issues, cancellations and flight anomalies.

The paper also offers ideas for better understanding prospects for delays, such as analysis of historical delay data coupled with event simulation, which can help operators and investors understand, plan for, and ideally mitigate these potential delays. Delay risk can be mitigated by actions such as adding launch processing infrastructure, increasing workforces, using overtime judiciously, and having ample schedule margin, as well as potentially policy and rule changes to facilitate government relief for those actors not directly responsible for delays.

“This is an exciting time for space launch. All the new players in an increasingly crowded and democratized space environment create new demand for launches. If demand for launches approaches current capacity limits, the risk of cascading delays will grow,” said Dr. Jamie Morin, vice president of Aerospace and executive director of the CSPS. “Investors, government agencies, and other space stakeholders who rely on launch services will want to understand those risks and how to communicate them, and this paper provides a framework for that.”

To learn more, download *Launch Uncertainty: Implications for Large Constellations* at www.aerospace.org/policy.

Awards and Recognitions, November 2018

by Gail Kellner

November 15, 2018

Aerospace employees frequently earn recognition for their professional accomplishments. This Orbiter feature acknowledges 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 Gail Kellner at gail.d.kellner@aero.org.

Alan King, Dr. Michael Lee, Shawn Lin, and Lesli Otake

Four Aerospace employees in the Engineering and Technology Group received organizational achievement awards at the 2018 Society of Asian Scientists and Engineers (SASE) National Conference and STEM Career Fair.

Tammy Choy and Dr. Malina Hills presented the awards to Alan King, Dr. Michele Lee, Shawn Lin, and Lesli Otake at the Achievement Awards Dinner last month in Schaumburg, IL. SASE is the largest conference and career fair for Asian Americans in the United States.



Amy Misakonis

Amy Misakonis, project leader, Human Exploration and Spaceflight Division, was presented the NASA Silver Snoopy Award last month.

The Silver Snoopy best symbolizes the intent and spirit of Space Flight Awareness. The Silver Snoopy is the astronauts' own award for outstanding performance, contributing to flight safety and mission success. Fewer than one percent of the aerospace program workforce receive it annually, making it a special honor to receive this award. Employees must have significantly contributed to the human space flight program to ensure flight safety and mission success.

Dr. Rokutaro Koga

Dr. Rokutaro Koga, Aerospace fellow, Space Science Applications Laboratory, was recently selected as the recipient of the 2018 IEEE Nuclear and Plasma Sciences Society Radiation Effects Award. The award recognized his "sustained contribution to the field of single event effects testing in microelectronics."

Koga is one of the pioneers of single event effects testing and is credited with the discovery of single event snapback as well as the first observation of many of the types of single event phenomena that are commonly known today.

Sandra Snow

Sandra Snow, project leader, Strategic Studies and Assessments Division, received the NASA Engineering and Safety Center Honor Award in recognition of exceptional project leader support on administering NESC task orders on an Aerospace contract, contributing to the overall success of the NESC mission. She was honored at the NESC Annual Awards ceremony on Nov. 7 at NASA Langley Research Center.

Marvin "Butch" Gardner

Marvin "Butch" Gardner, principal director, Eastern Range Directorate, was recently elected as the 2018/2019 chairman for the National Space Club Florida Committee. The Florida Committee is one of two regional committees of the National Space Club and Foundation in Washington, D.C.

November 2018 Obituaries

by Christine T Kato

November 01, 2018

Sincere sympathy is extended to the families of:

Abraham Gichtin, member of technical staff, hired Nov. 14, 1968, retired Dec. 1, 1990, died Sept. 14, 2018

Janet Hallett, member of administrative staff, hired May 14, 1962, retired July 1, 1994, died Sept. 20, 2017

Arnold Hanson, member of technical staff, hired Sept. 5, 1960, retired Dec. 1, 1987, died Aug. 21, 2018

Lucia Howsley, office of technical support, hired Sept. 17, 1984, retired Feb. 1, 1994, died Sept. 17, 2018

Daria Jewett, office of technical support, hired Oct. 24, 1977, retired Dec. 1, 1992, died Sept. 22, 2018

Denise Kleffman, member of administrative staff, hired Nov. 13, 1989, died Sept. 18, 2018

Nancy Mercier, office of technical support, hired July 3, 1972, retired Feb. 1, 1994, died Oct. 22, 2018

Lance Newman, member of technical staff, hired April 27, 1981, retired May 1, 2013, died Oct. 4, 2018

Irwin Rosenfeld, member of technical staff, hired April 12, 1987, retired Feb. 1, 1994, died Oct. 8, 2018

William Smith, member of administrative staff, hired May 8, 1990, retired Sept. 1, 1995, died Oct. 7, 2018

John Thacker, member of technical staff, hired April 1, 1974, retired Nov. 1, 2008, died Sept. 17, 2018

Ernest Wolff, member of technical staff, hired Oct. 15, 1973, retired Sept. 1, 1999, died Sept. 24, 2018

Craig Yandow, technical support staff, hired April 20, 1998, retired April 1, 2014, died Sept. 27, 2018

To notify Aerospace of a death and have it included in the Orbiter, please contact People Operations at (310) 336-5107.

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