



American Institute of Aeronautics and Astronautics
Los Angeles - Las Vegas Section

Newsletter

January 2020

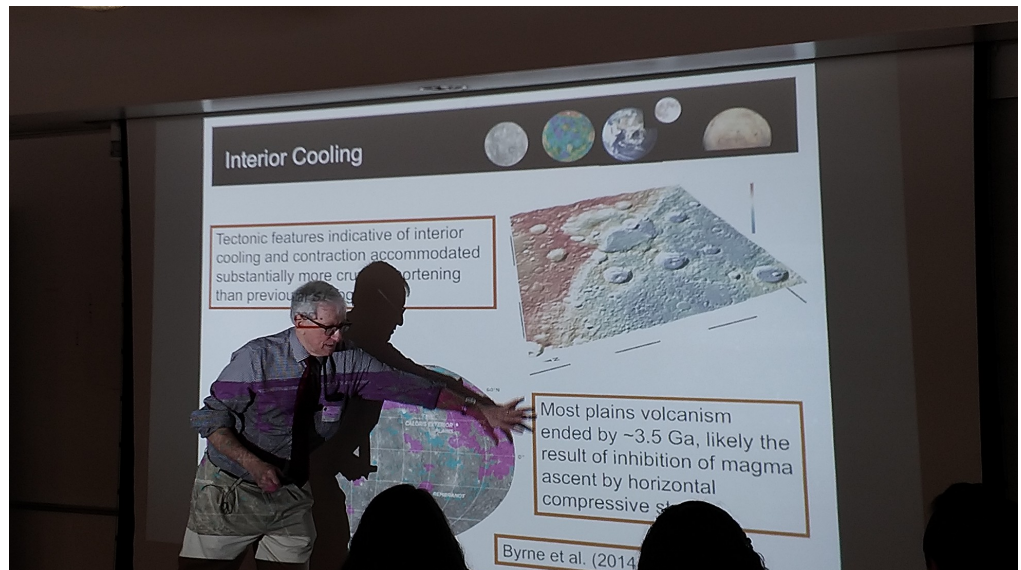
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Los Angeles-Las Vegas Section

Mercury: Past, Present, and Future Research Presented by Distinguished Dr. Sean C. Solomon (7 December, 2019: *First Rock from the Sun: 50 Years of Mercury Exploration by Spacecraft*)

by Arpine Ovsepyan, AIAA LA LV Council Member



Left Standing – Prof. Sean C. Solomon explaining the scientific discoveries by the MESSENGER'S spacecraft mission to Mercury, in the Playa Vista Branch Library, on December 7, 2019. (Photo courtesy of Ken Lui)

(Editor's Note: Prof. Solomon Received the Medal of Science from Pres. Obama in 2014, the same honor received by the well-known aerospace scientist, Dr. Theodore von Kármán, from Pres. Kennedy in 1963)

Nestled within the Playa Vista Library Meeting Room in California, AIAA and community members gathered to eagerly hear the insightful speech by the honorable Dr. Sean C. Solomon on Saturday, December 7,

2019. Having received the Presidential Medal of Honor by President Obama, Dr. Solomon is a highly respected voice in the aerospace industry. Dr. Solomon, is the Director of Lamont-Doherty Earth Observatory, Associate Director for Earth Systems Science, Earth Institute for and a William B. Ransford Professor of Earth and Planetary Science, Department of Earth and Environmental Sciences at Columbia University.

Mercury, which comes from the Latin term merx meaning merchandise, is the Roman god of commerce and travel and often referred to as the first rock from the sun. Despite its name, Mercury's location being so close to the sun, has made it difficult to travel to for space exploration. However, the human drive for finding answers to unanswered questions has drawn scientist to use ingenuity to successful flyby Mercury using Mariner 10 and Messenger spacecrafts.

(continued on page 6)

(More photos on bit.ly/2terYR2, bit.ly/39odUox)



American Institute of Aeronautics and Astronautics
Los Angeles - Las Vegas Section

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Moving Past Apollo: This generation's tools to build the 2nd major step for Mankind in Space (29 October, 2019)

by Niyati Chokshi, Co-Chair of AIAA LA LV Events/Program



An attendee making a positive comment (Photo courtesy by Ken Lui)

Professor David Barnhart, an active research professor from USC's Astronautics Department, imparted some wonderful perspectives with the AIAA attendees.

He highlighted the difference in technology used for missions back in 1960's versus the technology used now. Even though our modern technology didn't exist during older missions, with the combination of heart and mind it was possible to achieve something unprecedented - The Apollo Mission for example.. ith the balance of advanced technology and dedication, great things are achievable.

He summarized his vision and the vision of USC by stating that, "we need to stop fearing failure, if we want to move past Apollo and own more such groundbreaking achievements".

He shared his thoughts on STEM related degrees, jobs, and their revolutionary impact on the world coming ahead of us. Because 70% of youth says science is their favorite subject when participating in youth development programs, he also encouraged to making STEM fun and accessible beyond classrooms. He shared with the us amazing videos of the first failed rocket launch by USCRPL, which went on to become the first student-launched rocket to reach the von Kármán line (the edge of space). Moreover, he showcased the way he is helping the students to learn the language of satellites.



Prof. Barnhart addressing a question (Photo courtesy by Ken Lui)

Of particular note was his work on building a genderless connecting port to easily engage with any space platform. Professor Barnhart is a true inspiration and a supportive teacher, and his work will push the STEM field to greater heights.



Dr. Terrisa Duenas asking a question (Photo courtesy by Ken Lui)

(More photos on bit.ly/36cbOGH, bit.ly/2MGpim1, bit.ly/36cNwfl, bit.ly/36cNLHh)

(continued on page 7)

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Special: Advances in Aerospace & Planetary Robotics, and NASA Artemis: Astrobotic Announces New Lunar Logistics Headquarters in Pittsburgh, PA

(12 December, 2019): Astrobotic to open new state-of-the-art, 47,000 square foot facility in May 2020 for the development of lunar landers and rovers

by Astrobotic (with special permission)

Pittsburgh, PA – Astrobotic proudly announces that it will open a new state-of-the-art headquarters for lunar logistics in May 2020. The 47,000 square foot facility in Pittsburgh's North Side neighborhood of Manchester will house the company's spacecraft integration cleanrooms, test facilities, lab spaces, rover test labs, payload operations room, and dedicated mission control. Astrobotic's new headquarters is poised to become the epicenter for America's return to the Moon.



Astrobotic's new headquarters in the Pittsburgh North Side Neighborhood of Manchester, will be the primary hub for lunar logistics in the United States.

"This new facility marks the next phase of Astrobotic's growth and will be the primary hub for lunar logistics in the United States. Our headquarters will be used to design, build, and test lunar landers and rovers all under one roof, and then operate those vehicles from our own mission control right here in Pittsburgh," said Astrobotic CEO, John Thornton.

The facility will feature 15,000 square feet of cleanroom and lab space that can support up to 4 lunar lander missions simultaneously. Within the lab space, there will be environmental test facilities designed to simulate lunar and launch vehicle environments for mission hardware operations, a machine shop for parts manufacturing, a fluids lab for propulsion testing, and a high-power lab for battery assembly and testing. In addition to these lander mission development capabilities, the new facility will feature a space mobility and lunar simulant lab, where mobile rovers can test drive in synthetic lunar regolith.



The spacecraft assembly cleanroom will be capable of supporting up to 4 lunar lander missions simultaneously.

Once customer payload integration is completed, finished lunar landers and rovers will be transported to Cape Canaveral for integration with launch vehicles and launch. Following launch, Astrobotic will operate the mission from its Pittsburgh-headquartered mission control including the landing, power, communications and rover operations on the Moon.

The headquarters will be a short walk from the Carnegie Science Center and Heinz Field, and promises to be a new landmark in Western Pennsylvania. The new facility will host Astrobotic's growing workforce, which has tripled in the last 4 months and continues to expand at a rapid pace.

"Only three nations have landed on the surface of the Moon," said Thornton, "Pittsburgh Nation will be the next."

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The Astrobotic Mission Control will be the nerve center for the first U.S. mission to the lunar surface since Apollo.

November 16, 2019 Mars InSight & Mars Space (with PI Dr. Bruce Banerdt) Event (followed by the Aerospace Career & Employment Workshop)

by Shawn Paul Boike, Aerospace & Industry Leader



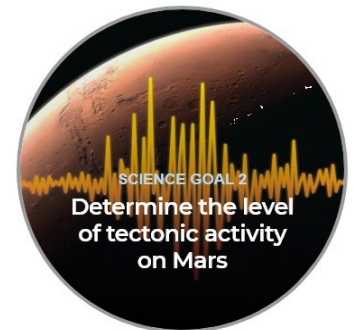
Dr. Bruce Banerdt explaining to the audience about the most up-to-date data on Martian surface from Mars InSight.

It was a pleasure to go to the Nov. 16th AIAA's Event; "The InSight Mission to Mars" with JPL's Dr. Bruce Banerdt the Principal Investigator on InSight Probe. It was hosted at the new Michelle Obama Neighborhood Library in Long Beach with the ambience of a modern Cal Tech Pasadena event center. This event was much more than just a NASA JPL presentation it was a complete 4-fold event with list of activities:

1. **Main Event**, very insightful & fun presentation by NASA JPL's Dr. Bruce Banerdt the Principal Investigator of MARS InSight a Remote geological investigating probe.
2. **Aerospace Career & Employment Workshop** with multiple hiring managers from Top Aerospace Firms. Explaining the Dos & Don'ts, resume writing & interviewing tips to many young people pursuing an opportunity in our Aerospace Industry.
3. **AV/VR Virtual Reality Mars** mission personal game room where you would be in a space capsule on Mars and go explore around Mars along with all the intricate details it would personally involve you to do as if you were there.
4. Very Large **3D Mars Team Game** room & wall including a live moderator & on-line participation for Mars exploration and adventure along with gaming (points).

Main Event: JPL's Dr. Bruce Banerdt explained the InSight probe had landed on Mars in November 2018. Its mission is to tell us more about the planets core & its

creation. **InSight**, is short for **I**nterior **E**xploration using **S**eismic **I**nvestigations, **G**eodesy and **H**eat **T**ransport, is a **M**ars lander designed to give the Red Planet its first thorough checkup since it formed 4.5 billion years ago (view video link: <https://youtu.be/LKLITDmm4NA>).



It had a lot of work after landing safely & successfully in what is considered the most boring (passive) place/landscape area on Mars. Explaining they had programmed & successfully deployed parachutes in Mars thinner atmosphere to slow the landing impact. Quoting the PM "We hit the Martian atmosphere at 12,300 mph (19,800 kilometers per hour), and the whole sequence to touching down on the surface took only six-and-a-half minutes". Upon landing first tasks is to deploy its two decagonal solar arrays, which will provide power. That process begins 16 minutes after landing and takes another 16 minutes to complete. within the first week after landing, though the teams will focus mainly on preparing to set InSight's instruments on the Martian ground. At least two days after touchdown, the engineering team will begin to deploy the 5.9-foot-long (1.8-meter-long) robotic arm so that it can take images of the landscape. After the use of multiple sensors & a couple cameras they did scanning of the terrain around them, which they mocked up in their Pasadena Lab to be used with their InSight prototype for further activities. The robotic arm placed the very sensitive seismometer onto the ground & installed is well engineered protective wind & thermal shield over it.

(Continued on Page 9)

(More photos on: bit.ly/304NfZH, bit.ly/303vREw, bit.ly/2se2JOE, bit.ly/305AsWR, bit.ly/2NbyJtP, bit.ly/2TewkSS)

November 23, 2019 Space Tourism Event

by Shawn Paul Boike, Aerospace & Industry Leader

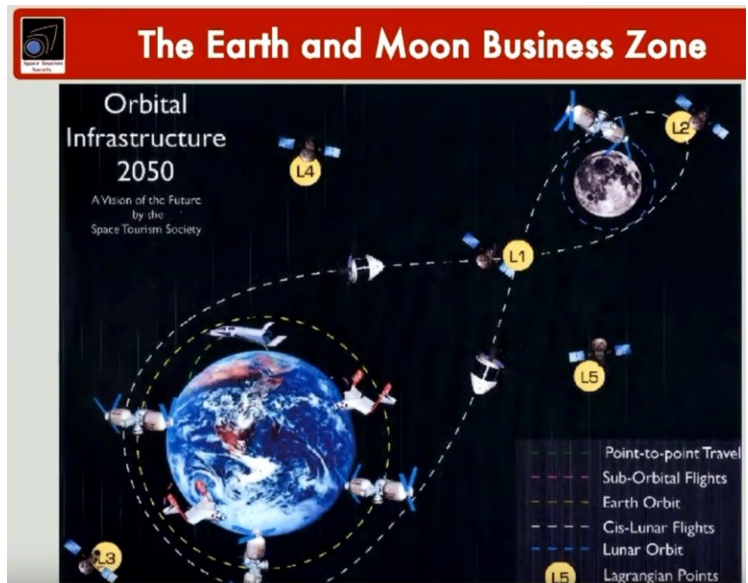
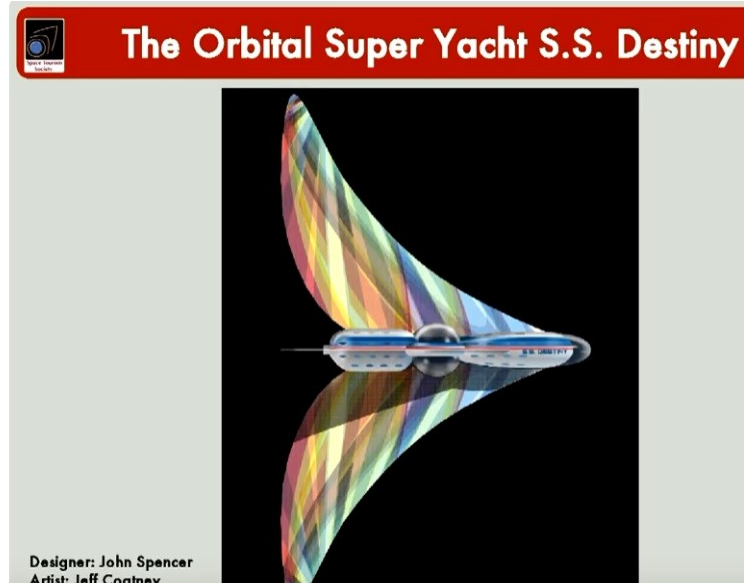
It was a pleasure to go to the Nov. 23rd AIAA's Event: "Space Tourism!" with multiple Speakers their projects & programs on the subject. It was hosted at the B-E-A-U-T-F-U-L Malaga Cove Library in Palos Verdes Estates with the surrounding overlooking South Bay Beaches. This event was a complete ½ Day (5 hours) event with fantastic future opportunities, Space Tourism & Recreational activities: A Panel Q&A at the end, the 5 Presentations were:

1. **Space Tourism Society (STS)**, Space Tourism & Recreational games: John Spenser
2. **Gateway Foundation & Orbital Assy Corp**, Spaceports: John Blincow & Thomas Spliker
3. **International Space University, NSS**: Madhu Thangavelu **USC**.
4. **Virgin Galactic** Chief Pilot Dave "Mac" Mackay
5. **EnCorps STEM**: Bethany Orozco

To-Be Noted: The International Space Station **ISS** is falling out of Space and will become uninhabitable in **2024** then Fall to Earth in 2028 with most of it to be burned-up in the Earth's atmosphere, unless it is towed into a higher orbit (which NASA is investigating). This will end a huge part of Human Space habitation, exploration, scientific benefits & adventure. This was to be our 1st destiny before the moon per NASA's Werner Von Braun in 1955 with a smart rotating Station.

Space Tourism Society's & Mars World Enterprises Inc. President **John Spenser's** exciting, credible presentation including Red Planet Ventures fun look at Space Tourism & Space Sports. He had described the wonderful **Space Experience** and how this life changing experience will be brought to everyone with many different projects such as Space Cruise ships, Orbital Super Yachts (S.S. Destiny), on-board Float Spheres, Orbital Weddings, Space Sports, Space Yacht Racing, Lunar Racing (moon), Lunar Tourism, Space, Lunar Vacation & Recreation Centers. Discussed a soon to come very large Space World & Mars World adventure center for the family, Space nerds, and Tourists in Las Vegas at a reasonable cost. He highlighted the attraction to Media, product branding,

unique experience only Space can provide. John Spenser's notable favorite Quote "*The Best Way to Predict the Future is to Invent It*" by Alan Kay (inventor of the PC Windows overlap technology).



(Two more photos at the bottom of Page 7)

(Continued on Page 10)

(More photos on: bit.ly/3054tGa, bit.ly/39Qh2cZ, bit.ly/35Cx72D, bit.ly/35BpLfR, bit.ly/2T4Ua3D)

Mercury: Past, Present, and Future Research Presented by Distinguished Dr. Sean C. Solomon (7 December, 2019: First Rock from the Sun: 50 Years of Mercury Exploration by Spacecraft)

(continued from page 1)

by Arpine Ovsepyan, AIAA LA LV Council Member

In addition, Dr. Solomon's presentation included a reflection on the past, present, and future of space missions to Mercury. Of particular interest was the presence of ice and other minerals that was found on Mercury that sparked a lively discussion with participants who interjected with insightful questions for Dr. Solomon. One such question was posed by AIAA's Council Member Bill Kelly who asked Dr. Solomon on whether scientists had looked into finding a section of Mercury that had a more tolerable region to study which is between the extreme hot and cold regions. Dr. Solomon responded that this is a possibility on this planet yet further research needs to be conducted.

Throughout his presentation, Dr. Solomon explained that previous missions to Mercury like the Mariner 10 where focused in on describing the environment. Then, he described Messenger's flyby and solar wind that helped this spacecraft on its journey. Dr. Solomon also describe a recent mission using the BepiColombo spacecraft that should make it to Mercury by 2025.

After the presentation, participants were welcome to talk with Dr. Solomon and participate in a Career Development Workshop lead by Bill Kelly. Overall, the presentation left a lasting impression on participants who are were eager to learn more about data from Mercury that will become available in future years that keeps us on the edge of our seats as we learn more about this planet with its unique place in the universe.



Bill Kelly giving the inspiring career counseling workshop after the Mercury Presentation by Prof. Solomon (Photo courtesy by Ken Lui)



Left: National Medal of Science (Wikipedia); Right: Dr. Theodore von Kármán receiving the same Medal of Science from Pres. Kennedy in 1963 (Wikipedia)

About the author: Arpine Ovsepyan is an internationally award winning educator who is passionate about empowering future generations to pursue STEM careers. As a STEM educator for Glendale Community College and Glendale Unified School District, she has worked hard to help inspire marginalized groups expand their post graduate plans. In fact, her work earned her distinguished awards where she was recognized at the White House by ASCD for her contributions to the educational field. She recently worked with the California Department of Education to review Next Generation Science Questions for statewide tests. Sharing a joint passion for science, education and nature, she and her husband, Vahik Khodagolian who is an aeronautical engineer and AIAA Council Member, co-authored a book on science topics related to engineering, space, and biomimicry entitled Nature's Magicians. They both enjoy volunteering for AIAA as Council Members, California Science Center and mentoring future generations by participating in the Von Kármán lectures at JPL with students to spark their creativity as engineers.



Bill Kelly (left) and other attendees (right) asking existing questions. Thanks a lot to the volunteer, Mr. Tai Thai (right, green shirt) ! (Photo courtesy by Ken Lui)

Moving Past Apollo: This generation's tools to build the 2nd major step for Mankind in Space (29 October, 2019)

by Niyati Chokshi, Co-Chair of AIAA LA LV Events/Program
(continued from page 2)



Exciting USC Student Space Research Programs
(Photo courtesy by Ken Lui)

About the Author: Niyati Chokshi is an Application engineer at Ketiv Technology, Inc. She has obtained her master's in aerospace engineering specializing in Computational Fluid Dynamics. She had worked with the local chapter of ESRA for solid propellant rockets. She is currently working towards her Private Pilot License and is loves to learn about Supersonic and Hypersonic Aircrafts. She is currently working as a Co-Chair for AIAA LA LV events program. She also enjoys Kayaking and Hiking on Sundaes. She also has participated and was trained in Community Emergency Response Training by

Long Beach Fire department and believes in helping the community to grow and flourish. She also enjoys writing blogs and finds Shakespeare's writing enthralling.



Niyati Chokshi (Photo courtesy by Ken Lui)

(More photos for the 23 November, 2019 Space Tourism ! event)



Left: Panelists / Speakers receiving the appreciation plaques (Left to Right: Dave "Mac" Mackay, Prof. Madhu Thangavelu, Dr. Thomas Spilker, Bethany Orozco, John Spencer, and John Blincow) The Saturn V and the lunar module models were provided by Prof. Madhu Thangavelu.

Right: Attendees absorbed in the presentations (John Spencer in the front speaking in this photo)

(Photo courtesy: Mohana Venkat (Left), and Prof. Madhu Thangavelu (Right))



Special: Advances in Aerospace & Planetary Robotics, and NASA Artemis: Astrobotic Announces New Lunar Logistics Headquarters in Pittsburgh, PA

(12 December, 2019): Astrobotic to open new state-of-the-art, 47,000 square foot facility in May 2020 for the development of lunar landers and rovers (continued from page 3)

by Astrobotic (with special permission)



Astrobotic's PEREGRINE LANDER (CLOSE UP)

About Astrobotic: Astrobotic Technology, Inc. is a space robotics company that seeks to make space accessible to the world. The company's lunar lander, Peregrine, delivers payloads to the Moon for companies, governments, universities, non-profits, and individuals for \$1.2 million per kilogram. Astrobotic was selected by NASA in May 2019 for a \$79.5 million contract to deliver payloads to the Moon in 2021. The company is also developing advanced space robotics capabilities such as terrain relative navigation, mobile robotics for lunar surface operations, and reliable computing systems for mission-critical applications. The company also has more than 30 prior and ongoing NASA and commercial technology contracts, a commercial partnership with Airbus DS, and a corporate sponsorship with DHL. Astrobotic was founded in 2007 and is headquartered in Pittsburgh, PA.



PEREGRINE LANDER FROM ABOVE ANALOG LUNAR SURFACE

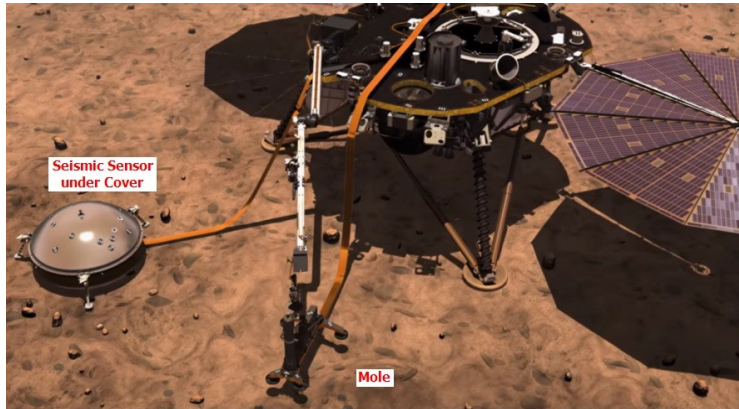


PEREGRINE LANDER ON ANALOG LUNAR SURFACE

November 16, 2019 Mars InSight & Mars Space (with PI Dr. Bruce Banerdt) Event (followed by the Aerospace Career & Employment Workshop)

(continued from page 4)

by Shawn Paul Boike, Aerospace & Industry Leader



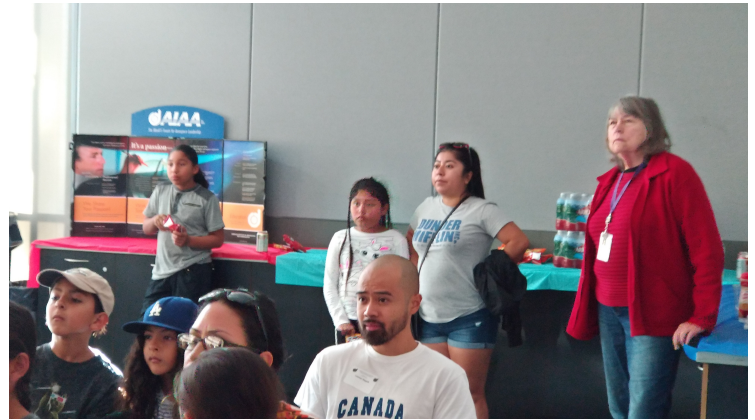
The Arm then placed the “Heat, Flow & Physical Properties Probe” nicknamed “mole” (German contribution) in an optimal location, as it was hammer-jacking itself into a lower depth 16 feet or (5 meters) it had stalled less than half way to depth. Trying to get it to mole deeper they told the robotic arm to reposition it and it popped itself out within a shorter amount of time compared to its first stall, using the robotic arm again they’ve made attempts to reposition the mole & are still trying to get to their proposed depth. **All suggestions are welcome & valuable, should you have an idea to help them, remember they only have the 1 robotic arm & it doesn’t have tremendous force capability & communication is lengthy.** The communications to and from Mars takes 12 ½ minutes each way, so manipulating the robotic arm takes 25 minutes for each detailed step of movement. They also have a radiometer to precisely monitor the variation of Mars poles position or wobble. This is now very successful and allows Mars positional accuracies dramatically more accurate than ever before.

It still hasn’t produced the planets crust depth & core information yet; it is gathering depth & core knowledge. Results are hoping to be discovered soon in the months to come.

Take-Aways:

- Mars may be our Human-kind’s immediate Plan B should earth be threatened from unforeseen event(s) Asteroid, Nuclear war, Solar & Space events.

- Follow Continuous live updates on facebook, twitter most social media thru: <https://mars.nasa.gov/insight/mission/overview/>



Students, children, teachers, and parents enjoying the event and inspired by Dr. Bruce Banerdt and the presentation (Photo courtesy by Ken Lui)



Attendees listening to the presentation enthusiastically (Photo courtesy by Ken Lui)



Fantastic aerospace rising stars from the AIAA UC Merced Student Branch volunteering in this event! (Photo courtesy by Ken Lui)

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November 23, 2019 Space Tourism Event

by Shawn Paul Boike, Aerospace & Industry Leader (Continued from Page 5)

Gateway Foundation The very knowledgeable President **John Blincow's** & Dr. Thomas Spilker Chief Architect's presentations of **great** new rotating (wheel) Space Station design(s) for more than just lab work but for all of us as an Ultimate Space Tourist destination. They had a terrific introduction and very detailed steps along with all aspects of lowered costs, equipment, resources, techniques & means to produce & evolve their space station. Their Von Braun rotating space station will be the first **commercial space construction industry** project in history. It will be serviced by the SpaceX Starship & maybe others and be designed to accommodate national space agency laboratories, billionaires who want to own property in space, and space tourists see link for good details & information: <https://www.youtube.com/watch?v=vTNP01Sg-Ss>.

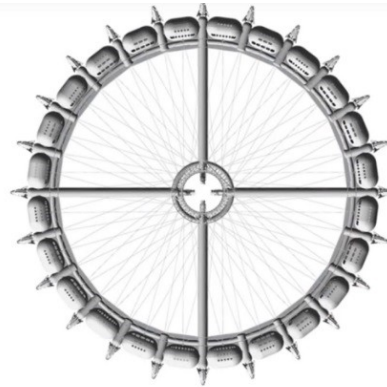


They go into more definition and show the goals of their bigger & better plans for a larger Spaceport: Starting with the Von Braun Station system operations and design series with announcements of Orbital Assembly's initiation of fabrication of large scale space construction machines and formation of Orbital Equity to fund other space construction industry assets. Very well defined details for comparisons & building their 1st spaceport, it is a fascinating video@:

<https://www.youtube.com/watch?v=LfycUTv2-aY>.

The Gateway Spaceport would be a huge "leapfrog" technological improvement for Human space habitation which we can use for tourism, experiments, discoveries, exploration, scientific benefits, adventure & a "Starship Culture" building things in space. This should be looked at as #1 choice to replace the ISS & more importantly the USA Space Forces hub with more than just 1 but 4 or

more as original conceived by Werner Von Braun-it is the smartest thing to do, do you hear us Mr. President Trump this is the Ultimate Legacy.

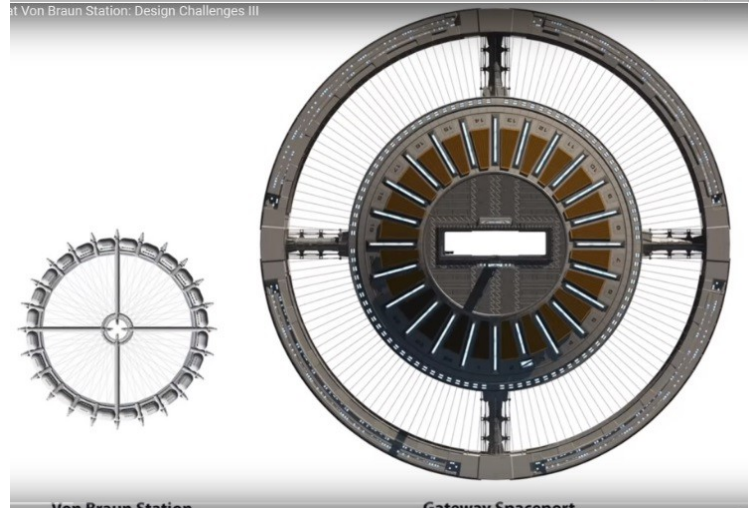


Von Braun Station



International Space Station (ISS)

at Von Braun Station: Design Challenges III



Von Braun Station

Gateway Spaceport

International Space University, National Space Society NSS, Dr. Madhu Thangavelu of USC helped moderate this AIAA event and explained how they have a University specializing in the sciences of space sciences & engineering. Dr. Madhu Thangavelu whose expertise in Space is very extensive as professor of the USC Astronautical Engineering, conductor of the Graduate Space Concept Synthesis studio & lecturer of USC school of Architecture. He presented the importance and outlook in Future Space projects, programs & concepts which more people will be needed to help fulfill. His pursuits in helping students get real-world hands on experiences in space sciences, ideas into mockups, rocketry, design & engineering for outer space.

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November 16, 2019 Mars InSight & Mars Space (with PI Dr. Bruce Banerdt) Event (followed by the Aerospace Career & Employment Workshop)

(continued from page 9)

by Shawn Paul Boike, Aerospace & Industry Leader

Facts about Mars:

*The average distance to **Mars from the sun** is 142 million miles (229 million km).

*The average distance to **Mars from Earth** is 140 million miles (225 million kilometers) current distance is 201 million miles away because they are on different orbits to the sun.

*Mars revolves around the sun in 687 Earth days, which represents a **Martian year**.

*A day on **Mars is 24.62 hours** or 24 hours & 39 minutes long while a day on Earth is 23.934 hours long. Studies have concluded when humans are in space we naturally acclimate to a Martian day sleep cycle.

*Mars and Earth have approximately the same **landmass**. Even though Mars has only 15% of the Earth's volume and just over 10% of the Earth's mass, around two thirds of the Earth's surface is covered in water. Martian surface gravity is only 37% of the Earth's (meaning you could leap nearly **3 times higher** on Mars).

*Mars has an **Atmosphere**: Mars is smaller & has less gravity than Earth which causes it to have a very thin atmosphere that consists mostly of 95% carbon dioxide, 3% nitrogen, 1.6% argon, and the remainder is trace amounts of oxygen, water vapor, and other gases. Average atmospheric pressure is 7 millibars, compared to 1,013 millibars on Earth. On Olympus Mon's peak, its pressure is at 30 pascals (0.0044 psi) and in the lowest point of Hellas Planitia it can get as high as 1,155 pascals (0.1675 psi). With no magnetic field to speak of Mars offers little protection from solar radiation and in fact the solar radiation or wind has been eroding the Martian atmosphere it has greatly reduced.

*Mars **temperature**, with a common value being -63 °C (210 K; -81 °F). Surface temperatures may reach a high of about 20 °C (293 K; 68 °F) at noon, at the equator, and a low of about -153 °C (120 K; -243 °F) at the poles.

*Due to its **gravity** Mars is differentiated, which—for a terrestrial planet—implies that it has a central core

made up of metallic iron and nickel surrounded by a less dense, silicate mantle and crust. Unlike Earth, evidence of molten metal in the Martian core is absent and there is no convection in the mantle

*It takes around 12 ½ minutes each way for communications, 25 minutes to receive & send transmissions like manipulating the robotic arm program.

*Manipulating the robotic arm to replace the mole took approximately 2 ½ months.

*Mars ground was duplicated in a lab for simulation & manipulation.

*Mars crust will be determined in the up-coming months.



Aerospace Career Workshop (after the Mars InSight presentation) instructors/panelists: (from left to right) Dean Davis, Darren DuPar, Moises Seraphin, Marty Waldman (from Las Vegas), and Bill Kelly. (Fred Lawler gave the instruction but had to leave earlier without joining the panel.)(Photo courtesy by Ken Lui)

Aerospace Career Event: We heard from Raytheon, Northrop & Las Vegas AIAA Chapter on career & employment tips for: (from instructors: Dean Davis, Darren DuPar, Marty Waldman, Bill Kelly, and Fred Lawler)

1. **Resume writing:** Std. Arial 12 Font, format & bullet points for Education, Achievements, hobbies & goals. To be less than 4 pages and using industry lingo.

(Continued on Page 13)

November 23, 2019 Space Tourism Event

by Shawn Paul Boike, Aerospace & Industry Leader (Continued from Page 10)

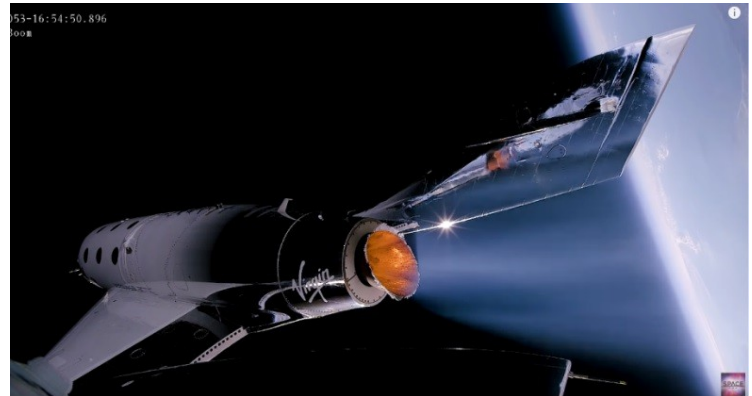
Photo below is Prof Madhu Thangavelu (USC) preparing to introduce Virgin Galactic's Chief Pilot David Mackay for his presentation in a Private Commercial Spaceline.



Virgin Galactic Space Chief Pilot. David "Mac" Mackay's presentation and personal experience of commercial Orbital Flight & safe landing(s). The Building, Testing & Development of any Human Spacecraft is very extensive, detail orientated, and all proofs of validation & verification required prior to full flight because any failure (not an option) can be catastrophic to life. Dave or Mac did explain parts of the pains taking activities & timelines to which they had completed to successfully perform their 1st full orbital flight into space even if it was only approximately 20 minutes. In 2019 Mac made his 2nd flight into space 2 pilots & 1 passenger, see video link: <https://youtu.be/kmPGOHghay8>.



The WhiteknightTwo takes VSS Unity up and it launches up to space at Mach 3+, 55.87 Miles (A)



The WhiteknightTwo takes VSS Unity up and it launches up to space at Mach 3+, 55.87 Miles (B)

The morning (Feb. 22) and soared to an altitude of 55.87 miles (89.9 kilometers), just two months after its first flight to space. Dave Mackay (doing the Irish jig to bagpipes below), the company's chief pilot, and Michael "Sooch" Masucci, each of whom has clocked more than 10,000 hours in the air. A third Virgin Galactic staff member, Beth Moses, who is the company's chief astronaut instructor, was also aboard. The flight also carried four payloads provided by NASA. These experiments will provide scientists with data about the implications of microgravity on how liquids and gases interact, how payloads vibrate and how dust particles behave, human bodies experiences as well as testing electromagnetic field sensor equipment. See more at: <https://www.space.com/virgin-galactic-powered-flight-february-2019.html>



Festive arrival from Space, dancing Dave "Mac" Mackay, Michael "Sooch" Masucci & Beth Moses

(Continued on Page 14)

November 16, 2019 Mars InSight & Mars Space (with PI Dr. Bruce Banerdt) Event (followed by the Aerospace Career & Employment Workshop)

(continued from page 11)

by Shawn Paul Boike, Aerospace & Industry Leader

2. Interviewing Technique: Professional dress suit & tie, must remember to wear socks! Same professional respectable dress attire for females. Look into the interviewers left eye (it is their attentive eye) & Navy blue is the respectable (subliminal of authority) color attire. Answer the Question with Yes & Nos then elaborate, let them talk about the position & listen of how you can add value to their need along with any examples you can discuss showing knowledge in the area.

3. Being Prepared, do a Google search on the Company & the division your interviewing with understand their size, revenue, years in business & outstanding achievements they've done. Look into the Organization structure & find the person(s) thru linkedin to see your interviewers background which you can relate.

4. Pay scale is respectable & good immediately out of college, you can make well over \$100K in ten or more years of experience & career growth in Aerospace is Good.

5. The future is very bright in Aerospace due to many industry experts are retiring.

About the Author:

Shawn Boike has created, lead, directed, managed, consulted on teams & professionally worked in, fortune 100; NASA, NSF, DOD, Boeing, General Dynamics, Lockheed Martin, Northrop Grumman, Honeywell, PPG, Parker, GM, FORD and McDonnell Douglas. Over 35 industrious years' experience in Aerospace & Product Development of; 18 Aircraft, 5 Spacecraft; 5 EV's, Tanks & many Automobiles. Founder of: Insta-Grid, American Industrial Consultants, Solution Vehicles Co. Solutioncell, Author and gained a BSME from MSU and a MBA from SDSU. www.linkedin/in/shawnpaulboike, Website: <http://www.insta-grid.com>



Published Book in Journal of Defense Management: <http://www.scribd.com/doc/215903395/Aerospace-Industry-America-s-Future>



Mrs. DuPar showing the opportunities and services at their exhibition table with Mr. Darren DuPar (Photo courtesy by Ken Lui)



Fred Lawler on resume writing (Photo courtesy by Ken Lui)



Some attendees surrounding the instructors for more advice and counseling after the event (Photo courtesy by Ken Lui)

aiaa-lalv.org, aiaa-lasvegas.org
engage.aiaa.org/losangeles-lasvegas

November 23, 2019 Space Tourism Event

by Shawn Paul Boike, Aerospace & Industry Leader (Continued from Page 12)

EnCorps STEM: Bethany Orozco an Author, a Science Technology Engineering & Math teacher presented EnCorps mission to help build our Aerospace base with young students. She is very pro-active with AIAA & our Industry, Bethany was compelled to inspire a love of math in urban students and joined Teach For America. She taught high school math and science at Da Vinci Schools in Hawthorne, California where she created project-based curriculum and connected academics to 21st century skills and real-world issues. Most recently, Bethany was a Recruiter with Partnerships to Uplift Communities Schools. She also worked to empower teacher voice in policy decisions made at the local and state levels as a Program Coordinator for Educators 4 Excellence, while simultaneously serving as a selector for Teach For America. After realizing the huge shortage for great math and science teachers, Bethany joined EnCorps to find the best and brightest talent and help them transition into careers as educators. Bethany earned her bachelor's degree in Mathematics from the University of Minnesota and Secondary Math Teaching Credential from Loyola Marymount University.

Entire Space Tourism Event

Take-Aways:

- *Space Tourism is a reality and going to become more common in this new decade.
- *Providing the Space experience for all mankind as a Tourist destination & adventure, not just a rare few Astronauts.
- *A lower cost access to all people to obtain the Space Experience & Zero G effect.
- *It is our Future and maybe the safest place to be should an unforeseen Asteroid, Nuclear, Solar or Space catastrophic event happen to our planet again.

Note from the article author:

"Understand the future doesn't have to be like the past and demanding to make the Future better - like our Race to Space and the moon. In this pursuit one's destiny is limitless."

(See Page 13 for more about the author of this article)



Future Space Tourist (and the mother)(Photo courtesy by Ken Lui)



Bethany Orozco and the EnCorps booth (Photo courtesy by Ken Lui)



Panel Discussion Session and Q & A at the end. Panelists sitting from Left to Right: Prof. Madhu Thangavelu (Moderator), Dave "Mac" Mackay, John Spencer, Dr. Thomas Spilker, Bethany Orozco, and John Blincow. Our Council Lady Mohana Venkat (sitting on the right) listening to the panel discussion (Photo courtesy by Ken Lui)

(See Bottom of Page 7 for 2 more photos)

Monday, January 13th, 2020

Aerospace Professionals Networking Event

Spotlight: Honoring minorities (aerospace professionals who are differently abled, gender, racial, ethnic and other minorities)



Location: The Museum of Flying, 3100 Airport Ave., Santa Monica, CA 90405

Time: 5:00 PM – 8:00 PM, **Dress code:** Business Casual / Casual

Who is invited: Aerospace professionals, family, and friend

Price: FREE!!! (Light hors d'oeuvres and refreshments provided)

RSVP and Information: <https://conta.cc/2PTII9n>

You do not need to be a member of AIAA to attend the event. Volunteers are needed for all AIAA activities)

Volunteers are needed, please contact: AIAA LA LV Section Chair (cgsonwane@gmail.com)

For event questions, please contact: Events/Program Chair (events.aiaalav@gmail.com)

AIAA LA LV 1/15 Aerospace Art at Lunchtime

(You do not need to be a member of AIAA to attend the event. Volunteers are needed for all AIAA activities)

**Wednesday, January 15 , 2020
11AM-2PM**

**Women in Aerospace Art with Michelle
Rouch and Mimi Stuart**
(with Presentations and selected Art Display)



Columbia Memorial Space Center (CMSC)

Theater Room (2nd Floor)
12400 Columbia Way
Downey, CA 90242

(No need to purchase a CMSC ticket to attend this event)

(Free Museum Parking)

(East of LAX/110 Hwy/710 Hwy, North of 105/Imperial Hwy, West of 605 Hwy, South of 5Hwy)

RSVP and Information: <https://conta.cc/2MBMzFG>

Wednesday, January 15, 2020, 11:00 AM - 2:00 PM (Check-in / Art Display Starting 11AM) Presentation at 12:00 PM.

(Seats/Tickets are limited. RSVP will end after Monday, January 13, 2020, or whenever all seats are filled.)

Dress Code

Business Casual

Contact:

events.aiaalav@gmail.com or (949)426-8175 (phone/text ok) (AIAA LA-LV Events/Program Chair)

***Volunteers are needed, please contact:**

AIAA LA-LV Section Chair (cgsonwane@gmail.com)

Who is Invited: Professionals, Students, friends and family members.

(You do not need to be AIAA member to attend the event) (Volunteers are needed for all AIAA activities)

Free admission and free pizza

Saturday, January 25, 2020

SNC's Propulsion Division History

by

Mike Carkin

Propulsion Engineer, Propulsion Division, Sierra Nevada Corporation (SNC)



Michelle Obama Neighborhood Library Community Meeting Room

5870 Atlantic Ave., Long Beach, CA 90805

(East of 710 Hwy, South of 91 Hwy, North of 405 Hwy, and West of 605. Near the junction of 710 Hwy and 91 Hwy.)

(Free Parking in the Library Parking Lot)

RSVP and Information: conta.cc/2pMnD5z

Saturday, January 25, 2020, 10:00 AM - 2:00 PM

Introduction/Presentation starts at 10:30 AM / 10:45 AM

(Ticket sales will end after Thursday, January 23, 2020, or whenever tickets are sold out.)

Dress Code: No open-toe shoes

Contact: events.aiaa.lalv@gmail.com or (949)426-8175 (phone/text ok) (AIAA LA-LV Events/Program Chair)

*Volunteers are needed, please contact: AIAA LA-LV Section Chair (cgsonwane@gmail.com)

Jan 25, 2020 - AIAA Los Angeles - Las Vegas Section Young Professionals Bowling Night

Alumni and Students! Join us for our first AIAA YP bowling night! This will be a college themed event. Wear your favorite undergrad outfit, sweatshirt, jacket, t-shirt, etc. If you attended multiple schools mix and match for your undergrad, masters or doctorate. Represent your alma mater with an evening of bowling, beverages and food! RSVPs will be cut off for bowling on Jan 20th or when we hit our cap. Following that, all can still RSVP to just attend.

RSVP and Information conta.cc/2QK8uvx


American Institute of Aeronautics and Astronautics
Los Angeles - Las Vegas Section

January 25th 2020
Bowling Night & Mixer
 (College Themed Night)
YOUNG PROFESSIONALS EVENT












Is your college logo missing? Send me an email and I will update the flyer.










Location: Bowlero Los Angeles
8731 Lincoln Blvd, Westchester (Los Angeles), CA 90045, United States

Time: 7:00pm-9:00pm

Attire: Collegiate Gear

Alumni! Come out and represent your alma mater with an evening of bowling, beverages and food! Wear your favorite university apparel and a prize will be awarded for best bowler!

Price: FREE Entry, Bowling is \$5 for AIAA Members or \$10 (RSVP Required)

Reminder: Not an AIAA Member? AIAA is currently offering a free one-year e-Membership!

What is e-Membership? It's a FREE one-year membership for aerospace professionals new to AIAA that offers access to AIAA's electronic resources! You'll be part of a vast network of aerospace professionals through AIAA's online Engage Community, take advantage of discounts on high-quality educational opportunities, and receive the latest news and information impacting your profession. You'll also be able to access other valuable online resources only available to AIAA members.

<https://www.aiaa.org/emember/>

For any questions or comments regarding this event or YP activity, please contact YP chair Moises Seraphin m.seraphin@staubli.com; cell: 747-232-0016. We are always in need for volunteers at this and all AIAA LA/LV events. Please contact cjsonwane@gmail.com for all volunteer opportunities.

AIAA LA-LV 1/30 Dinner Meeting

(You do not need to be a member of AIAA to attend the event. Volunteers are needed for all AIAA activities)

Thursday, January 30 , 2020

In the Line of Duty: **Michael Adams and the X-15** **Michelle Evans**

Author, Bestseller "The X-15 Rocket Plane, Flying the First Wings into Space"

Founder and President, Mach 25 Media (www.Mach25Media.com)

AIAA Distinguished Lecturer

Writer, Photographer, and Communications Specialist in aerospace



RSVP and Information: <https://conta.cc/2LNY7p8>

The Proud Bird (The Mission Room, 1st Floor) 11022 Aviation Blvd., Los Angeles, CA 90045

(Free Parking)

(East of LAX & Pacific Coast Hwy 1, North of 105/Imperial Hwy, West of 405 Hwy, South of W. Century Blvd/Hwy 10)

Thursday, January 30, 2020, 5:30 PM - 9:30 PM (Check-in / Buffet starts at 5:30AM) Presentation starts at 7:00 PM.

(Seats/Tickets are limited. RSVP will end after Tuesday, January 28, 2020, or whenever all seats are filled.)

Dress Code: Business Casual

Contact: events.aiaalalv@gmail.com (AIAA LA-LV Events/Program Chair)

*Volunteers are needed, please contact: AIAA LA-LV Section Chair (cgsonwane@gmail.com)

AIAA LA LV 2/13 evening event

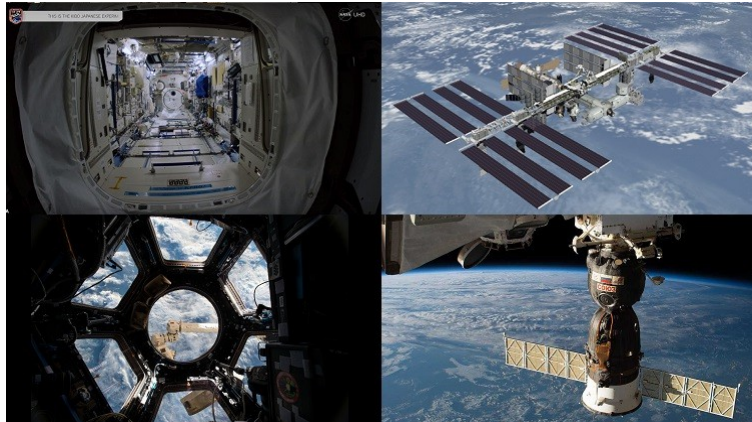
(You do not need to be a member of AIAA to attend the event. Volunteers are needed for all AIAA activities)

Thursday, February 13, 2020

Operations Development of the International Space Station

by

Mark Pestana



Colonel, USAF (ret.)

This presentation describes how the US led the international cooperation between 16 nations, including Russia, in developing the International Space Station (ISS), which has been continuously occupied for two decades. Not a description of detailed construction history, this talk focuses on the challenges of culture, language, and technical approaches in developing ISS training, operations, and safety for astronauts and cosmonauts. Information about NASA and commercial programs for crew transportation, Moon, Mars, and space tourism will be included.

El Segundo Public Library

Sue Carter Friends of the El Segundo Public Library Community Room (Downstairs)

111 W Mariposa Ave.

El Segundo, CA 90245

(Library Parking and Street Parking available)

(West 110 Hwy / PCH 1, South of LAX/ 105 Hwy / Imperial Hwy. Close to LAX)

Thursday, February 13, 2020, 6 PM - 9 PM, Introduction/Presentation at 6:30PM/6:45PM

(Seats/Tickets are limited. RSVP will end after Tuesday, February 11, 2020, or whenever all seats are filled.)

Dress Code

Business Casual

Contact:

events.aiaalav@gmail.com or (949)426-8175 (phone/text ok) (AIAA LA-LV Events/Program Chair)

Coordinating Organization: AIAA Los Angeles - Las Vegas Section

*Volunteers are needed, please contact: AIAA LA-LV Section Chair (cgsonwane@gmail.com)



aiaa-lalv.org, aiaa-lasvegas.org
engage.aiaa.org/losangeles-lasvegas

Who is Invited: Professionals, Students, friends and family members.
 (You do not need to be AIAA member to attend the event)
 (Volunteers are needed for all AIAA activities)

Electric and Hybrid Aircraft mini-Conference

Saturday, February 22, 2020

Dr. Marty K. Bradley

AIAA Fellow

Technical Fellow for The Boeing Company

Boeing Commercial Airplanes Advanced Concepts Group

Dr. Susan X. Ying

AIAA Fellow

Royal Aeronautical Society Fellow

SVP Global Partnerships, Ampaire

Joseph Oldham

President – New Vision Aviation

Sustainable Aviation Project – Flight Training with Pipistrel Alpha Electro Trainers



RSVP and Information: <https://conta.cc/36brp9F>

The Proud Bird, (The Mission Room, 1st Floor)

11022 Aviation Blvd., Los Angeles, CA 90045

(Southeast of LAX, South of 10 Hwy, North of 105 / Imperial Hwy, and West of 405 Hwy.)

(Free event parking in the Proud Bird Parking Lot)

Saturday, February 22, 2020, 10:00 AM - 2:30 PM (Check-in starts 9:30AM)

Presentation starts at 10:00 AM.

(Ticket sales will end after Thursday, February 20, 2020, or whenever tickets are sold out.)

Dress Code: Business or Business Casual

Contact: events.aiaalav@gmail.com (AIAA LA-LV Events/Program Chair)

*Volunteers are needed, please contact:

AIAA LA-LV Section Chair (cgsonwane@gmail.com)

See what's happening on our social sites: Please join us, take a look, and invite others! volunteers are needed for social media, please contact cgsonwane@gmail.com

Engage @ AIAA LA LV AIAA LA-LV Website : AIAA-LALV.org



Please check out the new website features, comment/like for blogs and provide feedback. Also, if you are interested in blog or newsletter articles, please contact us. Please also follow, join, share, and/or like our social media pages, groups or pin boards.

Monday, February 24th, 2020

Aerospace Professionals Networking Event

Spotlight: Engineers Week Celebration and AIAA Headquarter Executives



Location: The Proud Bird Food Bazaar & Event Center (Mission Room, 1st Floor)

11022 Aviation Blvd., Los Angeles, CA 90045

Time: 5:00 PM – 8:00 PM, Dress code: Business Casual / Casual

Who is invited: Aerospace professionals, family, and friend

Price: FREE!!! (Light hors d'oeuvres and refreshments provided)

RSVP and Information: <https://conta.cc/2XDGbBX>

You do not need to be a member of AIAA to attend the event. Volunteers are needed for all AIAA activities)

Volunteers are needed, please contact: AIAA LA LV Section Chair (cgsonwane@gmail.com)

For event questions, please contact: Events/Program Chair (events.aiaalv@gmail.com)

Space Colonization Innovation Competition

Cash Prizes for Top Three!



Entry Requirements:

Physical/Computer models, posters visualizing innovative technologies or ideas for sustained habitation on extra-terrestrial environments. Examples: Transportation, housing, communication, farming, living, etc. Entries will be judged by veterans of aerospace industry.

Awards:

First Place: \$600 & Trophy

Second Place: \$400 & Plaque

Third Place: \$250 & Plaque

Submission Deadline:

March 31, 2020

Who can submit an entry:

Single or Group submissions. Students, Professionals, Retirees, Family, and Friends. You do not need to be an AIAA member to submit the entry. (There is an additional competition just for High School and Middle School students Contact: dean.davis@ngc.com for more information).

Organized by: AIAA Los Angeles/Las Vegas Region

Event sponsor: AIAA CSU Long Beach Student Branch

Not an AIAA Member? AIAA is currently offering a free one-year e-membership

<https://www.aiaa.org/emember/>

For any questions regarding this event: College Students Contact: industry.rep@csulbaiaa.org

Working Professionals and Retirees:

serena.quach@ngc.com

aldomart@usc.edu

frederick.e.lawler@raytheon.com and

kenneth.varghese@boeing.com

We are always in need for volunteers for all AIAA LA/LV events.

Contact Chair of AIAA LA LV: cgsonwane@gmail.com.

AIAA LA/LV Section
Interplanetary Space Colonization (K-12 STEAM) Contest
Cash Prizes for Top Three!
Contest: Design of Human Space Colonies on Other Worlds

- *How do we get to other worlds and back? (Interplanetary Space Transportation)*
 - *How do humans build shelters on other worlds? What will they look like?*
 - *How do humans obtain air to breath and water to drink on other worlds?*
 - *How do humans grow crops and farm animals to eat on other worlds?*
 - *How do humans power their habitats and transportation systems?*
 - *How do humans communicate back to Earth and to each other?*

Entry Requirements:

- *Physical 3-D Models/Dioramas, Posters,*
- *Paintings, Drawings, Sculptures, Computer Graphical Designs*

Award Judging Criteria:

- *Creativity & Innovation*
- *Scientific & Engineering Plausibility*
- *Complexity & System Interconnectivity*

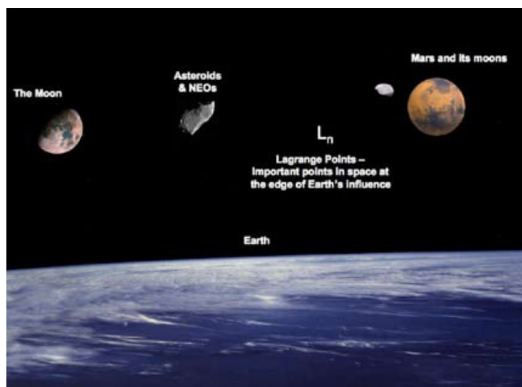
Awards:

- *First Place: \$200 & Trophy*
- *Second Place: \$100 & Plaque*
- *Third Place: \$50 & Plaque*

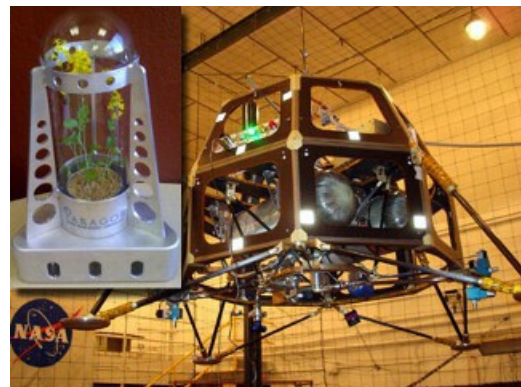
Submission Deadline:

March 31, 2020

Point of Contact: Dean Davis: Dean.Davis@ngc.com



Future Human Spaceflight Potential Destinations



Robot-Tended Lunar Farms

For any questions regarding this event: Dean Davis (AIAA LA-LV STEM K-12 Chair): Dean.Davis@ngc.com

We are always in need for volunteers for all AIAA LA/LV events.

Contact Chair of AIAA LA LV: cgsonwane@gmail.com.

Call for Donation (items) to AIAA Los Angeles - Las Vegas Section

The AIAA Los Angeles - Las Vegas Section is open for donation of your choice, such as books, models, gadgets, wine, telescope, gift cards, art pieces etc. in mint, clean, intact, working, and presentable conditions.

These items will be sold off at a silent auction at one of our events when you will be present. The money received from the auction will be given to students with Mr. And Mrs your name scholarship. If the money is used for the event, it will be called Mr. And Mrs your name sponsored event. You will receive a receipt for donation for tax write-off. We are a non-profit organization.

The proceeds of the funds will be used for STEM student scholarship, event expenses, gifts to our speakers / guests, raffle prizes, silent auction etc. Please contact the Section Chairman at cgsonwane@gmail.com. Please include the descriptions, recent photos, dimensions, and expiration dates (if applicable). You do not need to be AIAA member to donate or receive scholarship.

Thank you for helping the Aerospace community in Los Angeles Las Vegas region. The events have been immensely popular and have benefited several students in the region.

This silent auction is first of its kind event, and we request you to provide input suggestions and volunteer your time with ideas.

Research in Space: International Space Station U.S. National Laboratory

Leading experts from the International Space Station U.S. National Laboratory will be visiting AIAA Los Angeles in a few weeks. We are planning on having a public event for all, including but not limited to Aerospace Professionals, their family and friends, STEM students, teachers and any other members of public.

The event is a great occasion to meet and brainstorm ideas on research carried out in the International Space Station (ISS).

If your organization, college, or school, is involved or is interested in experiments carried out at the International Space Station, and wants to get involved in the event, please contact us. We want to reach out to all community members of Southern California.

Please contact cgsonwane@gmail.com