September 2019

Update

A free email newsletter of the Oklahoma Space Alliance

Oklahoma Space Alliance

A Chapter of The
National Space Society

Falcon Rising

September 2019 OSA Meeting

Saturday, September 14, 2019

2:00 PM

Cliff & Claire McMurray's House

2715 Aspen Circle, Norman, OK 73072

405-863-6173

Program— Space News and Events

Website: http://osa.nss.org

Quote of the Month

Politicians should read science fiction, not westerns and detective stories.

— Arthur C. Clarke

Table of Contents

Falcon Rising 1
September 2019 OSA Meeting 1
Quote of the Month 1
Table of Contents 2
Commercial Reusable Rockets are Coming to China 3
A Chinese (Semi-)Commercial Rocket Launches Three Satellites on First Flight 4
Yet Another Chinese "Commercial" Launcher 5
Even Arianespace Wants to Go Reusable 6
Starhopper Retires, On to Starship Mk1 7
Meanwhile, Delta IV Medium Rocket Has Its Last Flight 8
Dream Chaser Will Use ULA Vulcan Booster 9
NASA Plans to Keep BEAM on ISS Indefinitely 10
NASA Seeks Independent Review of ISS National Laboratory 11
FAA Can't Handle Its Commercial Space Workload 12
Virgin Galactic Opens 'Gateway to Space' for Tourist Launches at Spaceport America 13
NASA's Plan for Supply of Lunar Gateway Looks a Lot Like ISS Commercial Cargo Contracts 14
Update on Commercial Lunar Lander Companies 15
Lunar Exploration Is Providing New Impetus for Space Resources Legal Debate 16
So Close… Chandrayan-2 Lander Fails 17
This Week At NASA 18
Feature-length video: Jeffrey Manber Speech at ISDC 2019 20

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September 14, 2019

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Commercial Reusable Rockets are Coming to China

Linkspace Aerospace Technology Group, a private launch company established in China in 2014, carried out its third low-altitude untethered launch and landing test of its RLV-T5 tech demonstrator on August 9, reaching 300 meters. A full test flight of the NewLine-1 orbital launcher, to be capable of carrying 200 kilograms to a 500 kilometer sun-synchronous orbit (SSO), is planned for 2021.

Articles and video:
https://spacenews.com/chinese-linkspace-reaches-300-meters-with-launch-and-landing-test/

https://www.space.com/linkspace-reusable-suborbital-rocket-launch-success.html

A Chinese (Semi-)Commercial Rocket Launches Three Satellites on First Flight

The private Smart Dragon-1 rocket, built by the China Rocket Co. Ltd., completed its first mission on August 17, successfully launching three small satellites to Earth orbit. Smart Dragon-1 is comparable in size and performance to RocketLab's Electron smalsat launcher. But like many "commercial" companies in China, the boundaries between company and government are fuzzy. China Rocket is a subsidiary of the China Academy of Launch Vehicle Technology (CALT), which itself is part of the state-owned China Aerospace Science and Technology Corporation (CASC). CASC is China's main aerospace contractor, and CALT has built most of China's Long March rockets over the years.

Articles and video: https://www.space.com/china-commercial-rocket-smart-dragon-1-first-launch.html

https://spacenews.com/chinese-commercial-rocket-smart-dragon-1-reaches-orbit-with-first-launch/

Yet Another Chinese “Commercial” Launcher…

A commercial Kuaizhou-1A rocket launched on August 30, delivering a microgravity experiment satellite and a commercial technology verification satellite into roughly 600-kilometer altitude orbits inclined by 97.8 degrees. This rocket belongs to Expace, a commercial subsidiary of the China Aerospace Science and Industry Corporation (CASIC), a giant defense contractor and missile maker. Kuaizhou-1A is understood to be derived from missile technology; it consists of three solid stages and a liquid propellant upper stage, and is capable of lofting a 200-kilogram payload into a 700-kilometer sun-synchronous orbit (SSO).

Article: https://spacenews.com/chinese-light-launch-blitz-continues-with-kuaizhou-1a-mission/

Even Arianespace Wants to Go Reusable

When even Arianespace wants to have a reusable launch vehicle, you know reusability is the wave of the future. Back in February, ArianeGroup and the French space agency CNES signed a memorandum of understanding for a new "acceleration platform" named ArianeWorks that will work to develop new launchers, including reusable ones. ArianeWorks is developing two low-cost demonstrators that will examine how to recover the first stage of a rocket launching to space. An elementary experimental vehicle called Frog will test many of the technologies needed. Lessons learned from Frog will then be ported on to a more advanced demonstrator called Themis.

Article: https://www.space.com/arianeworks-reusable-rockets-themis-callisto-video.html

Starhopper Retires, On to Starship Mk1

After only four flights, SpaceX's Starhopper test bed for its Starship launch vehicle (intended ultimately for Mars colonization) has been retired. The last flight on August 27 reached 150 meters (about 500 feet). Future test flights will be carried out by two orbital prototypes, Starship Mk1 and Mk2, both powered by three Raptor engines (Starhopper had just one). SpaceX is building Mk1 in Boca Chica, Texas and Mk2 on Florida's Space Coast, reasoning that a little intra-company competition will improve the final Starship design. With his usual optimism, Elon Musk says operational Starship flights could begin as early as 2021.

Article: https://www.space.com/spacex-starhopper-aces-final-test-launch-landing.html

Meanwhile, Delta IV Medium Rocket Has Its Last Flight

The last United Launch Alliance (ULA) Delta IV Medium rocket lifted off on August 22, on the vehicle's 29th mission. After nearly two decades in service, the massive orange-and-white launcher delivered its final payload, a GPS III satellite for the U.S. Air Force. The old ULA launchers are being phased out. There are still a few Delta IV Heavy and Atlas flights left, but Delta II was retired last year. Beginning (hopefully) in 2021, ULA will be flying its next-generation Vulcan launch vehicle.

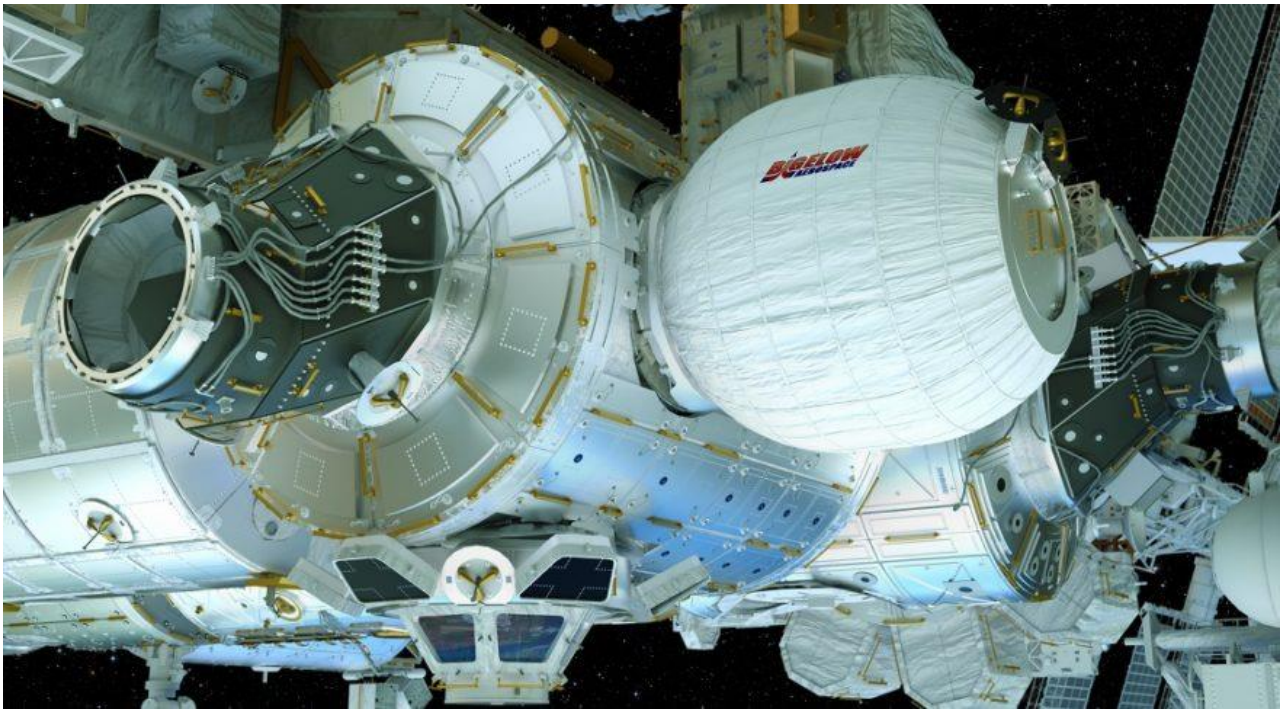
Article and video: https://www.space.com/last-delta-4-medium-rocket-launches-gps-3-satellite.html

Dream Chaser Will Use ULA Vulcan Booster

Sierra Nevada Corp. announced Aug. 14 that it will use United Launch Alliance's Vulcan launch vehicle for launching six Dream Chaser missions to the ISS under SNC's Commercial Resupply Services (CRS-2) contract awarded by NASA in 2016. These flights will be the commercial debut for Vulcan, with the first mission in late 2021, flying on the rocket's second flight. The companies said that, should Vulcan suffer delays, there is an option to shift launches to the Atlas 5 (where they were originally manifested). In addition to the six CRS-2 flights, SNC is pursuing additional opportunities for Dream Chaser, which could fly on vehicles other than Vulcan. "We're maintaining the ability to fly on other launch vehicles," said John Roth, vice president of strategy and business development at SNC. "We're launch vehicle agnostic."

Article: https://spacenews.com/sierra-nevada-corp-selects-ula-vulcan-for-dream-chaser-missions/

NASA Plans to Keep BEAM on ISS Indefinitely



In a July 30 presentation at the ISS Research and Development Conference, Nathan Wells, an instrumentation lead for the Bigelow Expandable Activity Module (BEAM) at NASA, said the module's on-orbit performance had exceeded expectations and that it had been cleared to remain on the station to 2028. "Now it's become more of a core facility," he said of BEAM, which is now being used for stowage to free up volume on the cramped station. BEAM launched in April 2016 and was installed on the station in May of that year. NASA originally intended to keep the module on the station for two years to test the effectiveness of BEAM's inflatible module technology, then discard it. But habitable volume is just too valuable to throw away.

Article: https://spacenews.com/nasa-planning-to-keep-beam-module-on-iss-for-the-long-haul/

NASA Seeks Independent Review of ISS National Laboratory

NASA seems to be unhappy with the ISS National Laboaratory (managed by as CASIS, i.e. the Center for the Advancement of Science in Space). They will perform an independent review of the non-profit organization that runs the portion of the International Space Station designated a national laboratory while also calling for a "strategic pause" in that organization's work. All this may have something to do with a request by CASIS "to change or significantly reduce the availability of services" of Joseph Vockley, who is president and chief executive of CASIS and serves as principal investigator for NASA's grant to CASIS to operate the ISS national lab. NASA said it was deferring that request until after the review. A source familiar with the situation said that the CASIS board recently sought to remove Vockley, a move that would require the concurrence of NASA.

Article: https://spacenews.com/nasa-to-seek-independent-review-of-iss-national-laboratory/

FAA Can't Handle Its Commercial Space Workload

The Federal Aviation Administration's space-related workload is growing faster than its workforce, but the agency wants to complete a reorganization focused on efficiency before seeking more personnel. That growing workload, the office's leader warns, may be exacerbated by planned revisions to regulations for launch licensing. The public comment period for those revisions closed Aug. 19.

Since 2012, the FAA's Office of Commercial Space Transportation, or AST, has increased staffing by 40 percent, according to Wayne Monteith, the associate administrator of that office. Its workload, in contrast, has grown tenfold, he said. "While 40% seems really really good … when you're looking at a 1,000% increase in the workload, something's got to give."

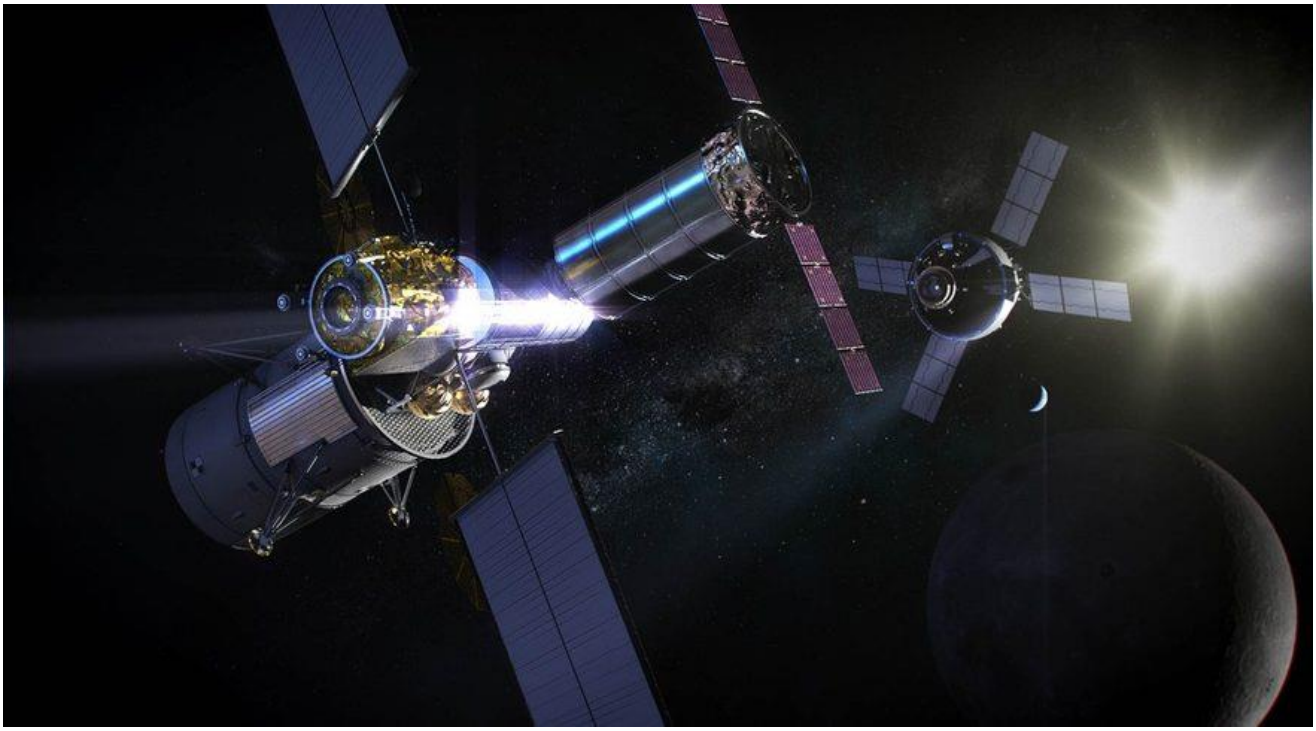
Article: https://spacenews.com/faa/

Virgin Galactic Opens 'Gateway to Space' for Tourist Launches at Spaceport America

Virgin Galactic unveiled the mostly completed interior of its "Gateway to Space" building at Spaceport America on August 15, showcasing communal areas where passengers will gear up for their flights as well as the spaceflight-operations sector housing mission control.

Article and video: https://www.space.com/virgin-galactic-unveils-spaceport-america-grand-opening.html

NASA's Plan for Supply of Lunar Gateway Looks a Lot Like ISS Commercial Cargo Contracts



NASA formally issued a call for proposals to provide cargo transportation services for its lunar Gateway Aug. 16, offering up to $7 billion in contracts to support operations of the human-tended facility. Proposals are due to NASA Oct. 1, with the agency expected to award one or more contracts before the end of the calendar year. Under the program, companies would deliver at least 3,400 kilograms of pressurized cargo and 1,000 kilograms of unpressurized cargo to the Gateway on each mission. The vehicle would also be required to dispose of at least as much pressurized and unpressurized cargo as it delivers to the Gateway. The program will use fixed firm price contracts with milestone payment schedules, like that used for cargo transportation services to and from ISS.

Article: https://spacenews.com/nasa-issues-call-for-proposals-for-gateway-logistics/

Update on Commercial Lunar Lander Companies

Astrobotic marches on, and Japanese company ispace gets into the act. Both will have first flights in 2021; Astrobotic's Peregrine lander will be the first payload on ULA's Vulcan Centaur. Meanwhile, the German lunar lander company PTScientists, which filed for bankruptcy in July, announced it has been acquired by an unidentified aerospace company, allowing it to continue operations.

Articles: https://spacenews.com/commercial-lunar-lander-companies-update-mission-plans/

https://spacenews.com/ptscientists-acquired-to-continue-lunar-lander-work/

Lunar Exploration Is Providing New Impetus for Space Resources Legal Debate

"This is looking like something that's going to happen in the real world in the relatively near future. The focus has shifted now from asteroids to the moon, and it's shifted from metals to ice," said Gabriel Swiney, a State Department attorney who deals with space law issues, during a September 5 meeting of the NASA Advisory Council's Regulatory and Policy Committee. The growing interest in lunar resources, and shifting positions among some nations, comes as the debate about space resource rights is about to enter a new chapter. The United Nations Committee on the Peaceful Uses of Outer Space (COPUOS) will establish a working group next specifically devoted to space resources. Swiney said that group will likely set up a three- to five-year "work plan" for addressing the issue.

Article: https://spacenews.com/lunar-exploration-providing-new-impetus-for-space-resources-legal-debate/

So Close… Chandrayan-2 Lander Fails

India's hopes to be the fourth nation to successfully land on the moon were dashed on September 6, when India's space agency ISRO lost contact with the Vikram lander less than three minutes from touchdown, at about 1.2 miles above the lunar surface. The orbiter part of the Chandrayaan-2 spacecraft has photographed the lander on the surface, apparently in a tilted position. Hard landing, but all in one piece? Attempts to contact the lander will continue for 14 days, but things aren't looking good. The orbiter continues with its mission, operating well.

Article: https://www.space.com/india-moon-lander-found-by-chandrayaan-2-orbiter.html

Video: https://www.youtube.com/watch?v=vTJ5IxuiDHA

This Week At NASA

Videos: https://www.youtube.com/watch?v=D5J-xTFyido

https://www.youtube.com/watch?v=lnn_-1BYbiY

https://www.youtube.com/watch?v=d1-6h4Wj6Aw

https://www.youtube.com/watch?v=5qnYNY6DvtM

https://www.youtube.com/watch?v=aOukt6g3os0

Feature-length video: Jeffrey Manber Speech at ISDC 2019

Jeffrey Manber, founder and CEO of Nanoracks, received NSS' Space Pioneer Award for Entrepreneurship at the National Space Society's 2019 International Space Development Conference. This is a video of his acceptance speech at the conference.

That’s All Folks