

# Astronautical News

31 March 2017

**Success for  
SpaceX 're-  
usable rocket'**

**Decommissioned  
Earth Science  
satellite to  
remain in orbit  
for decades**

**Dial-up space  
communications  
system gets  
'high-speed'  
upgrade**

**ExoMars: Rover  
scientists to  
study Mawrth  
Vallis option**

**Collator**

Scott Hatton

**Graphic Design**

Takiss Vessim

**In cooperation with**

The British Interplanetary Society

You can subscribe to the daily edition of Astronautical News by sending an email to [astronautical-news+subscribe@googlegroups.com](mailto:astronautical-news+subscribe@googlegroups.com)



**ExoMars: Rover scientists to study Mawrth Vallis option** Scientists are going to investigate a second site on Mars as a possible destination to send ESA's 2021 rover. Scientists spent two days considering the options and plumped in the end for Mawrth Vallis - an area rich in clay minerals that must have formed during prolonged rock interactions with water. Mawrth joins Oxia Planum, which was selected for study in 2015.



**New treasures from Juno: Jupiter dazzles during fourth close approach** Image processor Björn Jónsson shares some of his latest stunning images of Jupiter, created using data from NASA's Juno spacecraft.



**A repeat of the space shuttle's bold test flight? NASA considers crew aboard first SLS mission** NASA has only flown astronauts aboard a rocket's first flight once, when John Young and Bob Crippen took space shuttle Columbia on the boldest test flight in history. What are the risks of repeating the feat for SLS?



**Success for SpaceX 're-usable rocket'** SpaceX has successfully re-flown a segment from one of its Falcon 9 rockets. The first-stage booster, which was previously used on a mission 11 months ago, helped send a telecommunications satellite into orbit from Florida's Kennedy Space Center. It marks an important milestone for SpaceX in its quest for re-usability.



**Decommissioned Earth Science satellite to remain in orbit for decades** A NASA Earth science satellite whose mission is ending this week will remain in orbit through the middle of the century, far longer than the limit set by orbital debris mitigation guidelines.



**Dial-up space communications system gets 'high-speed' upgrade** NASA is making strides toward launching its laser-based space communications systems, which officials say could become the "high-speed internet of the sky."



**NASA orbiter shows Mars lost 90 per cent of its CO2 to space** The MAVEN spacecraft has completed the key part of its mission: to track down how much argon Mars's atmosphere is giving up as a proxy for carbon dioxide loss



**Russia hopes India will join initiative on non-deploying weapons in space** Russia hopes India will join the Russian initiative on non-deployment of weapons in outer space, Russian Foreign Ministry's Non-Proliferation and Arms Control Department Director Mikhail Ulyanov said. Ulyanov reminded that in 2004, Russia took a unilateral decision not to be the first to place weapons in outer space, setting a good example for other countries to follow suit.



**The "Brain" of the Space Launch System RS-25 engine passes critical test** An RS-25 rocket engine with a new flight-model engine controller and flight configuration software was tested for the first time at NASA's Stennis Space Center. Four RS-25 engines, manufactured by Aerojet Rocketdyne, a subsidiary of Aerojet Rocketdyne Holdings, Inc., will help propel NASA's Space Launch System (SLS) rocket, America's next generation heavy-lift launch vehicle.



**Vietnam set to produce satellites by 2022** Vietnam targets to self-develop Lotusat-2 by 2022 when its technical facilities for satellite research, assembly, integration and testing are ready to operate, according to the Vietnam National Satellite Center (VNSC).



**Bangladesh to join India's South Asia Satellite initiative** Bangladesh has signed an agreement with India to formally join New Delhi's 'South Asia Satellite' initiative, through which the Indian Space Research Organisation (ISRO) will launch a communication satellite for serving the South Asia region.



**NASA's SDO sees a stretch of spotless Sun** For 15 days starting on March 7, 2017, NASA's Solar Dynamics Observatory, or SDO, returned visible light images of a yolk-like spotless sun. This is the longest stretch of spotlessness since the last solar minimum in April 2010, indicating the solar cycle is marching on toward the next minimum, which scientists predict will occur between 2019- 2020.

## Recent Launch Activities

**Success for SpaceX 're-usable rocket'** SpaceX has successfully re-flown a segment from one of its Falcon 9 rockets. The first-stage booster, which was previously used on a mission 11 months ago, helped send a telecommunications satellite into orbit from Florida's Kennedy Space Center. It marks an important milestone for SpaceX in its quest for re-usability.  
(31 March 2017)

**Delta IV launches WGS-9 military communications satellite** The U.S. military communications satellite WGS-9 has launched into orbit atop a United Launch Alliance Delta IV rocket.  
(20 March 2017)

**New Japanese spy satellite in orbit** Japan launched a new spy satellite into orbit to help keep an eye on the nation's unpredictable, nuclear-armed neighbour, North Korea. The Information Gathering Satellite (IGS) Radar 5 lifted off atop a Japanese H-IIA rocket from Tanegashima Space Centre in southern Japan.  
(18 March 2017)

**SpaceX launches EchoStar XXIII communications satellite into orbit** SpaceX on Thursday successfully launched a communications satellite into space from the Kennedy Space Center in Florida. The company's Falcon 9 rocket blasted off at 2 am (0600 GMT) carrying the EchoStar XXIII, a commercial communications satellite for EchoStar Corporation. The satellite will provide telecommunications.  
(17 March 2017)

## Development Activities

**Russia to build first new-generation 'Federation' spacecraft by 2021** The first Russian next-generation manned spacecraft called the Federation, which is 80 percent built of composite materials, will be manufactured by 2021, Russia's Energia space corporation said.  
(22 March 2017)

**ESA's Jupiter mission moves off the drawing board** Demanding electric, magnetic and power requirements, harsh radiation, and strict planetary protection rules are some of the critical issues that had to be tackled in order to move ESA's Jupiter Icy Moons Explorer - Juice - from the drawing board and into construction.  
(17 March 2017)

**Blue Origin developing 10,000-lb. lunar polar lander** A robotic lunar lander capable of delivering as much as 10,000 lb. of cargo to a permanent outpost on the rim of the Moon's polar Shackleton Crater could make its first flight by July 2020, with a little help from NASA. Blue Origin owner Jeff Bezos said that his company has been working on a cargo lander that would support a human base set up in a zone of almost full-time sunlight on the crater's rim.  
(4 March 2017)

**China hopes to conduct second mission to Mars by 2030** China is likely to conduct its second Mars mission, aimed at collecting soil samples for analysis, by 2030, according to the China Aerospace Science and Technology Corporation (CASC).  
(3 March 2017)

**Chinese cargo spacecraft set for liftoff in April** In April, China will launch a cargo spacecraft into orbit as part of a schedule to develop an international space station as soon as 2020. A Tianzhou-1 cargo spacecraft could be headed into space "as early as mid-April" atop a Long March-7 Y2 rocket, representing a major milestone for China's space programme.  
(27 February 2017)

**NASA's audacious Europa missions are getting closer to reality** NASA announced progress on a spacecraft that would assess whether Jupiter's Moon Europa is habitable, and earlier this month, an agency-sponsored science team released a report on a separate lander mission that would directly search for signs of life.  
(27 February 2017)

**BepiColombo: ESA and JAXA join hands to explore Mercury in 2018** The spacecraft will reach Mercury over a span of seven years. It will fly by Earth in 2020 and Venus in 2021.  
(25 February 2017)

**German-French climate mission enters its implementation phase** DLR and Airbus DS signed a contract for the design and construction phases of the German-French climate satellite MERLIN (Methane Remote Sensing LIDAR Mission). From 2021, this small satellite mission will measure the methane concentration in Earth's atmosphere to an unprecedented level of accuracy and thus contribute to research into the causes of climate change.  
(18 February 2017)

## ISS Activities

**Spacewalks to advance Space Station commercial crew dockings** NASA is prepped to lay the groundwork for the installation of the second of two U.S. International Space Station commercial docking ports with a series of spacewalks.  
(24 March 2017)

**SpaceX Dragon returns to Earth** After carrying nearly 5,500 pounds of supplies and experiments to the International Space Station on Feb. 23, the SpaceX Dragon capsule officially detached and began its descent to Earth.  
(19 March 2017)

**NASA developing contingency plan for commercial crew delays** NASA plans to complete by the middle of March a contingency plan for ensuring access to the International Space Station should its two commercial crew partners suffer additional delays.  
(25 February 2017)

**Progress underway for first commercial airlock on Space Station** Deployment of cubesats and other small satellite payloads from the orbiting laboratory by commercial customers and NASA has increased in recent years. To support demand, NASA has accepted a proposal from NanoRacks to develop the first commercially funded airlock on the space station.  
(9 February 2017)

**Japanese craft leaves Space Station to conduct space-junk experiment** A Japanese cargo ship undocked from the International Space Station and will spend the next week doing a science experiment in orbit before burning up in Earth's atmosphere on Super Bowl Sunday (Feb. 5).  
(29 January 2017)

## Space Tourism

**Space tourism and business looking up** Why are wealthy business people sending their money into space? Some of them dreamed of space travel as children, and now they have the money to chase those dreams. So there is adventure and there is money.  
(10 March 2017)

**Decommissioned Earth Science satellite to remain in orbit for decades** A NASA Earth science satellite whose mission is ending this week will remain in orbit through the middle of the century, far longer than the limit set by orbital debris mitigation guidelines.

(30 March 2017)

**Satellites shed new light on earthquakes** Satellite radar scans of last year's earthquake in New Zealand are changing the way we are thinking about earthquake hazards in regions where our planet's tectonic plates meet.

(25 March 2017)

**ICESat-2 to provide more depth to sea ice forecasts** In March, the Arctic sea ice pack is supposed to reach its greatest extent - but this year it's far below average, off by an area about the size of Texas and New Mexico combined. Satellite observations currently reveal how much of the ocean surface is covered by ice, but there is another critical measurement to make.

(23 March 2017)

**30 years of deforestation** While the world marks the International Day of Forests, satellites continue to monitor the long-term effects of human activities on our planet's precious resources

(22 March 2017)

**Copernicus Sentinel-2B delivers its first images** Just over a week after being lofted into orbit, the European Union's Sentinel-2B satellite delivered its first images of Earth, offering a glimpse of the 'colour vision' it will provide for the Copernicus environmental monitoring programme.

(16 March 2017)

**NASA studies growing Louisiana deltas** The Louisiana coastline is sinking under the Gulf of Mexico at the rate of about one football field of land every hour (about 18 square miles of land lost in a year). But within this sinking region, two river deltas are growing. The Atchafalaya River and its diversion channel, Wax Lake Outlet, are gaining about one football field of new land every 11 and 8 hours, respectively.

(28 February 2017)

**Using high-resolution satellites to measure African farm yields** Stanford researchers have developed a new way to estimate crop yields from space, using high-res photos snapped by a new wave of compact satellites. The approach, detailed in the February 13 issue of the journal of the Proceedings of the National Academy of Sciences, could be used to estimate agricultural productivity and test intervention strategies in poor regions of the world.

(25 February 2017)

**Turn satellites into sparkling fireworks to burn up space junk** Satellite debris that falls to Earth could be deadly, but pellets made of a heat-generating mixture could help them burn up safely in the atmosphere

(19 February 2017)

**100 Earth-shattering remote-sensing applications and uses** This list may change the way you feel about how this industry is changing our world and the way we think.

(13 February 2017)

**CryoSat reveals lake outbursts beneath Antarctic ice** A novel way of using ESA's CryoSat mission has revealed how lakes beneath Thwaites Glacier drained into the Amundsen Sea - potentially the largest such outflow ever reported in this region of West Antarctica.

(11 February 2017)

**Keeping space communications reliable for an "always on" world** So many of the services we all depend on today are powered by space communications. Without space the world economy, in many ways, turns back half a century in time. For some time now, we have been hearing from the Pentagon that space is no longer the sanctuary it once was.

(7 February 2017)

**Sea ice cover in 2016 is lowest ever recorded** Latest data from ISRO's weather monitoring satellite SCATSAT-1 has revealed changes in the sea ice cover over the Arctic and the Antarctic. According to ISRO, the changes in the Arctic summer minimum sea ice cover were observed using SCATSAT-1 data collected on October 02, 2016, and compared it with OSCAT data collected on October 02, 2011. It was observed that sea ice cover during 2016 is lower than that observed in 2011, which was earlier lowest sea ice record.

(6 February 2017)

**Satellites counting whales from space revolutionising monitoring techniques for researchers** A research team in Perth is becoming familiar with what whales look like from space. They have commissioned two satellite images to be taken from 600 kilometres above Earth in order to do an accurate headcount of humpbacks migrating up the WA coast.

(5 February 2017)

**Time to make sure Europe's troubled satnav system really flies** Europe's costly Galileo satnav network has been branded a vanity project. In an isolationist world, it now seems a wise insurance policy, says Paul Marks

(4 February 2017)

**ISRO to launch backup satellite to replace IRNSS-1A** India will launch one of its back up navigation satellites this year as a replacement to IRNSS-1A satellite, whose three atomic clocks have failed, ISRO said. The agency denied the existence of similar problems with the rubidium atomic clocks in another navigation satellite.

(4 February 2017)

**African villagers use satellite data to help save wild chimpanzees** Given that chimpanzees are a keystone species and the closest extant relative to humans, their rapid decline in the wild has sparked widespread concern. In response, NASA and the Jane Goodall Institute partnered on a project that aims to use space-down views of chimpanzee habitats to guide local activists involved in conservation.

(31 January 2017)

**Tiny satellites to make big contributions to science** CubeSats were designed as educational tools and technological proofs-of-concept, demonstrating their ability to fly and perform needed operations in the harsh space environment. As the capabilities of these nanosatellites increase and their possible contributions grow, they've earned their own place in space.

(30 January 2017)

**Europe's new geostationary satellite platform for the telecommunications market** The Hispasat 36W-1 telecommunications satellite, the first in a new satellite platform called SmallGEO, developed and built in Germany, was launched to space on 28 January 2017 at 02:03 CET (27 January, 22:03 local time).

(29 January 2017)

**NOAA's GOES-16 satellite sends first images to Earth** GOES-16, the first spacecraft in NOAA's next-generation of geostationary satellites, has sent the first high-resolution images from its Advanced Baseline Imager (ABI) instrument. Included among them are a composite color full-disk visible image of the Western Hemisphere captured on January 15, 2017.

(25 January 2017)

**NASA's Earth Observatory reveals Cambodia's incredibly shrinking forests** Scientists from the University of Maryland and the World Resources Institute's Global Forest Watch have been using Landsat satellite data to track the rate of forest loss on a global scale. Though other countries have lost more acres in recent years, Cambodia stands out for how rapidly its forests are being cleared.

(23 January 2017)

**Clocks 'failed' onboard Europe's navigation satellites** Europe's beleaguered Galileo satnav has suffered another setback, with clocks failing onboard a number of satellites in space, the European Space Agency said Wednesday. Designed to render Europe independent from America's GPS, the 10 billion-euro (\$11 billion) project may experience further delays as the cause of the failure is investigated, ESA director general Jan Woerner told journalists in Paris.

(19 January 2017)

**ExoMars: Rover scientists to study Mawrth Vallis option** Scientists are going to investigate a second site on Mars as a possible destination to send ESA's 2021 rover. Scientists spent two days considering the options and plumped in the end for Mawrth Vallis - an area rich in clay minerals that must have formed during prolonged rock interactions with water. Mawrth joins Oxia Planum, which was selected for study in 2015.  
(29 March 2017)

**New treasures from Juno: Jupiter dazzles during fourth close approach** Image processor Björn Jónsson shares some of his latest stunning images of Jupiter, created using data from NASA's Juno spacecraft.  
(28 March 2017)

**NASA's SDO sees a stretch of spotless Sun** For 15 days starting on March 7, 2017, NASA's Solar Dynamics Observatory, or SDO, returned visible light images of a yolk-like spotless sun. This is the longest stretch of spotlessness since the last solar minimum in April 2010, indicating the solar cycle is marching on toward the next minimum, which scientists predict will occur between 2019- 2020.  
(26 March 2017)

**China's first cargo spacecraft to make three rendezvous with Tiangong-2** China's first cargo spacecraft Tianzhou-1 is expected to dock with the orbiting Tiangong-2 space lab three times after its planned launch in April, sources said. Tianzhou-1 will be sent into space from the Wenchang Space Launch Center in south China's Hainan Province aboard a Long March-7 Y2 carrier rocket.  
(9 March 2017)

**Orbiter steers clear of Mars moon Phobos** NASA's MAVEN spacecraft performed a previously unscheduled manoeuvre to avoid a collision in the near future with Mars' moon Phobos. The Mars Atmosphere and Volatile Evolution (MAVEN) spacecraft has been orbiting Mars for just over two years, studying the Red Planet's upper atmosphere, ionosphere and interactions with the sun and solar wind.  
(4 March 2017)

**Increasing the sensitivity of next-generation gravitational wave detectors** Nearly one year ago the LIGO Collaboration announced the detection of gravitational waves, once again confirming Einstein's theory of General Relativity. This important discovery by the Advanced Laser Interferometer Gravitational-Wave Observatory (aLIGO) has spurred great interest in improving these advanced optical detectors.  
(27 February 2017)

**Kepler's 'second life' - DLR researchers find six planets** In 2009, NASA's Kepler space probe was launched, embarking on a mission to hunt for exoplanets. In 2013, due to the failure of two of its reaction wheels, the mission had to be modified. Mission control managed to change the operational modus and manoeuvre the telescope orbiter into a different position in its orbit around the Sun that enabled the mission to continue.  
(24 February 2017)

**Wonderful potentially habitable worlds around TRAPPIST-1** Scientists have found seven, Earth-size planets orbiting a star just 40 light years away. Three lie in the habitable zone and could have water on their surfaces.  
(23 February 2017)

**NASA's Kepler mission could detect exomoons formed by giant impacts** The hunt is on for moons orbiting distant exoplanets - but only the most massive "exomoons" may be detectable.  
(21 February 2017)

**Juno Jupiter probe won't move into shorter orbit** NASA's Juno spacecraft won't move into a closer orbit around Jupiter as originally planned, agency officials announced.  
(20 February 2017)

**Big data for the universe** Astronomers at Lomonosov Moscow State University in cooperation with their French colleagues and with the help of citizen scientists have released "The Reference Catalog of galaxy SEDs" (RCSED), which contains value-added information about 800,000 galaxies.  
(13 February 2017)

**Who will get first dibs on the powerful James Webb Space Telescope?** NASA has issued solicitation for science projects using the long-awaited and incredibly powerful successor to Hubble, which is scheduled to launch next year.  
(10 February 2017)

**Angling up for Mars science** ESA's latest Mars orbiter has moved itself into a new path on its way to achieving the final orbit for probing the Red Planet.  
(9 February 2017)

**Gravitational wave detector prepares to peer into bizarre stars** It has already made the discovery of the decade ?? next LIGO aims to model weird events so we can recognise them when they arrive  
(8 February 2017)

**WorldView-4, DigitalGlobe's newest satellite, enters service** DigitalGlobe's WorldView-4 high-resolution-imaging satellite entered service this week, following nearly three months of in-orbit testing and calibration.  
(7 February 2017)

**NASA spacecraft to hunt for Earth's asteroid 'ghosts'** NASA's asteroid-sampling Osiris-Rex mission will search for possible Trojan asteroids that could be travelling along with Earth around the sun.  
(5 February 2017)

**Galactic X-rays could point way to dark matter** A small but distinctive signal in X-rays from the Milky Way could be key to proving the existence of dark matter. That is the claim of US scientists who analysed the energy spectrum of X-rays gathered by NASA's Chandra satellite. They found more X-ray photons with a particular energy than would be expected if they were produced only by familiar processes. Those photons could in fact have been generated by the decay of dark matter particles, say the researchers.  
(2 February 2017)

**Fermi sees gamma rays from 'hidden' solar flares** An international science team says NASA's Fermi Gamma-ray Space Telescope has observed high-energy light from solar eruptions located on the far side of the sun, which should block direct light from these events.  
(1 February 2017)

**Close views show Saturn's Rings in unprecedented detail** Newly released images showcase the incredible closeness with which NASA's Cassini spacecraft, now in its "Ring-Grazing" orbits phase, is observing Saturn's dazzling rings of icy debris. The views are some of the closest-ever images of the outer parts of the main rings, giving scientists an eagerly awaited opportunity to observe features with names like "straw" and "propellers."  
(31 January 2017)

**Spacecraft sees water at Rosetta's comet while stranded in solar orbit** The Japanese PROCYON spacecraft may have gotten stuck in orbit after launch, but it's been able to do some impressive observations of 67P/Churyumov-Gerasimenko from afar.  
(30 January 2017)

**China's hi-res SAR imaging satellite put into use** China's first high-resolution Synthetic Aperture Radar (SAR) satellite has passed all its in-orbit tests and is now operational, according to the State Administration of Science, Technology and Industry for National Defense. The Gaofen-3 satellite, which is accurate to one meter in distance, was launched in August 2016.  
(27 January 2017)

**Gaia turns its eyes to asteroid hunting** Whilst best known for its surveys of the stars and mapping the Milky Way in three dimensions, ESA's Gaia has many more strings to its bow. Among them, its contribution to our understanding of the asteroids that litter the Solar System. Now, for the first time, Gaia is not only providing information crucial to understanding known asteroids, it has also started to look for new ones.  
(26 January 2017)

**ISRO realigns orbit of Mars mission spacecraft 'Mangalyaan'** Indian Space Research Organization has successfully realigned the orbit of its Mars Orbiter Mission 'Mangalyaan' so it is not affected by a long-duration eclipse, ISRO chairman A S Kiran Kumar said.  
(23 January 2017)

**China's quantum science satellite begins experiments** The world's first quantum science and communications satellite has been handed over to Chinese scientists for the official start of experiments to test the phenomena of quantum entanglement and 'unhackable' quantum communication.  
(19 January 2017)

**Breakthrough surveying other galaxies for planets to visit** A private plan to visit Alpha Centauri is boosting science on Earth today. Breakthrough's Starshot plan is looking for exoplanets in the 'Goldlocks Zone' of the Alpha Centauri binary system that might support life.  
(18 January 2017)

**Curiosity finds Mars rock that may be a meteorite made from iron** NASA's Curiosity rover took a picture that appears to show a new iron-nickel meteorite on Mars, one of only eight that have been discovered by rovers there so far  
(18 January 2017)

**Eutelsat America's all-electric satellite enters service after seven-month journey** The second of two all-electric satellites fleet operator Eutelsat gained through its acquisition of Satmex began service Jan. 16 after finishing a seven-month journey to its orbital location. Eutelsat 117 West B launched last June on a SpaceX Falcon 9 rocket with ABS-2A, a similar all-electric satellite Boeing built for Bermuda-based ABS. Both satellites formed the second set in a four-satellite order paired with Falcon 9 dual launches.  
(17 January 2017)



**Russia hopes India will join initiative on non-deploying weapons in space** Russia hopes India will join the Russian initiative on non-deployment of weapons in outer space, Russian Foreign Ministry's Non-Proliferation and Arms Control Department Director Mikhail Ulyanov said. Ulyanov reminded that in 2004, Russia took a unilateral decision not to be the first to place weapons in outer space, setting a good example for other countries to follow suit.

(29 March 2017)



**Vietnam set to produce satellites by 2022** Vietnam targets to self-develop Lotusat-2 by 2022 when its technical facilities for satellite research, assembly, integration and testing are ready to operate, according to the Vietnam National Satellite Center (VNSC).

(27 March 2017)



**Bangladesh to join India's South Asia Satellite initiative** Bangladesh has signed an agreement with India to formally join New Delhi's 'South Asia Satellite' initiative, through which the Indian Space Research Organisation (ISRO) will launch a communication satellite for serving the South Asia region.

(27 March 2017)



**Russian Aerospace Forces to launch over 20 spacecraft** Russia's Aerospace Forces in 2017 are planning to launch 15 carrier rockets into space, during which over 20 spacecraft will be placed into orbit," the forces' commander, Col. Gen. Viktor Bondarev, said

(20 March 2017)



**NASA studying shared Venus science objectives with Russia** A team of NASA-sponsored scientists are meeting with the Russian Academy of Sciences' Space Research Institute (IKI) to continue work on a Joint Science Definition Team study focused on identifying shared science objectives for Venus exploration.

(14 March 2017)



**UK funding space entrepreneurs** The UK Space Agency has awarded just under 150,000 pounds to three business incubation centres across the UK which will support entrepreneurs and small companies in the space industry. The Agency is working with UK industry to deliver world-class science innovation support, in line with the Government's Industrial Strategy, which emphasises the importance of science, innovation and skills.

(14 March 2017)



**Potential NOAA cut would be devastating** On the surface, it may appear that the administration is actually prioritizing NOAA's weather prediction and warning apparatus, given the smaller 5 percent cuts to the National Weather Service and National Marine Fisheries Service. That's in contrast to the 22 percent and 26 percent spending reductions for NOAA satellites and NOAA weather and climate research, respectively.

(13 March 2017)



**ISRO makes more space for private sector participation in satellite making** The Indian Space Research Organisation (ISRO) is thinking of ways to enhance involvement of the private sector in its future satellite launches and include local firms in making integrated systems and sub-systems. It is part of the larger efforts of the Indian agency to augment capabilities and tap the growing commercial market for space-based surveillance and communication.

(12 March 2017)



**NASA Transition Authorization Act passes House** On March 7 the House passed the 'NASA Transition Authorization Act of 2017' which authorizes appropriations of \$19.5 billion for the space agency in fiscal year 2017.

(11 March 2017)



**Kuwait Space Agency - a pipedream or reality** A number of Kuwaitis have started to wonder whether it was feasible to have a national space programme.

(11 March 2017)



**India has capability to develop space station, says top official** India has the capability to develop a space station, a top official of the state-owned space agency has said. "We have all the capabilities to set up a space station. The day the country takes the decision, we will okay the project. Just draw a policy and provide us necessary funds and time," Indian Space Research Organisation (ISRO) chief A.S. Kiran Kumar told media.

(7 March 2017)



**Turkey moves closer to launching own space agency** A draft bill for legislation to create a Turkish Space Agency is finalised and readied for review by the Turkish parliament. Finalising this long-envisioned dream will determine the country's space policies and help develop a national space industry.

(6 March 2017)



**India's Moon mission on 2018 target, says ISRO chief** ISRO boss AS Kiran Kumar says the second lunar mission Chandrayaan 2 is making good progress; it is scheduled for launch next year. But critics question why should India get into the manned spaceflight race when the US and Russia have scaled back.

(4 March 2017)



**Space Wars: U.S. Air Force defends its turf** As the nation's space mission grows, does the service have enough clout to manage it all?

(2 March 2017)



**Italy, Russia working closely on Mars exploration, Earth monitoring satellites** There are neither sanctions nor politics in space and cooperation there between Russia, the US and Europe is absolutely vital. In an interview with Sputnik, the head of the Italian Space Agency (ASI), Roberto Battiston, spoke about the joint projects being implemented by ASI and Russia's Roscosmos space agency.

(23 February 2017)



**Mystery surrounds return of Pentagon's secretive X-37B spaceplane** After nearly two years in space, one of the US Air Force's biggest mysteries may be returning to Earth.

(22 February 2017)



**India takes Russian help to analyze chemical composition of lunar surface** ISRO has started a series of ground tests for testing the performance of sensors and actuators for soft landing of the Lander on the lunar surface. India Space Research Organization (ISRO) has selected Russian company JSC Isotope for supply of Radionuclide curium-244 (Cm-244) that enables sources to determine chemical composition of any rocks and soils.

(21 February 2017)



**Could Glasgow Prestwick airport host UK's first spaceport?** Detailed plans to create the UK's first spaceports are set to be unveiled.

(20 February 2017)



**Small satellite rocket booster arrives at New Zealand's first launch site** Rocket Lab is one among dozens of companies around the world building rockets to handle an expected boom in demand for small satellite launches.

(18 February 2017)



**SatRevolution to launch Poland's first satellite plant** Polish company SatRevolution S.A. has unveiled plans to set up the country's first satellite production facility that is to make small spacecraft in cooperation with foreign space industry players.

(17 February 2017)



**Indonesia sees long but possible path to developing own satellites** Indonesia is taking steps to reduce its dependence on foreign telecommunications satellites through technology-transfer arrangements and micro-satellite development.

(14 February 2017)



**UK may lose access to EU Galileo GPS system after Brexit** The United Kingdom may be cut off the new EU global positioning system (GPS) Galileo, which has been developed with active participation of British companies, and will have to hold separate negotiations to obtain access to the system after London leaves the European Union, media reported.

(14 February 2017)

## Opportunities

### **NASA Ames SPHERES/Astrobee Facility - NASA (United States)**

NASA Ames SPHERES/Astrobee Facility Brief description of duties: The successful applicant would be involved with software development and general support of the

### **NASA Earth Science Social Video Producer [Fellowship] - Universities Space Research Association (United States)**

producers, science writers, data visualizers, animators, and social media professionals at NASA 's Goddard Space Flight Center in Greenbelt, Maryland. Goddard is home

### **NASA Engineering and Logistics Business Development Director - PAE, Inc (United States)**

**\*\*Supporting the Most Exciting and Meaningful Missions in the World\*\*** NASA Engineering and Logistics Business Development Director The location of this job is

### **NASA Journalism and Multimedia Fall Internship - NASA (United States)**

INTRODUCTION: NASA invites students working towards degrees in journalism, communications, media relations, science writing, interactive journalism, or broadcast

### **NASA LaRC Autonomy Incubator - NASA (United States)**

This is a multidisciplinary team consisting of engineering from a variety of disciplines including aeronautic, electrical, computer, and mechanical. Other disciplines

### **NASA LaRC: Crew Systems and Aviation Operations - NASA (United States)**

NASA is conducting research in the areas of intelligent flight systems, autonomous systems, aviation operations, flight deck systems, and crew

### **NASA LaRC: Flight Deck Technologies - NASA (United States)**

NASA is conducting research into Increasingly Autonomous Systems (IAS) for the flight deck. This work involves computer programming, machine learning, and human in

### **Architecte propulsion lectrique HF**

Le Centre National d'Etudes Spatiales propose aux pouvoirs publics la politique spatiale de la France et la met en uvre dans 5 grands domaines stratgiques Ariane, les Sciences, l'Observation, les Tlcommunications et la Dfense. Afin de rester au premier rang mondial, anticipation, vision, innovation, imagination et rapidit d'action sont ncessaires et font l'objet d'un plan prioritaire pour les annes venir, Innovation et Inspiration . Pour en savoir plus [www.cnes.fr](http://www.cnes.fr). En tant qu'architecte, vous tes charg de coordonner les activits techniques lies au dveloppement du moteur et son intgration dans les nouvelles filires de satellite de tlcommunication. Vous assurez le support au suivi industriel du projet participation aux points techniques concernant les performancesles aspects mcaniques et thermiques, la prparation des essais et l'analyse des rsultats, le suivi qualit, les essais de qualification, etc. Au sein de la SousDirection Techniques Bord de la Direction des Systmes Orbitaux, le Servic...

### **BepiColombo Science Ground Segment Software Engineer**

RHEA Group is currently recruiting a BepiColombo Science Ground Segment Software Engineer to support the SW development for the implementation of the BepiColombo Science Control System at the Science Ground Segment at our clients premises in Madrid, Spain. Tasks and Activities The scope of work will include Develop and maintain the BepiColombo Quick Look Analysis QLA System and its major components Framework to host QL products this will have to provide high flexibility to the users for the configuration and setup of the users environment though dashboards Processing infrastructure backend hosting the Quick Look pipeline SW and processing algorithms required to generate the QL products this includes as well the coding of relevant pipeline SW, as required Implementation/integration of all required tools for the visualization of the QL products this includes handling of 2D/3D maps using modern technology GIS Database to store operational events and its interface with the BepiColombo Archi...

### **Career Opportunities with NASA NASA Independent Verification and Validation (IV&V) Program - West - SAIC (United States)**

Career Opportunities with NASA NASA Independent Verification and Validation (IV&V) Program - West Virginia (Job Number:422408) Description: SAIC is pursuing the

### **CoFR Coordinator**

Specific Requirements Masters degree or equivalent qualification in an engineering or science discipline Work experience in aerospace or human

spaceflight activities management Excellent written and verbal communication skills Ability to work independently and as part of a team Knowledge of SQL language, SharePoint and VBA is an asset Fluency in English is required, knowledge of another ESA member state language and/or Russian is an asset Specific Tasks The activities to be carried out are in the frame of the ESA ISS Project. In this frame, the Vitrociset Belgium CoFR Coordinator supports the Increment Management in the preparation and performance of the Campaign for the certification of flight readiness of several ISS payloads. Tasks Organization of the CoFR campaign Schedule generation, CoFR Database preparation Management and Maintenance of the Open Work Tracking List OWTL Preparation of the CoFR Letter, including the list of CoFR objectives, under the supervision of the ESA Increme...

### **Contract Specialist/Contract Closeouts - Multiple Locations - NASA - Stafford Consulting Company, Inc. (United States)**

Job Description Contract Specialist/Contract Closeout Specialist - NASA Please update your resumes prior to submittal, to reflect the below listed specialized

### **EGSE Engineer**

RHEA Group is currently recruiting an EGSE Engineer for our client located in Stevenage, United Kingdom. Tasks and Activities EGSE Commissioning and Validation Produce EGSE validation procedures Configure and commission a dedicated small EGSE LAN for interconnection of all the EGSE Equipment TCP/IP, network topology, IP addressing. Commissioning and decommissioning, setup, shipment support and item inventory of EGSE systems Design and procurement of EGSE test aids and test cables, including the production of associated drawings. Production and maintenance of EGSE related Automatic test procedures bespoke language Support to users in the use of the EGSE, including basic training and first level investigation EGSE Maintenance Carry out preventative maintenance validation activities, by executing validation procedures, in order to provide fully operational EGSE systems in readiness for spacecraft test. Carry out corrective maintenance activities first line support, including fault finding...

### **Electrical Test Engineer**

For the Solar Orbiter project, RHEA Group is looking for an experience Electrical Test Engineer to support electrical test activities on spacecraft hardware and software at our clients premises in Stevenage, UK. Tasks and Activities Review and interpretation of electrical test requirements Perform electrical integration and automated tests at unit, subsystem and system level Write test scripts, preparing and test products and operating. Production of test procedures and reports/discussions Development of ATP using bespoke high level test SW language for test and test control Develop scripts using LINUX scripting tools to automate operation You may be required to work in shift.assigned subsystems and instruments You will be required to travel to other UK and International sites. Skills and Experience The following skills and experience are mandatory Familiar with use of various test equipment, DMM, oscilloscope, signal generator, logic analyser, data bus monitors etc. Experience of writ...

### **Engineer for Satellite Navigation and Communications**

WHO ARE WE? GMV [www.gmv.com](http://www.gmv.com) is a privately owned technological enterprise group with an international presence employing more than 1.200 staff. Founded in 1984, GMV mainly operates in eight large sectors for both public and private organizations Aeronautics, Space, Defense, Health, Security, Transportation, Telecommunications and Information Technologies. GMV currently runs 8 work centers in Spain and offices in France, Germany, India, Malaysia, Poland, Portugal, Romania, USA, Colombia and United Kingdom. We recruit and hire excellent engineers, and encourage innovation, technical excellence and continuing education. Our engineers regularly present papers at technical conferences, continue their education more than 85 have a masters degree, and we reinvest more than 12% of budget in IRD projects. This striving for excellence, innovation and flexibility is a major part of our culture. We provide very competitive compensation, attractive benefits, and a great work environment with lots of...

### **Expert stations HF**

Le Centre National d'Etudes Spatiales propose aux pouvoirs publics la politique spatiale de la France et la met en uvre dans 5 grands domaines strategiques Ariane, les Sciences, l'Observation, les Tlcommunications et la Dfense. Afin de rester au premier rang mondial, anticipation, vision, innovation, imagination et rapidit d'action sont necessaires et font l'objet d'un plan prioritaire pour les anes venir, Innovation et Inspiration . Pour en savoir plus [www.cnes.fr](http://www.cnes.fr). La Direction des Lanceurs du CNES Toulouse, recrute actuellement pour son service Architecture Stations une Expert Stations HF. Expert Stations, vous dfinissez l'architecture et les performances des stations sol ainsi que les interfaces au sein du reseau sol. Vous apportez votre expertise BordSol pour les lanceurs et les satellites ainsi que pour la RT. Vous avez galemment en charge les affaires Stations de suivi lanceurs de satellites notamment les tudes de conception, les analyses et validations systemes, les valuations techniqu...

### **Facilities Management Process Improvement - NASA Independent Verification and Validation (IV&V) Program Support Office (PSO) - NASA (United States)**

Activities for which internship efforts within the NASA Independent Verification and Validation (IV&V) Program Support Office (PSO) consist of basic facilities

### **Flight Dynamics Mission Analysis Engineer**

Serco is a specialist at delivering vital services on behalf of European, National and Local Governments. Serco Europe employs a large workforce in Belgium, Luxembourg, France, Switzerland, Germany, Holland, Spain, Italy and the UK. Our European operations have ca. 2,000 employees delivering critical services to public institutions throughout Europe. Package description Full details on application. Relocation assistance provided if applicable. Main responsibilities The primary areas of responsibility for this position are for Near Earth Missions, but the candidate may be requested to assume the responsibility and perform activities for other missions types within the scope of Mission Analysis services. The general activities to be supported are depending on the phase of the project Trajectory design, e.g. Selection of operational orbit Orbit maintenance strategy Lifetime analysis Endoflife disposal Transfer orbit design Launcher injection orbit selection and performance analysis Launch...

### **Ground Segment System Engineer**

Client and Location For one of our main customers, EUMETSAT, we are currently looking for a Ground Segment System Engineer. The consultant will work at EUMETSAT Headquarters, located in Darmstadt, Germany. Tasks and Responsibilities The tasks of the Ground Segment System Engineer are related to different phases in the life cycle of EUMETSAT systems. They will mainly correspond to various stages of the Detailed Design Phase C of a given programme under definition and development, and Phase D Implementation and Validation, as support to Integration, Verification and Validation. The ground segments of EUMETSAT programmes consist of TTC and Payload Data acquisition ground stations, mission management and control systems, data and product processing, monitoring, archiving, data dissemination plus the associated network fabric elements supporting data distribution and circulation, plus underlying sites and infrastructure The key person will perform typical system engineering activities in t...

#### **Ingenieur composants électroniques HF**

Le Centre National d'Etudes Spatiales propose aux pouvoirs publics la politique spatiale de la France et la met en uvre dans 5 grands domaines stratégiques Ariane, les Sciences, l'Observation, les Télécommunications et la Défense. Afin de rester au premier rang mondial, anticipation, vision, innovation, imagination et rapidité d'action sont nécessaires et font l'objet d'un plan prioritaire pour les années à venir, Innovation et Inspiration . Pour en savoir plus [www.cnes.fr](http://www.cnes.fr). Au sein de la sous-direction Assurance Qualité, le Service Composants et Qualification DSOAQCQ est chargé du support qualité composants électroniques pour les projets du CNES et de la qualification des composants dans le système normatif européen. Nous recherchons, pour renforcer cette équipe, un ingénieur composants hf. Vous êtes responsable de la qualité des composants électroniques de certains projets orbitaux du CNES. Cette activité nécessitera d'apprendre et de maîtriser les essais qualité composants et les normes spatiales associées. Vous...

#### **Ingenieur mécanismes propulsion spatiale HF**

Le Centre National d'Etudes Spatiales propose aux pouvoirs publics la politique spatiale de la France et la met en uvre dans 5 grands domaines stratégiques Ariane, les Sciences, l'Observation, les Télécommunications et la Défense. Afin de rester au premier rang mondial, anticipation, vision, innovation, imagination et rapidité d'action sont nécessaires et font l'objet d'un plan prioritaire pour les années à venir, Innovation et Inspiration . Pour en savoir plus [www.cnes.fr](http://www.cnes.fr). La Direction des Lanceurs du CNES Paris, recrute actuellement pour son service Equipements propulsifs et Mécanismes une Ingénieur des mécanismes en propulsion spatiale HF. Ingénieur des mécanismes en propulsion spatiale, vous apportez l'expertise technique nécessaire aux développements et la qualification des systèmes de lancement. Vous êtes notamment responsable des études dans le domaine des équipements et mécanismes liés à la propulsion les vannes, les lectrovannes, les équipements de régulation de pression et les interfaces solbord fluides...

#### **Ingenieur Systèmes Mécaniques et Fluides HF**

Le Centre National d'Etudes Spatiales propose aux pouvoirs publics la politique spatiale de la France et la met en uvre dans 5 grands domaines stratégiques Ariane, les Sciences, l'Observation, les Télécommunications et la Défense. Afin de rester au premier rang mondial, anticipation, vision, innovation, imagination et rapidité d'action sont nécessaires et font l'objet d'un plan prioritaire pour les années à venir, Innovation et Inspiration . Pour en savoir plus [www.cnes.fr](http://www.cnes.fr). La Direction des Lanceurs du CNES Toulouse, recrute actuellement pour son service Procédés Equipements un Chargé d'affaires Systèmes Mécaniques et Fluides HF. Vous serez responsable de la conception, le suivi de l'exécution et la qualification des systèmes mécaniques. Vous aurez notamment en charge la recherche des concepts permettant de répondre aux besoins de nos clients systèmes mécaniques en interfaces lanceurs, moyens de transport, de traction ou de manutention et outillages. Vous vérifiez la compatibilité des systèmes mécaniques sol, en i...

#### **Ingenieur Turbomachine et Procédés HF**

Le Centre National d'Etudes Spatiales propose aux pouvoirs publics la politique spatiale de la France et la met en uvre dans 5 grands domaines stratégiques Ariane, les Sciences, l'Observation, les Télécommunications et la Défense. Afin de rester au premier rang mondial, anticipation, vision, innovation, imagination et rapidité d'action sont nécessaires et font l'objet d'un plan prioritaire pour les années à venir, Innovation et Inspiration . Pour en savoir plus [www.cnes.fr](http://www.cnes.fr). La Direction des Lanceurs du CNES Paris, recrute actuellement pour son service Equipements propulsifs et Mécanismes une Ingénieur turbomachine et procédés HF. Ingénieur en propulsion spatiale, vous apportez l'expertise technique nécessaire aux développements et la qualification des systèmes de lancement. Vous êtes notamment responsable des études dans le domaine des turbomachines et des procédés pour les matériels en exploitation sur le lanceur Ariane 5 turbopompe oxygène du moteur Vulcain 2 et turbopompe du moteur HM7 et pour la turbopompe ...

#### **JasonCS Senior System Engineer**

Take advantage of this attractive opportunity and support the JasonCS programme at Europe's Meteorological Satellite Agency EUMETSAT The JasonCS programme involves EUMETSAT, ESA, NASA, NOAA and the EU, and is a high precision ocean altimetry programme with two satellites planned for launch in 2020 and 2026. This is a challenging and rewarding senior engineering role offering the opportunity for system level coordination and ground segment development tasks. Reporting to the JasonCS System Manager, you shall be responsible for the coordination of system engineering activities related to the programme. This is a hands-on role often requiring a proactive and resourceful approach. Along with a university degree in science or engineering, you shall ideally have skill/experience in each of the following areas Proven and comprehensive experience in system engineering and development Demonstrated experience of translating operations concepts into satellite and ground segment operational requi...

#### **Mission Analysis Engineer for Near Earth Missions mf**

Mission Analysis Engineer for Near Earth Missions mf Ref. No. 1713678 Terma The hightech and innovative Terma Group develops products and systems for defense, nondefense and security applications, including command and control systems, radar systems, selfprotection systems for aircraft and vessels, space technology, and aerostructures for the aircraft industry. Terma is headquartered at Aarhus, Denmark. Internationally, Terma has subsidiaries and operations in The Netherlands, Germany, United Kingdom, United Arab Emirates, India, Singapore and the U.S. The Space Business Area contributes with mission/customized software and hardware products including power systems and star trackers as well as services to support a number of in-orbit pioneering European scientific and Earth observation satellite missions. Additionally, Terma is contracted for the development and delivery of software and hardware systems and services for numerous ongoing and future European, and international missions. T...

#### **Mission Analysis Software Engineer**

Telespazio VEGA Deutschland is the first choice aerospace company for IT and engineering solutions and services. With more than 350 employees

in Germany we shape the future of aerospace together and beyond. Our staff play a key role in determining our success through their qualifications, motivation, enthusiasm, different cultural backgrounds and their sense of teamwork. We are passionate about delivering exciting Space Programs for and with our customers. Through our large frame contracts with ESOC, EUMETSAT and DLR, we offer a future-oriented and trusting work environment, multicultural teams, as well as challenging jobs on space missions for graduates up until experienced professionals. This is an opportunity for an experienced engineer to work in the domain of the ESA Mission Analysis Section. The position is based in ESOC, in Darmstadt with a start from 01.09.2017. Deadline for submission is 24th of April 2017. Mission analysis is the analysis of satellite orbits to determine how ...

#### **OnBoard Software Production Engineer**

As part of the UKs Data Processing OnBoard Software department, you will be part of a highly motivated and dynamic development group working at the centre of embedded software development for some of the most exciting Space missions currently under development, including ExoMars Rover, and Solar Orbiter. RHEA Group is looking for a highly motivated engineer with good experience in embedded software development to work at our clients premises in Stevenage, UK. Tasks and Activities Software detailed design Code and unit test activities Software integration activities. Supporting software validation testing when applicable. Developing validation tests that exercise prove adherence to requirements Analysing debugging nonconformance Enhancement of the BepiColombo science archive. Skills and Experience The following skills and experience are mandatory Engineering degree in software, computer science or similar At least 3 years experience in realtime embedded Software engineering domains des...

#### **Pressure Systems Engineer - NASA Programs - The Aerospace Corporation (United States)**

ID: 5083 All Locations: Houston, TX (Texas) Responsibilities Provide expertise to NASA Programs in the area of structural integrity and operational capability of

#### **Project Planning and Control Officer**

Europes Meteorological Satellite Agency EUMETSAT has an exciting new opening for a Project Controller to join their friendly and dynamic team. This is an interesting and varied position offering work across multiple projects. Based within an international and multicultural organisation, your responsibilities shall include, Financial Planning, Cost Control, Budgeting and Scheduling, Human Resources Planning, reporting of progress and performance indicators. With opportunities to work on large space programmes in a matrix based environment, you shall ideally have a background in engineering or finance. Experience in managing people would be preferable as an element of the role will include coordinating and leading the allocated project control team. Along with a degree or equivalent in Engineering or Economics, you shall have skillsexperience in each of the following areas Proven and relevant experience, preferably in an engineering environment, in managing Project Planning and Control...

#### **Quality Management Officer**

You will have the opportunity to be part of the Quality Management Unit which is currently working on the transition of the Eumetsat Management System EMS to ISO 90012015 and to further optimisation and streamlining. Tasks and Activities The scope of work will include Support in execution of routine tasks in the QM Unit, such as administration of Internal Quality Audits, recording of minutes of meetings. Support in implementing changes related to EMS upgrade to ISO 90012015 and to further streamlining of the EMS. Administrative support in QM Unit tasks, such as proofreading and finalising of documentation. Skills and Experience The following skills and experience are mandatory Degree or vocational training in quality management. Ideally qualification as internal quality auditor. Knowledge and experience at least 3 years in Management System Documentation implementation, upgrade or certification and ISO 9000 series of standards, including knowledge of ISO 90012015 standard. Professiona...

#### **Senior/Senior Advanced Quality Engineer (NASA) - KBRwyle (United States)**

Title: Senior/Senior Advanced Quality Engineer ( NASA ) Location: US-US-MD-GREENBELT Job Number: 1049577 There are no relocation funds, however we are offering a

#### **Software Engineer (NASA) - Harris Corporation (United States)**

Job Description: Description: Title: Software Engineer ( NASA ) Req ID: CN-12469 Work Location: Greenbelt, MD Job Description: Harris is actively recruiting for a

#### **Software Engineer for ATC Systems Development and Maintenance**

Telespazio VEGA Deutschland is the first choice aerospace company for IT and engineering solutions and services. With more than 350 employees in Germany we shape the future of aerospace together and beyond. Our staff play a key role in determining our success through their qualifications, motivation, enthusiasm, different cultural backgrounds and their sense of teamwork. We are passionate about delivering highquality, excellent solutions to and with our Aviation customers, such as DFS, Eurocontrol and Airbus. The trust they place in our international teams inspires us also to pursue innovative projects that require pragmatic approaches and adaptable thinking. We are looking for several software engineers with experience in software development, maintenance and support for the development and maintenance of Air Traffic Control related software systems. These are fulltime and unlimited positions located on our customer side at DFS in Langen, Germany, with a start date foreseen in April ...

#### **SPO Supervisor, NASA -Ci KSC - Chenega Corporation (United States)**

CHENEGA INFINITY, LLC \*\*Company Job Title:\*\* Security Police Officer (SPO) Supervisor, NASA - CI \*\*Chenega Job Title:\*\* Security Shift Supervisor III \*\*Clearance:\*\*

**Sr. Software Engineer (NASA) - Harris Corporation (United States)**

Job Description: Description: Title: Sr. Software Engineer ( NASA ) Req ID: CN-11794 Work Location: Greenbelt, MD Job Description: Harris is actively recruiting for a

**Sr. Software Engineer - NASA Open MCT - QTS, Inc. (United States)**

Work Location: NASA Ames Research Center (Mountain View, CA) Minimum Citizenship: US Citizen or Permanent Resident Status Clearance : This position requires

**Student Trainee (Engineering) - NASA Pathways Intern Employment Program - John Glenn Research Center at Lewis Field (United States)**

About the Agency To receive consideration, you must submit a resume and answer NASA -specific questions. The NASA questions appear after you submit your resume

DISCLAIMER: Jobs posted in this section are accurate to the best of our knowledge but are generated automatically from multiple third-party sources and may contain duplicates.

[www.iac2017.org](http://www.iac2017.org)



# INTERNATIONAL ASTRONAUTICAL CONGRESS 2017

ADELAIDE, AUSTRALIA  
25-29 SEPTEMBER 2017

68<sup>TH</sup> IAC  
ADELAIDE 2017



-- *Unlocking imagination, fostering innovation and strengthening security* --



INDUSTRY ANCHOR SPONSOR



Australian Government

