

An aerial satellite-style photograph of a mountainous region. The terrain is rugged with numerous ridges and valleys. A prominent river valley runs through the center of the image. In the lower portion, a city is visible, surrounded by a large, flat area that appears to be a reservoir or a large lake. The overall color palette is dominated by earthy tones of brown, tan, and green, with some blue from the water bodies.

The Aerospace Update

A View of the Winter Olympics From Above

Feb. 22, 2018

Image Credit: NASA Earth Observatory image by Joshua Stevens

SpaceX Launches Pair of its Demo Internet Satellites with Spanish Radar sSatellite

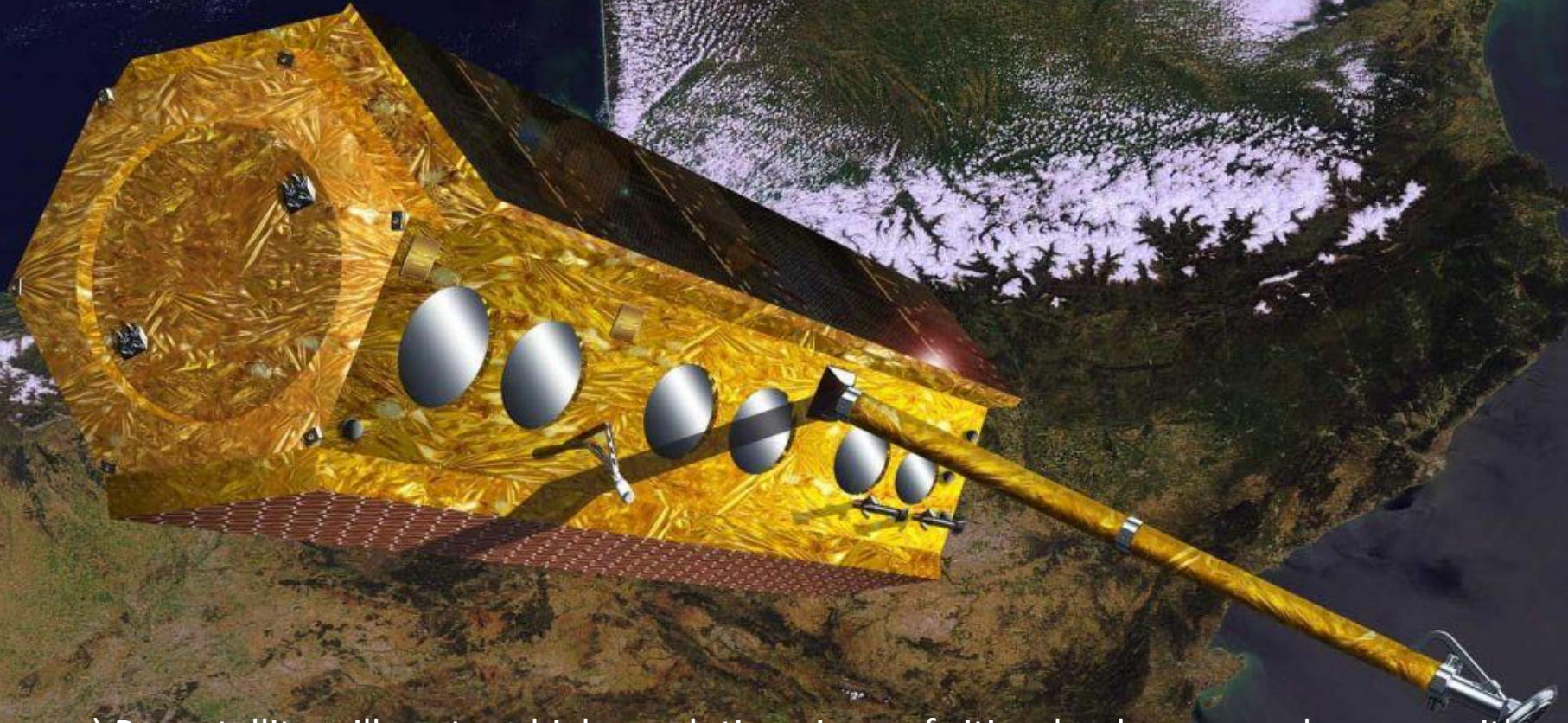


SpaceX on Feb. 22 launched a Falcon 9 rocket carrying a Spanish-owned radar-imaging satellite and two demonstration satellites for SpaceX's proposed broadband Starlink broadband constellation from Vandenberg AFB in California. SpaceX did not attempt to land Falcon 9's previously flown first stage following the mission but did attempt to recover the rocket's upgraded fairing using a parafoil and ship equipped with a large catcher's net.

Video Credit: SpaceX

Text Source: Caleb Henry @ SpaceNews.com

PAZ to Provide Radar Imaging for Spain's Military

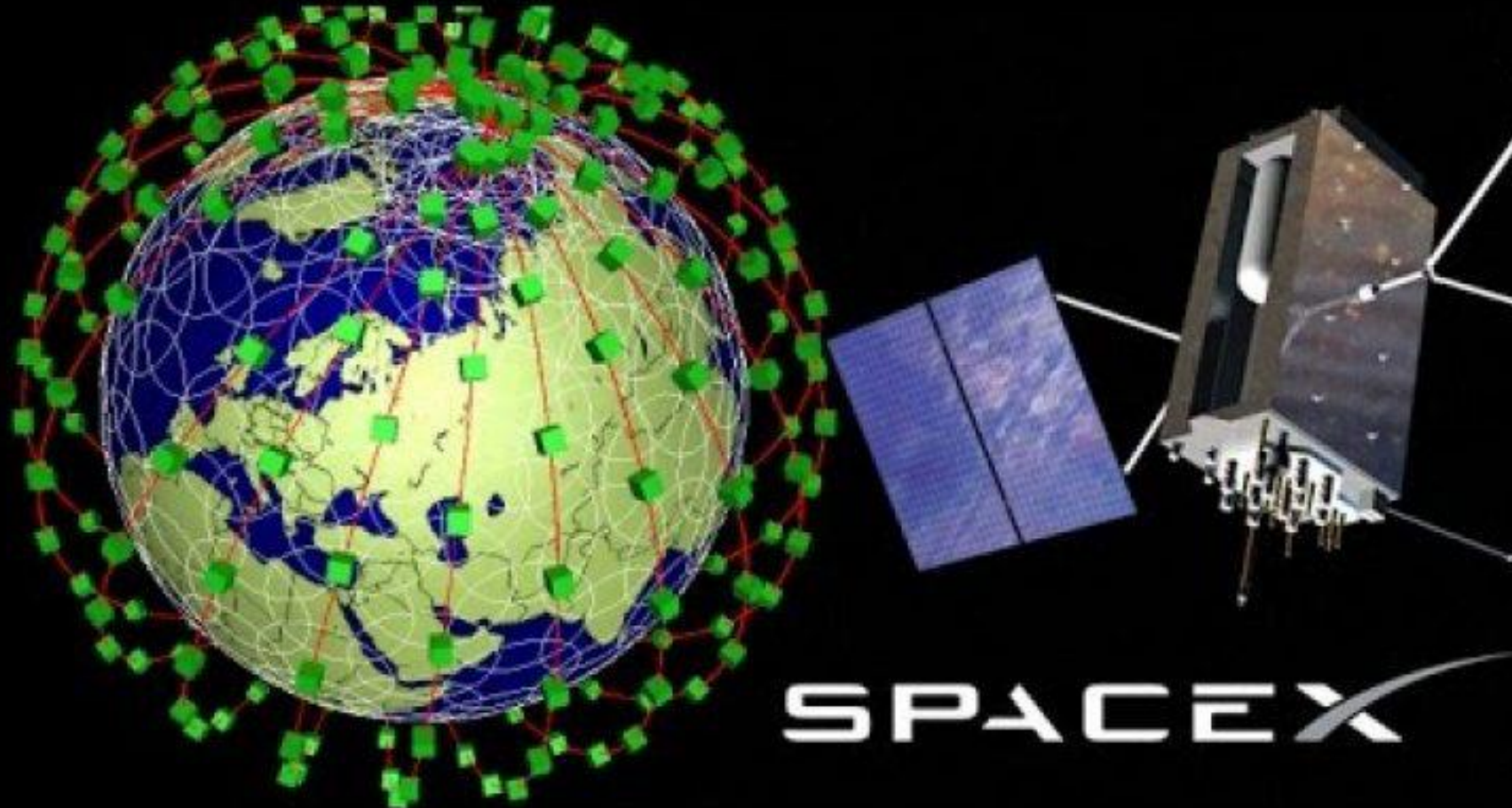


The 3,200-pound (1,450-kilogram) Paz satellite will capture high-resolution views of cities, landscapes and oceans with an X-band radar instrument. Paz is owned by Hisdesat, which oversees Spain's governmental satellite programs. The \$200 million (160 million euro) mission, primarily funded by the Spanish government, will produce radar imagery for the Spanish military and its allies, plus commercial clients. "It's a very flexible mission," said Miguel Angel García Primo, Hisdesat's chief operating officer, in an interview this week. "It's useful for a lot of applications, environmental, also for big infrastructure tracking and planning, maritime surveillance and government applications like monitoring and surveillance for any specific items that you'd like to follow."

Text Source: Stephen Clark @ SpaceFlightNow.com

Image Credit: Airbus Defense and Space / Hisdesat

First Two Test SpaceX High Speed Internet Delivery Satellites Launched with PAZ



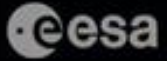
Tagging along for the ride with PAZ were two SpaceX's satellites. Called Tintin A & B, both are thought to be technology demonstrators for the company's Starlink satellite broadband service. Once deployed in the lower 319-mile (514-kilometer) orbit shared by the primary payload, the two smaller satellites are designed to utilize their onboard propulsion systems to raise their orbit to 699 miles (1,125 kilometers). SpaceX hopes to operate the pair of demonstrators for at least 20 months — or until such time as the primary mission goals are no longer achievable — after which the spacecraft should be deorbited.

SpaceX Now Trying to Recover Payload Fairings for Reuse



SpaceX attempted to recover the rocket's roughly \$6-million carbon-fiber fairing, or nosecone, for the first time. The giant piece of hardware parachuted toward a boat, christened "Mr. Steven," in the Pacific Ocean. It has onboard thrusters and a guidance system to bring it through the atmosphere intact, then releases a parafoil and a ship, named Mr. Steven, with basically a giant catcher's mitt welded on, tries to catch it." Shortly after launch, Musk tweeted that the fairing "made it back from space" and unfurled its parafoil. The fairing didn't hit its target, but it proved the concept could work — and could help SpaceX further cut its launch costs and lower the steep price of sending payloads to space.

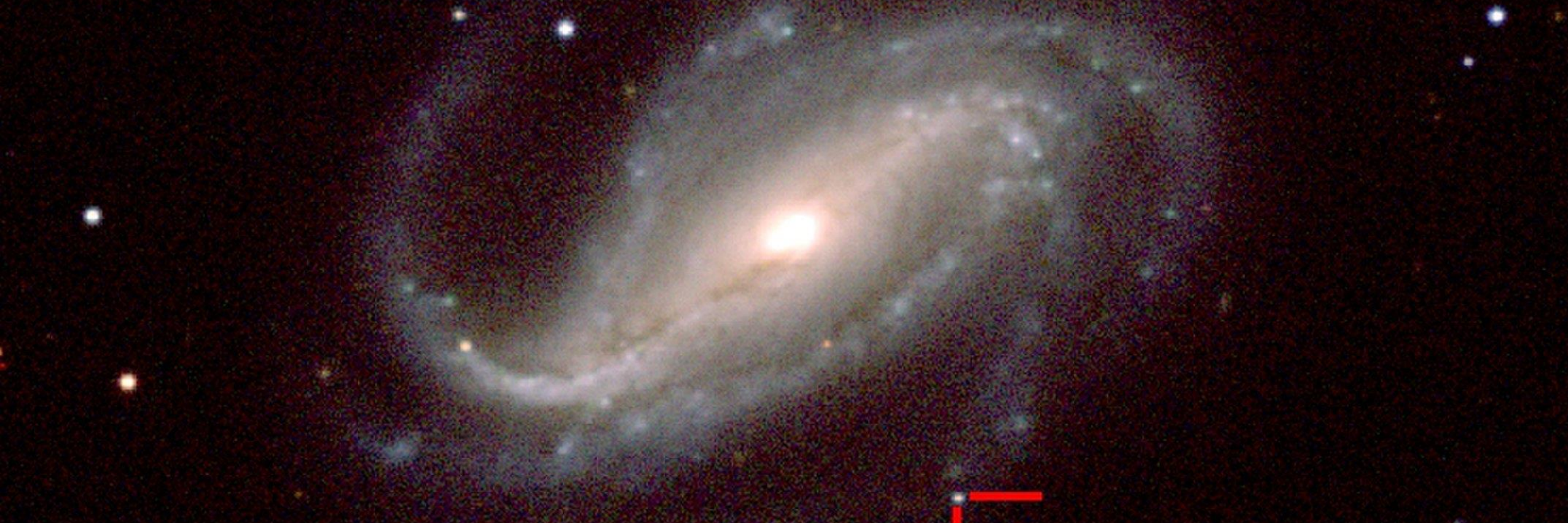
Surfing Complete!



Since arriving at Mars in October 2016

Slowed by skimming through the very top of the upper atmosphere, ESA's ExoMars has lowered itself into a planet-hugging orbit and is about ready to begin sniffing the Red Planet for methane. The spacecraft had to transform its initial, highly elliptical four-day orbit of about 98 000 x 200 km into the final, much lower and circular path at about 400 km. The end of this effort came at 17:20 GMT on 20 February, when the craft fired its thrusters for about 16 minutes to raise the closest approach to the surface to about 200 km, well out of the atmosphere. This effectively ended the aerobraking campaign, leaving it in an orbit of about 1050 x 200 km.

Amateur Astronomer Wins 'Cosmic Lottery' with 1-in-10-Million Supernova Shot

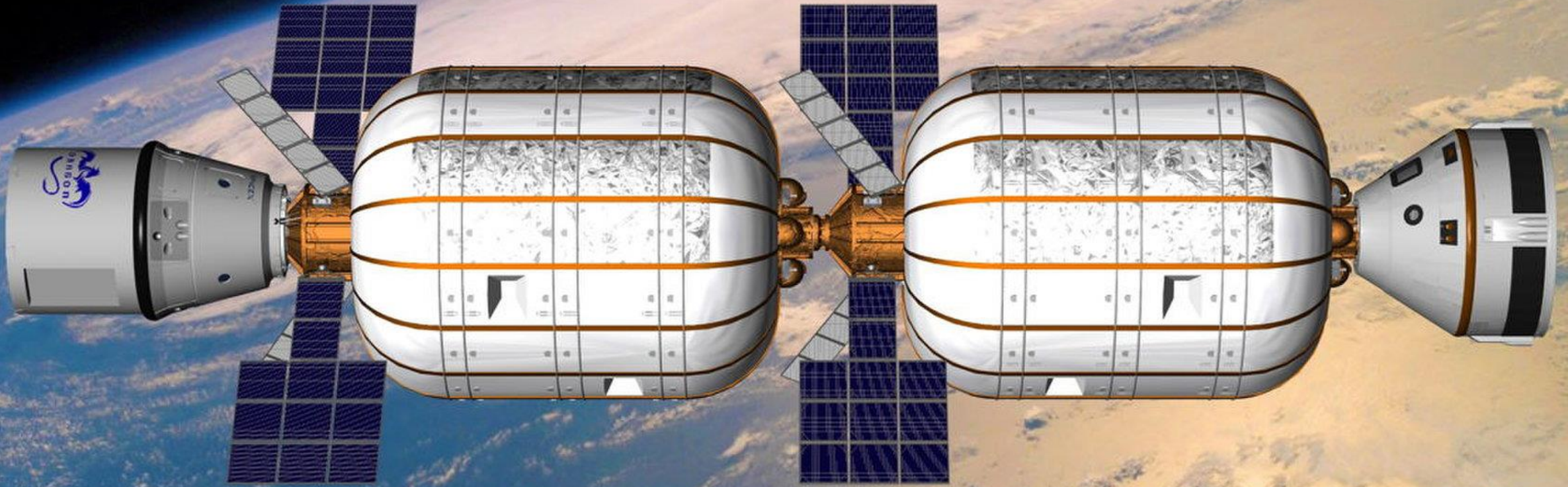


On Sept. 20, 2016, the Argentine amateur astronomer was trying out a new camera he'd affixed to his 16-inch (41 centimeters) telescope. He took some shots of the spiral galaxy NGC 613 — which lies about 80 million light-years from Earth, in the southern constellation Sculptor — and spotted something interesting: a brightening pinprick of light near the end of a spiral arm. researchers determined that Buso had imaged the "shock breakout" phase of a supernova — the first burst of visible light from an exploding star — according to a new study. Nobody had ever captured this elusive event before. In getting his random lucky shots, Buso had bucked odds of 1 in 10 million, or perhaps even 1 in 100 million, study team members said.

Text Source: Mike Wall @ Space.com

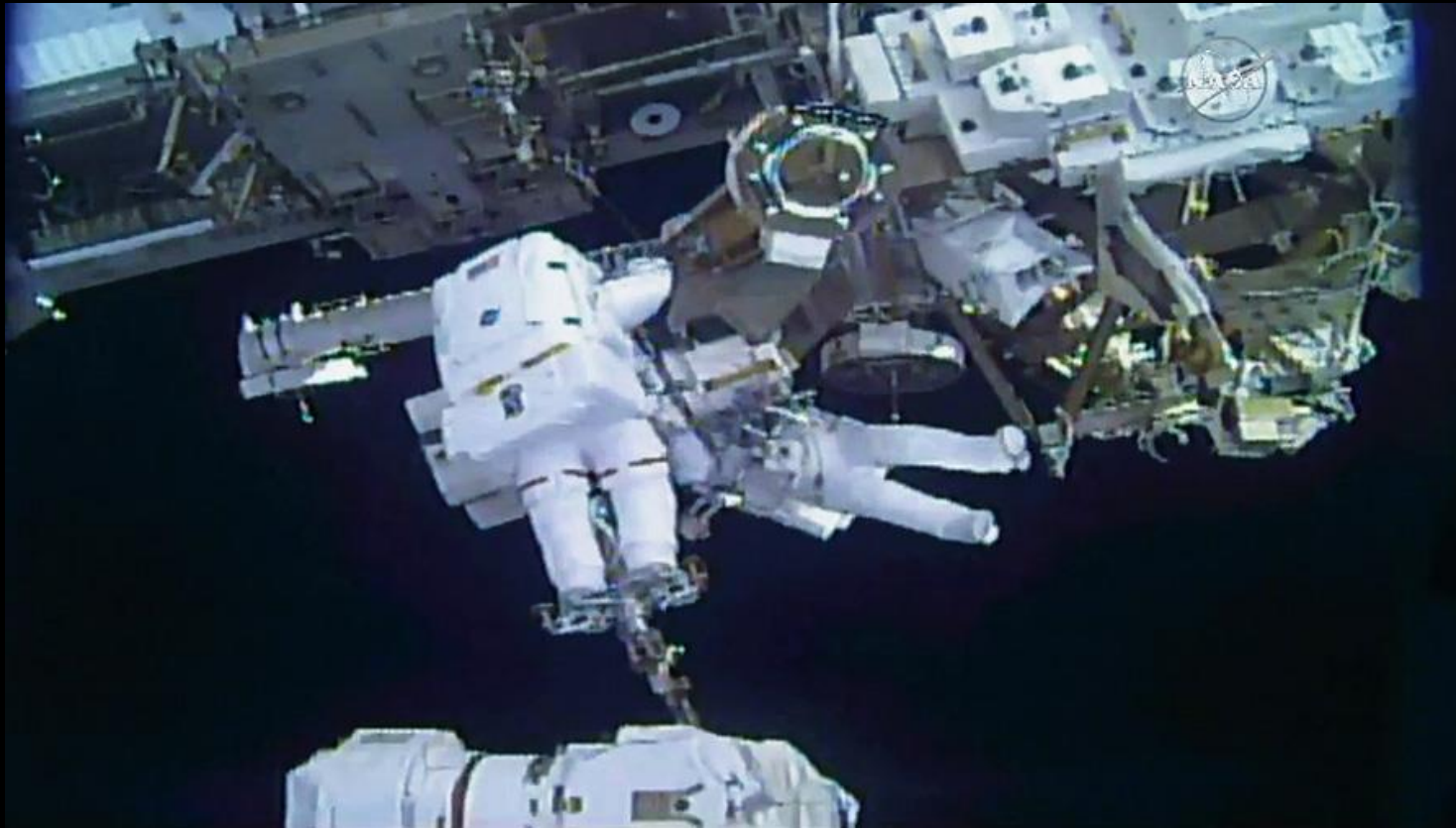
Image Credit: Carnegie Institution for Science/Las Campanas Observatory/UC Santa Cruz

Bigelow Calls For Commercial Human Low Earth Orbit Push



Bigelow Aerospace says it plans to explore the expansion of its commercial presence in low Earth orbit by standing up the Bigelow Space Operations venture and exercising a cooperative agreement with the Center for the Advancement of Science in Space (Casis). Casis is the Florida nonprofit that manages the U.S. National Laboratory assets of the International Space Station (ISS) for NASA. Both of the Feb. 20 developments are intended to forge a sustainable commercial space operations presence in low Earth orbit to go with the 19-year-old company's ongoing production of expandable, habitable space modules fashioned after the prototype Bigelow Expandable Activity Module (BEAM).

Spacewalkers Wrap Up Robotic Hand Transfers



Expedition 54 Flight Engineers Mark Vande Hei of NASA and Norishige Kanai of the Japan Aerospace Exploration Agency have completed a spacewalk lasting 5 hours and 57 minutes. The spacewalkers moved two Latching End Effector (LEE), or hands, for the Canadian-built robotic arm, Canadarm2. They moved one to a long-term storage location for future use as a spare part and brought the other inside the space station to be returned to Earth. It will be refurbished and later relaunched to the orbiting laboratory as a spare. Running well ahead of the timeline, the two spacewalkers also conducted a number of get ahead tasks, including the lubrication of the inside of the LEE installed on the International Space Station's robotic arm during the Jan. 23 spacewalk.

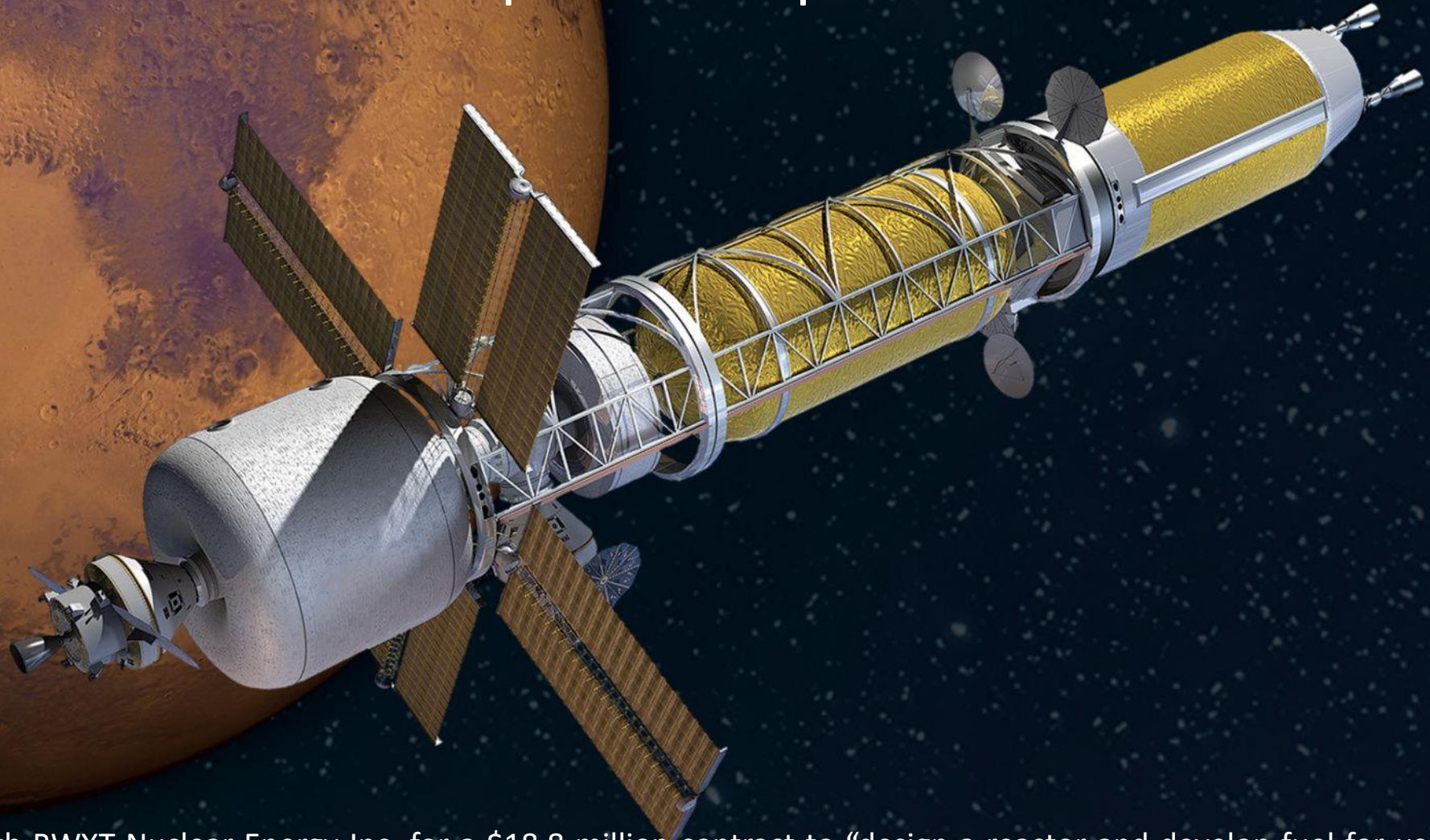
Long-Lived Mars Rover Opportunity Keeps Finding Surprises



NASA's Mars Exploration Rover Opportunity keeps providing surprises about the Red Planet, most recently with observations of possible "rock stripes." Textured rows on the ground in this portion of "Perseverance Valley" are under investigation by NASA's Mars Exploration Rover Opportunity, which used its Navigation Camera to take the component images of this downhill-looking scene. The rover reached its 5,000th Martian day, or sol, on Feb. 16, 2018

Text & Image credit: NASA/JPL-Caltech

NASA Interested In Nuclear-powered Spacecraft to Get to Mars



NASA partnered last year with BWXT Nuclear Energy Inc. for a \$18.8 million contract to “design a reactor and develop fuel for use in a nuclear thermal propulsion engine for deep-space travel.” Bloomberg says the move “marks the U.S. return to an idea that is also being pursued by Russia and China.” The atomic system, “uses the reactor to heat a propellant like liquid hydrogen, which then expands through a nozzle to power the craft.” Stephen Heister, a professor at Purdue University’s School of Aeronautics and Astronautics said, “This factor is absolutely huge, especially for very difficult missions that necessitate a lot of propellant such as a Mars flight.”

Source: Stephen Stapczynski @ bloombergnews.com

Image Credit: BWXT Nuclear Energy Inc.

AHRLAC Variant Bronco II Unveiled for US Light Attack Bid



Newly-formed Bronco Combat Systems on 21 February launched the Bronco II light attack aircraft for the US military market, leveraging the South African-designed AHRLAC platform with a US-based mission systems integrator named Fulcrum Concepts. The announcement on the eve of the Air Force Association's Air Warfare Symposium in Orlando adds yet another platform to a growing field of competitors chasing the US military's on-again, off-again interest in light attack aircraft.

Text Source: Stephen Trimble

Image Credit: Bronco Combat Systems

Russian Helicopters to Produce Revamped An-2



Russian Helicopters has reached an agreement with the country's government to launch production of a turboprop-powered update of the Antonov An-2 biplane and to establish airline operations for the aircraft. The fully composite version of the An-2 – rebranded as TVS-2DTS – is powered by a Honeywell TPE331-12 turboprop engine and completed its first flight in 2017. Production is scheduled to start at the Ulan-Ude Aviation Plant, which is more used to building Mil Mi-8 helicopters, by 2019, with an obligation to deliver "at least" 200 aircraft between 2021 and 2025, Russian Helicopters says.

In The News



NASA Certifies Falcon 9 for Science Missions. NASA has certified the current version of the SpaceX Falcon 9 to launch some categories of science missions, a milestone needed for the upcoming, but delayed, launch of the Transiting Exoplanet Survey Satellite (TESS) astronomy spacecraft. *(Jeff Foust @ SpaceNews.com)*



Boeing 737 Max 9 Cleared for Service. The Boeing 737 Max 9 has received its U.S. Federal Aviation Administration amended type certificate, clearing it for commercial service with launch customer Lion Air of Indonesia, Boeing announced Friday. The certification marks the culmination of an 11-month flight-test program involving two airplanes. Designed to carry 220 passengers to a range of 3,550 nm, the Max 9 becomes the second 737 Max variant to win certification. *(Gregory Polek @ AINonline.com)*



Airbus Delivers First Qatar A350-1000. Airbus delivered the first A350-1000, the largest variant of the A350XWB family, to its launch customer Qatar Airways on February 20 in Toulouse. This twin-aisle airplane, able to carry up to 366 passengers in three-class configuration (and a maximum of 440), will officially enter service on February 24 on the Doha-Heathrow route. *(Guillaume Lecompte-Boinet @ AINonline.com)*



Vector Planning First Orbital Launch this Summer. Vector, one of a growing number of companies developing small launch vehicles, plans to carry out its first orbital launch this summer from Alaska. The inaugural Vector-R orbital launch would take place from “Kodiak,” a reference to the Pacific Spaceport Complex-Alaska, formerly known as the Kodiak Launch Complex on Alaska’s Kodiak Island. *(Jeff Foust @ SpaceNews.com)*



Hawaiian Airlines Reportedly Cancels Airbus A330-800neo order for 787 Dreamliners. Hawaiian Airlines has reportedly walked away from an order for six A330-800 jets, and instead will acquire an unspecified number of Boeing 787-9 Dreamliners, according to aerospace analyst Scott Hamilton. Boeing’s win is a rare example of a plane maker successfully flipping an airline’s choice of intercontinental jets. *(Puget Sound Business Journal and WSJ.COM)*