

The world's most powerful space telescope begins its revolutionary voyage

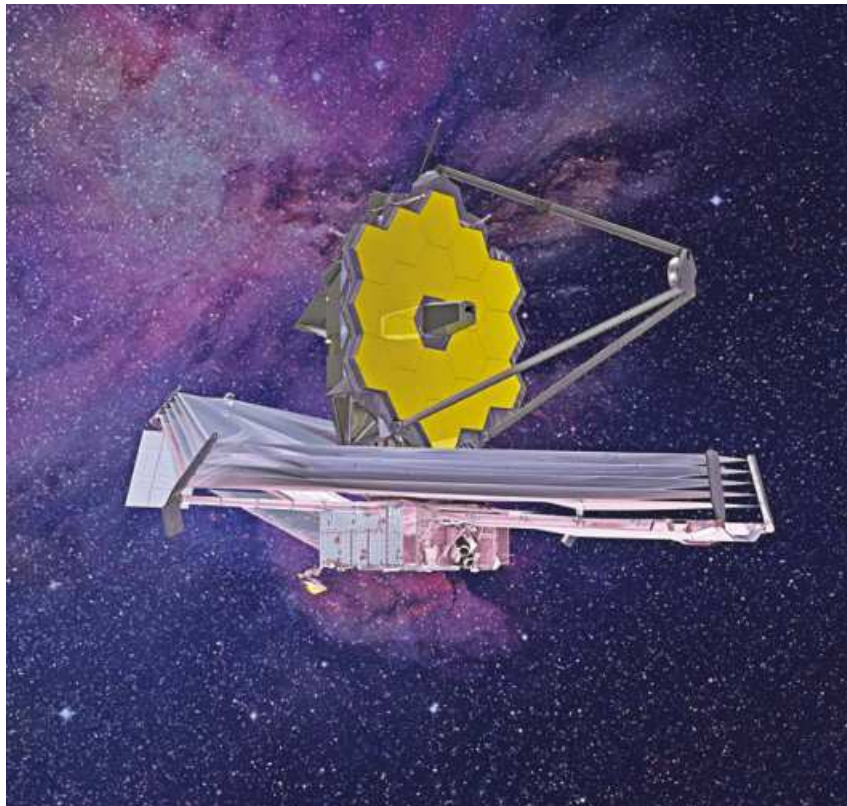
The James Webb telescope, known as the most powerful space telescope on the planet, set off on its newest mission on 25 December. Its destination is an outpost that is situated 1.5 million km from Earth. After three decades and billions of dollars of investment, the revolutionary telescope left the planet on the Ariane 5 Rocket, from the Kourou Space Center in French Guiana.

"What an amazing day. It's truly Christmas," said Thomas Zurbuchen, head of scientific missions for NASA, which together with the European and Canadian space agencies, ESA and ACS, built the telescope. ESA Chief Josef Aschbacher said he was "very happy to say that we've delivered the spacecraft into orbit very precisely... that Ariane 5 performed extremely well".

This was key since placing the spacecraft in orbit helps economise on the fuel the telescope will need to reach its final destination and perform well after that. It is expected to take a month to reach its remote destination. It is set to beam back new clues that will help scientists understand more about the origins of the Universe and Earth-like planets beyond our solar system.

Named after a former NASA director, Webb follows in the footsteps of the legendary Hubble -- but intends to show humans what the Universe looked like even closer to its birth nearly 14 billion years ago.

Speaking on social media, Webb project co-founder John Mather described the telescope's unprecedented sensitivity. "#JWST can see the heat signature of a bumblebee at the distance of the Moon," he said. All that power is needed to detect the weak glow emitted billions of years ago by the very first galaxies to exist and the first stars being formed.



The telescope is unequalled in size and complexity. Its mirror measures 6.5 metres (21 feet) in diameter -- three times the size of the Hubble's mirror -- and is made of 18 hexagonal sections. It is so large that it had to be folded to fit into the rocket. That maneuver was laser-guided with NASA imposing strict isolation measures to limit any contact with the telescope's mirrors from particles or even human breath.

Once the rockets have carried Webb 120 kilometres, the protective nose of the craft, called a 'fairing', will be shed to lighten the load. To protect the delicate instrument from changes in pressure at that stage, rocket-builder Arianespace installed a custom decompression system.

"Exceptional measures for an exceptional client," said a European Space Agency official in Kourou on Thursday. Once it reaches its station, the challenge will be to fully deploy the mirror and a tennis-court-sized sun shield. That intimidatingly complex process will take two weeks and must be flawless if Webb is to function correctly.

Its orbit will be much farther than Hubble, which has been 600 kilometres above the Earth since 1990. The location of Webb's orbit is called the Lagrange 2 point and was chosen in part because it will keep the Earth, the Sun and the Moon all on the same side of its sun shield. Webb is expected to officially enter service in June.

EDITOR'S NOTE

Wrapping it up

Whether we had wanted it to or not, another year comes to a close. 2021 was quite the journey. The world slowly recovered from the pandemic-induced trauma of 2020, and while the pandemic has still not completely left us, 2021 taught us to believe in a better future.

In the world of tech, 2021 meant revolutionary changes and meta-defining technological shifts. For the Toggle Rewind 2021 issue, we focused on the biggest tech news of 2021 that defined the year. Take a look at Next Step to learn how local startups grew in 2021. If you are planning on buying a new laptop or smartphone, we have you covered with not just one, but two exclusive buying guides - at Bytes and Tech Tips.

As we move forward to the wild ride that is sure to be 2022, let us not forget the perseverance we have shown during the toughest of times in the past years. Goodbye, 2021!

Have a great weekend (and year!) everyone. Stay safe!

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World's first-ever SMS sold as NFT for 107,000 euros

The first SMS ever sent over a mobile phone in 1992 was sold Tuesday as an NFT at auction for 107,000 euros (\$120,600), the Aguttes auction house said. The buyer, whose identity was not disclosed but is a Canadian involved in the tech sector, is now the owner of a unique digital replica of the first SMS message in the form of a Non-Fungible Token, or NFT.

The first SMS was a

15-character message sent to Vodafone employee Richard Jarvis wishing him "Merry Christmas". NFTs are digital items that can be bought and sold using blockchain technology. They have become immensely popular for collectors, including artwork that sold for nearly \$70 million at auction earlier this year. Among those in the auction hall was 18-year-old blockchain

entrepreneur Luigi Caradonna, who bowed out of the bidding when the price rose above 75,000 euros.

"I thought it would be interesting to have this piece of history to hold it as an asset until next year and to sell it next Christmas," he told AFP. Mobile network operator Vodafone has said it plans to donate its proceeds from the sale to the UN's refugee agency.

