Launch of the world's first soft X-ray satellite with 'Lobster-Eye' imaging technology

July 27 2020

The Lobster-Eye X-ray Satellite was successfully launched on July 25 (Saturday) into orbit at the Taiyuan Launch Center with the first signal received. Credit: The University of Hong Kong

The 'Lobster-Eye X-ray Satellite' was successfully launched on July 25

into orbit from the Taiyuan Launch Center, with the first signal received, riding the Long March 4B lift rocket. The Lobster-Eye X-ray Satellite project is co-led by Nanjing University (NJU), the Laboratory for Space Research (LSR) of The University of Hong Kong (HKU), the 508 Institute of the Fifth Academy of China Aerospace Science and Technology Corporation (CASC), and Shanghai ASES Spaceflight Technology Co.Ltd. also under the 805 Institute of the Eighth Academy of CASC. It was successfully developed through five years of joint effort by the above outstanding teams. The satellite is equipped with an internally developed 'Lobster-Eye' focused X-ray detector and a small high-precision payload platform. During the satellite's long-term orbit operations, it will verify the ultra-large X-ray field-of-view within the X-ray energy regime and complete several important space X-ray detection experiments. This includes carrying out dark matter signal detection research within the X-ray energy regime in an earth orbit environment.

Based on the Lobster-Eye focusing light theory, the X-ray imaging technology was first proposed in the 1970s, with advantages of large field-of-view, small size, light weight and easy assembly, etc., making it highly suitable for space payload applications. The Lobster-Eye X-ray Satellite will be the world's first in-orbit space exploration satellite equipped with such imaging technology. Its core payload was technically guided by Nanjing University and jointly manufactured by the 508 Institute of CASC and China Building Materials Academy (CBMA).

The satellite launch provides an exciting and new platform to continue these highly effective collaborations for the planned up-coming series of satellites. All the participating research teams and units will endeavor to contribute more efforts in core payload technology breakthrough and enhancing our nation's independent innovation capabilities in space astronomy, deep space exploration and space remote sensing fields.

"I hope this project will lead to important scientific advances that reflect

well on our two great universities of HKU and NJU and that will provide additional impetus and incentive for greater and deeper collaborations in the future with the Mainland Space program and emerging space economy," said Professor Quentin Parker, Director of HKU LSR.

Its successful launch marks an important milestone in the hoped-for the emergence of space science research in the Greater Bay Area and encouraging more scientists in the community to engage in nationwide space science projects. The LSR hopes this iconic scientific endeavor may inspire young minds in the HKSAR and beyond to pursue their space dreams and get involved in Science, Technology, Engineering and Mathematics (STEM).

Provided by The University of Hong Kong

Citation: Launch of the world's first soft X-ray satellite with 'Lobster-Eye' imaging technology (2020, July 27) retrieved 5 May 2024 from https://phys.org/news/2020-07-world-soft-x-ray-satellite-lobster-eye.html