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# Nasa successfully launches twin missions to study sun, history of universe

The SPHEREx and PUNCH space missions have an estimated mission life of two years.

Written by Anjali Marar
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An hour post the launch, Nasa said that it received the first and full signal acquisition from SPHEREx, which will collect data from over 450 million galaxies and over 100 million stars in the Milky Way. (Photo Credit: X/@nasa)

The National Aeronautics and Space Administration (NASA) launched the SPHEREx and the PUNCH space missions late on Tuesday (11.10 pm EST) from the Vandenberg Space Force Base in California, after multiple delays in the launch since February

27.

A few minutes into the launch, and after the first stage, Nasa confirmed that the Spectro-Photometer for the History of the Universe, Epoch of Reionization and Ices Explorer (SPHEREx) observatory had separated from Falcon 9 at the second stage. The science mission will take place from a sun-synchronous orbit about 650km above Earth.

An hour post the launch, Nasa said that it received the first and full signal acquisition from SPHEREx, which will collect data from over 450 million galaxies and over 100 million stars in the Milky Way. It is expected to create the most colourful, 3D map of the sky and help recreate the history of the universe since the Big Bang.

The SPHEREx team, over the next few weeks, will perform calibrations, cooling of the telescope to its desired operating temperature and characterise its optical performance. Science data is expected to start flowing four to six weeks from now, NASA officials said.

Piggy-backing onboard SPHEREx is the Polarimeter to Unify the Corona and Heliosphere (PUNCH), a solar mission. It is a constellation of four identical, suitcase-sized satellites that will observe the sun and capture images of the interior of the solar corona to produce one of the most detailed 3D images. Data from PUNCH will be useful in studying the transitions in solar winds, improving space weather prediction and studying how solar winds and the coronal mass ejections originate and propagate into the interstellar medium.

Ten minutes past the launch, Nasa said that all four PUNCH satellites were deployed in low earth orbit. The satellites will remain under the commissioning period for the next three months, following which the actual scientific work will commence.

Both the missions have an estimated mission life of two years.