NASA to launch probe into sun's scorching atmosphere

Ambitious plan: An illustration of NASA's Parker Solar Probe, which is scheduled for launch on August 6 . | Photo Credit: <u>AFP</u>

NASA is preparing to send a probe closer to the sun, enduring wicked heat while zooming through the solar corona to study this outermost part of the stellar atmosphere that gives rise to the solar wind.

The Parker Solar Probe, a robotic spacecraft the size of a small car, is slated to launch from Cape Canaveral in Florida, with August 6 targeted as the launch date for the planned seven-year mission. It is set to fly into the sun's corona within 3.8 million miles from the solar surface, seven times closer than any other spacecraft.

"To send a probe where you haven't been before is ambitious. To send it into such brutal conditions is highly ambitious," Nicola Fox, a project scientist from the Johns Hopkins University Applied Physics Laboratory, told a news conference on Friday.

The previous closest pass to the sun was by a probe called Helios 2, which in 1976 came within 43 million km.

The distance of the earth from the sun is approximately 149.6 million km.

Importance of study

The corona gives rise to the solar wind, a continuous flow of charged particles that permeates the solar system. Unpredictable solar winds cause disturbances in our planet's magnetic field and can play havoc with communications technology on the earth. NASA hopes the findings will enable scientists to forecast changes in the earth's space environment.

"It's of fundamental importance for us to be able to predict this space weather, much like we predict weather here on the earth," said Alex Young, a solar scientist at NASA's Goddard Space Flight Center in Maryland.

"In the most extreme cases of these space weather events, it can actually affect our power grids on the earth." The project, with a \$1.5 billion price tag, is the first major mission under NASA's Living With a Star programme.

The probe is set to use seven Venus flybys over nearly seven years to steadily reduce its orbit around the sun, using instruments designed to image the solar wind and study electric and magnetic fields, coronal plasma and energetic particles. NASA aims to collect data about the inner workings of the highly magnetized corona.

The probe, named after American solar astrophysicist Eugene Newman Parker, will have to survive difficult heat and radiation conditions.

It has been outfitted with a heat shield designed to keep its instruments at a tolerable 29 degrees Celsius even as the spacecraft faces temperatures reaching nearly 21,370 degrees Celsius at its closest pass.

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