

Hopkins and NASA to monitor solar flares

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BALTIMORE -

Two spacecraft rounded the moon this weekend in their final maneuver into an orbit around the sun paralleling the Earth's.

Designed by Johns Hopkins' Applied Physics Laboratory researchers, the STEREO probes will track huge plumes of charged ions spewed from the sun to give advanced warning to operators of aircraft communications, global positioning services and other sensitive electronic systems on Earth.

"STEREO is the first mission to use the moon's gravity to redirect multiple spacecraft, launched aboard a single rocket, to their respective orbits," said Ron Denissen, APL STEREO project manager. "We have to use two sets of people any time we want to talk to the spacecraft."

The probes are traveling at about 2 kilometers per second, Denissen said, and are now 1 degree apart in their orbits around the sun, or a little more than the distance the Earth travels through space in one day.

By April, the probes will be far enough apart to provide meaningful information, said science director Michael Kaiser of NASA's Goddard Space Flight Center. "It's hard to tell the speed of something coming straight at you."

On Dec. 15, STEREO's A observatory flew past the moon at a distance of approximately 4,550 miles, using lunar gravity to redirect the spacecraft away from Earth and into its orbit "ahead" of Earth, according to an APL release. The B observatory completed its slingshot maneuver Sunday, coming within approximately 5,468 miles of the moon and swinging into orbit "behind" Earth.

The two observatories will orbit the sun from this perspective, separating from each other by approximately 44 degrees per year, Dennisen said. Just as the slight offset between your eyes provides you with depth perception, this mirror-image-like positioning of the spacecraft will allow them to take 3D images and particle measurements of the sun.

Preliminary camera tests caught giant clouds of plasma shot into space from the sun's atmosphere, according to the APL release.

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