



# Probe Observation of Solar Generators

What is NASA's Parker Solar Probe?

NASA's Parker Solar Probe is diving into the Sun's atmosphere, facing brutal heat and radiation, on a mission to give humanity its first-ever sampling of a star's atmosphere. On Dec. 14, 2021, NASA announced that Parker had flown through the Sun's upper atmosphere - the corona - and sampled particles and magnetic fields there.

How does the Parker Solar Probe work?

The Parker Solar Probe team uses GONG's magnetic maps, along with data from NASA's Solar Dynamics Observatory, to make predictions of which regions on the Sun are sending out material and magnetic field lines toward the spacecraft.

How did Parker Solar Probe measure solar wind structures?

Near the Sun, Parker Solar Probe made better-than-ever measurements of these solar wind structures, using both imagers to take pictures from afar and in situ instruments to measure the structures as they pass over the spacecraft.

Did Parker Solar Probe energize a particle?

As Parker Solar Probe traveled away from the Sun in April 2019, after its second solar encounter, the spacecraft observed the largest-yet energetic particle event seen by the mission. Measurements by the energetic particle instrument suite, IS<sup>3</sup>IS, have filled in one missing link in the processes of particle energization.

Will the Parker Solar Probe be able to see new data?

This comes on the heels of a similar observation campaign in the winter of 2020. "Along with the global science community, the Parker Solar Probe team can't wait to see this new data," said Nour Raouafi, the Parker Solar Probe project scientist from the Johns Hopkins Applied Physics Laboratory in Laurel, Maryland.

What can we learn from Parker Solar Probe?

With direct measurements of this never-before-measured environment -- closer to the Sun than ever before -- we can expect to learn even more about these phenomena and uncover entirely new questions. Parker Solar Probe is part of NASA's Living with a Star program to explore aspects of the Sun-Earth system that directly affect life and society.

A statistical study of the radial evolution of the solar wind within 0.3 au is shown in this Letter based on Parker Solar Probe observations. We show the radial distribution of the ...

The era of Parker Solar Probe (PSP; Fox et al. 2016) and Solar Orbiter (Müller et al. 2020) observations now opens the possibility of extensive statistical studies of the kinetic ...

Along with observations of the solar wind from Parker Solar Probe and near Earth, scientists also have

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detailed images of the Sun and its atmosphere from spacecraft like NASA's Solar Dynamics Observatory and the ...

2 Observations. Parker Solar Probe (Fox et al. 2016) was launched on 2018 August 12; through a series of Venus flybys, the perihelion of the orbits will gradually be reduced to reach  $\approx 10 R_S$  ...

We report the observation by Parker Solar Probe (PSP) of magnetic structures in the solar wind that present a strong peak in their magnetic field magnitude with an embedded central current ...

Recent observations by Parker Solar Probe (PSP) show evidence of an accelerating solar wind close to the Sun. Hence, it is now a good time to revisit the theory of solar wind generation. The first theory of the ...

We utilize observations from the Parker Solar Probe (PSP) to study the radial evolution of the solar wind in the inner heliosphere. We analyze electron velocity distribution ...

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