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**Parker Solar Probe: Exploring the Sun as a Plasma Experiment.**<sup>1</sup>

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NASA's Parker Solar Probe (PSP) was successfully launched August 12, 2018. Probe's first perihelion was 35 solar radii, and will work its way inward to 9.86 solar radii by 2024 through a series of seven Venus gravity assists. The mission will go inside of the Sun's atmosphere to address the primary science goals of tracing the flow of energy from the corona to the solar wind, understanding the heating of the solar corona as well as exploring the mechanisms that accelerate the solar wind. Parker will also unveil the mechanisms of coronal mass ejections and energetic particle acceleration, as well as link the magnetic field evolution from the solar interior to its consequences in terms of solar variability and space weather. By November 2020, PSP will have collected data from five encounters with the Sun with a minimum perihelion of 20 solar radii and encountered Venus three times. Early results have already changed the way we understand our Sun. PSP data will also reveal information about other main sequence stars in terms of stellar activity, exoplanet habitability, and stellar evolution. Initial insights from PSP on the role a variety of small-scale plasma processes, including magnetic reconnection, turbulent dissipation and kinetic instabilities, and large-scale magnetic structures play in governing the dynamics of the young solar wind will be discussed.

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