Parker Solar Probe

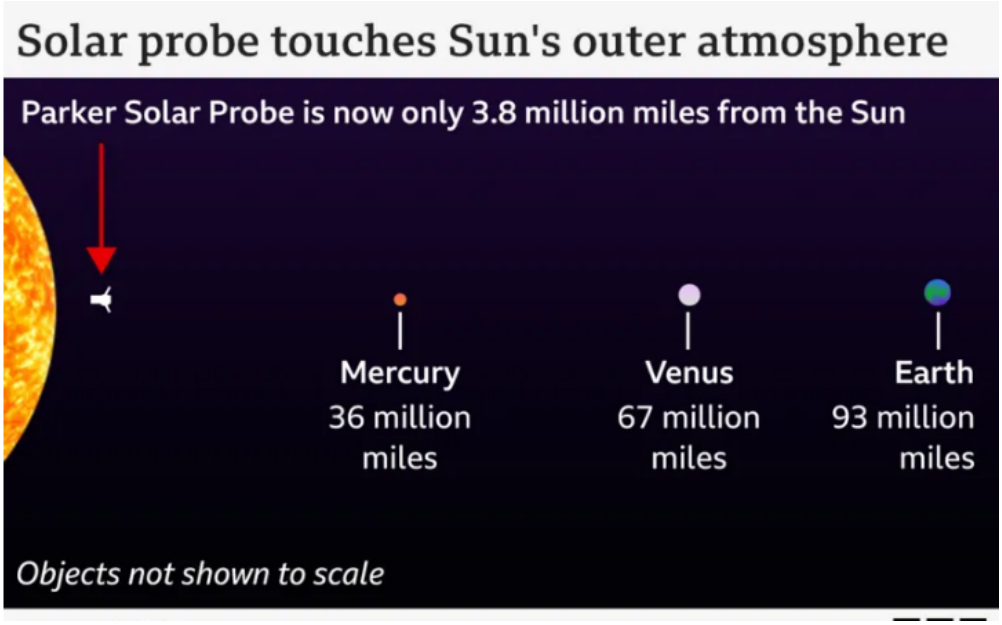
Why in News?

Recently, Parker Solar Probe made history by surviving the closest-ever approach to the Sun.

- **Launched in** – 2018.
- **Launched by** – NASA.
- **Mission** – To "Touch the Sun".
- It is designed to fly *within about 4 million miles* (6.5 million kilometers) of the Sun's surface.
- **Aim** – To make observations of the ***outer corona of the Sun***.

It became the 1st spacecraft to fly through the corona, the Sun's upper atmosphere in 2021.

- **Study objectives –** To *trace the energy flow*, to study magnetic fields, plasma, energetic particles, and to image the solar wind.
- Movement – It gradually circling closer towards the sun, using flybys of Venus to gravitationally pull it into a tighter orbit with the sun.
- Every orbit bringing it closer, the probe faces brutal heat and radiation.
- **4 Instruments**
  - Fields Experiment (FIELDS)
  - Integrated Science Investigation of the Sun (ISIS)
  - Wide Field Imager for Solar Probe (WISPR)
  - Solar Wind Electrons Alphas and Protons (SWEAP)
- **Thermal protector** – An 11.5cm thick carbon-composite shield from temperatures of nearly 2,500 degrees Fahrenheit.
- **Speed** – It moves *faster than any human-made object*, up to 430,000 mph.
- **Significance** – It flies more than 7 times closer to the Sun than any spacecraft and over 7 years, it will complete 24 orbits around the Sun.



References

1. The Hindu| Parker Solar Probe Makes History
2. NASA| Parker Solar Probe

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