# Stellar Parallax

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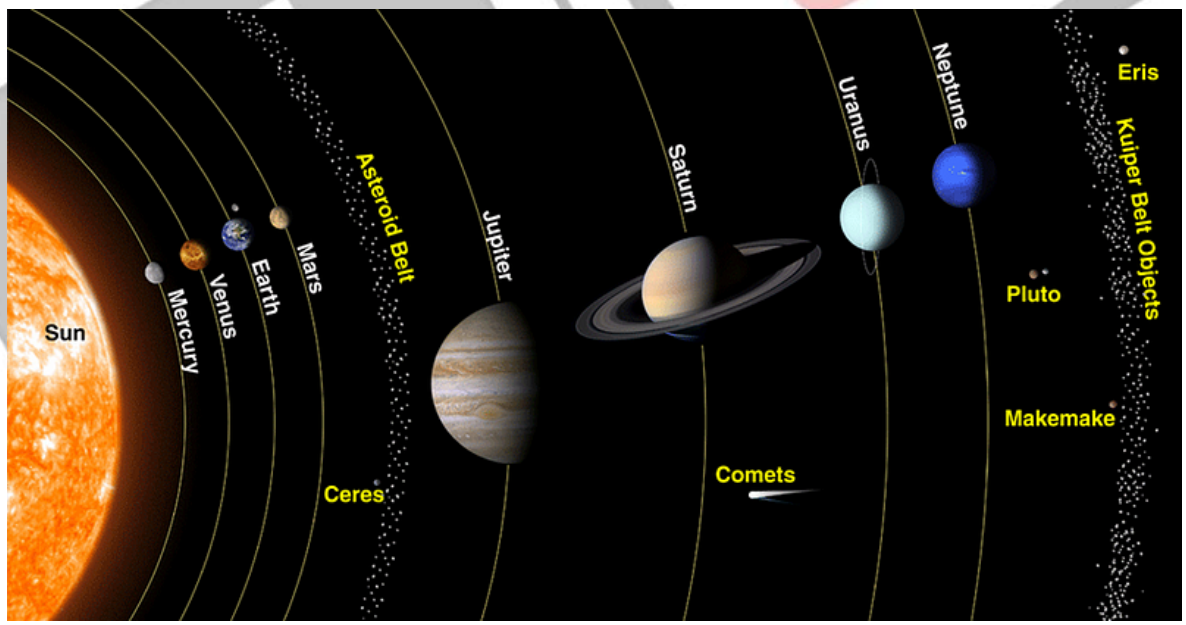
**Astronomers** have demonstrated a **pioneering technique** using **stellar parallax** to **navigate spacecraft** in deep space **without** relying on **Earth-based beacons.**

- **Stellar parallax**: As the earth orbits the sun, a star's position relative to other stars might seem to shift. This is because every six months, the earth is on opposite sides of the sun, providing two different viewpoints.
    - The **New Horizons** spacecraft observed **Proxima Centauri** (4.2 **light-years away**) and **Wolf 359** (7.9 **light-years away**) from a distance of **7 billion km from Earth**.
- **Other Space Navigation Methods:**
    - **Stellar Astrometric Navigation:** It uses **stars** and **special relativity** to estimate a **spacecraft's 3D position and velocity** by measuring the **angular separation** between two stars.
    - **Pulsar Navigation:** It uses **rapidly spinning neutron stars** like **lamps in space** to guide the way.
- **NASA** launched **New Horizons** in 2006 to study the **dwarf planet Pluto**, its **moons**, and objects in the **Kuiper Belt**, a **disc of icy rocks and dust** at the **solar system's outer edge**.

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