

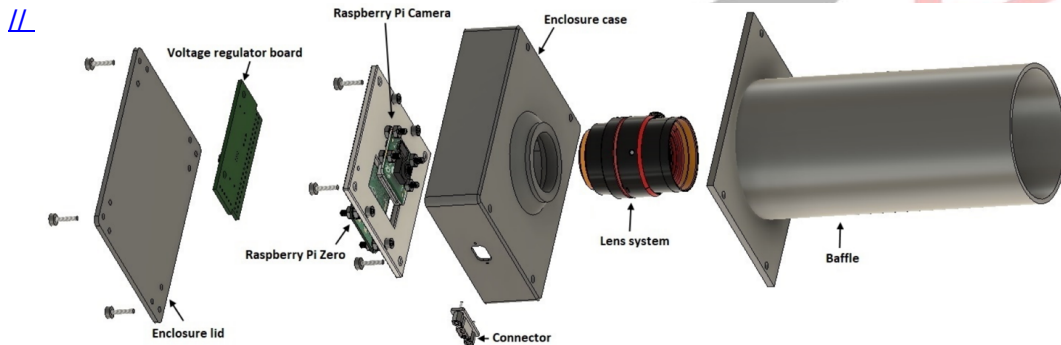


Starberry-Sense

Why in News?

Researchers at the **Indian Institute of Astrophysics (IIA)** have developed a low-cost star sensor for astronomy and small **CubeSat class satellite missions**.

- The star sensor named **Starberry-Sense** can help small **CubeSat class satellite** missions find their orientation in space.
- The **Department of Science and Technology (DST)** said that the Starberry-Sense is ready for launch on the **PS4-Orbital Platform** by **ISRO** and can be used for CubeSats and other **small satellite missions** in the future.



What is Star Sensor?

- Star sensor is one of the precise attitude determination sensors. It is an electro-optical system that takes an image from a set of stars and by comparing it with the star catalogue determines angle deviation of the satellite and modifies its attitude. Star sensor is composed of baffle, optical system, detector, and electronic and image processing system.

Why Starberry-Sense is Better than Other Star Sensor?

- This star sensor is **less expensive than those on the market by less than 10%** based on the commercial/off-the-shelf components which are readily available.
- The system is developed by using **Raspberry Pi Zero** which is available at low cost.
 - The Raspberry Pi Zero is a **compact size** (smaller than a credit card) computer with low **power consumption**, and ability to run **custom software** make it a suitable platform for a star sensor application.

What is Indian Institute of Astrophysics?

- The IIA is a premier research institute in India dedicated to the study of astronomy, astrophysics, and related fields. Wholly financed by the **Department of Science and Technology**, Government of India.
- It has several **observational facilities**, including the **Vainu Bappu Observatory** in Kavalur,

Tamil Nadu, the **Gauribidanur Radio Observatory** in Karnataka, and the **Hanle Observatory** in Ladakh, Jammu, and Kashmir.

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