Hayabusa 2

Japan Aerospace Exploration Agency (JAXA) has decided to make a **crater on asteroid 1999 JU3 (Ryugu)** to collect underground samples.

- This is part of the **Hayabusa 2 mission,** launched in December 2014, to explore asteroid 1999 JU3 (Ryugu).
- The purpose of drilling is to collect samples for possible clues to the origin of the solar system.

Asteroids

- **Asteroids are actually minor planets** which can neither be classified either as a planet or as a comet.
- These are generally in the **direct orbit around the Sun.**
- The larger forms of asteroids are also known as **planetoids**.

Hayabusa 2

- **Hayabusa 2 was launched in December 2014 and is planned to complete a mission of six years.**
- It arrived at Ryugu in July 2018 and **will spend 18 months studying the asteroid before making its return to Earth in December 2020.**
- The mission builds on the original Hayabusa mission that was launched in 2003 and successfully linked up with asteroid Itokawa in 2005.
- It returned samples to Earth in 2010 marking the first time sample materials from an asteroid were brought back to Earth.

Why Study Asteroids?

- Asteroids, like comets, are primitive bodies that can be considered to be the **building blocks of the early solar system.** They hold a record of the birth and initial evolution of the solar system.
- Larger planets like Earth went through a more complex evolution over which the pristine materials were melted and altered significantly. Due to this change, the materials found on large planets do not hold information into their early stages of formation.
- **Comets and asteroids, formed early in the evolution of the Solar System, retain a record of when, where and in what conditions they were formed. Exploration of these primitive bodies is essential in gaining insight into the formation of the Solar System.**