



China's Permanent Space Station

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Why in News

Recently, China **launched an unmanned module of its permanent space station that it plans to complete by the end of 2022.**

- The module, named "**Tianhe**", or "**Harmony of the Heavens**", was launched on the **Long March 5B**, China's largest carrier rocket.
- **India** has also set its **eye on building its own space station in low earth orbit** to conduct microgravity experiments in space in 5 to 7 years.

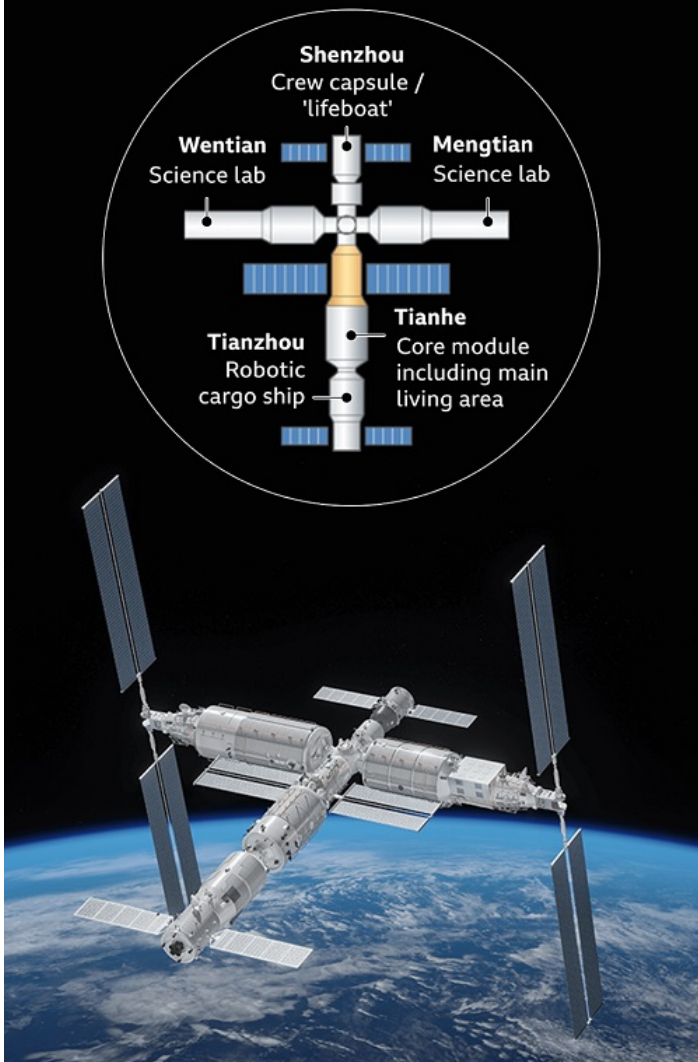
Key Points

- **Background:**
 - The **only space station** currently in orbit is the **International Space Station (ISS)**, from which **China is excluded**.
 - A **space station is a spacecraft** capable of supporting crew members, designed to remain in space for an extended period of time and for other spacecraft to dock.
 - The **ISS is backed by** the United States, Russia, Europe, Japan and Canada.
 - **China has been a late starter** when it comes to space exploration. It was only in 2003 that it sent its first astronaut into orbit, making it the third country to do so, after the Soviet Union and the US.
 - So far, China has sent two previous space stations into orbit. The **Tiangong-1** and **Tiangong-2** were **trial stations** though, simple modules that allowed only relatively short stays by astronauts.

- **China's Space Station:**
 - The **new, 66-tonne, multi-module Tiangong station** is set to be **operational for at least 10 years**.
 - **Tianhe is one of three main components** of what would be **China's first self-developed space station**, rivalling the only other station in service – the ISS.
 - It **forms the main living quarters for three crew members** in the Chinese space station.
 - The Tianhe launch is the **first of 11 missions** needed to complete the space station, which will **orbit Earth at an altitude of 340 to 450 km**.
 - In the later missions, China will launch the **two other core modules, four manned spacecraft** and **four cargo spacecraft**.
- **Significance for China:**
 - **For Ramping up Space Programme:**
 - China **aims to become a major space power by 2030**. It has ramped up its space programme with visits to the moon, the launch of an uncrewed probe to Mars and the construction of its own space station.
 - **ISS is about to expire by 2024:**
 - In contrast, the fate of the ageing ISS – in orbit for more than two decades – remains uncertain. The **project is set to expire in 2024**, barring funding from its partners. Russia has said recently that it would quit the project **from 2025**.
 - **Russia's Deepening Ties with China:**
 - Russia is deepening ties with China in space as **tensions with the US rise**. It has **slammed the US-led Artemis moon exploration programme** and instead chosen to join China in setting up **a lunar research outpost** in the coming years.
- **Other Missions of China:**
 - **Chang'e-5 (Moon)**
 - **Tianwen-1 (Mars)**

China's space station

How it will look when fully assembled



Source: TH