

Tiangong-2

November 16, 2018

Manifest Pedagogy

The details of ISS, Tiangong – 1 and 2 are of significance for both Prelims and Mains.

Space station is an indicator of the dominance in the outer space. After ISS, Tiangong – 2 is such an instrument to showcase the dominance. It will have consequences on global politics too. Issues of space weaponization have been in news. UPSC may inter-discipline IR and Science and Technology and ask questions related to it. Below is an example.

In news

The new space station – ‘Tiangong-2’ or ‘Heavenly Palace’ in Chinese – was unveiled.

Placing it in syllabus

1. Science and Technology- developments
2. Awareness in the fields of Space

Static dimensions

1. International Space Station (ISS)
2. Tiangong – 1

Current dimensions

1. China’s dominance in space
2. Deep space exploration

Content

The first elements of the International Space Station (ISS) were sent up to Earth's orbit 20 years ago, and the station has been occupied by humans every day for 18 of those years.

Currently, the ISS is the only operating station for space crafts in orbit. But that could change very soon.

China revealed some life-sized replicas of components going into a space station of its own making. The new station – 'Tiangong-2' or 'Heavenly Palace' in Chinese – was unveiled.

The **60-tonne orbiting lab** will feature a **17-meter (55 foot) core module**, which forms the station's backbone and hub.

The core module for the Chinese station is expected to launch as early as 2020. This module is much **smaller than that of the International Space Station (ISS)**, which is the size of a football field counting its solar panels. The

Chinese station is also roughly one-fifth the mass of the ISS. While the space station will technically belong to China, it would be open to astronauts from any UN countries, unlike the ISS today.

China is not one of the international partners in the ISS project, and no Chinese astronauts have been aboard it. The country sent up a prototype space station in 2011, the Tiangong-1, which ended with more than a few scientific takeaways for this second attempt.

China's second run at having a space station in orbit could have implications for space agencies worldwide. The ISS is set to be retired in 2024, after which Tiangong-2 will likely be the only space station in orbit.

Assembly is expected to be completed around 2022, with a 10 year lifespan.

Three astronauts will be permanently stationed to run scientific experiments.

It will act as a stepping-stone for deep-space exploration.

Tiangong-1

The Tiangong-1 was launched in September 2011, with an intended service span of two years. After the last crew departed the module in June 2013, it was put into sleep mode. It was intended that it would remain in orbit for some time, allowing China to collect data on the longevity of key components before being commanded to gradually re-enter the atmosphere. Finally it burned up in the Earth's atmosphere during an uncontrolled re-entry, but it orbited until 2nd April, 2018.

International Space Station (ISS)

The International Space Station – a collaboration between the **United States, Russia, Canada, Europe and Japan** – has been in operation since 1998 but is due to be retired in 2024.

The International Space Station is a unique scientific platform that enables researchers from all over the world to put their talents to work on innovative experiments in the microgravity environment which could not be done anywhere else. Although each space station partner has distinct agency goals for station research, each partner shares a unified goal to extend the resulting knowledge for the betterment of humanity. We may not know yet what will be the most important discovery gained from the space station, but we already have some amazing breakthroughs.

Test yourself: Mould your thoughts

What is the significance of unveiling of Chinese Tiangong-2? Discuss its impact on global politics?