



## Noble bird

Protection efforts see number of green peafowls increasing [GOING GREEN, PAGE 7](#)

## EU urged to seek win-win tariff position

[BUSINESS, PAGE 13](#)



## Plane crash

South Korea announces special inspection of 101 Boeing aircraft [WORLD, PAGE 12](#)

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## Agency's white paper lists Tiangong's scientific feats

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China's Tiangong space station has helped researchers achieve a long list of scientific and technological feats since its completion two years ago, according to the China Manned Space Agency.

The agency published a white paper on Monday in Beijing, showing 34 results of scientific experiments and technological tests that have been conducted onboard Tiangong.

The results relate to several research fields, including life science and biological technologies, observation and analysis on the human body in a space environment, materials science and hydrodynamics in microgravity.

The document outlines multiple world-class achievements obtained by scientists working with astro-

nauts onboard the Chinese space station, including the first germplasm resources of rice developed in space and the first human embryonic stem cells differentiated into hematopoietic stem/precursor cells in space.

The accomplishments also include the world's first cold atom interference gyroscope in space microgravity, the first high-throughput in-orbit microbial control test platform and the longest operation of a space-based water ecosystem, according to the white paper.

Since Tiangong's completion in December 2022, Chinese scientists and technologists have sought to carry out experiments and tests covering 32 academic subjects.

As of Dec 1, a total of 181 science and technology projects have taken place onboard Tiangong, with

nearly 2 metric tons of mission necessities having been transported to the space station and nearly 100 kinds of experimental samples and 300 trillion-bytes of data returned to Earth, the document said.

Thanks to Tiangong, Chinese researchers have published more than 500 theses listed in the Science Citation Index, a world-leading thesis index system, and have registered over 150 patents, it added.

The white paper noted that in the near future, Chinese researchers will perform more than 1,000 scientific and technological projects through Tiangong and will continue to offer science lectures and foster international cooperation related to the station.

In-orbit construction of the space station began in April 2021, when China launched the first and central part of the outpost — the

Tianhe core module. After that, several groups of astronauts were sent to the module to perform trial operations and prepare for the arrival of other sections.

In the second half of 2022, the Wentian and Mengtian science modules, the two major science components, were launched to dock with the Tianhe module, completing the space station's construction phase.

Tiangong is one of the largest and most advanced structures ever deployed in Earth's orbit and is the only operating space station independently built by a single nation. It now weighs more than 100 tons and is expected to function for at least 10 years.

So far, eight crews have been sent to man the space station, including the incumbent Shenzhou XIX team, which arrived at the outpost in late October.