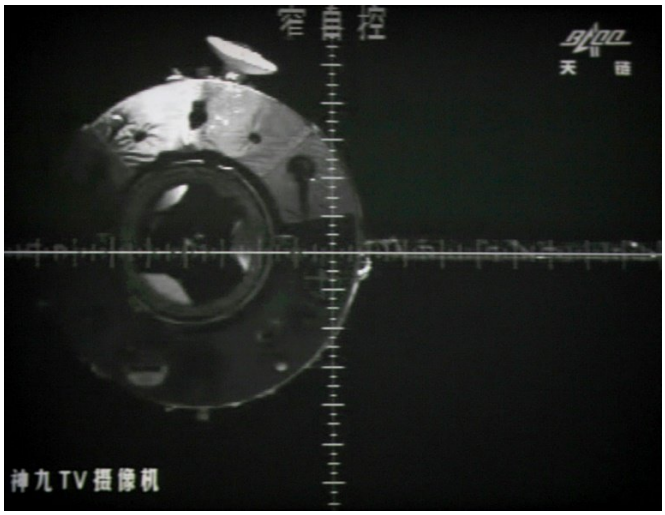
China space lab may fall to Earth later: European Space Agency

31 March 2018



The Tiangong-1 space lab is expected to make a fiery plunge back to Earth by Monday

China's defunct space lab could hurtle back to Earth later than previously forecast, with the European Space Agency saying it may re-enter the atmosphere as late as Monday morning GMT.

The ESA, which is tracking the craft, had earlier given a window of between midday Saturday and early Sunday afternoon GMT.

Chinese authorities have said the roughly eight-tonne Tiangong-1 is unlikely to cause any damage when it comes down and that its fiery disintegration will offer a "splendid" show akin to a meteor shower.

The abandoned craft is expected to make its plunge between the afternoon of Sunday and early Monday morning GMT, the ESA said in a blog post announcing its revised forecast.

In its update Saturday the agency said calmer space weather was now expected as a high-speed stream of solar particles did not cause an increase in the density of the upper atmosphere, as previously expected.

Such an increase in density would have pulled the spacecraft down sooner, it said.

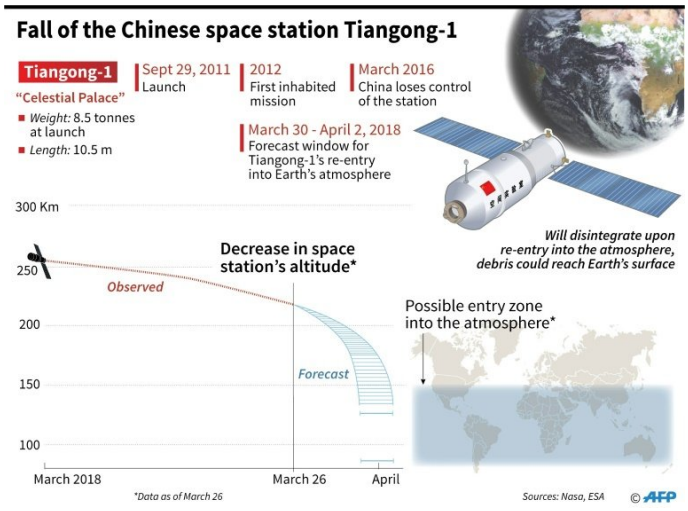
The re-entry window remains "highly variable", the ESA cautioned. There is similar uncertainty about where debris from the lab could land.

But there is "no need for people to worry", the China Manned Space Engineering Office (CMSEO) said earlier on its WeChat social media account.

Such falling spacecraft do "not crash into the Earth fiercely like in sci-fi movies, but turn into a splendid (meteor shower) and move across the beautiful starry sky as they race towards the Earth", it said.

Tiangong-1—or "Heavenly Palace"—was placed in orbit in September 2011 and had been slated for a controlled re-entry, but it ceased functioning in March 2016 and space enthusiasts have been bracing for its fiery return since.

The ESA said the lab will make an "uncontrolled re-entry" as ground teams are no longer able to fire its engines or thrusters for orbital adjustments.



Factfile on the Chinese space station Tiangong-1, due to plunge into the Earth's atmosphere sometime between March 30 and April 2.

A Chinese spaceflight engineer, however, denied earlier this year that it was out of control.

China will step up efforts to coordinate with the United Nations Office for Outer Space Affairs as the re-entry nears, foreign ministry spokesman Lu Kang told reporters on Friday.

Beijing sees its multi-billion-dollar space programme as a symbol of the country's rise. It plans to send a manned mission to the moon in the future.

China sent another lab, Tiangong-2, into orbit in September 2016 as a stepping stone to its goal of having a crewed space station by 2022.

'Spectacular show'

During the re-entry, atmospheric drag will rip away solar arrays, antennas and other external components at an altitude of around 100 kilometres (60 miles), according to the Chinese space office.

The intensifying heat and friction will cause the main structure to burn or blow up, and it should disintegrate at an altitude of around 80 kilometres, it said.

Most fragments will dissipate in the air and a small amount of debris will fall relatively slowly before landing across hundreds of square kilometres, most likely in the ocean, which covers more than 70 percent of the Earth's surface.

Experts have downplayed any concerns about the Tiangong-1 causing any damage when it hurtles back to Earth, with the ESA noting that nearly 6,000 uncontrolled re-entries of large objects have occurred over the past 60 years without harming anyone.

Jonathan McDowell, an astronomer at the Harvard-Smithsonian Center for Astrophysics, estimates that Tiangong-1 is the 50th most massive uncontrolled re-entry of an object since 1957, when the Soviet Union launched Sputnik 1—the world's first artificial satellite.

At an altitude of 60-70 kilometres, debris will begin to turn into "a series of fireballs", which is when people on the ground will "see a spectacular show", he said.