

# 'Very serious' coolant leak hits ISS

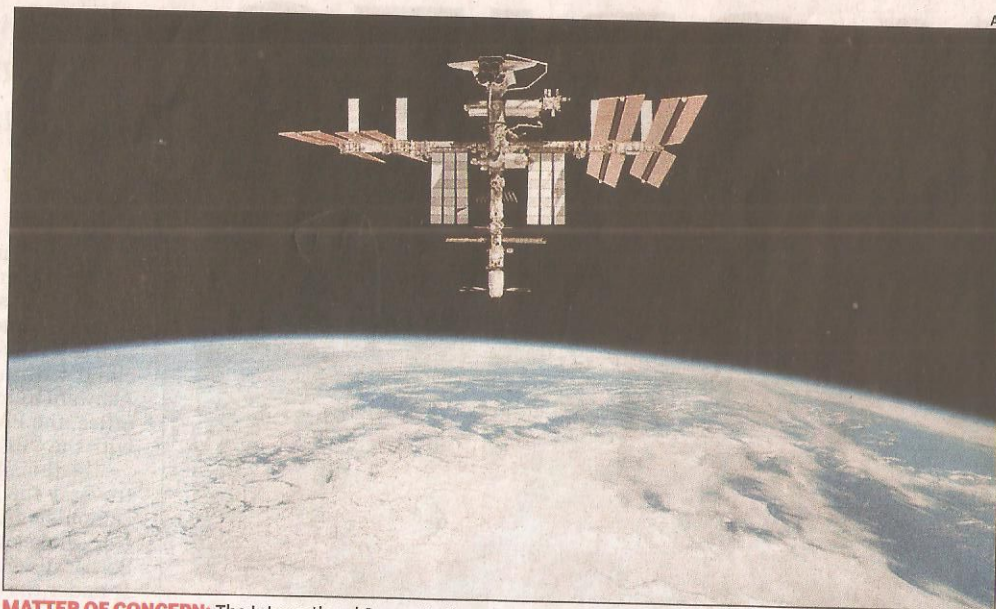
## Experts Mull Spacewalk To Fix Problem

**Moscow:** Russian and US space experts were scrambling to address a "very serious" ammonia leak outside the International Space Station that may require astronauts to perform an emergency spacewalk, a Russian official said on Friday.

"Indeed, they have a serious defect, very serious," Vladimir Solovyov, flight director for the Russian segment of the space station was quoted as saying by the Interfax news agency.

The US space agency Nasa earlier said the leak of ammonia used to cool the station's power system did not pose a danger to astronauts on board. Solovyov said officials from both countries were considering whether to send ISS crew members into open space to fix the leak. "The decision has not been taken yet," he was quoted as saying.

Interfax, citing a space industry source, said US astronauts Tom Mashburn and Chris Cassidy are likely to step into open space on Saturday to find the source of the leak. Another Russian official however played down the danger saying it only affected the US segment of ISS. "This is not critical," the state RIA Novosti news agency quoted Alexei Krasnov, head of manned flight programmes at Russian Space Agency, as saying. "It's not the first time such a situation has happened," Krasnov said. AFP



**MATTER OF CONCERN:** The International Space Station at an altitude of approximately 354km above the Earth

## Water on Moon came from Earth?

Kounteya Sinha | TNN

**London:** American scientists have revealed that the Earth and the Moon were involved in a giant collision 4.5 billion years ago, which led to the transfer of water from the planet to its only natural satellite.

The scientists, who studied samples brought from the Moon in the 1970s, announced on Friday that water there did not come from comets, but was present on the Earth when the collision took place. "Some of that water survived the impact, and that's what we see in the Moon," said Brown

University geological sciences associate professor Alberto Saal, who led the study. Researchers say the findings prove there was water on the proto-Earth at the time of the giant impact. To find the origin of the Moon's water, Saal and his colleagues looked at melt inclusions found in samples brought back from the Apollo missions. They are tiny dots of volcanic glass trapped within crystals called olivine.

Another research in 2011 had found that the melt inclusions have plenty of water — as much in fact as lavas forming on the Earth's ocean floor. This study

aimed to find the origin of that water. To do that, Saal and his colleagues looked at the isotopic composition of the hydrogen trapped in the inclusions.

"In order to understand the origin of the hydrogen, we needed a fingerprint," Saal said. "What is used as a fingerprint is the isotopic composition."

The researchers then measured the amount of deuterium in the samples compared to the amount of regular hydrogen. Deuterium is an isotope of hydrogen with an extra neutron. Water molecules originating from different places in the solar

## Earth-like planets in atmospheres of dead stars spotted

The Hubble space telescope has found signs of Earth-like planets in an unlikely place — the atmospheres of a pair of burnt-out stars in a nearby cluster. The white dwarf stars are being polluted by debris from asteroid-like objects falling onto them, researchers said. This discovery suggests that rocky planet assembly is common in clusters, say researchers. The stars, known as white dwarfs — small, dim remnants of stars once like the sun — reside 150 light years away in the Hyades star cluster, in the constellation of Taurus. The cluster is relatively young, at only 625 million years old. Astronomers believe that all stars formed in clusters. PTI

system have different amounts of deuterium. In general, things formed closer to the sun have less deuterium than things formed farther out.

Saal and his colleagues found that the deuterium/hydrogen ratio in the melt inclusions was relatively low and matched the ratio found in carbonaceous chondrites, meteorites originating in the asteroid belt near Jupiter and thought to be among the oldest objects in the solar system. That means the source of the water on the Moon is primitive meteorites, not comets as some scientists thought.