

SCIENCE THIS WEEK

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Earth's inner core, a hot iron ball the size of Pluto, has stopped spinning faster than the planet's surface and might now be rotating slower than it, research suggested. | Photo Credit: Getty Images

This week has been an exciting one in the field of science with an asteroid zooming past our planet, studies on the Earth's core and dinosaur eggs being discovered in the Narmada Valley. Find the latest studies and discoveries here.

Earth's inner core has stopped spinning faster than the planet's surface, a [study](#) in the *Nature Geoscience* has said. Measuring about the size of Pluto, Earth's iron core is suspended in the molten liquid outer core and spins independently. Due to a dearth of direct evidence the study of Earth's inner core has always been disputed. The latest research suggests that the inner core, relative to the Earth's surface, swings back and forth like a swing. From 2009 onwards, a negative trend has been noticed with the inner core rotating slower than the surface. The cycle of the swing lasts about seven decades, the study suggested.

A truck-sized asteroid [zoomed past](#) Earth without incident and back into open space. Called Asteroid 2023 BU, the celestial body was first spotted on January 21 by an amateur stargazer from Crimea. It came closest to the southern tip of South America at 0029 GMT on Friday. Measuring just 3.5 to 8.5 meters across, the asteroid was too small to cause much damage even though it was one of the closest asteroids to approach the planet.

Tiny specks of dust [collected](#) from a rubble-pile asteroid named Itokawa has shown that the asteroid is actually much older than previously thought. Smaller than the diameter of a hair, the particles from the asteroid were estimated to be at least 4.2 billion-year-old, ten times older than solid asteroids of similar size are predicted to be.

In a new study, scientists have [found](#) that artificial glow of the night sky has increased 9.2% to 10% every year since 2011 and 2022. Specifically, the glow brightened around 6.5% over Europe, 10.4% over North America and 7.7% over the rest of the world. The artificial light caused by light pollution is said to have detrimental effects on both humans and wildlife. It disrupts the circadian rhythm as artificial light hampers the production of melatonin which has been seen to increase risk of breast cancer among night shift workers.

A [study](#) by a group of scientists has suggested that the Tonga eruption in 2022 could potentially push average global temperatures temporarily above 1.5 degree Celsius from pre-industrial era

level. Last year, the Hunga Tonga Hunga Ha'apai erupted sending huge amounts of ash, gas and water into the atmosphere. It sent close 146 million metric tonnes of water into the atmosphere which could have a warming effect.

The biggest increases in inundation will occur after the first two metres of sea level rise, covering more than twice as much land as older elevation models predicted, according to a [study](#). The current models of sea level rise suggest the most widespread impacts will occur after sea level has risen by several metres. The study, published in the journal *Earth's Future*, used high-resolution measurements of land elevation from NASA's ICESat-2 lidar satellite, launched in 2018, to improve upon models of sea level rise and inundation.

Paleontologists have reported a [rare discovery](#) of closely located dinosaur nests and 256 eggs of the herbivorous titanosaurs in the Narmada valley in Madhya Pradesh. Researchers from the Delhi University and Indian Institute of Science Education and Research in Mohanpur-Kolkata and Bhopal have also reported discovery of ovum-in-ovo or multi-shell eggs in Bagh and Kukshi areas in Dhar district of Madhya Pradesh. The eggs, which ranged between 15 cm and 17 cm in diameter, likely belonged to a number of titanosaur species.

A rare swallowtail butterfly disappearing from its previously known ranges from Myanmar and southern China to Vietnam has been [recorded](#) for the first time in India. Dubbed Noble's Helen, the butterfly is characterised by a large dorsal white spot with a wingspan of 100-120 mm. Once commonly found in Thailand, Myanmar, Yunnan, Laos, Cambodia and Vietnam, the butterfly has become extremely rare and was spotted for the first time in India in three locations between 2019 and 2021.

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