

What is a Gravity hole?

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About Gravity hole:

- The gravity hole is a region of the ocean where **the effects of gravity are less than usual**.
- It occurs at the bottom of the ocean where there are **gravitational anomalies**.
- **Why it occurs?** These anomalies are caused by variations in the **gravitational pull of the Earth** due to differences in the density of the materials that make up the Earth's crust.
- The Indian Ocean is home to one of the most profound gravitational anomalies on Earth known as **the Indian Ocean Geoid Low (IOGL)**.
- It was **discovered in 1948** during a ship-based gravity survey by Dutch geophysicist Felix Andries Vening Meinesz.
- It is found in a large section of over three million sq. km in the Indian Ocean seafloor, located around **1,200 km southwest of India's southern tip**.
- It is estimated to have formed **approximately 20 million years ago**.
- Researchers said that the IOGL comprises **slabs from the Tethys Ocean**, a long-lost sea that plunged into the depths of the planet millions of years ago.

- The Tethys Ocean, which once separated the supercontinents of Gondwana and Laurasia is believed to have perturbed the African Large Low Shear Velocity province
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Q1) What is Tethys Sea?

The Tethys Sea was a vast ancient ocean that existed between the continents of Gondwana and Laurasia during the Mesozoic era, specifically from the late Paleozoic to the early Cenozoic era. It played a crucial role in the geological and tectonic history of Earth.

Source: What is causing the mysterious 'gravity hole' in the Indian Ocean?

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