

Gamburtsev Subglacial Mountains

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Gamburtsev Subglacial Mountains Latest News

New data published in Earth and Planetary Science Letters reveals the Gamburtsev Subglacial Mountains (GSM) were formed over 500 million years ago, during the assembly of the Gondwana supercontinent.

What are the Gamburtsev Subglacial Mountains (GSM)?

- The **Gamburtsev Subglacial Mountains** are a **completely buried mountain range** beneath the **East Antarctic Ice Sheet**, located at its highest point.
- These mountains were first discovered in **1958** by a **Soviet seismic expedition**.
- Unlike the **Transantarctic Mountains**, which are partially visible above the ice, the **Gamburtsev Mountains remain entirely buried**, concealed under several kilometres of ice.
- Typically, **mountains form at tectonic plate boundaries** due to **collision or subduction**, but **East Antarctica has remained tectonically stable** for hundreds of millions of years.
- The existence of such a massive mountain range **within a stable craton** posed a major puzzle for geologists.

Zircon “Time Capsules” and Dating Evidence

- Scientists analysed **zircon grains** from **sandstones** deposited by ancient rivers flowing from the mountains, collected from the **Prince Charles Mountains**.
- **Zircons** contain trace **uranium**, which decays at a **known radioactive rate**, enabling accurate age determination.
- Findings show:
 - Uplift began ~650 million years ago
 - Himalayan-scale peaks reached ~580 million years ago
 - Crustal melting and flow ceased ~500 million years ago.

Gamburtsev Subglacial Mountains FAQs

Q1: Where are the Gamburtsev Subglacial Mountains located?

Ans: The Gamburtsev Subglacial Mountains lie beneath the East Antarctic Ice Sheet, completely buried under ice.

Q2: How were these mountains discovered?

Ans: They were first discovered in 1958 during the International Geophysical Year by a Soviet expedition using seismic surveys.

Source: DTE

Source: <https://vajiramandravi.com/current-affairs/gamburtsev-subglacial-mountains/>

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