

Nuvvuagittuq Greenstone Belt

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Nuvvuagittuq Greenstone Belt Latest News

Recently, scientists determined that rocks from the Nuvvuagittuq Greenstone Belt are approximately 4.16 billion years old, using two independent radioactive dating methods.

About Nuvvuagittuq Greenstone Belt

- The **Nuvvuagittuq Greenstone Belt** is a region of ancient rock formations located on the **eastern shore of Hudson Bay in Quebec, Canada**.
- These rocks have been known for their **exceptional age** and **unique geological features**, making the region a critical site for studies of **Earth's early history**.
- This makes them **potentially the oldest known rocks on Earth**, challenging earlier estimates and rivalling other ancient formations like the **Acasta Gneiss Complex** (~4 billion years old).

Scientific Significance

- Researchers used **radiometric dating**, which tracks the **decay of radioactive isotopes** over time.
- Earth formed around **4.5 billion years ago**, but most early rocks were **destroyed or transformed** due to **tectonic activity** and **melting**.
- Rocks older than **4 billion years** are **extremely rare** and provide a **window into the planet's earliest crust**.
- The rock site lies on **Inuit tribal land** in **Inukjuak, Nunavik**.
- Due to **environmental damage** from earlier research and reports of **rock samples being sold online**, the **local Inuit community has restricted further sampling**.
- The community, led by the **Pituvik Landholding Corporation**, seeks to collaborate with scientists to create a **provincial park** to balance **research and conservation**.

What are Ultramafic Rocks?

- **Ultramafic rocks** are **dark-colored igneous or meta-igneous rocks** rich in **Magnesium oxide (MgO)** and **Iron oxide (FeO)**, but **low in Silica**.
- They contain **over 90% mafic minerals**, and are **poor in potassium**.
- The **Earth's mantle** is believed to be composed predominantly of **ultramafic rock types**.
- These rocks are commonly found in **orogenic (mountain-forming) belts** and can offer insights into **mantle composition** and **deep Earth processes**.

Source: **TH**

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