

EARTH'S ROTATION SLOWDOWN AFFECT OXYGEN CONTENT OF ATMOSPHERE



Issue

A new study has identified that slowdown in Earth's rotation speed had a major role in increasing the oxygen concentration in atmosphere.

Background

Earlier it was believed that all of the oxygen generated started from oxygen-producing cyanobacteria.

Details

- Scientists were studying cyanobacteria mats under the surface of lake Huron. The organisms emerged from under the ground, which resembles a pre-oxygen condition.
- The study emphasizes that continuous day light started the process of oxygen production by weird microbes. This may have been possible only because of more day time.
- Scientists were aware of the role of cyanobacteria but were still unclear about the start of the events exactly.

The process

- Earlier, Earth's rotation period was faster. The slowdown helped decrease speed of rotation from 6 hrs to current 24 hrs.
- The early amount generated was very low. Slowly, carbon dioxide breathing cyanobacteria started to emit oxygen through photosynthesis.
- The process allowed oxygen concentration to boost tremendously. This allowed new plants and animals to evolve.

- The reason why exposure to sunlight increased capacity to produce oxygen in cyanobacteria is not yet known to scientists.

Slowdown of Earth's rotation speed

The rotation speed decreased due to combination of factors such as interaction with moon and tidal friction.

Cyanobacteria

- Cyanobacteria are a variety of photosynthetic organisms. They are unicellular and grow in large colonies.
- They are said to be the earliest among all organisms and plants that prepared their food via the process of photosynthesis.

NOTES

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