MERIDIAN

Deep Time

Science at the scale of ages

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The May issue stretches the imagination to the scale of millennia. Researchers describe how they read the planet's slow records, and why a sense of deep time may be our most urgent form of knowledge.

Science | Ingrid Solberg

Listening to Glaciers

Underwater microphones reveal the hidden voices of melting ice

Beneath the surface of a Greenland fjord, a microphone the size of a thermos listens. It hears the crackle of trapped air bubbles escaping from melting ice, the groan of shifting walls and, occasionally, the thunder of a calving collapse.

The instrument belongs to glaciologist Dr. Mette Kjeldsen, who believes sound may tell us more about glaciers than satellites can. Images show where ice has gone; acoustics reveal how fast it is dying.

A language of ice

Each noise carries information. The pitch of bubbling reflects the rate of melting, while low rumbles trace internal fractures. By training algorithms on years of recordings, Kjeldsen's team can now estimate ice loss within hours.

The data are sobering, but the sound itself has moved listeners far beyond the laboratory. Composers have sampled the recordings, and a touring installation lets audiences sit in a darkened room surrounded by the voice of the ice.

> *“We are hearing a conversation that has gone on for a hundred thousand years, in its final chapters.”*

Deep time is difficult to feel. Listening, it turns out, helps. A glacier's long breath, played in a quiet room, makes the stakes of a warming world strangely intimate.

Thank you for reading Meridian.