

December 25, 2023

News and notes

Merry Christmas everyone! This is a busy time of year, so for this week I will only present some news items that I thought were interesting.

Research

- [Paratethys: The largest lake the Earth has ever seen.](#)
- [Sea level rise drowned a vast habitable area of north-western Australia driving long-term cultural change.](#)
- [Platinum and microspherule peaks as chronostratigraphic markers for onset of the Younger Dryas at Wakulla Springs, Florida.](#)
- Geophysics: [Inner core static tilt inferred from intradecadal oscillation in the Earth's rotation;](#) Phys.org summary [here](#).
- More geophysics: [Seismic wave attenuation \(1/Qp\) in the crust underneath the Eastern and eastern Southern Alps \(Europe\): imaging effects of faults, fractures, and fluids.](#)
- Rift valley geology: [Widespread diffuse venting and large microbial iron-mounds in the Red Sea.](#)
- Mineralogy: [Authigenic mineralization in Surtsey basaltic tuff deposits at 50 years after eruption.](#)
- More mineralogy, this time from the asteroid Ryugu: [Nucleosynthetic s-Process Depletion in Mo from Ryugu samples returned by Hayabusa2.](#)

Sedimentology

- [Sedimentological and ichnological variations in fluvio-tidal translating point bars, McMurray Formation, Alberta, Canada.](#)
- [Carbonate production and reef building under ferruginous seawater conditions in the Cambrian rift branches of the Avalon Zone, Newfoundland.](#)
- [Evolution from shallow-water deltas to fluvial fans in lacustrine basins: A case study from the Middle Jurassic Shaximiao Formation in the central Sichuan Basin, China.](#)
- [Fossilized autogenic responses of grain-size transition to sediment supply and water discharge: Alluvial fan experiments.](#)
- [Sedimentary record of bottom currents and internal tides in a modern highstand submarine canyon head.](#)
- [Ordovician sedimentation and basin development in the North Armorican Massif, NW France: Field evidence from the northern Cotentin Peninsula.](#)

- [Lithological Investigation of The Drill Core from a Sedimentary Cover in the Area of the Siljan Ring, Central Sweden.](#)

Paleontology

- [Singing Ankylosaurs, 310-Million-Year-Old Fossil Spiders, And A “Giant Sea Monster” Join The Planet's Prehistoric Wonders; 2023 was a big year for ancient animals.](#)
- Fossil plants: [Burseraceae in Cretaceous of India, Manchester, Kapgate, Judd](#); Phys.org summary [here](#).
- [A new derived mosasaurine \(Squamata: Mosasaurinae\) from south-western Japan reveals unexpected postcranial diversity among hydropedal mosasaurs](#); Live Science summary [here](#).
- [A new toothless pterosaur from the Early Cretaceous Jehol Biota with comments on the Chaoyangopteridae.](#)
- [Giant baleen whales emerged from a cold southern cradle](#); summary in The Conversation [here](#).
- [First *in situ* documentation of a fossil tooth of the megatooth shark *Otodus \(Megaselachus\) megalodon* from the deep sea in the Pacific Ocean](#); Phys.org summary [here](#).

Mining and Energy

- Mineral exploration research: [CoDA-Based Geo-Electrochemical Prospecting Prediction of Uranium Orebodies in Changjiang Area, Guangdong Province, China.](#)
- [Energy Fuels starts uranium production at three mines, shares rise.](#)
- More mineral exploration research: [Combining Electrical Resistivity, Induced Polarization, and Self-Potential for a Better Detection of Ore Bodies.](#)
- Employers get the union they deserve: [Platinum miners' underground protest in South Africa goes on.](#)
- Shut down base metal mine: [Trafigura's Myra Falls mine on Vancouver Island idled indefinitely.](#)
- [Coal Is the Climate Scourge That Just Won't Go Away.](#)
- Dr. Tim Morgan's latest assessment of our energy predicament: [The future we didn't order](#); classical reference [here](#).
- [The Top 5 Oil Producers of 2023.](#)
- [Angola to leave OPEC over disagreement on oil production quotas.](#)
- [U.S. Oil Production Growth Stalls in Q4.](#)
- [The oil industry's mega-merger spree and a US production boom point to strong crude demand for years to come.](#)
- [US Frackers Are Back to Haunt OPEC's Price Strategy.](#)

- [Record-High U.S. Production Weighs on Natural Gas Prices.](#)
- Rainbow Lake: [Remote Alberta town to become first in Canada powered by geothermal energy.](#)
- Molten salt reactors: [The US wants to build a different kind of nuclear reactor from a decades-old concept that could power ships and other off-the-grid locations.](#)

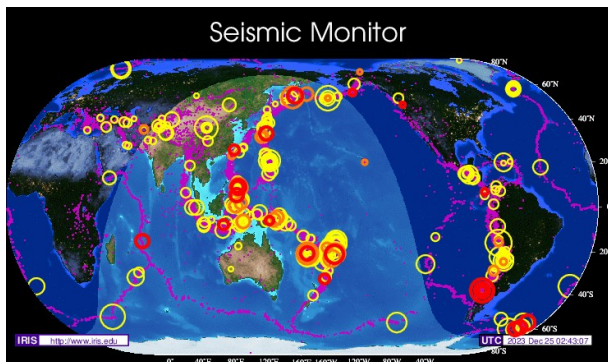
Environmental Geology and Hydrogeology

- [Evaluating Methane Emissions From Decommissioned Unconventional Petroleum Wells in British Columbia, Canada.](#)
- Weathering and the release of potentially toxic elements: [Incongruent dissolution of silicates and its impact on the environment: an example of a talc mine](#); conclusion “natural weathering processes do not have any impact on environmental pollution”.
- Soil remediation: [Bacteria degrading both n-alkanes and aromatic hydrocarbons are prevalent in soils.](#)
- Groundwater remediation: [Numerical investigation of mixed physical barriers for saltwater removal in coastal heterogeneous aquifers.](#)
- Mine remediation: [Leachate Experiments to Evaluate Weathering of Waste Rock for Backfill Aquifers in Restored Coal Mine Pits, Powder River Basin, USA.](#)

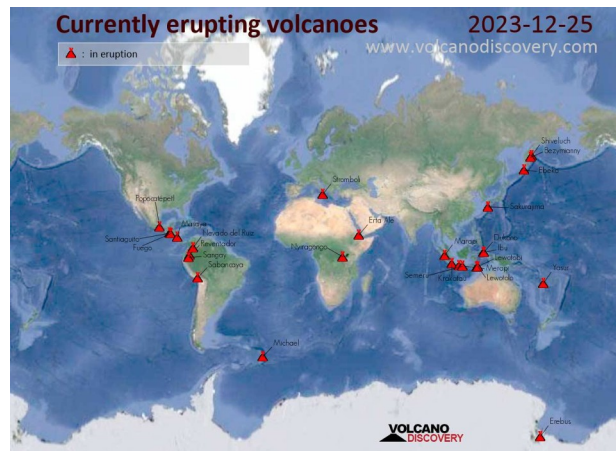
Glaciers and Climate Change

- [Genomic evidence for West Antarctic Ice Sheet collapse during the Last Interglacial](#): Phys.org summary [here](#).
- [Rapid deglaciation of the La Vega gorge \(Sierra de Gredos, Iberian Peninsula\) at the end of the global Last Glacial Maximum.](#)

Volcanoes, Earthquakes and Geohazards



[Seismic Monitor](#)



[Active Volcano Map](#)

- United States Geological Survey (USGS) Volcano Watch: [A Pūpū Platter of Earthquakes](#).
- USGS Yellowstone Volcano Observatory: [The challenges of conducting scientific research in Bison Country](#).
- [Smithsonian / USGS Weekly Volcanic Activity Report](#).



Fissure at the Sundhnúkar Crater – December 19, 2023
Credit: [Icelandic Coast Guard](#), public domain

- Iceland Sundhnúkar Volcano:
 - December 19: [The fissure moving closer to Grindavík](#); [Another Tongue-Twister from Iceland's Newest Volcanic Eruption](#); [The eruption seen from a helicopter](#);
 - December 20: [Reykjanes Eruption Could be Short-Lived, Volcanologist Notes](#);
 - December 21: [Indications of Magma Chamber Under Svartsengi](#);
 - December 22: [Thinks it's over but the next days will be indicative of what happens next](#).
- Ancient volcanoes: [Precursors to a continental-arc ignimbrite flare-up: Early central volcanoes of the San Juan Mountains, Colorado, USA](#).
- [Istanbul lightly shaken by M4 earthquake](#).

- [Deadly M6.1 earthquake strikes western China](#); USGS summary [here](#).
- Earthquake research: [Precarious rock formations near Los Angeles hold clues to giant earthquake hazards](#).
- Landslides: [Holocene gigascale rock avalanches in Vaigat strait, West Greenland—Implications for geohazard](#).
- More landslide research: [Evolution of an earthquake-induced landslide complex in the South Island of New Zealand: How fault damage zones and seismicity contribute to slope failures](#).

Standard Caveat

The purpose of my weblog postings is to spark people's curiosity in geology. Don't entirely believe me until you've done your own research and checked the evidence. If I have sparked your curiosity in the subject of this posting, follow up with some of the links provided here. If you want to, go out into the field and examine some rocks on your own with the help of a good field guide. Follow the evidence and make up your own mind.

In science, the only authority is the evidence.