

October 16, 2023

News and Notes

Things are busy, so this week I will just be presenting some news items that I thought were interesting. We'll continue with our look at the geology and geopolitics of nations next week.

General Science

- Reproducibility is a serious issue: [Reproducibility trial: 246 biologists get different results from same data sets](#).

Research

- [Kanatzidisite: A Natural Compound with Distinctive van der Waals Heterolayered Architecture](#); Phys.org summary [here](#).
- [Researchers from CNNC discover new mineral](#); IFLScience summary [here](#).
- [The crystal timekeeper zircon](#).
- [Vestiges of impact-driven three-phase mixing in the chemistry and structure of Earth's mantle](#); Phys.org summary [here](#).
- [Dust in the wind: Dust source tracing and their transport mechanisms before monsoon season from three glaciers at the Tibetan Plateau: revelations from REE analysis and an indirect tracing approach](#); behind paywall, Phys.org summary [here](#).
- [Construction of obsidian during explosive-effusive eruptions: insights from microlite crystals in obsidian pyroclasts](#).
- Fluvial geology: [Construction of a deltaic strandplain during the Roman period in the Tavoliere di Puglia plain and palaeoclimatic implications](#).
- Stratigraphy: [The eight architectural zones of nonmarine basins](#).
- Storms and sediment transport: [Hurricane Harvey Filled Houston with Sediment](#).
- From the journal [New Mexico Geology: Unusual Sandstone Cylinders from the Lower Permian Glorieta Sandstone, Northern New Mexico](#) (pdf).
- Geophysics of the sounds beneath our feet: [Microscopic defect dynamics during a brittle-to-ductile transition](#); behind a paywall, Phys.org summary [here](#).
- More geophysics: [Seismic insights into Earth's core](#).

Plate Tectonics

- SE Asia: [Plate tectonic cross-roads: Reconstructing the Panthalassa-Neotethys Junction Region from Philippine Sea Plate and Australasian oceans and orogens](#); IFLScience summary [here](#).

- South America: [Miocene surface uplift and orogenic evolution of the southern Andean Plateau \(central Puna\), northwestern Argentina.](#)
- Asia: [Discovery of the large-scale thrust nappe and its geological significance in the southwestern Santanghu fold–thrust belt, NW China.](#)
- North Atlantic: [Origin of paired extension-compression during rotational rifting: An early Paleogene example from the northeast Atlantic region and its implications.](#)
- [Kilometer-scale recumbent folding, tectonic attenuation, and rotational shear in the western Anaconda Range, southwestern Montana, USA.](#)

Paleontology

- Now children: [Finding the world’s oldest mammals: sieving, dialectical materialism, and squabbles](#); Phys.org summary [here](#).
- [Assembly theory explains and quantifies selection and evolution](#); Chemistry World summary [here](#).
- [Exceptional early Jurassic fossils with leathery eggs shed light on dinosaur reproductive biology.](#)
- [Caradiophyodidae, a New Family of Micro-Wasps \(Hymenoptera: Platygastroidea\) Based on the Description of *Caradiophyodus saradae* gen. et sp. nov. in Mid-Cretaceous Burmese Amber](#); SciTechDaily summary [here](#).
- Microfossils: [Musculature of an Early Cambrian cycloneuralian animal](#); Phys.org summary [here](#).
- [Fossil snake traces: another world-first find on South Africa’s Cape south coast.](#)
- [Oxygenation of the Baltoscandian shelf linked to Ordovician biodiversification](#); Phys.org summary [here](#).
- Marsupial predators: [A sabre-tooth predator from the Neotropics: Cranial morphology of *Anachlysictis gracilis* Goin, 1997 \(Metatheria, Thylacosmilidae\), based on new specimens from La Venta \(Middle Miocene, Colombia\)](#); Phys.org summary [here](#).
- From the Geological Society of America (GSA): [New South American Site Reveals Extraordinary Fossils from the End of the Age of the Dinosaurs.](#)
- Trilobites: [The latest encrinurid trilobites from the Lower Devonian of Xinjiang, Northwest China.](#)
- Video on [Anomalocaris](#), Cambrian Period: [The Worlds First Apex Predator](#); from [Moth Light Media](#).

Glaciers and Climate Change

- [Late Quaternary glacier advances in the Andes of Santiago, central Chile, and paleoclimatic implications.](#)

- Glacier research: [Borehole fibre-optic seismology inside the Northeast Greenland Ice Stream](#).
- Evidence of ancient glaciers: [Ice-rafted dropstones at midlatitudes in the Cretaceous of continental Iberia](#).
- [Early sea ice decline off East Antarctica at the last glacial–interglacial climate transition](#).
- [Annual mass budget of Antarctic ice shelves from 1997 to 2021](#); Phys.org summary [here](#).

Environmental Geology and Hydrogeology

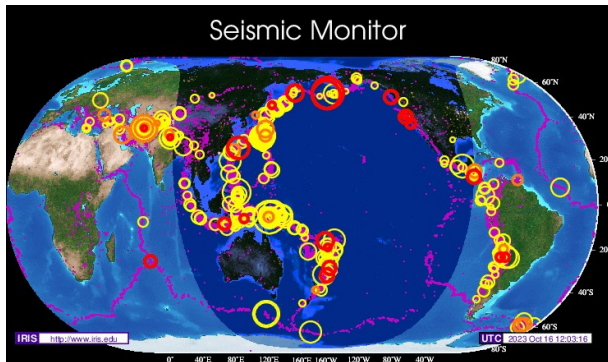
- [Sources and environmental fate of halomethoxybenzenes](#).
- [The dark side of artificial greening: Plastic turfs as widespread pollutants of aquatic environments](#); Phys.org summary [here](#).
- Groundwater provides 80 per cent of Switzerland's drinking water: [Swiss drinking water is contaminated with ‘forever chemicals’, research shows](#).
- [What is seawater intrusion? A hydrogeologist explains the shifting balance between fresh and salt water at the coast](#).
- [Ancient Maya reservoirs, constructed wetlands, and future water needs](#); Phys.org summary [here](#).
- From the GSA: [How an Ancient Society in the Sahara Desert Rose and Fell with Groundwater](#).
- [State of Global Water Resources report 2022](#); Phys.org summary [here](#).

Mining and Energy

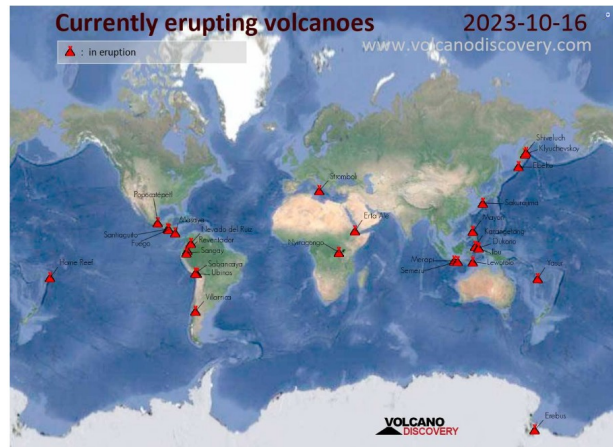
- [Planned B.C. gold mine near Quesnel passes environmental assessment](#).
- Also in British Columbia: [Former B.C. mining exec fined \\$30K for environmental violations — but First Nation says damage costs far more](#).
- [Australian lithium player eyes former Thunder Bay paper plant site for chemical refinery](#).
- [Canada Nickel aims to build world's second largest nickel mine in Timmins](#).
- [UK's Asteroid Mining Corp. unveils SCAR-E robot](#).
- [Those “abundant spodumene crystals” could run right into ground held by ASX newcomer James Bay Lithium](#).
- [EIA expects most U.S. households will spend less on energy this winter](#).
- [U.S. crude oil exports reached a record high in first half of 2023](#).
- [Petrobras Plans Exploration Drilling Close To The Mouth Of The Amazon River](#).
- Turning carbon monoxide into fuel: [The oscillating Fischer-Tropsch reaction](#); behind a paywall, Phys.org summary [here](#).

- [New York Refuses To Give Big Oil More Money For Offshore Wind Projects.](#)

Volcanoes, Earthquakes and Geohazards



[Seismic Monitor](#)



[Active Volcano Map](#)

- United States Geological Survey (USGS) Volcano Watch: [The Great Hawai'i ShakeOut and the Earthquake Energy Budget.](#)
- [Smithsonian / USGS Weekly Volcanic Activity Report.](#)
- Volcano research: [Anatomy of thermal unrest at a hydrothermal system: case study of the 2021–2022 crisis at Vulcano.](#)
- Hunga Tonga-Hunga Ha'apai, the gift that keeps on giving: [Periodic oscillations of Doppler frequency excited by the travelling ionospheric disturbances associated with the Tonga eruption in 2022.](#)
- [Volcanic glass from the 1.8 ka Taupō eruption \(New Zealand\) detected in Antarctic ice at ~ 230 CE;](#) Science Alert summary [here.](#)
- [Gravity Data Allow to Image the Shallow-Medium Subsurface Below Mud Volcanoes.](#)
- [Magnitude 5.8 earthquake strikes southeast Taiwan;](#) USGS report [here.](#)
- From Judith Hubbard's website: [Third](#) and [Fourth](#) M6.3 earthquakes strike Afghanistan.
- [M5.0 earthquake in Slovakia is largest in the country in almost 100 years.](#)
- Earthquake research: [Detection of hidden earthquakes after the 2011 Tohoku earthquake by automatic hypocenter determination combined with machine learning.](#)
- [Earthquake Environmental Effects and Building Properties Controlling Damage Caused by the 6 February 2023 Earthquakes in East Anatolia.](#)

- Flooding: [Glacial lake outburst floods in Alaska and the Himalayas show evolving hazards in a warming world.](#)

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.