

August 7, 2023

News and Notes



Short Necked [Pleisiosaur](#) Fossil at the [Canadian Fossil Discovery Centre](#) in Morden, Manitoba
Credit: [Shahnoor Habib Munmun](#), [Creative Commons Attribution 3.0 Unported](#) license

For today and the following two weeks, I'll be blogging lightly. It's summertime and we will be on vacation for a couple of weeks starting tomorrow. The next regular blog on geology and geopolitics will be August 28.

Research

- [New Mineral Names](#).
- Mineralogy of superconductor materials: [Cathodoluminescence of iron oxides and oxyhydroxides](#).
- Petrology and mineralogy: [Frictional melting mechanisms of rocks during earthquake fault slip](#).
- Stratigraphy of the late Mesoproterozoic: [Is there a great unconformity between Xiamaling and Longshan formations in the North China Craton?](#) The short answer is no; Phys.org summary [here](#).
- Stratigraphy research: [Ancient Aeolian Reservoirs of the East Siberia Craton](#).

- Non-biological methane production in the early Earth: [Methane formation driven by light and heat prior to the origin of life and beyond](#); Phys.org summary [here](#).
- Ancient oceans: [Seafloor hydrothermal systems control long-term changes in seawater \[Li⁺\]: Evidence from fluid inclusions](#); Phys.org summary [here](#).
- Geological history: [Metamorphic and intrusive history of the Hindu Raj region, northern Pakistan](#).
- Fun, fun, fun: [Public invited to follow Bering Land Bridge research project](#).

Plate Tectonics and Geophysics

- [Experimental Evidence for a Weak Calcic-Amphibole-Rich Deep Crust in Orogens](#).
- [Late Cambrian geomagnetic instability after the onset of inner core nucleation](#).
- [Effect of water on seismic attenuation of the upper mantle: The origin of the sharp lithosphere–asthenosphere boundary](#).
- [Mechanics of the Kalabagh Fault, northwest Himalayan fold and thrust belt \(convergence zone of India and Eurasia\), using SAR interferometry and CFS](#).
- [Relation Between Oceanic Plate Structure, Patterns of Interplate Locking and Microseismicity in the 1922 Atacama Seismic Gap](#).
- [Andean-type, bivergent crustal shortening in the Rinkian orogen: New constraints on the tectonic evolution of Laurentia–West Greenland in the Paleoproterozoic](#).
- [Early Triassic roll-back of subducted Paleo-Tethys oceanic lithosphere: Insights from A2-type silicic igneous rocks in the Pingxiang area, southwest China](#).

Paleontology

- My friend, Brian Scott, helped in this research: [Microvertebrate faunal assemblages of the Favel Formation \(late Cenomanian-middle Turonian\) of Manitoba, Canada](#); Phys.org summary [here](#).
- [Marine reptile skeleton dating back to age of dinosaurs discovered in southern Manitoba](#).
- Lagerstätte fossils: [Intra-gastric phytoliths provide evidence for folivory in basal avialans of the Early Cretaceous Jehol Biota](#); Phys.org summary [here](#).
- More lagerstätte fossils: [Annelids from the Cambrian \(Wuliuan Stage, Miaolingian\) Spence Shale Lagerstätte of northern Utah, USA](#); Phys.org summary [here](#).
- [A macroscopic free-swimming medusa from the middle Cambrian Burgess Shale](#); press release from the Royal Ontario Museum [here](#); summary in the journal Science [here](#).
- [A heavyweight early whale pushes the boundaries of vertebrate morphology](#).

- Turtles: [A description of a *Denazinemys nodosa* specimen \(Testudinata, Baenidae\) from the Late Cretaceous Kaiparowits Formation of southern Utah.](#)
- Bit off more than it could chew: [Death by ammonite: fatal ingestion of an ammonoid shell by an Early Jurassic bony fish](#); Phys.org summary [here](#).

Energy and Mining

- Georgia, United States: [First new nuclear reactor in more than 30 years comes online.](#)
- [Canada Turns to Nuclear Power After 30-Year Pause to Meet Demand Surge.](#)
- [Inflation-adjusted U.S. energy spending increased by 25% in 2021.](#)
- Recovery of oil from shales: [Water- and Surfactant-Based Huff-n-Puff Injection into Unconventional Liquid Hydrocarbon Reservoirs: Experimental and Modeling Study](#); Phys.org summary [here](#).
- New North Sea oil and gas licenses: [\(The North Sea\) Came in Like a Wrecking Ball – ENERGYminute.](#)
- [INSIGHT: World Battles to Loosen China's Grip on Vital Rare Earths for Clean Energy Transition.](#)
- Silica sand mine in Manitoba: [Canadian Premium Sand Inc. Announces Receipt of Final Environment Act Licence and Provides an Operational Update.](#)
- [Top 10 Lithium Mines in Africa.](#)
- Saskatchewan: [Grounded Lithium's Kindersley project could cost \\$447 million to build, but bring in \\$350 million per year.](#)
- [William R Catton's overshoot hypothesis: The world's resource bank is 'empty': Here's what that means.](#)

Glaciers and Climate Change

- [Cryogenian glaciation in Australia: Geochronology and formal stratigraphy of the Sturtian Glaciation in the Adelaide Superbasin.](#)
- [Extreme melting at Greenland's largest floating ice tongue](#); Phys.org summary [here](#).
- Ice age climate: [The role of Northern Hemisphere summer insolation for millennial-scale climate variability during the penultimate glacial](#); Phys.org summary [here](#).
- [Ice-core data used for the construction of the Greenland Ice-Core Chronology 2005 and 2021 \(GICC05 and GICC21\).](#)
- Getting ice cores: [Design and performance of the Hotrod melt-tip ice-drilling system.](#)

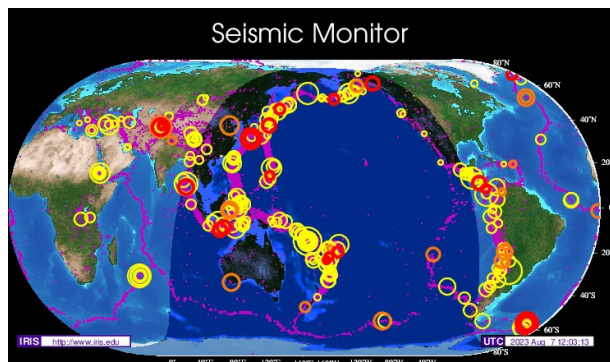
Environmental Geology and Hydrogeology

- [The distribution of cadmium in soil and cacao beans in Peru](#); Eureka Alert summary [here](#).
- Studying the hydrogeology of fractured limestone can drive you mad: [Study on the consolidation behavior of horizontal drainage foundation under complex aquifer formation conditions in karst regions](#).
- From the United States Geological Survey (USGS): [Evaluating Impacts of Stormwater and Road Runoff on Salmon and Aquatic Systems](#).
- Also from the USGS, [tweet on groundwater quality](#).
- For those interested in groundwater, check out the [Groundwater Project](#); there are lots of FREE resources and books; if you can contribute to the project with cash or as a volunteer.

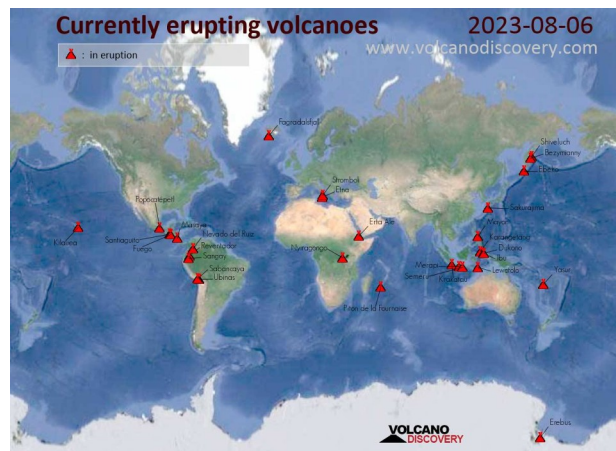
Shiny, Pretty Rocks

- [Characterization and discrimination of some gem silicate minerals adopting LIBS, FTIR, and Raman spectroscopic techniques](#); Cosmos summary [here](#).
- Crooked dealings: [555 Ct. Black Diamond Bought With Misappropriated Funds, Says SEC](#); legal complaint [here](#).

Volcanoes, Earthquakes and Geohazards



[Seismic Monitor](#)



[Active Volcano Map](#)

- Volcano Watch — [USGS Hawaiian Volcano Observatory staff return to American Samoa](#).
- [Smithsonian / USGS Weekly Volcanic Activity Report](#).
- I'll go and find out: [Is a Yellowstone eruption closer than thought?](#)
- Iceland: [Lava and Smoke Blanket Fagradalsfjall](#).
- [Taupo: The super volcano under New Zealand's largest lake](#).

- Volcanic eruptions: [Magma mingling and ascent in the minutes to hours before an explosive eruption as recorded by banded pumice](#).
- Volcanoes and climate change: [Shallow-water hydrothermal venting linked to the Palaeocene–Eocene Thermal Maximum](#); Phys.org summary [here](#).
- When you like it really hot: [YouTuber cooks microwave curry in lava](#); You Tube video [here](#).
- Vulcan’s forge: [Sulfur origin and flux variations in fumarolic fluids of Vulcano Island, Italy](#).
- Developing seismic catalogues for volcanoes: [Multi-station volcano tectonic earthquake monitoring based on transfer learning](#).
- Earthquake study using existing fibre optic cables: [The break of earthquake asperities imaged by distributed acoustic sensing](#); Phys.org summary [here](#).
- Earthquake research: [Seismic microzonation mapping of Greater Vancouver based on various site classification metrics](#).
- More earthquake research: [Impact of the solid Earth mass adjustment by the 2011 Tohoku-Oki earthquake on the regional sea level and hydrological mass change recovery from GRACE](#).
- Eritrea: [M5.6 earthquake in Afar Triple Junction highlights structural complexity](#); USGS report [here](#).
- [Unusual M5.4 earthquake strikes usually quiet part of eastern China](#); USGS report [here](#).
- The gift that keeps on giving: [Six months after Feb. 6 Kahramanmaraş earthquake sequence, papers start to pile up](#).
- Ancient earthquakes: [Paleoseismic evidence of five magnitude 7 earthquakes on the Norcia fault system in the past 8,000 years \(Central Italy\)](#).
- Geohazards, having a really bad summer: [The 2022 Sichuan-Chongqing spatio-temporally compound extremes: a bitter taste of novel hazards](#); Phys.org summary [here](#).

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.