

July 14, 2025

News and notes



Hawk Mountain (left) and Mt. Colin (right), [Colin Range of the Rockies](#), near Jasper AB, July 9, 2025

We've just returned from our summer road trip, so I'll be blogging lightly for this week. My regular postings will resume July 21. Here are some news items I thought were interesting.

Comments

If anyone has comments on any of my postings, please leave a comment on the LinkedIn page for the posting or email me at raymondreichelt@gmail.com.

Geopolitics

- [Trump's 50% copper import tariff said to cover refined metal.](#)
- [China is practicing orbital warfare to win in space.](#)

Research and News

- [Autogenic Curvature of Transgressive Shelf Profiles.](#)
- Geological history: [Kilometric sea level changes during the Messinian salinity crisis caused by river erosion and climate.](#)

- Geophysics: [Evidence for an Exceptionally Weak Cambrian Geomagnetic Field: New Paleointensity Estimates From the Florida Mountains, New Mexico.](#)
- [Seismic signature of the upper continental crust: Implications from the thermoelastic properties of liebermannite and K-hollandite II.](#)
- Geological dating: [Late Pleistocene-Holocene Paleosecular Variation Dating of Cave Sediments: Insights From Grotta Romanelli \(Apulia, Italy\).](#)
- Fluvial geology: [Single- and multithread rivers originate from \(im\)balance between lateral erosion and accretion;](#) Phys.org summary [here.](#)
- [Bio-mediated cementation of supratidal beach sediments associated with groundwater springs.](#)
- [Characterizing Fractured Zones in Urban Karst Geology Using Leaky Surface Waves From Distributed Acoustic Sensing.](#)
- [Rock-buffered versus fluid-buffered geochemistry of structurally controlled, hydrothermal dolomite: Insights from the Sichuan Basin, China.](#)
- [Is One Sample Enough? Testing the Importance of Lateral Sedimentary Variability in Cyclostratigraphy.](#)
- [The Kangâmiut dyke swarm in West Greenland: a new map and insights into their tectonic evolution.](#)
- [Km-scale mounds and sinkites formed by buoyancy driven stratigraphic inversion;](#) press release from the University of Manchester [here.](#)

Plate Tectonics

- [Polyphase Tectonic Evolution of the Puerto Rico-Virgin Islands Microplate Revealed by Fault-Slip Data and Stress Inversions.](#)
- [Structure and Seismicity of the Dead Sea Fault and the Galilee Revealed by 3D Earthquake Tomography.](#)
- [The Permo-Carboniferous Basins of the Catalan Pyrenees \(NE Iberia\): An Example of Interacting Tectonics and Collapse Calderas.](#)
- [Terrestrial temperature history reveals Late Miocene rapid uplift of the northern Tibetan Plateau.](#)
- [Slab underthrusting is the primary control on flat-slab size.](#)
- [Characterizing the Atacama Segment of the Chile Subduction Margin \(24°S–31°S\) With >165,000 Earthquakes.](#)
- [The Tectonic Responses in the Overriding Plate During the Tethyan Convergence and the Progressive Extrusion Process in Sundaland: Insights From the Wuliangshan Massif, SE Tibetan Plateau.](#)

- [Mantle Flow and Anisotropy in Subduction Zones: Modeling and Clustering of Olivine Textures.](#)
- [The Early Evolution of a Young Normal Fault in the Aysén Fjord, Chile.](#)

Astrogeology and Impacts

- [Geology and Mars analog potential of the <2.7-billion-year-old Miralga impact structure, North Pole Dome, Pilbara Craton, Australia.](#)
- Ancient geological history: [Rare earth element nucleosynthetic anomalies and dust transport in the protoplanetary disk.](#)
- [Youngest basaltic lunar meteorite fills nearly one billion-year gap in moon's volcanic history.](#)
- File under earth shattering kabooms: [USask researcher uses laser and diamond technology to simulate meteorite impacts.](#)

Paleontology

- [New discoveries begin on Saskatchewan's most famous fossil and new dinosaur bones left sitting for years.](#)
- How deep can a cephalopod with a shell dive before it is crushed? [Implosion and maximum inhabitable depths throughout ontogeny in phragmocone-bearing cephalopods: the Punctuated Pfaff Model.](#)
- [A new neornithischian dinosaur from the Upper Jurassic Tiaojishan Formation of northern China.](#)
- [A new mamenchisaurid from the Upper Jurassic Suining Formation of the Sichuan Basin in China and its implication on sauropod gigantism; Sci News summary \[here\]\(#\).](#)
- [New rhizodontid \(Tetrapodomorpha, Sarcopterygii\) material from Romer's Gap \(Tournaisian\) of the Ballagan Formation \(Scotland, U.K.\).](#)
- De-extinction: ['We're bringing back avian dinosaurs': De-extinction company claims it will resurrect the giant moa in next 10 years; related \[comment\]\(#\).](#)
- [A new multituberculate \(Mammalia, Allotheria\) from the Lulworth Formation \(Cretaceous, Berriasian\) of Dorset, England; Phys.org summary \[here\]\(#\).](#)
- [The first record of *Hallucigenia*-like lobopodians from the lower Jince Formation \(Cambrian, Miaolingian\) of the Příbram–Jince Basin.](#)
- [Late Ordovician cephalopods from Morocco and their implications.](#)
- [A new hybodontiform shark \(*Strophodus* Agassiz, 1838\) from the Upper Jurassic of Switzerland.](#)
- [*Psittacosaurus houi*, a longer snouted psittacosaurid from the Lower Cretaceous Lujiatun Unit of Yixian Formation, China, with the synonymy of the unresolved genus *Hongshanosaurus* revisited.](#)

- [A new late Permian archosauromorph reptile from Germany enhances our understanding of the early diversity of the clade.](#)
- [A new sauropod-dominated tracksite from the Lower Cretaceous in central Ningxia, northwestern China, and the implications on palaeoenvironments.](#)
- [An arboreal rhynchocephalian from the Late Jurassic of Germany, and the importance of the appendicular skeleton for ecomorphology in lepidosaurs;](#) Phys.org summary [here](#).

Ore and Petroleum Geology

- [Challenges of drilling Iran's deepest surface hole in the saddle section of Changuleh oilfield with complex structure and pressure regimes.](#)
- [Redox state of subducted sediments controls porphyry copper mineralization along the Tethyan belt.](#)
- Mineralogy of an ore body: [Arsenohauchecornite, ognitite, parkerite, and related minerals from Onça-Rosa orebody, Carajás, Brazil: fingerprinting PGE signatures in hydrothermal Ni ores.](#)
- [New minerals auropolybasite, \[Ag₁₅AuSb₂S₁₁\] and auropearceite, \[Ag₁₅AuAs₂S₁₁\], and the implications for the formation of bonanza ores in epithermal systems.](#)
- [Structural controls on Au–Co mineralisation at the Juomasuo deposit, an example of Paleoproterozoic Au–Co–Cu–REE systems in the Karelian belts of Scandinavia.](#)
- [Mantle contributions to global tungsten recycling and mineralization;](#) Phys.org summary [here](#).

Mining and Energy

- [Wyoming's first new coal mine in decades to extract rare earths.](#)
- [Shell Obtains Permission to Drill for Oil and Gas Offshore South Africa.](#)
- [Australian Rare Earths Stocks Surge After U.S. Takes Stake in MP Materials.](#)
- [Japan's Yoro reactor ushers in a new era of micro-nuclear power.](#)
- [Barrick hit again as Mali helicopters take off with \\$117M in gold.](#)
- [33 Tons Of Gold, Silver Concentrate Hijacked In Mexico.](#)

Environmental Geology and Hydrogeology

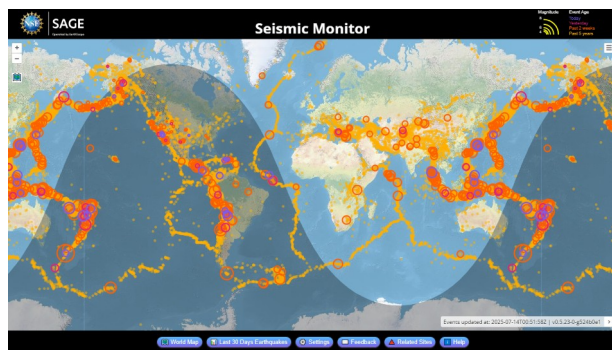
- Loess hydrogeology: [Sensitivity analysis of VG model parameters for infiltration in undisturbed loess under ponding conditions using the HYDRUS-1D model.](#)
- Fluid circulation in the oceanic crust: [Examining Controls on Fluid Overpressure in Buried Basement Highs of Oceanic Crust: Implications for Permeability of the Astoria Fan.](#)
- Groundwater discharge: [Great Salt Lake's mystery islands.](#)

- Television shows on the [state of groundwater in France](#), from the BRGM, en français.
- [Poisoned water and scarred hills. The price of the rare earth metals the world buys from China.](#)

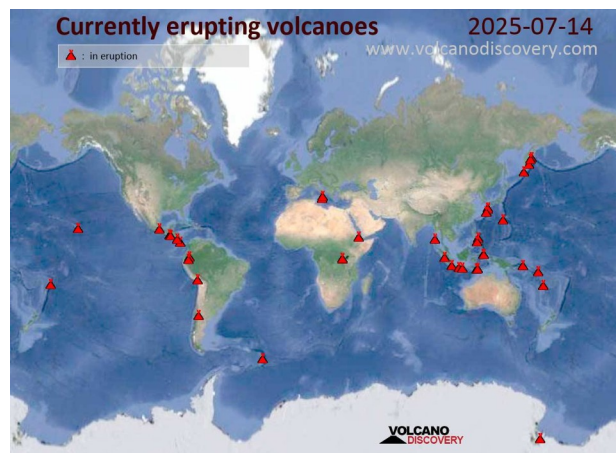
Glaciers and Climate Change

- [Extensive fluvial surfaces at the East Antarctic margin have modulated ice-sheet evolution.](#)
- [Polarimetric Wide-Angle Radar Detects Competing Signatures of Ice Fabric and Structural Firm Anisotropy.](#)
- [Early Triassic super-greenhouse climate driven by vegetation collapse](#); comment by Ugo Bardi [here](#).

Volcanoes, Earthquakes and Geohazards



[Seismic Monitor](#)



[Active Volcano Map](#)

Volcanoes

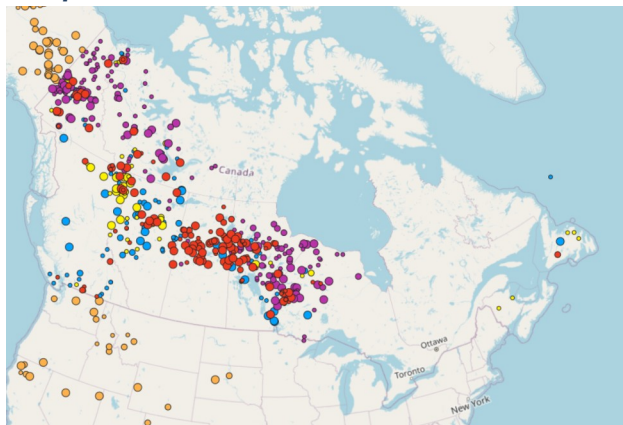
- [Smithsonian / USGS Weekly Volcanic Activity Report.](#)
- United States Geological Survey (USGS) Volcano Observatories:
 - [Cascades Volcano Observatory Weekly Update.](#)
 - Volcano Watch – [Snowshoeing on Kīlauea? High fountain episodes pose new challenges to volcano monitoring.](#)
 - [Eruption Unknown: The case of the newly recognized geologic unit.](#)
- [Petrological Constraints on Magma Ascent Processes During the 1977 Eruption of Usu Volcano, Japan.](#)
- [Efficacy of Assessing Magmatic Storage Depth Using Natural Samples, Experiments and Thermodynamic Models: A Case Study From Valles Caldera, NM \(USA\).](#)

- [Magma flow localisation during dyke propagation produces complex magma transport pathways.](#)
- [The Effect of Edifice Slope, Failure Surface Geometry, and Magma Intrusion Depth on the Development of Flank Instability at Volcanoes.](#)

Earthquakes

- [Euro-Mediterranean Seismological Centre \(EMSC\).](#)
- [Earthquakes Monitoring Live Worldwide.](#)
- [New Zealand earthquakes site.](#)
- [Swarm of Hundreds of Small Earthquakes Shakes Washington’s Iconic Mt. Rainier.](#)
- [Implications of the 9 July 1956 MS ~ 7.2 Amorgos Earthquake for Tsunami Hazard in the Aegean.](#)
- [Fault Geometry and Source Mechanics of the Altotiberina Fault System from a High-Resolution Machine-Learning Earthquake Catalog.](#)
- [The 28 March 2025 Mw 7.8 Myanmar Earthquake: Preliminary Analysis of an ~480 km Long Intermittent Supershear Rupture.](#)
- [Santorini earthquakes traced to sideways magma movement in crust, not traditional volcanic centers; research papers \[here\]\(#\) and \[here\]\(#\).](#)

Wildfires and Other Geohazards



Interactive Wildfire Map

Credit: ©[Canadian Wildland Fire Information System](#)

- [Manitoba again declares province-wide state of emergency as wildfires force new evacuations for thousands; related: Wisconsin, Minnesota Republicans demand to know what Canada is doing to curb wildfire smoke; perhaps they should ask King Canute.](#)

Free Geology Books and Other Stuff

Free geology books can be downloaded from these sites:

- [OreZone Readers and Experts Telegram Channel](#); the Ore Zone channel also shows employment opportunities for geologists.

- [The Groundwater Project](#) has many groundwater geology books for free download; also they now have a [Free Online Learning Module: Pumping Test Analysis](#); [New book: Estimating the Release Date of MTBE: A Case Study](#).
- Free Groundwater Modeling Course – [HydroGeoCenter](#).
- From Western Australia: [Carbonatite, lamprophyre and host rocks in the northern Aileron Province](#).
- Two volumes of Geology of Indonesia now can be accessed for [FREE/GRATIS](#). The books can be accessed from: vol 1 <https://lnkd.in/eH6Gcka4>; vol 2 <https://lnkd.in/egTYmpjk>.
- Brett Davis' book on veins in a deforming rock mass: "[The Veining Bible](#)"; also at [this site](#).

Upcoming Events

- [August 3 – 7, Golden, Colorado, 18th Biennial meeting of the Society of Geology Applied to Mineral Deposits](#).
- [Society for Sedimentary Geology conference, Mountjoy IV – August 10-13, 2025, in Montreal, Canada](#).
- [Copper to the World Conference, Tuesday 26 – Wednesday 27 August 2025](#), in Adelaide, Australia; report on 2024 conference [here](#).
- [The 52nd Congress of the International Association of Hydrogeologists, 15-19 September 2025, Melbourne Australia](#).
- [GeoManitoba 2025 78th Annual Canadian Geotechnical Society Conference & 9th Canadian Permafrost Conference, RBC Convention Centre, Winnipeg, Manitoba, September 21 – 24, 2025](#).
- [29 September – 1 October 2025, Stuttgart, Germany, Nature Conference on Advancing Perovskite-Based Photovoltaics](#).
- [November 3 – 4, 2025 Central Canada Mineral Exploration Convention 2025 Victoria Inn Hotel & Convention Centre, 1808 Wellington Avenue, Winnipeg, Manitoba R3H 0G3, Canada](#).
- [5th International Professional Geology Conference \(IPGC\), November 5 to 7, 2025, Zaragoza, Spain](#).
- 2025 [Society of Petroleum Engineers Distinguished Lecturer Schedule](#).
- [List of geoscience events in 2025 from the International Union of Geological Sciences](#).
- [American Geophysical Union List of Upcoming Meetings](#).
- The Geological Society: [Events & Courses](#).
- [“Geology Hour” Online](#), evenings on the 3rd Monday of the Month from the Geological Society of the Oregon Country, next one July 21.

Standard Caveat

[J. Robert Oppenheimer on freedom and scientific inquiry](#)

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.