

December 30, 2024

News and notes

For this week's year end blog I'll be posting news items and take a short look ahead at 2025.

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](#).
- Free Groundwater Modeling Course – [HydroGeoCenter](#).

Geopolitics

- James Howard Kunstler's forecast: [Forecast 2025 — Taking Out the Trash](#).
- Dave Collum's annual Year in Review: [2024 Year in Review: What is a Fact?](#)
- [CHARTS: The coming critical minerals trade war is BRICS short of a load](#).
- No oil for you: [Syrian Oil Supply Crisis Deepens as Iraq Cuts Exports](#).
- Bypassing sanctions: [Saudi Arabia Becomes Top Buyer Of Russian Fuel Oil](#).
- [Philippines says it will acquire U.S. Typhon missile system, sparking warnings from China](#).

Research and News

- End of the Messinian salinity crisis: [Land-to-sea indicators of the Zanclean megaflood](#).
- [Elemental geochemical insights into sediment sources, influx variations and depositional environment changes in the Eocene–Miocene Lark Formation, Danish North Sea](#).
- [U-Pb ages and Hf isotope data from detrital zircons in the metasedimentary rocks of the Mongolian Altai Group, Mongolian part of the Altai-Mongolian Terrane: implications on the provenance and tectonic setting](#).
- [Metasomatic to Hydrothermal Genesis of Natural Calcium Silicate Hydrates \(C-S-H\): Evidence from Lessini Mountains, Veneto Volcanic Province, Italy](#).
- Planetary geology: [Ureilite precursor formation from an isotopically and chemically heterogeneous, isolated protoplanetary disk reservoir](#).
- [From Circum Red Sea Sources to the Levant Basin Sink: An Integrated Provenance Study of Oligocene–Miocene Siliciclastic Sediments From Deep-Sea Boreholes](#).

- [Undulating stratigraphy of a carbonate inner ramp lagoon and associated architectural facies heterogeneity: An example from the Late Jurassic Hanifa Formation, Central Saudi Arabia.](#)
- [A Deccan Large Igneous Province related Maastrichtian regolith of Lameta Formation, Central India: Insights into the genesis and development of calcrete profiles and implications for palaeoclimate variability.](#)
- [Lithospheric flexure and effective elastic thickness under the Ulleung Basin in the East Sea using gravitational coherence.](#)
- [An Archean Porphyry-Type Deposit: Cu-Au Mineralization Associated with the Chibougamau Tonalite–Diorite Pluton, Abitibi Greenstone Belt, Canada.](#)
- [The Northern Central Andes and Andean tectonic evolution revisited: An integrated stratigraphic and structural model of three superimposed orogens.](#)
- [Reassessing metamorphic core complexes in the North American Cordillera.](#)

Bad Science

- [Evolution journal editors resign *en masse* to protest Elsevier changes.](#)
- [Researcher linked to paper mill activity mysteriously reappeared on list of journal's editorial board.](#)

Geophysics

- [NASA Is Watching a Vast, Growing Anomaly in Earth's Magnetic Field.](#)
- [Seismic characterization of carbonate stringers using machine learning techniques: an example from the western flank of South Oman Salt Basin.](#)
- Borehole logging: [Photoelectric Factor Characterization of a Mixed Carbonate and Siliciclastic System Using Machine-Learning Methods: Pennsylvanian Canyon and Strawn Reef Systems, Midland Basin, West Texas.](#)
- [Brunhes–Matuyama Reversal: When Earth's Magnetic Field Flips.](#)
- [Mesoscale fractures control the scale dependences of seismic velocity and fluid flow in subduction zones.](#)

Paleontology

- [Spongy-looking microfabrics in the earliest named stromatolite represent deep burial alteration and incipient metamorphism.](#)
- [New findings of *Dunyu* \(Eugaleaspiformes, Galeaspida\) from the Xiaoxi Formation in South China and their biostratigraphic significance.](#)
- [The Largest Mesosaurs Ever Known: Evidence from Scanty Records.](#)

- [Unique dental arrangement in a new species, *Groenlandaspis howittensis* \(Placodermi, Arthrodira\) from the Middle Devonian of Mount Howitt, Victoria, Australia.](#)
- [A latest Paleocene mammal fauna from the Great Divide Basin in southern Wyoming and a revised biozonation of the Clarkforkian land mammal age.](#)
- [An Ediacaran bilaterian with an ecdysozoan affinity from South Australia](#); SciTechDaily summary [here](#).
- [New ecdysozoan fossil embryos from the basal Cambrian of China](#); Science Alert summary [here](#).

Mining and Energy

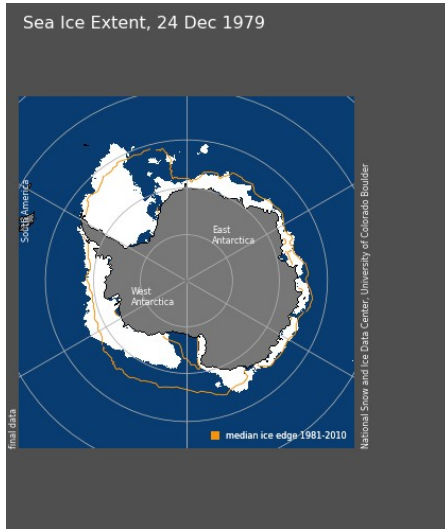
- Legal troubles: [Australia's Cassius Mining takes Ghana to court for \\$277m.](#)
- Exploration techniques: [Integrating Magnetic and Self-Potential Methods for Efficient Graphite Exploration: Insights from Ji'an, Northeast China.](#)
- [Ukraine says it received first US LNG shipment.](#)
- [Oil Prices Rise on China Growth Optimism and Strong US Demand.](#)
- [Mineral exploration spending up in Manitoba](#), may be behind a paywall.
- [Mongolia reaches deal for \\$1.6 billion uranium mine with Orano.](#)
- Ore deposit geology: [Coupled antimony and sulfur isotopic composition of stibnite as a window to the origin of Sb mineralization in epithermal systems \(examples from the Kremnica and Zlatá Baňa deposits, Slovakia\).](#)
- DRC: [Africa's biggest gold mine is in remote corner of huge country.](#)
- [European Energy Firm Ordered to Remove 84 Wind Turbines from Osage Lands In Oklahoma.](#)
- [DOE natural gas analysis draws disbelief from Republicans, industry.](#)
- [Nickel's Price Plunge: Indonesian Dominance Shakes Global Markets.](#)
- [Closed Kapuskasing phosphate mine has new owner, and maybe new life.](#)
- [Sodium-ion batteries hit 458 Wh/kg: Breakthrough material closes gap with lithium.](#)
- [US to mint nuclear power from soda mine with eight 50 MWt microreactors.](#)

Environmental Geology and Hydrogeology

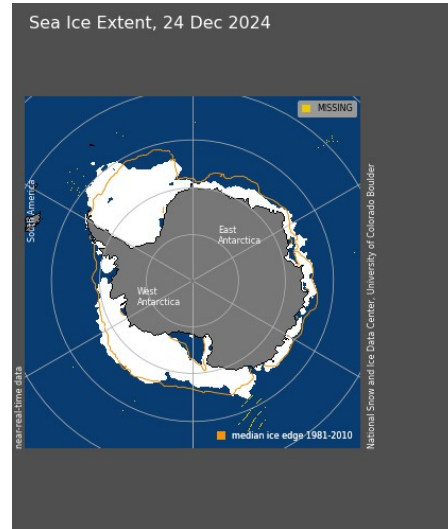
- Remediation research: [Behavior and Mechanisms of Antimony Precipitation from Wastewater by Sulfate-Reducing Bacteria *Desulfovibrio desulfuricans*.](#)
- More remediation: [Design, Implementation and Environmental Impact of Cutoff Wall for Pollution Control in an Industrial Legacy Site](#); this was a fairly standard practice when I worked in environmental geology.

- [Federal Judge in Washington State Orders Dairies to Test Wells for Nitrates.](#)
- King Solomon's mines: [Pre-roman copper industry had no polluting impact on the global environment](#); Phys.org summary [here](#).

Glaciers and Climate Change



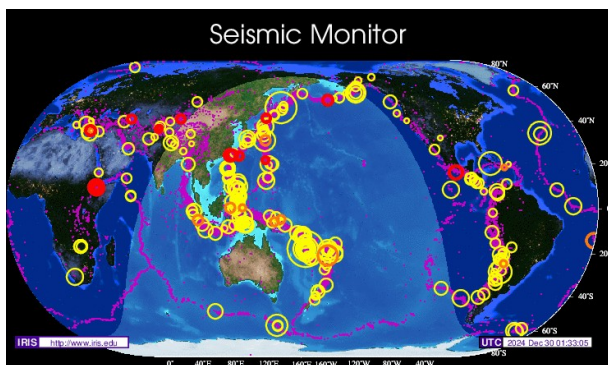
Antarctic Sea Ice Extent [December 24, 1979](#)
[National Snow and Ice Data Center](#)



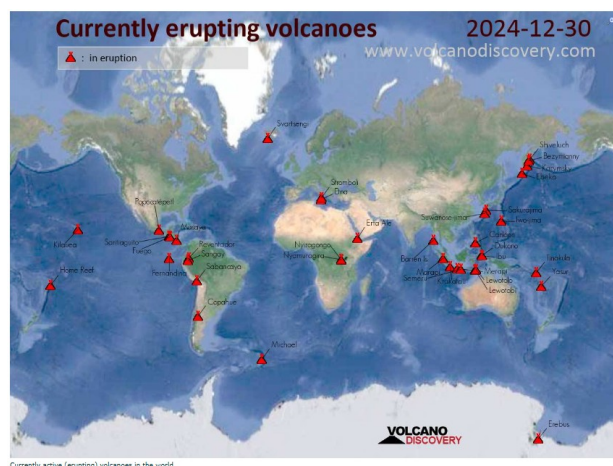
Antarctic Sea Ice Extent [December 24, 2024](#)
[National Snow and Ice Data Center](#)

- Periglacial environment: [Applying Data Analysis and Machine Learning Methods to Predict Permafrost Coast Erosion.](#)
- Geophysics: [Simultaneous Observation of Near-Inertial Frequency Gravity Waves by a Long-Duration Balloon and the PANSY Radar in the Antarctic](#); Phys.org summary [here](#).

Volcanoes, Earthquakes and Geohazards



[Seismic Monitor](#)



[Active Volcano Map](#)

Volcanoes

- United States Geological Survey (USGS) Volcano Watch: [Kilauea summit erupts again](#); related video: [Kilauea Live – Ken Hon, USGS](#).
- USGS Yellowstone Volcano Observatory: [What did Yellowstone look like before it became Wonderland?](#)
- [Smithsonian / USGS Weekly Volcanic Activity Report](#).
- Mary Shelley's Frankenstein: [A Biologist Tells The Story Of Earth's Deadliest Volcano-And The Literary 'Masterpiece' That Ensued](#).
- Video: [Unusual situation In Iceland – 2 Ancient And Dormant Volcano Systems Waking Up](#).
- Missed this last week: [Dec 21, 2024: Magnificent Eruption of Fuego Volcano, Guatemala](#).

Earthquakes

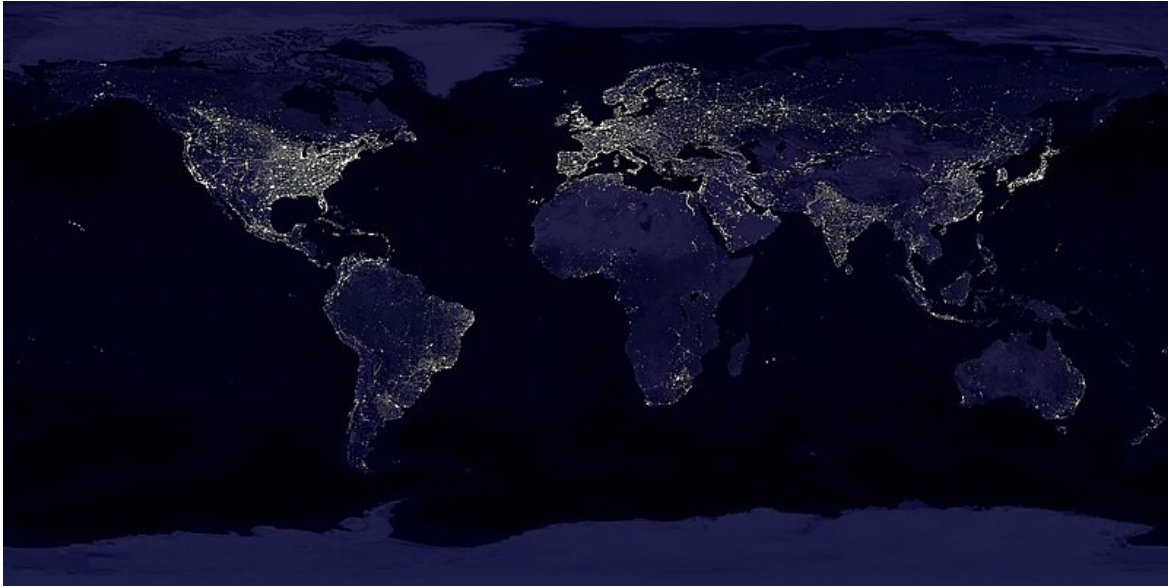
- [Euro-Mediterranean Seismological Centre \(EMSC\)](#).
- [Earthquakes Monitoring Live Worldwide](#).
- Video: [Quebec Earthquake Rattles Folks in Central Canada](#); Earthquakes Canada summary [here](#).
- [M 5.9 – 23 km SSE of Tinogasta, Argentina](#).

Upcoming Events

- The Geological Society: [Hybrid Conferences, January 16, 2025 – September 9, 2025, Climate and Ecology: Off the Rails](#).
- European Geosciences Union: [EGU General Assembly 2025, Vienna, Austria & Online 27 April–2 May 2025](#)
- [Sedimentary Geology and the Energy Transition Conference, June 2-5, 2025 – Salt Lake City, UT USA](#).
- [Geoscience Beyond Borders, GAC-MAC-IAH-CNC 2025 Ottawa, Ontario, May 11-14, 2025](#).
- [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](#).
- 2024-2025 [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](#).
- [List of events – The Geological Society](#).

December 30, 2024

Year End Thoughts



Earth's City Lights

Credit: Data: Marc Imhoff/NASA GSFC, Christopher Elvidge/NOAA NGDC; Image: Craig Mayhew and Robert Simmon/NASA GSFC, public domain

To round out this year, I thought that I would post a few thoughts on the past year and make a few predictions for the coming year. As usual, the big stories of 2024 revolve around conflicts and politics. So let's look at a few of these and their likely outcome in the coming year.

Europe

The Ukrainian War

This war continues to [drag on](#) and it is hard to see a good end to it. The most distressing part of the Ukrainian War is the many lost opportunities to come to a negotiated settlement. Those who worked against such settlements bear a heavy moral responsibility. I am reminded of what Shakespeare said in [Act 4, Scene 1 of Shakespeare's Henry V](#): "if the cause be not good, the King himself hath a heavy reckoning to make".

I expect that that Ukraine's Western backers will lose patience with the Kiev regime. Having emptied their armouries – first of old Soviet era weapons and now of more current equipment – the NATO nations are not seeing any resolution to the situation. There must be a strong desire to cut their losses and leave Volodymyr Zelenskyy to his fate, along with the rest of his government. As for Vladimir Putin and his government, they are unlikely to fail anytime soon and will strike a hard deal with whatever government is in Kiev. Don't expect Zelenskyy to stay in power long, or even remain alive, once he begins negotiations to end the war.

Russia

It's hard to tell what is actually happening in Russia, the old habits of information control are well established. What we can see is that, despite Western sanctions and the burdens of the Ukraine War,

Putin's government appears to retain broad public support. Economically, the sanctions have largely failed in their intent. Russia has a large and diverse supply of raw materials for their economy. They also have friends and [business associates](#) willing to circumvent the sanctions, especially on the sale of Russian petroleum. So don't look to see the end of Putin's regime any time soon.

Looking forward, the [BRICS alliance](#) may strengthen; thus further enhancing Russia's economic and political position. The big future problem for Russia comes when Putin eventually dies, either of old age or at the hands of a political rival. Historically, much of Russia's internal stability seems to be dependent on having a strong hand on the wheel of the ship of state. Once Putin is gone, there could be a time of troubles unless the next leader is also a strong one. In some ways, things haven't changed in Russia since the good old days of [Ivan the Terrible](#).

European Union (EU)

The EU is in deep economic trouble these days, especially in Germany and France, the heart of the EU project. A combination of bad policies have led to economic disaster for the EU. The pursuit of "green" policies, like shutting down German nuclear plants has been one bad move. They might have gotten away with their foolish energy policies if they had avoided alienating their main source of cheap energy, Russia, by supporting Ukraine in the current war. The hard times that have come as the result of [high energy prices](#) and industrial shutdowns are hitting ordinary people hard. In Germany, many are turning to the [Alternative fur Deutschland](#) (Afd). In France the angry ones are turning to the [National Rally](#) (RN). Both these parties have been accused of the terrible crime of being "far right", a catchall term for being anti-establishment populists. The rise in popularity of the Afd and RN ~~sears the shit out of~~ deeply concerns the political establishments in Germany and France and they are working mightily to sideline the threats to their positions. It may not work.

Another concern in the EU is migration. Migrants from Ukraine, Syria, and Sub-Saharan Africa have strained the social fabric of the host nations. The recent overthrow of the government in Syria has opened the possibility of expelling Syrian refugees from Western Europe if the Europeans deem it safe to send these people back home. A similar plan may be in the works for Ukrainian refugees.

Looking forward, as I note above, the Europeans are likely to welcome an end to the Ukrainian War, especially once the [bills come due](#). However, they are unlikely to repair the damage done to their economic relations with Russia, so energy prices are likely to remain high. I expect that in Germany and France, as well as other EU countries, populist parties will take over and seek to repair the situation. It will not be easy. We might see the breakup of the EU if it can't deliver on the promise of prosperity.

Another future issue for the EU is if, or when, the United States decides to reduce their overseas defence commitments. Donald Trump has already hinted at doing this. Should it happen, the states of the EU will then have to look to [their own resources for their defence](#).

Middle East

Israel / Palestine

Another sad situation that is unlikely to end well is the conflict between Israel and the Palestinians. The current destruction of Gaza began as a response to the atrocities committed by Palestinian terrorists on October 7, 2023. The Palestinians claim that Israel is engaging in a genocidal campaign against them,

and they are right. But the whole truth is that the Palestinians are also engaged in a genocidal war against Israel and that the Israelis have no intention of being victims of such a scheme.

Historically, genocidal wars rarely end well, especially for the losers. Both the Israelis and Palestinians are likely to continue their genocidal conflict until one or the other or both parties have been destroyed. Neither side sees the other as having a legitimate right to exist, so the killing is unlikely to stop any time soon.

Syria

The [swift downfall](#) of Bashar al-Assad's government was something of a surprise. Clearly, the opposition forces that overthrew Assad began to prepare for this move a long time ago, but the speed of their success must have surprised even them.

The challenge now is how to win the peace. Syria has many religious factions, the main ones being Sunni Moslems, Alawites (a variety of Shiite Islam), Druze, and Christians. Assad kept a lid on the rivalries through brutal repression – they are still uncovering mass graves. Authoritarian government seems to be the general pattern in Syrian history and it remains to be seen if the current rulers will be benign or harsh in their administration. One solution, used by the Ottoman Turks, is to let the various communities run their own affairs and only intervene to prevent sectarian violence.

Iran

Iran was a big backer of the Assad regime in Syria and with the overthrow of Assad's regime, the Iranians have taken a big hit in terms of prestige and influence. This might not bode well for the current leadership of Iran, mostly made up of old coots who made their mark in the 1979 Revolution. These guys are all getting older now and the generation that has grown up since 1979 may not share their obsession with religious purity, anti-American politics (the Great Satan), and the Israel/Palestine struggle (Israel being the Little Satan). While information coming out of Iran is tightly controlled by the regime, I suspect that young people there want something more than the dour religious puritanism of the 1979 Revolution Generation.

Looking forward, expect that generation change will bring new people to power in Iran; people with a different approach to Iranian affairs. Iran has the potential to be an effective and positive regional hegemon, ensuring peace and prosperity for itself and its neighbours. For Iran to pursue its interests along this path they may find it prudent to support a moderate approach to their social organization, one that doesn't alienate friends and foes alike. Such a development might make Iran an attractive ally to its neighbours and give legitimacy to their role as a regional power.

Another development that could affect the near future is the Iranian plan to build nuclear weapons. They may have them already and are just waiting for the right moment to use them. If that is the case, the likely target of Iranian nukes, Israel, may seek to take out the Iranian weapons in a preemptive strike. This could be the beginning of a much wider conflict. If the conflict involves the widespread use of nuclear weapons, the death toll will be staggering. Some of us might not be here to comment on New Years 2026.

China and Its Neighbours

China's ambitions to be the regional hegemon do not seem to have changed this year. In fact, there seems to be a new dispute every month with one of their neighbours or another over some piece of property. Border disputes are nothing new, but the pattern here is an aggressive long term policy to take strategically important places, largely to enhance Chinese security.

For the future, I don't expect China to stop pushing their weight around. The key to understanding China's foreign policy is their profound desire to not let anyone, ever again, mess with them. Looking to the next year or two, there are some big elephants in the room: Taiwan, demographics, and managing public expectations for a better life:

1. Will the Chinese attempt a forced re-integration of Taiwan into the Chinese Republic? Rationally, China has more to gain from the current situation where commercial ties between the People's Republic and Taiwan are enriching both polities. However, there is more to politics than economics. For some Chinese in the People's Republic, the Taiwan question is one of pride and prestige. While we can hope for cooler heads to prevail, don't discount the possibility that some hot-head takes control of the situation and forces a war.
2. Demographically, China is facing a population contraction as the result of their one child policy. They now have lots of old people and diminishing numbers of young people. While they are attempting to remedy the situation by encouraging people to have more kids again, the realities of urban life work against having large families, or even small ones. China will stabilize their population, but it will not be easy and may involve more than the usual political churn. The troubles may discredit the Chinese Communist Party (CCP). The example of a prosperous, and democratic, Taiwan must be very attractive to reformers and terrifying to the CCP.
3. Internally, China is facing problems with public order as people start demanding a better deal for all the hard work they have done to make China a world power again. This is the natural outcome of economic development: rising expectations and frustrations with the slow pace of improvements. Some will express their frustrations through strikes and job actions, this is part of the normal churn of modern societies. However, there are darker responses as some people express their anger through [acts of terrorism](#). Threats to public order could bring out strong authoritarian responses, so keep an eye on this one.

Argentina

An interesting event in Argentina was the election of Javier Milei as president just over a year ago. He was elected to make changes and boy did he deliver! He slashed public employment and government regulation. His administration balanced the government budget, for the first time in over a hundred years. The consequences: inflation dropped to levels unseen in years and the economy has grown. There are even [plans](#) to build nuclear power plants to power the now growing economy. There are still problems with poverty in the country, but at least there is hope for growing the Argentine economy out of the poverty trap. Here is a link to an interview with Milei [here](#).

I am guardedly optimistic for the future of Argentina. Milei has shown that there are solutions to his country's problems that don't involve greater government administration, the usual result of socialist policies. However, he is still operating in a culture where many, especially those with a higher education,

see a position in the government as an honourable vocation and preferable to the grubby world of commerce. It will be interesting to see what unfolds in the Argentine Republic.

The Anglosphere

The Anglosphere refers to the five English speaking countries united in the “[Five Eyes](#)” intelligence sharing agreement. This cultural area has a leadership class that shares common views on the role of government and the desirability of globalist approaches to trade and migration. They also share some common public opinions. One is the common observation that sees the elites benefiting mightily from the globalist project, while the ordinary people have seen few of those benefits but bear all the costs.

The United States

A few weeks ago, Americans elected, or re-elected, Donald Trump as their President. The campaign was an interesting one for political junkies and a fairly close one at that. The turning point, I think, was the assassination attempt that came within millimetres of killing Trump. Suddenly, it wasn't just democratic churn. Something serious was afoot. Trump's supporters saw the *Hand of God* in his miraculous escape from the sniper's bullet. Trump's opponents tried to downplay the whole thing, unsuccessfully as it turned out. Many uncommitted voters turned to supporting Trump in the aftermath of the attempted murder. Even some lifelong Democrats like Robert F. Kennedy Jr. and Tulsi Gabbard threw their support behind the [King in Orange](#), as John Michael Greer calls him.

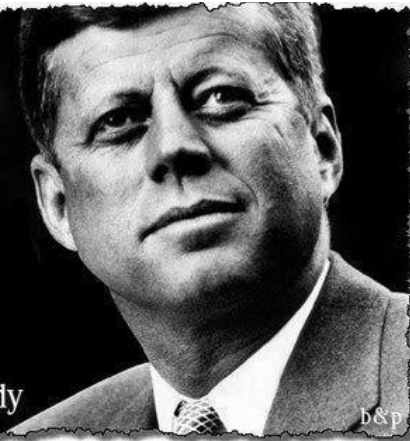
Looking forward, Trump seems to have learned from the mistakes of his first term and is better prepared this time to make the kinds of changes he thinks are necessary to “Make America Great Again”. The American people are cranky, and want change, so Trump's plan to change things may have some success. He may take a look at the Argentine experience with reducing government administration as a model for his own reforms. Trump is also looking at a more aggressive [America First foreign policy](#) with regards to America's back yard.

One big question that will occupy Trump's administration will be the proper approach to immigration, both legal and illegal. Many people resent the newcomers whose presence rises housing costs, lowers wages, and even prevents entry by native born Americans into certain kinds of work. Many construction crews are almost entirely made up of illegal immigrants, willing to work for lower wages than native-born American labourers. In the tech sector, many Americans find that work is now only available to people of South Asian background, again a group of people willing to work for less than native-born Americans. This is an ugly situation with allegations of virtual slavery and open discrimination against native-born Americans. It could become even uglier, remember that there are more guns than people in the USA.

Donald Trump was elected to bring about change, at least that is how many of his supporters see it. However, there are also powerful interests who don't want change, especially those that threaten their gravy train. For example, some of Trump's close associates are all in favour of open borders for tech workers and shouldn't be hard to find Republican contractors and agribusiness dependent on the cheap, labour of illegal migrants. It's going to be an interesting fight. In pondering this, John F. Kennedy's observation on the likelihood of violent change if peaceful change is prevented came to mind. It is something to think about.

Those who make
peaceful revolution
impossible, make
violent revolution
inevitable.

John F. Kennedy



Remarks on the first anniversary of the [Alliance for Progress, 13 March 1962](#)
[Credit: Goodreads](#)

United Kingdom

No longer a part of the EU, but pursuing similarly suicidal economic and social policies, the United Kingdom has dug itself into a deep hole. The replacement of an incompetent Conservative government with an equally incompetent Labour government has stirred up many political problems.

For example, the attempt to secure social peace by treating certain kinds of protests as “hate crimes” while ignoring the equally egregious actions of other parties has led to accusations of “two-tier” policing – a fundamental betrayal of the tradition of equality before the law. Desperate for revenue, the Labour government has sought to apply harshly extractive estate taxes to farmland, potentially destroying centuries-long family farms. On migration, the UK faces the same challenges as the rest of Europe. Is it any wonder that many Britons are turning to Nigel Farage’s [Reform Party UK](#)? The UK’s Reform Party is another anti-establishment populist party derided as “far-right” by those who can’t present a better alternative other than name-calling.



In the coming year we could see political turmoil in the UK as the ruling Labour party comes under increasing pressure to resign and call an election. Expect to see appeals to King Charles to dissolve Parliament and declare an election. Such an action, without the explicit advice of the Prime Minister, is almost unheard of in modern times. However, in a crisis, the King may have to step up and “save the country”. History ain’t over yet.

King Charles III

[Credit: The White House, public domain](#)

Australia and New Zealand

The two English speaking countries in the southern hemisphere have similar problems to the other nations in the Anglosphere in terms of managing economic and social change. A unique problem for Australia comes from their economic ties to China. Australia has made a lot of money selling coal and iron ore to China. However, economic troubles in China have reduced demand for Australian resources. The fallout

from these economic problems are likely to make Aussies cranky, it's actually not difficult to stir them up. Economic issues are likely to stir up the Kiwis as well, although they are a more sedate lot.

Keep an eye on Australia and New Zealand. Both are consequential in the English-speaking world and both can provide new approaches to solving our common problems. The Australians and their New Zealand partners (they have a common immigration policy), have shown that strict immigration policies can be both practical and humane. There is a lesson here for the rest of the Anglosphere.

Overall, while I expect political churn in both Australia and New Zealand, I don't see the possibility of drastic changes. Of all the Anglosphere, I am most optimistic for them.

Canada



[Protest Flag – Available at Amazon.ca](#)

Like the rest of the Anglosphere, Canadians are cranky. In fact, we Canuks have been cranky for quite a while now. Justin Trudeau was elected in 2015, in part, because of that crankiness. Trudeau's mistake was to believe that people voted *for* him and his program rather than just *against* the previous regime. Thinking he had a mandate for progressive policies, Trudeau proceeded to implement a course of action guaranteed to immiserate many ordinary Canadians. They have sought to shut down the Canadian fossil fuel industry, leading to unemployment and higher energy prices. Their mismanagement of the COVID-19 pandemic and subsequent use of the Emergency Act (formerly called the War Measures Act) against a peaceful, though noisy, demonstration by angry truckers, showed that they were out of touch with reality. With regards to immigration, the Trudeau Government pursuit of open border policies has overloaded the housing market and strained relations with the USA.

It didn't have to be this way, and people know it.

Given this turmoil, is it any surprise that President-elect Trump is getting his jollies out of trolling the Canadian government with suggestions that the US could/should annex the country? It really strikes a chord with Canadian insecurities and it shows the difficulties that Canada faces with its most important external relationship. Some Canadians are so desperate for change that annexation by the USA [might be welcomed](#) by them.

Canadians voted against the previous government in 2015 hoping for positive change. Now it is Trudeau's turn. Canadians are justifiably angry at the evident incompetence of Trudeau's leadership. When I was young, Pierre Trudeau's policies made supporting the Liberal Party in Western Canada untenable, his son Justin has done that for the rest of country. The Liberal Party of Canada may be destined for the dustbin of history.

Looking ahead, I expect a national election in Canada early in 2025. Even Trudeau's own party wants him gone, as do most Canadians. The likely winners of the next general election will be the Conservative Party with either the socialist New Democratic Party or the Quebec nationalist Bloc Quebecois as the official opposition. It remains to be seen if the Conservatives will govern wisely or if they will simply continue the now sad tradition of incompetent government in Canada. Still, we can always hope for better times.

Last Words

That kind of winds up this look at the current world situation and the coming new year. I retain a great deal of optimism for my fellow human beings. Despite the foolishness of our leadership class, there is hope for a better world.

Have a Happy New Year!

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.