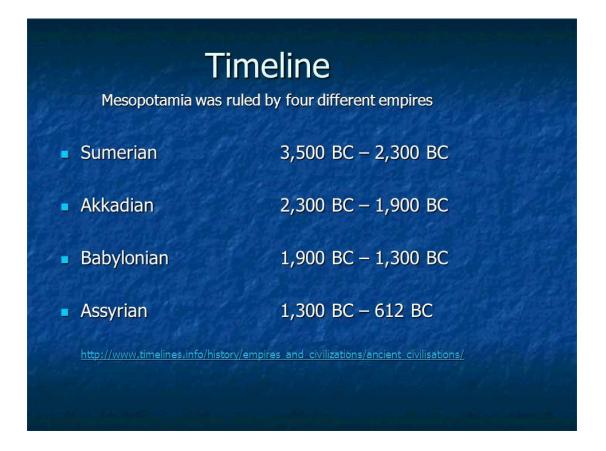
Akkadian Empire Collapse This May Be Happening Again Right Now



Looking back in history, starting off with the Sumerians, second down is the Akkadians with a noticeable 400 year run in their civilizations and in their empire, then we have the Babylonians and finally the Assyrians. Focusing on the Akkadian civilization, where have we seen that 400-year collapse cycle before globally? That is the duration and onset of the Grand Solar Minimum, between cycles.

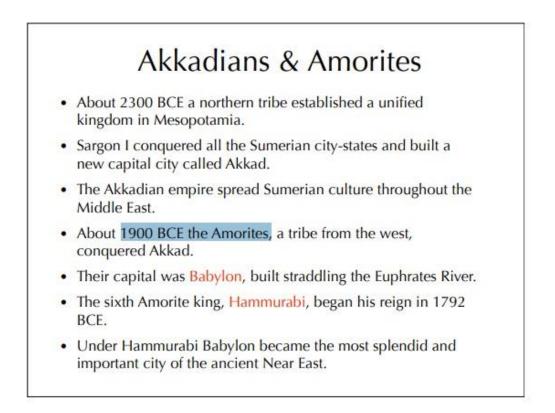


A stalagmite may have solved the mystery of the Akkadian Empire's fall



Around 4,200 years ago Mesopotamia's first empire, the Akkadian fell, coinciding with major transformations in Egypt and the Indus Valley, the two other great civilizations of the time. A study of stalagmites in Iran suggests a widespread climatic event may have been responsible for all three.

A closer look at the stalagmites might solve the mystery of the fall of the Akkadian Empire. It turned out that this fall may have been caused by a widespread climatic event.

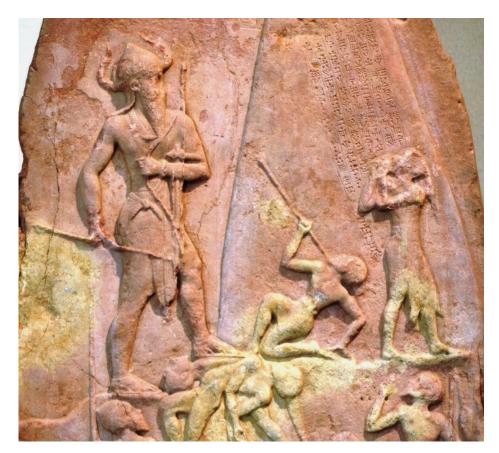


Akkadians had an established way of living in 2300 BC. Suddenly, in 1900 BC they were not able to defend themselves and suffered loss of food production, thus they were conquered by the Amorites.



1.6 The relation between cosmology and culture: the *Enuma Elish*

interestingly the Akkadian fall came in cosmology and culture of the *EnumalElish*.



There was only one story about Sargon from this entire era of history with the same iconography shown again and again. So the question is, why was there so little information about this time frame and civilization? Were climatic events so encompassing that it literally erased everything that was there?



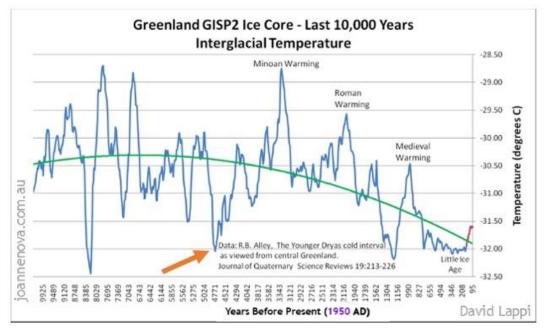
A stalagmite may have solved the mystery of the Akkadian Empire's fall

Around 4,200 years ago Mesopotamia's first empire, the Akkadian fell, coinciding with major transformations in Egypt and the Indus Valley, the two other great civilizations of the time. A study of stalagmites in Iran suggests a widespread climatic event may have been responsible for all three.

However, when a team led by The University of Oxford's <u>Dr Stacy Carolin</u> studied a stalagmite from Gol-e-Zard Cave in Iran's Alborz Mountains formed between 5,200 and 3,700 years ago they saw something certainly happened around the relevant time. The team report in the <u>Proceedings of the National Academy of Sciences</u> there were **sharp spikes in the amount of magnesium relative to calcium 4,510 and 4,260 years ago**, coinciding with slower growth and changes in the stone's oxygen isotopes. These changes lasted 110 and 290 years, respectively before the stalagmite composition returned to previous levels.

The change in the stalagmite's composition appears to be the result of increased dust falling in the mountains, which in turn seems to be a consequence of drier conditions to the west. Today, dry years in the deserts of Syria and Iraq are associated with increased dust deposition in Tehran, just 50 kilometers (30 miles) from Gol-e-Zard. The slow growth of the stalagmite could be a sign of locally drier conditions as well.

It wasn't just a single onset that happened 4,200 years ago, it began between 5,200 and 3,700 years ago. Researchers are pegging it at 4,500 to 4,200 years ago where drier conditions pervaded from the West.



Around 4,200 years ago Mesopotamia's first empire, the Akkadian fell

I included the orange arrow so you can see the steep drop in global temperatures. When you look at the overall GISP2 Ice Core temperature data set over the last ten thousand years, we were far on the right.

It was warmer, several times in the past than it is today. This is why, for me, that CO2 argument doesn't really stand up to scrutiny, especially when I look at charts like this.

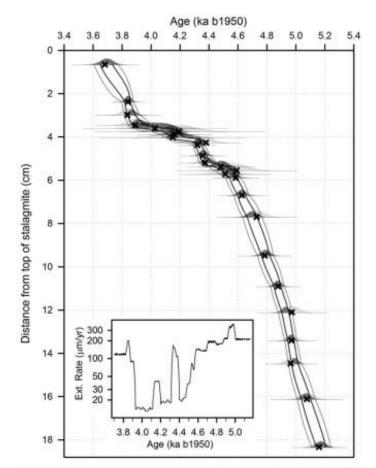


Fig. 3. GZ14-1 age v. depth plot with OxCal Poisson process deposition age model 68% (black) and 95% (dark gray) confidence ranges (30, 31). Original individual U-series samples' ages are plotted as black "x" shapes. Individual samples' modeled age distributions are shown in dark gray (68%) and light gray (95%). (*Inset*) GZ14-1's mean extension rate (micrometers per year), plotted as a 20-y moving average of the annually interpolated OxCal mean extension rate, is included as a subset.

The premise of the research was based on formation of stalagmites in ceilings of caves. These were formed due to the precipitation at the Earth's surface seeping through, and just like tree rings they started to grow year after year century after century. When they looked through these slices of stalagmites, researchers noticed a steep drop-off in its continuous growth curve. This is the dry season which you're seeing that they pegged back to this exact timeframe. Science meets ancient tales and myth.

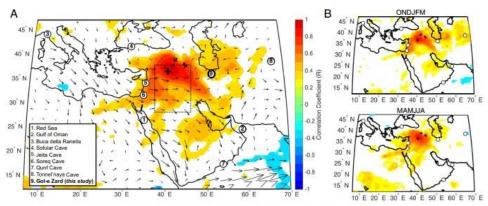


Fig. 1. Correlation maps of archeological site Tell Leilan (black "+") rainfall with European Centre for Medium-range Weather Forecasts Re-Analysis Interim (ERA-Interim) model forecast total precipitation (resolution -80 km) (41). White areas indicate areas where P > 0.10. The ERA-Interim model forecast tecord at (37⁺N, 41.5⁺E) was used to represent Tell Leilan rainfall. (A) Correlation map using annual precipitation records, constructed by calculating the 12-mo average of each year centered on winter, i.e., July 1979 to June 1980, July 1980 to June 1981, etc. (*B*) *Upper* uses only winter months October through March, and Lower uses only spring and summer months March through August, to create yearly records highlighting a particular second. At so shows the direction and the late of a severe dust of 450-mb-level winds from July 5, 2009, 12:00 GMT (41), an example time period of a severe dust event in Tehran, Iran, in which dust was sourced from the Mesopotamia region (25, 28). The locations of paleoclimate records discussed in the text are marked with circles; labels are provided in A. Source area of 92% of contributions of PM₁₀ (fine dust with particles smaller than 10 µm) in Tehran (50 km from location 9; this study) during 2009–2010 dusty episodes are shown by dotted boxed area in A (28).

Looking at how widespread it was, if this was to reoccur today, how much area will be affected by this dryness affect? If it would be a sudden onset as they said, continental periphery will be affected as well.

This onset of decreasing global temperatures, dust and dryness throughout amplified and persisted in Mesopotamia.



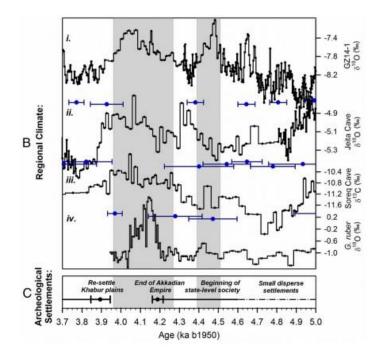
Oxygen isotopes suggest a period of drying, and the increased magnesium/calcium ratios suggest enhanced dust activity, suggestive of relatively arid climate conditions in Mesopotamia. The onset of the climate events appears to have been sudden, suggesting that climate conditions passed a threshold of aridity. According to the authors, the second event coincides with the abandonment of North Mesopotamian settlements, suggesting societal impacts of changing climates as well as the region's capacity to experience sudden century-scale dry events.



Iranian speleothems: Investigating Quaternary climate variability in semi-arid Western Asia

Here we present a synthesis of speleothem climate records across northern Iran, from the wetter climate of the Alborz and Zagros mountain ranges to the dry northeast, in order to investigate the magnitude of past climate variability and the forcings responsible. The stalagmites collected from the west and north-central mountain ranges, areas with ~200-400mm mean annual precipitation mostly falling within the fall-winter-spring months, all demonstrate growth limited to the interglacial periods of the Quaternary. We present overlapping Holocene stable isotope records with a complementary trace element record to assist in interpreting the isotopic variability. One of the records is sampled at <4yr resolution and spans 3.7-5.3 kyBP, a contested period of catastrophic droughts that allegedly eradicated civilizations in areas of the near East. Imposed upon decadal-scale variability, the record reveals a 1,000-yr gradual trend toward enriched stable oxygen isotope values, interpreted as a trend toward drier conditions, which ends with an abrupt 300-yr cessation in growth beginning at 4.3 kyBP, coincident with the so-called 4.2 kyBP drought event. From the northeast Iranian plateau, we present a new stalagmite record that spans the penultimate deglaciation and Stages 5e-5a. This region presently receives limited rain annually (~100-300mm/yr, regularly falling between November and May), and the record presented is one of the first speleothem climate records to span a deglaciation in West Asia.

Iran was also affected as catastrophic droughts that lasted for a thousand years hitting the area. That has a huge difference compared to a major drought, cities are abandoned at this level.



A timeline of the collapse of these prior civilizations, the decline wasn't actually at the apex of cooling, but it was the entry into and the onset of amplification in these same events. Just like we're seeing right now with the Eddy Grand Solar Minimum intensification.

PUBLIC RELEASE: 24-DEC-2018

Dust and social change in Mesopotamia

MAAAS

Oxygen isotopes suggest a period of drying, and the increased magnesium/calcium ratios suggest enhanced dust activity, suggestive of relatively arid climate conditions in Mesopotamia. The onset of the climate events appears to have been sudden, suggesting that climate conditions passed a threshold of aridity. According to the authors, the second event coincides with the abandonment of North Mesopotamian settlements, suggesting societal impacts of changing climates as well as the region's capacity to experience sudden century-scale dry events.

These events were not gradual, but a sudden onset.

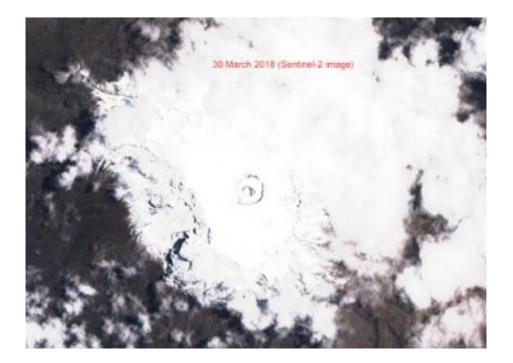
Kilimanjaro Ice Core Records: Evidence of Holocene Climate Change in Tropical Africa

Article (PDF Available) in Science 298(5593):589-93 · November 2002 with 296 Reads

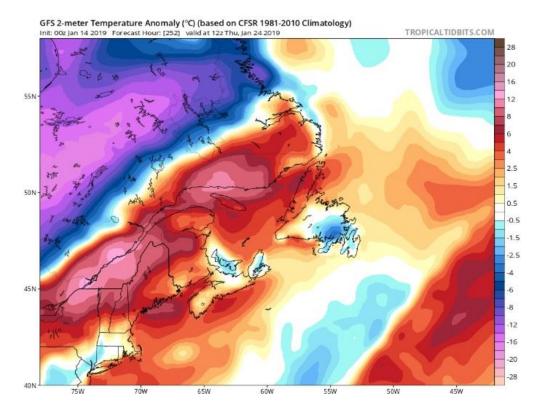
Six ice cores from Kilimanjaro provide an ~11.7-thousand-year record of Holocene climate and environmental variability for eastern equatorial Africa, including three periods of abrupt climate change: ~8.3, ~5.2, and ~4 thousand years ago (ka). The latter is coincident with the "First Dark Age," the period of the greatest historically recorded drought in tropical Africa. Variable deposition of F– and Na+during the African Humid Period suggests rapidly fluctuating lake levels between ~11.7 and 4 ka. Over the 20th century, the areal extent of Kilimanjaro's ice fields has decreased ~80%, and if current climatological conditions persist, the remaining ice fields are likely to disappear between 2015 and 2020.

Kilimanjaro Ice Core records also reported an indication of the same drop in precipitation. "Three periods of abrupt climate change were observed 8300 years ago, 5,200 years ago and then 4,000 years ago". As for me, that was the same event 4,200 years ago. These events are occurring routinely through our recent past but nobody wants to talk about the fact that we're entering into another abrupt climate change event due to the Grand Solar Minimum.

Notice the last sentence where it says, Kilimanjaro's ice fields have decreased 80% and if the current trend continues they should be ice-free by 2015 to 2020. These are the experts, but snow pack is now increasing as of 2019, opposite of predictions.

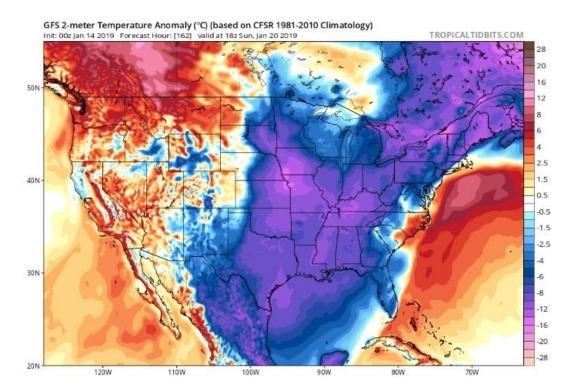


We are now in 2019, and they still had an enormous amount of snow last year which was said to be the most snow that this area of Africa had in decades. That is an entirely different story, I did a video on this earlier which I linked at the end of the article so you can go right to it, The Glacier Studies Program.



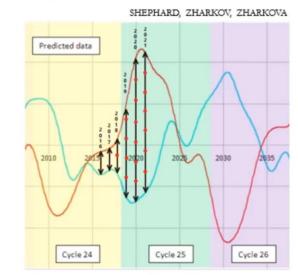
Meanwhile, when you talk about abrupt climate change you're looking at jet streams going out of flow due to a decreasing magnetosphere as solar output declines.

This is exactly what you're going to expect, extreme heat and extreme cold on one side as jet streams compete to find new routes in the atmosphere.



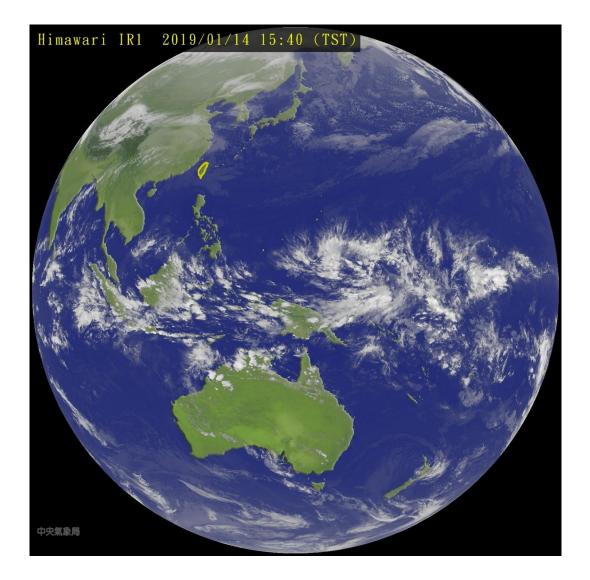
This is why we are seeing this extreme cold and Arctic vortex pushing down through Cuba and down to the Caribbean. Also, heat that's up in Canada is ridiculous, this should be 500 to 1000 miles further south latitude.

The shift of our global weather patterns are set to amplify 2x from July-Dec 2017, and from 2018-2019 a 4x shift, with another jump up as the spread widens to 6x in 2019. (I explain this in detail on pages 38-41)

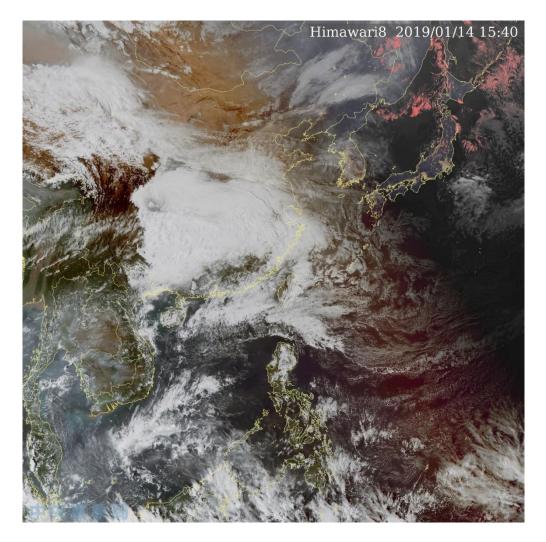


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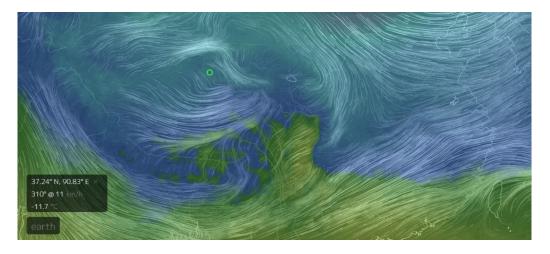
Jet streams are so mixed up that when you say it's hot where you're at, you're not getting any winter at all and it's really unusual, that is because you're living the "GSM".



Over to West Asia, let's look through the Climate Information Today in central China there is this some cyclonic spinning. Taiwan is highlighted in yellow.



Cyclonic spin seen in HIMAWARI8 cloud layer maps. Even **nullschool** has wind looking unusual, sort of like an eye.



Thanks for reading, I hope you got something out of the article. If you like more information like this I produce the tri-weekly Mini Ice Age Conversations podcast, 30 minutes of in depth analysis on the GSM you can take on the go.

Mini Ice Age Conversations Podcast

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(MIAC #182) Putting the Blinders on and Creating a Distraction for Global Events

http://adapt2030.libsyn.com/miac-182-putting-the-blinders-on-andcreating-a-distraction-for-global-events

For the bi-weekly Grand Solar Minimum climate update newsletter from myself, David DuByne, (ADAPT 2030) jump over to oilseedcrops.org you can enter your email and sign up. Move your mouse around for about 10 seconds and this box will pop up.

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http://www.ifa.hawaii.edu/users/joseph/1.%20Babylonians.pdf

Holocene https://ucmp.berkeley.edu/quaternary/holocene.php

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https://www.iflscience.com/environment/a-stalagmite-may-have-justrevealed-what-caused-the-fall-of-a-mesopotamian-empire/

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https://www.researchgate.net/publication/301684218 Iranian speleothem s Investigating Quaternary climate variability in semiarid Western Asia https://openpdf.com/ebook/precise-timing-of-abrupt-increase-in-dustactivity-in-the-middle-east-coincident-with-4-2-ka-social-change-pdf.html

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https://www.researchgate.net/publication/11075718_Kilimanjaro_Ice_Cor e_Records_Evidence_of_Holocene_Climate_Change_in_Tropical_Africa

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https://glacierhub.org/2018/04/04/greatest-snowfall-on-kilimanjaroglaciers-in-years/

https://www.iceagenow.info/looks-like-glaciers-are-growing-on-mountkilimanjaro/

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