

# Tonga Volcano & Global Warming



by John Shewchuk

Hunga Tonga

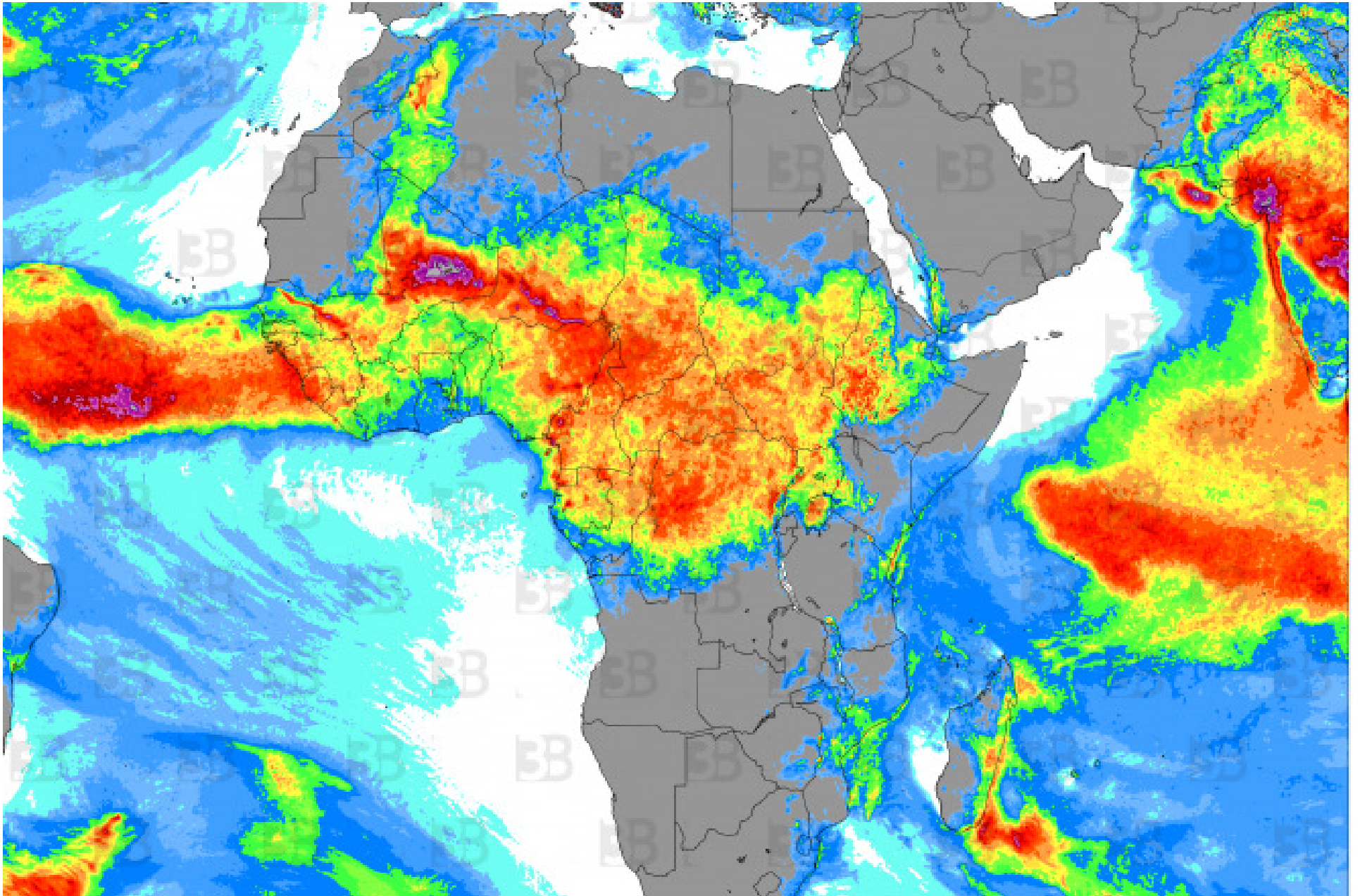
Hiroshima







# Monsoon-like rains in the Sahara desert.



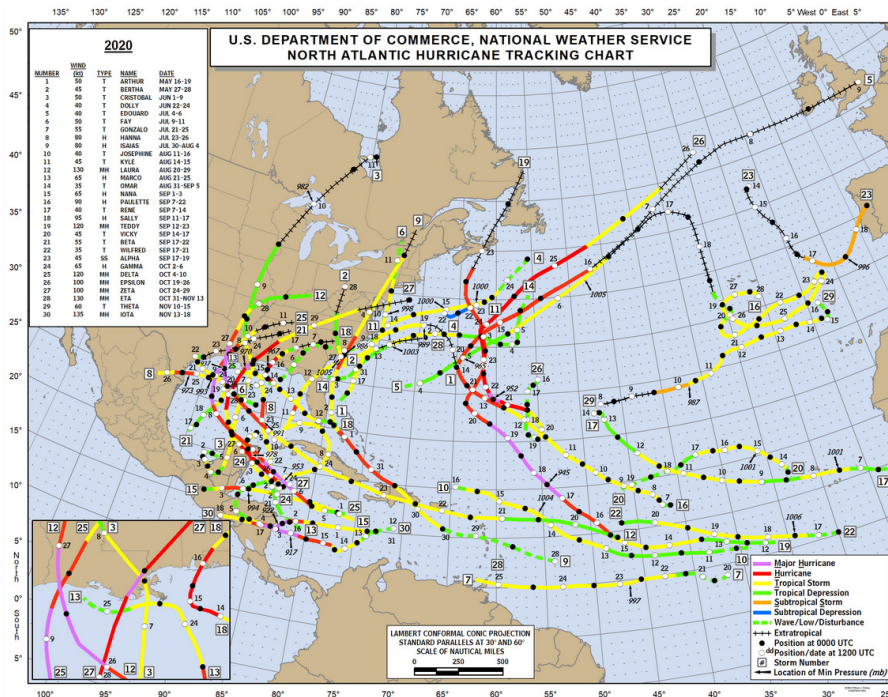


# Number of named storms by Sep 6.

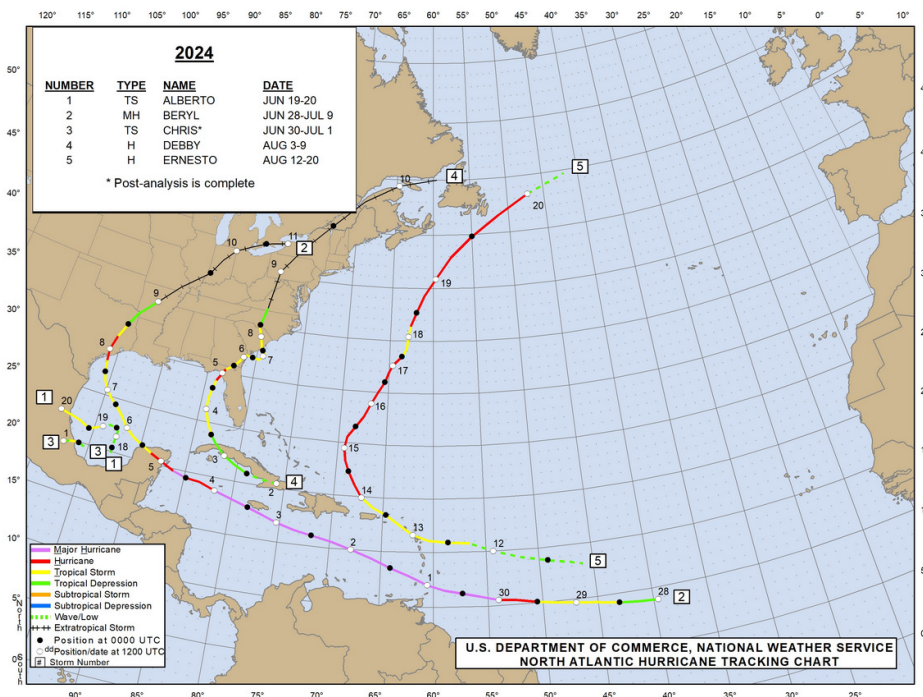
2020 had 15 named storms

2024 had 5 named storms.

2020



2024



**John Shewchuk (meteorologist since age 14).**

**B.S. Penn State, PA.**

**M.S. Naval Postgraduate School, CA.**

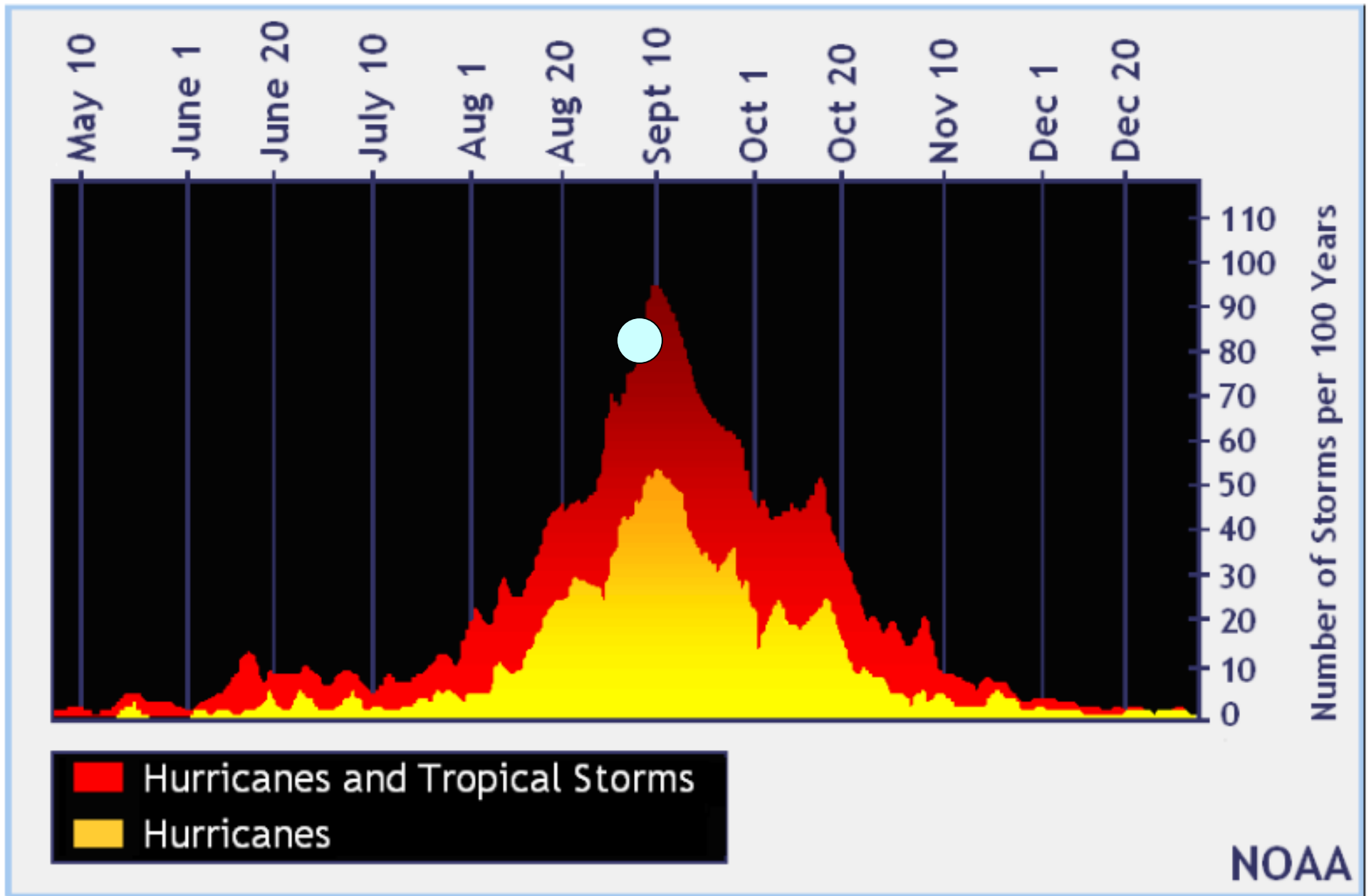
**Thesis: hurricane computer modeling.**

- Certified Consulting Meteorologist (CCM).**
  - Board certified by the Am. Meteo. Society.**
  - Annually mentor 2 meteorology students.**
- Lt Col, U.S. Air Force, Retired (22 years).**
  - U.S. Air Force “Forecaster of Year” 1979.**
- Founder of the Villages Weather Club.**



**This “Tonga Talk” will be repeated  
Oct 10 at 2 PM at Lake Miona  
for the SKILL Club.**

# Hurricane Season: June - November







# Two-Day Graphical Tropical Weather Outlook

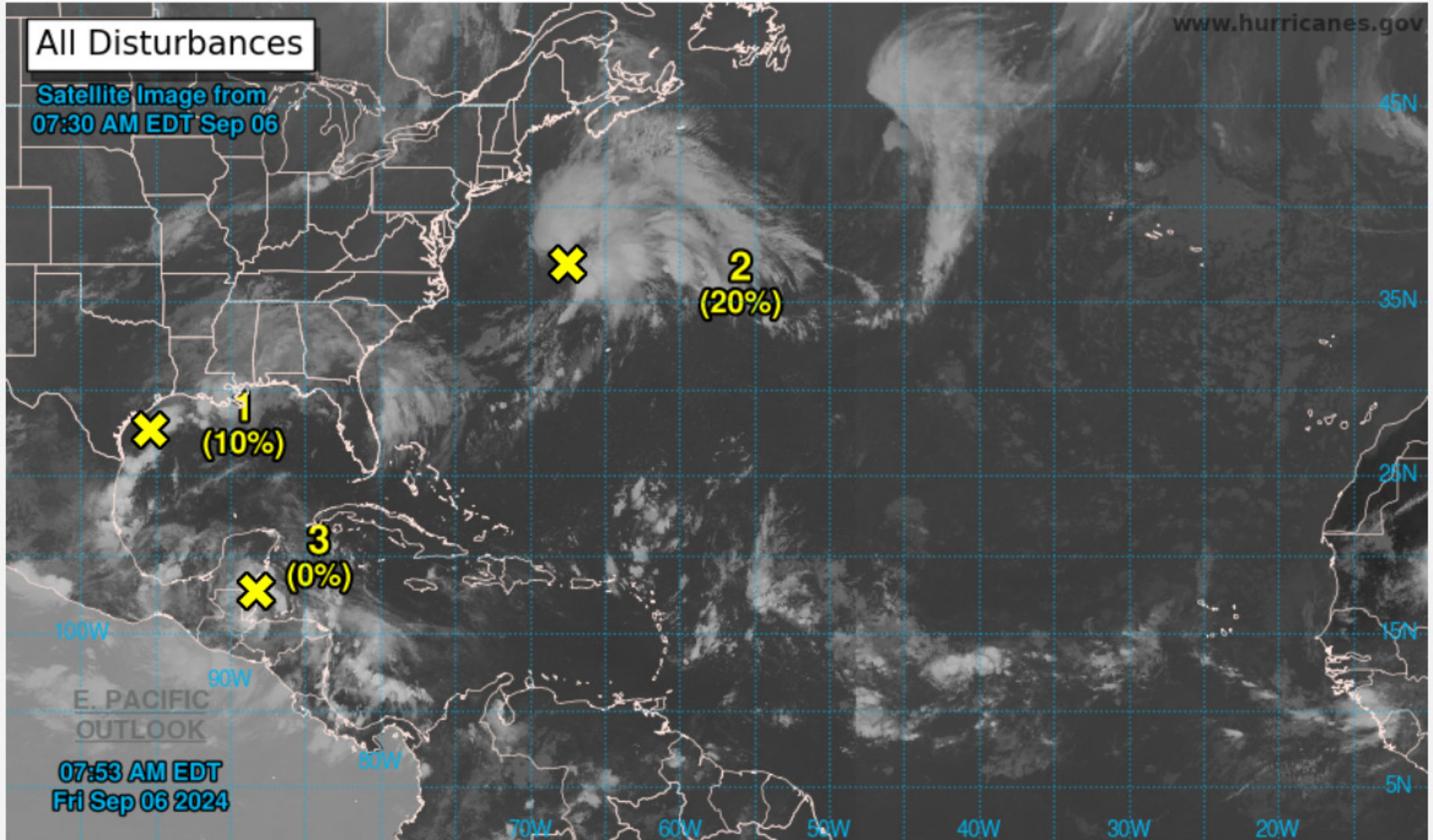
National Hurricane Center Miami, Florida



www.hurricanes.gov

All Disturbances

Satellite Image from  
07:30 AM EDT Sep 06



07:53 AM EDT  
Fri Sep 06 2024

Current Disturbances and Two-Day Cyclone Formation Chance: < 40% 40-60% > 60%

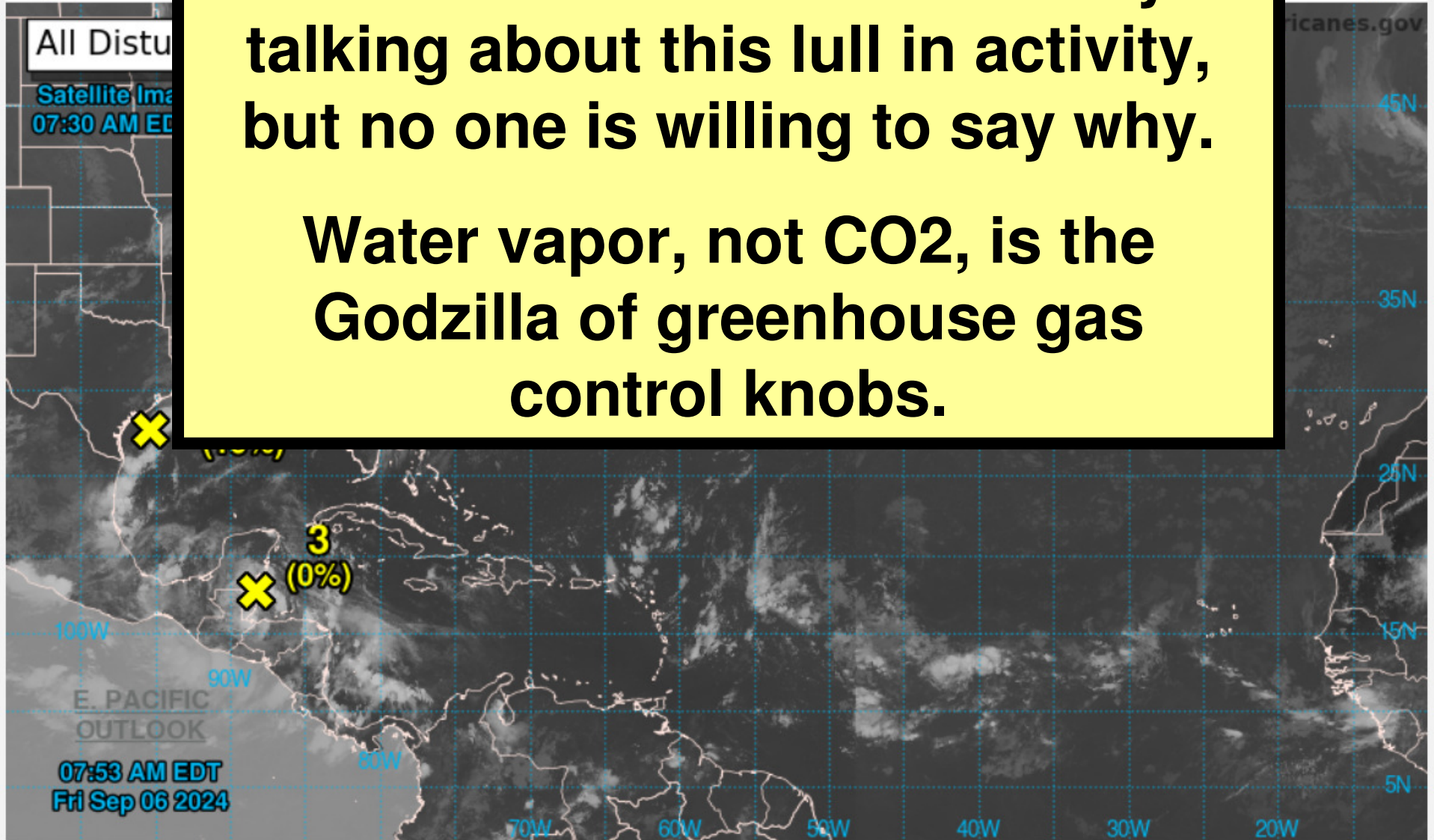
Tropical or Sub-Tropical Cyclone: Depression Storm Hurricane

Post-Tropical Cyclone or Remnants



The entire scientific community is talking about this lull in activity, but no one is willing to say why.

Water vapor, not CO2, is the Godzilla of greenhouse gas control knobs.

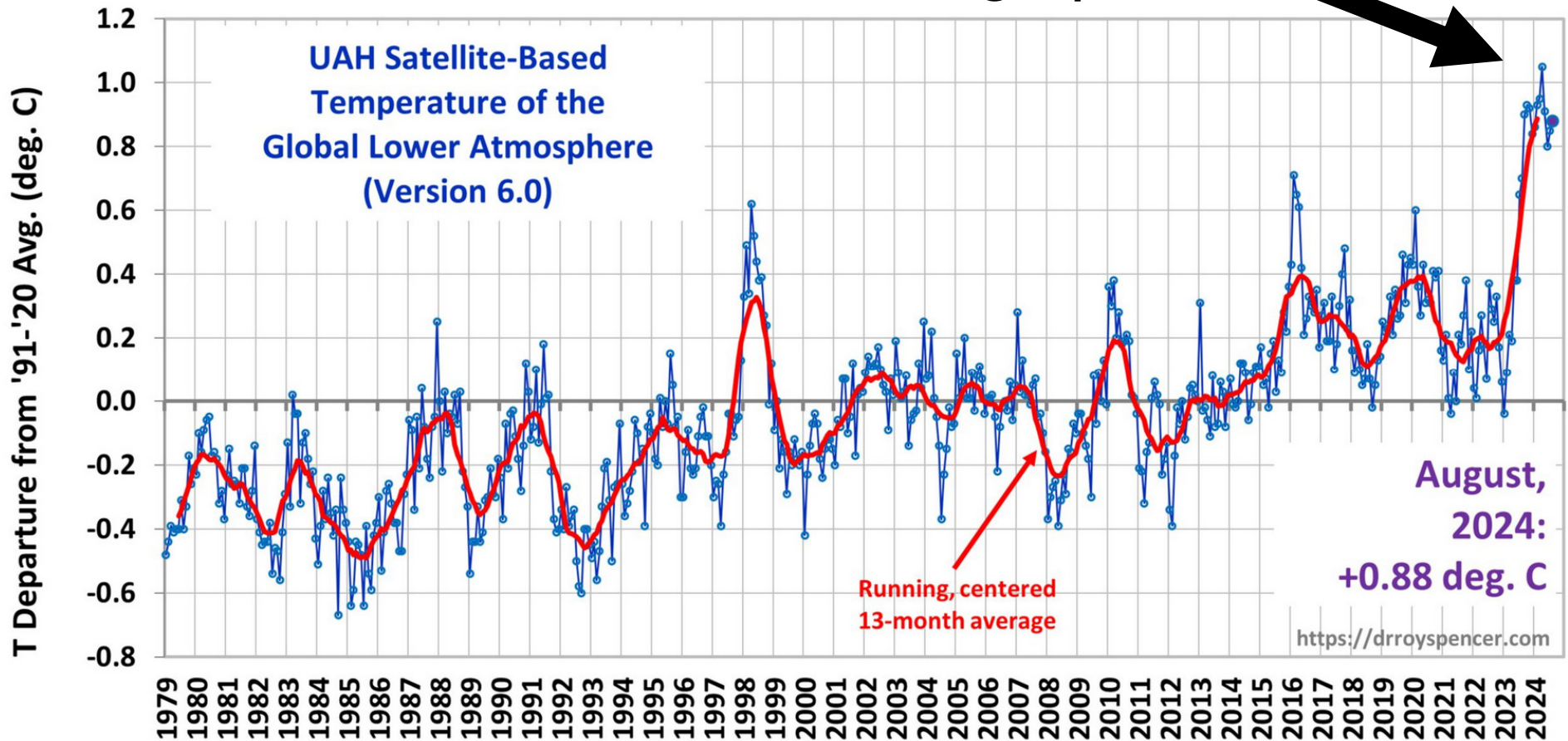


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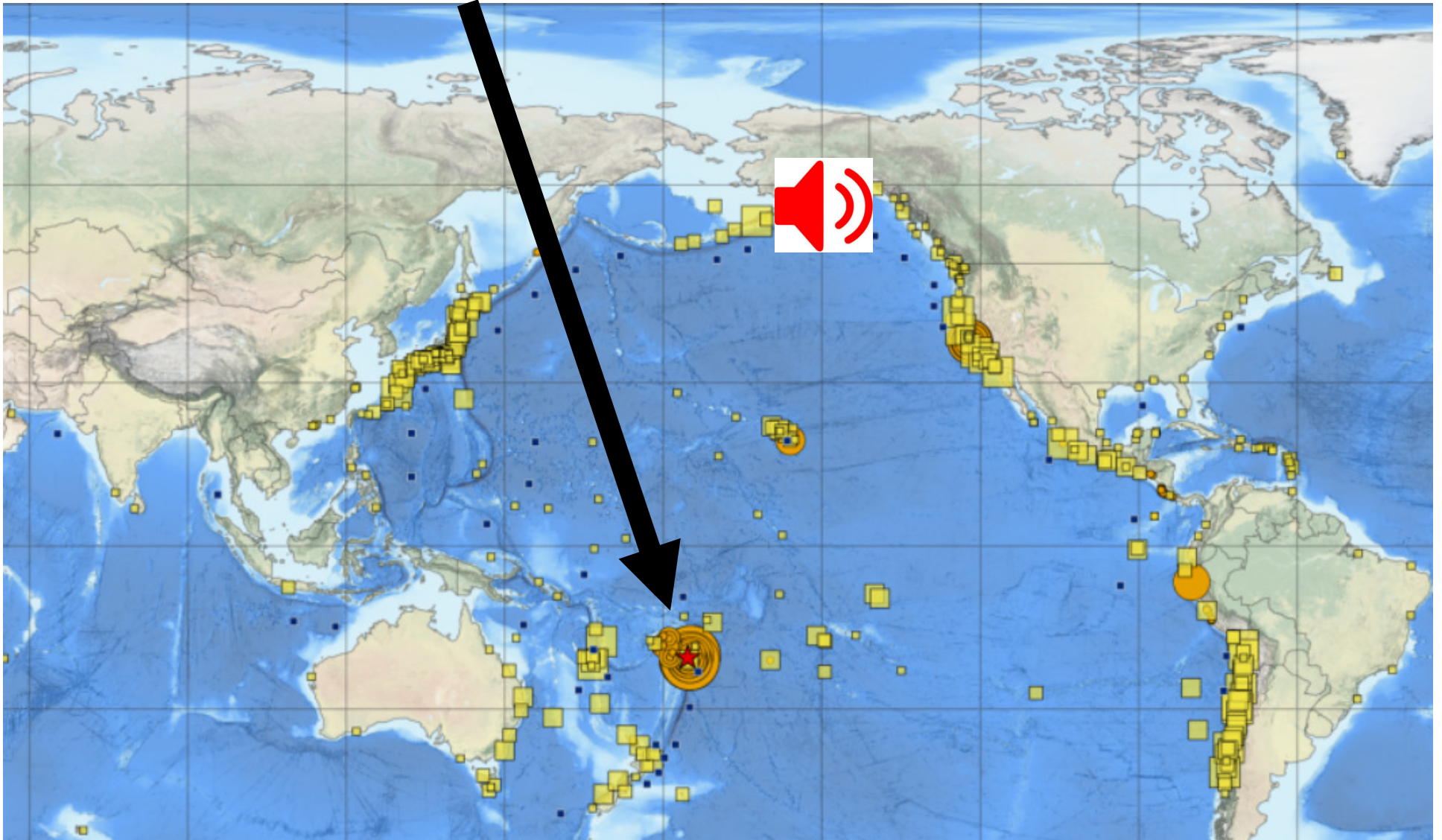


Tonga, 2022, vaporized 40 billion gallons of water into the stratosphere and now causes huge global warming spike.



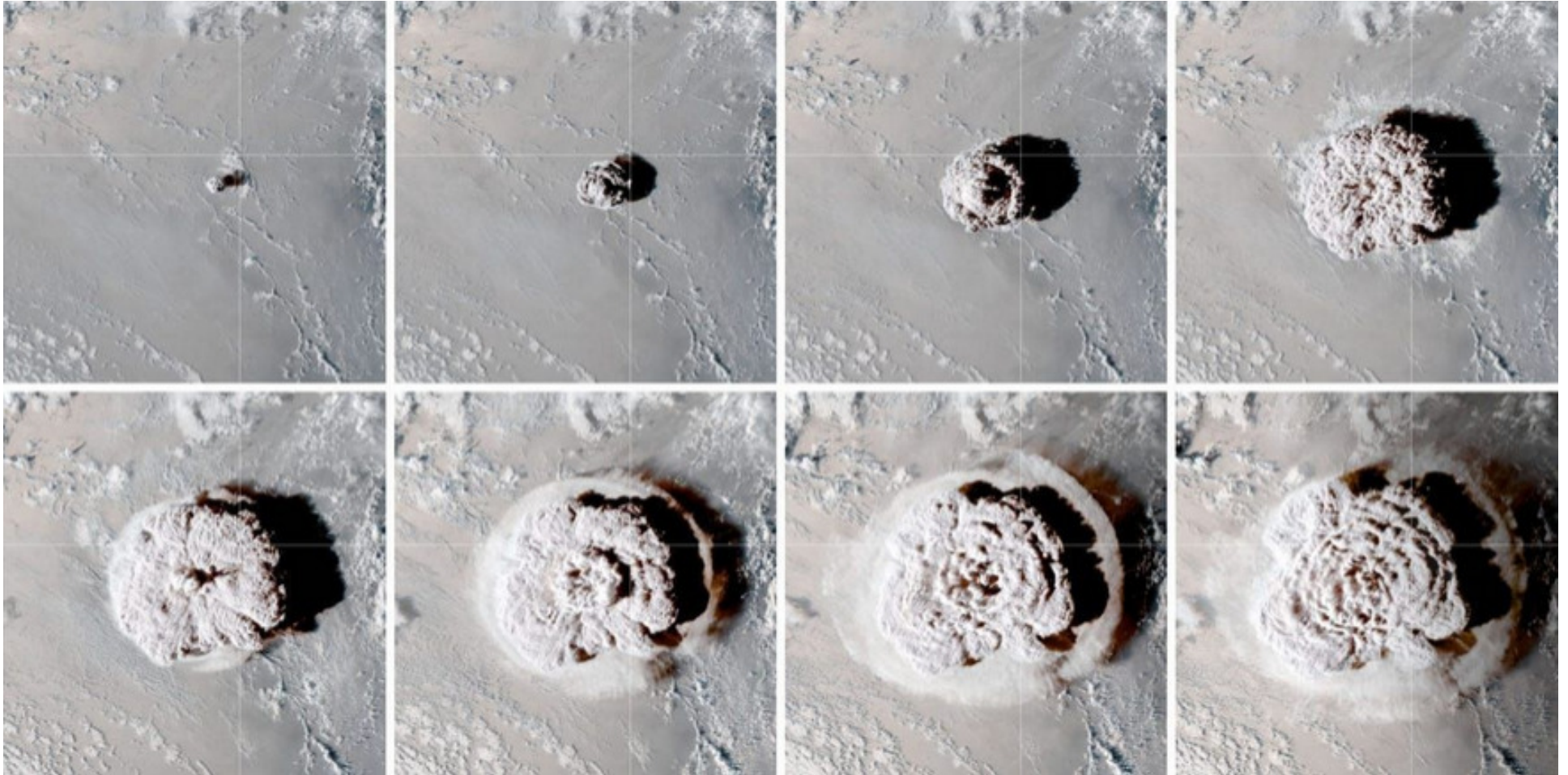


# Tonga – January 15, 2022.



**Shock wave traveled around the world – twice.**

# Tonga Volcano: 30-second video.

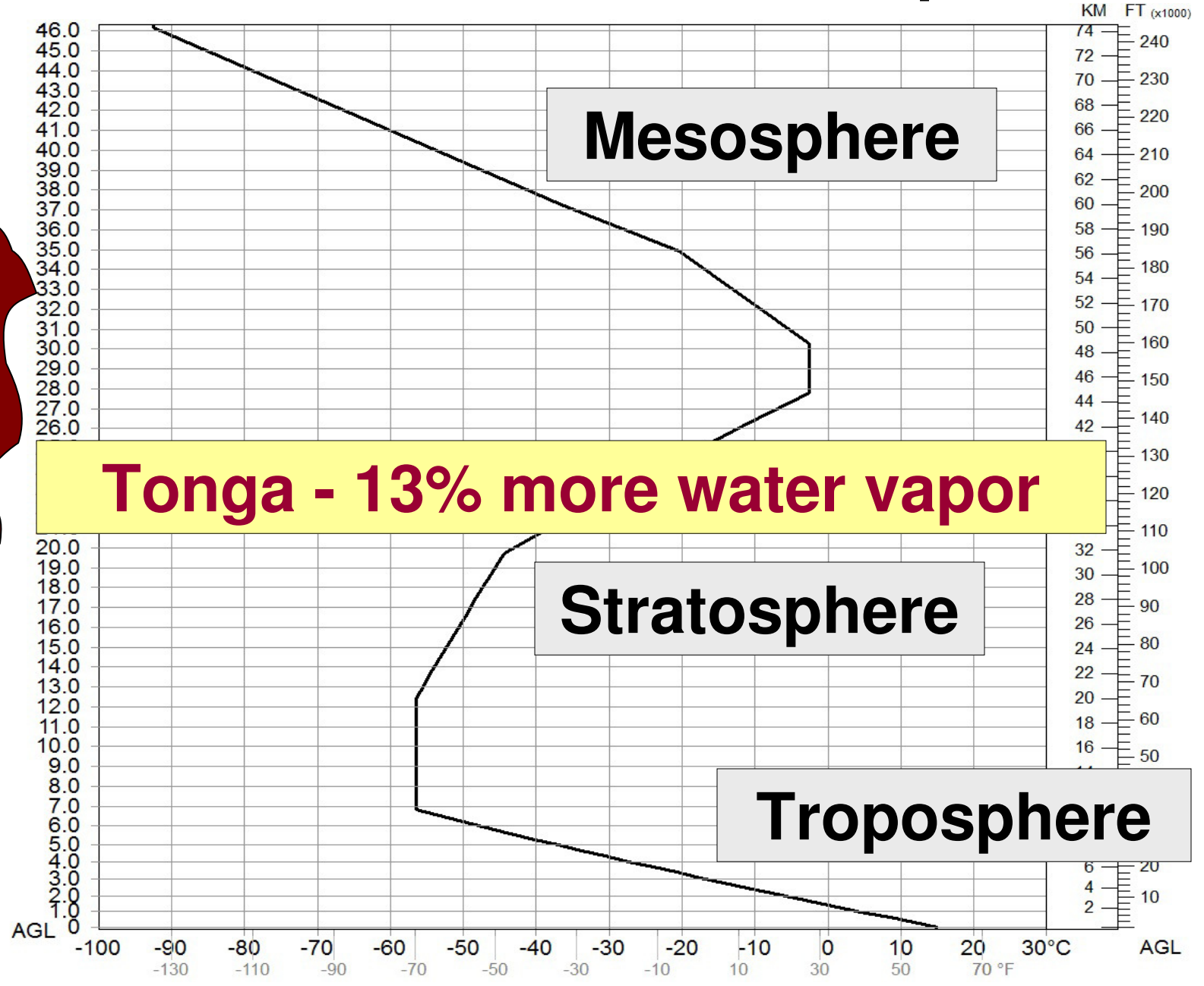
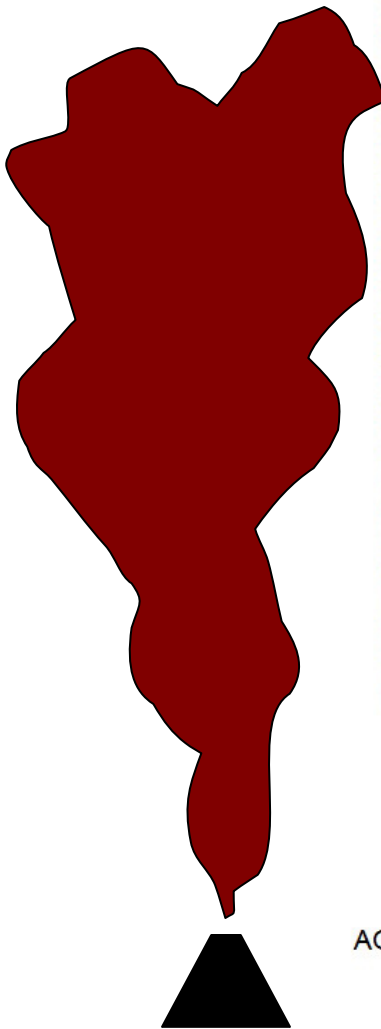


**Pre-eruption: 500 ft deep, 2 mi wide.**



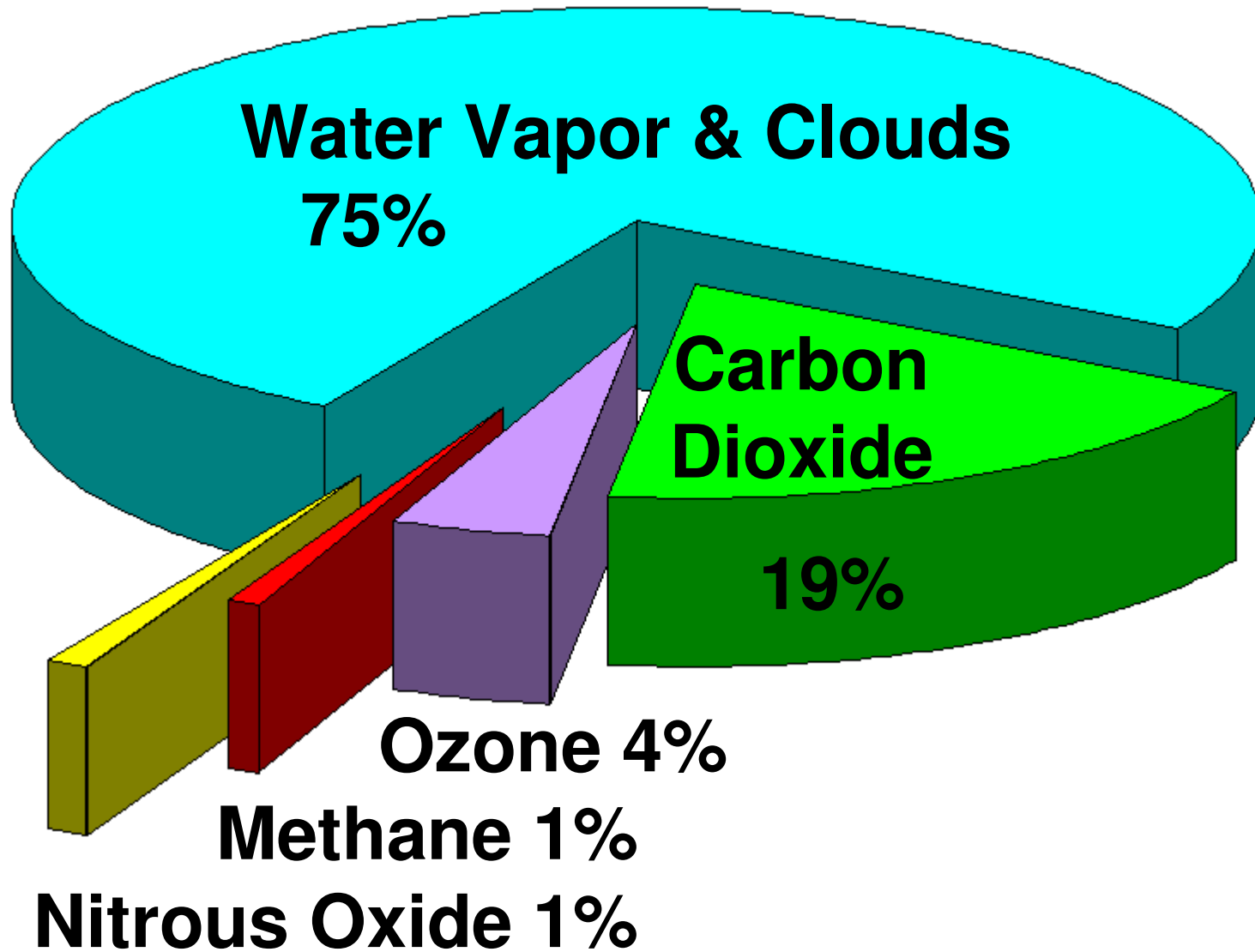
# 1976 U.S. Standard Atmosphere

miles

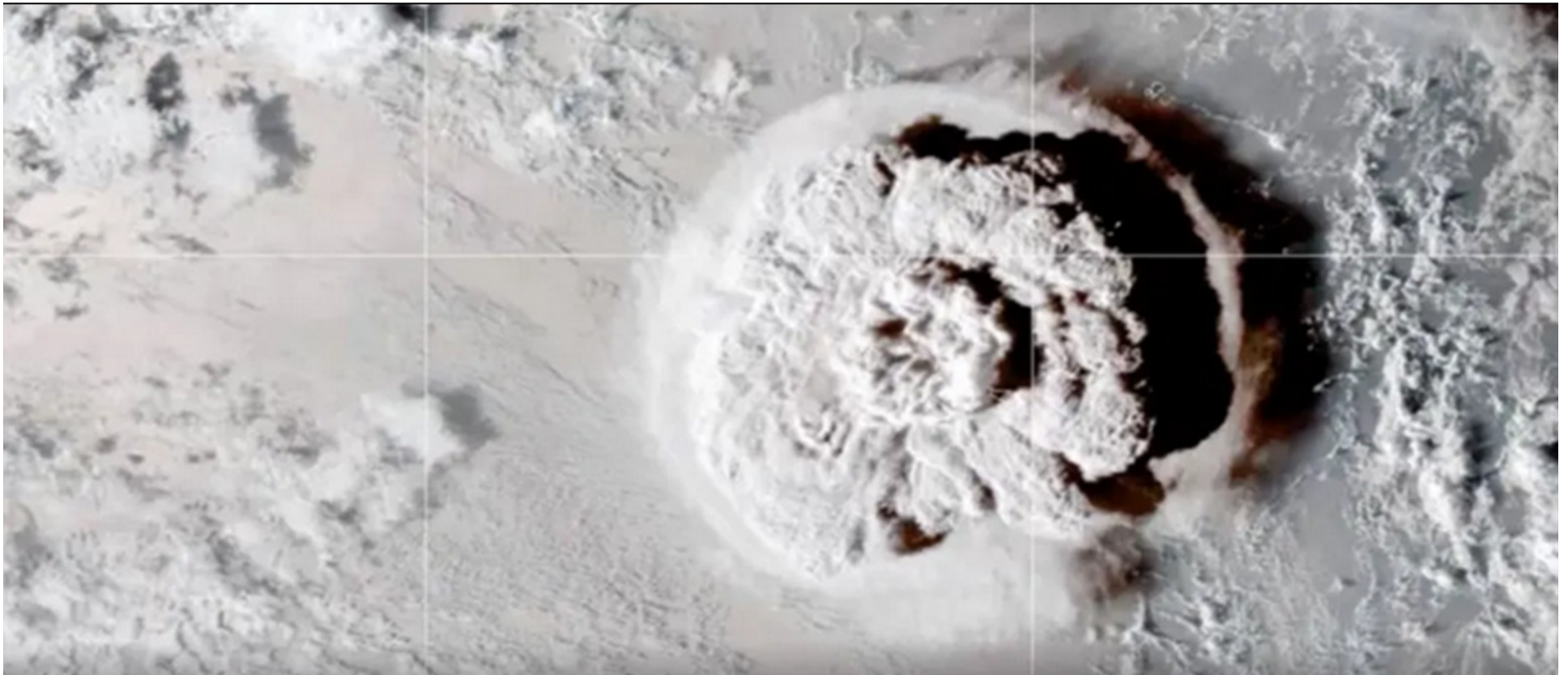




# Greenhouse Gas Effect

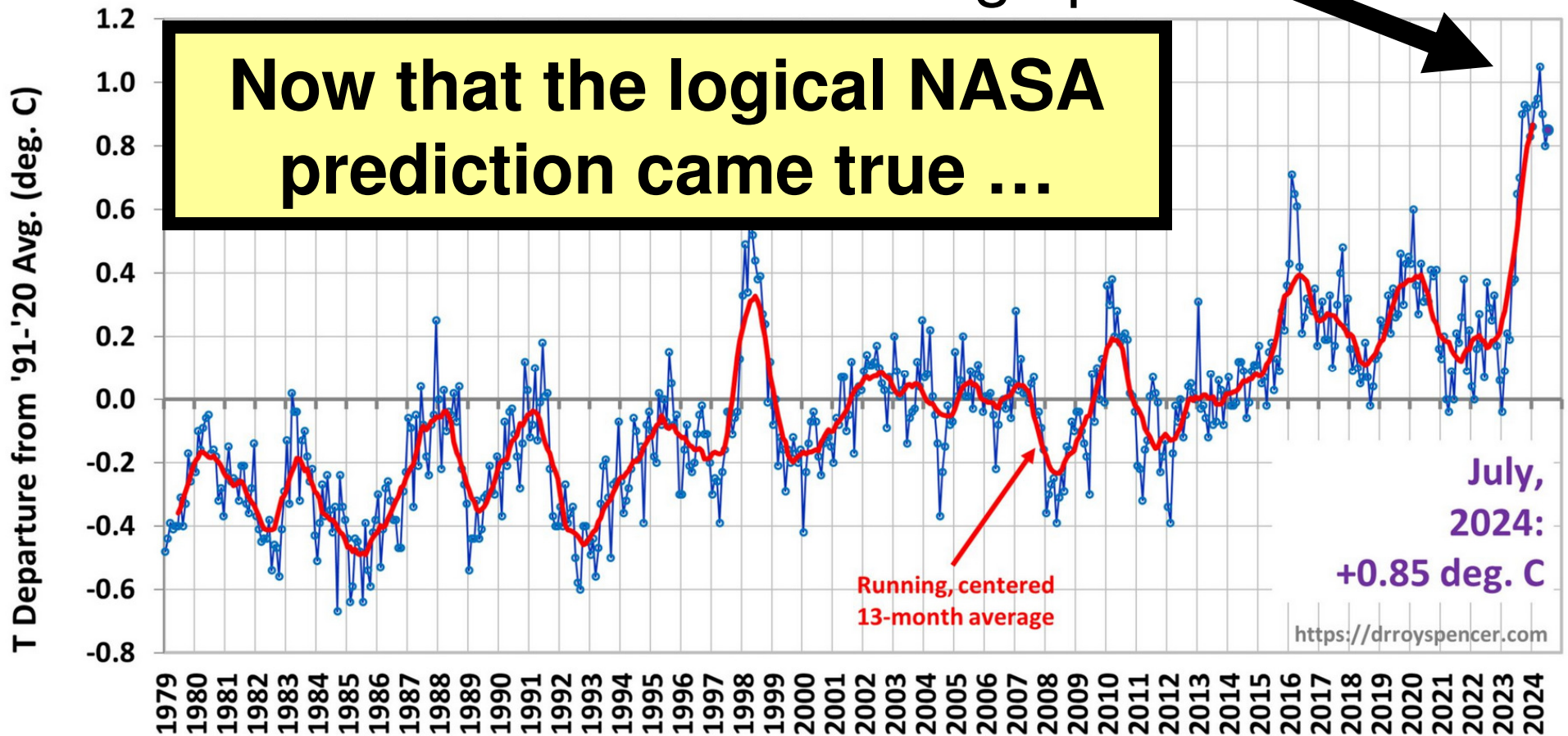


**Tonga - submarine volcano: Jan. 15, 2022.  
Instantly vaporized 40 billion gallons of water  
high into the stratosphere. Water vapor is  
Earth's primary greenhouse gas. NASA said  
it could cause temporary global warming.**





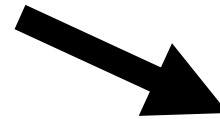
Tonga, 2022, vaporized 40 billion gallons of water into the stratosphere and now causes huge global warming spike.



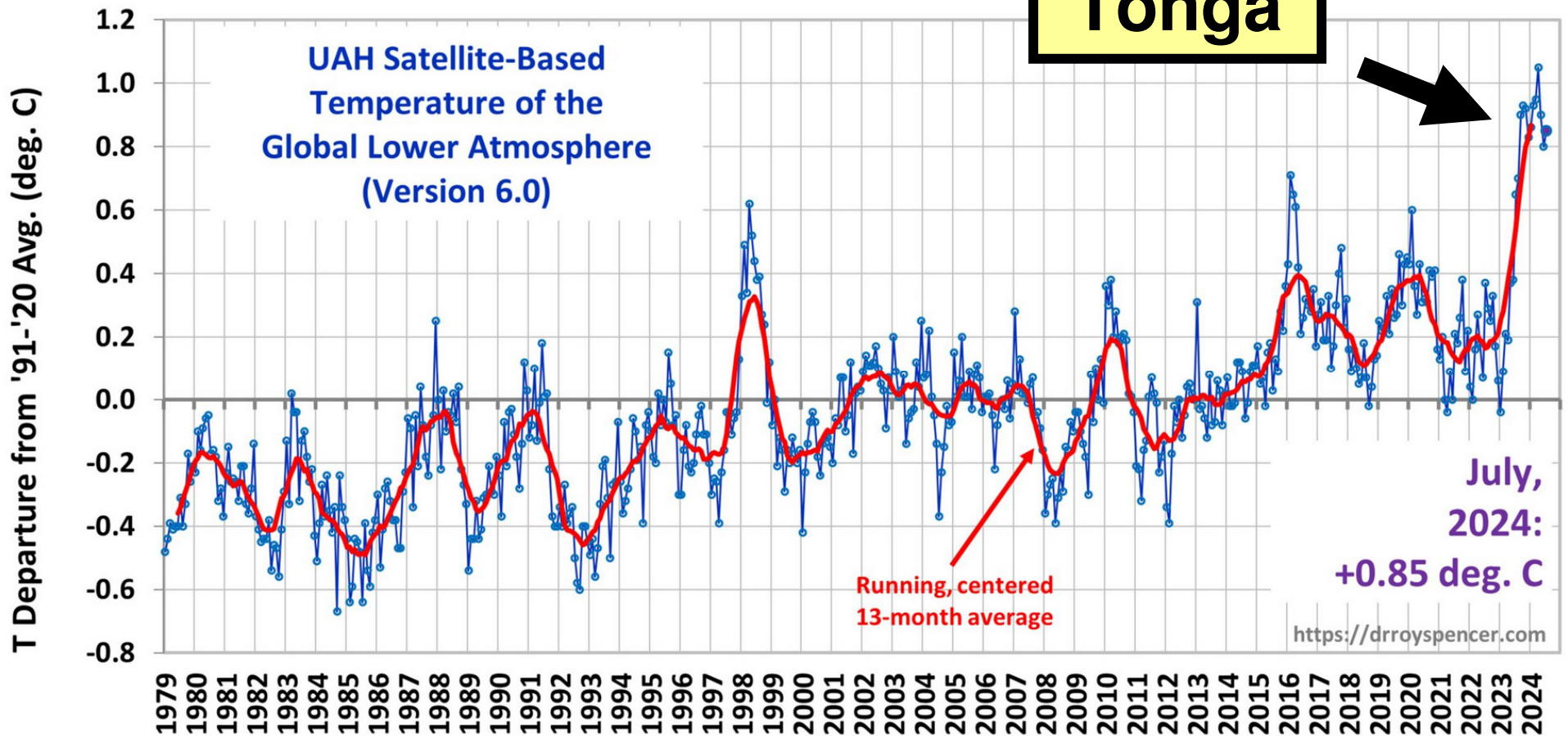


# JGR Atmospheres (7/24/24)

“The Hunga eruption cooled the climate.”

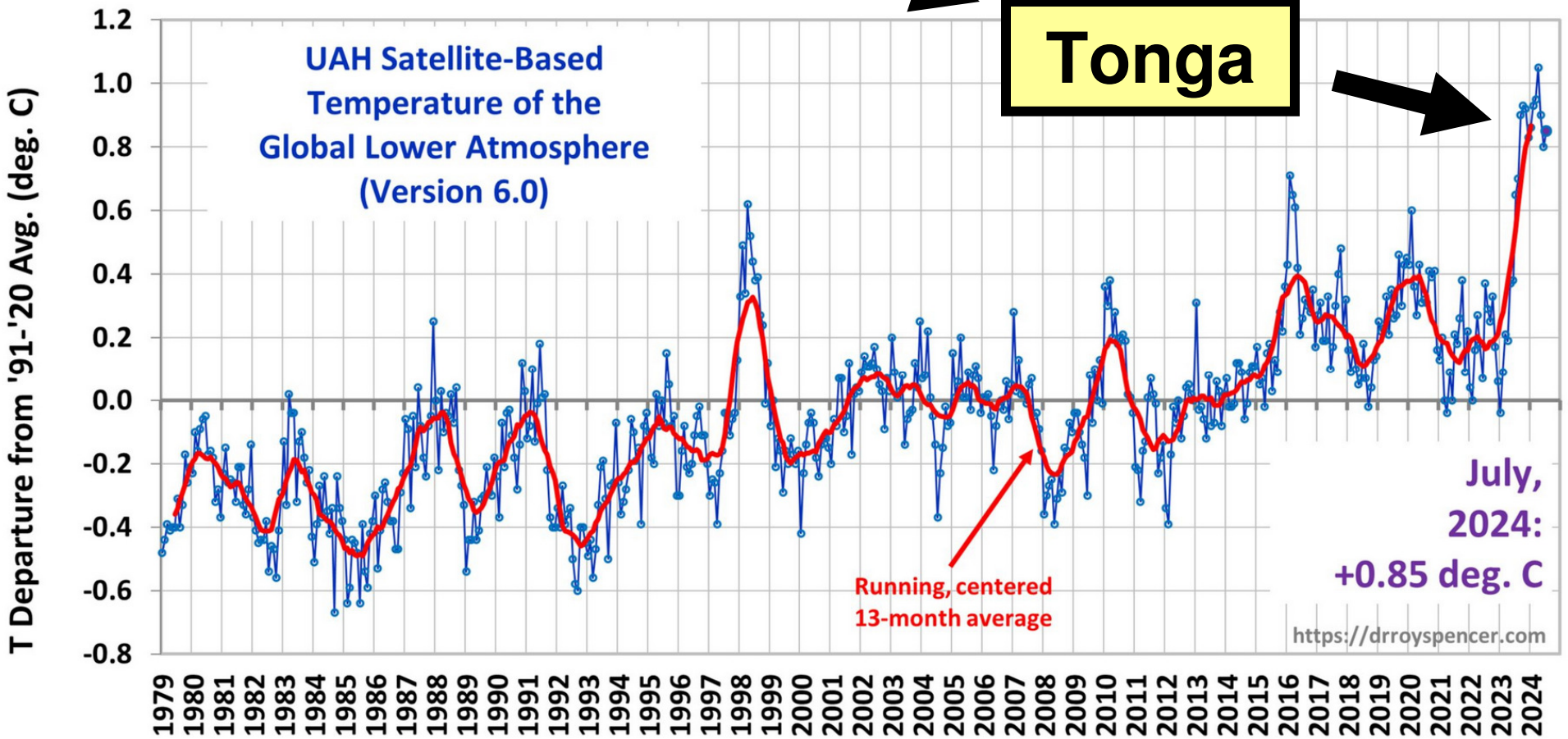


**Tonga**



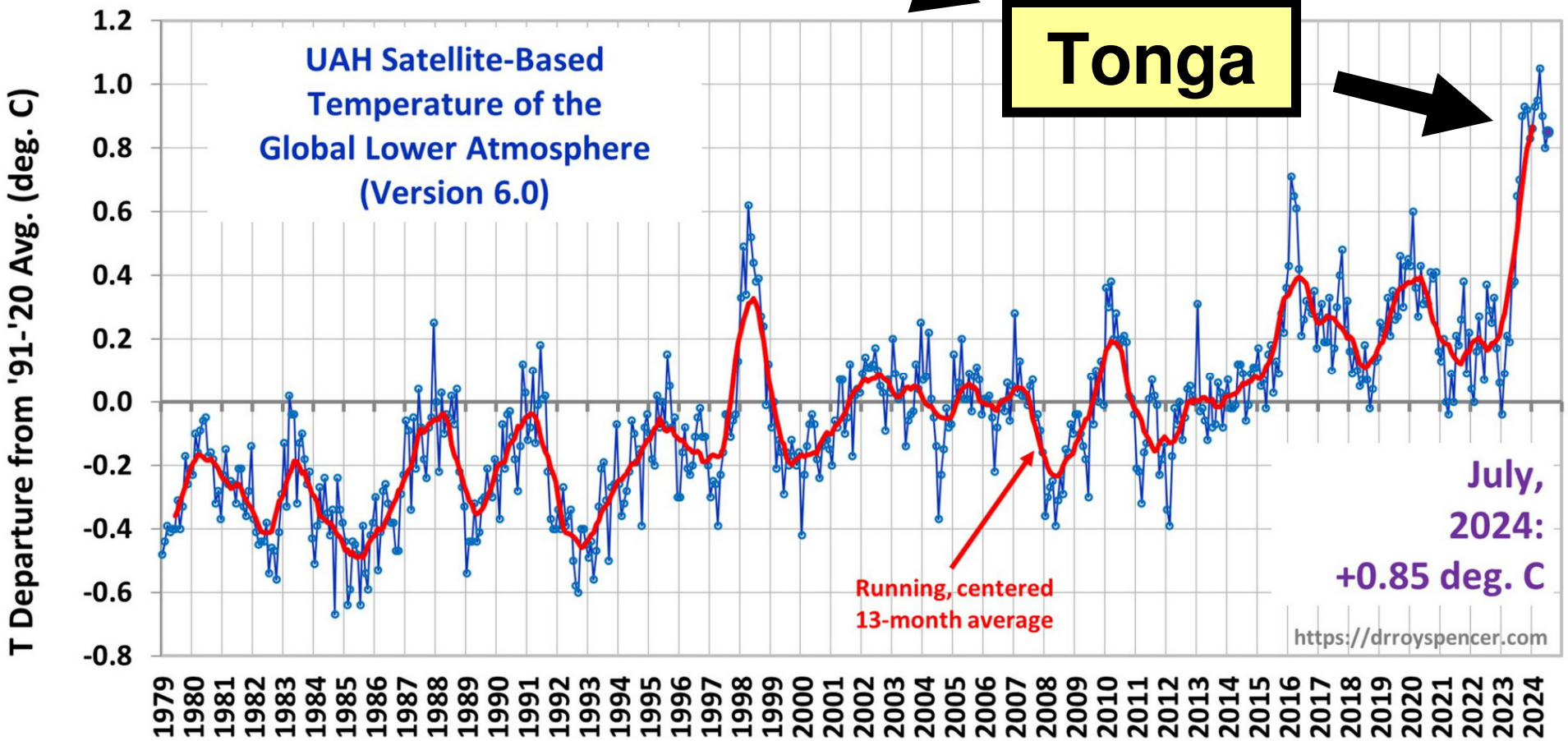
# Texas A&M Today (7/26/24)

“The eruption actually contributed to cooling the Earth.”



# Technology Networks (7/29/24)

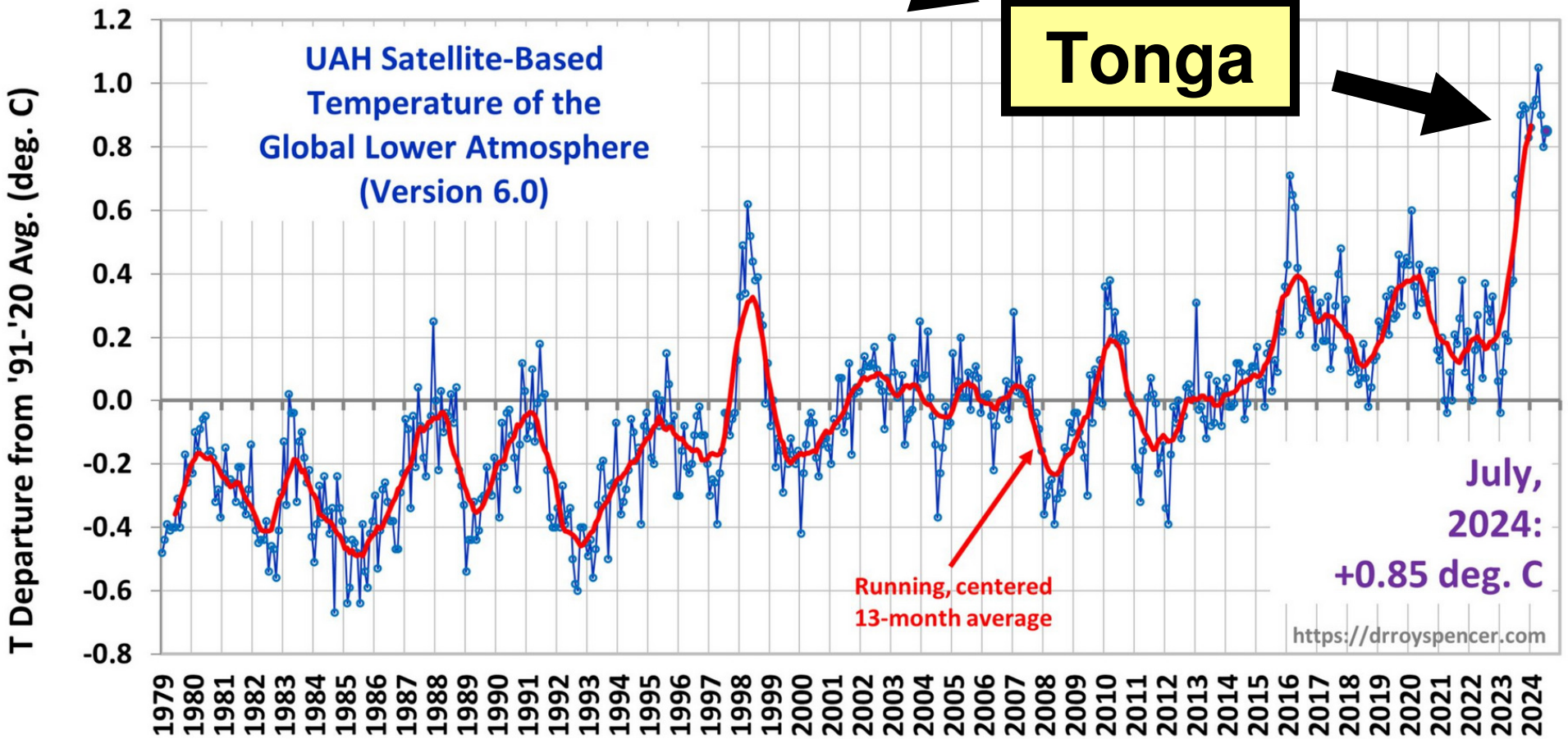
“The eruption actually contributed to cooling the Earth.”





# PHYS.ORG (7/26/24)

“The eruption actually contributed to cooling the Earth.”

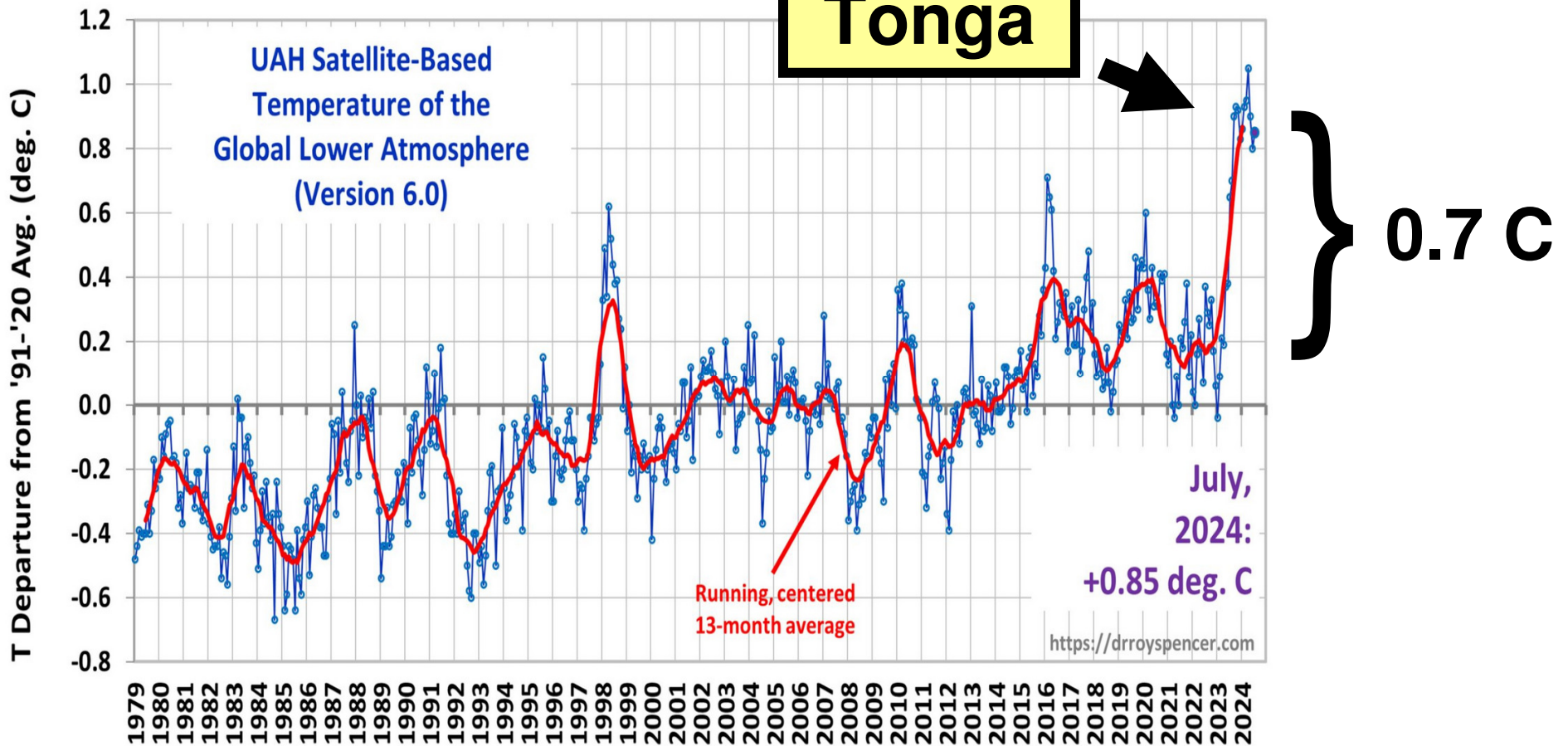


# The Conversation (5/29/24)

“The impact of Hunga Tonga is very small, only about 0.015 degrees Celsius.”

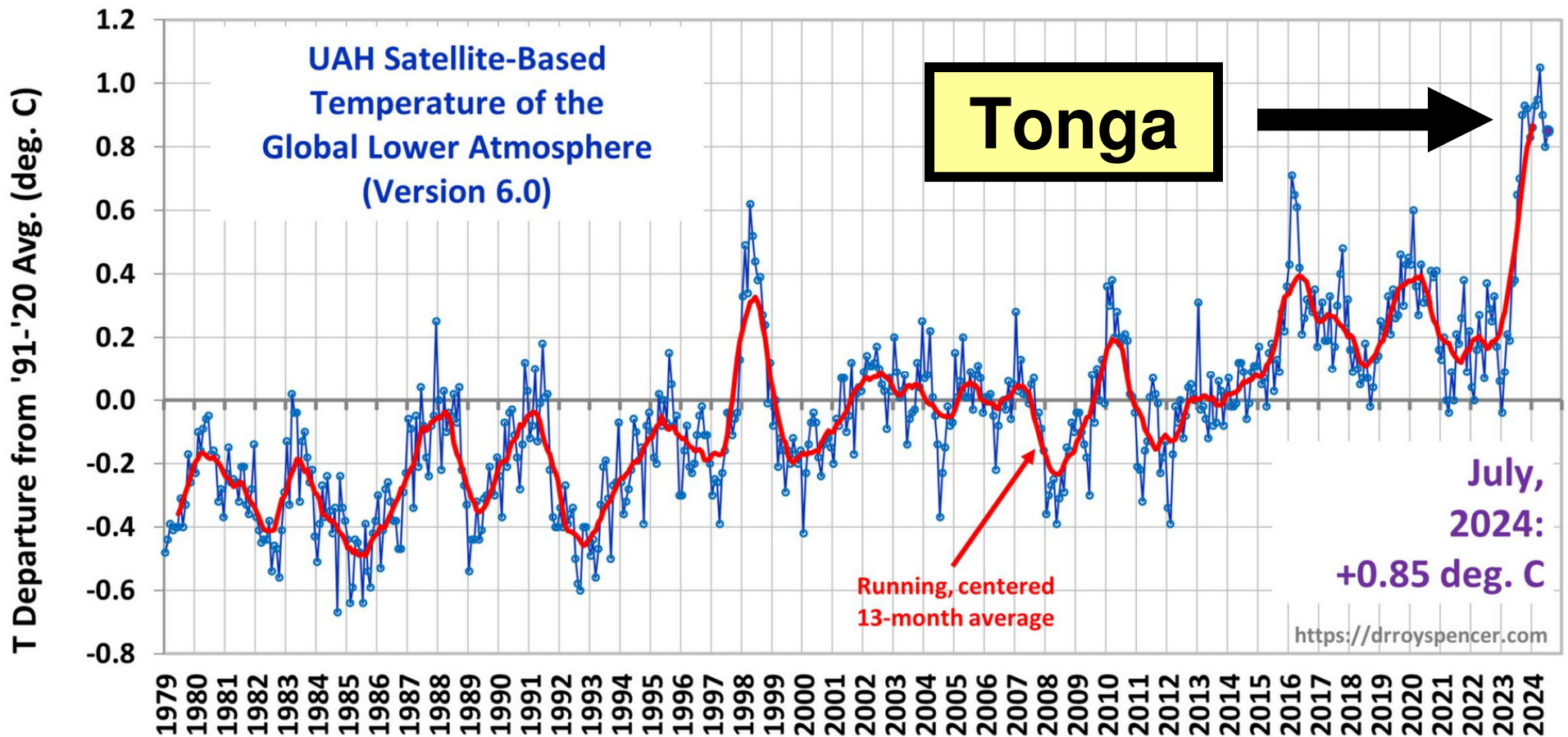


**Tonga**





Videos of the Tonga eruption don't even show the smoking-gun temperature graph.





**All attempts to discredit Tonga's global warming power fail the data test.**

**Volcanoes cool – not warm**

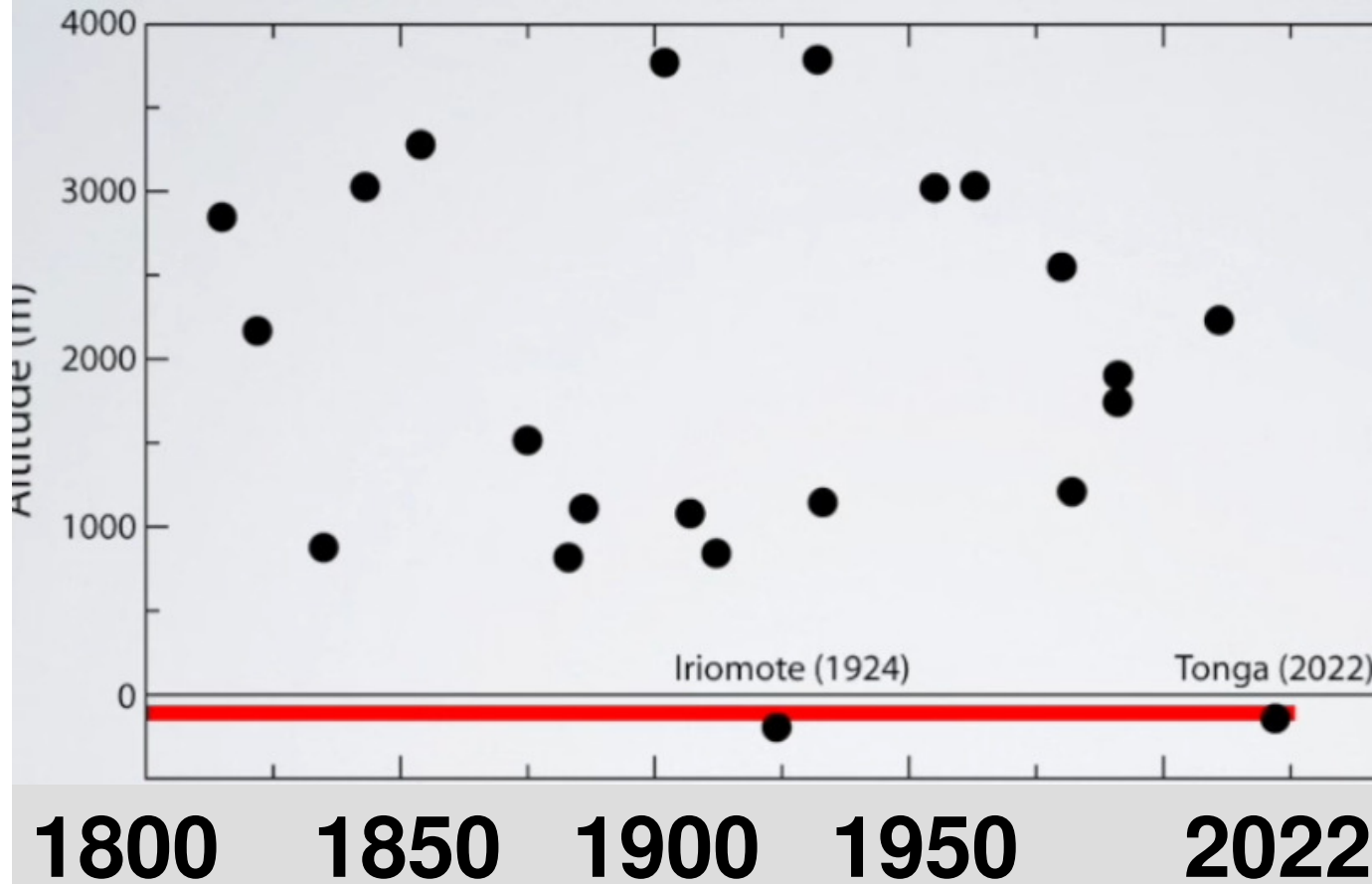
**Water freezes at high altitudes**

**CO2 ejection**

**Sunspots**

**El Nino**

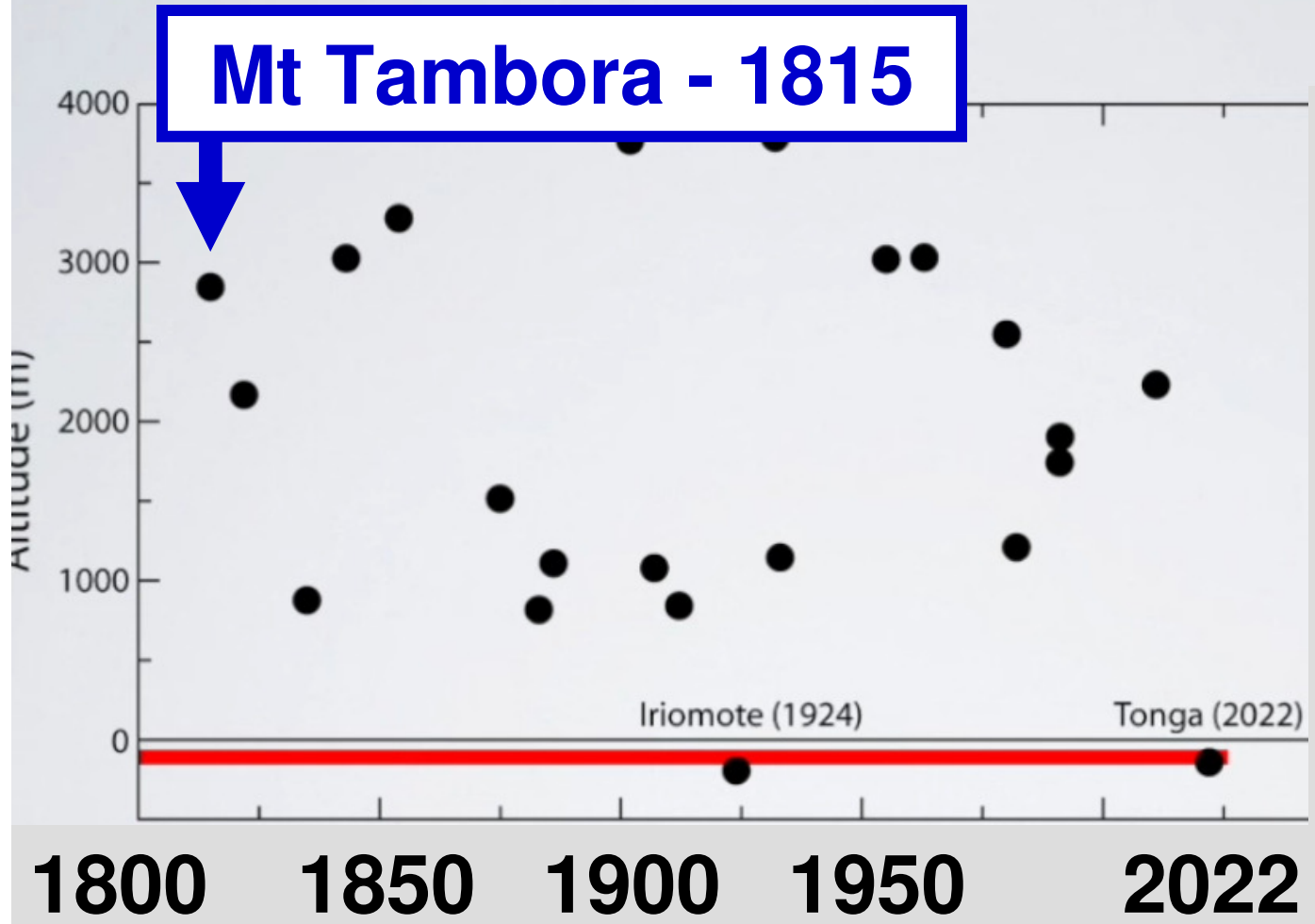
# Cone elevation of VEI $\geq 5$ eruptions since 1800



**These  
Cool**

**These  
Warm**

# Cone elevation of VEI $\geq 5$ eruptions since 1800



**Mt Tambora - 1815**

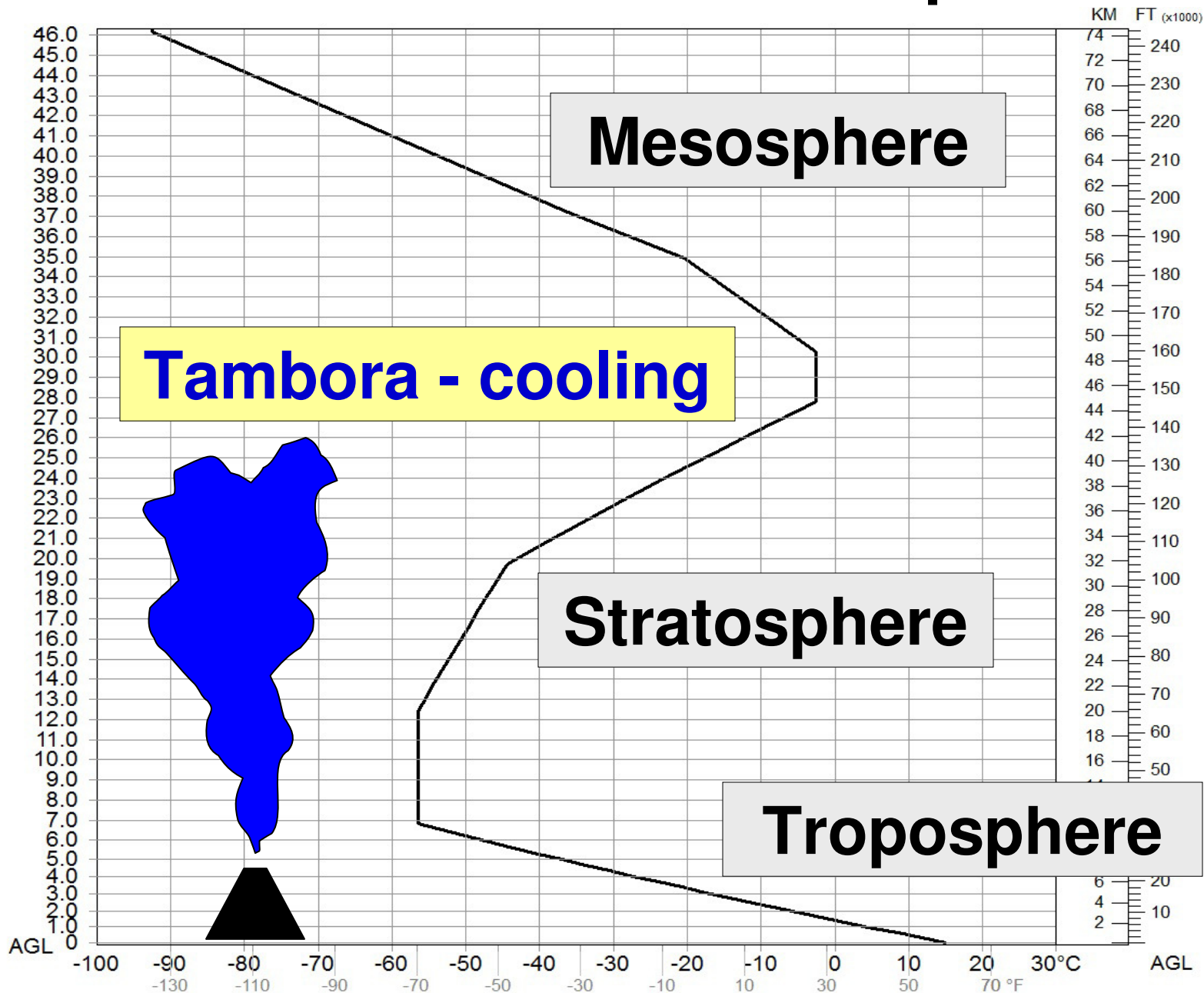
**These Cool**

**These Warm**



# 1976 U.S. Standard Atmosphere

miles



**The year without a summer was 1 year after eruption**

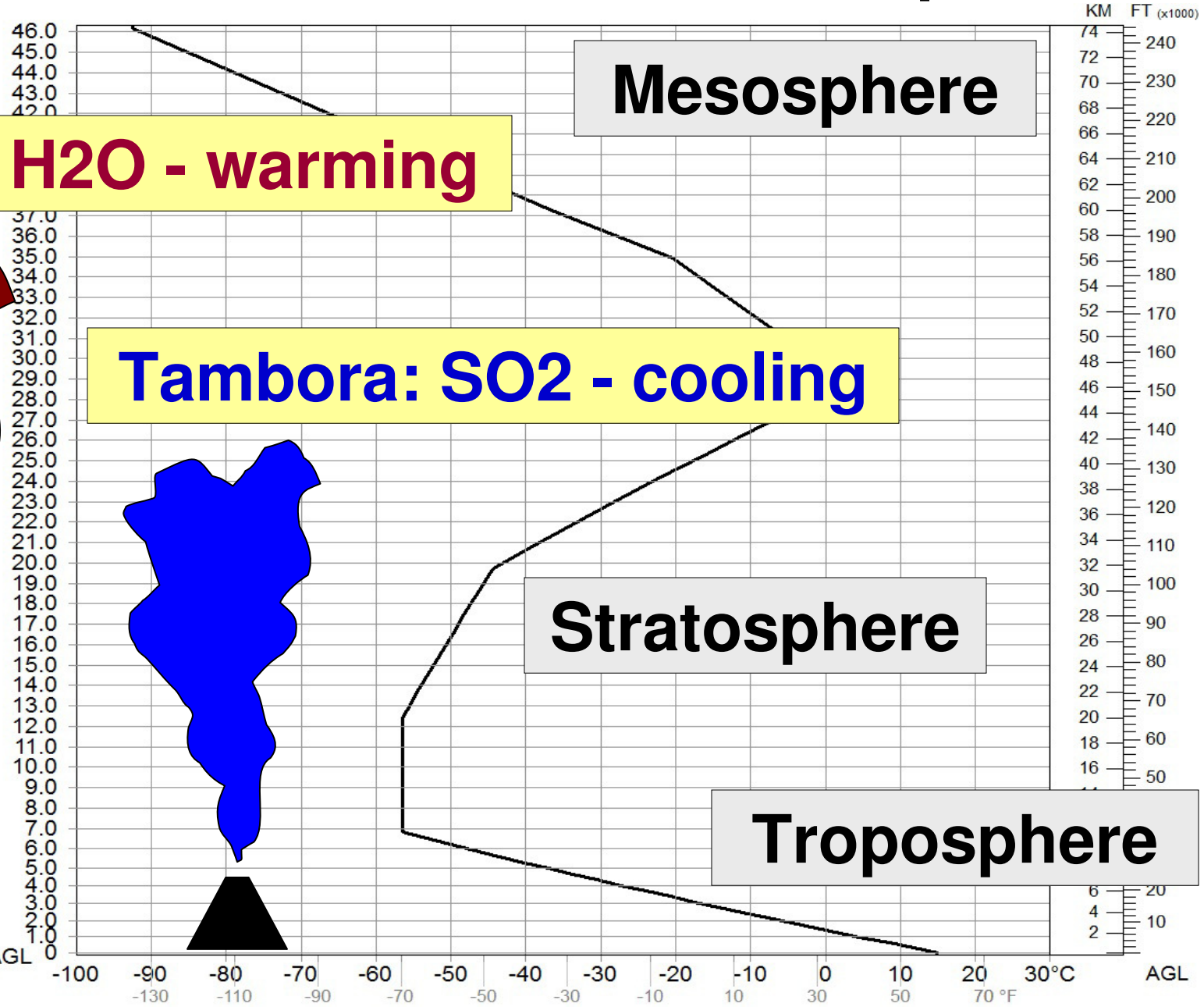
1816



**Mt Tambora - 1815**

# 1976 U.S. Standard Atmosphere

miles



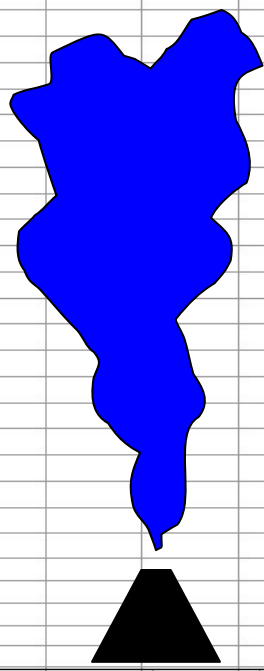
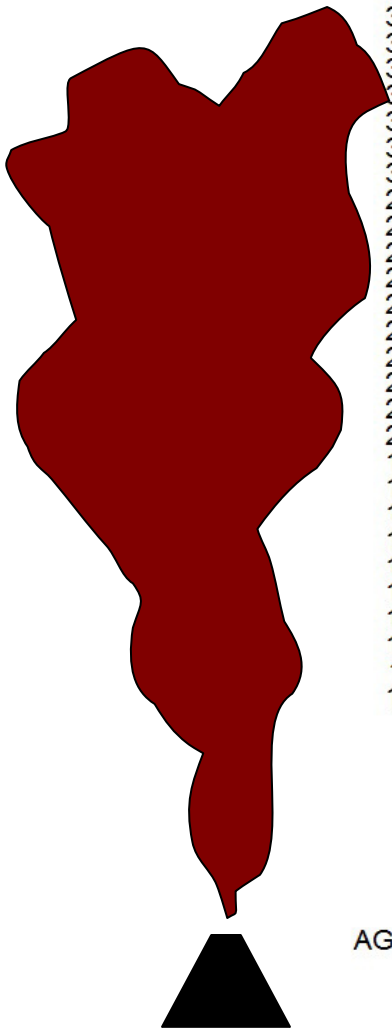
Mesosphere

Tonga: H<sub>2</sub>O - warming

Tambora: SO<sub>2</sub> - cooling

Stratosphere

Troposphere





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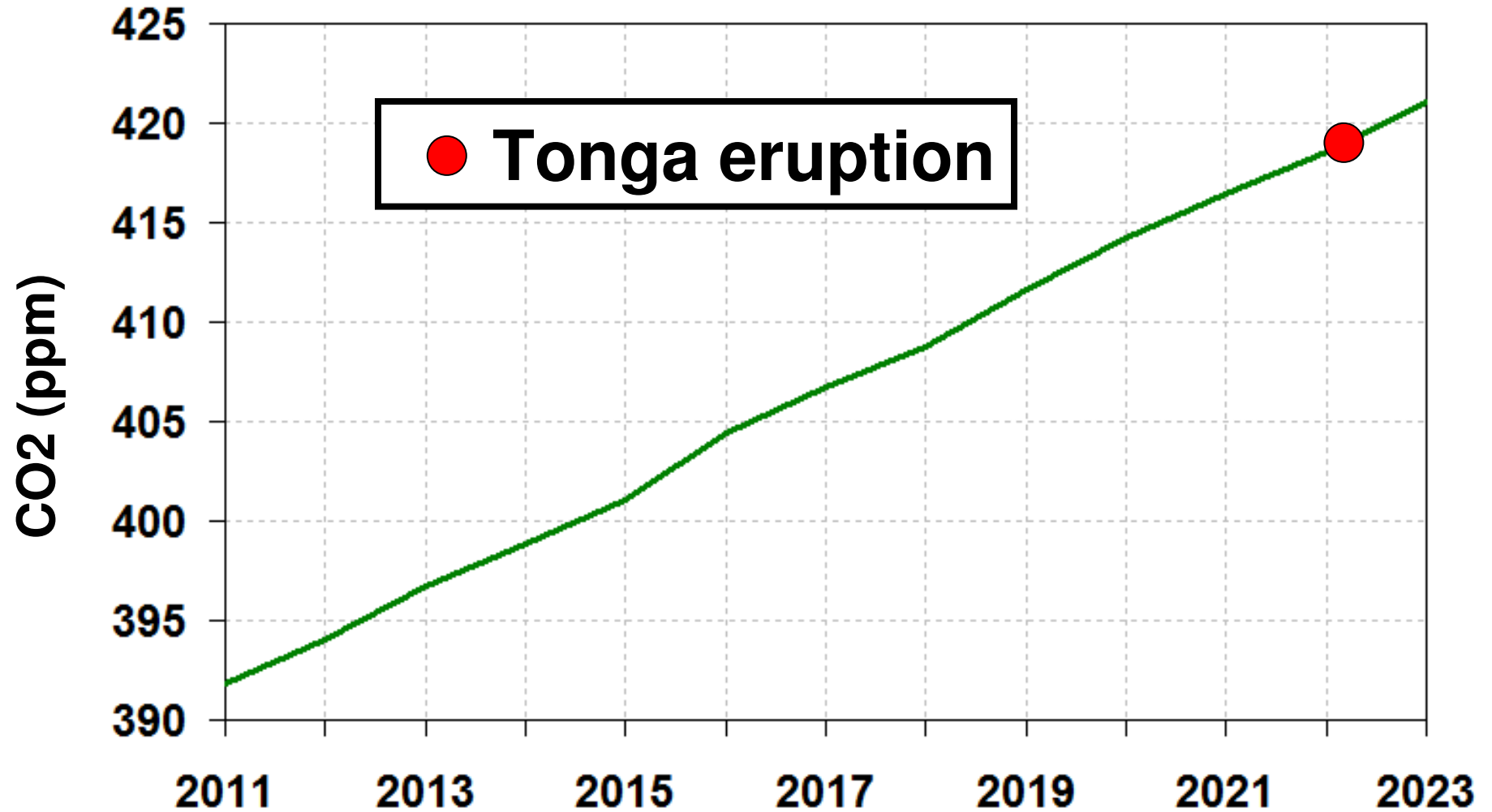
**CO2 ejection**

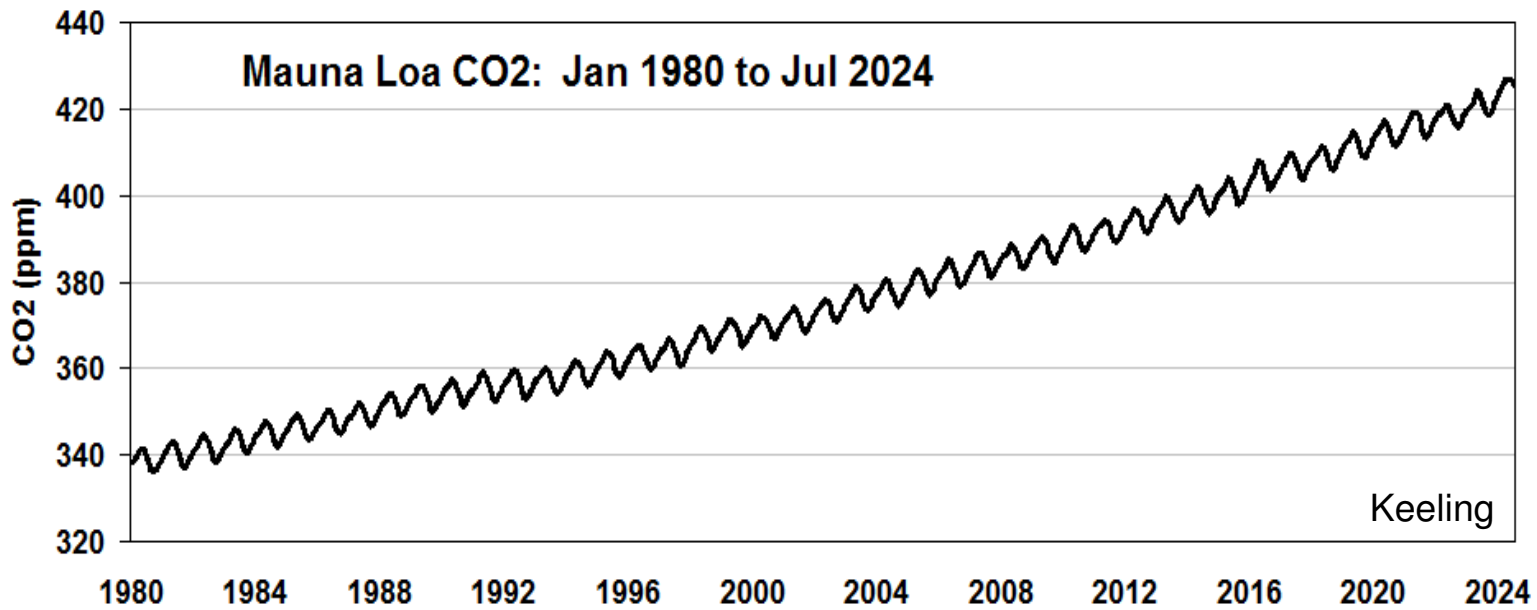
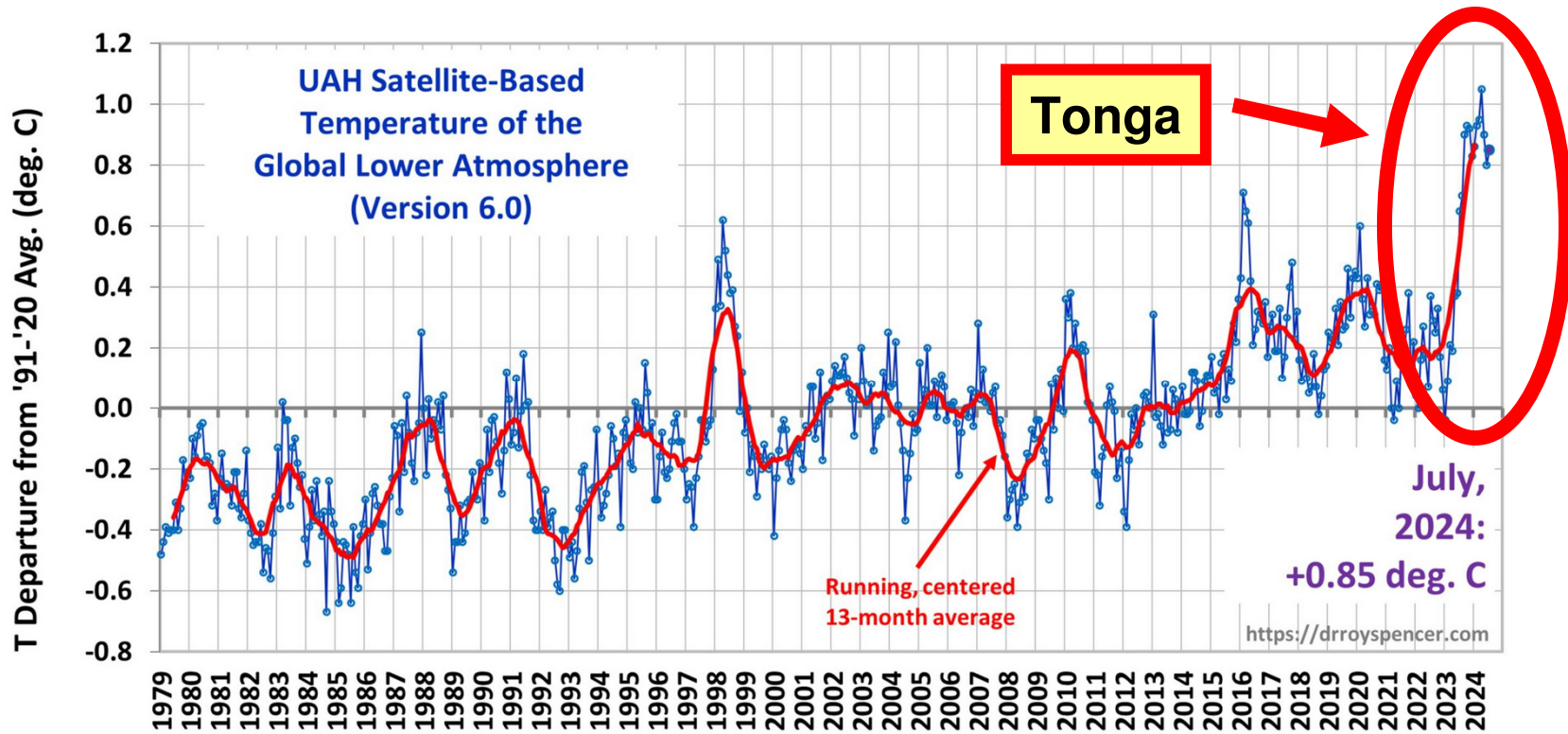
**Sunspots**

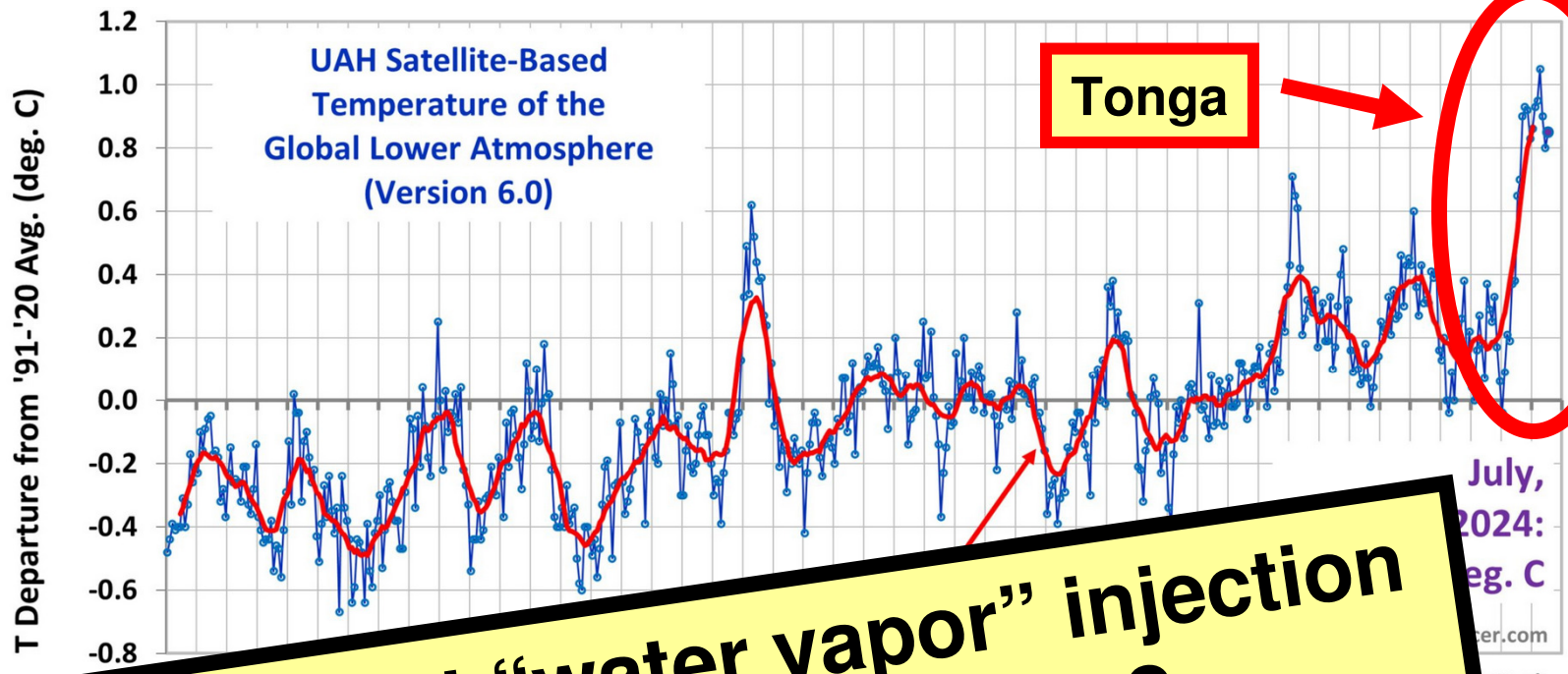
**El Nino**



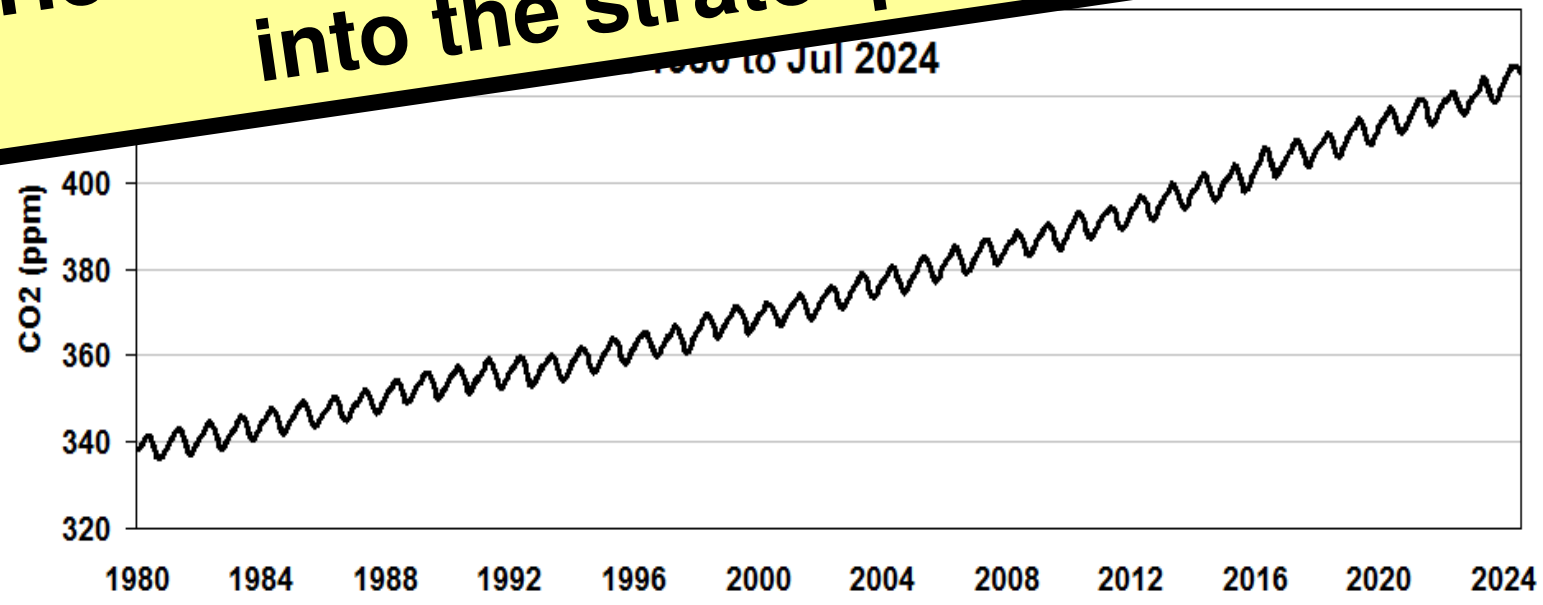
# Annual Atmospheric CO2 Levels Mauna Loa Observatory



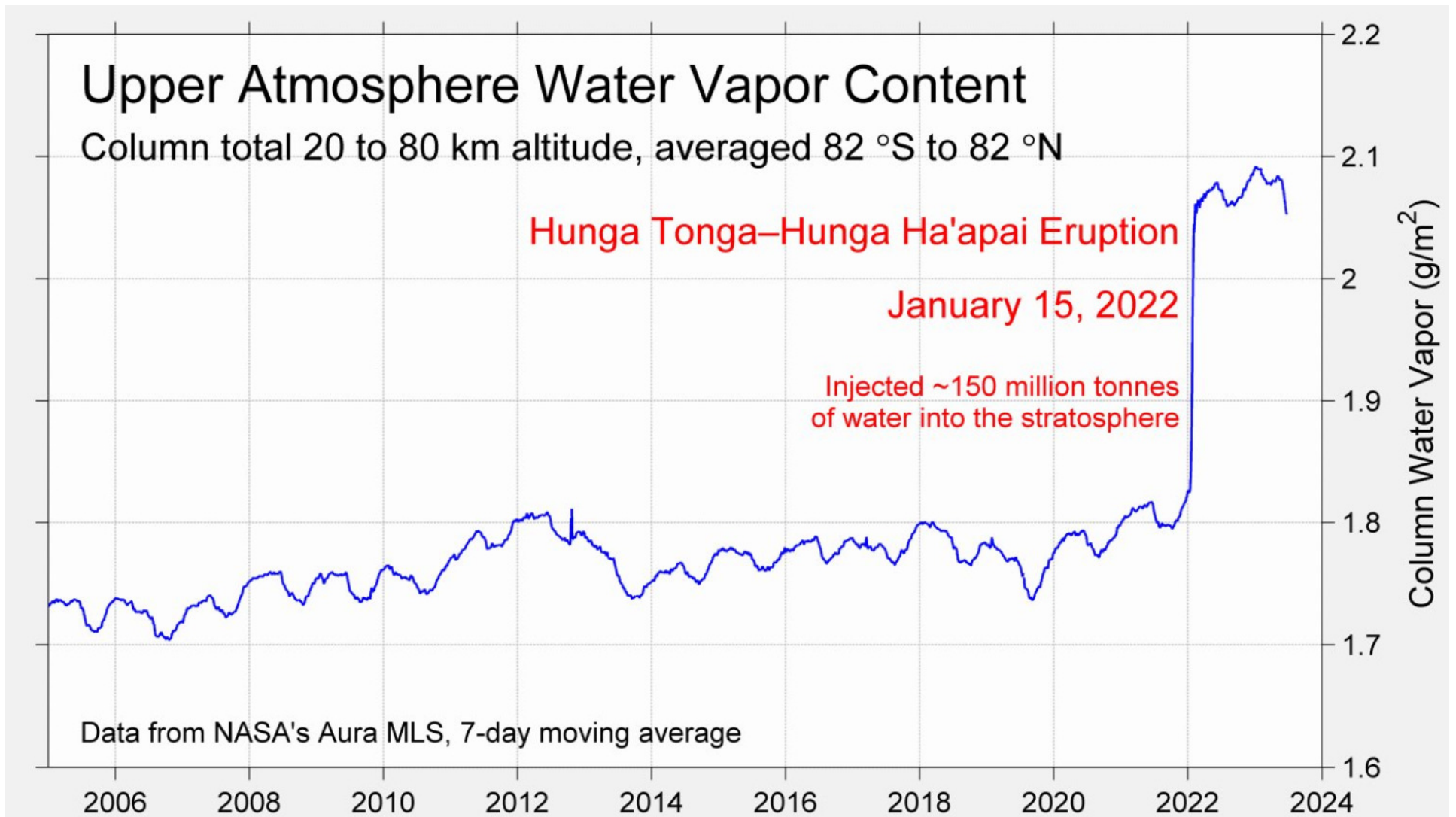




**How about “water vapor” injection into the stratosphere?**







**Stratospheric water vapor increased by 13%**

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**Volcanoes cool – not warm**

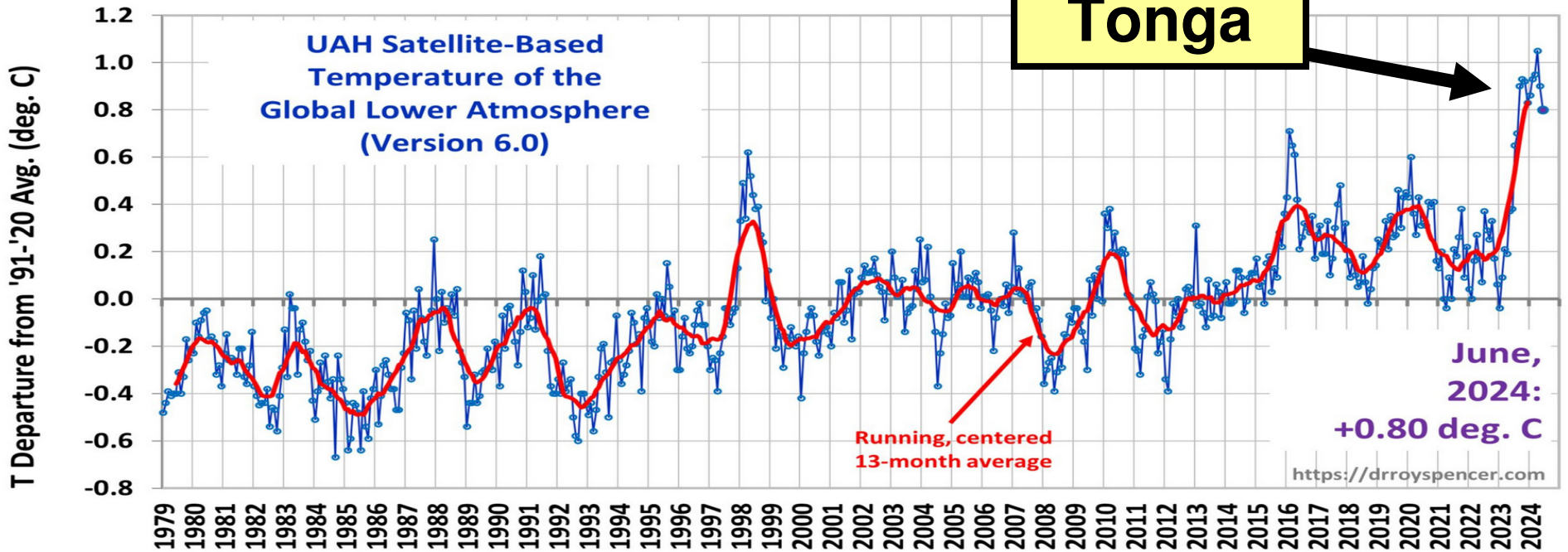
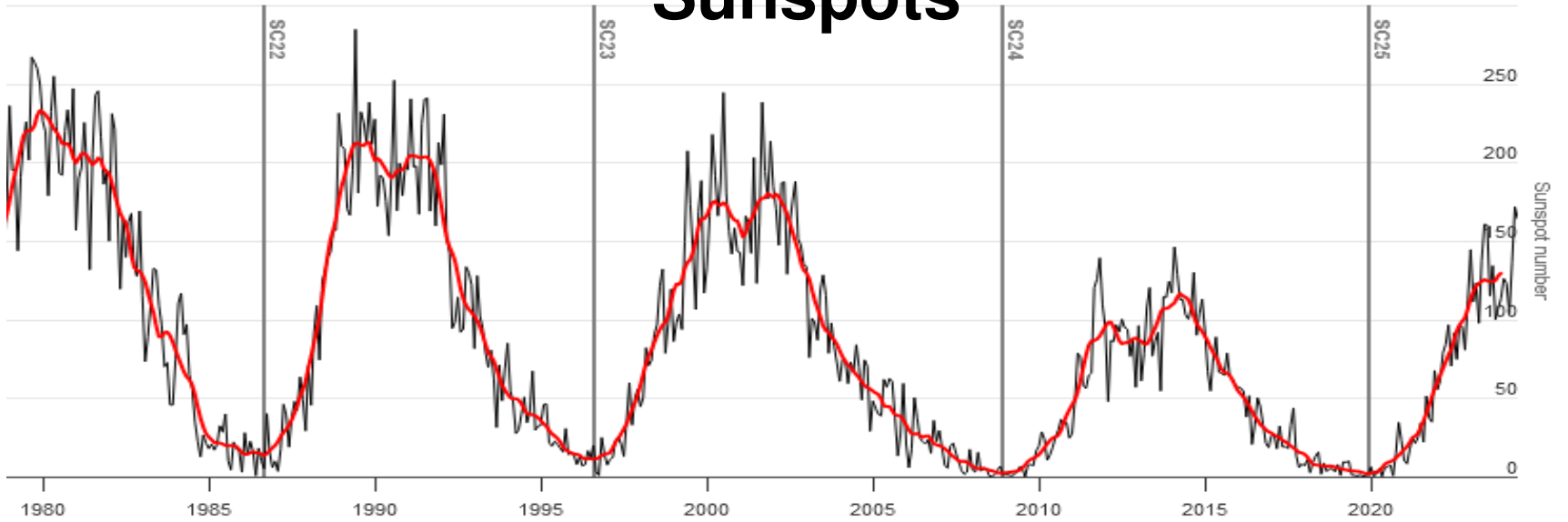
**Water freezes at high altitudes**

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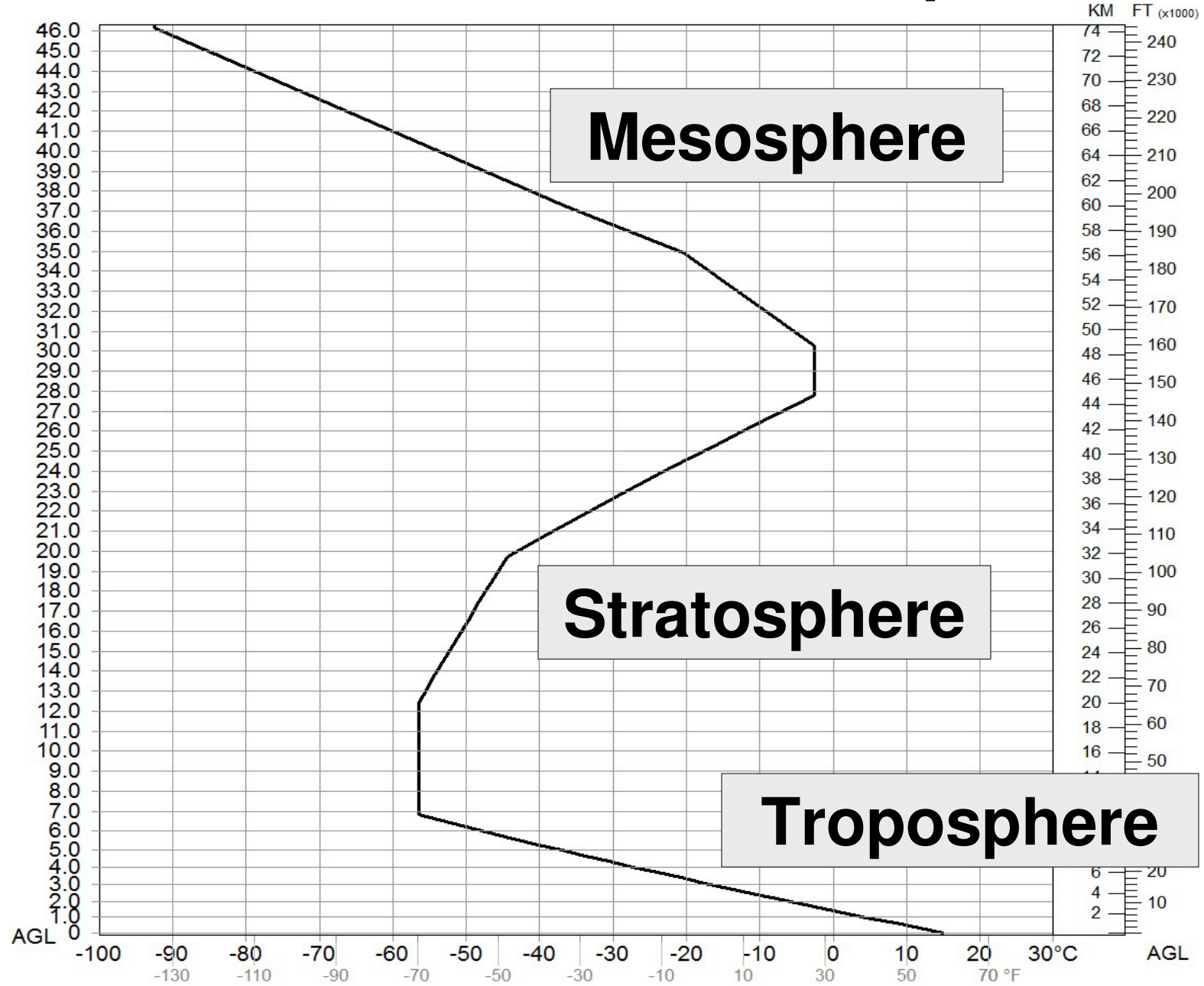
# Sunspots





# 1976 U.S. Standard Atmosphere

miles



Mesosphere

Stratosphere

Troposphere

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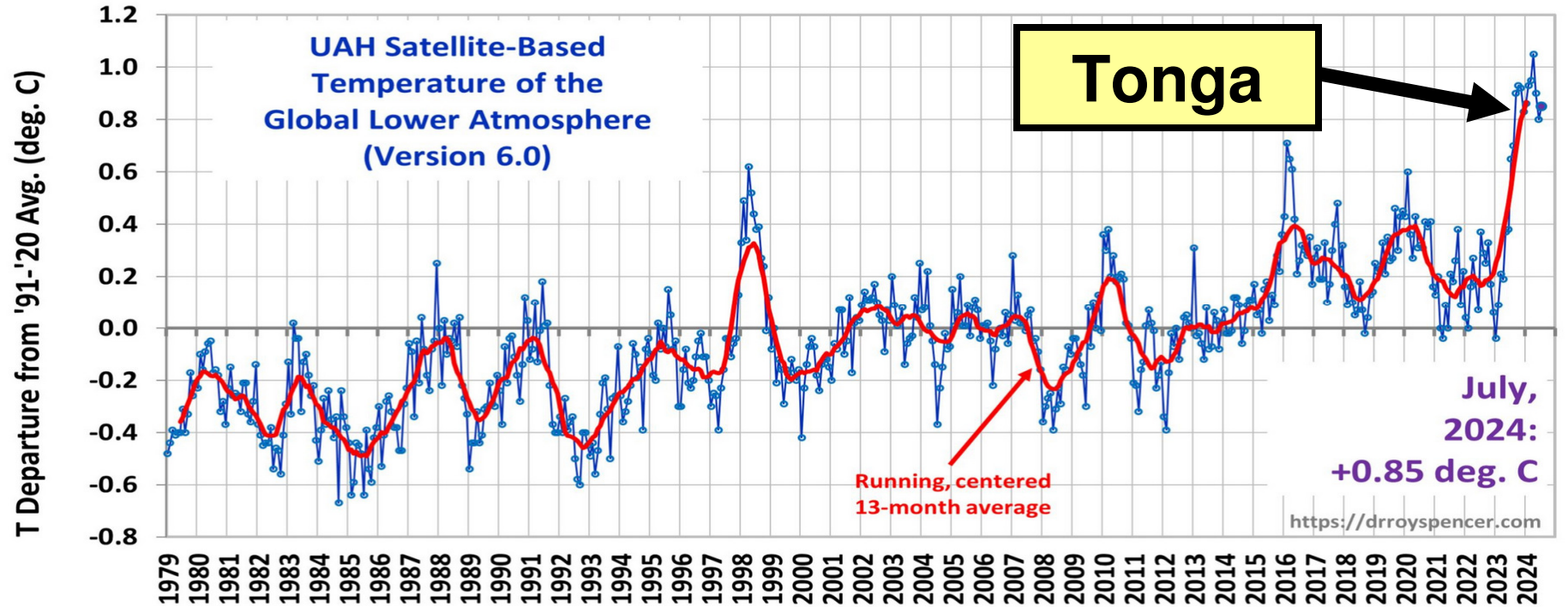
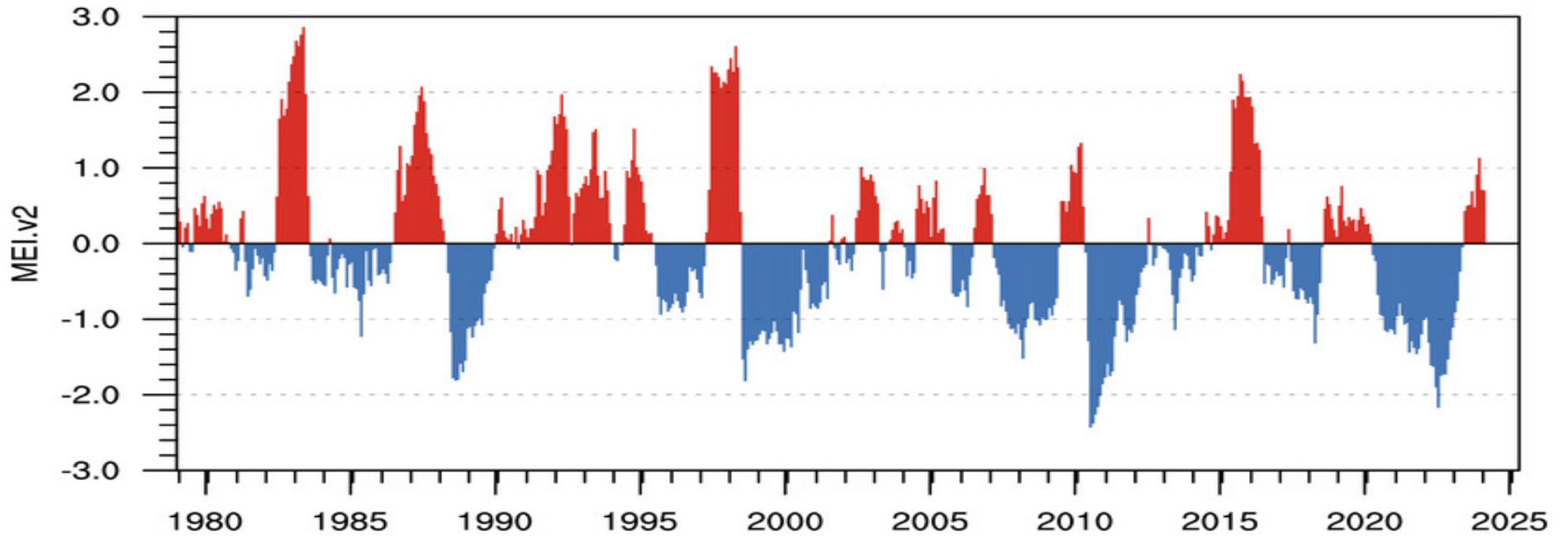
**Water freezes at high altitudes**

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# Multivariate ENSO Index Version 2 using JRA3Q





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**Volcanoes cool – not warm**

**Water freezes at high altitudes**

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**Sunspots**

**El Nino**

**Forecast**

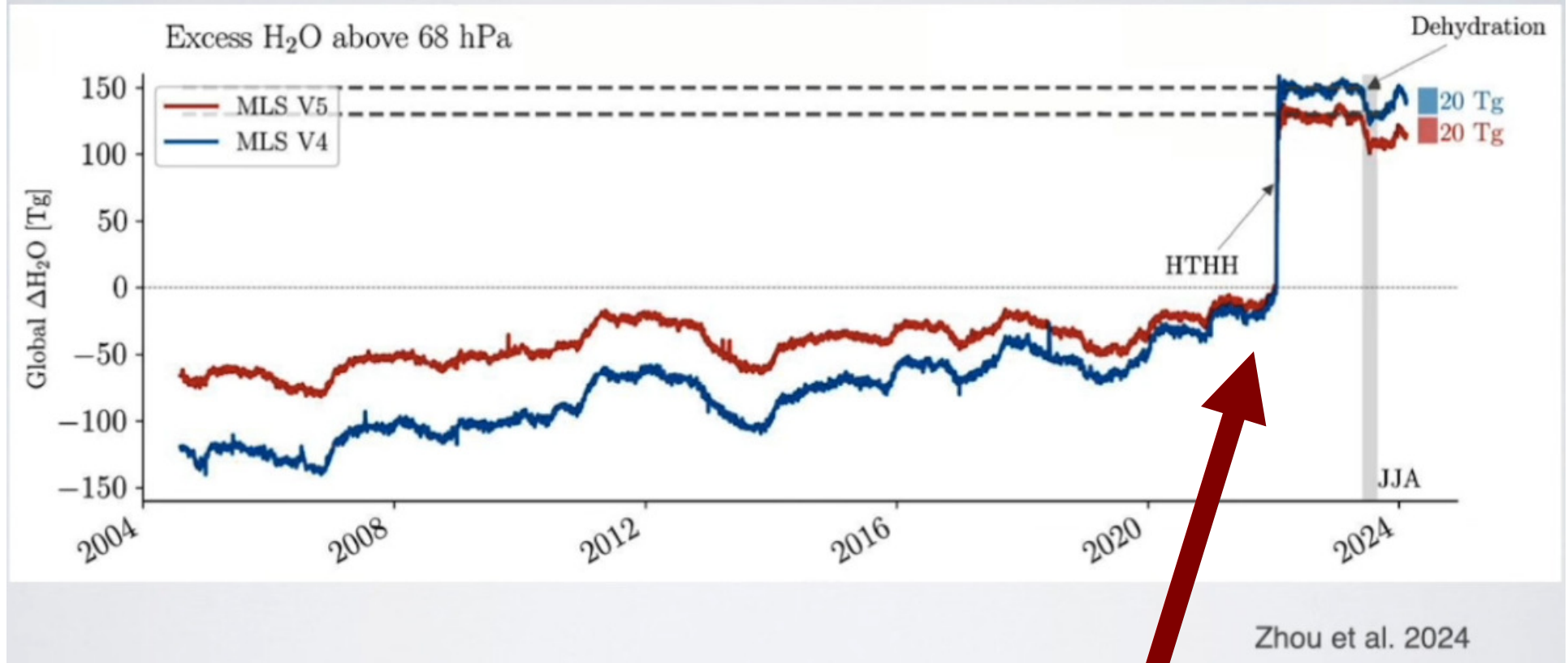
# How the Tonga volcano eruption from 2022 may affect Australia's weather for up to eight years

By [Tyne Logan](#)

Posted Wed 15 Feb 2023 at 4:31 pm, updated Wed 15 Feb 2023 at 11:39pm

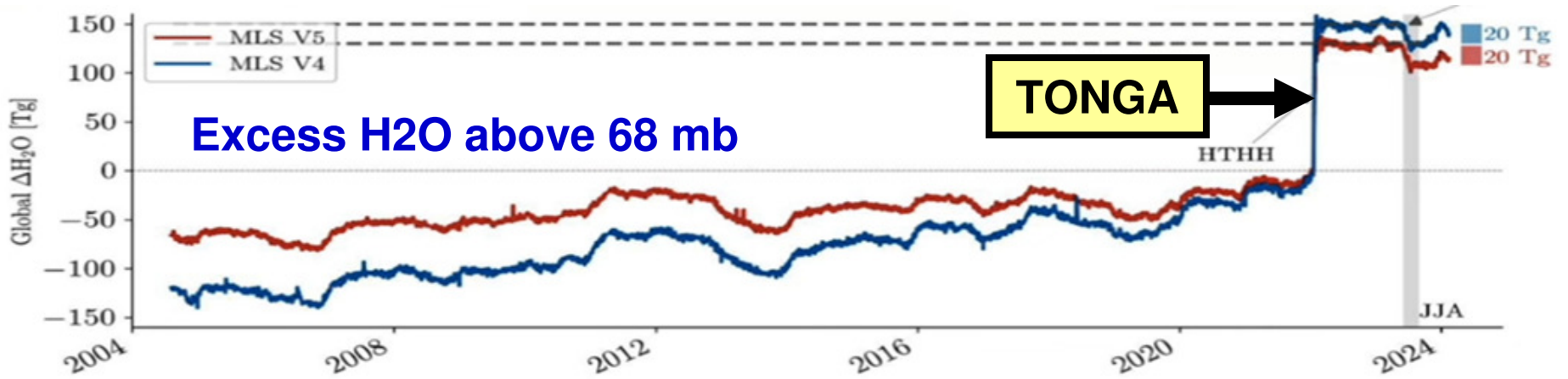


# Stratospheric water vapor is slowly decreasing

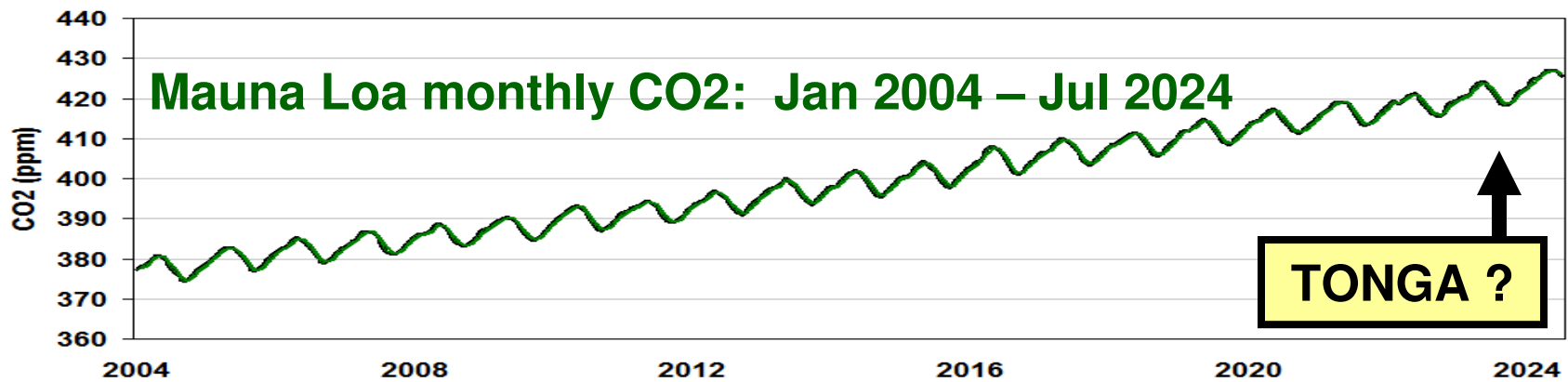
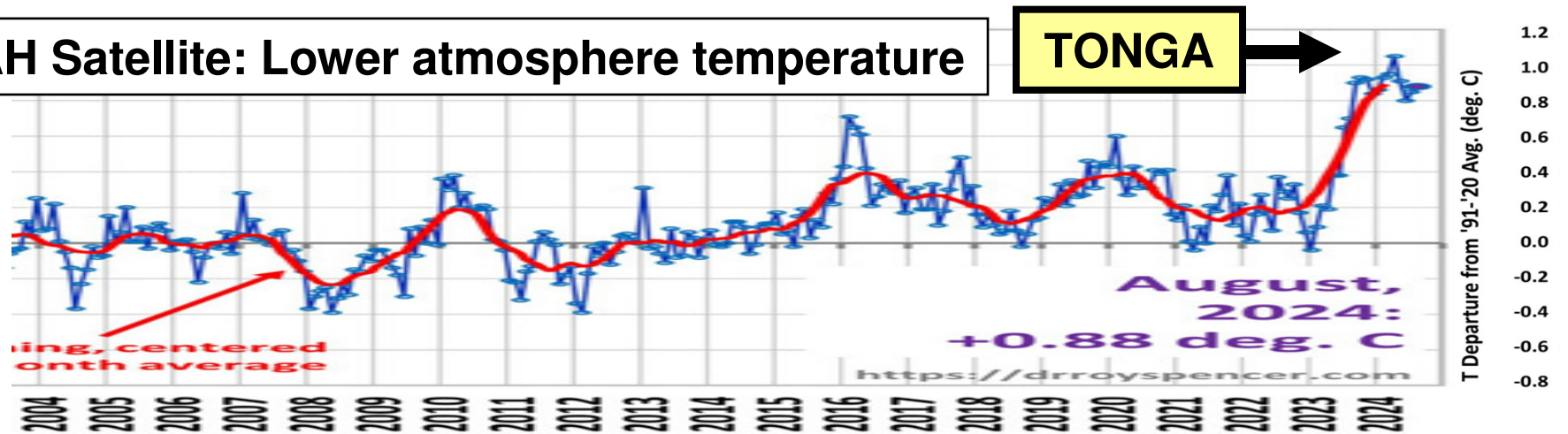


**Tonga volcano's unprecedented water vapor injection into the stratosphere is now causing the 2024 unprecedented global warming – which far exceeds any human induced CO<sub>2</sub> warming effects.**





UAH Satellite: Lower atmosphere temperature



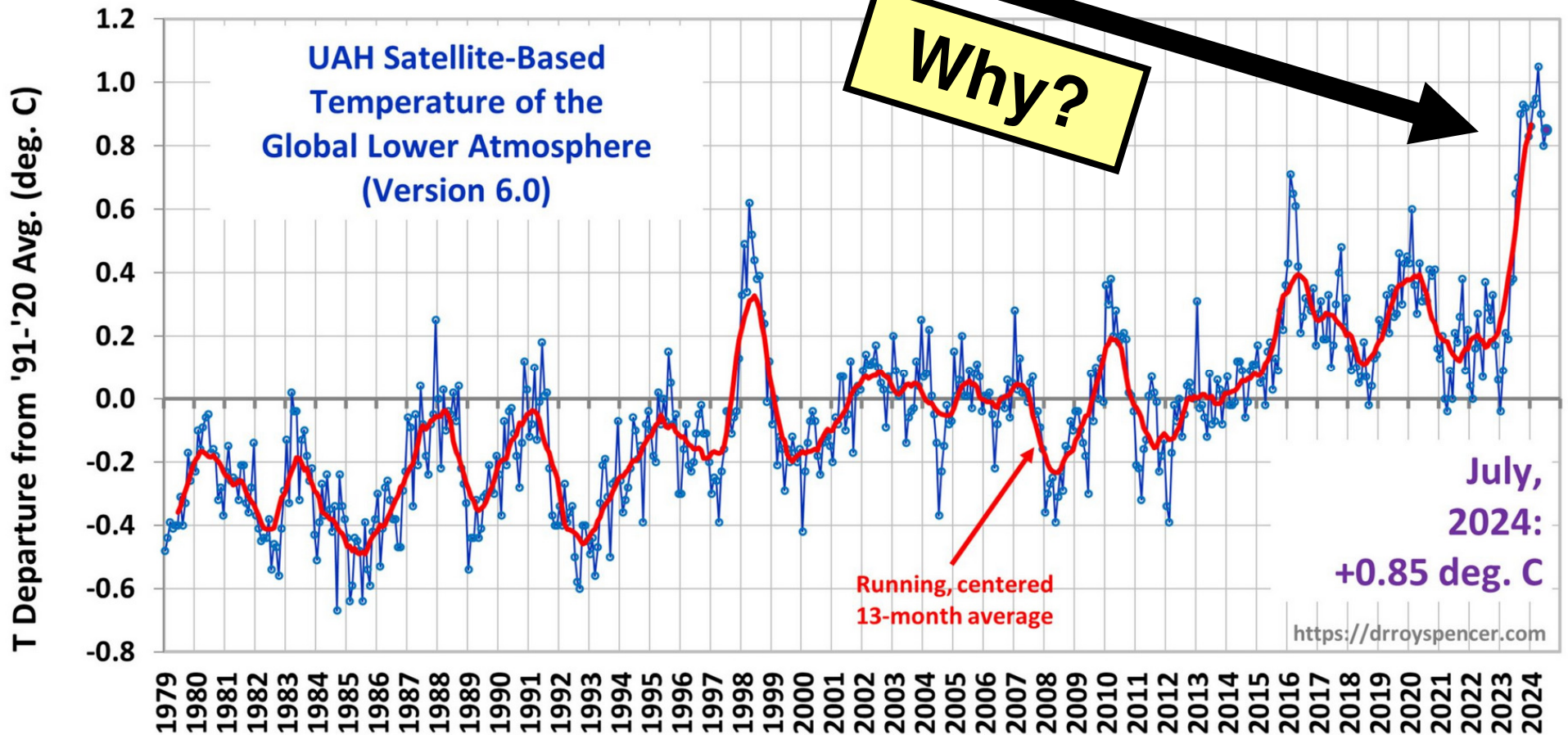
# World's first year-long breach of key 1.5C warming limit

**B B C**

8 February 2024

Mark Poynting

BBC News climate reporter

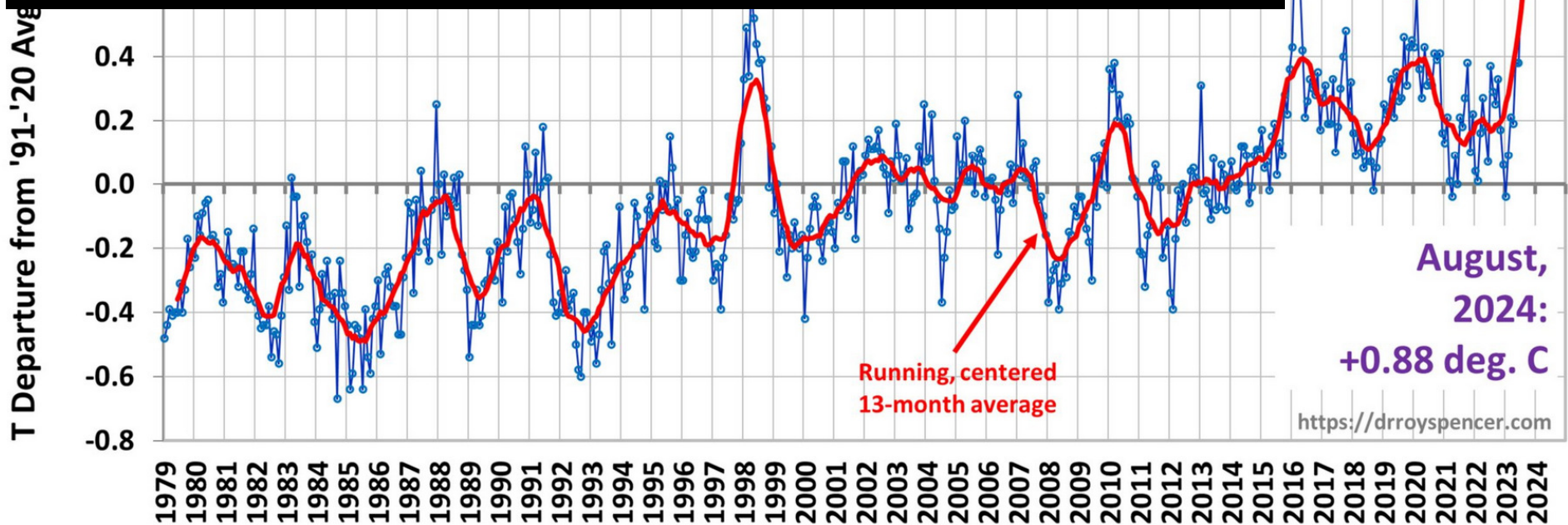






Tonga, 2022, vaporized 40 billion gallons of water into the stratosphere and now causes huge global warming spike.

**NASA: “small temporary warming”  
?**







# Two-Day Graphical Tropical Weather Outlook

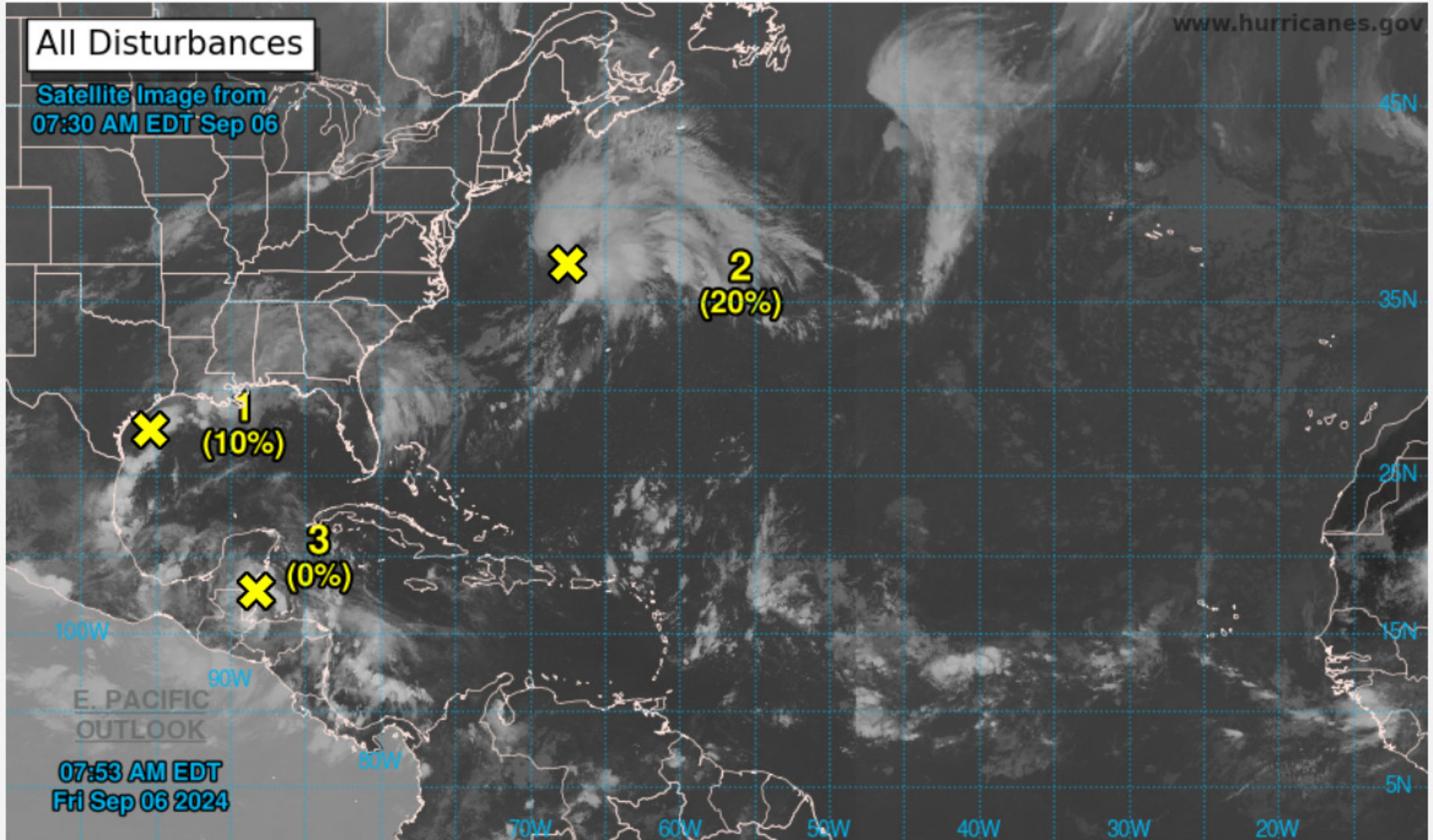
National Hurricane Center Miami, Florida



All Disturbances

Satellite Image from  
07:30 AM EDT Sep 06

www.hurricanes.gov



07:53 AM EDT  
Fri Sep 06 2024

Current Disturbances and Two-Day Cyclone Formation Chance: < 40% 40-60% > 60%  
Tropical or Sub-Tropical Cyclone: Depression Storm Hurricane  
 Post-Tropical Cyclone or Remnants



# Toga Toga Toga



# Tonga Tonga Tonga



# Tonga Volcano & Global Warming



**Questions.**





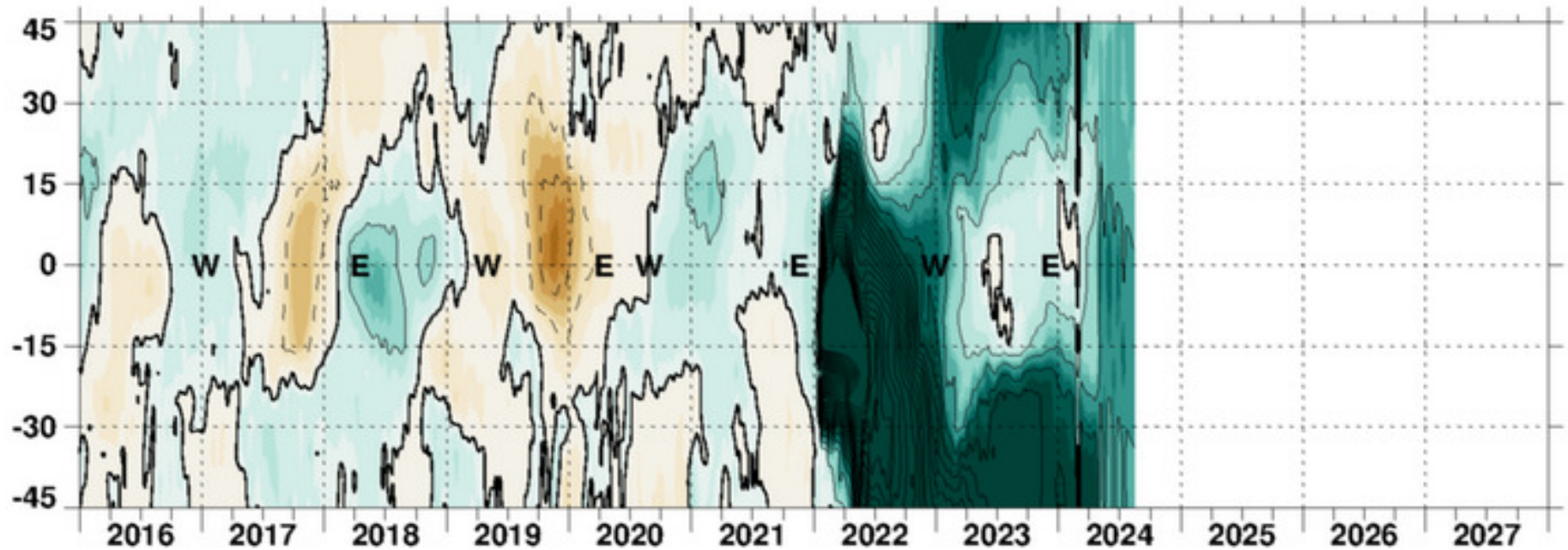
# Tonga Volcano Videos

<https://www.youtube.com/watch?v=tsYgCxVVICM>

<https://www.youtube.com/watch?v=bgsNYGkkIAE>

<https://www.youtube.com/watch?v=W7GN96BUCEo>

# H<sub>2</sub>O: 26.1 mb (16 miles high)

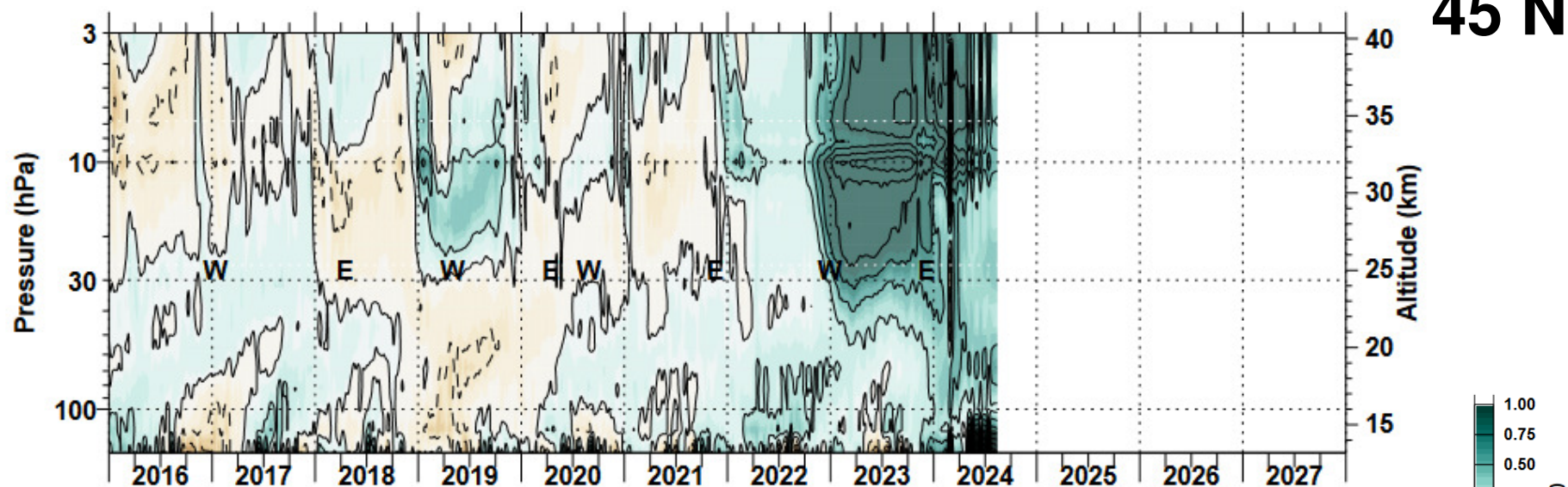


## Aura MLS – Microwave Limb Sounder

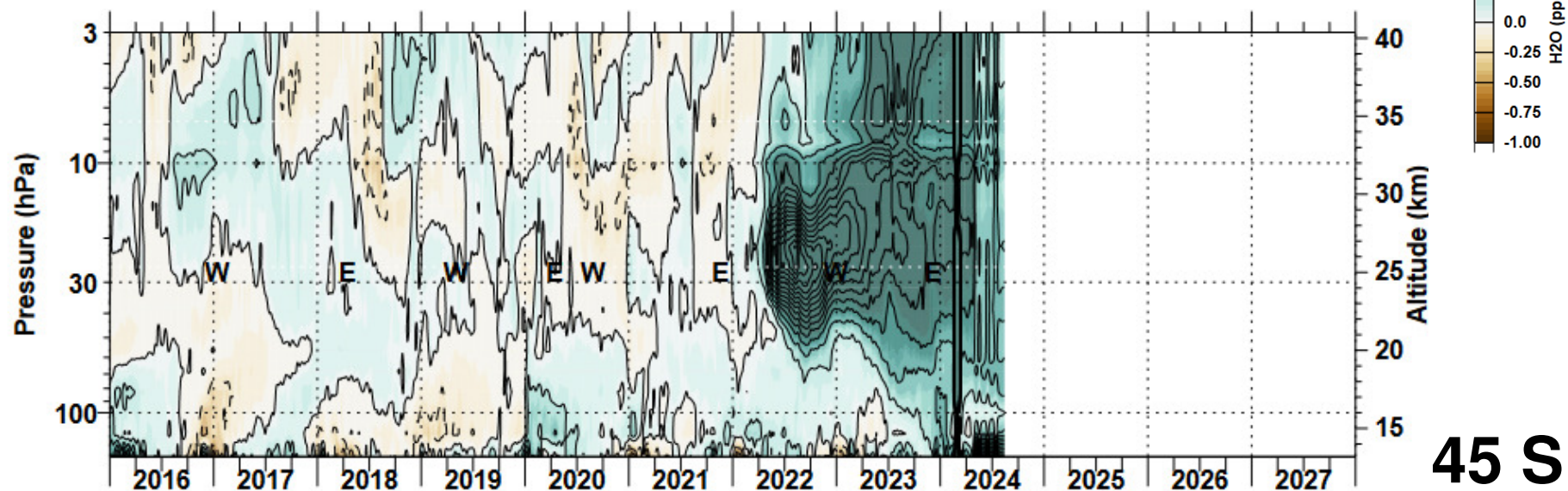


National Aeronautics and Space Administration  
Goddard Space Flight Center

45 N

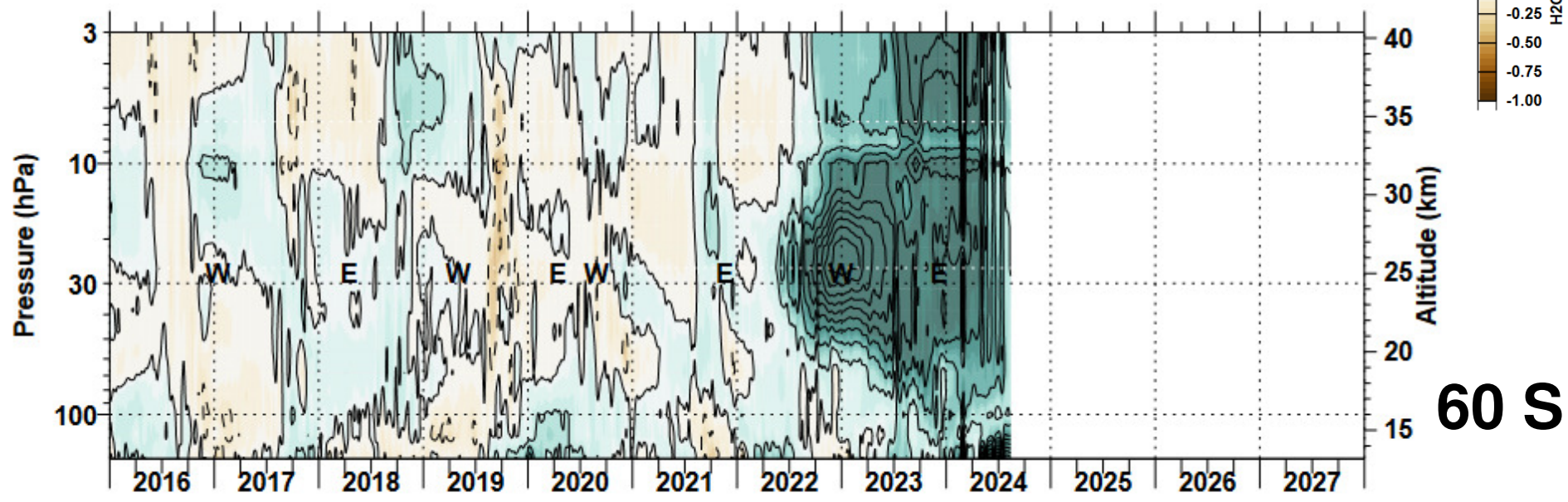
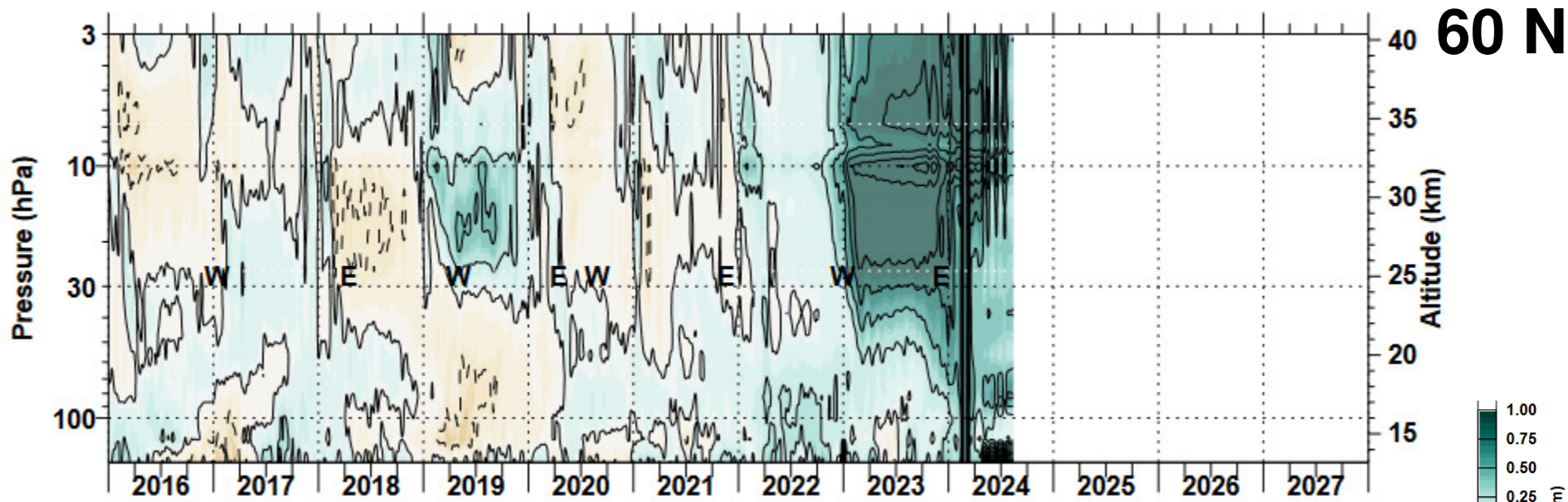


45 S



Ann. cycle removed, Gauss filter, half-amp.= 20.0 days





Ann. cycle removed, Gauss filter, half-amp.= 20.0 days