

A high-resolution image of Earth from space, centered on the African continent. The top of the frame shows the northern edge of Europe and the Middle East, with some landmasses covered in snow. The bottom shows the southern tip of Africa and parts of South America. The oceans are a deep blue, and white clouds are scattered across the landmasses. The entire scene is set against a black background filled with distant stars.

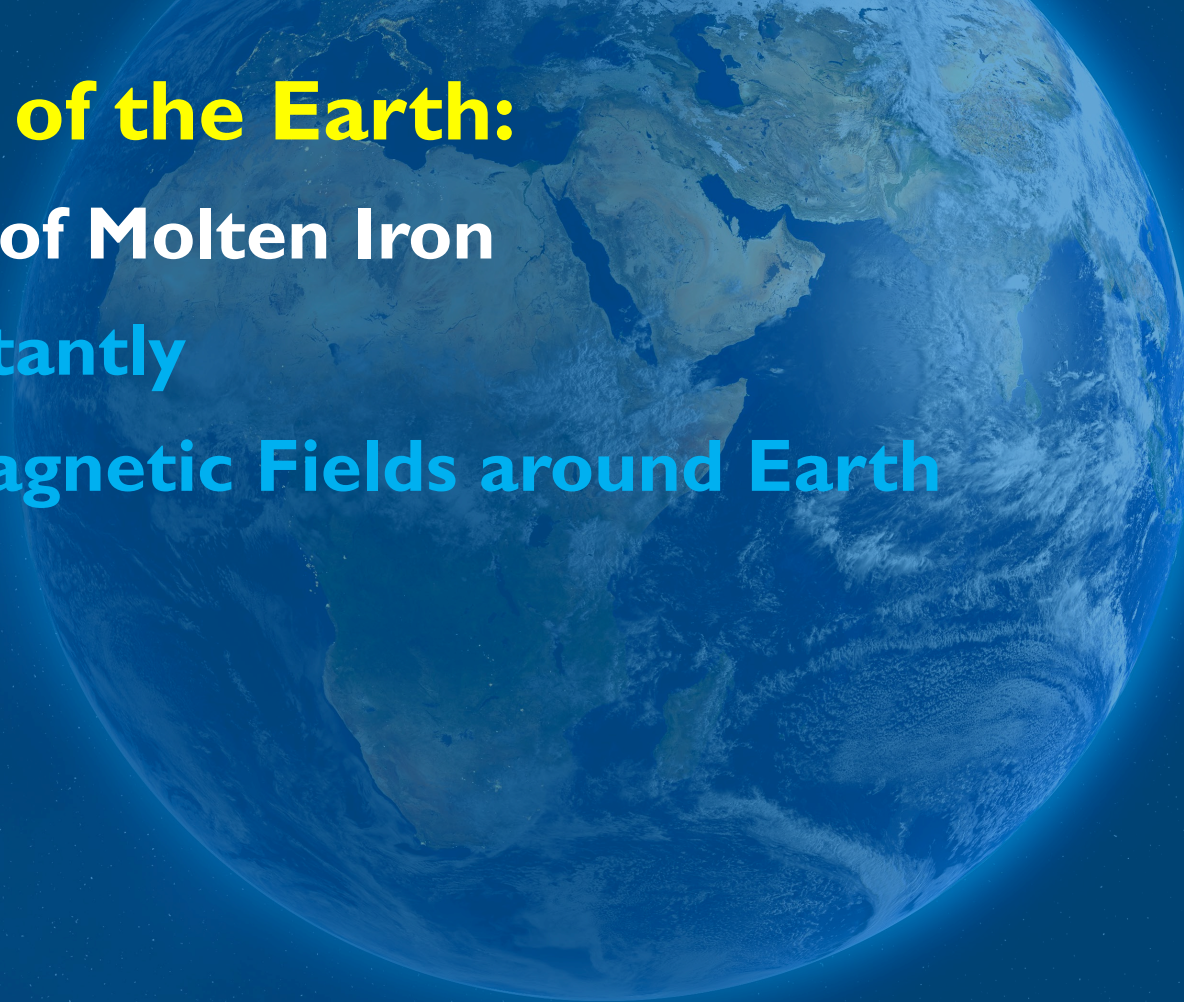
THE WORLD...IT'S A CHANGING!

and, that's HUGELY important!



# IT STARTS INSIDE

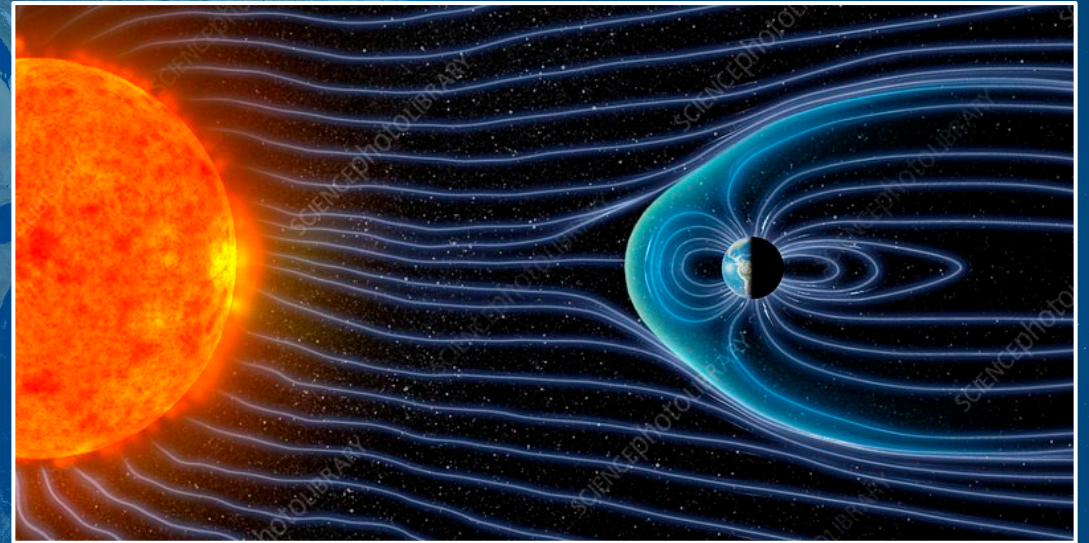
- **The Center of the Earth:**
  - Is made up of Molten Iron
  - Spins constantly
  - Creates Magnetic Fields around Earth





# MAGNETIC FIELD AROUND EARTH

- **Protects Earth from Sun**
  - Stops much of Radiation
  - Keeps Earth cool
  - **Water does not boil off like Mars**





## HOWEVER...

- **Something is happening...again!**
- **Something about core is changing in ways we don't understand**



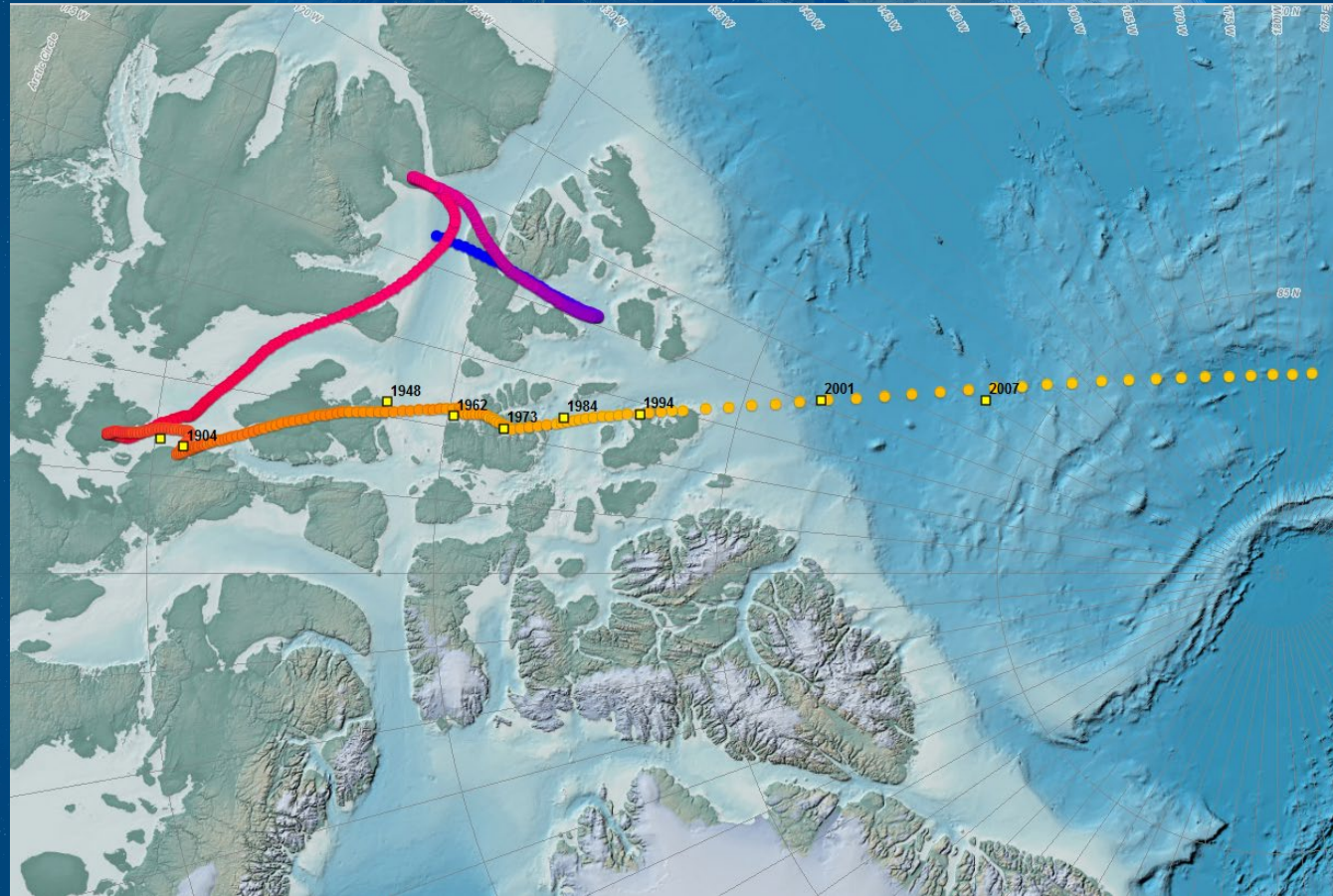


## CORE CHANGES ARE CAUSING...

- **Earth has started the process of the Magnetic Poles reversing themselves**
  - Such reversals have occurred several times over eons
    - But...before man
  - **North & South Magnetic Poles are no longer wandering around**
    - Now have definite directions...racing toward each other
    - Speed is increasing constantly and dramatically
    - S. Magnetic Pole no longer in Antarctica
    - Flip estimated to be in 80 to 150 years



# N. MAGNETIC POLE PATH




## S. MAGNETIC POLE PATH



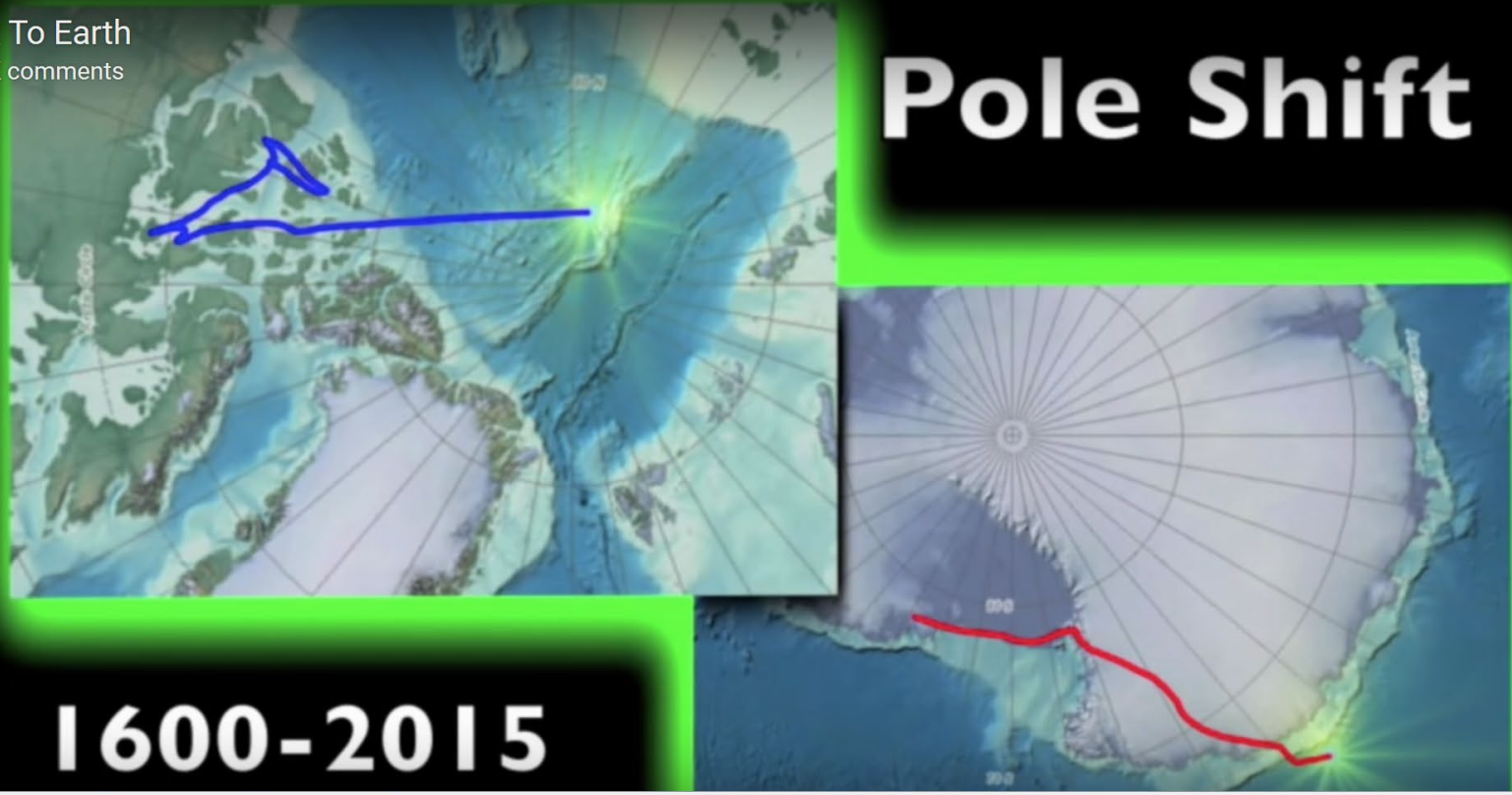


# POLES TO MEET IN PACIFIC OCEAN

 The #1 Risk To Earth  
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## Pole Shift

Watch later Share



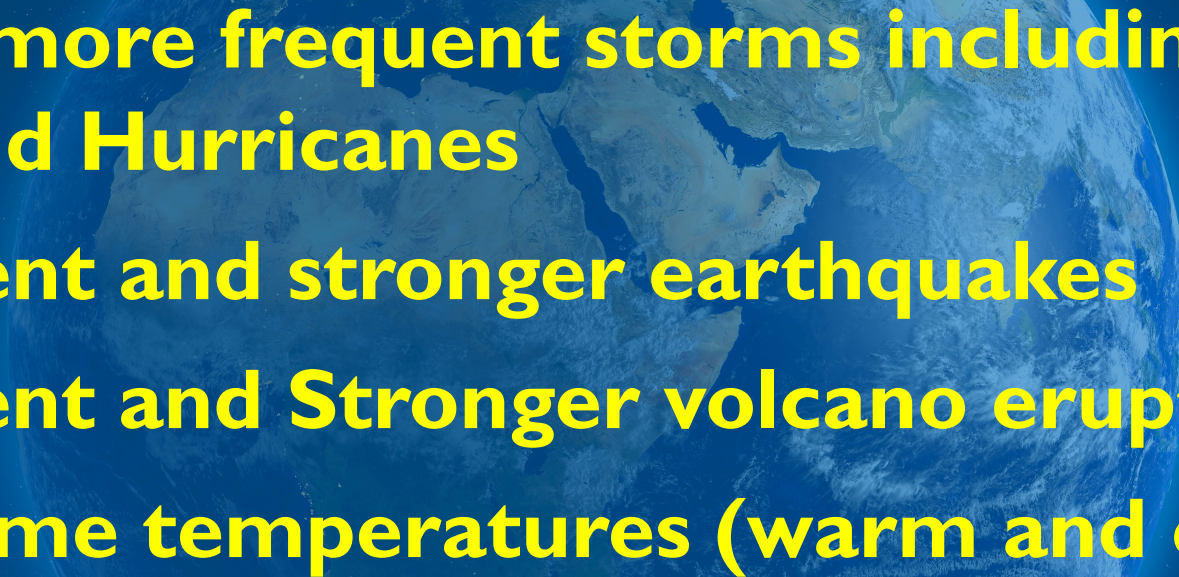
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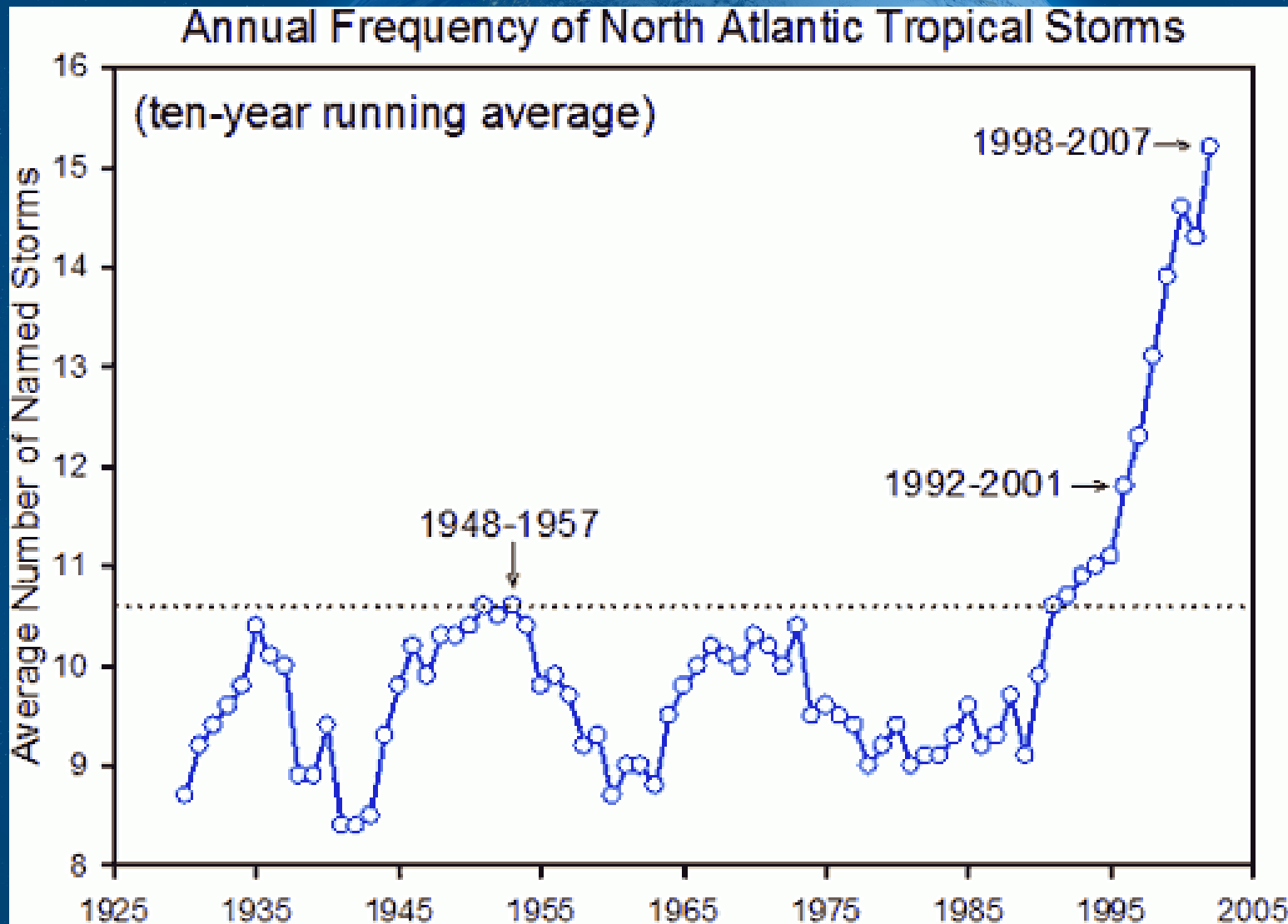


## OTHER RESULTS OF CORE CHANGES

- **Larger and more frequent storms including typhoons and Hurricanes**
  - **More frequent and stronger earthquakes**
  - **More frequent and Stronger volcano eruptions**
  - **More extreme temperatures (warm and cold)**
- 



# HURRICANE FREQUENCY





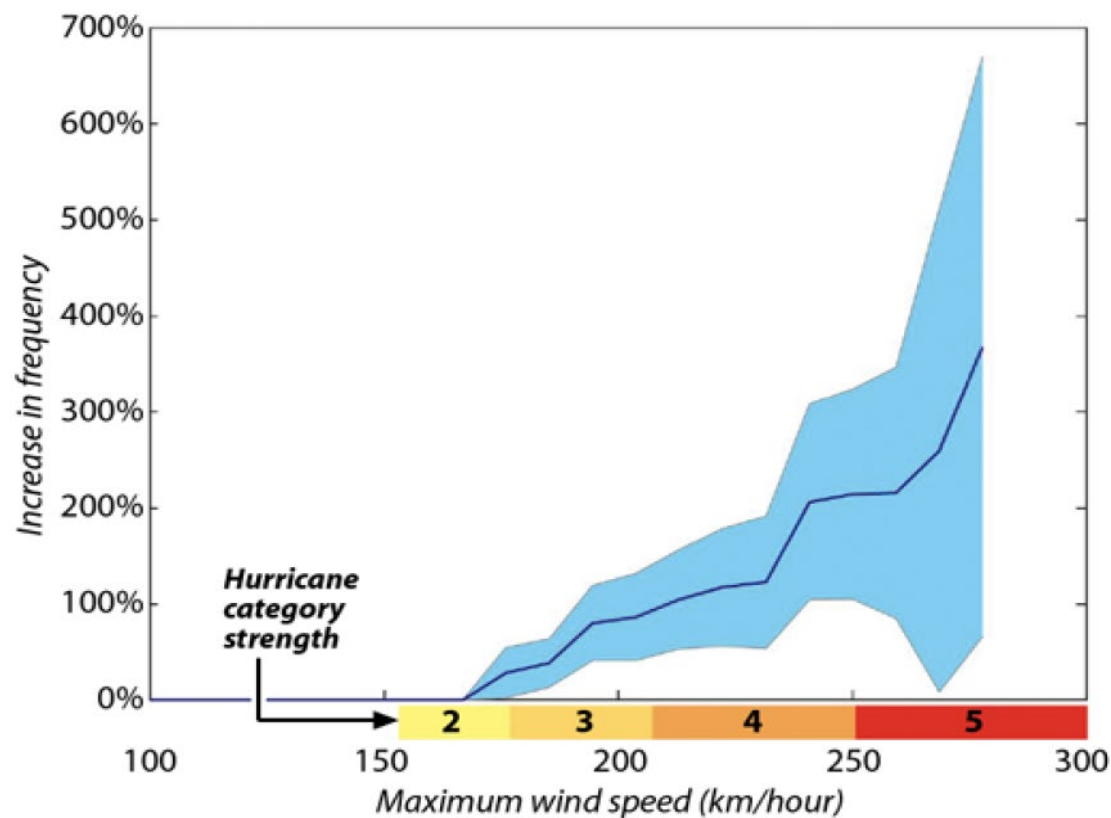
# STORMS ARE BIGGER

## Monster Storms Are Growing More Common

The frequency of the most intense tropical storms worldwide has increased since 1980. Those with wind speeds over 250 kilometers per hour (about 155 mph) have more than tripled.

### TROPICAL STORM STRENGTH AND FREQUENCY

Linear trends, 1980-2016



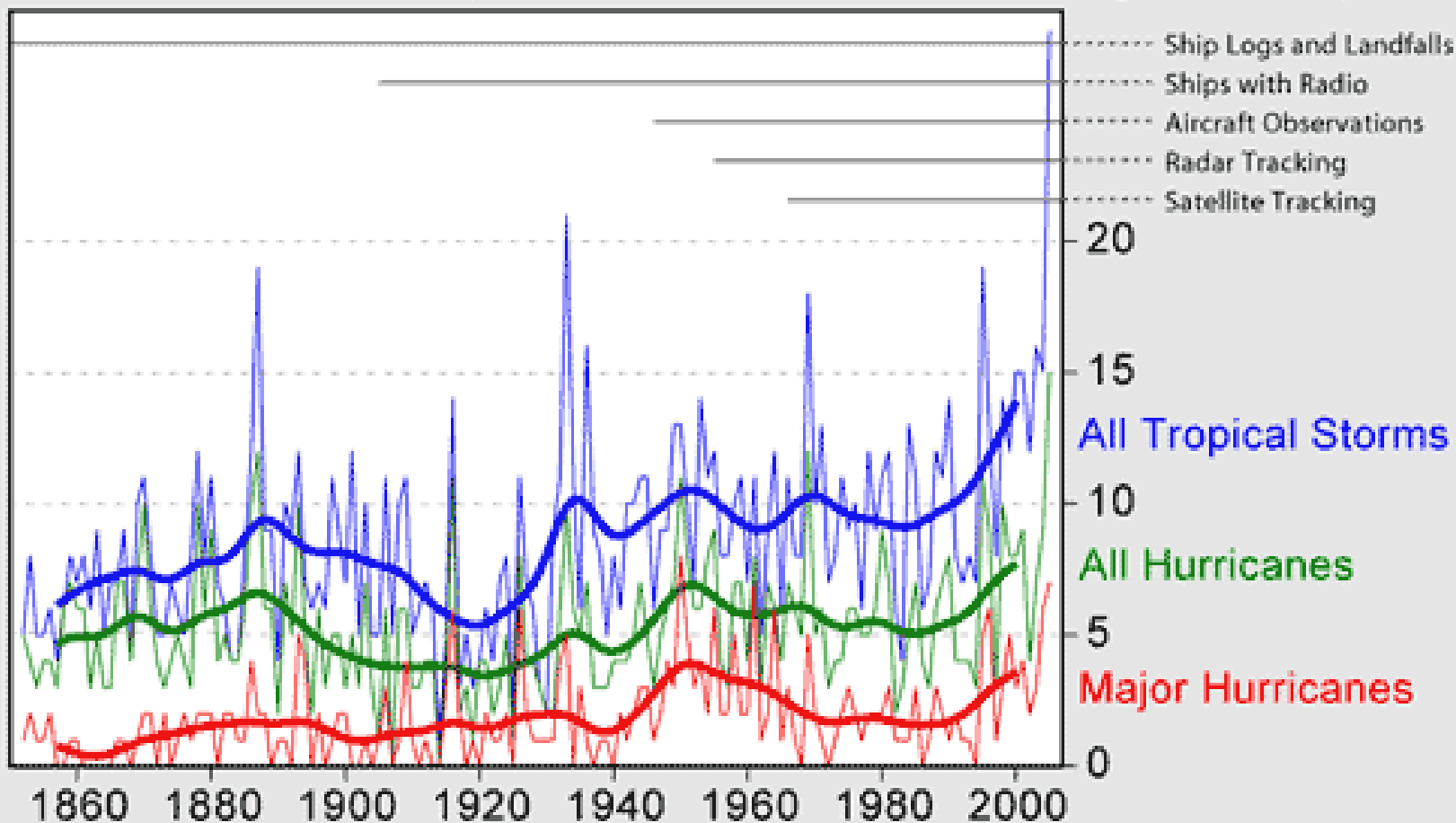
SOURCE: Kerry Emanuel, MIT

InsideClimate News



# STORMS ARE BIGGER

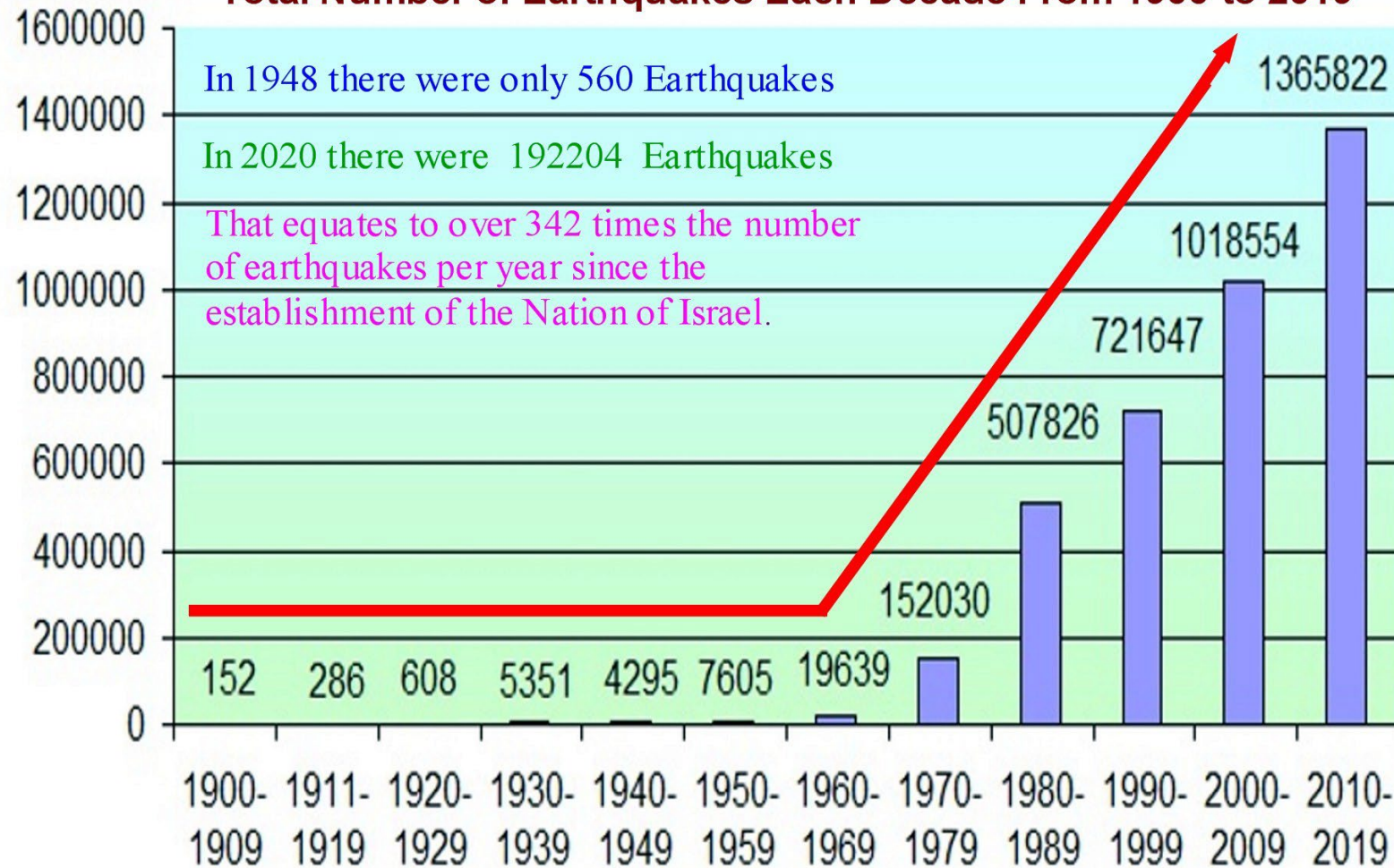
## North Atlantic Tropical Storms and Observing Techniques



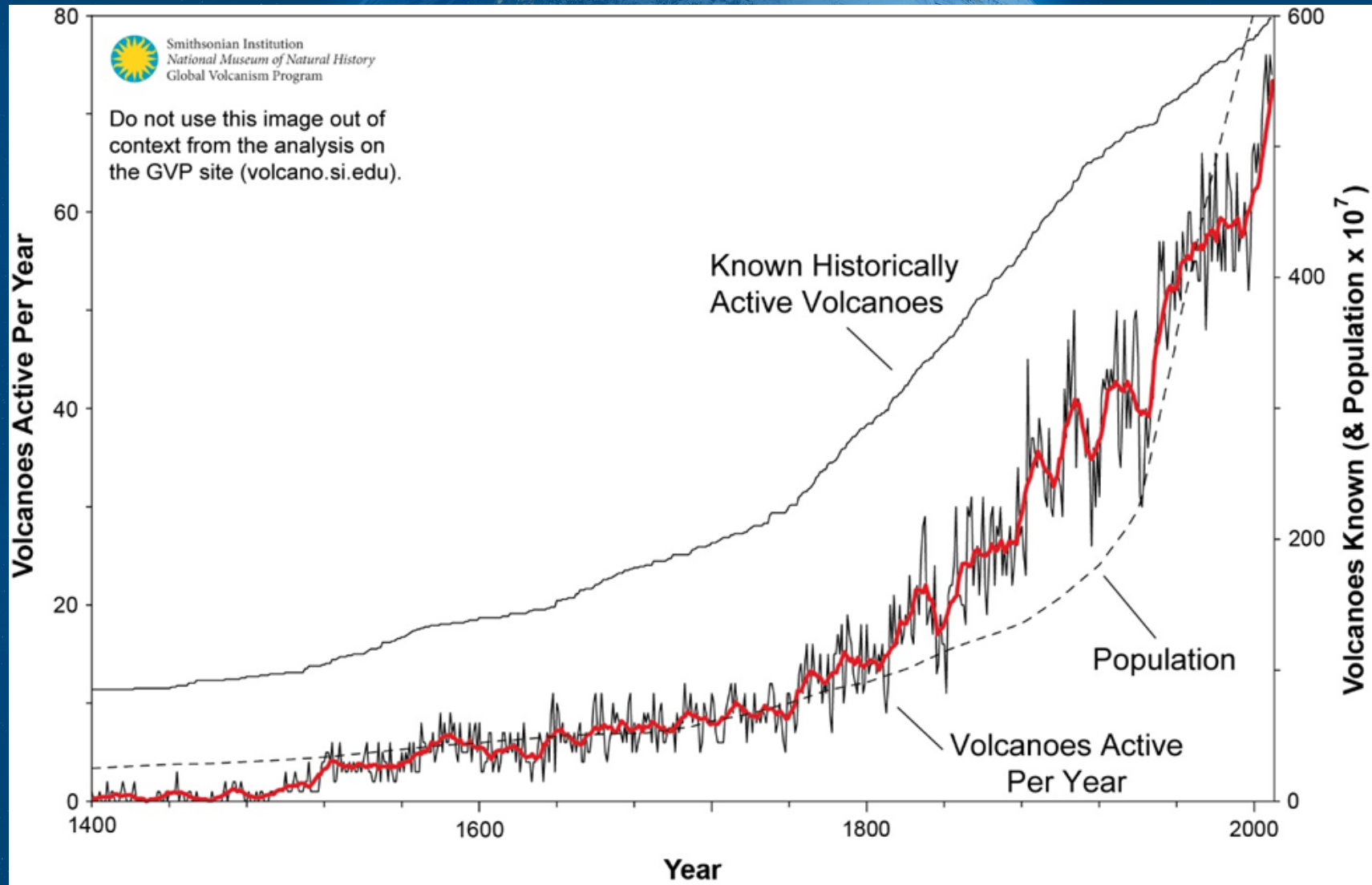


# EARTHQUAKES

**Total Number of Earthquakes Each Decade From 1900 to 2019**



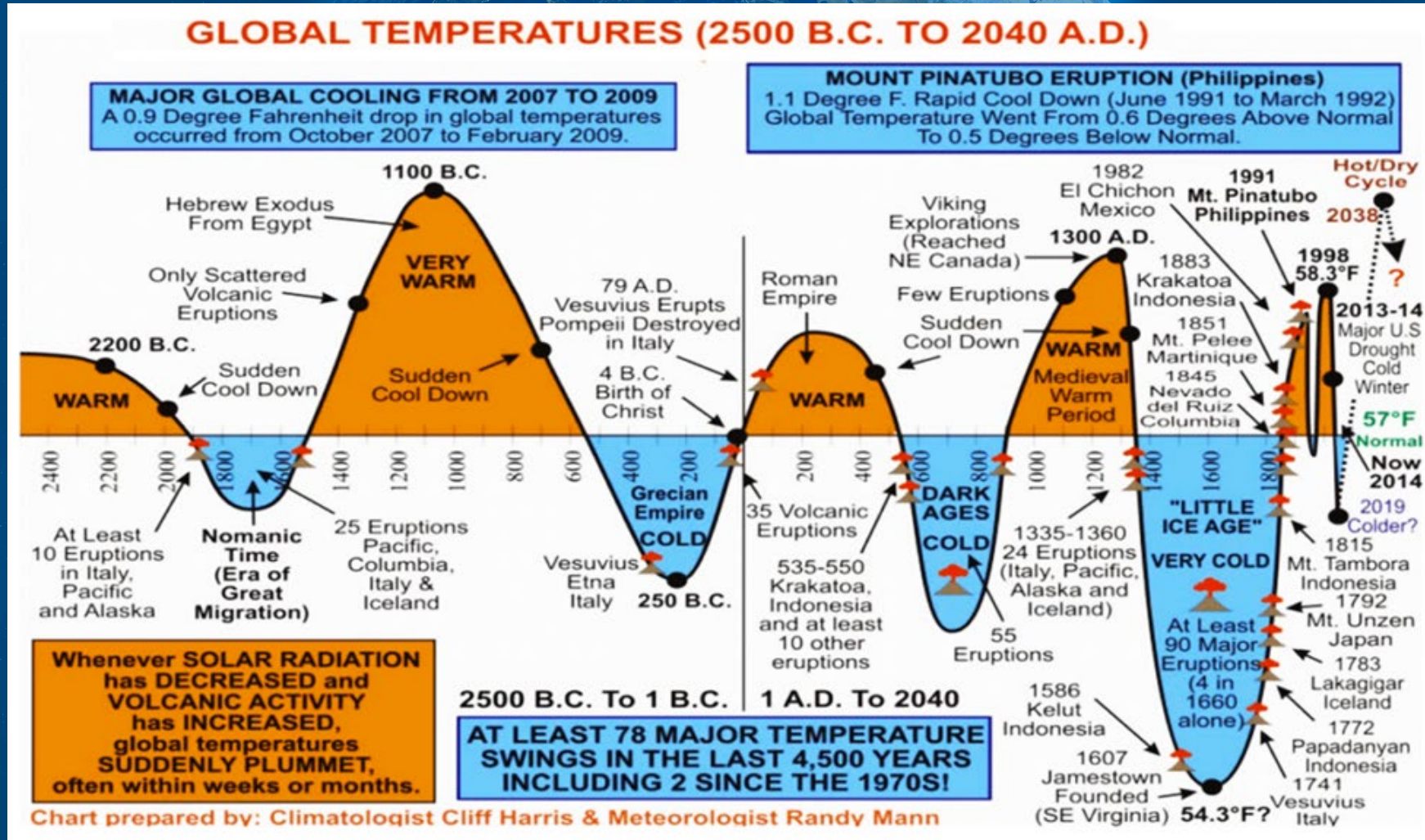
# VOLCANOES





# TEMPERATURE CHANGES...

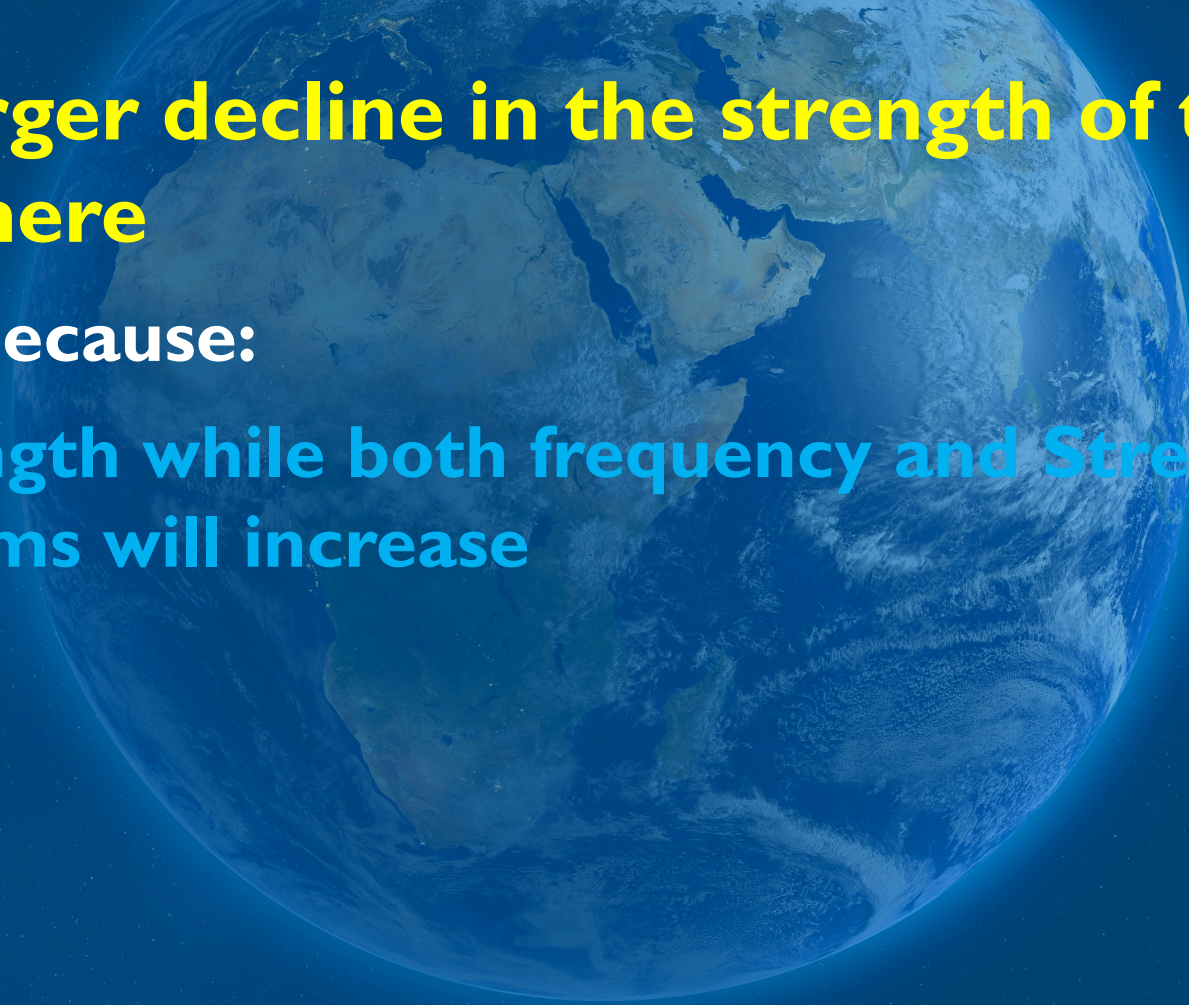
- But man isn't causing Global Warming/Cooling...





## AND THE “BIGGIE”

- **The ever-larger decline in the strength of the magnetosphere**
- **Important because:**
  - **Less Strength while both frequency and Strength of Solar Storms will increase**



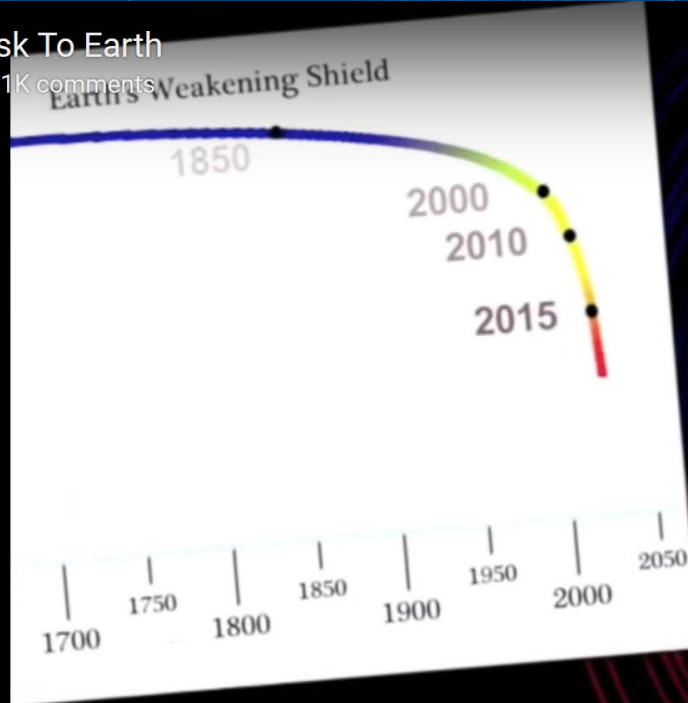


# STRENGTH DROPPING RAPIDLY



The #1 Risk To Earth

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## STRENGTH DROPPING RAPIDLY

- **Sample of headlines from Net**
  - **Earth's Magnetic Field Is Fading...***National Geographic*
  - **Swarm probes weakening of Earth's magnetic field...***European Space Agency*
  - **Earth's Magnetic Field Decaying at an Alarming Rate...***Creation Evolution Headlines*
  - **Earth's Magnetic Field Is Weakening 10 Times Faster Now**
  - *...Live Science*
  - **Forget global warming, worry about the MAGNETOSPHERE: Earth's magnetic field is collapsing and it could affect the climate and wipe out power grids...***Daily Mail*



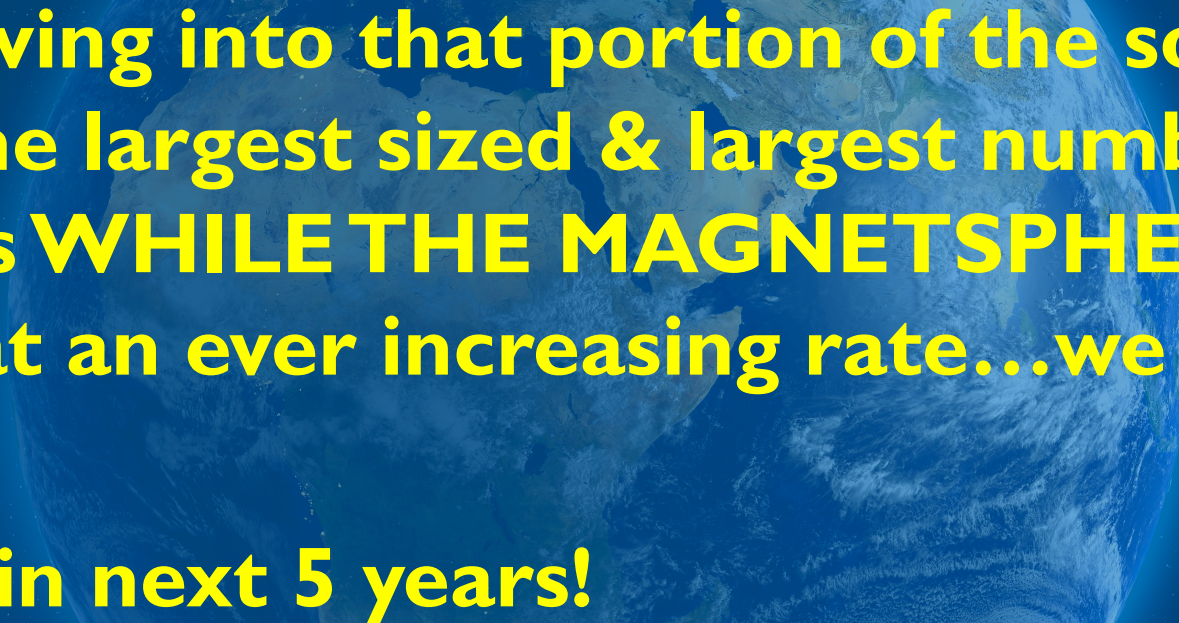
## SO WHAT?

- **The poles will reverse...**
  - History proves it happens on semi-schedule
  - We're due
- **Changes & impact are far reaching & in most cases years off**
  - Providing time for us to adapt & Prepare

**But...**



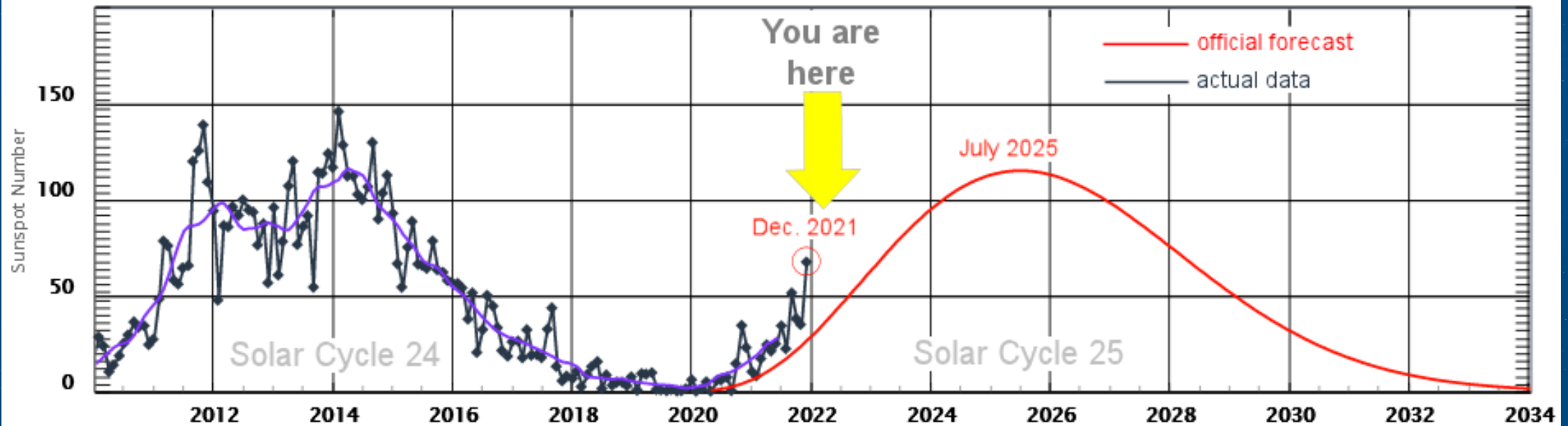
## **THE SUN REPRESENTS SERIOUS THREAT NOW!**

- **With us moving into that portion of the solar cycle with both the largest sized & largest number of solar storms WHILE THE MAGNETSPHERE is weakening at an ever increasing rate...we are at risk!**
  - **Most risk is in next 5 years!**
- 



# SOLAR CYCLE #25

## Sunspot Counts: Predicted vs. Actual



## SO...WITH

- **Solar Flares going to increase in size and frequency**
- **While we have and will continue to have even less protection**
- **Knowing the Sun can have devastating impact...(Examples)**
  - “Carrington” Event in 1859
  - 2012’s Near Miss of Event ten’s of time larger
- **Perhaps it’s time to add to the list of what we Prep for!**