

Topic 09: Raging Sky

What is the difference between thermoscopes and thermometers?

In what century were the Celsius and Fahrenheit temperature scales proposed?

When were temperature measurements standardized within the “European Sphere” and who was involved?

What are four station anomalies that require statistical adjustments of the historical temperature data? Explain each

What are the four major temperature reconstructions (there are more) used by climatologists around the globe? Why do they slightly vary?

What has been the warmest year on record so far?

How much warmer has the planet gotten over the 1850-1900 average?

In what interval of time do the top five global temperature records now fall?

Compare and contrast FIVE artistic ways in which global temperature change has been visualized.

Briefly explain how a tornado forms

When people say that tornadoes occur in “Tornado Alley”, what are they missing?

Explain why the record of the number of tornadoes since the 1950s is likely biased and incomplete

What does the tornado record suggest about how annual tornado “season” has changed across the US continent?

How has the number of days with at least one F1 tornado changed through time?

How has the number of days with at least thirty F1 tornado changed through time?

Which two regions experienced the greatest change in temporal variability in tornado activity between 1970-1980. Which two regions have seen the greatest increase in temporal variability between 1993-2006.

What does “temporal variability” of tornadoes actually measure?

What can be said about the total energy dissipated by tornadoes between 1995 and 2015? Is this trend climate change driven?

Explain why the record of North Atlantic hurricanes and tropical storms since the 1850s is likely biased and incomplete

Studies suggest no statistically significant increase in hurricane numbers between 1970 and 2004, but it did detect a possible signal in.....

Why is the number and frequency of storms not as relevant as storm intensity, endurance, etc.?

What CLEAR correlation exists between the power of a hurricane and sea surface temperatures between 1950 and 2005?

Between 1980 and 2006, what trend is there in maximum measured windspeeds in hurricanes?

For the same time period, what can be said about the upper 30% of hurricane sizes?

Which ocean basin has seen the largest intensification of windspeeds in hurricanes?

What can be said about rate of hurricane intensification across the globe?

What is measured by Rate 1 and Rate 2 Intensification?

How has intensification rates 2 changed in all ocean basins since 1985?

Why is the translational velocity of a hurricane important to humans?

What has happened to translational speed in all but the Indian Ocean since the 1950s?

Why is it important to note that translational speeds are even more reduced over land?

Why is a search for a global drought signal (just like a global precipitation signal) not very meaningful?

Hint: why does REGIONAL and LOCAL change matter so much more here?

What is meant by the 2021-22 US megadrought? How “rare” is this phenomenon?

What percentage of the US megadrought has been blamed on climatic change?

BTW, the US megadrought continues in various parts of the Western parts of the US....