

# CLIMATE and CLIMATE CHANGE

[https://www.youtube.com/watch?v=\\_EWOrZQ3L-c](https://www.youtube.com/watch?v=_EWOrZQ3L-c)

# History of Earth's climate

- [https://www.youtube.com/watch?v=dC\\_2WXyORGA](https://www.youtube.com/watch?v=dC_2WXyORGA)

From IPCC report

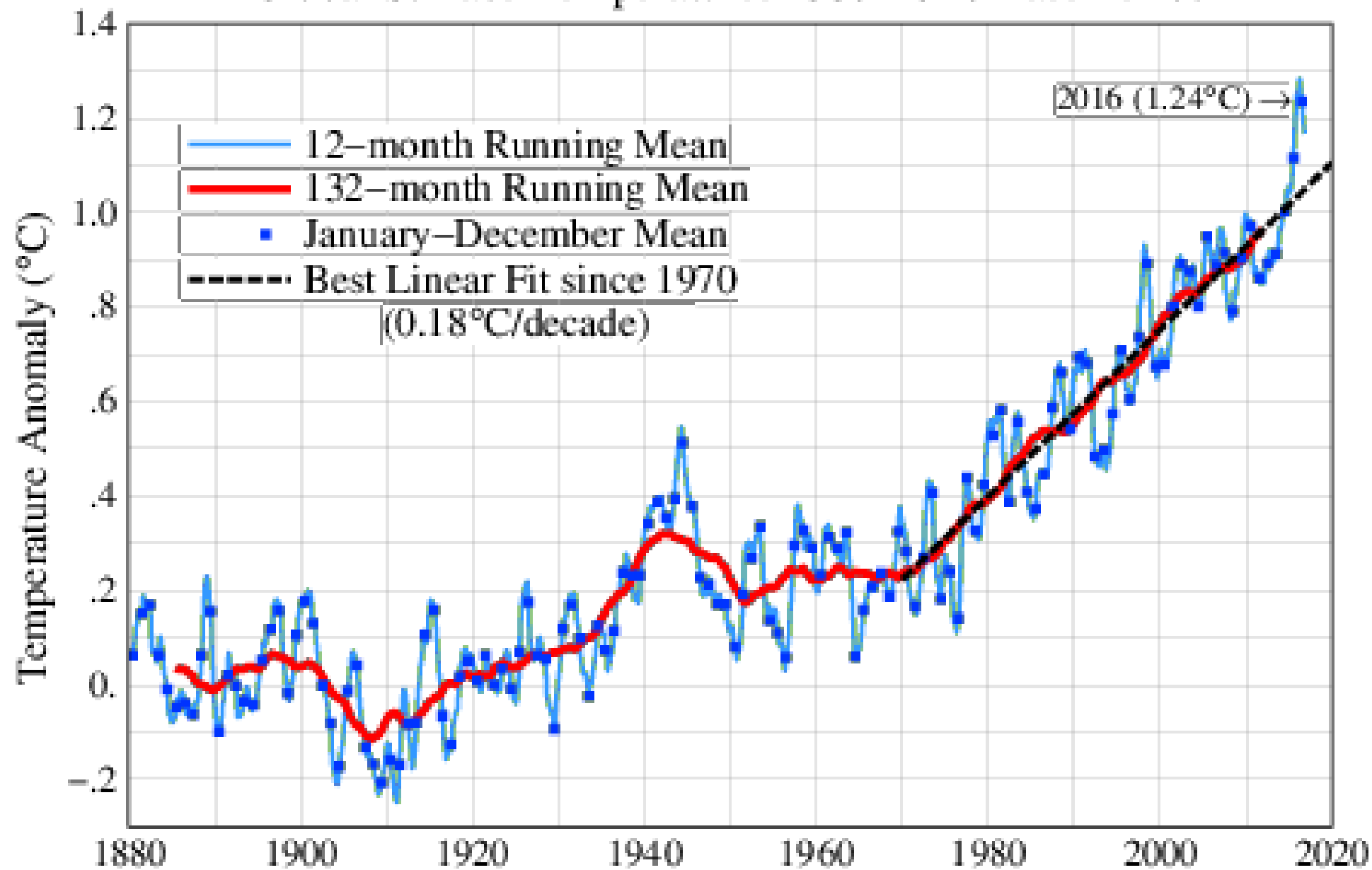
[https://www.ipcc.ch/pdf/assessment-report/ar5/syr/AR5\\_SYR\\_FINAL\\_SPM.pdf](https://www.ipcc.ch/pdf/assessment-report/ar5/syr/AR5_SYR_FINAL_SPM.pdf)

- Human influence on the climate system is clear, and recent anthropogenic emissions of greenhouse gases are the highest in history. Recent climate changes have had widespread impacts on human and natural systems.

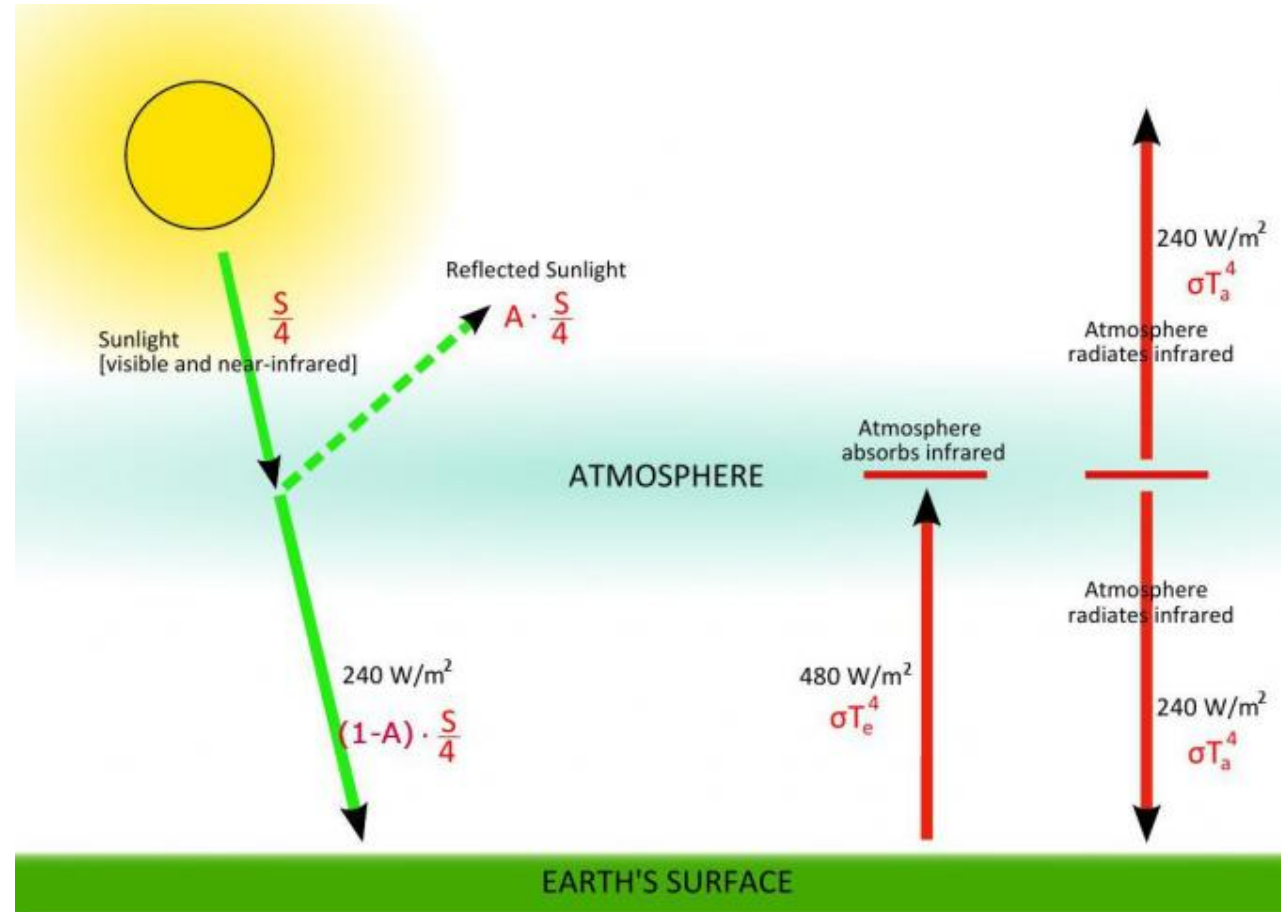
# From IPCC report

- Anthropogenic greenhouse gas emissions have increased since the pre-industrial era, driven largely by economic and population growth, and are now higher than ever. This has led to atmospheric concentrations of carbon dioxide, methane and nitrous oxide that are unprecedented in at least the last 800,000 years. Their effects, together with those of other anthropogenic drivers, have been detected throughout the climate system and are extremely likely to have been the dominant cause of the observed warming since the mid-20th century.

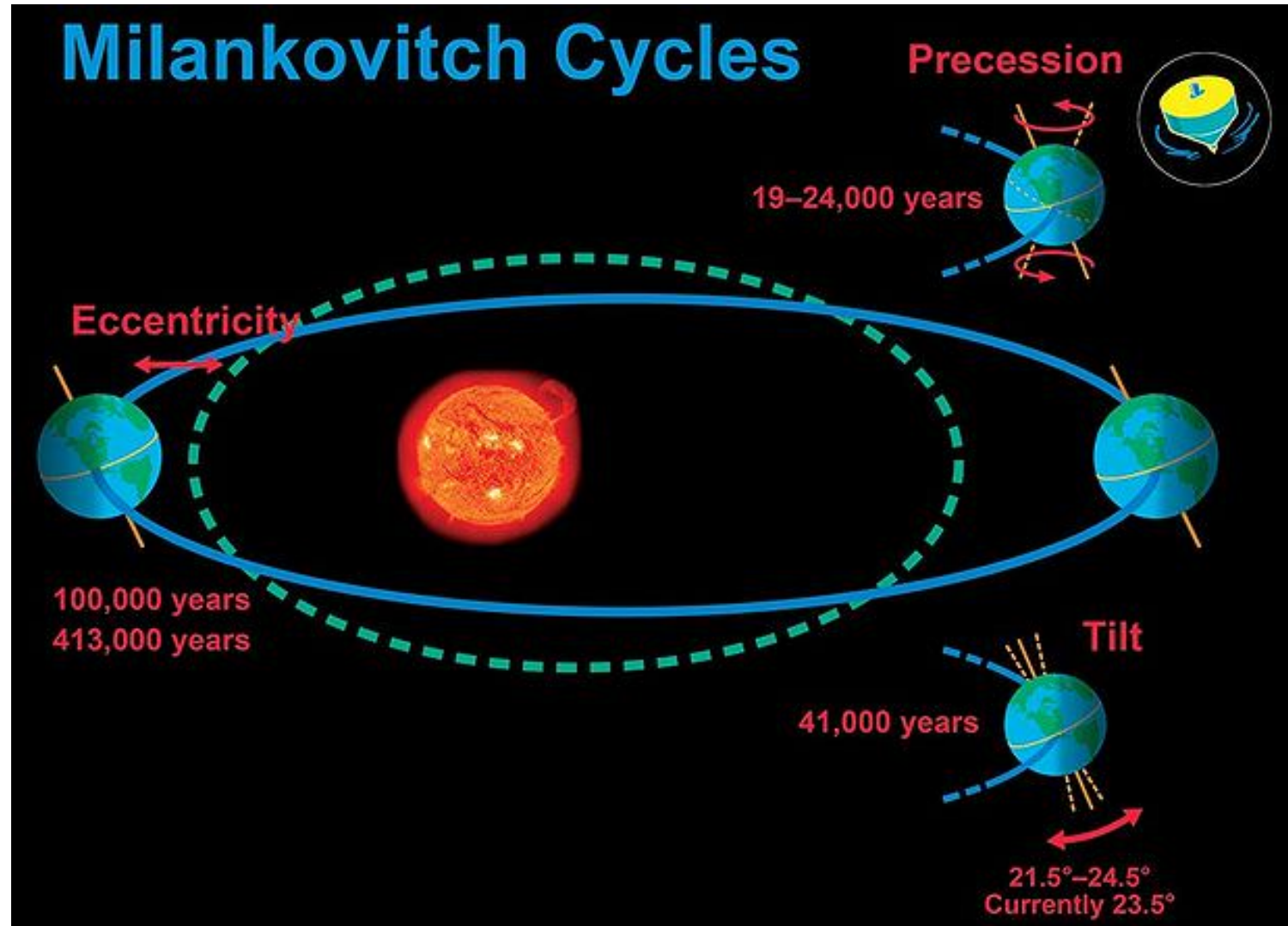
# Global Surface Temperature: 1880–1920 Base Period



# Greenhouse one layer model



<https://www.youtube.com/watch?v=6lbJrvtxWNE>





<https://www.youtube.com/watch?v=u7E1v24DlIk>