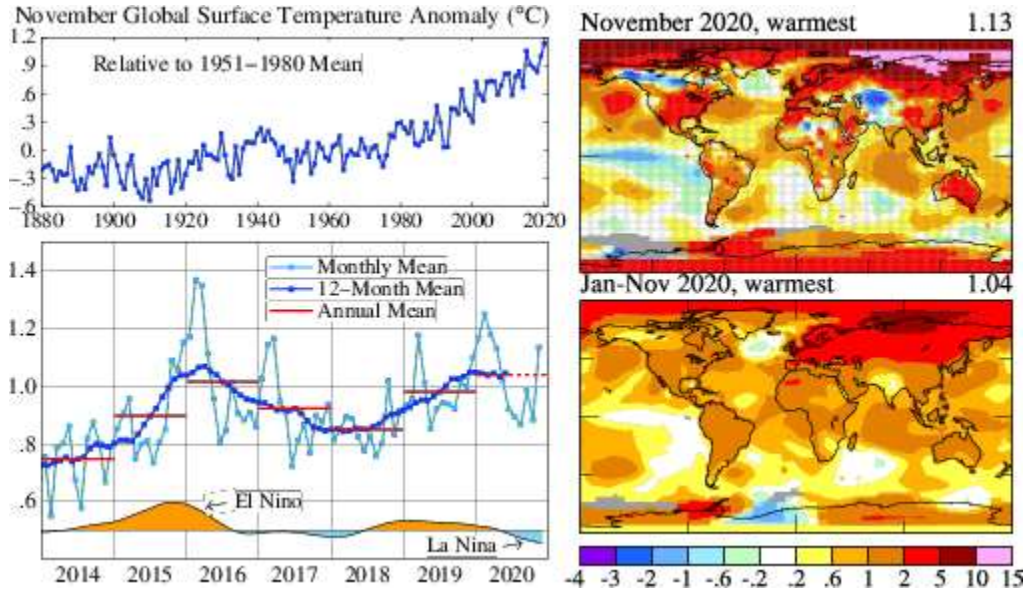


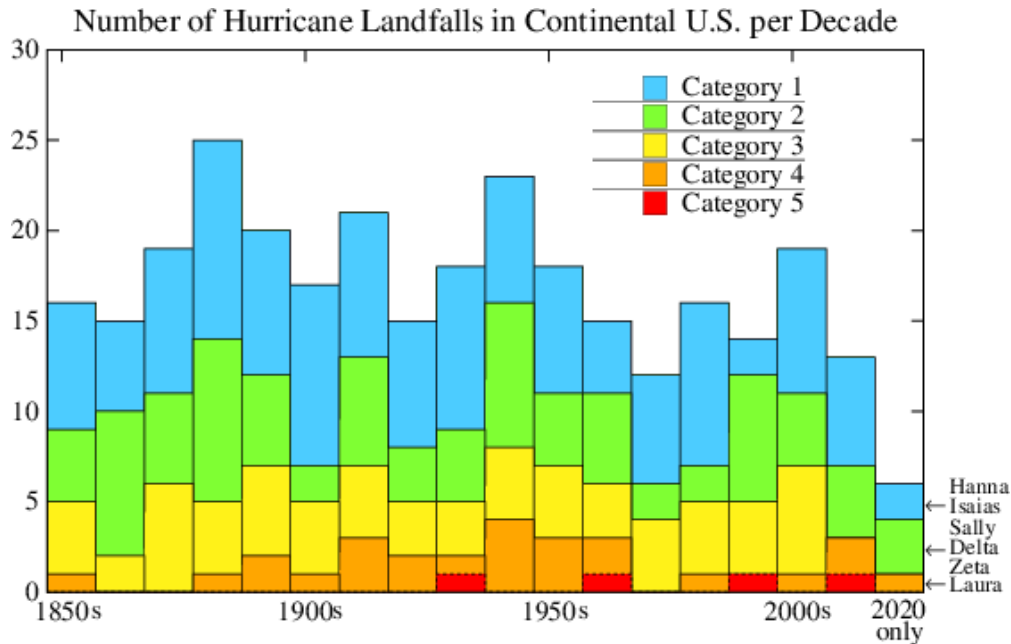
December 14, 2020

Although La Nina is getting stronger, both November 2020 (1.13C) and Jan-Nov 2020 (1.04C) had record highs. (Numbers are relative to 1951-1980 means.) Data source: NASA GISS. Also see <http://columbia.edu/~mhs119/Temperature/Emails/November2020.pdf>



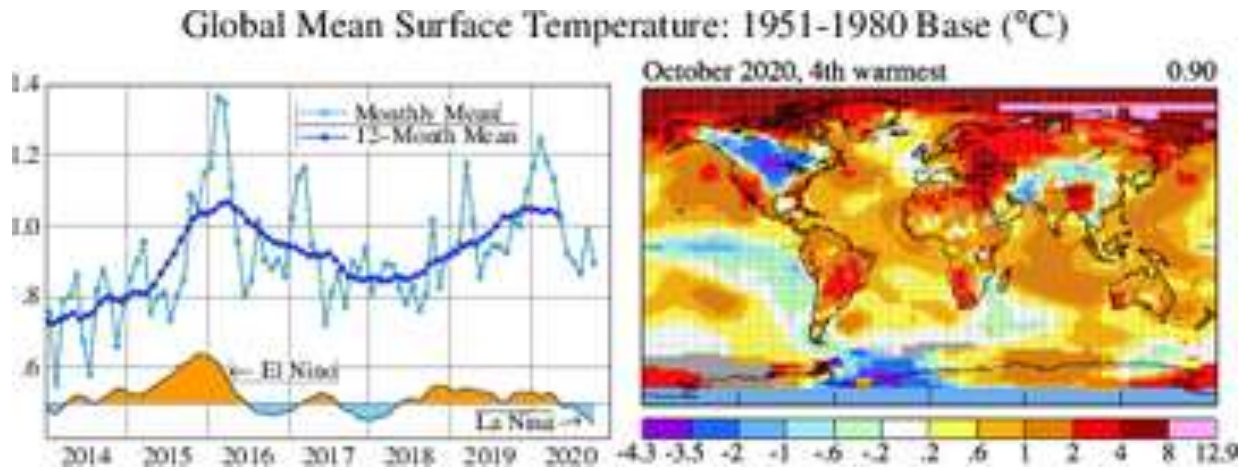
November 30, 2020

2020 Atlantic hurricane season ends today. If you are interested in how many hurricanes made landfalls in the U.S. this year,...



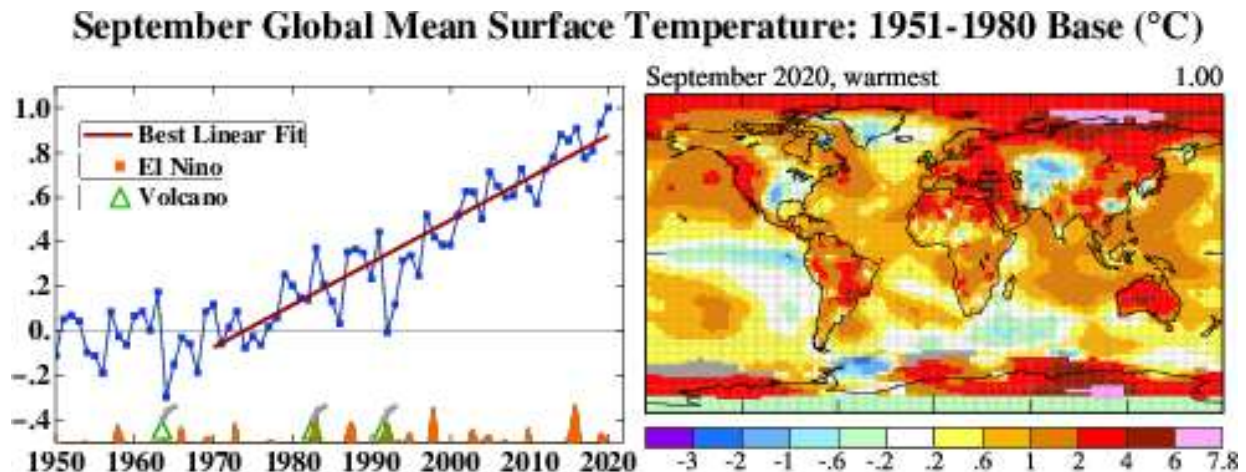
November 13, 2020

Jan-Oct 2020 had 2nd warmest 10-month mean since reliable global temperature data started in 1880, but the La Nina is getting stronger, so the globe will probably get cooler for next several months. Data source: <https://data.giss.nasa.gov/gistemp/> and <https://cpc.ncep.noaa.gov>



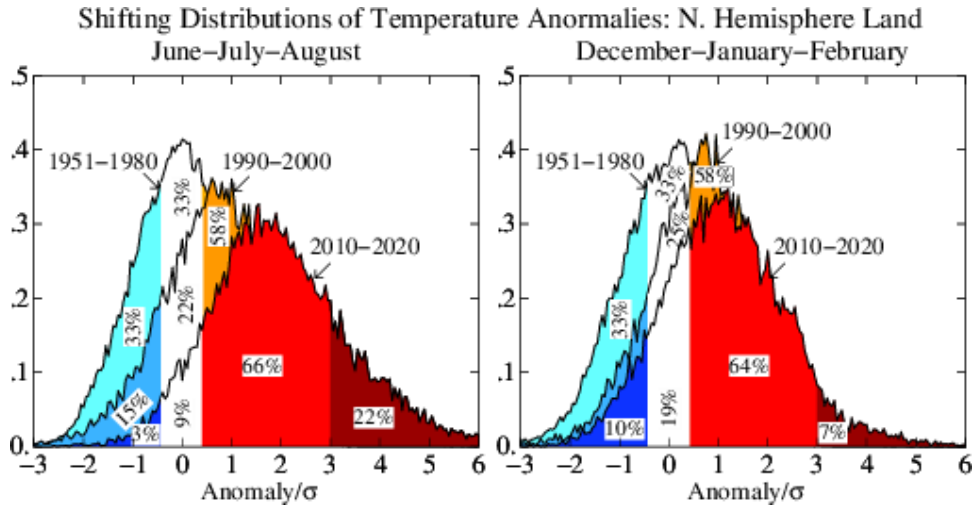
October 14, 2020

According to NASA/GISS analysis, September 2020 was the warmest September since reliable global temperature data began in 1880. It was 1.00C warmer than 1951-1980 mean or 1.25C warmer than the estimated pre-industrial level. See <http://columbia.edu/~mhs119/Temperature> for more info.



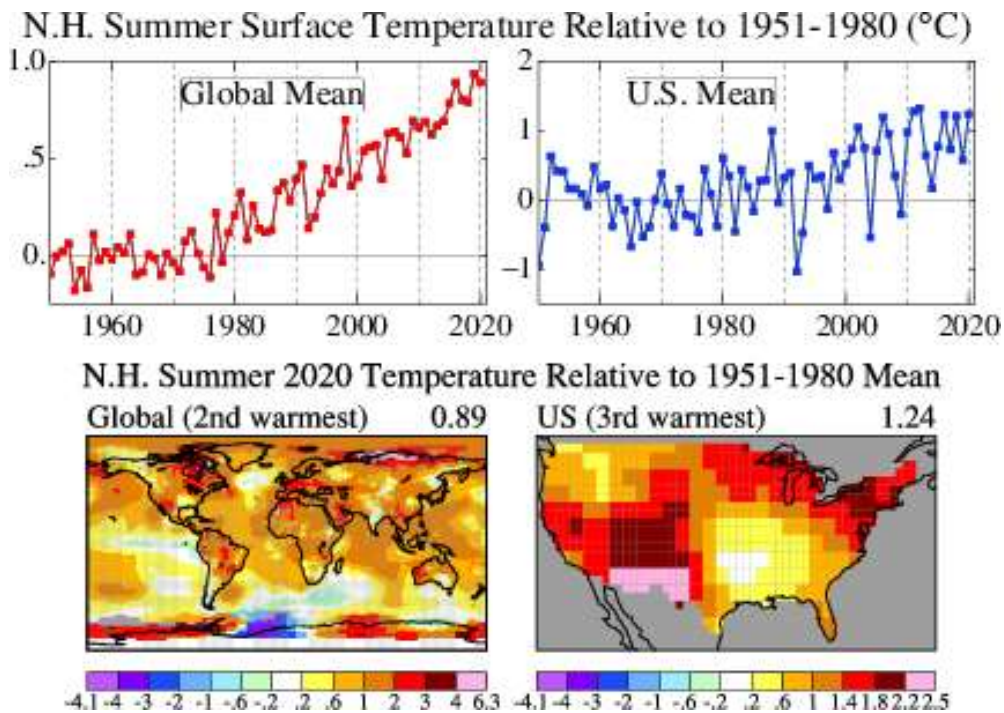
September 25, 2020

I made updates of some figures in http://columbia.edu/~jeh1/mailings/20200706_ShiftingBellCurvesUpdated.pdf with NASA GISS 2020 data, and show here in a different format.



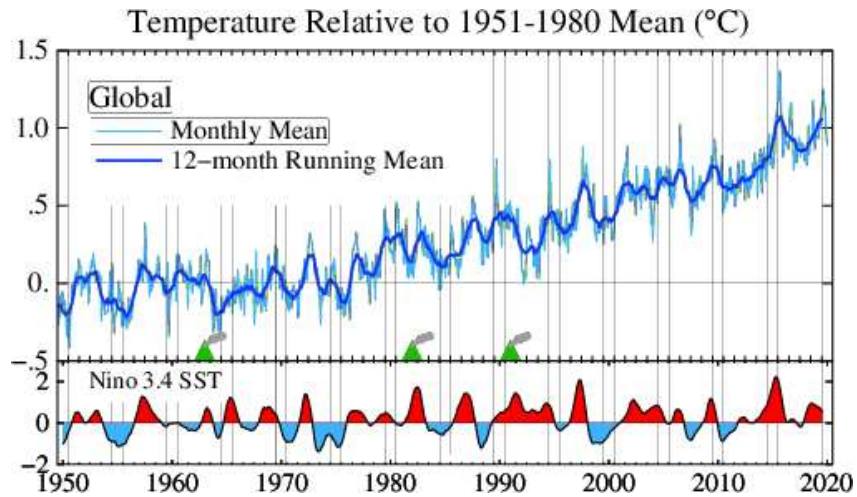
September 14, 2020

Was it hot this summer? According to NASA GISS, in the 141-year record it was the second warmest globally and the 3rd warmest in the U.S. The global mean was 1.15C higher than the pre-industrial estimate. See <http://columbia.edu/~mhs119/Temperature/> for more info.



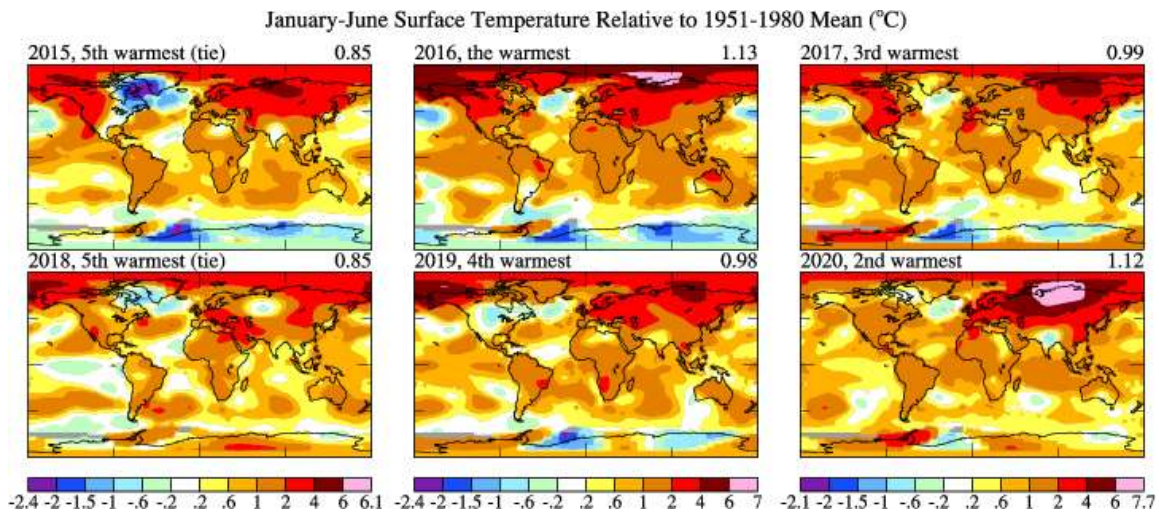
August 14, 2020

The global mean surface temperature is affected by volcanic eruptions, El Nino-La Nina or solar cycles, but it is obviously going up due to the greenhouse gas increase. Data source: NASA/GISS (global temperature) and NOAA Climate Prediction Center (Nino 3.4).



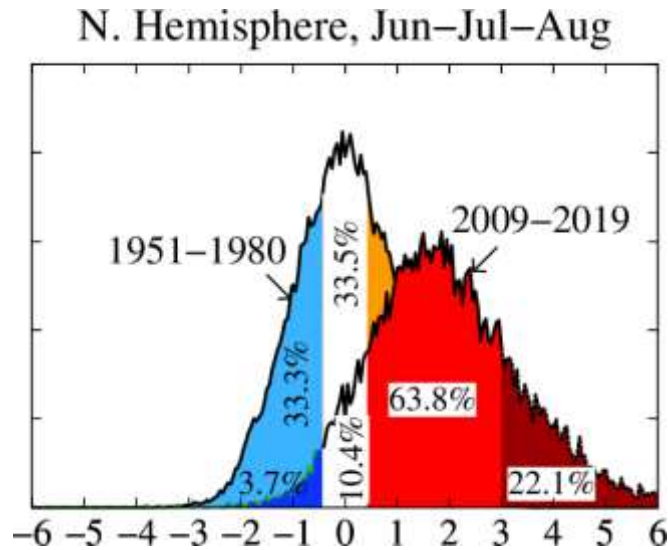
July 13, 2020

NASA/GISS updated the global surface temperature data. A comparison of the first half year of the past six years is shown here. 2020 has been very warm, almost tied with 2016, without having a large El Nino. Let's see what happens in next six months. <http://columbia.edu/~mhs119/>



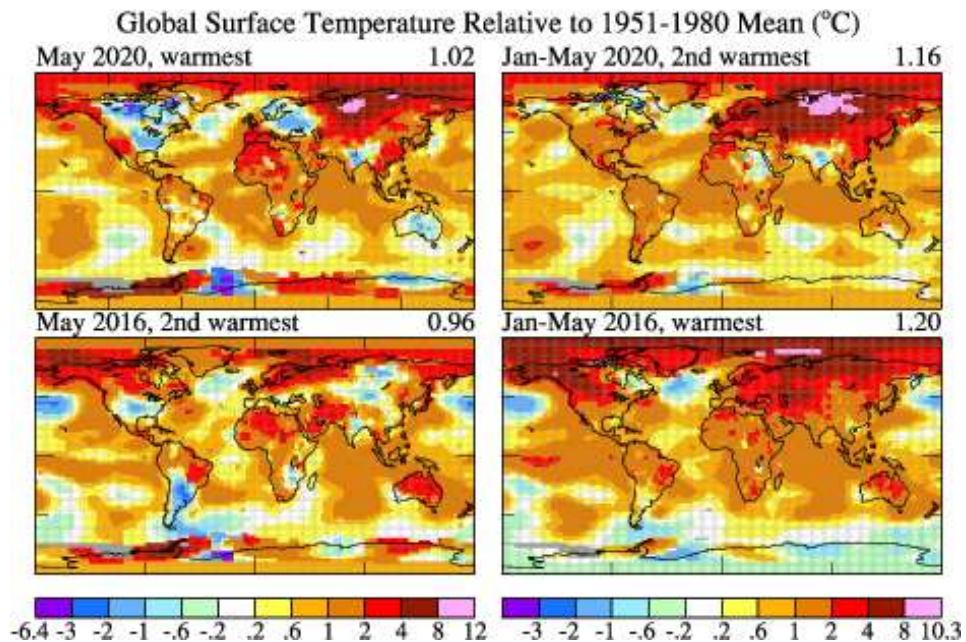
July 9, 2020

People on the globe must be feeling that the summer is getting hotter. It is! The graph shows the probability of having cold/medium/hot/extremely hot areas shifting toward the hotter season. See http://columbia.edu/~jeh1/mailings/2020/20200706_ShiftingBellCurvesUpdated.pdf for more details.



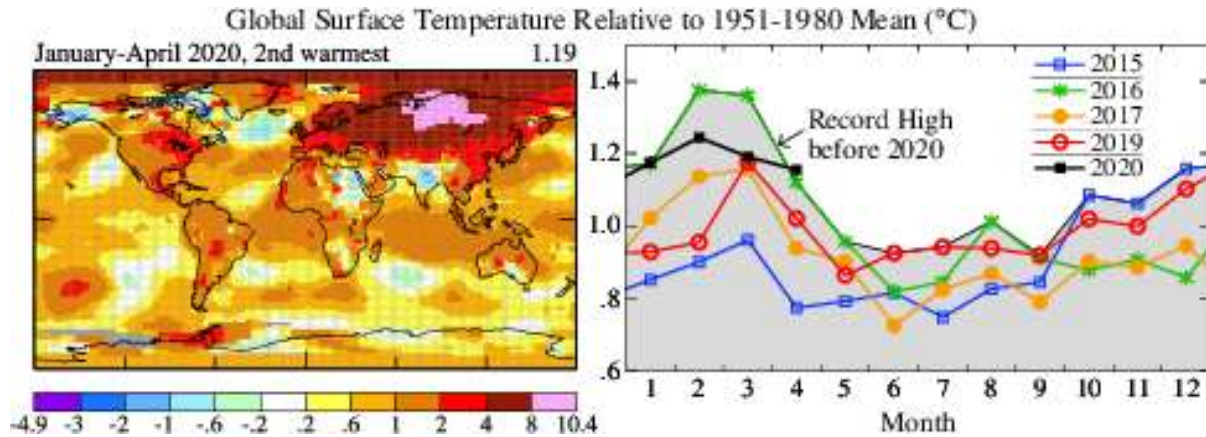
June 12, 2020

Comparison of 2016 and 2020 NASA/GISS temperature data. Further reading: <http://columbia.edu/~mhs119/Temperature/Emails/May2020.pdf> and <http://columbia.edu/~jeh1/mailings>



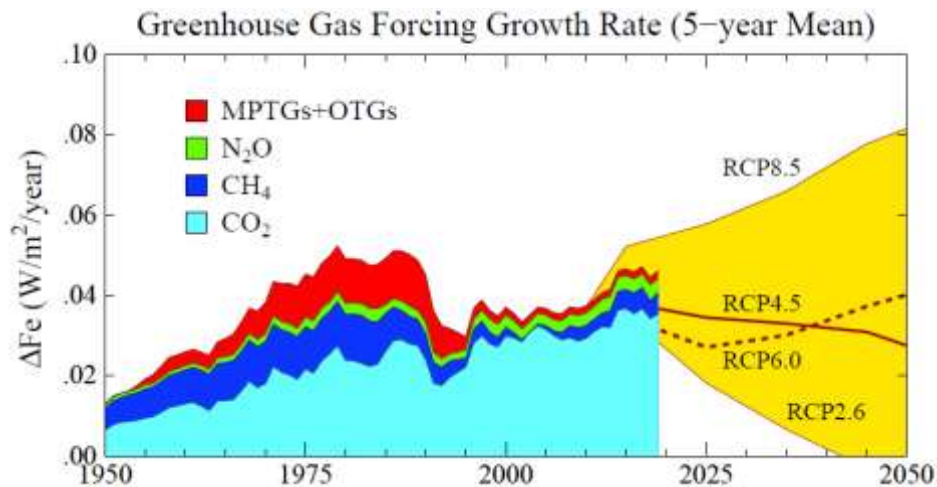
May 13, 2020

According to NASA/GISS@NASAGISS analysis, April 2020 was the warmest April and Jan-Apr mean was the 2nd warmest for the same 4 months since 1880, at 1.16 and 1.19 relative to 1951-1980 means, respectively. The 2/3 of the US was very cool. See <http://columbia.edu/~mhs119/Temperature/> for more info



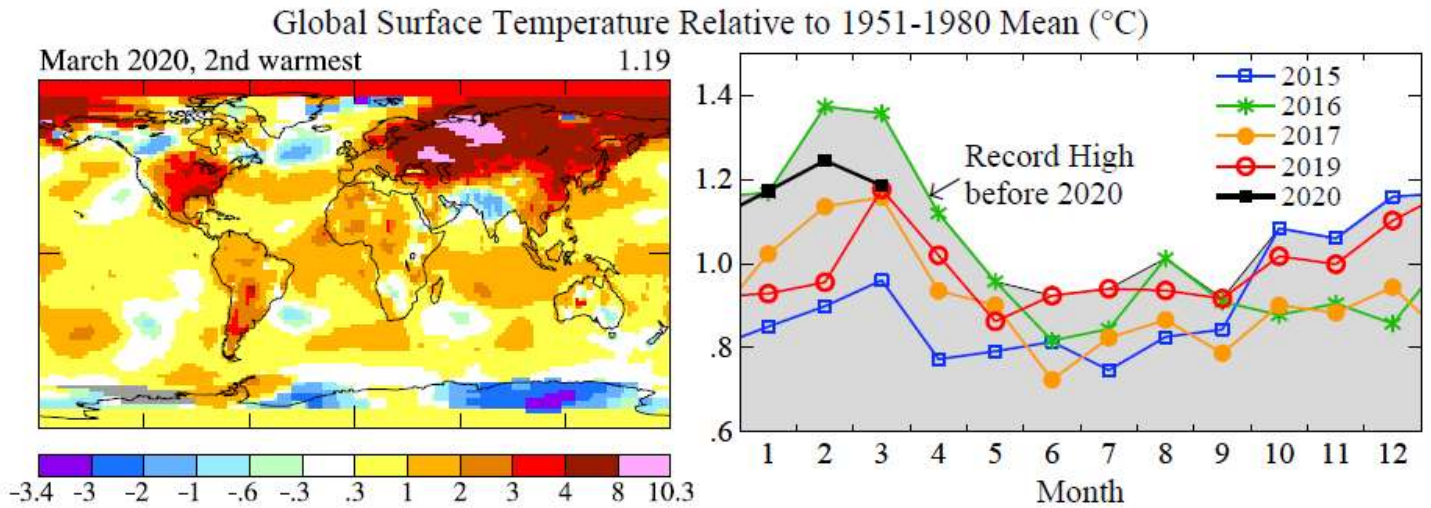
April 24, 2020

Greenhouse gas forcing growth rate figure (Hansen & Sato 2004 https://pubs.giss.nasa.gov/docs/2004/2004_Hansen_ha04010t.pdf) updated with data through 2019. Five year running means were used to remove noise, except 2018 and 2019 which are annual means.



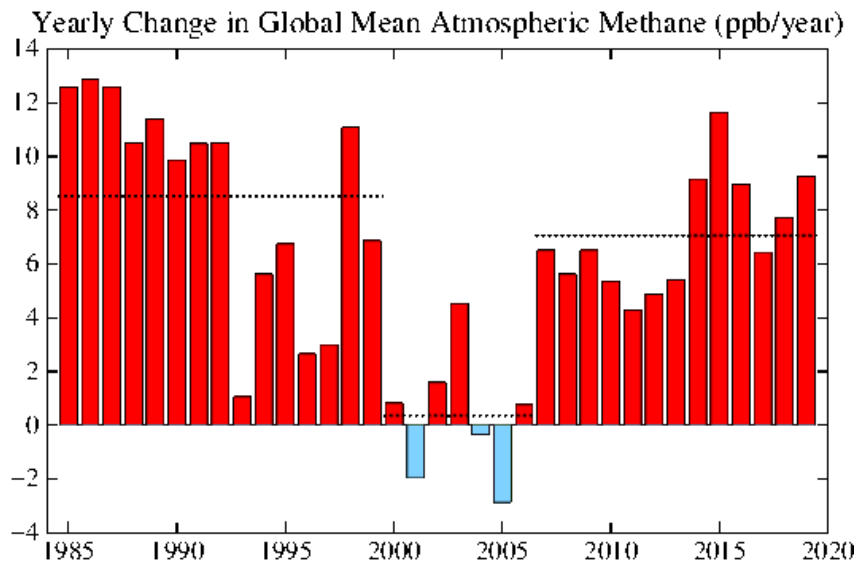
April 13, 2020

According to NASA GISS @NASAGISSanalysis March 2020 was globally the second warmest March since the reliable measurements started in 1880, at 1.19C relative to 1951-1980 mean. See <http://columbia.edu/~mhs119/Temperature/> for more info.



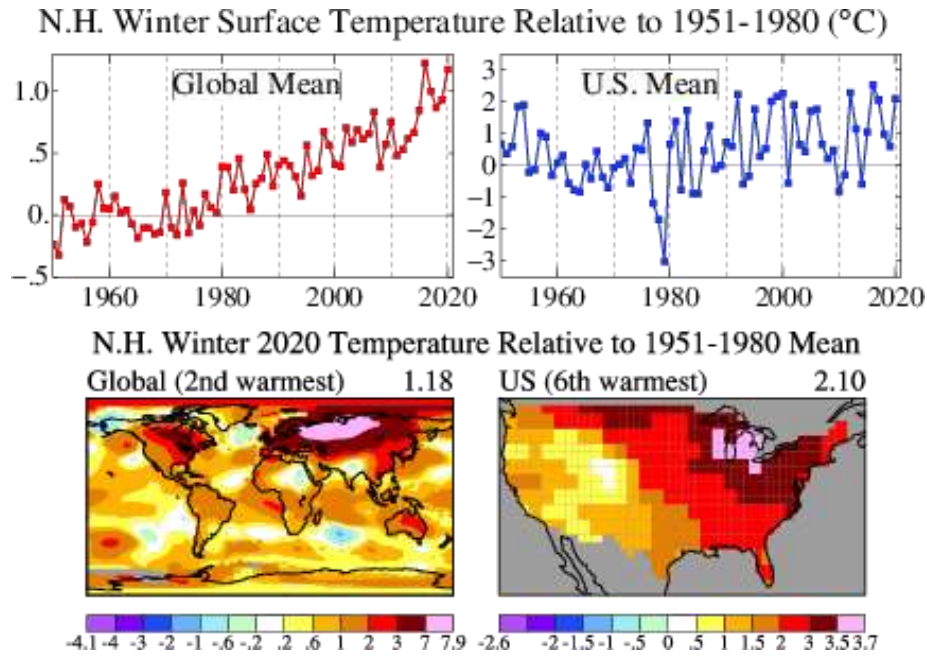
April 6, 2020

Methane, important global warming greenhouse gas, almost stopped increasing in early 2000s but has been increasing fast. Data by Dlugokencky <https://esrl.noaa.gov/gmd/ccgg/trend>



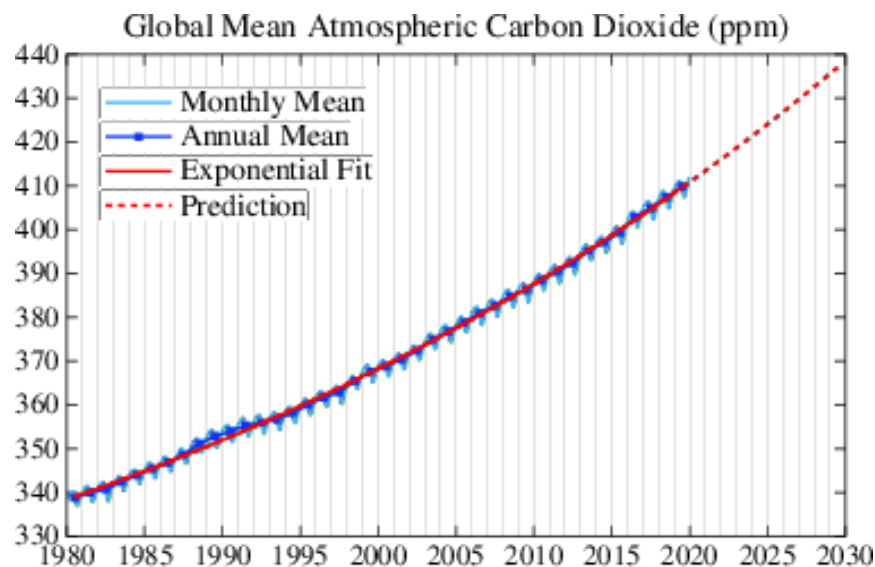
March 11, 2020

According to NASA GISS analysis, Northern Hemisphere winter (Dec-Jan-Feb) was globally the second warmest in the 140-year record, 1.47C warmer than the 1880-1920 mean (~ pre-industrial level). The US had the 6th warmest winter. See <http://columbia.edu/~mhs119/Temperature/> for more info.



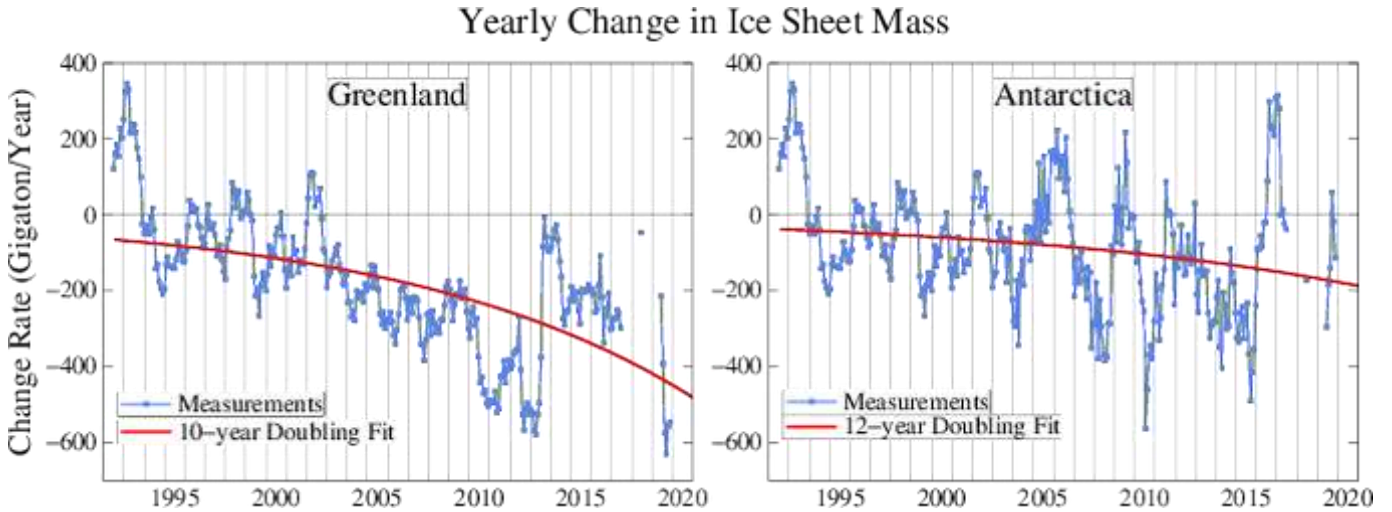
May 8, 2020

Carbon dioxide (CO₂) in the atmosphere, which contributes to the global warming most, is increasing not linearly but accelerating. Data source: <https://esrl.noaa.gov/gmd/ccgg/trend>



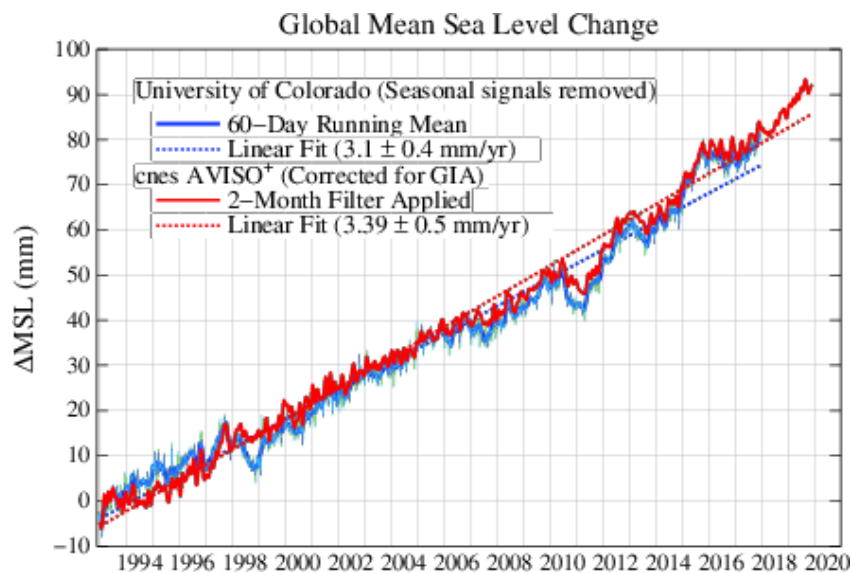
Feb 29, 2020

Land ice on Greenland and Antarctica are melting faster and faster, currently totaling about 650 gigatons every year, which is about 260 million Olympic-size swimming pools. It is contributing more than 50% of the global sea level rise. Data: <https://climate.nasa.gov/vital-signs/ice-sheets/>



Feb 20, 2020

The global mean sea level is now almost 10 cm (4 inches) higher than in 1993 when satellite measurements started. <https://www.aviso.altimetry.fr/en/data/products/ocean-indicators-products/mean-sea-level.html>



Feb 14, 2020

According to NASA GISS analysis, January 2020 was globally the warmest January in the 141-year record, 1.50 C warmer than the 1880-1920 mean (our best estimate for the pre-industrial level). The US had the 5th warmest January.

