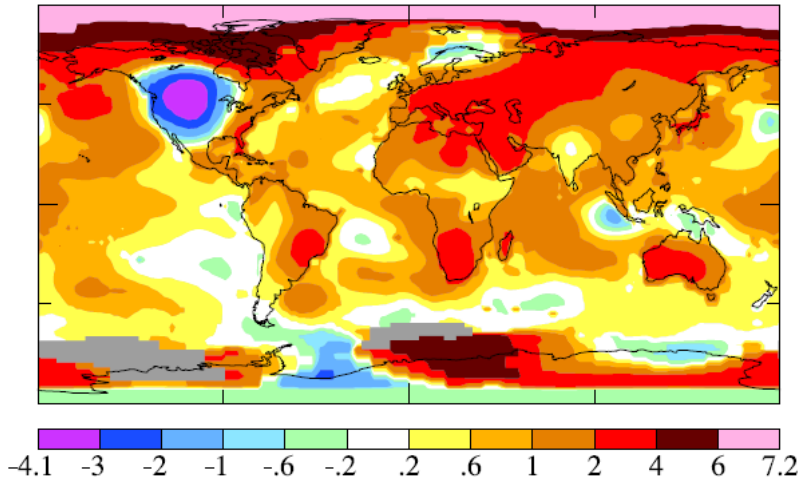


October 2019 Global Temperature Update

Surface Temperature (°C) Relative to 1951-1980 Mean
 October 2019 1.04



Globally, October 2019 was the second warmest October since 1880 (when measurements of adequate accuracy and spatial coverage began) at $+1.04^{\circ}\text{C}$ relative to 1951-1980 or $+1.27^{\circ}\text{C}$ relative to 1880-1920. Only October 2015 was warmer at $+1.32^{\circ}\text{C}$. January-October data for 2019 continue to suggest that 2019 will be the second warmest year, trailing only 2016, which was warmed by a super El Niño. 2019 has been affected by a very weak El Niño and by being near the solar cycle minimum.

Nature in October seemed to take aim at the fossil fools developing unconventional fossil fuels, with a bullseye on tar sands in Canada and fracked oil in North Dakota (see the map). Just kidding, but a blast of Arctic air made October in Casper WY and Billings MT -5.7°C and -5.1°C colder than 1951-1980 means, respectively. The warm air simultaneously sent north caused parts of the Arctic to be more than $+10^{\circ}\text{C}$ warmer than normal. The temperature extremes are reduced in the map by 1200 km smoothing.

Local linear trends (map below left) show an October cooling trend in mid-North America, but such cooling is not found for September or November. Interannual variability, quantified by the standard deviation, suggests that this cooling is noise. However, as has been much discussed, the weaker jet stream associated with polar warming allows blasts of Arctic air to reach midlatitudes more readily.

October Surface Temperature (°C)

