



Solar change and climate: an update in the light of the current exceptional solar minimum

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Many solar parameters and outputs have recorded unprecedented lows during the recent solar minimum since space measurements began. Comparison with long ground based data sequences indicates that average solar activity had reached levels not seen since around 1900. This decline marks the end of the recent grand solar maximum (which peaked around 1985) and using cosmogenic isotopes it is estimated that there is a roughly 10% chance of a return to Maunder minimum conditions within the next 50 years. Thus recent data provide valuable new tests of the robustness of reports of solar signals in the troposphere and to quantify the contribution of solar variability to the observed rise in global mean air surface temperature.