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Great Arctic Cyclone of August 2012 and associated sea ice anomaly

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On 2 August 2012 a dramatic storm formed over Siberia, moved into the Arctic, and died in the Canadian Arctic Archipelago on 14 August. During its lifetime its central pressure dropped to 966 hPa, leading it to be dubbed 'The Great Arctic Cyclone of August 2012'. The pressure of the storm was the lowest of all Arctic August storms over our record starting in 1979, and the system was also the most extreme when a combination of key cyclone properties was considered. Even though, climatologically, summer is a 'quiet' time in the Arctic, when compared with all Arctic storms across the period it came in as the 13th most extreme storm, warranting the attribution of 'Great'.

This cyclone occurred during a period when the sea ice extent was on the way to reaching a new satellite-era low (3.14 million square kilometers). Records show that SIE dropped rapidly between August 4 and August 8, exactly when the Great Cyclone entered the Arctic and was on its way to the Canadian. However, as been pointed out by National Snow and Ice Data Center, 'it is unclear if the storm prompted the rapid ice loss'.

Our focus in this presentation is on the direct effect of a specific cyclone on the sea ice. It will be shown how the August storm changed the sea ice distribution. Being armed with a long record of the sea ice data (since 1979) along with extensive atmospheric data, we will compare the August anomaly with similar atmospheric conditions in previous years and their effect on ice.