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マウンダー極小期の太陽活動サイクルに対する気候応答の地域分布
Spatial distribution of climate response to the solar cycles during the Maunder Minimum

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The Maunder Minimum (A.D. 1645-1715) is a useful period to investigate possible sun-climate linkages as sunspots became exceedingly rare and the characteristics of solar cycles were different from those of today. We have previously reported that climate (the rainy-season humidity in central Japan, the winter temperature in Greenland, and the mean annual temperature in the Northern Hemisphere) responded significantly to the characteristic solar magnetic cycles during the Maunder Minimum (Miyahara et al. 2008 EPSL; Yamaguchi et al. 2010 PNAS). At the solar cycle minima of negative polarity, we observed wet climate in Japan, and cold climate in Greenland and in the Northern Hemisphere. Here, we further examine climate responses to the solar cycles for wider areas including the Southern Hemisphere using the records of paleoclimate obtained from previous studies. We will discuss the spatial distribution of responses and its possible mechanism.

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