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New study from the Tibet Plateau: Whenever the sun became weak, the rain stopped

May 14, 2012 from Cold Sun

At the end of April 2012, a new study on the history of precipitation on the Tibet Plateau over the last millennium was published in the [Journal of Geophysical Research](#). The Tibet Plateau lies at an altitude of 3000 to 5000 m and is the highest and largest plateau in the world. It is extremely sensitive to climate changes. Junyan Sun and Yu Liu from the Chinese Academy of Sciences examined tree rings of two thousand-year-old trees that are still alive on the northeastern edge of the plateau. Tree growth at the study site depends primarily on the amount of precipitation.

The two researchers were able to reconstruct a development with significant fluctuations in precipitation over the last 1,000 years. The respective wet and dry phases lasted for several decades. A comparison with other climate reconstructions from the region shows great similarities in moisture development, making it a regionally representative climate signal. Severe periods of drought occurred in the periods 1092-1172, 1441-1517 and 1564-1730. In particular, the “Great Drought” of 1441-1517 is included in numerous historical documents and disaster reports. The “Great Drought” falls in the core area of a weak phase of the sun, in the so-called [Spörer Minimum](#), which lasted from 1420 to 1570.

Interestingly, almost all other drought phases also occurred at the same time as solar minima phases, including the Oort Minimum, Wolf Minimum, Maunder

Minimum and Dalton Minimum (Figure 1). Whenever the sun was weak for a few decades, there was no rain on the Tibetan Plateau. A frequency analysis of the precipitation curve also provided evidence of solar cycles. The Gleissberg cycle (60-120 years period) and the Suess/de Vries cycle (180-220 years) were found in the data set.

The study once again documents the enormous importance of solar activity fluctuations in climate events. The degradation of this important natural climate driver in the IPCC's theoretical climate models to the role of an unimportant accessory (see our blog article "[What will the coming solar doldrums bring? The Hadley Center is leaving a back door open](#)") is difficult to understand.

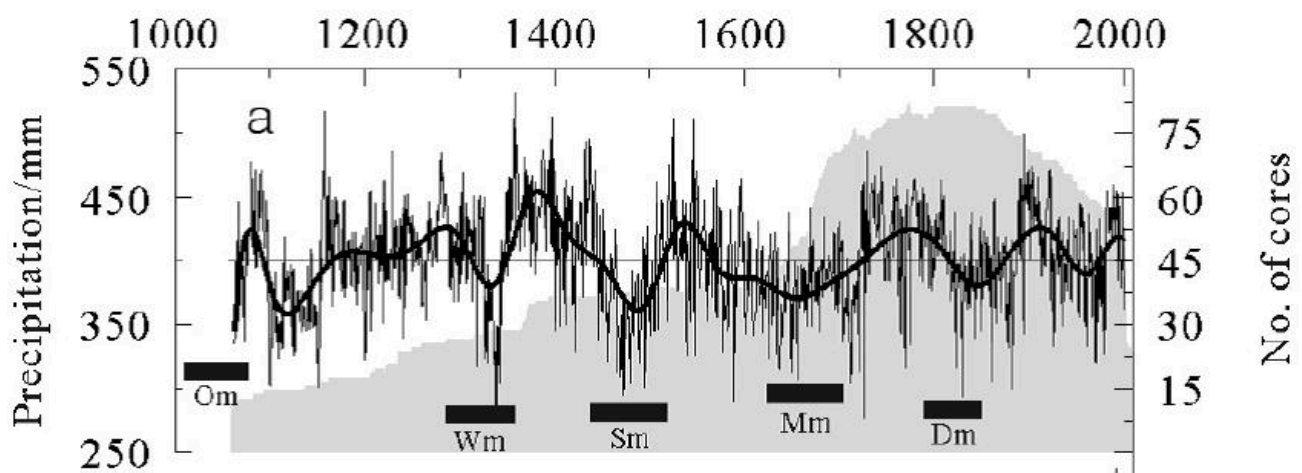


Figure 1: Reconstruction of precipitation for the study area on the edge of the Tibet Plateau. Bars mark prominent solar weak phases that coincide with periods of low rainfall (Om, Oort Minimum; Wm, Wolf Minimum; Sm, Spörer Minimum; Mm, Maunder Minimum; Dm, Dalton Minimum). Figure from [Sun & Liu \(2012\)](#).

See also English-language report on [notrickszone.com](#) and [WUWT](#).

Split:

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> Solar millennium cycles everywhere: The amount of rain in southeast Australia has also fluctuated in time with the sun over the last 10,000 years

Corrigendum

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