ABSTRACT from:

"A catalogue of sunspot observations from 165 BC to AD 1684", by A.D. Wittmann (1) and Z.T. Xu (2), Astronomy and Astrophysics Supplement Series, 70, 83-94, 1987.

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Summary - We have compiled a new catalogue of sunspot observations covering the period 165 BC to AD 1684 by updating and merging previously published catalogues and by adding a substantial amount of new data. The catalogue is in machine-readable form, the total number of entries being 235. Epoch analyses of the data have been made with regard to (a) the usefulness of naked-eye observable sunspots as tracers of the maximum epochs, and (b) the long-term phase behavior of the sunspot cycle. The average period of the sunspot cycle is 11.116 +/- 0.007 years, with individual periods ranging from 7.5 to 14.5 years (70 percent are between 9.9 and 12.3 years). Gaps (or scarcities of observations) are obvious between AD600 and AD800 (Medieval Minimum) and AD 1400-1500 (Spoerer Minimum), but not during 1640-1715 (Maunder Minimum). A useful numerical approximation for the maximum epochs is Year(Max.) = 4.0 + 11.116N, where N is an arbitrary cycle number (N = 178 for the maximum of 1980/81).