

On anticorrelation of number Coronal Bright Points with sunspot number during 1996-2005

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X-ray Bright Points (XBP) were extensively studied using observations from various instruments. Golub et al (1979) have found that number of XBP anticorrelates with sunspot number and suggested that solar cycle may be characterized as an oscillator in wavenumber space. This finding prompted Yoshimura (1983) to suggest the existence of a secondary cycle of magnetic activity running in opposite phase to the sunspot cycle. Later, however, Nakakubo Hara (2000) concluded that the variation in number of XBPs might be visibility effect, as the enhanced brightness of corona may hinder identification of dimmer XBPs. Sattarov et al (2002) found that while the number of bright points exhibit cyclic variation, the number of magnetic bipoles with a particular flux and separation does not change from solar minimum to the maximum. Hence, Sattarov et al (2002) concluded that cyclic variation in XBP number may be a visibility effect. In this work, we continue study the properties of coronal bright points (CBPs, features that include XBPs and bright points in other wavelengths) using SOHO/EIT 195A data from 1996-2005. We identify CBPs using automatic procedure developed by us (Sattarov et al 2005, Karachik et al. 2006) and calculate various parameters including heliographic position, intensity, area, and background intensity around each CBP. Analyzing this data, we found that the latitude-cycle variations of CBPs cannot be completely explained by the visibility effect. These irregularities suggest that in addition to the visibility effect, the actual number of coronal bright points on the Sun may vary with solar activity. We present details of the autocorrelation number of CBP with sunspot number.

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