

## Importance of solar-weather study putting an observational focus on the year of 2004

# Takao Saito[1]

[1] No

An analysis of aa-indices for 150 years shows an averaged maximum, not at sunspot maximum, but 3.5 years before sunspot minimum. From the viewpoint of the solar-weather study, this must be an important fact, which has been rarely noticed so far by both solar physicists and geophysicists.

Disturbances of the magnetosphere of the earth are expressed by functions commonly of the southward component magnetic field,  $B_s$ , and velocity,  $V$ , respectively, of the solar wind.

Out of the two parameters,  $B_s$  is important for short-range solar weather forecast of the disturbances in relation to solar CME's and Sc-type geomagnetic storms that tends to occur in sunspot maximum. On the other hand,  $V$  is important for long-range solar-weather forecast in relation to the stable coronal holes and non-Sc geomagnetic storms that occur before sunspot minimum.

The stable and distinct coronal holes are formed in this special period, because the so-called triple-dipole structure of the sun and its magnetosphere is formed in this phase during the course of the reversing of the heliomagnetospheric neutral sheet.

According to an analysis of geomagnetic data for more than one century, this special period is to be in the year of 2004, when all the sun, the solar wind, and the earth's magnetosphere are statistically expected to be governed in this year.

In conclusion, it is quite important for promotion of solar-weather study to settle appropriate observational projects putting a focus at the year of 2004.