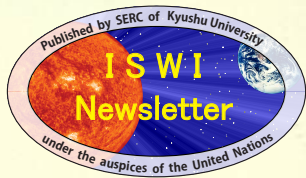


THE DAILY

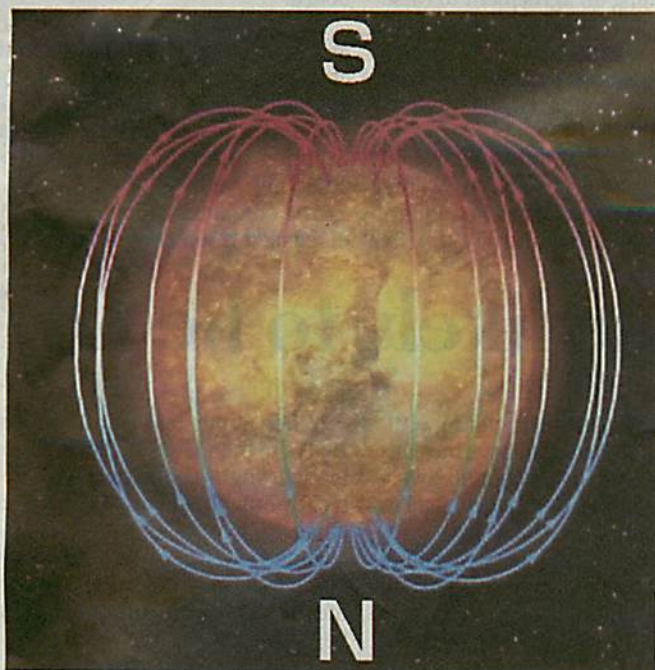


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Courtesy of National Astronomical Observatory of Japan

Left: The usual polarity of solar magnetic fields. There are the negative fields in the North Pole and positive fields in the South Pole. Right: The image of a quadrupolar field pattern. Strong magnetic field lines occur between the North and South poles, and the equator.

Solar poles to become quadrupolar in May

The Yomiuri Shimbun

Magnetic field polarity at the solar poles will reverse and become quadrupolar in May, meaning positive fields will emerge in the North and South poles and negative fields will emerge on the equator, according to the National Astronomical Observatory of Japan and other institutes.

When a similar phenomenon occurred about 300 years ago, the Earth's average temperature fell slightly.

A research team led by Saku Tsuneta, a professor at the observatory, analyzed solar magnetic fields data using Hinode, an observational satellite, and confirmed that the polarity of the magnetic field at the North Pole began to reverse in July last year.

The researchers also found the magnetic field at the South Pole, which was expected to reverse along with the North Pole, maintained a positive polarity, ensuring the formation of a quadrupole magnetic field.

Hinode
The cause behind the shifts in polar fields is not understood. However, it is known that the shifts coincide with the increase and decrease in the number of sunspots over an about 11-year cycle.

The current sunspot cycle has stretched for close to 13 years. A similar situation occurred in the 17th to 18th century, when the average temperature of the Northern Hemisphere decreased by 0.6 C. The research team believes the quadrupolar pattern also emerged at that time.