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399-day variations in solar-wind parameters

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Abstract content

Based on a large series ($N=14038$) of daily solar-wind densities, we obtained the fluctuation power spectrum. The spectrum shows that the 399-day variation (the synodic period of Jupiter) has the largest amplitude in the interval of periods from 20 to 800 day. It is second in magnitude only to the secular, 22-, and 11-year variations. The amplitudes of the 399-day variations in solar-wind density, temperature, and speed were determined by superposed epoch analysis: ~ 0.5 , $\sim 8000\text{K}$, and 2.8 km s^{-1} , respectively, at a more than 95% confidence level. This leads us to conclude that Jupiter may affect the solar-wind parameters, since only Jupiter has a 399-day periodicity in our planetary system.

If this paper is presented for a collaboration, please specify the collaboration

Summary

Reference

Proceedings of the 30th International Cosmic Ray Conference; Rogelio Caballero, Juan Carlos D'Olivo, Gustavo Medina-Tanco, Lukas Nellen, Federico A. Sánchez, José F. Valdés-Galicia (eds.); Universidad Nacional Autónoma de México, Mexico City, Mexico, 2008; Vol. 1 (SH), pages 399-402

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