

The influence of change of the sign of solar magnetic field on the Jovian electron intensity

N.G. Scryabin, S.N. Samsonov, I.Ya.Plotnikov (*Institute of Cosmophysical Research and Aeronomy, 31 Lenin Ave., 6777891 Yakutsk, Russia*)

It is known that the Jupiter is a powerful regular source of high- energy electrons (energy is from 0.2 to 40 MeV). In this connection, their density in the Earth-orbital space systematically increases with a period of 399 days coinciding with a Jovian synodic period. By the obtained estimations of their energy it is sufficient to form a significant local decrease of magnetic field in the IMF sector related to the Jupiter.

This work presents evidences of the fact that the relativistic electron fluxes in the Jovian sector are controlled by a general solar magnetic field. The treatment of 399-days data intervals of cosmic measurements of electron fluxes and IMF for the 1963 to 2000 period has been carried out with invoking data on the periodic changes of the sign on the Sun using the superposed epoch technique. The changes in particle intensities and IMF components at different signs of general solar magnetic field have been determined when the zero of epoch was choosing on the day of the Earth and Jupiter opposition using the numerous statistical data (9925 days). The times of maxima of 399-day variations during different periods of solar activity are compared and the character of their shift relatively the moment of planet opposition is discussed.