

# **Solar cosmic rays as a source of the temporary inner radiation belts**

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After October 29-31, 2003 magnetic storms new ion radiation belts have been recorded by Coronas-F satellite at  $L=2.1 - 3$ . created by solar protons and alpha particles with energy of 1-5 MeV/nucleon. Instead of "impulsive magnetic field compression mechanism during SC " proposed earlier, which is effective only with rare extremely high magnitude SC-events , it was suggested that solar ions can be trapped on closed orbits during fast retreat of the solar cosmic rays penetration boundary. The same mechanism of the solar cosmic rays trapping presumably was responsible for the temporary belt formations after November 2001 and January 2005 magnetic storms.

Energy spectrum, spatial structure and temporal stability of the solar ion belts are discussed.