



Analysis of suprathermal electron depletions within magnetic cloud

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We have analyzed a suprathermal electron depletion halo at 90° pitch angle within a north-south oriented magnetic cloud (MC) without a leading interplanetary shock observed by ACE and Wind at the first Lagrangian point L1 into close Earth's vicinity on 3-4 September 2008. We suggest that depletion of halo electrons can occur as a result of mirroring of suprathermal electrons associated with connection to magnetic field enhancement, as a consequence of complicated internal structure of the MC, occurring between of two nearby large-scale structures: a stream interface and a high speed stream. In our case we propose that the stream interface is a source of sunward suprathermal electrons, and solar heat flux electrons streaming along an open field lines of the MC are source of the antisunward beam.