
Low polarised emission from the core of coronal mass ejections

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Abstract

In white-light coronagraph images, the core of coronal mass ejections (CMEs) is sometimes identified with the cool prominence material. If, as generally assumed, this emission is caused by Thomson-scattered light from the solar surface, it should be strongly polarised tangentially to the solar limb. However, the observations of a CME made with the SECCHI/STEREO coronagraphs on 31 August 2007 show that the emission from the CME core is exceptionally low polarised.

We demonstrated for the first time that the bright core material is located close to the centre of the CME cloud. We show that the major part of the CME core emission, more than 85% in our case, is H alpha radiation and only a small fraction is Thomson-scattered light.

Keywords: CME, prominence, H alpha

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