

Hot coronal and cool chromospheric plasma in solar flares

Arkadiusz Berlicki

Astronomical Institute, Academy of Sciences of the Czech Republic, Ondřejov

František Fárník

Astronomical Institute, Academy of Sciences of the Czech Republic, Ondřejov

Petr Heinzel

Astronomical Institute, Academy of Sciences of the Czech Republic, Ondřejov

Abstract. Observations obtained during solar flares show the enhanced emission of the coronal as well as chromospheric structures. During the gradual phase of solar flares the hot coronal parts emit mainly the thermal EUV and soft X-ray (SXR) radiation, while lower in the chromosphere the plasma is cooler and radiate mainly in the UV and the optical range. It is commonly accepted that during solar flares the chromosphere is heated by the non-thermal particles and thermal conduction. However, some authors suggest that the direct heating of the chromosphere by the EUV and SXR radiation emitted from hot coronal structures may be also important. In this paper we analyze the relation between the SXR, EUV and the optical emission of the solar flare observed on December 13, 2006. In the optical range we used observations from Hinode/SOT in Ca II H line (chromosphere). The emission of hot coronal plasma of the flare was observed by Hinode/XRT (SXR) and TRACE (EUV). We analyzed correlations between all these emissions observed in different structures of the flare.