

Sodium exospheric observations at Mercury compared to space weather conditions and a Montecarlo model: a case study

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Recent observations of the Na exosphere of Mercury [*Barbieri et al.*, EGU 2006] taken with the SARG high resolution spectrograph at TNG (Canaries) in June-July 2005 are used to investigate (in visible light) the spatial configuration of the effective processes of exospheric refilling at the planet, against the background of ongoing solar events. In the latter context it is shown that Mercury was likely reached at the start of the observations by a high speed stream, associated with a low-latitude coronal hole (SoHO/EIT, and ACE data) and this period was further characterized by negative IMF B_X . Moreover, three different CMEs, which probably originated in active region AR0871 (SoHO/LASCO, and SoHO/EIT data), are inferred to have impacted Mercury's magnetosphere in the course of the observations.

The ground based data are compared with the Na column density obtained using a single particle model of the Hermean exosphere [*Mura et al.*, 2007], with due regard to the IMF condition pertaining, in order to derive the necessary boundary conditions for particle sources and losses.