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Mercury's sodium exosphere observations at TNG in 2005

C. Barbieri (1), G. Cremonese (2), F. Leblanc (3), V. Mangano(4,5)

(1) Dept. of Astronomy, University of Padova, Italy, (cesare.barbieri@unipd.it) (2) INAF, Astronomical Observatory of Padova, Italy, (3) CNRS, Verrieres Le Buisson, France, (4) CISAS, University of Padova, Italy, (5) IFSI-INAF, Roma, Italy

A long term plan of observations of the the sodium exosphere of Mercury has begun in 2002 using the high resolution spectroscopic facility (SARG) at the Telescopio Nazionale Galileo (TNG) located on La Palma, Canaries. This program is meant to investigate the variations of the sodium exosphere appearance under the different condition of observations, namely Mercury's position along its orbit, different solar flux, solar wind and micro-meteorites supplies to the mechanisms of exospheric refilling acting on the surface of Mercury. Moreover, the analysis of the exosphere at the limb and terminator sides is expected to give us information on the altitude profile of the exosphere, and on its dynamics toward the nightside.

We present here the analysis of the data taken in June-July 2005. The intensity of the sodium emission has been extracted from the spectra by a dedicated procedure based on the Hapke rough reflectance model. This procedure provides a versatile and coherent method to analyze all the data set already taken, and those to be taken during this long-term plan.