

The sodium emission from Mercury's exosphere as detected by the IMW coordinated campaign in June 2006

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Abstract

Since its discovery in 1985 [1], sodium emission from the environment of Mercury is generally used as a tracer to monitor the brightness variations, morphology and anisotropies of the Hermean exosphere. The information derived from Na observations is very important for two main reasons: 1. to understand the exosphere source processes acting on the Hermean surface and their relative contributions, and 2. to understand the interconnections of this gaseous envelope with the interplanetary environment, including the Sun and interplanetary dust.

The first International Mercury Watch (IMW) campaign was conducted in June 2006, with four different international teams observing Mercury's exosphere from four different telescopes located on the Canary Islands and Hawaii. Italian team observed at TNG telescope (for an example see 2005 observations [2]); US team observed at the AEOS telescope [3]; Japanese team observed at the Tohoku observatory [4] and French one at CFHT [5].

The aim of such synergy was to collect multi-technique data sets to enable comparative studies of simultaneous observations, to coordinate the study of short time-scale variability patterns, and to foster the use of ground-based observations for extended coverage of exospheric processes at Mercury.

Figure 1 clearly shows such a difference in the many observations performed.

Results of the campaign are presented here and future plans of the IMW program are discussed.

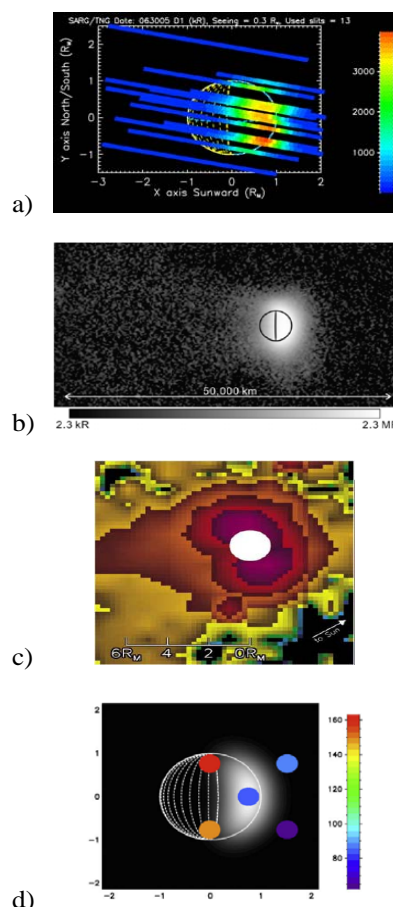


Figure 1: Sodium emission as measured from the four teams: a) TNG, Canary Islands; b) Tohoku observatory, Hawaii; c) AEOS, Hawaii; d) CFHT, Hawaii.

References

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