

High resolution observations of Mercury's exosphere

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Before the arrival of Messenger at Mercury in 2008, the only source of information available on Mercury's environment is observations done from ground based observatories. These observations provided a now large data set on Mercury's exosphere and in particular of its sodium component originally discovered by Potter et al. (Science, 1985). Two other elements have been discovered in the same way: the potassium (Potter et al., Icarus 1986) and the calcium (Bida et al. 2000). All this information helped us to much better understand the formation of Mercury's exosphere. Moreover, it helps to design of the payload of the forthcoming Bepi-Colombo mission.

High resolution spectroscopy has been obtained on night 29 and 30 october 2005, at the 3.6-m NTT telescope of ESO (La Silla, Chile) using the EMMI instrument in its echelle spectroscopy mode. Configuration of Mercury was favourable with an angular diameter of 6 arcseconds and the planet close to quadrature. The disk of the planet has been scanned for spatial variation of the exospheric species. The large spectral range of EMMI (3850-8550 Å) and high resolution ($R=75000$) allow simultaneous measurements of the integrated column density of Na and K as well as search for non-identified species of Mercury's exosphere. Data will be presented and discussed.