

## Ground-based observation of the sodium tail on Mercury

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Observations of sodium emission from Mercury's atmosphere were carried out using a Fabry-Perot Interferometer at Haleakala Observatory on June 14, 2006. The Fabry-Perot Interferometer was used as a wavelength-tunable filter. The spectra of the surface reflection were subtracted from the observed spectra to obtain the intensity distribution of sodium emission because sodium emission is contaminated by the surface reflection of Mercury. The image obtained in the observation clearly shows the sodium exosphere extended to the anti-solar direction, although the whole image of the sodium exosphere had not been obtained in the past observations. The lifetime of sodium atoms was estimated to be  $9-10 \times 10^3$  sec using the observed e-folding distance ( $5.0 \times 10^4$  km) in the sodium tail and was lower than observed by Potter et al (2002). However, it is close to the value predicted by Huebner et al. (1992).