

# **NH<sub>2</sub> and NH glow spatial distribution in the Halley comet coma**

**V. Guineva, R. Werner**

Solar-Terrestrial Influences Laboratory, Stara Zagora Department, Bulgarian Academy of sciences, Stara Zagora, Bulgaria

(v\_guineva@yahoo.com / Phone: +359-42-64 2011)

In this work, the NH<sub>2</sub> and NH radial emission profiles in the sunward coma of the Halley comet are studied. Spectra in the near UV and visible region, registered from the three-channel spectrometer (TKS) on board the VEGA-2 interplanetary station, on 9 March 1986, are used. The glow of the observed species is obtained from narrow intervals of the spectra, in which their emissions are predominant. The following wavelength intervals are used: for NH(0,0) -  $\lambda\lambda$  3349÷3374 ? (pixels 262÷265); for NH<sub>2</sub> - (0,9,0) 598 nm ( $\lambda\lambda$  5975÷5999 ?, pixels 699÷702), (0,9,0) 606 nm ( $\lambda\lambda$  6058÷6064 ?, pixel 713), (0,8,0) 634 nm ( $\lambda\lambda$  6330÷6348 ?, pixels 759÷761), (0,8,0) 631 nm ( $\lambda\lambda$  6306÷6312 ?, pixel 755), (0,10,0) 573 nm ( $\lambda\lambda$  5702÷5744 ?, pixels 653÷659), (0,7,0) 662 nm ( $\lambda\lambda$  6618÷6630 ?, pixels 808÷809). An improved method is applied to subtract the dust continuum in the UV part of the spectra. The intensities are corrected with the optical depth in the near-nucleus region. Theoretic curves following Haser's law are constructed and the course of the theoretical and the obtained by the measurements dependences are compared. The applicability of the recommended parameters to the TKS data is discussed and the most suitable ones are chosen. In the frames of the TKS experiment the Haser model is found to describe well the obtained dependences of the NH and NH<sub>2</sub> column intensities on the perpendicular distance. A comparison with the results for the other neutrals by the TKS spectra, as well as with the results for NH<sub>2</sub> and NH published so far, is made, and a similarity is found.

Due to the scanning of TKS, composed intensity distributions for each examined emission are constructed, covering a larger space region. The NH and NH<sub>2</sub> glow spatial distributions are studied, in comparison with other neutral compounds.