

[구SS-07] FUV observation of the comet C/2001 Q4 (NEAT) with FIMS

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We present the results of far-ultraviolet (FUV) observations of comet C/2001 Q4 (NEAT) obtained with Far-ultraviolet Imaging Spectrograph (FIMS) on board the Korean microsatellite STSAT-1, which operated at an altitude of 700 km in a sun-synchronous orbit. FIMS is a dual-channel imaging spectrograph (S channel 900–1150 Å, L channel 1350–1750 Å, $\lambda/\Delta\lambda \sim 550$) with large image fields of view (S: 4°0′×4′.6, L: 7°5′×4′.3, angular resolution 5′–10′) optimized for the observation of diffuse emission of astrophysical radiation. Comet C/2001 Q4 (NEAT) was observed with a scanning survey mode when it was located around the perihelion between 8 and 15 May 2004. Several important emission lines were detected including S I (1425, 1474 Å), C I (1561, 1657 Å) and several emission lines of CO A¹Π–X¹Σ⁺ system in the L channel. Production rates of the notable molecules, such as C I, S I and CO, were estimated from the photon fluxes of these spectral lines and compared with previous observations. We compare the flux and the production rates in the radius of 3×10⁵ km with 20×10⁵ km from the central coma. We obtained L-channel image which have map size 5°×5°. The image was constructed for the wavelength band of L-channel (1350 – 1710 Å). We also present the radial profiles of S I, C I, CO obtained from the spectral images of the central coma. The radial profiles of 2×10⁶ km region are compared with the Haser model.

**[구SS-08] Planetary companions orbiting K giant HD 208527
and M giant HD 220074**

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The purpose of the present study is to search for and study the origin of planetary companion by a precise radial velocity (RV) survey for K dwarfs. The high-resolution spectroscopy of the fiber-fed Bohyunsan Observatory Echelle Spectrograph (BOES) at Bohyunsan Optical Astronomy Observatory (BOAO) is used from September 2008 to June 2012. We report the detection of two new exoplanets in orbit around HD 208527, and HD 220074 with exhibiting a periodic variation of 875.5 and 672.1 days. The examinations of surface inhomogeneous are no related to the RV variations and Keplerian motion is the most likely explanation, which suggests that the RV variations arise from an orbital motion under the influence of planetary companion. We obtain the minimum masses for the exoplanets of 11.5 and 11.1 MJup with an orbital semi-major axis of 2.3 and 1.6 AU and an eccentricity of 0.08 and 0.14, respectively. From the literatures and our estimations of stellar parameters, the luminosity class of HD 208527 is changed K dwarf to K giant and the spectral type of HD 220074 is confirmed M giant rather than K dwarf. HD 220074 is the first M giant star harboring a planetary companion.