OBSERVATIONS OF THE C_6H^- ANION IN IRC+10216

Y. KASAI, *National Institute of Information and Communications Technology (NICT), Koganei, Tokyo 184-8795, Japan*; E. KAGI, *Faculty of Information Science, Hiroshima City University, Asaminami-ku, Hiroshima 731-3194, Japan*; K. KAWAGUCHI, *Department of Chemistry, Faculty of Science, Okayama University, Okayama 700-8530, Japan*.

Existence of negative ions in space has been discussed for a long time. Although 13 positive ions have been known in interstellar space, the first identification of the negative ion C_6H^- was carried out quite recently by McCarthy et al.[a]. In the present study, radio astronomical data of C_6H^- observed in a late tyep star IRC+10216 with Nobeyama 45-m and IRAM 30-m telescopes have been analyzed by the local thermodynamic equilibrium approximation to give the column density of 6.1-8.0 x 10^{12} cm^{-2} and the excitation temperature of 32 $\pm$ 3 K with an assumed source size of 30" $\pm$ 3". The abundance of C_6H^- was estimated to be 3.4 of C_6H^- and C_6H indicate that the distribution of C_6H^- is in inner region of the circumstellar envelope than C_6H. The production mechanism of C_6H^- is discussed.

[a] M. C. McCarthy, C. A. Gottlieb, H. Gupta, P. Thaddeus, *Astrophys. J.* **652**, L141 2006