

OBSERVATIONS OF THE C_6H^- ANION IN IRC+10216

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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 type 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 $6.1-8.0 \times 10^{12} \text{ cm}^{-2}$ and the excitation temperature of $32 \pm 3 \text{ K}$ 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.

^aM. C. McCarthy, C. A. Gottlieb, H. Gupta, P. Thaddeus, *Astrophys. J.* **652**, L141 2006