LASER INDUCED FLUORESCENCE SPECTROSCOPY SiCN : ROTATIONAL ANALYSIS OF THE $\tilde{A}\ ^2\Delta$ – $\tilde{X}\ ^2\Pi$ TRANSITION

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We have generated SiCN in supersonic free jet expansions, and observed the laser induced fluorescence (LIF) of the $\tilde{A}\ ^2\Delta$ – $\tilde{X}\ ^2\Pi$ transition. We have measured rotationally resolved LIF excitation spectra of the three vibronic bands. Combining with rotational reported transitions[a], the rovibronic transitions of the three vibronic bands were analyzed simultaneously, and the spin-orbit constant of the $\tilde{X}\ ^2\Pi$ state has been determined with precision of the rotational spectroscopy.

[a] A. J. Apponi, M. C. McCarthy, C. A. Gottlieb, and P. Thaddeus, Astrophys. J. 536, L55 (2000).