

We aim to study star-forming region NGC 2024 FIR5 in the Orion B molecular cloud at a distance of ~ 415 pc (Alves et al. 2011). The cloud harbors a binary system SMM1 and SMM2 with masses of $\sim 1.7 M_{\odot}$ and $0.7 M_{\odot}$ and a separation of $\sim 4''$ from previous SMA observations at $850 \mu m$ (Fig. 1; Chen et al. 2013). We request continuum observation at 1.3 mm in EXT configuration. The existing SMA $850 \mu m$ data of NGC 2024 FIR5 with a resolution of $2.2'' \times 1.3''$ shows a flux level of 42 mJy/beam near the edge of the source. Scaling to the EXT beam size of $1.1'' \times 1.0''$, the expected flux level at 1.3 mm would be 5.6 mJy/beam for a typical spectral index of -2.5. Based on the sensitivity estimator, one ~ 4 hour EXT track will give a rms of 0.39 mJy/beam, enough to provide $> 10\sigma$ detection.

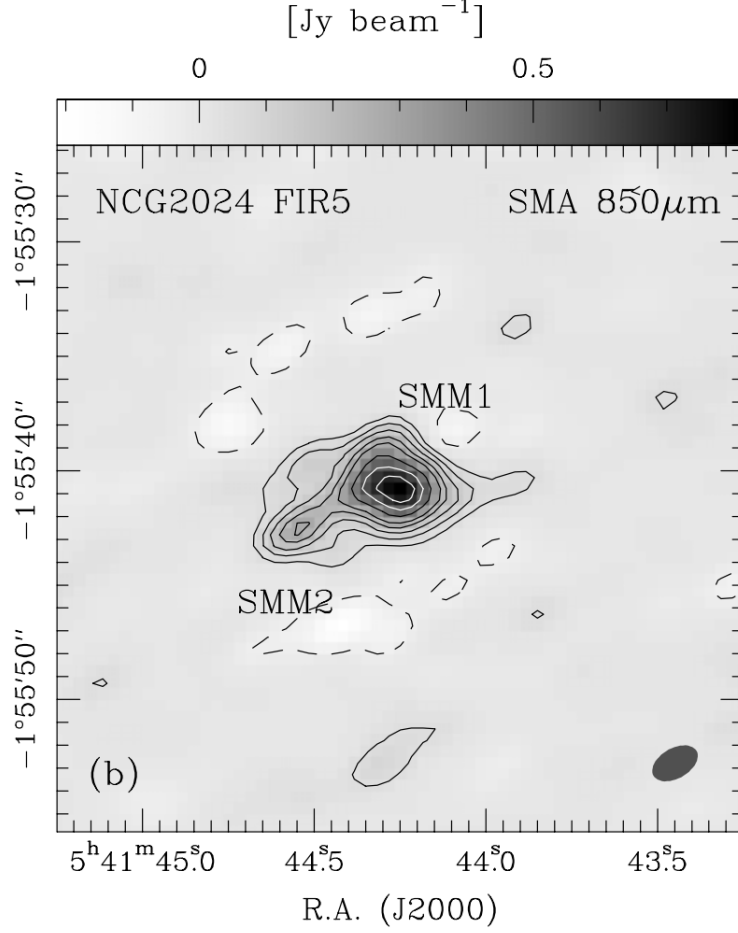


Figure 1. SMA $850 \mu m$ dust continuum image of NGC 2024 FIR5 overlapped by contours of -3σ , 3σ , 6σ , 10σ , 15σ , 20σ , 30σ , 40σ , and 50σ with $1\sigma \sim 14$ mJy/beam. The figure is extracted from Chen et al. (2013).

Reference

Alves F. O., et al., 2011, ApJ, 726, 63; Chen X., et al., 2013, ApJ, 768, 110