

Triggered massive star formation in the LMC HII complex N44

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Abstract. We have used *Spitzer* IRAC and MIPS observations of N44 to identify young stellar objects (YSOs). Sixty YSO candidates with masses $\gtrsim 4 M_{\odot}$ are identified. We have compared the distribution of YSOs with those of the ionized gas, molecular clouds, and HI gas to study the properties of star formation.

Keywords. stars: formation, stars: pre-main-sequence, Magellanic Clouds, HII regions

The distribution of YSO candidates relative to the ionized gas, molecular clouds (Fukui *et al.* 2001), and HI gas (Kim *et al.* 2003) is shown in the figure below. All YSOs are projected within molecular clouds. The majority are found near the peaks of molecular clouds; those off molecular peaks are in HI peaks. About 3/4 of the YSOs are in the two southern clouds associated with massive stars and ionized gas, and the other 1/4 in the northern cloud without much ionized gas, indicating that these YSOs are the first-generation massive stars in that cloud. The star formation history and stellar energy feedback may be responsible for the larger velocity dispersions (Mizuno *et al.* 2001) in the two southern clouds.

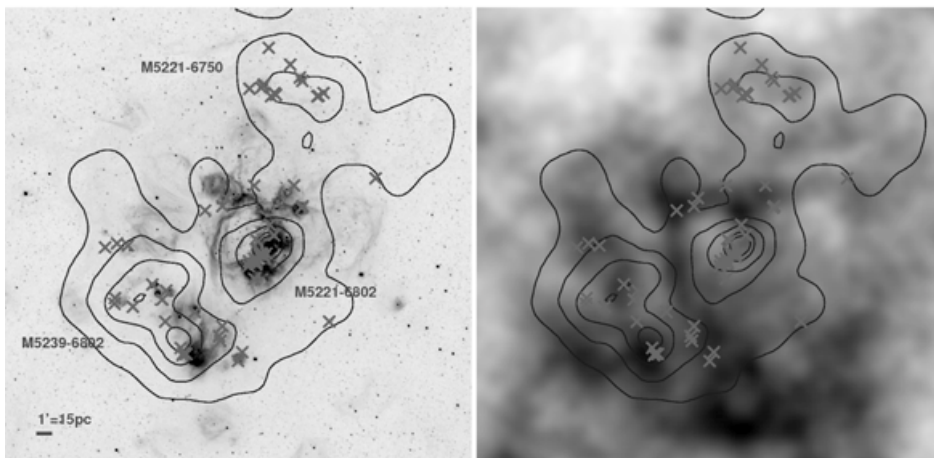


Figure 1. Left: H α image of N44 marked with YSOs (X), CO contours, and molecular clouds (designation from Mizuno *et al.* 2001). Right: ATCA+Parkes HI image of N44 (grey scale) marked with YSOs (X) and CO contours.

References

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