

CB 17 – A pre-protostellar core on the verge of collapse

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CB 17 (L 1389) is a small, relatively isolated, simply structured molecular cloud (Bok globule) located at a distance of ~ 300 pc. The total mass of this small globule amounts to only a few solar masses and its size (FWHM) is $\sim 2.5'$ (~ 0.2 pc). Measurements of different isotopes and transitions of CO, CS, HCO⁺, and H₂CO toward the core of CB 17 have been obtained using the IRAM 30m and CSO 10.4m telescopes (Launhardt *et al.* 1998, ApJS, 119, 59). High-resolution measurements of the HCO⁺(1–0) transition were performed with the OVRO millimetre wave array. In addition, the submm and mm continuum emission was observed with the JCMT 15m and IRAM 30m telescopes (Launhardt & Henning 1997, A&A, 326, 329; Launhardt *et al.* 1997, MNRAS, 288, L45). These measurements reveal the presence of a central dense core of $\sim 0.5 M_{\odot}$ (Launhardt *et al.* 1999, in prep.). Although the properties of this core resemble mostly those of a pre-stellar core (Ward-Thompson *et al.* 1994, MNRAS, 268, 276), spectral signatures of mass infall suggest that the protostellar collapse has already started. Microturbulent radiative transfer calculations and dust models are used to constrain the kinematic state and physical conditions of this star-forming globule core.

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