

Interferometric observations of the hot corinos IRAS16293-2422 and NGC1333-IRAS4A

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Abstract. The last two years have seen the discovery of the hot corinos, warm and dense regions around solar-type protostars, which present the chemical complexity of the long-known massive hot cores. So far, complex organic molecules have been detected in only two solar-type protostars: IRAS16293-2422 (Cazaux et al. 2003) and NGC1333-IRAS4A (Bottinelli et al. 2004a), and have been imaged in the former source only (Kuan et al. 2004; Bottinelli et al. 2004b). Sub-millimeter Array (SMA; Kuan et al. 2004) and Plateau de Bure (PdB; Bottinelli et al. 2004b) observations of IRAS16293-2422 show that the complex molecules are emitted by two distinct compact regions surrounding each of the components of this binary system. One remarkable result was the observed difference in the chemistry of the two components. In this contribution, we present new interferometric observations of the second hot corino, NGC1333-IRAS4A. We obtained Plateau de Bure maps of CH₃CN, in which the two components (IRAS4A1 and IRAS4A2) of this binary system are resolved. The maps show chemical differences between IRAS4A1 and IRAS4A2 similar to those observed in the IRAS16293-2422 binary system.

Keywords. ISM: individual (IRAS16293-2422, NGC1333-IRAS4A), ISM: molecules, stars: formation

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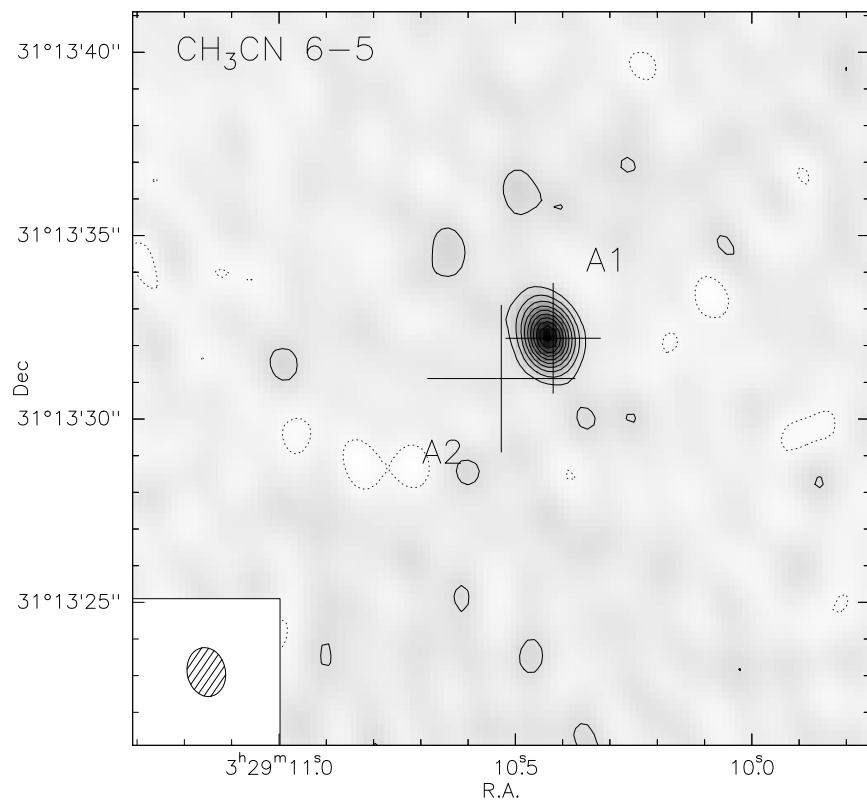


Figure 1. Line map of CH_3CN ($J = 6 - 5$), averaged over the transitions $K = 0, \dots, 4$; the rms is 2 mJy beam^{-1} , and contours range from 5 to 50 mJy beam^{-1} in steps of 5 mJy beam^{-1} ; the beam size is $1''.3 \times 1''.0$. The large cross indicates the position of NGC1333-IRAS4A2 and the small one that of NGC1333-IRAS4A1.