

## Discovery of a Hot Corino in the Bok Globule B335

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We report the first evidence of a hot corino in a Bok globule. This is based on the ALMA observations in the 1.2 mm band toward the low-mass Class 0 protostar IRAS 19347+0727 in B335. Saturated complex organic molecules (COMs), CH<sub>3</sub>CHO, HCOOCH<sub>3</sub>, and NH<sub>2</sub>CHO, are detected in a compact region within a few 10 au around the protostar. Additionally, CH<sub>3</sub>OCH<sub>3</sub>, C<sub>2</sub>H<sub>5</sub>OH, C<sub>2</sub>H<sub>5</sub>CN, and CH<sub>3</sub>COCH<sub>3</sub> are tentatively detected. Carbon-chain related molecules, CCH and c-C<sub>3</sub>H<sub>2</sub>, are also found in this source, whose distributions are extended over a few 100 au scale. On the other hand, sulfur-bearing molecules CS, SO, and SO<sub>2</sub>, have both compact and extended components. Fractional abundances of the COMs relative to H<sub>2</sub> are found to be comparable to those in known hot-corino sources. Though the COMs lines are as broad as 5-8 km/s, they do not show obvious rotation motion in the present observation. Thus, the COMs mainly exist in an infalling gas to the protostar, or in a rotating disk (ring) much smaller than the synthesized beam (0''58 x 0''52).

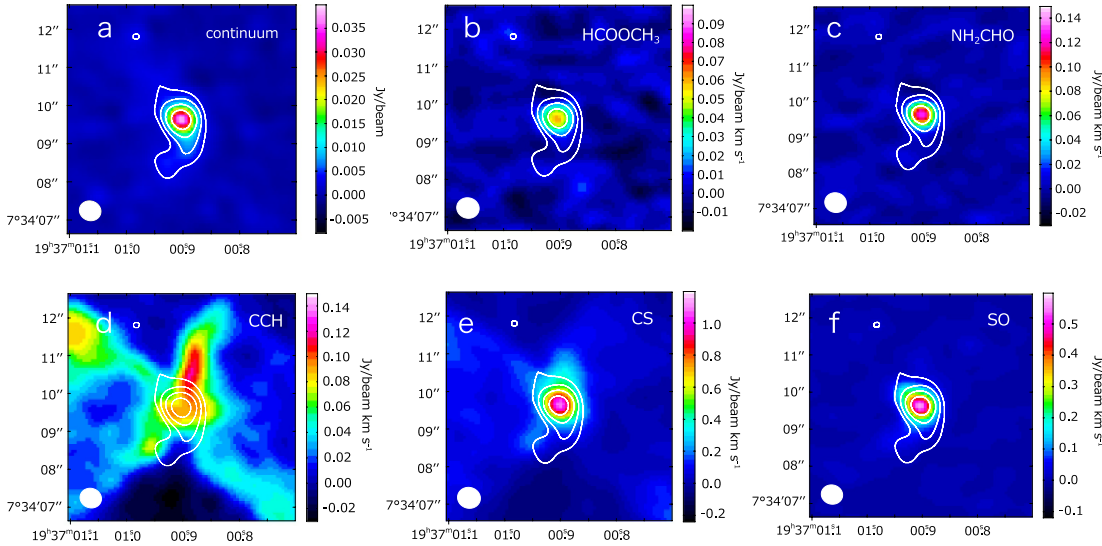


Figure 1: The continuum map and the moment 0 maps of HCOOCH<sub>3</sub>, NH<sub>2</sub>CHO, (CH<sub>3</sub>)<sub>2</sub>CO, CCH, CS, and SO. The contours represent the continuum flux of 10, 20, 40, 80 sigma levels. Compared with the synthesized beam shown in the bottom left in each figure, distribution of COMs are not resolved.