

ABSTRACT

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The isolated globule CB17 - a Herschel and ALMA perspective

Although astronomers often claim that low-mass star formation is well-understood and well-characterised, this statement is far from true. Even isolated dark clouds, which are the simplest cases of low-mass star formation, turn out to be more complicated than predicted by standard models. Initially, single dish observations with low spatial resolution showed only solitary cores embedded in these isolated clouds. However, the advent of high performance receivers at large (sub-)millimetre interferometers has led to the discovery of pre- and protostellar fragmentation into multiple cores or binary systems, indicating that even in simple isolated systems the low-mass star-formation process is far more complex than previously thought. CB 17 is one of a few prototypical isolated globules, which show multiple sources at different evolutionary stages. Spitzer and mm-continuum data allowed the classification of the sources in a prestellar core and a Class I/II source. With the aid of molecular line studies we observe collapse and rotation of the prestellar core, and detect a low-velocity molecular outflow from the Class I/II source. Recent Herschel observations allow us to obtain the dust temperature and column density maps with unprecedented detail and accuracy. Together with ALMA, with its unprecedented sensitivity, uv-coverage and spatial resolution, these maps will allow us to solve the plethora of open questions, which arise from our earlier observations. In this poster, we will give an introduction into the current status of CB 17, and the open questions we hope to answer with the aid of ALMA together with Herschel.