

# A Hungry Baby Star Eating a Space Hamburger and Spitting Spinning Bullets

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The forming process of Sun-like stars in the early phase is still not well understood. In particular, how the central protostars (baby stars) being fed is unclear. In addition, supersonic jets are often seen emanating from the central baby stars, but their role in star formation is still under debate. With the unprecedented power of the Atacama Large Millimeter/submillimeter Array (ALMA), the largest ground-based radio telescope ever built, we now start to unveil the mystery of star formation in the early phase. Recently, we have observed a very young nearby protostellar system HH 212 at unprecedented angular resolution and sensitivity with ALMA. We have resolved its accretion disk and supersonic jet for the first time in star formation. The disk is resolved for the first time in the vertical direction, showing a dark lane sandwiched between two bright features, appearing as a hamburger in space. More importantly, the structure and physical properties of the disk can be used to set the strong constraints on current accretion disk model for the feeding process. The jet is highly collimated and consists of a train of fast-moving bullets ejected from the innermost part of the disk. Interestingly, the bullets are found to be spinning convincingly for the first time. Therefore, the jet can indeed carry away the excess angular momentum from the innermost disk, allowing the disk material there to feed the central baby stars. In summary, our ALMA observations have unveiled for the first time the detailed growing process of a hungry baby star in the early phase, showing it spitting a chain of spinning bullets when eating a space hamburger.