



SACRAMENTO STATE

Department of Physics & Astronomy Fall 2006

# *Physics Colloquium Series*

## *"Pushing the Envelope - with Precessing Jets"*

*Stars form from dense cores of molecular material. As it collapses from its surrounding infall envelope, the protostar forms an accretion disk from which oppositely directed twin jets are magnetocentrifugally launched. Powerful, bipolar molecular outflows are also seen in the presence of a protostar. These outflows and jets are able to carry away excess angular momentum and magnetic flux from the infalling gas allowing the protostar to form. It has been suggested that outflow-infall interaction eventually halts the collapse and hence helps determine the mass of the forming star. This scenario stems from evidence that the bipolar outflow cavity created in the infall envelope widens with time. We present new, sensitive, near-infrared images of a late-stage protostar that directly show, for the first time, how an embedded, highly collimated, precessing jet is actively carving out the bipolar outflow cavity in the protostar's remnant infall envelope.*

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**Thursday, Nov. 30, 2006  
4:00-5:20 PM MND 1015**

**OPEN & FREE TO ALL STUDENTS, FACULTY & PUBLIC**