

Questions and Answers

The Formation of Stars and Planetary Systems, 2010, September 6-9, Särö, Sweden

Section & Talk by 2 Neil Evans

Name/Question JJ KAVELAARS

GIVEN THAT CLASS DOESN'T INDICATE STAGE
WHAT DOES ONE MEAN WHEN TALKING ABOUT
TIMESCALES? PARTICULARLY THIS IS CONFUSING
IF ACCRETION IS EPISODIC, PERHAPS THE TIMESCALE
YOU COMPUTE FROM CENSUS ARE NOT VERY MEANINGFUL?

Name/Answer Neil Evans

Yes, that is why I emphasized that the
timescales were for the classes.
Much more work ~~is~~ is needed to
determine stages. ~~Herschel~~ &
ground-based submm data will
greatly help ~~the~~ in this area, but we
also need ~~optical~~ optical / near-infrared
follow-up.

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Name/Question CABRIT Sylvie

You have nicely pointed out the limitations of a classification based on infrared SED slope, which may not reflect the true evolutionary stage of the source. Philippe André and collaborators have proposed to use the mm luminosity to L_{bol} ratio as a criterion which is independent of inclination and optical depth effects. Wouldn't this allow you to pick out "true stage 0" objects more surely and get a more accurate estimate of their lifetime?

Name/Answer Neil Evans

I agree that the long wavelength data provide the best information on the status of the envelope. But we also need the short wavelength emission to probe the disk and star. In particular the ratio of $L_{\text{mm}}/L_{\text{bol}}$ is always high for low luminosity sources even if the envelope is not so strong. So I would say that no ~~one~~ single parameter captures everything.

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Section & Talk by Neal Evans

Name/Question..... Erwine van Dishoeck

Another diagnostic of episodic accretion + heating events could be the shape of the solid CO_2 band. Upon heating, the profile becomes double-peaked due to segregation of the ice. Is there evidence for this toward CB 130 - 1 IRS 1?

Name/Answer..... Neal Evans

We have the data, but we have not yet fully analyzed it.

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Section & Talk by N. Evans

Name/Question N. Calvet

In addition to the Legacy team, the GTO IRS Disk Team has been conducting large surveys of nearby clouds. In one of these, the Oph survey by McClure et al, we found that the anomalously low of Class 0's in Oph disappears. Using reddening-free indices, McClure et al found that many of the so-called "Class I" were actually highly reddened disk sources. With the corrected number of Class I/envelope sources, the ratio Class 0/Class I is similar to that of other clouds.

Name/Answer NEAL EVANS

That is an even better explanation of the Ophiuchus ~~data~~ ratio of Class 0 to Class I. Ultimately, what we want to know is the duration of the stages. ~~Existed~~ That will require a lot of follow-up work. For example, we are checking Class I and Flat SED sources for HCO^+ emission to see if they really have a dense envelope, following the approach of van Kempen et al. Indeed, a number of Class I sources are not Stage I sources.