SHORT ORAL CONTRIBUTIONS (ABSTRACTS)

THE HERBIG-HARO OBJECTS ASSOCIATED WITH ESO 210-6A

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The observational data are given for the dark globule ESO 210-6A and the associated Herbig-Haro objects HH 46 and HH 47 originally discovered by Schwartz. Images are presented in the light of the Hα and [S II] lines. As well, we show the continuum images in the visual, red and near infrared and low resolution infrared contour maps at 1.2, 1.6 and 2.2 microns. We believe that we have located the stellar or pre-stellar source which generates the wind responsible for the HH objects in ESO 210-6A. Velocity data based on spectrograms taken with the CTIO 4m telescope are shown. We discuss the structure and geometry of ESO 210-6A and compare our results with recent observations by Dopita, Evans, and Schwartz.

DISCUSSION

S. Strom: What spectral feature near the "source" led you to deduce a line width of 300 km s^{-1}?

Graham: The [S II] and [N II] lines were best for this. Hα is clearly broad and contaminated by strong radiation from the Gum Nebula.

Tapia: What is the sensitivity limit of your 2.2μm survey?

Graham: The lowest contour corresponds to a 2.2μm surface brigthness of about $19^{m}5$ (arc sec)$^{-2}$.

IR MAPPING OF HH-OBJECTS 7-11 IN MOLECULAR HYDROGEN EMISSION LINES

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The striking alignment of HH-objects, HH 7-11 is the first group of HH objects to be mapped in the N = 1-0, S(1)m 2.12 micron line of molecular hydrogen. This mapping was carried out with the 3.8 meter UKIRT at Mauna Kea, Hawaii.

The HH-objects, 7-11 form a chain, aligned with a H20-IR source. This object appears to be the centre of a high velocity CO outflow and a possible exciting source for the HH-objects.

The molecular hydrogen emission closely follows the extent of the HH chain. It peaks near HH 8 and HH 9. We see a sharp cut off to the east of the HH 7 and to the south of the chain. The emission declines toward the H20-IR source but can still be detected 10 seconds northwest of it.

A spectrum shows the S(1) and Q branches of the emission to be of similar intensity.

We also detected H_2 emission in HH 32A which is associated with the ex-