

Fig. 4: Top. A CCD image in the Johnson V-band of the Herbig-Haro object from Fig. 2. It has the typical appearance of a Herbig-Haro object with a bright condensation in an extended nebulosity. Bottom. Same as top but in the near infrared Gunn z-band at 9500 Å. Note the additional bright knot to the left of the "visual" condensation.

obtained at the location of the IR spot (Fig. 6) shows a red continuum with possible photospheric features at 5893 Å (sodium D lines) and at 6160 Å (TiO band head). A very tempting thought is of course that we are actually seeing the protostar itself shining through in the IR. However, we may simply be seeing another condensation imbedded deeper in the dusty globule. To settle the matter more observations and a careful analysis are required.

T Tauri Stars

T Tauri stars are a class of low mass stars characterized by erratic light variations and an emission line spectrum of varying complexity from only Ca II and Balmer lines to a very rich emission line spectrum including lines of Fe II and He I. They are generally found close to or imbedded in dust and are considered to be newly born stars with ages less than a million years. If this region of Puppis is to be regarded as a region of star formation, T Tauri stars should be present. The search for H α -emitting stars resulted in the detection of about 40 emission line objects. So far 10 have been identified as T Tauri stars (see Fig. 5). Three of them form a group just to the south of the globules implying that stars may already have been formed from this complex. The rest of the identified T Tauri

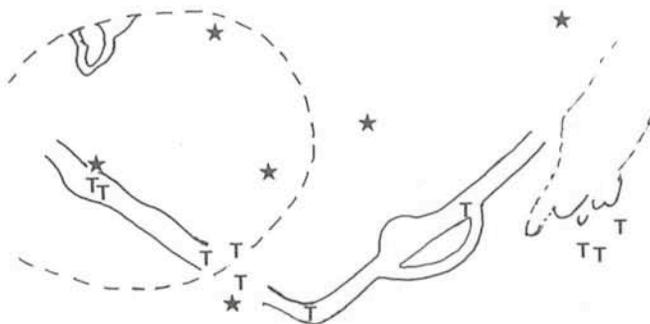


Fig. 5: A drawing showing the distribution of some of the material in the region. The circular area to the left delineated with a broken line is the H II region RCW 19. The full lines indicate obscuring dust and to the extreme right the complex of globules is sketched in. The locations of the identified T Tauri stars are indicated by 'T'. The positions of some bright foreground stars are given with '*' to facilitate comparison with Fig. 1. North is up and east to the left.

stars are all seen projected against the dark dust streak across the region. The bulk of the data for these stars is still in the reduction phase.

To summarize this progress report it appears that we have convincing indications for star formation activity in the region of Puppis OB3 in that we have observed several T Tauri stars connected with the dust here. Furthermore we have observed a Bok globule where it appears that a star is forming or very recently was formed inside it. The investigation continues with the final reductions after which it should be possible to present a more comprehensive picture of this apparently not very massive star forming region.

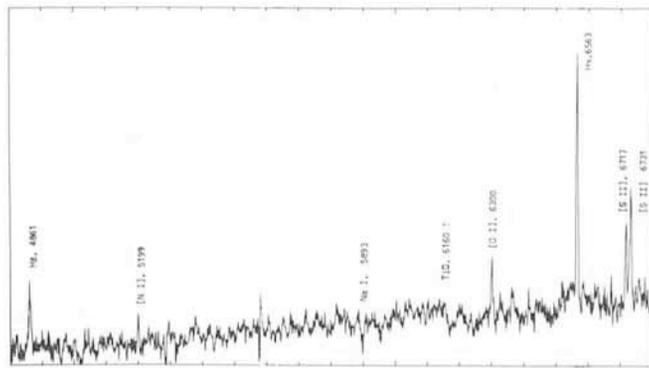


Fig. 6: An IDS spectrum obtained at the position of the IR knot in the Herbig-Haro object. The wavelength range is 4800 Å to 6800 Å. Note that the intensity scale is increased by a factor 5 relative to that given in Fig. 3. This spectrum has a completely different appearance than that of the visual condensation in that the Balmer lines dominate and that some photospheric absorption features seem to be present.

Applications for Observing Time at La Silla

Period 31 (April 1 – October 1, 1983)

Please do not forget that your proposals should reach the Section Visiting Astronomers **before October 15, 1982.**