BRACKET LINE OBSERVATIONS OF T TAURI STARS

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We have detected Bracket line emission from HL Tau, DG Tau, and HH 7-11 IR, but not L1551 IRS-5, and V410 Tau (Bracket-α line flux $< 5\times10^{-20}$ w cm^{-2} (3σ)). There is evidence that in some of these objects the line flux may be variable. We have also obtained a velocity-resolved spectrum of Lk Hα 101. Its Bα and Bγ lines are $\sim$40 km s^{-1} wide at half power, with emission extending to at least 150 km s^{-1} full width. Emission lines of He I and Mg II are also seen in its spectrum. Interpretation of the line and radio continuum emission (Cohen *et al.* *Ap. J.*, 253, 707) of these objects in terms of emission from an optically thick circumstellar envelope is discussed.

HIGH RESOLUTION CO STUDIES OF T TAURI-SIMILAR REGIONS

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We have studied regions which are characterized by their phenomenological similarity to the environment of T Tauri. We present CO (J = 1→0) high spatial resolution maps obtained with the Onsala Space Observatory 20-m telescope, which at 115 GHz has a beam width of 32". Additional ^{13}CO spectra were taken at all object positions.

We have made an extensive map of the NGC 7129 region and found high velocity CO outflow centered on LkHα 234, which like T Tauri is associated with an H_2O maser. The CO line wing emission is strongly peaked towards the northeast -in the direction of the GGD and IR objects- and is redshifted with a velocity full width of more than 20 km s^{-1}. At the position of the H_2O maser NGC 7129 (2), about 4!5 south of LkHα 234, we found CO wings as broad as at the star's position, but in contrast to those, completely symmetric with respect to the LSR rest velocity. Smaller wing emission was also detected at the position of the Cohen and Schwartz infrared source NGC 7129 IRS 1, approximately 4!5 north of LkHα 234.

Less extensive mapping was carried out around the H_2O masers HH 7-11 (A), (B), and (C). The high velocity outflow region around (A) has already been examined in a recent paper by Snell and Edwards (*Ap. J.*, 251, 103, 1981). The nebular T Tauri star AS 353A together with HH 32, and the nebular knot HH 2E were covered by half beam space strip maps. The H_2O maser HH 19-27 (about 4!5 east to HH 23) was observed only on source.

The fields studied were selected on the bases of the following criteria: we considered dark cloud regions in which one finds PMS objects and/or embedded infrared sources associated with HH nebulae, H_2O masers and vibrationally excited H_2 line emission. With the exception of LkHα 234 the PMS-objects are of low luminosity. Since the molecular hydrogen line emission -and perhaps also the H_2O masers- suggests regions of shock excitation we expected to find supersonic gas flows. Indeed, in all regions studied we find high velocity line wings.