ANOMALOUS OH EMISSION IN GALACTIC STAR FORMING REGIONS: A CLUE TO THE MEGAMASER PHENOMENON?

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We report the detection of spatially extended, anomalous OH emission in galactic star forming regions. This OH emission is similar, although much weaker, than that produced by extragalactic megamasers. This new type of galactic emission may provide clues to elucidate the nature of the extragalactic OH megamaser phenomenon observed in luminous infrared galaxies.

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THE DISTANCE TO THE SERPENS CLOUD AGAIN

Estela de Lara[1] and Carlos Chavarría–K.[2,3]

We present new near infrared data of reflection nebulosity stars (R-stars) associated with the Serpens dark cloud, and of probable member stars to the region with Hα presumably in emission. In an attempt to detect the star that is responsible for the small diffuse red nebulosity seen on the red POSS print in the vicinity of star 17 of Chavarría–K. *et al.* .(1988, *Astr. and Ap.*, **197**, 151), positions and photometry of 10 infrared sources are also given. If the red nebulosity is an H II region, its exciting star was not detected by us.

The new IR photometry of R-stars, and a reinspection of spectrograms of stars VV Ser, HD 170739, HD 170784, BD+1°3696 and BD–0°3513 allow us to redetermine the distance to the Serpens Cloud, found equal to d = 296 ± 34 pc (7 stars), and the extinction law to the region, in particular the total to selective extinction ratio R = 3.4 ± 0.2. The distance estimate is in better agreement to that by Chavarría–K. *et al.* (1988) of d = 250, than the estimate by Zhang *et al.* (1988, *Astr. and Ap.*, **199**, 170) of d = 750 pc. Note that star 15 (BD–0°3513) of Chavarría–K. is the reflection nebulosity detected with IRAS Zhang *et al.* (1988) at the south-east of their Figure 1.

Finally, from the infrared color-color $(H-K, K-L)$ diagram we conclude that only three stars have warm circumstellar envelopes, namely IRS 1 and 2, and star 17. Note that this last star fulfills all requirements of Herbig emission line stars. A more detailed note reporting our results will be published elsewhere.

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WINDS OF T TAURI STARS

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We present calculations of spherically symmetric models for the winds of T Tauri stars with the aim of determining the temperature structure, the mass loss rate, and the velocity fields (expansion plus turbulent) most appropriate for describing the extended expanding region of these stars. We calculate fluxes for the hydrogen lines and continua, for the resonance lines of Ca II and Mg II, and for the D line of Na I. The photosphere of the star is taken to be described by T_{eff} = 4000 K, M = 1 $M_\odot$, and R = 3 $R_\odot$. Expansion and turbulent velocity fields are similar to those in Hartmann, Edwards and Avrett (1982). Turbulent velocities are assumed to be isotropic. The temperature profile of the expanding region and the mass loss rate are taken as free parameters. We find: (1) The Hα emission flux in TTS originates in a region of T $\geq$ 8000 K which extends at least to 2.5 to 3 R_*. Envelopes with temperature lower than this limit will have Hα in absorption. (2) Comparison of observed Balmer decrements with model results suggest that stars with large Balmer decrements and stars in which only Hα is in emission, have envelopes with T $\approx$ 8000 K and $\dot{M} \leq 3 \times 10^{-9}$ $M_\odot$ yr^{-1}. The precise va-