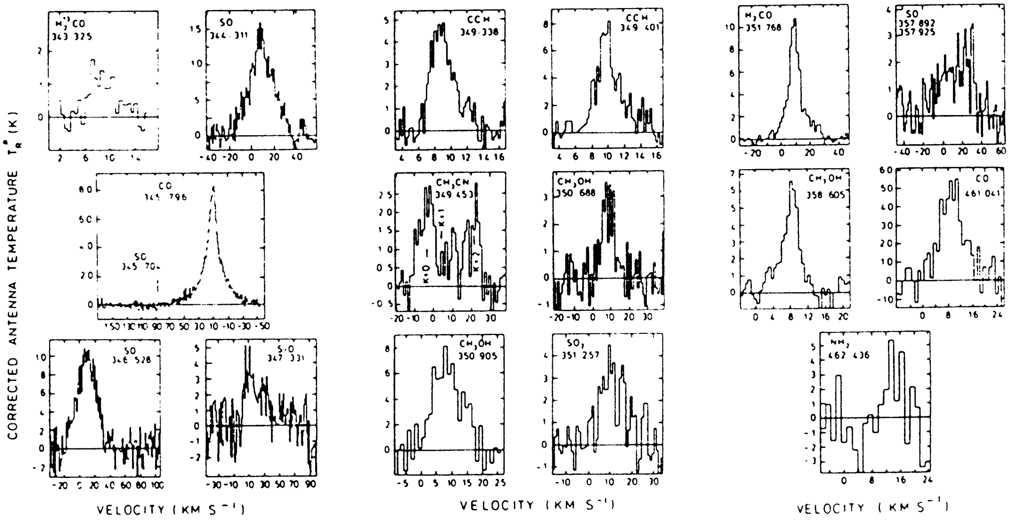

TWO DIMENSIONAL MODELS FOR THE ORION NEBULA AND M17

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We apply a 2-D, axisymmetric code for modeling H II regions (Rubin Ap.J. 287, 653, 1984) to observations of the Orion Nebula. The model solves for the ionization and thermal structure and radiative transfer for the quasi-equilibrium volume. Assuming that the Orion Nebula is viewed face-on (along the symmetry axis) and that the geometry/density distribution is plane parallel with an exponential density gradient perpendicular to the slab, we use a χ^2 minimization technique to best

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fit the radio continuum maps. The best fit to the Schraml and Mezger map (Astrophys. J. 156, 269, 1969) has a density at the star of $\sim$1800 cm^{-3}, a scale height of $\sim$0.23 pc, and $\sim 1.5\times10^{49}$ ionizing photons s^{-1} so that $\sim$ 1/3 of the ionizing photons from the exciting source are escaping the nebula through the frontal density-bounded direction. Our model for Orion requires circular symmetry in the plane of the sky; nonsymmetrical features such as the ionization bar toward the SE cannot be reproduced. Further modeling that compares with line observations has been delayed to incorporate the important role played by recombinations in populating low-lying [O II] levels (Rubin 1985, Astrophys. J., submitted).

We have also observed the nearly edge-on blister M17 SW in two strip scans: one along the direction from the double O4 V stars (Chini *et al.* Astron. Astrophys. 91, 186, 1980) to the radio point source (Felli *et al.* Astrophys. J. 242, L157, 1980) and the other orthogonal to this direction through the peak of the [S IV](10.5 μm) map (Lacy and Beck, private communication). The latter scan corresponds extremely well to the ridge seen in [S II]. Observations of [S III](33.5 μm) were made in addition to the lines observed in the Orion Nebula. Relative to the [S IV](10.5 μm) emission, the [Ne III](36 μm) peaks in the direction away from the major exciting source. When the modeling is completed, this observation will set a lower limit on T_{eff}.

A SUBMILLIMETRE CO J = 3-2 STUDY OF M17: THE INTERACTION OF AN IONIZATION FRONT AND A MOLECULAR CLOUD

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We have adopted a detailed map in the CO J = 3-2 line of the M17 molecular cloud complex covering an area of about 60 square arc minutes. As well as the M17SW cloud core, the map covers the areas containing both ionization bars, and their surrounding molecular clouds. A complex dynamical picture will be presented, with evidence for fragmentation of the complex into a number of discrete clouds, as well as indications of wide-spread interaction between the ionization bars and the CO gas. The morphology revealed by the CO maps will be discussed in connection with the distributions of IR, radio and optical emission, and the overall dynamics of the whole M17 region.