GENERAL DISCUSSION

Stecher: How does the variation of the dipole moment with intermolecular separation affect the photodestruction of the molecules?

Solomon: It increases the photodissociation slightly but the main effect is the very large overlap between the vibrational wave functions of the high V^1 states and the vibrational continuum in the ground electronic states.

Stecher: What grain model did you use in obtaining the grain temperature?

Solomon: Graphite core, ice mantle models were used but the grain temperature is not a sensitive function of the model unless one assumes a grain with a very low optical absorption efficiency such as for silicates, in which case the grain temperature would be substantially lower.

Carruthers: Perhaps the best chance to detect molecular hydrogen in the far ultraviolet would be to observe the resonance fluorescence in the Lyman bands at the interface between a hot star and a dense dust cloud. Such an opportunity is presented by the Orion nebula, in which Werner and Harwitt feel that they have observed the vibration-rotation infrared bands which follow in cascade the Lyman emission to the ground state.

Solomon: This might be possible but one of the difficulties is that the emission in the ultraviolet will be shared amongst over a hundred lines and no single line will be particularly strong. In addition, the detection by Werner and Harwitt still seems to be uncertain.

Houziaux and Butler (eds.), Ultraviolet Stellar Spectra and Ground-Based Observations, 321.