abundances given by Torres-Peimbert and Peimbert (1977). This mass is much larger than the mass in ionized gas but is comparable to the mass of the recently discovered molecular cloud surrounding NGC 7027 (Mufson et al. 1975).

No evidence of the 25.87μ fine structure line of OIV was observed. An upper limit of 2×10^{-16} W/cm^2 is set by our data. Simpson had predicted a flux of 3.8×10^{-16} W/cm^2. This difference can be reconciled by a slight increase in the assumed electron density. Our spectrum is consistent with $n_e > 2.5 \times 10^4$ cm^{-3}. Scott (1973) derived a value of $n_e = (5.0 \pm 0.5) \times 10^4$ cm^{-3} from high resolution 5 GHz observations.

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OBSERVATIONS OF INFRARED FINE-STRUCTURE LINES: [S III]

Lawrence T. Greenberg
Physics Department, University of California, Berkeley

Recent observations of the 18.7 μm fine-structure line of S^{++} in NGC 7027 and BD+30°3639 (Greenberg, Dyal and Geballe, 1977 Ap.J.(Letters), 213, L74) allow the first determination of an ionic column density in ionized nebulae. The line ratios 18.7 μm/λ9532 and λ6312/λ9532, besides yielding both electron density and temperature in the S^{++} region, have been used to indicate that the fine-structure levels of S^{++} are collisionally saturated. In this case the 18.7 μm surface brightness directly measures the column density of S^{++} ions with little dependence upon nebular structure, the major uncertainty being the experimental error. This research has been partially supported by NASA Grants NGR 05-003-511 and NGL 05-003-272.