Millimeter and Submillimeter Observations of N159/N160 in the Large Magellanic Cloud

Alberto D. Bolatto, James M. Jackson (Institute for Astrophysical Research, Boston University), Frank P. Israel (Leiden Observatory, The Netherlands), Xiaolei Zhang, Antony A. Stark (Harvard-Smithsonian Astrophysical Observatory)

We present new CO (SEST, AST/RO) and [C I] (AST/RO) observations of the N159/N160 molecular cloud complex in the LMC. The complex features three distinct and spatially well separated regions: 1) the northern region (N160), where massive star formation is well evolved and the parent clouds have been strongly photodissociated. 2) The central region, comprising the N159E and N159W GMCs, which is undergoing strong star formation activity but still is wrapped in molecular gas. And, 3) the southern region (N159S), which is mostly quiescent, with little or no star formation activity as evidenced by its far-infrared, Hα, and [C II] emission.

The new SEST data shows extended, previously undetected, CO J=2 $\rightarrow$ 1 emission throughout the complex that appears to be originating in optically thin CO. Part of this extended envelope is also bright in [C I]. Surprisingly, the neutral carbon emission peaks in the quiescent southern cloud, suggesting that an important fraction of the C^0 may not be related to photodissociation regions. Combining these observations with existing [C II] and CO data produces a picture of the intricate interaction between star formation and the interstellar medium.

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