

IRAS Infrared Fluxes of RV Tauri Stars

William P. Bidelman

Warner & Swasey Observatory, Case Western Reserve University
Cleveland, Ohio 44106

Data resulting from the IRAS survey relating to the stars of the RV Tauri class have been examined. Of a total of 78 objects definitely assigned to this class in the 4th edition of the GCVS, 33 are to be found in the Point-Source Catalogue, and for six of these spectral data are available in the low-resolution Spectral Atlas (to 22.6 μm) published by the IRAS Science Team (A & A Suppl. 65, 607, 1986). In the latter the pronounced difference in infrared emission between the carbon-rich star AC Her and most other RV Tauri stars, first noted by Gehrz in 1972, is striking, taking the form of a very marked continuation of that star's emission to at least 22 μm .

Further, this distinction is also nicely shown by the data of the Point-Source Catalogue, since for 29 of the 33 objects contained therein the 12- μm flux exceeds that at 25 μm , while for the four stars AD Aql, RU Cen, AC Her, and EP Lyr -- all carbon-rich -- the reverse is true. The star DY Ori, an uncertain member of the class, shares this characteristic, as do several other fairly bright mid-type high-luminosity variables: AI CMi, V1027 Cyg, AX Sgr, and V925 Sco.

Why only the carbon-rich RV Tauri stars exhibit this unusual infrared emission -- which, however, is also found in a great many even more exotic objects -- is a good question. The so-called "PAHs" seem to be prime suspects.