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INFRARED PHOTOMETRY OF BRUN 276

We have secured JHKLM photometry, on the San Pedro Martir photometric system (cf. Tapia et al.), of the T Tauri star Brun 276, embedded in the Orion Nebula, with the 2.1 m telescope of Observatorio Astronomico Nacional, UNAM at San Pedro Martir, B.C.N, Mexico, on January 29, 1987 (U.T.). These data have been combined with Walker's (1969) UVB photometry, and "R,I"-magnitudes estimated from a red paper copy of the PSS, and from a glass infrared plate taken also with the Palomar Schmidt by Haro in 1959, respectively. These R,I- magnitudes were derived following the procedure outlined by Liller and Liller (1975). The results are summarized in Table 1 (the probable errors are listed in the last row of this Table).

Table I: MULTICOLOR PHOTOMETRY OF BRUN 276

| U | B | V | R | I | J | H | K | L | M |
|-------|-------|-------|-----|-----|-------|-------|-------|------|-----|
| 17.78 | 18.77 | 18.04 | 16 | 15 | 14.15 | 13.50 | 12.75 | 10.7 | 8.8 |
| | | | 0.6 | 0.6 | 0.1 | 0.1 | 0.1 | 0.4 | 0.4 |

The previous data (cf. Mendoza et al.) placed Brun 276 below the main sequence ($M_{bol} \approx 10$). Now, the infrared observations can be used to derive a photometric luminosity (cf. Mendoza 1966, 1968, and Imhoff, and Mendoza 1974). However, this luminosity will be a lower limit of the total luminosity, because of (1), Brun 276 can be brighter (see below); and (2), the observed fluxes have been used uncorrected by the effects of interstellar extinction (spectral type unknown), if any. On the other hand, since Brun 276 is not an IRAS source, it is possible to have a good approximation of this photometric luminosity assuming that fluxes beyond 30 microns are negligible. This way, the results yield a photometric luminosity around 3 solar luminosities. Therefore, the warm circumstellar envelope, indicated by the infrared photometry listed in Table I, raises Brun 276 slightly above the main sequence on the HR diagram, as do other T Tauri stars (loc. cit.).

One of us (EEM) also obtained uvbyH-beta photometry of Brun 276 on November 8, 1986 (U.T.) which confirms the variability of this object, and the emission in the hydrogen line H-beta. This photometry yields $V = 15.5$, roughly the brightness of the star at the time that Brun made his catalogue (cf. Brun 1955).

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