MULTIPLE DUST SHELLS AROUND HERBIG Ae/Be STARS

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Intermediate mass ($2 < M/M_{\odot} < 9$) pre-main sequence objects, also named Herbig Ae/Be stars, are known to have excess radiation in the near-infrared. From IRAS o bservations it turns out without doubt (quality 3, high S/N radio), that these objects are very strong far-infrared emitters at 12, 25, 60 and often also at 100 μm. The spectral energy distribution, depicted in Fig. 1 for intermediate mass pre-main sequence stars, show clearly this large excess. From the difference curves it is apparent that this excess radiation is most probably caused by several dust shells. Using very simplified methods it is possible to derive the average temperature of the dust shells (see Thé, Wesselius, Tjin A Djie and Steenman, 1986). If the chemical composition of the mixture of the dust grains and their average size are assumed it is also possible to estimate other characteristics like the distance from the central star and the mass of the dust shells (see Thé, Hageman, Westerlund, Tjin A Djie, 1985).

REFERENCES:

Thé P.S., Hageman, T., Westerlund, B.E., Tjin A Djie, H.R.E.: 1985, Astronomy and Astrophysics, **151**, 391.
Thé, P.S., Wesselius, P.R., Tjin A Djie, H.R.E., Steenman, H.: 1986, Astronomy and Astrophysics, **155**, 347.

I. Appenzeller and C. Jordan (eds.), Circumstellar Matter, 99–100.

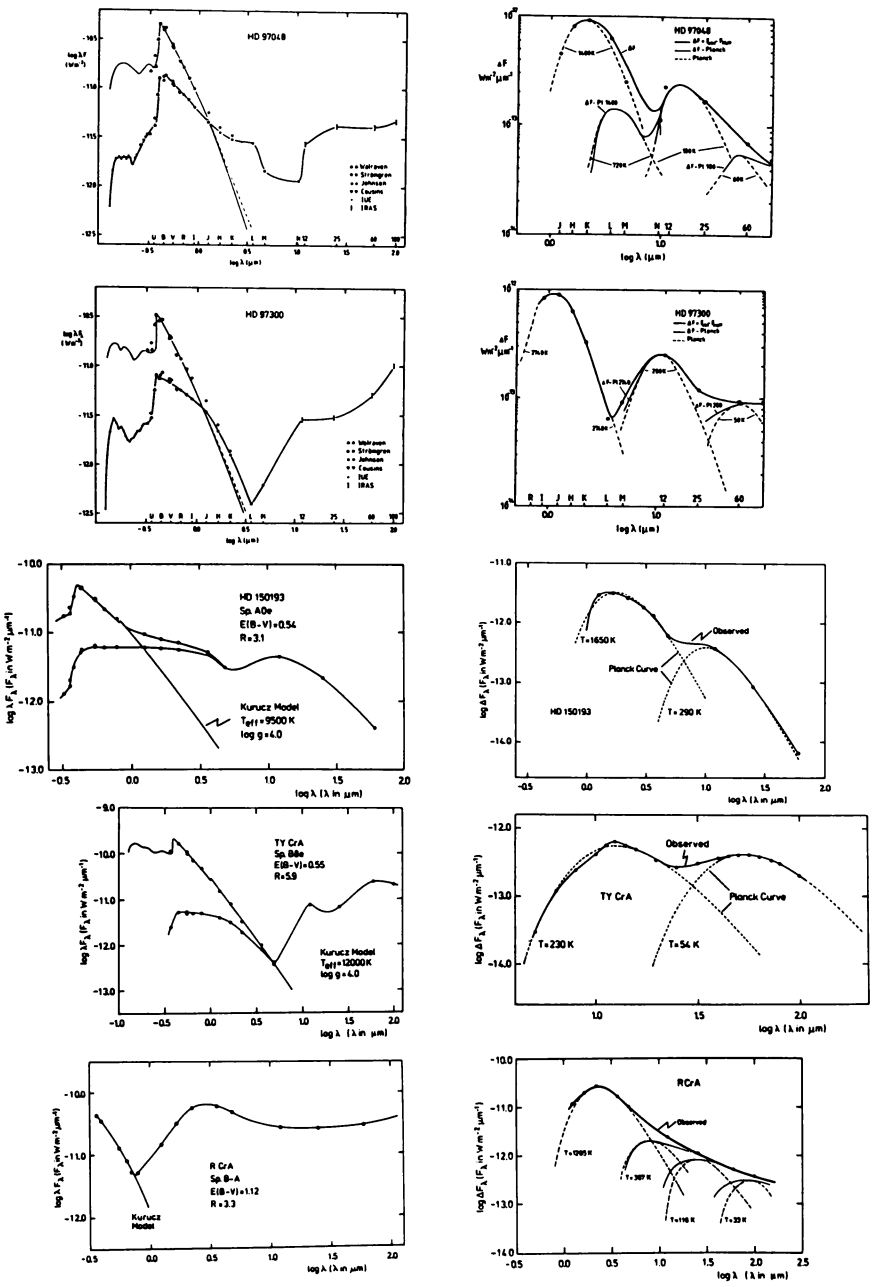

Fig. 1. The spectral energy distribution and difference curve of 5 intermediate mass pre-main sequence stars.

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