

A STUDY OF INTERSTELLAR ULTRAVIOLET EXTINCTION IN OB ASSOCIATIONS AND STAR - FORMING REGIONS

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1. INTRODUCTION

We studied the interstellar UV extinction towards 115 stars, selected from IUE data bank, belonging to a variety of different galactic areas, including well-known dense clouds.

The complete catalogue, including extinction data for the whole sample as well as the reduction procedure and error analysis, is in preparation (Aiello et al., 1986). Here we present the results referring to two regions (Carina and Ophiucus Complexes) where the interstellar medium is disturbed by the effects of recent and ongoing star formation. For comparison purposes, the extinction towards Cas OB6 is also reported. A more detailed analysis of the whole sample is found in Chlewicki (1985).

2. DISCUSSION OF SELECTED CASES

- a) Cas OB6 (Fig.1): this is an example of interstellar medium not disturbed by ongoing star formation processes. The observed stars (10) are about 50 pc away from the region where star formation is still taking place (Lada et al., 1978).
- b) Carina Complex (Fig.1): the extinction observed for the stars in Carina appears to be rather unique among the curves so far reported for regions of recent star formation, although it shows certain similarities with the UV extinction in Orion. In the far UV (130-170 nm) they are lower than the diffuse medium average, but their curvature appears to be normal. The hump is instead somewhat weaker than average. The peculiar extinction in Carina Complex may be associated with the disruption of the cloud by young massive stars. The curve reported in Fig.1 represents the average of the extinction curves for 8 stars.
- c) ρ Oph cloud (Fig.2): the characteristics of the UV extinction vary

with the location of the object with respect to the dense part of the cloud. In the outer part of the cloud, both the hump and FUV extinction are low (e.g. HD 147993- ρ Oph). The hump remains low in more heavily embedded stars (e.g. HD 147889); but the FUV raise becomes much steeper, exceeding even the slope of the average galactic curve. Extinction curves similar to that of HD 147701 have been obtained for several reflection nebulae (HD 200775 and HD 37903 in our sample: see also Witt et al, 1981), which suggests that a higher FUV raise may be typical for dense clouds undisturbed by the formation of massive stars.

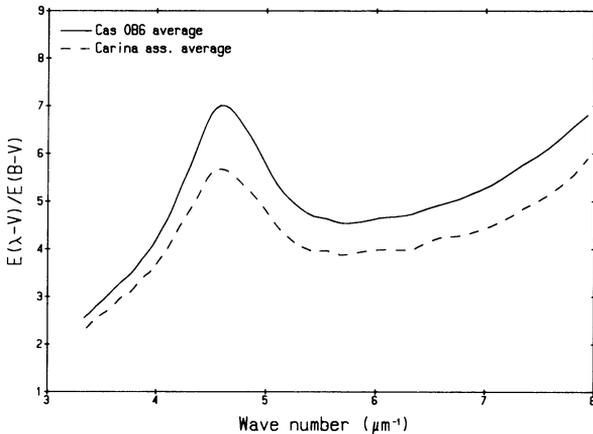


Fig.1: Average extinction curves for Cas OB6 and Carina

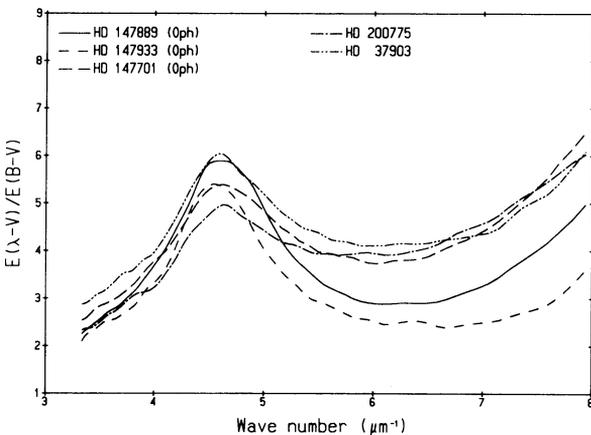


Fig.2: Extinction curves towards stars in ρ Oph and HD 200775 and HD 37903

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