

THE STRONGLY POLARIZED P CYGNI STAR WITH
INFRARED EXCESS CPD -52° 9243

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ABSTRACT

The visible spectrum of the point-like source with infrared excess CPD-52°9243 is identified; emission and absorption line strengths are given together with various ion velocities of P Cygni profiles; a strong polarization is detected : $P \approx 5\%$, $\theta \approx 36^\circ$. From stellar and interstellar features, a spectral type around B8Ia and a distance of about 3.1 kpcs are derived.

A detailed publication is presently in press in *Astronomy and Astrophysics*.

DISCUSSION

Viotti: The star CPD-52°9243 has a very positive (B-V) colour and I could conclude a very large interstellar extinction. If you correct your IR magnitudes for this extinction, the "dust" excess is depressed and the possibility for free-free emission (or for no IR excess at all) is still open. I just derived $E_{B-V} \approx 1.9$ and $A_K \approx .7$ which is quite large.

Swings: It is much more the colour that matters than the magnitudes themselves.

Coyne: Can the IR excess in CPD-52°9243 be due to free-free emission in hydrogen, rather than dust? Can the disc polarization be due to dust?

Swings: The location of CPD-52°9243 in the H-K/K-L diagram indicates that the majority of the IR excess must be due to dust. The effect of dust is certainly important to produce the high polarization that is measured. The IR colours of CPD-52°9243, however, are not extreme, so that geometry must play a big role as well, I would guess.

Hubert-Delplace: You mentioned that the star CPD-52°9243 could be a B supergiant star with dust and forbidden emission lines -- B8Ia[e] , are there other B supergiants with such properties: dust and forbidden emission lines?

Swings: RX Puppis could have been considered as a similar case, but it seems to be evolving back to a symbiotic star. There are a few supergiants exhibiting similar properties in the Magellanic Clouds. For the galactic objects, the problem is that quite often their spectrum does not reveal the phosphoric lines enabling one to know the spectral type and luminosity.