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**IS V731 Sco AN RCB STAR?**

There are 37 stars classified as RCB in the fourth edition of the General Catalogue of Variable Stars (GCVS) (Kholopov, 1987), the membership of 11 of them in this group is doubtful. In recent years V854 Cen (Kholopov, 1989) and LV TrA (Kholopov, 1990) were assigned to the group, though the membership of the last is doubtful. UX Ant, listed in the GCVS as doubtful, could be nowadays considered as a new "certain" member of the group after the great crisis it suffered in 1990 (Minniti, 1990; Milone et al., 1990), the first reported after its discovery in 1940 (Erro, 1940). On the contrary, and in agreement with spectroscopic studies, V504 Cen, AE Cir and V618 Sgr (Kilkenny & Lloyd Evans, 1989; Kilkenny 1989a, 1989b) must be definitely excluded from the RCB group in spite of the fact that they were listed as "certain" RCB type in the GCVS.

Spectroscopically, the RCB stars class are typified by extreme hydrogen-deficiency and by being somewhat cool and carbon-rich stars, excepting the hot objects such as MV Sgr, DY Cen and V348 Sgr which are extreme helium stars, whose spectra are B-peculiar type (Drilling, 1986). Kilkenny & Whittet (1984) have suggested that although these hot stars had been included in the GCVS as RCB stars their RCB-behavior may be only a circumstantial evidence.

V731 Sco is one of the stars whose membership to the RCB group is considered doubtful, it was discovered in 1958 (Plaut, 1958) and has been listed in the 3rd (Kukarkin et al., 1969) and 4th editions of the GCVS. It was poorly cited in the literature from then on, Feast (1975) suggested it would not be RCB-type from its spectrum.

We obtained an astrographic plate of the zone of V731 Sco with the aim of having a good identification of the star. The plate was taken with the 33 cm Astrographic Telescope, "Carte du Ciel" (plate scale 1mm=1') of the Córdoba Observatory. It was measured with a Repsold machine. The coordinates of the star were found by the least squares method, taking 7 stars of the SAO catalog as reference stars. The measured coordinates (Equinox 1950.0, Epoch 1991.3) were:

R.A.  $17^{\text{h}}30^{\text{m}}04^{\text{s}}.60 \pm 0.05$   
Dec.  $-32^{\circ}32'24''.00 \pm 1''.5$

These coordinates have a difference of approximately  $16''$  from that of the GCVS. Such a difference is not a surprise according to López (1990), who reported noticeable differences in several positions of stars with negative declination in that catalog. Figure 1 shows the new identification of V731 Sco.

Spectrograms at 58 Å/mm of the star identified as V731 Sco and, for comparison, of the well established RCB stars RZ and RT Nor (Feast, 1975; Drilling, 1986; Kholopov, 1987) were obtained with the Reticon photon counting system (Z-Machine) (Latham, 1982; da Costa, 1984) on the 2.15 m telescope of the Complejo Astronomico El Leoncito (San Juan,

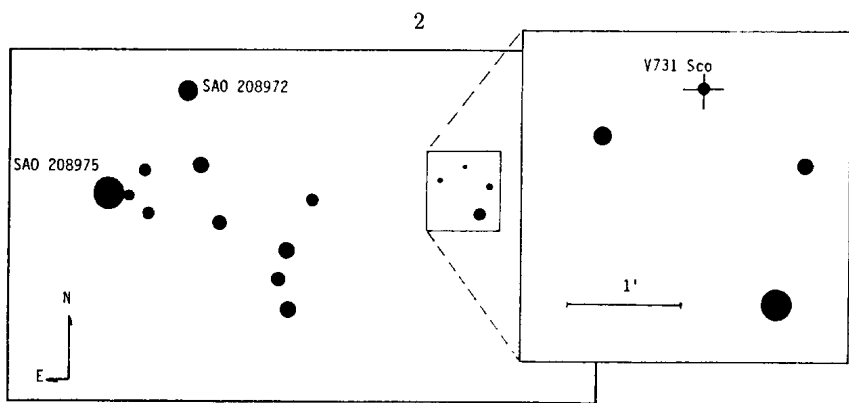


Figure 1  
New identification chart of V731 Sco.

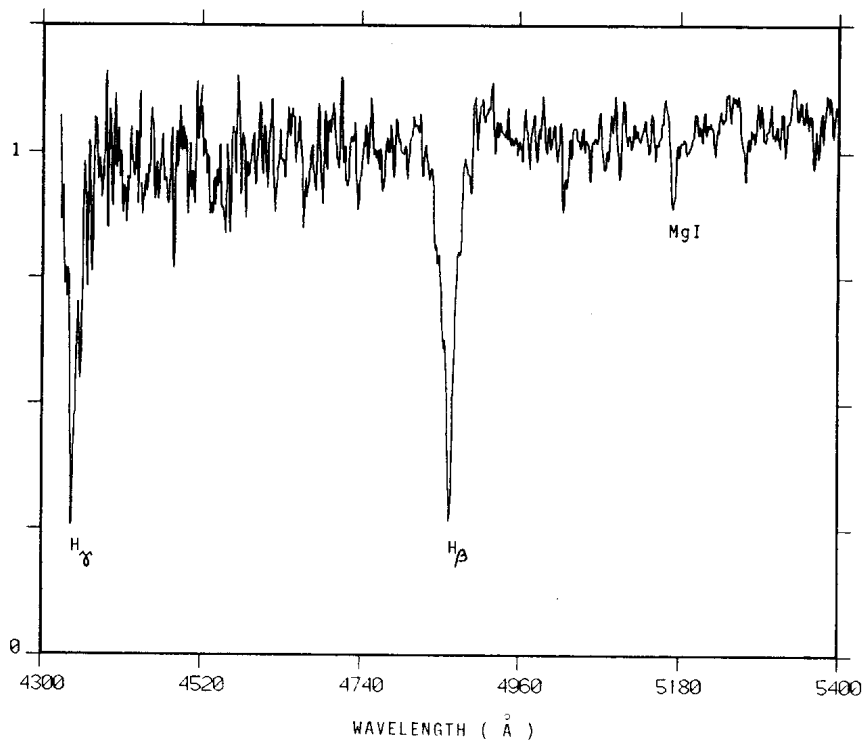


Figure 2  
Normalized by its continuum (not flux calibrated) spectrogram of V731 Sco,  
note the strong  $H_{\beta}$  and  $H_{\gamma}$  lines.

Argentina) on 1991 May 20 and 23. The spectra cover the range 4400 to 5700 Å and were reduced in a standard way.

The sky-subtracted and the normalized (not flux calibrated) spectrograms of the star identified as V731 Sco (Figure 2) show the strong features of the Balmer series and not the characteristic absorption bands observed in the spectra of the well established RCB stars RZ and RT Nor.

In conclusion, we think V731 Sco is not an RCB star, confirming the unpublished result of M. W. Feast. It would be necessary to reassign it to the correct variable group according to its photometric behavior.

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