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**RADIAL VELOCITY VARIABILITY OF THREE SUPERGIANTS**

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One of the motivations to study supergiant stars arises from the fact that they belong to a group of stars with an unstable evolutionary stage. In this context and due to the fact that there is no conclusion concerning the nature of three specific F-type supergiants (see references in Paredes 1998), these have been selected in order to analyze their spectra and to calculate their radial velocities. In particular, HD64238 (F1Ia), HD70761 (F3Ib) and HD74180 (F3Ia) were observed with the the grid-spectrograph attached to the 1-m reflector telescope located in the Observatorio Nacional de Llano del Hato (Mérida-Venezuela). The spectrograms were obtained on photographic plates of type IIa-O covering the region:  $\lambda\lambda=3500-5000 \text{ \AA}$ . The spectral resolution and the dispersion are  $0.2 \text{ \AA}$  and  $73.2 \text{ \AA mm}^{-1}$ , respectively. The comparison spectra were produced with a hollow-cathode Fe lamp. The spectrograms were digitized with the Joyce-Loebl microdensitometer of the Grupo of Astrofísica Teórica of the Universidad de Los Andes (Mérida-Venezuela).

After the reduction of the spectrograms, the procedure of the identification of the spectral lines was performed using the Multiplet Table of Moore (1972). Then, using standard procedures, many elements were identified (Paredes 1998), such as FeI, FeII, CrI, CrII, among others. Furthermore, with the heliocentric correction and the Doppler effect, the radial velocity was calculated for each star. Results of the present study as well as previous ones, are given in Tables 1, 2, and 3 for each star, respectively. Analyzing the results given in these tables, we conclude that, the radial velocities of the three stars are variable.

For the completion of the work, we have collected the information from the Hipparcos Catalogue (ESA 1997) and we have noticed that there are no detectable light variations in these stars. Finally, performing a careful inspection of the shape of the spectral line profiles (see Rosenzweig et al. 1998), we concluded that P-Cygni profiles and emission lines were absent in the whole analyzed spectra. The strange behavior of the large differences in radial velocities between the Ca II H and K, H $\delta$ , H $\gamma$  (all obtained in the present study), and the rest of the spectral lines, has been also noticed for the supergiant star HD101584 (Rosenzweig, Guzmán, and Naranjo 1997).

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Table 1: Spectral lines and radial velocities derived for HD74180

JD 2400000+	Identified Lines	Selected Lines	r.v. $\pm\sigma$ (Ref.) (km/s)	r.v. (km/s) Ca II H	r.v. (km/s) K	r.v. (km/s) H $\delta$	r.v. (km/s) H $\gamma$
16436.81			29.3 (2)				
16506.63			28 (2)				
16865.68			25.4 (2)				
16912.69			25.3 (2)				
16960.58			32.0 (2)				
17216.74			30.9 (2)				
			29.4 (2)				
18754.58			27.1 (2)				
			29.7 (2)				
19062.76			18.3 (2)				
			19.9 (2)				
			18.9 (2)				
19072.72			17.8 (2)				
			18.5 (2)				
20240			21.6 (3)				
20621			20.3 (3)				
20622			23.6 (3)				
47240.553	90	61	23 $\pm$ 1 (1)	13	-44	119	41
50430.221	40	19	32 $\pm$ 2 (1)	67	-23	210	22
50430.275	80	48	31 $\pm$ 1 (1)	27	-6	210	30

(1) Present study

(2) Campbell (1928)

(3) Lunt(1918)

Table 2: Spectral lines and radial velocities derived for HD70761

JD 2400000+	Identified Lines	Selected Lines	r.v. $\pm\sigma$ (Ref.) (km/s)	r.v. (km/s) Ca II H	r.v. (km/s) K	r.v. (km/s) H $\delta$	r.v. (km/s) H $\gamma$
22416.155			66.0 (4)				
22417.174			65.0 (4)				
22419.167			62.5 $\pm$ 0.2 (4)				
47213.929	101	62	56 $\pm$ 2 (1)	-97	-121	53	148

(1) Present study

(4) Abt (1970)

Table 3: Spectral lines and radial velocities derived for HD64238

JD 2400000+	Identified Lines	Selected Lines	r.v. $\pm\sigma$ (Ref.) (km/s)	r.v. (km/s) Ca II H	r.v. (km/s) K	r.v. (km/s) H $\delta$	r.v. (km/s) H $\gamma$
27496.234			15.3 (2)				
33226.530			13.8 (2)				
33321.301			21.0 (2)				
47215.000	300	250	17 $\pm$ 0.4 (1)	58	-5	-219	15
50429.158	148	71	27 $\pm$ 2 (1)	63	-30	154	43

(1) Present study

(2) Abt (1970)

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