

(1980), are also displayed in Figure 4b (HL and CD relations).

## 7. Delta Scuti, SX Phoenicis Stars and the B-W Method

Figure 5 displays the photometric observations obtained through the 7 filters of Geneva photometry, concerning the Delta Scuti star BS Aqr. From top to bottom are drawn the U, B1, B, B2, V1, V, and G magnitude observations in function of the phase  $\phi$ . The adopted origin of time is HJD 2440000. The scale in magnitude is given in the upper left corner. The fitted curve of the V magnitude is drawn.

For the same star, Figures 6a, 6b, 6c, and 6d display, from top to bottom, the observations and the fitted curves of the V magnitude, of the Geneva [B-V] colour index, of the radial velocity  $V_r$ , and of the 3 curves  $\Delta R$ ,  $\dot{R}$ , and  $\ddot{R}$  describing the pulsation cycle. Very similar figures are obtained for the SX Phoenicis star DY Peg.

The comparison of the curves in Figures 5 and 6 concerning BS Aqr with those in Figures 1 and 2 concerning RR Cet, i.e. an RRab Lyrae star, induces the following remarks:

(i) The light, colours and velocity curves are more symmetric: 3 to 5 harmonics of the Fourier series are sufficient to describe the observed variations in luminosity and in radial velocity, instead of 15 to 20 for the two RR Lyrae stars.

(ii) The amplitudes are smaller.

(iii) The width of the peak in the  $\ddot{R}$  curve is much larger, instead of 15% of the period in the case of RR Cet and DX Del.

(iv) No hump is observed on the light curve at the phase of minimum radius, which means that the perturbations of

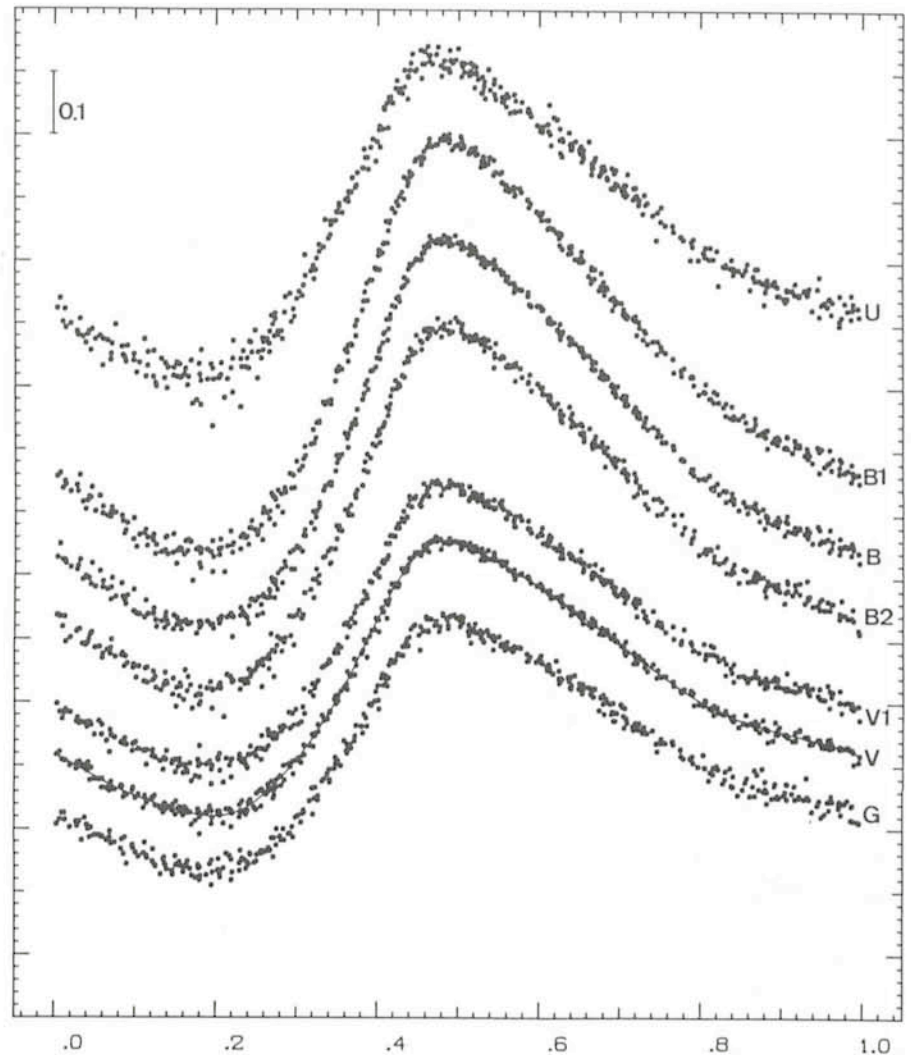


Figure 5: Luminosity curves measured in the 7 filters of Geneva photometry for the Delta Scuti star BS Aqr.

the stellar atmosphere by shock wave and/or by increase of the turbulence is less important in these Delta Scuti and SX Phoenicis stars than in RR Lyrae stars.

Various intervals of phase have been investigated: whole cycle, rising and diminishing light, increasing and decreasing radius. For both stars the  $R_0$  value of the mean radius for the whole cycle

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## STAFF MOVEMENTS

### Arrivals

#### Europe:

AVILA, Gerardo (Mex.), Engineer/Physicist  
AZIAKOU, Patricia (F), Adm. Clerk Purchasing  
BEELEN, Guido (B), Electronics Engineer  
BUYTENDIJK, Felice (NL), Receptionist  
GIRAUD, Edmond (F), Fellow  
STANGA, Ruggero (I), Associate

### Departures

#### Chile:

MÜLLER, Guido (CH), Electro-Mech. Engineer  
FOING, B. (F), Fellow