

MAGNITUDE SEQUENCES IN THE FIELDS SURROUNDING UX ANTLIAE AND UW CENTAURI

UX Ant (HV 966) was discovered and first studied by Erro (1940). Though for some time it was considered a suspected member of the R Coronae Borealis (R CrB) type of variable stars (Erro, 1940; Kholopov, 1985) more recently, suggestions were made that it is a true member of the class (Kilkenny and Westerhuys, 1990; Milone et al., 1990).

UW Cen is a typical R CrB type variable star, first studied by Gaposchkin (1952). From maximum to minimum light it has a rather large variation: 7 magnitudes.

Magnitude sequences in variable star fields can be useful in several respects, e.g., for determining light curves, or for knowing approximately the variable brightness at any moment, etc. UX Ant and UW Cen are quite dissimilar examples (at least, if we consider frequency of large light variations!) of what an R CrB type variable star is: from 1980 to 1990, UX Ant exhibited only one deep light minimum (Minniti, 1990); on the contrary, UW Cen frequently shows drops in brightness amounting to several magnitudes from its maximum light. Monitoring these stars would be interesting and a near-by magnitude sequence could facilitate things. Consequently, sequences observed in their fields are presented here.

UBV observations were made with the 60 inch reflecting telescope at the Bosque Alegre Astrophysical Branch of the Córdoba Astronomical Observatory and a single channel photoelectric photometer; they were reduced employing UBV standard stars from E regions (Cousins, 1972, 1983). An RCA 1P21 photomultiplier and standard UBV Schott glass filters were used (Kron, 1963). The field was usually diaphragmed to 10 arc seconds during measurements.

The atmospheric extinction was redetermined because early in 1991, several volcanic eruptions occurred in the southern hemisphere. Mean values were employed in the reduction of the observations.

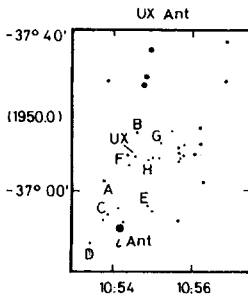


Figure 1. Region around UX Ant

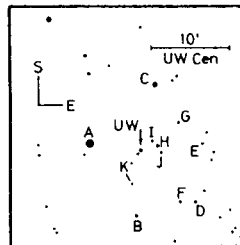


Figure 2. Region around UW Cen

Table I

	UX Ant				UW Cen		
	Region				Region		
	V	B-V	U-B		V	B-V	U-B
Star A	9.70	0.47		Star A	7.10	0.05	
Star B	10.45	1.00		Star B	8.58	1.14	
Star C	11.48	0.59		Star C	9.32	-0.03	
Star E	11.45	1.03		Star D	10.08	0.37	
Star F	11.78	0.45		Star F	11.22	1.15	
Star G	11.86	1.35		Star G	11.65	0.22	
Star H	13.33	1.23		Star H	11.28	0.35	
UX Ant close				Star I	12.42	1.46	
companion(1)	14.55	0.41		Star J1(5)	13.46	0.65	
UX Ant(2)	11.99	0.53	0.31	Star J2(5)	14.34	0.27	
UX Ant(3)	11.94	0.56	0.23	Star J12(5)	13.06	0.52	
UX Ant(4)	11.88	0.59	0.01	Star K(6)	12.93	0.56	
				UW Cen close			
				companion(7)	13.41	0.78	0.20

(1) A star 15 arc seconds to the NW of UX Ant.

(2, 3, 4) Observations made in 1992, April 24 (02:07 UT), May 1 (00:42 UT) and May 31 (23:46 UT), respectively (JD 2448736.59, 48743.53 and 48774.49).

(5) J is a double star; J1 and J2, bright and faint component, respectively; J12, combined magnitude and color.

(6) Double; combined magnitude and color.

(7) A star some 20 arc seconds to the NNW of UW Cen.

Observations were carried out from April to June 1992. During this period, UW Cen was rather faint and it was not photoelectrically observed. Measured magnitudes and colors are shown in Table I and the observed stars are identified in Figures 1 and 2 (these are only approximate reproductions and it may be useful to supplement them with published photographs, e.g., Papadopoulos (1979), or Milone (1990).

Our measured V, B-V, and U-B for UX Ant are similar to the values published by Kilkenny & Westerhuys (1992) (V=12.05, B-V=0.55, U-B=-0.02) and are consistent with the generally accepted idea that these stars show (usually small) light variations even at their maximum brightness. Also, measured colors for UX Ant nearly coincide with mean values obtained for RX Sgr at its maximum (Lawson et al., 1990); B-V \approx 0.60, U-B \approx 0.30, and in turn, they seem to be a little reddened (0.1, or 0.2, in B-V) as these two stars have mid to late F spectra.

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L. A. MILONE
 Observatorio Astronómico,
 Universidad Nacional de Córdoba,
 Laprida 854,
 5000 - Córdoba, Argentina

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