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LONG TERM OPTICAL PHOTOMETRIC MONITORING OF η CARINÆ FROM LA PLATA OBSERVATORY

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We present here the results of our optical monitoring program of the LBV η Carinæ. This program was begun to register the "eclipse-like" event, which ocurred in 2003.5 (Fernández Lajús et al. 2003). Then, we continued observing this object (Fernández Lajús et al. 2004, 2005), aiming to complete the orbital period of 5.5 years of the proposed binary (Damineli et al. 2000; Corcoran 2005). This work shows the results obtained till 2006, August.

Our observations consist of differential CCD photometry in the Johnson-Cousins optical bands $BVRI$, using the 0.8 m Reflector telescope at La Plata Observatory, Argentina (see Fernández Lajús et al. 2003 for more details on instrumental configuration and image processing methods).

Figure 1 shows the light variations of η Car observed in the B, V, R and I bandpasses since the beginning of our campaign in 2003. The gaps in the light curves correspond to the intervals during September and October every year, in which η Car is not observable. During the 2006 observing season, the brightness of η Car and its nebula continued with the increasing tendency that it has shown since the campaign started. The global rate of the brightness rise is about 0.13 mag/yr, almost the same value kept by the object since 1996 (Sterken et al. 1999). Fluctuations were present in every band with amplitudes not greater than 0.1 mag. The 2006 data show that η Car has always been brighter than $V = 4.8$. The maximum visual magnitude that the object attained in this period is $V = 4.65$. This maximum is well-marked in the B, V and I band light curves (Figure 1), whereas in the R band it is not well defined. At the end of the observing season, η Car reached again the maximum brightness ($V = 4.65$), after which a quick drop of ~ 0.1 mag was observed.

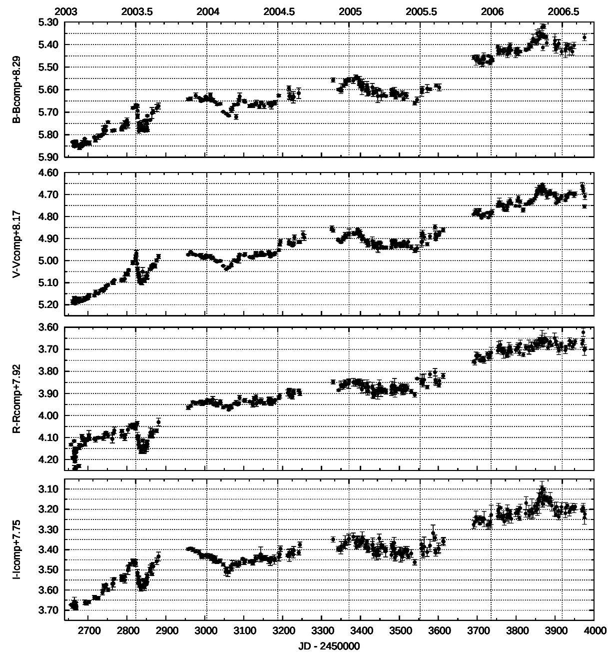

Fig. 1. $BVRI$ light variations of η Car observed from La Plata between 2003 and 2006.

This last event is not well documented due to the lack of visibility of the object.

Thus, until now, we have monitored more than a half of the 5.54 years orbital period of the binary system which η Car is supposed to be.

The observations are available at `http://lilen.fcaglp.unlp.edu.ar/EtaCar/`

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