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AN RR Lyr VARIABLE IN THE FIELD OF HX Peg

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Equatorial coordinates:	**Equinox:**
R.A.= $23^{h}40^{m}04^{s}.151$ **DEC.**= $12^{\circ}38'00''.67$	J2000

Observatory and telescope:
U.S. Naval Observatory Flagstaff Station 1.0m

Detector:	SITe/Tektronix 1024×1024

Filter(s):	BV

Date(s) of the observation(s):
5 nights between UTD 030923 and 031021

Transformed to a standard system:	yes
Standard stars (field) used:	5521-t1.txt

Type of variability:	RRab

Remarks:

2MASSJ23400415+1238007 (= 2UCAC 36397461, USNO-B1.0 1026-0769191) is a star near the cataclysmic variable HX Peg. On September 20, 2003, Linnolt noticed an object in the HX Peg field that he had not seen before; this object was also confirmed by Simonsen. Over the course of several hours, Linnolt measured a brightness decline. The transient nature, plus a rough position at which no object was visible on archival plates, was sufficient to cause several professional observatories to respond to the alert. Henden commented in vsnet-alert that his all-sky field calibration indicated a variable object north of the Linnolt position, and further observations confirmed that this was the transient object observed by Linnolt: an RRab star that normally was below his observation limit, with a nearly integral-day-fraction period that caused "observing seasons" when the object would be bright enough to be visible. A finding chart based on a Keck LRIS (Oke et al., 1995) R-band image (courtesy of George Becker) is shown in Figure 1. Multifilter time-series photometry by Henden using the NOFS 1.0m telescope gives an epoch and period (errors in parenthesis) of

$$\max = 2452904.868(1) + 0.50545(1) \times E$$

A B-band and V-band light curve is shown in Figure 2. The field calibration was performed on 6 nights (5 BV and one BVR_cI_c), using a large set of Landolt standard stars over wide color range and airmass. A preliminary version of this file was given in Henden and Honeycutt (1995). The variable was observed in all 4 BVR_cI_c filters on one occasion; the magnitude and colors are given below, with errors of 0.02mag in each measure.

Phase	V	$B-V$	$V-R$	$R-I$
0.787	15.915	0.453	0.320	0.344

The archival 2MASS observations yield the following magnitudes:

JD	J	Jerr	H	Herr	K	Kerr
2451135.7286	14.468	0.029	14.338	0.054	14.319	0.069

The $(J-H)$ and $(H-K)$ colors are typical of RRab variables.

Acknowledgements:

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References:

Henden, A. A., Honeycutt, R. K. 1995, *PASP*, **107**, 324.

Oke, J. B., Cohen, J. G., Carr, M., Cromer, J., Dingizian, A., Harris, F. H., Labrecque, S., Lucinio, R. ans W. Schaal 1995, *PASP*, **107**, 375.

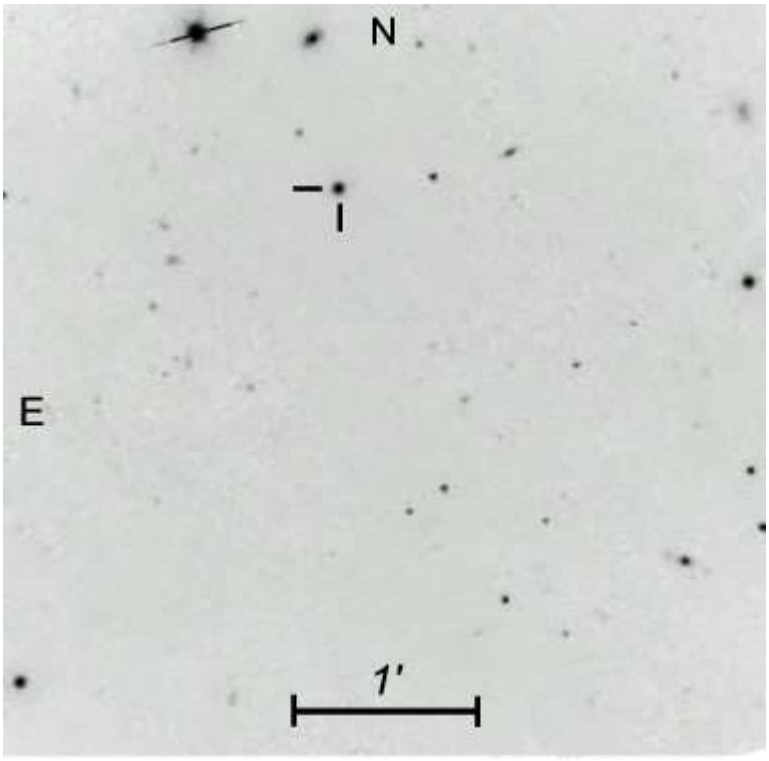

Figure 1. R-band finding chart. $4' \times 4'$

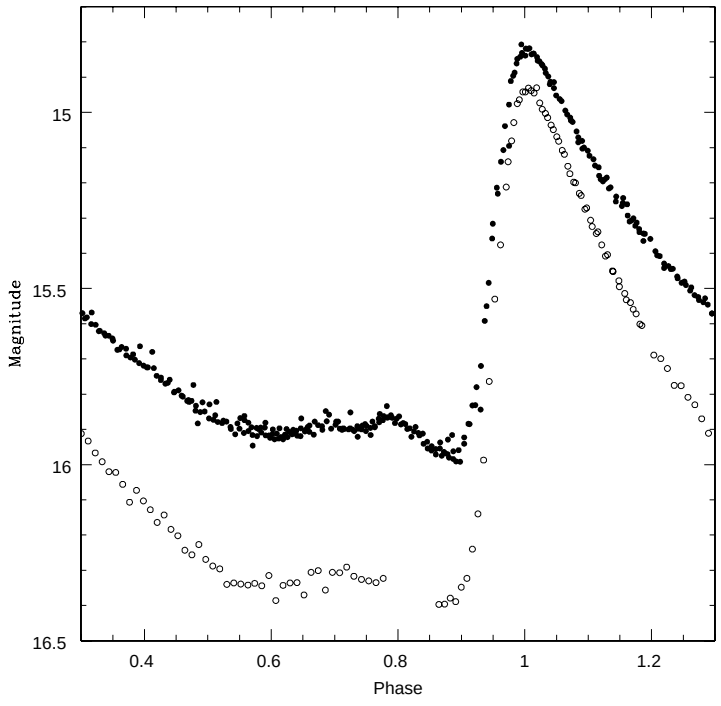

Figure 2. Light curve. Open circles are B, filled circles are V