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NEW MINIMUM TIMES OF THE W UMa SYSTEM RW Dor

The variability of the W UMa system RW Dor (HV 2435 = HDE 269320) was discovered by Miss Leavitt (1908) on plates taken on the Large Magellanic Cloud. The first classification was made by Miss Cannon (1921), who found a spectral type of K5. However, from our photometric observations we have found (B-V) = 0.84, which is in agreement with Eggen (1960) who measured (B-V)=0.81 indicating that the star is considerably earlier. This fact was recently corroborated by Bidelman and Sanduleak (1982) who estimated the star to be a late type G dwarf on a low dispersion (580 A/mm at Hγ) objective-prism plate.

Photographic minima were published by Hertzsprung in 1928. More recently we published (1981) eight times of minimum obtained from 500 UBV observations. The observations were carried out with the 154-cm reflector at the Bosque Alegre Station of Córdoba Observatory. A conventional photometer with RCA 1P21 photomultiplier refrigerated with dry ice was used. These observations were supplemented by latter ones made with the same instrument and telescope above. A total of 880 observations in each pass-band have been obtained and fifteen new times of minimum were derived.

The colour-averages of the photoelectric times of minimum are listed in Table I (mean errors are in parenthesis) together with the photographic minima published by Hertzsprung (1928). A linear least squares ephemeris using all available photoelectric times of minimum light gives,

$$\text{Min I} = \text{J.D. Hel. } 2444695.10270 + 0.28546371 \cdot E'$$
$$\pm 0.00018 \pm 0.00000021$$

while, including the photographic minima, the least squares ephemeris gives,

$$\text{Min I} = \text{J.D. Hel. } 2430938.60167 + 0.2854638109 \cdot E$$
$$\pm 0.00042 \pm 0.0000000086$$

Table I

Min	Colour	J.D. Hel (2400000+)	E	(O-C)	(O-C)'	Remarks
II	Pg	11298.8350	-68799.5	0.0008		1
II	Pg	14168.8830	-58745.5	-0.0044		1
II	Pg	15621.9010	-53655.5	0.0028		1
II	Pg	16013.8360	-52282.5	-0.0040		1
II	Pg	16489.7140	-50615.5	0.0058		1
I	Pg	17075.9030	-48562.0	-0.0051		1
I	Pg	23784.6000	-25061.0	0.0069		1
I	Pg	24172.5370	-23702.0	-0.0014		1
II	BV	44313.5813	46853.5	0.0009	0.0008	2
II	BV	44464.8764	47383.5	0.0002	0.0002	2
I	UBV	44581.7728	47793.0	-0.0008	-0.0008	2
I	UBV	44608.6063	47887.0	-0.0009	-0.0009	2
II	UBV	44608.7488	47887.5	-0.0011	-0.0011	2
II	UBV	44609.6063	47890.5	-0.0001	0.0000	2
I	UBV	44609.7493	47891.0	0.0003	0.0002	2
II	UBV	44610.7487	47894.5	0.0006	0.0005	2
I	UBV	44825.8462(8)	48648.0	0.0011	0.0011	3
II	UBV	44826.8442(4)	48651.5	-0.0001	0.0000	3
I	UBV	44873.8038(6)	48816.0	0.0007	0.0008	3
I	UBV	44874.6594(3)	48819.0	-0.0001	0.0000	3
II	UBV	44874.8010(4)	48819.5	-0.0012	-0.0011	3
I	UBV	44958.5851(4)	49113.0	-0.0007	-0.0006	3
II	UBV	44961.5843(6)	49123.5	0.0011	0.0012	3
I	UBV	44961.7239(6)	49124.0	-0.0020	-0.0019	3
I	UBV	44962.5815(7)	49127.0	-0.0008	-0.0007	3
II	UBV	44962.7267(5)	49127.5	0.0017	0.0018	3
I	UBV	45021.6738(3)	49334.0	0.0005	0.0006	3
II	UBV	45049.5058(6)	49431.5	-0.0002	-0.0001	3
I	UBV	45049.6486(8)	49432.0	-0.0002	0.0000	3
II	UBV	45050.6484(3)	49435.5	0.0005	0.0006	3
I	UBV	45076.4815(4)	49526.0	-0.0009	-0.0007	3

Remarks: 1. Hertzsprung (1928), 2. Marton, Grieco (1981), 3. Present observations.

The cycles E and residuals of these elements are listed in columns (4) and (5) of Table I, while residuals (O-C)' in column (6).

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References:

Bidelman, W.P., Sanduleak, N., 1982, I.B.V.S. No. 2122
Cannon, A.J., 1921, Harvard Bull., 754
Eggen, O.J., 1960, Royal Observatory Bull., 31
Hertzsprung, E., 1928, BAN IV, 146
Leavitt, H., 1908, Harvard Annals, 60
Marton, S.F., Grieco, A., 1981, I.B.V.S. No. 1960