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NEW TIMES OF MINIMA OF SOME ECLIPSING VARIABLES

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Observatory and telescope:
URSA Observatory at the University of Arkansas; 10" Schmidt-Cassegrain reflector. NFO WebScope near Silver City, NM, USA (`www.nfo.edu`); 24" classical Cassegrain.

Detector:	URSA: 1020×1530 pixels SBIG ST8EN CCD cooled to (typ.) −20 °C; 1.″15 square pixels; 20′(N-S)×30′(E-W) field of view. NFO: 2102×2092 pixels Kodak KAF 4300E CCD cooled to (typ.) −20 °C; 0.″78 square pixels; 27′ square field of view.

Method of data reduction:
Virtual measuring engine (Measure 2.0) written by C.H.S. Lacy.

Method of minimum determination:
Kwee & van Woerden (1956)

Times of minima:

Star name	Time of min. HJD 2400000+	Error	Type	Filter	Rem.
AP And	55121.6229	0.0001	2	*V*	NFO
	55139.8769	0.0005	1	*V*	NFO
	55144.6391	0.0001	1	*V*	NFO
	55152.5755	0.0001	1	*V*	NFO
	55159.7179	0.0002	2	*V*	NFO
	55358.9230	0.0002	1	*V*	NFO
	55412.8911	0.0001	1	*V*	URSA
	55432.7316	0.0002	2	*V*	URSA
	55451.7796	0.0001	2	*V*	URSA
	55466.8587	0.0002	1	*V*	NFO
	55467.6531	0.0002	2	*V*	URSA
	55478.7642	0.0003	2	*V*	NFO
	55486.7003	0.0001	2	*V*	NFO
	55494.6360	0.0002	2	*V*	NFO
	55497.8112	0.0002	2	*V*	NFO
	55509.7156	0.0002	1	*V*	NFO
	55528.7633	0.0002	1	*V*	NFO
	55555.7470	0.0002	1	*V*	NFO
	55563.6837	0.0001	1	*V*	NFO
	55575.5884	0.0002	2	*V*	NFO
	55575.5885	0.0002	2	*V*	URSA

Times of minima:					
Star name	Time of min. HJD 2400000+	Error	Type	Filter	Rem.
CG Aur	55116.9308	0.0004	1	*V*	NFO
	55126.9113	0.0004	2	*V*	NFO
	55137.7425	0.0008	2	*V*	NFO
	55183.7123	0.0004	1	*V*	NFO
	55193.6903	0.0011	2	*V*	NFO
	55554.6634	0.0005	2	*V*	NFO
HP Aur	55181.8290	0.0002	1	*V*	URSA
	55251.5488	0.0007	1	*V*	URSA
	55258.6627	0.0002	1	*V*	URSA
	55462.8389	0.0003	2	*V*	URSA
V361 Cas	55435.9071	0.0010	1	*V*	URSA
	55445.7402	0.0003	1	*V*	URSA
	55478.9212	0.0003	1	*V*	NFO
	55498.5865	0.0004	1	*V*	URSA
	55499.8127	0.0004	1	*V*	NFO
	55509.6477	0.0005	1	*V*	URSA
	55514.5622	0.0009	1	*V*	URSA
	55515.7912	0.0010	1	*V*	NFO
	55520.7069	0.0007	1	*V*	URSA
	55536.6835	0.0006	2	*V*	NFO
	55568.6355	0.0010	2	*V*	URSA
	55568.6366	0.0012	2	*V*	NFO
V381 Cas	55435.7317	0.0002	1	*V*	URSA
	55468.9034	0.0002	1	*V*	NFO
	55468.9044	0.0002	1	*V*	URSA
	55470.6509	0.0002	1	*V*	URSA
	55539.6137	0.0002	2	*V*	URSA
	55566.6796	0.0002	1	*V*	NFO
	55574.5311	0.0005	2	*V*	URSA
V651 Cas	55458.9197	0.0003	2	*V*	URSA
	55460.9133	0.0002	2	*V*	URSA
	55467.8926	0.0003	2	*V*	URSA
	55485.8329	0.0002	2	*V*	URSA
	55498.7920	0.0002	2	*V*	URSA
	55499.7889	0.0001	2	*V*	URSA
	55500.7856	0.0002	2	*V*	URSA
	55504.7729	0.0002	2	*V*	URSA
	55506.7666	0.0001	2	*V*	URSA
	55528.6964	0.0002	2	*V*	URSA
	55533.6805	0.0003	2	*V*	URSA
	55537.6673	0.0002	2	*V*	URSA
	55563.5838	0.0002	2	*V*	URSA
	55564.5808	0.0002	2	*V*	URSA
WW Cep	55176.5598	0.0006	2	*V*	URSA
	55431.9055	0.0002	1	*V*	URSA
	55468.7131	0.0002	1	*V*	URSA
	55469.8846	0.0003	2	*V*	URSA
	55528.5230	0.0003	1	*V*	URSA
V456 Cyg	55283.9844	0.0002	1	*V*	NFO
	55300.9172	0.0002	1	*V*	URSA
	55329.8805	0.0002	2	*V*	NFO
	55337.9033	0.0007	2	*V*	NFO
	55345.9214	0.0002	2	*V*	NFO
	55354.8351	0.0002	2	*V*	URSA
	55366.8658	0.0002	1	*V*	NFO

Times of minima:					
Star name	Time of min. HJD 2400000+	Error	Type	Filter	Rem.
	55366.8660	0.0003	1	*V*	URSA
	55378.8965	0.0003	2	*V*	URSA
	55379.7882	0.0003	2	*V*	URSA
	55392.7107	0.0002	1	*V*	URSA
	55395.8291	0.0002	2	*V*	URSA
	55396.7202	0.0003	2	*V*	URSA
	55399.8398	0.0002	1	*V*	URSA
	55400.7314	0.0001	1	*V*	URSA
	55411.8723	0.0003	2	*V*	URSA
	55421.6745	0.0002	2	*V*	URSA
	55425.6845	0.0002	1	*V*	URSA
	55434.5962	0.0003	1	*V*	URSA
V974 Cyg	55296.9396	0.0003	1	*V*	NFO
	55320.8793	0.0005	2	*V*	URSA
	55365.7471	0.0007	2	*V*	URSA
V1136 Cyg	55301.8923	0.0005	1	*V*	URSA
	55301.8943	0.0004	1	*V*	NFO
	55360.7606	0.0004	1	*V*	NFO
	55362.7981	0.0014	2	*V*	NFO
	55457.7170	0.0007	1	*V*	NFO
	55466.6732	0.0013	2	*V*	NFO
BF Dra	55370.7426	0.0002	1	*V*	URSA
	55370.7433	0.0003	1	*V*	NFO
	55471.6415	0.0002	1	*V*	URSA
	55471.6422	0.0002	1	*V*	NFO
V501 Her	55278.8917	0.0009	1	*V*	NFO
	55321.8833	0.0005	1	*V*	URSA
	55351.7943	0.0007	2	*V*	NFO
	55364.8705	0.0005	1	*V*	NFO
WZ Leo	55192.9954	0.0004	1	*V*	NFO
	55209.8941	0.0004	1	*V*	URSA
AL Leo	55251.7365	0.0002	1	*V*	NFO
	55259.7643	0.0002	1	*V*	URSA
	55259.7653	0.0006	1	*V*	NFO
	55260.5666	0.0004	2	*V*	URSA
	55267.7921	0.0003	1	*V*	NFO
	55280.6366	0.0003	1	*V*	NFO
	55284.6497	0.0002	2	*V*	NFO
	55296.6915	0.0002	1	*V*	URSA
	55300.7051	0.0002	2	*V*	URSA
	55300.7055	0.0002	2	*V*	NFO
	55349.6723	0.0004	1	*V*	NFO
	55490.9584	0.0004	1	*V*	URSA
	55519.8576	0.0004	1	*V*	URSA
	55531.9001	0.0004	2	*V*	NFO
	55539.9273	0.0001	2	*V*	NFO
	55543.9408	0.0002	1	*V*	URSA
	55543.9411	0.0001	1	*V*	NFO
	55564.0097	0.0002	2	*V*	NFO
	55564.0099	0.0003	2	*V*	URSA
	55564.8123	0.0001	1	*V*	URSA
	55568.8256	0.0002	2	*V*	URSA
	55568.8262	0.0002	2	*V*	NFO
	55580.8670	0.0002	1	*V*	NFO
	55588.8953	0.0001	1	*V*	URSA

Times of minima:					
Star name	Time of min. HJD 2400000+	Error	Type	Filter	Rem.
V501 Mon	55135.8866	0.0019	1	*V*	NFO
	55170.9960	0.0013	1	*V*	NFO
	55493.9715	0.0009	1	*V*	NFO
	55500.9939	0.0011	1	*V*	NFO
V506 Oph	55293.9475	0.0002	2	*V*	NFO
	55369.7682	0.0002	1	*V*	URSA
	55378.7803	0.0003	2	*V*	URSA
	55412.7157	0.0002	2	*V*	URSA
	55462.5558	0.0002	2	*V*	URSA
	55472.6288	0.0002	1	*V*	NFO
FO Ori	55170.8995	0.0007	1	*V*	NFO
	55505.9168	0.0005	2	*V*	URSA
V530 Ori	55152.9342	0.0007	1	*V*	NFO
	55482.9157	0.0001	1	*V*	NFO
	55531.8024	0.0001	1	*V*	URSA
	55531.8024	0.0002	1	*V*	NFO
	55537.9129	0.0002	1	*V*	NFO
	55580.6883	0.0002	1	*V*	NFO
NP Per	55484.9086	0.0007	2	*V*	NFO
	55484.9116	0.0014	2	*V*	URSA
	55533.9424	0.0006	2	*V*	NFO
IM Per	55241.6872	0.0006	2	*V*	NFO
	55473.8723	0.0003	2	*V*	URSA
	55490.7857	0.0003	1	*V*	NFO
	55490.7865	0.0003	1	*V*	URSA
	55500.9194	0.0004	2	*V*	URSA
	55507.6854	0.0004	2	*V*	URSA
	55507.6862	0.0005	2	*V*	NFO
	55525.7190	0.0007	2	*V*	NFO
	55533.6170	0.0004	1	*V*	NFO
	55544.8885	0.0004	1	*V*	NFO
	55568.5474	0.0007	2	*V*	URSA
	55569.6845	0.0003	1	*V*	URSA
	55587.7179	0.0009	1	*V*	URSA
V482 Per	55158.8543	0.0011	1	*V*	NFO
	55169.8635	0.0006	2	*V*	NFO
	55185.7682	0.0004	1	*V*	NFO
	55201.6755	0.0005	2	*V*	NFO
	55245.7097	0.0004	2	*V*	NFO
	55432.8751	0.0005	1	*V*	URSA
	55443.8859	0.0004	2	*V*	URSA
	55459.7893	0.0009	1	*V*	URSA
	55465.9052	0.0005	2	*V*	NFO
	55476.9162	0.0004	1	*V*	NFO
	55481.8093	0.0004	1	*V*	NFO
	55497.7146	0.0006	2	*V*	URSA
	55498.9346	0.0004	1	*V*	NFO
	55498.9364	0.0007	1	*V*	URSA
	55503.8308	0.0003	1	*V*	NFO
	55508.7236	0.0002	1	*V*	NFO
	55509.9476	0.0010	2	*V*	URSA
	55514.8421	0.0003	2	*V*	URSA
	55519.7355	0.0005	2	*V*	URSA
	55536.8653	0.0006	2	*V*	NFO
	55557.6609	0.0005	1	*V*	NFO

Times of minima:					
Star name	Time of min. HJD 2400000+	Error	Type	Filter	Rem.
	55563.7761	0.0006	2	*V*	NFO
	55563.7765	0.0004	2	*V*	URSA
	55573.5628	0.0004	2	*V*	URSA
	55590.6906	0.0003	2	*V*	URSA
V514 Per	55144.9267	0.0005	1	*V*	NFO
	55145.8344	0.0006	2	*V*	NFO
	55154.9320	0.0005	2	*V*	NFO
	55155.8410	0.0006	1	*V*	NFO
	55156.7505	0.0008	2	*V*	NFO
	55167.6673	0.0010	2	*V*	NFO
V335 Ser	55299.7795	0.0003	1	*V*	URSA
	55337.7290	0.0002	1	*V*	NFO
	55368.7776	0.0004	1	*V*	URSA
	55401.6790	0.0003	2	*V*	URSA
	55451.5751	0.0006	1	*V*	URSA
TY Tau	55175.6721	0.0003	1	*V*	URSA
	55209.6089	0.0004	2	*V*	URSA
	55245.7000	0.0005	1	*V*	URSA
	55485.9534	0.0003	1	*V*	URSA
	55499.9587	0.0002	1	*V*	URSA
	55533.8951	0.0004	2	*V*	URSA
	55544.6664	0.0003	2	*V*	URSA
	55557.5960	0.0008	2	*V*	URSA
CF Tau	55153.7515	0.0003	1	*V*	NFO
V1094 Tau	55157.7494	0.0003	1	*V*	NFO
	55175.7281	0.0003	1	*V*	NFO
	55181.5904	0.0003	2	*V*	URSA
	55202.6903	0.0006	1	*V*	NFO
	55208.5573	0.0002	2	*V*	URSA
	55247.6367	0.0003	1	*V*	NFO
	55274.6011	0.0003	1	*V*	URSA
HY Vir	55280.8670	0.0003	2	*V*	NFO
	55295.8986	0.0006	1	*V*	NFO
	55306.8257	0.0003	1	*V*	URSA
	55317.7536	0.0004	1	*V*	NFO
	55332.7877	0.0005	2	*V*	NFO
	55369.6662	0.0003	1	*V*	URSA
	55590.9881	0.0003	1	*V*	URSA
BP Vul	55350.8269	0.0004	2	*V*	NFO
BT Vul	55122.6912	0.0002	2	*V*	NFO
	55134.6733	0.0002	1	*V*	NFO
	55138.6677	0.0004	2	*V*	NFO
	55154.6456	0.0005	2	*V*	NFO
	55418.8327	0.0002	1	*V*	URSA
	55434.8089	0.0002	1	*V*	URSA
	55462.7666	0.0008	2	*V*	URSA
	55473.6084	0.0002	1	*V*	URSA
	55485.5918	0.0005	2	*V*	URSA
	55497.5738	0.0002	1	*V*	URSA

Remarks:

A sample of the observations has been published by Lacy, Hood & Straughn (2001). Mean deviations between independently timed eclipses by the two telescopes (URSA & NFO) are not significantly larger than expected based on the error estimates, implying that the estimated timing errors are realistic.

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References:

Kwee, K. K. & van Woerden, H., 1956, *BAN*, **12**, 327
Lacy, C. H. S., Hood, B. & Straughn, A., 2001, *IBVS*, No. 5067

ERRATUM FOR IBVS 5972

In IBVS 5972 the time of minimum for WW Cep - 55469.8846 +- 0.0003 type 2 eclipse from the URSA telescope - should have been from the star V651 Cas instead of WW Cep.

Lacy, C. H. S.