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**PRECISE TIMES OF MINIMUM LIGHT
OF NEGLECTED ECLIPSING BINARIES**

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We present 102 times of minimum light for 60 mostly neglected eclipsing binaries, as a continuation of an ongoing program of monitoring eccentric orbit, apsidal motion and other type systems. This is the first publication in our goal to also release all of our previously unpublished minimums in our archives. As part of this project we are including times of minimum light from CCDs as well as from photoelectric photometers.

These stars were observed during several seasons and are presented for their long-term value as well as for planning new observations. All data were obtained at Appalachian State University's Dark Sky Observatory. The CCD observations include measurements made with the 32-inch DFM Engineering telescope and Photometrics CH250 CCD camera with a Tek 1024² chip and Bessell filter set. Other data were obtained with the 18-inch telescope with a Photometrics CH350 CCD camera and SITe 1024² chip and Bessell filter set. Some other data were obtained with an SBIG ST-9E CCD on the 16-inch DFM telescope. These are noted in the table as 32, 18, and 16, respectively. The filters are the Johnson equivalents in the Bessell set, with 'C' representing a clear or no filter.

The photoelectric times of minimum light were observed with the 18-inch telescope with a Kitt Peak National Observatory single-channel design employing a thermoelectrically cooled EMI 9865QB photomultiplier tube with matching UBVR filters. One eclipse's data (U Oph) was obtained on the 32-inch with an Optec SSP-3 PIN-diode photomultiplier with Johnson filters, and in fact was the first scientific data obtained with that telescope.

The CCD data in this publication were reduced using Mira AP software.[†] All of our times of minimum and their standard errors, including the photoelectric data and its errors, were calculated using the method of Kwee & van Woerden (1956), using an algorithm by Ghedini (1982).

We are grateful for references provided by Greg Shelton and Brenda Corbin at the U.S. Naval Observatory Library. Other references were obtained at the NASA Astrophysics Data System. This work also made use of the SIMBAD data base and the Space Telescope Science Institute's Digitized Sky Survey. We thank Joe Pollock and Stephen Davis for the development of PMIS macros used in automatic data acquisition, and Lee Hawkins for instrumentation support. We especially thank the other people who observed or reduced the data including Wanda Burns, Brain Walls, Jeff Deal, and Nathan Bergey.

[†]The Mira AP software is produced by Mirametrix Inc., formerly Axiom Research Inc.

Star	Type	Filters	HJD - 2400000	Error	Tel	Instr.
RT And	pri	V	47770.8088	0.0008	18	KPmt
	sec	V	48159.8005	0.0004	18	KPmt
	pri	V	48191.5596	0.0002	18	KPmt
RX Ari	pri	V	47855.7043	0.0004	18	KPmt
WW Aur	pri	V	47893.6516	0.0001	18	KPmt
	sec	V	48225.6955	0.0002	18	KPmt
AR Aur	sec	V	48699.5808	0.0004	18	KPmt
CL Aur	pri	V	53388.6336	0.0001	32	CCD
EO Aur	pri	V	53341.8412	0.0002	18	CCD
HL Aur	pri	V	50110.7977	0.0002	32	CCD
	sec	V	53017.5775	0.0001	32	CCD
YZ Aql	pri	V	51071.6657	0.0003	32	CCD
V1182 Aql	pri	V	53210.7055	0.0007	32	CCD
44i Boo	pri	V	48357.8176	0.0003	18	KPmt
BW Boo	sec	VBRI	52815.6886	0.0015	18	CCD
UW Boo	pri	V	50512.7317	0.0002	18	CCD
	pri	V	50518.7590	0.0002	18	CCD
	sec	VBRI	52757.7543	0.0009	32	CCD
	pri	V	53470.5926	0.0001	32	CCD
AW Cam	pri	V	47919.7904	0.0002	18	KPmt
	sec	V	47972.6246	0.0008	18	KPmt
	pri	V	47994.6094	0.0002	18	KPmt
CV CMa	pri	V	53442.6562	0.0007	32	CCD
	sec	V	53451.5749	0.0006	32	CCD
CC Cas	pri	V	53016.6817	0.0006	18	CCD
IT Cas	sec	V	52592.5766	0.0001	32	CCD
V527 Cas	pri	V	53344.5257	0.0002	32	CCD
GK Cep	pri	V	48521.6067	0.0005	18	KPmt
	sec	V	48526.7590	0.0003	18	KPmt
	pri	V	48902.6232	0.0003	18	KPmt
SS Cet	pri	V	51551.7012	0.0008	32	CCD
TV Cet	sec	V	50110.6454	0.0005	32	CCD
WW Cyg	pri	V	51024.6271	0.0000	32	CCD
DX Cyg	pri	V	50685.5730	0.0009	32	CCD
	pri	V	50726.6848	0.0002	32	CCD
	sec	V	52911.6830	0.0017	32	CCD
V463 Cyg	sec	V	53577.7470	0.0003	16	CCD
	pri	V	53578.8125	0.0002	16	CCD
V469 Cyg	pri	V	53594.5918	0.0004	32	CCD
V490 Cyg	sec	V	51491.5776	0.0004	32	CCD
	pri	V	51495.5994	0.0002	32	CCD
V498 Cyg	sec	V	53584.6639	0.0003	32	CCD
V512 Cyg	sec	V	53619.5818	0.0003	32	CCD
	pri	V	53625.6438	0.0001	32	CCD
V541 Cyg	pri	V	53578.7911	0.0001	16	CCD
V873 Cyg	pri	V	53598.7008	0.0002	32	CCD
V959 Cyg	pri	V	50664.7335	0.0004	32	CCD
V974 Cyg	sec	V	50584.7872	0.0010	32	CCD
	pri	V	50967.7694	0.0001	32	CCD
V1136 Cyg	pri	V	53594.7403	0.0002	32	CCD
	sec	V	53603.7318	0.0003	32	CCD
V1326 Cyg	sec	V	50661.6760	0.0010	32	CCD
	pri	V	53588.8343	0.0005	32	CCD
V1436 Cyg	pri	VBR	52845.7191	0.0004	32	CCD
	sec	VRI	52895.7110	0.0023	32	CCD

Star	Type	Filters	HJD – 2400000	Error	Tel	Instr.
Z Dra	pri	V	52708.5681	0.0000	32	CCD
	sec	VBR	52710.6064	0.0011	32	CCD
	pri	V	52769.6520	0.0001	32	CCD
	sec	VBRI	52771.6911	0.0011	32	CCD
	pri	VBRI	52773.7243	0.0001	32	CCD
	pri	VBRI	53502.6609	0.0001	18	CCD
RR Dra	pri	V	51043.6183	0.0000	32	CCD
BF Dra	pri	V	53341.5523	0.0001	32	CCD
CM Dra	pri	R	53478.6467	0.0001	32	CCD
DI Her	sec	V	52812.7354	0.0001	18	CCD
	pri	V	52899.5675	0.0001	32	CCD
VZ Hya	pri	V	47971.5876	0.0003	18	KPmt
	pri	V	52702.6936	0.0001	32	CCD
CM Lac	sec	V	48210.6531	0.0002	18	KPmt
	pri	V	48530.7850	0.0004	18	KPmt
MZ Lac	pri	V	50422.6427	0.0002	32	CCD
	sec	V	50686.6745	0.0008	32	CCD
	pri	V	50722.7286	0.0004	32	CCD
	pri	V	53025.5097	0.0002	32	CCD
V345 Lac	pri	V	50373.8088	0.0006	32	CCD
	pri	V	50403.7826	0.0009	32	CCD
	pri	V	51377.7229	0.0002	32	CCD
	pri	VB	51849.7155	0.0003	32	CCD
	pri	V	53572.8447	0.0002	32	CCD
V412 Lyr	pri	V	50666.7391	0.0001	32	CCD
	sec	V	50672.7933	0.0010	32	CCD
V431 Lyr	pri	V	53499.7379	0.0003	32	CCD
	sec	V	53576.7384	0.0006	32	CCD
	pri	VBRI	53587.6718	0.0004	32	CCD
RU Mon	pri	C	50138.6517	0.0002	32	CCD
TV Mon	pri	V	51489.8738	0.0001	32	CCD
U Oph*	pri	V	49862.7335	0.0001	32	SSP3
WZ Oph	sec	V	48004.7536	0.0002	18	KPmt
	sec	V	53476.7886	0.0001	32	CCD
V451 Oph	sec	V	53575.7235	0.0001	18	CCD
EW Ori	sec	V	50431.6804	0.0001	32	CCD
	pri	V	52973.8223	0.0001	32	CCD
DV Peg	pri	V	53604.6143	0.0002	32	CCD
IQ Per	pri	V	51937.6525	0.0006	18	CCD
KX Pup	pri	V	53077.5933	0.0006	32	CCD
ER Sct	sec	V	53224.7529	0.0001	16	CCD
AN Tau	pri	V	53344.7797	0.0001	32	CCD
DR Vul	sec	V	50376.7009	0.0002	32	CCD
FQ Vul	pri	VBR	53595.8065	0.0005	32	CCD
GP Vul	sec	V	50985.7005	0.0001	32	CCD
	pri	V	51061.5885	0.0001	32	CCD
MN Vul	pri	V	53492.7941	0.0012	32	CCD

* The comparison star used for U Oph is designated as variable star V2368 Oph. From our own measurements it seems likely that this star is not significantly variable. Also, this same comparison star was used by Jordi et al. (1996) and Wolf et al. (2002), without problems reported.

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ERRATUM FOR IBVS 5707

Time of minimum of RZ Com was given as 52849.4809, but it should be 53849.4809.

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