

114 MINIMA TIMINGS OF ULTRA-SHORT ORBITAL PERIOD ECLIPSING BINARIES

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Abstract

We present 114 times of minima of 6 ultra-short orbital period eclipsing binaries.

Observatory and telescope:	
T1: 0.4m, f/8 Cassegrain telescope, located at the University of Athens Observatory, at Zografos, Athens, Greece. T2: 1.2m, f/13 Cassegrain telescope of the National Observatory of Athens, located at the Kryoneri Astronomical Station, at Korinth, Greece. T3: 2.3m, f/8 Ritchey-Chrétien telescope “Aristarchos” of the National Observatory of Athens, located at Helmos Astronomical Station, Kalavryta, Greece	

Detector:	C1: ST-10XME CCD camera, KAF-3200ME chip, $16' \times 11'$ and $25' \times 17'$ (using an f/6.3 focal reducer) field of view (FoV) with T1. C2: AP47p CCD camera, Marconi 47-10 chip, $2.5' \times 2.5'$ and $5' \times 5'$ (using an f/6.3 focal reducer) FoV with T2. C3: LN $1k \times 1k$ CCD camera, SITeAB chip, $4.8' \times 4.8'$ FoV with T3. All CCDs have a Peltier-type cooling system and are equipped with a set of UBVR filters (Bessell specifications).
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Method of data reduction:	
Differential photometry	

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

Times of minima:					
Star name	Time of min. HJD 2400000+	Error	Type	Filter	Rem.
1SWASP J003033.05+574347.6	56934.6364	0.0001	II	BVRI	T3+C3
	57258.3632	0.0001	I	BVRI	T3+C3
	57258.4767	0.0001	II	BVRI	T3+C3
1SWASP J080150.03+471433.8	56778.3594	0.0008	II	BVRI	T2+C2
	56780.3148	0.0014	II	BVRI	T2+C2
	56804.3564	0.0007	I	B	T2+C2
	56805.3312	0.0006	II	BVRI	T2+C2
	56773.5654	0.0013	II	BVRI	T1+C1
1SWASP J122224.73+334614.5	56775.3749	0.0006	II	BVRI	T1+C1
	56776.4311	0.0015	II	B	T1+C1
	56777.3511	0.0009	I	BVRI	T1+C1
	56777.5286	0.0012	II	BVRI	T1+C1
	56778.4305	0.0008	I	BVRI	T1+C1
	56779.3222	0.0009	II	BVRI	T1+C1
	56779.4984	0.0011	I	BVRI	T1+C1
	56778.5054	0.0009	I	VRI	T2+C2
	56779.5421	0.0019	I	BV	T2+C2
	56780.4404	0.0005	II	BVRI	T2+C2
1SWASP J174310.98+432709.6	56780.5685	0.0011	I	BVRI	T2+C2
	56804.4391	0.0022	II	BVRI	T2+C2
	56804.5740	0.0003	I	BVRI	T2+C2
	56805.4780	0.0008	II	BVRI	T2+C2
	56807.4068	0.0016	I	BV	T2+C2
	56808.4433	0.0018	I	BV	T2+C2
	56902.4454	0.0001	I	BVI	T3+C3
	57257.3707	0.0011	I	R	T1+C1
	57257.3829	0.0001	I	BVRI	T3+C3
	57257.4984	0.0001	II	BVRI	T3+C3
1SWASP J220734.47+265528.6	57257.5087	0.0013	II	R	T1+C1
	57257.6145	0.0001	I	BVRI	T3+C3
	57257.6148	0.0004	I	R	T1+C1
	57262.3532	0.0003	II	R	T1+C1
	57262.4705	0.0004	I	R	T1+C1
	57262.5886	0.0005	II	R	T1+C1
	57263.3967	0.0004	I	R	T1+C1
	57263.5093	0.0008	II	R	T1+C1
	57264.3193	0.0004	I	R	T1+C1
	57264.4378	0.0005	II	R	T1+C1
	57264.5496	0.0025	I	R	T1+C1
	57265.3602	0.0004	II	I	T1+C1
	57265.4779	0.0012	I	I	T1+C1
	57265.5937	0.0005	II	I	T1+C1
	57266.4014	0.0003	I	I	T1+C1
	57266.5173	0.0010	II	I	T1+C1
	57267.3245	0.0003	I	I	T1+C1
	57267.4430	0.0003	II	I	T1+C1
	57267.5598	0.0012	I	I	T1+C1

Times of minima:					
Star name	Time of min. HJD 2400000+	Error	Type	Filter	Rem.
1SWASP J220734.47+265528.6	57268.3674	0.0010	II	V	T1+C1
	57268.4832	0.0005	I	V	T1+C1
	57268.6014	0.0009	II	V	T1+C1
	57269.2890	0.0004	II	V	T1+C1
	57269.4071	0.0008	I	V	T1+C1
	57269.5240	0.0005	II	V	T1+C1
	57270.3318	0.0005	I	V	T1+C1
	57270.4485	0.0009	II	V	T1+C1
	57270.5675	0.0010	I	V	T1+C1
	57271.3722	0.0008	II	V	T1+C1
	57271.4888	0.0007	I	V	T1+C1
	57271.6076	0.0014	II	V	T1+C1
	57272.2939	0.0002	II	B	T1+C1
	57272.4136	0.0017	I	B	T1+C1
	57277.3847	0.0009	II	B	T1+C1
	57277.5039	0.0009	I	B	T1+C1
	57278.3055	0.0012	II	B	T1+C1
	57278.4242	0.0004	I	B	T1+C1
	57278.5470	0.0008	II	B	T1+C1
	57279.3502	0.0004	I	B	T1+C1
1SWASP J234401.81-212229.1	57279.4668	0.0007	II	B	T1+C1
	57280.3922	0.0008	II	B	T1+C1
	56893.5798	0.0007	II	BVR	T1+C1
	56894.5447	0.0004	I	I	T1+C1
	56895.5050	0.0005	II	I	T1+C1
	56896.5748	0.0004	II	I	T1+C1
	56897.5355	0.0002	I	I	T1+C1
	56898.4989	0.0005	II	R	T1+C1
	56898.6030	0.0007	I	R	T1+C1
	56899.5661	0.0012	II	R	T1+C1
	56900.5279	0.0004	I	R	T1+C1
	56901.4876	0.0004	II	R	T1+C1
	56903.5188	0.0006	I	V	T1+C1
	56904.4806	0.0007	II	V	T1+C1
	56911.5260	0.0009	II	V	T1+C1
	56914.5242	0.0009	II	V	T1+C1
	56915.4828	0.0013	I	V	T1+C1
	56917.5131	0.0007	II	V	T1+C1
	56920.5057	0.0009	II	V	T1+C1
	56924.4607	0.0013	I	B	T1+C1
	56933.4377	0.0011	I	B	T1+C1
	56941.3475	0.0026	I	B	T1+C1
	56942.3029	0.0015	II	B	T1+C1
	56942.4087	0.0010	I	B	T1+C1
	56943.3718	0.0023	II	B	T1+C1
	56946.2566	0.0006	I	I	T1+C1
	56946.3630	0.0010	II	I	T1+C1
	56948.3900	0.0006	I	I	T1+C1

Times of minima:					
Star name	Time of min. HJD 2400000+	Error	Type	Filter	Rem.
1SWASP J234401.81-212229.1	56949.2476	0.0003	I	I	T1+C1
	56949.3542	0.0012	II	I	T1+C1
	56950.3150	0.0003	I	I	T1+C1
	56950.4209	0.0004	II	I	T1+C1
	56951.2760	0.0007	II	R	T1+C1
	56951.3827	0.0007	I	R	T1+C1
	56952.2412	0.0003	I	R	T1+C1
	56954.2668	0.0007	II	R	T1+C1
	56954.3736	0.0013	I	R	T1+C1
	56956.2967	0.0003	I	R	T1+C1
	56961.3202	0.0005	II	V	T1+C1
	56963.3483	0.0008	I	V	T1+C1
	56964.3103	0.0006	II	V	T1+C1
	56977.2434	0.0017	I	B	T1+C1
	56977.3465	0.0011	II	B	T1+C1
	56982.2590	0.0008	II	B	T1+C1
	56983.2247	0.0021	I	B	T1+C1
	56983.3320	0.0004	II	B	T1+C1
	56984.2990	0.0013	I	B	T1+C1

Explanation of the remarks in the table:

T1, T2, T3, C1, C2 and C3 refer to the instrumentation (telescope and CCD camera) used for each case.

Remarks:

The majority of the above observations were performed utilizing the robotic and remotely controlled telescope at the University of Athens: (<http://observatory.phys.uoa.gr>) (Gazeas 2016). The “Aristarchos” telescope is operated on Helmos Observatory by the Institute for Astronomy, Astrophysics, Space Applications and Remote Sensing of the National Observatory of Athens.

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References:

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