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Maximum Timings of RR Lyrae Stars – 2025 Results

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Abstract: *The paper presents times of maximum light of RR Lyrae stars (RRAB, RRC, RRD) with GCVS designations, observed in 2025 with the two SATINO remote telescopes. All light curves were analysed uniformly; all times of maximum (ToM) were determined by a Fourier-series fit with a Python script. An important goal of the SATINO project is the observation of RR Lyrae stars showing the Blazhko effect (BL).*

1) Introduction

This paper reports heliocentric times of maximum light of RR Lyrae stars of subtypes RRAB, RRC and RRD observed during 2025. The programme is part of an ongoing effort within the Bundesdeutsche Arbeitsgemeinschaft für Veränderliche Sterne (BAV) to extend the timing datasets available for these objects. The paper is concentrated on GCVS stars, i.e. only variables with a GCVS designation are included. An important goal of the SATINO project is the monitoring of RR Lyrae stars showing the Blazhko effect (BL), i.e. a periodic modulation of amplitude and phase of the light curve.

Classification and catalogue data were taken from the AAVSO International Variable Star Index (VSX) [1], the GEOS RR Lyrae database [2] and the GCVS via SIMBAD/VizieR [3].

2) Observations and Data Analysis

Instruments

All observations were obtained with the two remote telescopes of the SATINO station, operated by the Stiftung Interaktive Astronomie und Astrophysik (SIAA), at the Observatoire de Haute-Provence in Southern France (IAU code C95): Satino-1 (S1N; 0.2-m SCT, f = 2100 mm) and Satino-2 (S2N; 0.3-m SCT, f = 1750 mm), each equipped with a ZWO ASI294MM Pro CMOS camera. Simultaneous observations of the same star with both telescopes are independent measurements and are listed separately.

Image calibration and plate solving

Raw frames were dark-subtracted and flat-field corrected. Astrometric calibration and plate solving were performed with Tycho-Tracker [4].

Photometry and photometric calibration

Differential aperture photometry was carried out with Phoranso [5]; the same program version was used for all Phoranso photometry. The photometry was performed as ensemble photometry, i.e. the brightness of the variable was referred to several reference stars simultaneously. The V-band

magnitudes of the reference stars were taken from APASS DR10 [6]; where no APASS data were available, AAVSO reference-star sequences [7] and UCAC4 [8] were used.

All observations were obtained without filter (CV = clear, i.e. unfiltered, reduced to the V-band scale of the reference stars). The unfiltered magnitudes were calibrated with the V-band magnitudes of the reference stars.

Times of maximum

All light curves were analysed uniformly with a Python script that builds on the standard scientific Python libraries NumPy [9], SciPy [10], Matplotlib [11], pandas [12] and Astropy [13]. A Fourier series is fitted to the light-curve section around the maximum; its degree n is chosen adaptively. The number of data points used in the fit (N) and the Fourier degree (Fn) are given for each ToM in Table 2.

The estimated uncertainty of each ToM combines in quadrature the photometric scatter, the position of the maximum within the observed interval, the curvature of the fit near the maximum, the asymmetry of the point distribution and the number of data points.

As a cross-check, ToMs of a significant number of light curves were also determined with Peranso [14]. No differences were found that are incompatible with the quoted uncertainties.

Only ToMs that passed a visual inspection of light curve and fit are published. ToMs with the maximum close to the edge of the observed interval or with large photometric scatter were excluded.

3) Results

This paper presents a total of 417 times of maximum for 198 different GCVS variables. Table 1 lists the observed stars; the corresponding ToMs are given in Table 2. The tables are inserted as full pages after this section. The photometric data, including information on the reference stars used for each observation, have been submitted to the AAVSO International Database [15] under the AAVSO observer code “HDR”.

Table 1 columns and abbreviations:

Name = GCVS variable designation;
RA (J2000) and *Decl (J2000)* = coordinates of the variable taken from VSX [1];
Type = variable type taken from VSX [1]:
- *RRAB* = RR Lyrae star pulsating in the fundamental mode (asymmetric light curve with steep rise);
- *RRC* = RR Lyrae star pulsating in the first overtone (nearly symmetric light curve);
- *RRD* = double-mode RR Lyrae star (fundamental mode and first overtone);
- *BL* = Blazhko effect, i.e. periodic modulation of amplitude and phase of the light curve;
- ~ = classification suspected, but not confirmed;

mag_max / *mag_min* = brightness range (maximum / minimum) taken from VSX [1].

Table 2 columns and abbreviations:

Name = GCVS variable designation;
ToM = heliocentric Julian date of maximum (*HJD − 2400000*);
σ(ToM) [d] = estimated 1σ uncertainty of the ToM;
Brightness = brightness at maximum [mag] (CV);
N = number of data points used in the fit;
Method = Fourier fit with degree n (e.g. F8: n = 8);
Telescope = telescope identifier (S1N, S2N; both at IAU site C95);
Observer = observer BAV code.

All ToMs are based on unfiltered (CV) photometry calibrated with V-band reference-star magnitudes; a filter column is therefore omitted.

Table 1. Observed Pulsating Variables with GCVS Names (RRAB, RRC, RRD)

Name	RA (J2000)	Decl (J2000)	Type [VSX]	mag_max [VSX]	mag_min [VSX]
AC And	23h18m02.35s	+48°46′58.3″	RRD	10.70	11.90
BK And	23h35m06.04s	+41°06′10.5″	RRAB	12.40	13.43
CI And	1h55m08.29s	+43°45′56.5″	RRAB	11.76	12.66
DM And	23h32m00.72s	+35°11′48.9″	RRAB	12.21	12.71
DR And	1h05m10.71s	+34°13′06.3″	RRAB-BL	11.65	12.94
DU And	2h30m31.37s	+40°50′33.5″	RRAB	12.87	13.98
FP And	1h16m49.49s	+35°03′32.0″	RRC	13.40	13.50
MV And	2h30m11.22s	+40°53′01.7″	RRAB	15.81	16.45
OV And	0h20m44.86s	+40°49′41.8″	RRAB-BL~	11.38	12.70
SW And	0h23m43.09s	+29°24′03.6″	RRAB-BL~	9.14	10.14
XX And	1h17m27.41s	+38°57′02.0″	RRAB-BL	10.08	11.13
AA Aql	20h38m15.08s	-2°53′25.0″	RRAB	11.07	12.42
V0341 Aql	20h32m31.56s	+0°35′07.1″	RRAB	10.18	11.45
CP Aqr	21h10m12.85s	-1°43′16.2″	RRAB	11.08	12.44
SW Aqr	21h15m17.85s	+0°04′34.9″	RRAB	10.44	11.76
SX Aqr	21h36m08.45s	+3°13′50.0″	RRAB	11.04	12.19
TZ Aur	7h11m35.02s	+40°46′37.1″	RRAB	11.08	12.45
V0377 Aur	6h13m49.54s	+44°17′03.6″	RRAB	14.20	15.00
V0378 Aur	6h20m33.27s	+46°50′00.0″	RRAB	14.10	14.70
CM Boo	14h16m03.13s	+20°03′37.7″	RRAB	12.10	13.26
CS Boo	14h06m01.78s	+24°34′15.0″	RRAB	12.30	13.50
RS Boo	14h33m33.21s	+31°45′16.6″	RRAB-BL	9.69	10.84
ST Boo	15h30m39.23s	+35°47′04.3″	RRAB-BL	10.49	11.41
SW Boo	14h27m34.86s	+36°02′44.1″	RRAB	11.76	12.88
TV Boo	14h16m36.58s	+42°21′35.7″	RRC-BL	10.57	11.23
TW Boo	14h45m05.94s	+41°01′44.1″	RRAB	10.63	11.68
UU Boo	15h17m05.26s	+35°06′56.5″	RRAB	11.50	12.81
UY Boo	13h58m46.34s	+12°57′06.5″	RRAB-BL	10.49	11.28
VY Boo	14h49m44.85s	+24°29′10.7″	RRAB	12.64	13.55
XX Boo	14h51m37.56s	+29°21′26.7″	RRAB-BL	11.83	12.43
AA CMi	7h17m19.17s	+1°43′40.1″	RRAB	11.02	12.04
AL CMi	7h48m57.06s	+5°38′11.2″	RRAB	11.59	12.35
RV CMi	7h21m50.61s	+4°14′40.4″	RRAB	12.58	13.79
X CMi	7h21m44.67s	+2°21′26.0″	RRAB	12.22	13.14
Y CMi	7h26m47.01s	+1°53′14.7″	RRAB-BL	13.60	14.85
AP CVn	12h51m10.58s	+32°58′18.4″	RRAB	13.36	14.09
BN CVn	12h29m36.71s	+47°49′16.5″	RRAB	12.49	13.20
RR CVn	12h29m07.51s	+34°38′50.4″	RRAB	11.89	13.15
RU CVn	13h59m33.28s	+31°39′04.3″	RRAB	11.36	12.48
RX CVn	13h48m42.61s	+41°23′06.8″	RRAB	12.19	12.97
RZ CVn	13h45m03.02s	+32°39′16.7″	RRAB	10.88	11.92
SS CVn	13h48m15.94s	+39°54′03.0″	RRAB-BL	11.52	12.30
ST CVn	13h57m34.06s	+29°51′28.7″	RRC	11.04	11.60
UV CVn	14h00m49.24s	+28°19′50.9″	RRAB	13.57	14.54
UZ CVn	12h30m27.70s	+40°30′31.9″	RRAB	12.49	13.20
XZ CVn	13h49m42.37s	+29°05′40.8″	RRC	13.39	13.88
Z CVn	12h49m45.38s	+43°46′25.2″	RRAB-BL	11.20	12.25
AH Cam	4h06m38.89s	+55°29′59.7″	RRAB-BL	11.31	12.33
RZ Cam	6h33m59.83s	+67°01′30.9″	RRAB	12.09	13.30
UY Cam	7h58m58.88s	+72°47′15.4″	RRC	11.33	11.66
BK Cas	0h53m07.38s	+64°36′03.2″	RRAB	13.30	14.80
HU Cas	1h11m03.64s	+57°20′45.9″	RRAB	11.79	13.02
IU Cas	23h44m39.18s	+52°20′41.6″	RRAB	12.19	13.30
V0516 Cas	0h35m21.87s	+52°59′53.2″	RRAB	13.80	15.10
DX Cep	22h44m19.06s	+83°57′02.0″	RRAB	11.60	12.80
EL Cep	21h46m22.48s	+69°11′07.5″	RRAB	12.70	13.83
EZ Cep	3h58m05.41s	+81°14′23.0″	RRAB	12.19	13.00
FP Cep	20h54m53.98s	+66°26′41.1″	RRAB	12.40	13.30
AN Cnc	8h58m10.32s	+15°48′18.8″	RRAB	12.10	13.00
AQ Cnc	9h17m38.98s	+12°39′03.7″	RRAB	11.41	12.39
AS Cnc	8h25m42.16s	+25°43′08.5″	RRAB	12.02	13.00
EZ Cnc	8h52m57.70s	+23°47′54.3″	RRAB	11.79	12.82

Name	RA (J2000)	Decl (J2000)	Type [VSX]	mag_max [VSX]	mag_min [VSX]
RW Cnc	9h19m06.04s	+29°03′55.7″	RRAB	11.40	12.10
SS Cnc	8h06m25.59s	+23°15′05.6″	RRAB-BL	11.42	12.76
TT Cnc	8h32m55.18s	+13°11′28.4″	RRAB-BL	10.93	11.57
BS Com	13h34m39.20s	+24°16′38.0″	RRD	12.40	13.60
RY Com	13h05m07.99s	+23°16′42.2″	RRAB-BL	11.68	12.92
S Com	12h32m45.63s	+27°01′45.4″	RRAB	10.88	12.12
ST Com	13h17m51.35s	+20°46′50.7″	RRAB	11.02	11.82
U Com	12h40m03.20s	+27°29′56.1″	RRC	11.50	11.97
RV CrB	16h19m25.86s	+29°42′47.7″	RRC	11.12	11.63
SZ CrB	15h47m25.85s	+29°39′42.3″	RRAB-BL	13.54	14.64
TV CrB	15h22m21.44s	+26°52′37.6″	RRAB	11.16	12.32
DM Cyg	21h21m11.55s	+32°11′28.7″	RRAB-BL	10.93	11.99
V0830 Cyg	20h57m27.55s	+39°24′26.1″	RRAB	12.80	14.20
V1116 Cyg	19h24m03.17s	+51°39′52.8″	RRAB	14.00	15.00
V2369 Cyg	19h39m51.05s	+38°21′08.0″	RRC	10.75	11.05
AX Del	20h48m13.30s	+15°21′55.7″	RRAB	12.40	13.40
BV Del	20h53m09.95s	+16°08′48.9″	RRAB-BL	12.20	12.86
CK Del	20h25m02.04s	+11°12′37.1″	RRAB	11.52	12.88
DX Del	20h47m28.36s	+12°27′50.7″	RRAB	9.56	10.29
ZZ Del	20h31m13.94s	+15°04′32.2″	RRAB	12.40	13.20
AE Dra	18h27m06.63s	+55°29′32.8″	RRAB	12.40	13.38
BK Dra	19h18m20.67s	+66°24′48.0″	RRAB	10.59	11.87
BT Dra	14h51m44.64s	+60°04′09.1″	RRAB	11.36	12.30
DT Dra	18h49m57.30s	+50°35′14.0″	RRAB	13.39	14.70
RW Dra	16h35m31.60s	+57°50′23.2″	RRAB-BL	11.05	12.08
SU Dra	11h37m56.61s	+67°19′47.0″	RRAB	9.18	10.27
SW Dra	12h17m46.63s	+69°30′38.2″	RRAB	9.94	10.94
VZ Dra	16h21m05.75s	+58°27′03.0″	RRC	11.40	12.20
RT Equ	21h14m43.25s	+4°29′37.2″	RRAB-BL	12.20	13.40
GI Gem	7h04m40.85s	+13°26′12.5″	RRAB	12.30	13.48
RR Gem	7h21m33.53s	+30°52′59.5″	RRAB-BL	10.62	11.99
SZ Gem	7h53m43.45s	+19°16′24.0″	RRAB	10.98	12.27
AR Her	16h00m32.23s	+46°55′25.7″	RRAB-BL	10.59	11.63
BD Her	18h50m32.19s	+16°31′50.9″	RRAB-BL	11.72	12.63
DL Her	17h20m22.45s	+14°30′38.7″	RRAB-BL	11.72	12.63
GY Her	16h38m18.04s	+37°48′04.8″	RRAB	11.97	13.16
IP Her	17h58m14.63s	+30°13′10.3″	RRAB-BL	12.10	12.90
LS Her	16h02m03.79s	+17°28′50.4″	RRC-BL	10.68	11.13
TW Her	17h54m31.20s	+30°24′37.7″	RRAB	10.52	11.83
V0394 Her	17h22m38.72s	+17°53′04.7″	RRAB-BL	12.09	13.47
V0418 Her	17h32m13.01s	+18°14′00.6″	RRAB	12.32	13.01
V0421 Her	17h32m05.56s	+39°45′32.2″	RRAB-BL~	13.82	14.71
V0442 Her	18h12m58.43s	+42°03′45.9″	RRAB-BL	12.06	13.28
V0576 Her	18h18m38.10s	+28°25′13.3″	RRAB	13.86	15.13
V0596 Her	16h32m34.19s	+30°20′38.4″	RRAB	14.82	15.80
V1348 Her	18h29m13.75s	+21°04′18.4″	RRAB-BL	11.10	12.10
VX Her	16h30m40.80s	+18°22′00.6″	RRAB	9.89	11.18
VZ Her	17h13m04.00s	+35°58′43.0″	RRAB-BL	10.72	12.04
DD Hya	8h12m31.81s	+2°50′05.0″	RRAB-BL	11.57	12.71
DG Hya	8h58m06.36s	-5°26′25.2″	RRAB-BL	11.57	12.59
DH Hya	9h00m14.83s	-9°46′44.1″	RRAB	11.40	12.67
ET Hya	8h35m04.22s	-8°50′10.0″	RRAB	11.54	12.46
GL Hya	8h40m59.22s	+2°37′22.2″	RRAB-BL	12.82	13.66
V LMi	10h25m25.59s	+28°47′07.7″	RRAB	11.10	12.23
X LMi	10h06m06.73s	+39°21′28.5″	RRAB	11.76	12.81
Y LMi	10h15m51.49s	+32°51′33.2″	RRAB-BL	11.40	13.30
CQ Lac	22h21m10.40s	+39°43′12.7″	RRAB	11.50	13.00
CZ Lac	22h19m30.76s	+51°28′14.8″	RRAB-BL	10.77	11.26
PW Lac	22h10m33.12s	+37°13′21.1″	RRAB	12.00	13.40
AA Leo	11h39m14.23s	+10°19′38.4″	RRAB	11.65	12.81
AE Leo	11h26m12.19s	+17°39′39.7″	RRAB-BL	11.86	12.81
AH Leo	11h05m05.30s	+23°21′09.0″	RRAB-BL	13.67	14.66

Name	RA (J2000)	Decl (J2000)	Type [VSX]	mag_max [VSX]	mag_min [VSX]
AN Leo	11h23m22.47s	+6°38′05.2″	RRAB	12.21	12.77
AX Leo	11h33m03.74s	+12°09′14.0″	RRAB	12.55	12.91
BT Leo	11h12m04.61s	+18°30′05.2″	RRAB	12.55	13.70
DL Leo	9h43m03.58s	+10°19′01.3″	RRAB	12.49	13.58
SS Leo	11h33m54.49s	-0°02′00.0″	RRAB	10.42	11.58
ST Leo	11h38m32.68s	+10°33′41.7″	RRAB	10.79	12.11
SU Leo	9h53m37.57s	+7°58′44.8″	RRAB	12.75	14.04
SZ Leo	11h01m36.82s	+8°09′55.6″	RRAB-BL	11.79	12.72
TV Leo	11h11m21.93s	-5°53′31.5″	RRAB	11.53	12.58
GP Lyn	7h33m08.56s	+48°03′53.7″	RRAB	13.11	13.65
RW Lyn	7h50m39.14s	+38°27′13.7″	RRAB	12.18	13.60
TT Lyn	9h03m07.79s	+44°35′08.1″	RRAB	9.42	10.21
TV Lyn	7h33m31.73s	+47°48′09.8″	RRC	11.24	11.66
TW Lyn	7h45m06.28s	+43°06′41.7″	RRAB	12.37	13.07
AQ Lyr	18h34m51.04s	+26°35′41.7″	RRAB-BL	12.30	13.51
CN Lyr	18h41m15.95s	+28°43′21.1″	RRAB	11.07	11.76
CX Lyr	18h51m17.28s	+28°47′47.5″	RRAB-BL	12.14	13.17
DD Lyr	18h53m10.66s	+27°04′43.4″	RRAB	12.70	13.80
DI Lyr	18h56m31.85s	+34°21′15.8″	RRAB	13.00	14.50
FN Lyr	19h10m22.25s	+42°27′31.7″	RRAB	11.91	13.23
IO Lyr	18h22m38.00s	+32°57′32.6″	RRAB	11.27	12.24
KM Lyr	18h30m29.76s	+40°18′15.8″	RRAB-BL	12.80	13.90
KR Lyr	18h30m57.07s	+37°44′29.5″	RRAB	13.64	14.76
KX Lyr	18h33m15.22s	+40°10′22.8″	RRAB	10.38	11.47
LX Lyr	18h40m23.30s	+41°02′22.8″	RRAB-BL	12.60	13.20
MW Lyr	18h19m53.82s	+31°58′54.6″	RRAB-BL	12.50	14.00
NQ Lyr	19h07m48.39s	+42°17′54.9″	RRAB	12.58	13.39
NR Lyr	19h08m27.26s	+38°48′46.0″	RRAB	12.21	12.98
RZ Lyr	18h43m37.88s	+32°47′54.0″	RRAB-BL	10.60	12.03
V0367 Lyr	19h11m09.29s	+42°26′07.1″	RRAB	15.00	16.50
Y Lyr	18h37m13.20s	+43°57′13.6″	RRAB-BL	12.58	13.90
V0452 Oph	17h17m59.68s	+11°04′28.0″	RRAB	11.67	12.62
V0455 Oph	18h15m18.52s	+12°21′08.5″	RRAB	11.83	12.64
V0765 Oph	17h29m12.80s	+6°17′15.6″	RRAB	14.62	15.66
V0785 Oph	17h35m32.67s	+9°33′56.7″	RRAB	12.93	14.25
CM Ori	6h03m54.87s	+8°14′32.2″	RRAB	12.20	13.25
AO Peg	21h27m03.43s	+18°35′57.5″	RRAB	12.38	13.34
AV Peg	21h52m02.79s	+22°34′29.4″	RRAB	9.93	10.99
BF Peg	22h45m53.08s	+24°08′36.8″	RRAB	12.33	13.07
BH Peg	22h53m01.04s	+15°47′16.6″	RRAB-BL	9.99	10.79
BT Peg	21h36m23.92s	+26°18′07.1″	RRAB	11.49	12.08
CG Peg	21h41m16.79s	+24°46′24.4″	RRAB	10.66	11.59
CY Peg	21h49m47.24s	+21°08′38.1″	RRAB-BL	12.00	13.20
DZ Peg	23h20m07.03s	+16°04′07.0″	RRAB	11.32	12.44
ES Peg	22h33m18.54s	+30°10′15.3″	RRAB	12.62	13.35
ET Peg	22h40m42.28s	+26°23′01.7″	RRAB	12.46	13.61
VV Peg	22h13m03.88s	+18°27′04.3″	RRAB-BL	11.13	12.31
VZ Peg	23h42m16.30s	+24°54′58.3″	RRC	11.66	12.13
AR Per	4h17m17.20s	+47°24′00.6″	RRAB-BL~	9.92	10.83
ET Per	1h39m22.17s	+53°52′19.2″	RRAB	12.20	13.70
TU Per	3h09m04.82s	+53°11′36.1″	RRAB	11.94	13.05
RU Psc	1h14m26.04s	+24°24′56.4″	RRC	9.93	10.40
RY Psc	0h11m41.10s	-1°44′55.3″	RRAB-BL	11.82	12.72
SS Psc	1h20m52.36s	+21°43′43.2″	RRC-BL	10.73	11.21
SY Psc	1h02m32.96s	+5°23′42.0″	RRAB	12.37	13.24
AN Ser	15h53m31.05s	+12°57′40.1″	RRAB-BL	10.40	11.44
AP Ser	15h14m00.92s	+9°58′51.9″	RRC	10.85	11.38
AR Ser	15h33m30.82s	+2°46′37.9″	RRAB-BL	11.60	12.20
BH Ser	15h15m01.07s	+19°26′35.2″	RRAB	11.83	13.11
VY Ser	15h31m01.93s	+1°41′01.7″	RRAB	9.78	10.44
RV Sex	10h46m41.81s	-8°22′32.8″	RRAB	11.60	12.48
SS Tau	3h36m41.87s	+5°21′41.2″	RRAB-BL	11.95	13.07

Name	RA (J2000)	Decl (J2000)	Type [VSX]	mag_max [VSX]	mag_min [VSX]
U Tri	1h55m31.42s	+33°46′07.9″	RRAB	11.88	13.20
UX Tri	1h45m35.01s	+31°22′49.6″	RRAB-BL	13.50	14.62
AB UMa	12h11m14.59s	+47°49′43.8″	RRAB~	10.70	11.09
RV UMa	13h33m18.09s	+53°59′14.6″	RRAB-BL	9.81	11.30
AF Vir	14h28m09.82s	+6°32′43.9″	RRAB-BL	11.15	12.17
AT Vir	12h55m10.54s	-5°27′32.3″	RRAB	10.66	11.79
BB Vir	13h51m40.79s	+6°25′51.4″	RRAB	10.72	11.42
FU Vir	12h38m26.29s	+13°00′57.6″	RRAB	12.89	13.56
UU Vir	12h08m35.07s	-0°27′24.3″	RRAB	9.95	11.11
UV Vir	12h21m16.73s	+0°22′03.0″	RRAB-BL	11.40	12.36
BN Vul	19h27m56.06s	+24°20′50.5″	RRAB	10.31	11.51
FH Vul	20h40m19.89s	+22°13′24.3″	RRAB	12.08	13.56

Table 2. Times of Maxima – Pulsating Variables with GCVS Names (RRAB, RRC, RRD)

Name	ToM (HJD−2400000)	σ(ToM) [d]	Brightness [mag]	N	Method	Telescope	Observer
AC And	60950.3613	0.0011	10.39	57	F14	S2N	HSR
BK And	60925.4836	0.0014	12.37	78	F7	S2N	HSR
BK And	60950.3564	0.0017	12.33	57	F9	S2N	HSR
CI And	60925.4540	0.0012	11.61	51	F8	S2N	HSR
CI And	60956.4721	0.0005	11.61	88	F12	S2N	HSR
CI And	61040.3330	0.0005	11.57	156	F15	S2N	HSR
DM And	60934.4572	0.0013	11.45	45	F11	S2N	HSR
DR And	60984.3701	0.0012	11.67	81	F14	S2N	HSR
DU And	60998.2567	0.0012	12.82	60	F9	S2N	HSR
FP And	60925.4533	0.0075	14.57	51	F6	S2N	HSR
FP And	60955.4901	0.0055	14.53	75	F9	S2N	HSR
MV And	60946.4543	0.0016	15.39	77	F10	S2N	HSR
MV And	60998.4228	0.0024	15.21	60	F7	S2N	HSR
OV And	60925.3818	0.0022	11.14	57	F7	S2N	HSR
OV And	60956.4401	0.0012	10.90	105	F12	S2N	HSR
OV And	60998.3217	0.0028	10.87	60	F8	S2N	HSR
SW And	60959.4215	0.0008	9.06	98	F14	S2N	HSR
SW And	60983.3035	0.0020	9.04	57	F7	S2N	HSR
SW And	60998.3405	0.0010	9.05	60	F7	S2N	HSR
XX And	60957.3681	0.0007	10.01	84	F9	S2N	HSR
XX And	60983.3805	0.0024	10.06	56	F10	S2N	HSR
AA Aql	60911.4455	0.0020	11.05	54	F5	S2N	HSR
V0341 Aql	60911.4504	0.0024	10.03	54	F7	S2N	HSR
V0341 Aql	60933.4138	0.0009	10.06	67	F14	S2N	HSR
CP Aqr	60853.4705	0.0023	10.83	54	F10	S2N	HSR
CP Aqr	60911.3948	0.0031	10.79	57	F6	S2N	HSR
CP Aqr	60930.3950	0.0030	10.88	36	F4	S2N	HSR
CP Aqr	60941.5146	0.0029	10.79	118	F5	S2N	HSR
CP Aqr	60942.4417	0.0019	10.75	93	F12	S2N	HSR
CP Aqr	60943.3681	0.0009	10.73	108	F15	S2N	HSR
SW Aqr	60924.4105	0.0021	10.43	66	F7	S2N	HSR
SX Aqr	60897.3918	0.0015	11.17	60	F8	S2N	HSR
SX Aqr	60957.3887	0.0010	11.01	54	F11	S2N	HSR
TZ Aur	60998.5228	0.0016	10.95	63	F10	S2N	HSR
TZ Aur	61007.5295	0.0021	10.93	111	F13	S2N	HSR
TZ Aur	61038.4731	0.0019	10.93	153	F15	S2N	HSR
V0377 Aur	60721.3704	0.0016	14.00	54	F13	S2N	HSR
V0378 Aur	60712.3999	0.0009	14.39	82	F15	S2N	HSR
CM Boo	60808.4537	0.0009	12.02	33	F6	S2N	HSR
CS Boo	60712.5836	0.0009	12.24	87	F15	S2N	HSR
CS Boo	60814.4075	0.0009	12.27	57	F14	S2N	HSR
RS Boo	60710.6187	0.0022	9.72	48	F6	S2N	HSR
RS Boo	60753.6413	0.0032	9.62	51	F6	S2N	HSR
ST Boo	60795.4518	0.0015	10.30	105	F15	S2N	HSR
SW Boo	60740.5785	0.0011	11.46	54	F11	S2N	HSR
SW Boo	60812.4776	0.0014	11.53	61	F10	S2N	HSR
TV Boo	60710.5574	0.0012	10.50	48	F10	S2N	HSR
TV Boo	60791.5176	0.0009	10.52	56	F13	S2N	HSR
TW Boo	60812.3639	0.0009	10.54	62	F8	S2N	HSR
UU Boo	60808.3703	0.0015	11.47	33	F8	S2N	HSR
UU Boo	60813.3939	0.0010	11.49	303	F15	S1N	HSRPAS
UY Boo	60690.5938	0.0008	10.20	51	F11	S2N	HSR
UY Boo	60791.4739	0.0012	10.45	56	F5	S2N	HSR
UY Boo	60791.4752	0.0008	10.40	794	F13	S1N	HSRPAS
UY Boo	60821.4164	0.0011	10.19	37	F9	S2N	HSR
VY Boo	60808.3614	0.0017	12.75	33	F9	S2N	HSR
XX Boo	60710.5919	0.0006	11.37	48	F10	S2N	HSR
XX Boo	60753.6103	0.0006	11.33	52	F13	S2N	HSR
XX Boo	60791.4119	0.0010	11.42	54	F8	S2N	HSR
XX Boo	60816.4018	0.0019	11.40	48	F4	S2N	HSR
XX Boo	60827.4492	0.0007	11.36	66	F11	S2N	HSR
AA CMi	60721.4065	0.0011	10.92	55	F10	S2N	HSR

Name	ToM (HJD−2400000)	σ(ToM) [d]	Brightness [mag]	N	Method	Telescope	Observer
AL CMi	61017.5743	0.0011	11.54	63	F12	S2N	HSR
AL CMi	61038.4944	0.0010	11.44	147	F15	S2N	HSR
RV CMi	60713.3663	0.0007	12.47	72	F14	S2N	HSR
RV CMi	60723.3743	0.0008	12.43	62	F15	S2N	HSR
RV CMi	60738.3840	0.0008	12.44	74	F14	S2N	HSR
X CMi	60738.2856	0.0010	12.08	72	F12	S2N	HSR
Y CMi	60721.3734	0.0024	13.67	50	F10	S2N	HSR
Y CMi	60738.4105	0.0010	13.74	74	F11	S2N	HSR
Y CMi	60739.3837	0.0021	13.77	60	F11	S2N	HSR
Y CMi	61007.4846	0.0021	13.82	106	F15	S2N	HSR
AP CVn	60690.6328	0.0016	13.29	54	F12	S2N	HSR
AP CVn	60750.3959	0.0009	13.25	90	F11	S2N	HSR
BN CVn	60797.4630	0.0017	11.58	72	F10	S2N	HSR
RR CVn	60712.6611	0.0010	11.74	90	F13	S2N	HSR
RR CVn	60740.5916	0.0006	11.71	54	F11	S2N	HSR
RU CVn	60712.6145	0.0009	10.91	88	F13	S2N	HSR
RU CVn	60750.4499	0.0007	11.10	90	F13	S2N	HSR
RU CVn	60801.4699	0.0009	10.97	66	F9	S2N	HSR
RU CVn	60808.3517	0.0010	11.11	36	F9	S2N	HSR
RU CVn	60812.3630	0.0011	10.97	60	F9	S2N	HSR
RX CVn	60801.4290	0.0007	12.08	66	F10	S2N	HSR
RZ CVn	60791.4898	0.0010	10.74	57	F9	S2N	HSR
SS CVn	60688.7139	0.0010	11.16	42	F6	S2N	HSR
SS CVn	60689.6688	0.0009	11.22	66	F12	S2N	HSR
SS CVn	60750.4545	0.0014	10.81	90	F11	S2N	HSR
SS CVn	60808.3511	0.0010	11.42	33	F7	S2N	HSR
ST CVn	60791.4253	0.0017	10.82	57	F11	S2N	HSR
UV CVn	60801.5410	0.0015	13.40	63	F11	S2N	HSR
UZ CVn	60721.6221	0.0006	11.49	72	F9	S2N	HSR
UZ CVn	60733.4801	0.0009	11.55	75	F13	S2N	HSR
XZ CVn	60797.4384	0.0011	13.26	69	F15	S2N	HSR
XZ CVn	60819.4221	0.0013	13.29	76	F11	S2N	HSR
Z CVn	60692.6395	0.0008	11.19	60	F15	S2N	HSR
Z CVn	60713.5652	0.0005	11.23	75	F14	S2N	HSR
AH Cam	60691.2920	0.0007	11.57	487	F9	S1N	HSRPAS
AH Cam	61039.3632	0.0005	11.23	85	F13	S2N	HSR
RZ Cam	60983.5381	0.0008	11.96	84	F15	S2N	HSR
UY Cam	60713.3299	0.0011	11.11	69	F5	S2N	HSR
UY Cam	61017.5060	0.0007	11.20	62	F9	S2N	HSR
BK Cas	60933.5003	0.0017	12.94	99	F10	S2N	HSR
BK Cas	60960.4306	0.0027	12.95	45	F5	S2N	HSR
BK Cas	60998.2857	0.0036	12.97	60	F4	S2N	HSR
HU Cas	60925.4147	0.0014	11.76	54	F5	S2N	HSR
HU Cas	60955.4601	0.0023	11.70	75	F9	S2N	HSR
HU Cas	60960.4000	0.0017	11.68	45	F10	S2N	HSR
IU Cas	60955.4362	0.0007	12.12	75	F11	S2N	HSR
IU Cas	60983.3622	0.0009	12.10	54	F11	S2N	HSR
V0516 Cas	60956.3958	0.0043	13.65	102	F10	S2N	HSR
V0516 Cas	60960.4328	0.0040	13.62	45	F4	S2N	HSR
V0516 Cas	60998.4023	0.0032	13.60	60	F8	S2N	HSR
DX Cep	60957.4041	0.0008	11.87	87	F10	S2N	HSR
EL Cep	60897.4107	0.0030	12.62	60	F5	S2N	HSR
EL Cep	60950.3214	0.0041	12.53	60	F8	S2N	HSR
EZ Cep	60960.4885	0.0011	11.86	60	F9	S2N	HSR
EZ Cep	61007.4846	0.0015	11.79	111	F13	S2N	HSR
FP Cep	60930.4097	0.0019	11.84	68	F8	S2N	HSR
AN Cnc	60721.3276	0.0014	12.42	54	F6	S2N	HSR
AN Cnc	60740.3354	0.0009	12.41	45	F10	S2N	HSR
AQ Cnc	60711.3483	0.0012	11.50	449	F14	S1N	HSRPAS
AQ Cnc	60740.4220	0.0009	11.23	45	F8	S2N	HSR
AQ Cnc	60751.3910	0.0008	11.27	63	F12	S2N	HSR
AS Cnc	60713.3852	0.0008	11.88	69	F14	S2N	HSR

Name	ToM (HJD−2400000)	σ(ToM) [d]	Brightness [mag]	N	Method	Telescope	Observer
EZ Cnc	60710.3699	0.0011	11.68	788	F6	S1N	HSRPAS
EZ Cnc	60740.3838	0.0011	11.55	45	F9	S2N	HSR
EZ Cnc	60998.5374	0.0008	11.57	60	F13	S2N	HSR
RW Cnc	60723.3295	0.0012	11.41	60	F8	S2N	HSR
RW Cnc	60723.3307	0.0008	11.50	675	F7	S1N	HSRPAS
SS Cnc	60711.3325	0.0022	11.35	66	F10	S2N	HSR
SS Cnc	60737.4130	0.0035	11.33	57	F4	S2N	HSR
SS Cnc	60740.3567	0.0031	11.38	45	F6	S2N	HSR
TT Cnc	61017.5164	0.0017	10.87	60	F13	S2N	HSR
BS Com	60723.5332	0.0008	12.32	57	F12	S2N	HSR
BS Com	60750.3951	0.0015	12.37	90	F9	S2N	HSR
RY Com	60740.6315	0.0012	11.52	54	F9	S2N	HSR
RY Com	60750.4783	0.0010	11.57	90	F10	S2N	HSR
RY Com	60750.4785	0.0010	11.72	693	F11	S1N	HSRPAS
S Com	60710.6401	0.0013	10.60	51	F10	S2N	HSR
S Com	60713.5752	0.0009	10.66	74	F7	S2N	HSR
S Com	60733.5189	0.0009	10.65	75	F11	S2N	HSR
S Com	60740.5565	0.0006	10.62	54	F13	S2N	HSR
ST Com	60688.6114	0.0011	10.91	40	F4	S2N	HSR
ST Com	60712.5706	0.0005	10.81	90	F9	S2N	HSR
ST Com	60721.5522	0.0007	10.92	69	F13	S2N	HSR
U Com	60689.5693	0.0025	11.27	68	F4	S2N	HSR
U Com	60713.5738	0.0007	11.09	75	F15	S2N	HSR
RV CrB	60827.4914	0.0009	11.06	69	F15	S2N	HSR
RV CrB	60842.4183	0.0022	11.13	54	F12	S2N	HSR
SZ CrB	60753.6756	0.0034	12.82	51	F6	S2N	HSR
SZ CrB	60812.4465	0.0013	12.86	60	F7	S2N	HSR
SZ CrB	60847.4419	0.0015	12.93	75	F11	S2N	HSR
TV CrB	60795.5331	0.0008	11.07	105	F8	S2N	HSR
TV CrB	60819.4937	0.0006	11.15	78	F10	S2N	HSR
DM Cyg	60930.4105	0.0009	11.00	57	F7	S2N	HSR
V0830 Cyg	60924.4513	0.0019	12.88	84	F8	S2N	HSR
V1116 Cyg	60842.5328	0.0024	14.36	49	F8	S2N	HSR
V1116 Cyg	60897.4698	0.0049	14.42	60	F5	S2N	HSR
V2369 Cyg	60790.5708	0.0015	10.57	40	F4	S2N	HSR
AX Del	60926.4434	0.0039	13.39	75	F7	S2N	HSR
AX Del	60930.3834	0.0014	13.40	60	F11	S2N	HSR
BV Del	60924.4158	0.0013	12.35	69	F9	S2N	HSR
CK Del	60855.4744	0.0016	11.42	51	F7	S2N	HSR
CK Del	60898.4252	0.0011	11.46	51	F7	S2N	HSR
DX Del	60854.4718	0.0018	9.57	97	F8	S2N	HSR
DX Del	60898.4273	0.0016	9.69	51	F9	S2N	HSR
DX Del	60924.4239	0.0017	9.62	69	F11	S2N	HSR
ZZ Del	60854.4546	0.0015	12.18	60	F10	S2N	HSR
ZZ Del	60930.4105	0.0020	12.41	57	F8	S2N	HSR
AE Dra	60837.4336	0.0011	11.71	75	F13	S2N	HSR
AE Dra	60840.4498	0.0029	11.78	57	F8	S2N	HSR
BK Dra	60851.4421	0.0008	10.36	75	F13	S2N	HSR
BK Dra	60854.4046	0.0011	10.45	60	F11	S2N	HSR
BK Dra	60855.5874	0.0013	10.42	51	F5	S2N	HSR
BT Dra	60816.4308	0.0010	11.04	48	F9	S2N	HSR
DT Dra	60840.4896	0.0017	12.96	57	F7	S2N	HSR
DT Dra	60898.4195	0.0020	12.98	51	F9	S2N	HSR
RW Dra	60821.5528	0.0022	10.88	43	F5	S2N	HSR
RW Dra	60840.5852	0.0053	10.79	57	F3	S2N	HSR
RW Dra	60853.4173	0.0009	11.10	61	F6	S2N	HSR
SU Dra	60688.6818	0.0036	9.12	42	F4	S2N	HSR
SU Dra	60690.6603	0.0013	9.09	54	F10	S2N	HSR
SW Dra	60713.6108	0.0010	9.59	78	F13	S2N	HSR
SW Dra	60721.5891	0.0014	9.56	72	F8	S2N	HSR
VZ Dra	60843.3816	0.0042	12.74	63	F11	S2N	HSR
RT Equ	60924.4617	0.0022	12.19	69	F7	S2N	HSR

Name	ToM (HJD−2400000)	σ(ToM) [d]	Brightness [mag]	N	Method	Telescope	Observer
GI Gem	60713.4027	0.0020	12.12	69	F12	S2N	HSR
RR Gem	60721.3648	0.0033	10.44	57	F8	S2N	HSR
RR Gem	60983.5827	0.0022	10.53	84	F14	S2N	HSR
RR Gem	61038.4067	0.0014	10.43	153	F15	S2N	HSR
SZ Gem	60693.3856	0.0010	10.93	1220	F14	S1N	HSRPAS
SZ Gem	60983.5408	0.0007	10.88	84	F15	S2N	HSR
SZ Gem	60998.5743	0.0008	10.84	63	F12	S2N	HSR
AR Her	60814.4656	0.0010	10.67	56	F8	S2N	HSR
AR Her	60823.3988	0.0010	10.46	55	F7	S2N	HSR
AR Her	60846.4148	0.0011	10.82	75	F12	S2N	HSR
BD Her	60783.5525	0.0017	11.45	57	F14	S2N	HSR
DL Her	60753.6655	0.0011	11.85	51	F7	S2N	HSR
DL Her	60813.4042	0.0015	11.96	30	F6	S2N	HSR
DL Her	60823.4815	0.0010	11.93	54	F8	S2N	HSR
DL Her	60842.3876	0.0009	11.94	51	F7	S2N	HSR
DL Her	60855.4224	0.0011	12.03	51	F10	S2N	HSR
GY Her	60801.3746	0.0017	11.61	63	F8	S2N	HSR
GY Her	60823.3743	0.0013	12.13	54	F5	S2N	HSR
GY Her	60846.4475	0.0008	11.92	74	F11	S2N	HSR
IP Her	60821.4770	0.0011	12.28	45	F8	S2N	HSR
IP Her	60844.4571	0.0013	12.52	54	F7	S2N	HSR
IP Her	60854.4454	0.0024	12.32	63	F7	S2N	HSR
IP Her	60897.3906	0.0016	12.47	59	F7	S2N	HSR
LS Her	60797.4048	0.0012	10.63	65	F14	S2N	HSR
LS Her	60823.4635	0.0014	10.69	51	F9	S2N	HSR
LS Her	60826.5001	0.0013	10.66	57	F11	S2N	HSR
LS Her	60842.4136	0.0022	10.64	51	F6	S2N	HSR
LS Her	60845.3861	0.0057	10.67	57	F11	S2N	HSR
TW Her	60821.5076	0.0018	10.49	44	F5	S2N	HSR
TW Her	60851.4780	0.0025	10.42	78	F11	S2N	HSR
V0394 Her	60790.6017	0.0010	11.97	693	F15	S1N	HSRPAS
V0394 Her	60790.6023	0.0011	11.88	276	F7	S2N	HSR
V0394 Her	60801.5049	0.0013	11.91	63	F6	S2N	HSR
V0394 Her	60842.4945	0.0018	11.96	51	F9	S2N	HSR
V0394 Her	60846.4182	0.0018	11.98	72	F10	S2N	HSR
V0394 Her	60856.4464	0.0033	12.06	54	F8	S2N	HSR
V0418 Her	60840.4042	0.0011	12.23	57	F9	S2N	HSR
V0418 Her	60855.5070	0.0012	12.22	51	F10	S2N	HSR
V0421 Her	60816.5307	0.0009	13.41	48	F8	S2N	HSR
V0421 Her	60821.5474	0.0011	13.32	43	F3	S2N	HSR
V0421 Her	60826.5809	0.0021	13.33	60	F5	S2N	HSR
V0442 Her	60826.3971	0.0010	12.08	60	F9	S2N	HSR
V0442 Her	60856.4508	0.0009	12.07	54	F6	S2N	HSR
V0576 Her	60856.4138	0.0027	14.04	51	F6	S2N	HSR
V0596 Her	60753.6034	0.0012	13.97	51	F10	S2N	HSR
V0596 Her	60823.4575	0.0026	14.05	52	F9	S2N	HSR
V0596 Her	60837.4283	0.0019	14.07	71	F12	S2N	HSR
V1348 Her	60790.5699	0.0007	11.03	42	F10	S2N	HSR
V1348 Her	60838.4460	0.0006	11.14	75	F12	S2N	HSR
V1348 Her	60851.4603	0.0007	11.31	77	F13	S2N	HSR
VX Her	60845.4413	0.0016	9.90	57	F9	S2N	HSR
VZ Her	60804.4887	0.0008	10.65	346	F14	S1N	HSRPAS
VZ Her	60812.4153	0.0011	10.63	647	F15	S1N	HSRPAS
VZ Her	60812.4170	0.0012	10.69	60	F8	S2N	HSR
VZ Her	60819.4598	0.0008	10.64	78	F12	S2N	HSR
VZ Her	60823.4261	0.0019	10.68	54	F8	S2N	HSR
VZ Her	60845.4414	0.0012	10.73	57	F10	S2N	HSR
VZ Her	60856.4513	0.0018	10.78	53	F7	S2N	HSR
DD Hya	60711.3907	0.0032	11.42	66	F8	S2N	HSR
DD Hya	61017.4545	0.0023	11.42	60	F8	S2N	HSR
DD Hya	61039.5442	0.0024	11.50	51	F7	S2N	HSR
DG Hya	60738.4240	0.0008	11.49	75	F15	S2N	HSR

Name	ToM (HJD−2400000)	σ(ToM) [d]	Brightness [mag]	N	Method	Telescope	Observer
DH Hya	60712.3694	0.0013	11.34	67	F15	S2N	HSR
DH Hya	61039.5206	0.0019	11.21	51	F8	S2N	HSR
ET Hya	60737.3780	0.0013	11.53	57	F5	S2N	HSR
ET Hya	60739.4313	0.0018	11.52	62	F6	S2N	HSR
GL Hya	60711.3366	0.0035	12.95	46	F11	S2N	HSR
V LMi	60723.5034	0.0008	10.95	54	F9	S2N	HSR
V LMi	61039.5217	0.0012	10.92	51	F10	S2N	HSR
X LMi	60713.2931	0.0010	11.71	1288	F9	S1N	HSRPAS
Y LMi	61039.6122	0.0009	12.04	51	F8	S2N	HSR
CQ Lac	60934.4184	0.0006	11.78	45	F11	S2N	HSR
CZ Lac	60926.4031	0.0038	11.17	77	F6	S2N	HSR
CZ Lac	60955.3511	0.0018	10.81	75	F8	S2N	HSR
CZ Lac	60984.2999	0.0039	10.84	78	F12	S2N	HSR
PW Lac	60933.4197	0.0008	12.27	99	F11	S2N	HSR
PW Lac	60934.4451	0.0011	12.23	45	F10	S2N	HSR
AA Leo	60740.4313	0.0010	11.62	1105	F15	S1N	HSRPAS
AE Leo	60723.5155	0.0012	11.56	57	F11	S2N	HSR
AE Leo	60733.5464	0.0011	11.38	75	F11	S2N	HSR
AH Leo	60723.5573	0.0011	13.24	57	F11	S2N	HSR
AN Leo	60721.5674	0.0011	12.30	72	F9	S2N	HSR
AX Leo	60690.6163	0.0009	11.85	54	F12	S2N	HSR
AX Leo	60733.4877	0.0009	11.75	75	F12	S2N	HSR
BT Leo	60733.6316	0.0018	12.24	75	F9	S2N	HSR
DL Leo	60738.3616	0.0007	12.25	74	F13	S2N	HSR
DL Leo	61039.5701	0.0008	12.25	51	F10	S2N	HSR
SS Leo	60710.6423	0.0022	10.34	51	F9	S2N	HSR
SS Leo	60751.3605	0.0012	10.32	63	F9	S2N	HSR
ST Leo	60740.5494	0.0007	10.54	53	F11	S2N	HSR
SU Leo	60723.3714	0.0010	12.59	63	F12	S2N	HSR
SU Leo	60739.4289	0.0021	12.56	57	F8	S2N	HSR
SU Leo	60740.3727	0.0011	12.59	45	F9	S2N	HSR
SZ Leo	60733.5210	0.0007	11.64	75	F13	S2N	HSR
SZ Leo	60739.3990	0.0008	11.76	57	F10	S2N	HSR
SZ Leo	61039.5480	0.0015	11.41	51	F9	S2N	HSR
TV Leo	60689.6127	0.0008	11.31	69	F14	S2N	HSR
TV Leo	60737.3889	0.0016	11.23	44	F7	S2N	HSR
GP Lyn	60723.3532	0.0007	13.42	60	F7	S2N	HSR
RW Lyn	60721.3878	0.0006	11.96	54	F9	S2N	HSR
RW Lyn	60737.3415	0.0020	11.93	54	F9	S2N	HSR
RW Lyn	60739.3364	0.0006	11.94	60	F12	S2N	HSR
RW Lyn	60740.3336	0.0007	11.95	48	F9	S2N	HSR
RW Lyn	61038.4707	0.0006	11.94	148	F15	S2N	HSR
TT Lyn	60712.3432	0.0024	9.44	87	F15	S2N	HSR
TT Lyn	60737.4370	0.0021	9.39	50	F9	S2N	HSR
TV Lyn	60723.3406	0.0005	11.11	60	F15	S2N	HSR
TW Lyn	60711.4186	0.0020	11.16	68	F5	S2N	HSR
TW Lyn	60739.3677	0.0014	11.16	60	F11	S2N	HSR
TW Lyn	60740.3295	0.0008	11.16	46	F9	S2N	HSR
TW Lyn	61039.5684	0.0015	11.16	51	F8	S2N	HSR
AQ Lyr	60845.4261	0.0029	12.33	57	F8	S2N	HSR
CN Lyr	60840.4572	0.0015	11.07	57	F11	S2N	HSR
CN Lyr	60847.4508	0.0007	11.04	75	F11	S2N	HSR
CN Lyr	60854.4471	0.0005	11.01	63	F8	S2N	HSR
CX Lyr	60844.5622	0.0009	12.27	54	F9	S2N	HSR
CX Lyr	60854.4011	0.0018	12.31	62	F9	S2N	HSR
DD Lyr	60838.4616	0.0014	13.04	75	F8	S2N	HSR
DD Lyr	60844.4241	0.0019	13.06	53	F5	S2N	HSR
DI Lyr	60856.4769	0.0015	13.45	51	F8	S2N	HSR
FN Lyr	60827.4341	0.0014	11.97	66	F12	S2N	HSR
FN Lyr	60837.4555	0.0007	12.01	75	F11	S2N	HSR
FN Lyr	60847.4782	0.0010	11.95	75	F11	S2N	HSR
FN Lyr	60856.4409	0.0008	12.08	51	F8	S2N	HSR

Name	ToM (HJD−2400000)	σ(ToM) [d]	Brightness [mag]	N	Method	Telescope	Observer
IO Lyr	60845.4488	0.0007	11.27	57	F12	S2N	HSR
IO Lyr	60897.3895	0.0008	11.26	63	F11	S2N	HSR
KM Lyr	60897.4031	0.0019	13.18	60	F9	S2N	HSR
KR Lyr	60837.4387	0.0012	13.61	72	F12	S2N	HSR
KR Lyr	60854.4711	0.0013	13.59	60	F13	S2N	HSR
KX Lyr	60845.4665	0.0012	10.34	56	F10	S2N	HSR
LX Lyr	60809.5987	0.0008	12.66	366	F15	S1N	HSRPAS
LX Lyr	60826.5132	0.0024	12.68	57	F7	S2N	HSR
LX Lyr	60838.5133	0.0007	12.66	75	F11	S2N	HSR
LX Lyr	60855.4251	0.0017	12.68	51	F8	S2N	HSR
MW Lyr	60790.5896	0.0014	12.90	42	F7	S2N	HSR
NQ Lyr	60838.4301	0.0008	12.78	73	F15	S2N	HSR
NQ Lyr	60855.4762	0.0013	12.82	51	F11	S2N	HSR
NQ Lyr	60898.3859	0.0009	12.79	51	F9	S2N	HSR
NR Lyr	60844.4906	0.0008	12.07	51	F8	S2N	HSR
RZ Lyr	60855.4522	0.0006	11.04	51	F7	S2N	HSR
RZ Lyr	60898.4014	0.0006	10.77	50	F9	S2N	HSR
V0367 Lyr	60837.4618	0.0053	15.13	66	F11	S2N	HSR
Y Lyr	60827.4092	0.0027	12.44	66	F11	S2N	HSR
Y Lyr	60838.4691	0.0010	12.43	75	F13	S2N	HSR
V0452 Oph	60813.4474	0.0019	11.63	35	F5	S2N	HSR
V0452 Oph	60823.4767	0.0013	11.66	54	F9	S2N	HSR
V0452 Oph	60837.4049	0.0012	11.67	75	F11	S2N	HSR
V0452 Oph	60842.4219	0.0009	11.66	51	F11	S2N	HSR
V0452 Oph	60847.4348	0.0012	11.65	77	F14	S2N	HSR
V0455 Oph	60790.5938	0.0007	11.58	42	F9	S2N	HSR
V0455 Oph	60801.4888	0.0011	11.62	54	F7	S2N	HSR
V0455 Oph	60821.4593	0.0012	11.59	44	F8	S2N	HSR
V0455 Oph	60826.4540	0.0014	11.63	57	F8	S2N	HSR
V0455 Oph	60846.4234	0.0010	11.65	72	F11	S2N	HSR
V0455 Oph	60856.4123	0.0007	11.68	54	F9	S2N	HSR
V0765 Oph	60827.4696	0.0042	14.36	60	F8	S2N	HSR
V0765 Oph	60844.5643	0.0037	14.38	51	F5	S2N	HSR
V0785 Oph	60801.5375	0.0015	13.02	54	F7	S2N	HSR
V0785 Oph	60819.5225	0.0014	12.99	78	F11	S2N	HSR
CM Ori	60712.3947	0.0006	12.04	87	F14	S2N	HSR
CM Ori	61040.3648	0.0009	12.05	153	F14	S2N	HSR
AO Peg	60897.4617	0.0015	12.46	60	F10	S2N	HSR
AV Peg	60924.5134	0.0017	9.77	81	F7	S2N	HSR
AV Peg	60955.3541	0.0017	9.76	63	F9	S2N	HSR
BF Peg	60911.4457	0.0020	11.97	60	F7	S2N	HSR
BF Peg	60983.3423	0.0006	12.09	54	F10	S2N	HSR
BH Peg	60956.3705	0.0011	10.02	96	F12	S2N	HSR
BH Peg	60983.2699	0.0014	9.92	54	F10	S2N	HSR
BT Peg	60957.4054	0.0009	11.70	78	F9	S2N	HSR
CG Peg	60941.4871	0.0011	10.60	148	F14	S2N	HSR
CG Peg	60942.4213	0.0009	10.60	102	F15	S2N	HSR
CG Peg	60943.3537	0.0007	10.57	136	F15	S2N	HSR
CG Peg	60950.3647	0.0013	10.64	60	F8	S2N	HSR
CY Peg	60925.4823	0.0009	12.03	75	F11	S2N	HSR
DZ Peg	60924.4281	0.0009	11.19	78	F10	S2N	HSR
DZ Peg	60930.5025	0.0014	11.24	57	F7	S2N	HSR
DZ Peg	60955.4038	0.0016	11.13	48	F9	S2N	HSR
DZ Peg	60983.3421	0.0007	11.16	54	F11	S2N	HSR
ES Peg	60897.4083	0.0011	11.63	60	F10	S2N	HSR
ES Peg	60911.4153	0.0010	11.58	60	F8	S2N	HSR
ES Peg	60946.4281	0.0011	11.54	114	F10	S2N	HSR
ET Peg	60925.4728	0.0016	12.42	78	F8	S2N	HSR
ET Peg	60943.5963	0.0022	12.31	150	F10	S2N	HSR
VV Peg	60924.4768	0.0008	11.05	81	F10	S2N	HSR
VV Peg	60950.3616	0.0011	11.06	46	F11	S2N	HSR
VZ Peg	60984.3437	0.0013	11.48	81	F15	S2N	HSR

Name	ToM (HJD−2400000)	σ(ToM) [d]	Brightness [mag]	N	Method	Telescope	Observer
AR Per	61017.5042	0.0013	9.82	102	F10	S2N	HSR
ET Per	60934.4992	0.0032	12.25	45	F5	S2N	HSR
ET Per	60957.3502	0.0033	12.23	84	F10	S2N	HSR
ET Per	60983.3546	0.0012	12.24	54	F9	S2N	HSR
ET Per	60998.3263	0.0017	12.15	60	F9	S2N	HSR
TU Per	61040.3318	0.0007	11.98	156	F15	S2N	HSR
RU Psc	60925.4767	0.0025	9.88	53	F14	S2N	HSR
RY Psc	60911.5616	0.0012	11.56	39	F5	S2N	HSR
SS Psc	60933.4133	0.0009	10.79	98	F15	S2N	HSR
SY Psc	60946.4606	0.0012	12.37	78	F13	S2N	HSR
SY Psc	60998.3265	0.0008	12.20	54	F10	S2N	HSR
AN Ser	60797.4402	0.0023	10.34	68	F10	S2N	HSR
AN Ser	60821.4544	0.0018	10.40	42	F9	S2N	HSR
AN Ser	60844.4275	0.0014	10.40	52	F8	S2N	HSR
AP Ser	60795.4420	0.0007	10.88	105	F15	S2N	HSR
AR Ser	60814.3752	0.0011	11.46	57	F9	S2N	HSR
AR Ser	60845.4275	0.0014	11.37	57	F8	S2N	HSR
BH Ser	60791.5582	0.0017	11.70	54	F5	S2N	HSR
VY Ser	60827.4657	0.0019	9.74	197	F5	S2N	HSR
RV Sex	60692.7238	0.0022	11.61	63	F5	S2N	HSR
SS Tau	60960.5390	0.0021	11.68	60	F9	S2N	HSR
SS Tau	61039.3183	0.0012	11.94	84	F7	S2N	HSR
U Tri	60925.4658	0.0038	11.97	51	F7	S2N	HSR
U Tri	60959.4563	0.0018	11.93	95	F12	S2N	HSR
U Tri	60998.3675	0.0032	11.85	60	F11	S2N	HSR
UX Tri	60943.5059	0.0005	12.54	108	F15	S2N	HSR
UX Tri	60967.2804	0.0012	12.89	116	F12	S2N	HSR
AB UMa	60690.5557	0.0011	10.51	54	F7	S2N	HSR
AB UMa	60723.5307	0.0005	10.40	57	F15	S2N	HSR
RV UMa	60690.6137	0.0023	9.87	54	F9	S2N	HSR
RV UMa	60712.6061	0.0010	9.55	89	F12	S2N	HSR
RV UMa	60766.4350	0.0011	10.29	300	F15	S1N	HSRPAS
AF Vir	60791.5119	0.0013	10.80	54	F8	S2N	HSR
AT Vir	60692.6223	0.0012	10.54	60	F13	S2N	HSR
AT Vir	60721.5401	0.0009	10.57	69	F12	S2N	HSR
BB Vir	60723.5515	0.0011	10.59	54	F10	S2N	HSR
BB Vir	60808.3581	0.0016	10.66	36	F7	S2N	HSR
FU Vir	60710.5658	0.0008	12.85	102	F13	S2N	HSR
FU Vir	60733.5356	0.0008	12.85	75	F11	S2N	HSR
UU Vir	60750.4081	0.0025	9.81	90	F10	S2N	HSR
UV Vir	60751.3973	0.0011	11.25	63	F10	S2N	HSR
BN Vul	60855.4559	0.0013	10.22	51	F10	S2N	HSR
FH Vul	60855.4661	0.0040	12.04	48	F8	S2N	HSR
FH Vul	60898.4376	0.0014	12.02	51	F5	S2N	HSR
FH Vul	60926.4117	0.0045	12.05	75	F11	S2N	HSR

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