OPEN EUROPEAN JOURNAL ON VARIABLE STARS
October 2008 http://var.astro.cz/oejv ISSN 1801-5964

NEW ELEMENTS FOR RR LYRAE AND CW STARS

SEBASTIÁN A. OTERO

Asociación Cielo Sur – Grupo Wezen 1 88, Buenos Aires, Argentina - varsao@hotmail.com

Abstract: This research presents elements for 95 RR Lyrae and CW variables listed in the GCVS and NSV catalogues that had wrong or unpublished periods. The data used for the analysis come from the publicly available ASAS-3 and NSVS databases. New identifications are given for the RRAB stars EU Tel, ST Tel and NSV 11178.

Methodology

The stars studied in this paper were selected from the NSV catalogue **(Kukarkin and Kholopov, 1982)** and its supplement **(Kazarovets et al., 1998)** and the GCVS (General Catalogue of Variable Stars, **Kholopov et al., 2008**). Stars in those catalogues that had no period published and were classified as RR, S, CEP, E or had no given classification were checked against the ASAS-3 **(Pojmanski, 2005)** and NSVS **(Wozniak et al., 2004)** databases to confirm their suspected variability. One of the stars (NSV 11544, classified as SR in the NSV catalogue) turned up in the systematic searches of the NSVS database performed with the method explained in **Otero (2007)**. When ASAS observations were available, the original unfiltered NSVS ROTSE-I magnitudes were shifted to match the ASAS-3 V magnitude of the stars. Observations with large errors in ASAS-3 and flagged observations in the NSVS datasets were discarded. Periods were found with AVE **(Barberá, 1996)**. Periods and epochs were then improved by light curve fitting of all the datasets available. The uncertainties are those for when the folded light curve began to show systematic differences and are expressed (between brackets) in units of the last digit. The amplitudes given in the paper are mean magnitudes at maximum and at minimum and not extreme values. Most of the stars studied are faint for the ASAS and NSVS systems and thus show large scatter at any phase of the light curve, making this difference important. The time span of the observations determines the accuracy of the periods and ranges from 1 (when only data from the NSVS database are available) to 9 years (when both NSVS and ASAS-3 data exist).

Results

Table 1 gives positions and cross-identifications for all of the stars studied. The first column gives the star's number in this paper. The following columns give the ASAS or NSVS identifier; other known identification; the variable star designation and the star's position included in the NOMAD catalogue **(Zacharias et al., 2005)**.

Table 1 – Positions and cross-identifications for the 95 stars studied.

Star Name				NOMAD position (J2000.0)
#	ASAS/NSVS ID	Other ID	GCVS ID	
1	NSVS 59763	GSC 4619-2241	ET Cep	01 02 22.95 +85 23 49.5
2	ASAS 011420-5309.8	GSC 8474-0893	UW Phe	01 14 20.98 -53 09 49.3
3	ASAS 030748-6234.1	GSC 8863-0116	NSV 1057	03 07 47.79 -62 34 07.3
4	ASAS 035217-7102.4	GSC 9156-1763	AT Hyi	03 52 17.40 -71 02 22.0
5	ASAS 035701-7609.5	GSC 9363-0781	NSV 1434	03 57 01.23 -76 09 30.5
6	ASAS 042341-7034.8	GSC 9157-1157	NSV 1603	04 23 41.10 -70 34 46.7
7	ASAS 070330-1532.6	GSC 5963-1286	NSV 3354	07 03 30.47 -15 32 36.0
8	ASAS 072134+1518.7	AN 399.1934	NSV 3545	07 21 34.39 +15 18 43.3
9	ASAS 080725-2149.8	GSC 6007-1592	NSV 3908	08 07 25.45 -21 49 47.9
10	ASAS 091330-6833.7	GSC 9196-0078	LT Car	09 13 30.90 -68 33 43.0
11	ASAS 092328-2925.3	GSC 6600-1494	SY Pyx	09 23 28.05 -29 25 16.2
12	ASAS 094925-7245.1	GSC 9217-2790	NSV 4650	09 49 24.99 -72 45 02.2

13	ASAS 095439-6804.0	GSC 9209-0273	NSV 4680	09 54 39.58 -68 03 56.8
14	ASAS 095633-6726.7	GSC 8954-0132	NSV 4683	09 56 32.67 -67 26 42.1
15	ASAS 095726-6702.2	GSC 8954-0706	OR Car	09 57 26.69 -67 02 11.4
16	ASAS 105621+1429.5	GSC 0853-0008	NSV 5019	10 56 20.67 +14 29 31.3
17	ASAS 112156-3217.1	GSC 7206-0334	EV Hya	11 21 55.83 -32 17 03.9
18	ASAS 120752-0559.9	GSC 4945-0709	NSV 5467	12 07 52.21 -05 59 54.9
19	ASAS 125013-8157.3	GSC 9425-0170	AZ Cha	12 50 12.87 -81 57 16.0
20	ASAS 141942-3028.0	GSC 7282-0730	NSV 6625	14 19 42.12 -30 28 04.9
21	ASAS 142550-3224.4	GSC 7299-1110	NSV 6662	14 25 50.07 -32 24 27.7
22	ASAS 142611-3025.0	GSC 7295-1783	V726 Cen	14 26 10.71 -30 25 05.0
23	ASAS 143016-2524.1	GSC 6736-0296	GX Hya	14 30 15.81 -25 24 07.2
24	ASAS 143423-3129.3	GSC 7296-1815	V735 Cen	14 34 22.08 -31 29 19.0
25	ASAS 143512-3035.7	GSC 7296-0373	V736 Cen	14 35 11.82 -30 35 44.3
26	ASAS 143739-2958.9	GSC 6757-1490	NSV 6736	14 37 39.25 -29 58 53.8
27	ASAS 144240-2807.9	GSC 6758-2568	HI Hya	14 42 40.06 -28 07 55.2
28	ASAS 144313-2519.5	GSC 6750-0992	HK Hya	14 43 13.19 -25 19 30.9
29	ASAS 144658-4753.1	GSC 8283-1128	TX Lup	14 46 57.94 -47 53 11.1
30	ASAS 144736-2647.2	GSC 6755-1381	HP Hya	14 47 36.21 -26 47 14.4
31	ASAS 150148-5250.5	GSC 8681-3135	XY Lup	15 01 48.30 -52 50 30.1
32	ASAS 152746-8044.6	GSC 9441-1556	NSV 7042	15 27 45.12 -80 44 31.4
33	ASAS 153312-1758.4	GSC 6188-0193	NSV 7128	15 33 11.99 -17 58 22.3
34	ASAS 153741-1525.5	2MASS J15375108-1522120	NSV 7165	15 37 51.09 -15 22 11.9
35	ASAS 154130-1332.9	GSC 5608-0223	NSV 7197	15 41 29.78 -13 32 55.1
36	ASAS 154525-1942.2	GSC 6194-0361	NSV 7231	15 45 24.29 -19 42 05.9
37	ASAS 155014-3126.7	GSC 7328-2386	NSV 7279	15 50 14.59 -31 26 38.6
38	ASAS 155535-1523.9	GSC 6187-0448	NSV 7333	15 55 34.69 -15 23 56.5
39	ASAS 155831-1039.8	GSC 5615-0480	NSV 7369	15 58 30.61 -10 39 49.1
40	ASAS 160124-7703.7	GSC 9446-0162	NSV 7358	16 01 24.46 -77 03 44.1
41	NSVS 1048004	GSC 4571-0045	NSV 7463	16 03 30.94 +77 11 11.9
42	ASAS 160412-6910.1	GSC 9273-4631	NSV 7390	16 04 11.96 -69 10 02.3
43	ASAS 160936-2153.9	HV 1045	NSV 7480	16 09 36.22 -21 53 51.9
44	ASAS 162554-6034.7	HV 5333	CH TrA	16 25 54.87 -60 34 44.6
45	ASAS 164100-6332.7	GSC 9042-3122	DW TrA	16 41 01.73 -63 32 34.0
46	ASAS 175018-5845.7	GSC 8754-0891	NSV 9710	17 50 17.34 -58 45 37.1
47	ASAS 175724-5310.1	HV 7931	PS Ara	17 57 23.85 -53 10 08.6
48	ASAS 175738-5142.8	HV 7932	NSV 9874	17 57 37.80 -51 42 48.0
49	ASAS 180002-5011.8	HV 7940	NSV 9934	18 00 02.47 -50 11 44.2
50	ASAS 180817-5240.2	GSC 8743-0968	QV Ara	18 08 17.18 -52 40 04.2
51	ASAS 180840-3930.4	GSC 7903-0340	NSV 10238	18 08 39.97 -39 30 23.2
52	ASAS 181058-4001.8	HV 11841	NSV 10298	18 10 57.82 -40 01 49.8
53	ASAS 182608-5602.0	GSC 8748-1915	NSV 10746	18 26 08.27 -56 02 08.6
54	ASAS 182742-5153.1	HV 9912	NSV 10800	18 27 40.81 -51 53 04.3
55	ASAS 183017-5212.4	GSC 8371-1874	NSV 10880	18 30 16.54 -52 12 29.6
56	ASAS 183330-4954.4	GSC 8367-1547	EU Tel	18 33 30.03 -49 54 20.1
57	ASAS 183621-4954.9	HV 9985	FI Tel	18 36 21.04 -49 54 58.9
58	ASAS 183740-5727.7	GSC 8753-0578	NSV 11079	18 37 40.67 -57 27 39.1
59	ASAS 183915-4443.1	GSC 7914-2085	NSV 11135	18 39 15.03 -44 43 10.1
60	ASAS 184141-5503.6	GSC 8762-1902	NSV 11178	18 41 41.13 -55 03 33.1
61	ASAS 184701-5434.3	AN 69.1920	ST Tel	18 47 01.57 -54 34 21.2
62	ASAS 184740-4836.0	GSC 8377-1440	NSV 11328	18 47 40.44 -48 36 03.3
63	NSVS 3014042	GSC 4224-0890	NSV 11544	18 53 30.16 +63 55 03.7
64	ASAS 185639-7710.5	GSC 9462-0327	NSV 11434	18 56 38.98 -77 10 30.8

65	ASAS 185839-6858.5	GSC 9292-1439	NSV 11549	18 58 39.55 -68 58 35.3
66	ASAS 190858-4714.2	GSC 8379-0897	NSV 11751	19 08 58.68 -47 14 08.8
67	ASAS 192239-4540.4	GSC 8376-0734	NSV 11936	19 22 38.96 -45 40 22.8
68	ASAS 193455-4414.8	GSC 7944-1634	V2150 Sgr	19 34 55.01 -44 14 46.4
69	ASAS 194430-3917.4	GSC 7933-2011	V2175 Sgr	19 44 29.77 -39 17 23.1
70	ASAS 194723-5431.5	GSC 8779-1380	NSV 24877	19 47 22.41 -54 31 28.8
71	ASAS 200228-3700.2	GSC 7452-0409	NSV 12698	20 02 27.88 -37 00 16.9
72	ASAS 200749-4243.9	GSC 7955-2321	NSV 12800	20 07 49.36 -42 43 47.2
73	ASAS 200840-3558.9	GSC 7453-1119	V2237 Sgr	20 08 40.18 -35 58 55.6
74	ASAS 201349-3749.4	GSC 7948-0031	NSV 12902	20 13 49.11 -37 49 27.4
75	ASAS 202845-6443.1	GSC 9095-1042	NSV 13085	20 28 44.17 -64 43 06.2
76	ASAS 203306-3846.7	GSC 7950-1079	SX Mic	20 33 06.18 -38 46 39.0
77	ASAS 204432-4616.5	GSC 8407-0442	WX Ind	20 44 32.17 -46 16 30.4
78	ASAS 205344-6609.3	GSC 9113-1102	NSV 13359	20 53 42.91 -66 09 22.4
79	ASAS 210527-6046.1	GSC 9101-0265	NSV 13498	21 05 26.42 -60 46 04.0
80	NSVS 5847833	GSC 3592-2060	NSV 13593	21 11 08.64 +47 10 05.9
81	ASAS 211155-2109.7	GSC 6358-0736	NSV 13586	21 11 55.47 -21 09 41.5
82	ASAS 212337-3949.5	GSC 7983-0500	NSV 13676	21 23 36.52 -39 49 33.7
83	ASAS 212450-4400.8	GSC 7991-0676	BE Mic	21 24 49.97 -44 00 48.9
84	ASAS 213333-4918.6	GSC 8431-0835	NSV 13773	21 33 32.46 -49 18 38.0
85	ASAS 213830-4900.9	GSC 8432-0530	NSV 13809	21 38 29.66 -49 00 53.3
86	ASAS 214057-5734.7	GSC 8815-0869	NSV 13829	21 40 56.99 -57 34 43.4
87	ASAS 214318-3952.1	GSC 7985-0062	NSV 13850	21 43 17.58 -39 52 10.7
88	ASAS 214619-4250.8	GSC 7989-0446	NSV 13870	21 46 19.42 -42 50 49.4
89	ASAS 221842-6953.0	BV 1147	NSV 14103	22 18 42.42 -69 53 01.2
90	ASAS 222417-6541.0	GSC 9123-1325	NSV 14140	22 24 17.85 -65 41 02.8
91	ASAS 222620-4059.5	GSC 7999-0200	UY Gru	22 26 20.23 -40 59 28.8
92	ASAS 223212-6818.9	GSC 9337-1003	NSV 14186	22 32 11.61 -68 18 55.9
93	ASAS 233002-6647.5	GSC 9132-1111	NSV 14591	23 30 01.03 -66 47 22.9
94	ASAS 233901-6445.5	GSC 9130-0595	NSV 14651	23 39 00.87 -64 45 31.1
95	ASAS 234107-4208.8	GSC 8017-0142	NSV 14655	23 41 06.62 -42 08 49.4

Table 2 lists the elements and data for the stars. The first column gives the star's number in this paper. The other columns give the brightness range of the variable; the passband of the observations (V for ASAS-V and R1 for ROTSE-I magnitudes); the variability type; the period; the epoch of maximum light derived from the complete dataset; the duration of light increase from minimum to maximum (M-m) expressed in hundredths of the period; the J-K color as published in the 2MASS catalogue **(Skrutskie et al., 2006)** and the classification given in the GCVS or NSV catalogues.

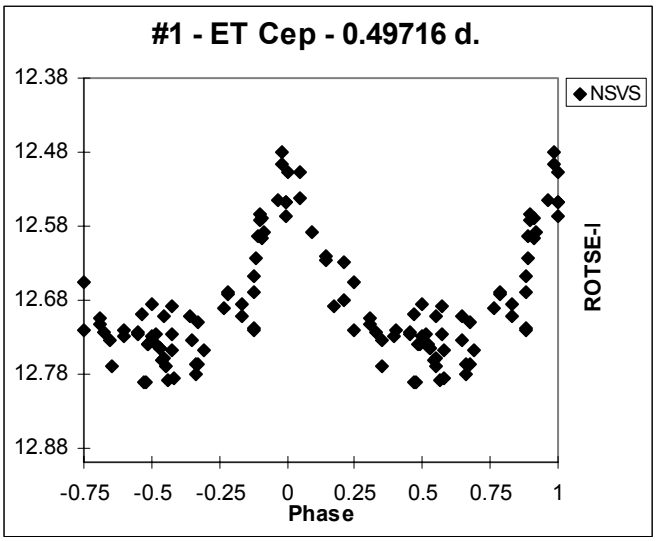
Table 2 – Elements and data for the 95 stars studied.

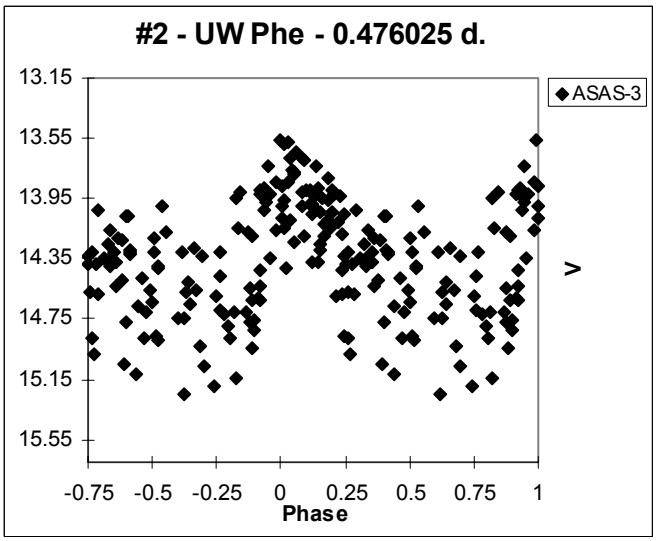
#	Magnitude range		Filt	Type	Period (days)	Epoch (HJD)	M-m	J-K	GCVS/NSV classification
	Max	Min							
1	12.5:	12.75:	R1	RRAB	0.49716(2)	2451400.72(1)	20:	0.26	RR:
2	13.9	14.9	V	RRAB	0.476025(9)	2452203.64(1)	19	0.15	RR
3	14.0	14.7	V	RRAB	0.60217(1)	2452215.67(1)	16	0.30	RR
4	14.3	15.0	V	RRAB	0.72332(3)	2452926.82(3)	32	0.09	RR
5	13.6	14.1	V	RRC	0.318265(4)	2452956.75(1)	37	0.40	RR
6	13.9	14.4	V	CWB:	2.2378(3)	2454529.5(1)	63	0.33	
7	13.45	14.25	V	CWB	3.5227(2)	2453601.93(3)	24	0.54	S
8	13.95	14.95	V	RRAB	0.475541(2)	2453470.563(9)	14	0.33	

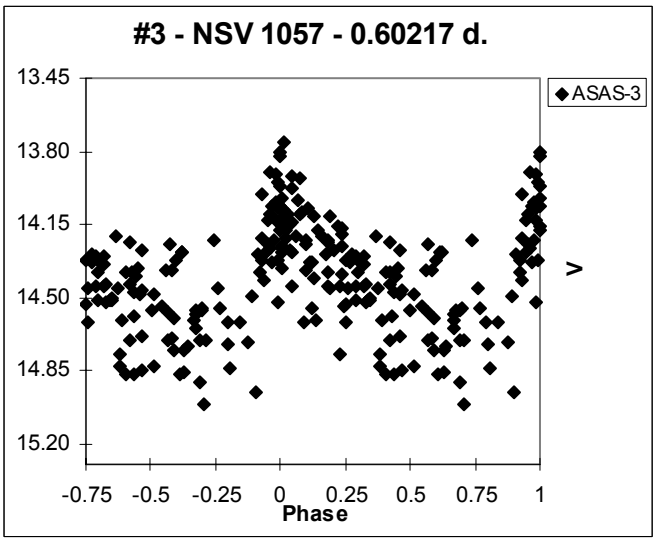
9	12.8	13.7	V	RRAB	0.575206(5)	2452948.84(1)	23	0.42	S
10	13.08	14.2	V	RRAB	0.499788(3)	2454441.828(8)	14	0.38	RR
11	14.0	14.8	V	RRAB	0.61785(1)	2452192.86(2)	20:	0.44	RR
12	13.8	14.6	V	RRAB	0.55131(1)	2453439.76(1)	20:	0.43	RR:
13	13.3	14.3	V	RRAB	0.575349(3)	2453865.587(4)	16	0.20	S
14	13.5	14.3	V	RRAB	0.569655(9)	2452926.857(9)	16	0.25	S
15	13.85	14.3	V	RRAB	0.76324(2)	2452739.70(2)	29:	0.32	RR
16	13.8	14.8	V	RRAB	0.524979(3)	2452761.61(1)	12	0.21	RR:
17	13.6:	14.7	V	RRAB	0.446103(3)	2451982.666(6)	24:	0.41	RR
18	13.9	14.7	V	RRAB	0.88797(1)	2451308.78(2)	15	0.35	
19	13.5	14.7	V	RRAB	0.555282(2)	2454163.822(3)	11	0.31	RR
20	14.1	15.1	V	RRAB	0.565275(5)	2452722.742(5)	12:	0.47	E:
21	13.8	14.5	V	RRAB	0.777373(7)	2453809.78(3)	26	0.33	RRC:
22	13.9	14.7	V	RRAB	0.70043(2)	2454311.55(1)	17	0.33	RR
23	13.7	14.6	V	RRAB	0.585878(6)	2452511.506(6)	15	0.37	RR
24	13.55	14.65	V	RRAB	0.510239(3)	2453475.655(3)	11	0.41	RR
25	13.9	15.0	V	RRAB	0.551596(5)	2452645.843(7)	13:	0.30	RR
26	14.1	14.9	V	RRC	0.394290(3)	2453450.774(9)	30:	0.27	RRC:
27	13.4	14.2	V	RRC:	0.406062(3)	2452810.585(6)	26	0.22	RR
28	13.6	14.5	V	RRAB	0.478331(2)	2454344.500(5)	14	0.18	RR
29	13.7	14.6	V	RRAB	0.566265(7)	2453103.78(1)	15	0.39	RR
30	13.1	14.2	V	RRAB	0.592960(2)	2454641.700(5)	14	0.28	RR
31	13.0	14.2	V	RRAB	0.498121(1)	2451982.763(4)	10	0.27	RR
32	13.7	14.7	V	RRAB	0.69107(1)	2454586.671(7)	13	0.50	
33	14.2	15.1:	V	RRAB	0.59191(2)	2451320.80(1)	20:	0.29	RR
34	13.15	13.55	V	RRC	0.354970(6)	2452481.491(8)	36	0.33	RR
35	13.95	14.55	V	RRC	0.313667(1)	2453824.775(9)	41	0.28	RR
36	14.1	14.9	V	RRAB	0.59821(1)	2451630.83(2)	21:	0.41	RR
37	13.15	14.55	V	RRAB	0.457739(1)	2452027.687(3)	9	0.33	S
38	13.8	14.7	V	RRAB	0.537129(3)	2453544.72(1)	14	0.41	RR
39	12.25	12.75	V	RRC	0.344860(5)	2454257.73(2)	38	0.26	
40	13.75	14.25	V	RRC	0.384399(3)	2453893.635(7)	36	0.29	
41	14.45	15.0	R1	RRC	0.30979(2)	2451442.614(7)	43	0.19	S
42	13.0	14.1	V	RRAB	0.601064(4)	2453664.506(4)	12	0.40	RR
43	14.3:	15.0:	V	RRAB	0.540461(8)	2453883.67(2)	15:	0.43	S
44	13.3	14.4	V	RRAB	0.548010(5)	2454172.846(6)	11	0.29	RR
45	12.8	13.4	V	RRAB	0.549275(9)	2454657.66(1)	24	0.19	RR
46	13.6	14.4	V	RRAB	0.603399(4)	2452711.840(7)	17	0.37	S
47	13.6	14.5	V	RRAB	0.528117(6)	2454369.62(1)	13	0.29	RR
48	13.1	13.6	V	RRAB:	0.76025(2)	2452198.495(6)	29	0.36	RR
49	13.7	14.2	V	RRC	0.392725(9)	2452164.49(3)	46:	0.30	RR
50	13.4	14.2	V	RRAB	0.466870(4)	2453590.582(8)	11	0.36	RR
51	13.2	13.7	V	RRAB	0.64437(1)	2453547.753(9)	29	0.31	S
52	13.6	14.1	V	RRC	0.362915(8)	2452543.52(1)	38	0.28	S
53	13.0	13.95	V	RRAB	0.521208(3)	2454336.555(4)	13	0.37	RR
54	14.1	15.0	V	RRAB	0.69234(2)	2452082.678(9)	18:	0.38	RR
55	13.8	14.8	V	RRAB	0.625974(3)	2452192.558(2)	17:	0.42	RR
56	13.3	14.65	V	RRAB	0.468999(1)	2453127.790(2)	7	0.25	RR
57	13.75	14.9	V	RRAB	0.609128(3)	2454354.607(4)	14	0.20	RR
58	13.8	14.35	V	RRC	0.322843(4)	2452813.717(7)	36	0.19	RR
59	13.5	14.35	V	RRAB	0.536320(3)	2453470.861(3)	14	0.24	S:
60	13.75	14.4	V	RRAB	0.55691(1)	2452916.57(1)	25	0.32	RR

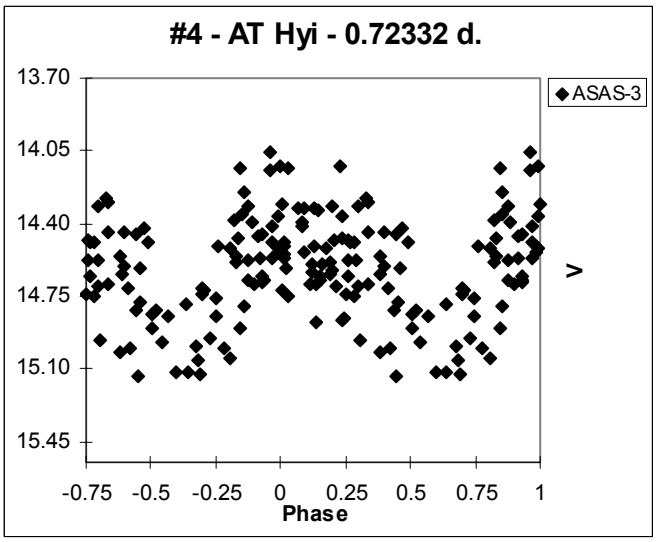
61	13.7	14.8	V	RRAB	0.572215(3)	2452106.62(1)	10	0.36	RR
62	11.32	12.65	V	CWA	14.3116(9)	2453886.87(3)	35	0.35	CEP:
63	11.52	11.70	R1	RRC:	0.348087(3)	2451470.62(1)	45:	0.17	SR
64	13.55	14.6	V	RRAB	0.553665(2)	2452804.720(6)	10	0.37	
65	13.5	14.45	V	RRAB	0.688625(7)	2452949.566(7)	13	0.37	
66	13.35	14.3	V	RRAB	0.614008(5)	2452106.666(6)	10	0.25	
67	13.4	14.6	V	RRAB	0.495593(2)	2452039.797(6)	11	0.24	S
68	13.55	14.5	V	RRAB	0.460023(2)	2454371.571(3)	11	0.34	RR
69	14.0	15.0	V	RRAB	0.587516(4)	2454393.647(5)	9	0.17	RR
70	13.0	14.1	V	RRAB	0.515212(3)	2452204.517(4)	12	0.21	RR:
71	13.5	14.25	V	RRAB	0.575775(5)	2454308.702(3)	14	0.20	RR:
72	13.65	14.1	V	RRC:	0.39505(1)	2454276.725(9)	50:	0.32	E:
73	13.9	15.0	V	RRAB	0.510513(3)	2453629.568(3)	8	0.30	RR
74	13.3:	14.2	V	RRAB	0.59644(1)	2454229.91(1)	22	0.29	E
75	13.7	14.7	V	RRAB	0.630296(3)	2453571.750(6)	8	0.32	
76	13.55	14.2	V	RRAB	0.635185(9)	2452193.546(4)	17	0.36	RR
77	14.05	15.0	V	RRAB	0.66229(1)	2452740.854(9)	22	0.10	RR
78	13.8	14.9	V	RRAB	0.439893(6)	2453564.741(7)	12	0.36	
79	13.55	14.8	V	RRAB	0.574641(4)	2453560.805(6)	14	0.36	
80	10.35	10.60	R1	CWB:	1.7659(3)	2451362.70(3)	31	0.40	CST
81	13.2	14.4	V	RRAB	0.469366(2)	2452067.736(4)	11	0.31	
82	14.0	14.8	V	RRAB	0.576557(4)	2452145.622(9)	15:	0.30	S
83	13.5	14.3	V	RRAB	0.56179(2)	2452141.65(3)	21	0.36	RR
84	13.35	14.45	V	RRAB	0.567054(4)	2452955.650(3)	9	0.11	S
85	13.1	14.1	V	RRAB	0.477480(3)	2452757.897(6)	10	0.07	RR:
86	12.0	13.1	V	RRAB	0.480757(1)	2452902.693(5)	14	0.27	S
87	13.8	14.4	V	RRAB	0.630675(9)	2452929.62(1)	10	0.28	S:
88	12.35	13.5	V	RRAB	0.615420(3)	2452982.579(5)	12	0.17	RR:
89	13.55	14.8	V	RRAB	0.460222(5)	2452085.89(1)	15:	0.36	
90	13.45	14.6	V	RRAB	0.577455(1)	2452132.678(3)	12	0.36	
91	13.8	14.8	V	RRAB	0.611793(3)	2453551.87(1)	19:	0.25	RR
92	13.55	14.3	V	RRAB	0.576158(4)	2452548.608(4)	13	0.16	
93	13.6	14.4	V	RRAB	0.590475(6)	2454308.77(1)	16	0.23	
94	13.9	14.9	V	RRAB	0.605030(4)	2453655.595(9)	9	0.29	
95	12.68	13.15	V	RRC	0.380481(3)	2452227.528(7)	49	0.32	

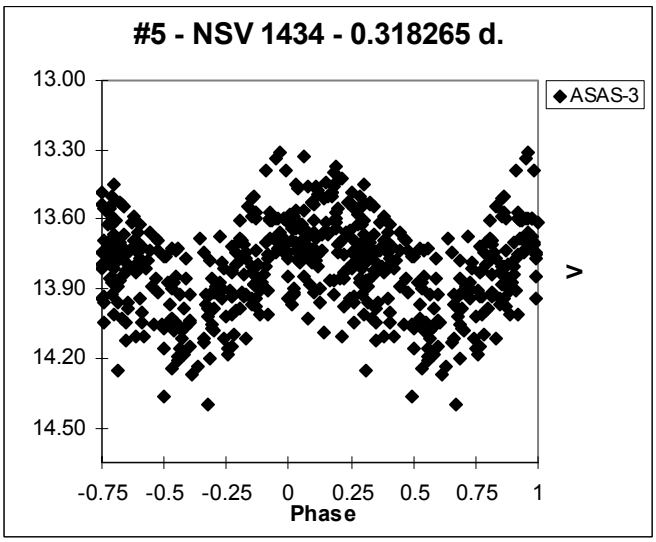
Figures 1 to 95 show the collection of light curves of the RR Lyrae and CW stars studied in this paper.

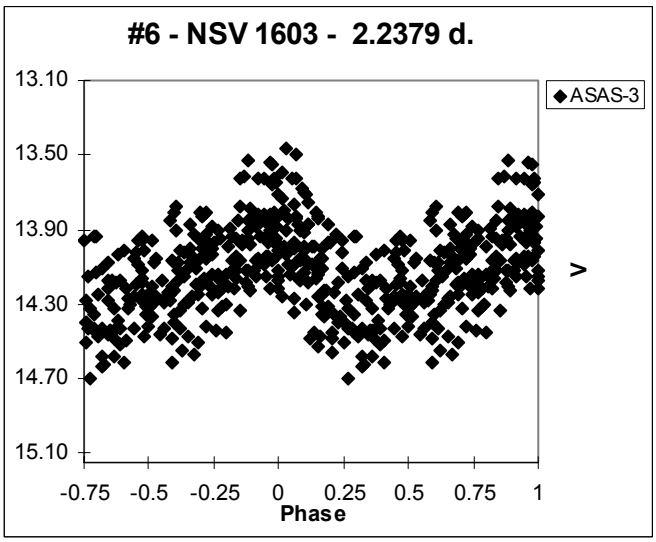

#1 - ET Cep - 0.49716 d.
NSVS
ROTSE-I
12.38
12.48
12.58
12.68
12.78
12.88
-0.75 -0.5 -0.25 0 0.25 0.5 0.75 1
Phase

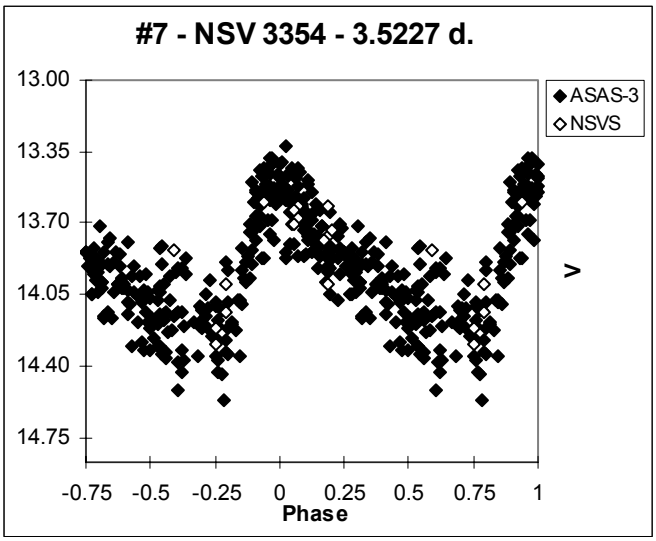

#2 - UW Phe - 0.476025 d.
ASAS-3
V
13.15
13.55
13.95
14.35
14.75
15.15
15.55
-0.75 -0.5 -0.25 0 0.25 0.5 0.75 1
Phase

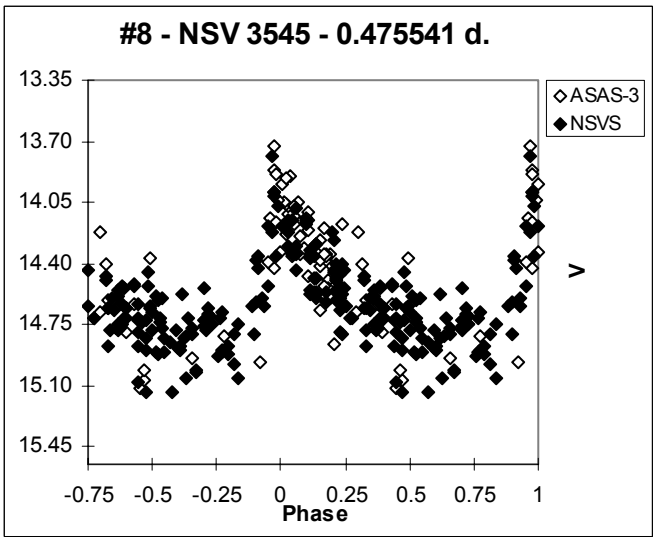

#3 - NSV 1057 - 0.60217 d.
ASAS-3
V
13.45
13.80
14.15
14.50
14.85
15.20
-0.75 -0.5 -0.25 0 0.25 0.5 0.75 1
Phase

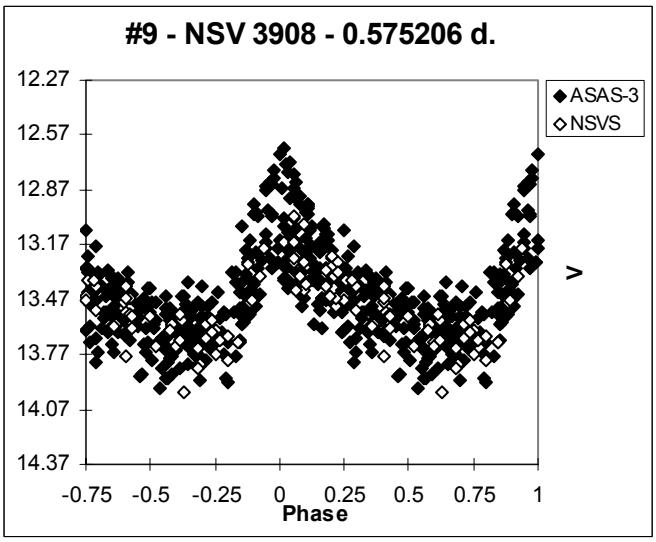

#4 - AT Hyi - 0.72332 d.
ASAS-3
V
13.70
14.05
14.40
14.75
15.10
15.45
-0.75 -0.5 -0.25 0 0.25 0.5 0.75 1
Phase

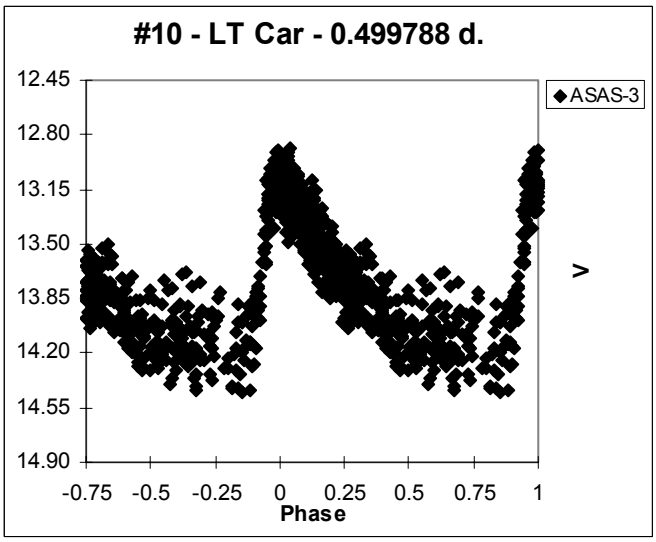

#5 - NSV 1434 - 0.318265 d.
ASAS-3
V
13.00
13.30
13.60
13.90
14.20
14.50
-0.75 -0.5 -0.25 0 0.25 0.5 0.75 1
Phase

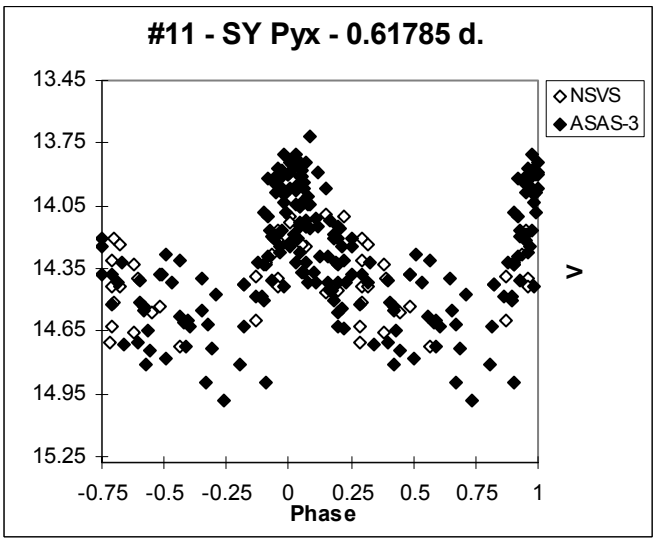

#6 - NSV 1603 - 2.2379 d.
ASAS-3
V
13.10
13.50
13.90
14.30
14.70
15.10
-0.75 -0.5 -0.25 0 0.25 0.5 0.75 1
Phase

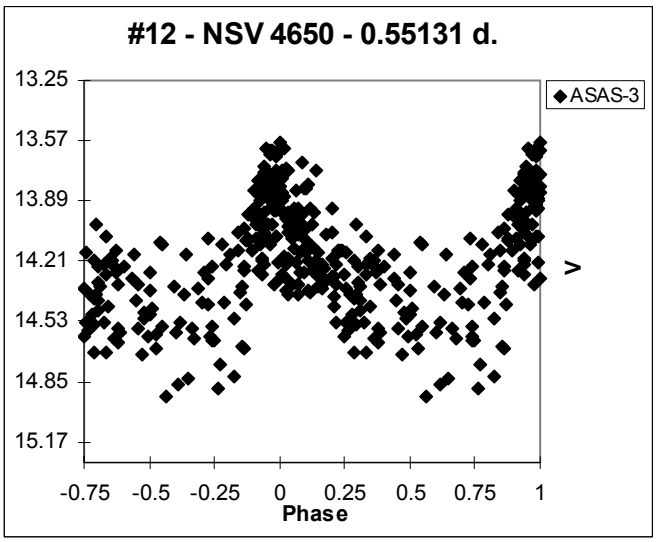

#7 - NSV 3354 - 3.5227 d.
13.00
13.35
13.70
14.05
14.40
14.75
-0.75 -0.5 -0.25 0 0.25 0.5 0.75 1
Phase
V
ASAS-3
NSVS

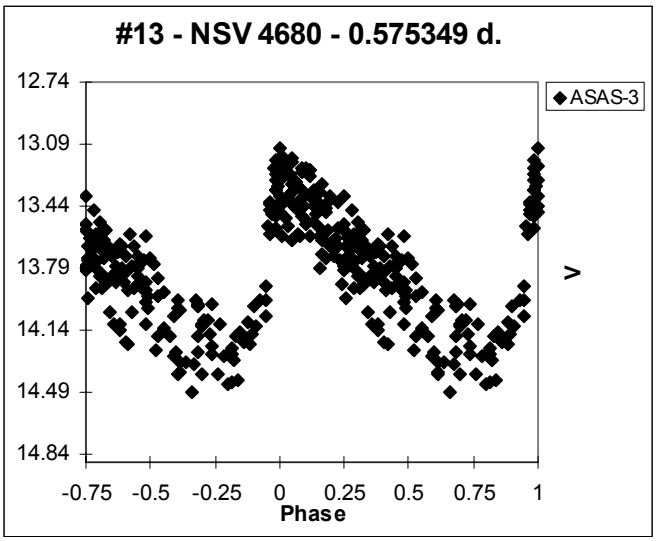

#8 - NSV 3545 - 0.475541 d.
13.35
13.70
14.05
14.40
14.75
15.10
15.45
-0.75 -0.5 -0.25 0 0.25 0.5 0.75 1
Phase
V
ASAS-3
NSVS

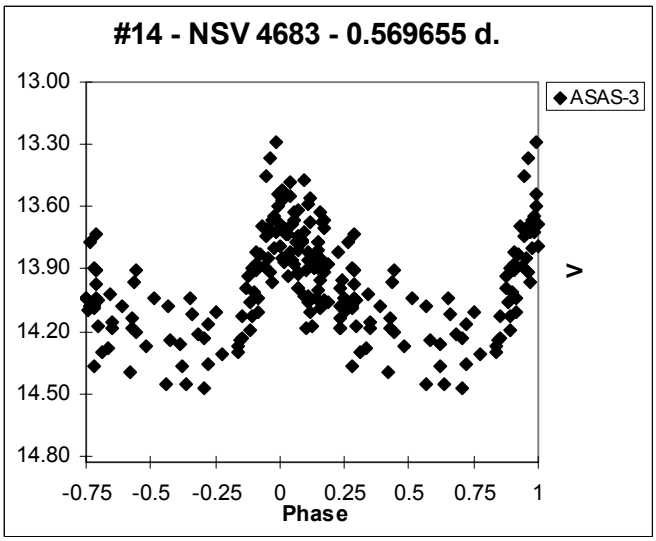

#9 - NSV 3908 - 0.575206 d.
12.27
12.57
12.87
13.17
13.47
13.77
14.07
14.37
-0.75 -0.5 -0.25 0 0.25 0.5 0.75 1
Phase
V
ASAS-3
NSVS

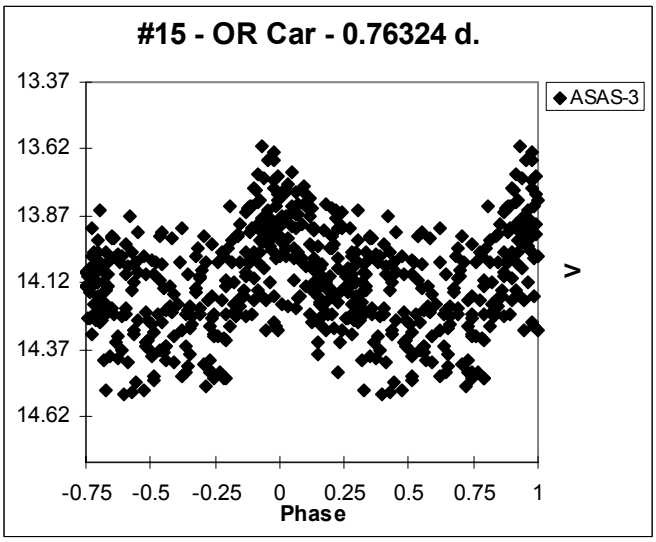

#10 - LT Car - 0.499788 d.
12.45
12.80
13.15
13.50
13.85
14.20
14.55
14.90
-0.75 -0.5 -0.25 0 0.25 0.5 0.75 1
Phase
V
ASAS-3

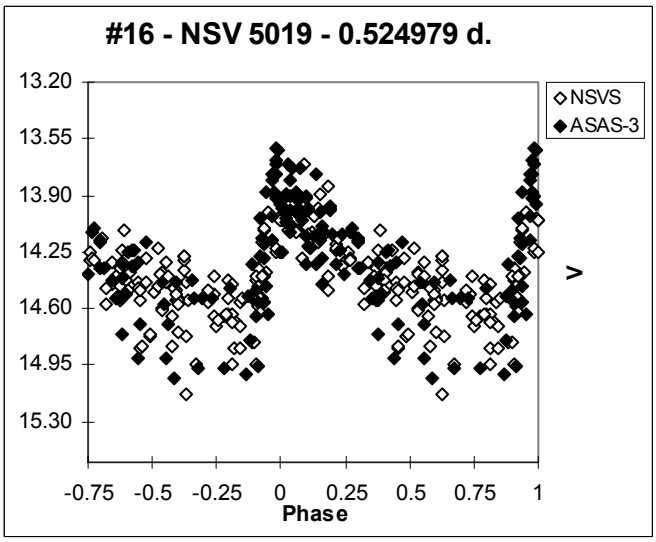

#11 - SY Pyx - 0.61785 d.
13.45
13.75
14.05
14.35
14.65
14.95
15.25
-0.75 -0.5 -0.25 0 0.25 0.5 0.75 1
Phase
V
NSVS
ASAS-3

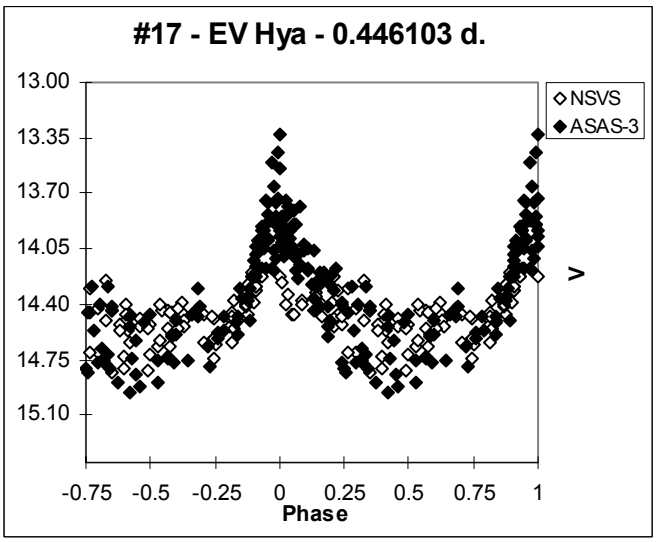

#12 - NSV 4650 - 0.55131 d.
13.25
13.57
13.89
14.21
14.53
14.85
15.17
-0.75 -0.5 -0.25 0 0.25 0.5 0.75 1
Phase
V
ASAS-3

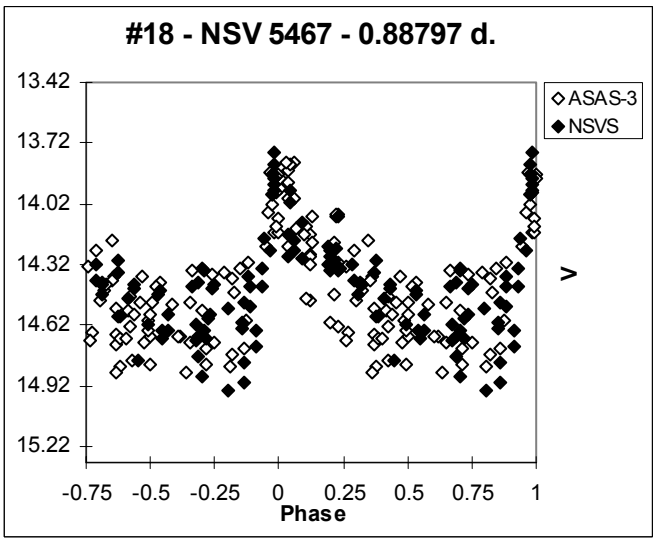

#13 - NSV 4680 - 0.575349 d.
ASAS-3
V
Phase

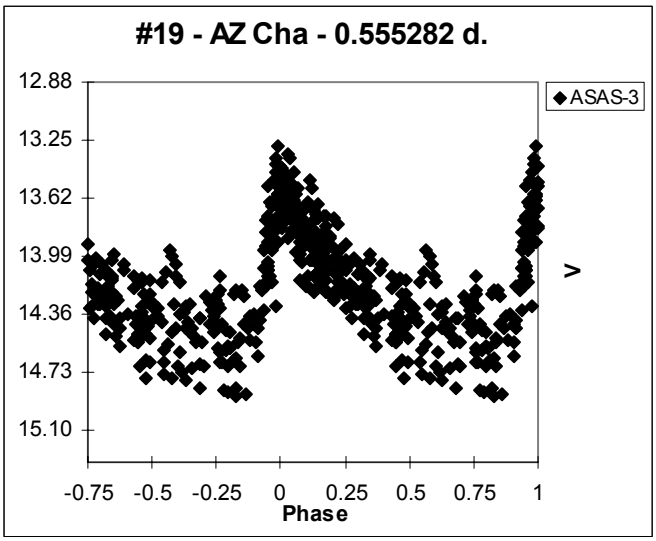

#14 - NSV 4683 - 0.569655 d.
ASAS-3
V
Phase

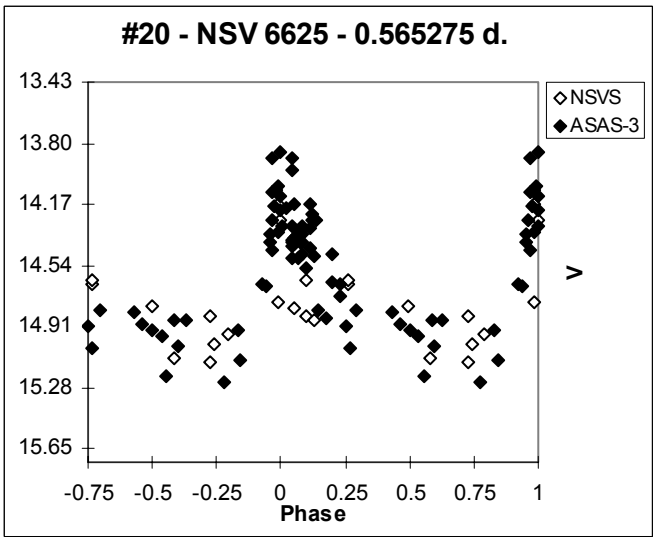

#15 - OR Car - 0.76324 d.
ASAS-3
V
Phase

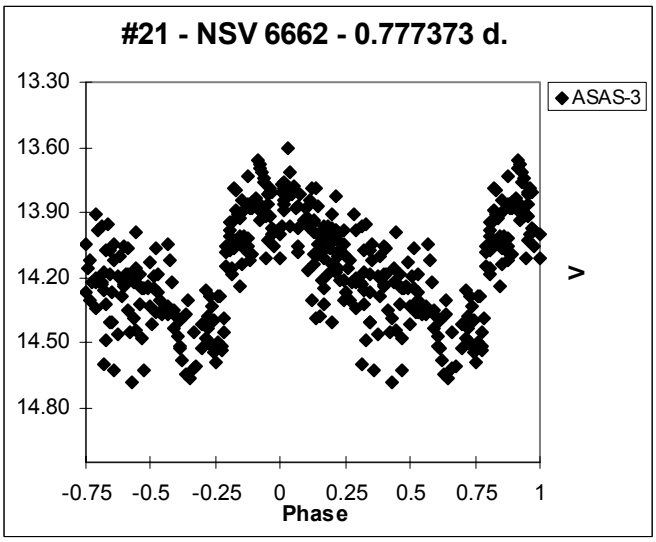

#16 - NSV 5019 - 0.524979 d.
NSVS
ASAS-3
V
Phase

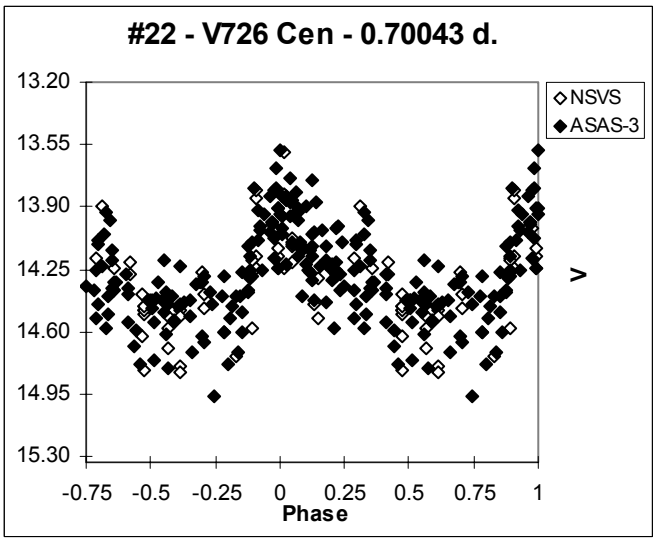

#17 - EV Hya - 0.446103 d.
NSVS
ASAS-3
V
Phase

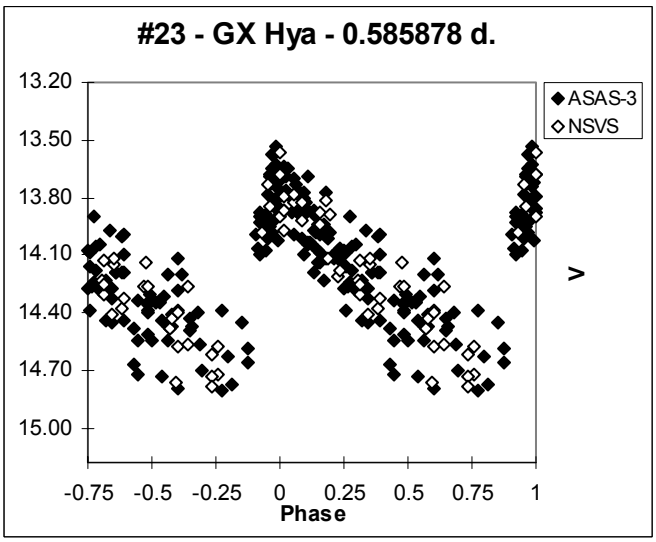

#18 - NSV 5467 - 0.88797 d.
ASAS-3
NSVS
V
Phase

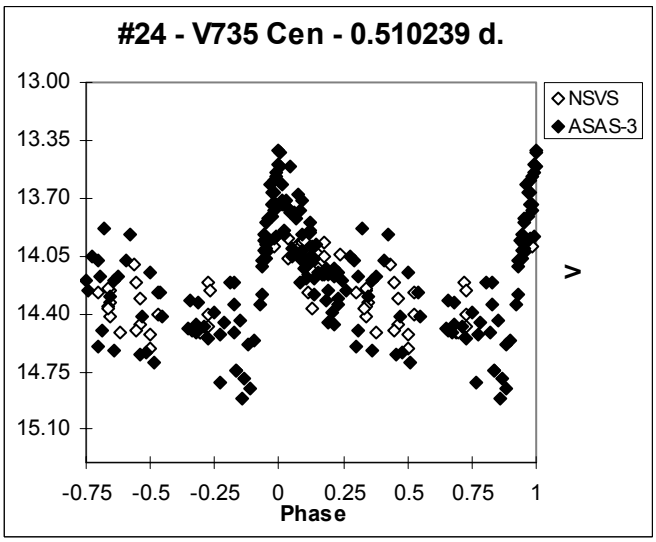

#19 - AZ Cha - 0.555282 d.
ASAS-3
12.88
13.25
13.62
13.99
14.36
14.73
15.10
V
-0.75 -0.5 -0.25 0 0.25 0.5 0.75 1
Phase

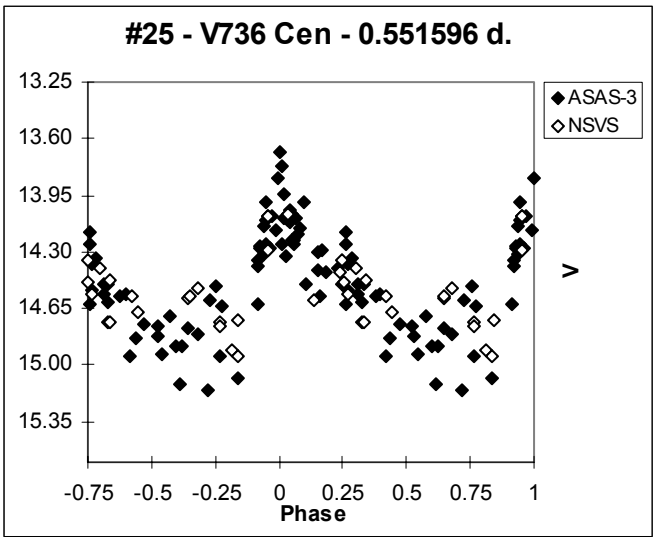

#20 - NSV 6625 - 0.565275 d.
NSVS
ASAS-3
13.43
13.80
14.17
14.54
14.91
15.28
15.65
V
-0.75 -0.5 -0.25 0 0.25 0.5 0.75 1
Phase

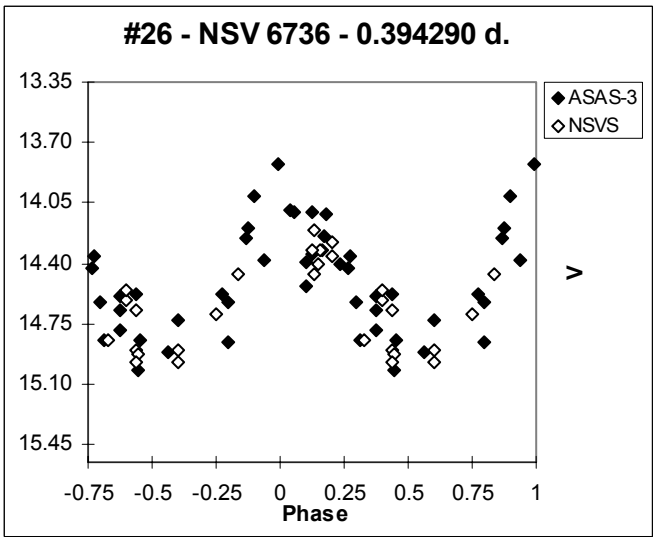

#21 - NSV 6662 - 0.777373 d.
ASAS-3
13.30
13.60
13.90
14.20
14.50
14.80
V
-0.75 -0.5 -0.25 0 0.25 0.5 0.75 1
Phase

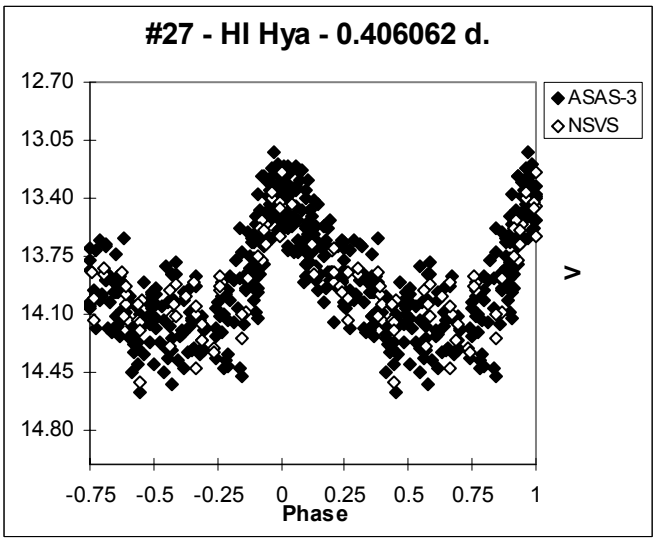

#22 - V726 Cen - 0.70043 d.
NSVS
ASAS-3
13.20
13.55
13.90
14.25
14.60
14.95
15.30
V
-0.75 -0.5 -0.25 0 0.25 0.5 0.75 1
Phase

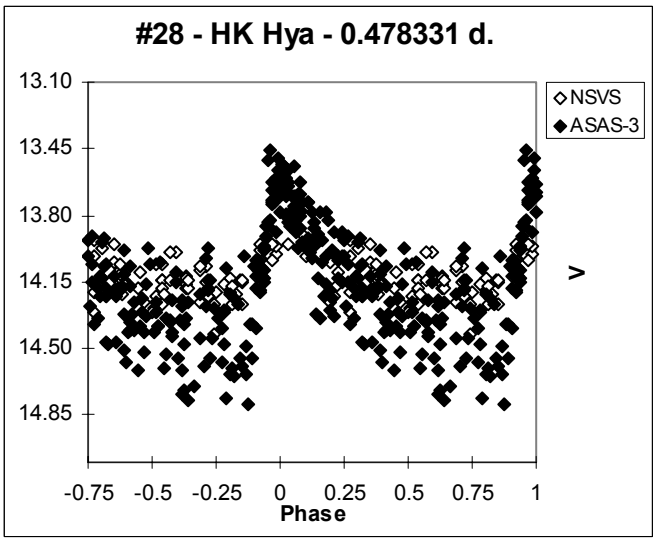

#23 - GX Hya - 0.585878 d.
ASAS-3
NSVS
13.20
13.50
13.80
14.10
14.40
14.70
15.00
V
-0.75 -0.5 -0.25 0 0.25 0.5 0.75 1
Phase

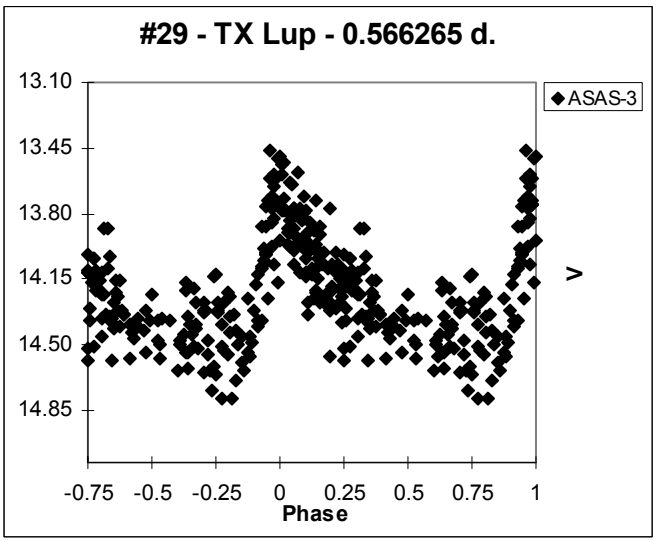

#24 - V735 Cen - 0.510239 d.
NSVS
ASAS-3
13.00
13.35
13.70
14.05
14.40
14.75
15.10
V
-0.75 -0.5 -0.25 0 0.25 0.5 0.75 1
Phase

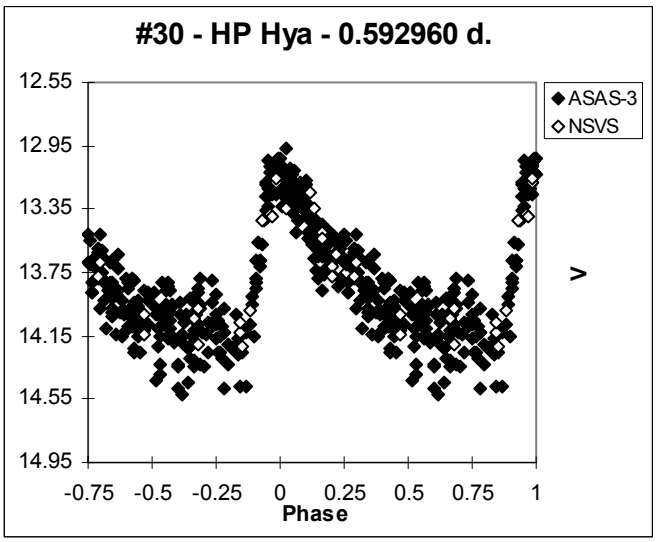

#25 - V736 Cen - 0.551596 d.
ASAS-3
NSVS
V
Phase

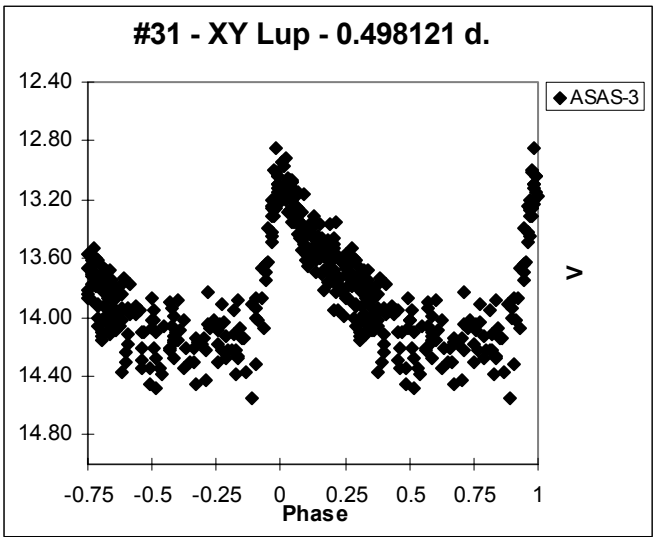

#26 - NSV 6736 - 0.394290 d.
ASAS-3
NSVS
V
Phase

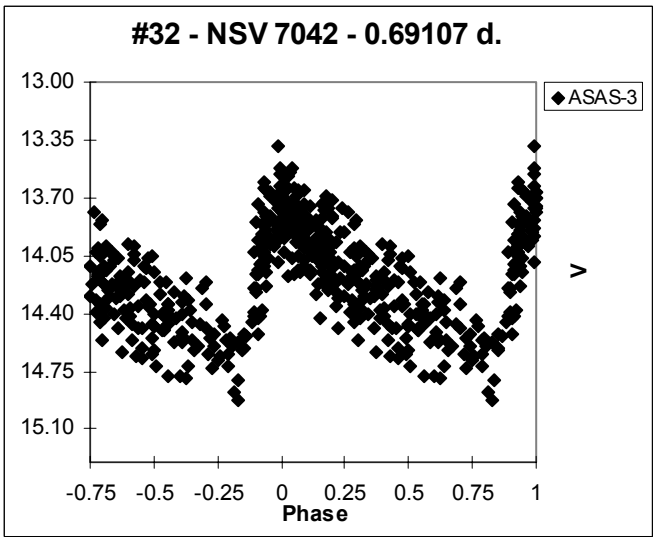

#27 - HI Hya - 0.406062 d.
ASAS-3
NSVS
V
Phase

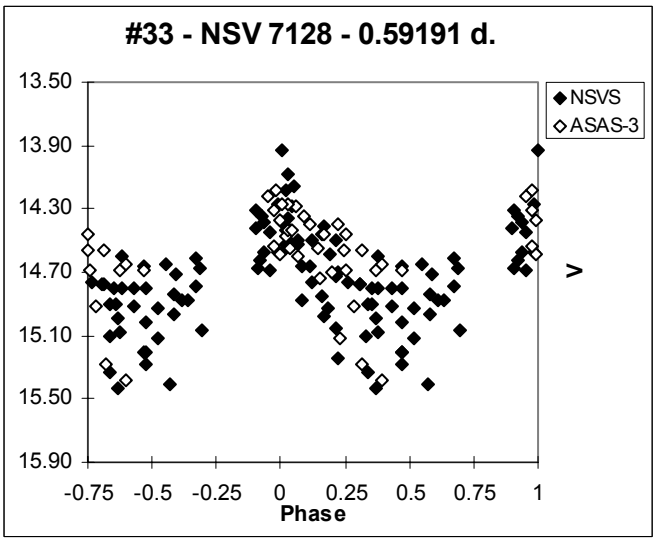

#28 - HK Hya - 0.478331 d.
NSVS
ASAS-3
V
Phase

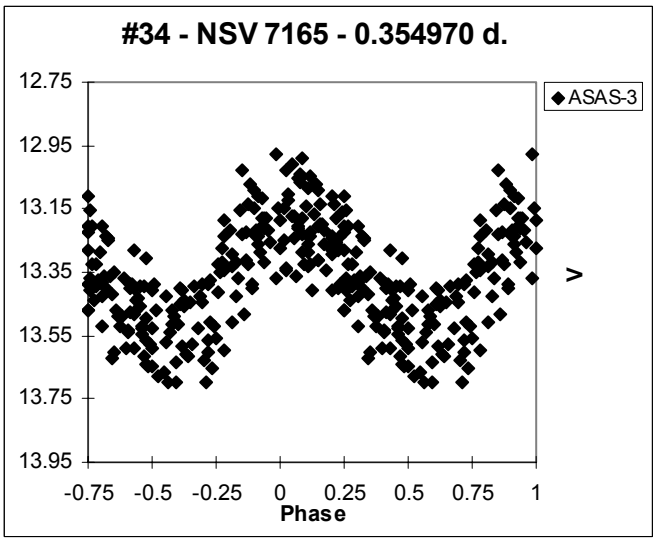

#29 - TX Lup - 0.566265 d.
ASAS-3
V
Phase

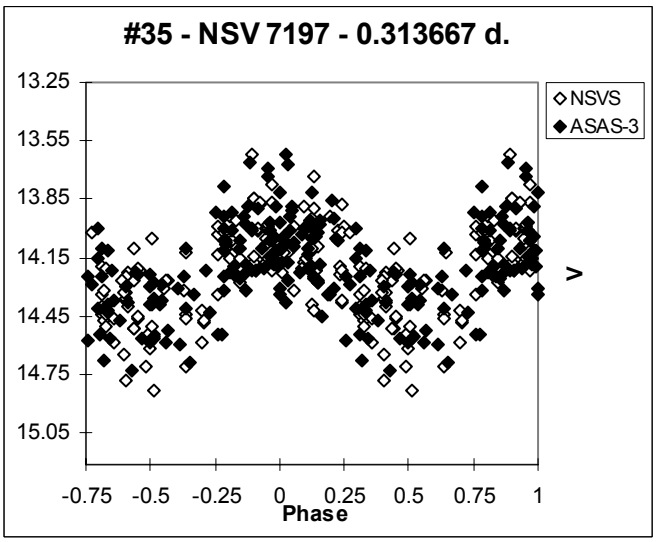

#30 - HP Hya - 0.592960 d.
ASAS-3
NSVS
V
Phase

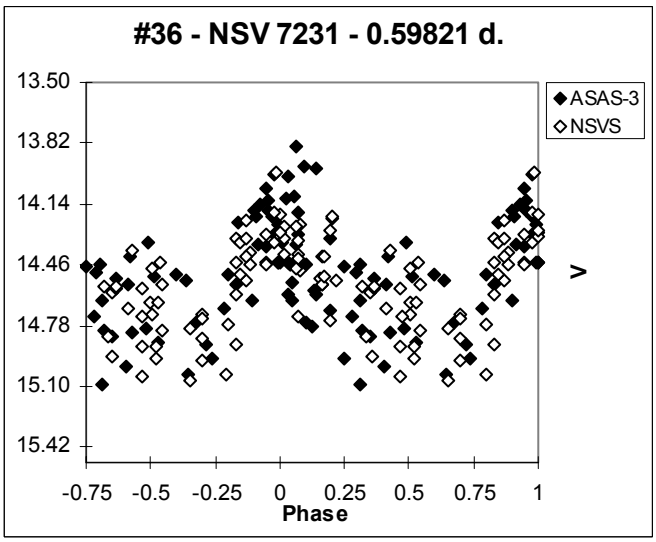

#31 - XY Lup - 0.498121 d.
ASAS-3
V
Phase

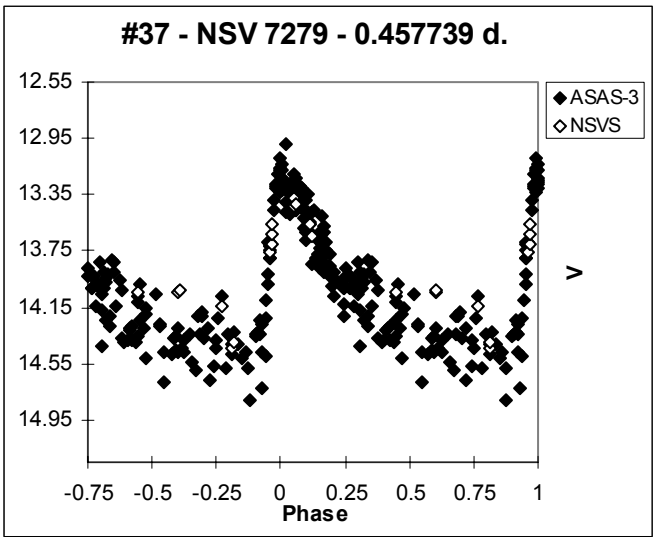

#32 - NSV 7042 - 0.69107 d.
ASAS-3
V
Phase

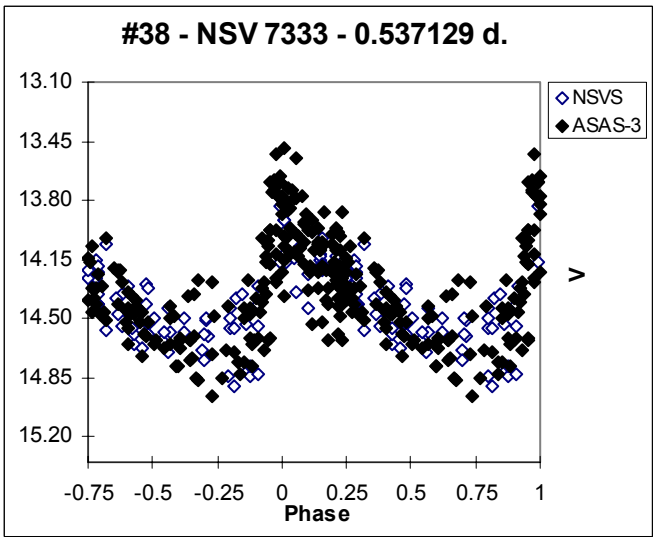

#33 - NSV 7128 - 0.59191 d.
NSVS
ASAS-3
V
Phase

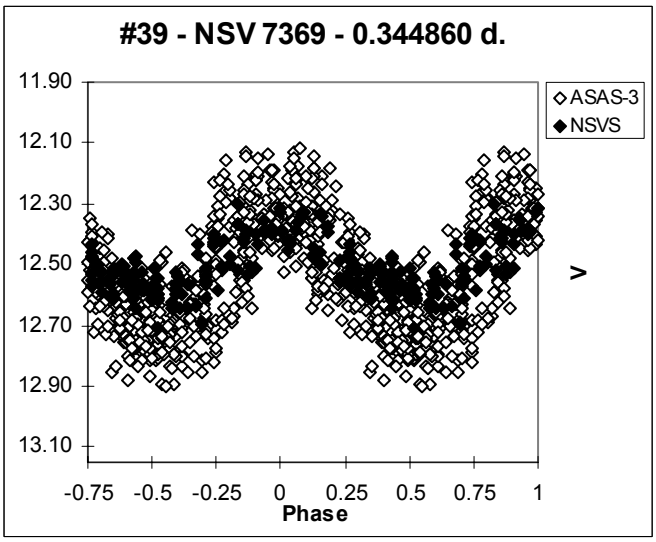

#34 - NSV 7165 - 0.354970 d.
ASAS-3
V
Phase

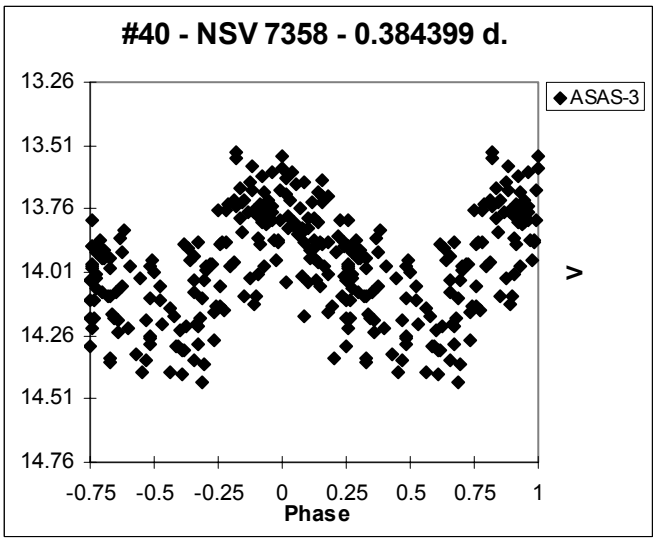

#35 - NSV 7197 - 0.313667 d.
NSVS
ASAS-3
V
Phase

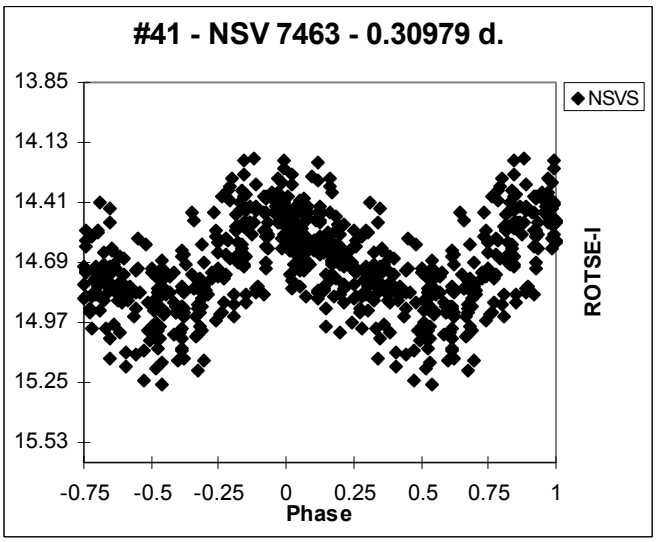

#36 - NSV 7231 - 0.59821 d.
ASAS-3
NSVS
V
Phase

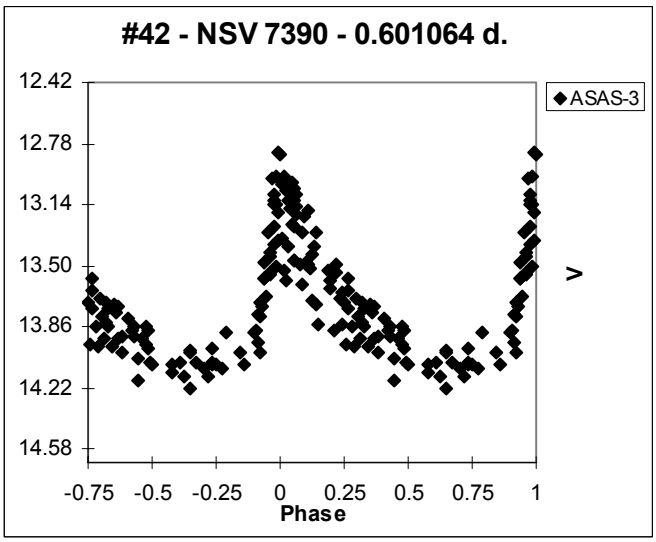

#37 - NSV 7279 - 0.457739 d.
ASAS-3
NSVS
V
Phase

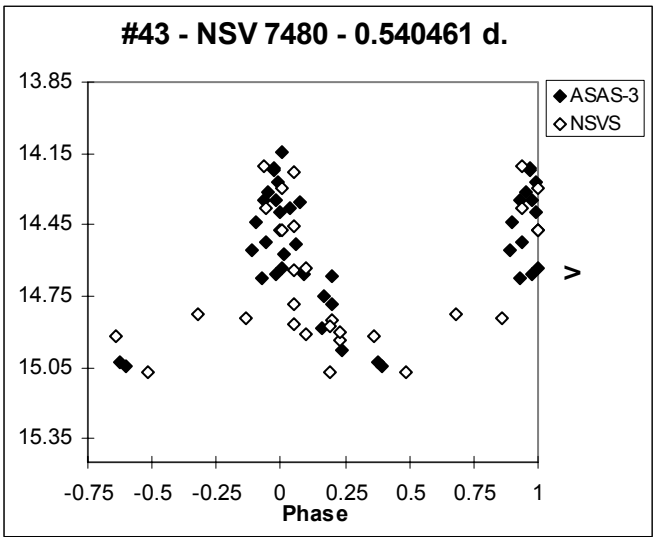

#38 - NSV 7333 - 0.537129 d.
NSVS
ASAS-3
V
Phase

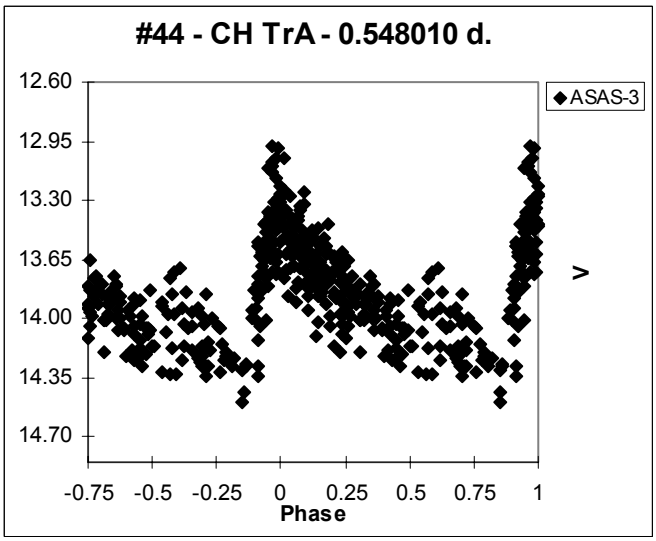

#39 - NSV 7369 - 0.344860 d.
ASAS-3
NSVS
V
Phase

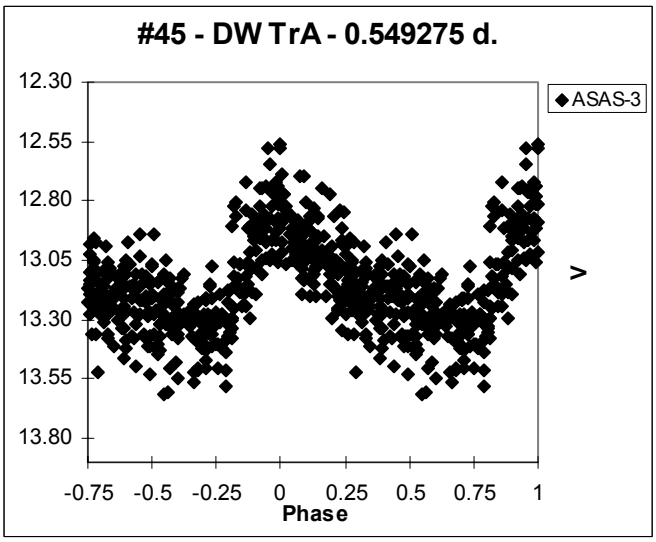

#40 - NSV 7358 - 0.384399 d.
ASAS-3
V
Phase

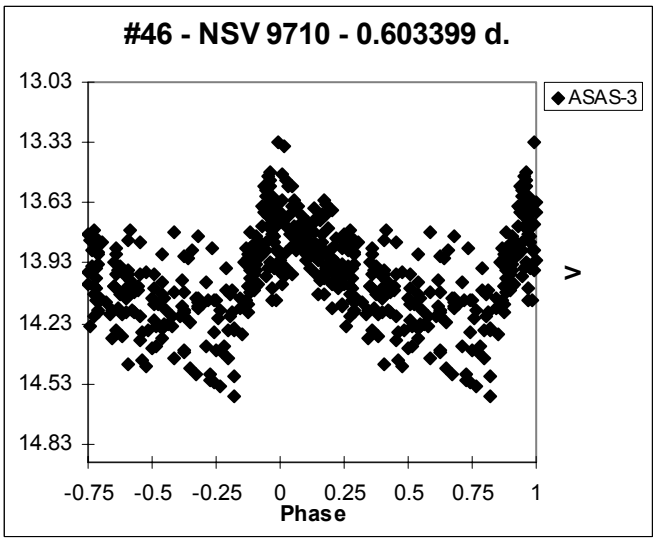

#41 - NSV 7463 - 0.30979 d.
NSVS
ROTSE-I
Phase

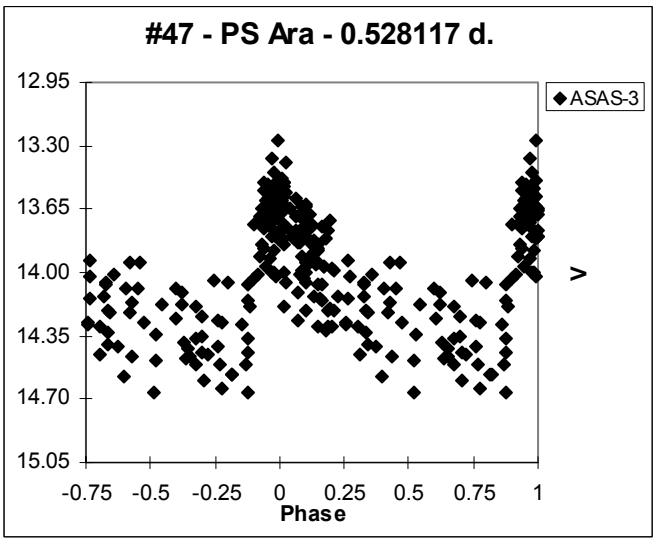

#42 - NSV 7390 - 0.601064 d.
ASAS-3
V
Phase

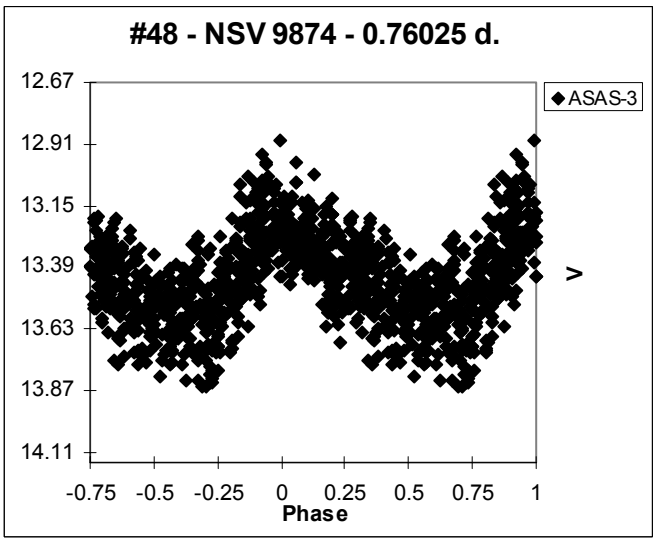

#43 - NSV 7480 - 0.540461 d.
ASAS-3
NSVS
V
Phase

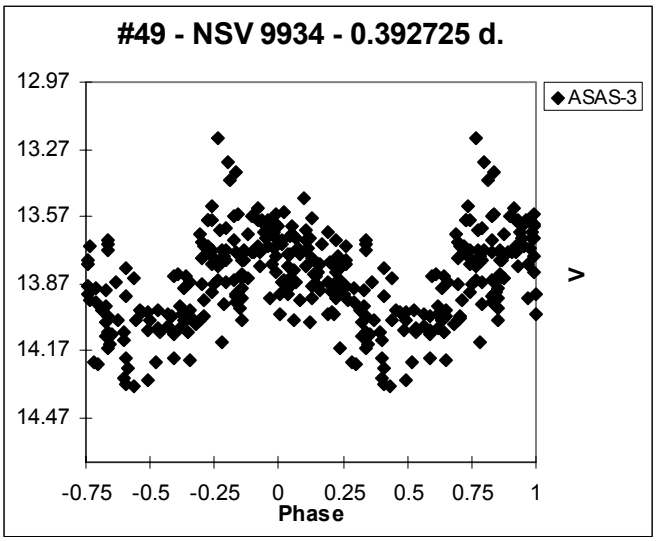

#44 - CH TrA - 0.548010 d.
ASAS-3
V
Phase

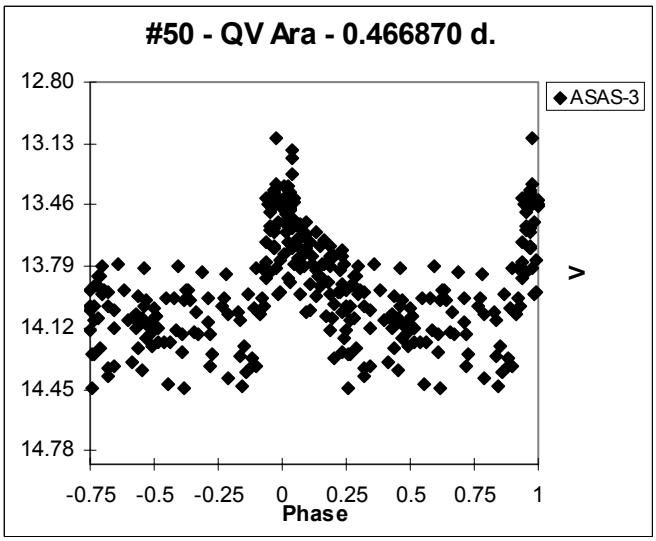

#45 - DW TrA - 0.549275 d.
ASAS-3
V
Phase

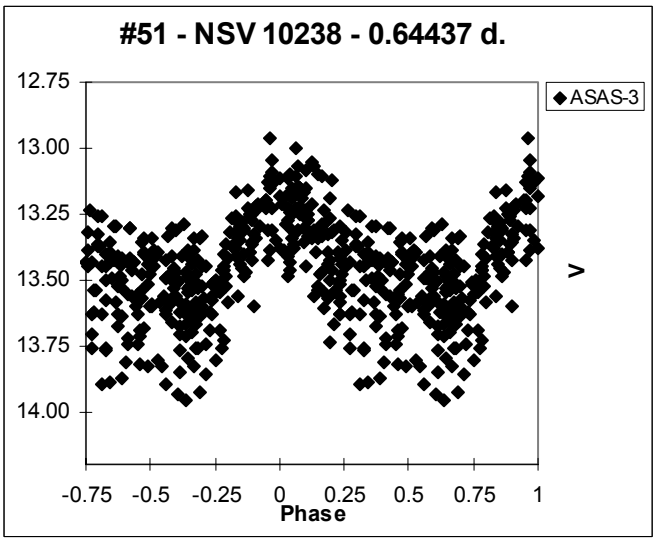

#46 - NSV 9710 - 0.603399 d.
ASAS-3
V
Phase

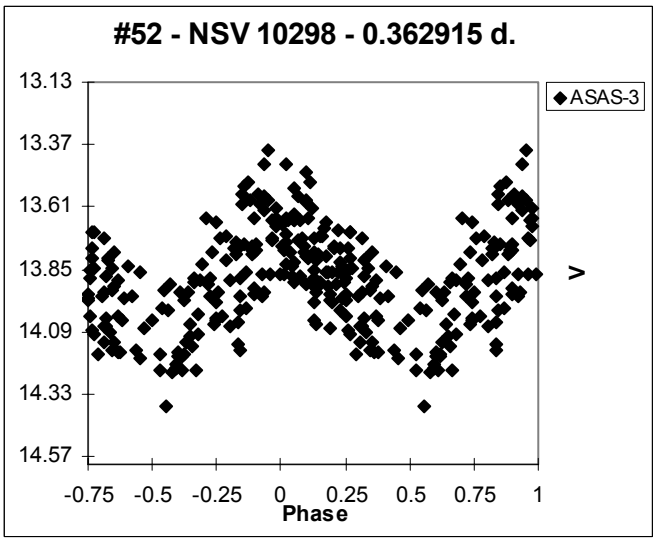

#47 - PS Ara - 0.528117 d.
ASAS-3
V
Phase

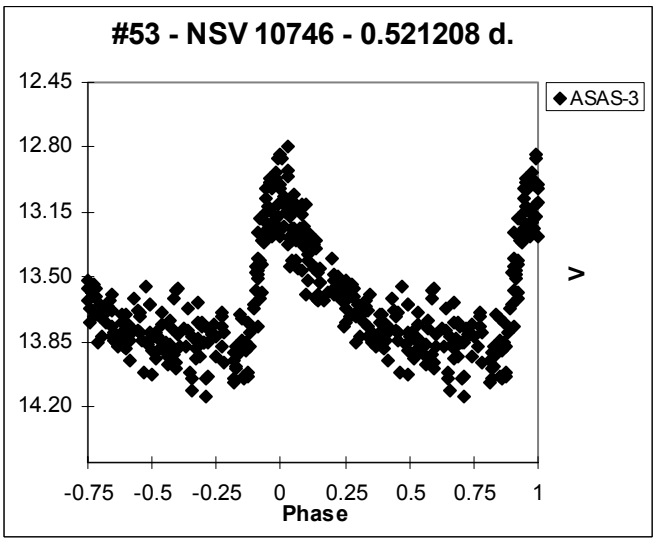

#48 - NSV 9874 - 0.76025 d.
ASAS-3
V
Phase

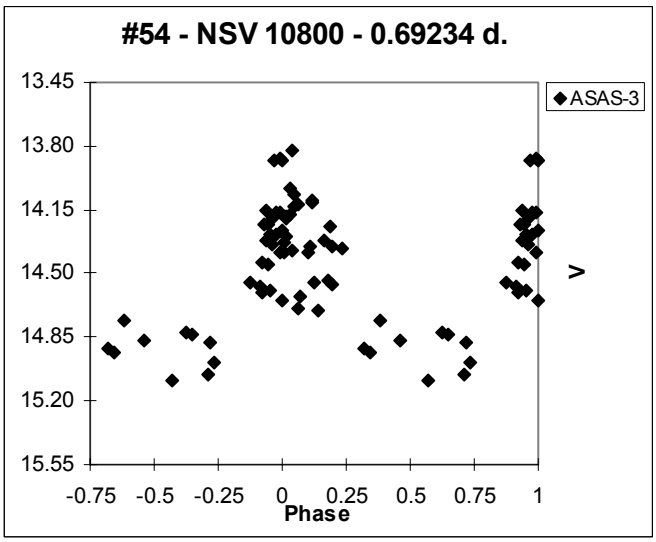

#49 - NSV 9934 - 0.392725 d.
ASAS-3
V
Phase
12.97
13.27
13.57
13.87
14.17
14.47
-0.75 -0.5 -0.25 0 0.25 0.5 0.75 1

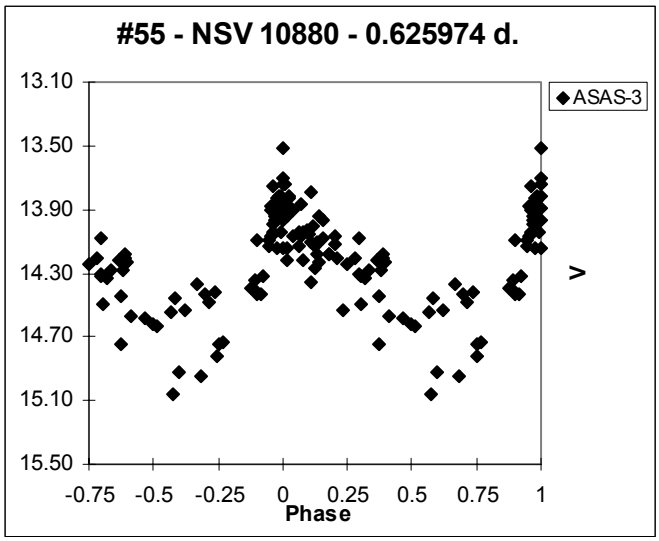

#50 - QV Ara - 0.466870 d.
ASAS-3
V
Phase
12.80
13.13
13.46
13.79
14.12
14.45
14.78
-0.75 -0.5 -0.25 0 0.25 0.5 0.75 1

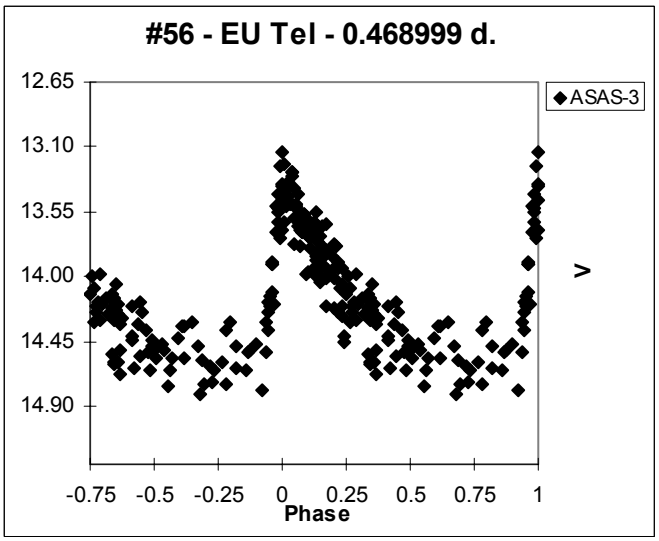

#51 - NSV 10238 - 0.64437 d.
ASAS-3
V
Phase
12.75
13.00
13.25
13.50
13.75
14.00
-0.75 -0.5 -0.25 0 0.25 0.5 0.75 1

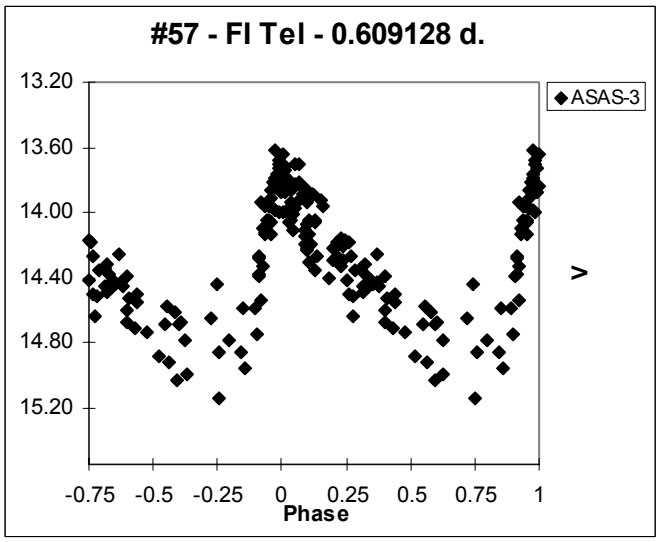

#52 - NSV 10298 - 0.362915 d.
ASAS-3
V
Phase
13.13
13.37
13.61
13.85
14.09
14.33
14.57
-0.75 -0.5 -0.25 0 0.25 0.5 0.75 1

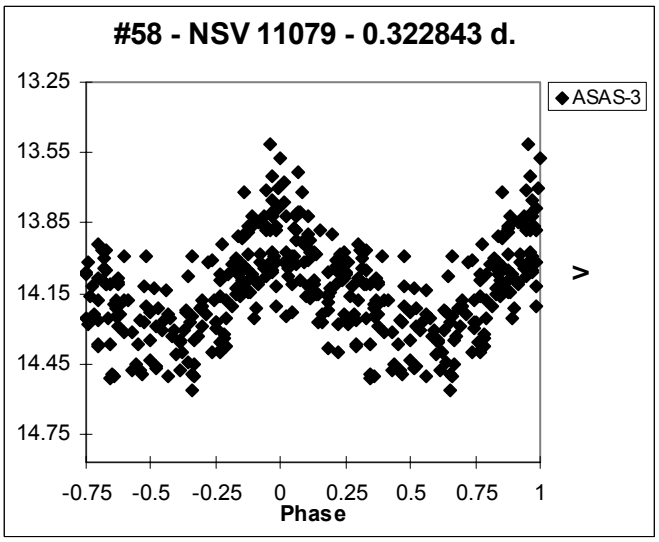

#53 - NSV 10746 - 0.521208 d.
ASAS-3
V
Phase
12.45
12.80
13.15
13.50
13.85
14.20
-0.75 -0.5 -0.25 0 0.25 0.5 0.75 1

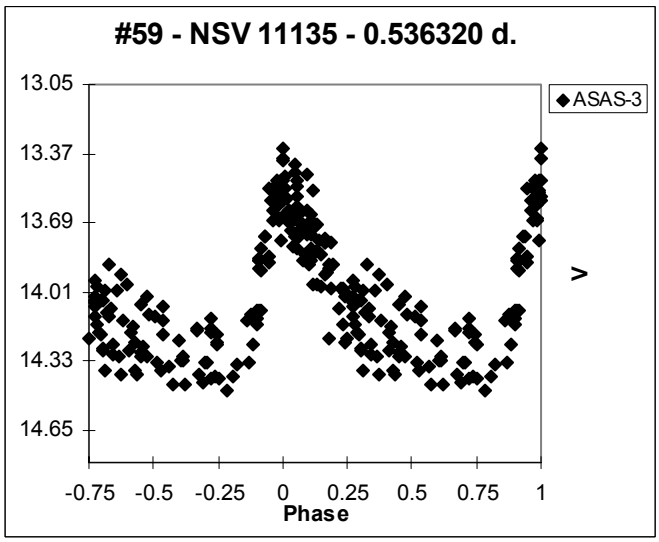

#54 - NSV 10800 - 0.69234 d.
ASAS-3
V
Phase
13.45
13.80
14.15
14.50
14.85
15.20
15.55
-0.75 -0.5 -0.25 0 0.25 0.5 0.75 1

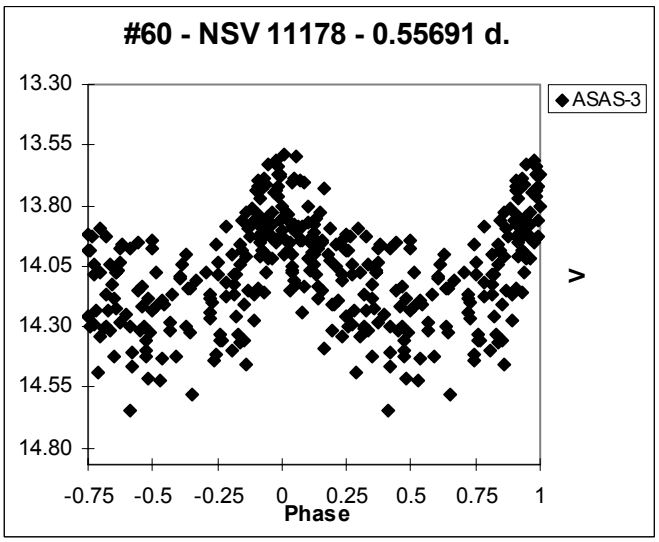

#55 - NSV 10880 - 0.625974 d.
ASAS-3
V
Phase

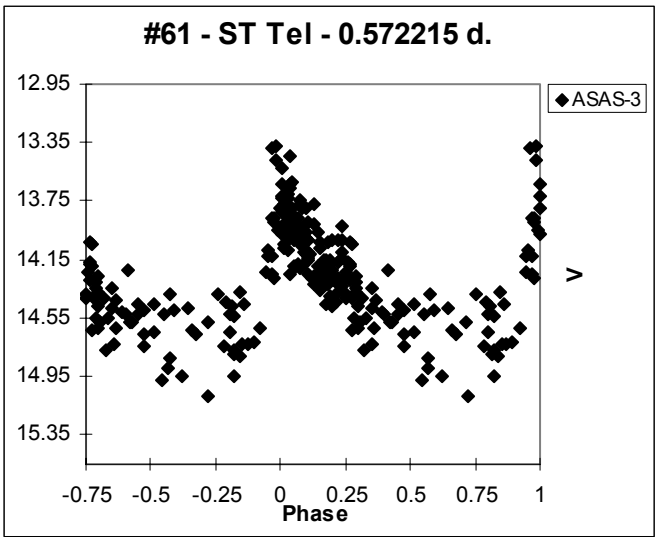

#56 - EU Tel - 0.468999 d.
ASAS-3
V
Phase

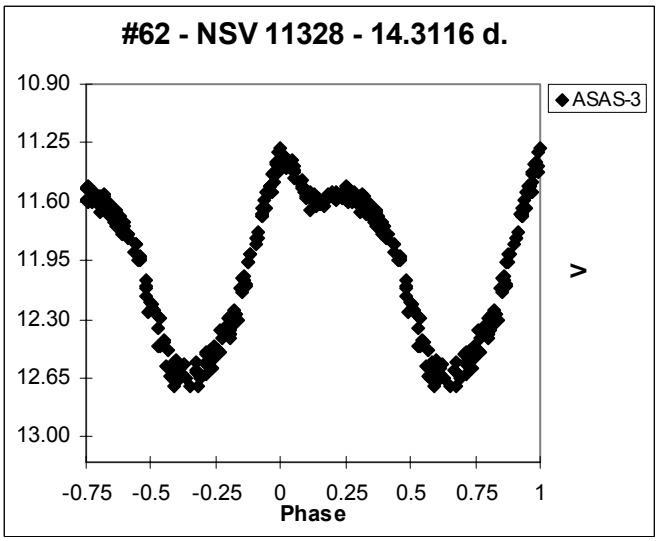

#57 - FI Tel - 0.609128 d.
ASAS-3
V
Phase

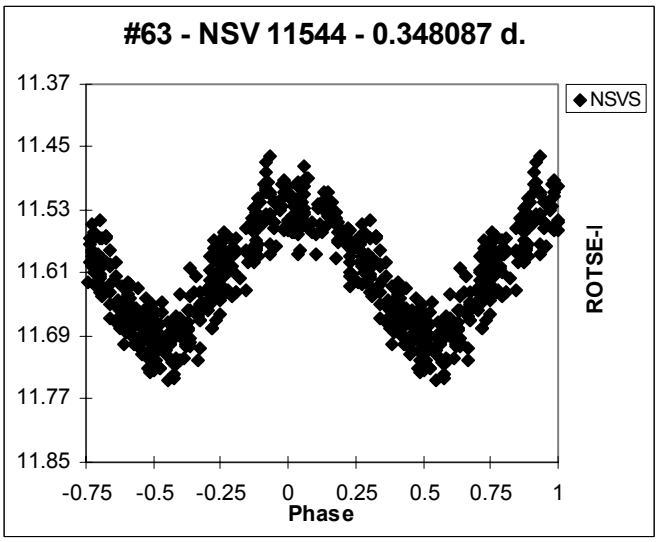

#58 - NSV 11079 - 0.322843 d.
ASAS-3
V
Phase

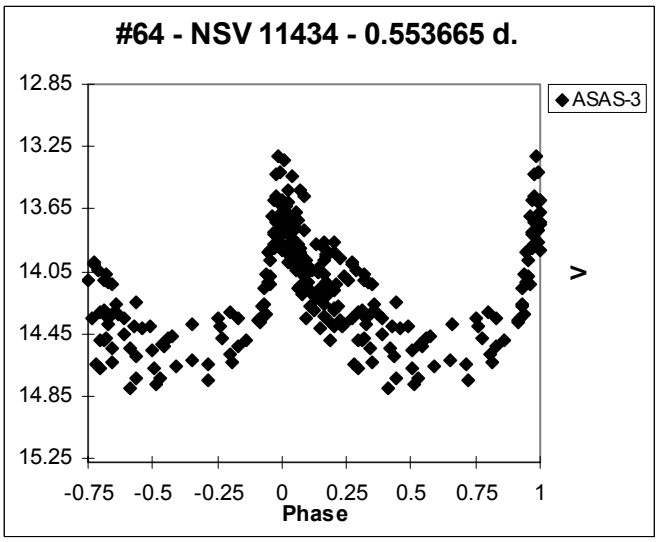

#59 - NSV 11135 - 0.536320 d.
ASAS-3
V
Phase

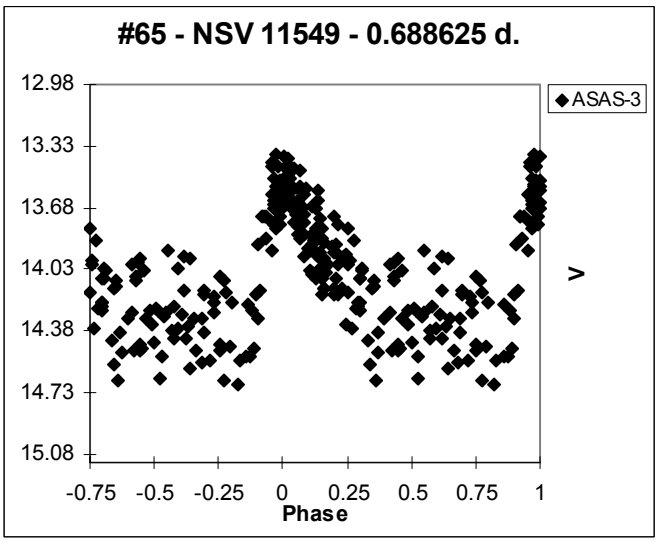

#60 - NSV 11178 - 0.55691 d.
ASAS-3
V
Phase

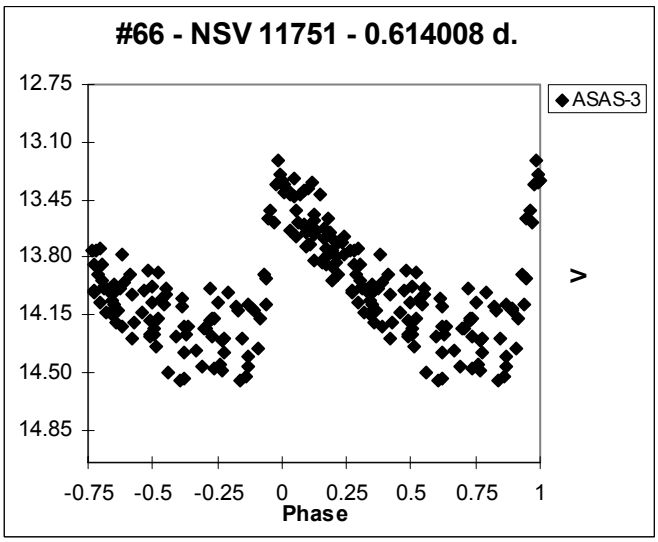

#61 - ST Tel - 0.572215 d.
ASAS-3
V
Phase

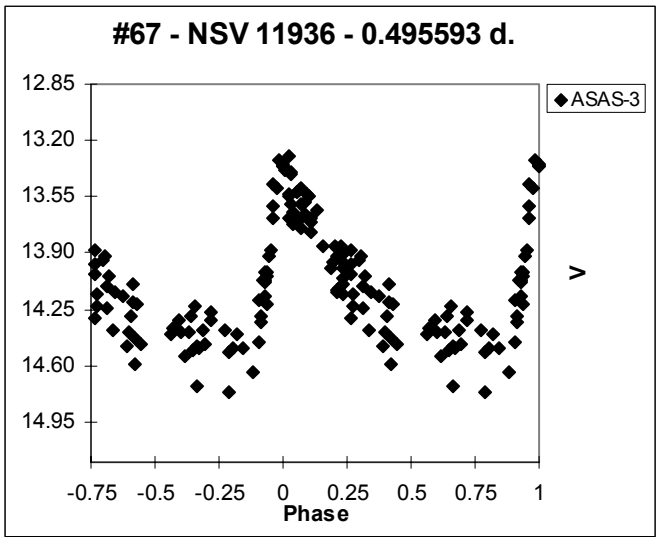

#62 - NSV 11328 - 14.3116 d.
ASAS-3
V
Phase

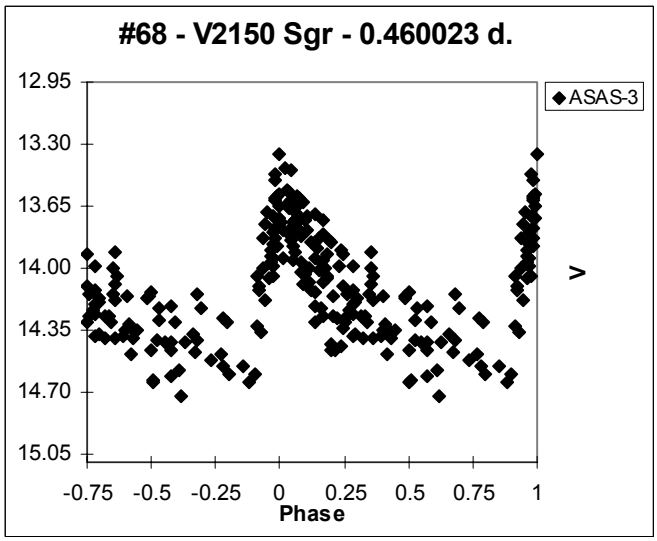

#63 - NSV 11544 - 0.348087 d.
NSVS
ROTSE-I
Phase

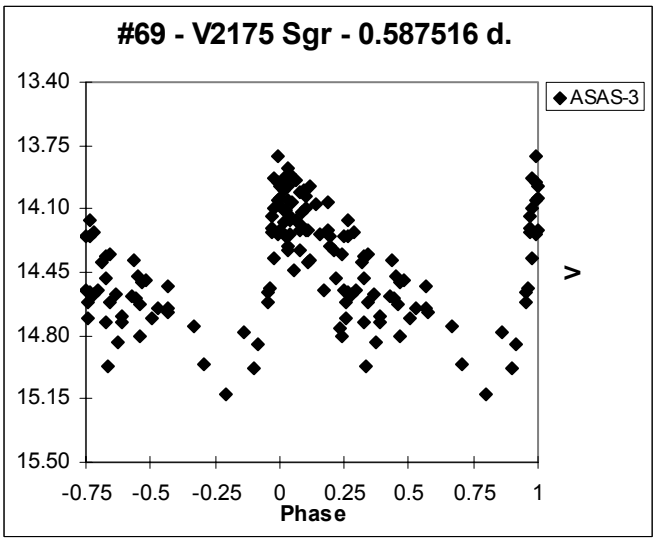

#64 - NSV 11434 - 0.553665 d.
ASAS-3
V
Phase

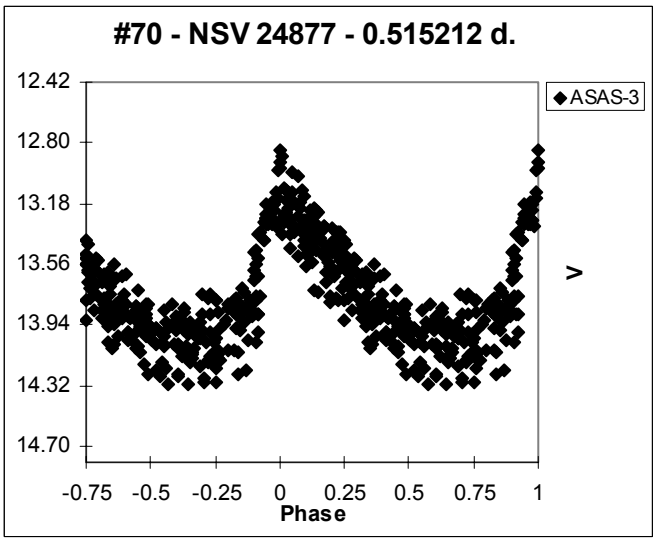

#65 - NSV 11549 - 0.688625 d.
ASAS-3
V
Phase

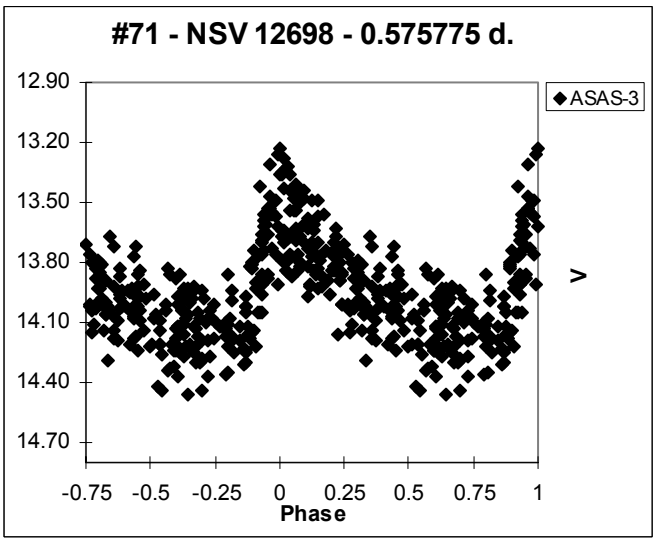

#66 - NSV 11751 - 0.614008 d.
ASAS-3
V
Phase

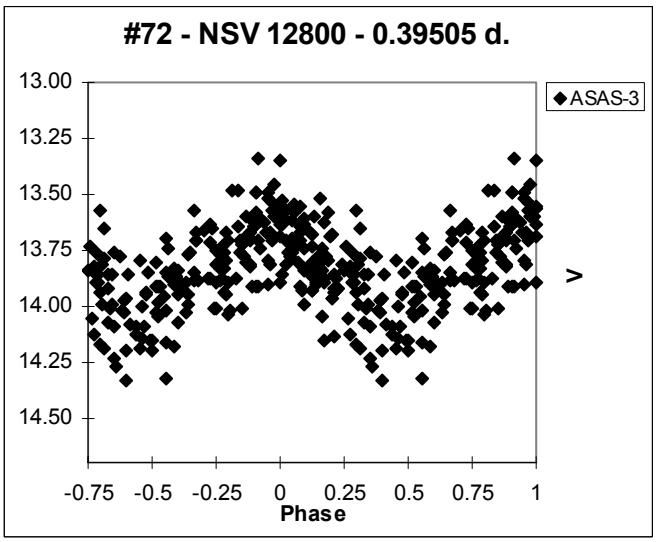

#67 - NSV 11936 - 0.495593 d.
ASAS-3
V
Phase

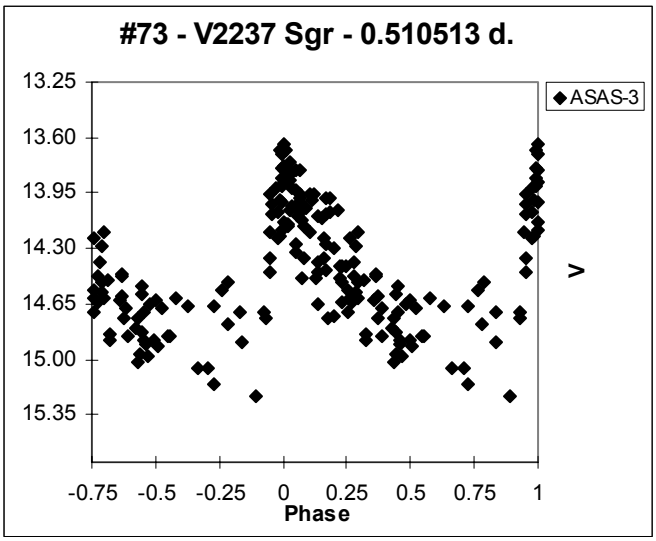

#68 - V2150 Sgr - 0.460023 d.
ASAS-3
V
Phase

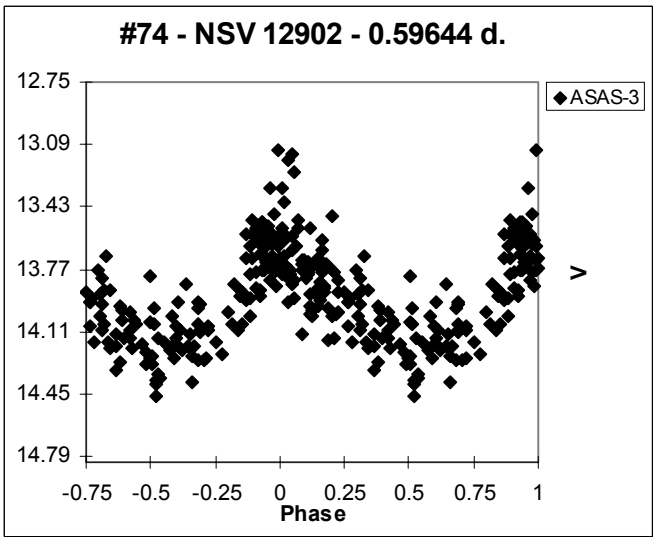

#69 - V2175 Sgr - 0.587516 d.
ASAS-3
V
Phase

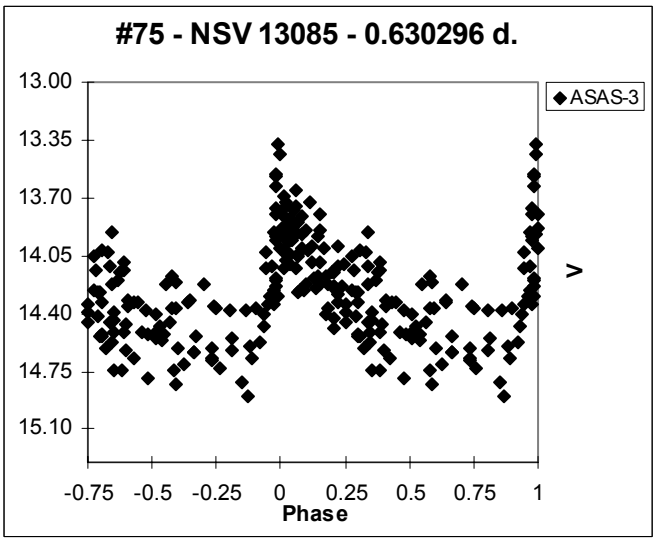

#70 - NSV 24877 - 0.515212 d.
ASAS-3
V
Phase

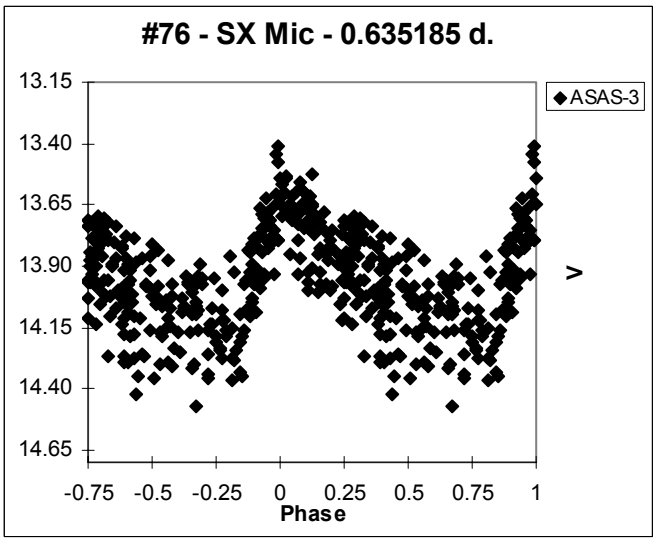

#71 - NSV 12698 - 0.575775 d.
ASAS-3
V
Phase

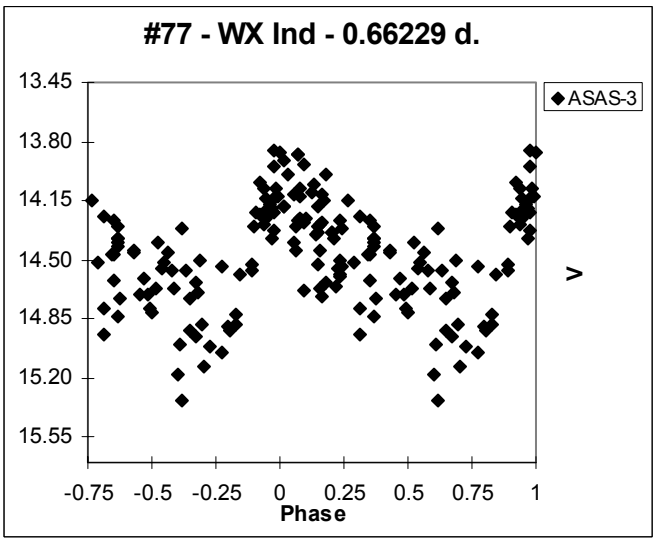

#72 - NSV 12800 - 0.39505 d.
ASAS-3
V
Phase

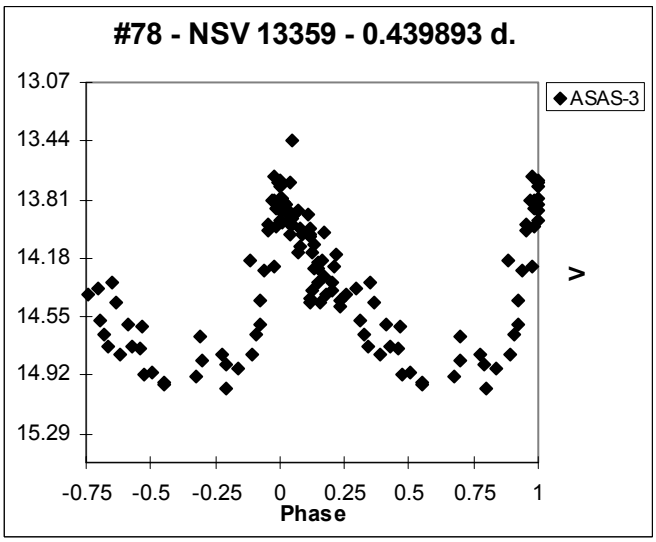

#73 - V2237 Sgr - 0.510513 d.
ASAS-3
V
Phase
13.25
13.60
13.95
14.30
14.65
15.00
15.35
-0.75 -0.5 -0.25 0 0.25 0.5 0.75 1

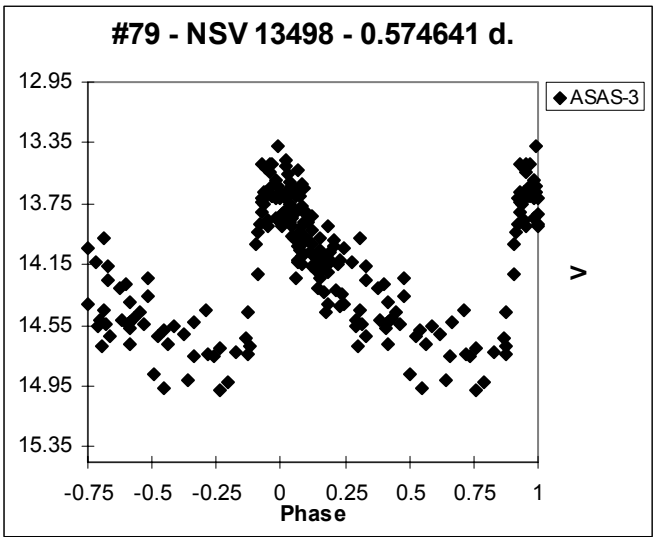

#74 - NSV 12902 - 0.59644 d.
ASAS-3
V
Phase
12.75
13.09
13.43
13.77
14.11
14.45
14.79
-0.75 -0.5 -0.25 0 0.25 0.5 0.75 1

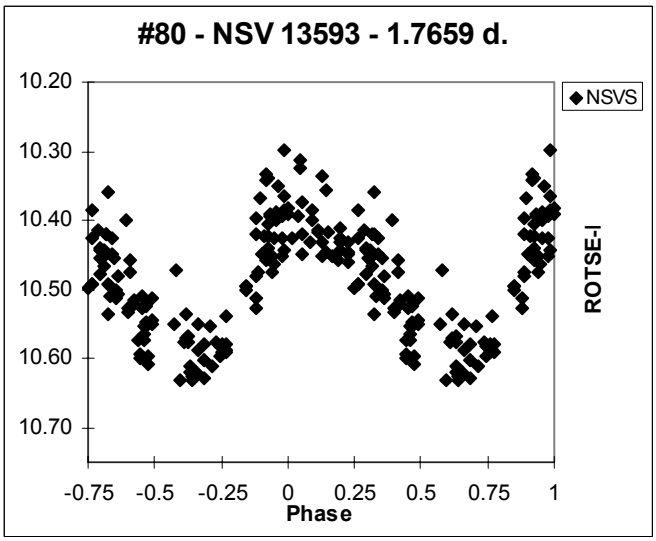

#75 - NSV 13085 - 0.630296 d.
ASAS-3
V
Phase
13.00
13.35
13.70
14.05
14.40
14.75
15.10
-0.75 -0.5 -0.25 0 0.25 0.5 0.75 1

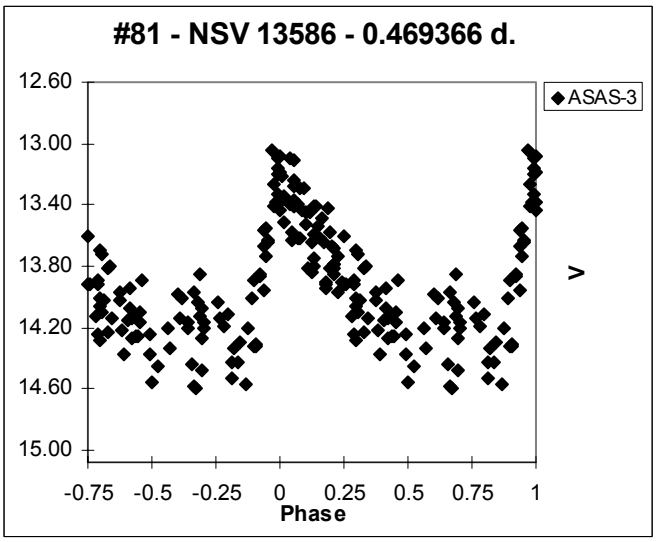

#76 - SX Mic - 0.635185 d.
ASAS-3
V
Phase
13.15
13.40
13.65
13.90
14.15
14.40
14.65
-0.75 -0.5 -0.25 0 0.25 0.5 0.75 1

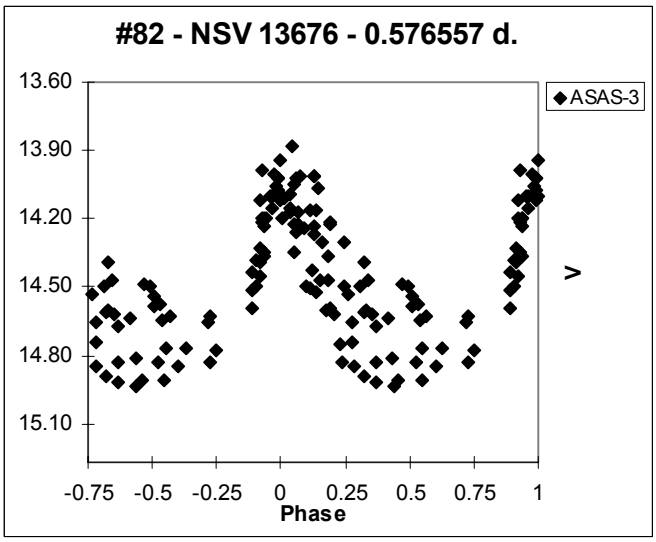

#77 - WX Ind - 0.66229 d.
ASAS-3
V
Phase
13.45
13.80
14.15
14.50
14.85
15.20
15.55
-0.75 -0.5 -0.25 0 0.25 0.5 0.75 1

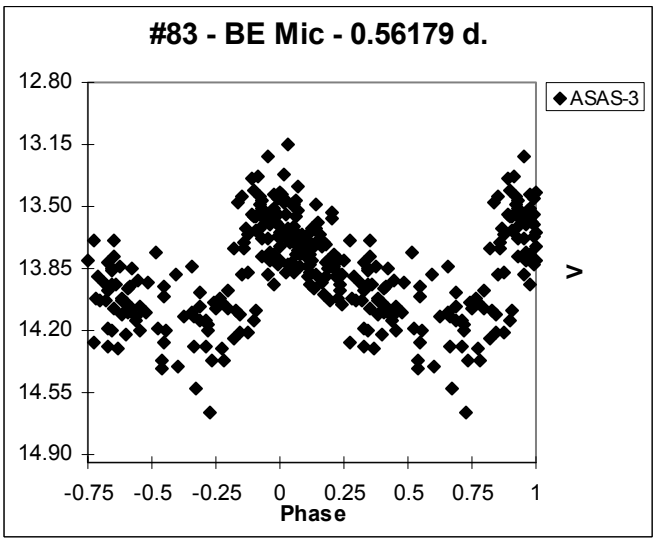

#78 - NSV 13359 - 0.439893 d.
ASAS-3
V
Phase
13.07
13.44
13.81
14.18
14.55
14.92
15.29
-0.75 -0.5 -0.25 0 0.25 0.5 0.75 1

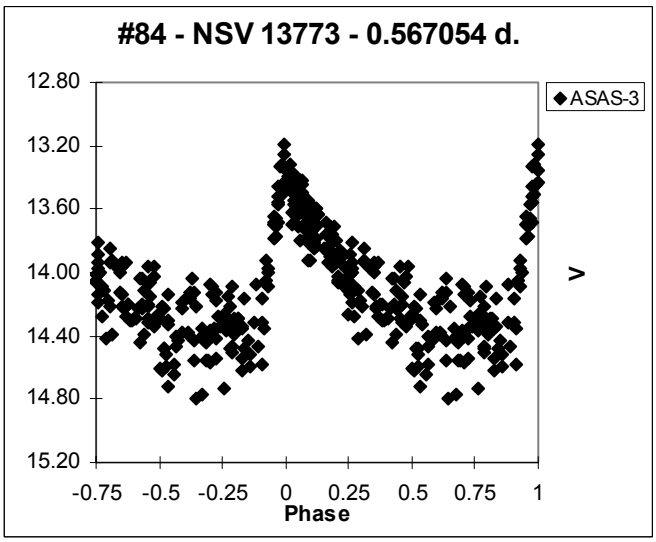

#79 - NSV 13498 - 0.574641 d.
ASAS-3
V
Phase

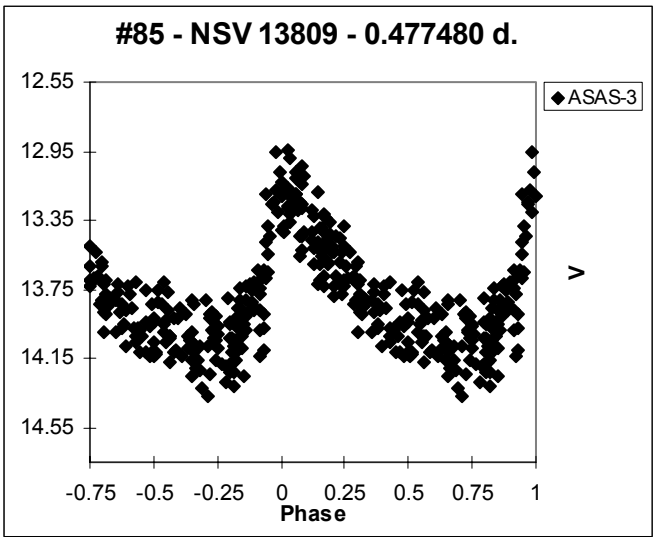

#80 - NSV 13593 - 1.7659 d.
NSVS
ROTSE-I
Phase

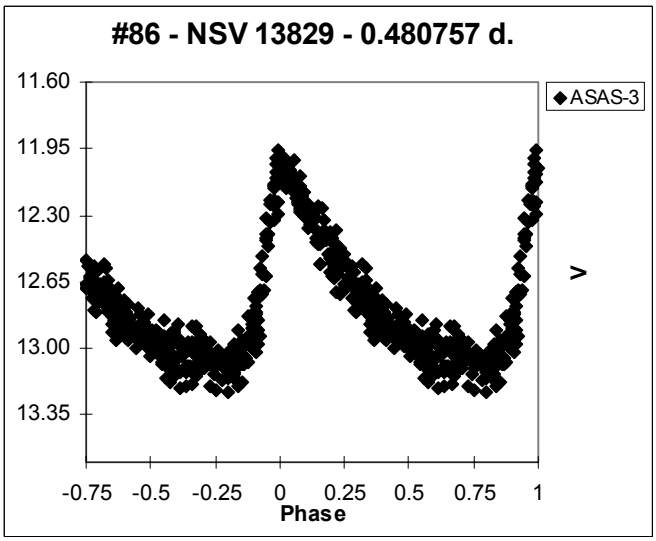

#81 - NSV 13586 - 0.469366 d.
ASAS-3
V
Phase

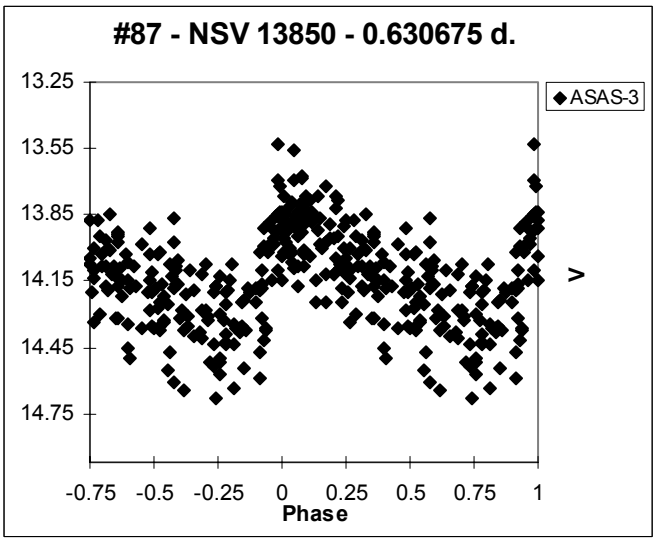

#82 - NSV 13676 - 0.576557 d.
ASAS-3
V
Phase

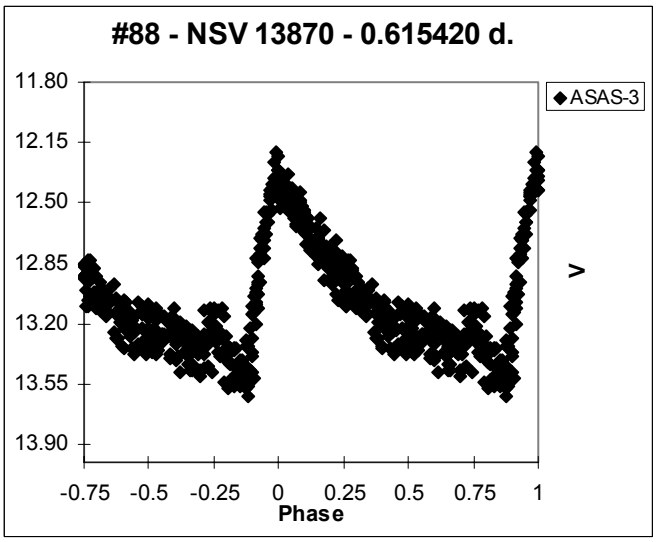

#83 - BE Mic - 0.56179 d.
ASAS-3
V
Phase

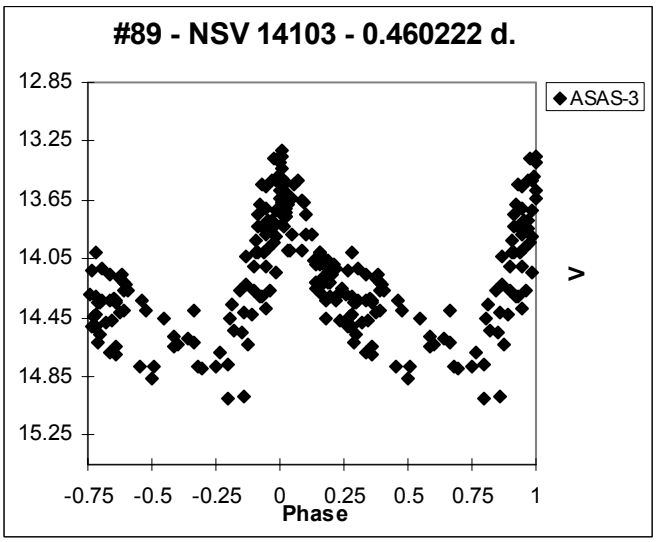

#84 - NSV 13773 - 0.567054 d.
ASAS-3
V
Phase

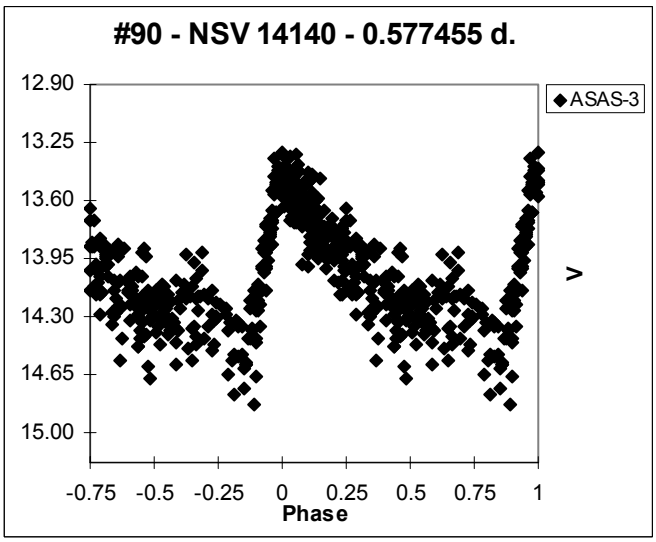

#85 - NSV 13809 - 0.477480 d.
ASAS-3
V
Phase

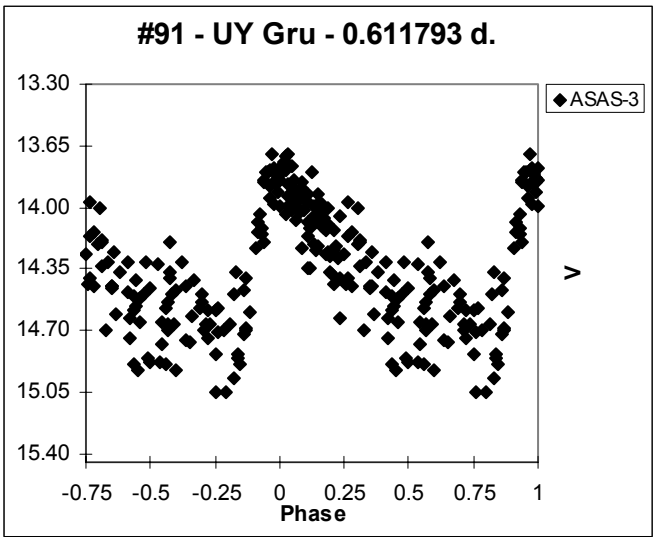

#86 - NSV 13829 - 0.480757 d.
ASAS-3
V
Phase

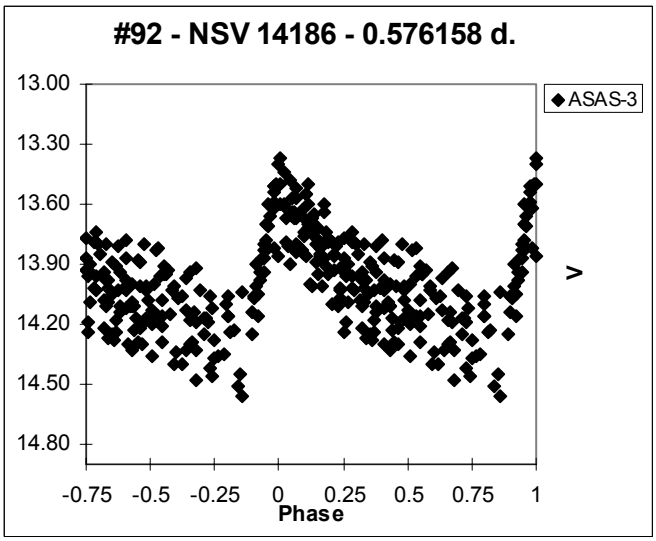

#87 - NSV 13850 - 0.630675 d.
ASAS-3
V
Phase

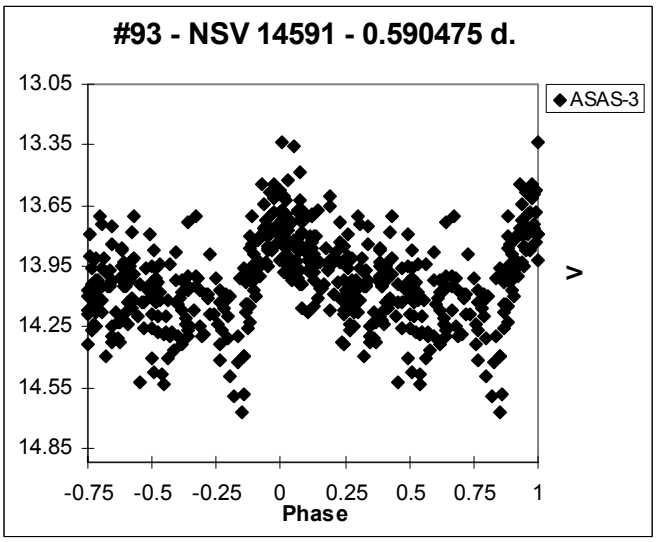

#88 - NSV 13870 - 0.615420 d.
ASAS-3
V
Phase

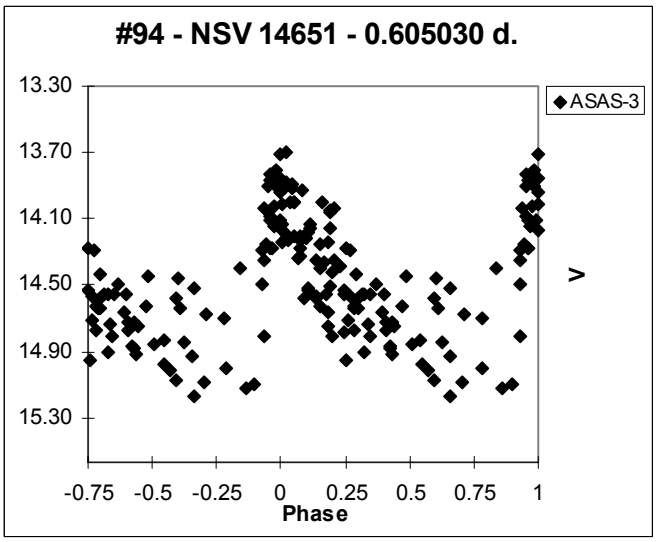

#89 - NSV 14103 - 0.460222 d.
ASAS-3
V
Phase

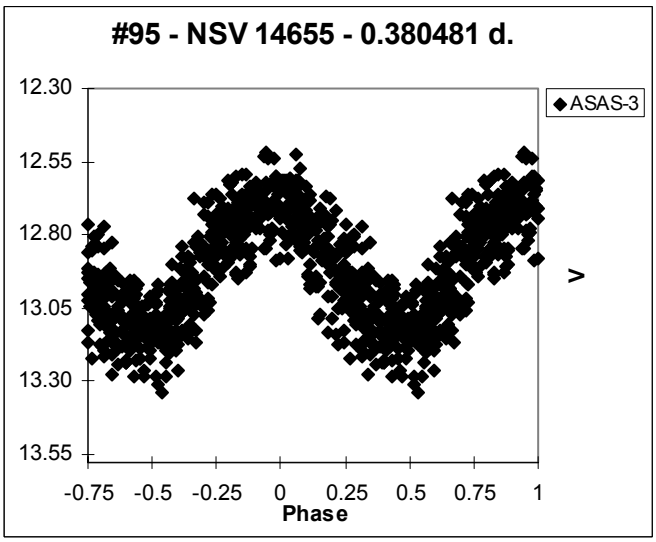

#90 - NSV 14140 - 0.577455 d.
ASAS-3
V
Phase











Notes for individual stars:

#1 - 2MASS position given. According to the finder chart in **Hoffmeister (1964)**, the star is GSC 4619-2241, but the only entry in the area in the NSVS is an RRAB star at the position of GSC 4619-0936. However, the extremely small amplitude

for an RRAB variable (0.25 mag.) indicates that the NSVS entry is a blend of both stars so the identification in the literature is right.
#6 - Noisy data. It could be an RR Lyrae with a period of 0.64272 or 0.39125 d.
#7 - Classified as RRAB in the ASAS catalogue with a wrong period of 0.437316 d.
#9 - Possible very long period Blazhko effect causing light curve modulation and amplitude changes.
#11 - Possible Blazhko effect.
#17 – ROTSE-I amplitude is reduced by light from GSC 7206-1595.
#17 - Uncertain period of 0.4972 d. in the GCVS.
#28 – ROTSE-I amplitude is strongly reduced by light from nearby stars.
#31 - Uncertain period of 0.64 d. in the GCVS.
#39 - Classified as DSCT/DSCTr in the ASAS catalogue with a period of 0.203985 d. Light contamination from GSC 5615-0382. ROTSE-I amplitude is strongly reduced.
#49 - The ASAS entry might be a blend with 2MASS J18000104-5011497. The bluest star was identified as the variable because of a better color match with an RRC-type variable.
#50 - Uncertain period of 0.3180 d. in the GCVS.
#56 - Wrongly identified as GSC 8367-2557 in the GCVS.
#60 - Position in the online GCVS **(Kholopov et al., 2008)** is that of 2MASS J18414193-5502518 which is not the RR Lyrae star.
#61 - Wrongly identified as GSC 8762-0144 in the GCVS.
#63 – It might be ELL at twice the period.
#70 - Spectral type A in the GCVS.
#72 - It might be EW-type.
#74 - Possible Blazhko effect but data are too noisy.
#76 - Uncertain period of 0.676 d. in **van Genderen and Block (1980)**.
#77 - Uncertain period of 0.454 d. in the GCVS.
#80 - It might be DCEPS.
#82 - Spectral type A3: **(Skiff, 2007)**.
#89 - Possible Blazhko effect.
#91 - Spectral type F0 **(Skiff, 2007)**.
#95 - Classified as EC in the ASAS catalogue with a period of 0.76098 d.

Acknowledgements: This research has made use of the SIMBAD and VizieR databases operated at the Centre de Données Astronomiques (Strasbourg).

References:

Barberá, R., 1996, http://www.astrogea.org/soft/ave/aveint.htm

Hoffmeister, C., 1964, AN, 288, 49 (1964AN....288...49H)

Kazarovets, V., Samus, N.N., Durlevich, O.V., 1998, IBVS, No. 4655, New Catalogue of Suspected Variable Stars. Supplement - Version 1.0 (1998IBVS.4655....1K)

Kholopov, P.N. et al., 2008, The combined table of General Catalogue of Variable Stars volumes I-III, 4th ed. (GCVS4) and Namelists of Variable Stars Nos.67-78 (http://www.sai.msu.su/groups/cluster/gcvs/gcvs/new.htm)

Kukarkin, B.V., Kholopov, P.N., 1982, Moscow: Publication Office "Nauka", New Catalogue of Suspected Variable Stars (1982ncsv.book.....K)

Otero, S.A., 2007, Open European Journal on Variable Stars, 59, 1 (2007OEJV...59....1O)

Pojmanski G., 2005, ASAS-3, http://www.astrouw.edu.pl/~gp/asas/asas.html

Skiff, B.A., 2007, Lowell Observatory, General Catalogue of Stellar Spectral Classifications (2007yCat....102023S)

Skrutskie, M. F., et al, 2006, AJ, 131, 1163, The Two Micron All Sky Survey (2MASS) (2006AJ....131.1163S)

van Genderen, A.M., Block, D.L., 1980, A&AS, 39, 199 (1980A&AS...39..199V)

Wozniak, P.R., et al., 2004, AJ, 127, 2436, Northern Sky Variability Survey: Public Data Release (2004AJ....127.2436W)

Zacharias, N., et al., 2005, American Astronomical Society Meeting 205, #48.15; Bulletin of the American Astronomical Society, Vol. 36, p.1418, Naval Observatory Merged Astrometric Dataset (NOMAD) (2004AAS...205.4815Z)