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CONFIRMATION OF VARIABILITY OF FASTT SUSPECTED VARIABLES

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Henden and Stone (1998, 2000) presented two lists of suspected variable stars near the equator. These stars were found as an ancillary project from data obtained by the US Naval Observatory 0.2 m Flagstaff Astrometric Scanning Transit Telescope (FASTT) in support of the Sloan Digital Sky Survey. In the first paper (Henden and Stone, 1998) approximately 1500 newly discovered variables were listed, the second paper (Henden and Stone, 2000) provided 1000 variables (including some stars already on the first list).

In this study we verify the variability of the brighter stars of these lists by data obtained by the ASAS3 survey (Pojmanski, 2002) and the TASS Mk III (Richmond et al., 2000) and Mk IV (Droege, 2003) surveys. All data are publicly available. FASTT stars which are already named in the latest online combined GCVS (Samus and Durlevich, 2003) have not been included. However one exception, FASTT 199 = UV Mon, has been considered because the light curve and the presence of a faint X-ray source suggest it is an EW type eclipsing binary, and not an RR Lyr variable as catalogued in the GCVS.

The confirmed variable stars are presented in Tables 1 and 2. The first column gives the identification of the objects in the FASTT survey. The following columns contain the GSC identification, the position (as given in the original papers), maximum and minimum V magnitude (derived from ASAS3 and TASS), $V - I_c$ colour index (average value from TASS), $J - K_s$ colour index (from the 2MASS survey), an epoch (JD - 2450000) of minimum or maximum (respectively for eclipsing or pulsating stars), the period (in days, found by use of the PDM method, Stellingwerf, 1978) and the type of variability. An asterisk in the first column denotes a remark below the tables. Light curves (ASAS3: filled circles, TASS MkIII: asterisks, TASS MkIV: open squares), links to Simbad and ASAS3 and TASS identifications, are available in the tables of the electronic version of the IBVS.

Table 1. Confirmed variables from the FASTT survey (Henden and Stone, 1998)

Star name		Coordinates (J2000)		V	$V-I_c$	$J-K_s$	Epoch	Period	Type
N ^o	GSC	RA	Dec	[mag]	[mag]	[mag]	-2400000	[day]	
24	4674-0967	00 57 53.84	-00 46 34.8	11.6-12.0	0.59	0.28	1047.86	0.42829	EW
74	0066-0608	03 54 30.23	+01 24 19.2	11.7-12.0	3.41	1.32	-	2.0740	BY:
103	4709-1250	03 28 09.63	-01 18 05.4	11.9-12.5	0.63	0.31	1920.59	1.06426	EB
150	4734-0713	04 31 27.73	-00 43 52.2	12.2-12.8	0.42	0.25	-	0.31755	EW
196*	0165-0962	07 29 36.97	+01 01 41.2	11.8-12.4	2.94	1.30	-	213	SR
199*	0162-3042	07 02 59.91	+00 37 19.3	12.5-13.3	0.60	0.46	2661.72	0.41568	EW
201	0162-0673	07 05 33.38	+00 30 30.6	13.0-13.6	0.63	0.29	2373.53	0.67772	EW
229	0162-0717	07 04 11.01	+00 03 52.0	12.5-13.0	1.02	0.75	-	9.57	RS
297	4817-0087	07 25 18.95	-00 04 59.7	11.6-11.9	0.55	0.26	2605.93	0.64933	EW
310	4815-1795	07 14 55.55	-00 46 14.2	12.6-13.2	0.80	0.36	1869.79	0.50943	EW
350	4816-2928	07 17 10.24	-01 32 14.5	9.7- 9.9	0.04	-0.01	2776.48	6.013	EA
362*	0180-1251	07 51 08.00	+00 56 34.3	12.4-13.8	3.77	1.35	-	260	SRA
365	0181-0485	07 53 30.39	+01 18 52.5	13.1-13.6	0.46	0.27	2759.58	0.53361	EW
367	0181-1576	07 57 06.26	+01 17 19.8	12.8-13.5	0.67	0.38	2390.49	0.36253	EW
376	0195-0857	08 10 44.72	+01 03 30.3	12.9-13.4	0.82	0.53	-	0.63131	EW
379	0195-0658	08 13 01.35	+01 19 41.2	11.2-11.6	0.43	0.28	2213.80	0.93511	EW
380	0196-1325	08 19 20.18	+01 17 59.1	12.6-13.1	0.87	0.53	2652.73	0.31710	EW
381*	0181-0179	07 55 01.04	+00 23 36.7	10.9-11.3	1.67	1.26	-	182	SR
389	0195-1901	08 14 01.08	+00 22 55.5	13.0-13.5	0.49	0.30	2701.66	0.39539	EW
391	0196-0699	08 18 43.49	+00 28 50.7	11.8-12.4	0.61	0.38	2184.87	0.52829	EW
395	0181-0365	07 52 50.39	+00 14 10.0	12.3-12.6	0.57	0.28	2733.63	0.98383	EW
403	0195-1661	08 10 00.91	+00 10 21.8	12.1-13.0	1.22	0.73	2651.80	2.7253	EB
435	4846-0809	08 01 51.18	-00 33 26.3	13.0-13.6	0.55	0.27	2742.61	0.37709	EW
440	4847-0524	08 12 01.77	-00 32 59.8	11.2-11.5	0.38	0.19	2690.69	0.36299	RRc
449	4848-1493	08 15 39.94	-00 56 41.3	12.3-12.6	0.55	0.31	0872.64	0.88309	EW
452	0244-1292	10 06 24.86	+01 00 11.5	12.4-12.8	0.50	0.20	2697.75	0.42886	EW
491	4903-1476	10 09 37.40	-00 56 28.4	11.5-11.8	0.76	0.47	2615.97	0.36805	EW
498	0263-0256	11 12 16.86	+01 19 05.5	10.9-11.6	0.99	0.58	2740.68	0.31158	EW
599	4966-1341	13 38 48.89	-00 09 54.3	12.6-13.2	0.32	0.26	1919.85	0.71560	EW
648*	0337-0421	15 26 10.68	+00 31 56.4	10.8-12.3	2.10	1.16	-	175	SRA
730*	0367-0313	16 11 32.56	+00 31 10.4	10.8-12.0	2.70	1.21	-	145	SRA
734*	0369-0944	16 23 34.86	+00 24 30.0	11.8-12.2	1.43	0.85	-	0.50285	RS:
754	5032-0544	16 01 05.58	-00 13 07.5	12.4-12.9	2.11	1.18	-	-	SR
802*	5035-0723	16 28 32.93	-01 04 29.2	12.1-12.9	2.56	1.21	-	126	SR
823	0416-0831	17 46 32.64	+01 25 19.7	13.1-13.7	2.20	1.28	-	46	SR:
866*	0430-3101	18 03 28.46	+01 16 30.6	11.4-11.8	3.32	1.30	-	57	SR:
872	0430-0866	18 05 11.48	+01 29 55.6	12.7-13.2	0.65	0.27	2178.51	0.60128	EW
931*	0415-1270	17 43 02.89	+00 05 49.9	12.9-13.6	2.29	1.30	-	116	SR
1005	5096-0943	18 06 57.45	-00 24 55.9	12.8-13.7	2.70	1.36	-	67	SRA
1038	5082-0541	17 52 15.58	-00 38 46.1	11.5-12.2	2.34	1.27	-	309	SRA
1056	5083-1361	17 59 59.22	-00 41 13.7	13.0-13.6	2.03	1.07	-	96	SRA
1096	5082-0862	17 51 30.61	-00 51 51.7	13.3-14.0	2.68	1.31	-	82	SR
1142	5083-0810	17 53 14.90	-01 28 54.2	13.2-13.8	2.00	1.19	-	48	SR
1180*	0462-2402	19 02 39.63	+01 29 13.7	12.7-13.9	0.00	1.89	-	279	SR
1195	0449-0455	18 56 59.13	+00 28 11.7	12.2-12.8	0.85	0.32	2885.61	1.53002	EB
1269	5113-1089	18 40 10.12	-00 47 42.4	11.6-12.2	0.76	0.50	2813.78	0.43580	EW/KW
1380*	5115-0110	18 55 20.62	-01 05 31.6	12.3-13.0	4.01	1.56	-	61	SR
1407	-	19 01 56.26	-01 15 06.5	12.6-13.1	0.83	0.33	2562.55	2.2918	EA
1537	5210-0638	21 46 09.98	-01 06 47.8	12.4-13.1	0.80	0.66	2540.65	0.28514	EW
1545	5210-0437	21 46 48.03	-01 32 44.9	12.5-13.0	0.56	0.21	2854.65	1.07369	EA
1552	0568-1328	22 44 10.12	+00 58 53.8	12.4-13.0	0.90	0.54	2443.82	0.28466	EW
1599	5233-0327	22 39 27.29	-01 36 57.4	12.4-13.0	0.27	0.22	2082.85	0.43035	EW

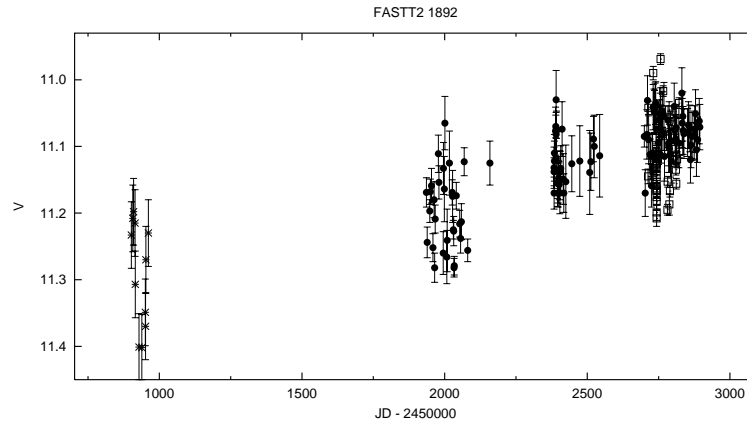


Figure 1. Gradual brightening of FASTT2 1892. Crosses represent TASS MkIII; filled squares TASS MkIV; filled circles ASA3 data.

Table 2. Confirmed variables from the second FASTT survey (Henden and Stone, 2000)

Star name N ^o	Coordinates (J2000)		V [mag]	$V-I_c$ [mag]	$J-K_s$ [mag]	Epoch -2400000	Period [day]	Type
	GSC	RA Dec						
102*	4716-0272	03 31 54.25 -01 38 21.5	11.3-11.7	0.25	0.20	2648.61	0.94264	EA
1891	0366-0196	16 05 25.62 +01 30 45.5	12.6-13.1	0.95	0.58	2742.88	0.27546	EW
1892*	0368-0141	16 22 26.32 +00 07 22.5	11.0-11.2	1.02	0.71	-	-	RS:

Notes on individual stars:

FASTT 196 = IRAS07270+0107

FASTT 199 = UV Mon = 2RXP J070300.3+003717: shows a very strong O'Connell effect.

FASTT 362 = IRAS07485+0104

FASTT 381 = IRAS07524+0031

FASTT 648 = NSV 7075: The full amplitude of this star may be larger, so it may be a Mira variable.

FASTT 730 = IRAS16090+0038

FASTT 734: No eclipses are seen.

FASTT 802 = NSV 7750

FASTT 866 = IRAS18009+0116

FASTT 931 = NSV 9569

FASTT 1180 = IRAS19001+0124

FASTT 1380 = IRAS18527-0109

FASTT2 102: The low amplitude secondary minimum may be slightly displaced from phase 0.5

FASTT2 1892 = 1RXS J162226.6+000721: On top of short period variations, this star shows a slow brightening of about 0.3 mag over the last 5 years, reminiscent of the secular variation due to solar type cycles that some RS CVn stars are known for.

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References:

- Droege, T. F., 2003, <http://www.tass-survey.org>
 Henden, A. A., Stone, R. C, 1998, *AJ*, **115**, 296
 Henden, A. A., Stone, R. C, 2000, *American Astronomical Society Meeting*, **196**, 46.08
 Pojmanski, G., 2000, *Acta Astronomica*, **50**, 177
 Pojmanski, G., 2002, *Acta Astronomica*, **52**, 397
 Richmond, M. W., Droege, T. F., Gombert, G., Gutzwiller, M., Henden, A. A., Albertson, C., Beser, N., Molhant, N., Johnson, H., 2000, *PASP*, **112**, 397
 Samus, N. N., Durlevich, O. V., 2003,
<http://www.sai.msu.su/groups/cluster/gcvs/gcvs/iii/>
 Stellingwerf, R. F., 1978, *ApJ*, **224**, 953

ERRATA FOR IBVS 5458

Geert Hoogeveen reported the following errors:

IBVS No.	item	printed	correct
5458	identifier (FASTT 1195)	GSC 0449-0455	GSC 0449-0456
5458	Epoch column header	2400000	2450000