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CONFIRMATION OF VARIABILITY OF BIDELMAN-MACCONNELL SUSPECTED VARIABLES

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Bidelman and MacConnell (1973, hereafter BM) gave a number of lists of remarkable southern hemisphere stars, among which a list of 311 stars, selected on the presence of $H\gamma$ or $H\delta$ emission lines in their spectrum on top of an M type continuum. A large number of these stars were known or have been found to be Mira or semi-regular variables. The remaining 60 stars from the list (6 of which were suspected in variability by other sources as well) were catalogued in the NSV, as suspected Mira variables. Positions were given with an accuracy of $0\overset{\mathrm{m}}{.}1$ in RA and $1'$ in declination. Most of the known variable stars were found within $4'$ radius, though three had large errors of up to 1° due to typographical errors.

This study will give more accurate positions for the NSV stars from the BM paper. Identifications were made based on either the presence of an IRAS source or a bright red star in the 2MASS survey ($J < 9$, $J - K_s > 1$), and in addition, on the variability shown by the publicly available data of the ASAS3 (Pojmanski, 2002) and the TASS (Richmond et al., 2000; Droege, 2003) surveys. The latter could only be used for stars near the equator.

In some cases, no obvious identification could be made in the close vicinity of the given positions. This may be due to a typographical error in the BM paper.

The positively identified variable stars are given in Table 1, while proposed but less certain identifications, with no candidate within a distance of $4'$ from the BM position, are given in Table 2. Probably the only way to verify the latter will be by the original plates. The first column of both tables gives the NSV number of the variable star. The following columns contain the IRAS identification if present, the position of the star as found from the 2MASS survey, maximum and minimum V magnitude (derived from the ASAS3 survey), the $J-K_s$ colour index (from the 2MASS survey), an epoch of maximum (JD – 2400000), the period (in days, found by use of the PDM method, Stellingwerf, 1978) and the type of variability as derived from the light curve (with "SR:" indicating that the star may be either a semi-regular or irregular variable). An asterisk in the first column indicates a comment below the table. 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.

Note that the given periods may not be very accurate, as in some cases only (part of) two cycles have been observed, and that the minimum magnitude may be fainter, as the minimum itself could not always be observed by ASAS3.

Table 1. Identifications for the BM variables

Star name		Coordinates (J2000)		V	$J-K_s$	Epoch	Period	Type
NSV	IRAS	RA	Dec	[mag]	[mag]	−2400000	[day]	
1043	03038-5229	03 05 21.31	−52 18 04.6	10.0−10.9	1.31			SR
3033	06325-6333	06 32 49.58	−63 35 49.8	11.7−15.7	1.26	52763	201	M
3245	–	06 50 54.86	−37 29 23.0	12.4−15.2	1.49	52566	148:	M
3286	06534-3603	06 55 12.44	−36 07 09.9	11.5−14.2	1.24	52628	286	M
3513	07152-3444	07 17 05.76	−34 49 39.7	11.6−14.6	1.82	52745	302	M
3539	07178-1925	07 20 04.06	−19 30 45.3	9.5−10.0	1.24	52702	274	SRA
3840	07569-2217	07 59 08.97	−22 26 12.3	11.5−13.9	1.75	52400	420	M
3873	08003-4838	08 01 49.42	−48 46 55.7	11.0−14.5	1.41	52254	317	M
3966	08133-0141	08 15 52.43	−01 50 49.3	12.0−14.2	1.40	52390		M
4052	08211-6047	08 22 03.68	−60 57 12.7	10.6−15.0	1.34	51875	206	M
4082*	08239-0307	08 26 26.81	−03 17 43.7	10.9−14.1	1.30	52776	313	M
4116	08286-3110	08 30 39.15	−31 20 26.3	13.3−14.4	1.86	52819		SR:
4574*	–	09 39 46.31	−41 04 03.0	10.7	0.85			BY:
4583*	09396-7419	09 39 55.10	−74 32 42.6	10.3−14.2	1.28	52192	185	M
4775	10092-5733	10 11 02.95	−57 48 13.9	9.6− 9.9	1.24	51953		SR:
5003	10508-4121	10 53 07.92	−41 37 27.7	11.4−14.8	1.43	52717	188	M
5271	F11348-5013	11 37 17.62	−50 30 23.2	10.7−11.9	1.11	52411	82	SRA
5273	11352-4347	11 37 43.22	−44 04 31.1	10.4−14.3	1.29	51906	240	M
5295	11390-7213	11 41 19.52	−72 30 38.5	11.0−14.4	1.67	52239	199	M
5924*	12428-4723	12 45 40.41	−47 40 04.6	12.0−14.8	1.31	52878	270	M
6040*	12559-4214	12 58 44.70	−42 30 42.5	10.4−11.7	1.44	52820	337	M
6071	13005-1547	13 03 10.64	−16 03 20.3	9.5−15.1	1.27	51995	253	M
6160*	13131-3644	13 16 01.38	−37 00 10.7	10.4−10.9	1.23	51886	101:	SR:
6288	13285-7556	13 32 52.52	−76 12 22.5	11.1−14.0	1.23	52731	166	M
6400	F13399-4821	13 43 01.28	−48 36 21.9	11.7−13.8	1.38	52724	248:	M:
6404	13408-1734	13 43 33.97	−17 49 37.6	9.3−11.1	1.38	52469	200	SRA
6453*	13464-4611	13 49 32.16	−46 26 10.6	10.6−11.4	1.62	52662	347:	M:
6494	13531-3014	13 55 58.21	−30 29 36.0	9.6−10.4	1.28	52893		SRB
6700	14303-1042	14 32 59.89	−10 56 03.6	11.8−14.9	1.54	52851	380:	M
6856	14530-2630	14 56 01.64	−26 42 38.5	12.4−15.5	1.40	52393	266	M
6929	15035-6953	15 08 19.97	−70 04 34.8	10.9−14.0	1.34	52786	314	M
7075	F15236+0042	15 26 10.69	+00 31 56.5	10.8−12.9	1.16	52765	170	SRA
7190*	15379-6529	15 42 25.72	−65 39 08.8	10.4−11.2	0.90	52713	247	SRA
7458	16046-2637	16 07 42.66	−26 45 08.0	11.2−13.1	1.26	52761	185	M
7884	16367-2046	16 39 41.39	−20 52 38.8	10.3−11.3	1.50	52388	281	SR
8761	–	17 29 25.10	−51 10 22.8	11.2−14.7	1.34	52406	186	M
8952	17273+0132	17 29 51.44	+01 29 46.1	10.1−11.9	1.20	52473	109	SRA
10943	18285-4439	18 32 13.89	−44 37 01.5	11.4−13.5	1.54	52546	320	M
10964	–	18 32 09.58	−29 55 46.9	11.0−13.2	1.23	52025	162	M
11320*	18435-4741	18 47 20.56	−47 38 05.6	10.5−13.0	1.61	52122	380	M
11330	–	18 47 21.78	−31 07 47.6	13.3−15.2	1.27	52088	191	M
11475	18508-2225	18 53 52.84	−22 22 03.9	11.8−14.6	1.79	52757	123	M
12041*	19249-2142	19 27 53.58	−21 35 52.6		1.39			?
12190	19335-2841	19 36 40.49	−28 35 04.1	11.8−15.1	1.45	52775	377	M
12294	19390-2853	19 42 08.96	−28 46 11.1	11.7−14.7	1.30	52812	216	M
12305	19395-2213	19 42 30.99	−22 06 11.9	11.3−15.0	1.44	52510	278	M
12313	–	19 42 25.86	−10 58 18.3	10.1−12.2	1.24	51996	157	SR
12652	19570-2306	19 59 58.04	−22 58 14.7	11.3−15.4	1.45	52757	284	M
13090	–	20 27 29.17	−30 48 37.3	12.6−15.0	1.34	52156	230	M
13131	20302-2350	20 33 10.51	−23 40 11.3	10.8−12.6	1.40	52156	242	SRA
13344	20480-3505	20 51 09.04	−34 53 53.3	11.1−15.3	1.27	52816	233	M
14283*	22403-4147	22 43 11.54	−41 31 58.3	9.9−14.4	1.30	52211	264	M

Table 2. Suggested identification for some BM variables

Star name		Coordinates (J2000)		V	$J-K_s$	Epoch	Period	Type
NSV	IRAS	RA	Dec	[mag]	[mag]	−2400000	[day]	
3357*	–	07 03 11.05	−24 51 05.7	11.8−12.1	1.32			SR
3611*	07229-8440	07 14 09.41	−84 45 47.0	10.8−14.8	1.15	52226	199	M
4314*	08536-6239	08 54 35.43	−62 50 37.3	13.1−13.8	1.45			SR
7500*	16077-6628	16 12 34.86	−66 36 35.9	10.5−13.0	1.29	52491	259	M
9654*	17444-5843	17 48 53.48	−58 44 43.1	8.4−14.7	1.26	52142	287	M
10851*	18255-1547	18 28 26.77	−15 45 17.5	10.0−10.3	1.45	52755	64	SRA
11632*	–	19 00 35.66	−16 25 22.9	11.8	1.15			Cst?
13567*	21070-4902	21 10 31.25	−48 49 59.2	11.0−12.4	1.42	52761	202	SRA

Notes on individual stars:
NSV 3357: 5′ from BM position
NSV 3611: 6′ from BM position
NSV 4082: See also Wils (2003)
NSV 4314: 8′ from BM position
NSV 4574 = Gliese 358 = LHS2166 = 1RXS J093945.7-410405: Long wave of 0.1 mag amplitude.
NSV 4583 = NSV 4586 = BV 1054. Large variation between cycles.
NSV 4775 = 2RXP J101103.0-574810 ?
NSV 5924: Position from Kato (1999)
NSV 6040: Component of close double, not separated by ASAS3. Fairly large range of magnitude at maximum.
NSV 6160 = V1044 Cen (ZAnd type)
NSV 6453: Component of close double, not separated by ASAS3.
NSV 7190: Position from Morel (1994). The flat bottomed minimum may be an indication for a close companion. There is however no indication of duplicity on NOFS images, nor in the 2MASS survey.
NSV 7500 = TbrV0117 (Tabur, 2003), 6′ from BM position
NSV 9654 = RZ Pav, 8′ from BM position
NSV 10851: 8′ from BM position
NSV 11320 = NSV11324 = BV1449
NSV 11632: 9′ from BM position , no other obvious candidate present.
NSV 12041: Position from Yamaoka (2000). No ASAS3 data available.
NSV 13567 = TbrV0117 (Tabur, 2003), 6′ from BM position
NSV 14283: Position from Demartino et al. (1996)

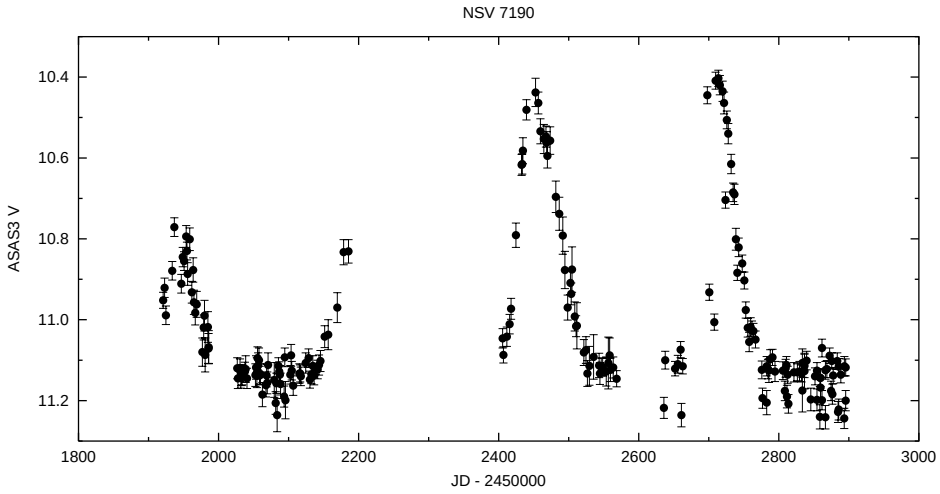

Figure 1. Light curve of NSV 7190 from ASAS3 data (Pojmanski, 2002).

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[1] `http://www.tass-survey.org`
[2] `http://archive.princeton.edu/~asas/`