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NEED OF PLANNED OBSERVATIONS OF MAGNETIC STARS

To evaluate the reliability of each class of models invoked to interpret the behaviour of magnetic stars, the variation curves of magnetic field intensity, radial velocity and brightness are needed (Blanco et al. 1972).

At present about 400 stars are considered magnetic or suspected magnetic. Among these, Zeeman measurements are available for 128 stars. These stars are listed in Table I if, at least for a Zeeman measurement, the probable error is less than one third of the measure itself, otherwise they are listed in Table II. In both tables the types of available observations, for which periodic curves do exist, are indicated as follows:

H = magnetic field intensity curves

V_r = radial velocity curves

l = photometric curves

W_λ = spectral line intensity curves

An asterisk in the l column denotes the stars being photoelectrically observed at the Catania Observatory.

From Table I it is evident that only for a few stars magnetic field intensity, radial velocity and brightness curves are available; furthermore the various kinds of observations have been carried out at very different epochs. In the present conditions any attempt to evaluate the reliability of the available models seems to be extremely precarious.

The need of an international planning in the field of magnetic star observations (simultaneous magnetic field intensity and brightness observations) is evident.

Osservatorio Astrofisico
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C. BLANCO, F.A. CATALANO,
G. GODOLI and S. VACCARI

Table I

	Star	other designations	S _p	Available periodic curves
1	HD 2453		A1p	*
2	4174	EG And	gM2ep	1
3	8441		A2p	H V _r 1
4	9996	HR 465	AOp	H V _r 1 Wλ
5	10221	HR 478=43 Cas	AOp	
6	10783	UZ Psc	A2p	H V _r 1
7	11187		AOp	
8	15144	HR 710	A4p	H V _r 1
9	18296	HR 873=21 Per=LTPer	AOp	H V _r 1 Wλ
10	19445		A8p	
11	20210	HR 976	A6pm	V _r
12	22374	9 Tau	A1p	
13	22649	HR 1105	S5	
14	24712	HR 1217	A8p	H Wλ
15	25354		AOp	H V _r 1
16	25823	HR1268=41 Tau=GS Tau	AOp	H V _r 1
17	27962	HR1389=68 Tau	A2IVm	
18	30466		AOp	V _r 1
19	32633	HZ Aur	B9p	H V _r 1
20	33254	HR 1672=16h Ori	A2-F2m	V _r
21	33904	HR 1702=5μ Lep	B9p	
22	42474	WY Gem	M3ep(+B3)	
23	42616		A2p	
24	49976	HR 2534	AOp	
25	50169		A4p	
26	53791	HR 2671=R Gem	S3e	1
27	62140	HR 2977=49 Cam	gFOp	
28	63700	HR 3045=7 ξ Pup	GOI-G3Ib	
29	64486	HR 3082	AOp	
30	65339	HR 3109=53 Cam=AX Cam	A3p	H V _r 1
31	71866	TZ Lyn	AOp	H 1
32	72968	HR 3398=3 Hya	A2pm	H 1*
33	74521	HR 3465=49 Cnc	A1p	H V _r 1
34	77350	HR 3595=69νCnc	B9p	
35	78316	HR 3623=76K Cnc	B8p	H V _r 1
36	81009	HR 3724	A2	V _r
37	89822	HR 4072	AOp	V _r *
38	90569	HR 4101=45 Leo	A1p	
39	98088	HR 4369	A9p	H V _r *
40	108662	HR 4752=17 Com=AI Com	AOp	H V _r 1
41	110066	HR 4816	A3p	
42	110073	HR 4817=1 Cen	B8p	
43	110380-79	HR 4826=29 γ ¹ Vir	FOV	
44	111133	HR 4854	A2p	H V _r 1 Wλ
45	112413	HR 4915=12α ² CVn	AOp	H V _r 1 Wλ

Table I (cont.)

Star	other designations	S _p	Available periodic curves
46	HD 115708	A2p	
47	118022 HR 5105=78 Vir=CW Vir	A2p	H V _r 1
48	125248 HR 5355=CS Vir	A1p	H V _r 1 Wλ
49	126515	A2p	H *
50	129174 HR 5475=29 π ¹ Boo	B9p	Wλ
51	130559 HR 5523=7μ Lib	A1p	
52	133029 HR 5597	AOp	H
53	134793	A3p	*
54	135297	AOp	
55	137909 HR 5747=3βCrB	A9p	H V _r 1
56	137949 33 ζ ² Lib	FOp	H *
57	143807 HR 5971=14ιCrB	AOp	
58	149911 HR 6179	AOp	*
59	152107 HR 6254=52 Her	A3p	
60	153286	A2-Fpm	
61	153882 HR 6326=V451 Her	A3p	H V _r 1
62	165474 HR 6758	A6p+AO	
63	171586	A2p	
64	173524 HR 7049=46 Dra	AO	V _r
65	173650 HR 7058=V535 Her	AOp	H V _r 1
66	174933 HR 7113=112 Her	B9II-III	H V _r 1
67	176232 HR 7167=10 Aql	A4p	H V _r 1
68	179761 HR 7287=21 Aql	B8p	1
69	182989 RR Lyr	A3-F1	H V _r 1
70	184552 HR 7431 51h ¹ Sgr	A3-F5m	V _r
71	187474 HR 7552	AOp	H
72	188041 HR 7575	A6p	H V _r 1
73	191742	A6p	
74	192913	AOp	
75	196502 HR 7879=73 Dra=AF Dra	A2p	H V _r 1 Wλ
76	201601 HR 8097=5γ Equ	A9p	H V _r 1
77	203006 HR 8151=θ ¹ Mic	A2p	1
78	204075 HR 8204=34ζCap	G4-5p	
79	207757 AG Peg	WN6+M1-3II-III	
80	208816 HR 8383= VV Cep	M2Iaep+B9p	V _r 1
81	215038 GQ Cep	AOp	1
82	215441 GL Lac	AOp	H V _r 1
83	216386 HR 8698=73λAqr	M2III	
84	221507 HR 8937=β Scl	B9p	
85	224801 HR 9080=CG And	AOp	1

Table II

	Star	other designations	spectral type	available periodic curves
1	HD 358A	HR 15=21 α And= δ Peg	B9p	V _r 1
2	4778	HR 234	AOp	1
3	5797		AO	
4	12288		AOp	
5	18078		AOp	
6	20283	HR 979 B	AOp	
7	25267	HR 1240= 36 τ Eri	AOp	V _r
8	27376	HR 1347= 41 Eri	B8.5V	V _r
9	29139	HR 1457= 87 α Tau	K5III	1
10	34452	HR 1732= IQ Aur	B9p	1 W _{λ}
11	40312	HR 2095= 37 θ Aur	B9.5p	
12	43819	HR 2258	B9p	
13	45677		B2pe	
14	56495		A3pm	
15	60414,5	HR 2902= KQ Pup	M2Iabpe+Be	
16	62509	HR 2990= 78 β Gem	KOIII	
17	68351	HR 3215= 15 Cnc= ψ Gem	AOp	1
18	84367	HR 3871= θ Ant	F7V	
19	89069		AOp	
20	96707	HR 4330	A5p	
21	107168	HR 4685= 8 Com	A6m	
22	108651	HR 4751= 17 Com B	A4m	
23	112185	HR 4905= 77 ϵ UMa	AOp	V _r 1 W _{λ}
24		BD+46 ^o 1913	Apm	
25	137389	HR 5731	AOp	
26	147550	HR 6096	B9p	
27	148898	HR 6153= 9 Oph	A7p	
28	151525	HR 6234= 45 l Her	AOp	
29	176155	HR 7165= FF Aql	F5-F9	V _r 1
30	184905		AOp	1
31	189849	HR 7653= 15 Vul	Am	V _r
32	190073		AOep	
33	192678		A3p	1
34	194093	HR 7796= 37 γ Cyg	F8Ib	
35	335238	BD+29 ^o 4202	Ap	
36	204411	HR 8216	Ap	
37	207840	HR 8348	B6Vp	
38	208095	HR 8357B	AOp	V _r
39	216533		A2p	
40	220825	HR 8911= 8 κ Psc	A2p	1
41	221568	V 436 Cas	AO	1
42	221760	HR 8949= ι Phe	A2p	1
43	223640	HR 9031= 108 ι ³ Aqr	AOp	1

References

Blanco, C., Catalano, F.A., Godoli, G., Vaccari, S. 1972, Ricerche sulle stelle magnetiche in Giornate di Studio dedicate al Prof. F. Zagar, Milano.