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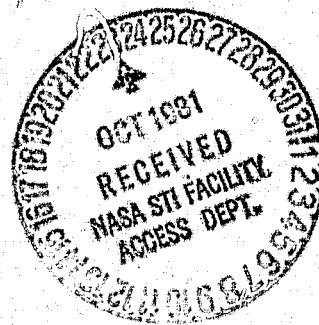


National Space Science Data Center/
World Data Center A For Rockets and Satellites

81-02

Documentation
For The Machine-Readable Version
of The Thirteen-Color Photometry
of 1380 Bright Stars

March 1981



DOCUMENTATION FOR THE MACHINE-READABLE
VERSION OF THE THIRTEEN-COLOR PHOTOMETRY
OF 1380 BRIGHT STARS

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March 1981

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SECTION 1 - INTRODUCTION

The Catalogue of Thirteen-Color Photometry of 1380 Bright Stars contains final data on the 13-color medium-narrow-band photometric system, as published by Johnson and Mitchell (1975). Observations of essentially all stars brighter than fifth visual magnitude north of $\delta = -20^\circ$ and brighter than fourth visual magnitude south of $\delta = -20^\circ$ are included.

This document describes the magnetic tape version of the above catalogue. It is intended to enable users to read and process the tape without the common difficulties and uncertainties. It should be distributed along with any unmodified machine-readable version of the catalogue.

SECTION 2 - TAPE CONTENTS

A byte-by-byte description of the contents of the tape catalogue is given in Table 1. A suggested format specification for reading each datum is given in the final column, but can be modified depending upon usage. Although real format specifications are given for magnitude and color-index data in order to indicate the location of decimal points, these data should be read initially with A (character) format specifications or buffered in because the data fields are blank for missing data.

Table 1. Tape Contents. Thirteen-Color Photometry of 1380 Bright Stars

Byte(s)	Description	Suggested Format
1- 7	CDS Strasbourg identification number	
	1- 4 Catalogue identification	I4
	5 Catalogue file (A=1, B=2, ...)	A1
	6- 7 Year of machine version	I2
8	*if remark to table, otherwise blank	A1
9- 12	Number (BS = HR) in Yale Bright Star Catalogue (Hoffleit 1964)	I4
13- 15	Miscellaneous information regarding identification or physical characteristics; e.g. /X,/XX, -X for additional HR numbers included V, D in bytes 14-15 for variable, double star . in byte 15 for uncertainty * 3 stars contain asterisks in byte 14, but meaning is not defined in paper, nor could any common peculiar characteristics be found. The stars are HR4883, 6707, and 8143.	A3
16	Blank	1X
17- 32	Spectral type from miscellaneous sources 17- 18 luminosity class for Mt. Wilson types, W in W-R types 19- 20 temperature class and subclass 21- 32 additional spectral-type information See Section 4 for additional information	4A4
33	X if 52 magnitude transformed from Cape V mag., otherwise blank	A1
34	Blank	1X
35- 40	52 magnitude (see byte 33 description)	F6.3
41	Blank	1X

Table 1. (continued)

Byte(s)	Description	Suggested Format
42- 47	33 - 52 color (blank if no data)	F6.3
48	Blank	1X
49- 54	35 - 52 color	F6.3
55	Blank	1X
56- 61	37 - 52 color	F6.3
62	Blank	1X
63- 68	40 - 52 color	F6.3
69	Blank	1X
70- 75	45 - 52 color	F6.3
76	Blank	1X
77- 82	52 - 58 color	F6.3
83	Blank	1X
84- 89	52 - 63 color	F6.3
90	Blank	1X
91- 96	52 - 72 color (blank if no data)	F6.3
97	Blank	1X
98-103	52 - 80 color (blank if no data)	F6.3
104	Blank	1X
105-110	52 - 86 color (blank if no data)	F6.3
111	Blank	1X
112-117	52 - 99 color (blank if no data)	F6.3
118	Blank	1X
119-124	52 - 110 color (blank if no data)	F6.3
125	Blank	1X

Table 1. (concluded)

Byte(s)	Description	Suggested Format
126-127	Number of blue observations (filters 33 to 63)	I2
128	Blank	1X
129-130	Number of red observations (filters 72 to 110)	I2

Table 2 contains remarks for records in the catalogue which contain an asterisk (*) in byte 8. The remarks are taken directly from the paper of Johnson and Mitchell (1975).

Table 2. Remarks to Catalogue Data Records

HR	Name	Remarks
215	ζ And	58 filters differ by $>0^m10$
681	σ Cet	39831.6 matched to 39151.6
1239	λ Tau	39873.6 matched to 39440.8
1845	CE Tau	39831.8 matched to 39499.7
2061	α Ori	39797.9 matched to 38787.7
2308	BL Ori	39773.9 matched to 39501.8
2590	π CMa	58 filters differ by $>0^m10$. May be variable.
2650	ζ Gem	39804.9 matched to 38789.8
4163	U Hya	58 filters differ by $>0^m10$. 33 - 52 = 12. is lower limit. 33 was not measurable.
4846	γ CVn	39867.9 matched to 39176.9. 33 - 52 = 12. is lower limit. 33 was not measurable.
4915	α^2 CVn	39930.7 matched to 38894.7
5056	α Vir	39930.8 matched to 39176.9
5589	RR UMi	39910.9 matched to 39257.8
6146	γ Her	39969.8 matched to 38929.7
6406	α Her	39973.7 matched to 39227.9
6431	μ Her	58 filters differ by $>0^m10$
7066	R Sct	39974.9 matched to 38917.8
7564	χ Cyg	40004.9 matched to 40006.9 (unpublished data)
7570	η Aql	39976.9 matched to 38871.9
8262	W Cyg	58 filters differ by $>0^m10$
8297	V460 Cyg	33 - 52 = 12. is lower limit. 33 was not measurable.
8316	μ Cep	58 filters differ by $>0^m10$
8383	VV Cep	58 filters differ by $>0^m10$
8571	δ Cep	39278.8 matched to 39459.6
8752	HD 217476	58 filters differ by $>0^m10$

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SECTION 3 - TAPE CHARACTERISTICS

The information contained in Table 3 is sufficient for a user to read the machine version of the catalogue. Information for the entire catalogue is given in the table, but data which are easily varied from installation to installation, such as blocksize (physical record length), blocking factor (number of logical records per physical record), total number of blocks, tape density, and coding (EBCDIC, ASCII, BCD, etc.) are not included: these parameters should always be supplied if secondary copies of the catalogue are transmitted to other users or installations.

Table 3. Tape Characteristics. Thirteen-Color Photometry of 1380 Bright Stars

NUMBER OF TRACKS	9
NUMBER OF FILES	1
LOGICAL RECORD LENGTH	130
RECORD FORMAT	FB
TOTAL NUMBER OF LOGICAL RECORDS	1380

SECTION 4 - REMARKS AND REFERENCES

A magnetic tape version of the Thirteen-Color Photometry of 1380 Bright Stars was received from the Centre de Données Stellaires (CDS), Strasbourg (Identification Number 2052A78). As received, the spectral types had no uniformly coded fields for searching purposes, and no flags were included in the records to indicate remarks. In order to improve the uniformity of the spectral types, the entire catalogue was transferred from tape to disk at the Astronomical Data Center, and modifications were made interactively. The spectral types were modified such that the temperature class and subclass always occur in bytes 19 and 20, respectively. Mt. Wilson luminosity codes (g, d, sg, c, etc.) were shifted to occur uniformly in bytes 17-18, as was the W in each Wolf-Rayet type. Characters which are lower case in standard astronomical notation (e.g., Mt. Wilson luminosity codes, m and p in peculiar and metallic-line A stars, a, b, ab in luminosity classes, e for emission-line stars, etc.) were converted from upper to lower case. These characters should print as normal upper-case characters on conventional upper-case-only printers, but the use of an extended chain printer is suggested if one is available. The asterisks were also added as the remarks flag in byte 8 and the catalogue was transferred back to magnetic tape.

A considerable number of stars had no MK types in the catalogue as received. When available, these types were added from the catalogues of M. Jaschek (1978), Kennedy (1978) and Morgan and Keenan (1973). Additional MK types were found for stars south of -40° in Houk and Cowley (1975) and Houk (1978). Where possible, attempts were made to resolve uncertainties and to correct obvious errors.

The order of the tape records (by HR number) is unchanged from the published catalogue (Johnson and Mitchell 1975), but they do differ slightly in that the star names present in the published catalogue (Table 7) have never been present on the tape.

REFERENCES

- Hoffleit, D. (1964). *Catalogue of Bright Stars*, 3rd edition (Yale University Observatory).
- Houk, N. (1976). *Michigan Catalogue of Two-Dimensional Spectral Types for the HD Stars*, Volume 2 (Department of Astronomy, Univ. Michigan, Ann Arbor).
- Houk, N. and Cowley, A. P. (1975). *University of Michigan Catalogue of Two-Dimensional Spectral Types for the HD Stars*, Volume 1 (Department of Astronomy, Univ. Michigan, Ann Arbor).
- Jaschek, M. (1978). *Catalogue of Selected Spectral Types in the MK System*, *Bull. Inf. Cent. Données Stellaires*, No. 15, p. 121.
- Johnson, H. L. and Mitchell, R. I. (1975). *Rev. Mexicana Astron. Astrof.* 5 299.
- Kennedy, P. M. (1978). *MK Classification Extension* (Mt. Stromlo Obs.)
- Morgan, W. W. and Keenan, P. C. (1973). *Annu. Rev. Astron. Astrophys.* 11, 29

SECTION 5 - SAMPLE LISTING

The sample listing given on the following pages contains logical data records exactly as they are recorded on the tape. The beginning of each record and bytes within the record are indicated by the column heading index across the top of the page (digits read vertically). Since each logical record is longer than 115 bytes, the remainder of each record (bytes 116-130) is printed in the following row.

