National Soace Science Data Center/
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Documentation for the

Machine-Readable Version of

A Catalogue of Hondgeneous Photometry of

Bright Stars on the DDO System

February 1982

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DOCUMENTATION FOR THE MACHINE-READABLE VERSION OF A *CATALOGUE OF HOMOGENEOUS PHOTOMETRY OF BRIGHT STARS ON THE DDO SYSTEM*

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February 1982

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SECTION 1 - INTRODUCTION

A Catalogue of Homogeneous Photometry of Bright Stars on the DDO System (McClure and Forrester 1981) is a compilation of DDO photometry of 2196 bright G and K stars prepared from observations made at Kitt Peak National and Cerro Tololo Inter-American Observatories over the last several years using filter sets well matched to the standard system. The catalogue includes a large number of DDO stars whose data have been taken directly from the standard-star paper of McClure (1976), plus a representative sample of stars selected from the *Catalogue of Bright Stars* (Hoffleit 1964) and the *Catalogue of High-Velocity Stars* (Eggen 1964) to have good velocities, spectral types and freedom from companion contamination. The source publication includes a table of mean indices for MK spectral classes G0 to K7 which is not included in the machine-readable catalogue.

This document describes the magnetic tape version of the above catalogue. It is intended to enable users to read and process the data without problems or guesswork and a copy should be supplied with secondary machine-readable copies of the catalogue.

Source Reference

McClure, R. D. and Forrester, W. T. 1981, *Publ. Dominion Astrophys. Observatory* 15, 439 (No. 14).

SECTION 2 - TAPE CONTENTS

A byte-by-byte description of the contents of the catalogue is given in Table 1. A suggested format for reading each datum is given in the table, but can be modified depending on usage; however, care must be exercised if substituting format specifications because some data fields contain character data and others are blank when data are absent. Since data fields for magnitudes and color indices are blank for missing data, it is safest to read records with A (character) format specifications or buffer them in, test for blanks, and then convert the data internally.

Table 1. Tape Contents. *A Catalogue of Homogeneous Photometry of Bright Stars on the DDO System.*

Byte(s)	Units	Suggested Format	Description
1- 6	---	I6	*Henry Draper* (HD) *Catalogue* number (blank for five stars not in the HD)
7	---	I1	HD Code (1 = A component; 9 if HD and HD+1 included in observation, e.g. 179957/8; 0 otherwise)
8- 9	---	A2	Durchmusterung (DM) identification BD = *Bonner Durchmusterung* CD = *Cordoba Durchmusterung* CP = *Cape Photographic Durchmusterung*
10	---	A1	Sign of DM zone.
11-12	---	I2 (A2)	DM zone.
13-17	---	I5 (A5)	DM number.
18	---	1X	Blank.
19-24	mag	F6.3	*48* filter magnitude *m48*. Blank if not present.
25-26	10^{-3} mag	F2.3	Standard error ($\sigma/\sqrt{N}$) of *m48* [blank if not present because of single observation, no data, standard star, or error > 0.099 mag (see byte 27)].
27	---	A1	Asterisk if bytes 25-26 blank because of error > 0.099 (** in published table of McClure and Forrester 1981). Blank otherwise.
28-33	mag	F6.3	Color-index *C(45-48)*. Data always present.

Table 1. continued

Byte(s)	Units	Suggested Format	Description
34-35	10^{-3} mag	F2.3	Standard error of *C(45-48)*. See bytes 25-26. No cases of error > 0.099 mag.
36	---	1X	Blank
37-42	mag	F6.3	Color index *C(42-45)*. Data always present.
43-44	10^{-3} mag	F2.3	Standard error of *C(42-45)*. See bytes 34-35.
45	---	1X	Blank
46-51	mag	F6.3	Color index *C(41-42)*. Data always present.
52-53	10^{-3} mag	F2.3	Standard error of *C(41-42)*. See bytes 34-35.
54	---	1X	Blank
55-60	mag	F6.3	Color index *C(38-41)*. Blank if not present.
61-62	10^{-3} mag	F2.3	Standard error of *C(38-41)*. See bytes 25-26.
63	---	A1	See byte 27.
64-69	mag	F6.3	Color index *C(35-38)*. Blank if not present.
70-71	10^{-3} mag	F2.3	Standard error of *C(35-38)*. See bytes 25-26.
72	---	A1	See byte 27.
73-78	---	6I1	Array of 6 digits giving numbers of observations, N, contributing to the magnitude and colors, respectively. Fields are all blanks for standard stars where data are taken directly from McClure (1976), and in cases where all N > 9 (see byte 79).
79	---	A1	Flag for N (* - all digits blank and N > 9 in each case; S if standard star; blank otherwise.

SECTION 3 - TAPE CHARACTERISTICS

The information contained in Table 2 is sufficient for a user to read the machine version of the catalogue. Information easily varied from installation to installation, such as block size (physical record length), blocking factor (number of logical records per physical record), total number of blocks, tape density, number of tracks, and coding (EBCDIC, ASCII, BCD, etc.) is not included. These parameters should always be supplied if secondary copies of the tape are transmitted to other users or installations.

Table 2. Tape Characteristics. *A Catalogue of Homogeneous Photometry of Bright Stars on the DDO System.*

NUMBER OF FILES	1
LOGICAL RECORD LENGTH	80
RECORD FORMAT	FB*
TOTAL NUMBER OF LOGICAL RECORDS	2196

* Fixed block length (last block may be short)

SECTION 4 - REMARKS, MODIFICATIONS, ACKNOWLEDGMENTS AND REFERENCES

The catalogue was received on magnetic tape from Dr. Robert D. McClure of the Dominion Astrophysical Observatory on 5 January 1982. The following modifications to the original format were made in order to make the data easier to process by the general user while still retaining all information and coding in the original data set:

1. All records were condensed by eliminating unused bytes between the data fields in order to make room for the addition of Durchmusterung (DM) numbers for the HD stars.

2. DM numbers were inserted into the records by retrieving them from an updated and corrected version of the SAO-HD-DM-GC Cross Index (Warren and Roman 1981) which had been sorted by HD number. Eleven stars not in the cross index (non-SAO stars) were looked up manually using the HD catalogue and inserted.

3. Multiple HD numbers, e.g. HD 110379/80 were replaced by the lower number alone followed by a 9 to indicate that the data are for HD and HD + 1, i.e. the standard codes adopted by the Centre de Donnees Stellaires, Strasbourg, were added to all HD numbers (see description for byte 7).

4. Asterisks in the standard error fields of *m48*, *C(38-41)* and *C(35-38)*, used to indicate errors > 0.099 mag, were moved to the flag bytes 27, 63 and 72 and those standard error fields were blanked out to allow the fields to be read with real format specifications.

5. Asterisks in the numbers of observations (N) fields were converted to blanks and a single asterisk moved to byte 79 for the same reason as above. Also, the abbreviation "STD" in the N fields was changed to blanks and the character "S" placed into byte 79 to flag standard stars.

6. Plus signs were added to all positive color-index data, always in the byte immediately preceding each datum.

ACKNOWLEDGMENTS

Appreciation is expressed to R. D. McClure for providing the magnetic tape of the catalogue, transmitting corrections, and reviewing the modifications and resulting documentation.

REFERENCES

Hoffleit, D. 1964. *Catalogue of Bright Stars*, 3rd Ed. (New Haven: Yale University Observatory).

McClure, R. D. 1976, *Astron. J.* 81, 182.

McClure, R. D. and Forrester, W. T. 1981, *A Catalogue of Homogeneous Photometry of Bright Stars on the DDO System, Publ. Dominion Astrophys. Observatory* 15, 439 (No. 14).

Warren, W. H. Jr. and Roman, N. G. 1981, *Bull. Amer. Astron. Soc.* 13, 838.

SECTION 5 - SAMPLE LISTING

The sample listing given on the following pages contains logical data records exactly as they are recorded on the tape. Groups of records from the beginning and end of the catalogue are illustrated. The beginning of each record and bytes within the record are indicated by the column heading index (digits read vertically) across the top of each page.

LISTING OF RECORDS FROM TAPE FILE

TAPE FILE NAME: ODO HOMOG. PHOTOMETRY
RECORDS 1 TO 30
TAPE FILE 37
RECORD LENGTH 80 BYTES
INPUT VOLSER NAV008

```
COLUMN
HEADING  1111111111222222222233333333334444444444555555555566666666667777777777888888888899999999990000000001111111
INDEX    12345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123
RECORD    1    263BD+37 5128  8.569 7 +1.208 5 +0.930 5 +0.166 6 -0.746 3 +0.86710 555555
RECORD    2    2808D-06 6357  4.990 4 +1.190 0 +0.912 2 +0.186 1 -0.478 1 +1.052 1 444444
RECORD    3   1663BD+28 4704  6.369   +1.056   +0.753   +0.023   -0.658   +0.888         S
RECORD    4    3600BD-09    5 6.361 0 +1.194 1 +0.881 1 +0.180 1 -0.498 1 +1.060 3 333333
RECORD    5    4963CD-06   13 4.236 5 +1.135 3 +0.876 4 +0.206 2 -0.507 1 +1.062 2 333333
RECORD    6    5710BD+05   17 5.205   +0.944   +0.429   +0.053   -0.876   +1.507         S
RECORD    7    5870BD-06   11 6.197 3 +1.163 4 +0.870 3 +0.154 3 -0.525 1 +1.031 4 333333
RECORD    8    6363CP-82    4 5.651 2 +1.197 2 +0.895 5 +0.251 1 -0.502 2 +1.100 4 222222
RECORD    9    6453BD-13   13 6.227 2 +1.174 3 +0.878 2 +0.171 2 -0.475 3 +1.065 2 444444
RECORD   10    7200CD-28   26         +1.321   +1.131   +0.286   -0.203   +1.203   011111
RECORD   11    7870BD-18   14 5.877 3 +1.371 3 +1.275 4 +0.226 3 -0.192 5 +1.230 2 444444
RECORD   12    8863BD+14   13 2.737   +0.724   +0.249   +0.009   -1.414   +0.636         S
RECORD   13   10130BD+19   27 5.483   +1.358   +1.381   +0.132   +0.014   +1.400         S
RECORD   14   10323CP-85    2 6.625   +1.439   +1.411   +0.183   +0.052   +1.427   111111
RECORD   15   11870CD-32   72 6.155 2 +1.317 3 +1.161 5 +0.308 0 -0.228 3 +1.230 2 333333
RECORD   16   12270BD+07   27 6.455   +1.157 2 +0.795 8 +0.186 2 -0.600 3 +1.032 6 122222
RECORD   17   12800BD+37   34 4.673   +0.727   +0.312   +0.036   -0.846   +1.308         S
RECORD   18   13261BD+43   43 8.858   +1.282   +1.484   -0.208   -0.374   +1.150         S
RECORD   19   14960BD+29   33 7.523 3 +1.237 2 +1.042 2 +0.229 5 -0.32312 +1.167 5 444444
RECORD   20   14610BD-08   33 6.704 5 +1.032 3 +0.686 2 +0.039 2 -0.710 7 +0.913 8 244433
RECORD   21   15223BD-09   48 3.985 8 +1.281 2 +0.981 1 +0.353 2 -0.425 1 +1.174 1 344444
RECORD   22   15810CP-55   13 4.444 2 +1.004 2 +0.583 1 +0.015 1 -0.852 1 +0.901 4 333333
RECORD   23   16330BD+25   17 7.941 3 +1.322 3 +1.225 4 +0.221 7 -0.101 8 +1.230 5 444444
RECORD   24   16350BD+07   36 5.888 4 +1.317 1 +1.139 2 +0.293 3 -0.227 5 +1.204 3 444444
RECORD   25   17373CD-29   46 5.517 6 +1.194 4 +0.826 3 +0.292 2 -0.630 2 +1.079 2 333333
RECORD   26   18010CP-78    9 6.623   +1.330   +1.159   +0.245                         111100
RECORD   27   18353BD-13   43         +1.026 3 +0.669 3 +0.025 3 -0.74510 +0.94535 033322
RECORD   28   19180BD+44   76 7.970 3 +1.180 6 +0.821 6 +0.130 2 -0.559 6 +1.034 5 333333
RECORD   29   20230BD-03   49 6.525 1 +1.268 3 +1.018 4 +0.255 3 -0.339 0 +1.150 5 222222
RECORD   30   21143BD+01   57 6.073 2 +1.136 2 +0.730 2 +0.152 2 -0.636 2 +1.024 4 444444
```

L I S T I N G O F R E C O R D S F R O M T A P E F I L E

TAPE FILE NAME: DDO HOMOG. PHOTOMETRY
RECORDS 2167 TO 2196
TAPE FILE 37
RECORD LENGTH 80 BYTES
INPUT VOLSER WHOOOH

COLUMN HEADINGS INDEX

```
                    1111111111222222222233333333334444444445555555556666666667777777778888888899999999990000000001111111
1234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234
```

```
RECORD  2167  223524)BD-10 6177  6.348 3 +1.230 2 +0.978 3 +0.257 1 -0.400 3 +1.143 3 555555
RECORD  2168  2235590BD-15 6507  6.296 5 +1.350 1 +1.318 4 +0.241 4 -0.040 4 +1.300 4 333333
RECORD  2169  2236470CP-82  905  5.442 4 +1.167 6 +0.806 5 +0.103 3 -0.593 1 +0.992 4 333333
RECORD  2170  2237190BD+02 4725  6.187 6 +1.404 1 +1.296 4 +0.254 3 -0.048 3 +1.296 6 666666
RECORD  2171  2237740BD-15 6515  6.311   +1.267 2 +1.092 6 +0.267 5 -0.290 6 +1.171 7 122222
RECORD  2172  2238070BD-09 6277  6.188 3 +1.247 2 +0.983 2 +0.265 2 -0.385 3 +1.135 2 333333
RECORD  2173  2238250BD-03 5723  6.323 1 +1.210 3 +0.911 4 +0.244 2 -0.495 4 +1.097 2 444444
RECORD  2174  2239693BD+25 5038  7.859 2 +1.148 4 +0.883 5 +0.150 3 -0.500 2 +1.017 3 333333
RECORD  2175  22415508D+37 5101  6.869   +0.606   +0.288   +0.032   -0.870   +1.225         S
RECORD  2176  2241650BD+46 4214  6.430 0 +1.298 3 +0.890 3 +0.342 4 -0.537 2 +1.124 2 333333
RECORD  2177  2243623CP-82  907  6.099 6 +1.206 1 +0.892 5 +0.250 1 -0.498 6 +1.082 3 333333
RECORD  2178  2244270BD+24 4865  5.359   +1.390   +1.257   +0.101   -0.114   +1.352         S
RECORD  2179  2245333BD-04 5996  5.216 3 +1.151 3 +0.798 3 +0.175 1 -0.577 1 +1.028 2 455555
RECORD  2180  2245540CP-5310561 5.54014 +1.217 1 +0.960 2 +0.201 3 -0.404 2 +1.084 4 233223
RECORD  2181  2248399CD-4910316 6.029 3 +1.149 4 +0.766 1 +0.179 2 -0.642 2 +1.029 2 333333
RECORD  2182  2248700BD+49 4309  6.575 3 +1.178 0 +0.800 3 +0.182 1 -0.580 2 +1.053 3 222222
RECORD  2183  2248833CP-77 1596  5.24110 +1.278 1 +1.104 2 +0.258 3 -0.276 1 +1.185 2 333333
RECORD  2184  2249263BD-03 5749  5.078   +0.740   +0.262   +0.015   -1.216   +0.912         S
RECORD  2185  2249300BD+26 4714  6.010   +1.043   +0.665   -0.018   -0.839   +0.863         S
RECORD  2186  2249350BD-06 6305  5.16418 +1.406 2 +1.257 4 +0.093 3 +0.028 7 +1.500 5 588888
RECORD  2187  2251970BD-17 6863  6.172 2 +1.213 1 +0.932 2 +0.314 4 -0.497 2 +1.125 4 333333
RECORD  2188  2252120BD-11 6195  5.570 2 +1.522 2 +1.248 2 +0.373 2 -0.217 6 +1.309 6 344444
RECORD  2189  2252330BD+33 4828  6.349 3 +1.035 2 +0.616 3 +0.011 4 -0.842 3 +0.928 1 333333
RECORD  2190  2320780BD+16 3928  9.76010 +1.672 9 +1.26335 +0.26127 +0.04651 +1.669  +455555
RECORD  2191  2811590BD+31  643  8.920   +1.004   +0.463   +0.078   -0.990   +1.087         S
RECORD  2192        BD+31 4774  9.671   +1.242   +1.429   -0.224   -0.414   +1.237         S
RECORD  2193        BD+34 3563 10.345   +1.396   +1.888   -0.309   -0.680   +1.273         S
RECORD  2194        BD+09  970  9.121 5 +1.269 6 +1.023 7 +0.350 6 -0.392 5 +1.197 5 677777
RECORD  2195        CP-57 3502  8.140 3 +1.705 4 +1.352 5 +0.290 9 -0.04635 +1.49559 444444
RECORD  2196        CP-57 4547  8.70420 +1.78711 +1.360 2 +0.261 6 +0.18025 +1.84948 444444
```

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ORIGINAL PAGE IS
OF POOR QUALITY