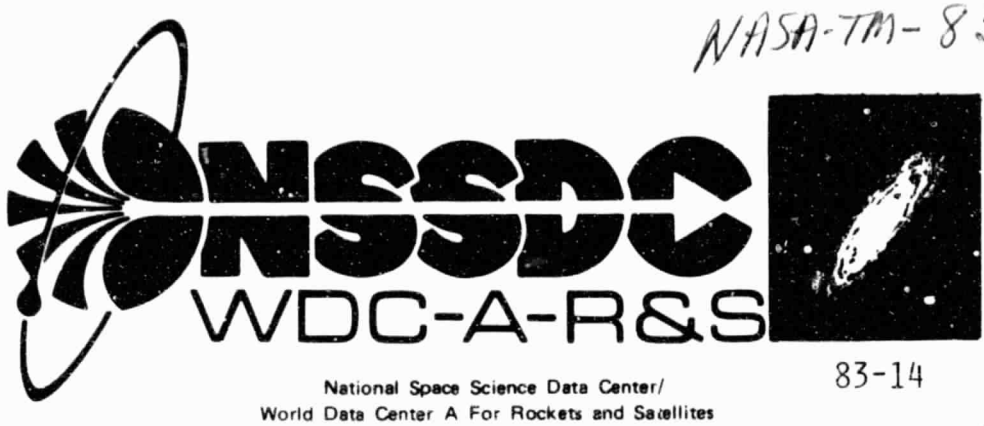
NASA-TM-85457



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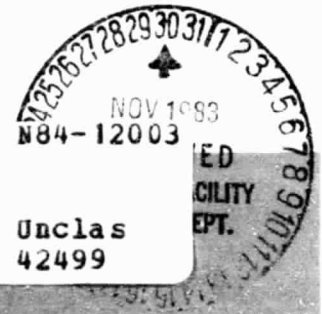
World Data Center A For Rockets and Satellites

83-14



Documentation for the Machine-Readable Version

of the

Revised Catalogue of Stellar Rotational Velocities

of Uesugi and Fukuda (1982)

October 1983

NSSDC/WDC-A-R&S 83-14

DOCUMENTATION FOR THE MACHINE-READABLE VERSION

OF THE

REVISED CATALOGUE OF STELLAR ROTATIONAL VELOCITIES

OF UESUGI AND FUKUDA (1982)

Wayne H. Warren Jr.

October 1983

National Space Science Data Center (NSSDC)/
World Data Center A for Rockets and Satellites (WDC-A-R&S)
National Aeronautics and Space Administration
Goddard Space Flight Center
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ABSTRACT

Descriptions of the contents and formats of the data and reference files of the machine-readable catalog are given. The catalog provides v sin i data, on the old Slettebak system, for 6472 stars, with source references given in a second file.

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SECTION 1 - INTRODUCTION AND SOURCE REFERENCE

The machine-readable *Revised Catalogue of Stellar Rotational Velocities* (Uesugi and Fukuda 1982) provides mean $v \sin i$ data on the old Slettebak system (Slettebak 1949, 1954, 1955, 1956; Slettebak and Howard 1955) for 6472 stars. The catalog results from the review, analysis and transformation of 11460 data from 102 sources. Included in the computerized version are star identification (major catalog number, name if the star has one, or cluster identification, etc.), a mean projected rotational velocity, and a list of source references. The references are given in a second file included with the catalog when it is distributed on magnetic tape. This version of the machine-readable catalog is comprehensive and supersedes the earlier compilation of Uesugi and Fukuda (1970).

This document describes the machine-readable catalog as it is currently being distributed from the Astronomical Data Center. It is intended to enable users to read and process the data without problems and guesswork. Additional details concerning the compilation and analysis of the data can be found in Uesugi and Fukuda (1981). A copy of the document should be supplied to anyone receiving a secondary copy of the machine-readable files.

SOURCE REFERENCE

Uesugi, A. and Fukuda, I. 1982, *Revised Catalogue of Stellar Rotational Velocities*, Department of Astronomy, Kyoto Univ., Kyoto, Japan.

SECTION 2 - TAPE CONTENTS

Byte-by-byte descriptions of the contents of the *Revised Catalogue of Stellar Rotational Velocities* files are given in Tables 1 and 2. The suggested format specifications apply to FORTRAN formatted reads and can be modified depending upon individual programming and processing requirements. Default values are always blanks for fields read with character formats. Alternate format specifications are given in parentheses.

Table 1. Tape Contents. *Revised Catalogue of Stellar Rotational Velocities*. Data File.

Byte(s)	Units	Suggested Format	Default Value	Description
1- 6	---	I6 (A6)	blank	Number in the *Henry Draper Catalogue* (HD, Cannon and Pickering 1918-1924) or its extensions (Cannon 1925-1936; Cannon and Walton Mayall 1949).
7- 9	---	A3	---	Component identifications (A, B, ...) for multiple stars or additional HD number in form "/X" if more than one HD star is included in the measurement.
10-21	---	12A1	---	Name of star, e.g. Flamsteed and/or Bayer designation and constellation abbreviation, variable-star name, cluster identification and number, Durchmusterung number for non-HD stars. Parenthesized letters denote lower case.
22-24	---	3X	---	Blank
25	---	A1	---	Representative character if an upper or lower limit for $v \sin i$ is given; the characters <, >, ≤, ≥ (hexidecimal codes 4C, 6E, 8C, AE, respectively) can occur. NOTE: *The latter two characters do not have equivalents in 7-bit ASCII code, so care must be exercised when converting the file to ASCII.*

Table 1. (concluded)

Byte(s)	Units	Suggested Format	Default Value	Description
26-29	km s^{-1}	I4	---	Projected rotational velocity, v sin i, as determined from all available observations and transformed to the old Slettebak system.
30	---	A1	---	A colon (:) if the derived mean is uncertain due to disagreement among the observations.
31	---	A1	---	A colon (:) if the derived mean is very uncertain, i.e. a double colon (::) in bytes 30-31 denotes extreme uncertainty (e.g. HD 206773).
32	---	I1	---	Number of measurements (n) included in the v sin i value reported. This should always be equal to the number of sources given in bytes 33-80.
33-80	---	8A4 (nA4)	---	Source reference numbers or codes for the data included in the reported v sin i. Reference codes are given in groups of 4 bytes.

Table 2. Tape Contents. *Revised Catalogue of Stellar Rotational Velocities.* Reference File.

Byte(s)	Description
1- 4	Reference code cited in the data file. The field is blank for continuation lines.
5-80	Reference.

SECTION 3 - TAPE CHARACTERISTICS

The information contained in Table 3 is sufficient for a user to describe the indigenous characteristics of the files of the *Revised Catalogue of Stellar Rotational Velocities* to a computer. 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, and internal coding (EBCDIC, ASCII, etc.) is not included. These parameters should always be supplied if secondary copies are transmitted to other installations. Parameters relating to the two files of the catalogue are separated by commas.

Table 3. Tape Characteristics. *Revised Catalogue of Stellar Rotational Velocities.*

NUMBER OF FILES	2
LOGICAL RECORD LENGTH	80, 80
RECORD FORMAT	FB*
TOTAL NUMBER OF LOGICAL RECORDS	6472, 109

* Fixed block length (last block may be short)

SECTION 4 - REMARKS, MODIFICATIONS, ACKNOWLEDGMENTS AND REFEPENCES

A magnetic tape containing the *Revised Catalogue of Stellar Rotational Velocities* was received from the Astronomical Data Center, Japan, on 4 March 1983. Minor modifications, as described below, were made to the data file in order to effect a more homogeneous format consistent with other computerized catalogs.

1. The characters "<=" and ">=", originally in bytes 25-26 for upper- and lower-limit velocities, were changed to "<" and ">" (hexidecimal codes 8C and AE) respectively. Although these characters have no 7-bit ASCII equivalents, it was felt useful to have all limit notation uniform in one byte. Users of ASCII coded versions can change these characters back to the original notation (byte 26 of the $v \sin i$ field is now always blank) or can convert the "<" and ">" characters to, e.g. "-" and "+".

2. The HD field contained a zero for every non-HD star; these were converted to blanks.

3. The abbreviations "BD", "CD", and "CPD" were added to Durchmusterung (DM) numbers where they were absent. The abbreviation CPD already occurred for CPD stars in the zones -22° to -52° where CD numbers are ordinarily used (following the HD convention). An unknown character (not in the published version) occurred in the Name field after all zone numbers for DM identifications. All occurrences of this character were changed to blanks.

ACKNOWLEDGMENTS

Appreciation is expressed to K. Sadakane of Osaka University for personally transmitting our request for a copy of the tape to the Astronomical Data Center, Japan, and to Y. Terashita and A. Hayashi for preparing and supplying the magnetic tape.

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Uesugi, A. and Fukuda, I. 1982, *Revised Catalogue of Stellar Rotational Velocities*, Department of Astronomy, Kyoto Univ., Kyoto, Japan.

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 each file of the catalog are illustrated. The beginning of each record and bytes within the record are indicated by the column heading index across the top of each page (digits read vertically).

ORIGINAL PAGE IS
OF POOR QUALITY

```
LISTING OF RECORDS FROM TAPE FILE

        TAPE FILE NAME: v sim i (1982)   Data
              RECORDS        1 TO      30
             TAPE FILE      45
         RECORD LENGTH      80 BYTES
          INPUT VOLSER   ADC003

C O L U M N
H E A D I N G          111111111122222222223333333333444444444455555555556666666666777777777788888888889999999999000000000011111
I N D E X    12345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012345

RECORD     1      3                   275  1D
RECORD     2     28    33     PSC   < 15   116
RECORD     3     73                   105  1WH
RECORD     4    108                   115  2CE   STD
RECORD     5    184    10     CAS     170  4 4   12   38   SL2
RECORD     6    256                   185  1AH
RECORD     7    358    21ALP  AND      55  7 1    5   12   46   ACS STD WP
RECORD     8    400                 <   5  142
RECORD     9    431                    95  1AH
RECORD    10    432    11BFT  CAS      70  7 3    6   12   16   DD   S    STD
RECORD    11    434                    65  146
RECORD    12    483                    50  1AL
RECORD    13    493     KAP 1 SCL     170  112
RECORD    14    560    34     PSC     280  1WP
RECORD    15    571    22     AND      45  6 6   12   16   19   DD   STD
RECORD    16    692     6     CET      40  212   16
RECORD    17    739     TEY   SCL      50  112
RECORD    18    761                   240  1WE
RECORD    19    787                 < 20:  116
RECORD    20    821                   100  131
RECORD    21    822                   110  131
RECORD    22    886    88GAM  PEG       5  8 2    4   12   25   DW   S    STD WA
RECORD    23    905    23     AND      30  1BR
RECORD    24    952                    55  1D
RECORD    25    965                    90  131
RECORD    26   1050                   135  131
RECORD    27   1061    35     PSC      90  2AH   L3
RECORD    28   1083                   245  146
RECORD    29   1114                 <  50  131
RECORD    30   1142                 ≤  50  1L4
```

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: v sim i (1992) Data
RECORDS 6463 TO 6472
TAPE FILE 95
RECORD LENGTH 80 BYTES
INPUT VOLSER ADC003

COLUMN READING INDEX
1234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012345

RECORD 6463 MWC39 250: ISL
RECORD 6464 MWC43 800: ISL
RECORD 6465 MWC837 850: ISL
RECORD 6466 MWC847 400: ISL
RECORD 6467 MWC848 200: ISL
RECORD 6468 MWC849 350: ISL
RECORD 6469 MWC711 300: ISL
RECORD 6470 MWC715 350: ISL
RECORD 6471 NGC1502-A-N 95 1H
RECORD 6472 NGC1502-A-S ≥ 165 1H
RECORD 6473 NGC1502-3 ≥ 230 1H
RECORD 6474 NGC1502-5 170 1H
RECORD 6475 NGC2159-A 140 1H
RECORD 6476 NGP23 < 50 124
RECORD 6477 NGP122 < 75 124
RECORD 6478 NGP206 < 50 124
RECORD 6479 NGP235 200 124
RECORD 6480 NGC1960-M120 150 126
RECORD 6481 NGC1960-U208A 75 126
RECORD 6482 NGC1960-M238 125 126
RECORD 6483 NGC1960-M249 225 126
RECORD 6484 NGC1960-M250 150 126
RECORD 6485 NGC1960-M258 150 126
RECORD 6486 NGC1960-M313 175 126
RECORD 6487 NGC1960-M365 150 126
RECORD 6488 NGC2244-M11 150: 126
RECORD 6489 NGC2244-M15 150: 126
RECORD 6490 MR-92 15: 134
RECORD 6491 T13,3,19 95 1PA
RECORD 6492 NGC2231-65 ≤ 25 1HP

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: v sin i (1982) Refs
RECORDS 1 TO 30
TAPE FILE 46
RECORD LENGTH 80 BYTES
INPUT VOLSER ADC003

COLUMN HEADING INDEX
1111111111222222222233333333334444444444555555555566666666667777777777888888888899999999990000000001111111
12345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012345

RECORD 1 1 SPAJN,G. AND STRUVE,O., 1929, MONTHLY NOTICES ROY. ASTRON. SOC., <89>, 222.
RECORD 2 2 ELVEY,C.T., 1930, ASTROPHYS. J., <71>, 221.
RECORD 3 3 STRUVE,O. AND ELVEY,C.T., 1931, MONTHLY NOTICES ROY. ASTRON. SOC., <91>, 663
RECORD 4 .
RECORD 5 4 WESTGATE,C., 1933A, ASTROPHYS. J., <77>, 141.
RECORD 6 5 WESTGATE,C., 1933B, ASTROPHYS. J., <78>, 46.
RECORD 7 6 WESTGATE,C., 1934, ASTROPHYS. J., <79>, 357.
RECORD 8 7 SMITH,B. AND STRUVE,O., 1944, ASTROPHYS. J., <100>, 360.
RECORD 9 8 STRUVE,O., 1945, POPULAR ASTRON., <53>, 201, 259.
RECORD 10 9 VAN DIEN,E., 1948, J. ROY. ASTRON. SOC. CANADA, <42>, 249.
RECORD 11 11 SCHWARZSCHILD,M. AND SCHWARZSCHILD,B., 1950, ASTROPHYS. J., <112>, 248.
RECORD 12 12 HUANG,S.S., 1953, ASTROPHYS. J., <118>, 235.
RECORD 13 14 OKE,J.B. AND GREENSTEIN,J.L., 1954, ASTROPHYS. J., <120>, 384.
RECORD 14 16 HERBIG,G.H. AND SPALDING,JR.,J.F., 1955, ASTROPHYS. J., <121>, 118.
RECORD 15 19 AET,H.A., 1957, ASTROPHYS. J., <126>, 503.
RECORD 16 20 AET,H.A., 1958, ASTROPHYS. J., <127>, 658.
RECORD 17 21 KRAFT,R.P., CAMP,D.C., PERNIE,J.D., FUJITA,C. AND HUGHES,W.T., 1959,
RECORD 18 ASTROPHYS. J., <129>, 50.
RECORD 19 22 TREANOR,P.J., 1960, MONTHLY NOTICES ROY. ASTRON. SOC., <121>, 503.
RECORD 20 23 MEADOWS,A.J., 1961A, ASTROPHYS. J., <133>, 907.
RECORD 21 24 SLETTEBAK,A., BAHNER,K. AND STOCK,J., 1961, ASTROPHYS. J., <134>, 195.
RECORD 22 25 MCNAMARA,D.H. AND HANSEN,K., 1961, ASTROPHYS. J., <134>, 207.
RECORD 23 26 MEADOWS,A.J., 1961B, MONTHLY NOTICES ROY. ASTRON. SOC., <123>, 81.
RECORD 24 27 MCNAMARA,D.H. AND LARSSON,H.J., 1962, ASTROPHYS. J., <135>, 748.
RECORD 25 28 AET,H.A. AND HUNTER,JR.,J.H., 1962, ASTROPHYS. J., <136>, 381.
RECORD 26 29 MCNAMARA,D.H., 1963, ASTROPHYS. J., <137>, 316.
RECORD 27 30 SLETTEBAK,A., 1963, ASTROPHYS. J., <138>, 118.
RECORD 28 31 SVOLOPOULOS,S.N., 1963, ASTRON. J., <68>, 428.
RECORD 29 32 RINGWELET-KASWALDER,A.E., 1963, PUBL. ASTRON. SOC. PACIFIC, <75>, 323.
RECORD 30 33 KOCH,R.H., OLSON,E.C. AND YOSS,K.M., 1965, ASTROPHYS. J., <141>, 955.