# General Disclaimer

One or more of the Following Statements may affect this Document

- This document has been reproduced from the best copy furnished by the organizational source. It is being released in the interest of making available as much information as possible.

- This document may contain data, which exceeds the sheet parameters. It was furnished in this condition by the organizational source and is the best copy available.

- This document may contain tone-on-tone or color graphs, charts and/or pictures, which have been reproduced in black and white.

- This document is paginated as submitted by the original source.

- Portions of this document are not fully legible due to the historical nature of some of the material. However, it is the best reproduction available from the original submission.

Produced by the NASA Center for Aerospace Information (CASI)

NASA-TM-85457

NSSDC
WDC-A-R&S
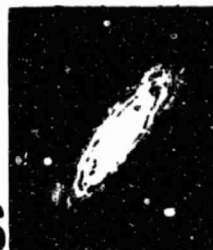
National Space Science Data Center/
World Data Center A For Rockets and Satellites

83-14

DOCUMENTATION FOR THE MACHINE-READABLE VERSION

OF THE

REVISED CATALOGUE OF STELLAR ROTATIONAL VELOCITIES

OF UESUGI AND FUKUDA (1982)

OCTOBER 1983

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

DOCUMENTATION FOR THE MACHINE-READABLE VERSION

OF THE

REVISED CATALOGUE OF STELLAR ROTATIONAL VELOCITIES

OF UESUGI AND FUKUDA (1982)

Wayne H. Warren Jr.

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.

PRECEDING PAGE BLANK NOT FILMED

TABLE OF CONTENTS

LIST OF TABLES

Table

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.
10-2'	---	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

REFERENCES

Cannon, A. J. 1925-1936, *The Henry Draper Extension, Ann. Astron. Obs. Harvard College* 100.

Cannon, A. J. and Pickering, E. C. 1918-1924, *The Henry Draper Catalogue, Ann. Astron. Obs. Harvard College* 91-99.

Cannon, A. J. and Walton Mayall, M. 1949, *The Henry Draper Extension, The Annie J. Cannon Memorial Volume, Ann. Astron. Obs. Harvard College* 112.

Fukuda, I. 1982, *Publ. Astron. Soc. Pacific* 94, 271.

Slettebak, A. 1949, *Astrophys. J.* 110, 498.

Slettebak, A. 1954, *Astrophys. J.* 119, 146.

Slettebak, A. 1955, *Astrophys. J.* 121, 653.

Slettebak, A. 1956, *Astrophys. J.* 124, 173.

Slettebak, A. and Howard, R. F. 1955, *Astrophys. J.* 121, 102.

Uesugi, A. and Fukuda, I. 1970, *A Catalog of Rotational Velocities of the Stars,*
Mem. Fac. Sci. Kyoto Univ., Ser. Phys., Astrophys., Geophys., Chem. 33, 205.

Uesugi, A. and Fukuda, I. 1981, in *Data for Science and Technology, Proc. 7th*
International CODATA Conf., ed. P. S. Glaeser (Oxford: Pergamon Press), p. 201.

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).

LISTING OF RECORDS FROM TAPE FILE

TAPE FILE NAME: v 3in i (1982) Data
RECORDS 1 TO 30
TAPE FILE 05
RECORD LENGTH 80 BYTES
INPUT VOLSER ADC003

```
COLUMN  1111111111222222222233333333334444444444555555555566666666667777777777888888888899999999990000000000111111111112222
READER  1234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012345
```

RECORD	1	2				275	1D					
RECORD	2	28	33	PSC	<	15	116					
RECORD	3	73				105	1WH					
RECORD	4	108				115	2CE	STD				
RECORD	5	188	10	CAS		170	8 8	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	811				95	1AH					
RECORD	10	832	11BFT	CAS		70	7 3	6	12	16	DD S	STD
RECORD	11	838				65	186					
RECORD	12	883				50	1AL					
RECORD	13	893	RAP 1	SCL		170	112					
RECORD	14	560	38	PSC		280	1WP					
RECORD	15	571	22	AND		85	6 6	12	16	19	DD STD	
RECORD	16	692	6	CFT		80	212	16				
RECORD	17	739	TFT	SCL		50	112					
RECORD	18	761				280	1WE					
RECORD	19	787			<	20:	116					
RECORD	20	821				100	131					
RECORD	21	822				110	131					
RECORD	22	886	ABGAH	FFG		5	8 2	8	12	25	DM 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	43				
RECORD	28	1062				285	186					
RECORD	29	1114			<	50	131					
RECORD	30	1182			<	50	1LH					

5-2

LISTING OF RECORDS FROM TAPE FILE

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

```
COLUMN  INDEX           111111111122222222223333333333444444444455555555556666666666777777777788888888889999999999111
                1234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123
```

RECORD	6463	NGC39	250:	1SL
RECORD	6464	NGC43	400:	1SL
RECORD	6465	NGC137	450:	1SL
RECORD	6466	NGC447	400:	1SL
RECORD	6467	NGC448	200:	1SL
RECORD	6468	NGC449	350:	1SL
RECORD	6469	NGC711	300:	1SL
RECORD	6470	NGC715	350:	1SL
RECORD	6471	NGC1502-A-N	95	1H
RECORD	6472	NGC1502-A-S	$\geq$ 165	1H
RECORD	6473	NGC1502-3	$\geq$ 230	1H
RECORD	6474	NGC1502-5	170	1H
RECORD	6475	NGC2169-B	180	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-H365	150	126
RECORD	6488	NGC2243-H11	150:	126
RECORD	6489	NGC2288-H15	150:	126
RECORD	6490	CR-92	15:	134
RECORD	6471	T13.3.12	95	1PA
RECORD	6472	NGC2231-65	$\leq$ 25	1HP

LISTING OF RECORDS FROM TAPE FILE

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
         111111111122222222223333333333444444444455555555556666666666777777777788888888889999999999000000000011111111112
1234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012345
```

RECORD   1   1   SHAJN,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   SPITH,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 RINGHELET-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.