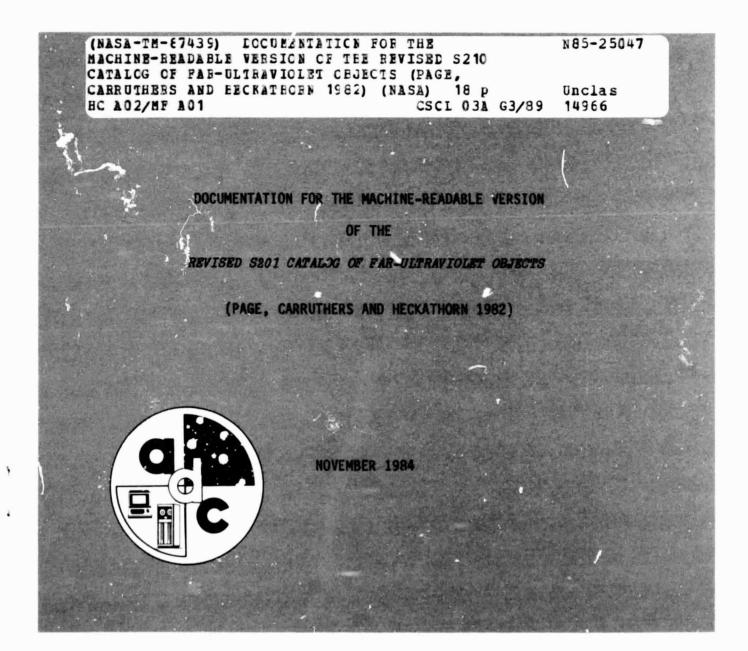
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DOCUMENTATION FOR THE MACHINE-READABLE VERSION

OF THE

REVISED S201 CATALOG OF FAR-ULTRAVIOLET OBJECTS

(PAGE, CARRUTHERS AND HECKATHORN 1982)

Wayne H. Warren Jr.

November 1984

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 Greenbelt, Maryland 20771

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ABSTRACT

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A detailed description of the machine-readable revised catalog as it is currently being distributed from the Astronomical Data Center is given. This catalog of star images was compiled from imagery obtained by the Naval Research Laboratory (NRL) Far-Ultraviolet Camera/Spectrograph (Experiment S201) operated from 21 to 23 April 1972 on the lunar surface during the Apollo 16 mission. The documentation includes a detailed data format description, a table of indigenous characteristics of the magnetic tape file, and a sample listing of data records exactly as they are presented in the machine-readable version.

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SECTION 1 - INTRODUCTION AND SOURCE REFERENCE

The Revised S201 Catalog of Far-Ultraviolet Objects was compiled from images obtained by the NRL Far-Ultraviolet Camera/Spectrograph operated on the lunar surface from 21 to 23 April 1972 during the Apollo 16 mission. The catalog was prepared by scanning the images on a microdensitometer and recording its output on magnetic tape. The Revised Catalog differs from the first edition (Page, Carruthers and Hill 1978) in that the brightnesses of all detected objects have been transformed to an absolute scale of UV magnitudes based upon instrumental preflight calibrations. The positional errors of the detected images are ≤ 3 arcminutes.

This document describes the machine version of the Revised S201 Catalog as it is currently being distributed from the Astronomical Data Center (ADC). It is intended to enable users to read the tape and process the data without problems and guesswork. For a more detailed description of the instrumentation used to obtain the S201 imagery, the data reductions and analysis, comparison with stellar models, the Celescope Catalog stars (Davis, Deutschman and Haramundanis 1973), the OAO-2 Filter Photometry Catalog (Code, Holm and Bottemiller 1980) stars, and further discussion on other expected far-ultraviolet sources, the source reference (Page, Carruthers and Heckathorn 1982) should be consulted. A copy of this document should be supplied with any duplicate of the machine version of the catalog originally obtained from the ADC.

SOURCE REFERENCE

Page, T., Carruthers, G. R. and Heckathorn, H. M. 1982, Revised S201 Catalog of Far-Ultraviolet Objects, NRL Report 8487 (Washington, DC: Naval Research Laboratory). (Note: Table 22, p. 89 refers to the listing in the earlier catalog published as NRL Report 8173; see references.)

SECTION 2 - TAPE CONTENTS

The machine version of the *Revised S201 Catalog of Far-Ultraviolet Objects* is divided into eleven parts covering ten fields in the sky, although these parts are stored contiguously in a single file in the tape catalog. Table 1 gives field information for each group of logical records (objects) in the catalog.

Field	Field	Center	Number of	Number of
	a (19	50) ð	Objects	Frames
Cygnus Capricorn Cetus Grus Pavo Mensa	21 ^h 24 ^m 21 14 2 44 23 44 21 14 5 50	+37°30' -14 30 -14 30 -41 30* -52 12 -74 00	1275 178 83 139 86 919	6 5 8 3 4
Norma	17 24	-59 04	895	4
Aquarius	23 07 [†]	-04 17†	252	11
Fornax	3 42	-27 20	85	5
Sagittarius West	18 34	-30 24	1404	6
Sagittarius East	18 34	-30 24	1080	6

Table 1. Star Field Information

* 23^h34m to 23^h54^m, -42°30' to -40°30' * 22 58 to 23 16 , -05 06 to -03 12

Table 2 contains a byte-by-byte description of the data records. The suggested Fortran 77-type format specifications are for reference purposes only and may be modified depending upon individual data processing requirements; however, care must be exercised when processing fields which can contain valid zero values, but which are blank for missing data, e.g., magnitudes. It is recommended that data records be buffered in or read with an A format initially to check for blank fields before conversion to numerical data for searching or computations. Default values are always blanks for data having A-type (character) format specifications, but are given for numerical data fields unless valid data are always present. There are many mostly numerical fields which contain character data in some cases, e.g., the object identification, and visual and photographic magnitudes. The normal procedure for preparation of a machine-readable catalog for distribution would be to modify the data records to produce fields of purely numerical or character data; however, extensive format changes would be required to accommodate the separation of all numerical and character data contained in the mixed fields of this catalog; hence, it was decided not to modify the records. Considering that the most likely application of the machine catalog will be to search for object identifications after sorting by right ascension and declination, the mixed numerical/character data fields should not present a major problem for most users.

2-1

Byte(s)	Units	Suggested Format	Default Value	Remarks
1		11	blank	A "1" if the object is the last in this field.
2		1X		Blank
3- 6		14		Running number of the object in the field.
7- 9		3X		Blank
10- 13	min	F4.1		Exposure time for the image. The numbers are not entirely uniform within this field (e.g., values of .25 are present) but all data con- tain decimals which will override the format specification anyway.
14		A1		Filter code (L for LiF, passband 1050-1600 A; C for CaF2, passband 1250-1600 A). Using the exposure time and filter, a frame number can be determined from Table 1 of the source reference. Information on the two multiple-exposure fields (Grus, Aquarius) can be found there also.
15- 17		3X		Blank
18- 20		13	blank	X scan coordinate of the object's peak intensity.
21- 22		2X		Blank
23- 25		13		Y scan coordinate of the object's peak intensity.
26- 28		3X		Blank
29- 30	hours	12		Right ascension, α , of the image, taken from the <i>SAO Catalog</i> (Smith- sonian Astrophysical Observatory Staff 1966) or another source (see bytes 50-59 for additional infor- mation)

Table 2. Tape Contents. Revised S201 Catalog of Far-Ultraviolet Objects.

2-2

Table L	(concine	ear		
Byte(s)	Units	Suggested Format	Default Value	Remarks
31		1X		A colon (:) separator character.
32- 33	min	12		
34		1X		Colon separator.
35- 36		Î2		
35- 30	sec	12		α
37		1X		Blank
38		A1		Sign of the image's declination.
39- 40	0	12		Declination, δ , of the image (see
41		1X		hytes 29-30). Colon separator.
42- 43		12		
				δ
44		1X		Colon separator.
45- 46		12	blank	 Arcsecond data are not given for nebulous objects.
47- 49		3X		Blank
50- 59		A10		Object identification. In most cases this is the SAO number and no prefix is present, but numbers from the Henry Draper Catalogue (Cannon and Pickering 1918-1924) (prefixed by HD), The Revised New General Catalog of Nonstellar Astronomical Objects (RNGC, Sulentic and Tifft 1973) (prefixed by N) and the Catalogue of Galactic Planetary Nebulae (Perek and Kohoutek 1967) (prefixed by N) also occur. Character comments may be present with the following meanings:
				NO there is no SAO CATALOG APOLLO star within 10' of the measured image position and the same image is de- tected on other S2O1 frames; the coordinates given in this case are means of all the frames; NO LMC equivalent in Mensa;
				NO* star considered reliably identified in catalog(s) other than SAO;
			2-3	S

Table 2	(continued)

<pre>image was recorded on frame only; /,: following an SAO numbe notes that the star is of a pair or group too close to be resolved b S201 camera (either st identifiable with imag ? the measured position 10' different from the catalog position (doub identification); * two images only; same</pre>	Byte(s)	Units	Suggested Format	Default Value	Remark	S
 notes that the star is of a pair or group to close to be resolved by S201 camera (either st identifiable with image? the measured position (doub identification); two images only; same NEB,CL on two different from the catalog position (a doub identification); two images only; same NEB,CL on two different frames; thus, a slash indicates "alte tive", a question mark "posit al discrepancy", and a colon "magnitude-spectrum discrepan "magnitude-spectrum discrepan discrepancy", the measured and catalog ordinates (in the seasured and catalog ordinates (in the seasured and catalog ordinates (in the seasured position. 61 min 11 (A1) blank Δα 62 1X Colon separator. 63 - 64 sec 12 (A2) blank Δα 65 1X Blank 66 A1 Sign of the difference in δ b tween measured and catalog contates (see also byte 60). 67 - 68 ' 12 blank Δδ 69 1X Colon separator 70 - 71 " 12 blank Δδ 					BLANK	if this field is blank, the image was recorded on one frame only;
 10' different from the catalog position (doub identification); * two images only; same NEB,CL on two differen frames; thus, a slash indicates "alte tive", a question mark "posit al discrepancy", and a colon "magnitude-spectrum discrepan 60 Al Sign of the difference in a between measured and catalog ordinates (in the sense measured and catalog). When NO occurs in 50-59, the difference is betw the measured position. Alter and the position. 61 min II (Al) blank Δα 62 1X Colon separator. 63 - 64 sec I2 (A2) blank Δα 65 1X Blank 66 Al Sign of the difference in s b tween measured and catalog contates (see also byte 60). 67 - 68 ' I2 blank Δδ 69 1X Colon separator 70 - 71 " I2 blank Δδ 					/,:	following an SAO number de- notes that the star is one of a pair or group too close to be resolved by the S2O1 camera (either star identifiable with image);
 60 Al Sign of the difference in α between measured and catalog ordinates (in the sense measured and catalog). When NO occurs in 50-59, the difference is betw the measured position. 61 min II (Al) blank Δα colon separator. 62 1X Colon separator. 63 - 64 sec I2 (A2) blank Δα 65 1X Blank 66 Al Sign of the difference in δ b tween measured and catalog contacts (see also byte 60). 67 - 68 ' I2 blank Δδ 69 1X Colon separator 70 - 71 " I2 blank Δδ 					?	the measured position is 5- 10' different from the catalog position (doubtful identification);
tive", a question mark "posit al discrepancy", and a colon "magnitude-spectrum discrepan $60 \qquad Al \qquad \qquad Sign of the difference in \alphabetween measured and catalogordinates (in the sense measucatalog). When NO occurs in50-59$, the difference is betw the measured position and the position. $61 min \qquad I1 (A1) \qquad blank \qquad \Delta \alpha$ $62 \qquad 1X \qquad \qquad Colon \ separator.$ $63- 64 sec \qquad I2 (A2) \qquad blank \qquad \Delta \alpha$ $65 \qquad Al \qquad \qquad Blank$ $66 \qquad Al \qquad \qquad Sign of the difference in \delta btween measured and catalog conates (see also byte 60).67- 68 I2 \qquad I2 \qquad blank \qquad \Delta \delta$					*	two images only; same LMC NEB,CL on two different frames;
between measured and catalog ordinates (in the sense measured catalog). When NO occurs in 50-59, the difference is betw the measured position and the position. $62 1X Colon \ separator.$ $63- \ 64 sec I2 \ (A2) blank \Delta \alpha$ 65 IX Blank $66 A1 Sign \ of \ the \ difference \ in \ \delta \ b \ tween \ measured \ and \ catalog \ conates (see \ also \ byte \ 60).$ $67- \ 68 I I2 blank \Delta \delta$ $69 IX Colon \ separator$ $70- \ 71 I I2 blank \Delta \delta$					tive", al dis	a question mark "position- crepancy", and a colon
61minI1 (A1)blank $\Delta \alpha$ 621XColon separator.63-64secI2 (A2)blank $\Delta \alpha$ 651XBlank66A1Sign of the difference in δ b tween measured and catalog co nates (see also byte 60).67-68'I2blank691XColon separator70-71''I2blank $\Delta \delta$	60		A1		betwee ordina catalo 50-59, the me	en measured and catalog co- ites (in the sense measured - og). When NO occurs in bytes the difference is between easured position and the mean
 63- 64 sec 65 66 66 67- 68 ' 69 1X 1X blank Δδ 69 1X Colon separator 70- 71 " 12 blank Δδ 		min		blank	Δα	
 65 1X Blank 66 Al Sign of the difference in δ b tween measured and catalog co nates (see also byte 60). 67-68 ' I2 blank Δδ 69 1X Colon separator 70-71 " I2 blank Δδ 		sec		blank		separator.
tween measured and catalog contains (see also byte 60). 67-68 ' I2 blank $\Delta\delta$ 69 IX Colon separator 70-71 " I2 blank $\Delta\delta$						
67-68 I I2 blank Δδ 69 1X Colon separator 70-71 I2 blank Δδ	66		A1		tween	measured and catalog coordi-
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	67- 68		12	blank		(see also byte 60).
70-71 " I2 blank ∆8	69		1X			separator
72-73 2X Blank	70- 71	u	12	blank		
	72- 73		2X		Blank	

Table 2 (continued)

2-4

Table 2	(continued)
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Byte(s)	Units	Suggested Format	Default Value	Remarks
74- 78		A5		Spectral type of the object; how- ever, miscellaneous descriptions, e.g., "PLAN", "GLOB?", "NEB+*", "HII" can occur.
79- 83	mag	A5		Visual magnitude listed in the SAO Catalog. Some magnitudes are listed for nonstallar objects, but sources are not given. Character data can occur.
84- 90	mag	A7		Stated by the authors to be SAO photographic magnitude, but character data are present for nonstellar and LMC objects, e.g., "(GAL)", N numbers.
91- 92		2X		Blank
93- 95	0.010	13	blank	Uncorrected peak density at scan coordinates X and Y given in bytes 18-20, 23-25. The measured α and δ of the image were derived from the scan coordinates of the peak position.
96		1X		Blank
97		A1		A left parenthesis "(" is present when the number of points datum (following) is surrounded by parentheses.
98-101		14	blank	Number of points (pixels) > 20 units (0.2D) above the local back- ground in the object image.
102		A1		A right parenthesis ")" (see byte 97) or a query (?) when the datum in bytes 98-101 is considered un- certain.
103-104		2X		Blank

Table 2	(continued)		
Byte(s)	Units	Suggested Format	Default Value	Remarks
105-107		13		The local background surrounding an object image, determined by averaging 5 pixels outside the image.
108		A1		A query (?) if the local back- ground value is uncertain, normal- ly because of irregularities near the image.
109- 110		2X		Blank
111-116		16	blank	Sum of the measured density minus background for the number of pixels within the image "boundary". [Denoted by V_M in parts of the source reference text, while V_C is used for the first-stage corrected density- volume (D-V) value.]
117		A1		Query (?) if the value for D-V is uncertain due to overexposure or irregular background.
118		A1		Density-Volume code:
				D overlapping images;
			×	H, L denote that the D-V is too large (High) cr too small (Low) for the identified star. If the value of the D-V is more than twice as large as the average for an object's visual magnitude and spectral type, the entry in bytes ill-116 is flagged with an H here. Occasionally, these flags may augur mis- identifications, but in most cases the H flags indicate objects having particularly high far-UV fluxes and worthy of further study. If the D-V

lable 2	(concluded)			
Byte(s)	Units	Suggested Format	Default Value	Remarks
				is less than half the aver- age, the L code is present here. The H and L flags are not precise, but are based on trends of D-V divided by ex- posure with magnitude and spectral type rather than on comparison with stellar models.
119-124	.010 min ⁻¹	16	blank	The fully corrected D-V divided by exposure time. Corrections for nonlinearity, PDS microdensi- tometer lag, truncation and over- under image density have been made (as explained in the data analysis section of the source reference).
125		A1		Usually blank, but the characters "*" and "E" can occur.
				 V_C/E values for two close images have been combined; the two images were really one. Preceded or followed by a blank for V_C/E of the weak- er image;
				E image at edge of field and partially missing; hence, V _c /E is a lower limit.
126-127		2X		Blank
128-132	mag	F5.2	blank	The ultraviolet (UV) magnitude, as converted from the datum in bytes 119-124 using equations (12a) and (12b) of the source in ference.

SECTION 3 - TAPE CHARACTERISTICS

The information contained in Table 2 is sufficient for a user to describe the indigenous characteristics of the magnetic tape version of the *Revised S201* Catalog of Far-Ultraviolet Objects to a computer. Information which is 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 coding (EBCDIC, ASCII, etc.) is not included: this information should always be supplied if secondary tape copies of the catalog are transmitted to other users or installations.

Table 3. Tape Characteristics. Revised S201 Catalog of Far-Ultraviolet Objects.

L
2
*
5
3

* Fixed block length (last block may be short)

SECTION 4 - REMARKS, MODIFICATIONS, ACKNOWLEDGMENTS AND REFERENCES

A magnetic tape of the *Revised S201 Catalog of Far-Ultraviolet Objects* was received from Dr. Thornton L. Page on 17 December 1981. The tape had been prepared in ASCII coding on a Univac 1110 computer and was written in a special format appropriate for producing the printed catalog published in the source reference. The original tape contained eleven files, one each for the fields listed in Table 1. The Univac tape was first converted on a MODCOMP IV computer to a uniformly formatted ASCII tape with the special coding removed and the eleven files concatenated to a single file of 15,191 x 132-byte logical records. The following modifications were then made to the single file catalog to produce the homogeneous data file described in this document:

- All header information and blank (spacing) records were removed to produce a uniform data file processable with a single format specification. To separate the observed star fields, a "1" flag was added to the last record of each field, as described in Table 2. Thus, 8795 records were removed to leave the 6396 records of the final catalog.
- The right ascension and declination fields were homogenized by the addition of preceding zeros to all subfields and of plus (+) signs to positive declinations. Minus signs were moved to always occur in byte 38.
- 3. The data field containing the photographic magnitude from the SAO Catalog (and character data in many cases) had ".00" for missing data in cases where an SAO visual magnitude is given. These fields were converted to blanks.
- 4. Certain object-identification character data (bytes 50-59) extended into the sign field for $\Delta \alpha$ (byte 60). The abbreviations in these fields were shortened in six cases to eliminate the field overlap. This problem also occurred in the spectral-type field, which extended into the visual magnitude area, but only data shifting was required to fix these cases.
- 5. Plus signs were added to all positive $\Delta \alpha$ and $\Delta \delta$ fields and minus signs for $\Delta \delta$ were moved to always occur in byte 66.
- 6. A left parenthesis occurred inside the number of points field (bytes 98-101) in two cases (both in the Sagittarius West star field, stars SAO 186233, 186324). The character was moved to byte 97 in both cases to isolate it from the purely numerical data field.

ACKNOWLEDGMENTS

Appreciation is expressed to Thornton Page for supplying the magnetic tape of the Revised S201 Catalog. Drs. Page, Carruthers and Heckathorn kindly reviewed a draft copy of this document before its final printing for distribution with magnetic tape copies of the catalog. Dr. Page made many useful comments and provided additional information which has improved this document.

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The sample listing given on the following pages contains logical data records exactly as they are recorded on the tape. Sample records for objects at the beginning and the end of the data file are listed. 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, Revised S201 Far UV Obj 35 2 RECORDS

132 BYTES ADC002 62 INPUT VOLSER TAPE FILE RECORD LENGTH

ORIGINAL PAGE IS OF POOR QUALITY																																		
8.27	8.39	8.35	8.05	4.68	4.45	4.29	3.89	4.02	3.79	4.68	4.45	4.29	3.89	4.02	3.79	7.27	6.01	5.89	6.15	7.73	5.12	4.80	4.54	4.56	4.51	7.19	6.98	6.23	6.05	6.08	4.48	4.43	4.30	3.78
8	8	84	110	5788	7168	8230	500	4430	5450	5788	7168	8230	5000	4430	5450	540	715	299	630	148	3845	5170	2760	2690	2820	580	700	585	688	670	6968	7272	8200	5500
•	41	•	223	330 L	5549	12952	9929	26836	12758	330	5549	12952	6266	26836	12758	666	1711	4992	1554	1117	2615 N	H 1612	5822 H	17077 H	7275 H	201	1281DN	1108 H	5917DH	1721 H	704	5785	13855	10874
16	19	28	18	23	57	129	16	0 2	18	23	57	129	16	20	16	129	15	20	18	16	60	133	15	19	18	58	137	21	21	22	22	58	128	16
•	2	•	80	14	102	138	110	203	130	4	102	138	110	203	130	33	35	11	42	4	59	19	83	143	8	۰	8	32	63	43	26	66	137	113
32	40	38	50	50	180	382	266	430	307	50	180	382	266	430	307	172	67	164	80	52	144	309	193	397	225	82	192	26	180	16	61	194	395	292
8.70	8.70	8.70	8.20							8.90	8.90	8.90	8.90	8.90	8.90											8.00	8.00	8.00	8.00	8.00				
8.70	8.70	8.70	8.40	5.93	5.93	5.93	5.93	5.93	5.93	8.90	8.90	8.90	8.90	8.90	8.90	6.92	6.92	6.92	6.92		6.44	6.44	6.44	6.44	6.44	8.30	8.30	8.30	8.30	8.30	5.60	5.60	5.60	5.60
V	V	V	A 2	B 8	B 8	B 8	88	88	B 8							89	80	89	89		89	80	89	B9	B9	B9	B9	B9	B9	89	B 8	83	B 8	B 8
	- 00'0+	+0107 -	+0103 -	+ 90'0-	+ +0-0-	+ 10'0+	-0-18 +	+ 2010-		-0.13 +	+ 60'0-	-0105 +	-0:24 +	+ 9010-	+ + +0 -	-0105 +	-0125 +	-0110 +	+ 90'0-		15.0 - 01.0+	- 90'0+	-0.15 -	- 2010+	- \$0'0+	+010+	+0'0+	-0111 -	- 00'0-	- 10'0+	-01)5 +	- 0-04	-0.12 +	-0119 +
70276	70276	70276	70514	49899/	49899/	49899/	49899/	49899/	49899/	499021	49902	499021	49902?	499021	499021	49929	499297	49929	49929	ę	70367	70367	70367	70367	70367	70380	70380	70380	70380	70380	49946	49946	49946	49946
20135118 +38146146	20135118 +38146146	20135118 +38146145	20:36:15 +35:27:34	20:37:43 +40:24:06	20:37:43 +40:24:06	20:37:43 +40:24:06	20:37:43 +40:24:06	20:37.43 +40:24:06	20:37:43 +40:24:06	20:37:49 +40:24:31	20.37.49 +40.24.31	20:37:49 +40:24:31	20:37:49 +40:24:31	20:37:49 +40:24:31	20:37:49 +40:24:31	20.39.04 441.01.24	20.39.04 +41.01.24	20.39.04 +41.01.24	20.39.04 +41.01.24	20:39:05 +38:01:33	20:39:07 +38:54:12	20:39:07 +38:54:12	20:39:07 +38:54:12	20:39:07 +38:54:12	20:39:07 +38:54:12	20139136 +35133106	20139136 +35133106	20139136 +35133106	20139136 +35133106	20:39:36 +35:33:06	20+40+08 +41+32+13	20.40.08 +41.32.13	20:40:08 +41:32:13	20:40:08 +41:32:13
463	460	468	631	388	363	386	381	378	386	388	383	386	361	378	386	354	350	347	354	505	459	462	457	454	461	629	632	628	625	632	331	326	329	324
932	686	066	277	959	196	962	806	965	967	959	967	962	806	965	967	950	896	953	955	954	950	945	893	696	952	246	937	886	943	945	938	945	941	886
3.00	10.00	3.70	10.0C	.25L	1.0L	3.0L	3.00	10.00	3.7	.25L	1.0L	3.0L	3.00	10.00	3.70	3.0L	3.00	10.00	3.2	3.7	1.0L	3.0L	3.00	10.00	3.70	1.0L	3.0L	3.00	10.00	3.70	.25L	1.01	3.0L	3.00
-	2	m	4	ŝ	۴	1	•0	•	10	::	12	13	2	15	16	17	18	19	20	21	22	23	54	25	26	27	28	53	8	31	32	33	34	35
-	2	n	4	5	9	2	80	•	10	=	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
RECORD	RECORD	RECORD	RECORD	RECORD	RECORD	RECORD	RECORD	RECORD	RECORD	RECORD	RECORD	- RECORD	RECORD	RECORD	RECORD	RECORD	RECORD	RECORD	RECORD	RECORD	RECORD	RECORD	RECORD	RECORD	RECORD	RECORD	-RECORD	RECORD	RECORD	RECORD	RECORD	RECORD	- RECORD	RECORD

DAGE TO 1010

LISTING OF RECORDS FROM TAPE FILE

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TAPE FILE NAME: Revised S201 Far UV Obj

RECORDS 6362 TO 6396 TAPE FILE 79 RECORD LENGTH 132 BYTES INPUT VOLSER ADC002

		-															₩# 20																	
1.71	8.36	8.21	9.03	9.37	6.00	4.71	5.76	4.89	4.74	7.49	16.91	6.00	4.71	5.76	4.89	4.74	6.23	6.96	6.06	5.85	7.33	8.39	8.27	7.57	7.29	7.84	6.25	4.50	5.86	5.29	4.71		5.89	7.25
360	83	95	45	33	1729	5600	006	2000	2300	440	20	1729	5600	006	2000	2300	1400	300	680	830	510	81	8	410	530	320	1374E	6800E	820	1388E	2350		1900	550
210	396 L	1782	92 L	999 F	738 H	4730 H	1842 H	N 11211	26046 H	288	228 L	738 H	4730 H	1842 H	N 11211	26046 H	1216	421	4119	10400	H2242	420	1855	2347	356?	H2691	418	4770 H	1660	10440 H	24684 H	87?	1552 H	H2262
276	\$0	82	42	82	74	302	22	49	82	270	78	4	302	22	C St	82	297	23	497	82	275?	497	85	2927	2847	274?	72	290	25	\$¢	88	282?	285	277?
•0	15	60	4	29	29	75	49	116	238	12	2	29	75	49	116	238	8	17	76	164	14	17	62	10	13	•	18	26	4	120	214	4	61	14
307	75	124	99	109	105	402	89	338	347	298	104	105	402	89	338	347	343	53	163	233	301	78	126	319	318	303	100	396	8	306	362	305	317	321
			8.47	8.47								8.38	8.38	8.38	8.38	8.38						8.58	8.58	8.55	8.63							8.81	8.81	9.43
9.20	9.20	9.20			7.38	7.38	7.38	7.38	7.38	00.9	9.00										9.20	8.98	8.98	8.86	8.84	8.90	7.52	7.52	7.52	7.52	7.52	9.20		
88	88	88	V	V	VO	¥0	P0	Ŷ	¥0	V	Ŷ	88	B 8	88	8	88											88				B 8	A0	AO	AO
٠	+0'00 + 1'00	٠	٠	+0.06 + 2.01	+0:27 - 1:38	+0.32 - 1.05	+0.21 - 2.07	+0.26 - 3.16	•	-0110 + 4104	+0.13 + 2.52	٠	+0.29 + 1.55	٠	+0.23 - 0.16	٠	۲	+0.00 + 0.12	т	-0:06 + 1:40	-0.07 - 4.34	+0.46 - 1.48	1	٠	-0.25 - 1.14	-0:07 - 7:59	+0:24 - 0.42	+0.16 - 0.47	+0119 - 1110	+0.25 - 1.03	+0.25 + 1.02	-0129 - 0140	+0.16 + 3.28	-0.30 + 5.14
187864	187864	187864	211085	211085	211100/	211100/	211100/	211100/	211100/	187884	187894	211101/2	211101/	/101112	211101/	211101/	Q	Q	Q	Q	187891	2011112	2111107	211113	211132?	187922?	211148	211148	211148	211148?	211148	211155?	211155	211182?
19,11,27 -28,51,58	19.11.27 -28.51.58	19.11.27 -28.51.58	19.11.36 -31.10.17	19.11.36 -31.10.17	19.12.30 -33.37.07	19.12.30 -33.37.07	19.12.30 -33.37.07	19:12:30 -33:40:07	19.12.30 -33.37.07	19:12:32 -27:56:40	19.12.32 -27.56.40	19.12.33 -33.40.07	19.12.33 -33.40.07	19.12.33 -33.40.07	19.12.33 -33.40.07	19.12.33 -33.40.07	19.12.38 -34.56.49	19.12.38 -34.56.49	19.12.38 -34.56.49	19.12.38 -34.56.49	19.12.55 -28.02.12	19:13:00 -34:32:05	19.13.00 -34.32.05	19.13.09 -33.09.11	19.14.17 -32.35.21	19.14.19 -28.33.59	19,15,06 -33,14,38	19:15:06 -33:14:38	19.15.06 -33.14.38	19,15,06 -33,14,36	19.15.06 -33.14.38	19,15,21 -30,55,11	19,15,21 -30,55,11	15,16,56 -32,21,04
889	881	871	910	206	960	296	953	950	5	889	876	096	962	953	950	5	972	963	960	952	896	967	957	961	961	918	983	983	976	973	996	950	957	626
313	320	325	427	432	536	535	532	541	545	267	277	536	535	532	541	545	597	592	601	605	277	580	586	510	484	563	509	509	505	514	518	402	396	459
3.0L	10.00	30.00	10.0C	30.0C	1.0L	3.0L	3.00	10.00	30.00	3.0L	30.00	1.0L	3.0L	3.00	10.0C	30.0C	3.0L	3.00	10.0C	30.0C	3.0L	10.00	30.00	3.0L	3.0L	3.0L	1.0L	3.0L	3.00	10.0C	30.00	3.0L	3.0L	3.0L
1046	1047	1048	1049	1050	1051	1052	1053	1054	1055	1056	1057	1058	1059	1060	1061	1062	1063	1064	1065	1066	1067	1068	1069	1070	1071	1072	1073	1074	1075	1076	1077	1078	1079	1 1080
6362	6363	6364	6365	6366	6367	6368	6369	6370	6371	6372	6373	6374	6375	6376	6377	6378	6379	6380	6381	6382	6383	6384	6385	6386	6387	6388	6389	6390	6391	6392	6393	6394	6395	6396
RECORD	RECORD	RECORD	PECORD	RECORD	L RECORD	RECORD	RECORD	RECORD	RECORD	RECORD	RECORD	RECORD	RECORD	RECORD	RECORD	RECORD	RECORD	RECORD	RECORD	-RECORD	RECORD	RECORD	RECORD	RECORD	RECORD	- RECORD	RECORD							

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