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Technical Note

1965-14

Radiometer Data Processing
in the Haystack
Antenna Pointing System

Paul Stylos

29 July 1965

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MASSACHUSETTS INSTITUTE OF TECHNOLOGY
LINCOLN LABORATORY

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IN THE HAYSTACK ANTENNA POINTING SYSTEM

PAUL STYLOS

Group 62

TECHNICAL NOTE 1965-14

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ABSTRACT

This report describes the real time radiometric data processing in the Haystack Antenna Pointing System.

Accepted for the Air Force
Stanley J. Wisniewski
Lt Colonel, USAF
Chief, Lincoln Laboratory Office

RADIOMETER DATA PROCESSING IN THE HAYSTACK ANTENNA POINTING SYSTEM

I. INTRODUCTION

Since Radiometric methods are used to boresight the Haystack System, the Univac 490 antenna pointing system includes a radiometer data processing program which operates in real time concurrently with the antenna pointing programs.

The program implements a technical approach which is matched to the radiometric measuring equipment* provided by Messrs. Meeks and Weinreb of Group 31. This approach was jointly formulated.

The main input to the program is comprised of 30-bit data words passed from the radiometric equipment to the computer via channel 5. Each word contains identification bits allowing the computer program to distinguish between two different types of data: "auxiliary" or "radiometric". The processing of the auxiliary data consists of a simple check to determine if data associated with a particular identification falls within specified bounds for that identification. This data is then logged on the high-speed printer, along with its associated upper and lower limits, and an indication if the data is outside of the specified limits. Processing of the radiometer data is more complex and is described in the following sections; in general, the primary output is a running measure of radiometric source temperature. The results of this processing are both logged and plotted on the high-speed printer in real time.

II. INPUTS

A. Via Channel 5. The bit layout of the incoming words is shown in Figs. 1 and 2. The incoming word is either auxiliary data (identified 1 through 50) or radiometric data (identified 51 through 53).[†] The data entering the system can be thought of as existing in blocks. A block of auxiliary data (A data) can be up to fifty words. The auxiliary data train may be somewhat shorter in length and may consist

* The radiometric Equipment is described in TR-365, H. G. Weiss, 15 September 1964.

† Note that an input word cannot contain 0 (30-bits of 0) or, -0 (30 bits of 1) by virtue of the identification field.

of any arbitrarily selected subset of the fifty words, the only restriction being that lower numbered I. D. 's must be sent first. A block of radiometric data (R data) is three words long, the first being a status word. (This can be readily modified to accommodate blocks of R data up to fifty words long.) The bit layout of the status word is shown in Fig. 2. The status word indicates one of four possible statuses - Base, Calibrate, Observe, or Stop. The next two words of the radiometer data block contains the data from receivers 1 and 2. If the incoming word starts a block of auxiliary data or radiometer data, the right ascension and declination of the point on the celestial sphere corresponding to the direction of the antenna (saved during last integral second) is stored along with sufficient data to determine time to the nearest 4ms. A sense switch (SS3) is included in the radiometer equipment. When set by the experimenter, SS3 results in the printing of an asterisk at the beginning of an R data output line.

The data rate is selectable from the radiometer equipment. The antenna pointing system is interrupted upon the arrival of a 30 bit word. Incoming data is stored in a circular buffer consisting of 125 registers which can accommodate up to 20 complete R data blocks. This buffer is cleared once each frame (nominally 2 sec.). The data flow to the computer is asynchronous with any other antenna pointing system function.

B. Keyboard Inputs

When the radiometer program is initialized, the experimenter is given the option to change any or all auxiliary data limits and any or all calibration constants (those used in equations 3 and 4). The auxiliary data limits are entered as decimal integers (- 9999 through + 9999). The calibration constants are entered as decimal numbers.

The experimenter may also elect to intersperse "comments" with his program output. Comments are typed in via the console and can be up to 80 characters per line, terminated by a carriage return. Figure 8 shows a sample keyboard input.

C. Common Storage Input

The following common storage registers are used.

TRUETIME	-	g m t
CAZIM	-	corrected azimuth
CELEV	-	corrected elevation
ASTRORA	-	displayed right ascension
ASTRODEC	-	displayed declination

III. DATA PROCESSING

The processing of data is discussed under the headings of Radiometric Data and Auxiliary Data.

A. Radiometric Data

There are three distinct categories of radiometric data, Calibrate, Base and Observe. A Calibrate run can be started any time, may be of arbitrary length as chosen by the experimenter, and is terminated upon the arrival of data marked as Base. A Base run can be started only after a Calibrate run, is again of arbitrary length, and is terminated by incoming Observe Data. Each base or calibrate run is considered as a single integration period, whereas the observe run is broken up into a multiplicity of integration periods; the length of the Observe integration period (in Blocks) is specified by the status word. Over each integration period of calibration, base or observe data, the following quantities are determined; it should be noted that a particular quantity will be produced for each of the two radiometers.

The average signal is

$$R = \frac{1}{N} \sum_{i=1}^N r_i \quad (1)$$

where N is the number of blocks and r is the data point.

The estimated standard deviation is

$$S = \sqrt{\frac{\sum_{i=1}^N r_i^2}{N(N-1)} - \frac{R^2}{N-1}} \quad \text{for } N > 1 \quad (2)$$

Subsequent processing will depend on the particular radiometric data category.

1. Calibrate

For each calibrate period, the following quantities are defined for later processing and on-line printing.

R_c is the average signal during the Calibration period.

S_c is the estimated standard deviation.

N_c is the number of blocks in the Calibration period.

2. Base

For each Base period, the average signal and standard deviation define the following quantities.

R_b is the average signal during the Base period.

S_b is the estimated standard deviation.

N_b is the number of blocks in the Base period.

The following quantities are then computed for each receiver.

$$\begin{aligned} V &= \frac{X}{R_c - R_b} \cdot R_b + Y && \text{(TEMP)} \\ \Delta V &= \frac{X}{R_c - R_b} \cdot S_b && \text{(DELTA BASE)} \\ \Delta C &= \frac{X}{R_c - R_b} \cdot S_c && \text{(DELTA CAL)} \end{aligned} \tag{3}$$

where X and Y are constants called TCAL and TBASE.

3. Observe

It has been noted that the integration period used for the Observe category is specified in the status word. In the event of a change in the number of blocks per integration period, data accumulated up to the time of change will be included as the first samples of the new interval. In the event of a change in the status word to a new data category, the accumulated data will be dropped.

For each Observe interval, the following quantities are defined.

R_o is the average signal during the integration period.

S_o is the estimated standard deviation.

N_o is the number of blocks in the integration period.

The following quantities are computed for each receiver

$$T = \frac{X}{R_c - R_b} \cdot (R_o - R_b)$$

$$\Delta T = \frac{X}{R_c - R_b} \cdot S \quad (4)$$

4. Stop

The stop category is used to make the program "idle". If the previous categories were either CAL, BASE or STOP the program rejects this block and proceeds to look for more data. If the block immediately preceding this stop block was of the OBSERVE category, the accumulation registers are cleared (this discards the last incomplete integration period) and spaces the line printer one line. The program then proceeds to look for more input.

B. Auxiliary Data

For each A_i , an upper and lower limit is stored. These limits may be changed individually via the keyboard during the initialization phase of the program.

Processing of the data is a simple check to determine if the data for an A_i falls within the specified limits.

IV. PROGRAM OUTPUTS

A. Real Time Outputs

The real time output of data is via the high-speed printer. Figure 3 shows a sample of data output on the printer after a Base run. This output is triggered at the end of a Calibration-Base sequence and is printed at the top of a page. The duration is in blocks and is N_c and N_b , whereas DELTA CAL (1), DELTA CAL (2), DELTA BASE (1), DELTA BASE (2), TEMP (1) and TEMP (2) are found from Eq. (3). The calibration constants are those used in all computation. The values for azimuth, elevation, right ascension and declination are those for the antenna position at the end of the BASE category run.

Figure 4 shows the format for the logging and plotting of the OBSERVE data. The column headings and scaling information (showing the range of the plot) are printed as the second line on each page. Time, right ascension and declination are those for the midpoint of the integration period. In the event the scale is changed,

the plot shows a discontinuity allowing the new scale to be printed. The scale is selected via the status word. A change in scale (and hence range) does not interrupt the processing of data. The symbol for receiver 1 is "X" and for receiver 2 is "0". When both receivers have the same value, a single symbol "1" is plotted. If a quantity exceeds the plotting range, it will be plotted as the closest value within the selected range. A blank line signifies discarded data.

Figure 5 shows the format for Auxiliary Data. The column headed by E is used to denote that the value for a particular A_i lies outside its limits. The asterisk character will denote this phenomenon. The auxiliary data printout will always be on a separate page.

B. Emergency messages appear on the high speed printer. The printer is spaced so that the message can be read without using the line feed. There are two emergency messages, one calling for a calibrate sequence, the other asking for a Base run. A calibrate sequence is requested if the experiment is not started with Calibrate data. A Base run is called for if an experimenter tries to follow a Calibrate run with Observe data.

V. MAGNETIC TAPE RECORDING

In keeping within the antenna pointing system recording philosophy the radiometer program will prepare the data records and the system recording program will perform the actual tape writing (binary records) and error checking. These records will then appear on the system recording tape along with any other system recordings. The radiometer program prepares two types of records, data and comments, each having a unique ID.

A. Comments

A comments record will always be 18 words (30 bit) long. The first word will contain the field data coded characters "RDMTI". The second word will indicate a writing parity for the previous record. (0 = no error). The next 16 words will contain the field data coded characters that were typed in as comments. One of these records will be written each time the experimenter terminates a comment line via the carriage return.

B. Data Records

The Data records will always be 152 words long. The first word contains the field data coded characters "RDMTR". As in the case of the comments record, the second word is used by the recording program and sets a non zero value (30 bits) if a writing error occurred for the previous record. At present 4 types of information are recorded, each having their own sentinel. The four types of information may be intermixed on the recording in any order. If for any type, the 152 word limit is reached the rest of the words will appear at the beginning of the next radiometric data record.

1. Radiometric data sentinel is 77777 00001

A sentinel of 77777 00001 indicates the next seven words are from a radiometric data block.

- word 1 is the output azimuth buffer control
- word 2 is true time in days with a B of 27
- word 3 is radar azimuth from the encoders. B of 19
- word 4 is radar elevation from the encoders. B of 19
- word 5 is the status word (see Fig. 2)
- word 6 is from receiver 1 (see Fig. 1)
- word 7 is from receiver 2 (see Fig. 1)

The first four words are recorded upon the arrival of a status word. Words 1 and 2 permit a calculation of time to the nearest 4ms. as follows:

word 2 gives time at the beginning of current computer frame. The upper half of word 1 gives the final location for azimuth output for this frame, while the lower half gives the next location, therefore $\frac{\text{final address} - \text{current address}}{500}$ gives the fraction of the frame that has elapsed since truetype.

2. Auxiliary data sentinel is 77777 00002

The first four words following this sentinel are the same as for radiometric data. They are recorded when the first word of an Auxiliary data scan is sensed. These words are followed by as many (up to 50) auxiliary data words as are sent to the computer.

3. Calibration sentinel is 77777 00003

Four calibration constants follow this sentinel:

word 1 is $Y_1(\text{TBASE}_1)$ B15

word 2 is $Y_2(\text{TBASE}_2)$ B15

word 3 is $X_1(\text{TCAL}_1)$ B20

word 4 is $X_2(\text{TCAL}_2)$ B20

This data is recorded during the initialization phase of the program at the beginning of an experiment and any time the constants are changed.

4. Right ascension and declination and range are recorded after the sentinel 77777 00004. The angles are recorded in revolutions with a B of 27. Range is recorded in earth radii with a B of 22 if positive. If range is negative, the compliment of the range in astronomical units with of B of 22 is stored. If range is 0 an infinite range has been assumed.

VI. PROGRAM DETAILS

A logical flow diagram of the computer program is shown in Figs. 6 and 7. The three main sections of the program are initialization, interrupt and working.

A. Initialization

The initialization section performs the following function:

1. Clears the accumulation registers ($N_i \Sigma r_i$, etc.).
2. Clears input buffers and sets control for selecting next word in buffer.
3. Sets control for storing incoming data into work blocks.
4. Clears output line count.
5. Gives experimenter the option to change A data limits.
6. Types on console the calibration constants and allows the experiments to change these constants.
7. Gives the experimenter the opportunity to type comments and have them appear on the high-speed printer, and on the magnetic tape recording. (Although this portion of the radiometer program is in the initialization section, the facility for typing comments remains active throughout the experiment.)

The initialization of the radiometer program is accomplished through the console typewriter. Figure 8 shows a page copy of a sample operator/program communication. In the example the experimenter changes a few A data limits and the calibration constants.

B. Interrupt

The antenna pointing system is interrupted upon the arrival of a 30 bit word from the radiometer equipment. Control is then passed to the interrupt portion of the radiometer program. The interrupt section first saves the operational registers then stores (in BUF) the incoming word for later processing. If the incoming word signifies the start of a new block a 30-bit minus 0 is stored. Time information is then stored. The operational registers are restored, channel 5 is reset to provide an interrupt upon the arrival of the next word and control is returned to the antenna pointing system.

The beginning of a block is determined from the identification of the word and a control indicator called LASTADIND. The beginning of a Radiometric data block is merely a word with an ID of 51. The beginning of an Auxiliary data block is sensed if the ID is less than 51 and if the LASTADIND is set to a non zero value. If the beginning of an A data block is sensed, LASTADIND is set to zero. This indicator is reset by the working section of the program.

C. Working Section

The working section operates as a data processing program immediately following the azimuth buffer chain. A routine called "get next block" is used to process the buffered data. This routine checks the circular buffer for any data (non-zero words) and sets up a work block which may be 52 registers long. The first word of the work block dictates the setting of the work block indication (0 = R/data, 1 = A/data. In the event of R data the plotting scale is sensed - if a new scale is indicated, it is printed and the line count is increased by one. Control is passed to the working section if a complete block is found - if not control is passed to the master control program. (See Fig. 7)

The processing of an A data block results in a printout as shown in Fig. 5. It is noted that if a particular A(1) is blank no data was received for that ID. The LASTADIND is then set to accept the next A data scan and control is passed to the master control program.

In the event the work block is R data, the data status is sensed. The initial data status is stop. Figure 7 shows the switching logic which controls further processing of the data. Note that the first R data that can be accepted must be of the CALIBRATE mode and that this must be followed by a base run. When a block is accepted the data are included in the following calculation.

Σr_i	BO	max value 2^{29}
Σr_i^2	BO	double register 2^{59}
N	BO	max value 2^9

When a particular mode is terminated, Eq. (1) and (2) are used to calculate.

R_{mode}	B15
S_{mode}	B13*

The values for V , ΔV , ΔC as given by Eq. (3) are calculated upon the completion of a base run. They are also scaled to a B of 15.

Finally T and ΔT are calculated (with a B of 15) for each observe integration period. These are also scaled to a B of 15. The results are then recorded on the high speed printer via the system logging program.

*It should be remembered that these values are calculated for each of the two receivers.

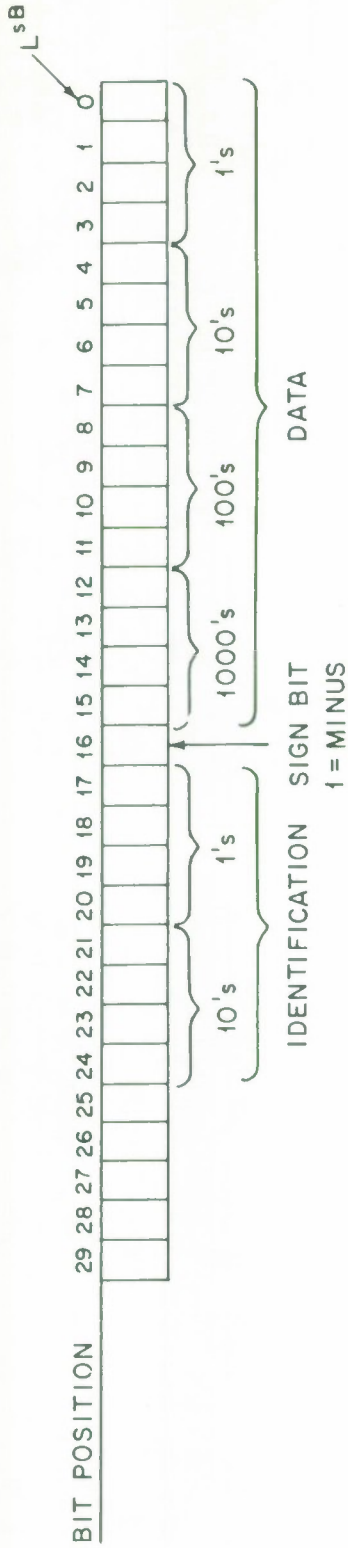


Fig. 1 Incoming Word

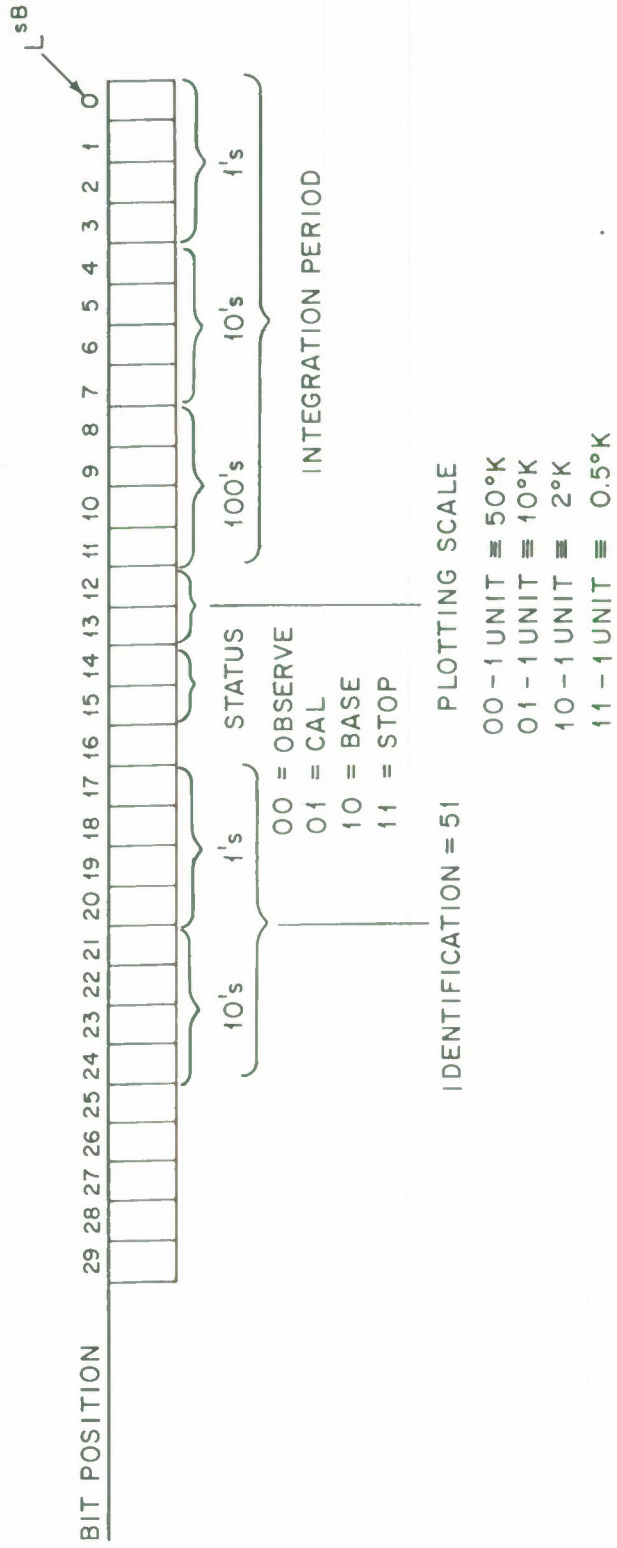


Fig. 2 Status Word

LOOKING AT THE STARS
 CAL COMPLETED 02/03/65 17:02:36 GMT
 CAL OURATION 027 CYCLES DELTA CAL(1) -12.02 DEG K DELTA CAL(2) 05.24 DEG K T CAL(1) 045.64 T CAL(2) 040.50
 BASE OURATION 023 CYCLES DELTA BASE(1) -05.83 DEG K DELTA BASE(2) 04.49 DEG K T BASE(1) 015.75 T BASE(2) 011.25
 ANTENNA TEMPERATURES BASE TEMP(1) 681.6 DEG K BASE TEMP(2) -059.2 DEG K
 AZIMUTH 153.970 LEVATION 29.351 RT.ASCEN 08 20 35 OECLIN 66 23 59
 -62-3412

Fig. 3 Calibration Printout

LOOKING AT THE STARS TIME	RIGHTA	DECLIN	T(1)	T(2)	DEL(1)	DEL(2)	-10	0	10	20	30
22 32 09	06 00 00	60 11 26	0007.09	0007.41	01.021	01.024	I				
22 32 11	06 00 00	60 13 58	0012.81	0012.79	00.855	00.849	I		I		
22 32 13	06 00 00	60 16 30	0015.40	0015.67	00.622	00.667	I		I		
22 32 15	06 00 00	60 19 03	0015.01	0015.30	00.664	00.685	I		I		
22 32 17	06 00 00	60 19 03	0012.24	0012.20	00.838	00.809	I		I		
22 32 19	06 00 00	60 21 35	0007.47	0007.33	00.892	00.955	I		I		
22 32 21	06 00 00	60 24 07	0002.71	0002.68	00.786	00.809	I		I		
22 32 23	06 00 00	60 26 39	-0000.02	-0000.04	00.623	00.632	I		I		
22 32 25	06 00 00	60 29 12	0000.78	0000.65	00.678	00.702	I		I		
22 32 27	06 00 00	60 31 41	0004.51	0004.56	00.899	00.897	I		I		
22 32 29	06 00 00	60 32 57	0009.28	0009.39	00.842	00.903	I		I		
22 32 31	06 00 00	60 30 28	0012.97	0013.16	00.702	00.715	I		XO		
22 32 33	06 00 00	60 27 55	0012.60	0012.73	00.609	00.631	I		I		
22 32 35	06 00 00	60 27 55	0008.81	0009.06	00.706	00.727	I		I		
22 32 37	06 00 00	60 25 23	0004.39	0004.40	00.808	00.836	I		XO		
22 32 39	06 00 00	60 22 51	0000.68	0000.48	00.738	00.735	I		I		
22 32 41	06 00 00	60 20 19	-0001.29	-0001.36	00.617	00.643	I		I		
22 32 43	06 00 00	60 17 46	-0001.10	-0001.08	00.635	00.687	I		I		
22 32 45	06 00 00	60 15 14	0001.78	0001.67	00.775	00.792	I		I		
22 32 47	06 00 00	60 12 42	0005.76	0005.97	00.851	00.822	I		I		
22 32 49	06 00 00	60 10 10	0009.77	0009.93	00.774	00.804	I		I		
22 32 51	06 00 00	60 07 37	0012.63	0013.03	00.670	00.665	I		I		
22 32 53	06 00 00	60 05 05	0013.42	0013.79	00.613	00.641	I		XO		
22 32 55	06 00 00	60 05 05	0011.94	0012.43	00.675	00.695	I		I		
22 32 57	06 00 00	60 02 33	0008.88	0009.09	00.769	00.781	I		XO		
22 33 01	06 00 00	60 00 01	0005.11	0005.25	00.740	00.803	I		I		
22 33 03	06 00 00	59 57 27	0002.52	0002.56	00.682	00.698	I		I		
22 33 05	06 00 00	59 54 55	0001.54	0001.53	00.613	00.625	I		I		
22 33 07	06 00 00	59 52 23	0002.44	0002.49	00.644	00.686	I		I		
22 33 09	06 00 00	59 49 50	0004.96	0005.06	00.728	00.743	I		XO		
22 33 11	06 00 00	59 47 18	0007.81	0007.99	00.662	00.664	I		I		
22 33 13	06 00 00	59 44 46	0009.12	0009.39	00.613	00.630	I		I		
22 33 15	06 00 00	59 42 14	0009.40	0009.66	00.612	00.632	I		I		
22 33 17	06 00 00	59 39 41	0006.86	0007.50	00.636	00.654	I		I		
22 33 19	06 00 00	59 37 09	0005.17	0005.29	00.660	00.669	I		XO		
22 33 21	06 00 00	59 34 37	0003.67	0003.61	00.619	00.644	I		I		
22 33 23	06 00 00	59 32 04	0002.92	0002.96	00.609	00.638	I		I		
22 33 25	06 00 00	59 29 32	0002.75	0002.95	00.610	00.629	I		I		
22 33 27	06 00 00	59 27 29	0003.82	0004.16	00.654	00.676	I		XO		
22 33 29	06 00 00	59 27 03	0006.18	0006.29	00.695	00.686	I		I		
22 33 31	06 00 00	59 28 19	0008.25	0008.36	00.629	00.671	I		I		
22 33 33	06 00 00	59 30 48	0009.20	0009.44	00.608	00.637	I		I		
22 33 35	06 00 00	59 30 48	0009.46	0009.53	00.608	00.630	I		I		
22 33 37	06 00 00	59 33 21	0009.01	0009.08	00.616	00.632	I		I		
22 33 39	06 00 00	59 35 53	0007.93	0008.21	00.631	00.641	I		XO		
22 33 41	06 00 00	59 38 25	0006.74	0006.87	00.624	00.651	I		I		
22 33 43	06 00 00	59 40 57	0005.77	0005.84	00.614	00.628	I		I		
22 33 45	06 00 00	59 43 30	0005.74	0005.75	00.610	00.625	I		I		
22 33 47	06 00 00	59 46 02	0006.15	0006.06	00.619	00.636	I		I		
22 33 49	06 00 00	59 48 34	0006.85	0007.09	00.622	00.636	I		XO		
22 33 51	06 00 00	59 51 06	0007.57	0007.85	00.622	00.629	I		I		
22 33 53	06 00 00	59 53 39	0007.86	0007.90	00.610	00.641	I		I		

THIS LINE ILLUSTRATES THE ABILITY TO ENTER COMMENTS FROM THE CONSOLE TYPEWRITER.

Fig. 4 Observe Data

LOOKING AT THE STARS 02/03/65 16:37:33 GMT

E I	A(I)	LOWER	UPPER	E I	A(I)	LOWER	UPPER	E I	A(I)	LOWER	UPPER	E I	A(I)	LOWER	UPPER
* 01	0731	0000	0000	* 02	0001	0000	0000	* 03	1179	0000	0000	* 04	4814	0000	0000
* 05	3542	0000	0000	* 06	2788	0000	0000	* 07	-1853	0000	0000	* 08	-9008	0000	0000
* 09	0000	0000	0000	* 10	-0001	0000	0000	* 11	1193	0000	0000	* 12	-0000	-3456	3456
* 13	-1532	0000	0000	* 14	0000	0000	0000	* 15	0000	-9999	9999	* 16	0000	0000	0000
17		0000	0000	* 18	0000	0000	0000	* 19	0000	0000	0000	* 20	0000	0000	0000
21		0000	0000	* 22	0000	0000	0000	* 23	0000	0000	0000	* 24	0000	0000	0000
25		0000	0000	* 26	0000	0000	0000	* 27	0000	0000	0000	* 28	0000	0000	0000
29		0000	0000	* 30	0000	0000	0000	* 31	0000	0000	0000	* 32	0000	0000	0000
33		0000	0000	* 34	0000	0000	0000	* 35	0000	0000	0000	* 36	0000	0000	0000
37		0000	0000	* 38	0000	0000	0000	* 39	0000	0000	0000	* 40	0000	0000	0000
41		0000	0000	* 42	0000	0000	0000	* 43	0000	0000	0000	* 44	0000	0000	0000
45		0000	0000	* 46	0000	0000	0000	* 47	0000	0000	0000	* 48	0000	0000	0000
49		0000	0000	* 50	0000	0050	5380								

Fig. 5 Auxiliary Data Printout

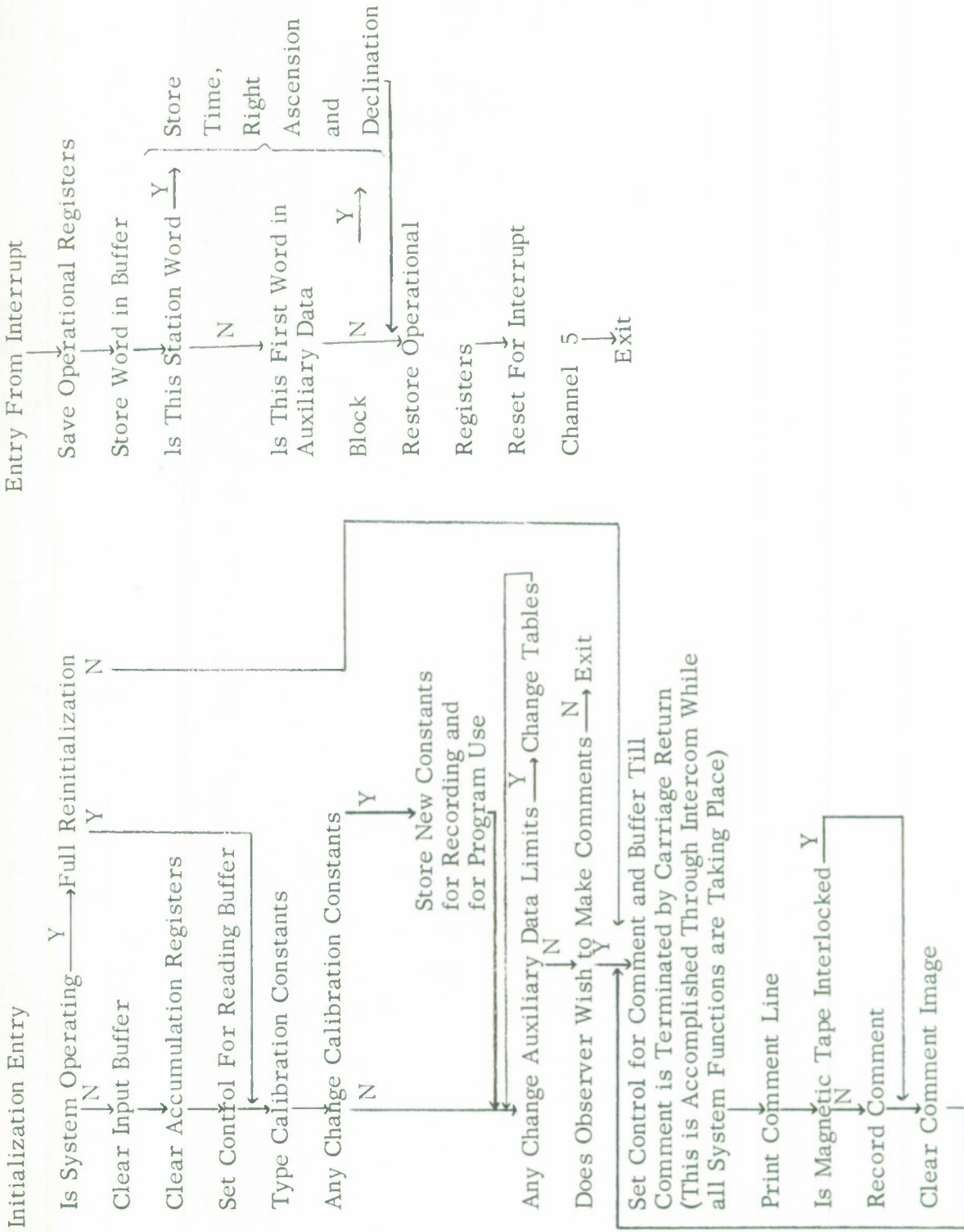


Fig. 6 Initialization and Interrupt Sections

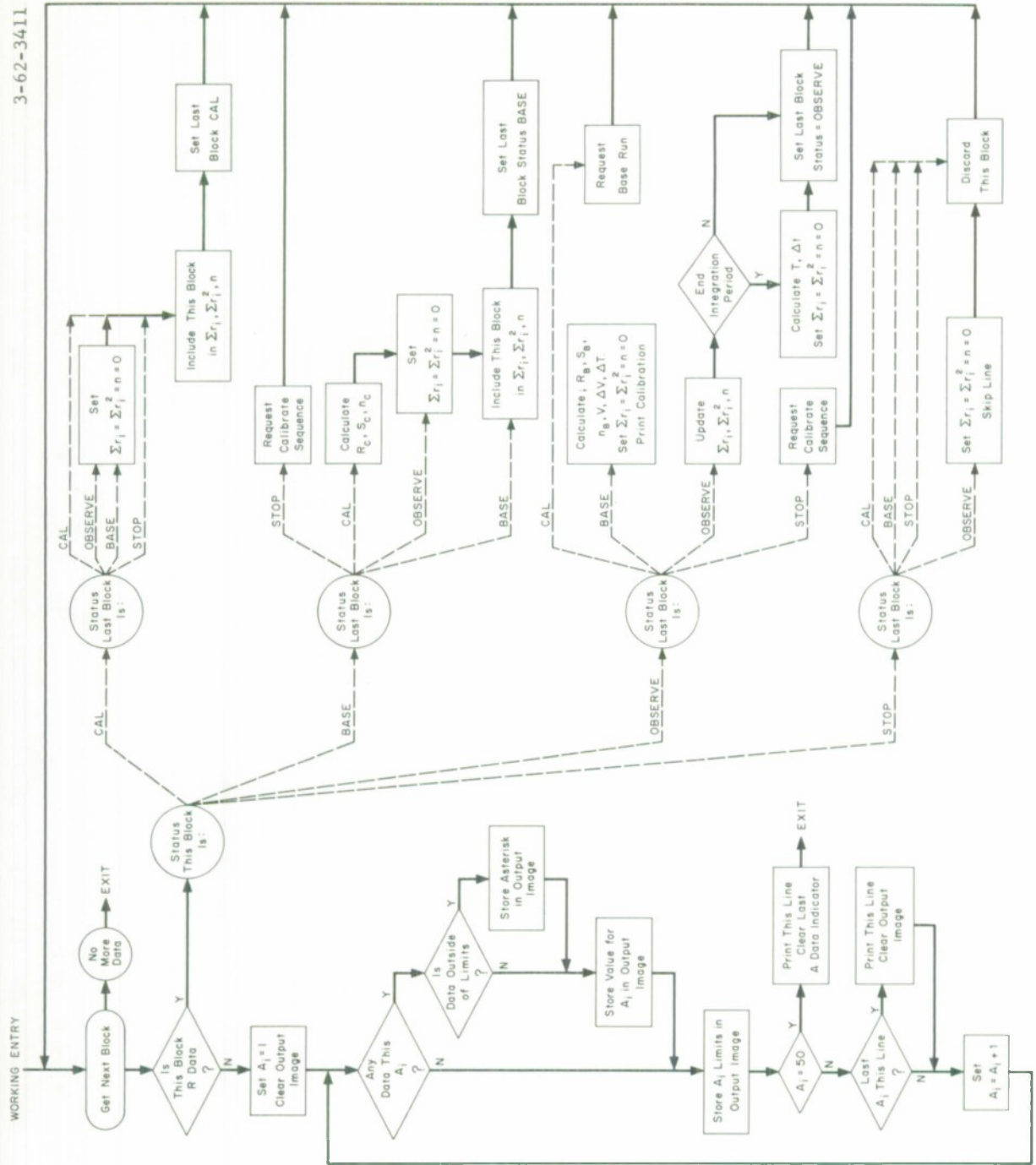


Fig. 7 Working Section

SIGN OFF(1) MOD(2) NEXT RUN(3) PRINT(4)
2*

MOON (1) SCAN(2) RECORDING(3) RADIOMETER(4) TIMING(5) OTHER(6)
4*

T CAL(1)=50.000 T CAL(2)=50.000>TBASE(1)=10.000>TBASE(2)=10.000

CHANGE CALIBRATION CONSTANTS YES(0) NO(1)
0*

T CAL(1)=
45.65*

T CAL(2)=
40.5*

TBASE(1)=
15.75*

TBASE(2)=
11.25*

ANY AUXILIARY LIMIT CHANGES YES(0) OR NO(1)
0*

A(I)=
12*

UPPER =
3456*

LOWER =
-3456*

A(I)=
15*

UPPER =
9999*

LOWER =
-9999*

A(I)=
*

DO YOU WISH TO WRITE COMMENTS. YES(0) NO(1)
0*

PROCEED ENDING EACH LINE WITH A CARRIAGE RETURN

Fig. 8 Initialization of Radiometer Program

..... RADIOMETER SPURT OUTPUT NO. 21C
 P.STYLOS*28APR65

CARDS	LI	ID	LABEL	TA	STATEMENT	LOC	F	JK8	Y	NC	TES
.	CC000		RADIOMETER	PROGRAM	P.STYLOS*28APR65	00000	00253	CCCC			
.	CC001		ROMTRX	U-TAG	WORKING*INIT	00001	27112	23127			
.	CC002			FC	1*ROMTR						
.	CC003		AZINBUF	EQUALS	113						
.	CC004		ELINBUF	EQUALS	112						
.	CC005		INIT	ENTRY							
.	CC006			ENT	A*IX(SYSTAT1)*ANDT						
.	CC007			JP	REINIT						
.	CC010			CLEAR	139D*LEFTOVER						
.	CC011			NC-UP		00002	61000	CCCC			
.	CC012			RPL	Y+)*W(LASTAIND)	00003	11550	63113			
.	CC013			RPL	Y+1)*W(NEWCOUNT)	00004	61000	CC13C			
.	CC014			ENT	A*550	00005	70100	CC213			
.	CC015			STR	A*W(LINECOUNT)	00006	16030	C3131			
.	CC016		INCONT	RJP	U(INTERCOM)	00007	12000	CCCC			
.	CC017			U-TAG	CCONST*0	00010	36030	C4356			
.	CC020			RJP	U(INTERCOM)	00011	36030	C3426			
.	CC021			U-TAG	KONOUT*KOMIN	00012	11000	CCC67			
.	CC022			ENT	A*W(KIN)*AZERO	00013	15030	C3425			
.	CC023			JP	ADQ	00014	65020	63426			
.	CC024			RJP	U(INTERCOM)	00015	02261	CCCC			
.	CC025			U-TAG	EXIOUT*EXLIN	00021	61000	CCC32			
.	CC026			RJP	U(INTERCOM)	00022	65020	63426			
.	CC027			U-TAG	EXZOUT*EXZIN	00023	02322	C2327			
.	CC030			RJP	U(INTERCOM)	00024	65020	63426			
.	CC031			U-TAG	YIOUT*YIIN	00025	02331	C2336			
.	CC032			RJP	U(INTERCOM)	00026	65020	63426			
.	CC033			U-TAG	Y2OUT*Y2IN	00027	02340	C2345			
.	CC034		ADC	RJP	U(INTERCOM)	00030	65020	63426			
.	CC035			U-TAG	QOUT*QIN	00031	02347	C2354			
.	CC036			ENT	A*W(QINA)*AZERO	00032	65020	63426			
.	CC037			JP	NOMOCHAN	00033	02357	C2373			
.	CC040		AUXCHANGE	CL	W(NUMBER)	00034	11430	C2356			
.	CC041			RJP	U(INTERCOM)	00035	61000	CC055			
.	CC042			U-TAG	ADUT*AIN	00036	16030	C2407			
.	CC043			ENT	A*W(NUMBER)*ANOT	00037	65020	63426			
.	CC044			JP	NOMOCHAN	00040	C2377	C2403			
.	CC045			RJP	U(INTERCOM)	00041	11530	C2407			
.	CC046			U-TAG	UPPEROUT*UPPERIN	00042	61000	CC055			
.	CC047			RJP	U(INTERCOM)	00043	65020	63426			
.	CC050			U-TAG	LOWEROUT*LOWERIN	00044	02410	C2417			
.	CC051			ENT	B6*W(NUMBER)	00045	65020	63426			
.	CC052			ENT	A*W(LIMIT)	00046	02424	C2433			
.	CC053			STR	A*W(AOATL+B6)	00047	12630	C2407			
.	CC054			ENT	A*W(UPLIMIT)	00050	11010	C2437			
.	CC055			STR	A*W(AOATL+B6)	00051	15016	C244C			
.	CC056			JP	AUXCHANGE	00052	11010	C2423			
.	CC057		NUMCCCHAN	ENT	A*W(CALKONSENT)	00053	15026	C244C			
.	CC060			RJP	RECDATA	00054	61000	CCC36			
.	CC061			CL	B6*	00055	11030	C4204			
.	CC062			ENT	A*W(YCONI+B6)	00056	65000	C347C			
.	CC063			RJP	RECDATA	00057	12600	CCCC			
.						00060	11036	C3427			
.						00061	65000	C347C			

CARDS	LI	ID	LA	TA	STATEMENT	RA	DIOMETER	SPURT	OUTPUT	NO.	21C	LOC	F	JKR	Y	NOTES
.	00064				BSK B6*3							00062	71600	CCC03		
.	00065				JP \$-3							00063	61000	CCC6C		
.	00066				ENT A*XL(SYSTAT1)*ANOT							00064	11550	63313		
.	00067				JP \$+2							00065	61000	CCC67		
.	00070				EXIT							00066	61010	CCC02		
.	00071				CL W(COMMENTREQ)							00067	16030	C440C		
.	00072				RJP U(INTERCOM)							00070	65020	63426		
.	00073				U-TAG RECOMOUT*REOCUMIN							00071	04357	C4374		
.	00074				ENT A*W(COMMENTREQ)*AZERC							00072	11430	C440C		
.	00075				EXIT							00073	61010	CCC02		
.	00076				RJP U(INTERCOM)							00074	65020	63426		
.	00077				U-TAG PROCEED*0							00075	04401	CCC0C		
.	00100				CLEAR 170*COMMENTLINE							00076	70100	CCC21		
.	00101				RJP U(INTERCOM)							00077	16030	C442C		
.	00102				O INCOMSPEC							00100	65020	63426		
.	00103				NC-OP							00101	00000	04441		
.	00104				NC-OP							00102	12000	CCCC		
.	00105				NC-OP							00103	12000	CCCC		
.	00106				NC-OP							00104	12000	CCCC		
.	00107				JP CLINE1*KEY1							00105	12000	CCCC		
.	00110				RJP U(INTERCOM)							00106	61100	CC11C		
.	00111				RJP U(INTERCOM)							00107	61000	C0114		
.	00112				160 COMMENTLINE							00110	65020	63423		
.	00113				-1 0							00111	00020	0442C		
.	00114				NC-OP							00112	77776	CCCC		
.	00115				ENT Q*W(0SECONDS)							00113	12000	CCCC		
.	00116				STR Q*W(COMMENTLINE+16D)							00114	10030	63141		
.	00117				ENT A*W(LITREC)							00115	14030	C444C		
.	00120				STR A*W(RECFILE+5)							00116	11030	C4211		
.	00121				ENT A*UX(INTERLCKSW)*ANEG							00117	15030	63217		
.	00122				JP \$+2							00120	11760	6346C		
.	00123				JP CLEARLINE							00121	61000	C0123		
.	00124				ENT A*W(RECEILE+5)*ANOT							00122	61000	CCC76		
.	00125				JP CLEARLINE							00123	11530	63217		
.	00126				RJP U(INTERCOM)							00124	61000	CCC76		
.	00127				O 0							00125	65020	63426		
.	00130				JP \$-4							00126	00000	CCCC		
.	00131				CL W(REINITA)							00127	61000	C0123		
.	00132				RJP U(INTERCOM)							00130	16030	C3064		
.	00133				U-TAG REOUTSPEC*REINSPEC							00131	65020	63426		
.	00134				ENT A*W(REINITA)*ANOT							00132	03045	C306C		
.	00135				JP INCONT							00133	11530	C3064		
.	00136				JP CLEARLINE-2							00134	61000	CCC14		
.	00137				ENTRY							00135	61000	CCCC		
.	00140				STR A*W(SAVEA)							00136	61000	CCCC		
.	00141				STR Q*W(SAVEQ)							00137	15030	C2526		
.	00142				STR B6*W(SAVEB6)							00140	14030	C2527		
.	00143				STR B3*W(SAVEB3)							00141	16630	C253C		
.	00144				ENT B6*W(INEAD)							00142	16330	C2531		
.	00145				ENT Q*W(INR)							00143	12630	C3146		
.	00146				STR Q*W(RUEIN+R6)							00144	10030	C2524		
.	00147				BSK B6*1250							00145	14036	C3147		ST WD
.												00146	71600	C0175		

SAVE OPERATIONAL REGISTERS

CARDS	L1	IO LABEL	TA STATEMENT	LOC	F	JKR	Y	NCTFS
.	0C150		JP \$+1	00147	61000	0C15C		
.	0C151		ENT LP*(IOMASK)	00150	40030	0C376		
.	0C152		SUB A*(IOA51)*APOS	00151	21630	0C44C		
.	0C153		JP AOXDAT	00152	61000	0C247		AUXILIARY DATA
.	0C154		STR A*(IFMP)*ANOT	00153	15530	0C113		
.	0C155		JP STRADAT	00154	61000	0C164		CRSERVE DATA STATUS WD
.	0C156	INTEND	ENT A*(SAVFA)	00155	11030	0C2526		RESTORE OPERATIONAL REGESTERS
.	0C157		STR B6*(NEADD)	00156	16630	0C146		
.	0C160		ENT B6*(SAVER6)	00157	12630	0C253C		
.	0C161		ENT B3*(SAVERB3)	00160	12330	0C2531		
.	0C162		ENT G*(SAVFQ)	00161	10030	0C2527		
.	0C163		IN C5*(INCOMING)*MCNITCR	00162	75270	0C2523		
.	0C164		RILJP L(RADIINT)	00163	60110	0C136		STORE INFO FCR CALCULATING RA
.	0C165	STRADAT	ENT A*(IO)	00164	11030	0C441		DEC
.	0C166		STR A*(BOFIN*86)	00165	15036	0C147		EW RLK
.	0C167		BSK B6*1250	00166	71600	0C175		
.	0C170		JP \$+1	00167	61000	0C17E		
.	0C171		ENT A*(TRUEIME)*ANGT	00170	11530	0C132		
.	0C172		ADD A*1	00171	20000	0C001		
.	0C173		STR A*(BOFIN*86)	00172	15036	0C147		
.	0C174		BSK B6*1250	00173	71600	0C175		
.	0C175		JP \$+1	00174	61000	0C175		
.	0C176		ENT A*(ELINRUF)	00175	11010	0C112		
.	0C177		SUB A*(INLEVADO)	00176	21020	0C447		
.	0C200		SUB A*2*APNS	00177	21600	0C002		
.	0C201		JP STRA1	00200	61000	0C227		
.	0C202		ENT A*(AZINRUF)	00201	11010	0C113		
.	0C203		SUB A*2	00202	21000	0C002		
.	0C204		CNT B3*A	00203	12370	0C00C		
.	0C205		ENT A*(B+3)*ANGT	00204	11533	0C001		
.	0C206		ADD A*1	00205	20000	0C001		
.	0C207		STR A*(BOFIN*86)	00206	15036	0C147		
.	0C210		BSK B6*1250	00207	71600	0C175		
.	0C211		JP \$+1	00210	61000	0C211		
.	0C212		ENT A*(ELINRUF)	00211	11010	0C112		
.	0C213		SUB A*2	00212	21000	0C002		
.	0C214		ENT B3*A	00213	12370	0C00C		
.	0C215		ENT A*(B+3)*ANGT	00214	11533	0C00C		
.	0C216		ADD A*1	00215	20000	0C001		
.	0C217		STR A*(BOFIN*86)	00216	15036	0C147		
.	0C220		BSK B6*1250	00217	71600	0C175		
.	0C221		JP \$+1	00220	61000	0C221		
.	0C222		ENT A*(B33)*ANGT	00221	11530	0C133		
.	0C223		ADD A*1	00222	20000	0C001		
.	0C224		STR A*(BOFIN*86)	00223	15036	0C147		
.	0C225		BSK B6*1250	00224	71600	0C175		
.	0C226		JP \$+1	00225	61000	0C226		
.	0C227		JP STRA4	00226	61000	0C245		
.	0C230	STRA1	ENT A*(INAZIMADD)	00227	11010	0C446		
.	0C231		RJP STRA3	00230	65000	0C234		
.	0C232		ENT A*(INLEVADD)	00231	11010	0C447		

CAROS	L1 ID	LAREL	TA STATEMENT	LOC	F	JKB	Y	NOTES
	0C233		RJP STRA3	00232	6500	00234		
	0C234		JP STRA4	00233	6100	00245		
	0C235	STRA3	ENTRY	00234	6100	0000		
	0C236		ADD A*4990	00235	2000	00763		
	0C237		ENT B3*A	00236	12370	00000		
	0C240		ENT A*W(O+B3)*ANOT	00237	11533	00000		
	0C241		ADD A*1	00240	2000	00001		
	0C242		STR A*W(BUFIN+R6)	00241	15036	03147		
	0C243		BSK B6*1250	00242	71600	00175		
	0C244		JP \$*1	00243	6100	00244		
	0C245		EXIT	00244	61010	00234		
	0C246	STRA4	STR B6*W(NEADD)	00245	16630	03146		
	0C247		JP INTEND	00246	61000	00155		
	0C250	AUXDAT	ENT A*W(LASTAGINC)*ANOT	00247	11530	04356		START NEW AC BLOCK (SET BY WO RKING)
	0C251		JP INTEND	00250	61000	00155		NC
	0C252		CL W(LASTADINO)	00251	16030	04356		YES - SET FCR NC FOR NEXT WO
	0C253		JP STRADAT	00252	61000	00164		
	0C254	WORKING	ENTRY	00253	61000	00000		WORKING ENTRY
	0C255		RJP GETNXTBLK	00254	65000	02021		
	0C256		ENT A*W(WKRLKING)*ANCT	00255	11530	02220		
	0C257		JP RDATA	00256	61000	00346		
	0C260	ADATA	RJP U(PRLOG)	00257	65020	63423		THIS BLOCK RADIOMETER DATA
	0C261		18D EXPNAME	00260	00022	63350		
	0C262		-6 I	00261	77771	00001		
	0C263		NO-OP	00262	12000	00000		
	0C264		ENT A*W(AOATASENT)	00263	11030	04203		
	0C265		RJP RECDATA	00264	65000	03470		
	0C266		CL B3*	00265	12300	00000		
	0C267		ENT A*W(WORKKA+1+83)	00266	11033	04225		
	0C270		RJP RECDATA	00267	65000	03470		
	0C271		BSK B3*3	00270	71300	00003		
	0C272		JP \$-3	00271	61000	00266		
	0C273		ENT B3*ADATAHEAD	00272	12300	02562		
	0C274		RJP HEADROUTIN	00273	65000	01746		
	0C275	ADATA0	RJP U(PRLOG)	00274	65020	63423		
	0C276		24D ACOLHEAD	00275	00030	02532		
	0C277		-1 0	00276	77776	00000		PRINT ACATA CCLUMN HEADING
	0C300		NO-OP	00277	12000	00000		
	0C301		CL B3*	00300	12300	00000		
	0C302		ENT B7*1	00301	12700	00001		
	0C303		ENT A*W(BIT17)	00302	11030	03412		
	0C304		STR A*W(LOCOUNT)	00303	15030	03424		
	0C305	ADAT1	ENT B5*260	00304	12500	00032		
	0C306		CL W(RLKOUT+85)	00305	16035	04321		
	0C307		BJP B5*\$-1	00306	72500	00305		
	0C310		CL B4*	00307	12400	00000		
	0C311	ADAT1	RJP SETUPAD	00310	65000	00500		
	0C312		ENT C*W(LOCOUNT)	00311	10030	03424		
	0C313		ENT LP*W(UNITSMASK)	00312	40030	03401		
	0C314		SUB A*W(NINE)*ANOT	00313	21530	03414		
	0C315		JP ADDTEN	00314	61000	00321		

CARDS	LI	IO LABEL	TA STATEMENT	LUC	F	JKR	Y	NOTES
.	00316		ENT A*(LOCOUNT)	00315	11030	03424		
.	00317		ADD A*(HIT17)	00316	20030	03412		
.	00320		STR A*(LOCOUNT)	00317	15030	03424		
.	00321		JP LINETEST	00320	61000	00325		
.	00322	ADCTEN	ENT Q*(LOCOUNT)	00321	10030	03424		
.	00323		ENT LP*(TENSMASK)	00322	40030	03402		
.	00324		ADD A*(HIT21)	00323	20030	03415		
.	00325		STR A*(LOCOUNT)	00324	15030	03424		
.	00326	LINETEST	SUB A*(FIFTYONE)*ANCT	00325	21530	03416		
.	00327		JP LT1	00326	61000	00332		
.	00330		BSK 87*500	00327	71700	00062		
.	00331		BSK 84*3	00330	71400	00003		
.	00332		JP ADATA1	00331	61000	00310		
.	00333	LT1	RJP U(PRLOG)	00332	65020	63423		
.	00334		240 BLKOUT	00333	00030	04321		
.	00335		-1 0	00334	77776	00000		
.	00336		NC-UP	00335	12000	00000		
.	00337		ENT A*(LOCOUNT)	00336	11030	03424		
.	00340		SUB A*(FIFTYONE)*APOS	00337	21630	03416		
.	00341		JP ADAT1	00340	61000	00304		
.	00342		RPL Y+1*(LASTAIND)	00341	36030	04356		
.	00343		ENT A*610	00342	11000	00075		
.	00344		STR A*(LINECOUNT)	00343	15030	03425		
.	00345		RPL Y+1*(NEWCOUNT)	00344	36030	03426		
.	00346		JP L(WORKING)	00345	61010	00253		
.	00347	RODATA	ENT Q*(WORK)	00346	10030	04231		
.	00350		ENT LP*(STATUSMASK)	00347	40030	03403		
.	00351		RSH A*140	00350	02000	00016		
.	00352		ENT 86*A	00351	12670	00000		
.	00353		STR A*(THISRIND)	00352	15030	03421		
.	00354		JP \$+1+R6	00353	61006	00354		
.	00355		JP ROR	00354	61000	00360		GRERVE
.	00356		JP RC	00355	61000	00406		CALIBRATE
.	00357		JP RB	00356	61000	00420		BASE
.	00360		JP RS	00357	61000	00433		STCP
.	00361	ROR	RJP RECALCKMT	00360	65000	03440		
.	00362		ENT B6*(LASTBIND)	00361	12630	03422		
.	00363		JP \$+1+R6	00362	61006	00363		
.	00364		JP ROBA	00363	61000	00377		LAST RLK ORSERVE
.	00365		JP RORC	00364	61000	00453		
.	00366		JP ROBB	00365	61000	00376		
.	00367	RCALREQ	ENT A*(ICALSEQ(ND))*AZERO	00366	11430	03133		
.	00370		JP RCRI	00367	61000	00374		
.	00371		RJP U(PRLOG)	00370	65020	63423		
.	00372		110 CALSEQREQ	00371	00013	03016		
.	00373		L -260	00372	00001	77745		
.	00374		NO-OP	00373	12000	00000		
.	00375	RCR1	RPL Y+1*(CALSEQIND)	00374	36030	03133		
.	00376		JP WORKING+1	00375	61000	00254		
.	00377	RORR	RJP FINALBASE	00376	65000	01234		
.	00400	RUBA	RJP PRBLK	00377	65000	00621		
.	00401		ENT Q*(WORK)	00400	10030	04231		START ORSERVE DATA
.	00402		RJP READPERIOD	00401	65000	00703		

CAROS	LI	IO	LABEL	TA STATEMENT	LUC	F	JKB	Y	NOTES
.	00403			SUB Q*(SUMN)*QZERO	00402	27430	03136		
.	00404			JP WORKING+1*QPOS	00403	60200	00254		
.	00405			RJP FINOBSERVE	00404	65000	01436		
.	00406			JP WORKING+1	00405	61000	00254		
.	00407	RC		RJP RECHLOCKMT	00406	65000	0344C		
.	00410			ENT B6*(LASTBINO)	00407	12630	03422		
.	00411			JP \$+1+R6	00410	61006	00411		
.	00412			JP RCC	00411	61000	00415		
.	00413			JP RCC	00412	61000	00416		
.	00414			JP RSS	00413	61000	0045C		
.	00415			JP RCC	00414	61000	00416		
.	00416	RCC		RJP CLEARORS	00415	65000	00465		
.	00417	RCC		RJP PRBLK	00416	65000	00621		
.	00420			JP WORKING+1	00417	61000	00254		
.	00421	RB		RJP RECHLOCKMT	00420	65000	0344C		
.	00422			ENT B6*(LASTBINO)	00421	12630	03422		
.	00423			JP \$+1+R6	00422	61006	00423		
.	00424			JP RBO	00423	61000	00463		
.	00425			JP RBC	00424	61000	00427		
.	00426			JP RBB	00425	61000	00431		
.	00427			JP RCALREQ	00426	61000	00366		
.	00430	RBC		RJP FINVLCAL	00427	65000	00726		
.	00431			JP RSS	00430	61000	0045C		
.	00432	RBB		RJP PRBLK	00431	65000	00621		
.	00433			JP WORKING+1	00432	61000	00254		
.	00434	RS		ENT R6*(LASTBINO)	00433	12630	03422		
.	00435			JP \$+1+R6	00434	61006	00435		
.	00436			JP RSO	00435	61000	00441		
.	00437			JP RSC	00436	61000	00446		
.	00440			JP RSB	00437	61000	00447		
.	00441			JP RSS	00440	61000	0045C		
.	00442	RSC		ENT A*(SKIPOLINE)*AZERO	00441	11430	03134		
.	00443			JP RSO1	00442	61000	00444		
.	00444			RJP CLEARORS	00443	65000	00465		
.	00445	RSCI		RPL Y+1*(SKIPOLINE)	00444	36030	03134		
.	00446			RPL Y+1*(NEWCOUNT)	00445	36030	03426		
.	00447	RSC		JP WORKING+1	00446	61000	00254		
.	00450	RSB		JP WORKING+1	00447	61000	00254		
.	00451	RSS		ENT A*(THISBINO)	00450	11030	03421		
.	00452			STR A*(LASTBINO)	00451	15030	03422		
.	00453			JP WORKING+1	00452	61000	00254		
.	00454	ROBC		ENT A*(REQBASEIND)*AZERO	00453	11430	03132		
.	00455			JP ROBC1	00454	61000	00461		
.	00456			RJP UPRLOG)	00455	65020	63423		
.	00457			L2D NEEDBASE	00456	00014	03031		
.	00460			L -260	00457	00001	77745		
.	00461			NO-UP	00460	12000	0000C		
.	00462	ROBC1		RPL Y+1*(REQBASEIND)	00461	36030	03132		
.	00463			JP WORKING+1	00462	61000	00254		
.	00464	RBC		RJP CLEARORS	00463	65000	00465		
.	00465			JP RBB	00464	61000	00431		
.	00466	CLEARORS		ENTRY	00465	61000	0000C		
.	00467			CLEAR 7*SUM	00466	70100	0000C		

CARDS	LI ID LABEL	TA STATEMENT	LOC	F	JKB	Y	NCTES
	00470	RJP RECBLOCKMT	00467	16C3C	C3136		
	00471	RJP U(PRLOG)	00470	65000	C344C		
	00472	1 LOWEROUTA	00471	65020	63423		
	00473	-1 0	00472	00001	C2426		
	00474	JP \$+1	00473	77776	C000C		
	00475	RPL Y+1*(LINECOUNT)	00474	61000	C0475		
	00476	CL W(WDCOUNT)	00475	36030	C3423		
	00477	EXIT	00476	16C30	C3135		
	00500	SETUPAD	00477	61C10	C0465		
	00501	ENTRY Q*(WORK+B3)	00500	61000	C000C		
	00502	ENT LP*(IDMASK)	00501	10033	C4231		
	00503	SUB A*(IDCOUNT)*AZERO	00502	40C30	C3376		
	00504	JP BB	00503	21430	C3424		
	00505	STR B7*(T5)	00504	61000	CC574		
	00506	RJP PROWORO	00505	16730	C312C		
	00507	ENT A7*(T5)	00506	6500C	C0655		
	00510	STR Q*(A1)	00507	12730	C312C		
	00511	ENT A*(WORK+B3)	00510	14030	C3126		
	00512	RJP RECDATA	00511	11033	C4231		
	00513	ENT Q*(WORK+B3)	00512	65000	C347C		
	00514	ENT LP*(SIGNMASK)*AZERO	00513	10033	C4231		
	00515	JP STAD2	00514	40430	C340C		
	00516	BSK B3*500	00515	61000	CC612		
	00517	ENT A*(ADATL+*B7)	00516	71300	CC662		
	00520	COM A*(A1)*YMORE	00517	11057	C244C		
	00521	JP EXLIMIT	00520	04730	C3126		
	00522	ENT A*(ADATL+*B7)	00521	61000	C0616		
	00523	COM A*(A1)*YLESS	00522	11067	C244C		
	00524	JP EXLIMIT	00523	04630	C3126		
	00525	CL A*	00524	61000	CC616		
	00526	ENT Q*(IDCOUNT)	00525	11000	CC00C		
	00527	Q*5	00526	10C30	C3424		
	00530	LSH AQ*4	00527	05000	CC005		
	00531	ADD A*480	00530	07000	CC004		
	00532	LSH A*2	00531	20000	CC06C		
	00533	LSH AQ*4	00532	06000	CC002		
	00534	ADC A*480	00533	07000	CC004		
	00535	LSH A*6	00534	20000	CC06C		
	00536	STR A*(RLKOUT+*B5)	00535	06000	CC006		
	00537	BSK B5*260	00536	15035	C4321		
	00540	ENT R6*3	00537	71500	CC032		
	00541	ENT Q*(A1)	00540	12600	CC003		
	00542	RJP POSINT	00541	10C30	C3126		
	00543	CL Q*	00542	65000	C1022		
	00544	LSH AQ*480	00543	10000	CC00C		
	00545	STR A*(RLKOUT+*B5)	00544	07000	CC06C		
	00546	BSK B5*260	00545	15035	C4321		
	00547	LSH AQ*300	00546	71500	CC032		
	00550	ENT Q*(ADATL+*B7)*CPOS	00547	07000	CC036		
	00551	ADD A*(MINUS)	00550	1C257	C244C		
	00552	STR A*(RLKOUT+*B5)	00551	2C030	C3071		
	00553	BSK B5*260	00552	15C35	C4321		
			00553	71500	CC032		

NC DATA THIS ID

CARDS	LI	IO	LABEL	TA STATEMENT	LOC	F	J	K	R	Y	NOTES
.	0C554			ENT B6*3	00554	12600	C0C03				
.	0C555			RJP POSINT	00555	65000	C1C22				
.	0C556			CL Q*	00556	10000	0C000				
.	0C557			LSH AQ*6	00557	07000	0C006				
.	0C560			STR A*(BLKOUT+85)	00560	15035	04321				
.	0C561			ASK H5*260	00561	71500	00032				
.	0C562			ENT Q*UX(A0ATAL+87)	00562	10067	0244C				
.	0C563			ENT B6*3	00563	12600	00003				
.	0C564			RJP POSINT	00564	65000	01022				
.	0C565			CL C*	00565	10000	0C000				
.	0C566			LSH AQ*480	00566	07000	0006C				
.	0C567			STR A*(BLKOUT+85)	00567	15035	04321				
.	0C57C			BSK H5*260	00570	71500	00032				
.	0C571			STR C*(BLKOUT+85)	00571	14035	04321				
.	0C572			BSK H5*260	00572	71500	00032				
.	0C573	LEAVE		EXIT	00573	61010	0050C				
.	0C574	BB		ENT Q*(LOCOUNT)	00574	10030	03424				
.	0C575			CL A*	00575	11000	0C000				
.	0C576			LSH Q*5	00576	05000	00005				
.	0C577			LSH AQ*4	00577	07000	0C004				
.	0C60C			ADD A*480	00600	20000	0006C				
.	0C601			LSH A*2	00601	06000	0C002				
.	0C602			LSH AQ*4	00602	07000	00004				
.	0C603			ADD A*480	00603	20000	0006C				
.	0C604			LSH A*6	00604	06000	00006				
.	0C605			STR A*(BLKOUT+85)	00605	15035	04321				
.	0C606			BSK H5*260	00606	71500	00032				
.	0C607			BSK H5*260	00607	71500	00032				
.	0C610			CL A*	00610	11000	0C000				
.	0C611			JP B88	00611	61000	0055C				
.	0C612	STA02		ENT A*(A1)	00612	11030	03126				
.	0C613			CP A*	00613	15040	0C000				
.	0C614			STR A*(A1)	00614	15030	03126				
.	0C615			JP STA01	00615	61000	00516				
.	0C616	EXLIMIT		ENT A*(ASTERISK)	00616	11030	0310C				
.	0C617			LSH A*80	00617	06000	0001C				
.	0C620			JP INSIOE+1	00620	61000	00526				
.	0C621	PRBLK		ENTRY	00621	61000	0C000				
.	0C622			ENT B6*1	00622	12600	00001				
.	0C623	PRBLKA		ENT Q*(WORK+1+86)	00623	10036	04232				
.	0C624			RJP PROORO	00624	65000	00655				
.	0C625			ENT Q*(WORK+1+86)	00625	10036	04232				
.	0C626			ENT LP*(STGNMASK)*AZERO	00626	40430	03400				
.	0C627			JP NEGVAlUE	00627	61000	00651				
.	0C630	PRBLKI		ENT A*(SUMR1+86)	00630	11036	03137				
.	0C631			ADD A*(T4)	00631	20030	03117				
.	0C632			STR A*(SUMR1+86)	00632	15036	03137				
.	0C633			ENT Q*(T4)	00633	10030	03117				
.	0C634			MUL W(T4)	00634	22030	03117				
.	0C635			ADD C*(SUMRSOR1+86)*QNEG	00635	26736	03141				
.	0C636			JP PRBLKZ	00636	61000	00643				
.	0C637			RPL Y+1*(SQCARRY1+86)	00637	36036	03143				
.	0C640			LSH AQ*300	00640	07000	00036				

CARDS	LI	ID	LABEL	TA STATEMENT	LOC	F	J	K	Y	NOTES
.	0C641			SEL CL*(8IT29)	00641	52030	C3413			
.	0C642			RSH AQ*300	00642	03000	C0C36			
.	0C643	PRBLK2		STR Q*(SUMRSQR1+B6)	00643	14036	C3141			
.	0C644			BJP R6*PRBLKA	00644	72600	C0623			
.	0C645			RPL Y+1*(SUMN)	00645	36030	C3136			
.	0C646			ENT A*(THISBINO)	00646	11030	C3421			
.	0C647			STR A*(LASTBINO)	00647	15030	C3422			
.	0C650			EXIT	00650	61010	C0621			
.	0C651	NEGVALUE		ENT A*(T4)	00651	11030	C3117			
.	0C652			CP A*	00652	15040	C0C0C			
.	0C653			STR A*(T4)	00653	15030	C3117			
.	0C654			JP PRBLK1	00654	61000	C063C			
.	0C655	PRCWORO		ENTRY	00655	61000	C0C0C			
.	0C656			LSH Q*140	00656	05000	C0C16			
.	0C657			CL A*	00657	11000	C0C0C			
.	0C660			ENT B7*3	00660	12700	C0C03			
.	0C661	PRW01		LSH AQ*4	00661	07000	C0C04			
.	0C662			STR A*(T1+B7)	00662	15037	C3114			
.	0C663			CL A*	00663	11000	C0C0C			
.	0C664			BJP B7*PRW01	00664	72700	C0661			
.	0C665			ENT Q*(T4)	00665	10030	C3117			
.	0C666			MUL 10000	00666	22000	0175C			
.	0C667			ACC Q*(T1)	00667	26030	C3114			
.	0C670			STR Q*(T4)	00670	14030	C3117			
.	0C671			ENT Q*(T3)	00671	10030	C3116			
.	0C672			MUL 1000	00672	22000	00144			
.	0C673			ACC Q*(T4)	00673	26030	C3117			
.	0C674			STR Q*(T4)	00674	14030	C3117			
.	0C675			ENT Q*(T2)	00675	10030	C3115			
.	0C676			MUL 100	00676	22000	C0C12			
.	0C677			ACC Q*(T4)	00677	26030	C3117			
.	0C700			STR Q*(T4)	00700	14030	C3117			
.	0C701			STR Q*(PER100)	00701	14030	C3C65			
.	0C702			EXIT	00702	61010	C0655			
.	0C703	READPER100		ENTRY	00703	61000	C0C0C			
.	0C704			ENT LP*(PER100MASK)	00704	40030	C3404			
.	0C705			RSH AQ*80	00705	03000	C0C1C			
.	0C706			STR A*(T1)	00706	15030	C3114			
.	0C707			CL A*	00707	11000	C0C0C			
.	0C710			LSH AQ*4	00710	07000	C0C04			
.	0C711			STR A*(T2)	00711	15030	C3115			
.	0C712			CL A*	00712	11000	C0C0C			
.	0C713			LSH AQ*4	00713	07000	C0C04			
.	0C714			STR A*(T3)	00714	15030	C3116			
.	0C715			ENT Q*(T1)	00715	10030	C3114			
.	0C716			MUL 1000	00716	22000	00144			
.	0C717			ACC Q*(T3)	00717	26030	C3116			
.	0C720			STR Q*(T4)	00720	14030	C3117			
.	0C721			ENT Q*(T2)	00721	10030	C3115			
.	0C722			MUL 100	00722	22000	C0C12			
.	0C723			ACC Q*(T4)	00723	26030	C3117			
.	0C724			STR Q*(T4)	00724	14030	C3117			
.	0C725			EXIT	00725	61010	C0703			

CARDS	LI	ID LABEL	TA STATEMENT	LOC	F	JKB	Y	NOTES
.	0C726	FINALCAL	ENTRY	00726	61000	CCCC		
.	0C727		CL R6*	00727	12600	CCCC		
.	0C730		RJP FINPRU	00730	65000	CC735		
.	0C731		ENT A*55D	00731	11000	CC667		
.	0C732		STR A*(LINECOUNT)	00732	15030	03425		
.	0C733		RPL Y+1*(NEWCOUNT)	00733	36030	03426		
.	0C734		EXIT	00734	61010	00726		
.	0C735		ENTRY	00735	61000	00000		
.	0C736	FINPRU	ENT A*(SUMR1)	00736	11030	03137		
.	0C737		RSH AQ*300	00737	03000	00036		
.	0C740		LSH AQ*150	00740	07000	00017		
.	0C741		DIV W(SUMN)	00741	23030	03136		
.	0C742		STR Q*(RSUBC1+B6)	00742	14036	03345		
.	0C743		ENT A*(SUMR2)	00743	11030	03140		
.	0C744		RSH AQ*300	00744	03000	00036		
.	0C745		LSH AQ*150	00745	07000	00017		
.	0C746		DIV W(SUMN)	00746	23030	03136		
.	0C747		STR Q*(RSUBC2+B6)	00747	14036	03346		
.	0C750		ENT A*(SUMN)	00750	11030	03136		
.	0C751		STR A*(NSUBC+B6)	00751	15036	03351		
.	0C752		SUB A1*ANDT	00752	21500	00001		
.	0C753		JP ZEROSUB	00753	61000	01015		
.	0C754		STR A*(T1)	00754	15030	03114		
.	0C755		LSH A*200	00755	06000	00024		
.	0C756		STR A*(T5)	00756	15030	03120		
.	0C757		ENT Q*(T1)	00757	10030	03114		
.	0C760		MUL W(SUMN)	00760	22030	03136		
.	0C761		STR Q*(T2)	00761	14030	03115		
.	0C762		CNT Q*(SUMRSQR1)	00762	10030	03141		
.	0C763		LSH Q*1	00763	05000	00001		
.	0C764		ENT A*(SQARRAY1)	00764	11030	03143		
.	0C765		RSH AQ*1	00765	03000	00001		
.	0C766		DIV W(T2)	00766	23030	03115		
.	0C767		STR Q*(T3)	00767	14030	03116		
.	0C770		CL Q*	00770	10000	00000		
.	0C771		RSH AQ*1	00771	03000	00001		
.	0C772		DIV W(T2)	00772	23030	03115		
.	0C773		STR Q*(T4)	00773	14030	03117		
.	0C774		ENT Q*(RSUBC1+B6)	00774	10036	03345		
.	0C775		RJP SQRTR	00775	65000	01667		
.	0C776		STR A*(SSUBC1+B6)	00776	15036	03347		
.	0C777		ENT Q*(SUMRSQR2)	00777	10030	03142		
.	01000		LSH Q*1	01000	05000	00001		
.	01001		ENT A*(SQARRAY2)	01001	11030	03144		
.	01002		RSH AQ*1	01002	03000	00001		
.	01003		DIV W(T2)	01003	23030	03115		
.	01004		STR Q*(T3)	01004	14030	03116		
.	01005		CL Q*	01005	10000	00000		
.	01006		RSH AQ*1	01006	03000	00001		
.	01007		DIV W(T2)	01007	23030	03115		
.	01010		STR Q*(T4)	01010	14030	03117		
.	01011		ENT Q*(RSUBC2+B6)	01011	10036	03346		
.	01012		RJP SQRTR	01012	65000	01667		

CAROS	LI	ID LABEL	TA STATEMENT	LOC	F	JKB	Y	NOTES
	01013		STR A*(SSUBC2+B6)	01013	15036	0335C		
	01014		JP \$+3	01014	61000	01017		
	01015	ZERROSSUR	CL W(SSUBC1+B6)	01015	16036	03347		
	01016		CL W(SSUBC2+B6)	01016	16036	0335C		
	01017		CLEAR 7*SUMN	01017	70100	00007		
	01020		EXIT	01020	16030	03136		
	01021		ENTRY	01021	61010	00735		
	01022	POSINT	STR B6*W(INTND)	01022	61000	0000C		
	01023		STR Q*(TEMP)*QPOS	01023	16630	03127		
	01024		CP Q*	01024	14230	03113		
	01025	POSINT1	CL A*	01025	14000	0000C		
	01026		CL A*	01026	11000	0000C		
	01027		DIV 100	01027	23000	00012		
	01027		ADD A*480	01030	20000	0006C		
	01030		STR A*(T1+B6)	01031	15036	03114		
	01031		HJP B6*POSINT1	01032	72600	01026		
	01032		ENT Q*(TEMP)*QPOS	01033	10230	03113		
	01033		ADD A*4100	01034	20000	0410C		
	01034		BSK B6*W(INTND)	01035	71630	03127		
	01035		JP \$+2	01036	61000	0104C		
	01036		EXIT	01037	61010	01022		
	01037		LSH A*6	01040	06000	00006		
	01040		ADD A*(T1+B6)	01041	20036	03114		
	01041		JP \$-5	01042	61000	01035		
	01042	MIXCON	ENTRY	01043	61000	0000C		
	01043		STR Q*(MCI)	01044	14010	01047		
	01044		STR A*(TEMP)*APOS	01045	15630	03113		
	01045		CP A*	01046	15040	0000C		
	01046	MC1	RSH AQ*0	01047	03000	0000C		
	01047		STR C*(ANS5)	01050	14030	03125		
	01050		ENT C*A	01051	10070	0000C		
	01051	MC2	CL A*	01052	11000	0000C		
	01052		DIV 100	01053	23000	00012		
	01053		ADD A*480	01054	20000	0006C		
	01054		STR A*(T1+B6)	01055	15036	03114		
	01055		HJP B6*MC2	01056	72600	01052		
	01056	MC3	ENT C*(ANS5)	01057	10030	03125		
	01057	MC4	CL A*	01060	11000	0000C		
	01060		RSH AQ*I	01061	03000	00001		
	01061		MUL 200	01062	22000	00024		
	01062		ACD A*480	01063	20000	0006C		
	01063		STR A*(ANS1+B6)	01064	15036	03121		
	01064		BSK B6*LL(FRND)	01065	71610	0313C		
	01065		JP MC4	01066	61000	0106C		
	01066	MC5	ENT A*(TEMP)*APOS	01067	11630	03113		ASSEMBLE MCPCS
	01067		ENT C*41*SKIP	01070	10100	00041		
	01070		ENT Q*54	01071	10000	00054		
	01071		CL A*	01072	11000	0000C		
	01072		LSH AQ*6	01073	07000	00006		
	01073		ADD C*(T1+B6)	01074	26036	03114		
	01074		BSK B6*LL(INTND)	01075	71610	03127		
	01075		JP \$-3	01076	61000	01073		
	01076		LSH AQ*6	01077	07000	00006		

CARDS	LI ID LABEL	TA STATEMENT	LOC	F	JKB	Y	NOTES
•	01077	ACD Q*75	01100	26000	CC075		
•	01100	LSH AQ*6	01101	07000	CC006		
•	01101	ACD Q*(ANS1+86)	01102	26036	03121		
•	01102	BSK B6*L(FRND)	01103	71610	0313C		
•	01103	JP \$-3	01104	61000	01101		
•	01104	EXIT ANCG	01105	60710	01043		
•	01105	LSH AQ*6*ANEG	01106	07700	CC006		
•	01106	JP \$-1	01107	61000	01106		
•	01107	EXIT	01110	61010	C1C43		
•	01110	CONRADCC	01111	61000	CC0CC		
•	01111	ENT Q*(R,IGHTA)	01112	10030	C4222		
•	01112	CL A*	01113	11000	CC0CC		
•	01113	LSH G*6	01114	05000	CC006		
•	01114	LSH AQ*4	01115	07000	CC004		
•	01115	ACD A*480	01116	20000	CC06C		
•	01116	LSH A*2	01117	06000	CC002		
•	01117	LSH AQ*4	01120	07000	CC004		
•	01120	ACD A*480	01121	20000	CC06C		
•	01121	LSH A*6	01122	06000	CC006		
•	01122	STR A*(2+R3)	01123	15033	CC002		
•	01123	CL A*	01124	11000	CC0CC		
•	01124	LSH AQ*4	01125	07000	CC004		
•	01125	ACD A*480	01126	20000	CC06C		
•	01126	LSH A*2	01127	06000	CC002		
•	01127	LSH AQ*4	01130	07000	CC004		
•	01130	ACD A*480	01131	20000	CC06C		
•	01131	LSH A*8D	01132	06000	CC01C		
•	01132	LSH AQ*4	01133	07000	CC004		
•	01133	ACD A*480	01134	20000	CC06C		
•	01134	LSH A*2	01135	06000	CC002		
•	01135	LSH AQ*4	01136	07000	CC004		
•	01136	ACD A*480	01137	20000	CC06C		
•	01137	STR A*(3+R3)	01140	15033	CC003		
•	01140	CL A*	01141	11000	CC0CC		
•	01141	ENT Q*(DECLIN)*QPOS	01142	10230	C4223		
•	01142	ACD A*(MINUS)	01143	20030	03071		
•	01143	ENT Q*(DECLIN)*QPOS	01144	10230	C4223		
•	01144	CP Q*	01145	14000	CC0CC		
•	01145	LSH G*6	01146	05000	CC006		
•	01146	LSH A*2	01147	06000	CC002		
•	01147	LSH AQ*4	01150	07000	CC004		
•	01150	ACD A*480	01151	20000	CC06C		
•	01151	LSH A*2	01152	06000	CC002		
•	01152	LSH AQ*4	01153	07000	CC004		
•	01153	ACD A*480	01154	20000	CC06C		
•	01154	STR A*(4+R6)	01155	15036	CC004		
•	01155	CL A*	01156	11000	CC0CC		
•	01156	LSH AQ*4	01157	07000	CC004		
•	01157	ACD A*480	01160	20000	CC06C		
•	01160	LSH A*2	01161	06000	CC002		
•	01161	LSH AQ*4	01162	07000	CC004		
•	01162	ACD A*480	01163	20000	CC06C		
•	01163	LSH A*8D	01164	06000	CC01C		

CAROS	L1	ID	LABEL	TA STATEMENT	LOC	F	J	K	Y	NC	TES
.	01164			LSH A0*4	01165	07000	C0004				
.	01165			ADD A*480	01166	20000	C066C				
.	01166			STR A*W(5+R6)	01167	15036	C0005				
.	01167			CL A*	01170	11000	C000C				
.	01170			LSH A0*4	01171	07000	C0004				
.	01171			ADD A*480	01172	20000	C006C				
.	01172			LSH A*240	01173	06000	C003C				
.	01173			STR A*W(6+R6)	01174	15036	C0006				
.	01174			EXIT	01175	61010	01111				
.	01175		FOCATACON	ENTRY	01176	61000	C000C				
.	01176			STR Q*L(FODC1)	01177	14010	01203				
.	01177			CL B5*	01200	12500	C000C				
.	01200		FODC2	ENT B6*W(INTNO)	01201	12630	03127				
.	01201			ENT Q*150	01202	10000	C0017				
.	01202		FODC1	ENT A*W(0+R5)	01203	11035	C000C				
.	01203			RJP MIXCON	01204	65000	01043				
.	01204			STR A*W(7+R4)	01205	15034	C0007				
.	01205			BSK B4*77777	01206	71400	77777				
.	01206			STR Q*W(7+R4)	01207	14034	C0007				
.	01207			BSK B4*77777	01210	71400	77777				
.	01210			BSK B5*1	01211	71500	C0001				
.	01211			JP FODC2	01212	61000	01201				
.	01212			EXIT	01213	61010	01176				
.	01213		CALK	ENTRY	01214	61000	C000C				
.	01214			ENT A*1	01215	11000	C0001				
.	01215			STR A*W(FRNO)	01216	15030	0313C				
.	01216			STR Q*L(CALK1)	01217	14010	01222				
.	01217		CALK2	ENT B6*W(INTNO)	01220	12630	03127				
.	01220			ENT A*W(0+R5)	01221	11035	C000C				
.	01221		CALK1	ENT Q*0	01222	10000	C000C				
.	01222			RJP MIXCON	01223	65000	01043				
.	01223			STR A*W(200+R3)	01224	15033	C0024				
.	01224			STR Q*W(210+R3)	01225	14033	C0025				
.	01225			STR B3*A	01226	16340	C000C				
.	01226			ACC A*4	01227	20000	C0004				
.	01227			FNT B3*A	01230	12370	C000C				
.	01230			BSK B5*77777	01231	71500	77777				
.	01231			RJP B4*CALK2	01232	72400	0122C				
.	01232			EXIT	01233	61010	01214				
.	01233		FINALBASE	ENTRY	01234	61000	C000C				
.	01234			ENT B6*5	01235	12600	C0005				
.	01235			RJP FINPRO	01236	65000	00735				
.	01236			ENT A*610	01237	11000	C0075				
.	01237			STR A*W(LINECOUNT)	01240	15030	C3425				
.	01240			RPL Y*1*W(NEWCOUNT)	01241	36030	C3426				
.	01241			CL W(REOBASEINO)	01242	16030	03132				
.	01242			CL W(CALSEQINO)	01243	16030	03133				
.	01243			FNT B6*1	01244	12600	C0001				
.	01244		FB2	ENT A*W(RSUBC1+R6)	01245	11036	C3345				
.	01245			SUB A*W(RSUBB1+R6)*ANOT	01246	21536	C3352				
.	01246			JP FB1	01247	61000	01276				
.	01247			STR A*W(T1)	01250	15030	03114				
.	01250			ENT A*W(RSUBB1+R6)	01251	11036	03352				

DECREMENTATOR IS ZERO

CARDS	LI	ID	LABEL	TA	STATEMENT	LOC	F	J	K	Y	NOTES
.	01251			RSH	AQ*300	01252	03000	CCC	36		
.	01252			LSH	AQ*150	01253	07000	CCC	17		
.	01253			OIV	W(TI)	01254	23030	031	14		
.	01254			MUL	W(EXCONI*86)	01255	22036	034	31		
.	01255			LSH	AQ*100	01256	07000	CCC	12		
.	01256			ADO	A*W(YCONI*86)	01257	20036	034	27		
.	01257			STR	A*W(VI*86)	01260	15036	033	64		
.	01260			ENT	A*W(EXCONI*86)	01261	11036	034	31		
.	01261			RSH	AQ*200	01262	03000	CCC	24		
.	01262			DIV	W(TI)	01263	23030	031	14		
.	01263			STR	Q*W(T3)	01264	14030	031	16		
.	01264			MUL	W(SSUBR1*86)	01265	22036	033	54		
.	01265			RSH	AQ*130	01266	03000	CCC	15		
.	01266			STR	Q*W(DELVI*86)	01267	14036	033	66		
.	01267			ENT	Q*W(T3)	01270	10030	031	16		
.	01270			MUL	W(SSUBC1*86)	01271	22036	033	47		
.	01271			RSH	AQ*130	01272	03000	CCC	15		
.	01272			STR	Q*W(DELVI*86)	01273	14036	033	7C		
.	01273			RJP	86*FB2	01274	72600	012	45		
.	01274			JP	FR4	01275	61000	013	02		
.	01275			CL	W(VI*86)	01276	16036	033	64		
.	01276		FB1	CL	W(DELVI*86)	01277	16036	033	66		
.	01277			CL	W(DELVI*86)	01300	16036	033	7C		
.	01300			JP	FR1-2	01301	61000	012	74		
.	01301		FR4	RJP	U(PRLOG)	01302	65020	634	23		
.	01302			180	EXPNAME	01303	00022	633	5C		
.	01303			-6	1	01304	77771	00001			
.	01304			NC-OP		01305	12000	00000			
.	01305			ENT	B3*COATAHEAD	01306	12300	025	72		
.	01306			RJP	HEADRUUTIN	01307	65000	017	46		
.	01307			ENT	86*2	01310	12600	00002			
.	01310			ENT	Q*W(NSUBC)	01311	10030	033	51		
.	01311			RJP	POSIT	01312	65000	010	22		
.	01312			STR	A*W(CALONE*3)	01313	15030	026	05		
.	01313			ENT	B3*CALONE	01314	12300	026	02		
.	01314			ENT	85*EXCONI	01315	12500	034	31		
.	01315			ENT	Q*200	01316	10000	000	24		
.	01316			ENT	84*1	01317	12400	000	01		
.	01317			RJP	CALK	01320	65000	012	14		
.	01320			RPL	Y-1*W(TINNO)	01321	37030	031	27		
.	01321			ENT	B3*CALONE	01322	12300	026	02		
.	01322			ENT	H5*OELC1	01323	12500	033	7C		
.	01323			RJP	BASELINE	01324	65000	017	27		
.	01324			RJP	U(PRLOG)	01325	65020	634	23		
.	01325			260	CALONE	01326	00032	026	02		
.	01326			-1	0	01327	77776	00000			
.	01327			NO-OP		01330	12000	00000			
.	01330			RPL	Y-1*W(TINNO)	01331	37030	031	27		
.	01331			RPL	Y+1*W(IFRNO)	01332	36030	031	3C		
.	01332			ENT	B3*CALTWO	01333	12300	026	34		
.	01333			ENT	85*OELV1	01334	12500	033	66		
.	01334			RJP	BASELINE	01335	65000	017	27		
.	01335			RPL	Y+1*W(TINNO)	01336	36030	031	27		

CARDS	LI	ID	LABEL	TA	STATEMENT	LOC	F	JKB	Y	NOTES
.	01336			RPL	Y-1*(FRND)	01337	37030	C313C		
.	01337			ENT	R6*2	01340	12600	00002		
.	01340			ENT	Q*(NS088)	01341	10030	03356		
.	01341			RJP	POSIT	01342	65000	01022		
.	01342			STR	A*(CAL TWO+3)	01343	15030	02637		
.	01343			ENT	R3*(CAL TWO)	01344	12300	02634		
.	01344			ENT	R5*(YCON)	01345	12500	03427		
.	01345			ENT	C*150	01346	10000	00017		
.	01346			ENT	R4*1	01347	12400	00001		
.	01347			RJP	CALK	01350	65000	01214		
.	01350			RJP	U(PRLOG)	01351	65020	63423		
.	01351			260	CAL TWO	01352	00032	02634		
.	01352			-1	O	01353	77776	0000C		
.	01353			NO-UP		01354	12000	0000C		
.	01354			ENT	R3*(CAL THREE)	01355	12300	02666		
.	01355			ENT	R5*V1	01356	12500	03364		
.	01356			CL	W(FRND)	01357	16030	0313C		
.	01357			RJP	BASELINE	01360	65000	01727		
.	01360			RJP	U(PRLOG)	01361	65020	63423		
.	01361			180	CAL THREE	01362	00022	02666		
.	01362			-1	O	01363	77776	0000C		
.	01363			NO-OP		01364	12000	0000C		
.	01364			ENT	R6*2	01365	12600	00002		
.	01365			STR	R6*(FRND)	01366	16630	0313C		
.	01366			ENT	Q*200	01367	10000	00024		
.	01367			ENT	A*(AZIMINTERG)	01370	11030	04216		
.	01370			RJP	MIXCON	01371	65000	01043		
.	01371			STR	A*(CAL FOUR+4)	01372	15030	02714		
.	01372			STR	C*(CAL FOUR+5)	01373	14030	02715		
.	01373			ENT	R6*1	01374	12600	00001		
.	01374			STR	R6*(INTNO)	01375	16630	03127		
.	01375			ENT	A*(ELEVINTERG)	01376	11030	04215		
.	01376			ENT	C*200	01377	10000	00024		
.	01377			RJP	MIXCON	01400	65000	01043		
.	01400			STR	A*(CAL FOUR+80)	01401	15030	0272C		
.	01401			STR	Q*(CAL FOUR+90)	01402	14030	02721		
.	01402			ENT	R3*(CAL FOUR+100)	01403	12300	02722		
.	01403			ENT	R6*(CAL FOUR+120)	01404	12600	02724		
.	01404			RJP	CONRADEC	01405	65000	01111		
.	01405			RJP	U(PRLOG)	01406	65020	63423		
.	01406			190	CAL FOUR	01407	00023	0271C		
.	01407			-1	O	01410	77776	0000C		
.	01410			NO-UP		01411	12000	0000C		
.	01411			EXIT		01412	61010	01234		
.	01412		ENTERVALUE	ENTRY		01413	61000	0000C		
.	01413			CL	R6*	01414	12600	0000C		
.	01414			S08	A*(SCALE)*APOS	01415	21630	03437		
.	01415			JP	EVI	01416	61000	01424		
.	01416			B5K	R6*500	01417	71600	00062		
.	01417			JP	\$-3	01420	61000	01415		
.	01420			ENT	R6*9D	01421	12600	00011		
.	01421			ENT	R3*4	01422	12300	00004		
.	01422			EXIT		01423	61010	01413		

CARD	LI	IO	LAHEL	TA STATEMENT	LOC	F	JK8	Y	NOTES
.	01423		EV1	STR B6*A	01424	16640	CCCC		
.	01424			CL B6*	01425	12600	CCCC		
.	01425			CL B3*	01426	12300	CCCC		
.	01426			SUB A*5*APDS	01427	21600	00005		
.	01427			JP EV2	01430	61000	01433		
.	01430			BSK B6*500	01431	71600	CCC62		
.	01431			JP \$-3	01432	61000	01427		
.	01432		EV2	AOO A*5	01433	20000	00005		
.	01433			ENT B3*A	01434	12370	0000C		
.	01434			EXIT	01435	61010	01413		
.	01435		FIN8SERVE	ENTRY	01436	61000	0000C		
.	01436			CL WISKIPOLINE)	01437	16030	03134		
.	01437			ENT B6*100	01440	12600	00012		
.	01440			RJP FINPRO	01441	65000	00735		
.	01441			ENT B6*1	01442	12600	00001		
.	01442		FOR1	ENT A*WIRSUBC1+B6)	01443	11036	03345		
.	01443			SUB A*WIRSUBB1+B6)*ANOT	01444	21536	03352		
.	01444			JP CPT51	01445	61000	0147C		
.	01445			STR A*WIT1)	01446	15030	03114		
.	01446			ENT A*WIRSUBO1+B6)	01447	11036	03357		
.	01447			SUB A*WIRSUBR1+B6)*ANOT	01450	21536	03352		
.	01450			JP CPT52	01451	61000	01461		
.	01451			RSH AQ*300	01452	03000	00036		
.	01452			LSH AQ*150	01453	07000	00017		
.	01453			OIV W(1)	01454	23030	03114		
.	01454			MUL W(EXCON1+B6)	01455	22036	03431		
.	01455			LSH AQ*100	01456	07000	00012		
.	01456			STR A*WITEMPER1+B6)	01457	15036	03372		
.	01457			JP CPT53	01460	61000	01462		
.	01460		CPT52	CL WITEMPER1+B6)	01461	16036	03372		
.	01461		CPT53	ENT Q*WISSUBO1+B6)	01462	10036	03361		
.	01462			MUL W(EXCON1+B6)	01463	22036	03431		
.	01463			OIV WIT1)	01464	23030	03114		
.	01464			RSH Q*3	01465	01000	00003		
.	01465			STR Q*WIOELT1+B6)	01466	14036	03374		
.	01466			JP CPT55	01467	61000	01472		
.	01467		CPT51	CL W(TEMPER1+B6)	01470	16036	03372		
.	01470			CL WIOELT1+B6)	01471	16036	03374		
.	01471		CPT55	RJP B6*FOR1	01472	72600	01443		
.	01472			RPL Y+1*(NEWCOUNT)	01473	36030	03426		
.	01473			ENT A*WILINECOUNT)	01474	11030	03425		
.	01474			SUB A*540*ANEG	01475	21700	00066		
.	01475			JP FOR2	01476	61000	016CC		
.	01476		FOR3	ENT Q*W(THROBS)	01477	10030	04217		
.	01477			ENT H6*1	01500	12600	00001		
.	01500			RJP POSINT	01501	65000	01022		
.	01501			LSH A*6	01502	06600	00006		
.	01502			ENT Q*A	01503	10070	0000C		
.	01503			ENT A*W(ATT)*AZERO	01504	11430	03423		
.	01504			ACC Q*W(IPUB1)	01505	26030	03076		
.	01505			STR Q*W(LINE)	01506	14030	02733		
.	01506			ENT Q*W(MINOR)	01507	10030	0422C		

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CARDS	LI	IO	LABEL	TA	STATEMENT	LOC	F	JKB	Y	NOTES
.	01507			ENT	R6*1	01510	12600	CC001		
.	01510			RJP	POSINT	01511	65000	C1022		
.	01511			LSH	A*180	01512	06000	C0022		
.	01512			STR	A*W(LINE+1)	01513	15030	02734		
.	01513			ENT	Q*W(SECOB)	01514	10030	04221		
.	01514			ENT	R6*1	01515	12600	C0001		
.	01515			RJP	POSINT	01516	65000	01022		
.	01516			AOO	A*W(LINE+1)	01517	20030	02734		
.	01517			STR	A*W(LINE+1)	01520	15030	02734		
.	01520			ENT	R6*LINE	01521	12600	02733		
.	01521			ENT	R3*LINE	01522	12300	02733		
.	01522			RJP	CONRADEC	01523	65000	C1111		
.	01523			ENT	R4*LINE	01524	12400	02733		
.	01524			ENT	R6*3	01525	12600	C0003		
.	01525			STR	R6*W(INTNO)	01526	16630	03127		
.	01526			ENT	A*1	01527	11000	C0001		
.	01527			STR	A*W(FRNO)	01530	15030	03130		
.	01530			ENT	Q*TEMPER1	01531	10000	03372		
.	01531			RJP	FOOATAACON	01532	65000	01176		
.	01532			ENT	R6*1	01533	12600	C0001		
.	01533			STR	R6*W(INTNO)	01534	16630	03127		
.	01534			RPL	Y+1*W(FRNO)	01535	36030	03130		
.	01535			ENT	Q*OELTI	01536	10000	03374		
.	01536			RJP	FOOATAACON	01537	65000	01176		
.	01537			AOO	Q*16	01540	26000	00016		
.	01540			STR	Q*W(LINE+140)	01541	14030	02751		
.	01541	F085		ENT	Q*W(SCALE)	01542	10030	03437		
.	01542			MUL	100	01543	22000	C0012		
.	01543			AOO	Q*W(TEMPER1)*QPOS	01544	26630	03372		
.	01544			JP	FOB6	01545	61000	01612		
.	01545			LSH	AQ*300	01546	07000	C0036		
.	01546			RJP	INTERVALUE	01547	65000	01413		
.	01547			STR	R6*W(ERASELINE)	01550	16630	04213		
.	01550			ENT	A*W(CHAR+83)	01551	11033	03101		
.	01551			STR	A*W(LINE2+86)	01552	15036	02752		
.	01552	F088		ENT	Q*W(SCALE)	01553	10030	03437		
.	01553			MUL	100	01554	22000	C0012		
.	01554			AOO	Q*W(TEMPER2)*QPOS	01555	26630	03373		
.	01555			JP	FOB7	01556	61000	01616		
.	01556			LSH	AQ*300	01557	07000	C0036		
.	01557			RJP	INTERVALUE	01560	65000	01413		
.	01560			STR	R6*W(ERASELINE+1)	01561	16630	04214		
.	01561			ENT	A*W(CHAR+83)	01562	11033	03106		
.	01562			AOO	A*W(LINE2+86)	01563	20036	02752		
.	01563			STR	A*W(LINE2+86)	01564	15036	02752		
.	01564	F089		RJP	U(PRLOG)	01565	65020	63423		
.	01565			250	LINE	01566	00031	C2733		
.	01566			-1	0	01567	77776	C0000		
.	01567			NO-OP		01570	12000	C0000		
.	01570			RPL	Y+1*W(LINECOUNT)	01571	36030	03425		
.	01571			CL	W(WDCOUNT)	01572	16030	03135		
.	01572			ENT	R6*W(ERASELINE)	01573	12630	04213		
.	01573			CL	W(LINE2+86)	01574	16036	02752		

CARDS	LI	IO LABEL	TA STATEMENT	LOC	F	JKB	Y	NOTES
.	01574		ENT B6*(ERASEL(NE+1))	01575	12630	C4214		
.	01575		CL W(LINE2+86)	01576	16036	C2752		
.	01576		EXIT	01577	61010	01436		
.	01577	F082	RJP U(PRLOG)	01600	65020	63423		
.	01600		18D EXPNAME	01601	00022	6335C		
.	01601		-6 1	01602	77771	00001		
.	01602		NO-UP	01603	12000	00000		
.	01603		RJP U(PRLOG)	01604	65020	63423		
.	01604		25D DOBHEAD	01605	00031	C2764		
.	01605		-1 0	01606	77776	00000		
.	01606		NO-OP	01607	12000	00000		
.	01607		CL W(LINECOUNT)	01610	16030	03425		
.	01610		JP F083	01611	61000	01477		
.	01611	F086	CL W(ERASELINE)	01612	16030	04213		
.	01612		ENT A*(CHAR)	01613	11030	03101		
.	01613		STR A*(LINE2)	01614	15030	02752		
.	01614		JP F088	01615	61000	01553		
.	01615	F087	CL W(ERASELINE+1)	01616	16030	04214		
.	01616		ENT A*(CHAR)	01617	11030	03106		
.	01617		ADD A*(LINE2)	01620	20030	02752		
.	01620		STR A*(LINE2)	01621	15030	02752		
.	01621		JP F089	01622	61000	01565		ARBITRARY
.	01622	SQRT	JP SQRT	01623	61000	01623		CLEAR Q
.	01623		CL Q*	01624	10000	00000		NORMALIZE
.	01624		RPT 140	01625	70000	00016		SHIFT UNTIL A 0
.	01625		RSH AQ*2-AZERO	01626	03400	00002		ERROR,BIT 28 CR 29 1
.	01626		JP L(SQRT)*ANOT	01627	60510	01623		NDORMALIZE IN A
.	01627		LSH AQ*280	01630	07000	00034		STRE NORMALIZED RADICANO
.	01630		STR A*(SQRT+340)*ANOT	01631	15530	01665		RADICAND 0
.	01631		JP SQRT+290	01632	61000	01660		DIVIDE BY 8 FCR LINEAR APPROX
.	01632		RSH A*3	01633	02000	00003		
.	01633		COM A*(SQRT+310)*YMORE	01634	04730	01662		SKIP IF BIT 24 0
.	01634		ADD A*(SQRT+330)*SKIP	01635	20130	01664		ADD 7/8
.	01635		15140 00000	01636	15140	00000		CP+A*SKIP
.	01636		ADD A*(SQRT+340)*SKIP	01637	20130	01665		ARG/8+7/8+ARG
.	01637		ADD A*(SQRT+320)*SKIP	01640	20130	01663		ADD 9/32
.	01640		RSH A*1*SKIP	01641	02100	00001		DIVIDE BY 2
.	01641		ADD A*(SQRT+340)	01642	20030	01665		ARG/8+9/32+ARG
.	01642		STR A*(SQRT+350)	01643	15030	01666		LINEAR APPROX COMPLETE
.	01643		ENT A*(SQRT+340)	01644	11030	01665		ENTER RADICAND (SCALED AT 28)
.	01644		RSH AQ*2	01645	03000	00002		SCALE AT 26
.	01645		DIV W(SQRT+350)	01646	23030	01666		DIVIDE (SCALED AT 28)
.	01646		ADD Q*(SQRT+350)	01647	26030	01666		
.	01647		RSH Q*1	01650	01000	00001		
.	01650		STR Q*(SQRT+350)	01651	14030	01666		ENTER RADICAND
.	01651		ENT A*(SQRT+340)	01652	11030	01665		SCALE 2(ARG) AT 26
.	01652		RSH AQ*2	01653	03000	00002		DIVIDE,RESULT IN Q
.	01653		DIV W(SQRT+350)	01654	23030	01666		2(RESULT TO A
.	01654		ENT Y+Q*(SQRT+350)	01655	30030	01666		ROUND
.	01655		RSH AQ*1+8*QPOS	01656	03207	00001		
.	01656		ADD A*1	01657	20000	00001		

CAROS	LI	ID	LABEL	TA	STATEMENT	LOC	F	JKR	Y	NOTES
.	01657				ENT 87*(SQRT)	01660	12710	C1623		EXIT ADDRESS TO 87
.	01660				JP 1+87	01661	61007	CC001		RETURN
.	01661				01000	01662	01000	CC000		
.	01662				04400	01663	04400	CC000		9/32 AT 28
.	01663				16000	01664	16000	CC000		7/8 AT 28
.	01664				0	01665	00000	CC000		TEMPORARY
.	01665				0	01666	00000	CC000		TEMPORARYATAN
.	01666	SQRTR			ENTRY	01667	61000	CC000		
.	01667				STR Q*(ANS3)	01670	14C30	C3123		
.	01670				MUL W(ANS3)	01671	22030	C3123		
.	01671				RSH AQ*100	01672	03000	CC012		
.	01672				OIV W(T5)	01673	23030	C312C		
.	01673				STR Q*(ANS1)	01674	14D30	C3121		
.	01674				CL Q*	01675	10000	CC000		
.	01675				RSH AQ*1	01676	03000	CC001		
.	01676				OIV W(T5)	01677	23030	C312C		
.	01677				STR Q*(ANS2)	01700	14D30	C3122		
.	01700				CP Q*	01701	14000	CC000		
.	01701				ACC Q*(T4)*QPOS	01702	26630	C3117		
.	01702				RPL Y-1*W(T3)	01703	37030	C3116		
.	01703				LSH Q*1	01704	05000	CC001		
.	01704				ACD Q*1	01705	26000	CC001		
.	01705				ENT A*(T3)	01706	11030	C3116		
.	01706				SUB A*(ANS1)*APOS	01707	21630	C3121		
.	01707				JP SQRTR1	01710	61000	C1722		
.	01710				CL B3*	01711	12300	CC000		
.	01711				COM A*(ROOTMAX)*YMORE	01712	04730	C1726		
.	01712				JP \$+5	01713	61000	C172C		
.	01713				BSK B3*300	01714	71300	CC036		
.	01714				LSH AQ*2*APOS	01715	07600	CC002		
.	01715				JP \$-5	01716	61000	C172C		
.	01716				LSH AQ*580	01717	61000	C1712		
.	01717				LSH AQ*580	01720	07000	CC072		
.	01720				RJP SQRTR	01721	65000	C1623		
.	01721	SQRTR1			CL A*	01722	11000	CC000		
.	01722	SCALECOUNT			STR B3*(\$+1)	01723	16310	C1724		
.	01723				RSH A#D	01724	02000	CC000		
.	01724				EXIT	01725	61010	C1667		
.	01725	ROOTMAX			17777	01726	17777	77777		
.	01726	BASELINE			ENTRY	01727	61000	CC000		
.	01727				ENT B4*1	01730	12400	CC001		
.	01730	BALL			ENT A*(LO+R5)	01731	11035	CC000		
.	01731				ENT B6*(INTNO)	01732	12630	C3127		
.	01732				ENT Q*15D	01733	10000	CC017		
.	01733				RJP MIXCON	01734	65000	C1043		
.	01734				ACD Q*(P1)	01735	26030	C3074		
.	01735				STR A*(90+B3)	01736	15033	CC011		
.	01736				STR Q*(100+B3)	01737	14033	CC012		
.	01737				STR B3*A	01740	16340	CC000		
.	01740				ACD A#6	01741	20000	CC006		
.	01741				ENT B3*A	01742	12370	CC000		
.	01742				BSK B5*77777	01743	71500	77777		
.	01743				BJP B4*BAL1	01744	72400	C1731		

CARDS	LI	IO LABEL	TA STATEMENT	LOC	F	JKB	Y	NOTES
.	01744		EXIT	01745	61010	01727		
.	01745	HEADROUTIN	ENTRY	01746	61000	0000C		
.	01746		ENT B6*1	01747	10010	63147		
.	01747		RJP POSINT	01750	12600	00001		
.	01750		LSH A*6	01751	65000	01022		
.	01751		ACC A*(SLASH1)	01752	06000	00006		
.	01752		STR A*(3*83)	01753	20030	03066		
.	01753		ENT C*(DAY)	01754	15033	00003		
.	01754		ENT B6*1	01755	10020	63150		
.	01755		RJP POSINT	01756	12600	00001		
.	01756		LSH A*6	01757	65000	01022		
.	01757		ACC A*(SLASH1)	01760	06000	00006		
.	01760		LSH A*120	01761	20030	03066		
.	01761		STR A*(ANS1)	01762	06000	00014		
.	01762		ENT C*(YEARMONTH)	01763	15030	03121		
.	01763		ENT B6*1	01764	10020	63147		
.	01764		RJP POSINT	01765	12600	00001		
.	01765		ACC A*(ANS1)	01766	65000	01022		
.	01766		STR A*(4*83)	01767	20030	03121		
.	01767		ENT C*(HROBS)	01770	15033	00004		
.	01770		ENT B6*1	01771	10030	04217		
.	01771		RJP POSINT	01772	12600	00001		
.	01772		LSH A*6	01773	65000	01022		
.	01773		ACC A*(COLON)	01774	06000	00006		
.	01774		STR A*(5*83)	01775	20030	0307C		
.	01775		ENT C*(MINOB)	01776	15033	00005		
.	01776		ENT B6*1	01777	10030	0422C		
.	01777		RJP POSINT	02000	12600	00001		
.	02000		LSH A*6	02001	65000	01022		
.	02001		ACC A*(COLON)	02002	06000	00006		
.	02002		LSH A*120	02003	20030	0307C		
.	02003		STR A*(ANS1)	02004	06000	00014		
.	02004		ENT C*(SECUR)	02005	15030	03121		
.	02005		ENT B6*1	02006	10030	04221		
.	02006		RJP POSINT	02007	12600	00001		
.	02007		ACC A*(ANS1)	02010	65000	01022		
.	02010		STR A*(6*83)	02011	20030	03121		
.	02011		STR B*(L(\$+2))	02012	15033	00006		
.	02012		RJP O(PRLOG)	02013	16310	02015		
.	02013		-1 0	02014	65020	63423		PRINT ACATA TITLE
.	02014		NO-OP	02015	00010	0000C		
.	02015		EXIT	02016	77776	0000C		
.	02016		ENTRY	02017	12000	0000C		
.	02017	GETNXTBLK	JP \$*4*C5*ACTIVEIN	02020	61010	01746		
.	02020		ENT A*(INTERA00)	02021	61000	0000C		
.	02021		IN C5*(INCOMING)*MONITOR	02022	62240	02026		
.	02022		ENT B5*(LEFTCT)	02023	11030	02525		
.	02023		ENT A*(FIVEINTER)	02024	15030	00045		
.	02024		ENT B5*(LEFTCT)	02025	75270	02523		
.	02025		ENT A*(ROFIN*86)*ANCT	02026	12530	03145		
.	02026		JP NOMODAT	02027	12630	03131		
.	02027	GNH1		02030	11536	03147		
.	02030			02031	61000	02044		

CARDS	LI	IO	LABEL	TA STATEMENT	LOC	F	JKB	Y	NOTES
.	02031			STR A*(WORKA+85)	02032	15035	04224		
.	02032			CP A*ANOT	02033	15540	00000		
.	02033			JP NEGIO	02034	61000	02047		
.	02034			BSK 85*570	02035	71500	00071		
.	02035			JP \$+2	02036	61000	0204C		
.	02036			ENT 85*570	02037	12500	00071		
.	02037			CL W*(RUFIN+86)	02040	16036	03147		
.	02040			BSK 86*1250	02041	71600	00175		
.	02041			JP \$+1	02042	61000	02043		
.	02042			JP GNB1	02043	61000	0203C		
.	02043			STR 86*(LEFTOVER)	02044	16630	03131		
.	02044		NOMCOAT	STR 85*(LEFTCT)	02045	16530	03145		
.	02045			JP L*(WORKING)	02046	61010	00253		
.	02046		NEGIO	ENT A*(JPCOM)	02047	11030	02221		
.	02047			STR A*(GNB1+4)	02050	15030	02034		
.	02050			CL W*(RUFIN+86)	02051	16036	03147		
.	02051			BSK 86*125D	02052	71600	00175		
.	02052			JP \$+1	02053	61000	02054		
.	02053			JP GNB1	02054	61000	0203C		
.	02054		COMPBLK	CL W*(RUFIN+86)	02055	16036	03147		
.	02055			BSK 86*1250	02056	71600	00175		
.	02056			JP \$+1	02057	61000	0206C		
.	02057			ENT A*2	02060	11000	00002		
.	02060			STR A*(LEFTCT)	02061	15030	03145		
.	02061			STR A*(WKBLKINO)	02062	15030	0222C		
.	02062			STR 86*(LEFTOVER)	02063	16630	03131		
.	02063			ENT A*(WORKA+2)	02064	11030	04226		
.	02064			STR A*(SECONOSOF0)	02065	15030	02222		
.	02065			ENT Q*(WORKA)	02066	10030	04224		
.	02066			BJP 85*\$+1	02067	72500	0207C		
.	02067			ENT A*(WORKA+85)	02070	11035	04224		
.	02070			STR A*(WORKA)	02071	15030	04224		
.	02071			ENT A*(WORK)	02072	11030	04231		
.	02072			STR A*(WORKA+1)	02073	15030	04225		
.	02073			STR Q*(WORK)	02074	14030	04231		
.	02074			ENT LP*(IOMASK)	02075	40030	03376		
.	02075			SUB A*(IOA51)*APOS	02076	21630	03410		
.	02076			JP GETB	02077	61000	02112		
.	02077			CL W*(WKBLKINO)	02100	16030	0222C		
.	02100			ENT Q*(WORK)	02101	10030	04231		
.	02101			ENT LP*(STATUSMASK)	02102	40030	03403		
.	02102			RSH A*140	02103	02000	00016		
.	02103			ENT 86*A	02104	12670	0000C		
.	02104			JP \$+1+86	02105	61006	02106		
.	02105			JP GETO	02106	61000	02143		
.	02106			EXIT	02107	61010	02021		
.	02107			JP GETB	02110	61000	02112		
.	02110			EXIT	02111	61010	02021		
.	02111		GETB	A*(IASTRORA)	02112	11030	63105		
.	02112			STR A*(RIGHTA)	02113	15030	04222		
.	02113			ENT A*(ASTRODEC)	02114	11030	63106		
.	02114			STR A*(OECLIN)	02115	15030	04223		
.	02115			ENT Q*(SECONOSOF0)	02116	10030	02222		

CARDS	LI	ID LABEL	TA STATEMENT	LOG	F	JKB	Y	NOTES
.	02116		ENT LP*(SORMASK)	02117	40030	03406		
.	02117		RSH AQ*300	02120	03000	00036		
.	02120		MUL W(SEGINDAY)	02121	22030	02226		
.	02121		RSH AQ*300	02122	03000	00036		
.	02122		DIV W(THPEESIXHU)	02123	23030	02223		
.	02123		STR Q*(HROBS)	02124	14030	04217		
.	02124		ENT Q*A	02125	10070	00000		
.	02125		CL A*	02126	11000	00000		
.	02126		DIV W(SIXTY)	02127	23030	02224		
.	02127		STR Q*(MINOR)	02130	14030	04220		
.	02130		STR A*(SECOB)	02131	15030	04221		
.	02131		ENT Q*(CAZIM)	02132	10030	03060		
.	02132	GNB2	MUL W(THSIXTY)	02133	22030	02225		
.	02133		LSH AQ*3	02134	07000	00003		
.	02134		STR A*(AZIMINTERG)	02135	15030	04216		B2C
.	02135		ENT Q*(CELEV)	02136	10030	03061		
.	02136		MUL W(THSIXTY)	02137	22030	02225		
.	02137		LSH AQ*3	02140	07000	00003		B2C
.	02140		STR A*(ELEVINTERG)	02141	15030	04215		
.	02141		EXIT	02142	61010	02021		
.	02142	GETO	ENT Q*(WORK)	02143	10030	04231		
.	02143		ENT LP*(ATTMASK)	02144	40030	02227		
.	02144		STR A*(ATT)	02145	15030	03423		
.	02145		RPL Y+1*(WOCOUNT)	02146	36030	03135		
.	02146		ENT Q*(WORK)	02147	10030	04231		
.	02147		RJP REAPER100	02150	65000	00703		
.	02150		RSH Q*1	02151	01000	00001		
.	02151		SUB Q*(WOCOUNT)	02152	27030	03135		
.	02152		ADD Q*1*QNDT	02153	26500	00001		
.	02153		JP GNB3	02154	61000	02156		
.	02154		EXIT	02155	61010	02021		
.	02155	GNB3	ENT A*(NEWCOUNT)*ANDT	02156	11530	03426		
.	02156		EXIT	02157	61010	02021		
.	02157		CL W(NEWCOUNT)	02160	16030	03426		
.	02160		ENT Q*(WORK)	02161	10030	04231		
.	02161		ENT LP*(SCALEMASK)	02162	40030	03405		
.	02162		RSH A*120	02163	02000	00014		
.	02163		ENT R6*A	02164	12670	00000		
.	02164		ENT A*(FIFTYSCALE*B6)	02165	11036	03433		
.	02165		SUB A*(SCALE)*ANDT	02166	21530	03437		
.	02166		JP GETB	02167	61000	02112		
.	02167		RPL Y+A*(SCALE)	02170	24030	03437		
.	02170		ENT Q*A	02171	10070	00000		
.	02171		MUL 100	02172	22000	00012		
.	02172		STR Q*(A00TEMP)	02173	14030	02230		
.	02173		ENT A*5	02174	11000	00005		
.	02174		BJP B6*\$*2	02175	72600	02177		
.	02175		JP GNB4	02176	61000	02201		
.	02176		ADD A*6	02177	20000	00006		
.	02177		JP \$-3	02200	61000	02175		
.	02200	GNB4	ENT B6*A	02201	12670	00000		
.	02201		ENT B3*5	02202	12300	00005		
.	02202	\$*501	ENT B5*150	02203	12500	00017		

CARDS	LI	ID	LABEL	TA	STATEMENT	LOC	F	JKB	Y	NOTES
.	02203				ENT Q*(FD50*B6)	02204	10036	02231		
.	02204				STR Q*(O08HEAD+B5)	02205	14035	02764		
.	02205				BSK 85*300	02206	71500	00036		
.	02206				BSK 85*300	02207	71500	00036		
.	02207				BJP 86*5+1	02210	72600	02211		
.	02210				BJP 83*5-5	02211	72300	02204		
.	02211				RJP U(PRLOG)	02212	65020	63423		
.	02212				250 OOBHEAD	02213	00031	02764		
.	02213				-1 0	02214	77776	00000		
.	02214				NO-OP	02215	12000	00000		
.	02215				RPL Y+1*(LINECOUNT)	02216	36030	03425		
.	02216				JP GETR	02217	61000	02112		
.	02217				JP 0	02220	00000	00000		
.	02220		WKBKIND		JP COMBLK	02221	61000	02055		
.	02221		JPCOM		JP 0	02222	00000	00000		
.	02222		SECONDSOFD		000007020	02223	00000	07020		OEC
.	02223		THREESIXHU		000000074	02224	00000	00074		OEC
.	02224		SIXTY		264000000	02225	26400	00000		OEC
.	02225		THSIXTY		00012*3000	02226	00012	43000		OEC
.	02226		SECNOAY		2 0	02227	00002	00000		
.	02227		ATTMASK		0006200000	02230	00062	00000		OEC
.	02228		ADTEMP		62606 0	02231	62606	00000		
.	02230		F050		61656 0	02232	61656	00000		
.	02231				61606 0	02233	61606	00000		
.	02232				65600 0	02234	65600	00000		
.	02233				60000 0	02235	60000	00000		
.	02234				65600 0	02236	65600	00000		
.	02235				64600 0	02237	64600	00000		
.	02236				63600 0	02240	63600	00000		
.	02237				62600 0	02241	62600	00000		
.	02240				61600 0	02242	61600	00000		
.	02241				60000 0	02243	60000	00000		
.	02242				61600 0	02244	61600	00000		
.	02243				70000 0	02245	70000	00000		
.	02244				66000 0	02246	66000	00000		
.	02245				64000 0	02247	64000	00000		
.	02246				62000 0	02250	62000	00000		
.	02247				60000 0	02251	60000	00000		
.	02250				62000 0	02252	62000	00000		
.	02251				62756 0	02253	62756	00000		
.	02252				61756 50000	02254	61756	50000		
.	02253				61756 0	02255	61756	00000		
.	02254				60756 50000	02256	60756	50000		
.	02255				60756 0	02257	60756	00000		
.	02256				60756 50000	02260	60756	50000		
.	02257		CCONST		FD 0*A	02261	06050	50505		
.	02260				0 EX1Q	02262	00000	02324		
.	02261				FC 0*X3920	02263	35630	76224		
.	02262				0 EXCON1	02264	00000	03431		
.	02263				FC 0*A	02265	06050	50505		
.	02264				0 EX20	02266	00000	02333		
.	02265				FC 0*X3820	02267	35630	76224		
.	02266				0 EXCON2	02270	00000	03432		
.	02267									

CAROS	LI	IO	LABEL	TA	STATEMENT	LOC	F	JKB	Y	NOTES
*	02270				FO 0*A	02271	06050	50505		
*	02271				0 Y1Q	02272	00000	02342		
*	02272				FO 0*X3815	02273	35630	76165		
*	02273				0 YCON1	02274	00000	03427		
*	02274				FO 0*A	02275	06050	50505		
*	02275				0 Y2Q	02276	00000	02351		
*	02276				FO 0*X3815	02277	35630	76165		
*	02277				-0 YCON2	02300	77777	0343C		
*	02300		KIN		0 0	02301	00000	0000C		
*	02301		KONOUT		FO 0*A	02302	06050	50505		
*	02302				-0 KONA	02303	77777	02304		
*	02303		KONA		FO 0*CHANGE CALIBRATION CONSTANTS YES(02304 0) NO(1)	02305	10150	62314		
						02306	12051	06621		
						02307	16072	70631		
						02310	16242	3051C		
						02311	24233	03106		
						02312	23313	00536		
						02313	12305	1244C		
						02314	05232	45161		
						02315	40050	50505		
						02316	77777	77777		
						02317	11050	50505		
						02320	00011	02301		
						02321	00000	0000C		
						02322	00000	00001		
						02323	06050	50505		
						02324	77777	02324		
						02325	09310	51006		
						02326	21516	14C44		
						02327	77777	77777		
						02330	35622	40505		
						02331	00001	03431		
						02332	06050	50505		
						02333	77777	02333		
						02334	09310	51006		
						02335	21516	24C44		
						02336	77777	77777		
						02337	35622	40505		
						02340	00001	03432		
						02341	06050	50505		
						02342	77777	02342		
						02343	09310	7063C		
						02344	21516	14C44		
						02345	77777	77777		
						02346	35616	50505		
						02347	00001	03427		
						02350	06050	50505		
						02351	77777	02351		
						02352	09310	7063C		
						02353	21516	24C44		
						02354	77777	77777		
							35616	50505		

CARDS	LI	IO	LABEL	TA	STATEMENT	LOC	F	JKB	Y	NOTES
.	02340			01	YCONZ	02355	00001	0343C		
.	02341		QINA	0	0	02356	00000	0000C		
.	02342		QOUT	F0	0*A	02357	06050	50505		
.	02343			-0	QOUTA	02360	77777	02361		
.	02344		QOUTA	F0	0*A ANY AUXILIARY LIMIT CHANGES YES(02361) 01 OR NO(11)	02362	06233	60506		
.	02345			-0		02362	32351	62116		
.	02346		QIN	F0	1*0	02363	06273	60521		
.	02347			11	QINA	02364	16221	63105		
.	02350			0	0	02365	10150	62314		
.	02351			0	1	02366	12300	50536		
.	02352		ADUT	F0	0*A	02367	12305	1244C		
.	02353			-0	ADUTA	02370	05242	70523		
.	02354		ADUTA	F0	0*A(11)=	02371	24516	14005		
.	02355			-0		02372	77777	77777		
.	02356		AIN	F0	1*0	02373	11050	50505		
.	02357			11	ANUMBER	02374	00011	02356		
.	02360			0	0	02375	00000	0000C		
.	02361			0	500	02376	00000	00001		
.	02362		ANUMBER	0	0	02377	06050	50505		
.	02363		UPPEROUT	F0	0*A	02400	77777	02401		
.	02364			-0	UPPEROUTA	02401	06511	64044		
.	02365		UPPEROUTA	F0	0*	02402	77777	77777		
.					UPPER =	02403	11050	50505		
.						02404	00011	02407		
.						02405	00000	0000C		
.						02406	00000	00062		
.						02407	00000	0000C		
.						02410	06050	50505		
.						02411	77777	02412		
.						02412	05050	50505		
.						02413	05050	50505		
.						02414	32252	51227		
.						02415	05440	50505		
.						02416	77777	77777		
.						02417	35240	50505		
.						02420	00001	02423		
.						02421	77777	5436C	OEC	
.						02422	00000	23417	OEC	
.						02423	00000	0000C		
.						02424	06050	50505		
.						02425	77777	02426		
.						02426	05050	50505		
.						02427	05050	50505		
.						02430	21243	41227		
.						02431	05440	50505		
.						02432	77777	77777		
.						02433	35240	50505		
.						02434	00001	02437		
.						02435	77777	5436C	OEC	
.						02436	00000	23417	DEC	
.						02437	00000	0000C		
.						02440	00000	0000C		
.										
.	02377			-0						
.	02400		LOWERIN	F0	1*0					
.	02401			01	LLIMIT					
.	02402			77777	54360					
.	02403			00000	23417					
.	02404		LLIMIT	0	0					
.	02405		ADATAL	RESERVE	510					

CARDS	LI	IO LABEL	TA STATEMENT	LOC	F	JK8	Y	NGTES
.	02406	INCOMING	U-TAG	02523	02524	02524	02524	
.	02407	INB	0 0	02524	00000	00000	00000	
.	02410	INTERADD	RJP RADIOINT	02525	65000	00136		
.	02411	FIVEINTER	EQUALS 45					
.	02412	SAVEA	0 0	02526	00000	00000		
.	02413	SAVEQ	0 0	02527	00000	00000		
.	02414	SAVEB6	0 0	02530	00000	00000		
.	02415	SAVEB3	0 0	02531	00000	00000		
.	02416	ACCLHEAD	FO 110•E I A(I) LOWER UPPER	E02532	12050	51605		
			I A(I) LOWER UPP					
.	02417		FO 110•E R E I A(I) LOWER	02533	05050	50651		
				02534	16400	50521		
				02535	24341	22705		
				02536	05053	22525		
				02537	12270	50505		
				02540	12050	51605		
				02541	05050	50651		
				02542	16400	50521		
				02543	24341	22705		
				02544	05053	22525		
				UPPE02545	12270	50505		
.	02420		FD 2• UPPER	02546	12050	51605		
				02547	05050	50651		
				02550	16400	50521		
				02551	24341	22705		
				02552	05053	22525		
				02553	12270	50505		
				02554	12050	51605		
				02555	05050	50651		
				02556	16400	50521		
				02557	24341	22705		
				02560	05053	22525		
				02561	12270	50505		
				02562	06323	51621		
				02563	16062	73605		
				02564	11063	10605		
				02565	00000	00000		
				02571	05142	23105		
				02572	10062	10510		
				02573	24222	52112		
				02574	31121	10505		
				02575	00000	00000		
				02601	05142	23105		
				02602	05100	62105		
				02603	05113	22706		
				02604	31162	42305		
				02605	00000	00000		
				02606	05103	61021		
				02607	12300	50505		
				02610	05051	11221		
				02611	31060	51006		
				02612	21516	14005		

CARDS	LI ID LABEL	TA STATEMENT	LOC	F	JKB	Y	NOTES
*	02432	0 0	02613	0000	0000	0000	0000
*	02433	0 0	02614	0000	0000	0000	0000
*	02434	FD 4* K DELTA CAL(2)	02615	05200	5050	5050	0000
			02616	05051	11221		
			02617	31060	51006		
			02620	21516	24005		
*	02435	0 0	02621	00000	0000	0000	0000
*	02436	0 0	02622	00000	0000	0000	0000
*	02437	FD 3* K T CAL(1)	02623	05200	50505		
			02624	05310	51006		
			02625	21516	14005		
			02626	00000	0000	0000	0000
*	02440	U 0	02627	00000	0000	0000	0000
*	02441	U 0	02630	05310	51006		
*	02442	FC 2* T CAL(2)	02631	21516	24005		
*	02443	0 0	02632	00000	0000	0000	0000
*	02444	0 0	02633	00000	0000	0000	0000
*	02445	FD 3* BASE DURATION	02634	05070	63012		
			02635	05113	22706		
			02636	31162	42305		
*	02446	0 0	02637	00000	0000	0000	0000
*	02447	FD 5* CYCLES DELTA BASE(1)	02640	05103	61021		
			02641	12300	50505		
			02642	05111	22131		
			02643	06050	7063C		
			02644	12516	14005		
*	02450	0 0	02645	00000	0000	0000	0000
*	02451	0 0	02646	00000	0000	0000	0000
*	02452	FD 4* K DELTA BASE(2)	02647	05200	50505		
			02650	05111	22131		
			02651	06050	7063C		
			02652	12516	24005		
			02653	00000	0000	0000	0000
*	02453	0 0	02654	00000	0000	0000	0000
*	02454	0 0	02655	05200	50505		
*	02455	FC 3* K T BASE(1)	02656	31050	7063C		
			02657	12516	14005		
*	02456	0 0	02660	00000	0000	0000	0000
*	02457	0 0	02661	00000	0000	0000	0000
*	02460	FC 2* T BASE(2)	02662	31050	7063C		
			02663	12516	24005		
*	02461	0 0	02664	00000	0000	0000	0000
*	02462	0 0	02665	00000	0000	0000	0000
*	02463	FD 0* ANTENNA TEMPERATURES ASE TEMP(1)	02666	05062	33112		
			02667	23230	60531		
			02670	12222	51227		
			02671	06313	22712		
			02672	30050	50505		
			02673	05050	50505		
			02674	05050	7063C		
			02675	12053	11222		
			02676	25516	14005		

CARDS	LI ID LABEL	TA STATEMENT	LOC	F	JKB	Y	NOTES
*	02464	0 0	02677	0000	0000	0000	
*	02465	0 0	02700	0000	0000	0000	
*	02466	FO 0* K	02701	05200	5050	5050	
		BASE TEMP(2)	02702	05050	70630		
			02703	12053	11222		
*	02467	0 0	02704	25516	24005		
*	02470	0 0	02705	00000	00000		
*	02471	FO 0* K	02706	00000	00000		
*	02472	FO 0* K	02707	05200	50505		
		AZIMUTH	ELEV02710	05050	50505		
		ATION	02711	05050	50505		
			02712	05050	63716		
			02713	22323	11505		
			02714	05050	50505		
			02715	05050	50512		
			02716	21123	30631		
			02717	16242	30505		
*	02473	0 0	02720	00000	00000		
*	02474	0 0	02721	00000	00000		
*	02475	FO 0* RT.ASCEN	02722	05052	73175		DECLIN
			02723	06301	01223		
			02724	05050	50505		
			02725	05050	50505		
			02726	05050	50511		
			02727	12102	11623		
*	02476	0 0	02730	00000	00000		
*	02477	0 0	02731	00000	00000		
*	02500	0 0	02732	00000	00000		
*	02501	FO 110*	02733	05050	50505		
			02734	05050	50505		
			02735	05050	50505		
			02736	05050	50505		
			02737	05050	50505		
			02740	05050	50505		
			02741	05050	50505		
			02742	05050	50505		
			02743	05050	50505		
			02744	05050	50505		
			02745	05050	50505		
*	02502	0 0	02746	00000	00000		
*	02503	0 0	02747	00000	00000		
*	02504	0 0	02750	00000	00000		
*	02505	0 16	02751	00000	00016		
*	02506	FO 100*	02752	05050	50505		
			02753	05050	50505		
			02754	05050	50505		
			02755	05050	50505		
			02756	05050	50505		
			02757	05050	50505		
			02760	05050	50505		

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 RADIOMETER
 SPUPT OUTPUT NO. 210
 P. STYLOS*28APR65

CARDS	LI	ID LABEL	TA STATEMENT	LOC	F	JKB	Y	NOTES
.	02507	00BHEAD	FC 110* TIME T(1) RIGHTA T(2) OECLIN	02761	05050	50505		
.				02762	05050	50505		
.				02763	05050	50505		
.				02764	05053	11622		
.				02765	12050	50505		
.				02766	05052	71614		
.				02767	15310	60505		
.				02770	05050	51112		
.				02771	10211	62305		
.				02772	05050	50505		
.				02773	31516	14005		
.				02774	05050	50505		
.				02775	05315	16240		
.				02776	05050	50505		
.				02777	05111	22151		
.				03000	61400	00000		
.				03001	11122	15162		
.				03002	40000	00041		
.				03003	65600	00000		
.				03004	00000	00000		
.				03005	60000	00000		
.				03006	00000	00000		
.				03007	65600	00000		
.				03010	00000	00000		
.				03011	61606	00000		
.				03012	00000	00000		
.				03013	61656	00000		
.				03014	00000	00000		
.				03015	62606	00000		
.				03016	36243	22705		
.				03017	10242	22532		
.				03020	31122	70516		
.				03021	30051	62305		
.				03022	11162	71205		
.				03023	23121	21105		
.				03024	24130	50605		
.				03025	10062	11607		
.				03026	27063	11624		
.				03027	23053	01226		
.				03030	32122	31012		
.				03031	32232	11230		
.				03032	30053	62432		
.				03033	05220	62012		
.				03034	05060	50706		
.				03035	30120	52732		
.				03036	23051	60510		
.				03037	06232	32431		
.				03040	05141	63312		
.				03041	05362	43205		
.				03042	10242	72712		

FO 0*YOUR COMPUTER IS IN OIRE NEED OF
 A CALIBRATION SEQUENCE

FO 0*UNLESS YOU MAKE A BASE RUN I CANNOT
 OT GIVE YOU CORRECT AN

CARDS	LI	ID	LABEL	TA	STATEMENT	LOC	F	J	K	Y	NOTES
.	02531		RECUTSPEC		FO 0*SMERS	03043	10310	50623			
.	02532		RECUTSPEC		FO 0*A	03044	30341	22730			
.	02533		RECUTA		-0 RECUTA	03045	06050	50505			
.	02534		RECUTA		FO 0*FULL INITIALIZATION(0) COMMENTS NLY(1)	03046	77777	03047			
.	02535		REINSPEC		-0	03050	16231	63116			
.	02536		REINSPEC		FO 1*0	03051	06211	63706			
.	02537		REINSPEC		11 REINITA	03052	31162	42351			
.	02540		REINSPEC		0	03053	24400	51024			
.	02541		REINSPEC		0 1	03054	22221	22331			
.	02542		REINITA		0 0	03055	30052	42321			
.	02543		PERIOD		0 0	03056	36516	14005			
.	02544		SLASH1		0 74	03057	77777	77777			
.	02545		SLASH2		0 7400	03060	11050	50505			
.	02546		COLON		0 53	03061	00011	03064			
.	02547		MINUS		U 41	03062	00000	00000			
.	02550		NEGTEMP		40000 0	03063	00000	00001			
.	02551		FDPICNT		0 75	03064	00000	00000			
.	02552		PI		1 11214	03065	00000	00000			
.	02553		MINUSA		41000 0	03066	00000	00074			
.	02554		POB1		50000 0	03067	00000	07400			
.	02555		MINUSB		410 0	03070	00000	00053			
.	02556		ASTERISK		0 50	03071	00000	00041			
.	02557		CHAR		35000 0	03072	40000	00000			
.	02560		CHAR		350 0	03073	00000	00075			
.	02561		CHAR		3 50000	03074	00001	11214			
.	02562		CHAR		0 3500	03075	41000	00000			
.	02563		CHAR		0 35	03076	50000	00000			
.	02565		CHAR		24000 0	03077	00410	00000			
.	02566		CHAR		240 0	03100	00000	00050			
.	02567		CHAR		2 40000	03101	35000	00000			
.	02570		TEMP		0 24	03102	00350	00000			
.	02571		TEMP		0 0	03103	00003	50000			
.	02572		TEMP		0 0	03104	00000	03500			
.	02573		TEMP		3 50000	03105	00000	00035			
.	02574		TEMP		0 3500	03106	24000	00000			
.	02575		TEMP		0 35	03107	00240	00000			
.	02576		TEMP		24000 0	03110	00002	40000			
.	02577		ANS1		240 0	03111	00000	02400			
.	02600		ANS2		0 0	03112	00000	00024			
.	02601		ANS3		0 0	03113	00000	00000			
.	02602		ANS4		0 0	03114	00000	00000			
.	02603		ANS5		0 0	03115	00000	00000			
.	02604		ANS5		0 0	03116	00000	00000			
.	02604		ANS5		0 0	03117	00000	00000			
.	02604		ANS5		0 0	03120	00000	00000			
.	02604		ANS5		0 0	03121	00000	00000			
.	02604		ANS5		0 0	03122	00000	00000			
.	02604		ANS5		0 0	03123	00000	00000			
.	02604		ANS5		0 0	03124	00000	00000			
.	02604		ANS5		0 0	03125	00000	00000			
.	02604		ANS5		0 0	03126	00000	00000			

CARDS	LI ID LABEL	TA STATEMENT	LOC	F	JKB	Y	NOTES
•	02605 INTNO	0 0	03127	00000	00000	00000	
•	02606 FRNO	0 0	03130	00000	00000	00000	
•	02607 LEFTOVER	0 0	03131	00000	00000	00000	
•	02610 REQBASEIND	0 0	03132	00000	00000	00000	
•	02611 CALSEQIND	0 0	03133	00000	00000	00000	
•	02612 SKIPOLINE	0 0	03134	00000	00000	00000	
•	02613 WDCOUNT	0 0	03135	00000	00000	00000	
•	02614 SUMN	0 0	03136	00000	00000	00000	
•	02615 SUMR1	0 0	03137	00000	00000	00000	
•	02616 SUMR2	0 0	03140	00000	00000	00000	
•	02617 SUMRSQR1	0 0	03141	00000	00000	00000	
•	02620 SUMRSQR2	0 0	03142	00000	00000	00000	
•	02621 SQCARRY1	0 0	03143	00000	00000	00000	
•	02622 SQCARRY2	0 0	03144	00000	00000	00000	
•	02623 LEFTCT	0 0	03145	00000	00000	00000	
•	02624 NEADO	0 0	03146	00000	00000	00000	
•	02625 RUFIN	RESERVE 1260	03147	00000	00000	00000	
•	02626 RSUBC1	0 0	03345	00000	00000	00000	
•	02627 RSUBC2	0 0	03346	00000	00000	00000	
•	02630 SSUBC1	0 0	03347	00000	00000	00000	
•	02631 SSUBC2	0 0	03350	00000	00000	00000	
•	02632 NSUBC	0 0	03351	00000	00000	00000	
•	02633 RSUBB1	0 0	03352	00000	00000	00000	
•	02634 RSUBB2	0 0	03353	00000	00000	00000	
•	02635 SSUBB1	0 0	03354	00000	00000	00000	
•	02636 SSUBB2	0 0	03355	00000	00000	00000	
•	02637 NSUBB	0 0	03356	00000	00000	00000	
•	02640 RSUBD1	0 0	03357	00000	00000	00000	
•	02641 RSUBD2	0 0	03360	00000	00000	00000	
•	02642 SSUBD1	0 0	03361	00000	00000	00000	
•	02643 SSUBD2	0 0	03362	00000	00000	00000	
•	02644 NSUBD	0 0	03363	00000	00000	00000	
•	02645 V1	0 0	03364	00000	00000	00000	
•	02646 V2	0 0	03365	00000	00000	00000	
•	02647 DELV1	0 0	03366	00000	00000	00000	
•	02650 DELV2	0 0	03367	00000	00000	00000	
•	02651 DELC1	0 0	03370	00000	00000	00000	
•	02652 DELC2	0 0	03371	00000	00000	00000	
•	02653 TEMPER1	0 0	03372	00000	00000	00000	
•	02654 TEMPER2	0 0	03373	00000	00000	00000	
•	02655 DELT1	0 0	03374	00000	00000	00000	
•	02656 DELT2	0 0	03375	00000	00000	00000	
•	02657 IDMASK	01774 0	03376	01774	00000	00000	
•	02660 DATAMASK	1 77777	03377	00001	77777		
•	02661 SIGMASK	2 0	03400	00002	00000	00000	
•	02662 UNITSMASK	74 0	03401	00074	00000	00000	
•	02663 TENSMASK	1700 0	03402	01700	00000	00000	
•	02664 STATUSMASK	1 40000	03403	00001	40000		
•	02665 PERIODMASK	0 7777	03404	00000	07777		
•	02666 SCALEMASK	0 30000	03405	00000	30000		
•	02667 SQRMASK	17777 77777	03406	17777	77777		
•	02670 IOA1	4 0	03407	00004	00000	00000	
•	02671 IOA51	504 0	03410	00504	00000	00000	

CAROS	LI	IO	LABEL	TA	STATEMENT	LOC	F	JKB	Y	NOTES
.	02672	ID		-0	-0	03411	7777	7777		
.	02673	8IT17		4	0	03412	00004	00000		
.	02674	8IT29		40000	0	03413	40000	00000		
.	02675	NINE		44	0	03414	00044	00000		
.	02676	8IT21		100	0	03415	00100	00000		
.	02677	EIETVONE		574	0	03416	00504	00000		
.	02700	SIGNSET		40000	0	03417	40000	00000		
.	02701	LASTAINO		0	1	03420	00000	00001		
.	02702	THISBINO		0	0	03421	00000	00000		
.	02703	LASTBINO		0	3	03422	00000	00003		
.	02704	ATT		0	0	03423	00000	00000		
.	02705	IOCCOINT		0	0	03424	00000	00000		
.	02706	LINCCOINT		0	610	03425	00000	00075		
.	02707	NEWCOINT		0	1	03426	00000	00001		
.	02710	YCCN1		0001200000		03427	00012	00000		DEC
.	02711	YCCN2		0001200000		03430	00012	00000		DEC
.	02712	EXCON1		0310000000		03431	03100	00000		DEC
.	02713	EXCON2		0310000000		03432	03100	00000		DEC
.	02714	EIETVSCALE		0000500000		03433	00005	00000		DEC
.	02715	TENSCALE		0000100000		03434	00001	00000		DEC
.	02716	TWSCALE		0000014631		03435	00000	14631		DEC
.	02717	HALFSCALE		0000003146		03436	00000	03146		DEC
.	02720	SCALE		0000500000		03437	00005	00000		DEC
.	02721	RECBLOCKMT		ENTRY		03440	61000	00000		
.	02722			ENT A*(ROATASENT)		03441	11030	04202		
.	02723			RJP RECOATA		03442	65000	03470		
.	02724			CL 86*		03443	12600	00000		
.	02725			ENT A*(WORKA+1+B6)		03444	11036	04225		
.	02726			RJP RECOATA		03445	65000	03470		
.	02727			BSK 86*6		03446	71600	00006		
.	02730			JP \$-3		03447	61000	03444		
.	02731			RPL Y+1*(RBM11)		03450	36030	03465		
.	02732			SQB A*(RBM12)*APOS		03451	21630	03466		
.	02733			EXIT		03452	61010	03440		
.	02734			CL W(RBM11)		03453	16030	03465		
.	02735			ENT A*(RRADCESENT)		03454	11030	04205		
.	02736			RJP RECOATA		03455	65000	03470		
.	02737			ENT A*(TROERANGE)		03456	11030	63063		
.	02740			RJP RECOATA		03457	65000	03470		
.	02741			ENT A*(RADIORA)		03460	11030	63540		
.	02742			RJP RECOATA		03461	65000	03470		
.	02743			ENT A*(RADIOOEC)		03462	11030	63541		
.	02744			RJP RECOATA		03463	65000	03470		
.	02745			EXIT		03464	61010	03440		
.	02746	RBM11		0	0	03465	00000	00000		
.	02747	RBM12		0	400	03466	00000	00050		
.	02750			EXIT		03467	61010	03440		
.	02751	RECOATA		ENTRY		03470	61000	00000		
.	02752	RECO1		STR A*(RADOATBOEL+2)		03471	15030	03524		
.	02753			RPL Y+1*(RECO1)		03472	36010	03471		
.	02754			SQB A*(ROR)*AND1		03473	21530	03516		
.	02755			JP RECO2		03474	61000	03476		
.	02756			EXIT		03475	61010	03470		

CARDS	LI	IO	LABEL	TA	STATEMENT	LOC	F	JKB	Y	NC	TES
.	02757		RECO2		ENT A*(RECO1)	03476	11010	03471			
.	02760				SUB A*1	03477	21000	00001			
.	02761				STR A*(ROB3)	03500	15020	03521			
.	02762				SUB A*1510	03501	21000	00227			
.	02763				STR A*(ROB3)	03502	15010	03521			
.	02764				ADD A*2	03503	20000	00002			
.	02765				ENT Q*(ROB1)	03504	10010	03517			
.	02766				STR A*(ROB1)	03505	15010	03517			
.	02767				STR Q*(RECO1)	03506	14010	03471			
.	02770				ENT A*(ROB)	03507	11010	03516			
.	02771				ENT Q*(ROB2)	03510	10010	03520			
.	02772				STR Q*(ROB)	03511	14010	03516			
.	02773				STR A*(ROB2)	03512	15010	03520			
.	02774				ENT A*(ROB3)	03513	11030	03521			
.	02775				STR A*(RECFILE*4)	03514	15030	63216			
.	02776				EXIT	03515	61010	03470			
.	02777	ROB			0 RAOATBUF1+1520	03516	00000	03752			
.	03000	ROB1			0 RAOATBUF2+2	03517	00000	03754			
.	03001	ROB2			0 RAOATBUF2+1520	03520	00000	04202			
.	03002	ROB3			0 0	03521	00000	00000			
.	03003	RAOATBUF1			FO 0*RDTR	03522	27112	23127			
.	03004				0 0	03523	00000	00000			
.	03005				RESERVE 1500	03524	00000	00000			
.	03006	RAOATBUF2			FO 0*RDTR	03752	27112	23127			
.	03007				0 0	03753	00000	00000			
.	03010				RESERVE 1500	03754	00000	00000			
.	03011	ROATASENT			-0 1	04202	77777	00001			
.	03012	AOATASENT			-0 2	04203	77777	00002			
.	03013	CALKONSENT			-0 3	04204	77777	00003			
.	03014	RAOECSENT			-0 4	04205	77777	00004			
.	03015	SRTBEG			0 1	04206	00000	00001			
.	03016				0 2	04207	00000	00002			
.	03017				0 3	04210	00000	00003			
.	03020	LITREC			U-TAG LITLOG*180*LITLOG	04211	04440	04416			
.	03021	FRACT			0 0	04212	00000	00000			
.	03022	ERASELINE			0 0	04213	00000	00000			
.	03023				0 0	04214	00000	00000			
.	03024	ELEVINTERG			0 0	04215	00000	00000			
.	03025	AZIMINTERG			0 0	04216	00000	00000			
.	03026	HRCBS			0 0	04217	00000	00000			
.	03027	MINOB			0 0	04220	00000	00000			
.	03030	SECOB			0 0	04221	00000	00000			
.	03031	RIGHTA			0 0	04222	00000	00000			
.	03032	OECLEIN			0 0	04223	00000	00000			
.	03033	WORKA			0 0	04224	00000	00000			
.	03034				0 0	04225	00000	00000			
.	03035				0 0	04226	00000	00000			
.	03036				0 0	04227	00000	00000			
.	03037				0 0	04230	00000	00000			
.	03040	WORK			0 0	04231	00000	00000			
.	03041	WORKB			RESERVE 550	04232	00000	00000			
.	03042	BLKOUT			RESERVE 290	04321	00000	00000			
.	03043	LASTADINO			0 1	04356	00000	00001			

CARDS	LI	ID	LABEL	TA STATEMENT	LOC	F	JKB	Y	NOTES
.	03044		RECCOMOUT	FD 0*A	04357	06050	50505		
.	03045		REQOUTA	-0 REQOUTA	04360	77777	04361		
.	03046		REQOUTA	FD 0*00 YOU WISH TO WRITE COMMENTS. YES(0) NO(1)	04361	11240	53624		
.	03047			-0	04362	32053	41630		
.	03050		RECCOMIN	FD 1*0	04363	15053	12405		
.	03051			11 COMMENTREQ	04364	34271	63112		
.	03052			0	04365	05102	42222		
.	03053			0	04366	12233	13075		
.	03054		COMMENTREQ	0	04367	05050	50536		
.	03055		PROCEE0	0	04370	12305	12440		
.	03056			FD 0*A	04371	05052	32451		
.	03057		PROCEE0A	-0 PROCEE0A	04372	61400	50505		
.				FD 0*PROCEE0	04373	77777	77777		
.				ARRIAGE RETURN	04374	11050	50505		
.					04375	00011	04400		
.					04376	00000	00000		
.					04377	00000	00001		
.					04400	00000	00000		
.					04401	06050	50505		
.					04402	77777	04403		
.					04403	25272	41012		
.					04404	12110	51223		
.					04405	11162	31405		
.					04406	12061	01505		
.					04407	21162	31205		
.					04410	34163	11505		
.					04411	06051	00627		
.					04412	27160	61412		
.					04413	05271	23132		
.					04414	27230	50505		
.					04415	77777	77777		
.					04416	27112	23116		
.					04417	00000	00000		
.					04420	00000	00000		
.					04441	22702	40505		
.					04442	00001	0442C		
.					04443	00000	00000		

END OF LISTING

P-STYLOS*28APR65

RADIOMETER

LABEL	LOC	LABEL	LOC	LABEL	LOC	LABEL	LOC
\$\$\$D1	02203	AOUT	02377	ACUTA	02401	ACUTIM	02401
AI	03126	ACOLHEAD	02532	ACQAZIM	63071	ACTUALTIME	63071
ACQUELV	63075	ACQUT	63427	ADATAD	00274	ADATAD	00274
ADAT1	00304	ADATA	00257	ADATIAL	02440	ADATIAL	02440
ADATA1	00310	ADATAHEAD	02562	ADATIEN	00321	ADATIEN	00321
ADATASENT	04203	ADOTEEMP	02230	AESCN	63417	AESCN	63417
ADQ	00032	AOSCN	63416	ANS2	03122	ANS2	03122
AIN	02403	ANS1	03121	ANS5	03125	ANS5	03125
ANS3	03123	ANS4	03124	ASTROEC	63106	ASTROEC	63106
ANUMBER	02407	ASTERISK	03100	ATTMASK	02227	ATTMASK	02227
ASTRORA	63105	ATT	03423	AUXDAT	00247	AUXDAT	00247
AUPEREQUAT	63341	AUXCHANGE	00036	AZIMOVER	63325	AZIMOVER	63325
AZIM	63053	AZIMOUT	64000	AZIMINTERG	04216	AZIMINTERG	04216
AZIMAOD	63442	AZIMIN	75000	BALL	01731	BALL	01731
AZINBUF	00113	BODYSIZE	63462	BBB	00550	BBB	00550
BASELINE	01727	BB	00574	BIT29	03413	BIT29	03413
BLASTOFF	03412	BIT21	03415	BUFIN	03147	BUFIN	03147
COCON	63146	BLKOUT	04321	COMENLINE	04420	COMENLINE	04420
COMMENTREQ	63414	COLON	03070	CONRADEC	01111	CONRADEC	01111
CONVERTIME	04400	COMPBLK	02055	COSORIENT	63065	COSORIENT	63065
COSAZEL	63135	CORCT	63420	CALFOUR	02710	CALFOUR	02710
CALK	63070	CALONE	02602	CALK1	01222	CALK1	01222
CALK2	01214	CALKONSENT	04204	CALSEQREG	03016	CALSEQREG	03016
CALTHREE	01220	CALSEQIND	03133	CAZIM	63060	CAZIM	63060
CCDNST	02666	CALTWO	02634	CELBOOY	63113	CELBOOY	63113
CELCOMPCH	63424	CDATAHEAD	02572	CELTIME	63133	CELTIME	63133
CHAR	03101	CELEV	63061	CHCOR	63422	CHCOR	63422
CHPAR	63431	CHARA	03106	CLEARLINE	00076	CLEARLINE	00076
CLINE1	00110	CLEAROB S	00465	CPTSI	01470	CPTSI	01470
CPTS2	01461	CLINE2	00114	CPTSS	01472	CPTSS	01472
CRANGE	63057	CPTSS	01462	DOPPOUT	66000	DOPPOUT	66000
DOPPAO	63444	DOBHEAD	02764	DATANALYZE	63425	DATANALYZE	63425
DECLIN	04223	DATAMASK	03377	DECDOT	63010	DECDOT	63010
DELT1	03374	DEC	63003	DELC2	03371	DELC2	03371
DELV1	03366	DEL1	03370	DELTATEE	63316	DELTATEE	63316
DUMSECTTG	63154	DEL2	03375	DSECONOS	63141	DSECONOS	63141
ELEVOUT	65000	DELV2	03367	ELEV	63054	ELEV	63054
ELEVINTERG	04215	DYDMP	63421	ELEVIN	76000	ELEVIN	76000
EQUATOR	63323	ELEVADD	63443	ENTERVALUE	01413	ENTERVALUE	01413
EVI	01424	ELINBUF	00112	ESTSHIFTED	63143	ESTSHIFTED	63143
EX1IN	02327	ERASELINE	04213	EXICUT	02322	EXICUT	02322
EXCON2	02336	EV2	01433	EX2DOT	02331	EX2DOT	02331
EXCON1	03432	EX1Q	02324	EXCGN1	03431	EXCGN1	03431
F0B1	01443	EX2Q	02333	EXPNAME	63350	EXPNAME	63350
F0B5	01542	EXLIMIT	00616	FOB3	01477	FOB3	01477
F0B8	01553	FB2	01600	FOR7	01616	FOR7	01616
F0CC1	01203	FB4	01612	FODATACCN	01176	FODATACCN	01176
F82	01245	F0B9	01565	FBI	01276	FBI	01276
F0POINT	03073	F0C2	01201	FD50	02231	FD50	02231
		F84	01302	FIFTYSCALE	03433	FIFTYSCALE	03433
		FIFTYONE	03416				

P.STYLOS*28APR65

RADIOMETER

LABEL	LOC	LABEL	LOC	LABEL	LOC	LABEL	LOC
FINORSERVE	01436	FINALBASE	01234	FINALCAL	00726		
FIVPRO	00735	FIRSTLEV	63104	FIRSTTHRU	63153		
FIVEINTER	00045	FLATTENING	63337	FRACT	04212		
FRAMESIZE	63101	FREQUENCY	63317	FRNO	03130		
GECCENLAT	63322	GEOEFLAT	63321	GETO	02143		
GETB	02112	GETNXTBLK	02021	GMTMOU24	63145		
GMTSHIFTED	63144	GNB1	02030	GNB2	02133		
GNB3	02156	GNB4	02201	HOURLMINUTE	63137		
HOUREG	63151	HALFSCALE	03436	HEADROUTIN	01746		
HEIGHT	63326	HROBS	04217	IO	03411		
IO10RADIO	66777	IO11RADIO	67776	IO12RADIO	67777		
IO13RADIO	70775	IO14RADIO	70776	IO15RADIO	71776		
IO16RADIO	71777	IO17RADIO	72776	IO18RADIO	72777		
IO19RADIO	73776	IO1CELCOR	63000	IO1ENTPNT	63410		
IO1RAOCOR	63050	IO1RAIO	63440	IO1RECRD	63210		
IO1SYSENT	77576	IO1SYSNAM	77676	IO1SYSPAR	63310		
IO1TIME	63130	IO2ORADIO	73777	IO21RADIO	74776		
IO22RADIO	74777	IO23RADIO	75776	IO24RADIO	75777		
IO25RADIO	76775	IO26RADIO	76776	IO2CELCOR	63001		
IO2ENTPNT	63411	IO2RAOCOR	63051	IO2RAOIC	63441		
IO2RECRD	63211	IO2SYSENT	77577	IO2SYSNAM	77677		
IO2SYSPAR	63311	IO2TIME	63131	IO3RADIO	63776		
IO4RADIO	63777	IO5RADIO	64776	IO6RADIO	64777		
IO7RADIO	65776	IO8RADIO	65777	IO9RADIO	66776		
IOA1	03407	IOA51	03410	IOCOUNT	03424		
IDMASK	03376	INAZIMAO	63446	INB	02524		
INGMING	02523	INCOMSPEC	04441	INCONT	00014		
INELEVAOD	63447	INIT	00002	INSIOE	00525		
INTEND	00155	INTER	63413	INTERACD	02525		
INTERAZIM	72000	INTERCOM	63426	INTEROOPP	74000		
INTERELEV	73000	INTERLCKSH	63460	INTERRANGE	76777		
INTNO	03127	JPCOM	02221	KONOUT	02302		
KONA	C2304	KONIN	02316	KIN	02301		
KMPERNM	63342	KYBROLEVEL	63110	LONGITUDE	63320		
LOWEROUT	02424	LOWEROUTA	02426	LCWERIN	02433		
LASTADIND	04356	LASTAINO	03420	LASTBINO	03422		
LEAVE	C0573	LEFTOVER	03131	LEFTCT	03145		
LINE	02733	LINE2	02752	LINECOUNT	03425		
LINETEST	00325	LITLOG	04416	LITREC	04211		
LLIMIT	02437	LSPERAU	63336	LT1	00332		
MAINSWITCH	63334	MCI	01047	MC2	01052		
MC3	01057	MC4	01060	MC5	01067		
MCPFILLER	71000	MCPGH	63412	MILLSTNACD	63451		
MINOB	04220	MINREG	63152	MINUS	03071		
MINUSA	03075	MINUSB	03077	MIXCON	01043		
MSFREQ	63332	NOMOCNAN	00055	NGMCCOAT	02044		
NEADD	03146	NEEODBASE	03031	NEGID	02047		
NEGTEMP	03072	NEGVALUE	00651	NEWCOUNT	03426		
NINE	03414	NMPERAU	63340	NSURO	03363		
NSURB	03356	NSURC	03351	POBI	03076		
POLE	63324	POSIT	01022	PCSINTI	01026		

P.STYLOS*28APR65

RADIOMETER

LABEL	LOC	LABEL	LOC	LABEL	LOC	LABEL	LOC
PI	03074	PERIOD	03065	PERIODMASK	03404		
PLOTP	63436	PLANP	63434	PRCCEEC	04401		
PRDCEEOA	04403	PWORD	00655	PRBLK	00621		
PRBLK1	00630	PRBLK2	00643	PRBLKA	00623		
PREVIOUSM	63461	PRLOG	63423	PRWDI	00661		
QOUT	02357	QOUTA	02361	QIN	02373		
QINA	02356	ROOTMAX	01726	ROB	00360		
ROBA	00377	ROBB	00376	ROBC	00453		
ROBCL	00461	RA	63002	RACOT	63007		
RAARMODE	63312	RAOATBUF1	03522	RADATBUF2	03752		
RADIOEC	63541	RADIOINT	00136	RADIOMETER	63102		
RADIORA	63540	RADIUS	63006	RADIUSDDT	63011		
RANGE	63052	RANGEOUT	70777	RANGEADD	63445		
RANGEOOT	63062	RB	00420	RBC	00463		
RBB	00431	RBC	00427	RBMT1	03465		
RBMT2	03466	RC	00406	RCO	00415		
RCALREQ	00366	RCC	00416	RCRI	00374		
RDATA	00346	ROATASENT	04202	ROB	03516		
RDBI	03517	ROB2	03520	RO3	03521		
RDTR	63430	ROMTRX	00000	ROXXX	63433		
REUTA	03047	REOUTSPEC	03045	READPERIOD	00703		
RECORDSIZE	63112	RECAZIM	67000	RECBLOCKPT	03440		
RECOL	03471	REC2	03476	RECDATA	03470		
RECELEV	70000	RECFILE	63212	RECO	63415		
RECRDSTCH	63155	REINIT	00130	REINITA	03064		
REINSPIC	03060	RELEASESM	63156	REQDATA	04361		
REBASEIND	03132	REQCOMUT	04357	REQCDMIN	04374		
RIGHTA	04222	RRADCESENT	04205	RS	00433		
RSO	00441	RSO1	00444	RSB	00447		
RSC	00446	RSS	00450	RSURD1	03357		
RSUB02	03360	RSUBB1	03352	RSURB2	03353		
RSUBC1	03345	RSUBC2	03346	SAVEA	02526		
SAVEB3	02531	SAVEB6	02530	SAVEQ	02527		
SAZIM	63055	SCALE	03437	SCALECOUNT	01723		
SCALEMASK	03405	SCALETIME	63134	SDEC	63005		
SECOB	04221	SECONDS	63140	SECONDSOFO	02222		
SECINDAY	02226	SELEV	63056	SETUPAD	00500		
SIOERTIME	63012	SIGNMASK	03400	SIGNSET	03417		
SINDORIENT	63064	SINAZEL	63066	SIXTY	02224		
SKIP	63331	SKIPOLINE	03134	SLASH1	03066		
SLASH2	03067	SQCARRY1	03143	SQCARRY2	03144		
SORMASK	03406	SQRT	01623	SCRTR	01667		
SQRTR1	01722	SRA	63004	SRADTIME	63136		
SRTBEG	04206	SSUB01	03361	SSUB02	03362		
SSUBB1	03354	SSUBB2	03355	SSUBC1	03347		
SSUBC2	03350	STA01	00516	STAD2	00612		
STATUSMASK	03403	STRA1	00227	STRA3	00234		
STRA4	00245	STRADAT	00164	SUMN	03136		
SUMR1	03137	SUMR2	03140	SUMSOR1	03141		
SUMRSQR2	03142	SYNCTIMING	63542	SYSCCMREG1	63452		
SYSCOMREG2	63453	SYSCOMREG3	63454	SYSCOMREG4	63455		

P.STYLOS*28APR65

RADIOMETER

LABEL	LOC	LABEL	LOC	LABEL	LOC
SYSCOMREG5	63456	SYSCOMREG6	63457	SYSENTRIES	77600
SYSNAMES	77700	SYSTAT1	63313	SYSTAT2	63314
SYSTATD	63315	T1	03114	T2	03115
T3	03116	T4	03117	T5	03120
TEMP	03113	TEMPER1	03372	TEMPER2	03373
TENSCALE	03434	TENSMASK	03402	THISBING	03421
THREESIXHU	02223	THSIXTY	02225	TIMECORR	63107
TIMEHUDE	63103	TIMEP	63435	TRUERANGE	63063
TRUETIME	63132	TTYSTATUS	63111	TWOSCALE	03435
TWSECDOP	63017	UNITSMASK	03401	UPLIMIT	02423
UPPERROUT	02410	UPPERROUTA	02412	UPPERIN	02417
V1	03364	V2	03365	VELOFLIGHT	63335
VIZOEC1	63014	VIZDEC2	63016	VIZRAL1	63013
VIZRA2	63015	WORK	04231	WORKA	04224
WORKB	04232	WORKING	00253	WDCOUNT	03135
WFORD	63432	WFADO	63450	WFFREQ	63333
WKBLKIND	02220	Y1OUT	02340	Y1IN	02345
Y1Q	02342	Y2OUT	02347	Y2IN	02354
Y2Q	02351	YCON1	03427	YCCN2	03430
YEARMONTH	63147	YRTRAN	63327	ZEROSSUB	01015
ZRTRAN	63330				

END OF LISTING

RAIOMETER

LABEL	LOC	LABEL	LOC	LABEL	LOC	LABEL	LOC
ROMTRX	00000	INIT	00002	INCCNT	00014		
AQ	00032	AUXCHANGE	00036	FIVEINTER	00045		
NOMOCHAN	00055	CLEARLINE	00076	CLINE1	00110		
ELINBUF	00112	AZINBUF	00113	CLINE2	00114		
REINIT	00130	RAIOINT	00136	INTENO	00155		
STRADAT	00164	STRAL	00227	STRAS	00234		
STRA4	00245	AUXDAT	00247	WCRKING	00253		
AATA	00257	AUATAO	00274	AATL	00304		
AATA1	00310	AOTIEN	00321	LINETEST	00325		
LTI	00332	ROATA	00346	ROB	00360		
RCALREQ	00366	RCR1	00374	ROBB	00376		
ROBA	00377	RC	00406	RCC	00415		
RCC	00416	RB	00420	RBC	00427		
RBB	00431	RS	00433	RSC	00441		
RS01	00444	RSC	00446	RSB	00447		
RS5	00450	ROBC	00453	ROBC1	00461		
RBO	00463	CLEAROB S	00465	SETUPAO	00500		
STAD1	00516	INSIOE	00525	BBB	00550		
LEAVE	00573	BB	00574	STAD2	00612		
EXLIMIT	00616	PRBLK	00621	PRBLKA	00623		
PRBLK1	00630	PRBLK2	00643	NEGVAlUE	00651		
PROMORO	00655	PRW01	00661	READPERIO	00703		
FINALCAL	00726	FINPRO	00735	ZEROSSUB	01C15		
POSINT	01022	POSINT1	01026	MIXCON	01043		
MC1	01047	MC2	01052	MC3	01057		
MC4	01060	MC5	01067	CONRADEC	01111		
FODATACON	01176	FODC2	01201	FODC1	01203		
CALK	01214	CALK2	01220	CALK1	01222		
FINALBASE	01234	FB2	01245	FB1	01276		
FB4	01302	ENTERVALUE	01413	EVI	01424		
EV2	01433	FINOBSERVE	01436	FCB1	01443		
CPTS2	01461	CPTS3	01462	CPTS1	01470		
CPTS5	01472	FB3	01477	FB5	01542		
FOBB	01553	FOB9	01565	FOB2	01600		
FOB6	01612	FOB7	01616	SCRT	01623		
SQTR	01667	SQTR1	01722	SCALECCUNT	01723		
ROOTMAX	01726	BASELINE	01727	BAL1	01731		
HEADROUTIN	01746	GETNTRLK	02021	GMB1	02030		
NOMCOAT	02044	NEGIO	02047	COMPBLK	02C55		
GETB	02112	GMB2	02133	GETC	02143		
GMB3	02156	GMB4	02201	\$5C1	02203		
WBLKIND	02220	JPCOM	02221	SECONDSOFO	02222		
THREESIXHU	02223	SIXTY	02224	THSIXTY	02225		
SECINOAY	02226	ATTMASK	02227	ADCTEMP	02230		
F050	02231	CCONST	02261	KIN	02301		
KONOUT	02302	KONA	02304	KCNIN	02316		
EX1OUT	02322	EX10	02324	EX1IN	02327		
EX2OUT	02331	EX20	02333	EX2IN	02336		
Y1OUT	02340	Y10	02342	Y1IN	02345		
Y2OUT	02347	Y20	02351	Y2IN	02354		
QINA	02356	QOUT	02357	GOUT	02361		

P-STYLOS*28APR65

RAIOMETER

LABEL	LOC	LABEL	LOC	LABEL	LOC	LABEL	LOC
QIN	02373	AOUT	02377	AOUTA	02401	PI	03071
AIN	02403	ANUMBER	02407	UPPEROUT	02410	MINUSB	03074
UPPEROUTA	02412	UPPERIN	02417	UPLIMIT	02423	CHARA	03106
LOWEROUT	02424	LOWROUTA	02426	LOWERIN	02433	T2	03115
LLIMIT	02437	AOATAL	02460	INCOMING	02523	T5	03120
INB	02524	INTERADO	02525	SAVEA	02526	ANS3	03123
SAVEQ	02527	SAVEB6	02530	SAVEB3	02531	A1	03126
ACDLHEAD	02532	ADATAHEAD	02562	ADATAHEAD	02572	LEFTOVER	03131
CALONE	02602	CALTWO	02634	CALTHREE	02666	SKIPOLINE	03134
CALFDIR	02710	LINE	02733	LINE2	02752	SUMRI	03137
OQBHEAD	02764	CALSEQREQ	03016	NEEDBASE	03031	SUMRSQR2	03142
REUTSPEC	03045	REUTA	03047	REINSPEC	03060	LEFTCT	03145
REINITA	03064	PERIOO	03065	SLASH1	03066	RSUBC1	03345
SLASH2	03067	COLON	03070	MINUS	03071	SSUBC2	03350
NEGTEMP	03072	FDPOINT	03073	PI	03074	RSUBB2	03353
MINUSA	03075	P0B1	03076	MINUSB	03077	NSUBB	03356
ASTERISK	03100	CHAR	03101	CHARA	03106	SSUBD1	03361
TEMP	03113	T1	03114	T2	03115	V1	03364
T3	03116	T4	03117	T5	03120	OELV2	03367
ANS1	03121	ANS2	03122	ANS3	03123	TEMPER1	03372
ANS4	03124	FRNO	03125	A1	03126	DEL2	03375
INTND	03127	CALSEQIND	03130	LEFTOVER	03131	DEL1	03400
REQBASEIND	03132	SUMN	03136	SKIPOLINE	03134	DATAMASK	03400
WOCOUNT	03135	SUMRSQR1	03141	SUMRI	03137	TENSMASK	03403
SUMR2	03140	SQCARRY2	03144	SUMRSQR2	03142	PERIDDMASK	03406
SQCARRY1	03143	BUFIN	03147	LEFTCT	03145	IDAI	03411
NEADD	03146	SSUBC1	03347	RSUBC1	03345	BIT17	03412
RSUBC2	03346	RSUBB1	03352	SSUBC2	03350	BIT21	03415
NSURC	03351	SSUBB2	03355	RSUBB2	03353	LASTAIND	03420
SSURB1	03354	RSUBD2	03360	NSUBB	03356	ATT	03423
RSURD1	03357	NSUB0	03363	SSUBD1	03361	NEWCOUNT	03426
SSURD2	03362	DELV1	03366	V1	03364	EXCON1	03431
V2	03365	DEL2	03371	OELV2	03367	TENSCALE	03434
DEL1	03370	DEL1	03374	TEMPER1	03372	SCALE	03437
TEMPER2	03373	DEL1	03377	DEL2	03375	R0MT2	03466
IOMASK	03376	DATAMASK	03402	DEL2	03375	RECD2	03476
UNITSMASK	03401	TENSMASK	03402	TEMPER1	03372	ROB2	03520
PERIDDMASK	03404	SCALEMASK	03405	DEL2	03375	RADATBUF2	03752
BIT17	03407	IDA51	03410	OELT2	03400		
BIT21	03412	IDA51	03410	STATUSMASK	03403		
LASTAIND	03420	FIFTYONE	03416	SCRMASK	03406		
ATT	03423	THISBIND	03421	I0	03411		
NEWCOUNT	03426	IDCOUNT	03424	NINE	03414		
EXCON1	03431	YCON1	03427	SIGNSEI	03417		
TENSCALE	03434	EXCON2	03432	LASTRIND	03422		
SCALE	03437	TWOSCALE	03435	LINECOUNT	03425		
R0MT2	03466	RECBLOCKMT	03440	YCCN2	03430		
RECD2	03476	RECDATA	03470	FIFTYSCALE	03433		
ROB2	03520	R0B	03516	HALFSCALE	03436		
RADATBUF2	03752	R0B3	03521	RBMT1	03465		
		RDATASENT	04202	RECD1	03471		
				R0B1	03471		
				RAC0ATBUF1	03517		
				ADATASENT	04203		

RADIOMETER

LABEL	LOC	LABEL	LOC	LABEL	LOC	LABEL	LOC
CALKONSENT	04204	RRADCESENT	04205	SRADCESENT	04206	SRTBEG	04206
LITREC	04211	FRACT	04212	ERASELINE	04213	ERASELINE	04213
ELEVINTERG	04215	AZIMINTERG	04216	HRC8S	04217	HRC8S	04217
MINOB	04220	SECOB	04221	RIGHTA	04222	RIGHTA	04222
DECLIN	04223	WORKA	04224	WORK	04231	WORK	04231
WORKB	04232	BLKOUT	04321	LASTADIND	04356	LASTADIND	04356
REQCOMOUT	04357	REQOUTA	04361	REQCOMIN	04374	REQCOMIN	04374
COMMENTREQ	04400	PROCEED	04401	PROCEEOA	04403	PROCEEOA	04403
LITLOG	04416	COMMENTLINE	04420	INCOMSPEC	04441	INCOMSPEC	04441
ID1CELCOR	63000	ID2CELCOR	63001	RA	63002	RA	63002
DEC	63003	SRA	63004	SOEC	63005	SOEC	63005
RADIUS	63006	RAOOT	63007	DECDOT	63010	DECDOT	63010
RADIUSDOT	63011	SIOERTIME	63012	VIZRA1	63013	VIZRA1	63013
VIZOECI	63014	VIZRA2	63015	VIZDFC2	63016	VIZDFC2	63016
TWOSECONP	63017	ID1RADCOR	63050	ID2RADCOR	63051	ID2RADCOR	63051
RANGE	63052	AZIM	63053	ELEV	63054	ELEV	63054
SAZIM	63055	SELEV	63056	RANGE	63057	RANGE	63057
CAZIM	63060	CELEV	63061	RANGE00T	63062	RANGE00T	63062
TRUERANGE	63063	SINORIENT	63064	COSORIENT	63065	COSORIENT	63065
SINAZEL	63066	COSAZEL	63070	ACQAZIM	63071	ACQAZIM	63071
ACQELV	63075	FRAME SIZE	63101	RADIOMETER	63102	RADIOMETER	63102
TIMEMODE	63103	FIRSTELEV	63104	ASTORA	63105	ASTORA	63105
ASTRODEC	63106	TIMECORR	63107	KYBRDLEVEL	63110	KYBRDLEVEL	63110
TYSTATUS	63111	RECORDSIZE	63112	CELBOOY	63113	CELBOOY	63113
IDTIME	63130	ID2TIME	63131	TRUETIME	63132	TRUETIME	63132
CELTIME	63133	SELTIME	63134	CONVERTIME	63135	CONVERTIME	63135
SRAOTIME	63136	HOURLMINUTE	63137	SECONOS	63140	SECONOS	63140
OSECONDS	63141	ACTUALTIME	63142	ESTHIFTED	63143	ESTHIFTED	63143
GMTSHIFTED	63144	GMTMOOU24	63145	BLASTOFF	63146	BLASTOFF	63146
YEARMONTH	63147	DAY	63150	HOUREG	63151	HOUREG	63151
MINREG	63152	FIRSTHRU	63153	DUMSECTTG	63154	DUMSECTTG	63154
RECSWITCH	63155	RELEASESW	63156	ID1RECRD	63210	ID1RECRD	63210
ID2RECRD	63211	RECFILE	63212	ID1SYSPAR	63310	ID1SYSPAR	63310
ID2SYSPAR	63311	RADARMODE	63312	SYSTAT1	63313	SYSTAT1	63313
SYSTAT2	63314	SYSTATD	63315	DELTATEE	63316	DELTATEE	63316
FREQUENCY	63317	LONGITUDE	63320	GEODETLAT	63321	GEODETLAT	63321
GEDCENLAT	63322	EQUATOR	63323	POLE	63324	POLE	63324
AZIMOVER	63325	HEIGHT	63326	YRTRAN	63327	YRTRAN	63327
ZRTRAN	63330	SKIP	63331	MSFREQ	63332	MSFREQ	63332
WFFREQ	63333	MAINSWITCH	63334	VELOFLIGHT	63335	VELOFLIGHT	63335
LSPERAU	63336	FLATTENING	63337	NMPERAU	63340	NMPERAU	63340
AUPEREQUAT	63341	KMPERNM	63342	EXPNAME	63350	EXPNAME	63350
ID1ENTPNT	63410	ID2ENTPNT	63411	MCPGM	63412	MCPGM	63412
INTER	63413	COCON	63414	RECRD	63415	RECRD	63415
AOSC	63416	AESC	63417	CORCT	63420	CORCT	63420
CHCOR	63421	CHCOR	63422	PRLOG	63423	PRLOG	63423
CELCOMPGM	63424	DATANALYZE	63425	INTERCOM	63426	INTERCOM	63426
ACQUI	63427	ROMTR	63430	CHPAR	63431	CHPAR	63431
WFD	63432	ROXXX	63433	PLANP	63434	PLANP	63434
TIMEP	63435	PLOTP	63436	ID1RADIO	63440	ID1RADIO	63440
ID2RADIO	63441	AZIMAAD	63442	ELEVADO	63443	ELEVADO	63443

RADIOMETER		P-STYLOS*28APR65		RADIOMETER	
LABEL	LOC	LABEL	LOC	LABEL	LOC
DOPPADD	63444	RANGEADD	63445	INAZIMADD	63446
INELEVADD	63447	WFADD	63450	MILLSTNADD	63451
SYSCOMREG1	63452	SYSCOMREG2	63453	SYSCOMREG3	63454
SYSCOMREG4	63455	SYSCOMREG5	63456	SYSCOMREG6	63457
INTERLCKSH	63460	PREVIOUSSTM	63461	BODYSIZE	63462
RADIORA	63540	RADIODEC	63541	SYNCTIMING	63542
ID3RADIO	63776	I04RADIO	63777	AZIMOUT	64000
ID5RADIO	64776	I06RADIO	64777	ELEVOUT	65000
ID7RADIO	65776	IDBRADIO	65777	DOPPOUT	66000
ID9RADIO	66776	ID10RADIO	66777	RECAZIM	67000
ID11RADIO	67776	ID12RADIO	67777	RANGEOUT	70000
ID13RADIO	70775	ID14RADIO	70776	ID16RADIO	71777
MCPFILLER	71000	ID15RADIO	71776	ID18RADIO	72777
INTERAZIM	72000	ID17RADIO	72776	ID20RADIO	73777
INTERELEV	73000	ID19RADIO	73776	ID22RADIO	74777
INTERDOPP	74000	ID21RADIO	74776	ID24RADIO	75777
AZIMIN	75000	ID23RADIO	75776	ID26RADIO	76776
ELEVIN	76000	ID25RADIO	76775	ID28RADIO	77577
INTERRANGE	76777	ID15YSENT	77576	ID25YSENT	77577
SYSENTRIES	77600	ID15YSNAM	77676	ID25YSNAM	77677
SYSNAMES	77700				

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