TIROS II
RADIATION DATA CATALOG

(VOLUME ONE)

GODDARD SPACE FLIGHT CENTER
GREENBELT, MD.

August 15, 1961

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TIROS II

RADIATION DATA CATALOG

VOLUME ONE

By

Staff Members

of the

Aeronomy and Meteorology Division
US Goddard Space Flight Center, Greenbelt, Md
National Aeronautics and Space Administration

and the

Meteorological Satellite Laboratory
United States Weather Bureau

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National Oceanic and Atmospheric Administration
TIROS Satellites and Satellite Meteorology

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ABSTRACT

The NASA TIROS II Meteorological Satellite launched on November 23, 1960, carried a medium-resolution, five-channel, scanning radiometer.

This catalog describes the mapping procedures which have been employed in processing the TIROS II radiation data utilizing "Final Meteorological Radiation (Magnetic) Tapes" and automatic data-processing equipment.

Sample grid point analyses of radiation data from 50 orbits are presented and serve to introduce TIROS II radiation data to the meteorological community.

An index of all existing Final Meteorological Radiation Tapes is included.

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I. INTRODUCTION

The TIROS II meteorological satellite was launched on November 23, 1960. The mean orbital characteristics during the 5 months of active radiation data acquisition were the following:

Perigee	385.6	statute miles.
Apogee	454.4	statute miles.
Anomalistic Period	98.27	minutes.
Inclination	48.53	degrees.

Like the first TIROS satellite launched nearly 8 months earlier, TIROS II carried two television cameras. However, the outstanding difference between the two was that TIROS II for the first time carried a medium-resolution, five-channel, scanning radiometer sensitive in the following spectral regions:

Channel 1	6.0 – 6.5	microns—water vapor absorption.
Channel 2	8.0 –12.0	microns—atmospheric window.
Channel 3	0.25– 6.0	microns—reflected solar radiation.
Channel 4	8.0 –30.0	microns—thermal radiation.
Channel 5	0.55– 0.75	microns—visible reference and daytime cloud cover.

This volume describes the mapping procedures utilizing electronic data-processing equipment which have been employed initially in processing the TIROS II radiation data and illustrates sample maps in grid print form from the first 50 orbits where data were acquired over or near the United States and successfully reduced. An index of all "Final Meteorological Radiation (FMR) Tapes" from TIROS II is included at the end of the volume.

The grid point analyses of radiation data shown here serve to introduce TIROS II radiation data to the meteorological community – suggesting capabilities of resolving patterns from smoothed macro systems down into the meso scale region. The maps, along with several other diagnostic monitor programs, also serve as a means of sampling and evaluating the operation of the entire data-processing system.

This catalog is intended as a companion volume to the "TIROS II Radiation Data Users' Manual" which includes an explanation of the calibration procedures, physical significance of the data, approximations used, the format of the Final Meteorological Radiation Tape, and associated information.

Any group having a special interest in the data and/or the data reduction system employed, may obtain further information by writing to the

Chairman, TIROS Radiation Data Working Group
Aeronomy and Meteorology Division
NASA, Goddard Space Flight Center
Greenbelt, Md.
Attention: Mr. W. R. Bandeen

It is presently planned to publish grid print samples of all existing Final Meteorological Radiation Tapes, after which copies of the tapes will be made available to the meteorological community. Hence, upon publication of this volume, FMR Tapes of the orbits mapped herein may be obtained at cost by writing to the

National Weather Records Center
Asheville, N.C.

As subsequent volumes of the catalog are published in the near future, the corresponding FMR Tapes will similarly become available from the National Weather Records Center.

II. MAPPING PROGRAMS

Although vast amounts of radiation data can be stored as binary information on magnetic tapes, further machine processing is needed in order that the data can be applied to a particular meteorological problem. At present three IBM–7090 machine programs are available for such processing.

Each of these programs consults the selected Final Meteorological Radiation (FMR) Tape and, on the basis of a job card, operates on the particular data specified. Detailed instructions for the use of these programs on the computer are given at the end of this discussion. A general description of each follows:

Data Listing Program (MS 500)

This program produces a printed list of information for a specified timespan which is usually limited to only a few minutes of satellite data. Calibrated information is presented from all five sensors for each earth-viewed spot in a spin cycle along with appropriate locator information. Latitude and longitude as well as nadir and azimuth angle information are given for each viewed spot. Nadir angle is measured at the satellite between the subpoint radius vector and the ray to the viewed spot. Azimuth is measured in the plane tangent to the earth at the subsatellite point, clockwise from north to the great circle arc connecting the subpoint and the viewed spot. The data list is grouped by earth viewed swaths—viewed either through the "floor" or "wall" of the satellite or in alteration. A sample listing is presented in figure 1.

MICRON IR DATA FOR 6MINUTES FROM 1808Z DAY PASS 4STA NEWJER

AZIMUTH	NADIR ANGLE	LONGITUDE	LATITUDE	6.0-6.5 MU	8.0-12 MU	0.2-5.0 MU	7.5-30 MU	.55-.75 MU
227.20	62.91	122.56	33.20	0.50	35.50	123.75	32.25	236.87
229.16	59.35	119.22	35.81	0.50	34.50	109.25	42.00	46.87
228.24	55.50	116.42	37.98	0.62	34.50	5.87	42.00	363.50
225.23	51.41	114.12	39.78	0.62	36.50	70.25	42.87	173.50
220.90	47.13	112.26	41.24	0.62	32.12	70.25	37.75	236.87
216.03	42.73	110.80	42.41	0.75	38.37	5.87	42.87	236.87
211.39	38.27	109.67	43.33	0.50	23.12	109.25	42.00	236.87
207.76	33.79	108.83	44.05	0.50	25.87	169.62	32.25	426.75
205.91	29.37	108.23	44.61	0.62	26.50	221.25	37.75	16.12
206.61	25.06	107.81	45.06	0.62	23.12	169.62	31.50	16.12
210.66	20.91	107.53	45.44	0.62	25.87	169.62	33.87	46.87
227.00	16.21	107.14	45.95	0.62	34.50	221.25	40.25	46.87
246.18	12.00	106.82	46.45	0.62	29.87	58.87	38.50	236.87
266.93	8.50	106.58	46.94	0.62	29.87	169.62	38.50	110.25
287.97	5.98	106.41	47.42	0.62	30.62	169.62	41.12	236.87
308.03	4.69	106.30	47.91	0.62	25.87	169.62	38.50	46.87
320.50	7.01	106.19	48.39	0.50	24.50	109.25	34.62	110.25
330.77	10.52	106.15	48.90	0.62	31.37	221.25	41.12	110.25
338.93	14.93	106.19	49.43	0.75	36.50	5.87	45.37	46.87
345.02	19.95	106.32	49.99	0.50	33.62	123.75	38.50	300.12
349.12	25.30	106.55	50.59	0.62	29.12	142.25	40.25	236.87
351.30	30.68	106.88	51.25	0.50	29.12	123.75	42.00	236.87
351.60	35.82	107.34	51.96	0.50	27.12	70.25	35.37	236.87
350.10	40.42	107.93	52.75	0.62	32.12	221.25	38.50	46.87
346.86	44.20	108.66	53.60	0.50	29.87	109.25	37.00	363.50
341.95	46.87	109.53	54.55	0.50	23.87	109.25	37.00	363.50
335.43	48.15	110.57	55.58	0.62	22.50	109.25	33.87	300.12
327.37	47.74	111.77	56.72	0.50	23.87	169.62	32.25	110.25
317.82	45.37	113.15	57.96	0.62	24.50	5.87	34.62	236.87
306.85	40.74	114.73	59.32	0.37	23.12	109.25	31.50	236.87

AZIMUTH	NADIR ANGLE	LONGITUDE	LATITUDE	6.0-6.5 MU	8.0-12 MU	0.2-5.0 MU	7.5-30 MU	.55-.75 MU
227.45	62.64	121.55	33.66	0.37	34.50	70.25	25.00	110.25
229.63	59.10	118.32	36.09	0.50	39.87	275.25	46.25	46.87
228.77	55.26	115.61	38.13	0.62	32.12	109.25	43.75	16.12
225.67	51.18	113.38	39.83	0.62	38.37	142.25	42.87	46.87
221.16	46.93	111.57	41.21	0.75	38.37	70.25	43.75	110.25
216.05	42.55	110.14	42.33	0.75	41.87	109.25	45.37	236.87
211.15	38.10	109.03	43.22	0.62	27.12	221.25	46.25	16.12
207.28	33.64	108.20	43.92	0.50	24.50	221.25	33.87	16.12
205.26	29.22	107.60	44.48	0.50	29.12	194.00	38.50	110.25
205.90	24.91	107.17	44.94	0.62	28.50	221.25	38.50	16.12
210.02	20.75	106.87	45.33	0.62	19.25	109.25	36.25	300.12
227.10	16.01	106.48	45.84	0.62	24.50	169.62	32.25	46.87
247.12	11.74	106.16	46.33	0.50	25.87	109.25	33.87	300.12
268.72	8.19	105.91	46.81	0.62	31.37	5.87	41.12	300.12
290.55	5.63	105.73	47.30	0.62	31.37	70.25	40.25	173.50
311.25	4.30	105.61	47.78	0.50	28.50	142.25	37.00	236.87
323.57	6.65	105.49	48.27	0.62	32.87	123.75	38.50	173.50
333.53	10.21	105.45	48.78	0.62	29.12	70.25	38.50	363.50
341.25	14.67	105.48	49.31	0.62	35.50	70.25	41.12	300.12
346.85	19.75	105.60	49.88	0.62	35.50	123.75	38.50	300.12
350.45	25.14	105.81	50.48	0.50	34.50	109.25	37.00	300.12
352.18	30.56	106.14	51.14	0.62	38.37	248.50	42.87	46.87
352.16	35.72	106.58	51.86	0.62	27.12	58.87	38.50	46.87
350.50	40.32	107.15	52.64	0.50	28.50	275.25	37.00	16.12
347.33	44.07	107.85	53.49	0.50	26.50	109.25	36.25	110.25
342.77	46.67	108.70	54.42	0.50	23.12	221.25	42.00	46.87
336.93	47.84	109.71	55.44	0.50	24.50	109.25	34.62	236.87
329.95	47.28	110.88	56.56	0.50	26.50	169.62	33.87	110.25
321.94	44.69	112.23	57.79	0.62	20.50	142.25	37.75	46.87
313.03	39.79	113.77	59.12	0.50	22.50	169.62	33.87	110.25

AZIMUTH	NADIR ANGLE	LONGITUDE	LATITUDE	6.0-6.5 MU	8.0-12 MU	0.2-5.0 MU	7.5-30 MU	.55-.75 MU
226.39	60.48	118.05	36.14	0.37	9.37	967.37	12.37	933.37
229.65	57.07	115.56	37.88	0.62	42.62	142.25	42.00	[illegible]
229.15	53.25	113.44	39.38	0.62	[illegible]	[illegible]	[illegible]	[illegible]
225.90	49.12	111.67	[illegible]	0.75	[illegible]	[illegible]	[illegible]	[illegible]
220.87	[illegible]	110.21	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
215.08	[illegible]	109.02	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

FIGURE 1. Sample Printout from Listing Program.

Low-Resolution Mapping (AW 950) [1]

This program accumulates and averages large amounts of data at grid points on a hemispheric polar stereographic map base. This is the standard Joint Numerical Weather Prediction (JNWP) grid used in hemispheric analysis and prediction. The mesh size is approximately 200 miles at middle latitudes so that the resulting map is relatively low in resolution considering the sensor capabilities. Normally one may choose to map 50 minutes of radiation data from one of the five sensors in order to obtain such an analysis of the viewed region extending in a band across an entire hemisphere. The data population averaged at each grid point may vary from only a few near the edges of the viewed band up to 40 or more near the center. However, variation in the amount of smoothing thereby injected tends to be compensated by the fact that the resolving power of the sensor is reduced toward the horizon at the band edges. Samples of these maps (designated N and S) are presented in this catalog.

High Resolution Mapping (MS 501)

Data are fitted to a fine mesh grid in this program using a revision of the objective analysis program currently in use by JNWP (see Cressman, G. P., *Monthly Weather Review*, vol. 87, October 1959, pp. 367–374). The data population from the specified sensor is limited so that the number of observations approximates the number of grid points. The mesh size is presently set at one-fifth of the standard size used in the low-resolution mapping and the data sample is limited to a span of about 5 minutes. This program is segmented into the following steps.

1. The FMR Tape is consulted and the data for a particular sensor and timespan are extracted, sorted, and arranged in a particular format on an intermediate binary tape.

2. Next, this data dictionary tape is used as source data by the objective analysis program in which the data serves to correct a "first guess" value which has been assigned to each grid point. Repeated scans with ever-diminishing data search areas around each grid point serve to sharpen up the analysis and remove the influence of the first-guess field. The final grid print map uses only three or four observations in a search area less than one mesh length in radius in the final scan. The maps lettered A through I illustrate the output of this program.

3. Optional line drawn output produced by an Electronic Associates Data Plotter may be obtained by an additional step in which the grid point information is placed on another binary tape. This tape now serves as input to a standard JNWP subroutine which generates binary tape records of X, Y points which direct the drawing of contours by the data plotter. A sample of this output is presented in figure 2. (Compare this with the corresponding grid print in 4.2.2.)

[1] This is a minor revision of a program written and largely debugged as an Air Weather Service Reserve project under the Directorate of Scientific services/EDD/ECB.

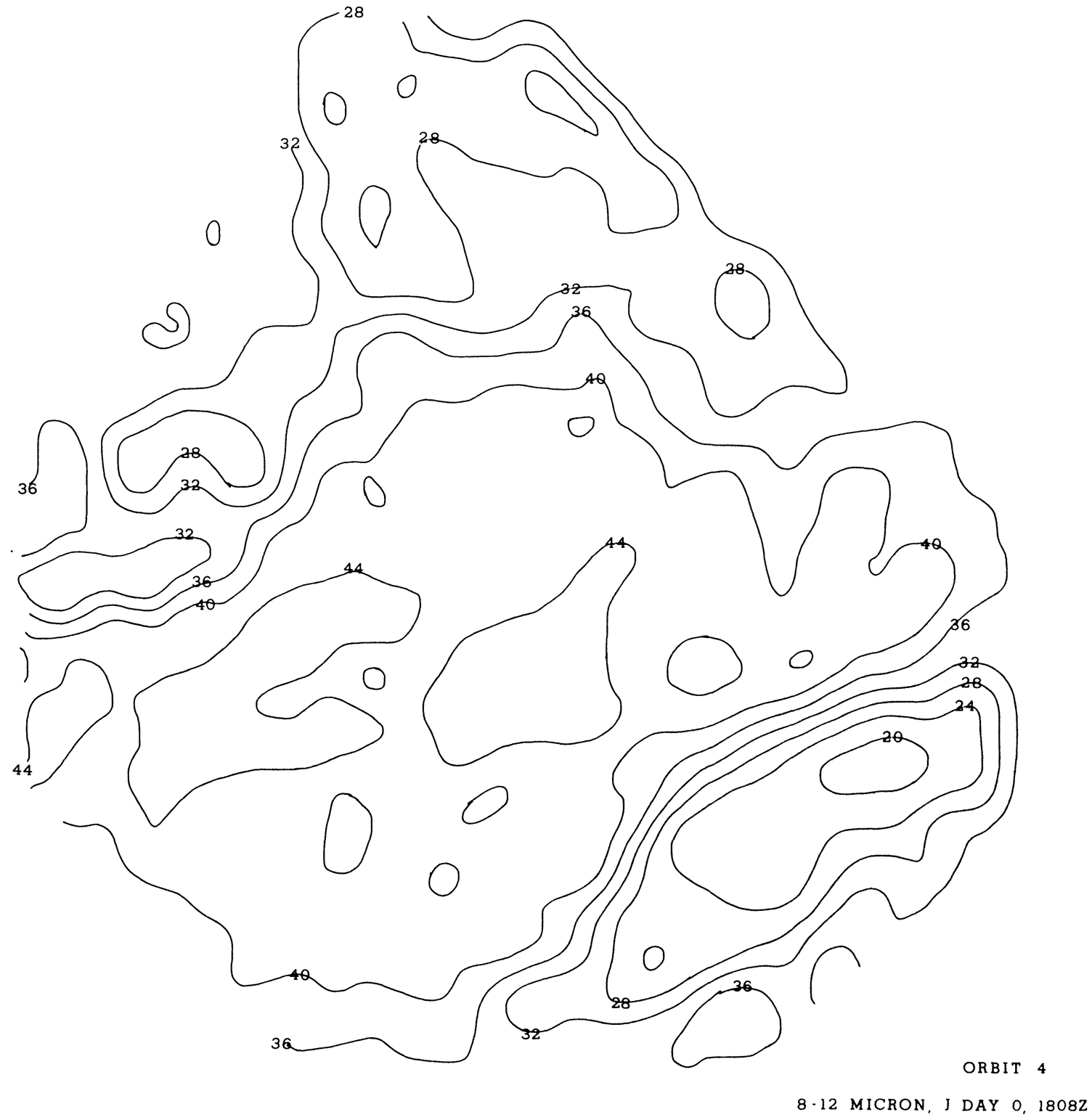

FIGURE 2. Sample Line-Drawn Map.

III. DETAILED DESCRIPTION OF MAPPING PROGRAMS

The following paragraphs pertain to program instructions and may not interest the nonprogramer.

3.1 Job Card Format

The following explanation and key will allow the user to punch standard IBM cards in a format acceptable to all of the programs described in the text (MS500, AW 950, MS 501).

Card column(s)	*Item*
1–3	Julian Day.
4–5	Hour (Z time).
6–7	Minute (Z time).
8–11	Job time span in minutes.
12	Data Channel Number: 1=6.3 microns. 2=8–12 microns. 3=0.2–5 microns. 4=7–30 microns. 5=0.6–0.8 microns.
13–14	Nadir angle limit.
15–18 [1]	Delta I grid column origin displacement.
19–22 [1]	Delta J, grid row origin displacement.
23–34 [1]	C MESH mesh intervals, pole-equator.
35–36 [1]	CF number of fine mesh intervals in a coarse mesh interval.
37–38 [2]	Indicator=01.
39	Sign of latitude to select desired hemisphere: 1=northern, 0=southern.
40–43	Orbit number (readout).
44	Station of readout; 1=East coast, 2=West coast.

[1] Used only by MS 501 and explained more fully in that writeup.
[2] Presently unused except in listing code where now required to be 01.

The appended form (fig. 3) has been found convenient for recording jobs to be punched. The recorded example will illustrate the items specified in the format. Here 5 minutes of data are requested from the channel 4 sensor on the orbit of readout number 43 and starting at 0806Z on the third day after launch day. Data having a nadir angle of 58° or more will be discarded. An area of the Northern Hemisphere will be mapped within a 1,977-point grid array which contains 5-mesh intervals in a fine array for each coarse mesh interval. The coarse mesh interval length is that used by JNWP which contains 31.2+ mesh intervals on the polar stereographic map base between pole and equator. In terms of fine-mesh intervals, the origin of the 1,977-point fine-mesh array is displaced 81 intervals from the coarse-mesh origin ordinate and 106 intervals from the origin abscissa.

3.2 MS500 Listing Program for IBM 7090 E.D.P.M.

Purpose

To produce an off-line listing of calibrated radiation sensor data from TIROS II Final Meteorological Radiation (FMR) Tapes as prescribed by the job card.

Restrictions

1. The data timespan specified on the job card is limited to that which can be contained in a 20,000-word input buffer (normally not over 15 or 20 minutes of data).
2. The interpolative generation of omitted locator information may deteriorate in value near the end of an earth-viewed swath in the absence of an end-point anchor. In this event the interpolation routine reverts to an extrapolative mode.

Method

The program digests input data from the buffer in earth viewed swath batches, and generates locator information between every fifth scan spot by an interpolation approximation. The order of interpolation in each swath is governed by the population anchor spots (every fifth spot); linear for two, quadratic for three, and cubic when more than three are present.

Input FMR Tape data search is accomplished through comparison of tape file documentation records with each orbit in conjunction with the job card. Selected output is labeled as to beginning time and timespan of the listed data and data is broken into batches by scan swaths.

Usage

The program is available as an absolute binary deck of 200 cards with a one-card self loader. Use is controlled through the job cards. (See appended discussion.) All locations of a 32,000-word core are used.

Job cards may be cascaded to produce listings of separate segments from the same orbit (file) on the FMR Tape. Running time is primarily a function of tape search for input data.

3.3 AW950 Low-Resolution Mapping Program for IBM 7090 E.D.P.M.

Purpose

To produce a polar stereographic map analysis of radiation sensor data from TIROS II as prescribed by a job card. Information is produced at an array of 1,977 grid points on a hemispheric basis.

Restrictions

1. Data are mapped for only one radiation sensor at a time as specified by the job card.
2. Since multiple job usage is allowed, output tapes have been left without final end of file marks—manual ends of file are thus required at termination.
3. Data population at a grid square is presently limited to (377)[8].
4. Data are not normalized to remove variations in optical depth or other effects.

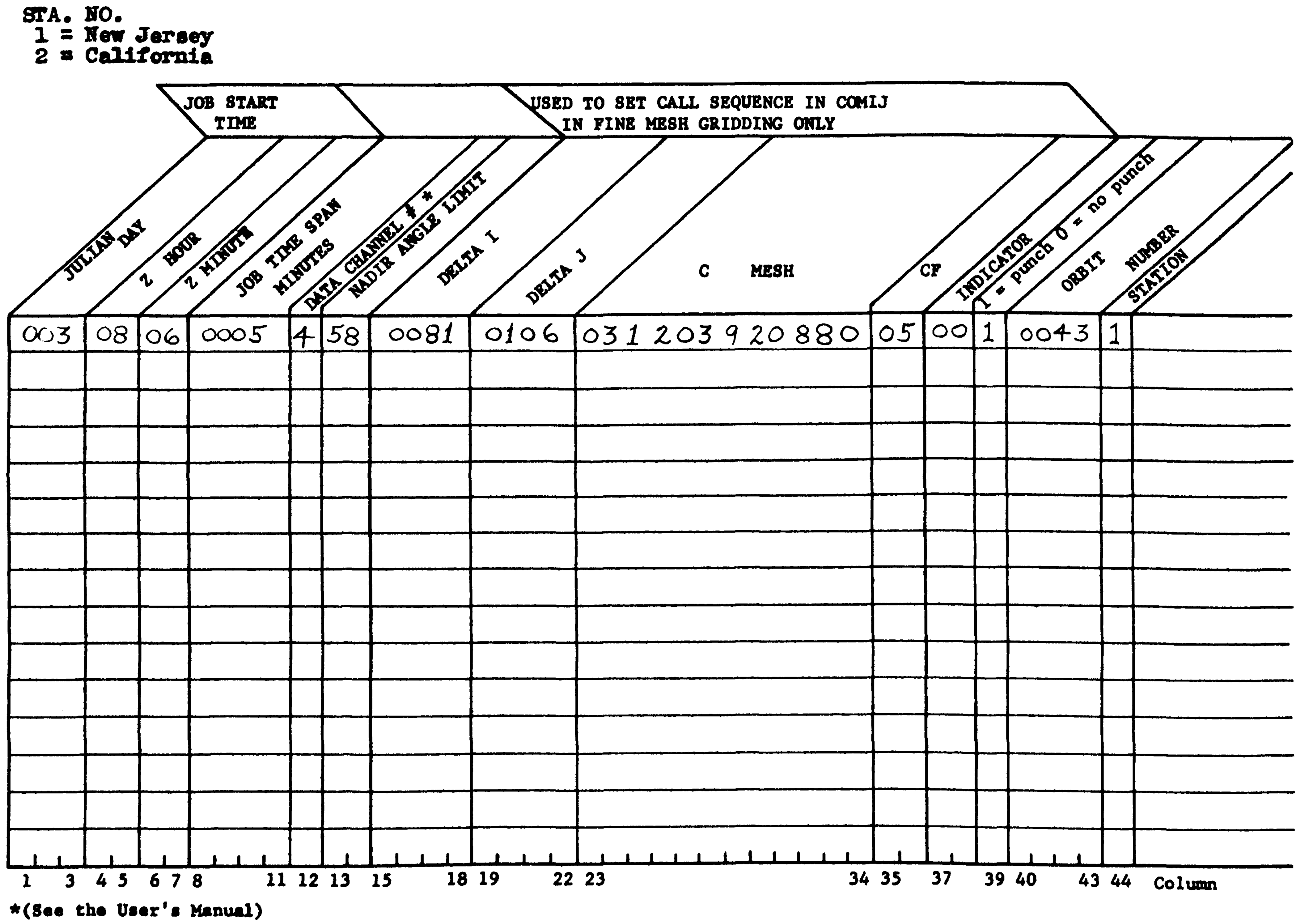

FIGURE 3. Job Card Format—Mapping Codes.

Method

Data are read from the input tape one record at a time (each such record contains data collected in 1 minute of real time by the satellite). Digestion from the input buffer is accomplished in earth-viewed swath batches, location information being generated between every fifth (anchor) spot by an interpolation approximation. Order of interpolation is governed by the population of anchor location spots in each swath.

Latitude and longitude location information is converted to i, j coordinates on a map overlay grid array.

Data accepted within each grid square is combined into a simple arithmetic average.

Usage

The program is available on some 200-row binary cards as a FORTRAN/FAP package with BSS loader.

The selection of input data from TIROS II Final Meteorological Radiation (FMR) Tapes and the digestive action taken is controlled by job cards. (See appended description.)

Input: FMR Tape is tape No. 4 on B channel (low density) and the appropriate job card is placed in the card deck. Several job cards specifying different segments of data or different treatments may be placed in tandem in order to group jobs.

Output: Tape No. 2 on A channel is produced in BCD for off-line IBM 1401 printing. Two maps are grid printed for each job—the radiation analysis and a companion population map specifying the number of pieces of data accepted for each grid point. Grid point radiation values are expressed in watts per square meter.

Sense Switch Options

1. Switch No. 1 down permits a binary output record of radiation grid point data for each job card on B channel tape No. 5. This tape (with manual end of file) serves as input to a revised version of WPK04, a JNWP program which generates binary magnetic tape records for an Electronic Associates data plotter which produces inked contours on a 1:30 million polar stereographic map base.

2. Switch No. 2 provides terminating options in the event of input tape record-reading failures. Instructions are printed on line.

Error Steps

1. Diagnostic tape and job card beginning and ending time documentation information is printed on line, the input tape is rewound and the computer stops in cases of incompatibility between timespans of data contained on the FMR Tape and the timespan of data requested on the job card.

2. Program stops contained in various subroutines have not been listed.

3. In converting latitude and longitude to i, j coordinates, degrees are changed to radians. If overflow occurs in this process, the data from such a viewed spot is discarded.

3.4 MS501 High-Resolution Mapping Program for IBM 7090 E.D.P.M.

Purpose

To produce a high-resolution map analysis of radiation sensor data on a polar stereographic gridlet as prescribed by a job card. The gridlet contains an array of 1,977 grid points and is scaled five times greater than the low-resolution map analysis.

Restrictions

1. Data are mapped for only one infrared sensor at a time as specified by the job card.

2. More than one job card may be used, providing they all refer to the same orbit; i.e., the same file on the Final Meteorological Radiation Tape. After the last job card is processed, end-of-file marks are written on the data dictionary tape, which is then rewound.

3. Data input is limited to 8,200 words from the FMR Tape. This may mean from 5 to 10 minutes of real time by the satellite depending upon minute-record sizes. Input in excess of this word limit will cause a program stop.

4. Data located outside the octagon gridlet chosen is simply deleted and does not affect the map analysis.

Method

Input data from the FMR Tape are processed in two stages. In the first stage the FMR Tape is searched, one file at a time, for the timespan requested. All the data within this timespan are then read into a buffer in core storage. As in the low-resolution method, swath batches are digested and sorted according to location information furnished for every fifth (anchor) spot. Intermediate locations are interpolated so that every piece of data has a corresponding latitude and longitude. These latitudes and longitudes are now converted to i, j coordinates on a 1,977-point grid array—the standard octagon grid used by the Joint Numerical Weather Prediction (JNWP) Unit. These fields, data and grid locations, are now written on an intermediate binary tape to be used as source data by the map analysis program.

In the second stage a special adaptation of the JNWP objective analysis program operates upon the data dictionary tape generated by the first stage. The main features of the adaptation are as follows: (1) Only one map analysis is produced during the program run, but the program can recycle allowing more than one job on the data dictionary tape to be analyzed. (2) Location and size of the gridlet can be specified on the job card. The size of the gridlet is normally taken to be one twenty-fifth of the hemispheric grid; i.e., a scale of 1:6,000,000. This is compatible with the maximum resolution of radiation sensor values.

The analysis method is basically a method of applying corrections to a first-guess field. The guess field for radiation data is simply a field of average values of all the data in the gridlet. The corrections are determined from a comparison of the data with the interpolated value of the guess field at the location of the data point. A series of scans of the field is made, each scan consisting of application of corrections on a smaller data search area than during the previous scan. Finally, a smoothing operation is performed to eliminate small scale perturbations.

Usage

To complete a high-resolution map analysis, two programs are run in sequence. The first program is available as an absolute row binary deck of some 200 cards, containing a 1-card loader. Only two tapes are needed at this stage and do not conflict with those needed in the second program. The Final Meteorological Radiation (FMR) Tape serves as input (on channel B No. 4 low density). Output is an intermediate binary tape called the data dictionary tape. Place a blank tape on channel B No. 3 for the life of both programs. Tapes (B–4) and (B–3) are rewound after processing the last job card. Job cards control selection of the data from the FMR Tape. (See appended description.) These job cards are placed behind the binary deck, followed by a blank card to signal the end of the job batch. More than one job card may be used provided they all refer to the same file on the FMR Tape.

The second program runs with the SOS System under the IBM monitor and uses all of the core. In addition to the normal system tapes required, the data dictionary tape (B–3) and a blank (B–5) for curve follower output, if desired, are required. The adapted JNWP objective analysis program is available as a SQUOZE deck (binary and decimal card mixture) of some 500 cards which may be read in from the card reader or from tape (A–3). While in execution, the scan number, which starts at 2, is displayed by the sense lights on the console.

Final output is in two forms as determined by console keys. (See table below.) If printed maps are desired (key 34 down), output is one BCD file on tape (A–2) ready for off-line printing on the IBM 1401 printer under program control. A companion data population map precedes each map analysis specifying the number of data points affecting each grid point in the last scan. Normally, the data search radius in the last scan is 0.9 grid intervals. An end-of-file mark is written on output tape (A–2) after every job batch, but tape (A–2) is not rewound to allow stacking of output.

If curve follower output is desired (key 35 up), a prepared field of data, comprising one record, is written on tape B–5. This tape now serves as input to a revised version of WPKO4, a JNWP full core program which generates binary tape records for an Electronic Associates data plotter. Inked contours are drawn by the plotter for the gridlet which normally represents a 1:6,000,000 polar stereographic map base. Tape (B–5) is not rewound to allow stacking of curve follower output; and an end-of-file mark should be written manually at termination.

OUTPUT TABLE

Output option according to console keys

Key 34	*Key 35*	*Output*
Down	Down	Printed maps.
Up	Up	Curve follower.
Down	Up	Printed maps and curve follower.
Up	Down	Will cause a stop *before* output.[1]

[1] This is an opportunity to change key settings. Push start to resume.

NOTE: Key 33 is set aside for punch output (not yet available).

As in the low-resolution mapping code, diagnostic information is printed on line if the timespan requested on the job card is incompatible with the timespan contained in the FMR Tape.

Grid print data in watts per square meter is expressed in units and tenths (data held in core is expressed to three fractional bits). As in the low-resolution mapping program, no normalizing of data has been included.

IV. GRID PRINT MAPS

4.1 Explanation of the Maps

The low-resolution maps marked N (Northern Hemisphere) and S (Southern Hemisphere) present hemispheric stripes of data from individual orbits. Only data from the 8–12-micron sensor are presented in these 1:50 million polar stereographic maps. Integer values in watts per square meter pertain to the grid points designated by plus signs (e.g., "090" is 90.0 watts/meter^2). Figures printed on non-grid-point rows provide filler for alternate contour channels. The contour interval is 5.0 watts/meter^2. After the average value is obtained at each grid point viewed in the data stripe, the average of all of these values is placed at all remaining grid points in order to minimize abrupt gradients and discontinuities at the edges of the data. Plastic geographic overlay sheets are provided for these hemispheric grids. The pole is placed over the central point of the grid with the 80th meridian extended through the central grid point of the lower baseline row.

The high-resolution maps, although presented in the same page-size format, are actually 1:10 million segments of the same polar stereographic map base with a mesh interval of about 40 miles. These sample analyses of small segments of a hemispheric data stripe are confined to a set of nine selected locations over and near the United States. The orientation of these nine inset gridlets is such that their bases are always parallel to the base row of the hemispheric (low-resolution) grid. In general, the last several minutes of data recorded before readout are mapped. Contour printing, as in the case of the low-resolution maps, is provided. The grid point data for the thermal channels 1, and 2, and 4 are expressed as integers and tenths at the grid points (e.g., "007" is 0.7 watts/meter^2 and "900" is 90.0 watts/meter^2). The contour interval for channel 1 is 0.1 watts/meter^2 and for channels 2 and 4 is 2.0 watts/meter^2. The grid point data for the reflected solar channels 3 and 5 are expressed as integers at the grid points (e.g., "215" is 215.0 watts/meter^2. The contour interval for channels 3 and 5 is 20.0 watts/meter^2. Nine plastic geographic overlay sheets (A through I) are included—the lettered overlay to be alined on the similarly lettered grid print such that the bases correspond and the edge marks include all grid points designated by the plus signs. As in the low-resolution case, an average value remains at all grid points without data.

The grid print samples from 52 orbits contained herein are arranged chronologically by orbit number and numerically by channel number within each orbit (two low resolution orbits—Nos. 43 and 235—are not repeated in the 50 high-resolution samples because data were not acquired over the United States). Only a few maps of the reflected solar channels 3 and 5 are illustrated (i.e., orbits 4, 31, 61, 89, 91, and 93) because during this period of the history of TIROS II the portion of the orbital track over latitudes encompassing the United States was largely in either poor illumination or complete darkness.

The maps presented in this volume are not from a selected list of the "best available" but rather are representative of the quality spectrum to be found in the TIROS II radiation data for which minimum acceptability criteria were met resulting in Final Meteorological Radiation Tapes. For example, channels 1, 2, and 4 of such orbits as 31, 246, and 261 exhibit continuous patterns with reasonable appearing gradients throughout the grid prints, whereas channels 2 and 4 of orbit 1, for example, contain noisy patches with improbably large gradients interspersed among the more regular radiation patterns.

LOW RESOLUTION MAPS

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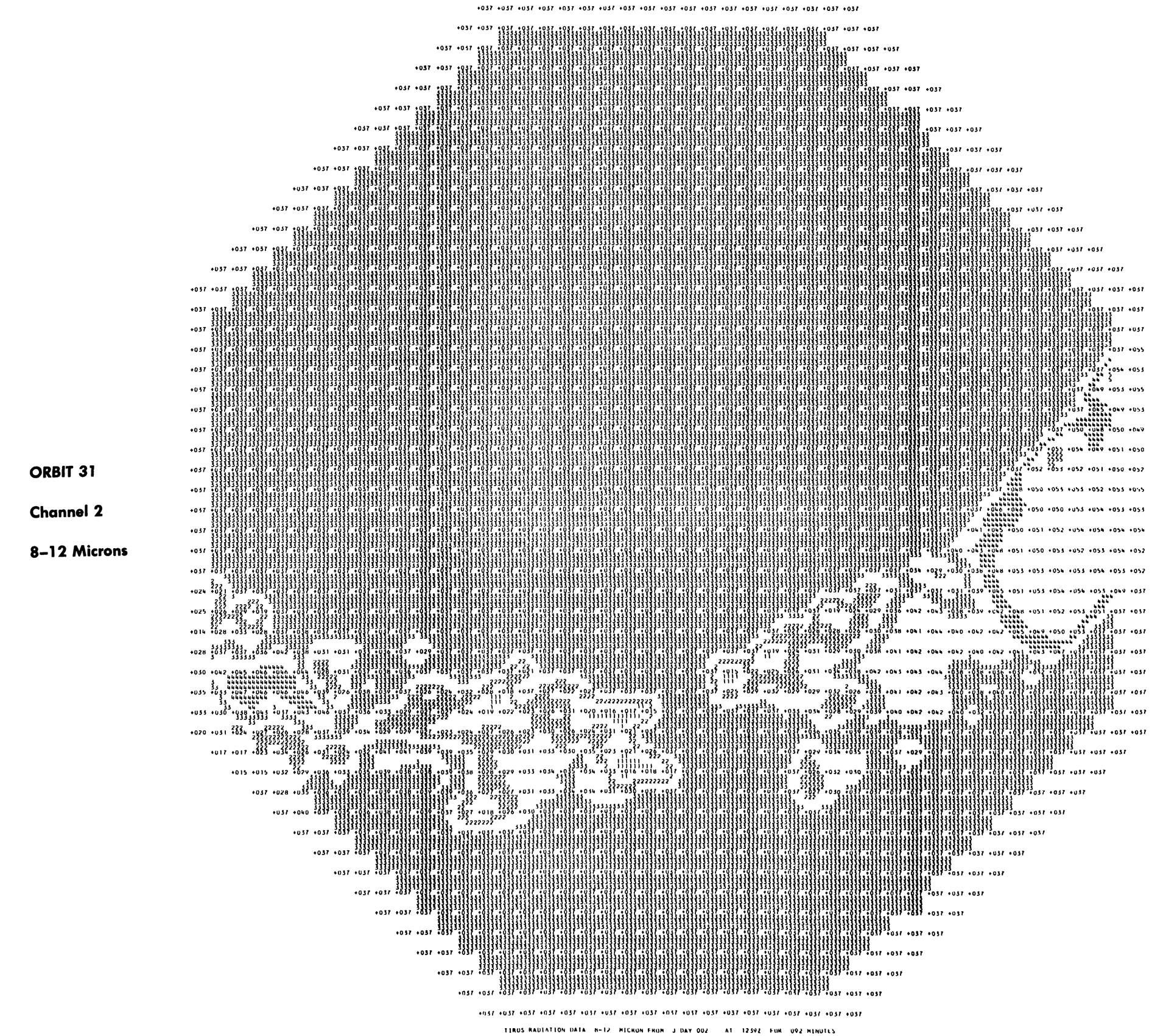
ORBIT 31

Channel 2

8–12 Microns



N

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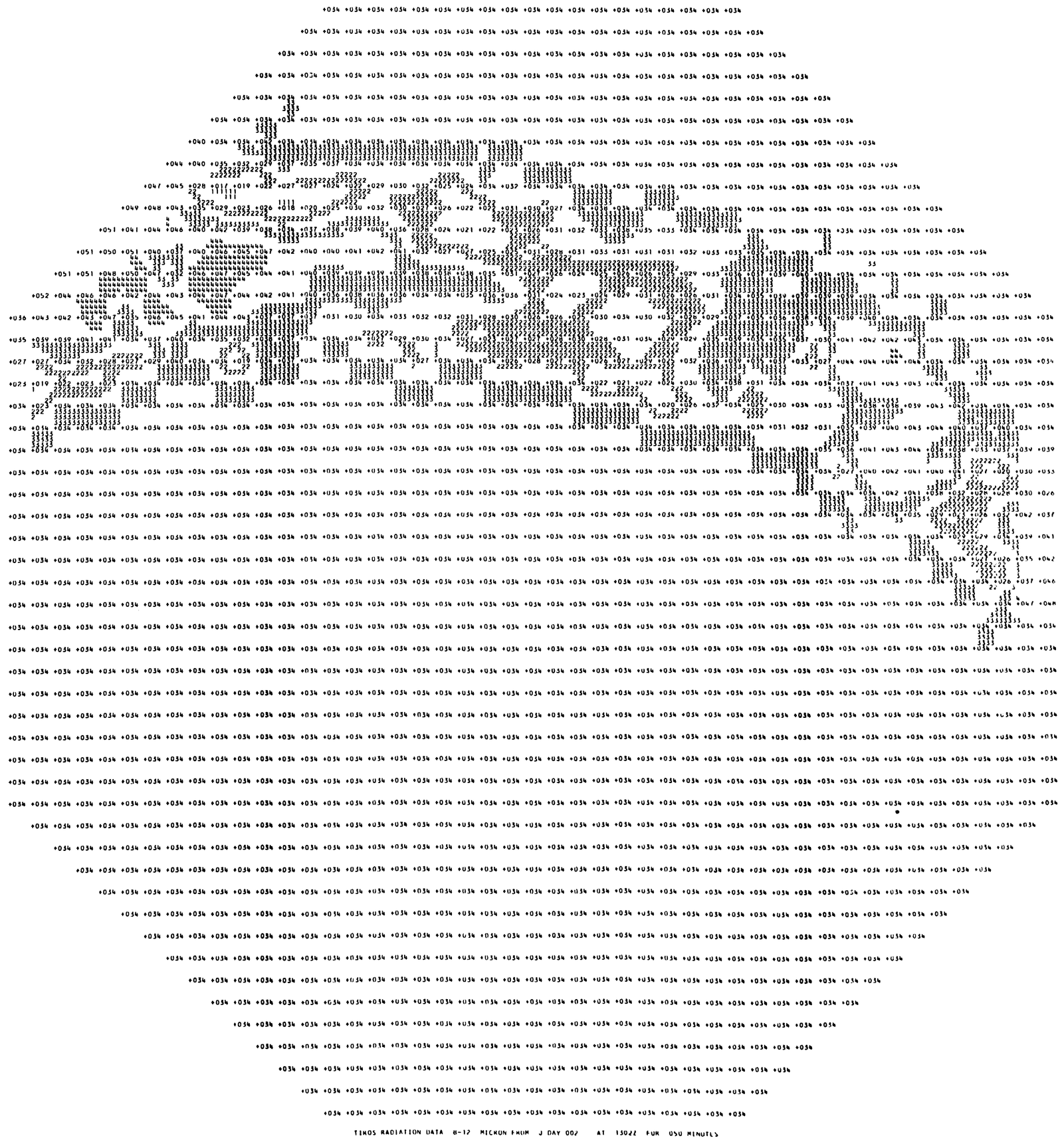
ORBIT 31

Channel 2

8–12 Microns



S

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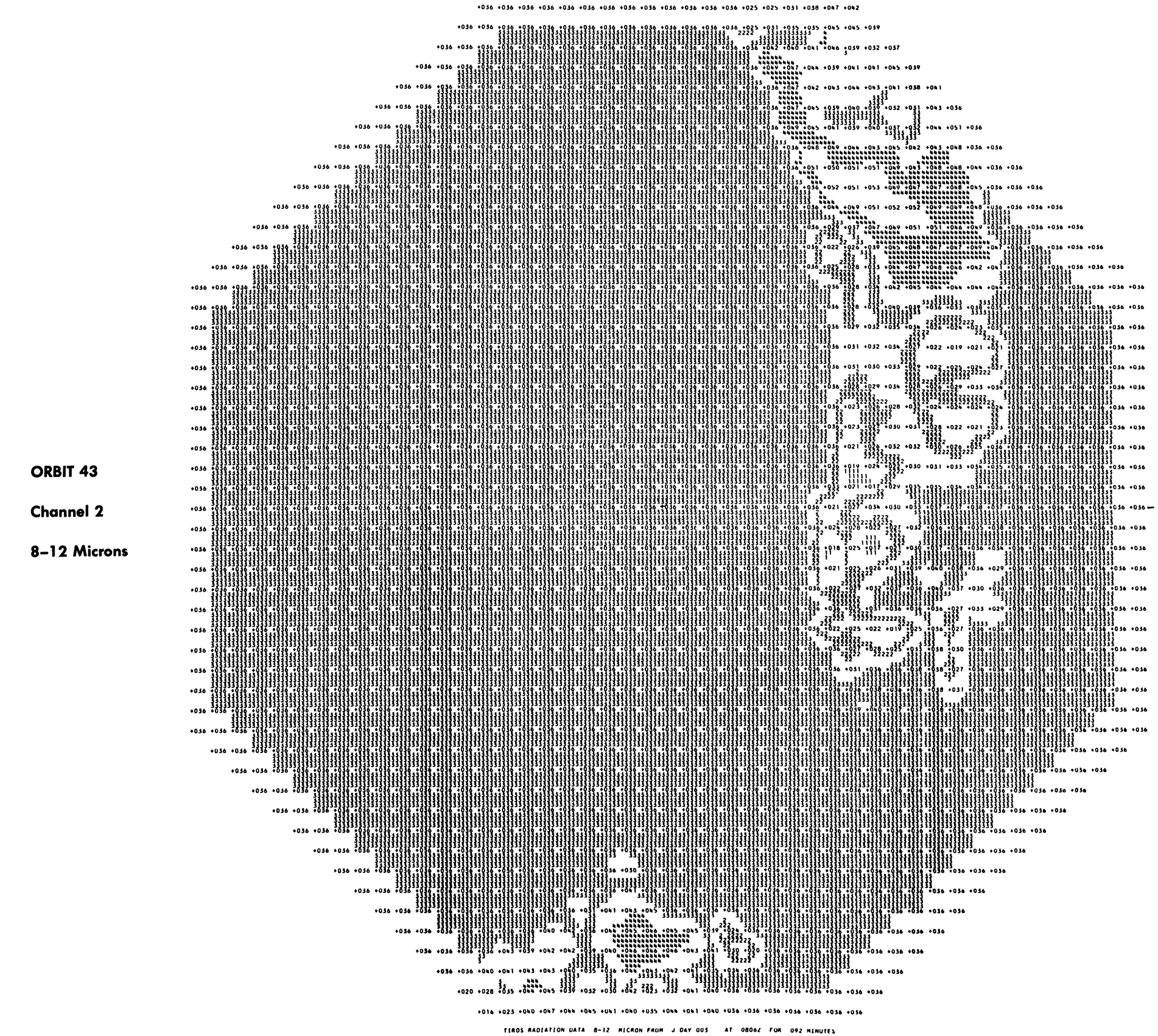
ORBIT 43

Channel 2

8–12 Microns



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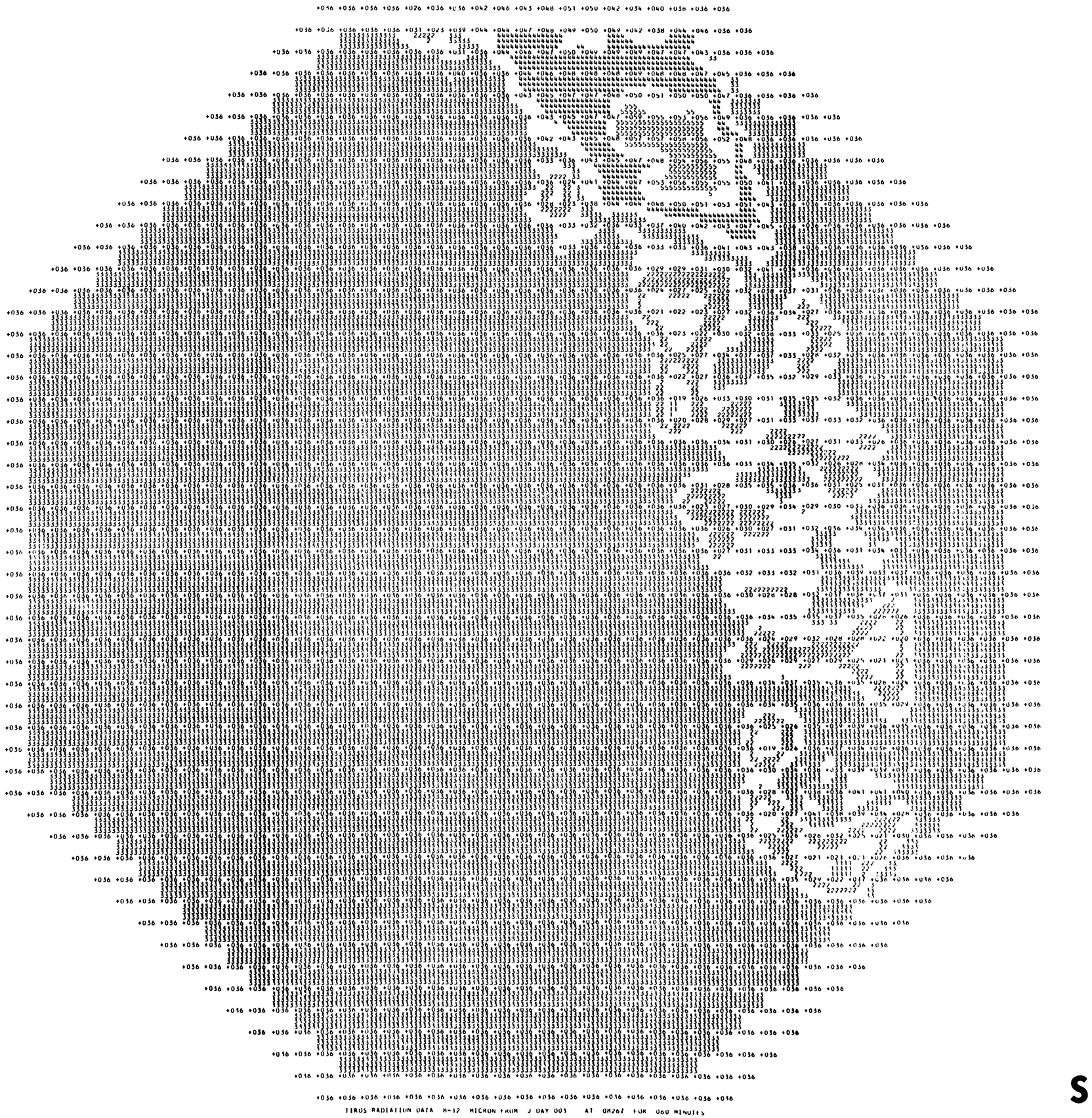
ORBIT 43

Channel 2

8–12 Microns



S

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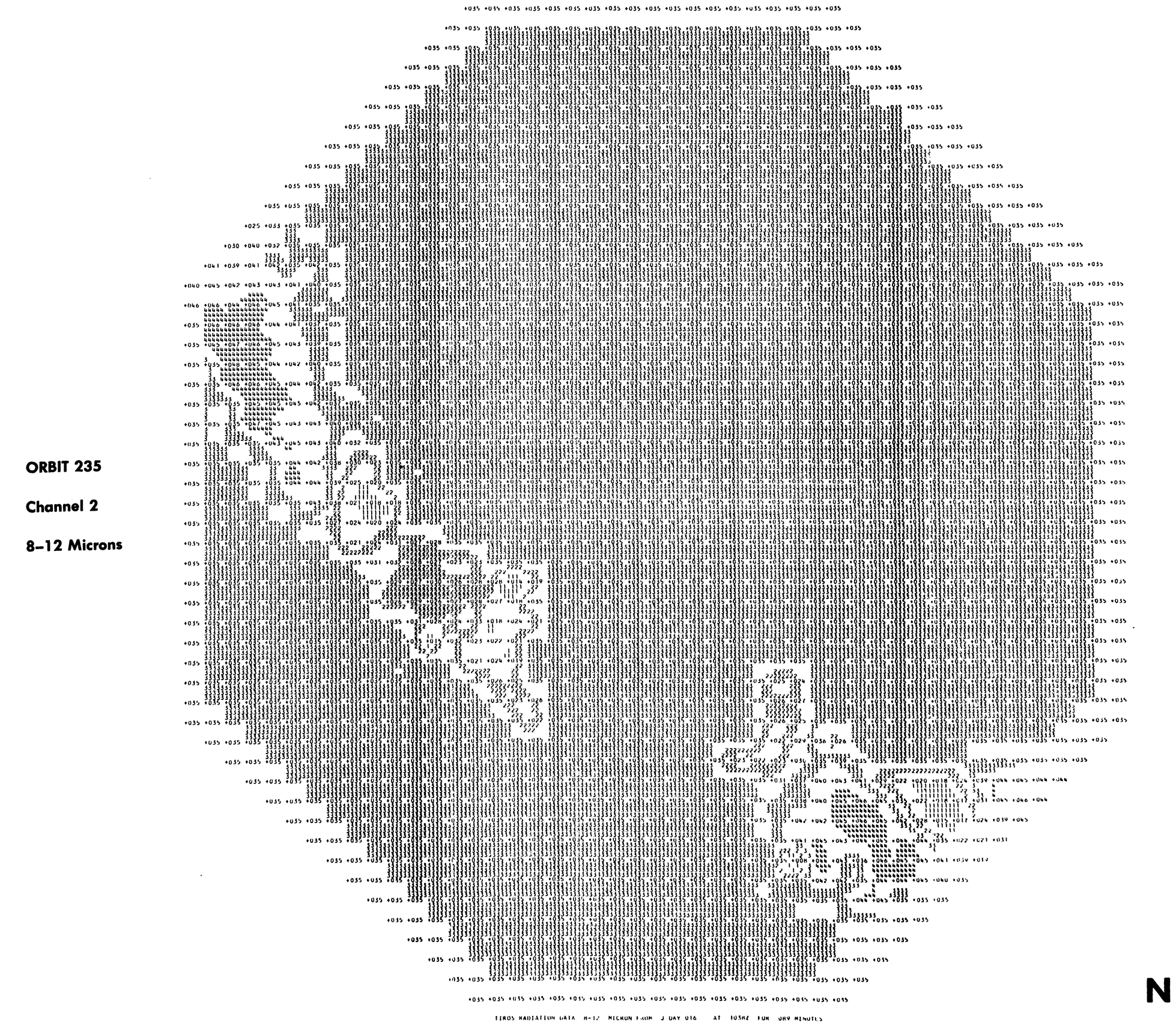
ORBIT 235

Channel 2

8–12 Microns



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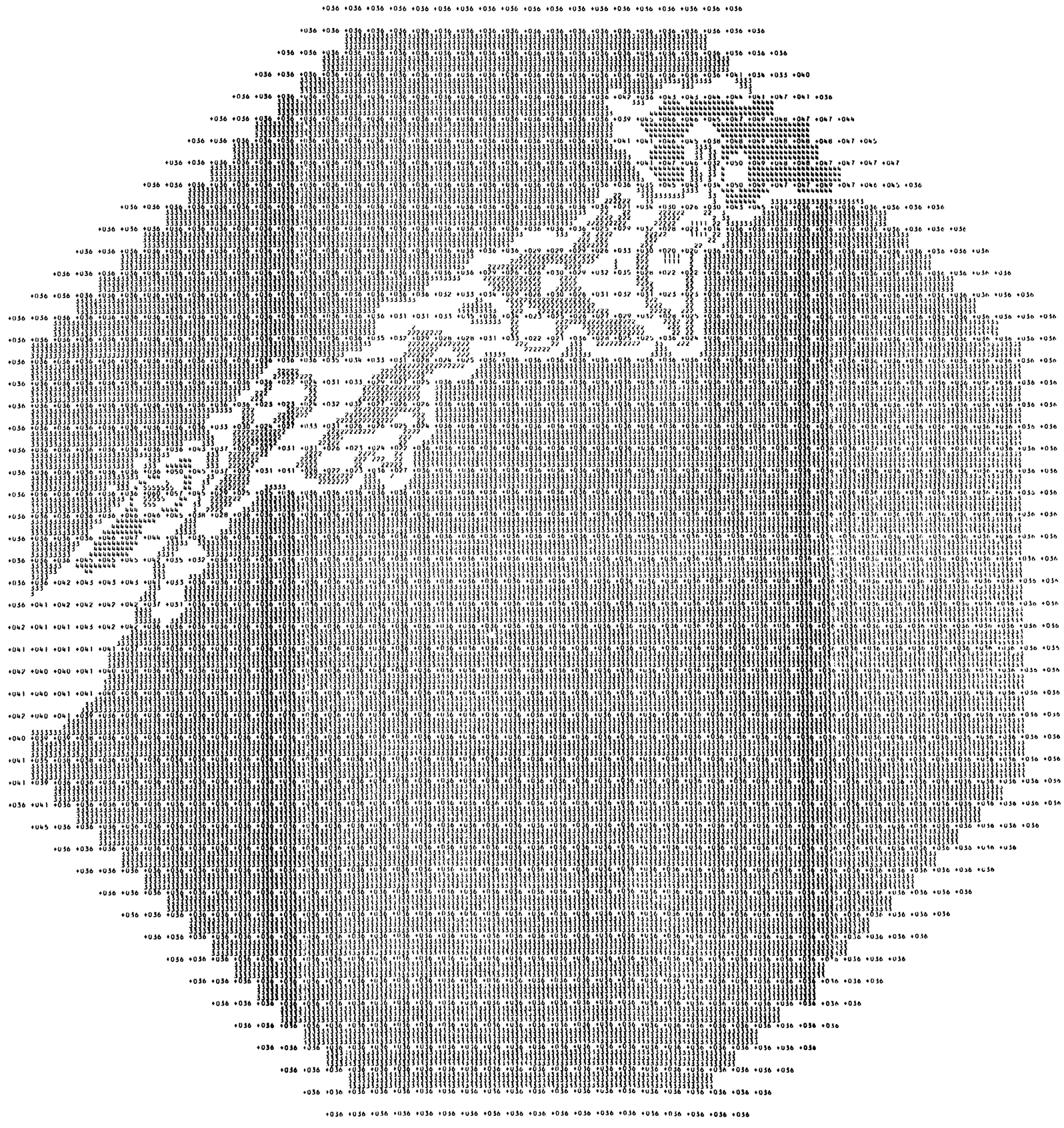
ORBIT 235

Channel 2

8–12 Microns



TIROS RADIATION DATA 8-12 MICRON FROM J DAY 016 AT 1055Z FOR 060 MINUTES

S

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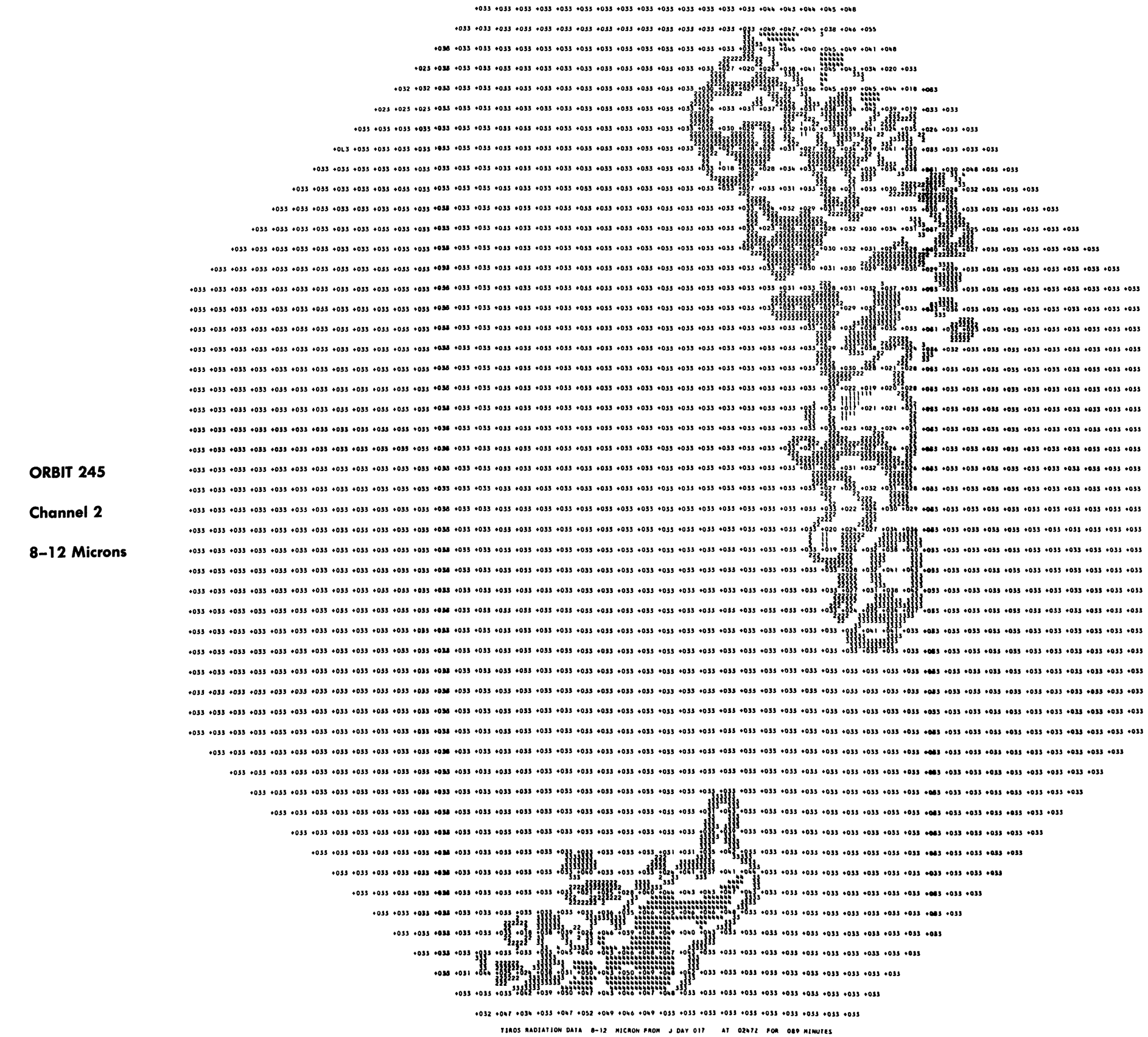
ORBIT 245

Channel 2

8–12 Microns



N

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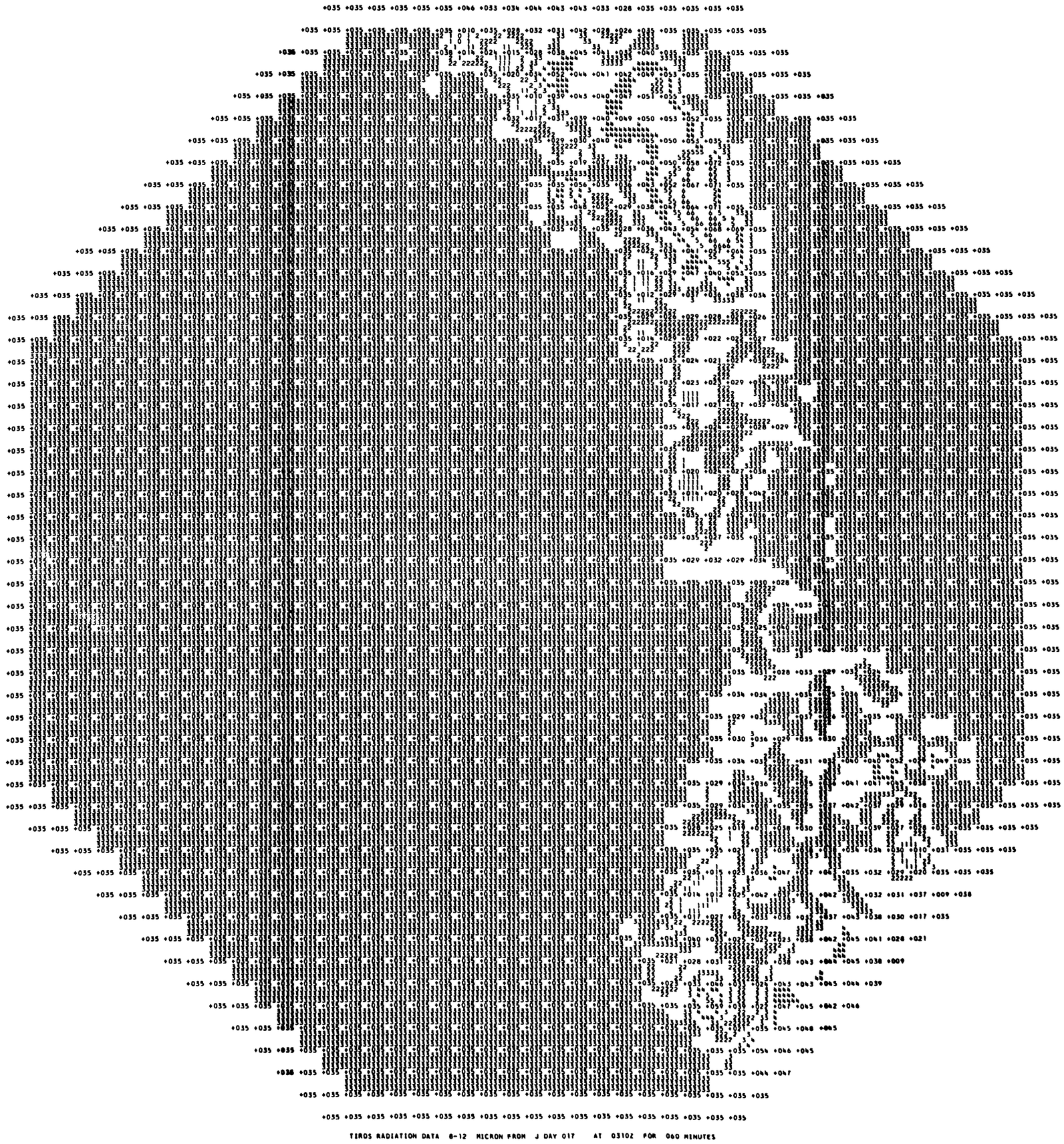
ORBIT 245

Channel 2

8–12 Microns



S

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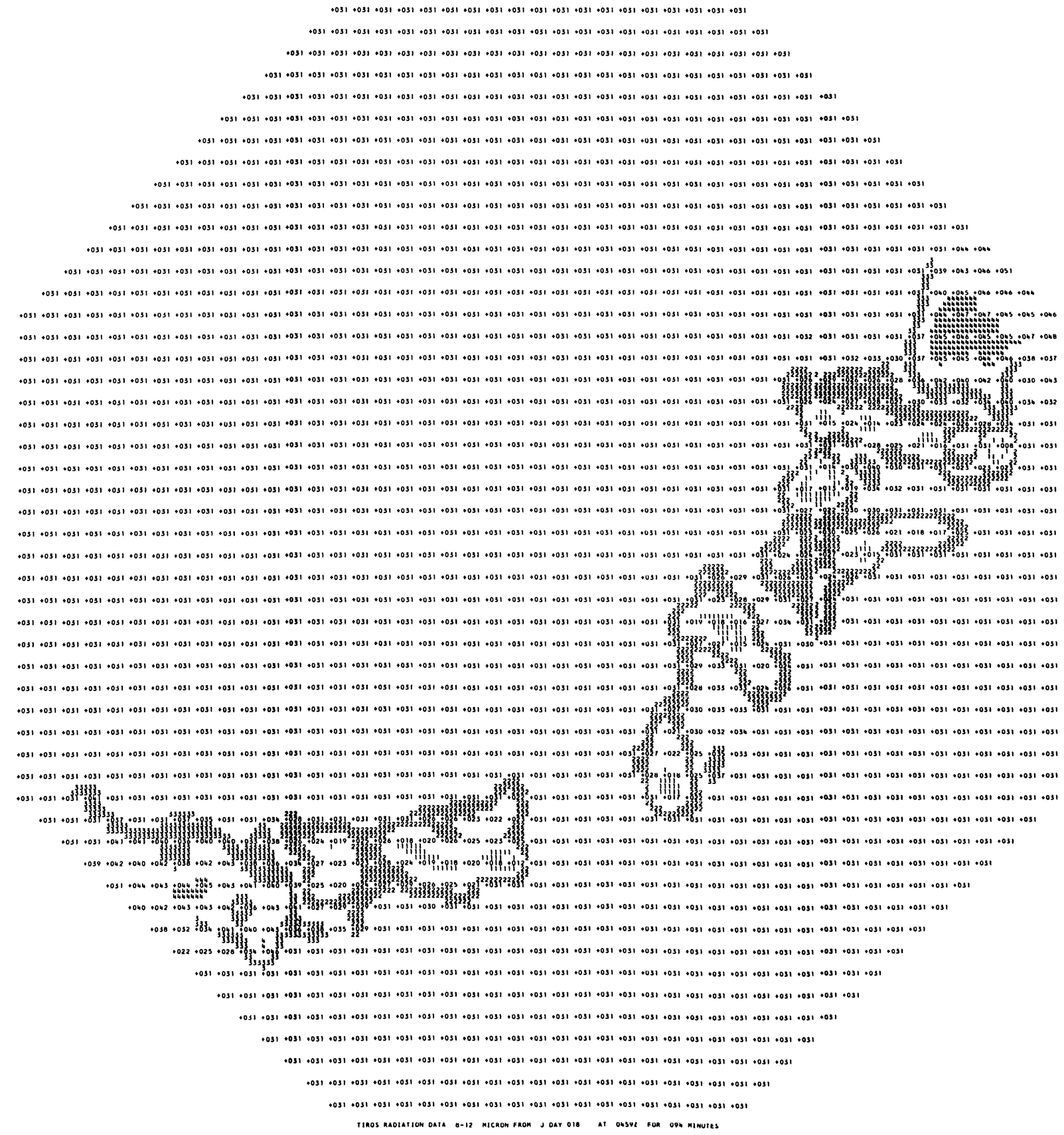
ORBIT 261

Channel 2

8–12 Microns



N

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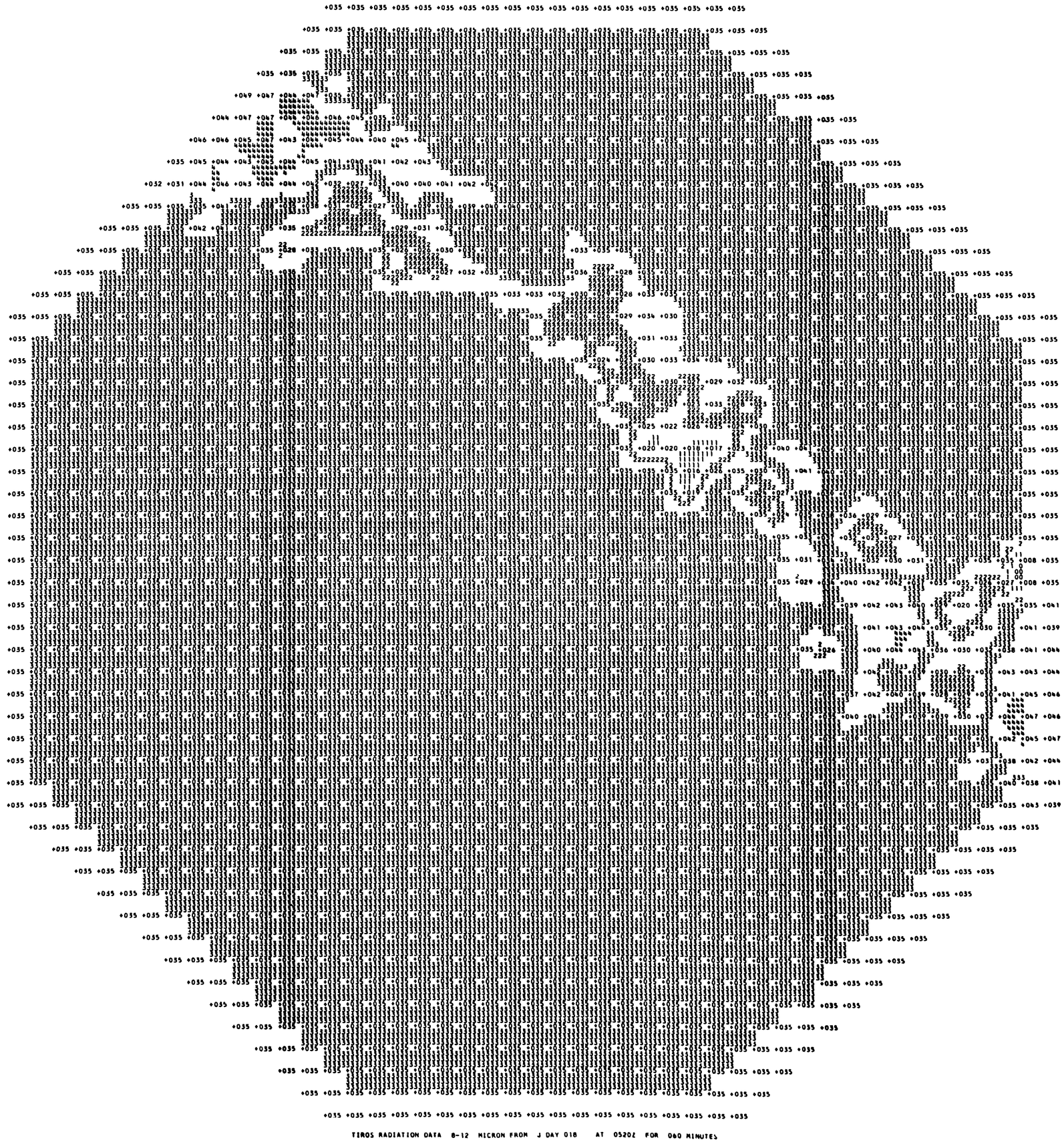
ORBIT 261

Channel 2

8–12 Microns



TIROS RADIATION DATA 8-12 MICRON FROM J DAY 018 AT 0520Z FOR 060 MINUTES

S

606327 O—61——8

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HIGH RESOLUTION MAPS

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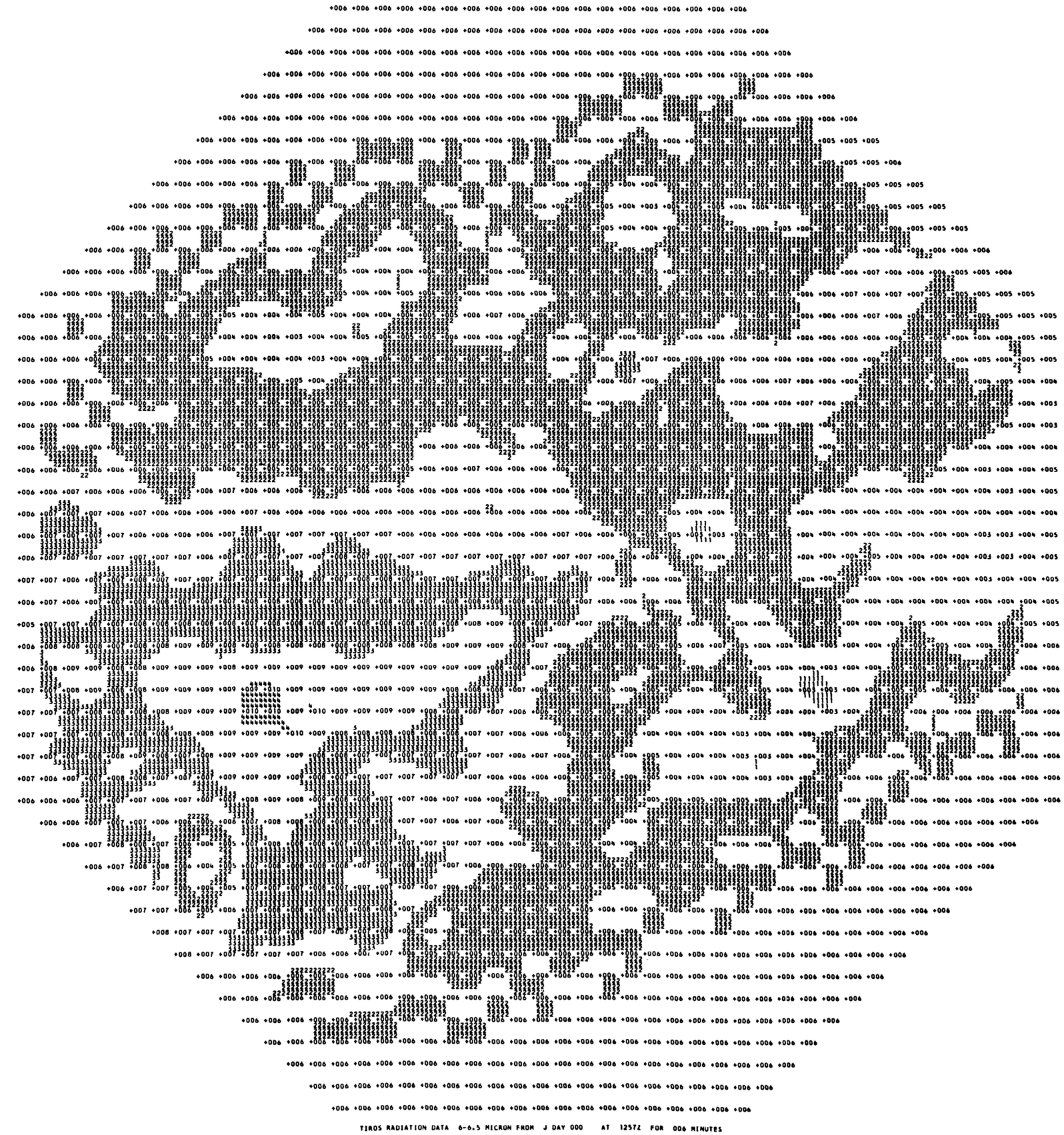
ORBIT 1

Channel 1

6–6.5 Microns



E

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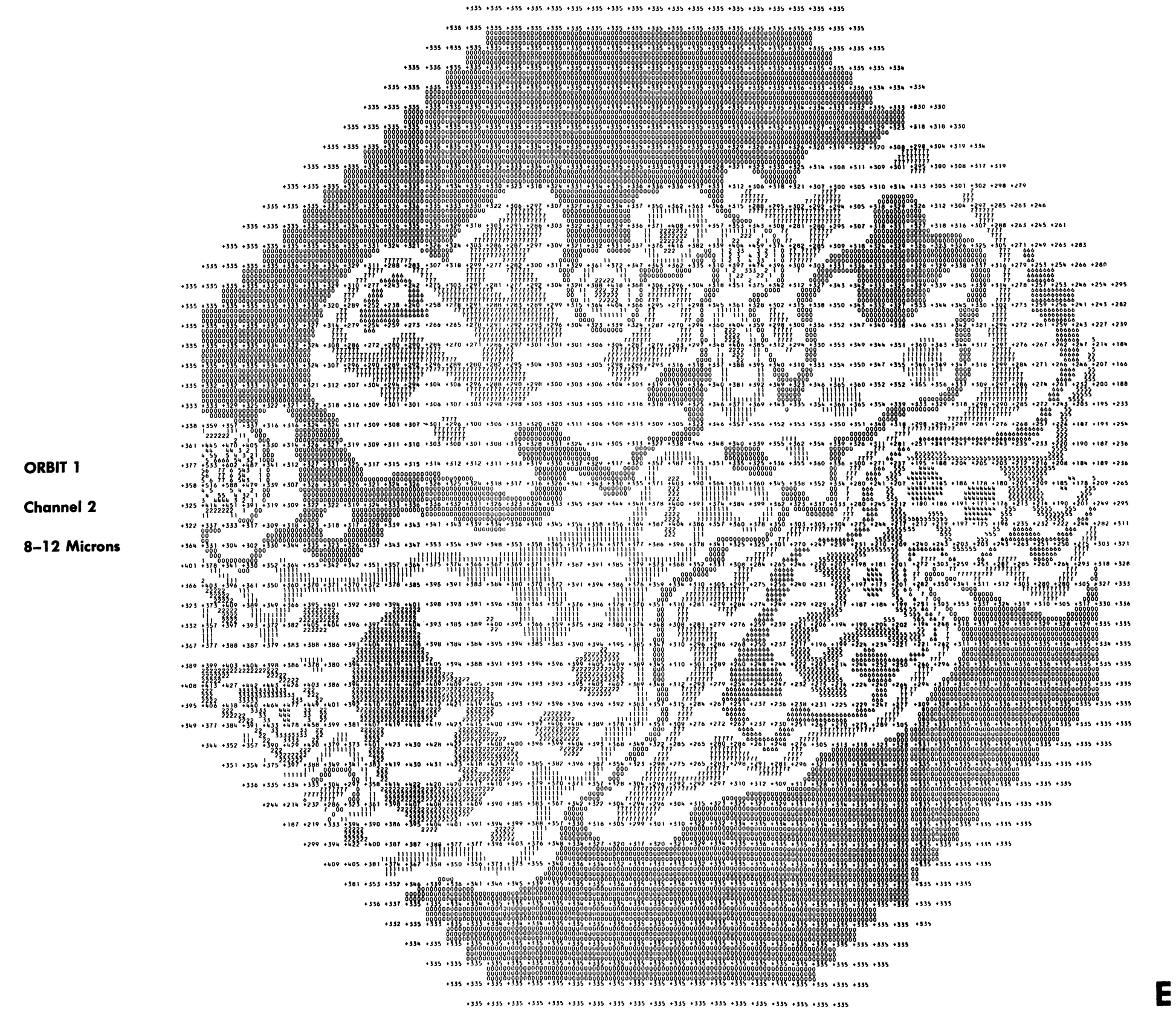
ORBIT 1

Channel 2

8–12 Microns



TIROS RADIATION DATA 8-12 MICRON FROM J DAY 000 AT 12572 FOR 006 MINUTES

E

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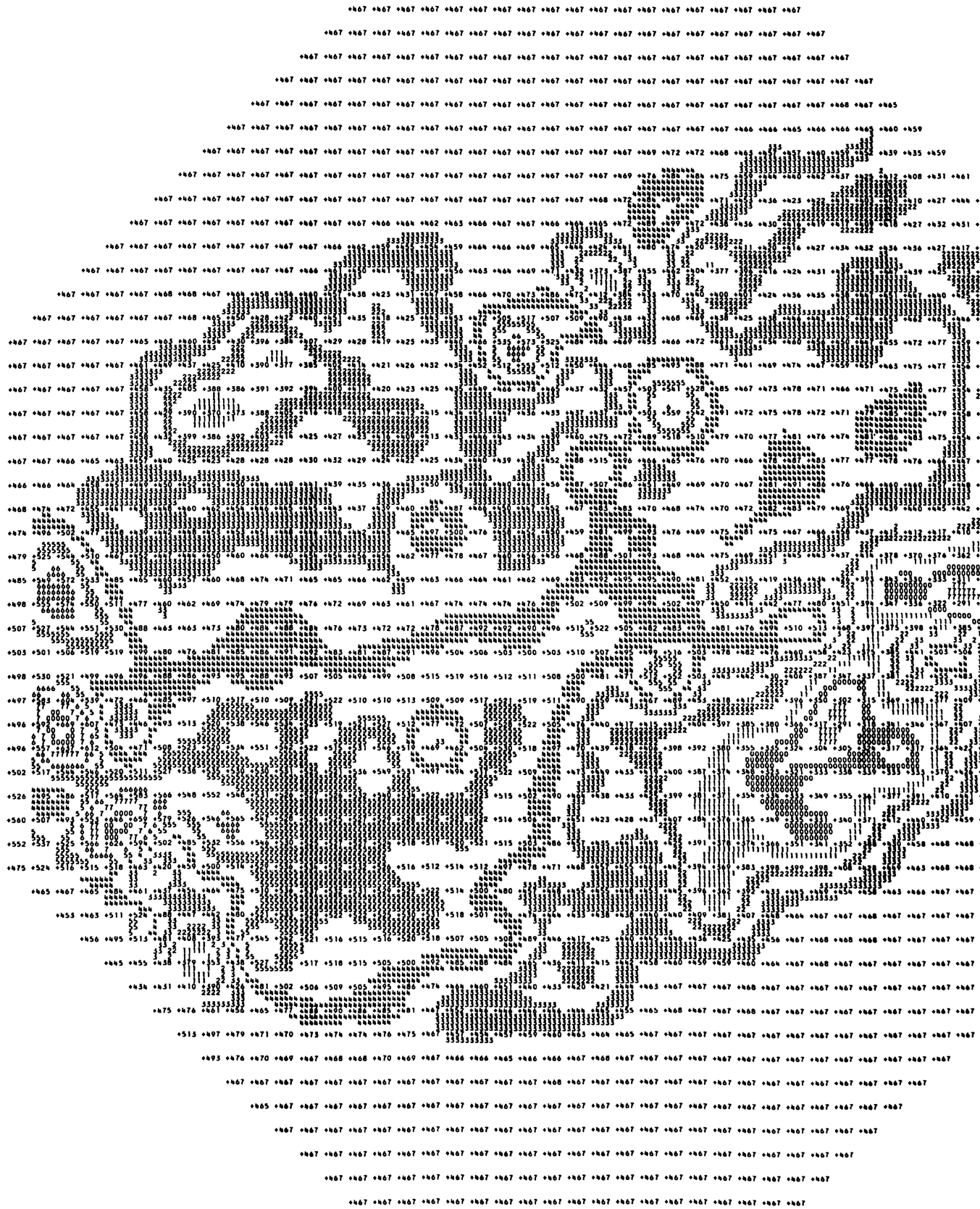
ORBIT 1

Channel 4

8–30 Microns



E

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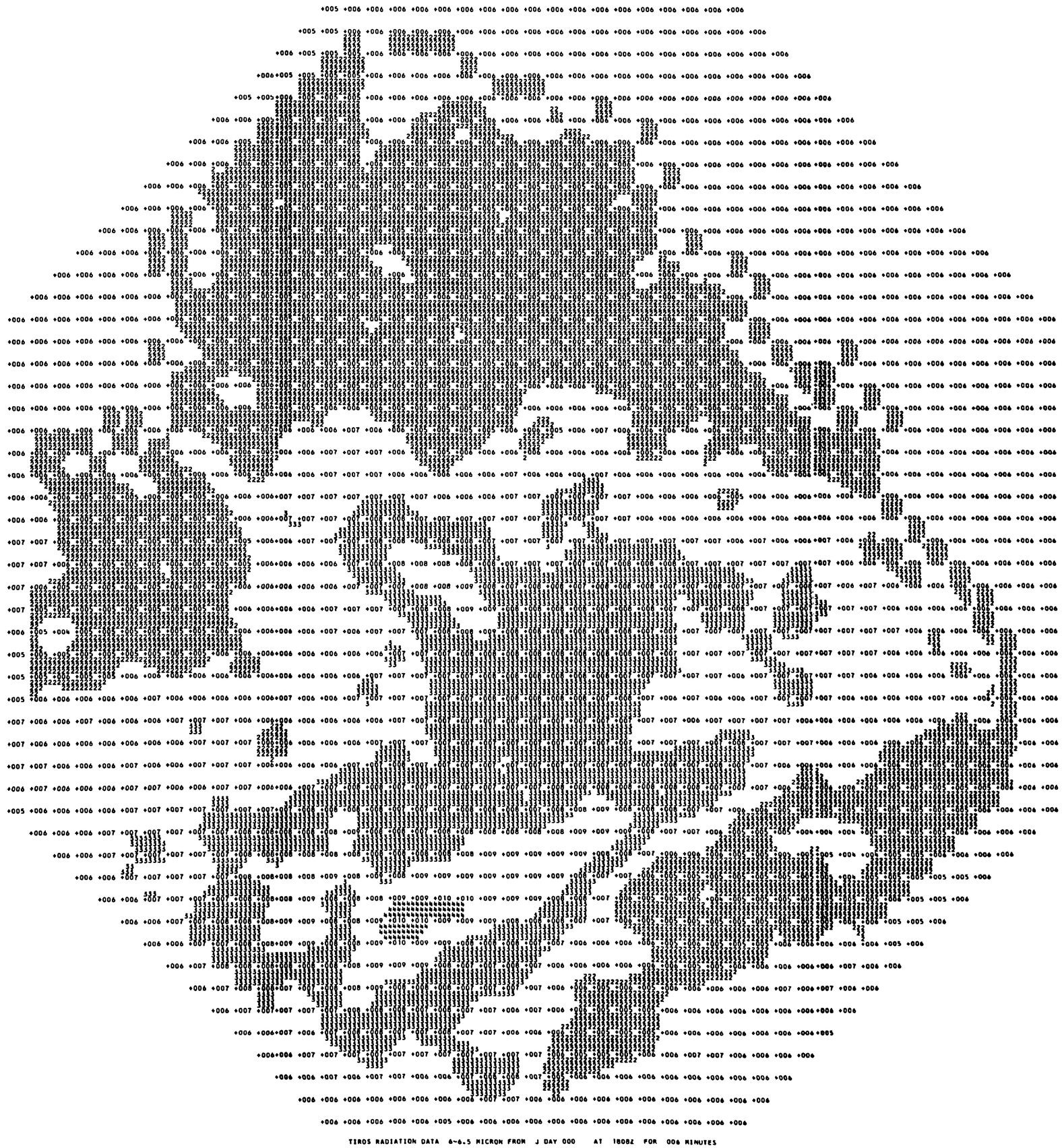
ORBIT 4

Channel 1

6–6.5 Microns



B

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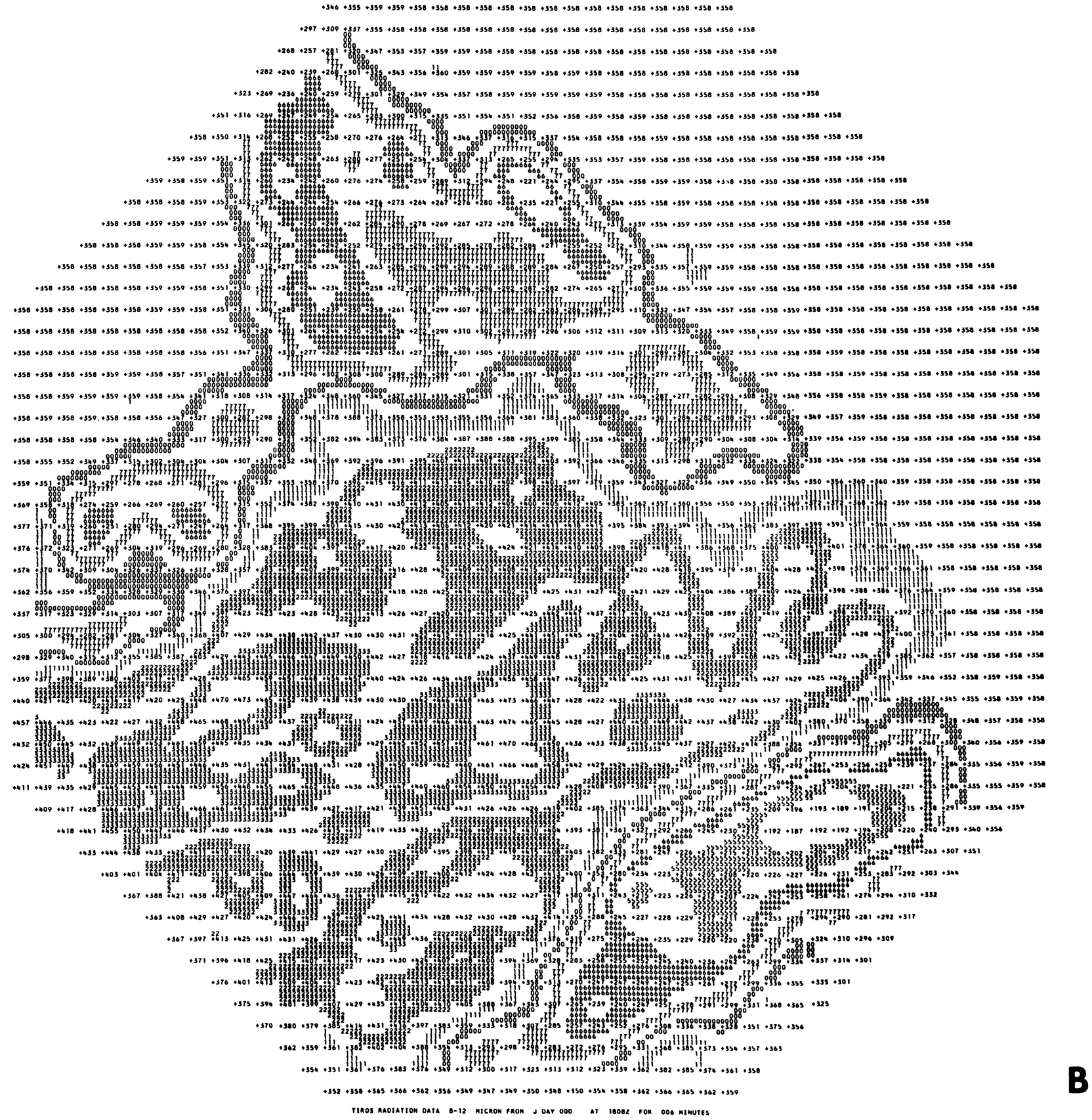
ORBIT 4

Channel 2

8–12 Microns



B

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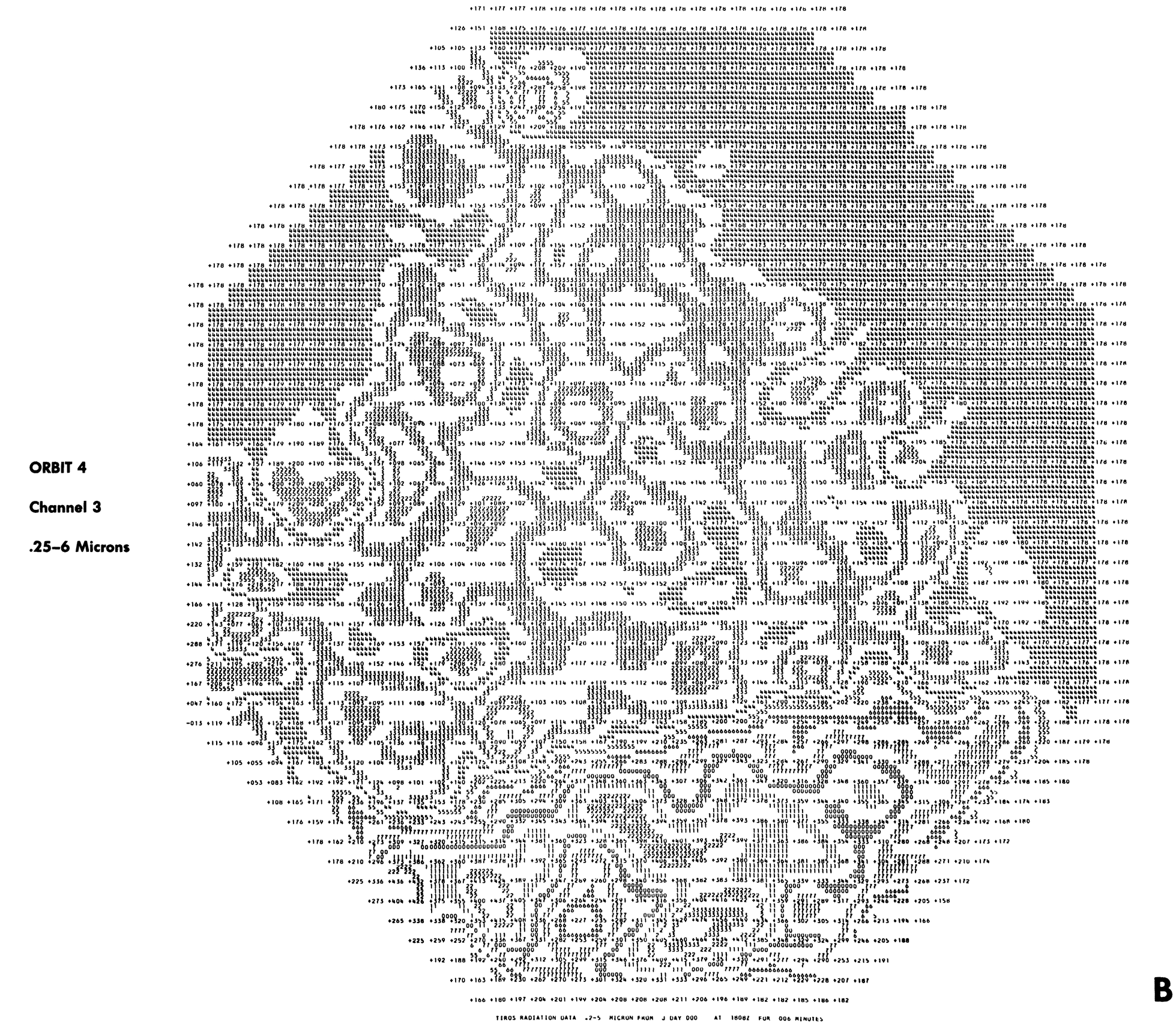
ORBIT 4

Channel 3

.25–6 Microns



TIROS RADIATION DATA .2-5 MICRON FROM J DAY 000 AT 1808Z FOR 006 MINUTES

B

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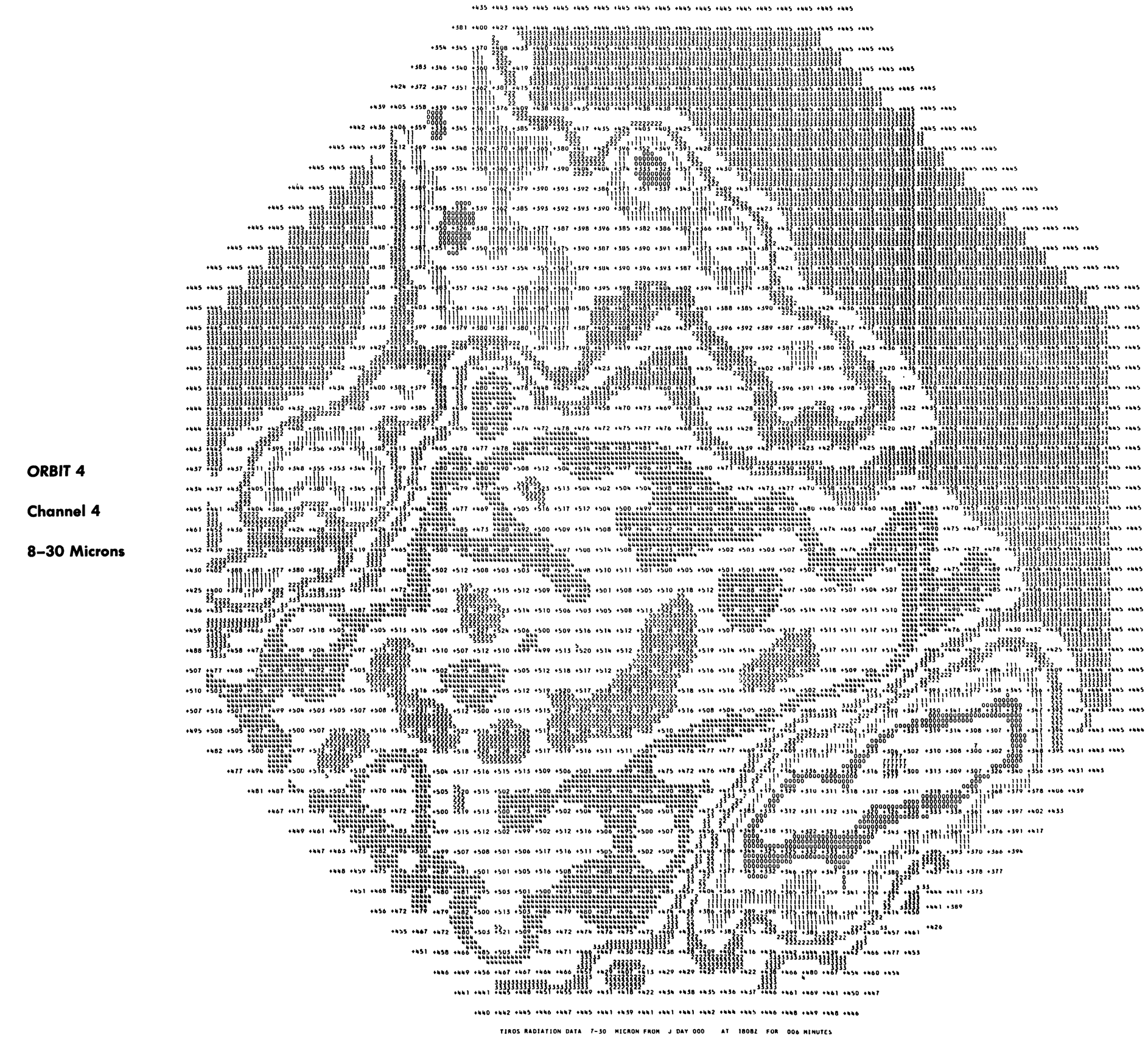
ORBIT 4

Channel 4

8–30 Microns



B

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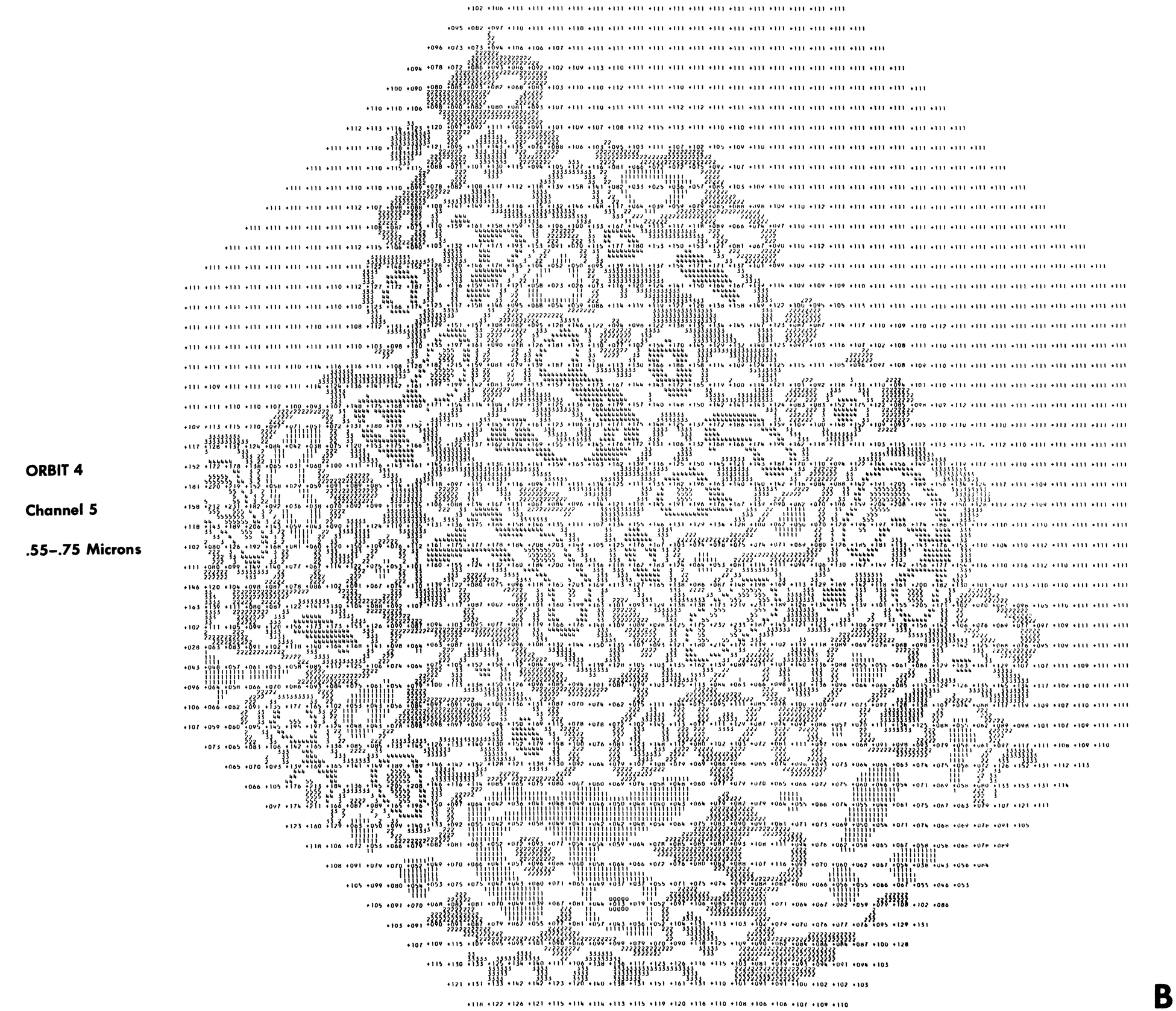
ORBIT 4

Channel 5

.55–.75 Microns



TIROS RADIATION DATA .6-.8 MICRON FROM J DAY 000 AT 18082 FOR 006 MINUTES

B

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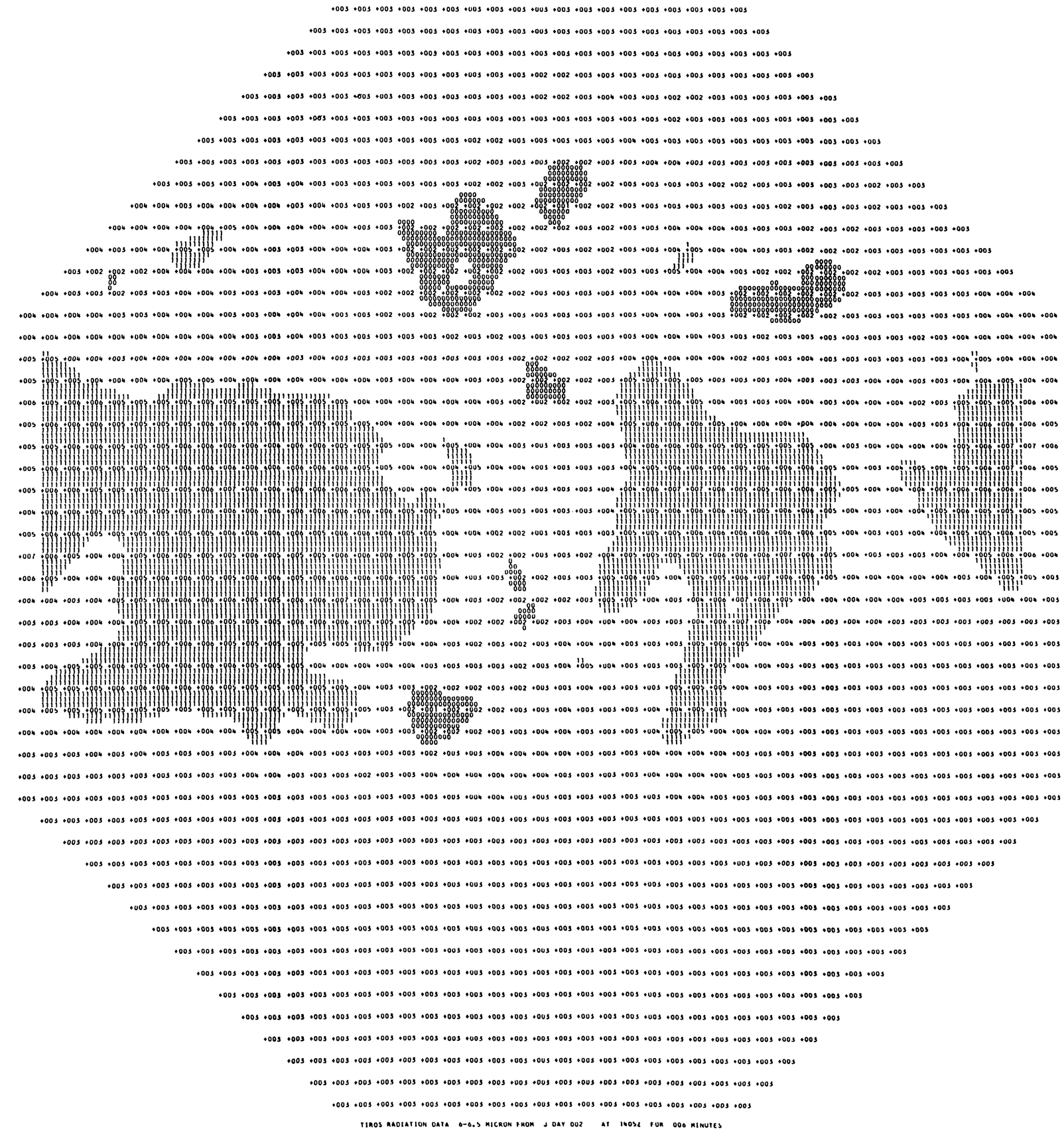
ORBIT 31

Channel 1

6–6.5 Microns



D

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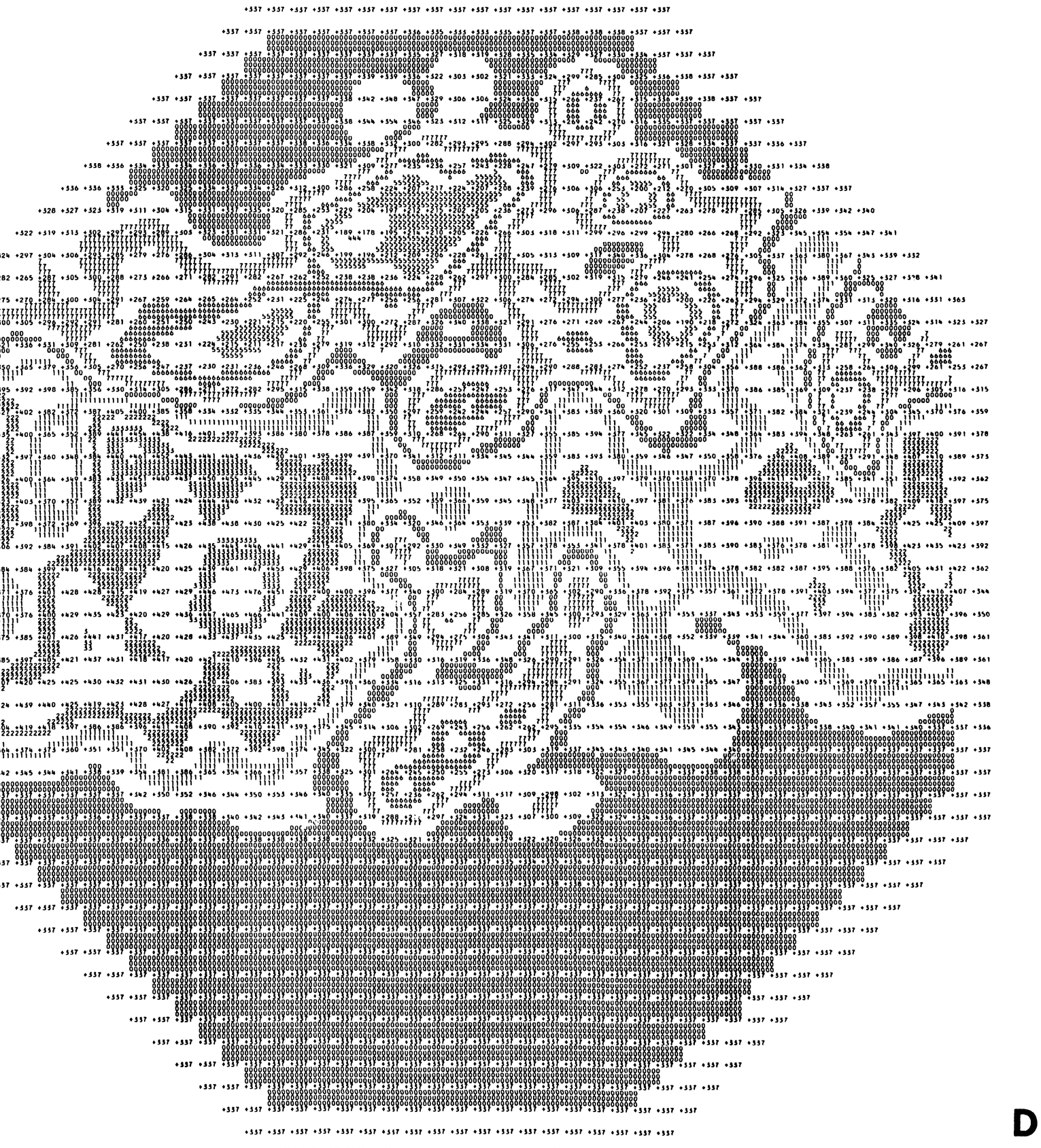
ORBIT 31

Channel 2

8–12 Microns



TIROS RADIATION DATA 8-12 MICRON FROM J DAY 002 AT 14052 FOR 006 MINUTES

D

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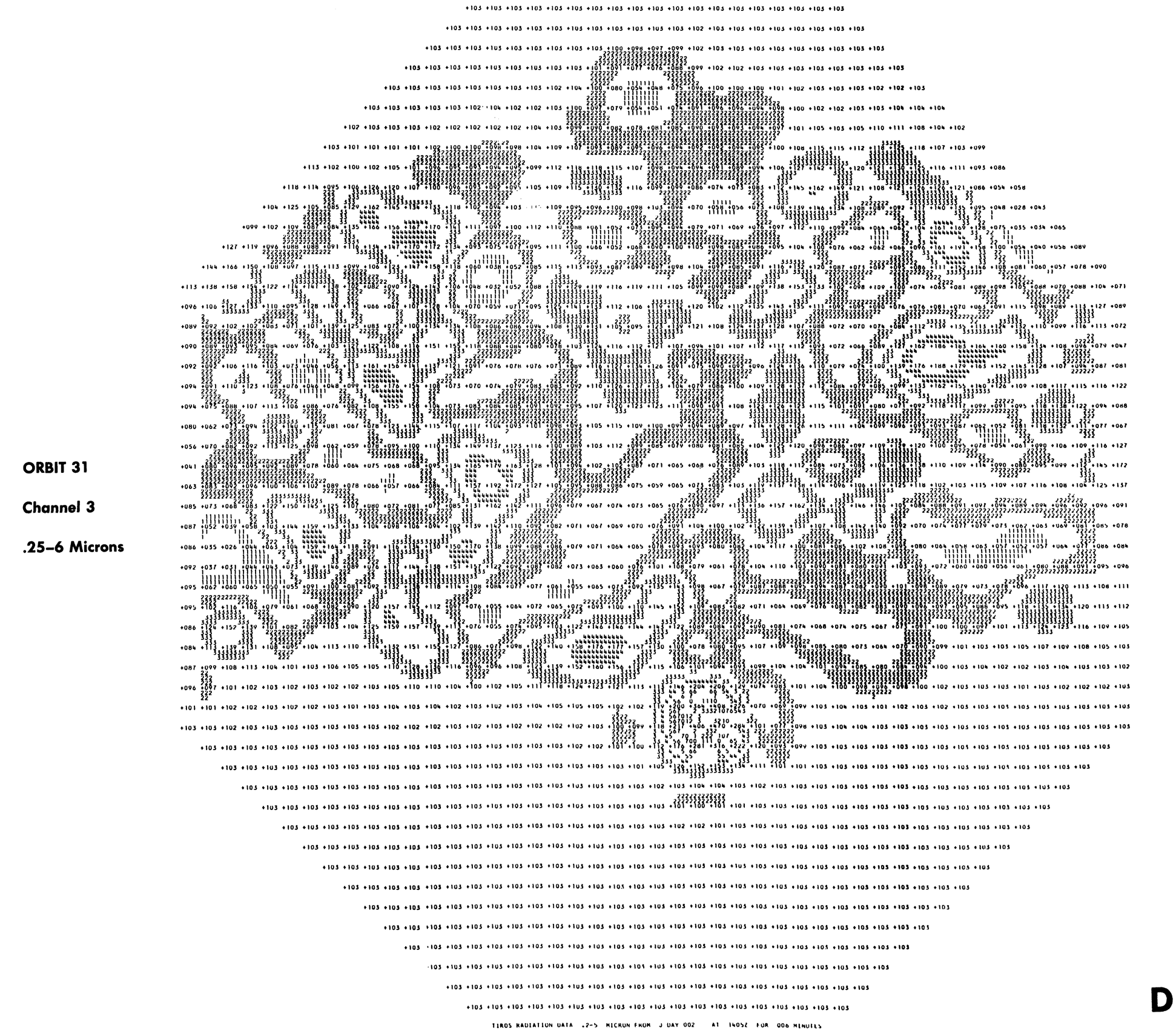
ORBIT 31

Channel 3

.25–6 Microns



D

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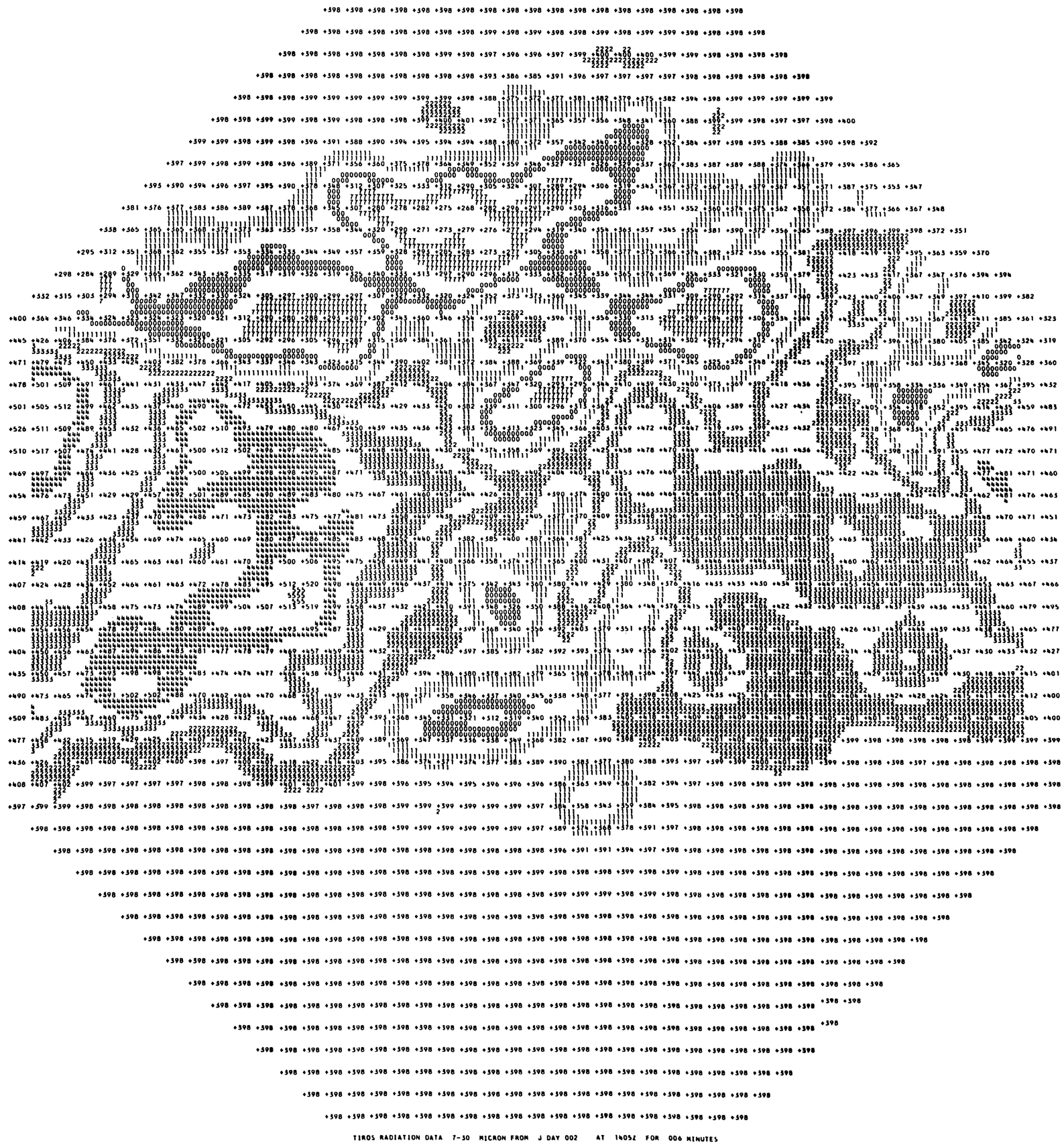
ORBIT 31

Channel 4

8–30 Microns



TIROS RADIATION DATA 7-30 MICRON FROM J DAY 002 AT 1405Z FOR 006 MINUTES

D

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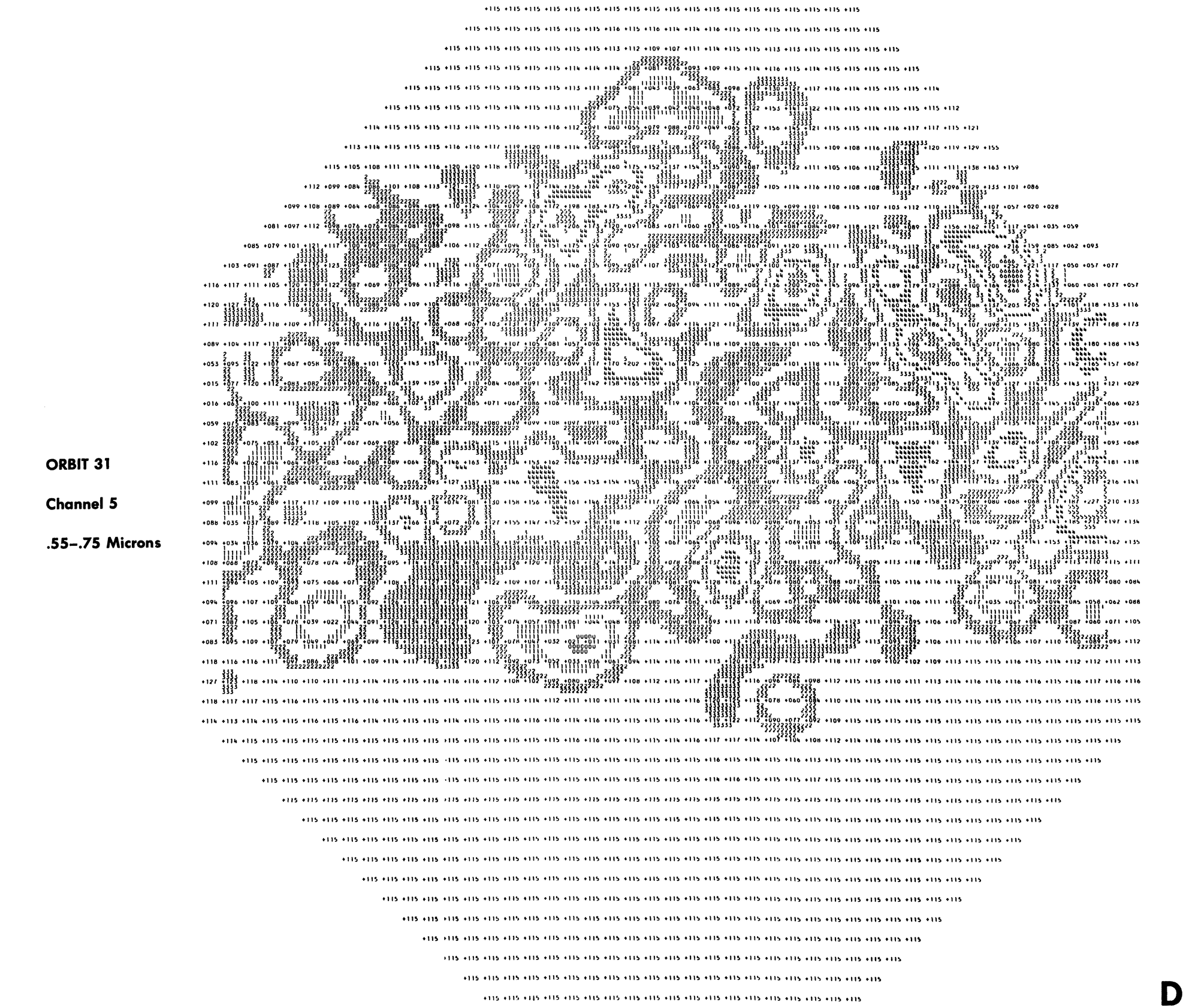
ORBIT 31

Channel 5

.55–.75 Microns



D

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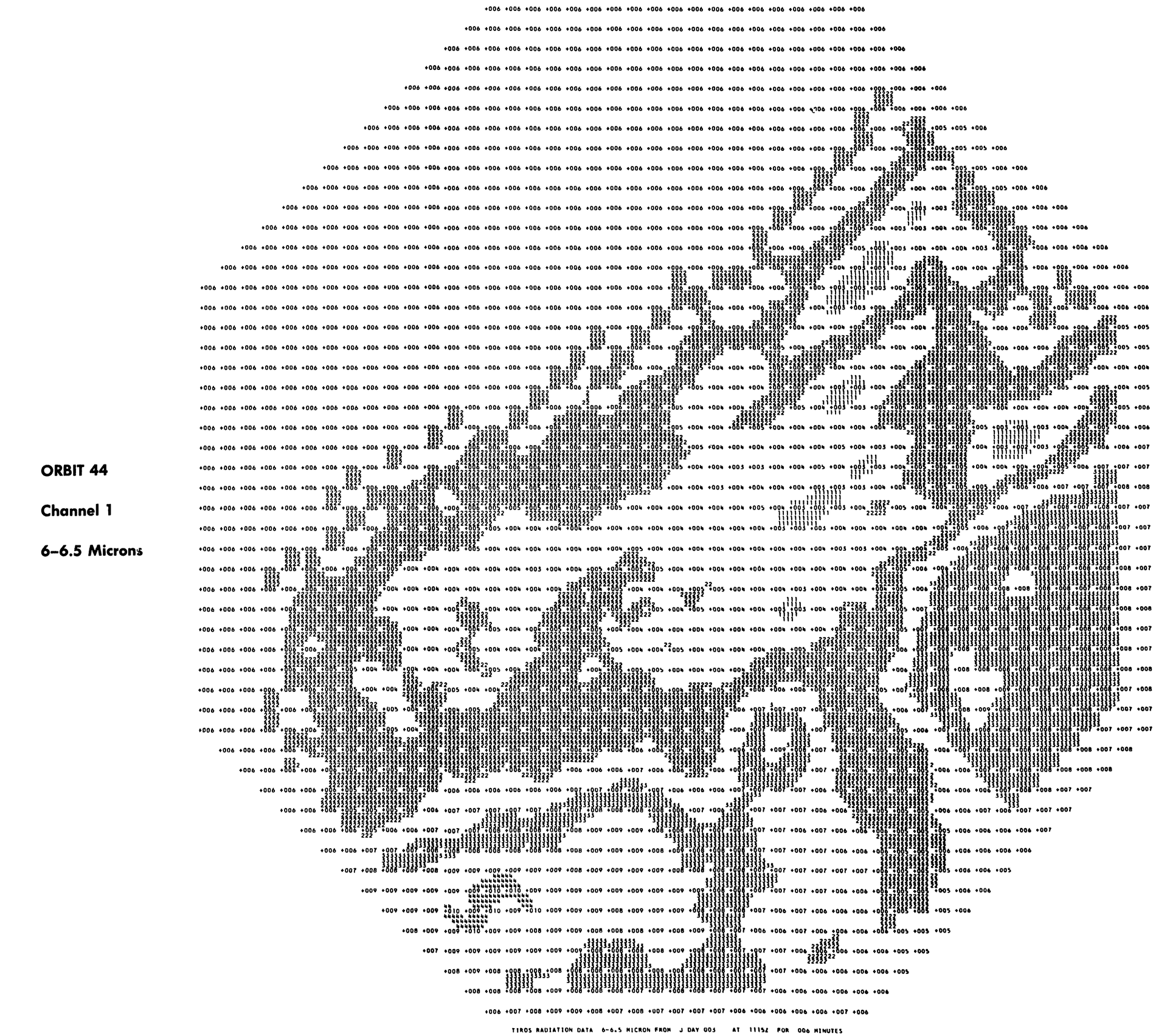
ORBIT 44

Channel 1

6–6.5 Microns



G

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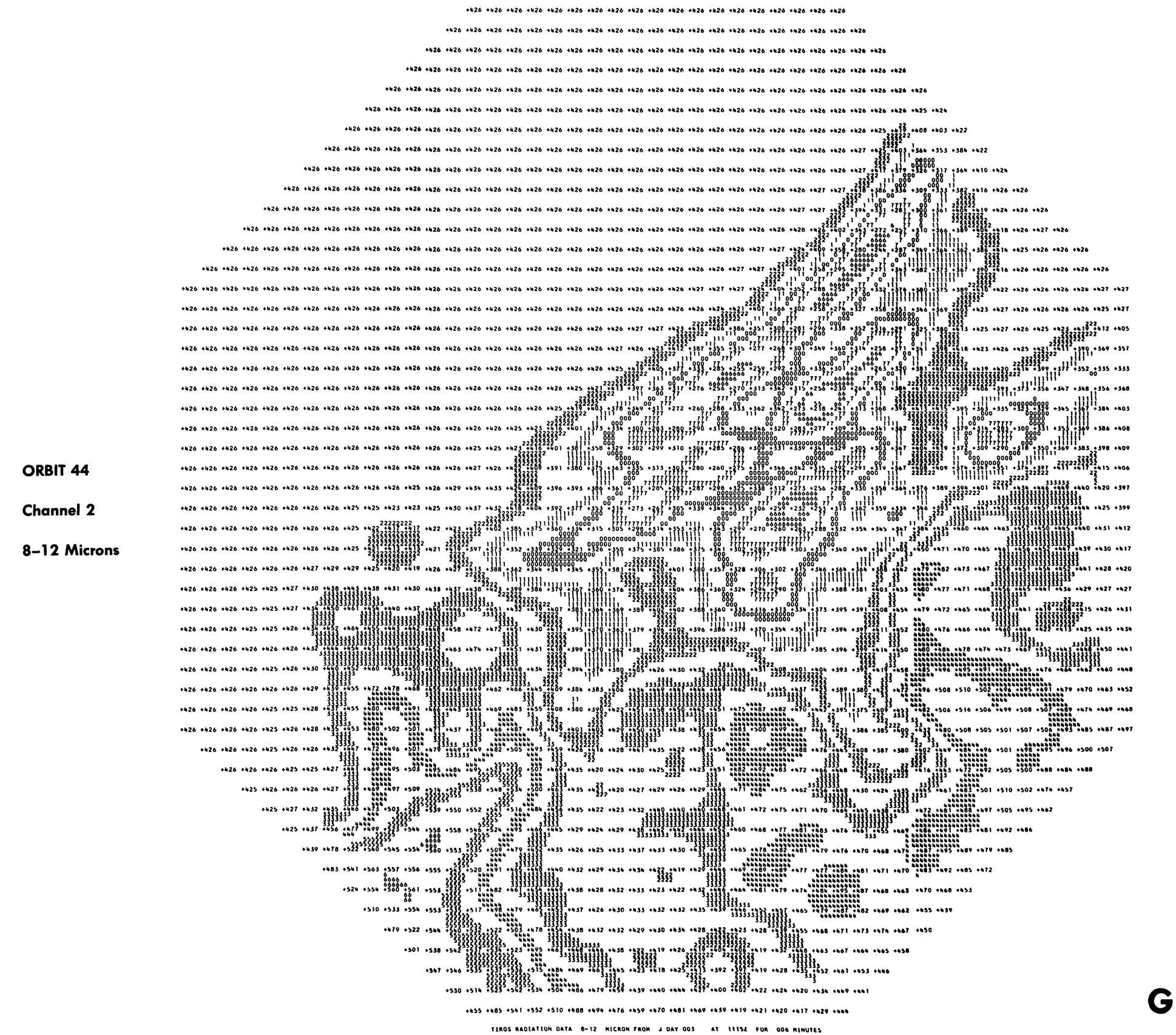
ORBIT 44

Channel 2

8–12 Microns



G

606327 O—61——5

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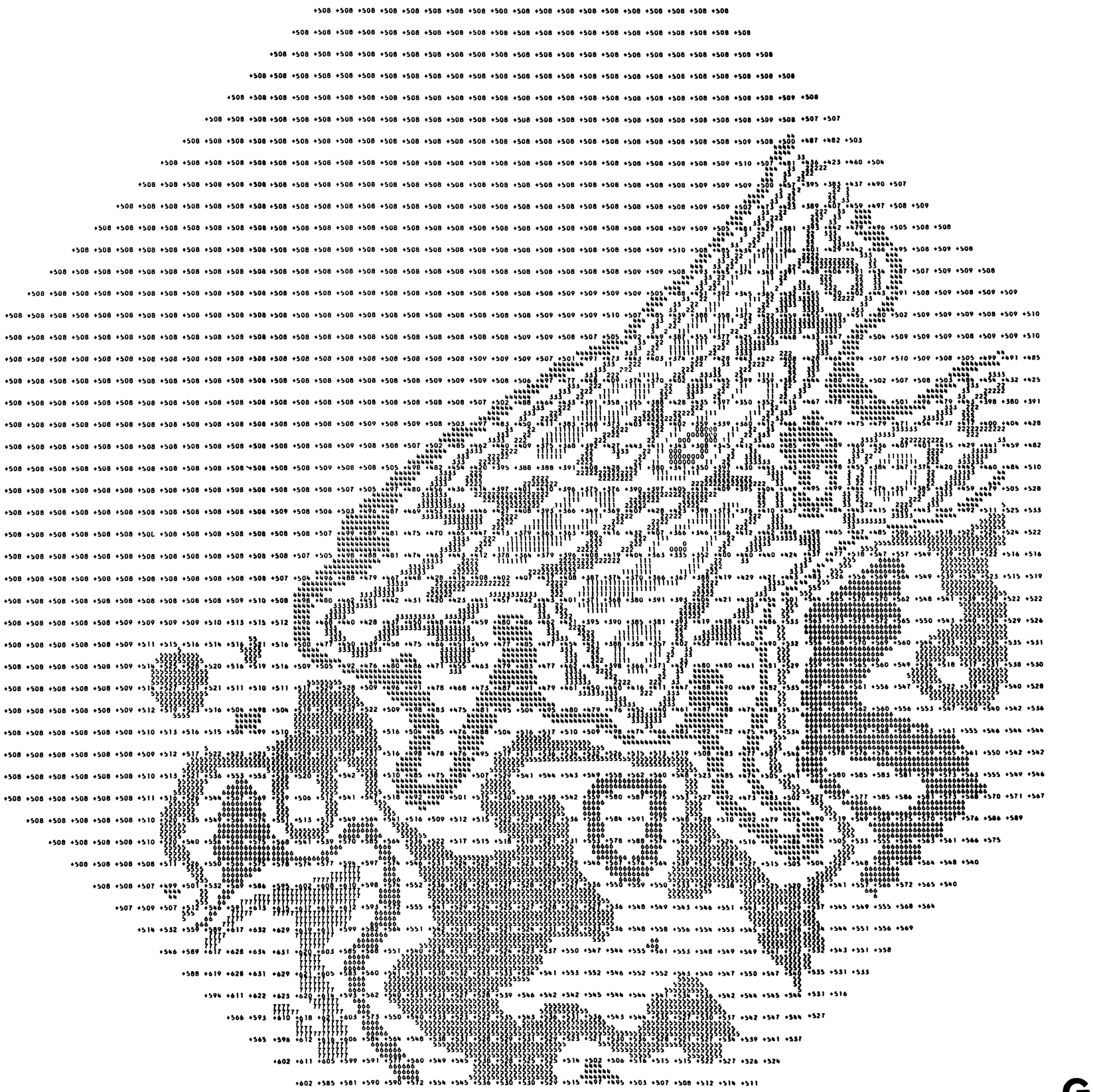
ORBIT 44

Channel 4

8–30 Microns



TIROS RADIATION DATA 7-30 MICRON FROM J DAY 003 AT 1115Z FOR 006 MINUTES

G

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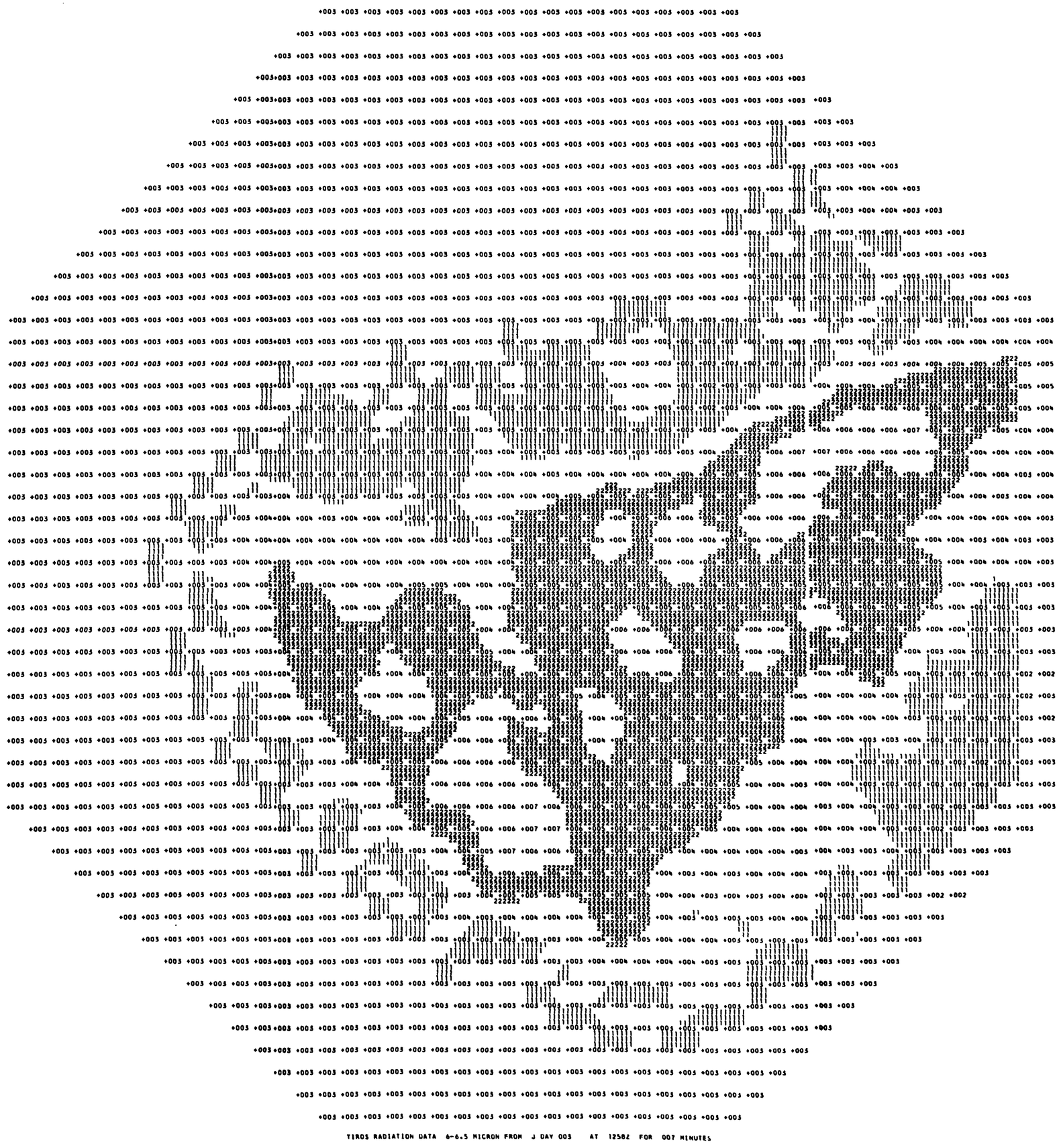
ORBIT 45

Channel 1

6–6.5 Microns



D

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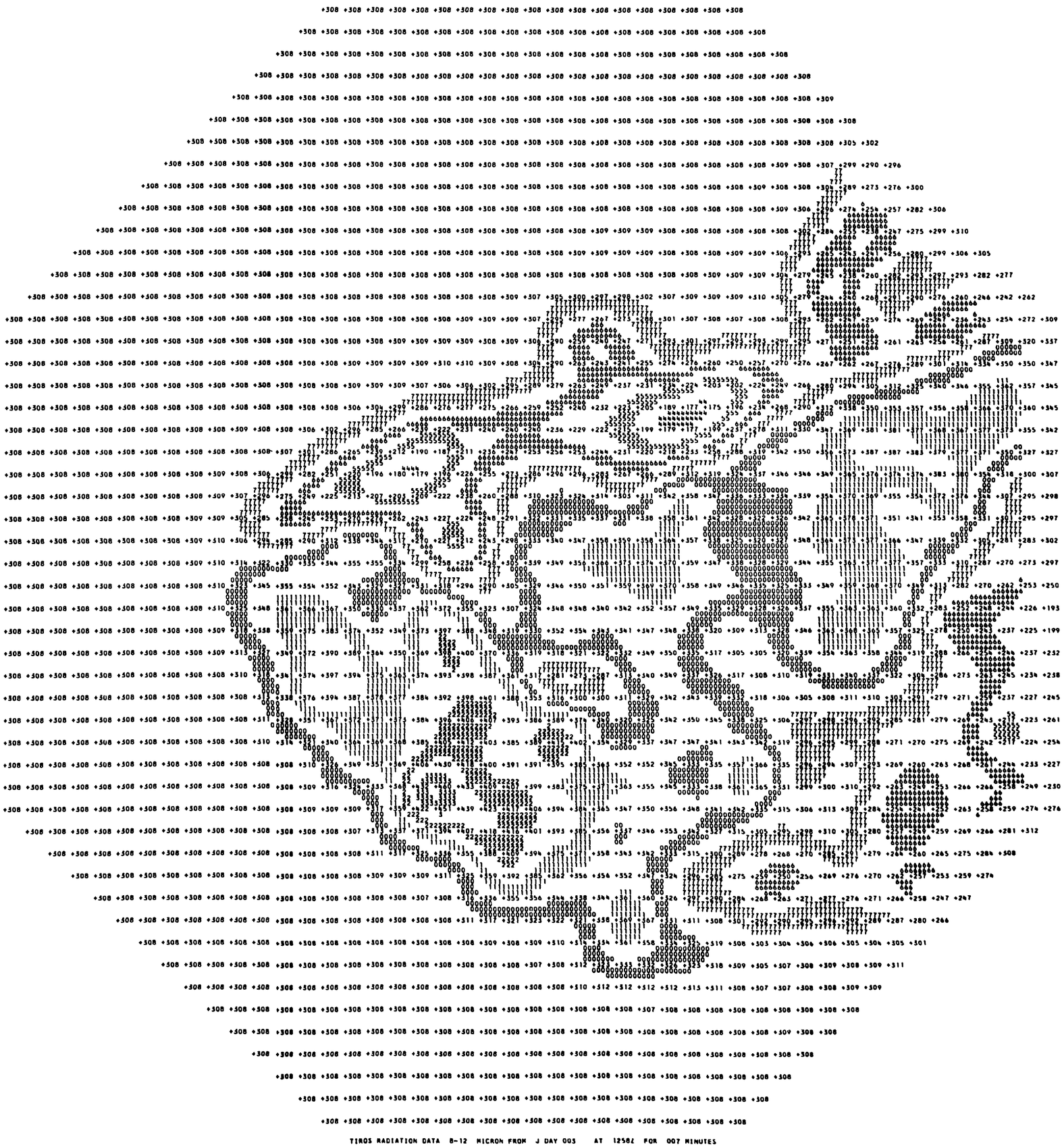
ORBIT 45

Channel 2

8–12 Microns



D

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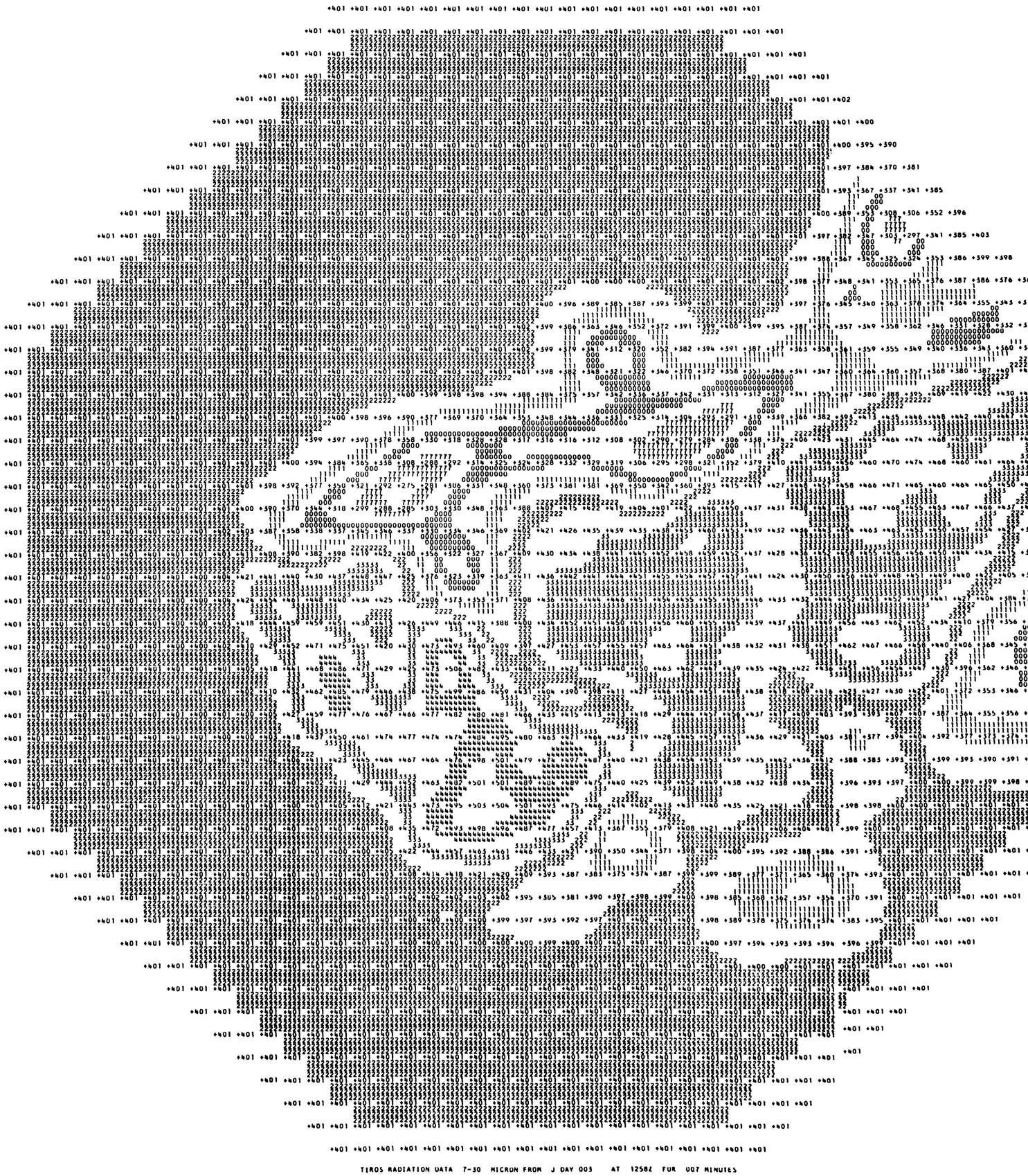
ORBIT 45

Channel 4

8–30 Microns



D

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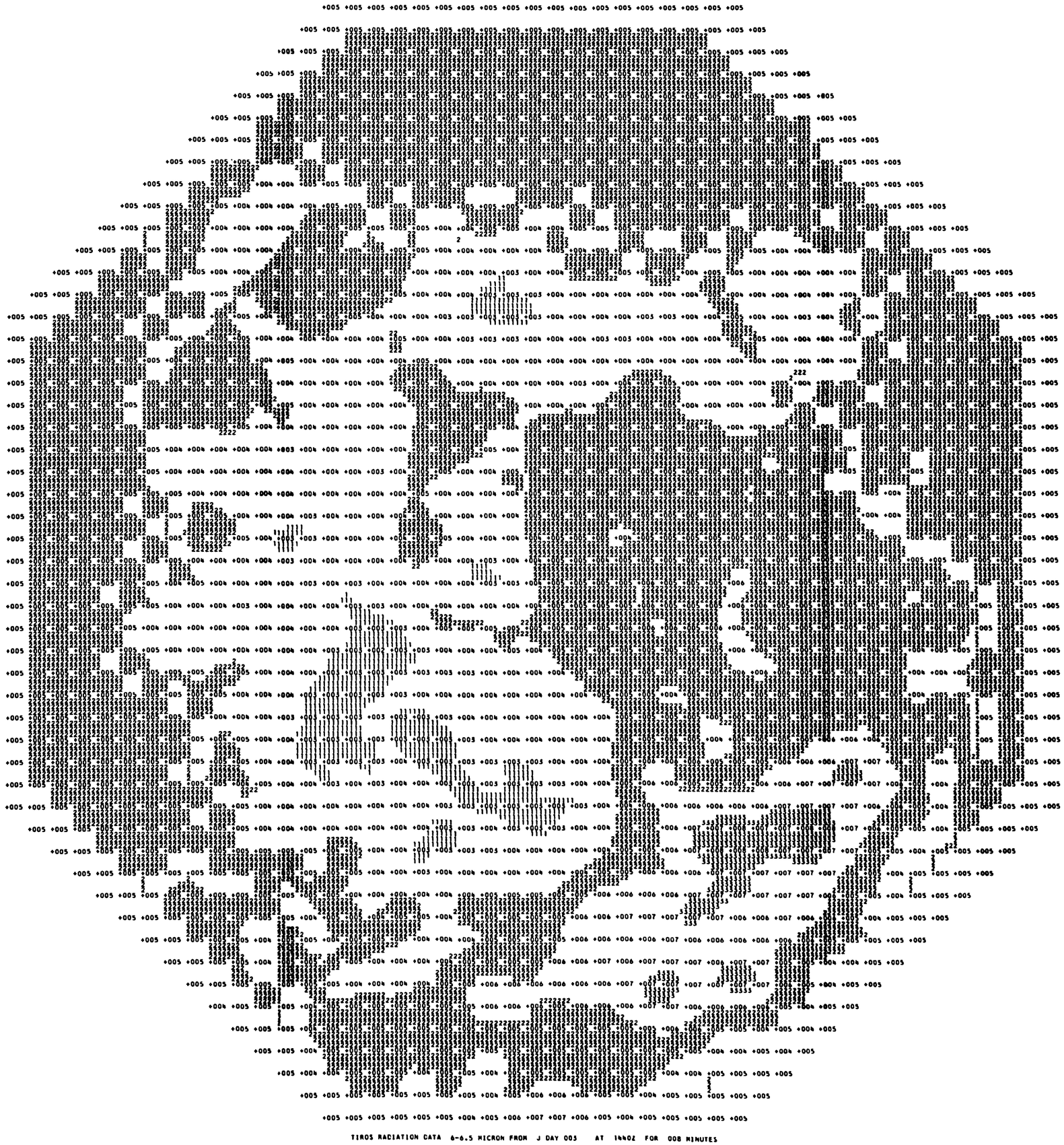
ORBIT 46

Channel 1

6–6.5 Microns



A

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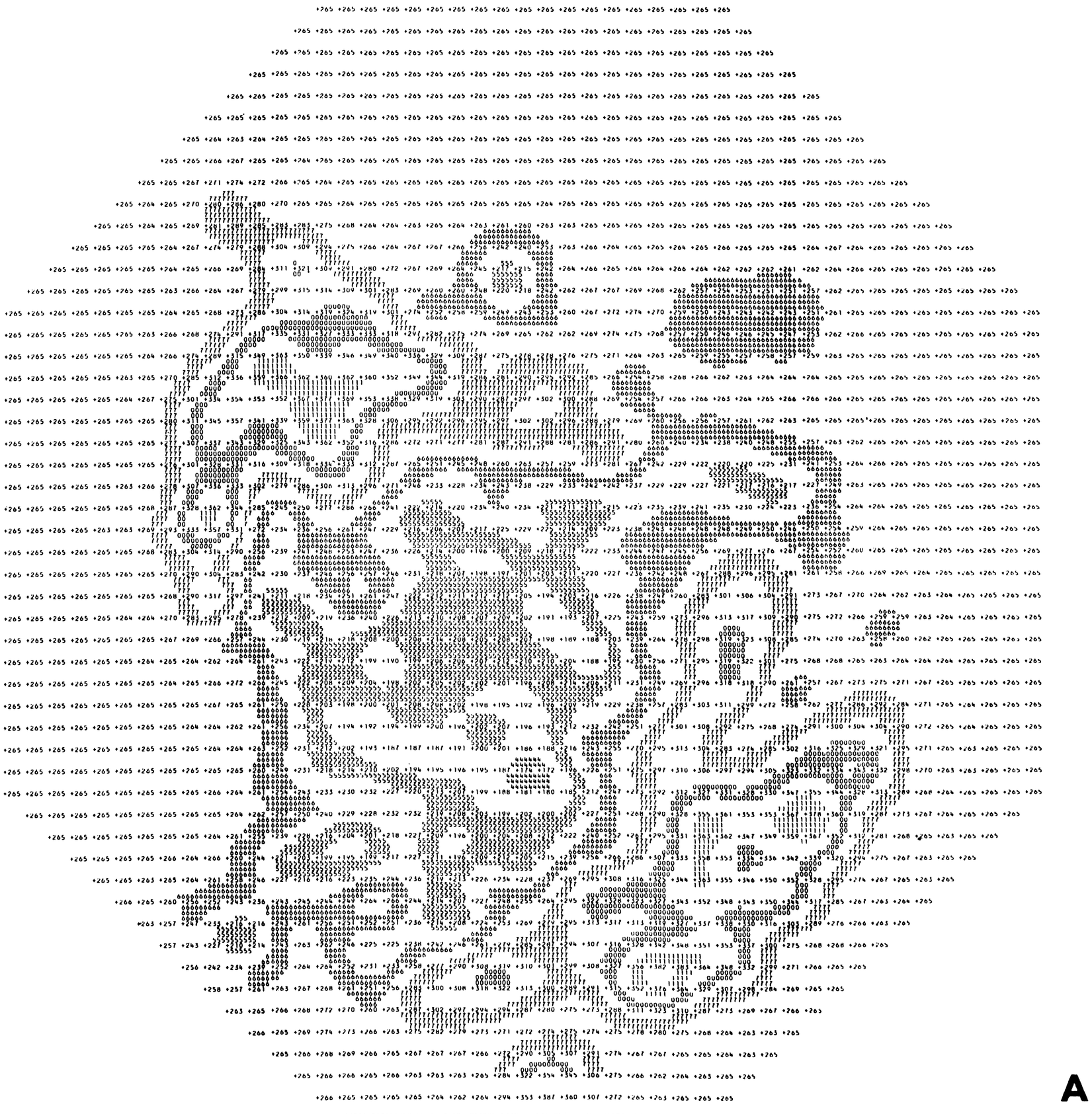
ORBIT 46

Channel 2

8–12 Microns



A

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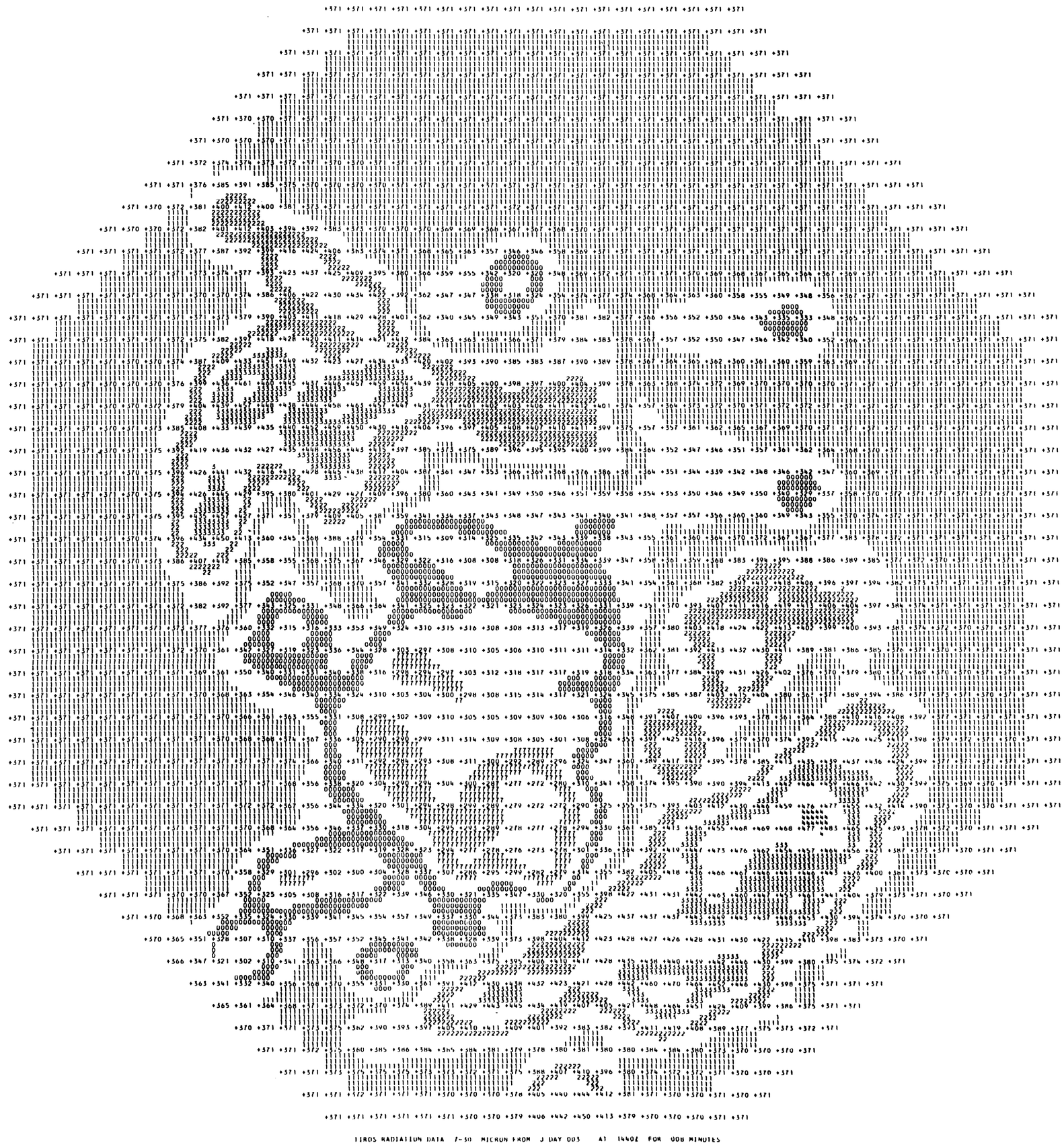
ORBIT 46

Channel 4

8–30 Microns



TIROS RADIATION DATA 7-30 MICRON FROM J DAY 003 AT 1440Z FOR 008 MINUTES

A

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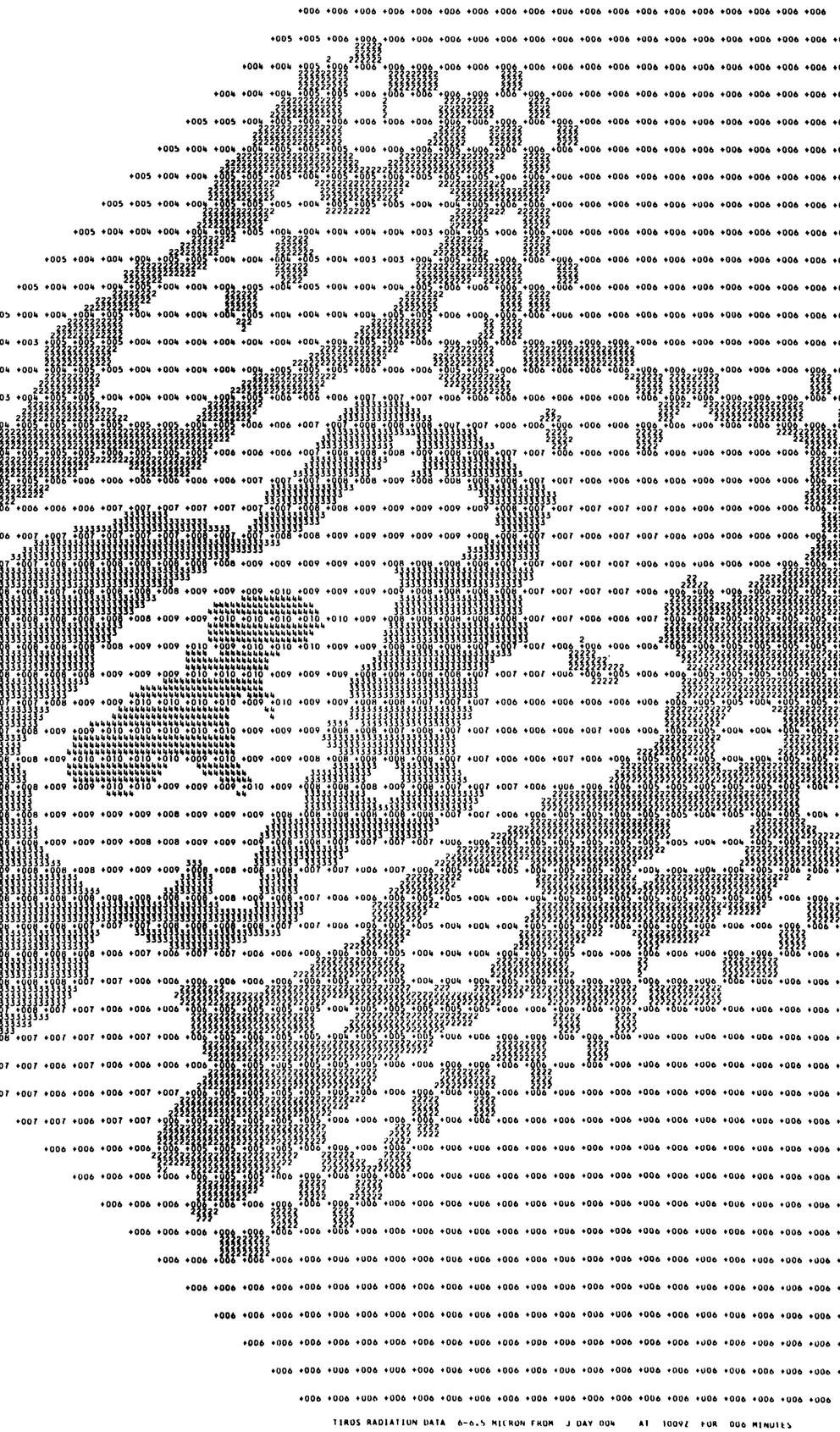
ORBIT 58

Channel 1

6–6.5 Microns



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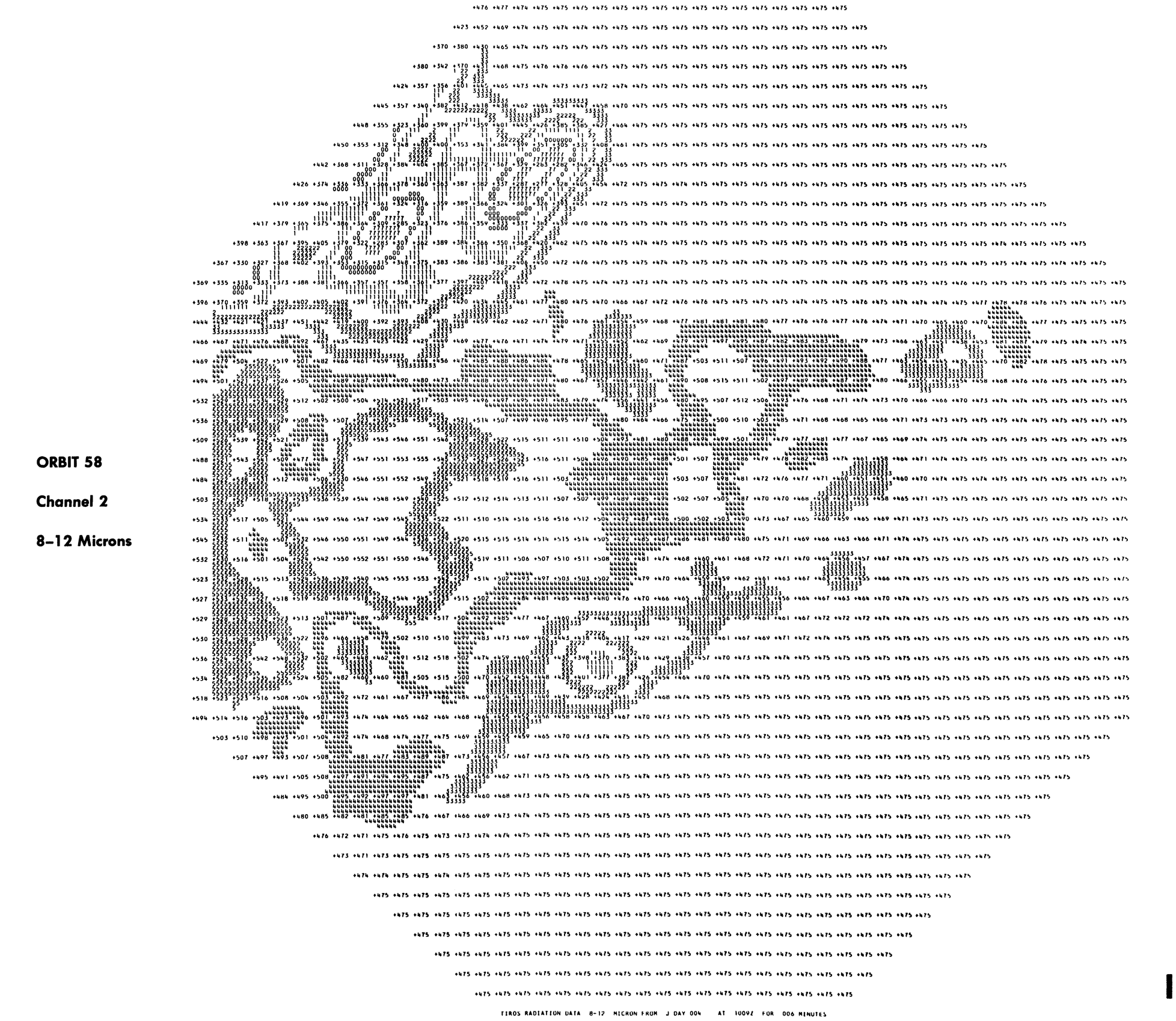
ORBIT 58

Channel 2

8–12 Microns



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ORBIT 58

Channel 4

8–30 Microns

TIROS RADIATION DATA 7-30 MICRON FROM J DAY 004 AT 1009Z FOR 006 MINUTES

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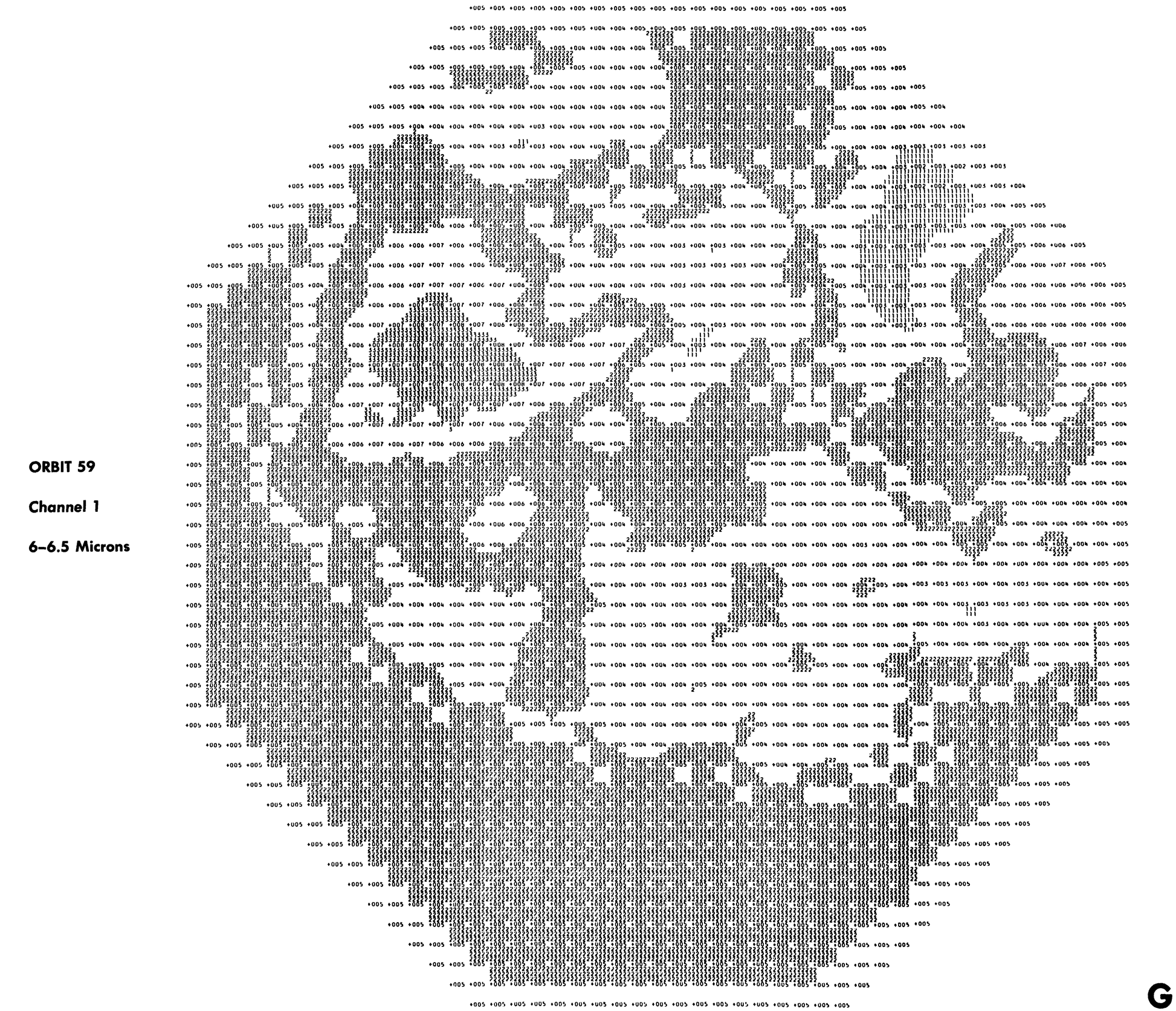
ORBIT 59

Channel 1

6–6.5 Microns



G

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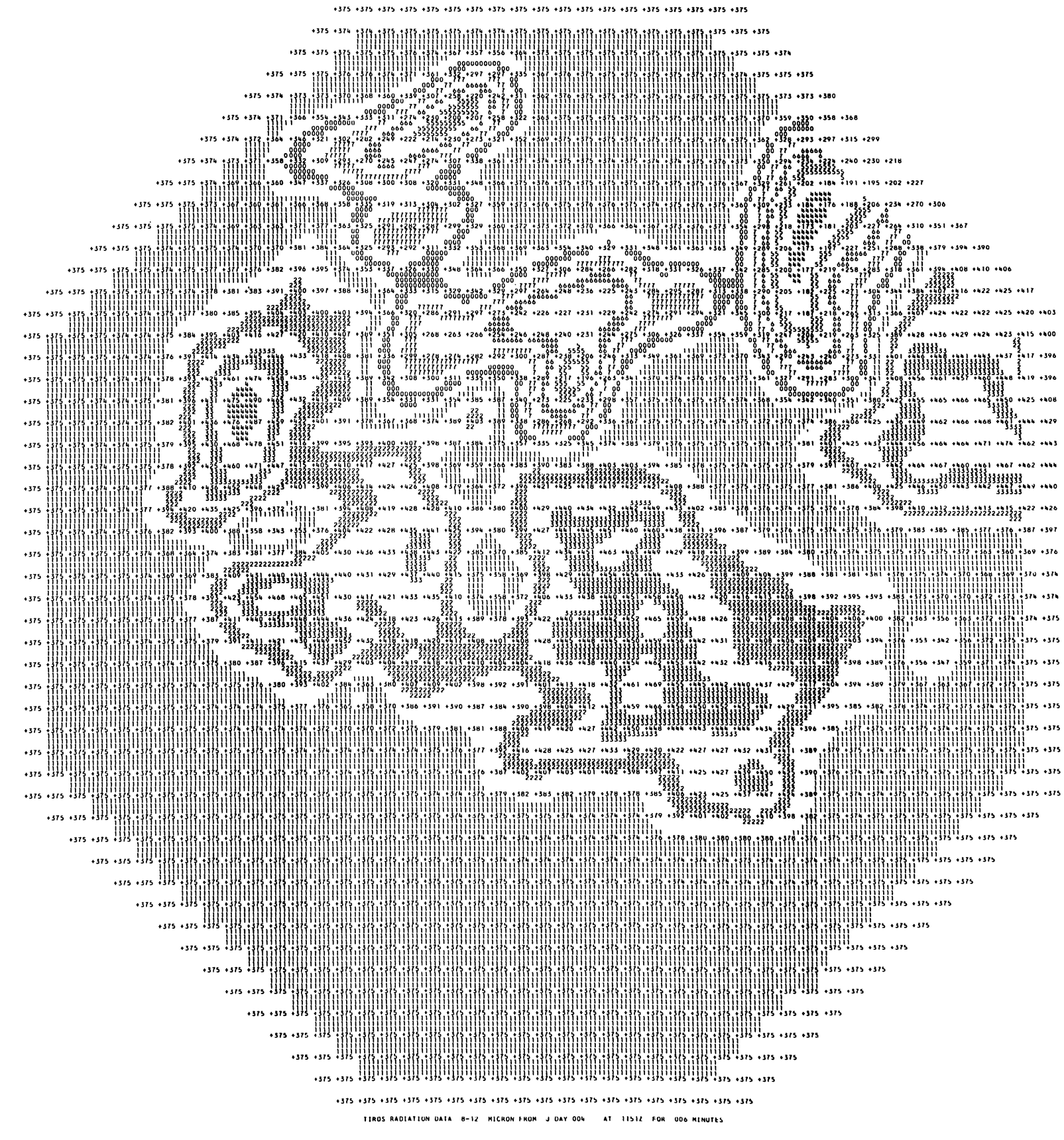
ORBIT 59

Channel 2

8–12 Microns



G

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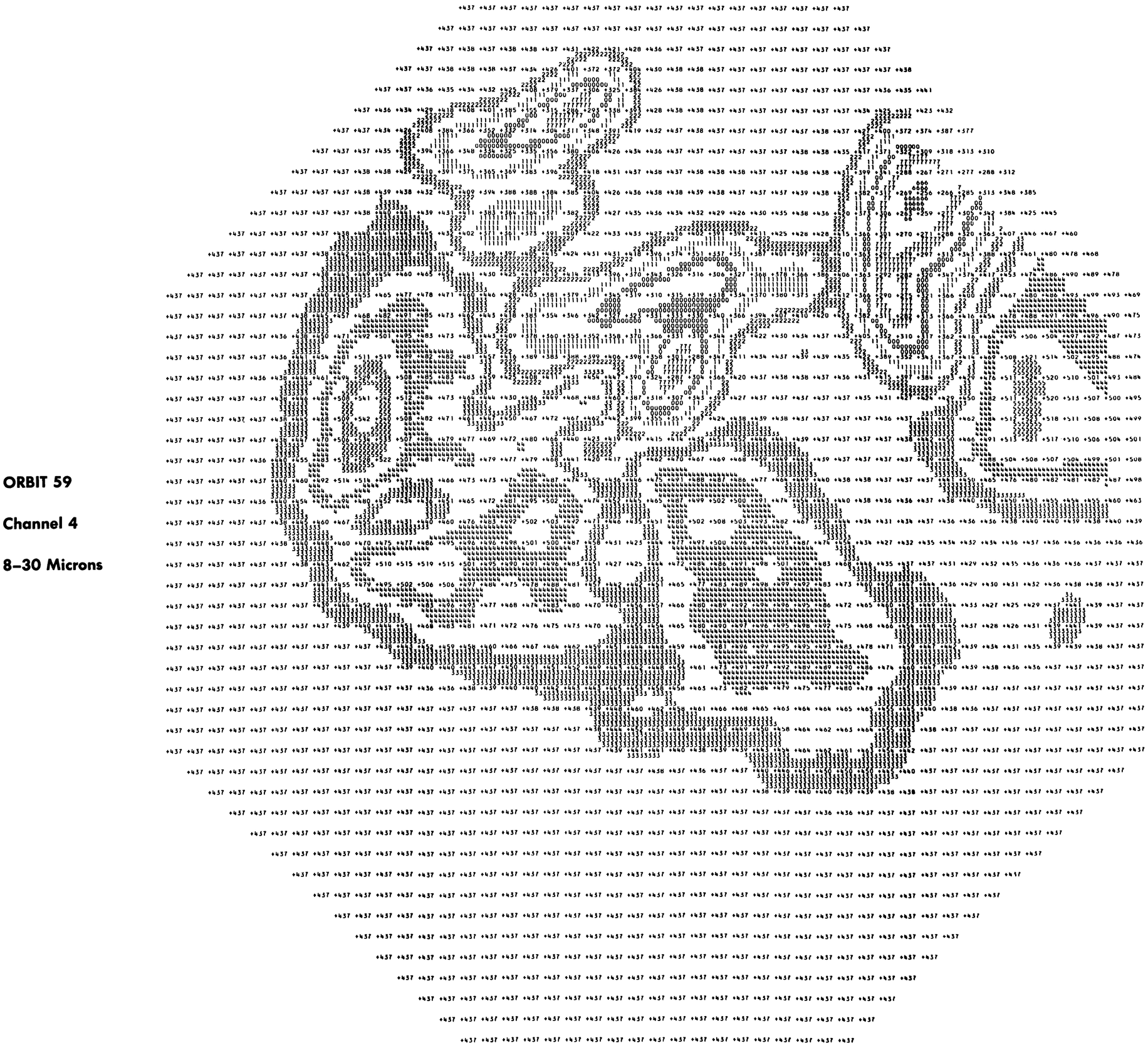
ORBIT 59

Channel 4

8–30 Microns



G

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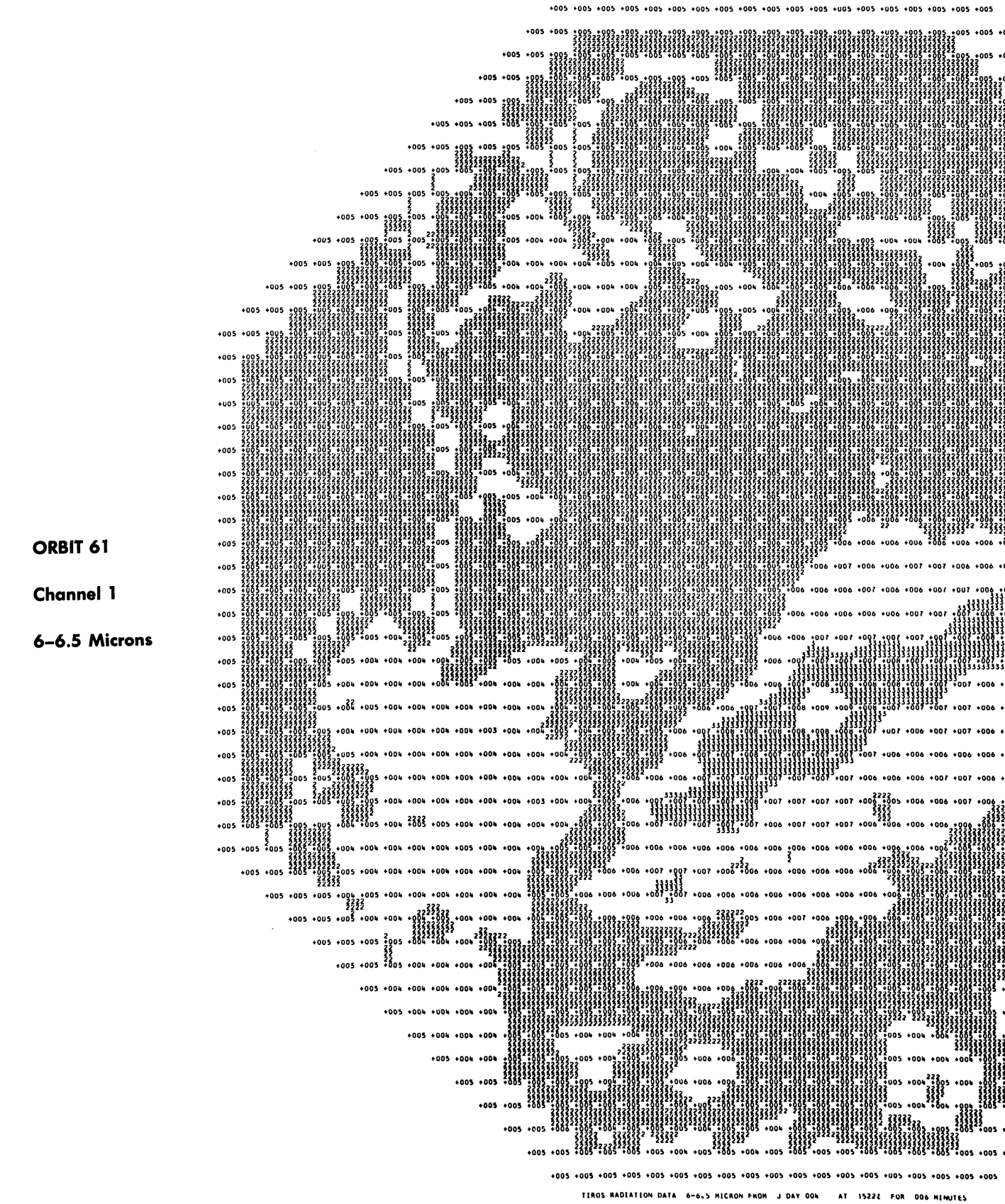
ORBIT 61

Channel 1

6–6.5 Microns



B

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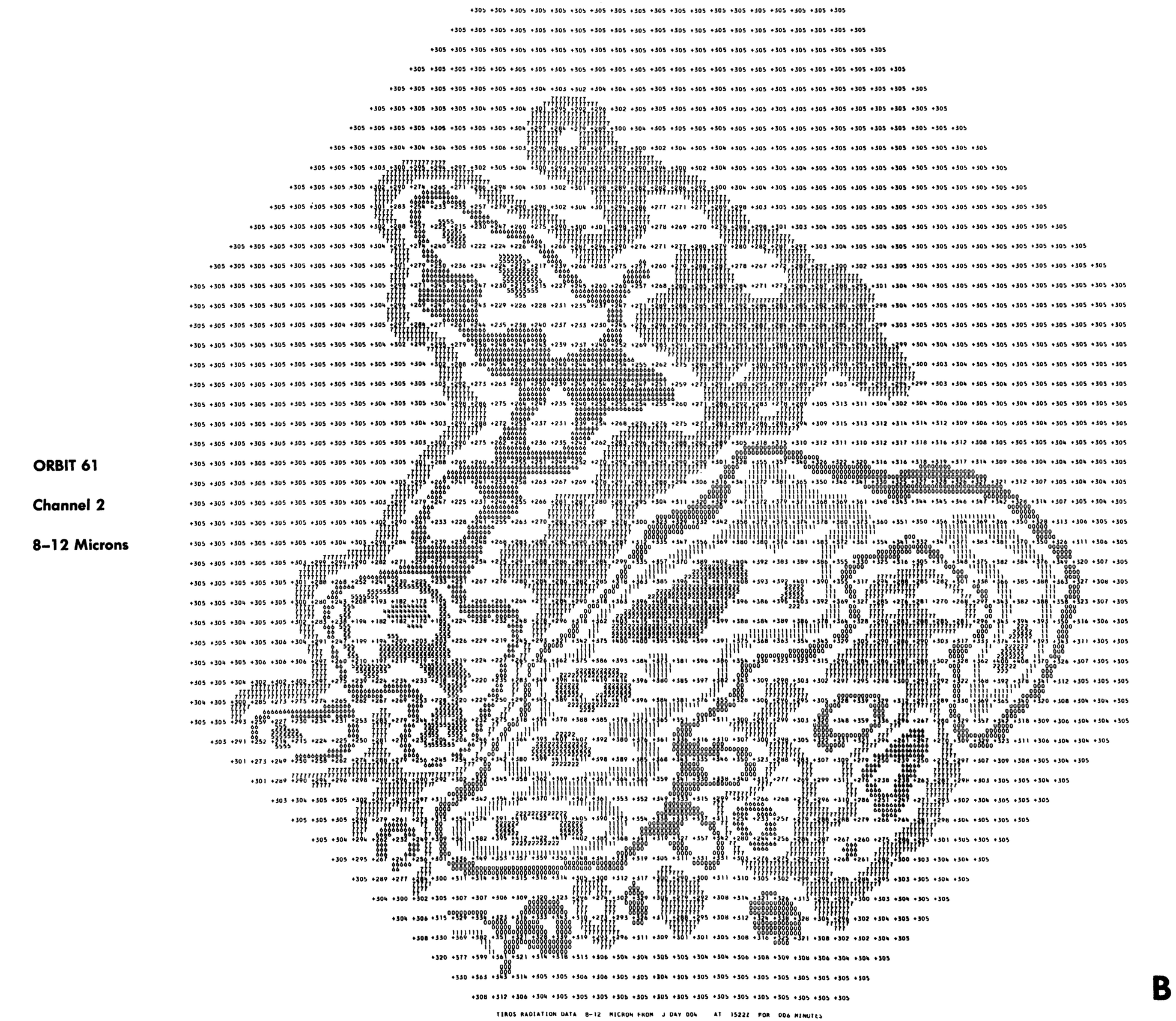
ORBIT 61

Channel 2

8–12 Microns



B

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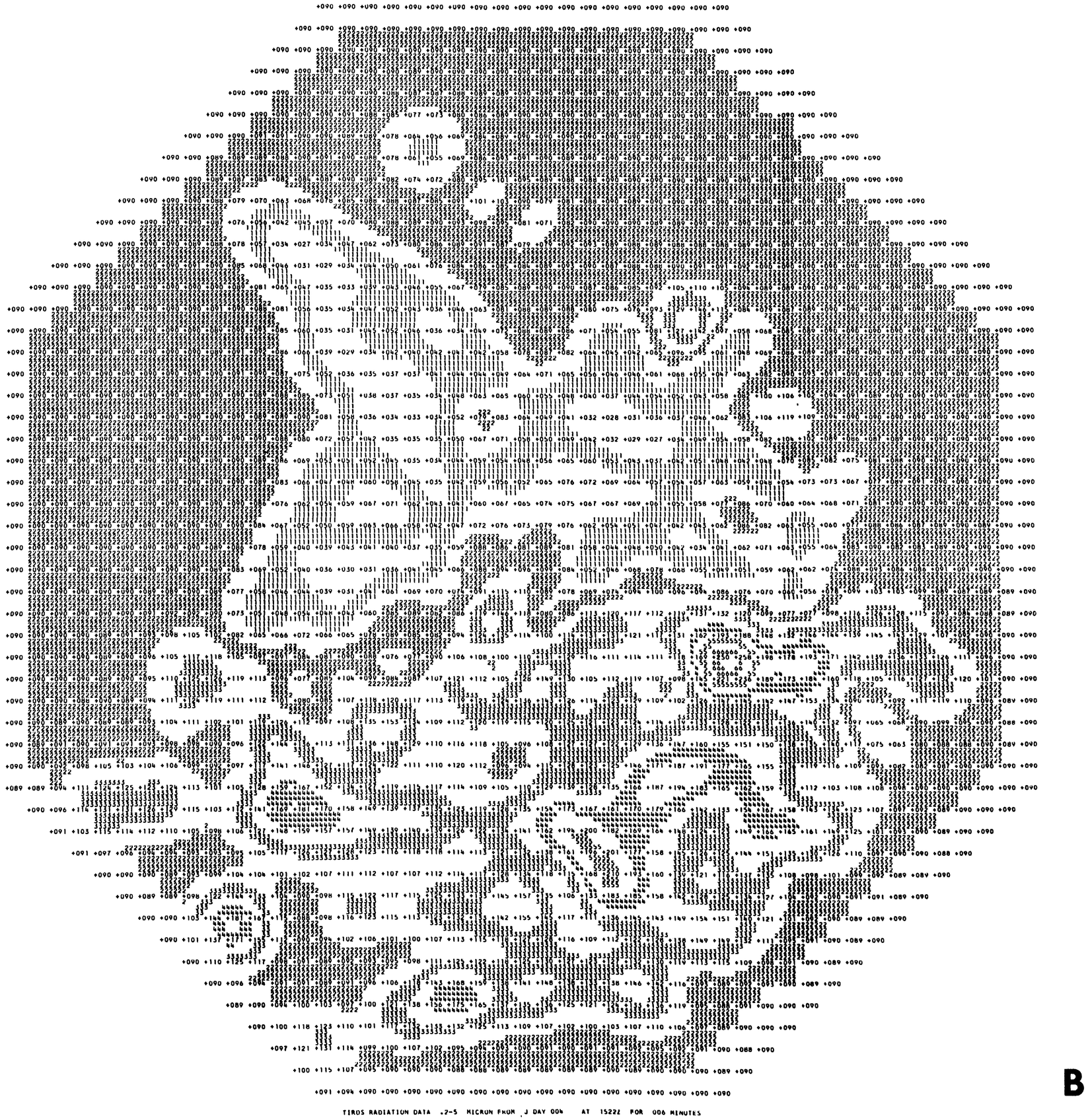
ORBIT 61

Channel 3

.25–6 Microns



B

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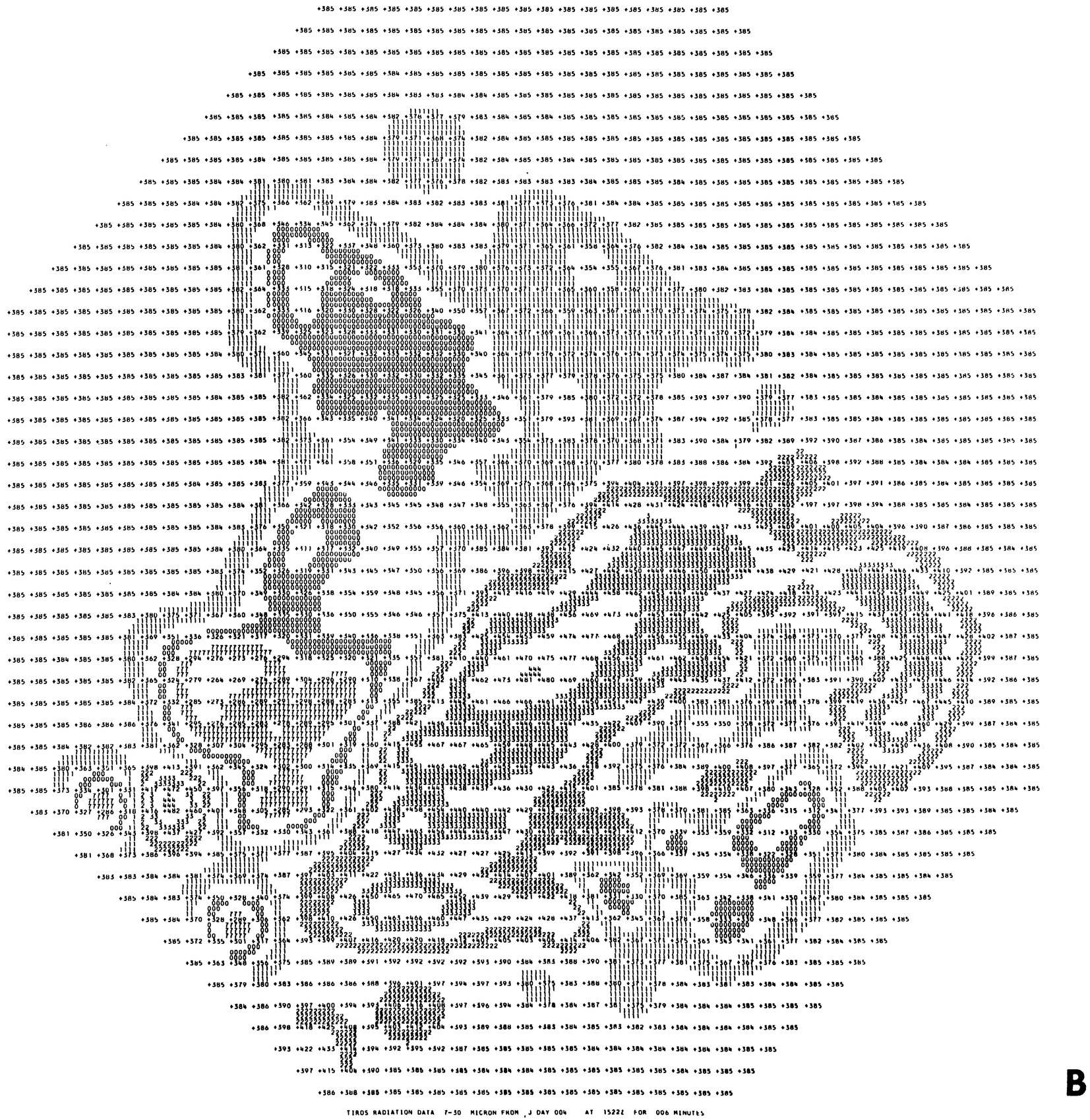
ORBIT 61

Channel 4

8–30 Microns



B

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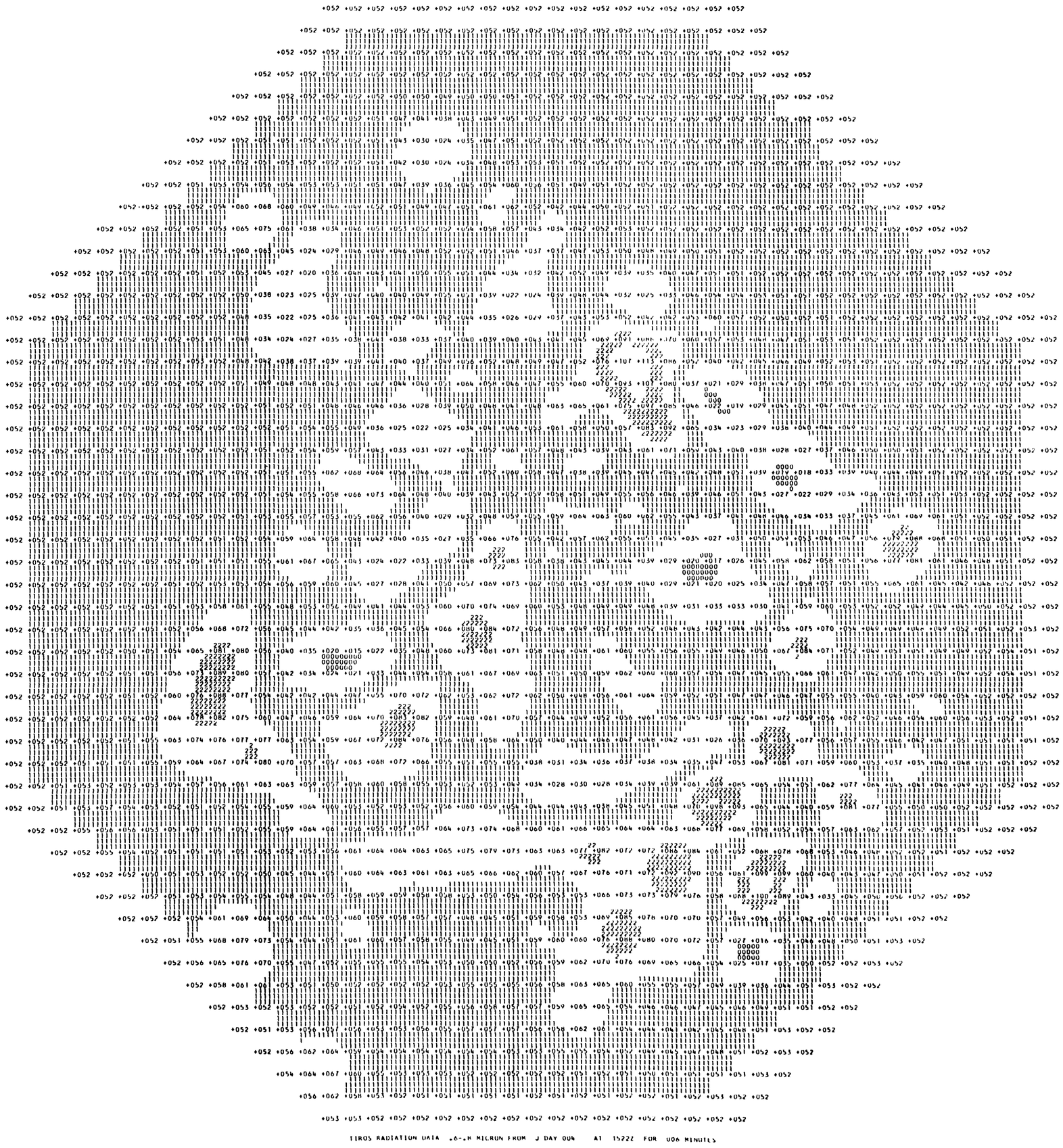
ORBIT 61

Channel 5

.55–.75 Microns



TIROS RADIATION DATA .6-.8 MICRON FROM J DAY 004 AT 15222 FOR 006 MINUTES

B

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ORBIT 72

Channel 1

6–6.5 Microns

TIROS RADIATION DATA 6-6.5 MICRON FROM J DAY 005 AT 09037 FOR 005 MINUTES

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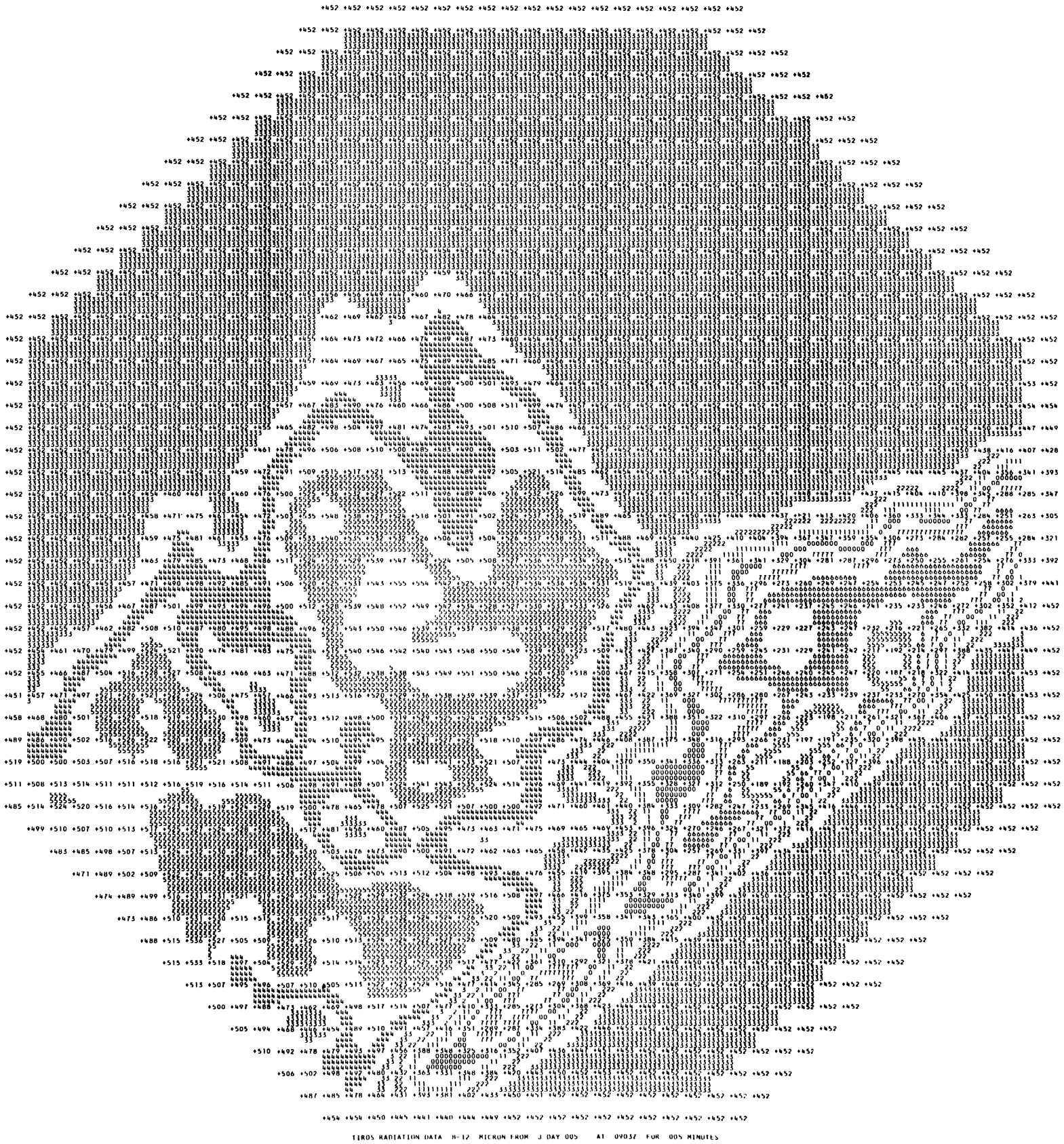
ORBIT 72

Channel 2

8–12 Microns



TIROS RADIATION DATA 8-12 MICRON FROM J DAY 005 AT 0903Z FOR 005 MINUTES

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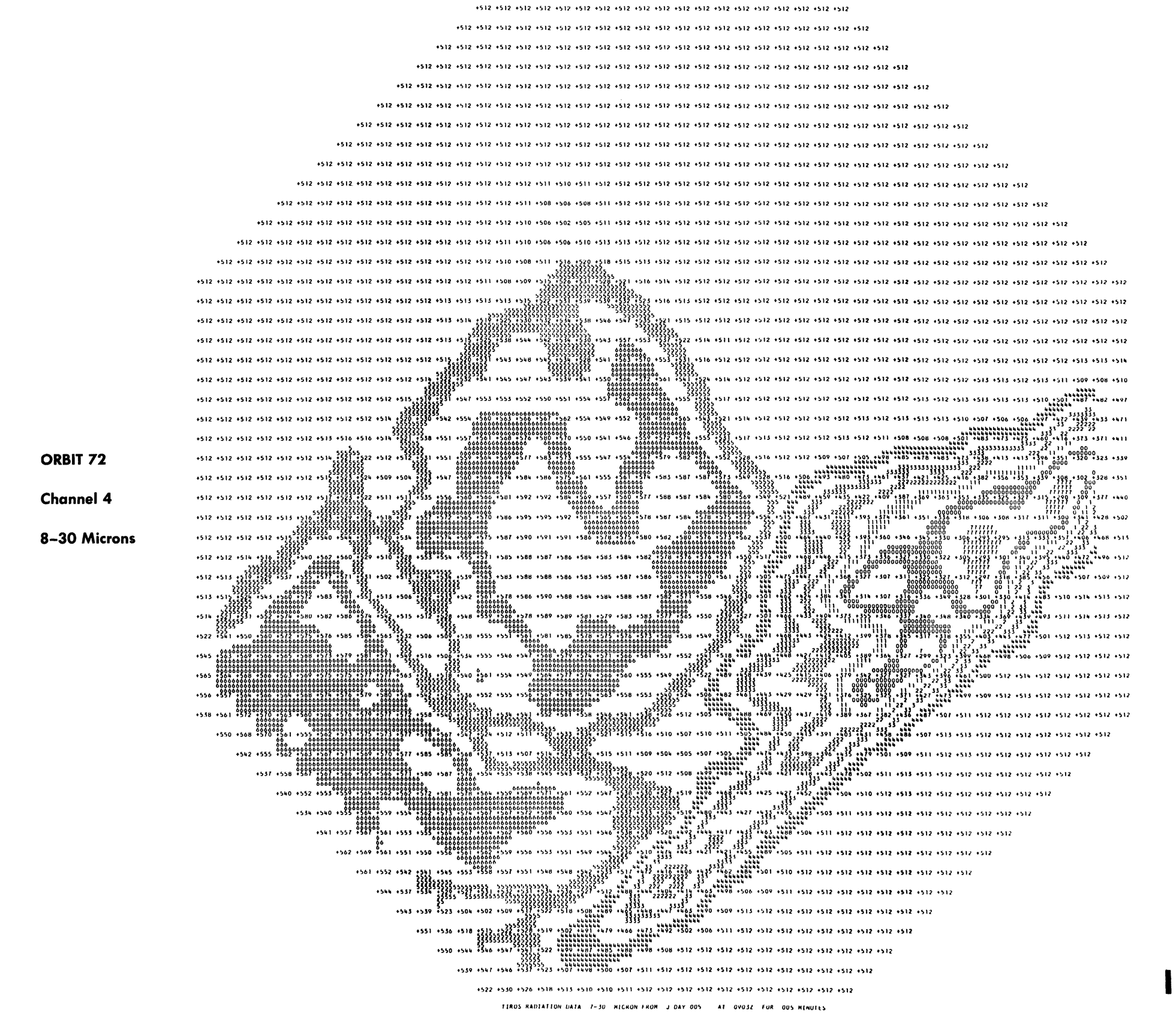
ORBIT 72

Channel 4

8–30 Microns



TIROS RADIATION DATA 7-30 MICRON FROM J DAY 005 AT 0903Z FOR 005 MINUTES

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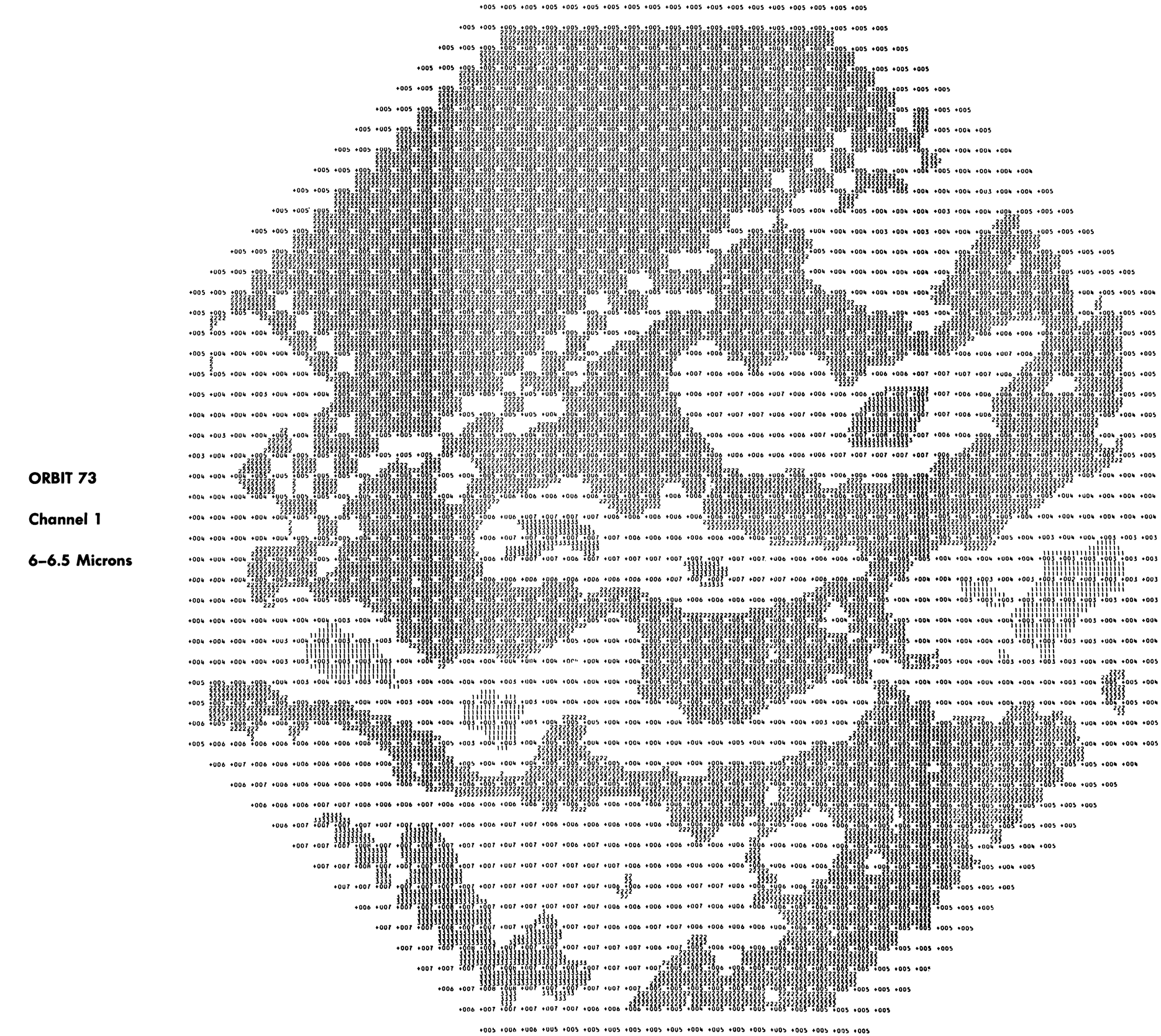
ORBIT 73

Channel 1

6–6.5 Microns



TIROS RADIATION DATA 6-6.5 MICRON FROM J DAY 005 AT 1042Z FOR 007 MINUTES

G

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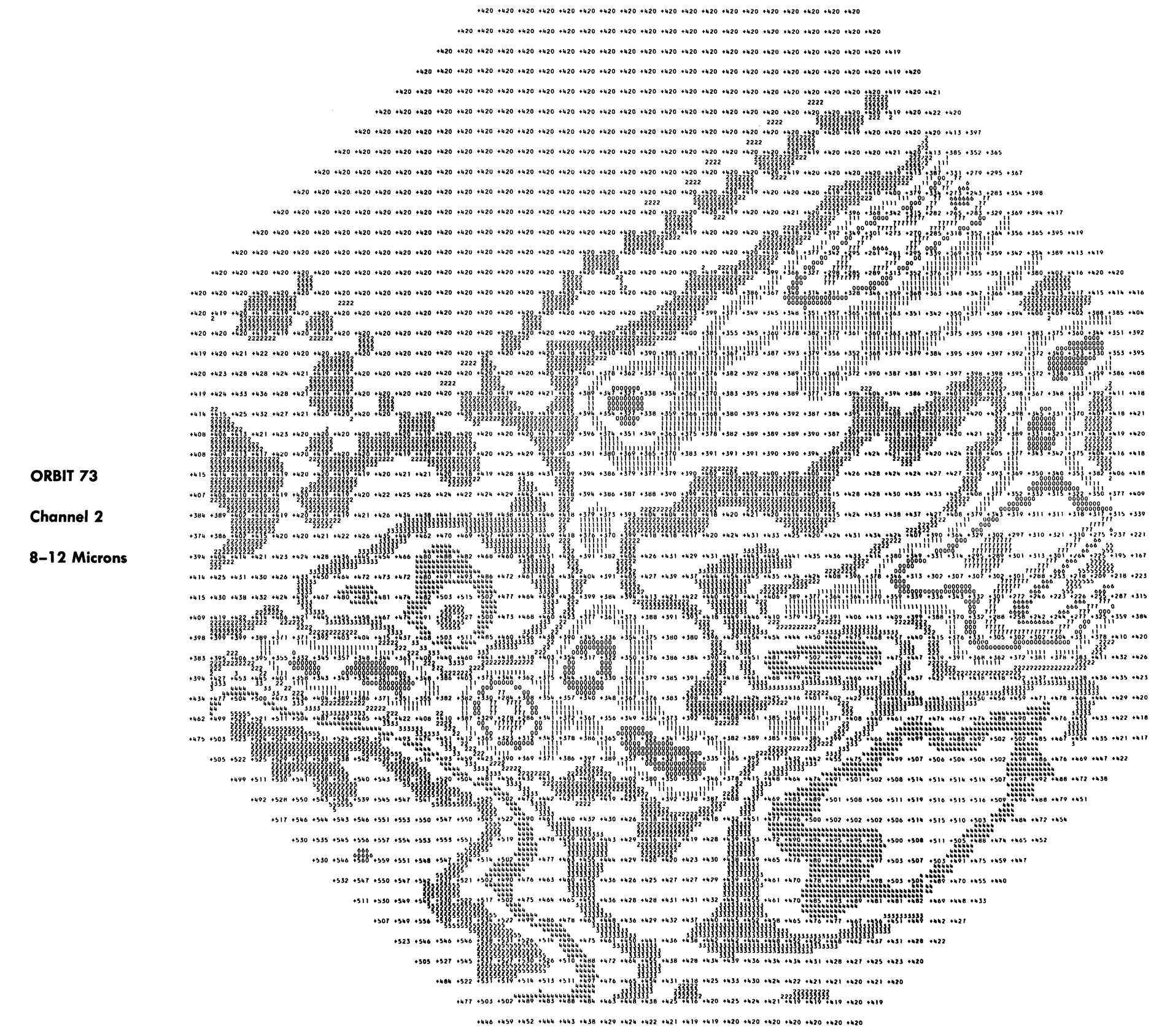
ORBIT 73

Channel 2

8–12 Microns



G

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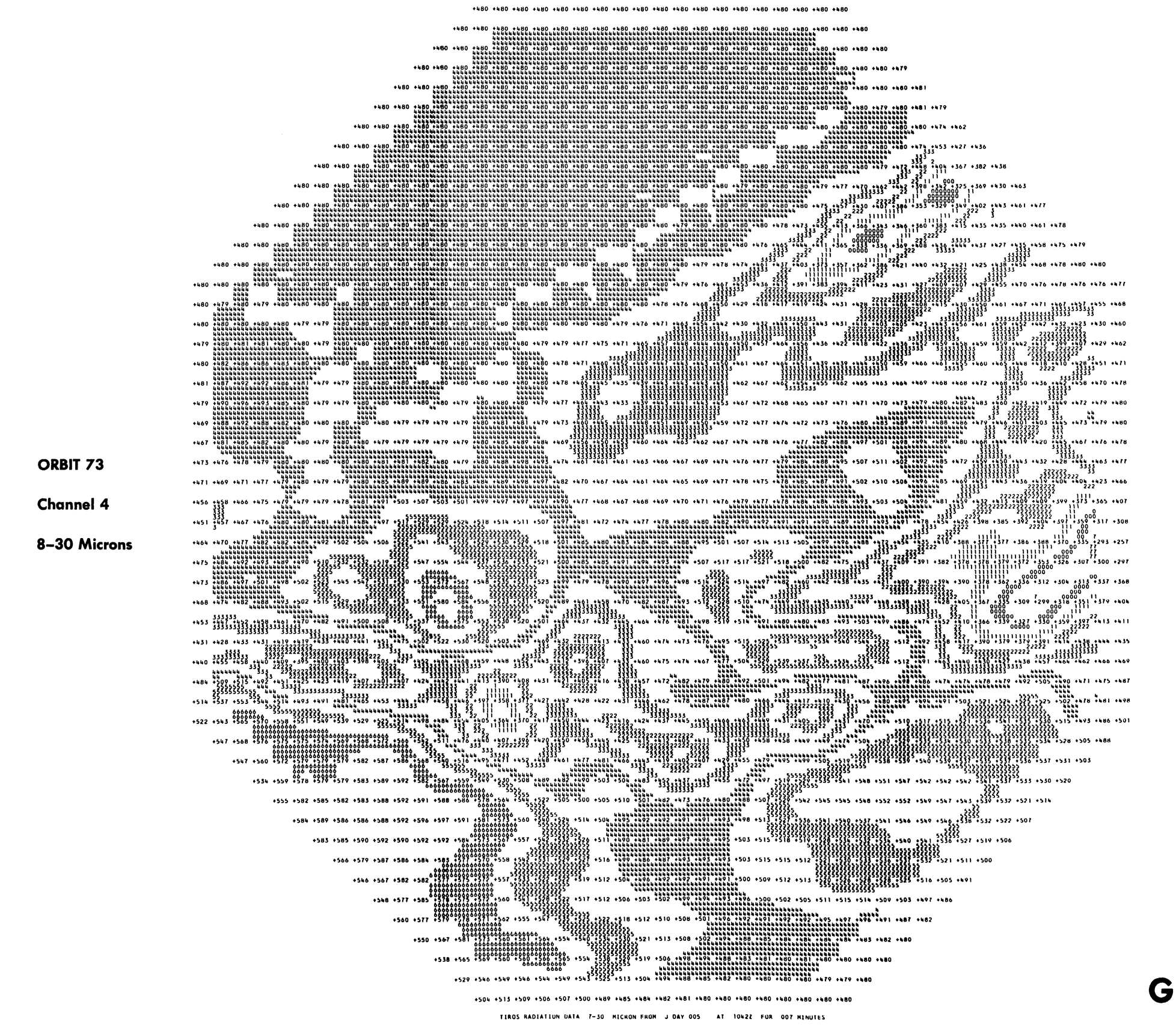
ORBIT 73

Channel 4

8–30 Microns



G

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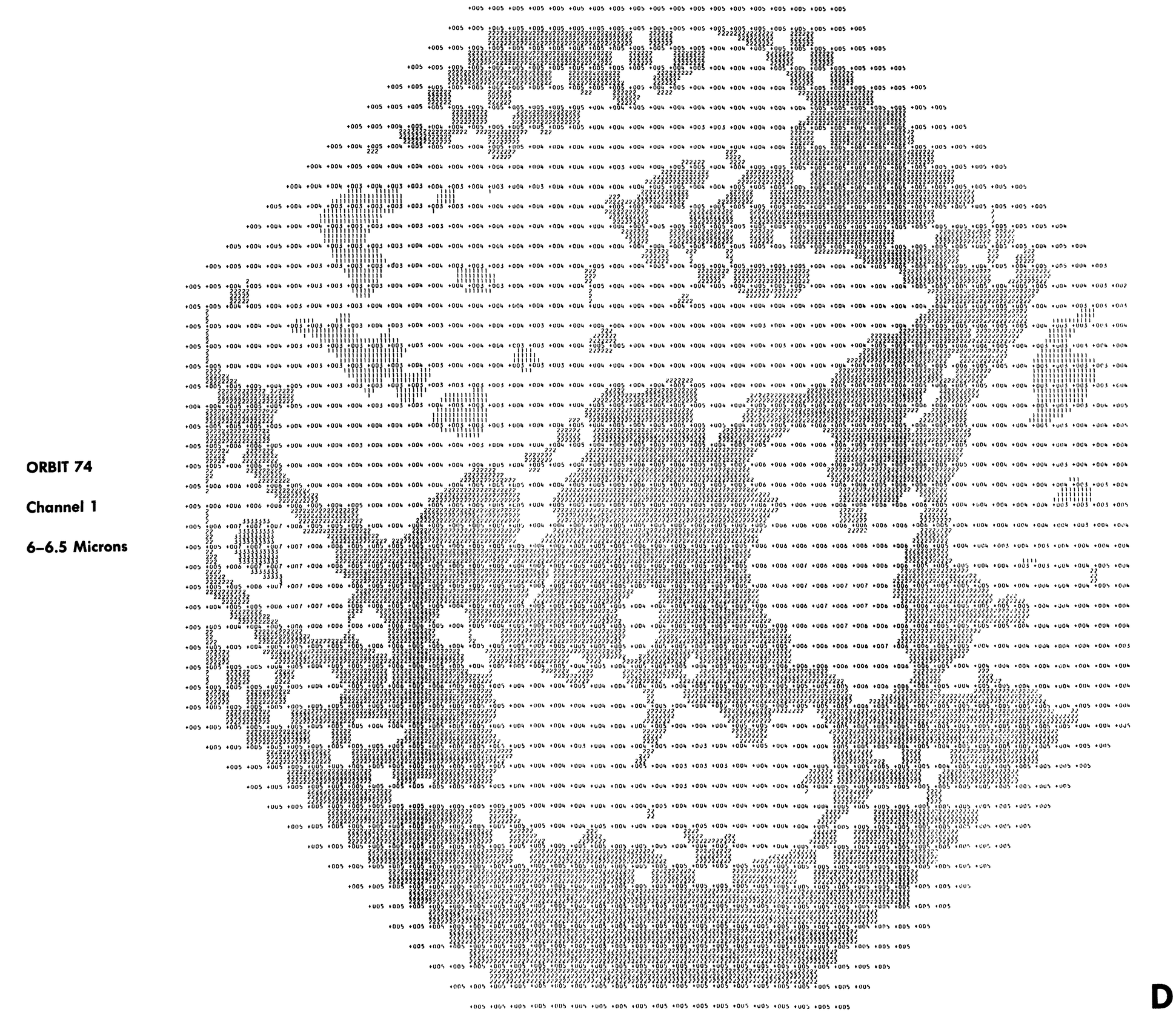
ORBIT 74

Channel 1

6–6.5 Microns



D

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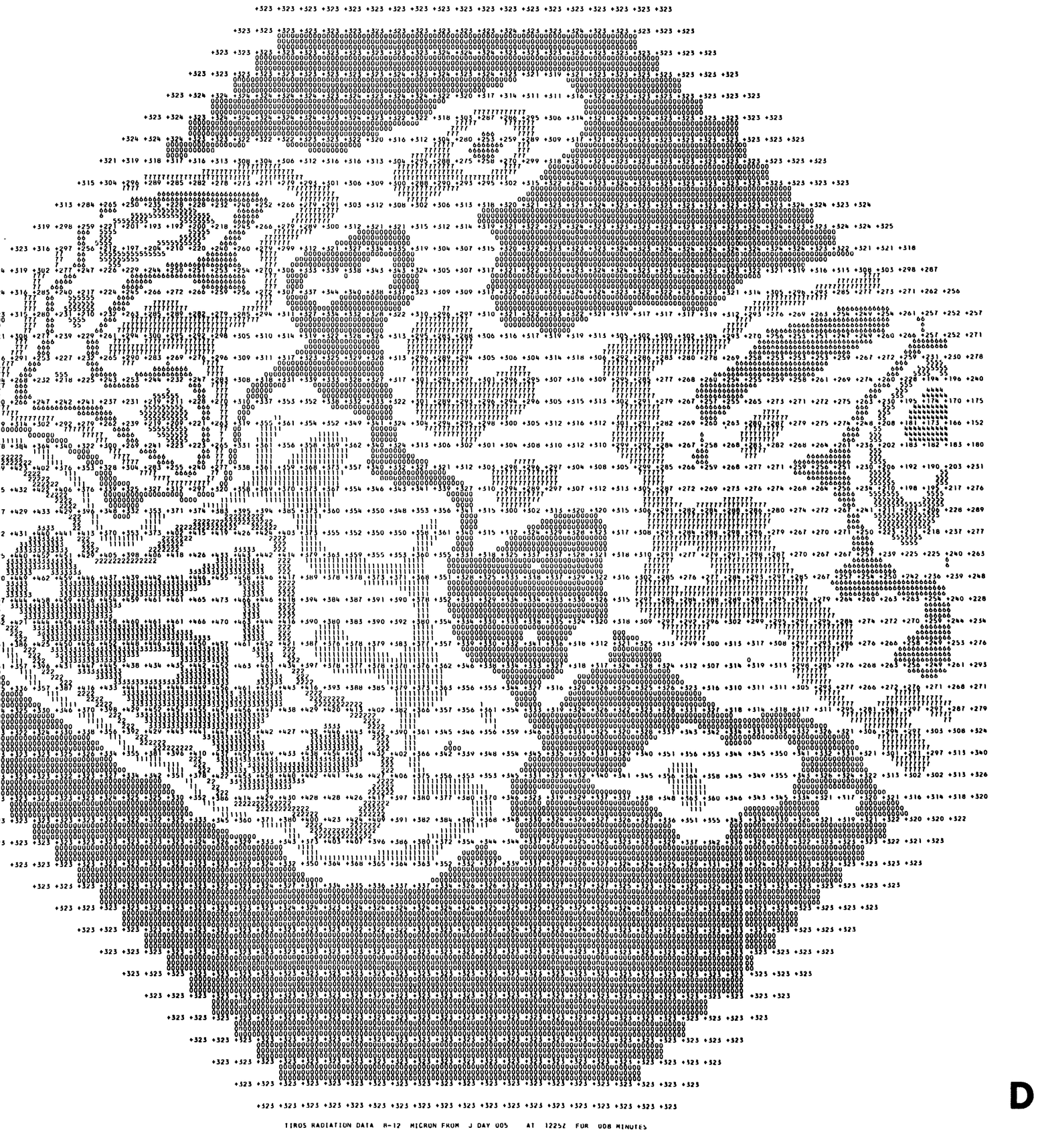
ORBIT 74

Channel 2

8–12 Microns



TIROS RADIATION DATA H-12 MICRON FROM J DAY 005 AT 1225Z FOR 008 MINUTES

D

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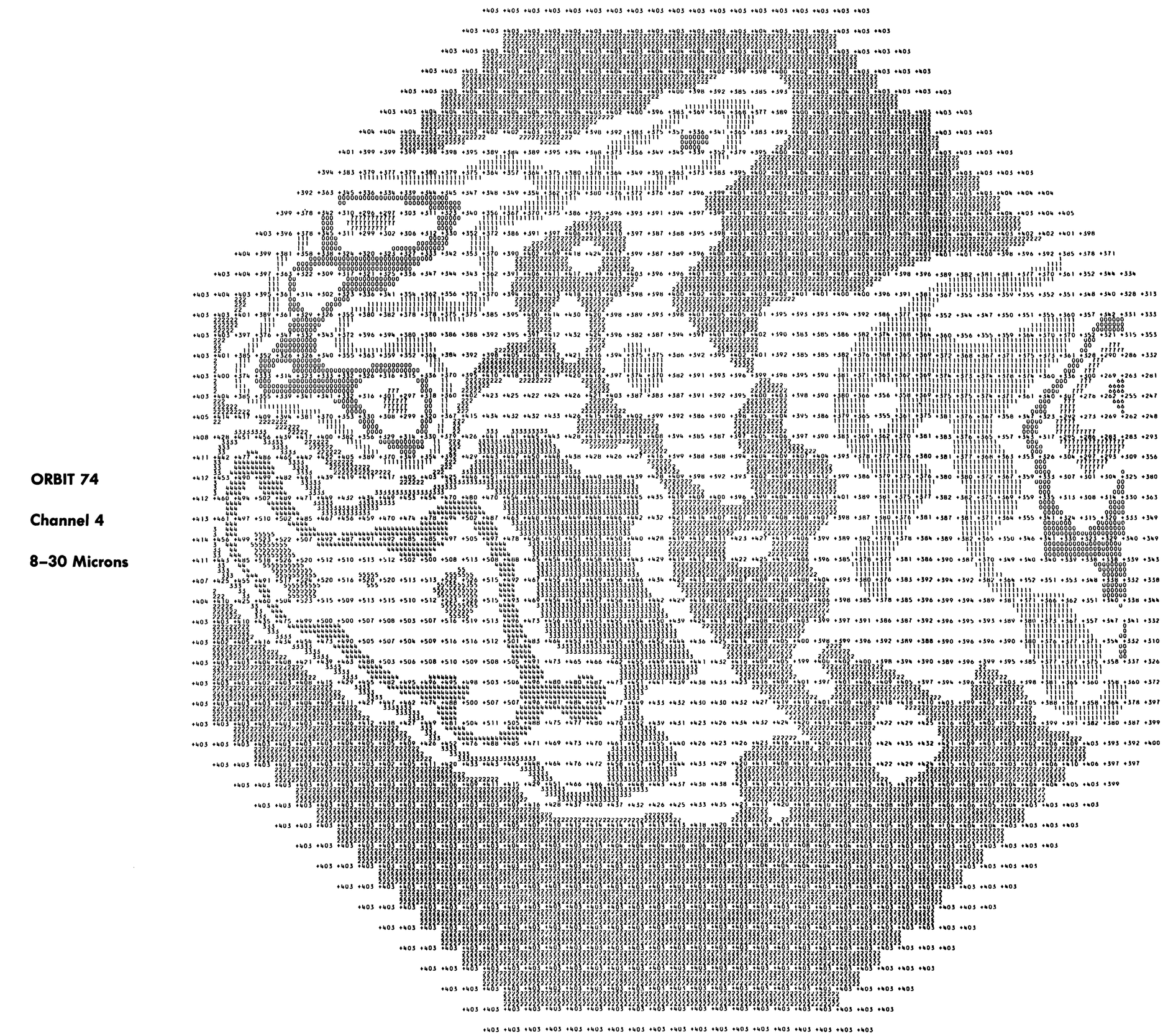
ORBIT 74

Channel 4

8–30 Microns



D

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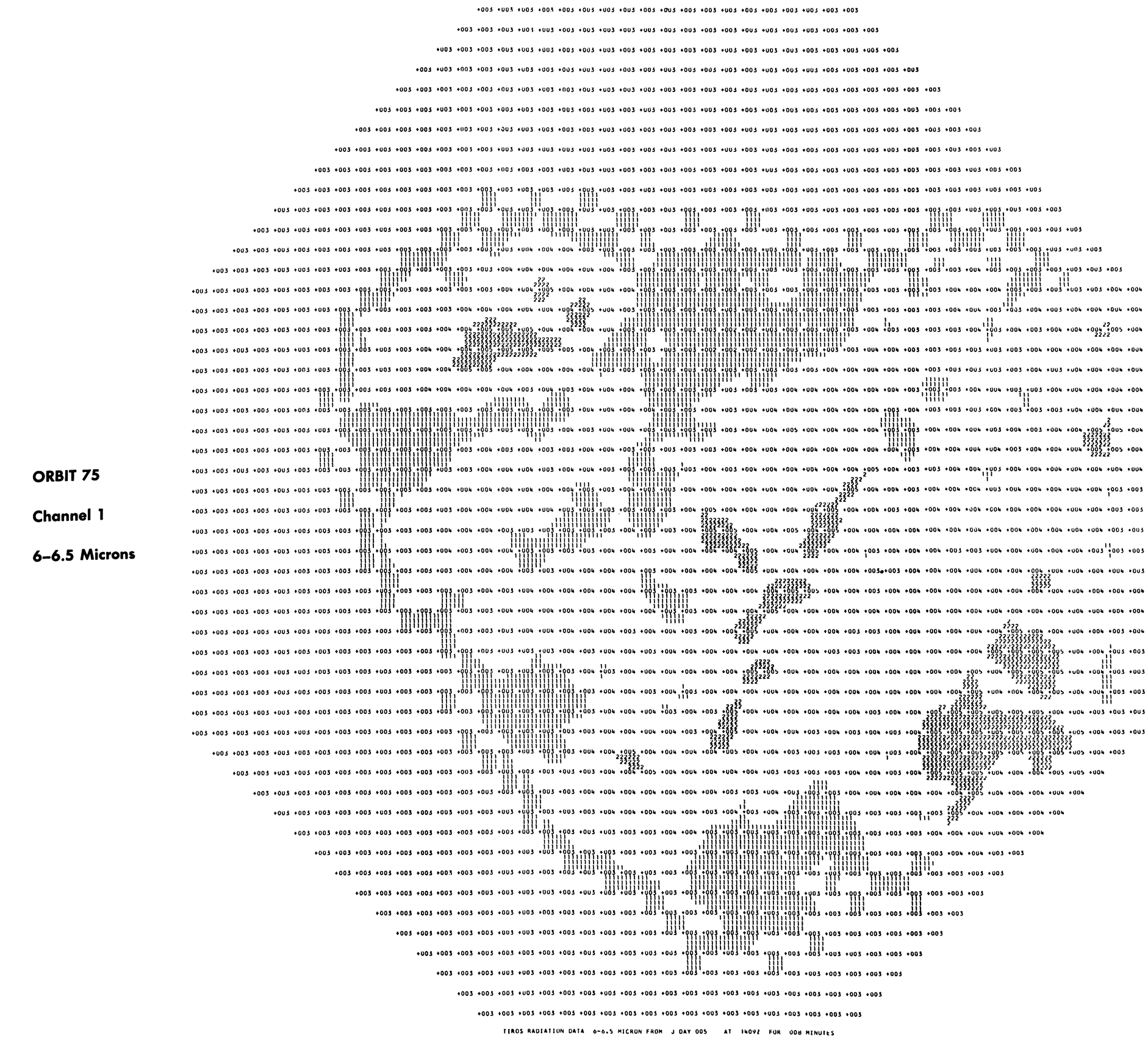
ORBIT 75

Channel 1

6–6.5 Microns



A

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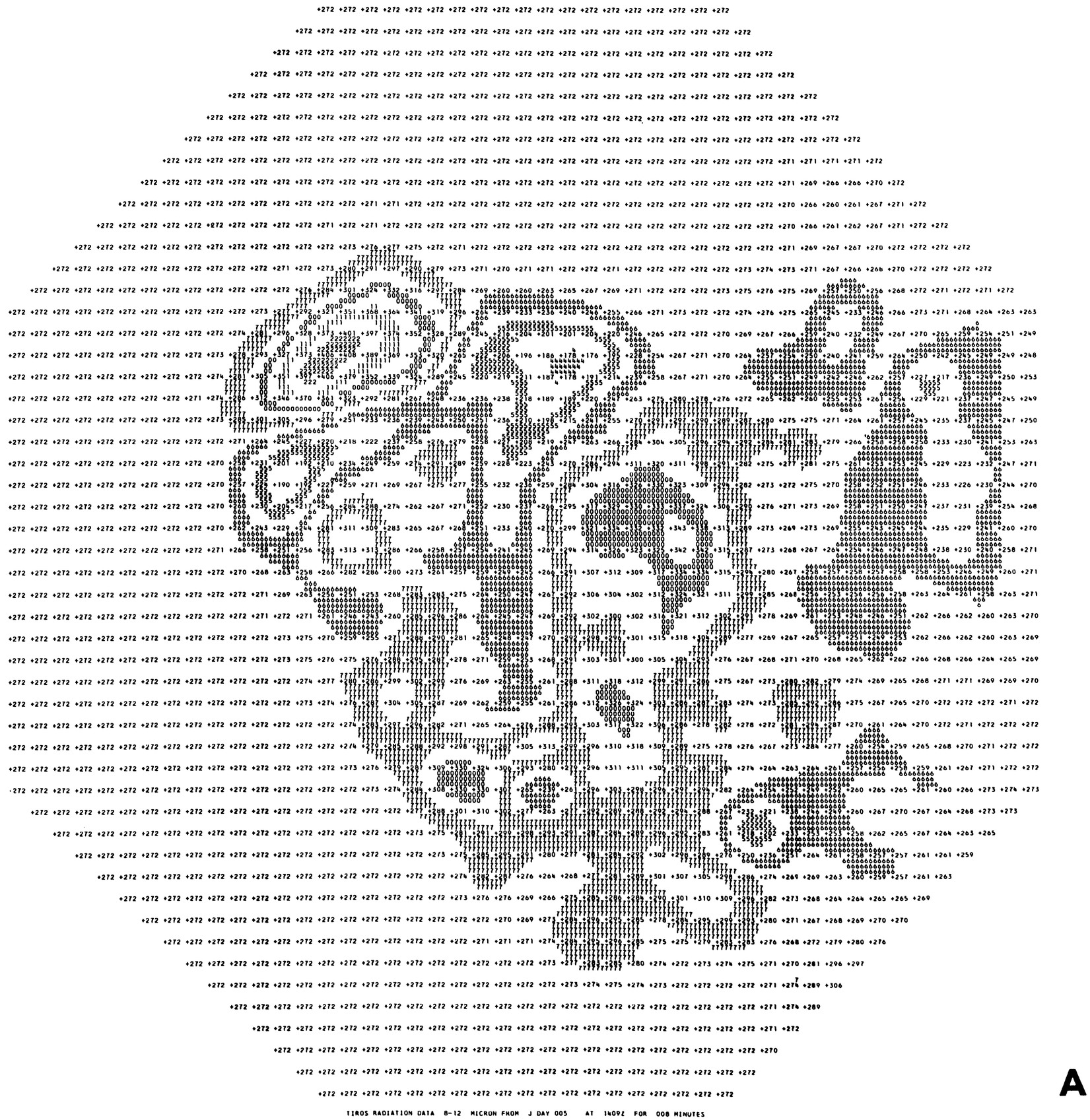
ORBIT 75

Channel 2

8–12 Microns



A

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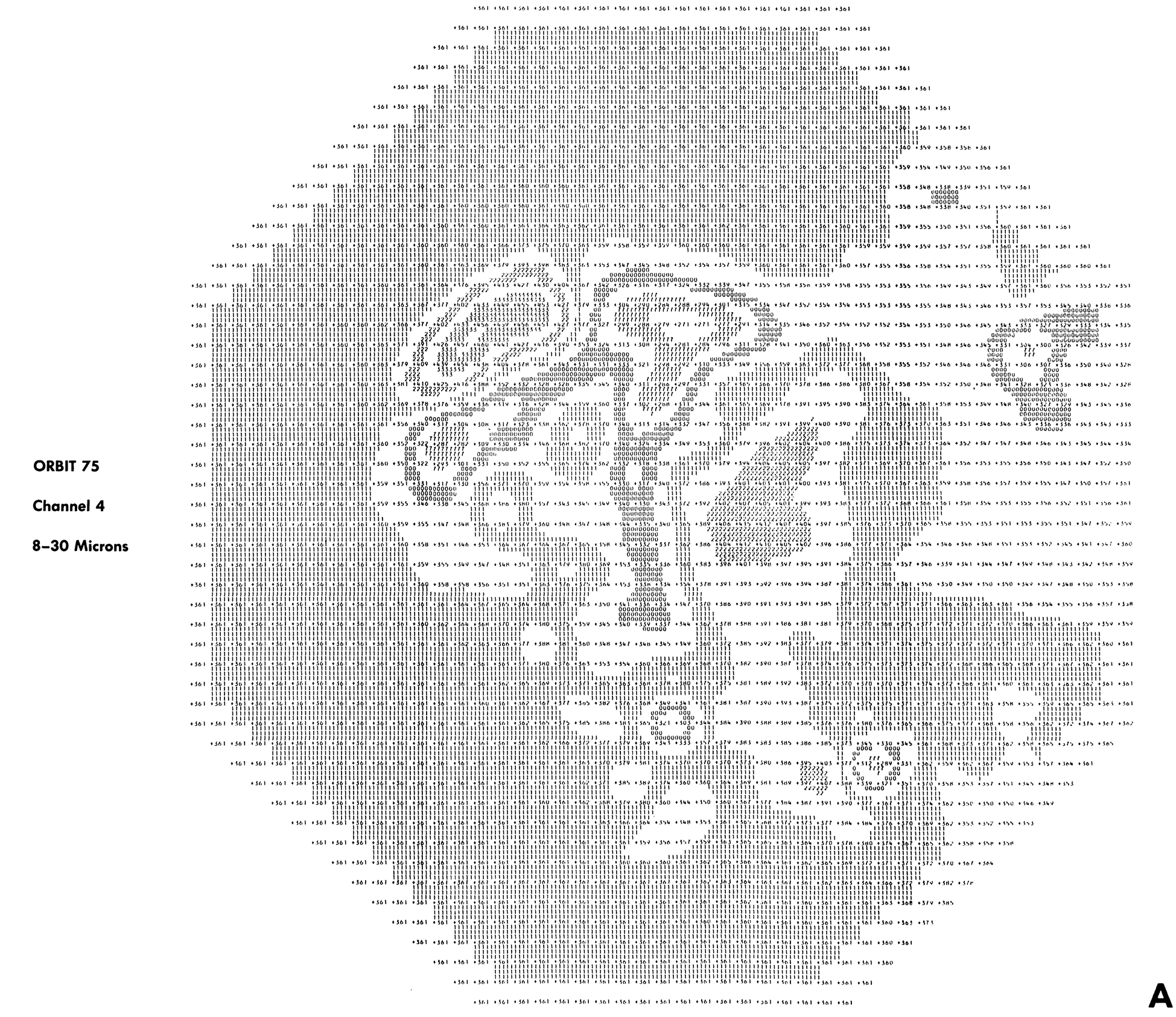
ORBIT 75

Channel 4

8–30 Microns



A

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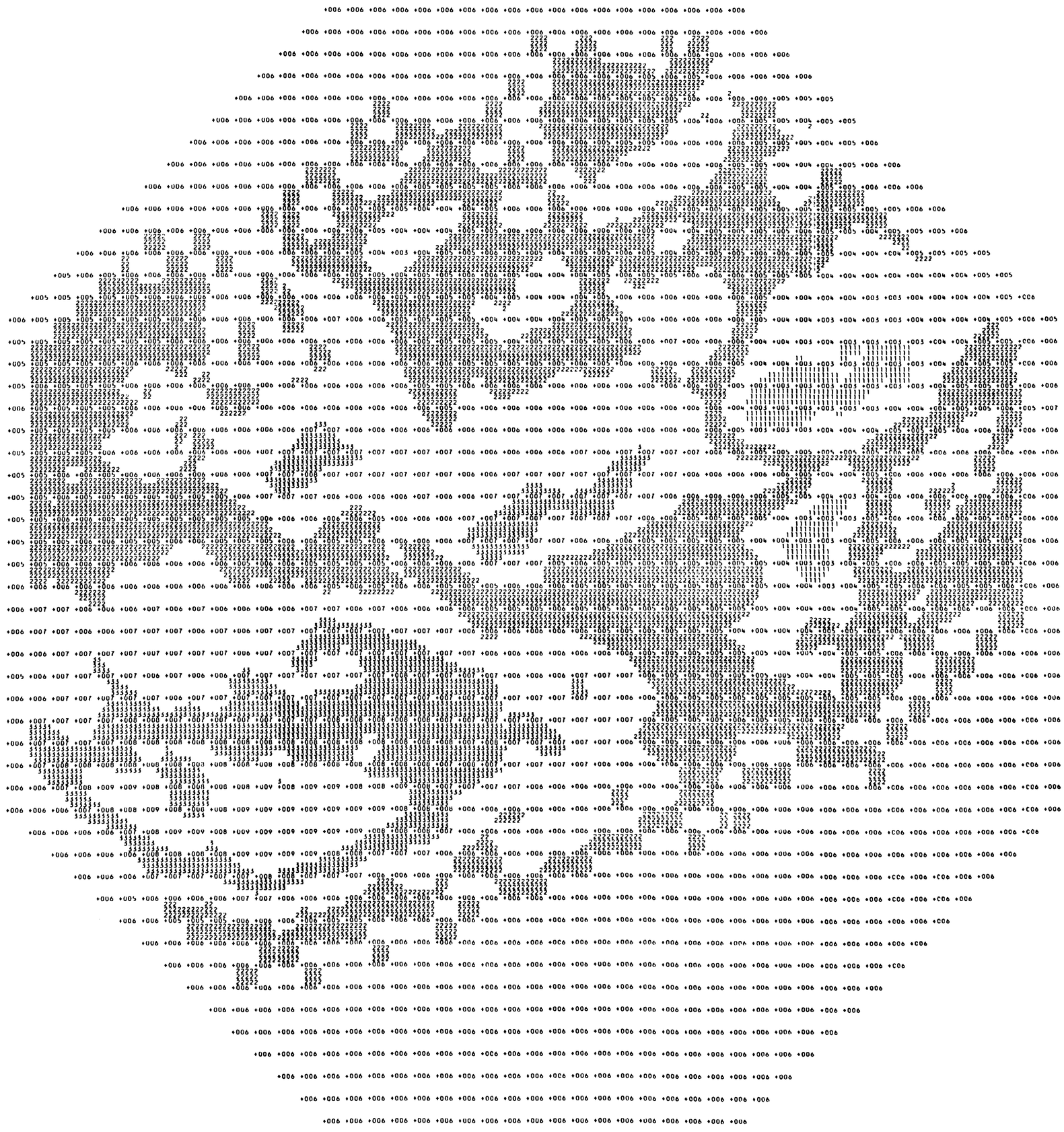
ORBIT 87

Channel 1

6–6.5 Microns



H

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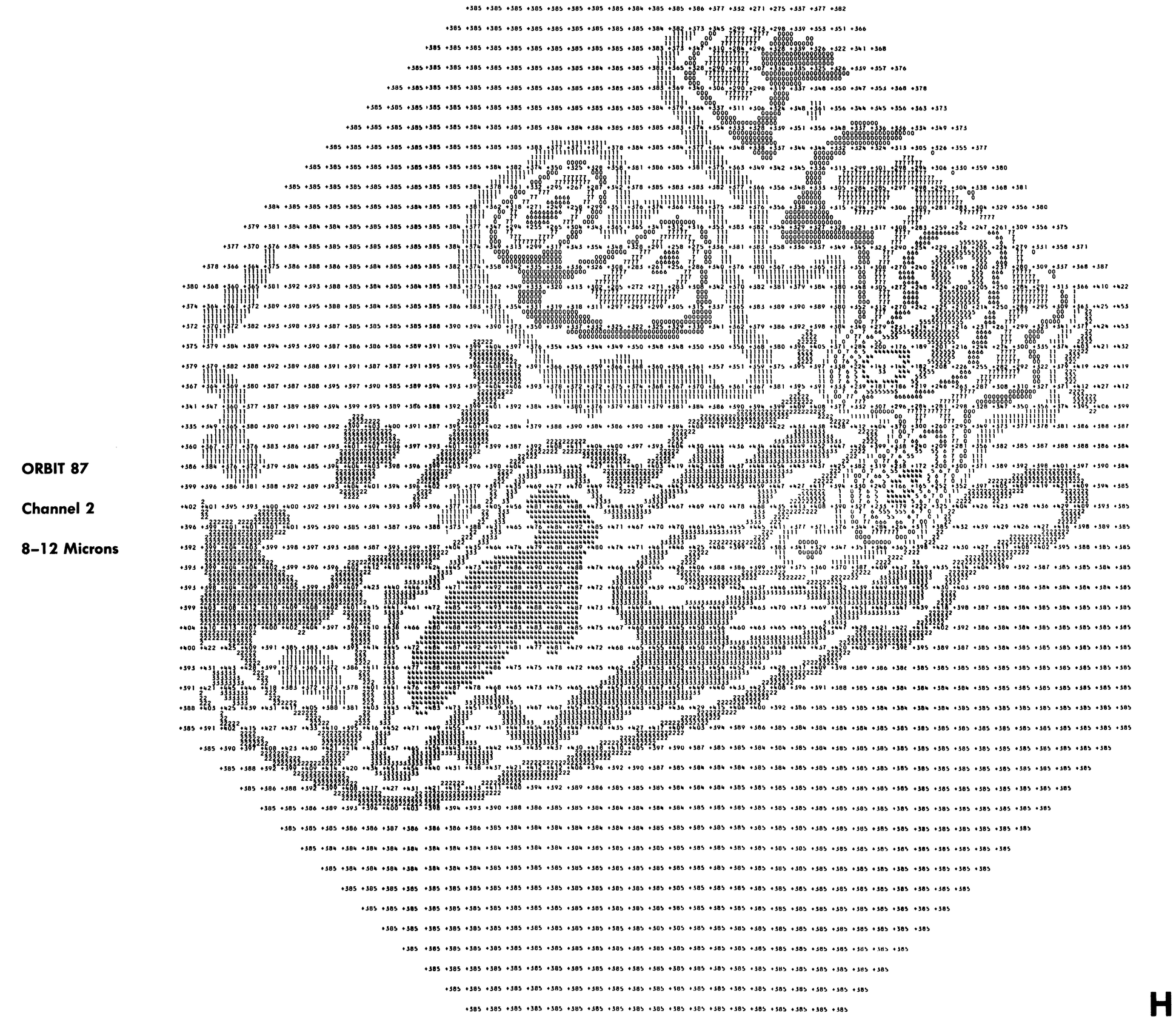
ORBIT 87

Channel 2

8–12 Microns



H

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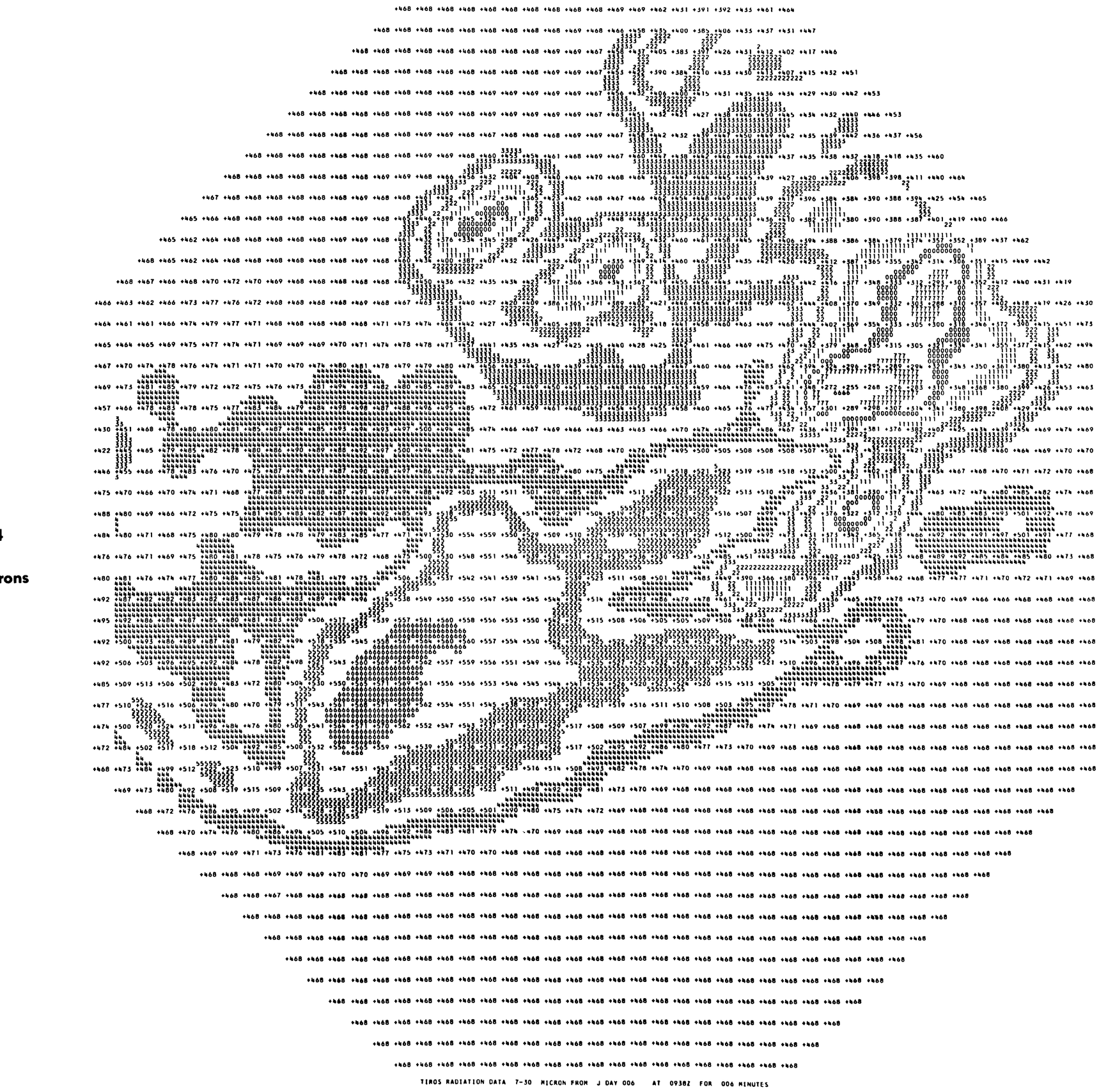
ORBIT 87

Channel 4

8–30 Microns



H

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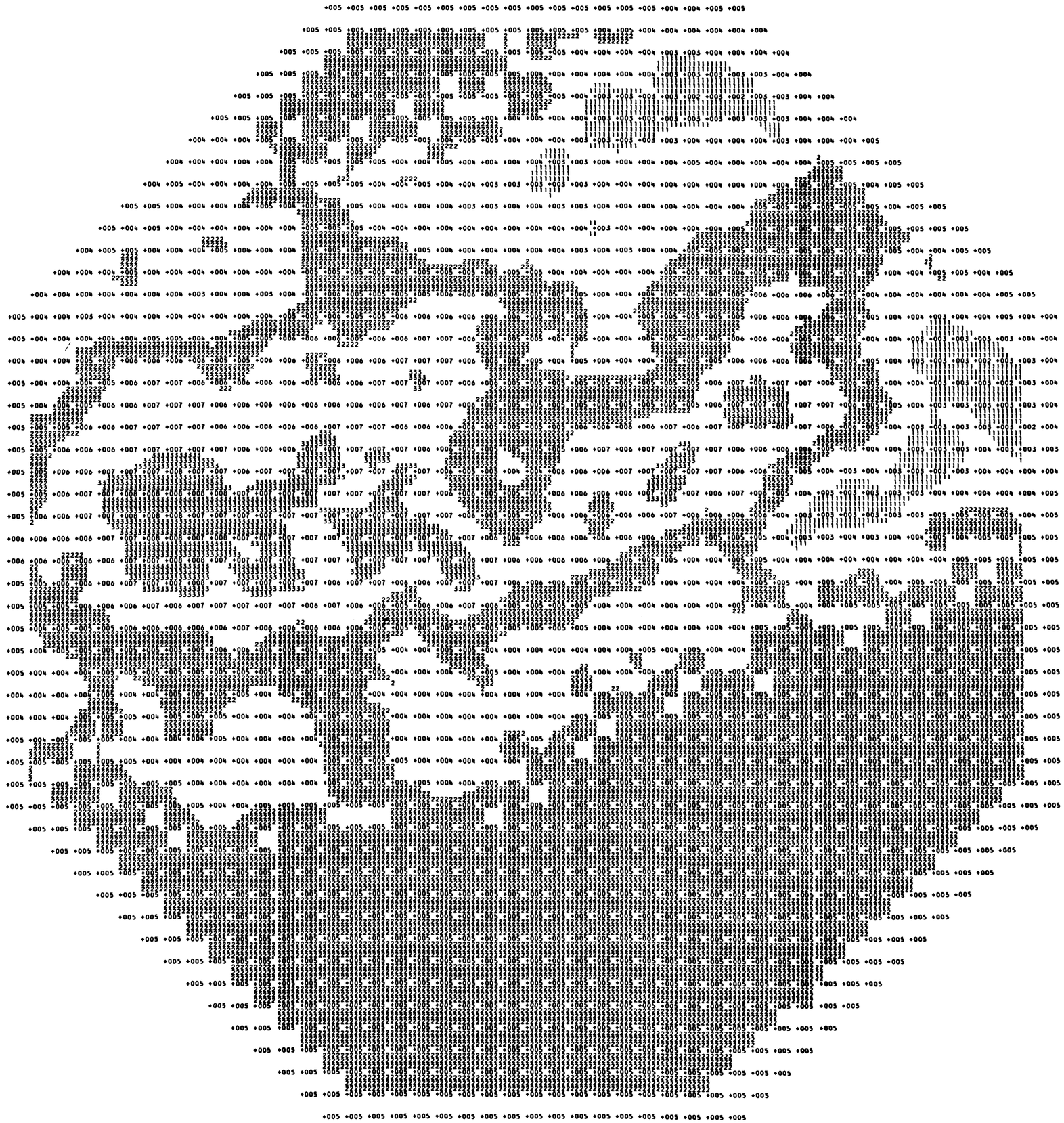
ORBIT 88

Channel 1

6–6.5 Microns



TIROS RADIATION DATA 6-6.5 MICRON FROM J DAY 006 AT 1121Z FOR 008 MINUTES

E

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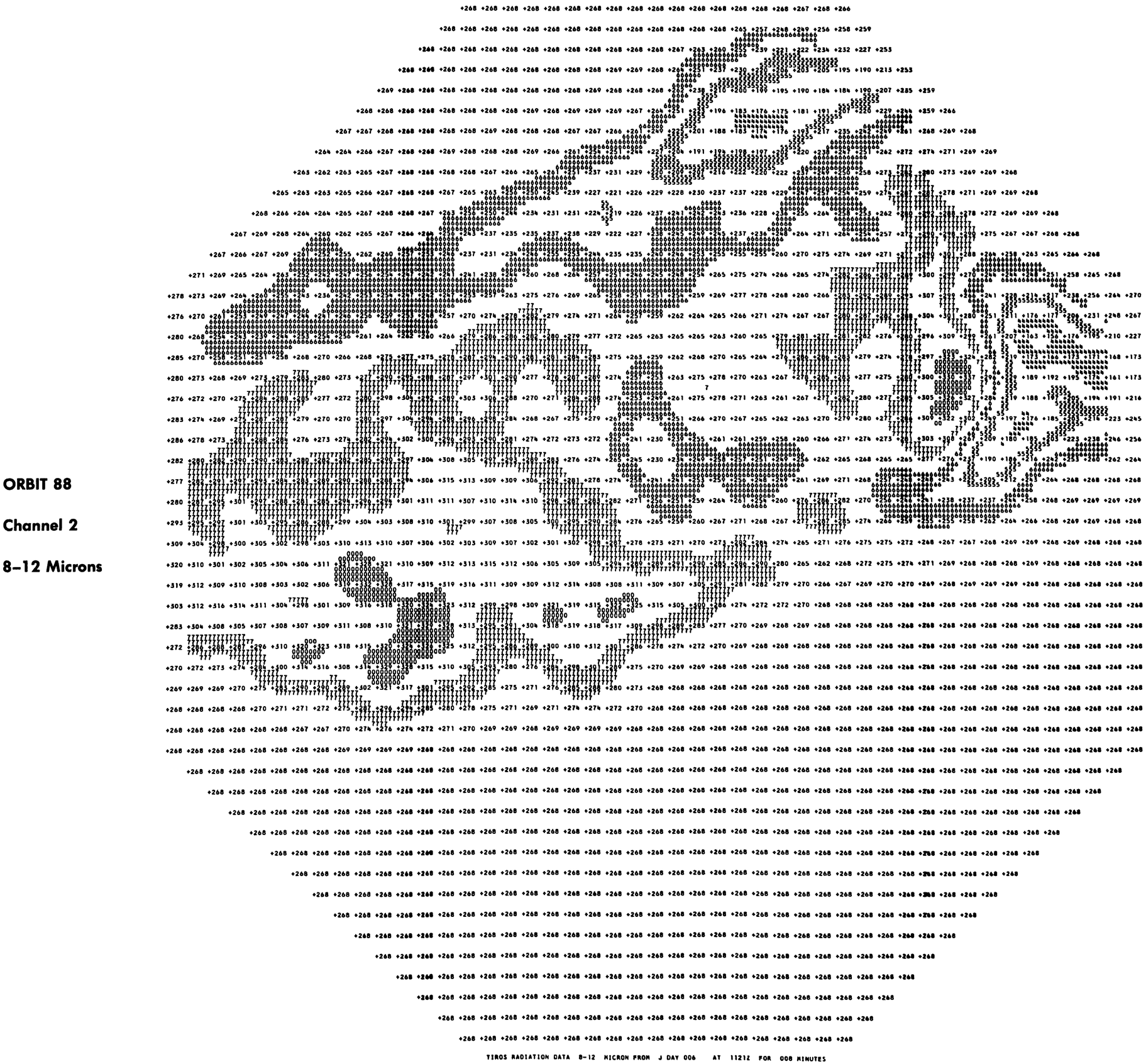
ORBIT 88

Channel 2

8–12 Microns



E

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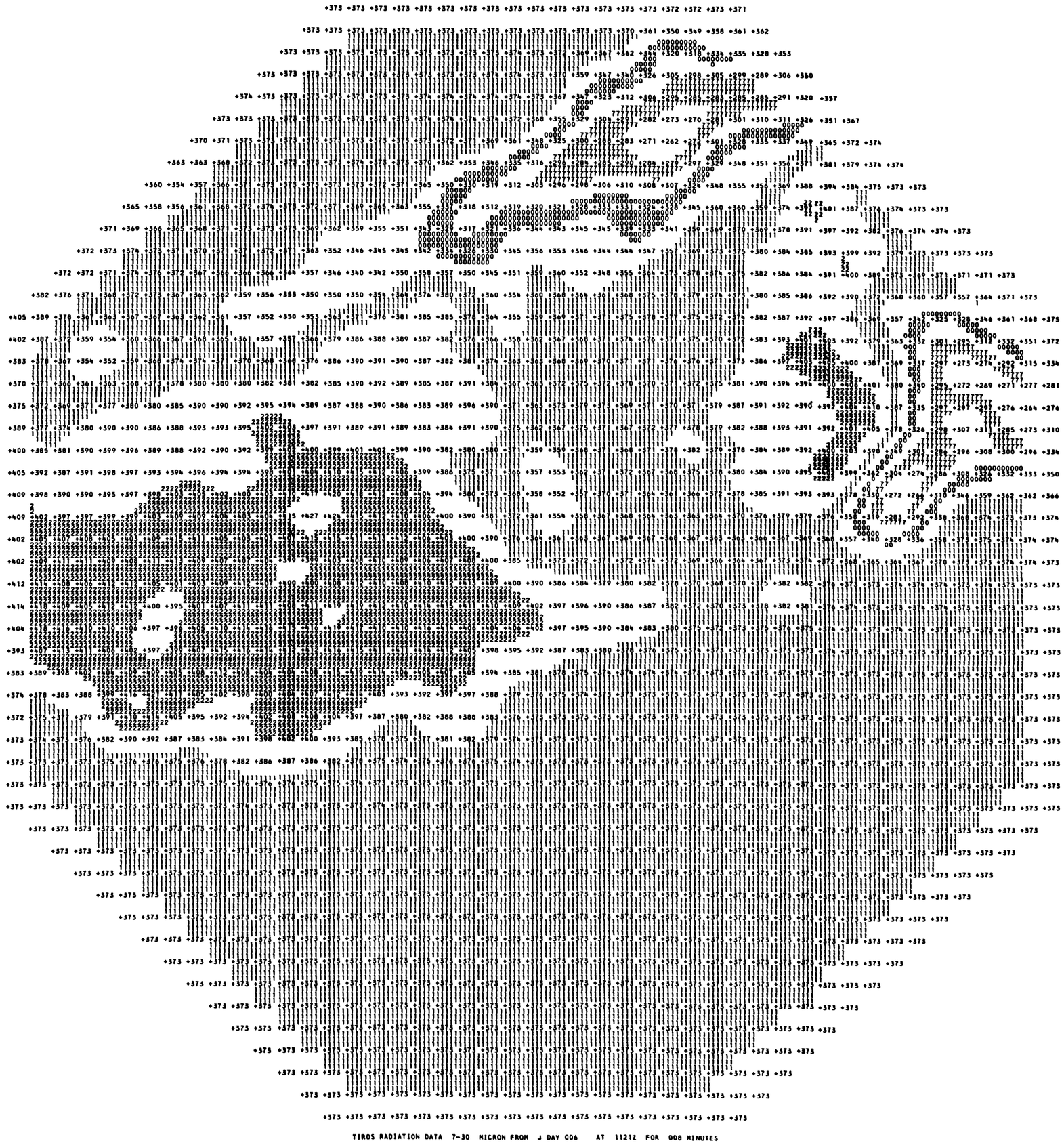
ORBIT 88

Channel 4

8–30 Microns



E

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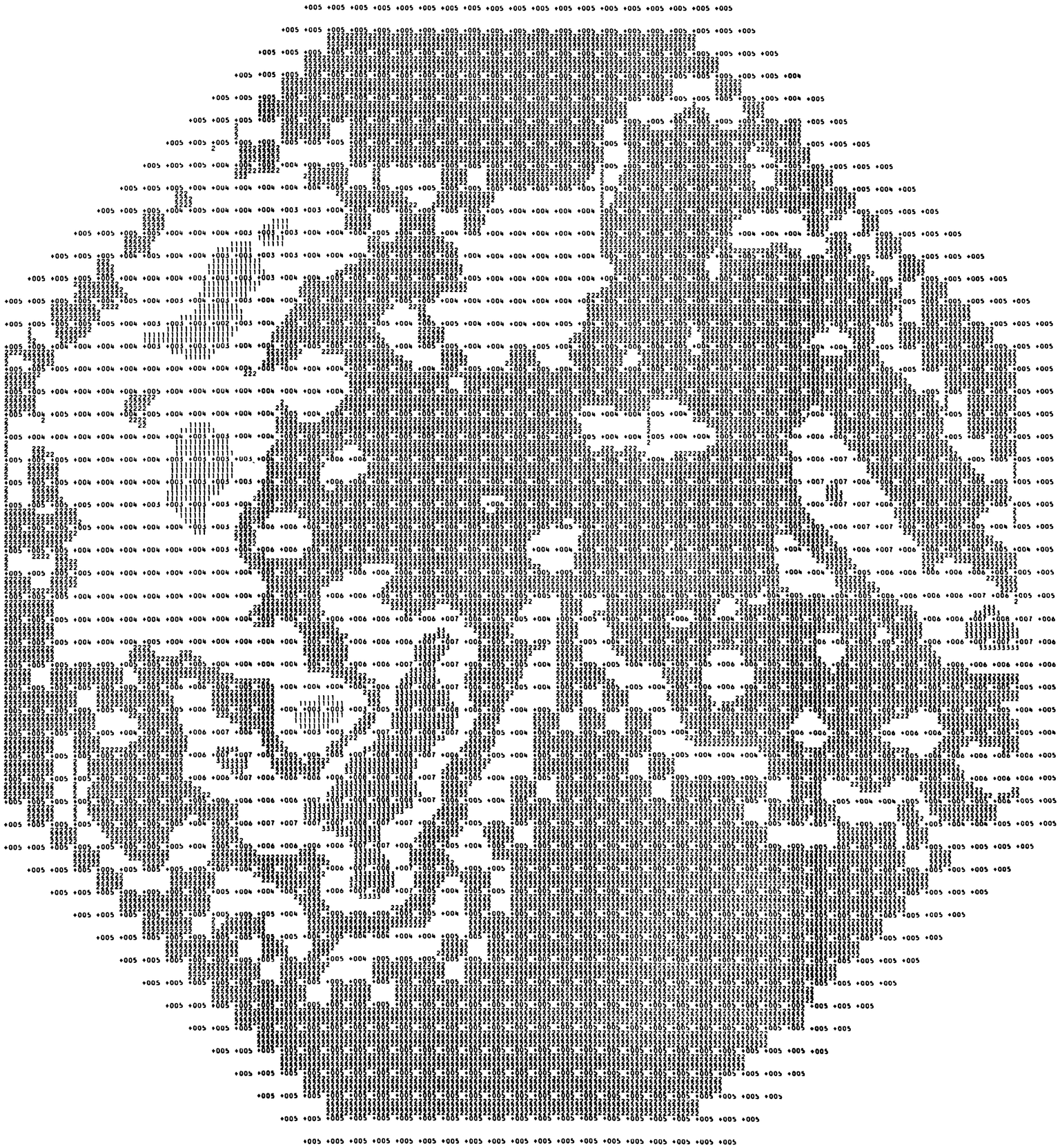
ORBIT 89

Channel 1

6–6.5 Microns



TIROS RADIATION DATA 6-6.5 MICRON FROM J DAY 006 AT 13052 FOR 006 MINUTES

B

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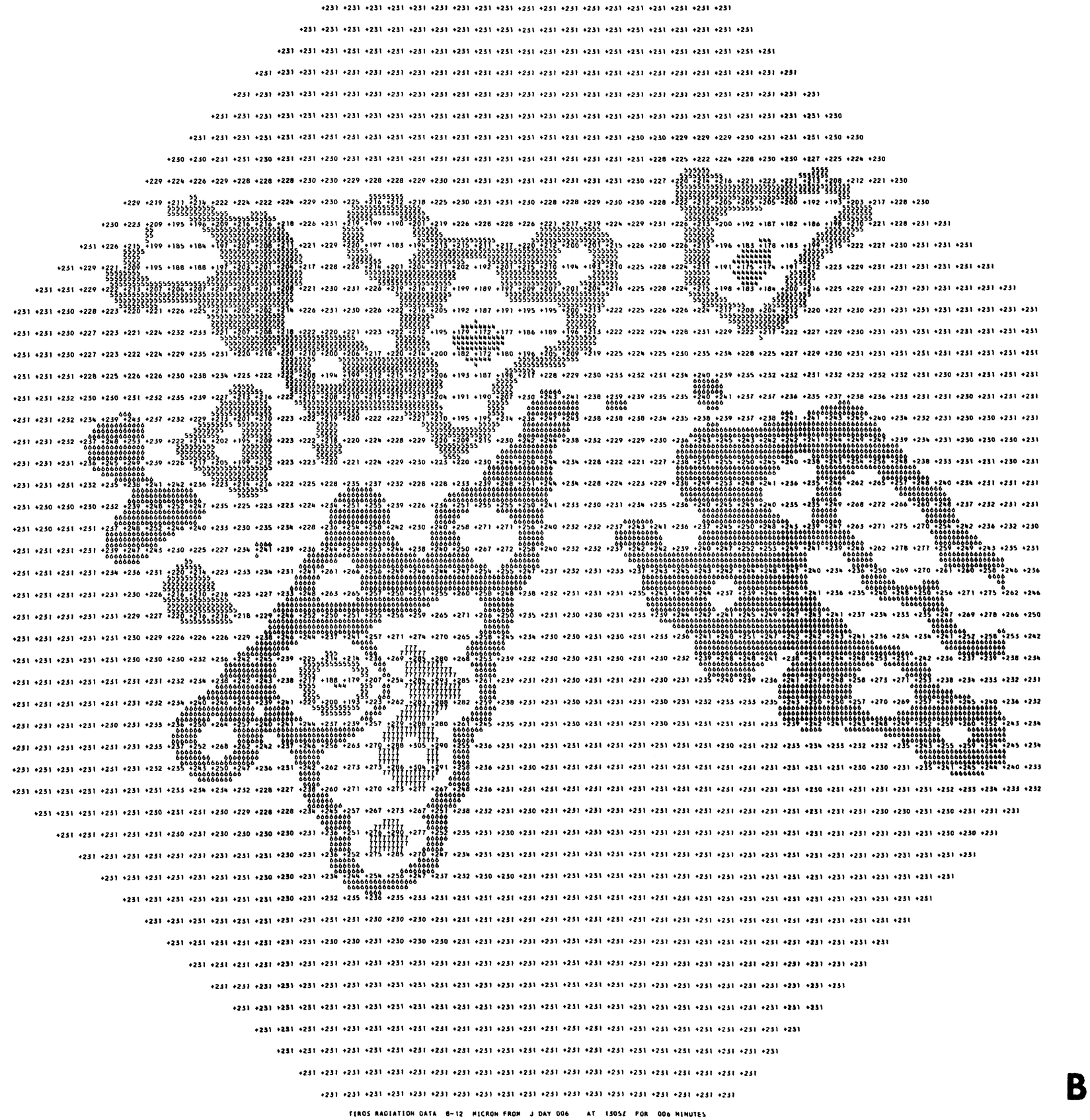
ORBIT 89

Channel 2

8–12 Microns



B

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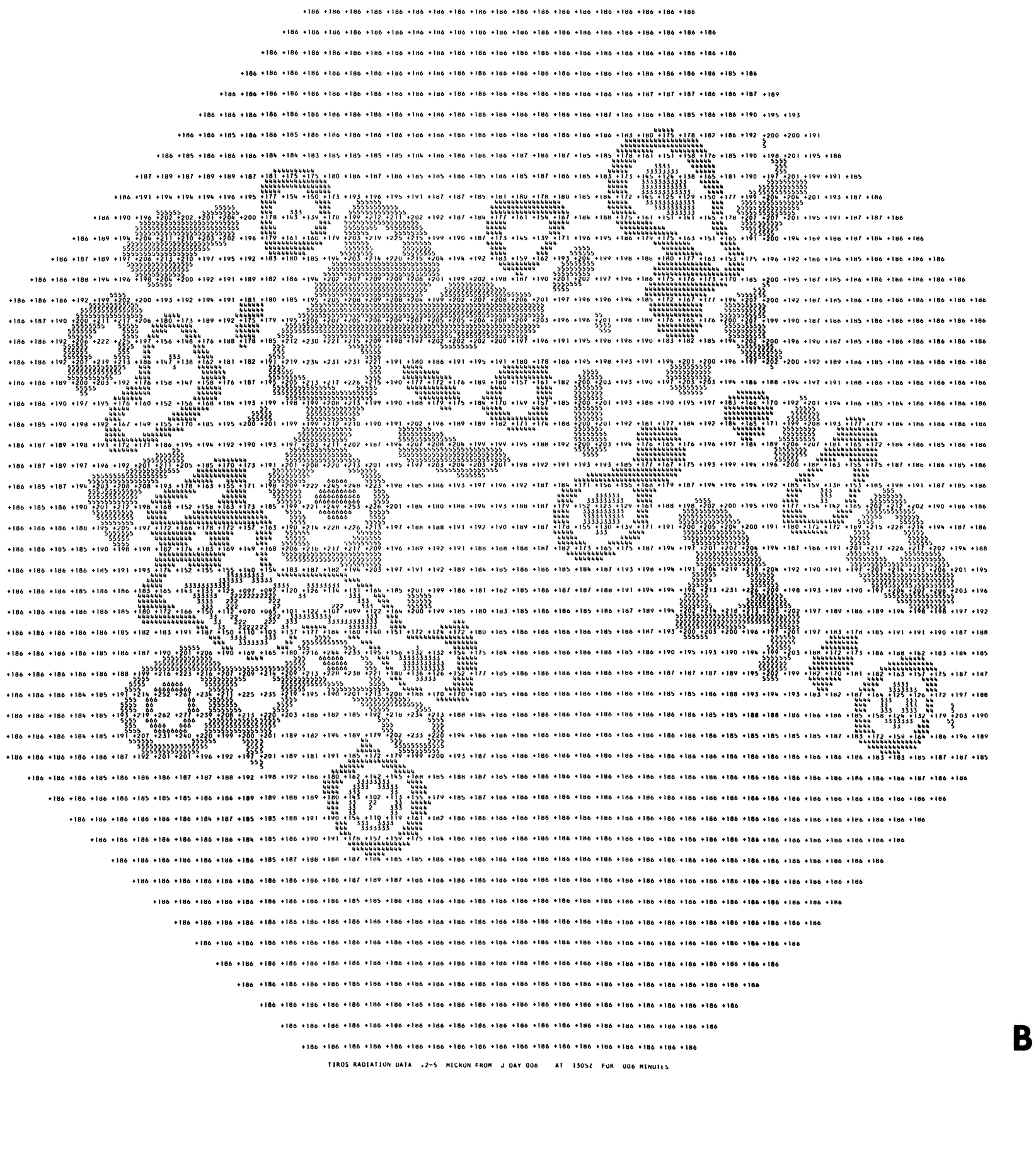
ORBIT 89

Channel 3

.25–6 Microns



B

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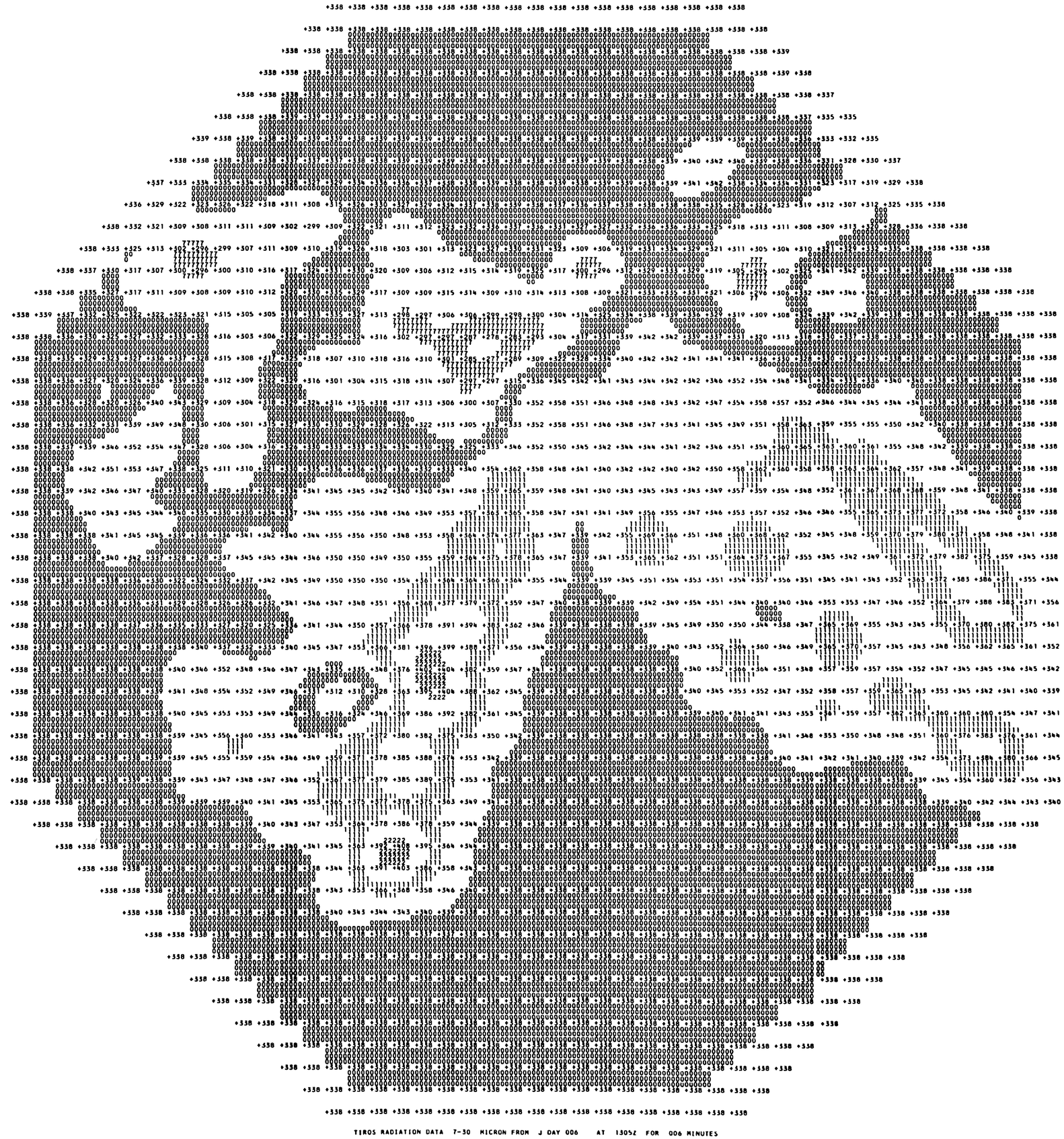
ORBIT 89

Channel 4

8–30 Microns



TIROS RADIATION DATA 7-30 MICRON FROM J DAY 006 AT 1305Z FOR 006 MINUTES

B

606327 O—61——10

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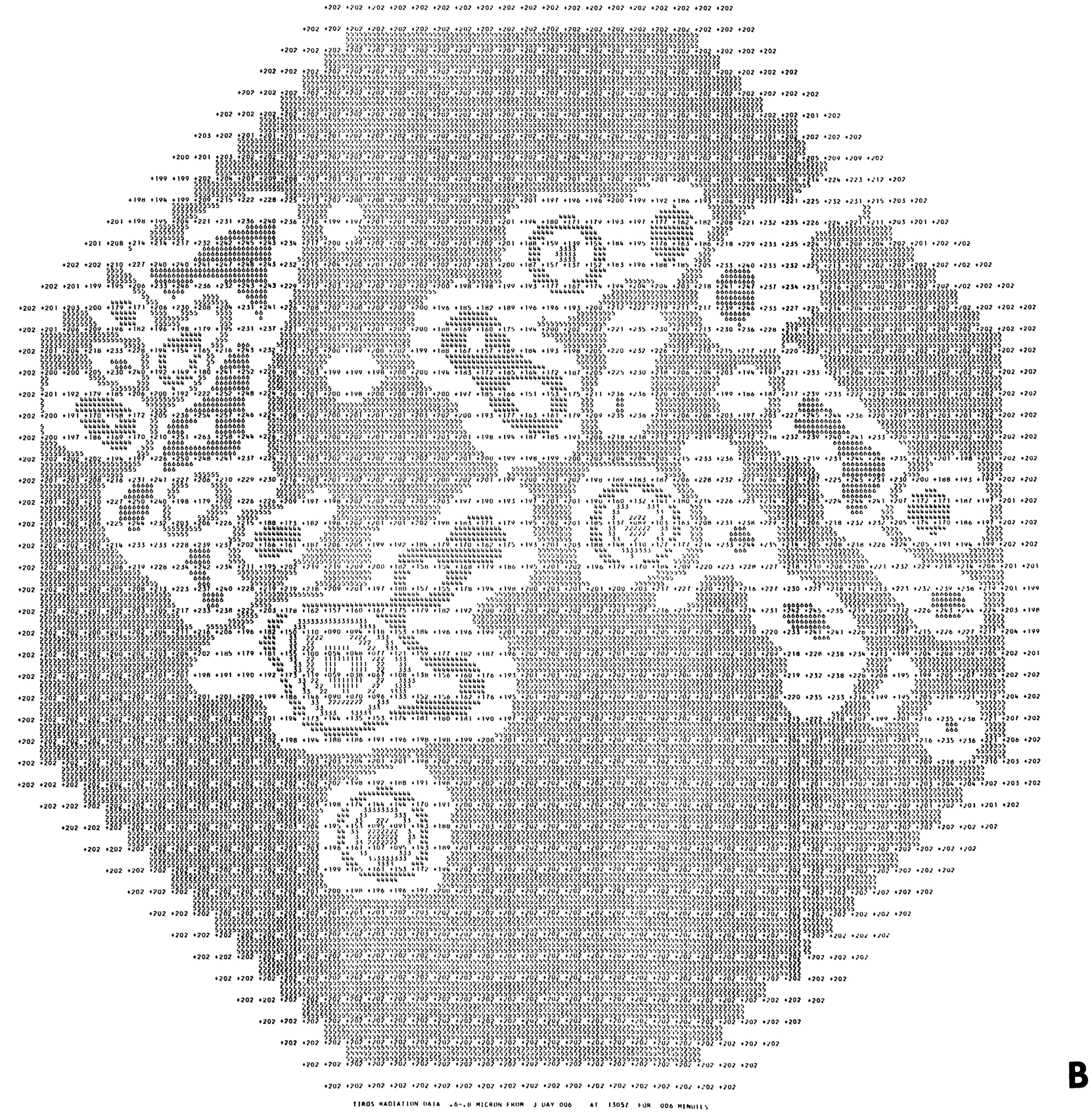
ORBIT 89

Channel 5

.55–.75 Microns



B

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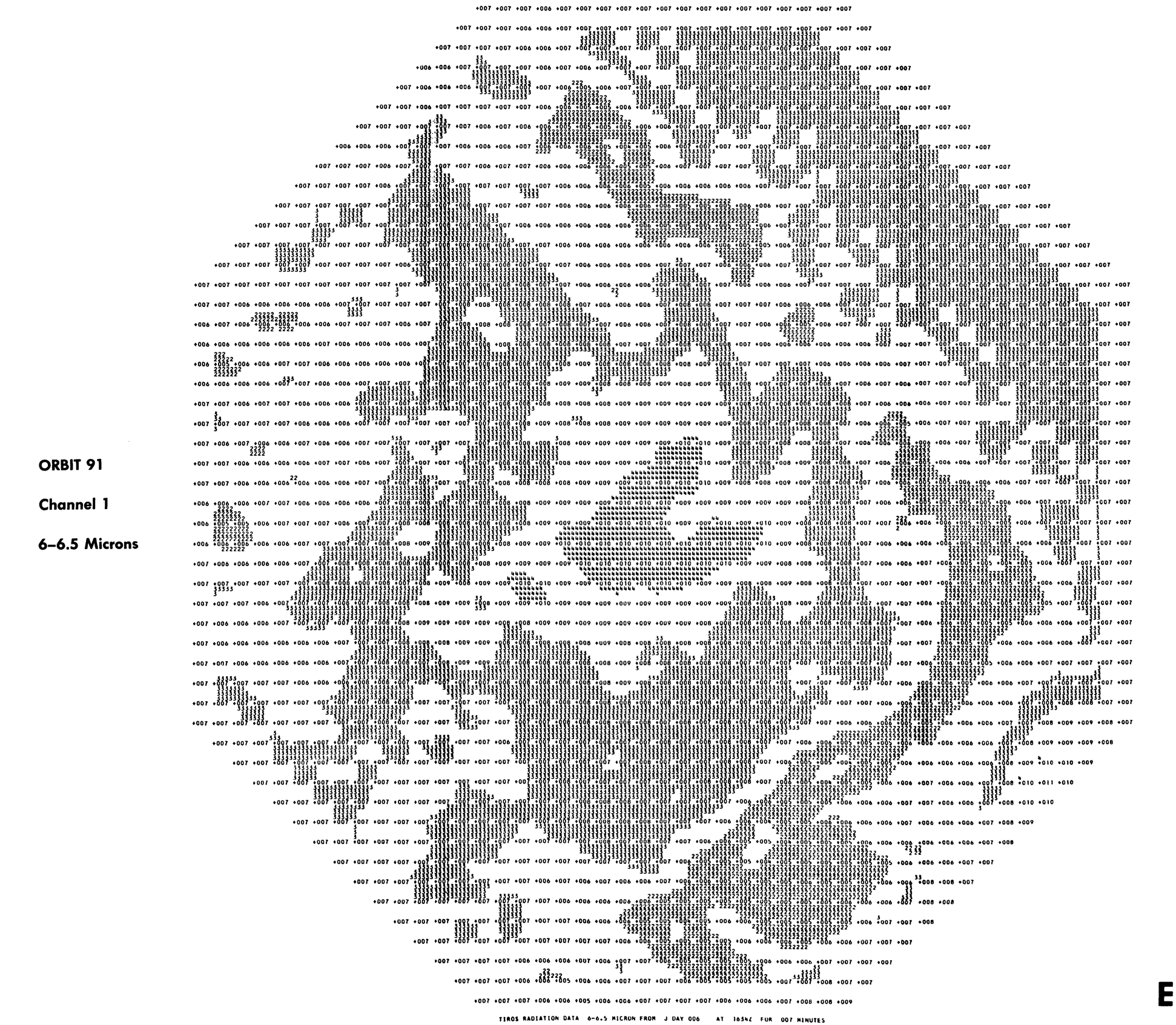
ORBIT 91

Channel 1

6–6.5 Microns



TIROS RADIATION DATA 6-6.5 MICRON FROM J DAY 006 AT 16542 FOR 007 MINUTES

E

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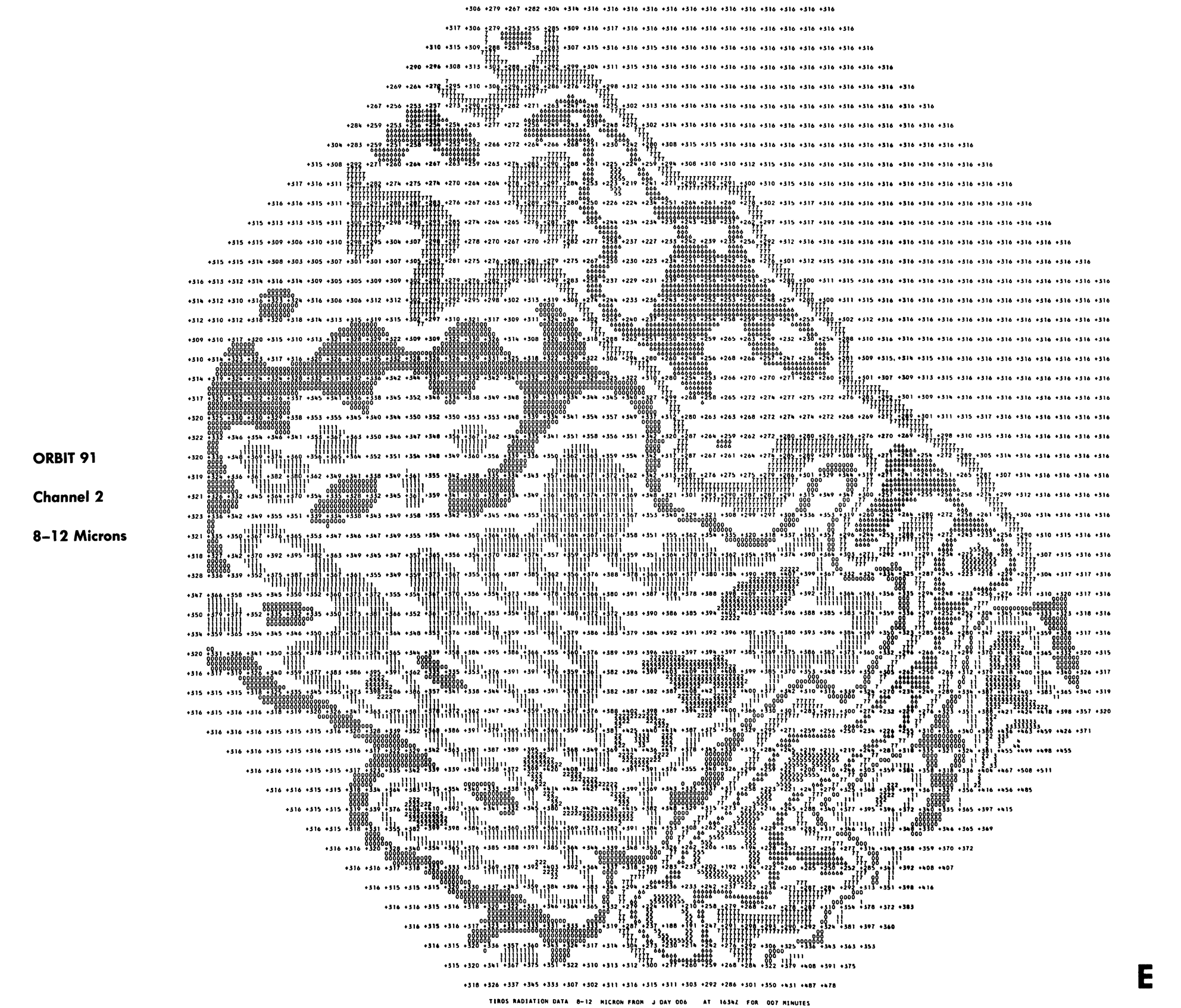
ORBIT 91

Channel 2

8–12 Microns



TIROS RADIATION DATA 8-12 MICRON FROM J DAY 006 AT 1634Z FOR 007 MINUTES

E

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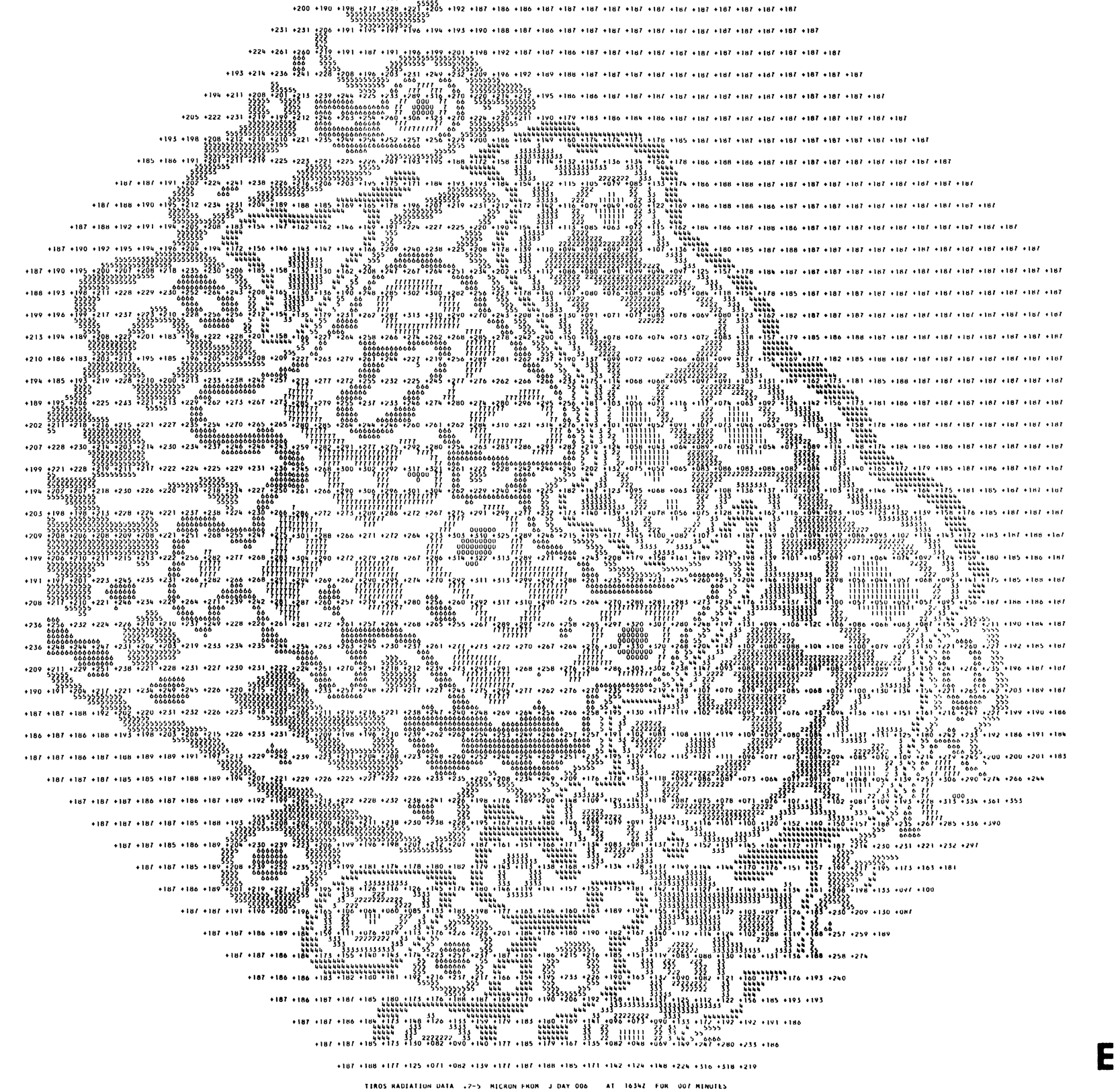
ORBIT 91

Channel 3

.25–6 Microns



TIROS RADIATION DATA .2-5 MICRON FROM J DAY 006 AT 1634Z FOR 007 MINUTES

E

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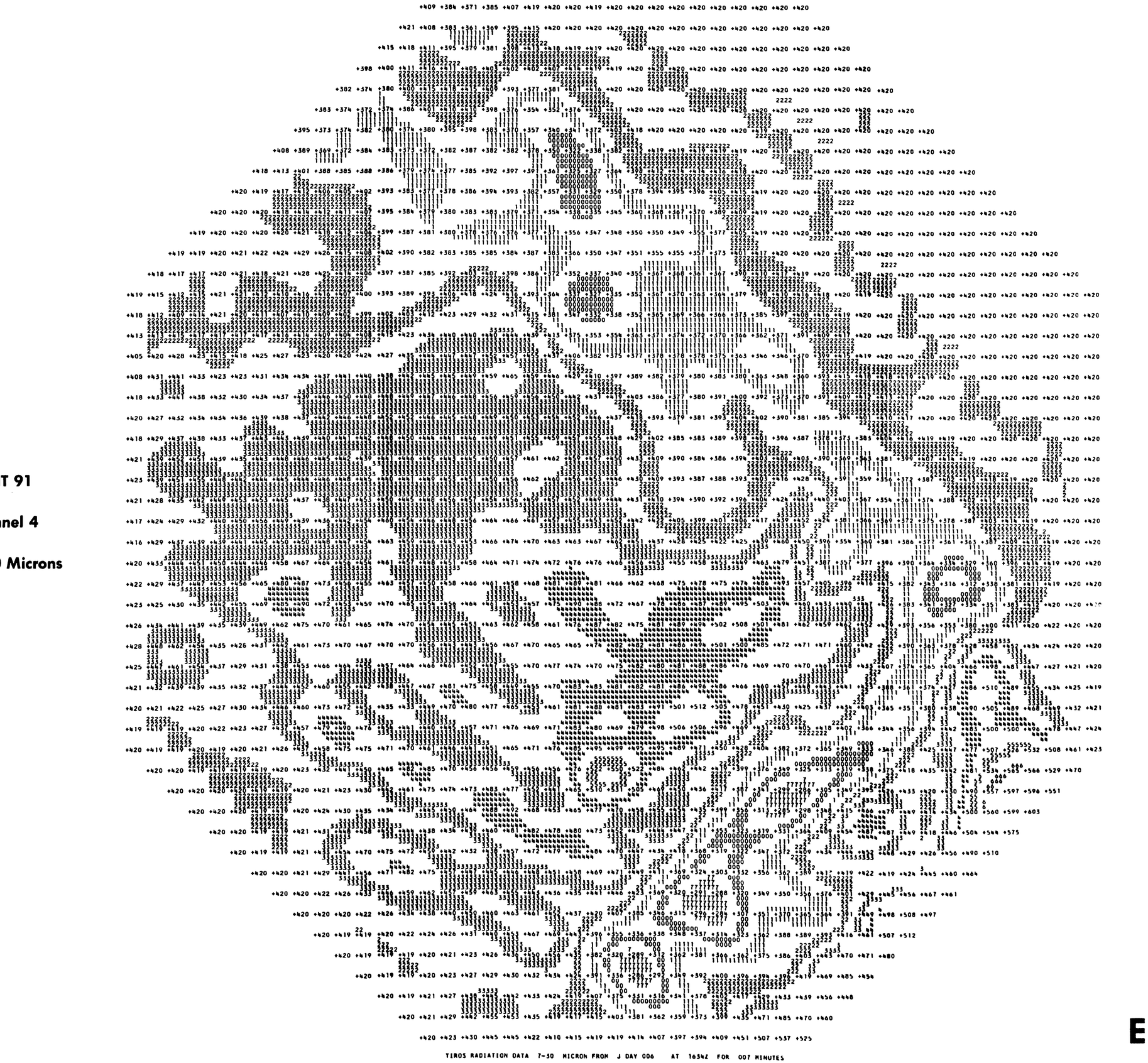

ORBIT 91

Channel 4

8–30 Microns

E

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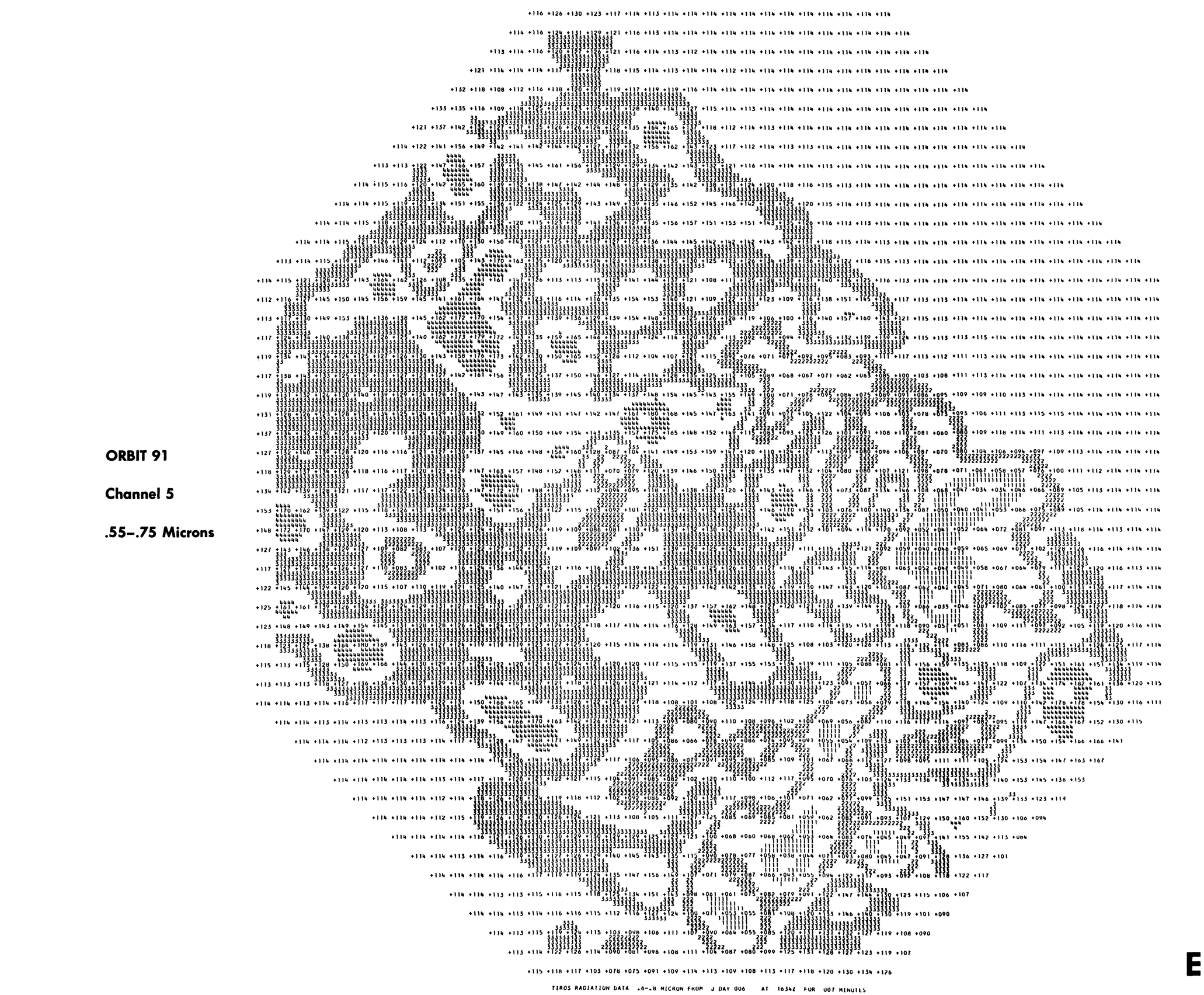
ORBIT 91

Channel 5

.55–.75 Microns



E

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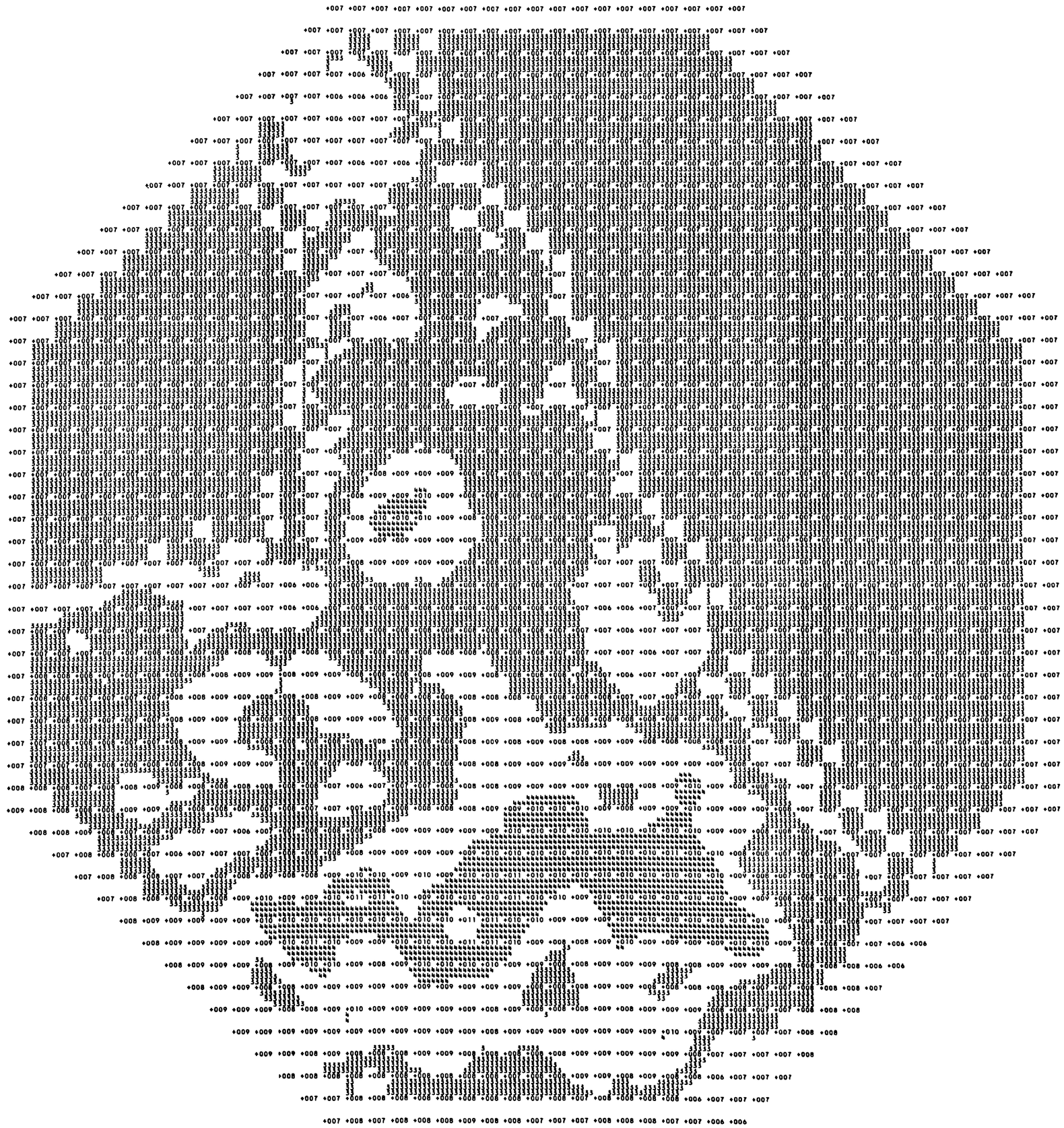
ORBIT 93

Channel 1

6–6.5 Microns



TIROS RADIATION DATA 6-6.5 MICRON FROM J DAY 006 AT 18202 FOR 007 MINUTES

H

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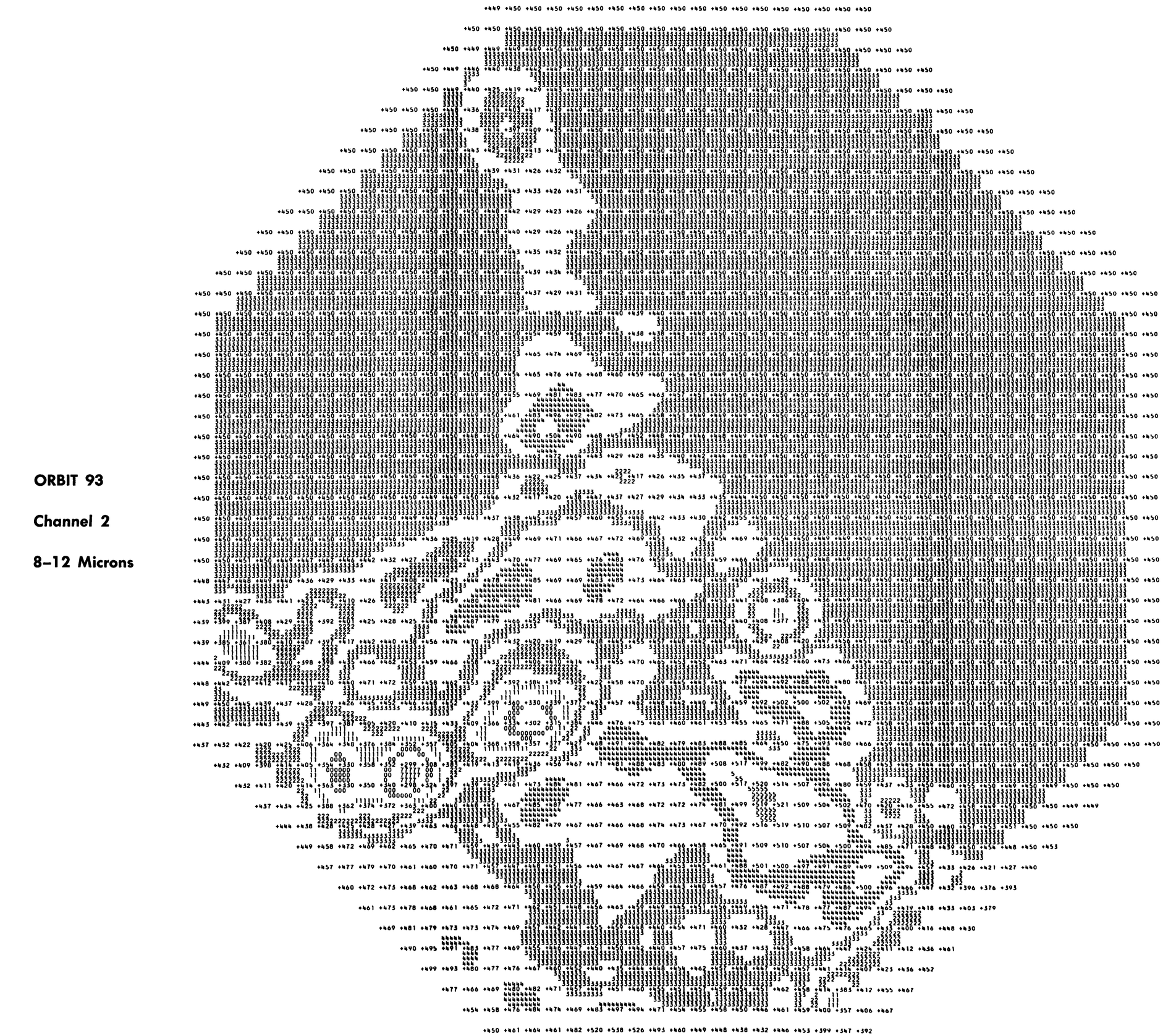
ORBIT 93

Channel 2

8–12 Microns



TIROS RADIATION DATA 8-12 MICRON FROM J DAY 006 AT 1820Z FOR 007 MINUTES

H

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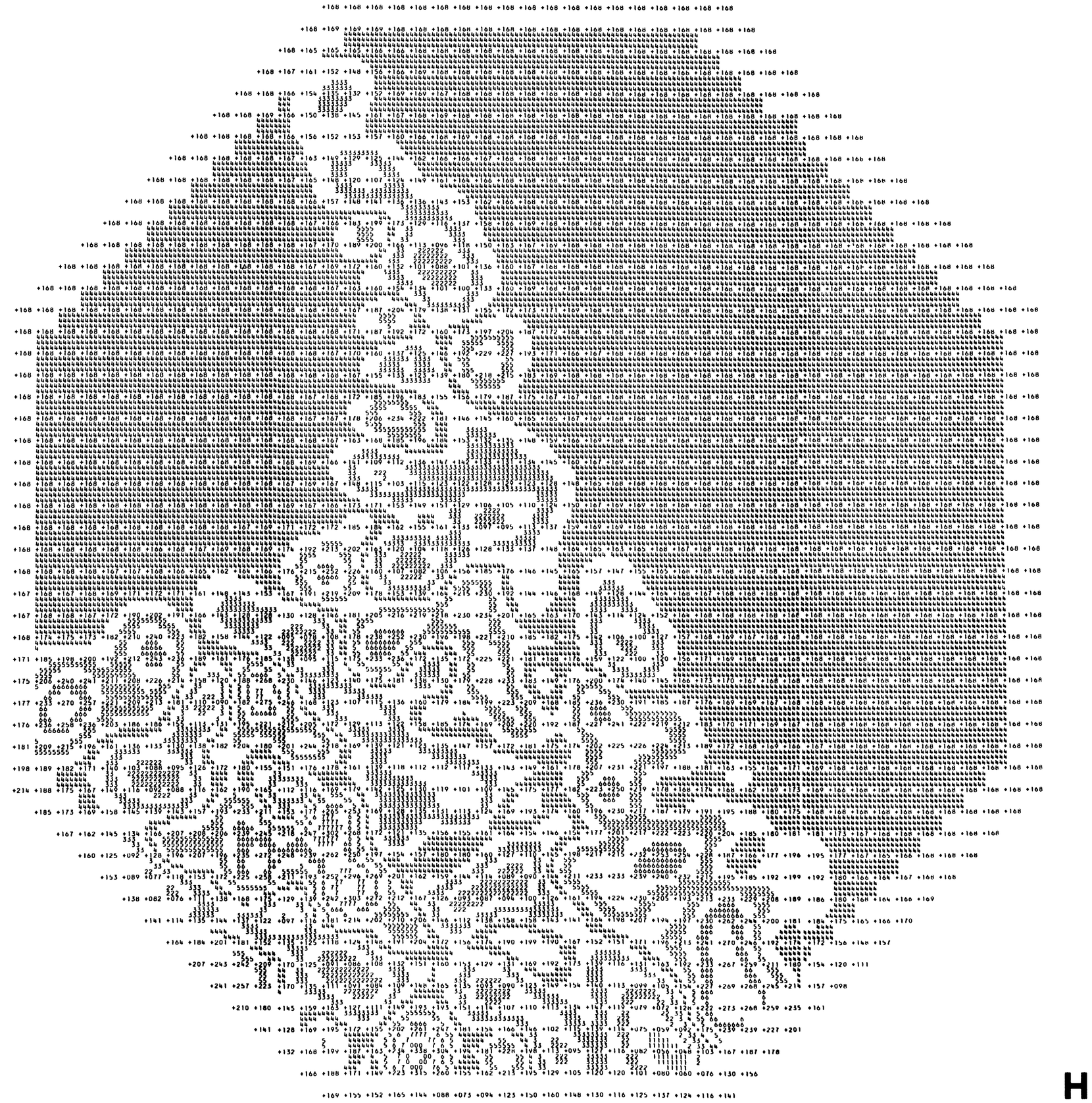
ORBIT 93

Channel 3

.25–6 Microns



TIROS RADIATION DATA .2-5 MICRON FROM J DAY 006 AT 1820Z FOR 007 MINUTES

H

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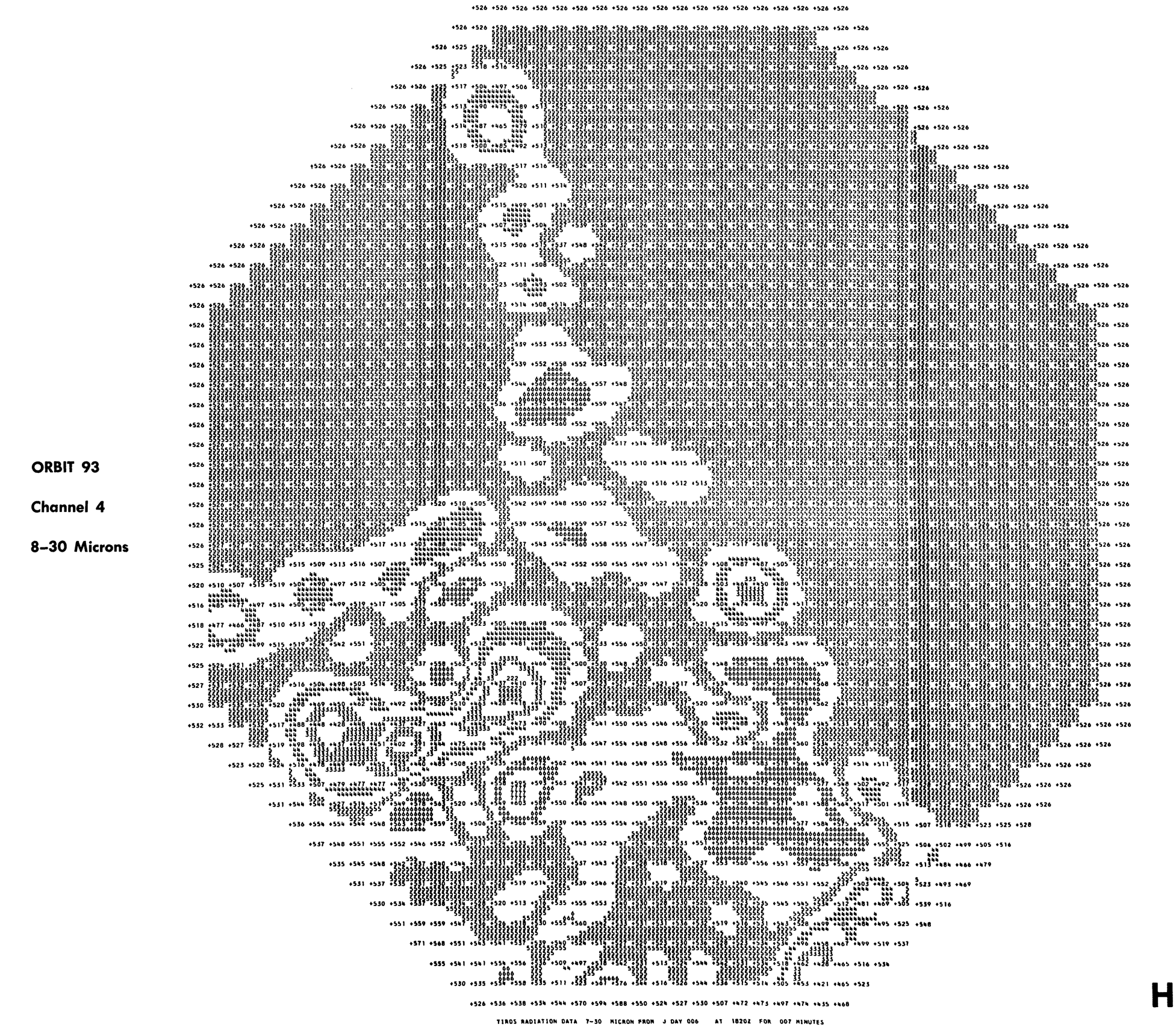
ORBIT 93

Channel 4

8–30 Microns



TIROS RADIATION DATA 7-30 MICRON FROM J DAY 006 AT 1820Z FOR 007 MINUTES

H

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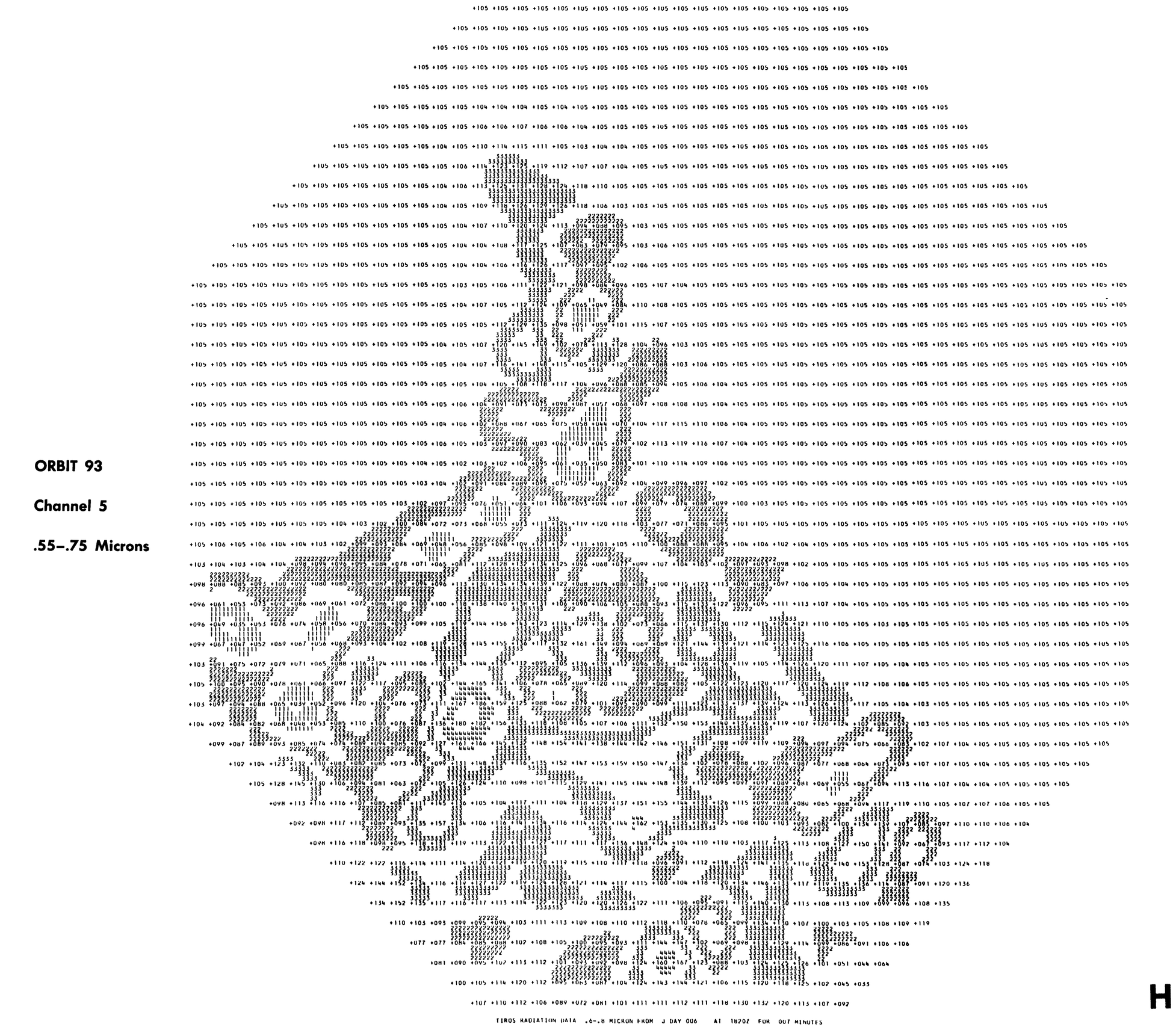
ORBIT 93

Channel 5

.55–.75 Microns



TIROS RADIATION DATA .6-.8 MICRON FROM J DAY 006 AT 1820Z FOR 007 MINUTES

H

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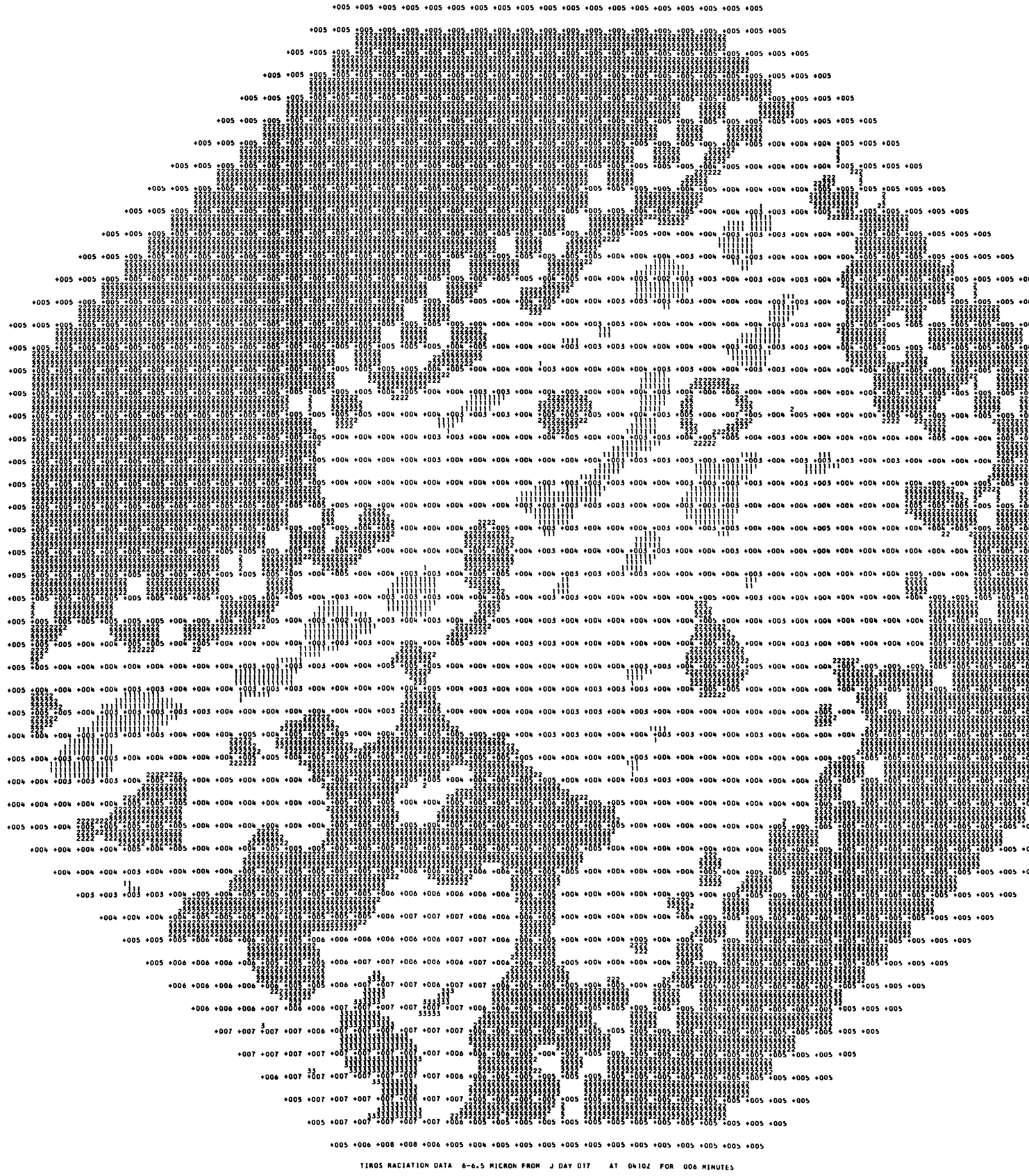
ORBIT 254

Channel 1

6–6.5 Microns



TIROS RACIATION DATA 6-6.5 MICRON FROM J DAY 017 AT 0410Z FOR 006 MINUTES

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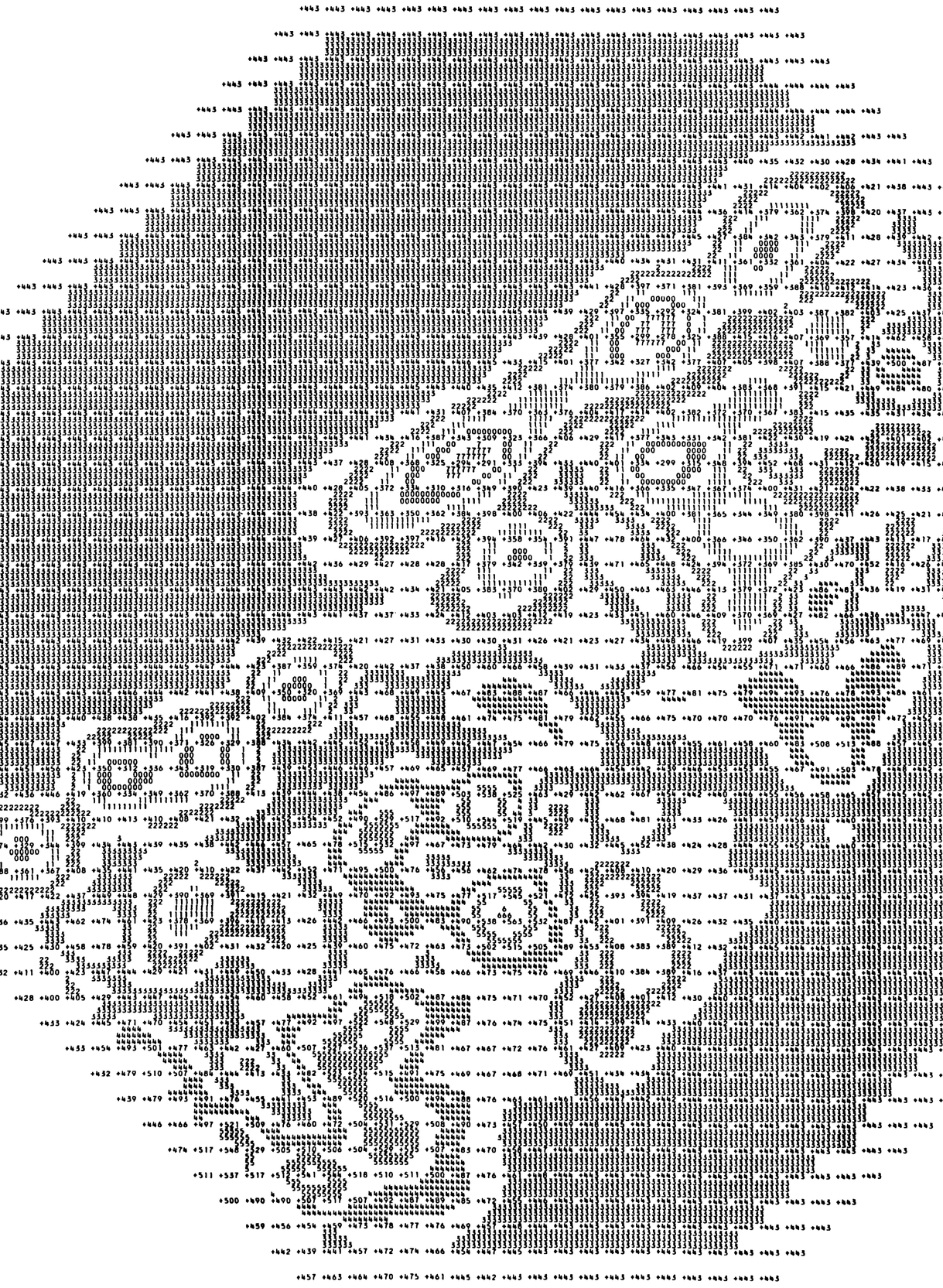
ORBIT 245

Channel 2

8–12 Microns



TIROS RADIATION DATA 8-12 MICRON FROM J DAY 017 AT 0410Z FOR 006 MINUTES

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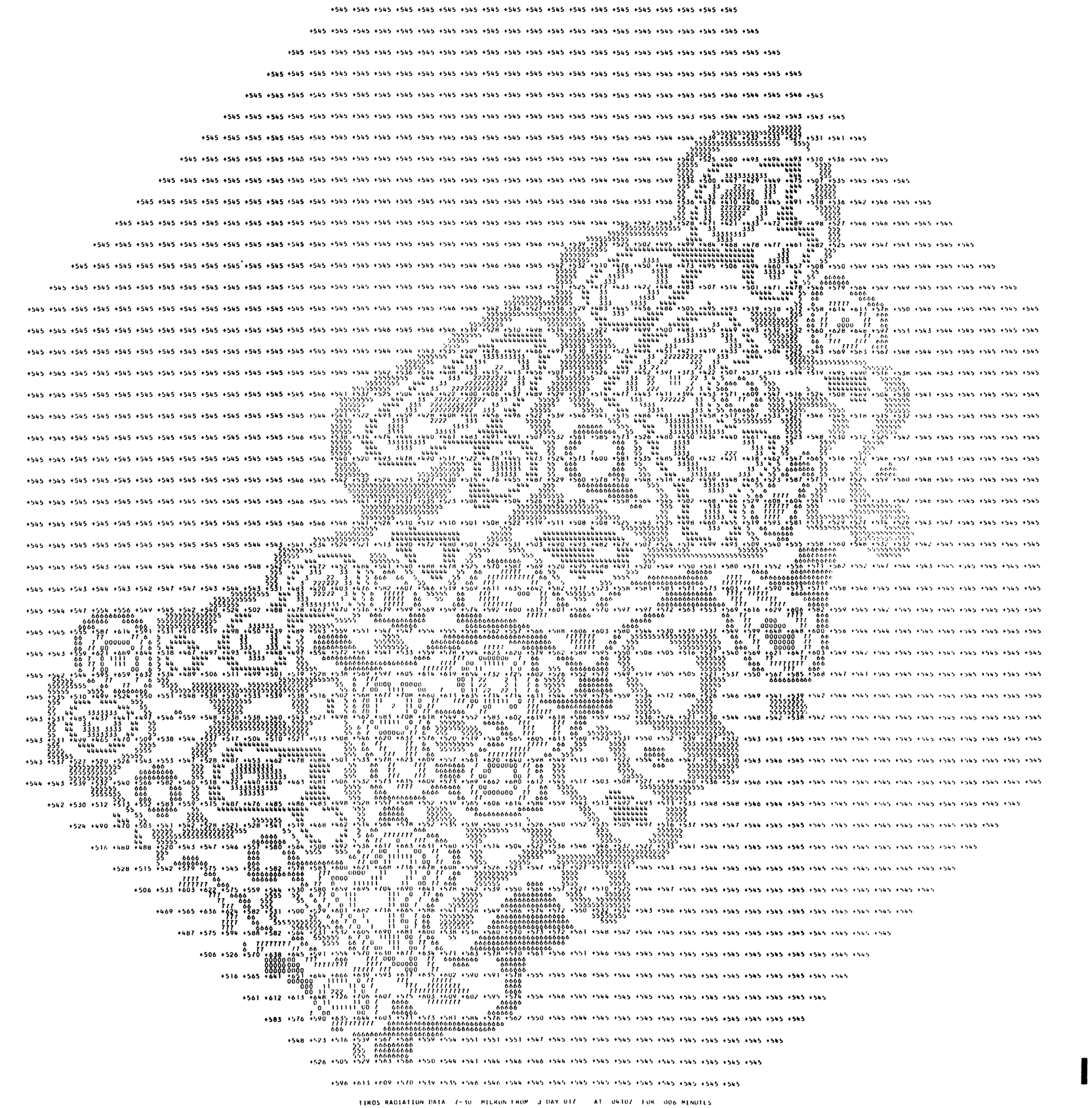
ORBIT 245

Channel 4

8–30 Microns



TIROS RADIATION DATA 7-50 MICRON FROM J DAY 017 AT 04107 FOR 006 MINUTES

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ORBIT 246

Channel 1

6–6.5 Microns

H

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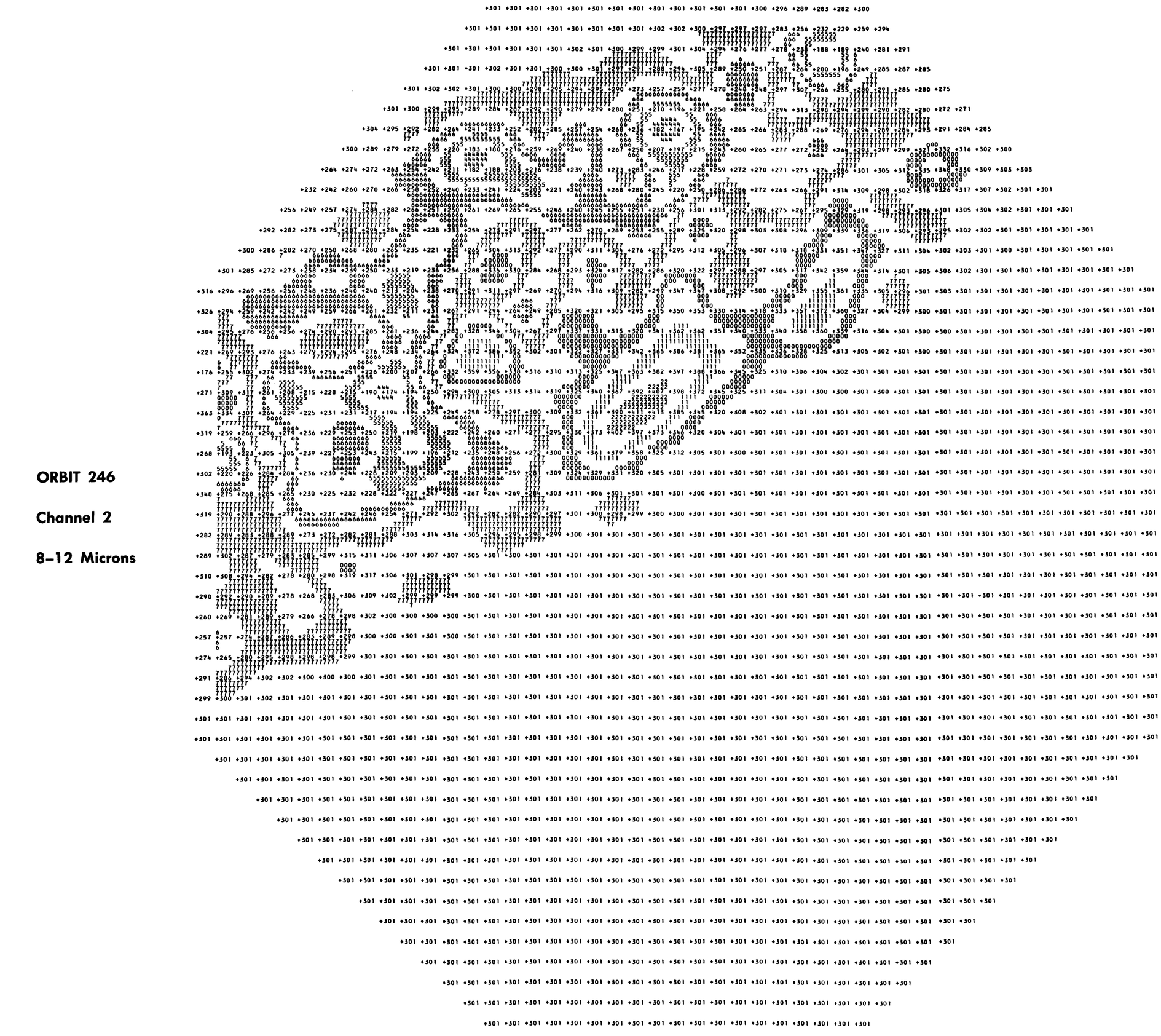
ORBIT 246

Channel 2

8–12 Microns



H

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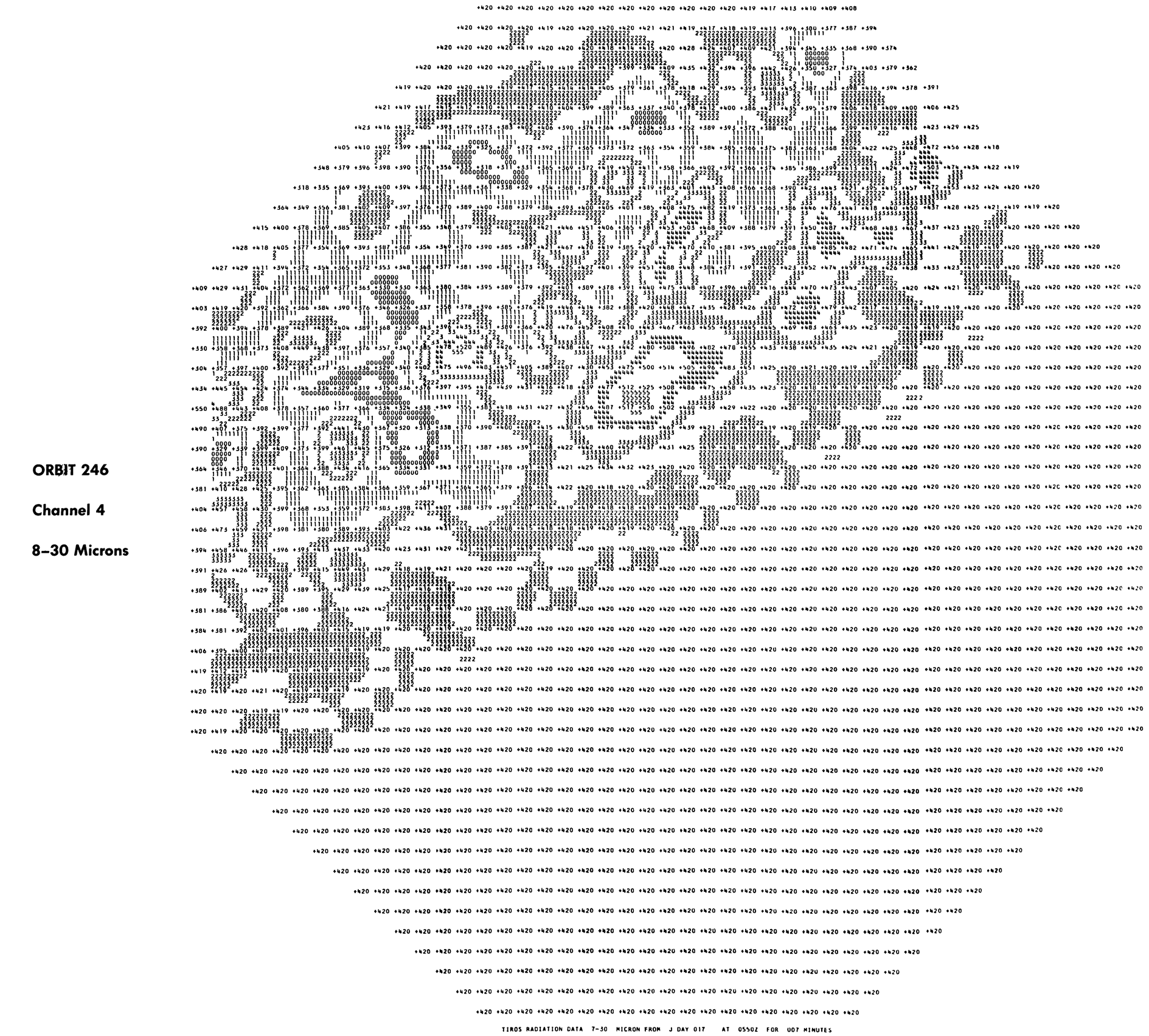
ORBIT 246

Channel 4

8–30 Microns



TIROS RADIATION DATA 7-30 MICRON FROM J DAY 017 AT 0550Z FOR 007 MINUTES

H

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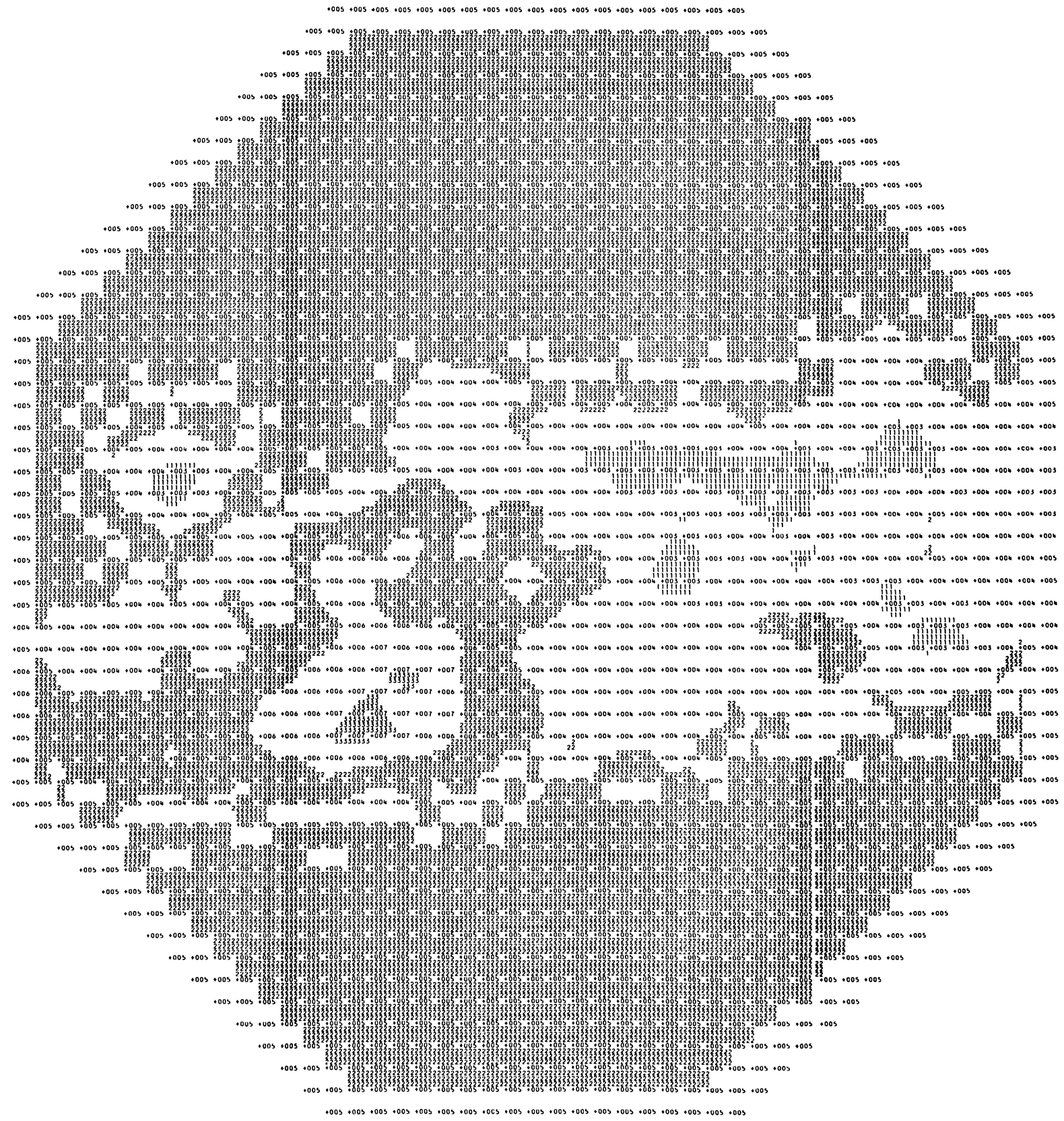
ORBIT 247

Channel 1

6–6.5 Microns



TIROS RADIATION DATA 6-6.5 MICRON FROM J DAY 017 AT 07332 FOR 007 MINUTES

D

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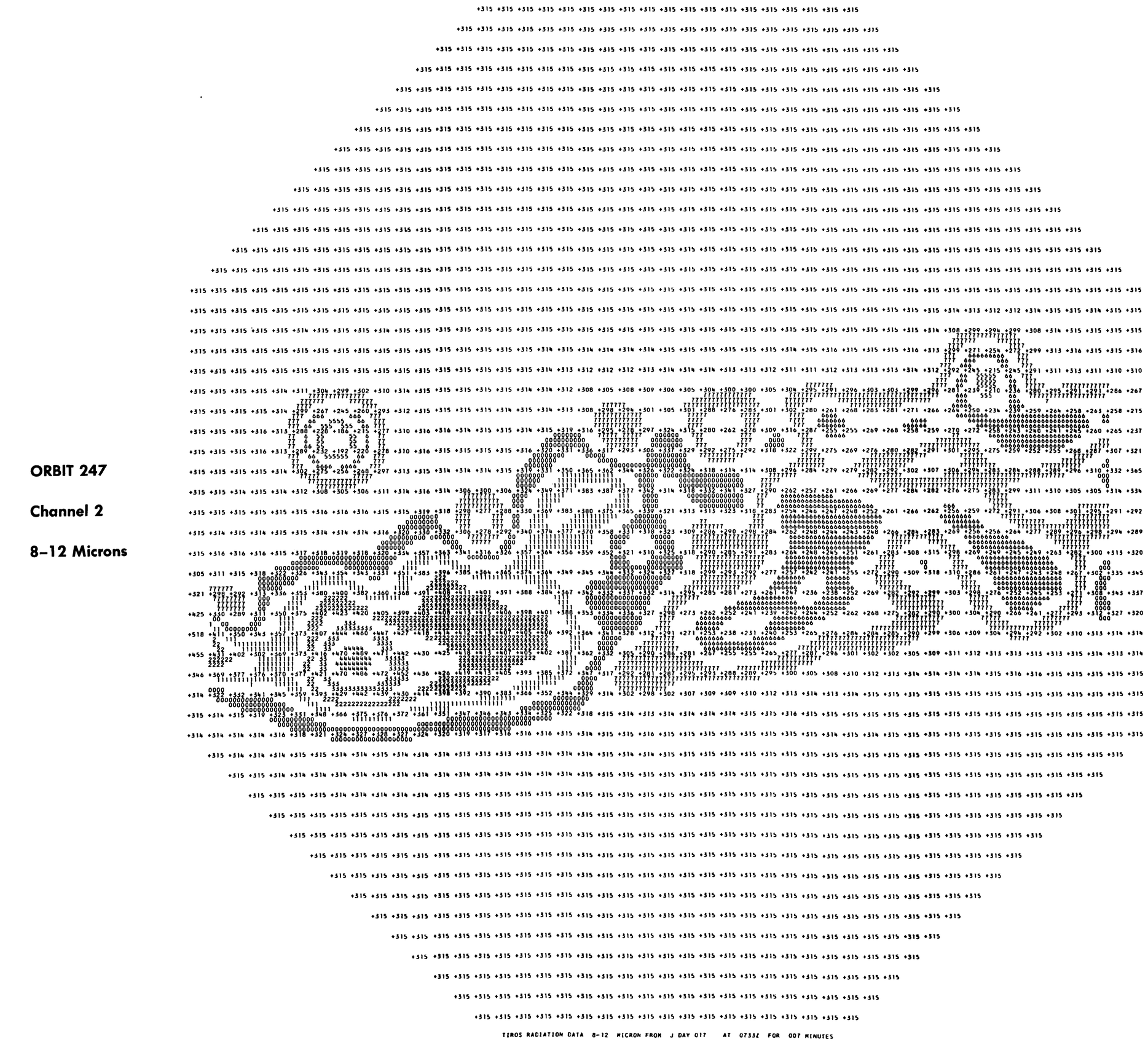
ORBIT 247

Channel 2

8–12 Microns



TIROS RADIATION DATA 8-12 MICRON FROM J DAY 017 AT 0733Z FOR 007 MINUTES

D

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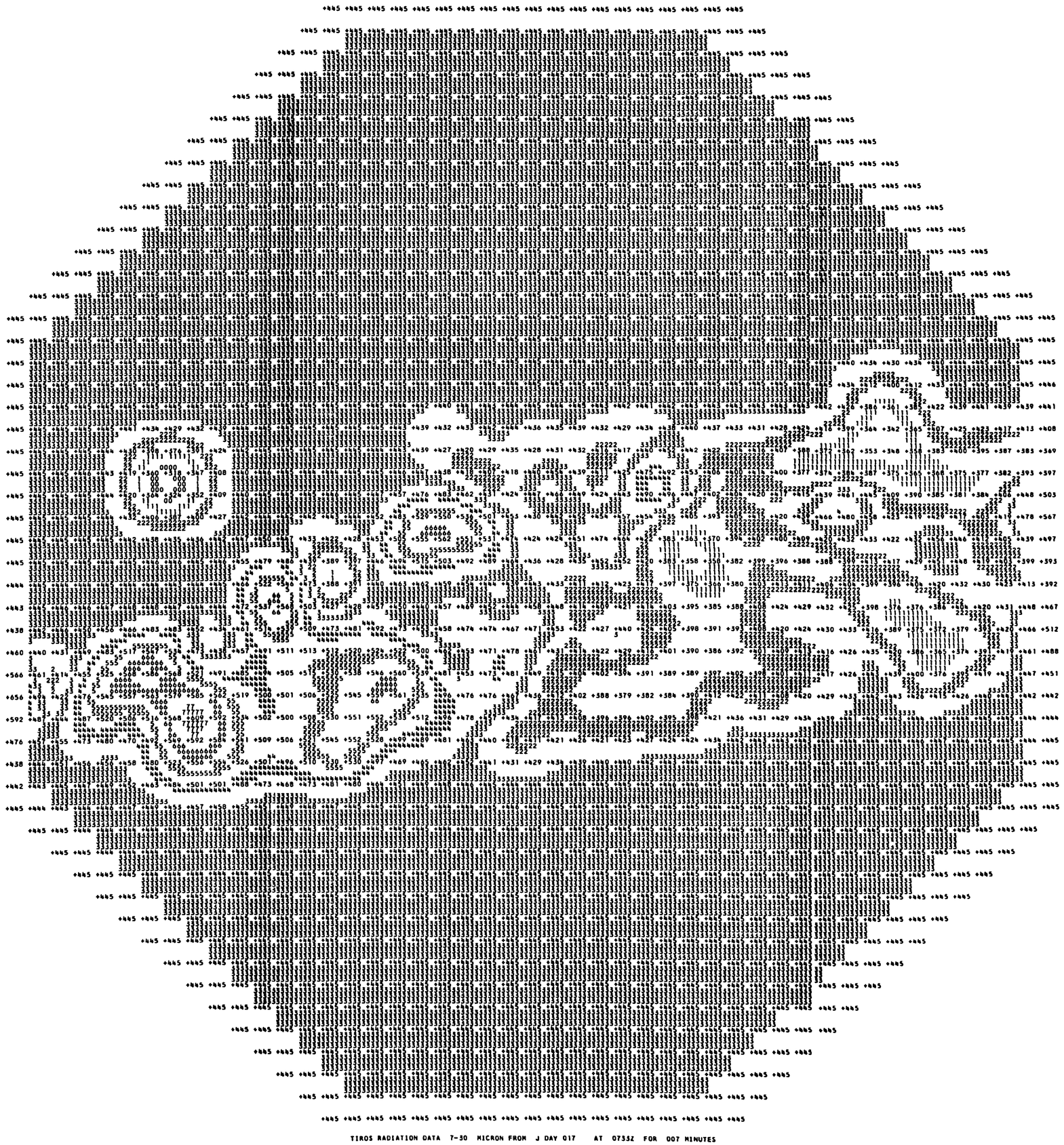
ORBIT 247

Channel 4

8–30 Microns



D

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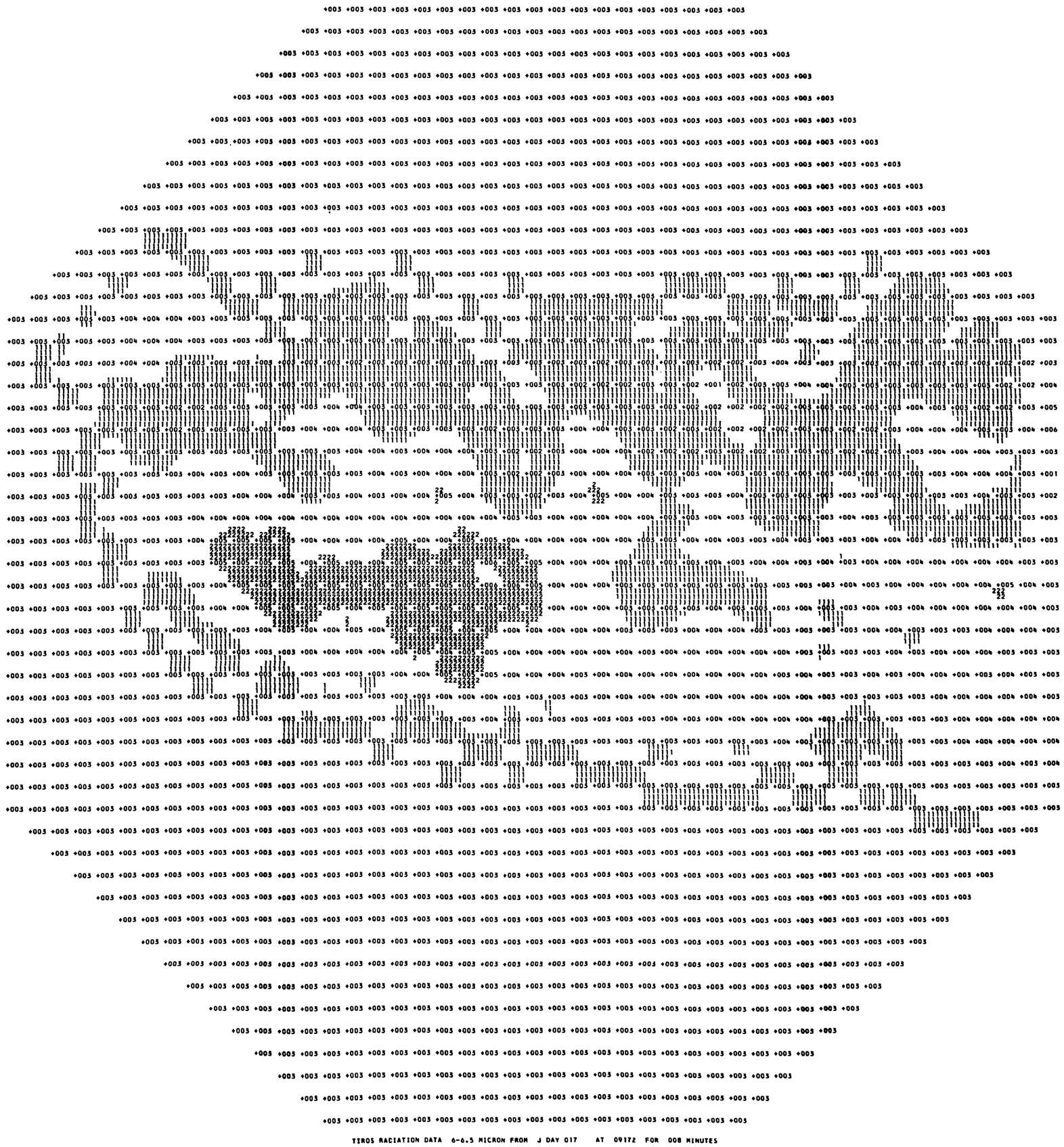
ORBIT 248

Channel 1

6–6.5 Microns



A

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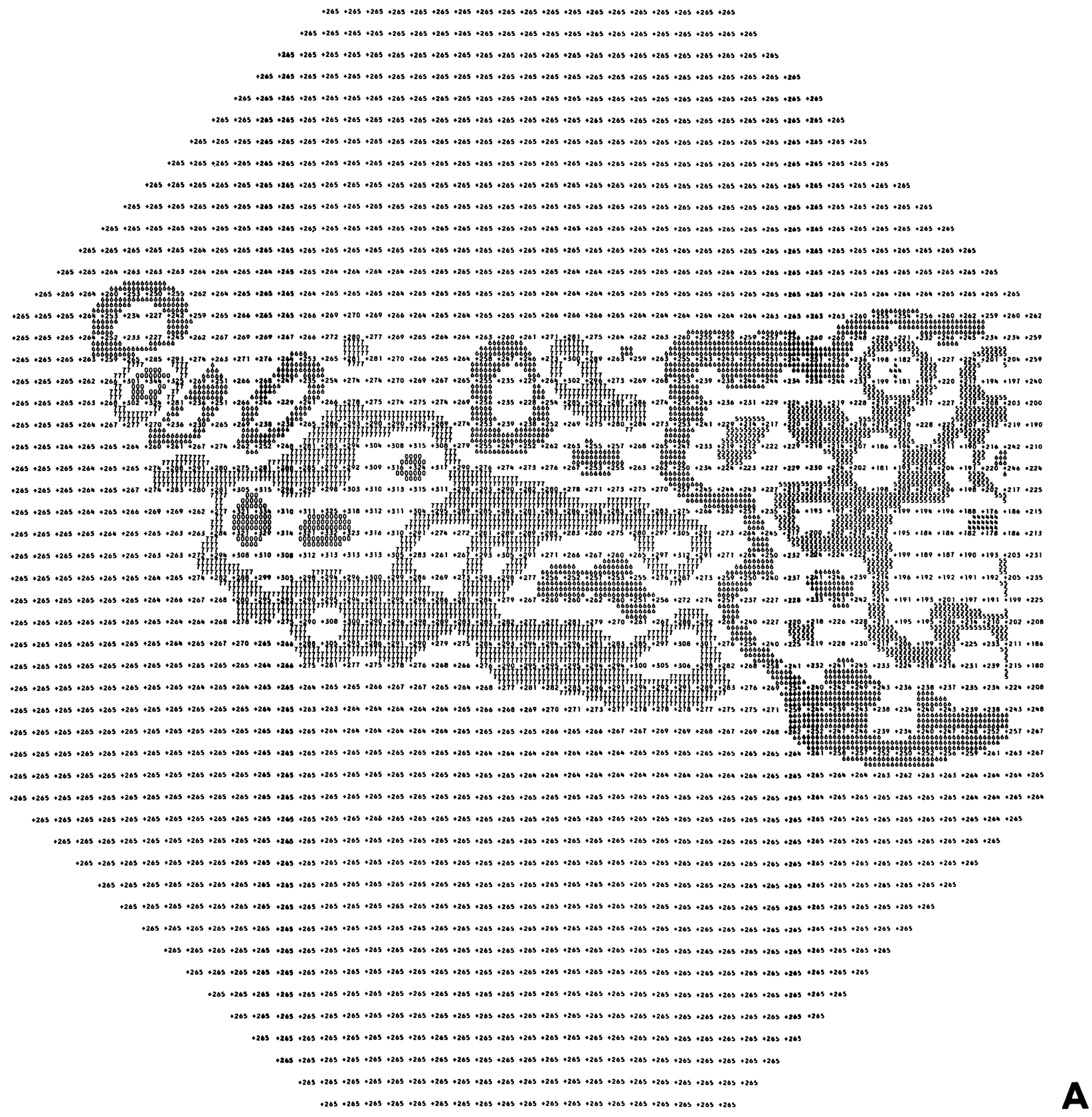
ORBIT 248

Channel 2

8–12 Microns



A

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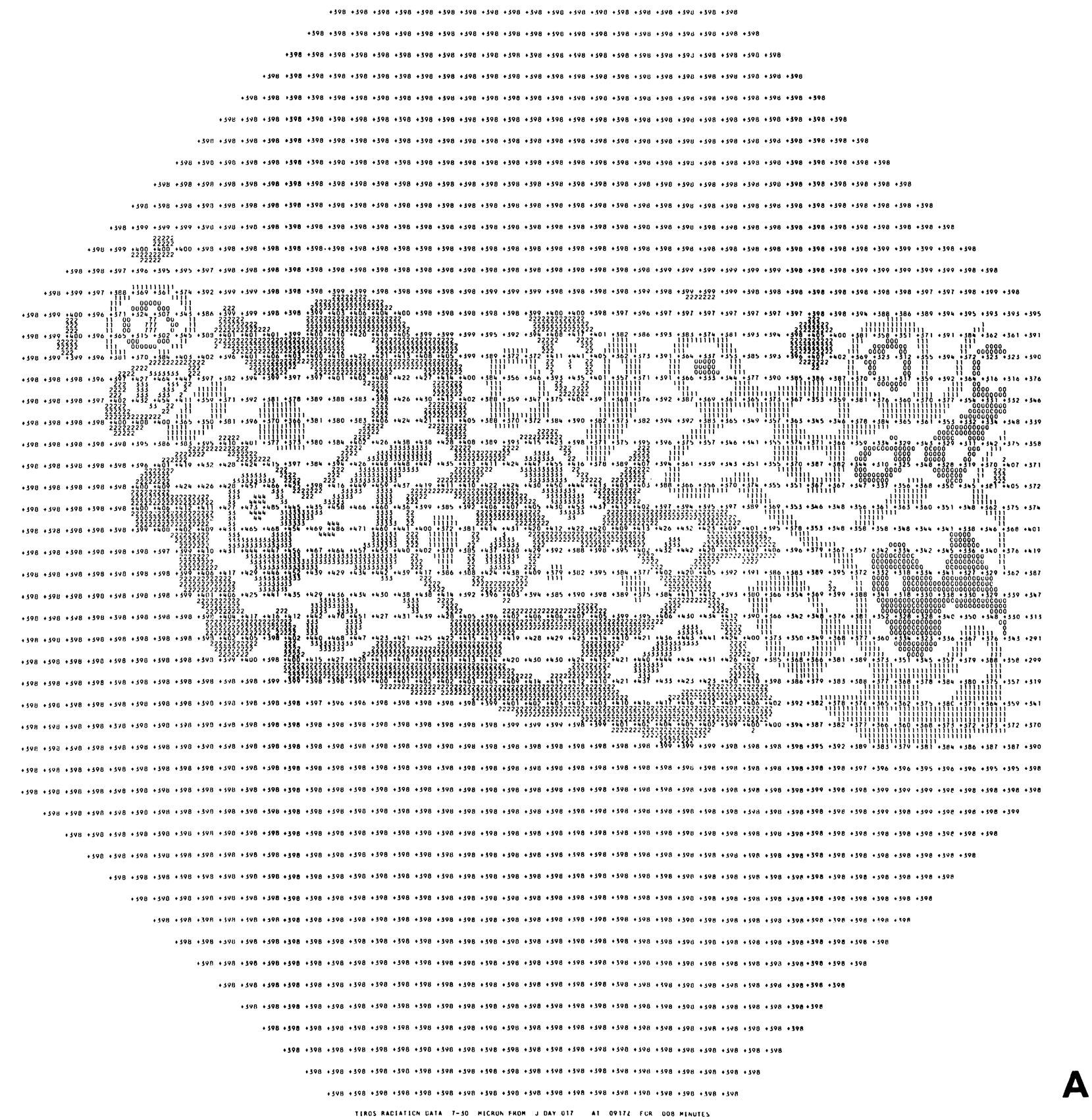
ORBIT 248

Channel 4

8–30 Microns



A

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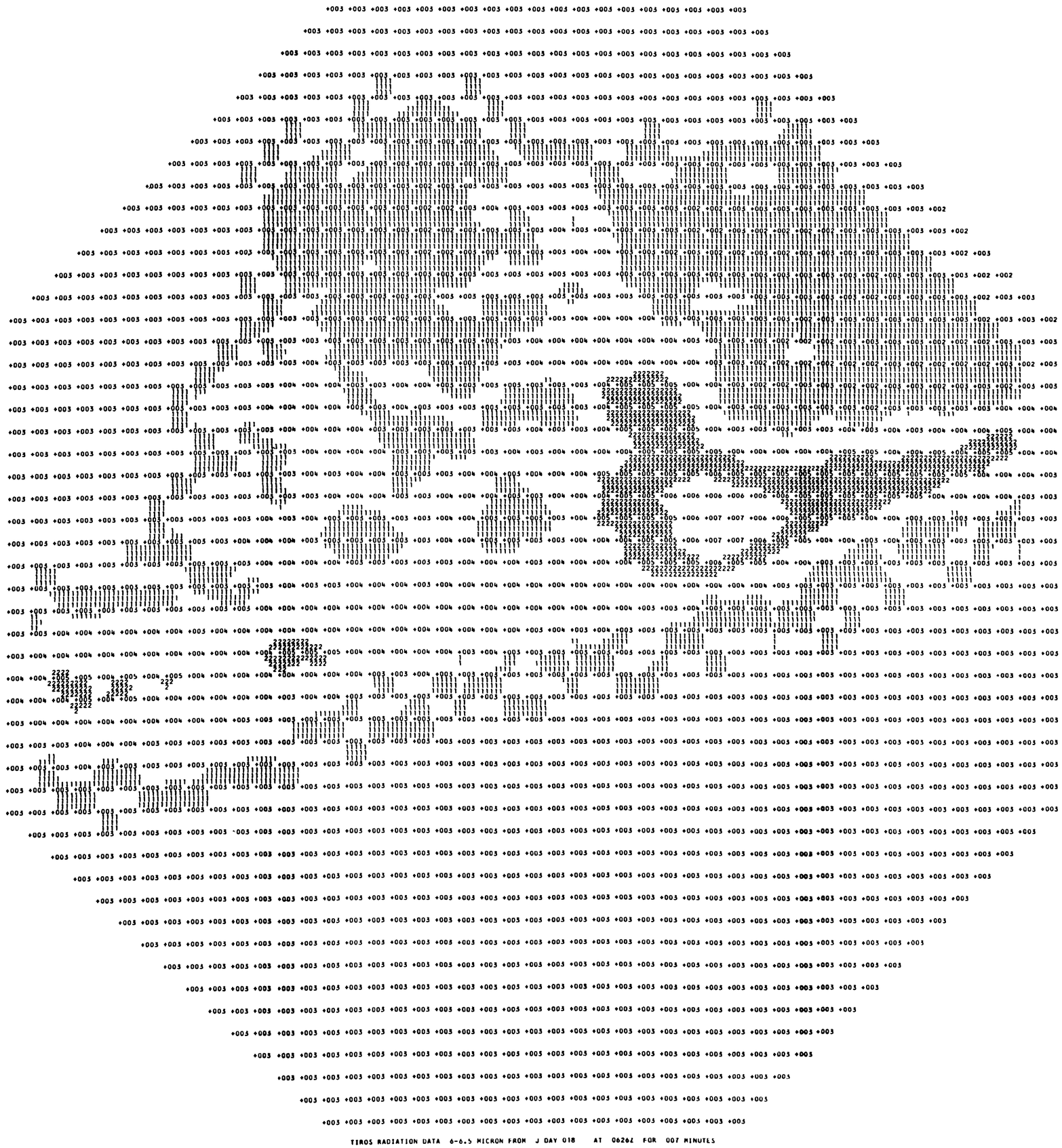
ORBIT 261

Channel 1

6–6.5 Microns



TIROS RADIATION DATA 6-6.5 MICRON FROM J DAY 018 AT 0626Z FOR 007 MINUTES

G

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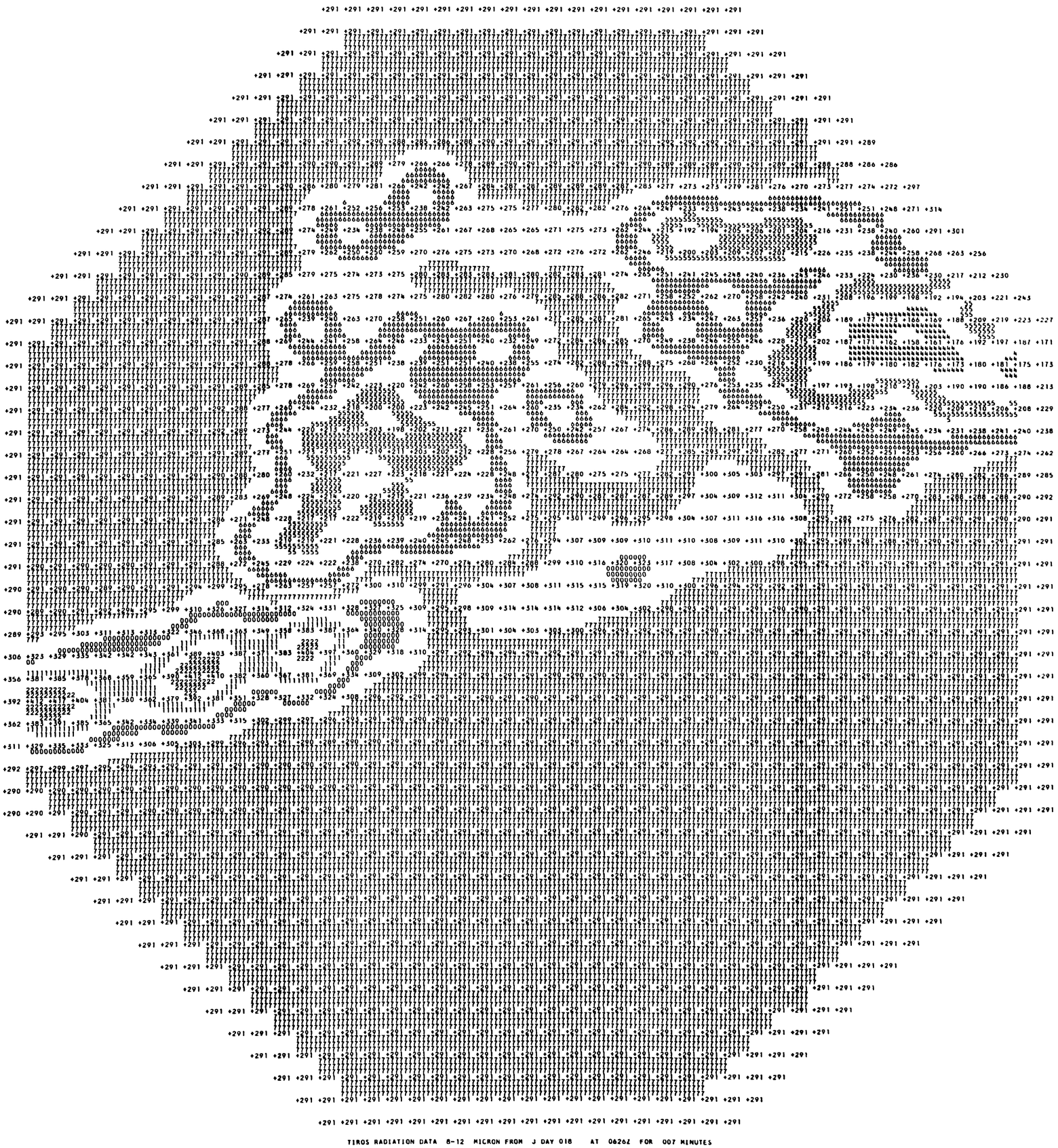
ORBIT 261

Channel 2

8–12 Microns



G

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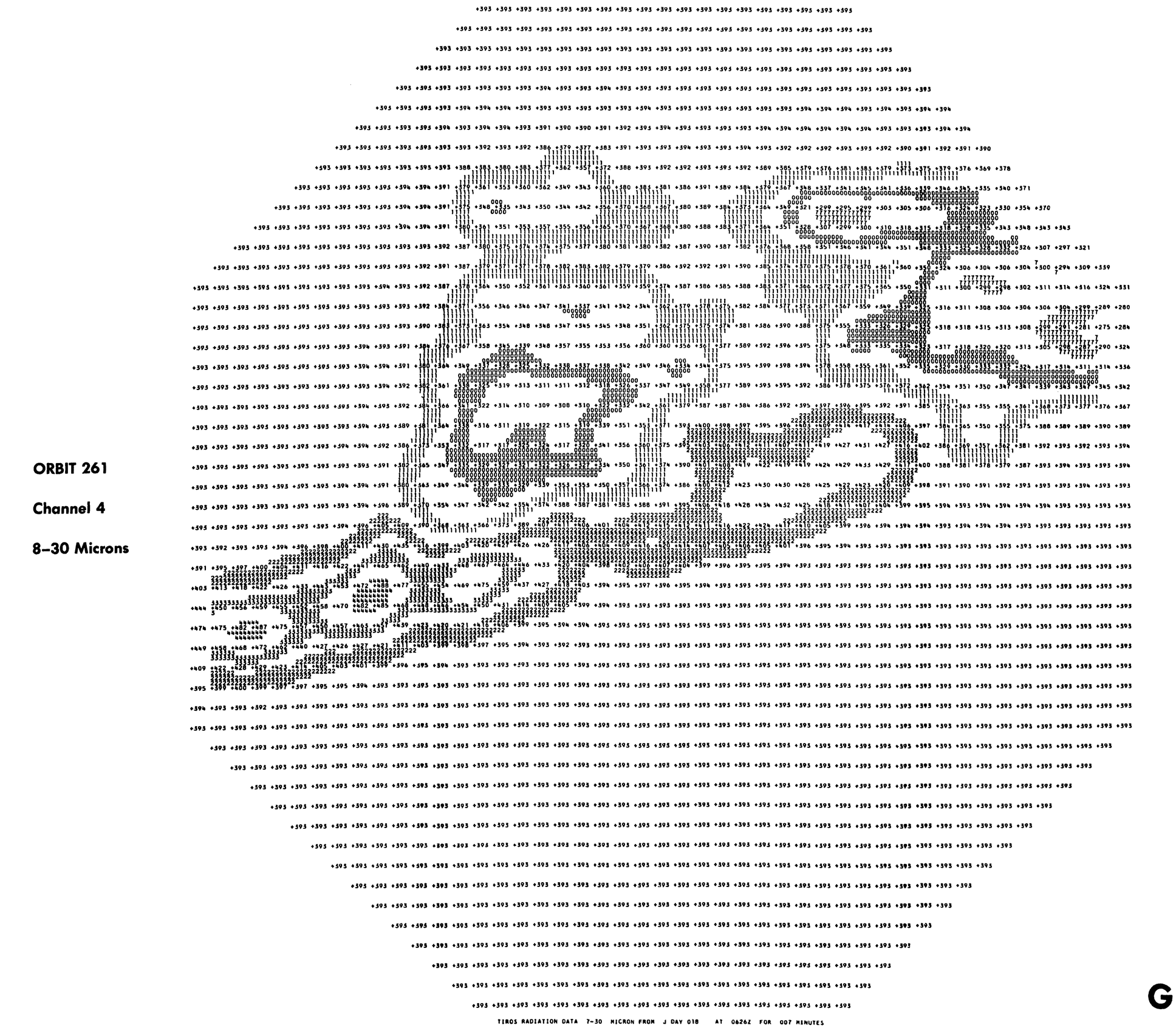
ORBIT 261

Channel 4

8–30 Microns



G

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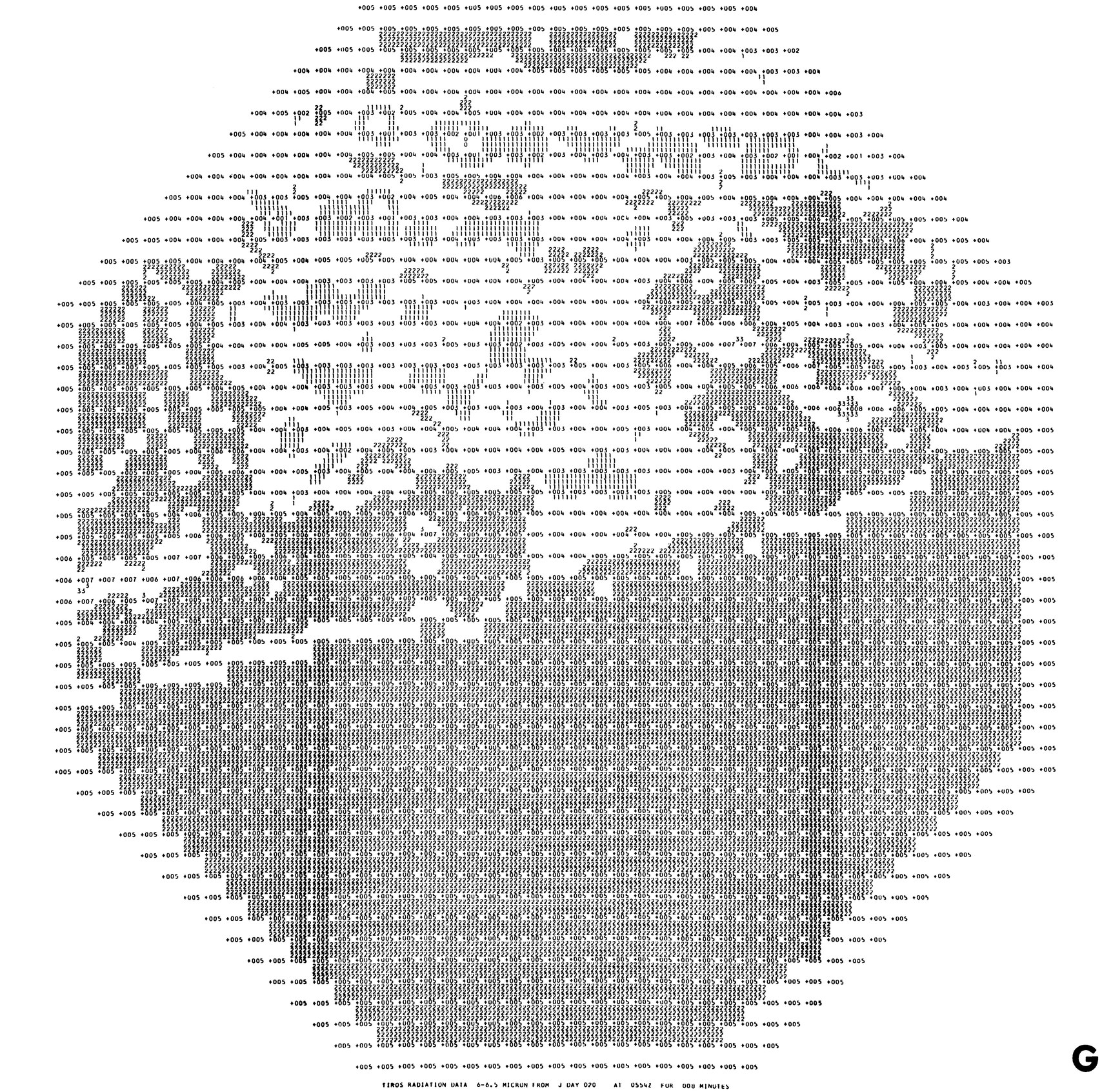
ORBIT 290

Channel 1

6–6.5 Microns



G

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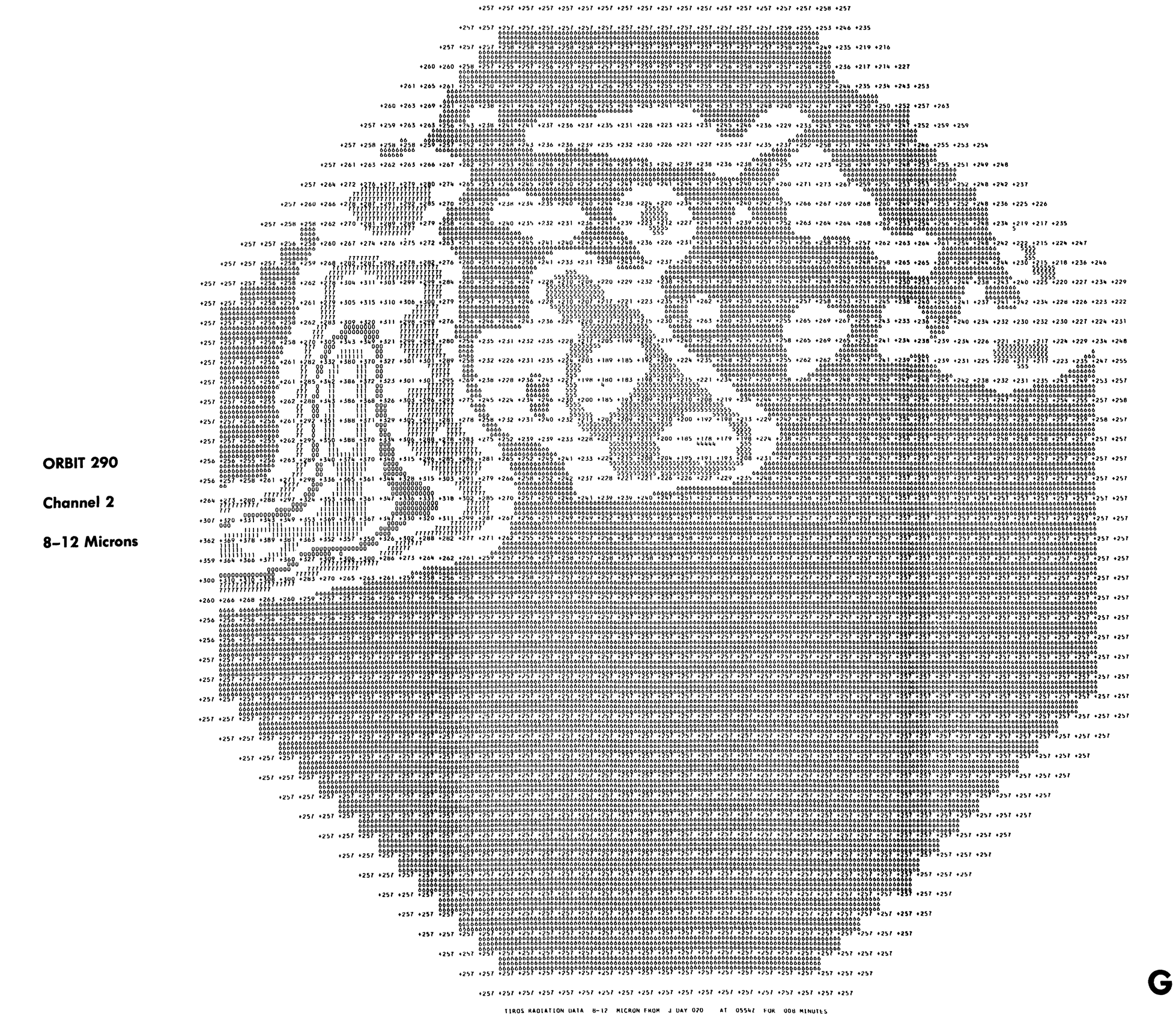
ORBIT 290

Channel 2

8–12 Microns



G

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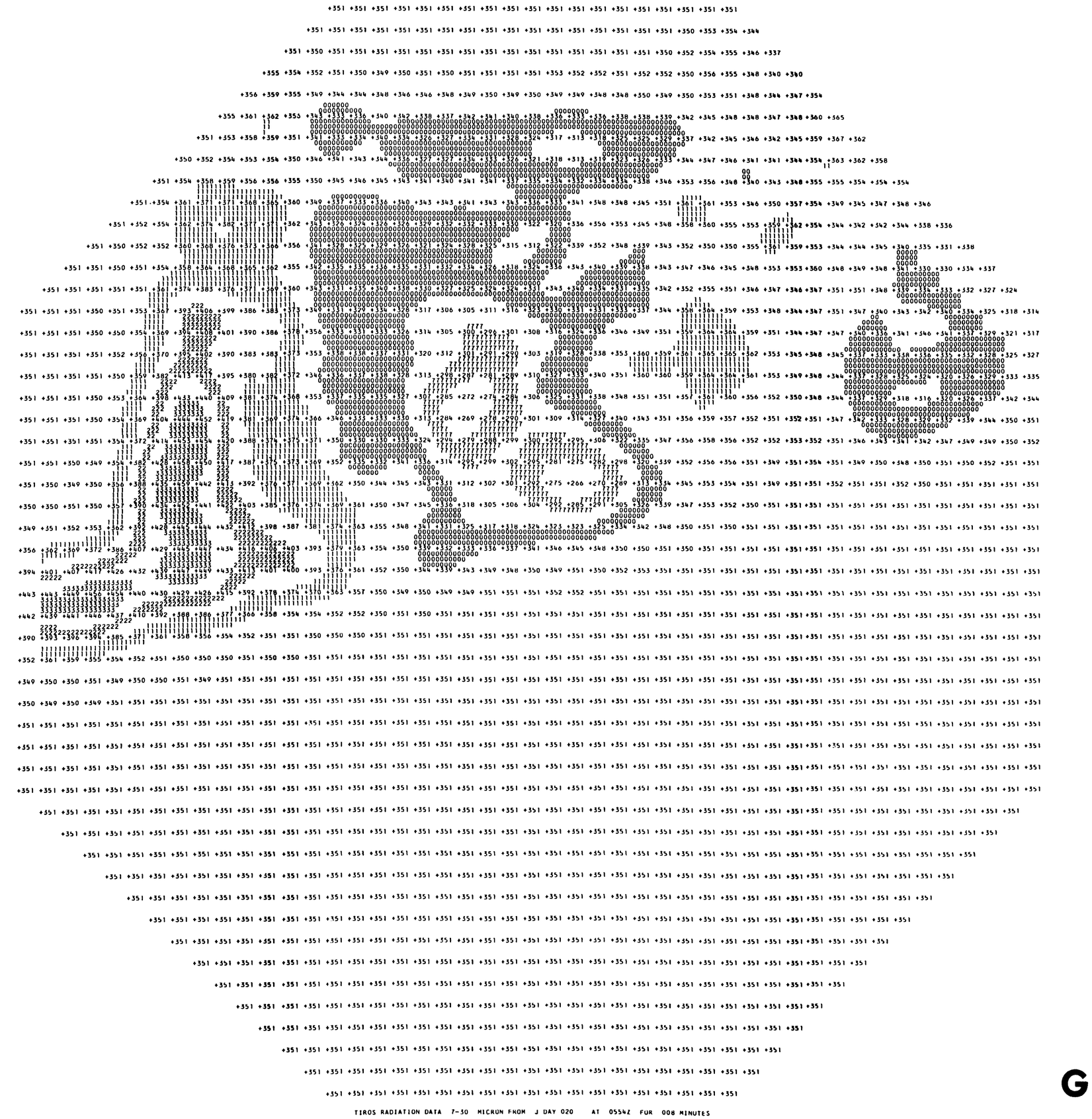
ORBIT 290

Channel 4

8–30 Microns



G

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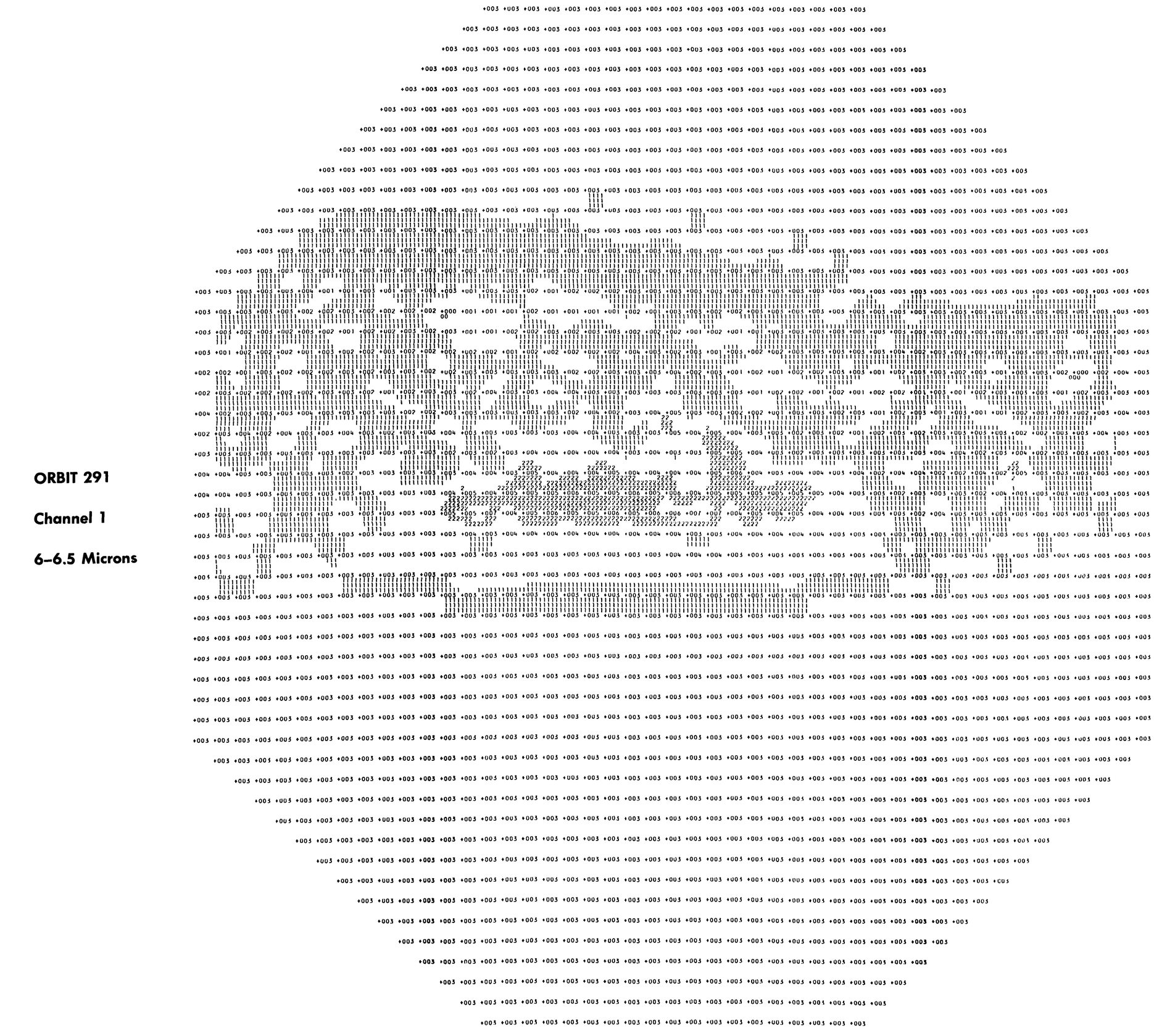
ORBIT 291

Channel 1

6–6.5 Microns



B

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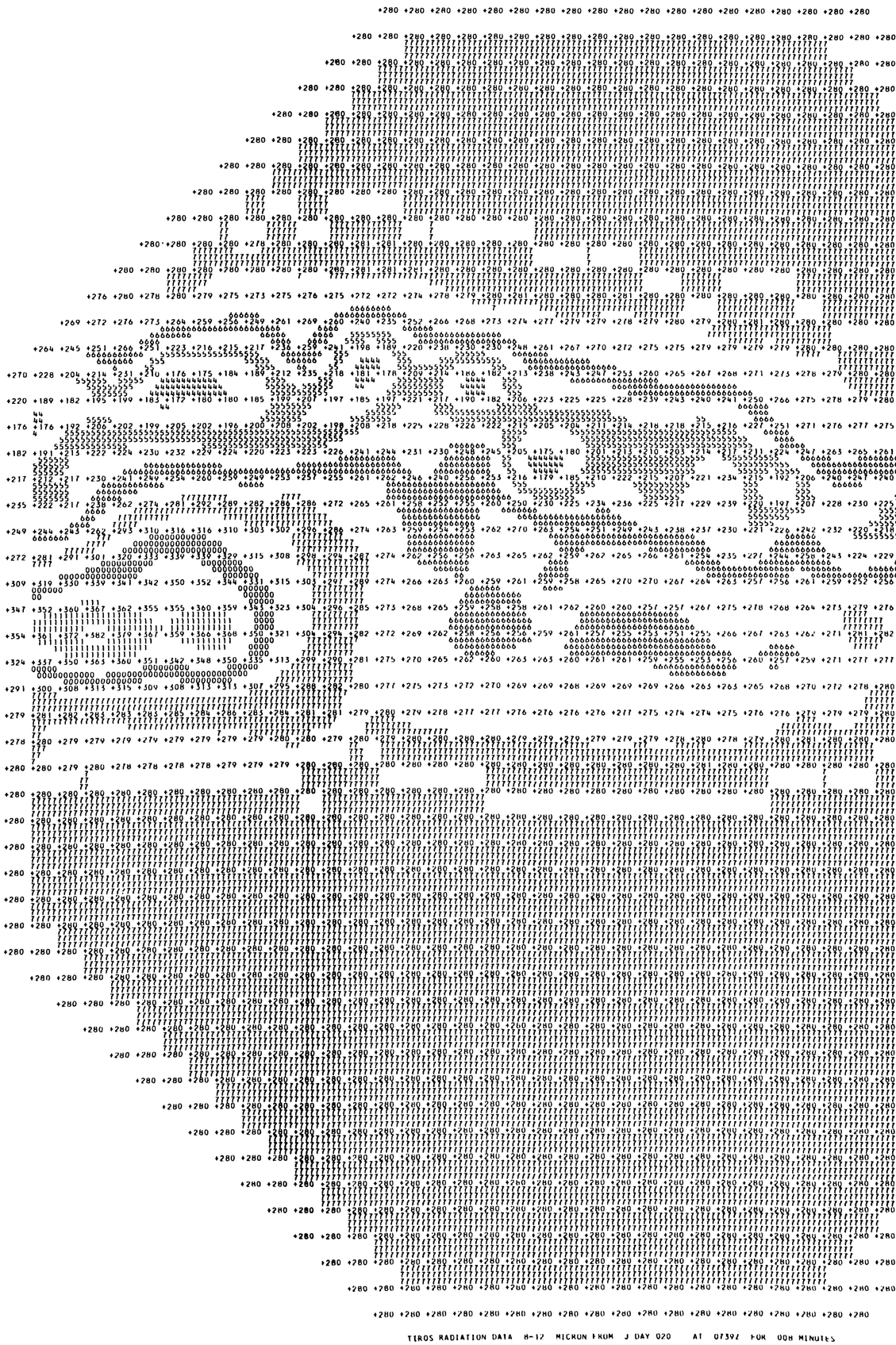
ORBIT 291

Channel 2

8–12 Microns



B

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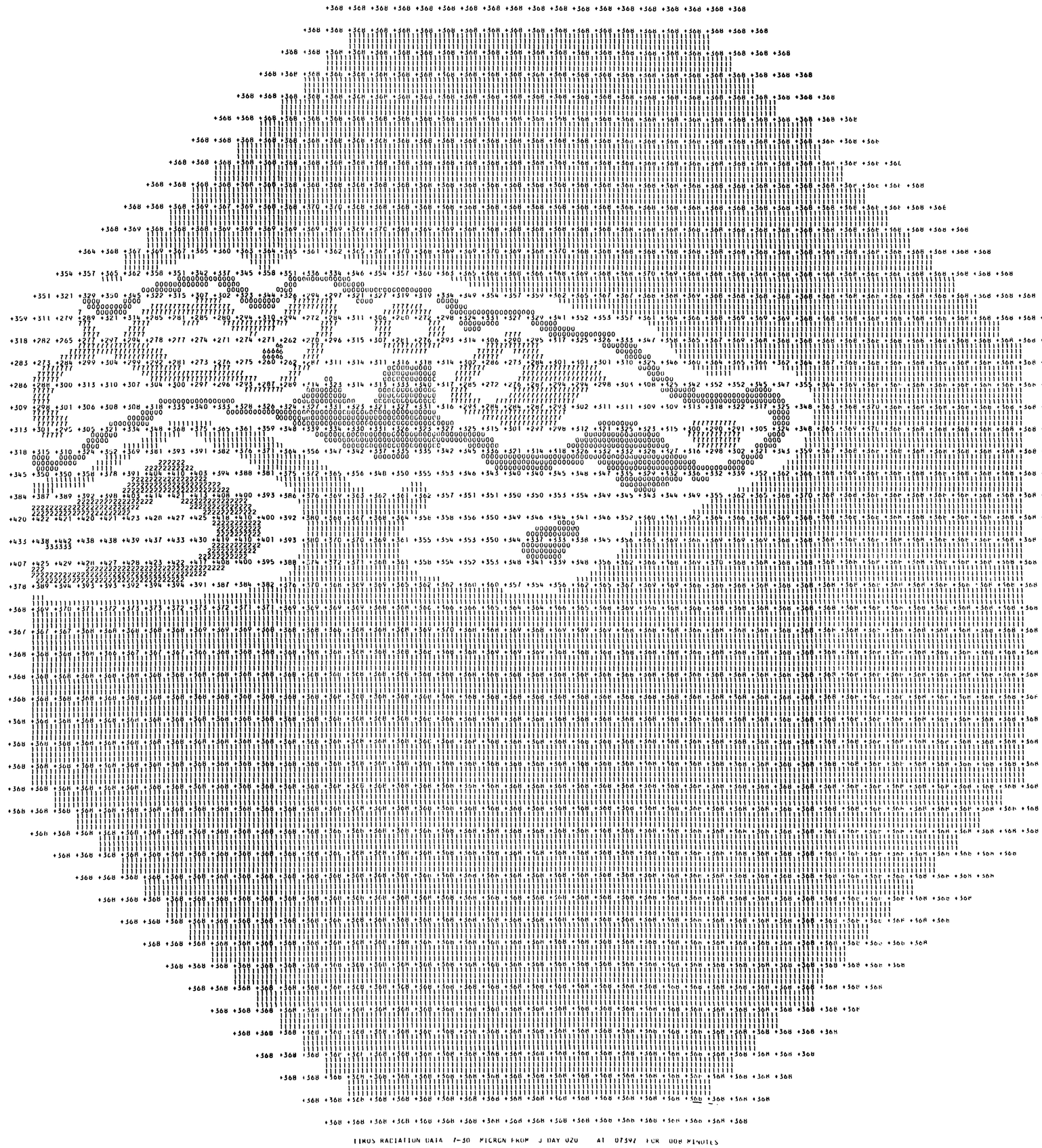
ORBIT 291

Channel 4

8–30 Microns



B

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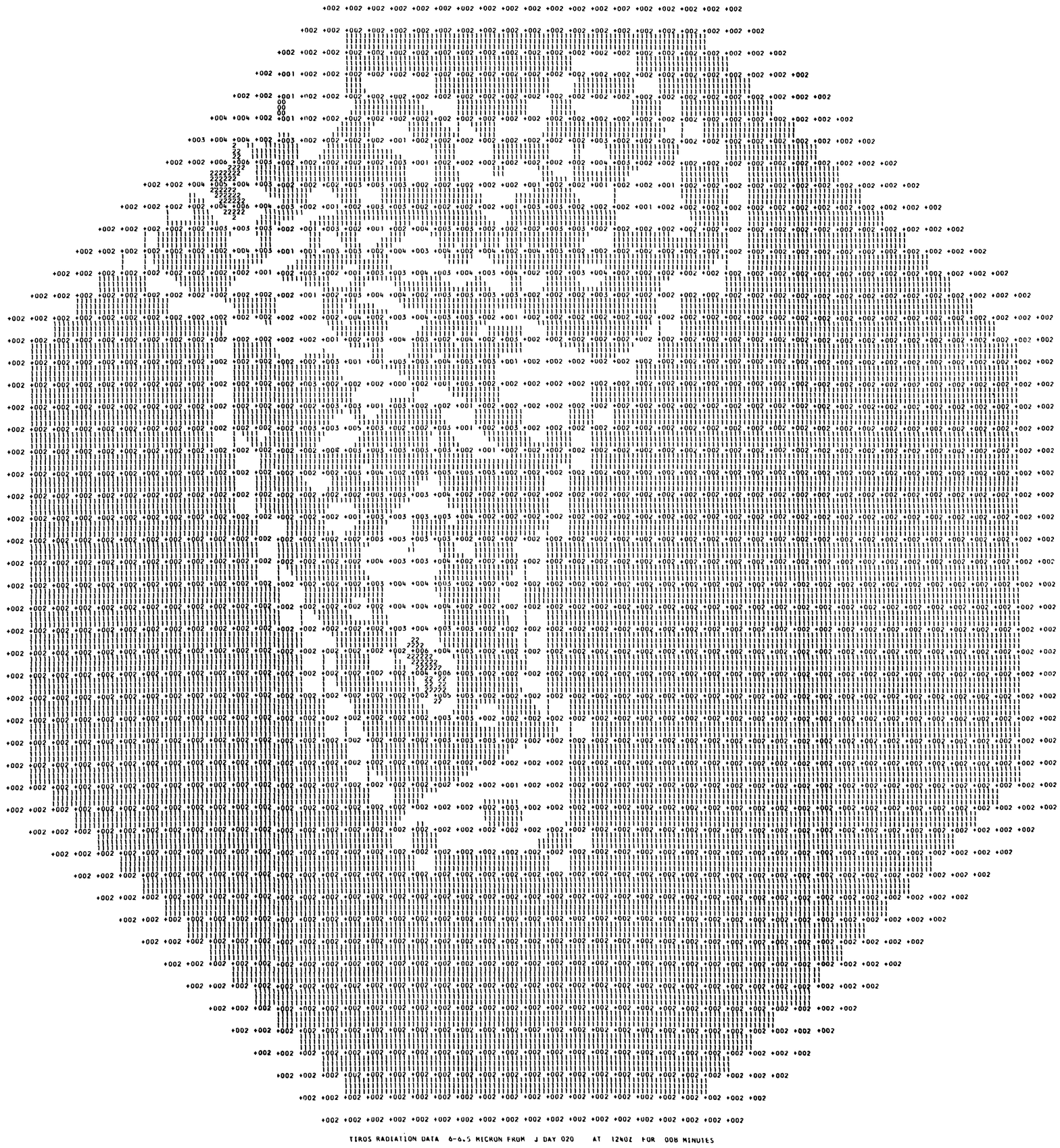
ORBIT 294

Channel 1

6–6.5 Microns



A

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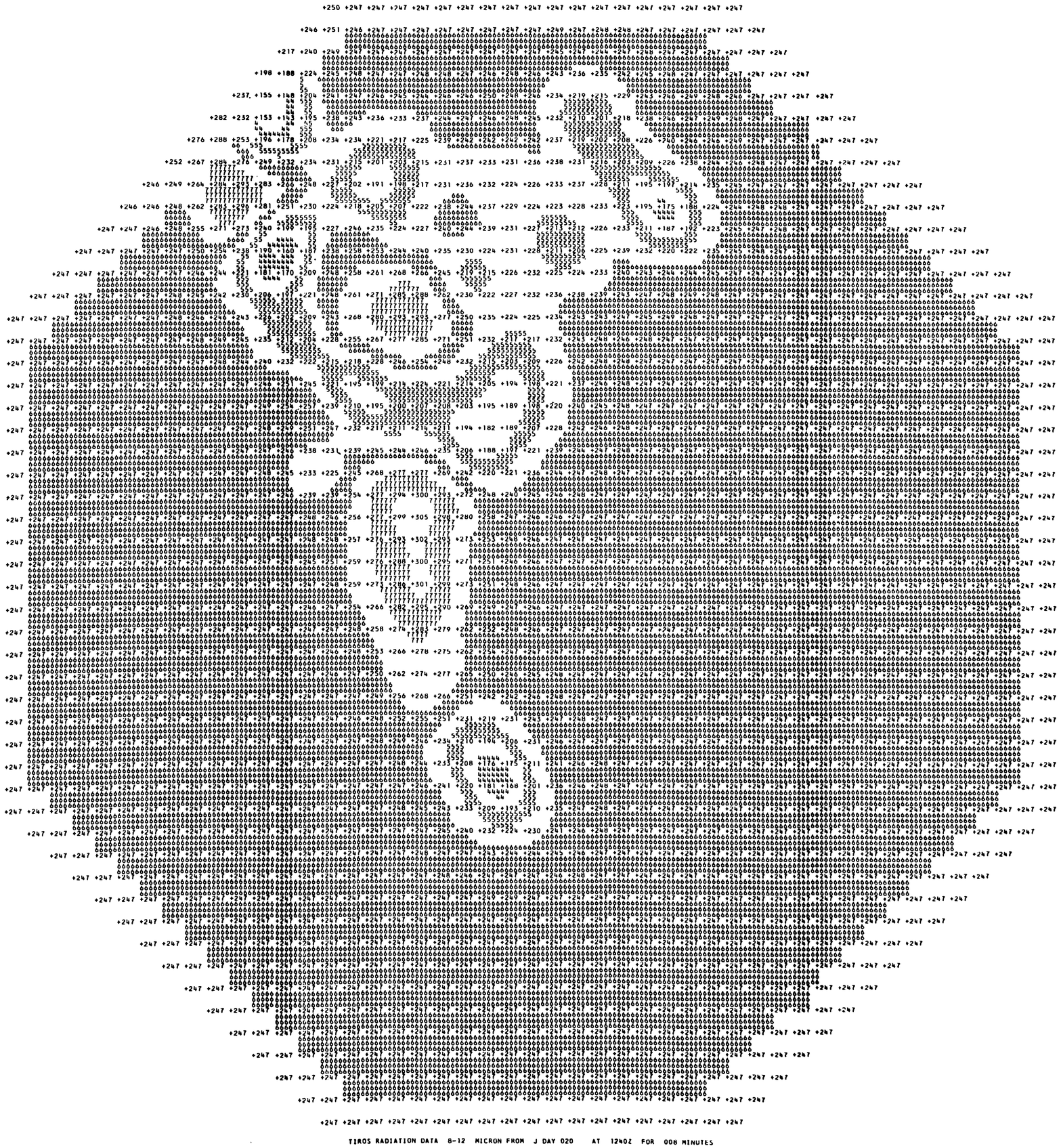
ORBIT 294

Channel 2

8–12 Microns



TIROS RADIATION DATA 8-12 MICRON FROM J DAY 020 AT 1240Z FOR 008 MINUTES

A

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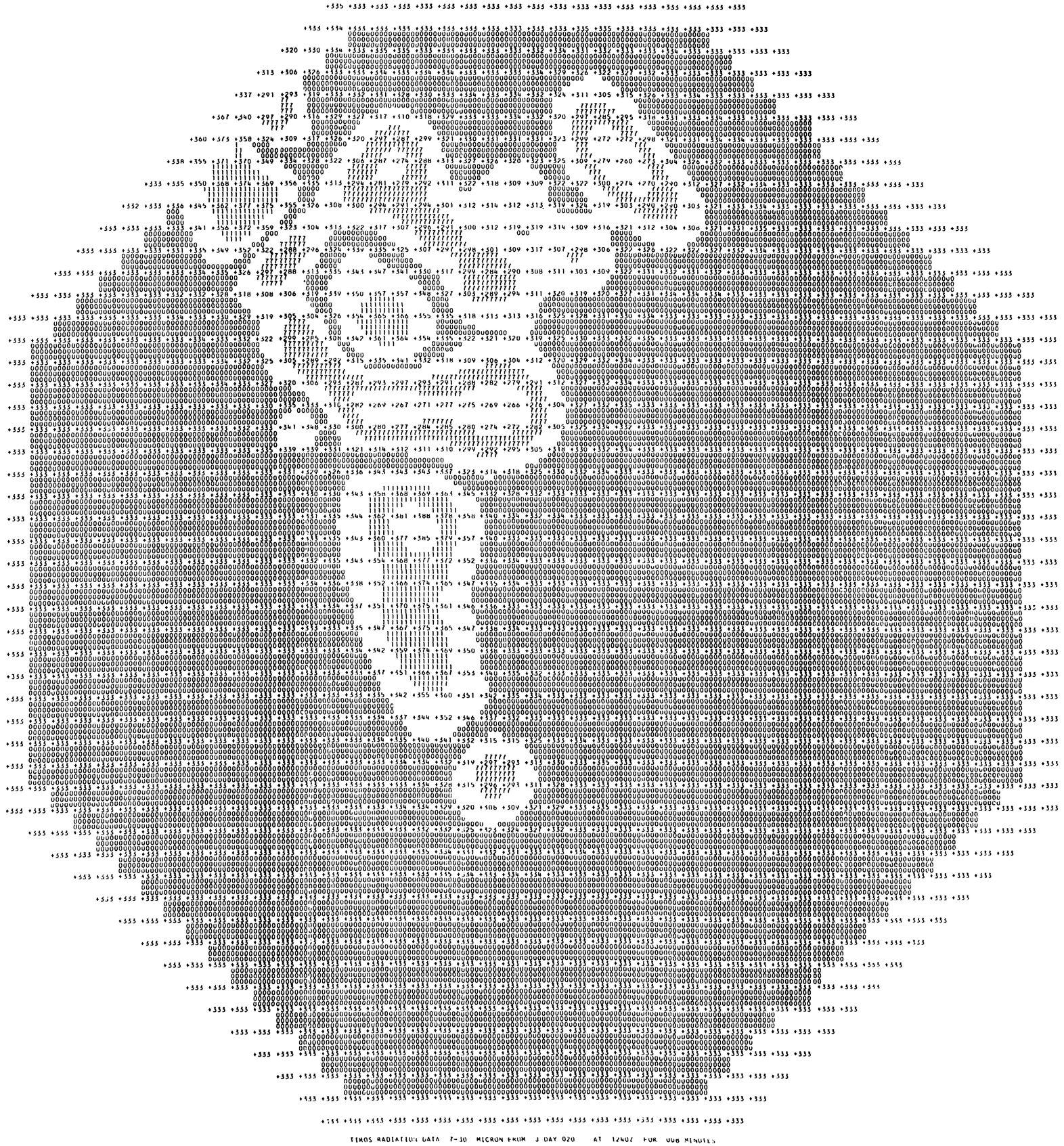
ORBIT 294

Channel 4

8–30 Microns



A

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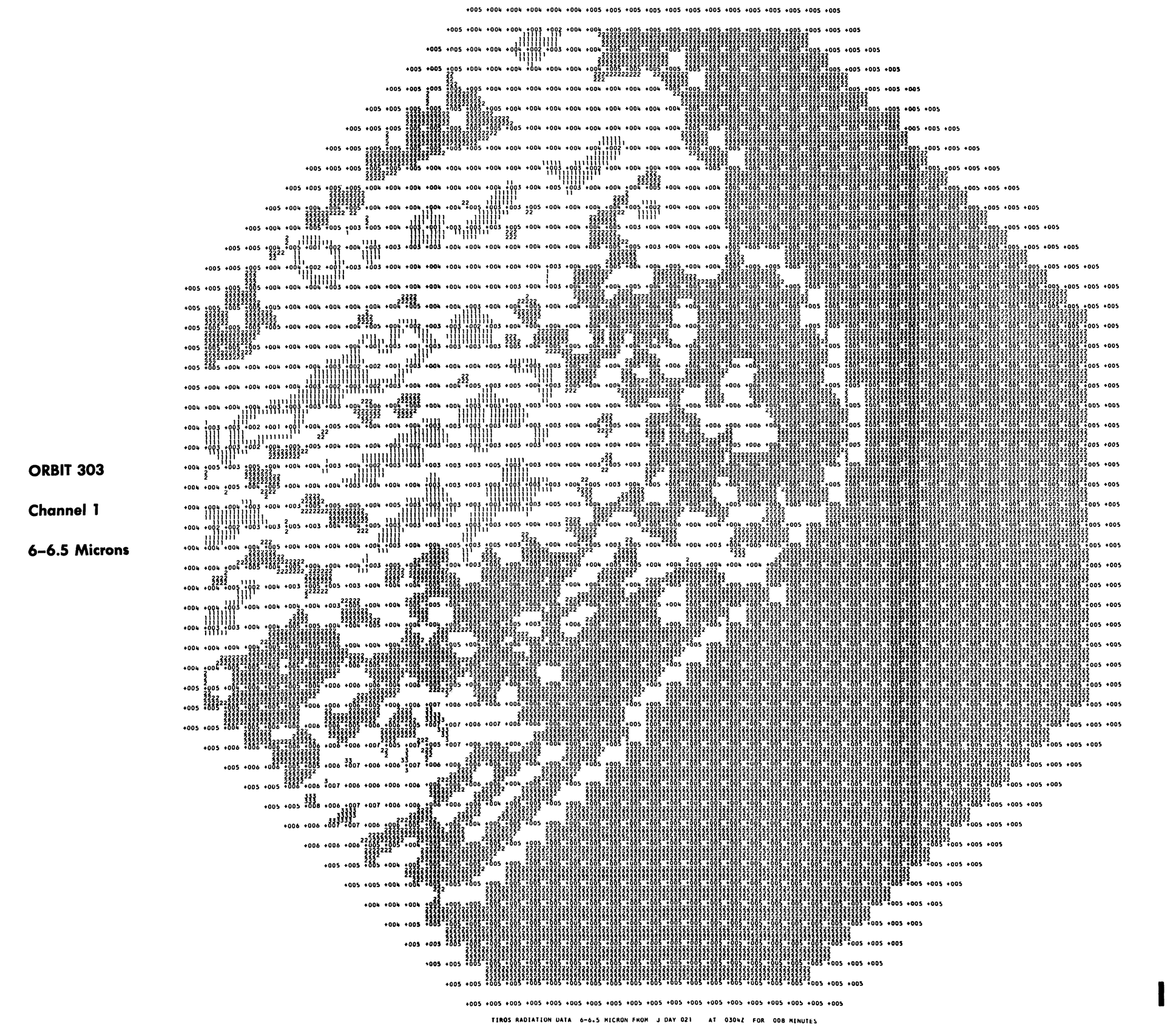
ORBIT 303

Channel 1

6–6.5 Microns



TIROS RADIATION DATA 6-6.5 MICRON FROM J DAY 021 AT 0304Z FOR 008 MINUTES

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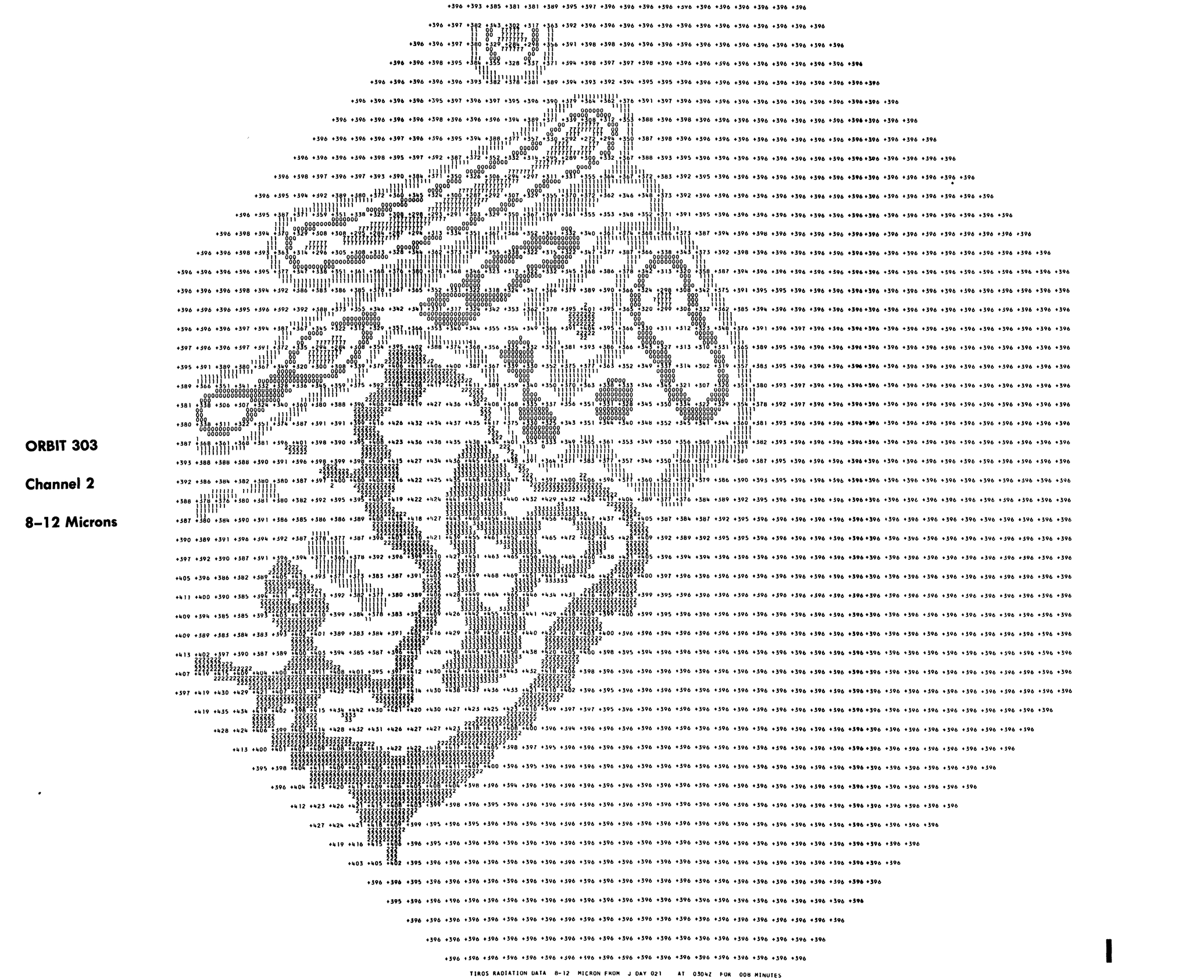
ORBIT 303

Channel 2

8–12 Microns



TIROS RADIATION DATA 8-12 MICRON FROM J DAY 021 AT 0304Z FOR 008 MINUTES

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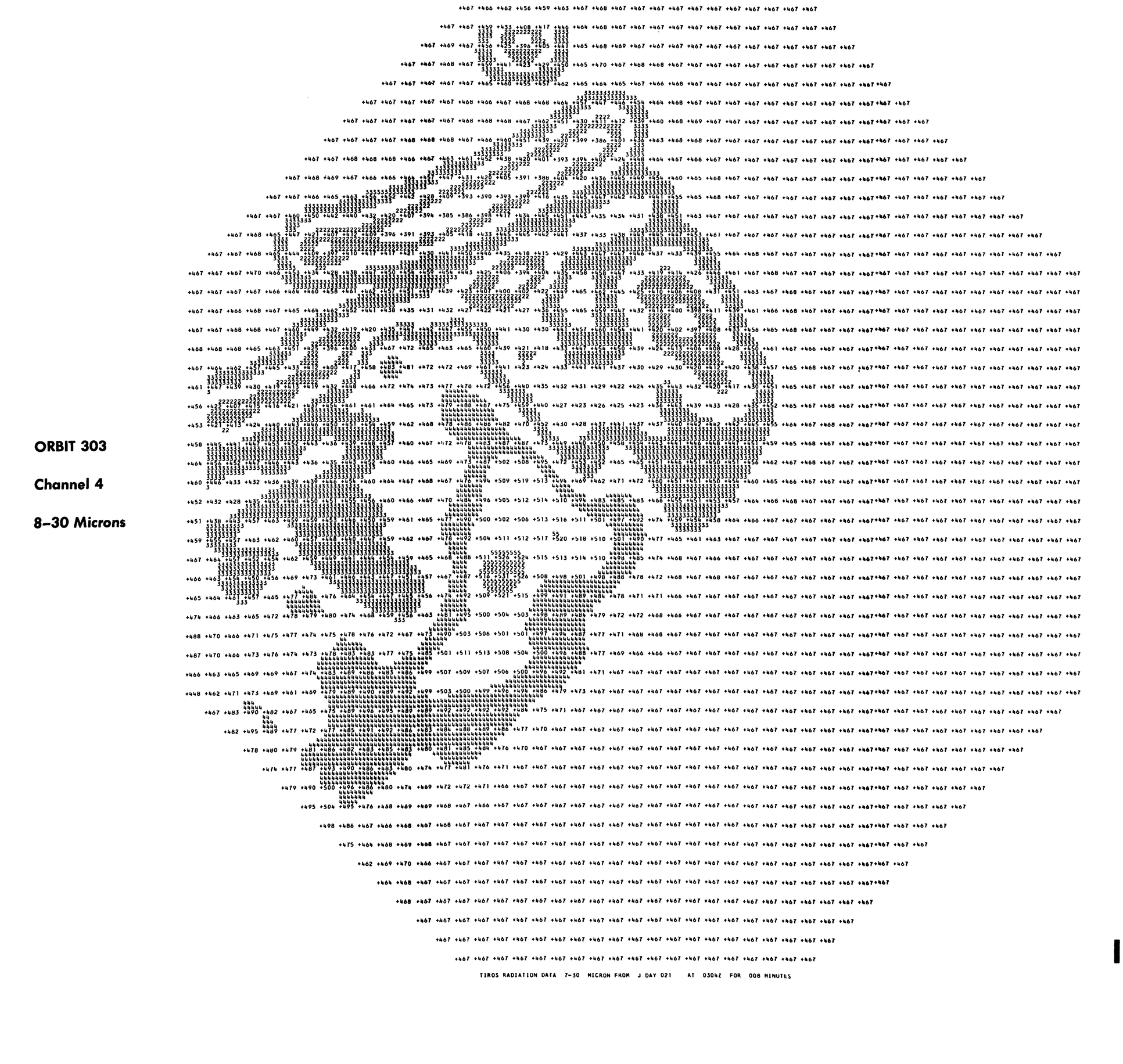
ORBIT 303

Channel 4

8–30 Microns



TIROS RADIATION DATA 7-30 MICRON FROM J DAY 021 AT 0304Z FOR 008 MINUTES

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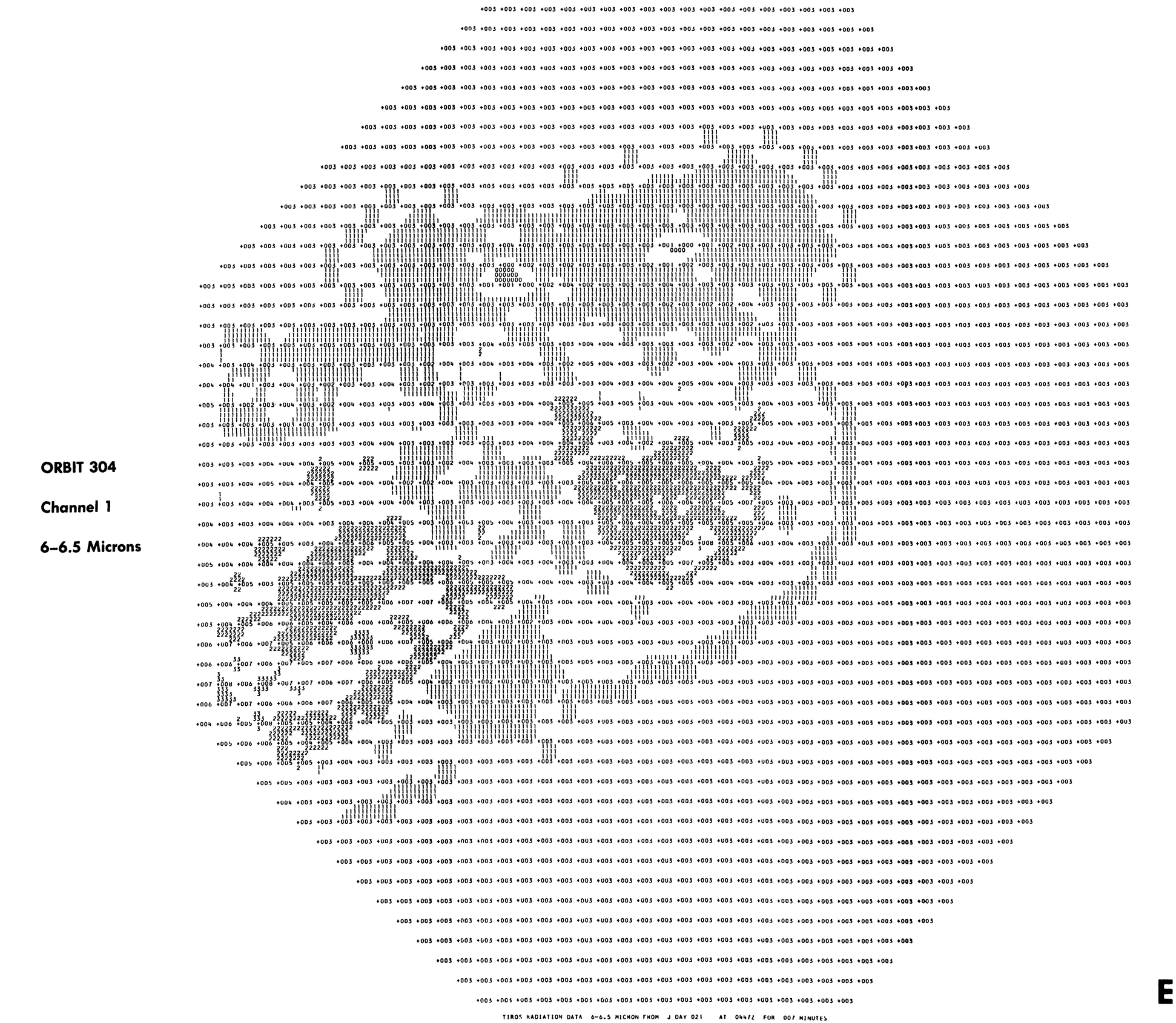
ORBIT 304

Channel 1

6–6.5 Microns



E

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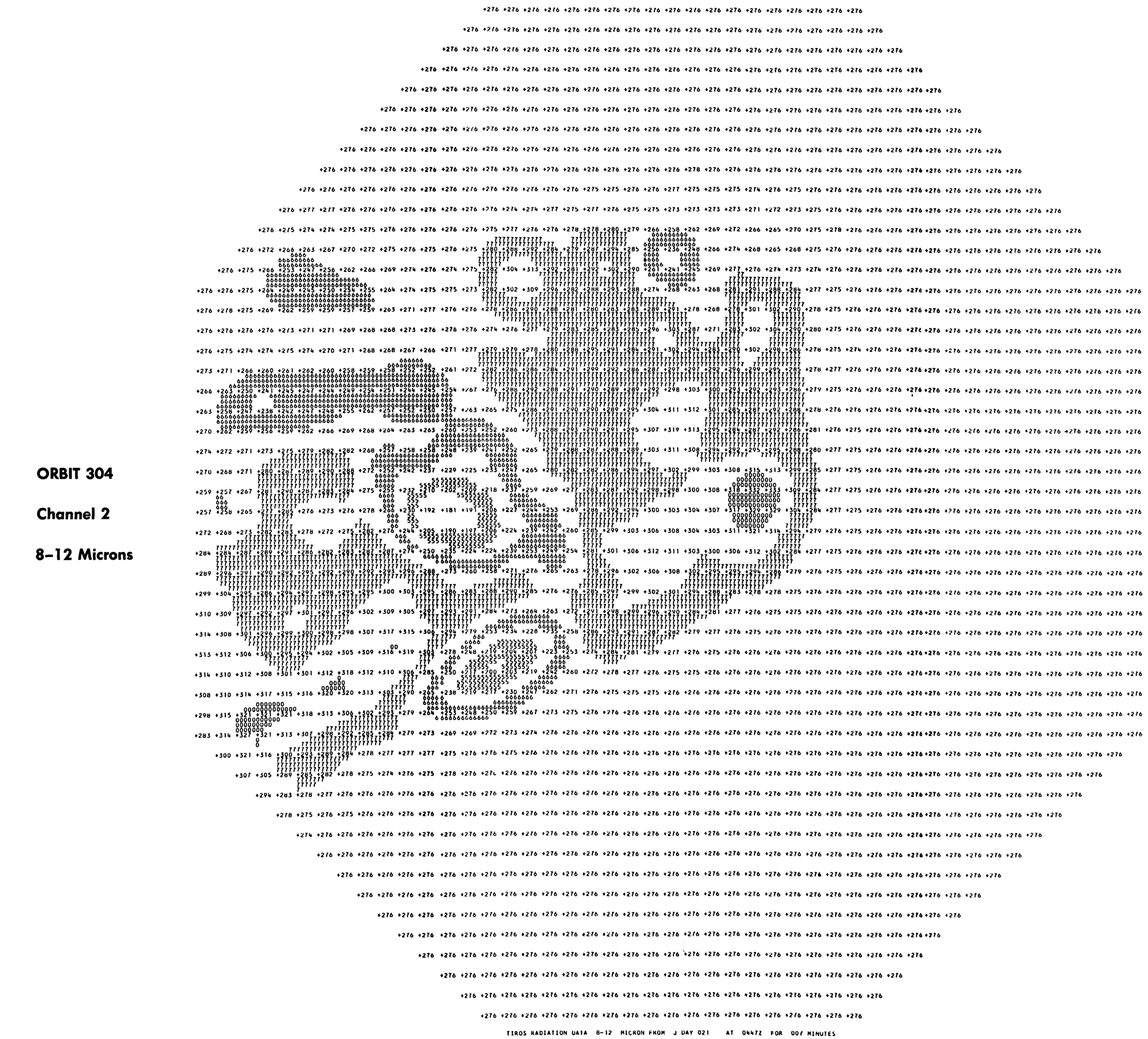
ORBIT 304

Channel 2

8–12 Microns



TIROS RADIATION DATA 8-12 MICRON FROM J DAY 021 AT 0447Z FOR 007 MINUTES

E

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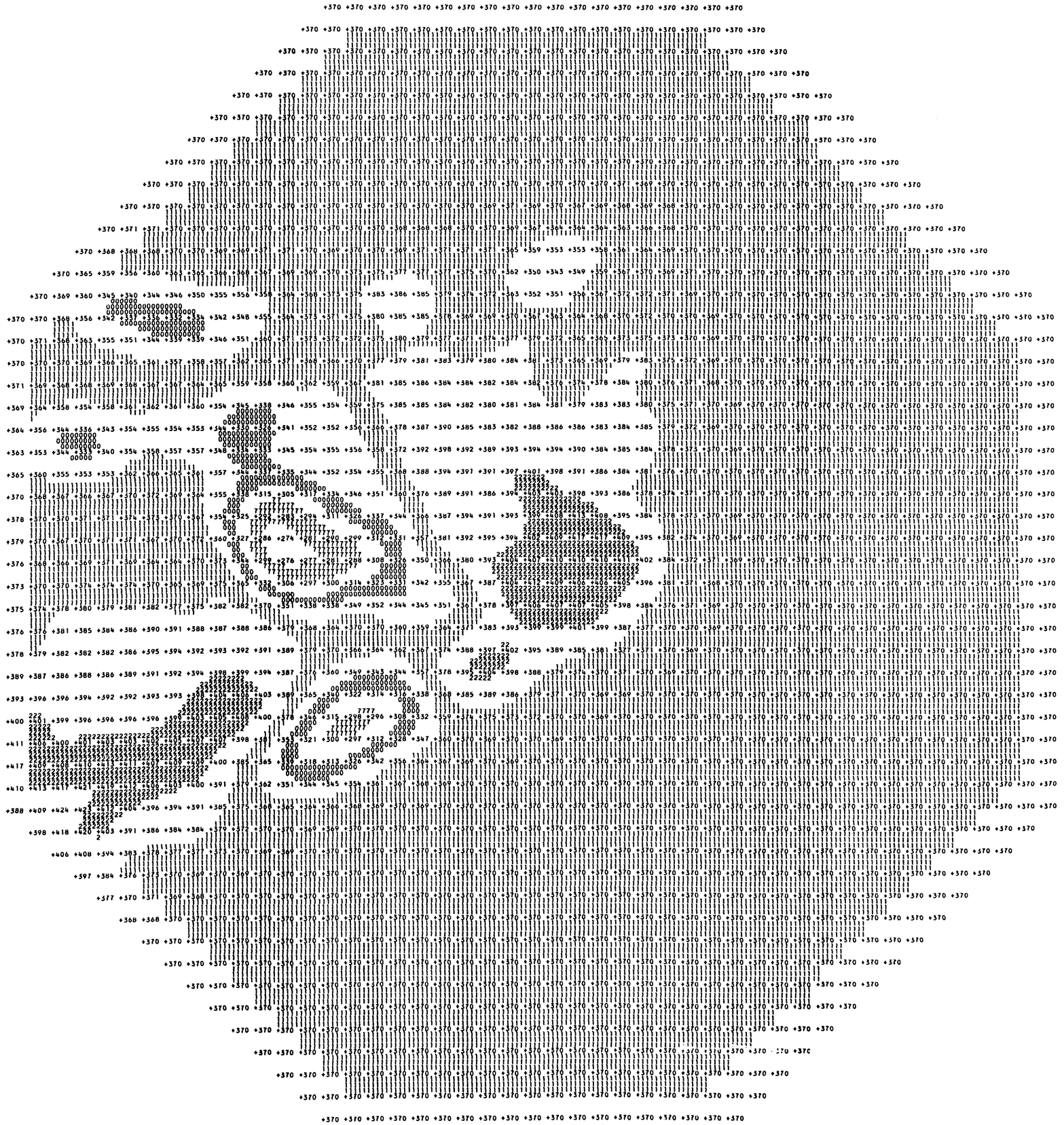
ORBIT 304

Channel 4

8–30 Microns



TIROS RADIATION DATA 7-30 MICRON FROM J DAY 021 AT 0447Z FOR 007 MINUTES

E

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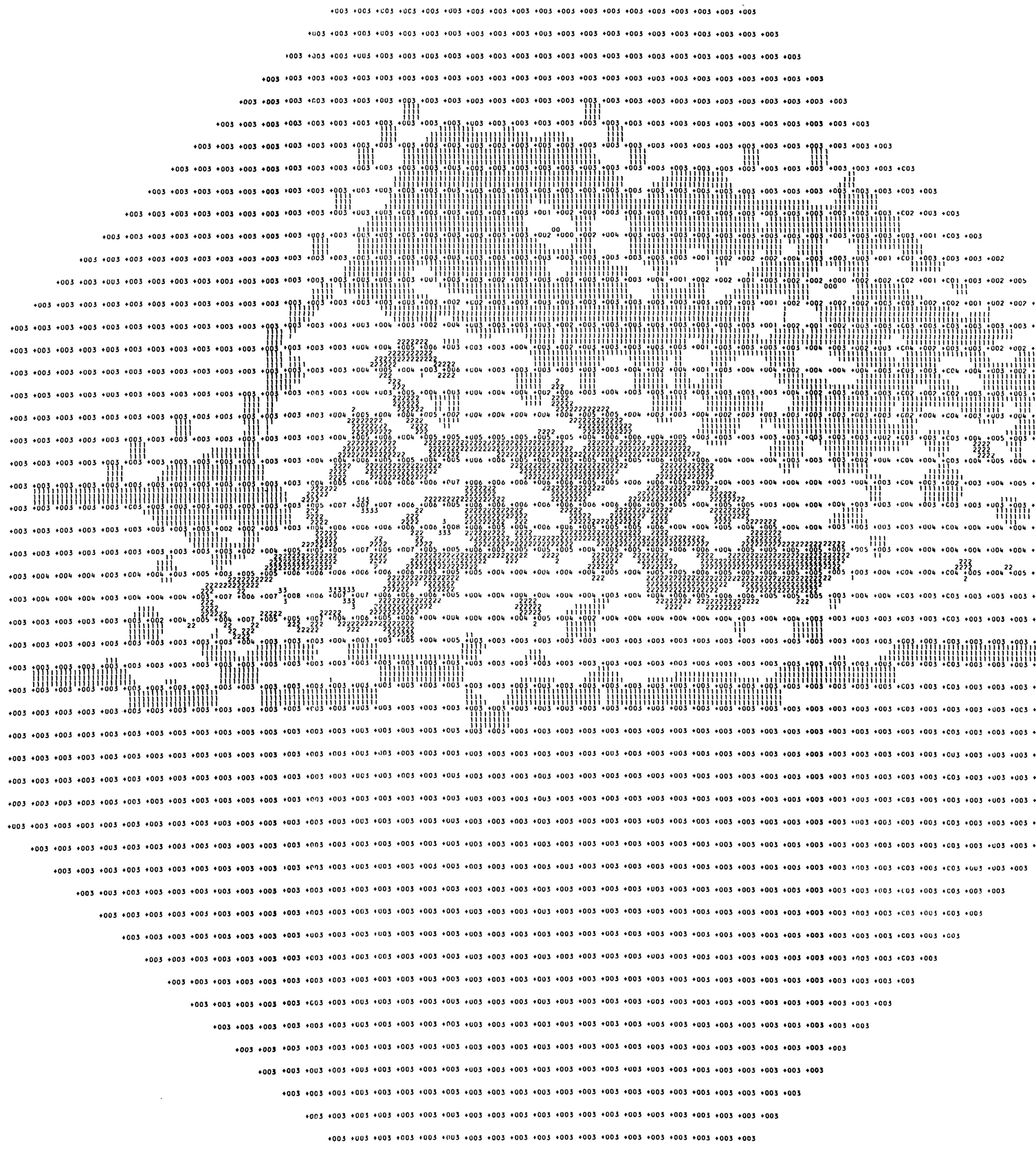
ORBIT 305

Channel 1

6–6.5 Microns



D

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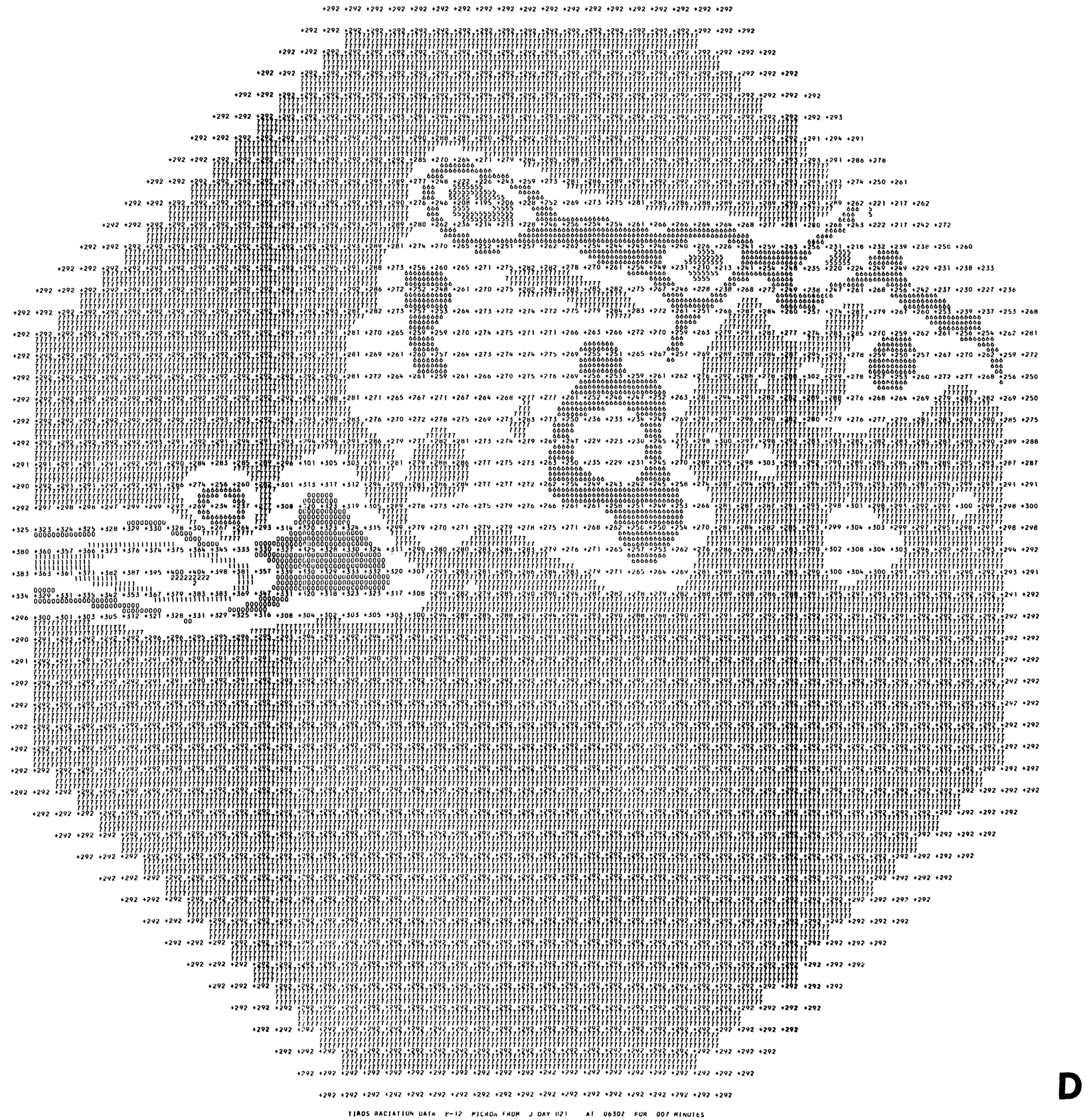
ORBIT 305

Channel 2

8–12 Microns



TIROS RADIATION DATA 8-12 MICRON FROM J DAY 021 AT 0630Z FOR 007 MINUTES

D

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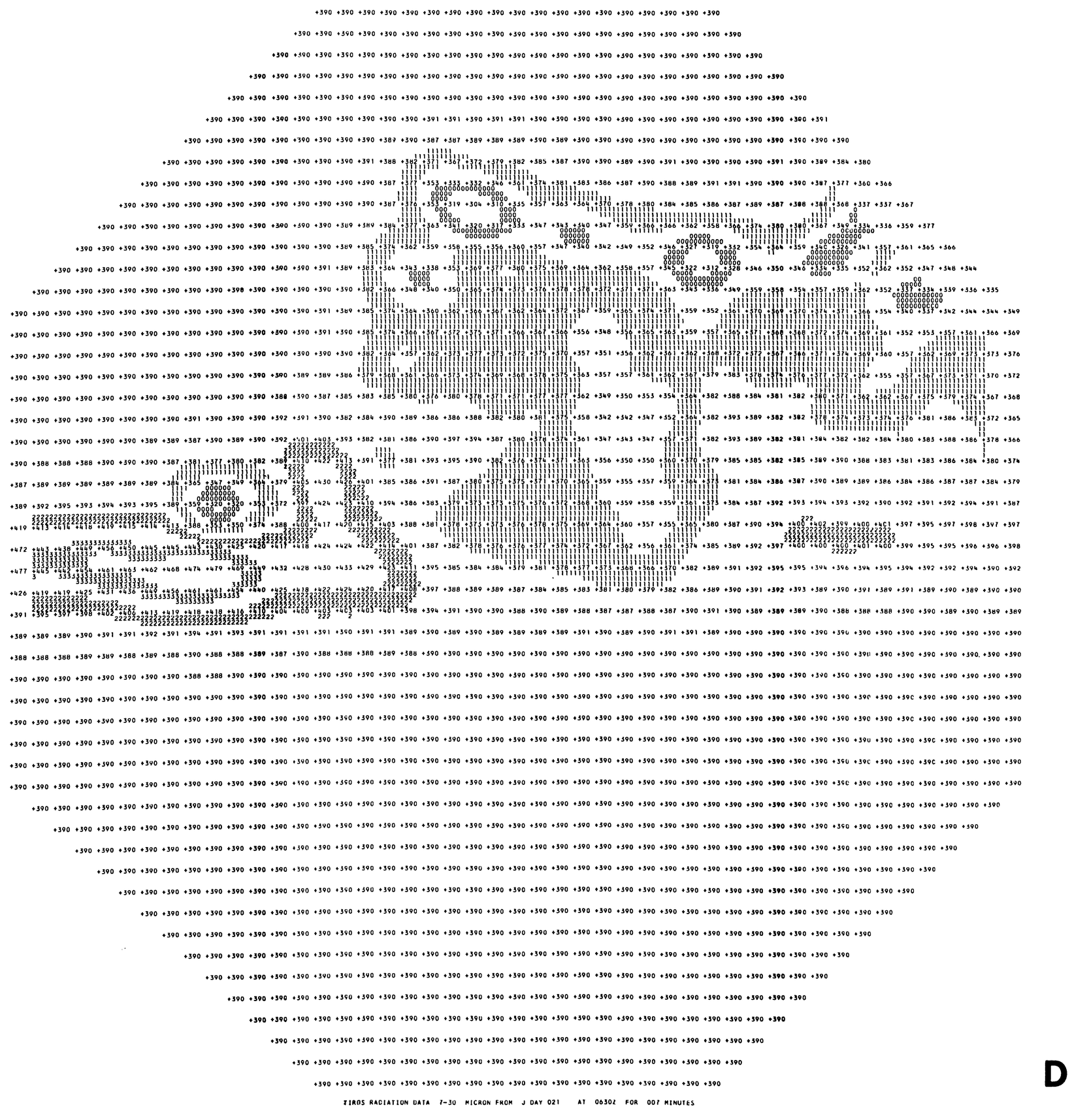
ORBIT 305

Channel 4

8–30 Microns



TIROS RADIATION DATA 7-30 MICRON FROM J DAY 021 AT 06302 FOR 007 MINUTES

D

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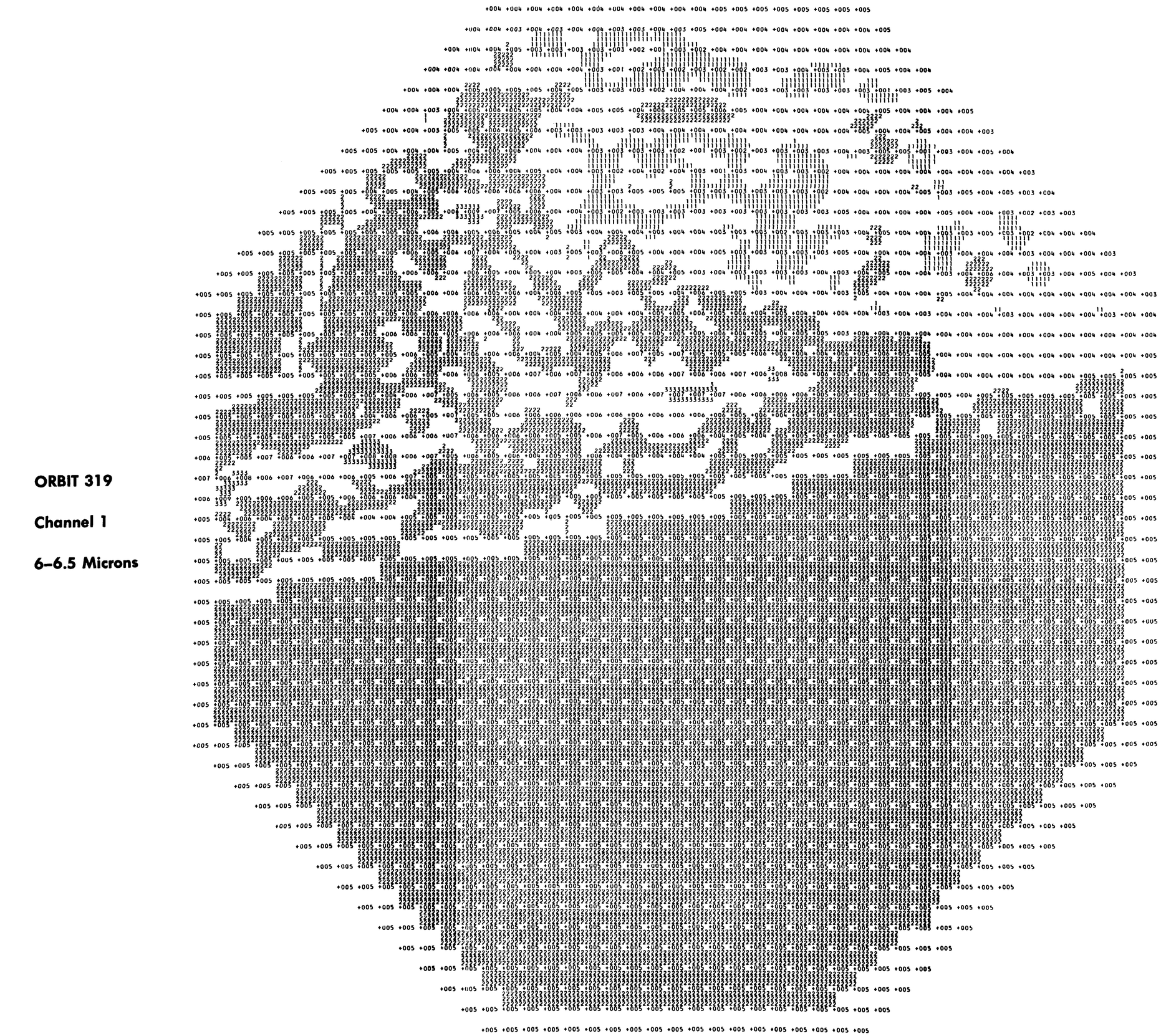
ORBIT 319

Channel 1

6–6.5 Microns



TIROS RADIATION DATA 6-6.5 MICRON FROM J DAY 022 AT 0523Z FOR 007 MINUTES

G

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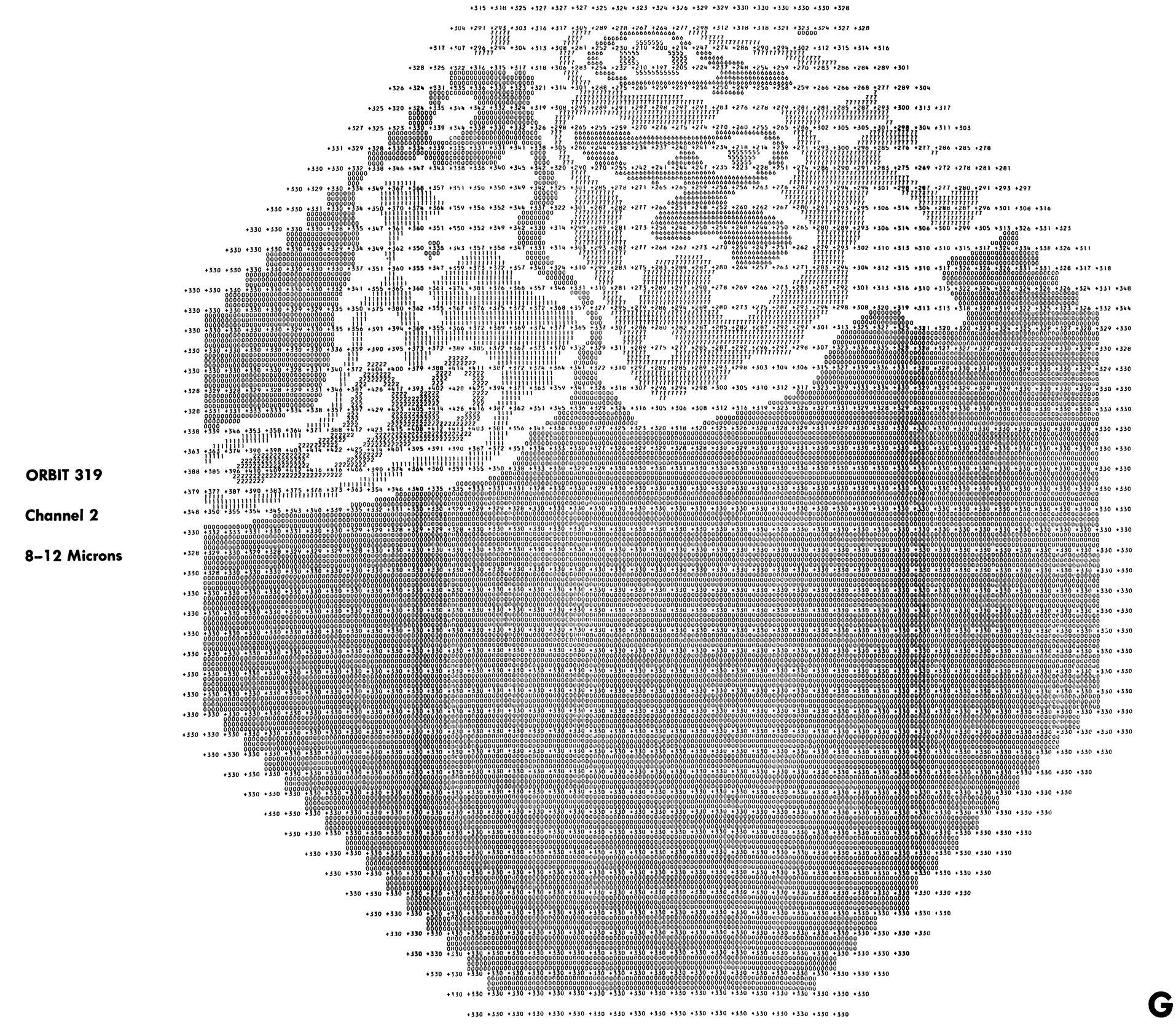
ORBIT 319

Channel 2

8-12 Microns



TIROS RADIATION DATA 8-12 MICRON FROM J DAY 022 AT 0523Z FOR 007 MINUTES

G

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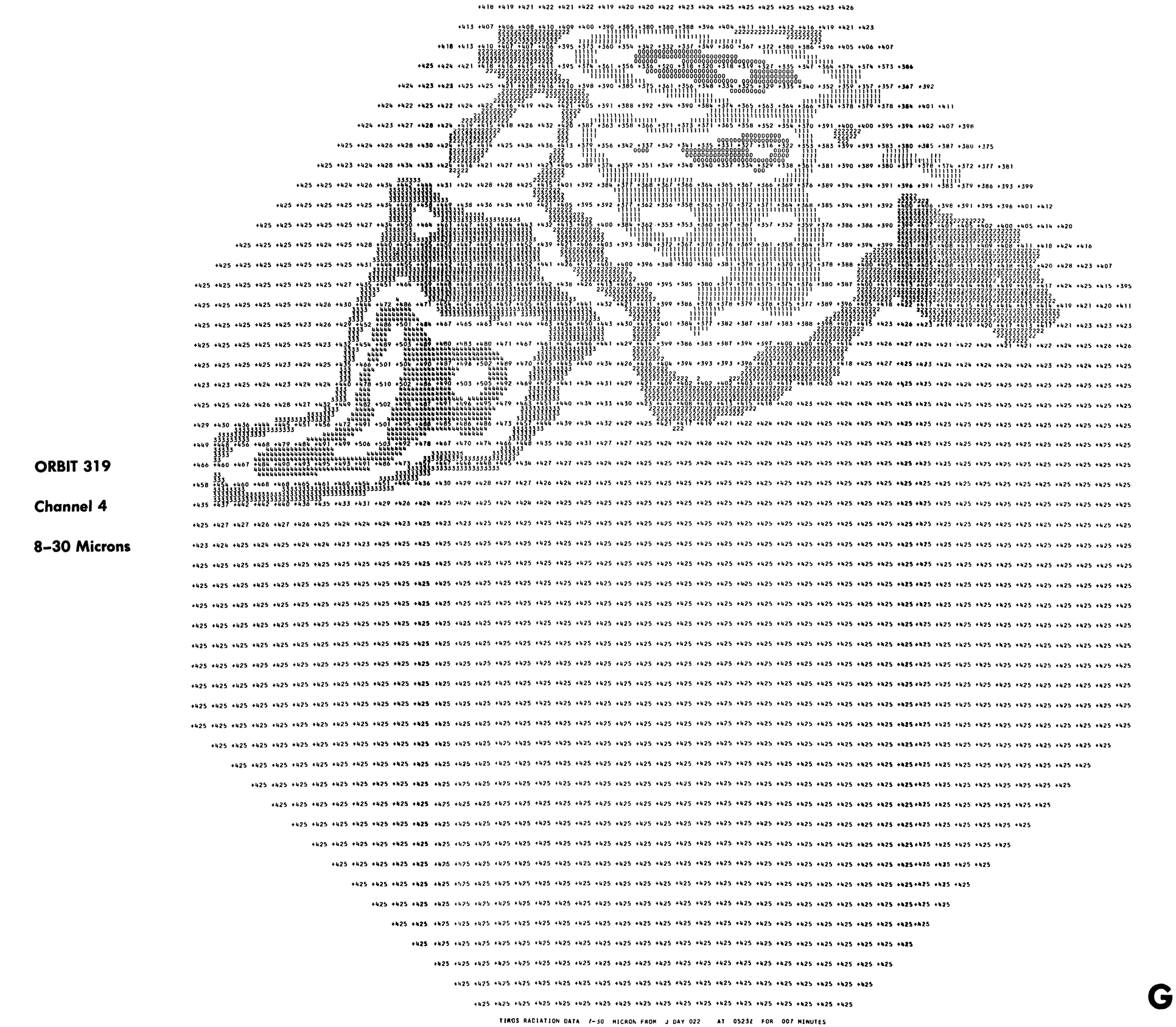
ORBIT 319

Channel 4

8–30 Microns



G

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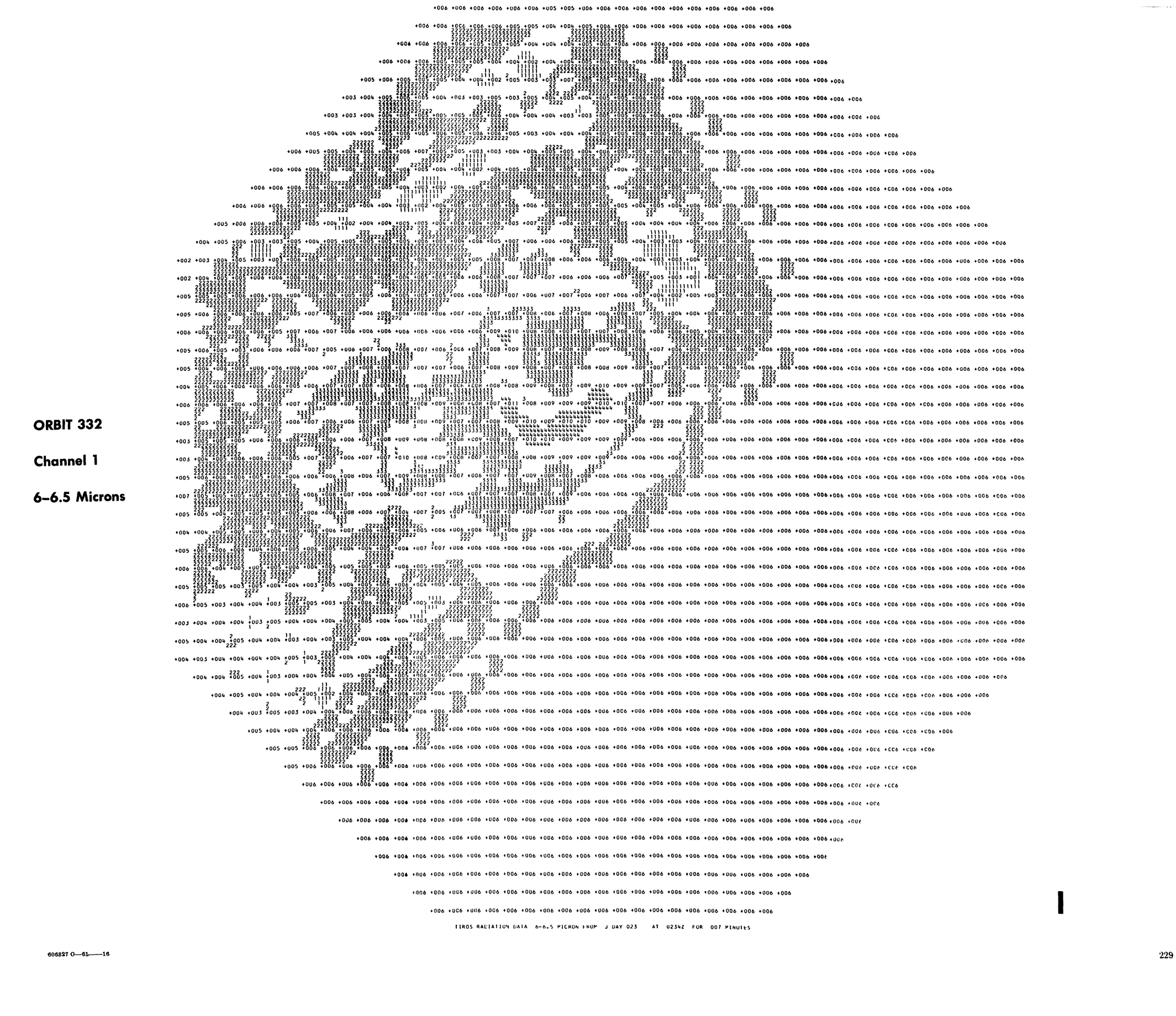
ORBIT 332

Channel 1

6–6.5 Microns



TIROS RADIATION DATA 6-6.5 MICRON FROM J DAY 023 AT 0234Z FOR 007 MINUTES

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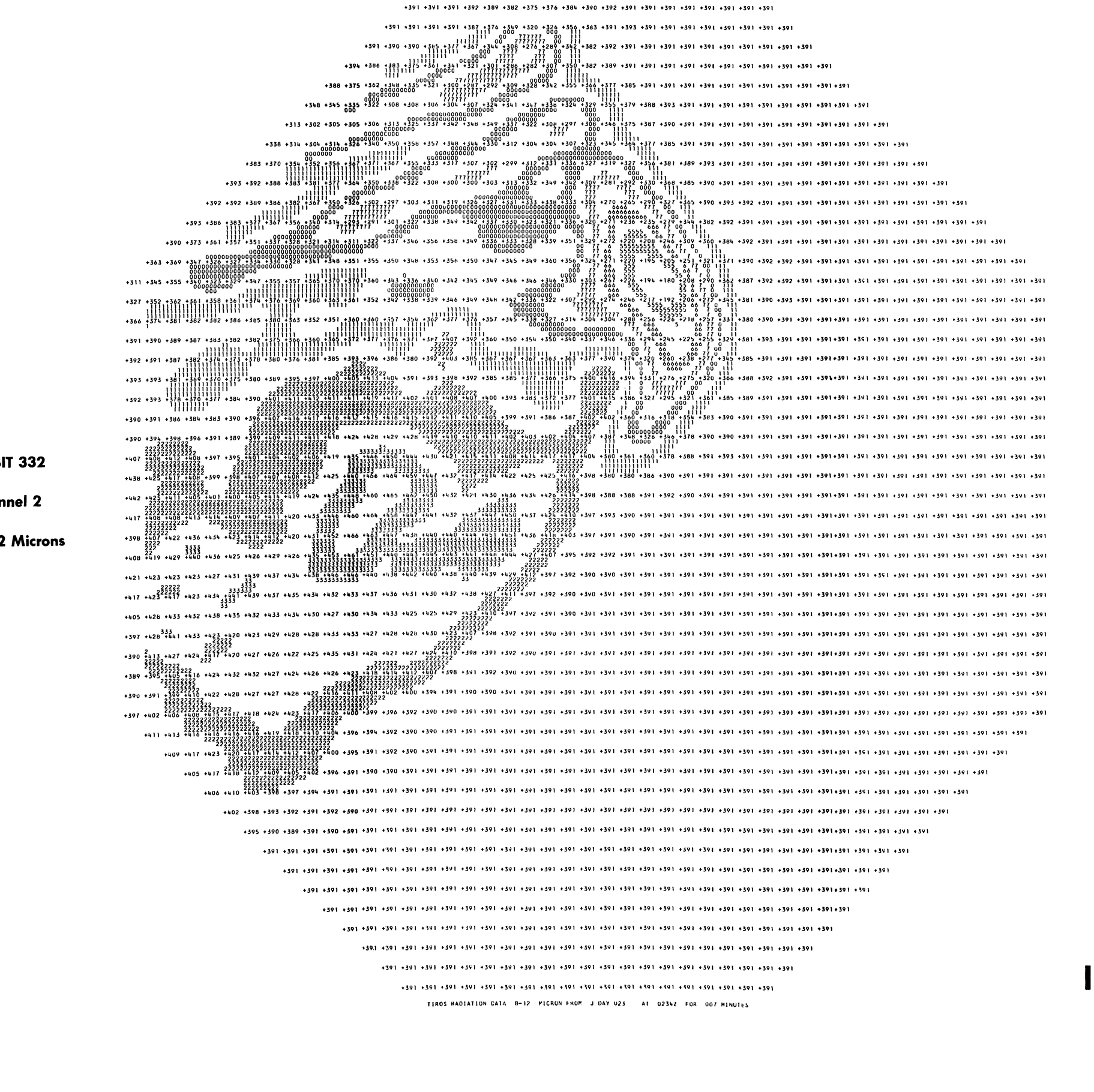
ORBIT 332

Channel 2

8–12 Microns



TIROS RADIATION DATA 8-12 MICRON FROM J DAY 025 AT 0234Z FOR 007 MINUTES

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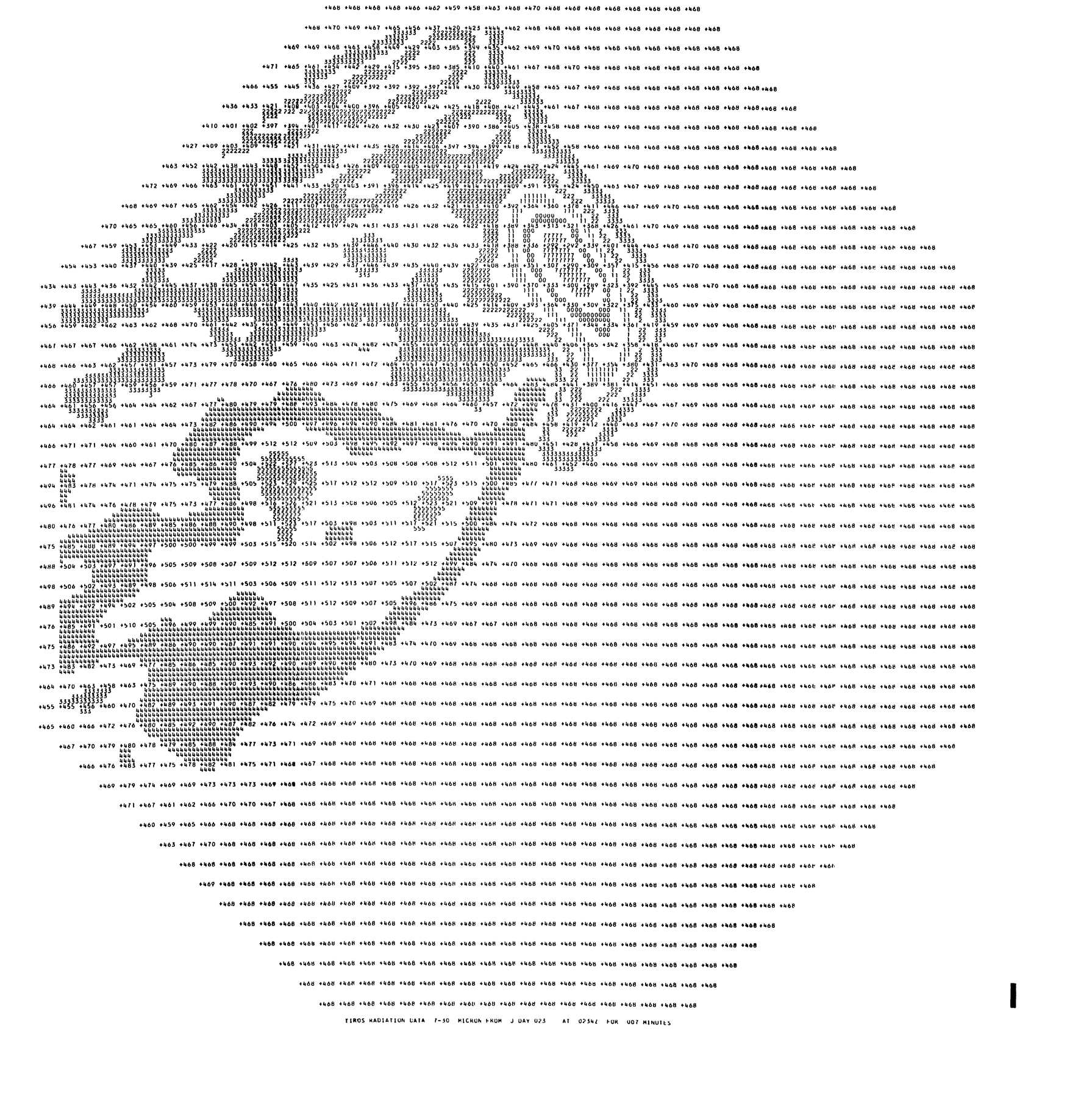
ORBIT 332

Channel 4

8–30 Microns



TIROS RADIATION DATA 7-30 MICRON FROM J DAY 023 AT 02342 FOR 007 MINUTES

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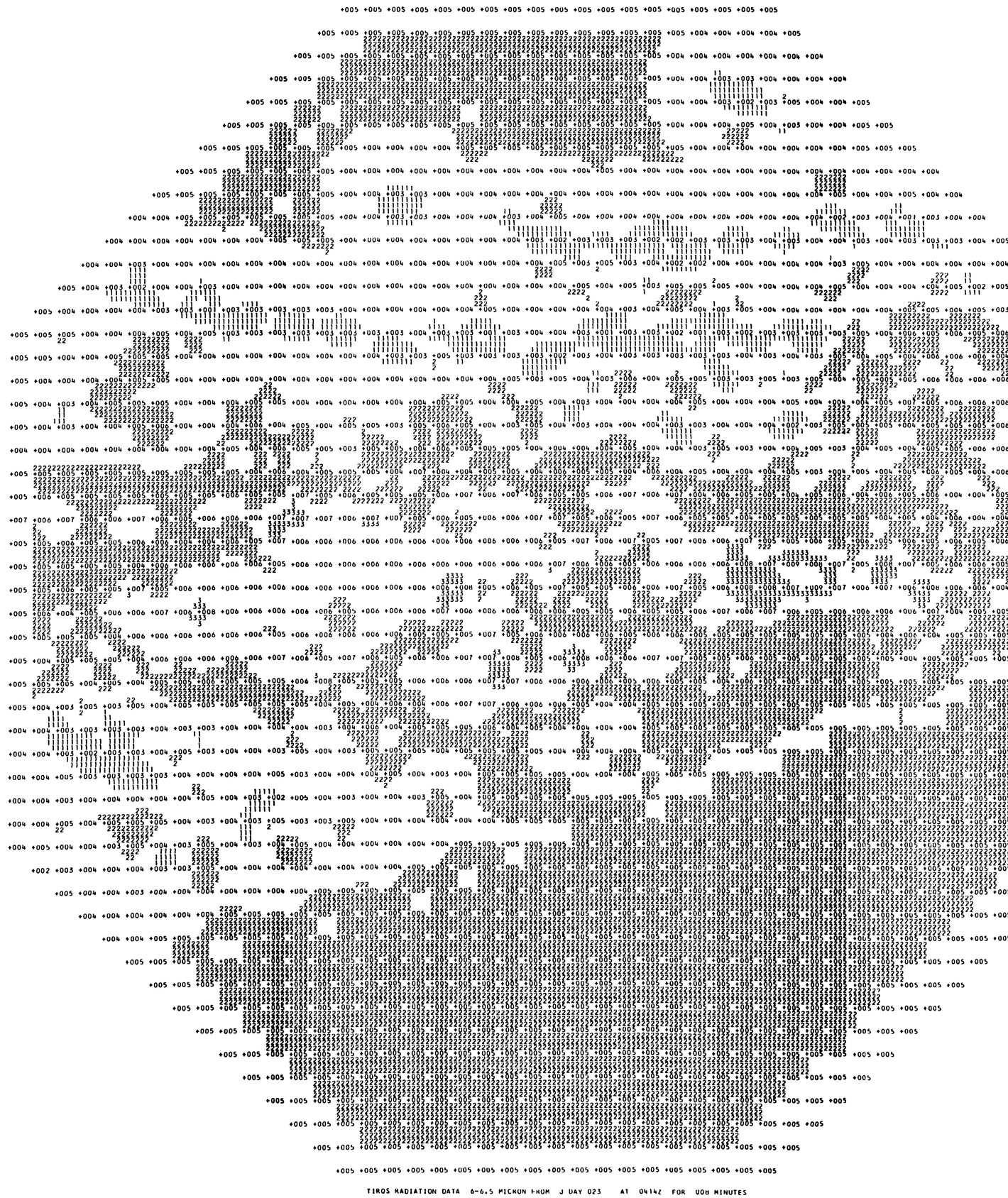
ORBIT 333

Channel 1

6-6.5 Microns



TIROS RADIATION DATA 6-6.5 MICRON FROM J DAY 023 AT 0414Z FOR 008 MINUTES

G

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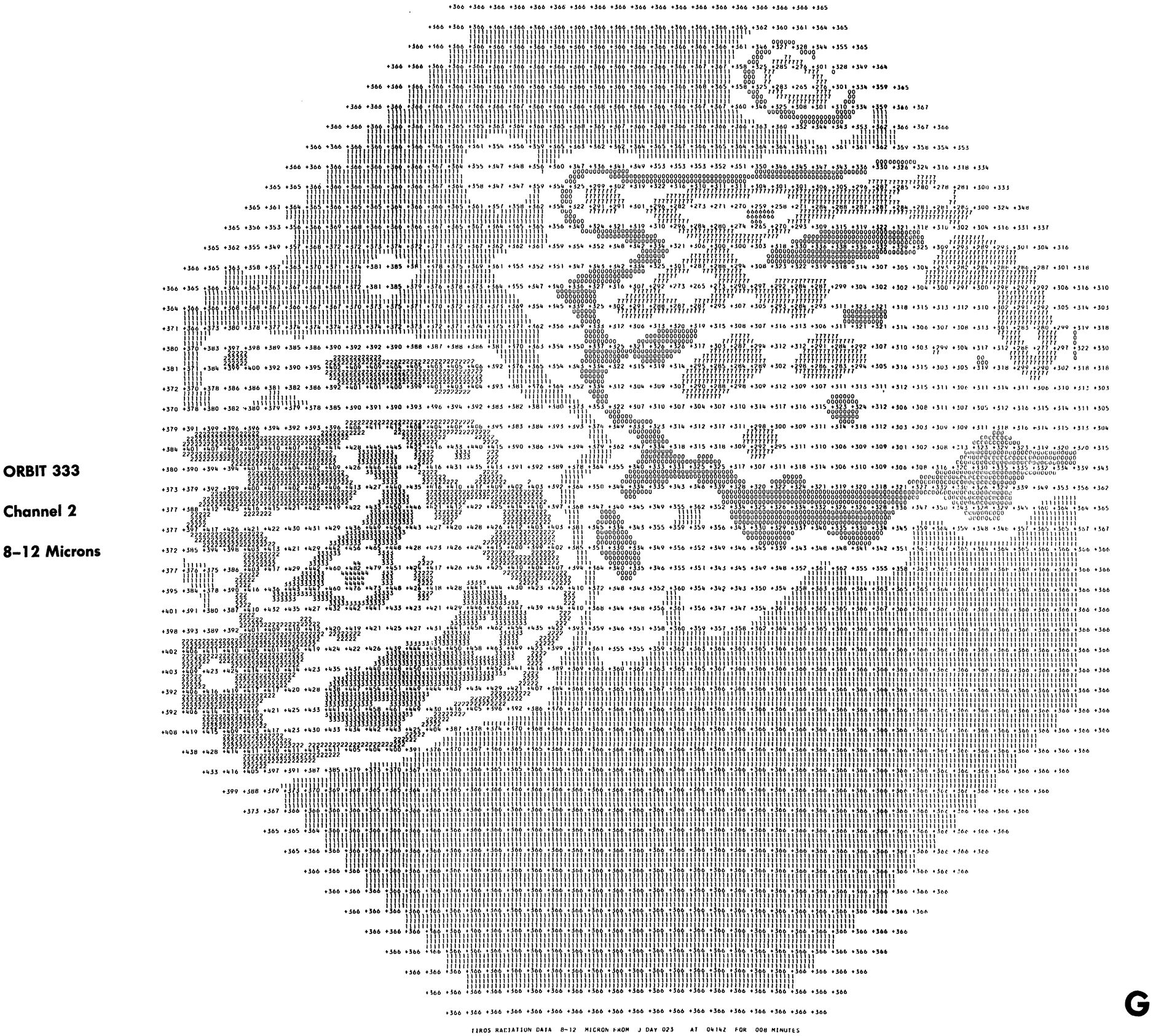
ORBIT 333

Channel 2

8–12 Microns



TIROS RADIATION DATA 8-12 MICRON FROM J DAY 023 AT 0414Z FOR 008 MINUTES

G

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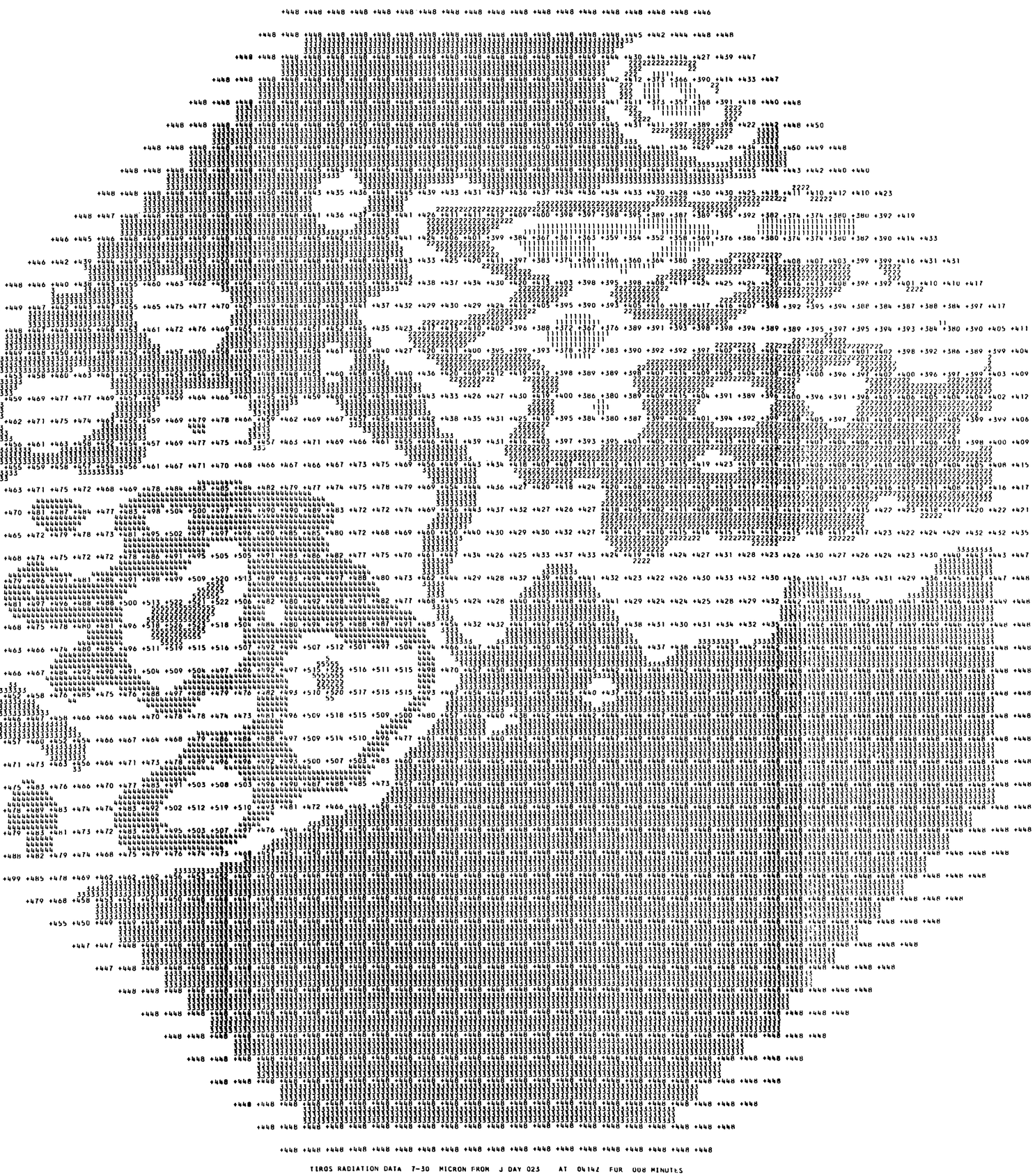
ORBIT 333

Channel 4

8–30 Microns



G

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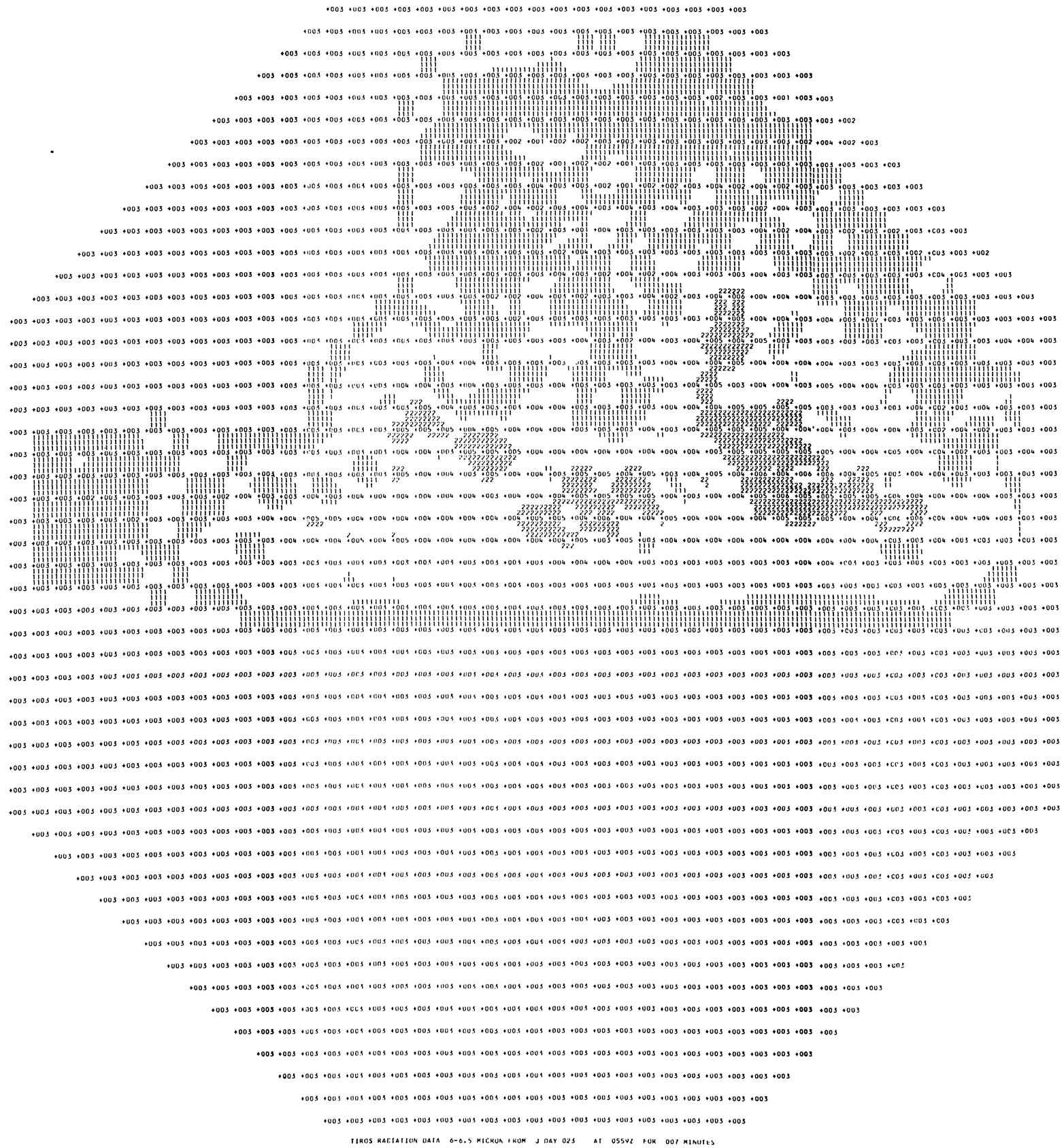
ORBIT 334

Channel 1

6–6.5 Microns



TIROS RADIATION DATA 6-6.5 MICRON FROM J DAY 023 AT 0559Z FOR 007 MINUTES

D

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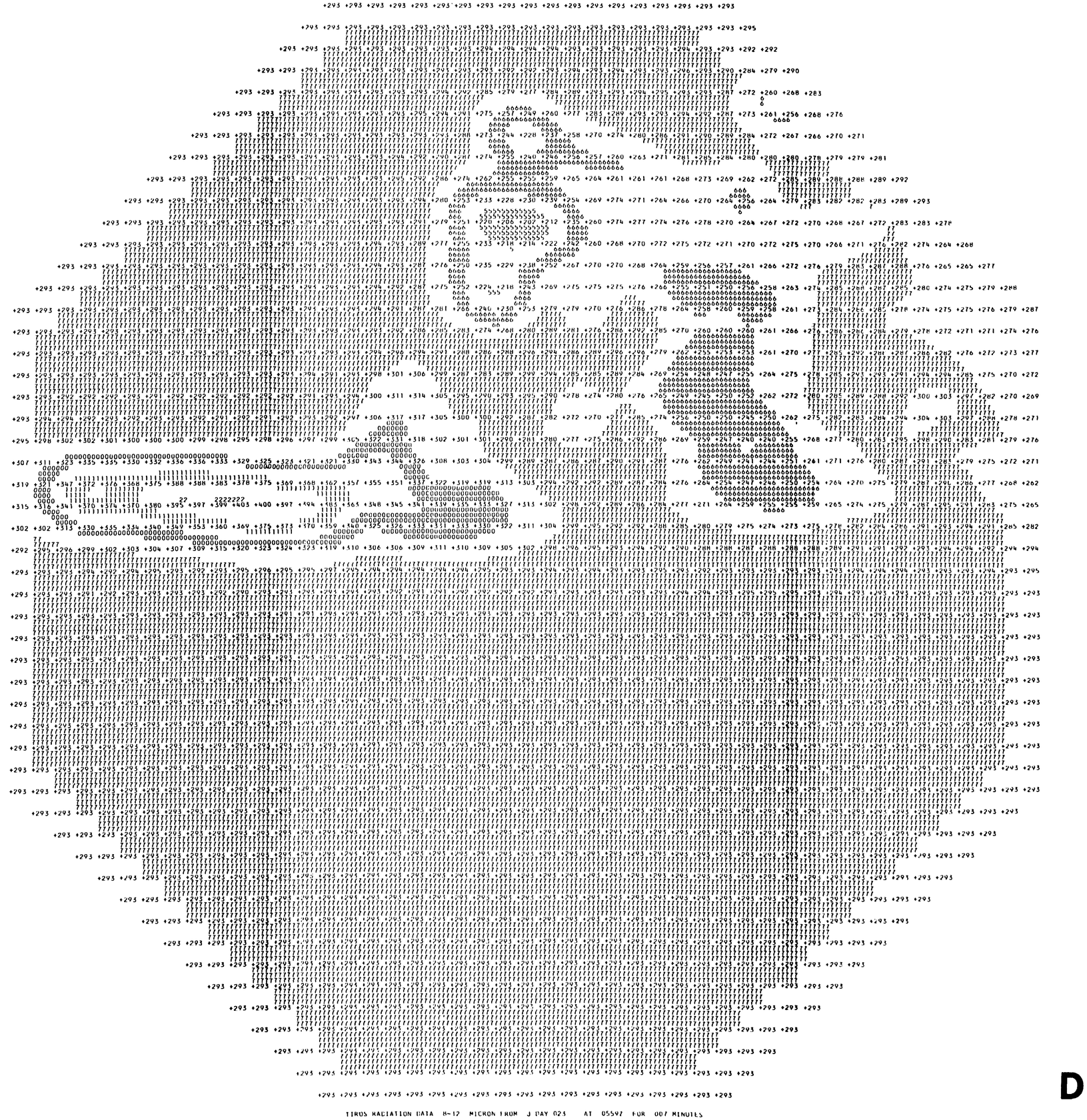
ORBIT 334

Channel 2

8–12 Microns



D

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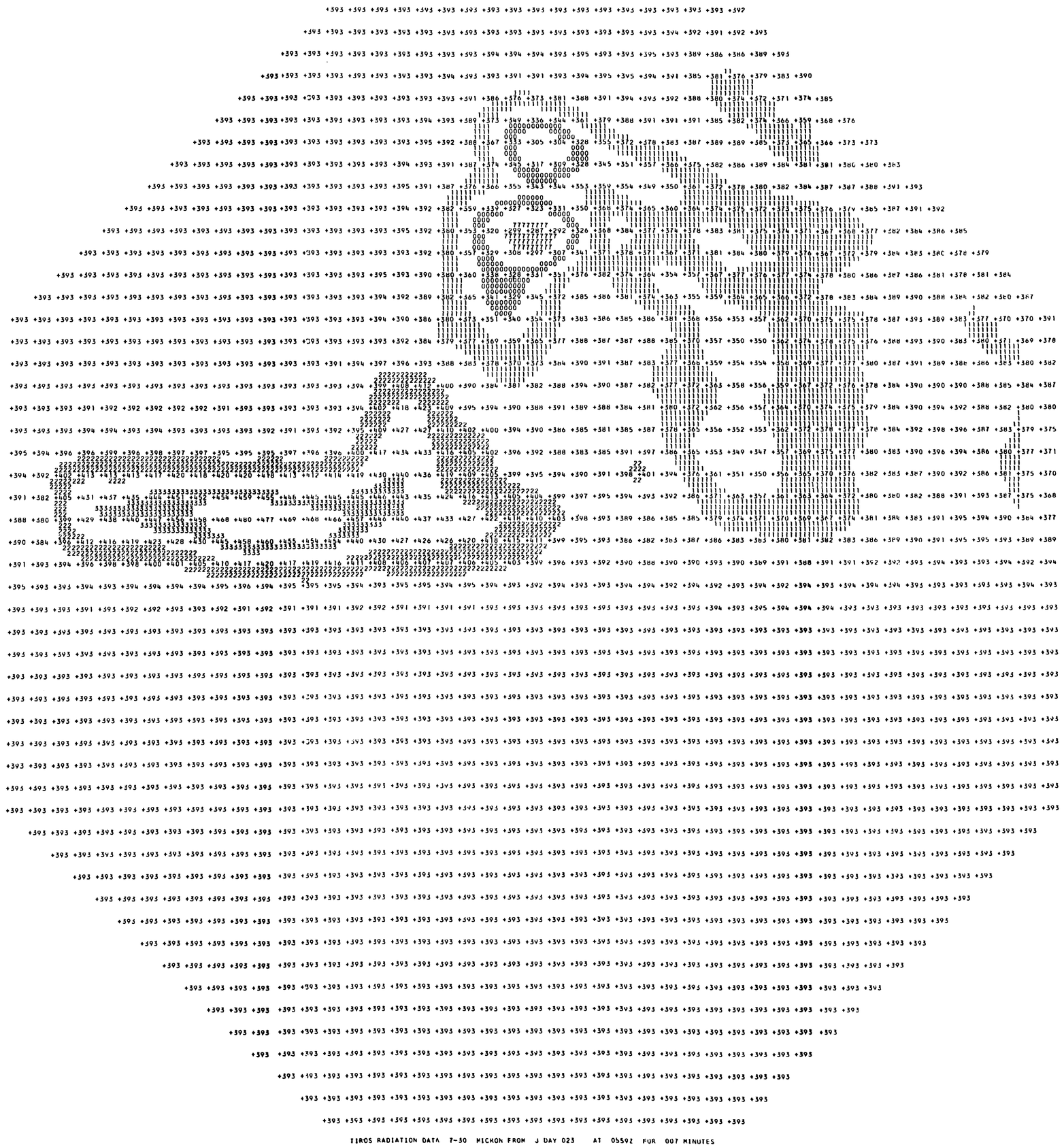
ORBIT 334

Channel 4

8–30 Microns



TIROS RADIATION DATA 7-30 MICRON FROM J DAY 023 AT 0559Z FOR 007 MINUTES

D

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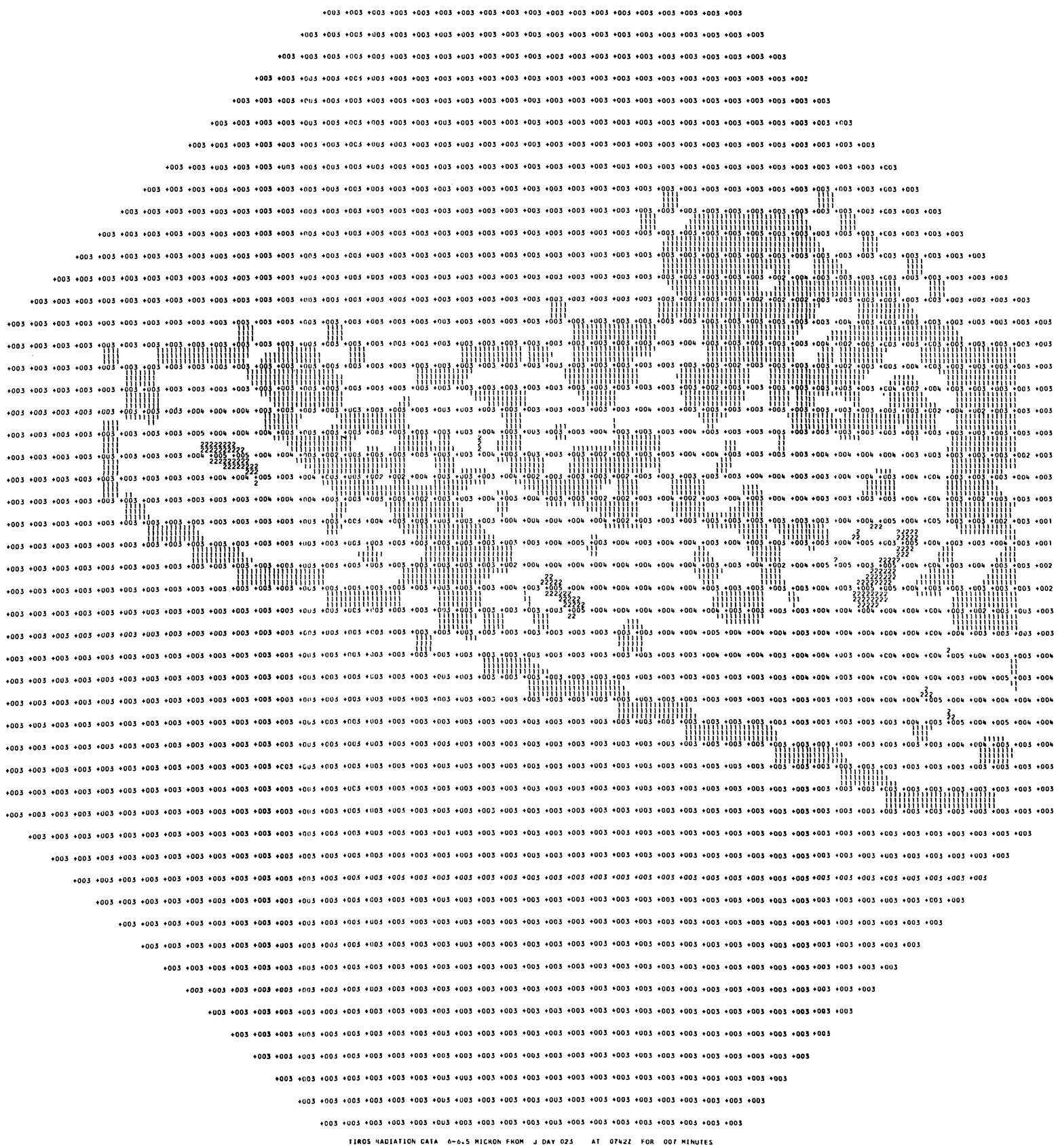
ORBIT 335

Channel 1

6–6.5 Microns



TIROS RADIATION DATA 6-6.5 MICRON FROM J DAY 025 AT 0742Z FOR 007 MINUTES

A

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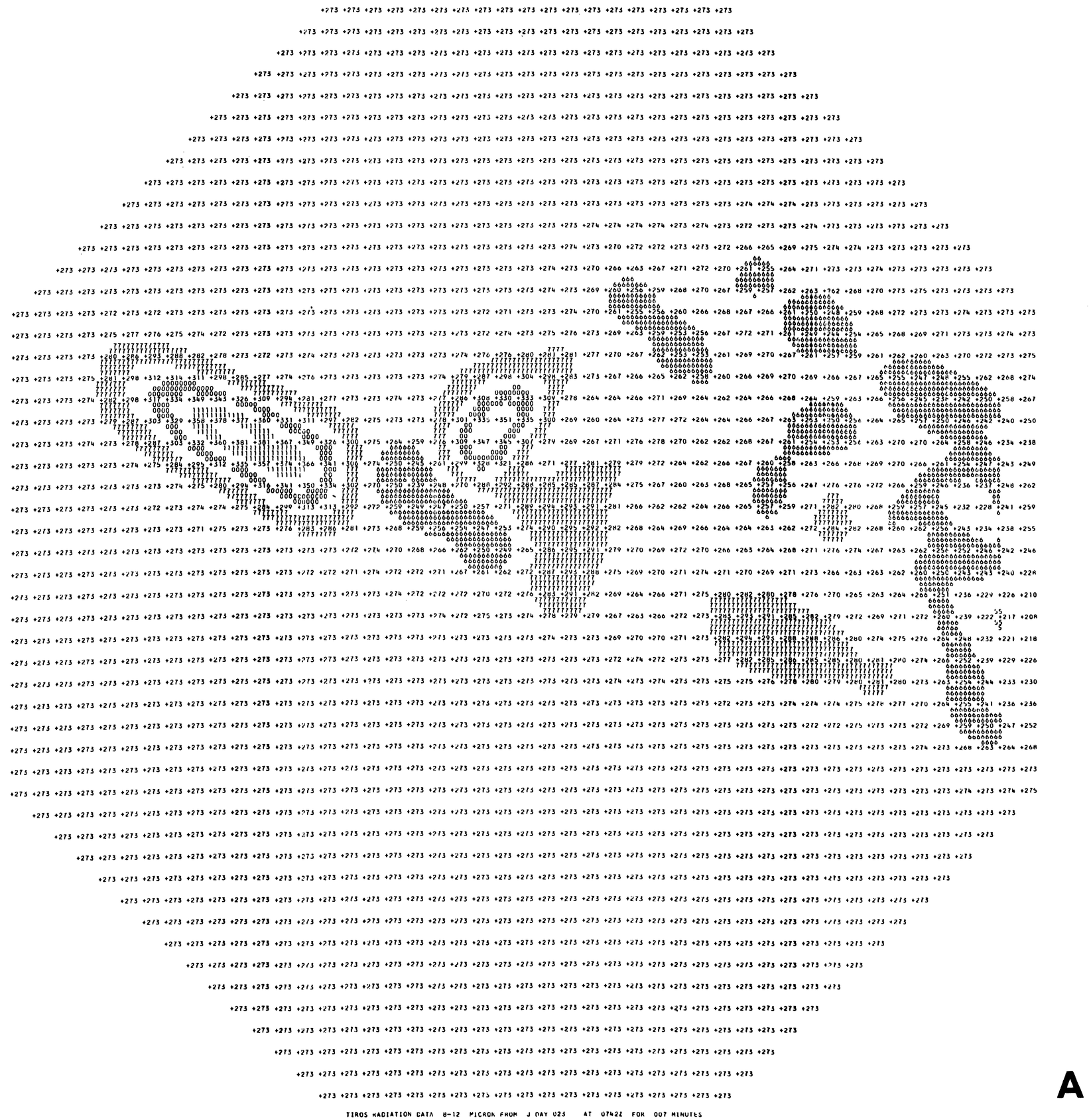
ORBIT 335

Channel 2

8–12 Microns



A

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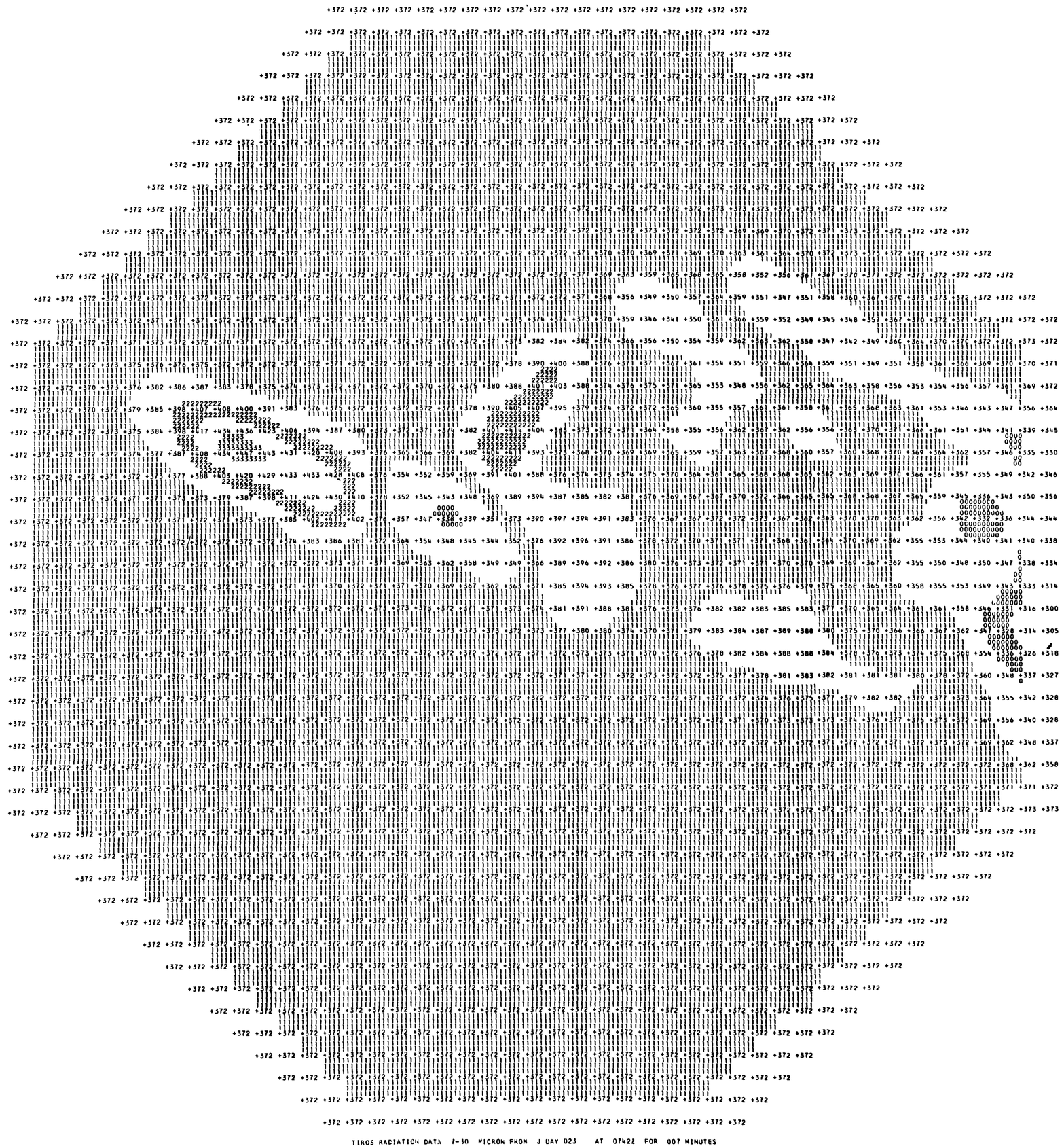
ORBIT 335

Channel 4

8–30 Microns



A

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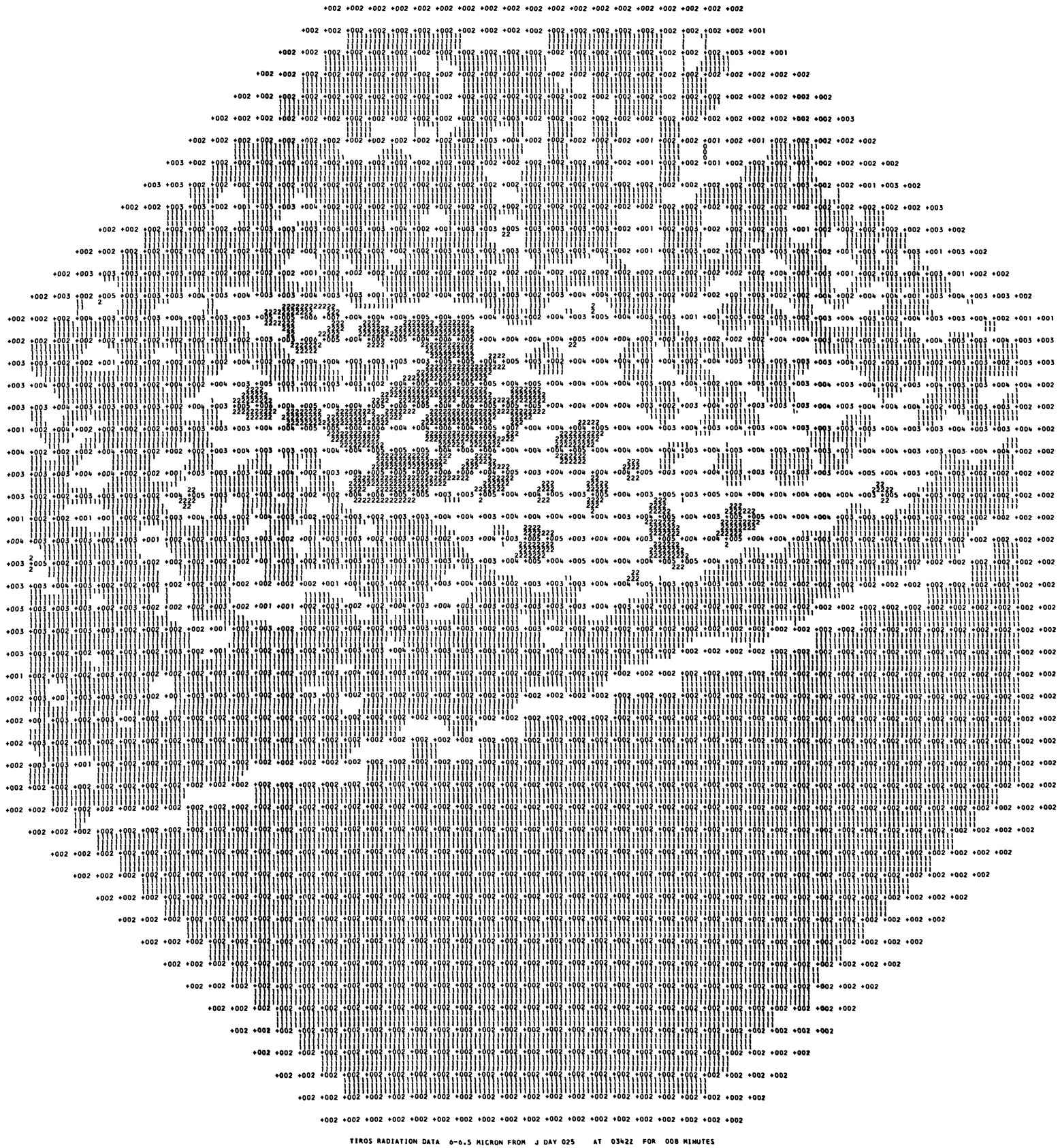
ORBIT 362

Channel 1

6–6.5 Microns



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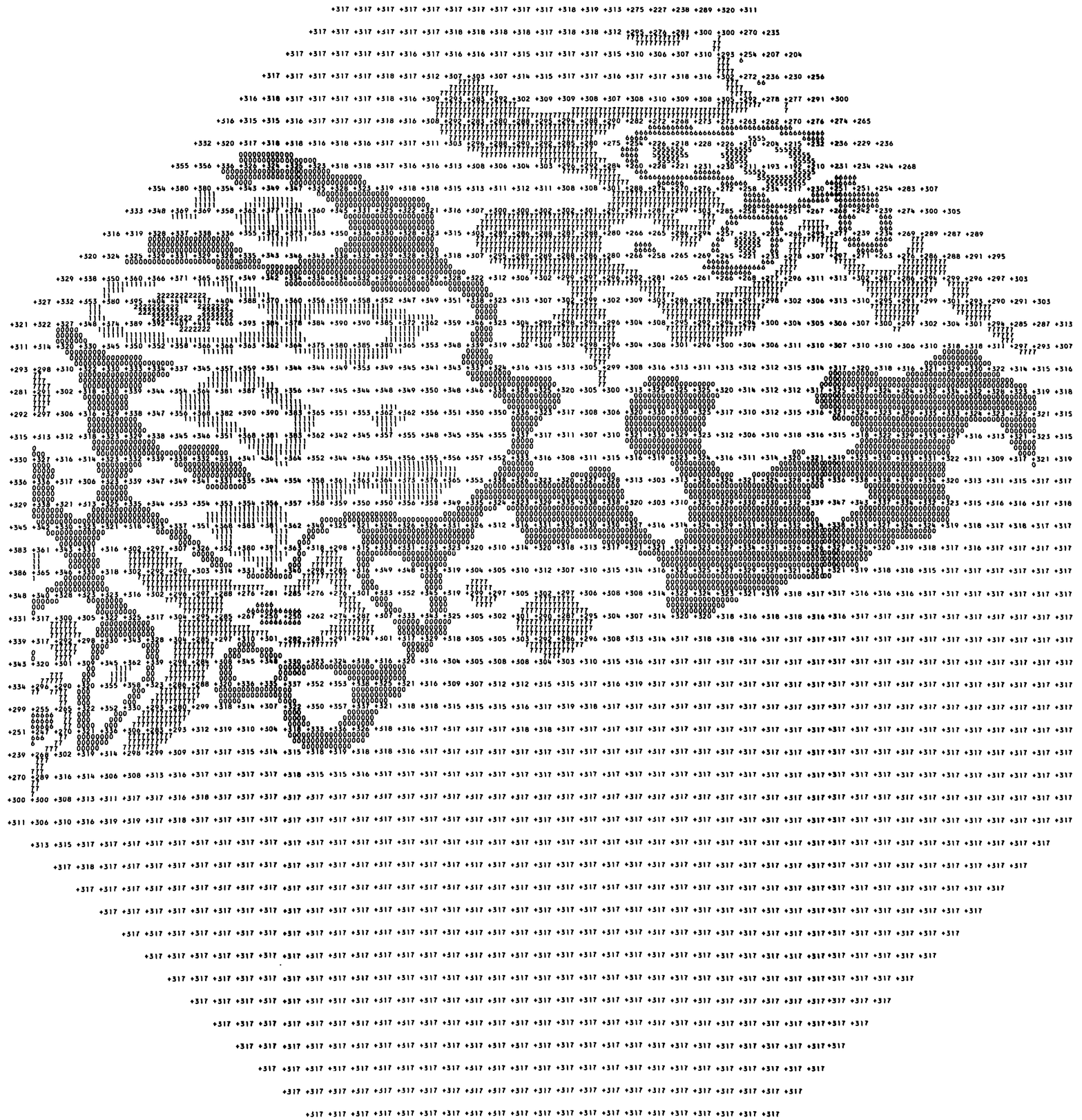
ORBIT 362

Channel 2

8–12 *Microns*



TIROS RADIATION DATA 8-12 MICRON FROM J DAY 025 AT 0342Z FOR 008 MINUTES

G

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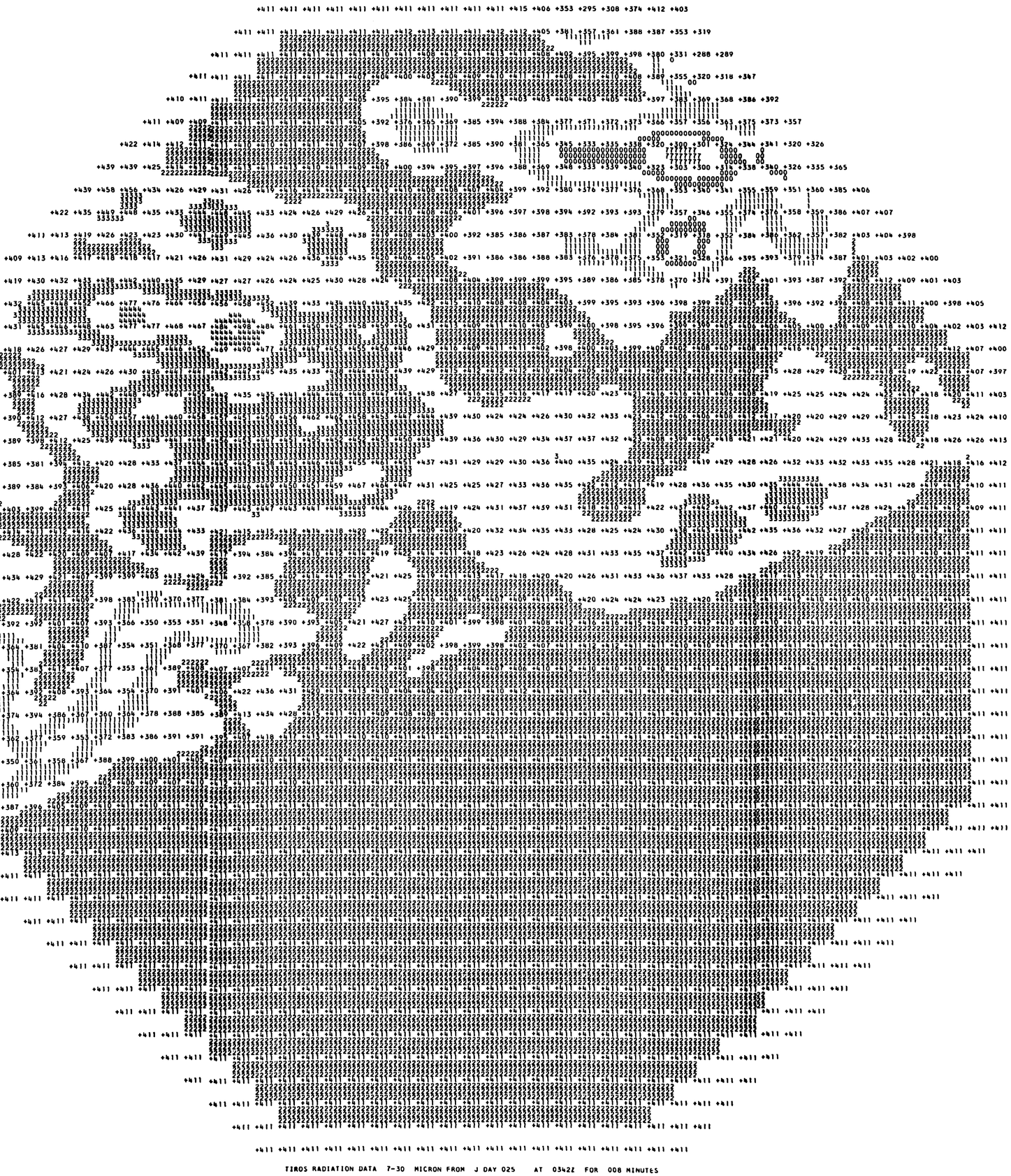
ORBIT 362

Channel 4

8–30 Microns



G

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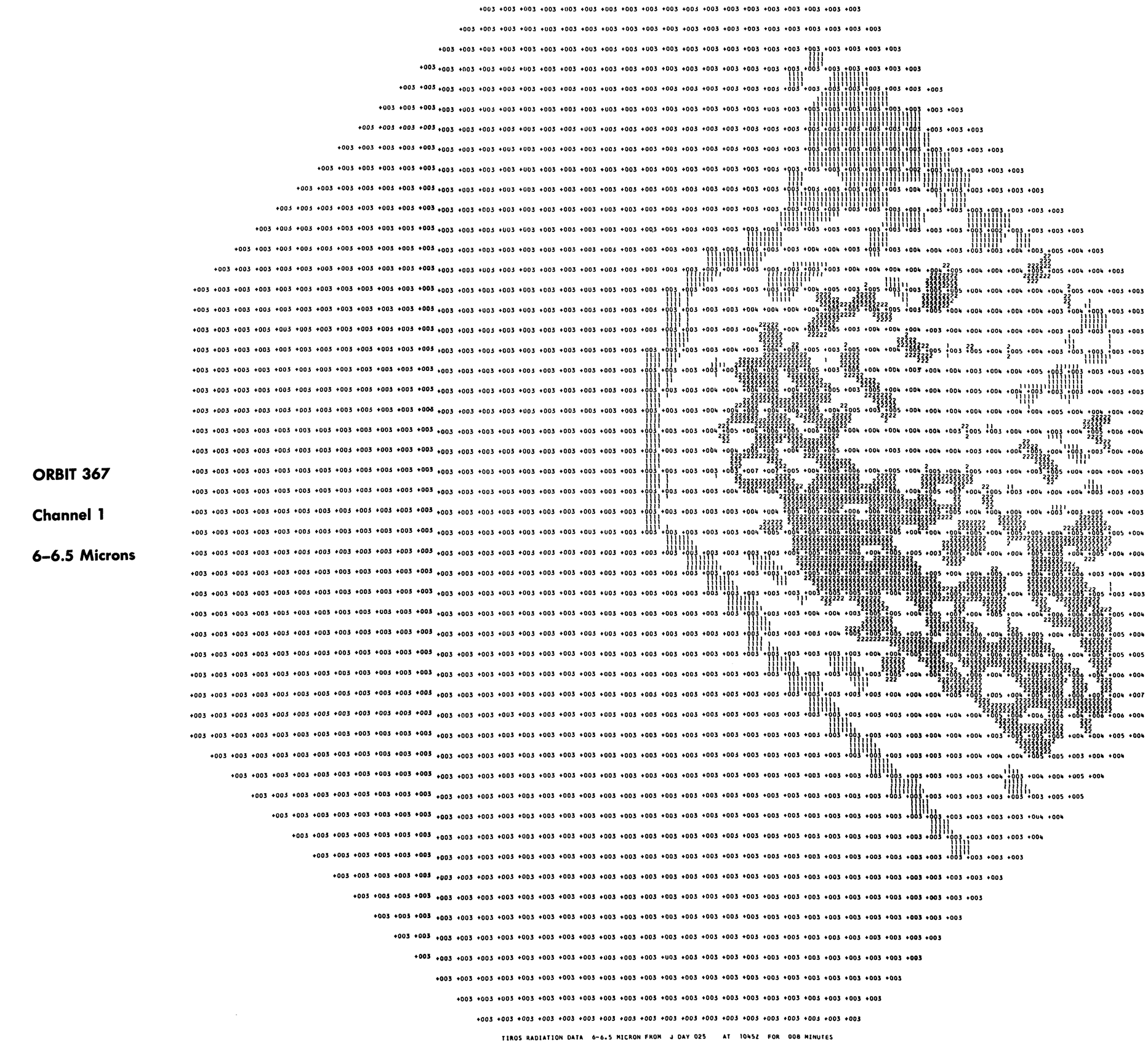
ORBIT 367

Channel 1

6–6.5 Microns



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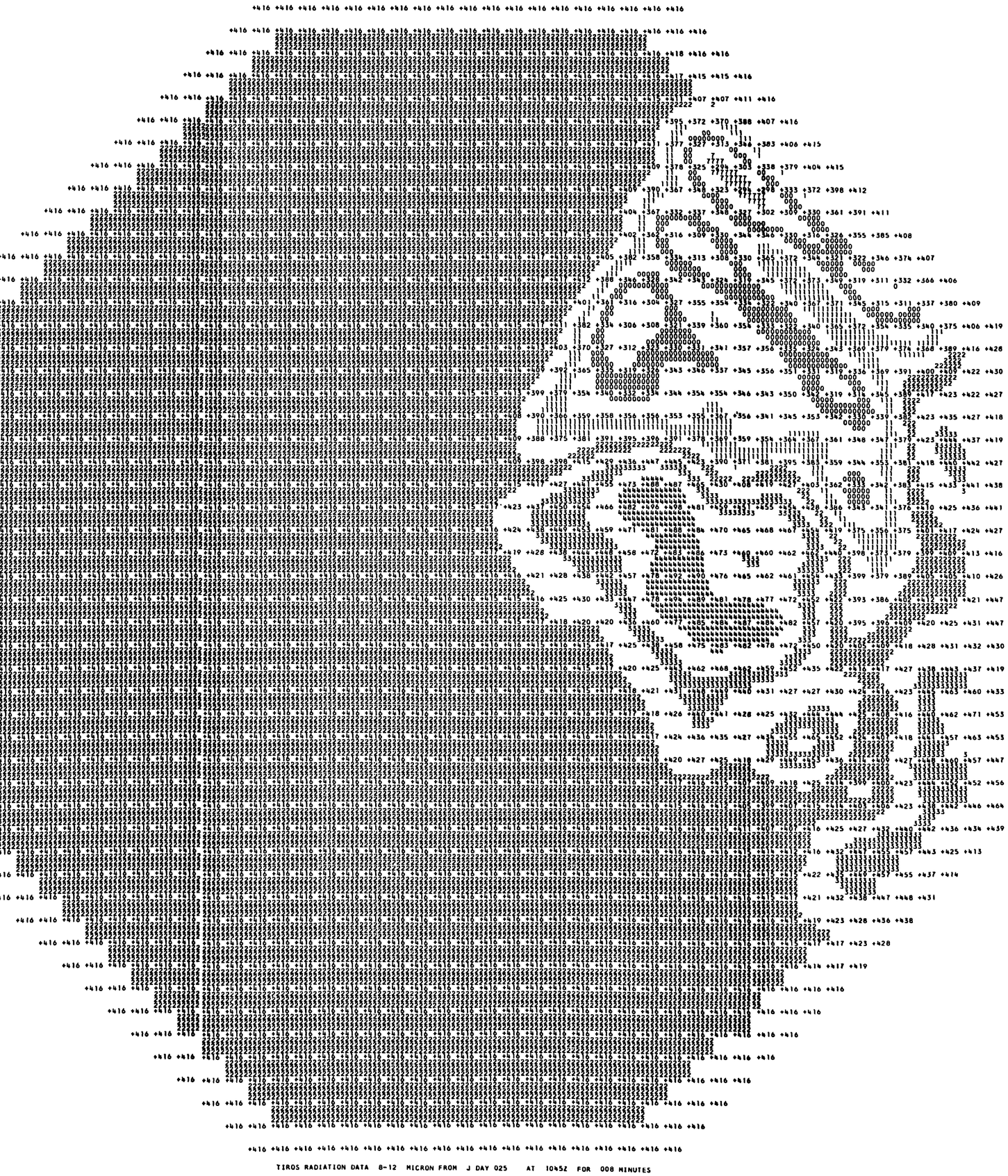
ORBIT 367

Channel 2

8–12 Microns



H

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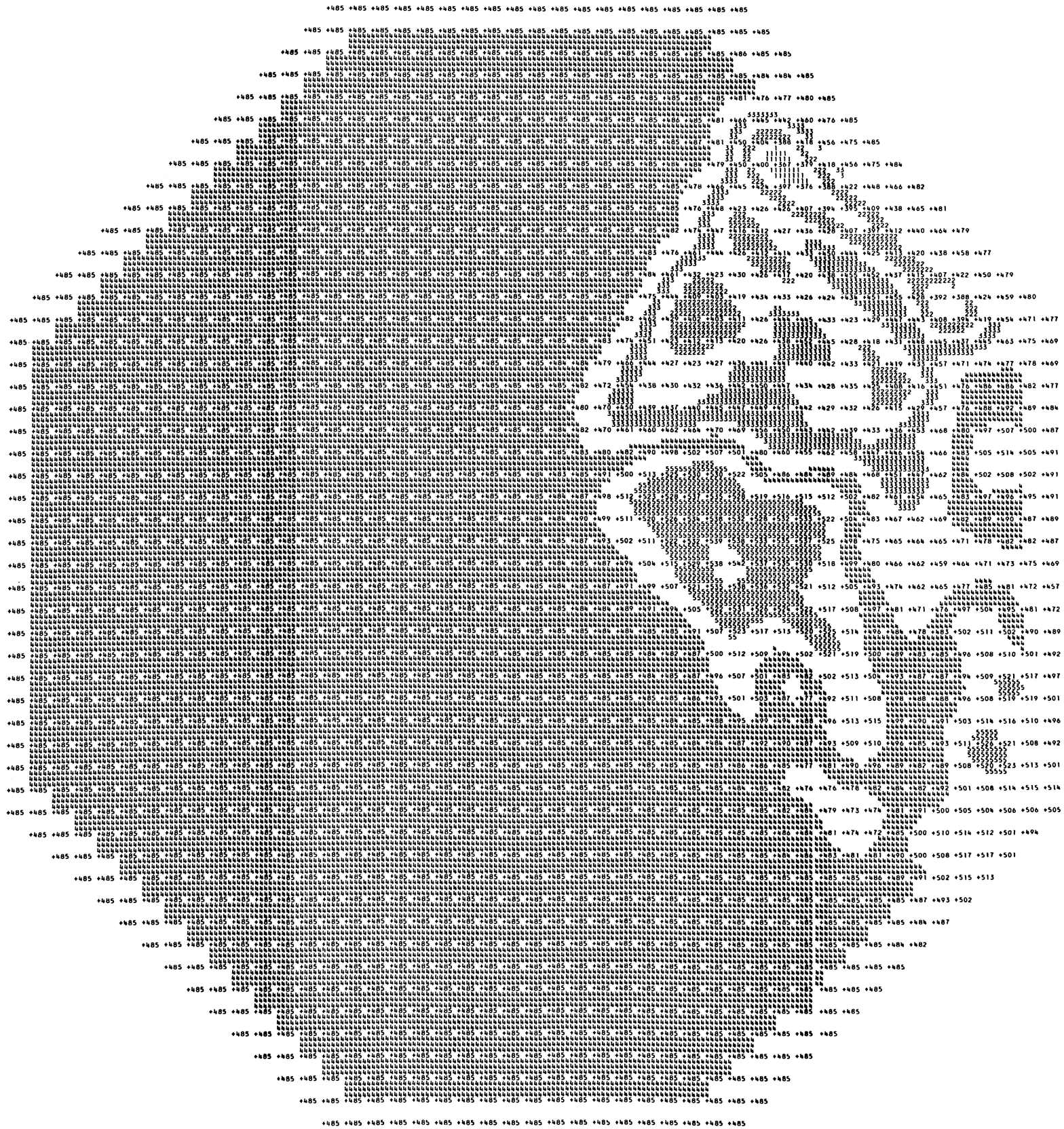
ORBIT 367

Channel 4

8–30 Microns



TIROS RADIATION DATA 7-30 MICRON FROM J DAY 025 AT 1045Z FOR 008 MINUTES

H

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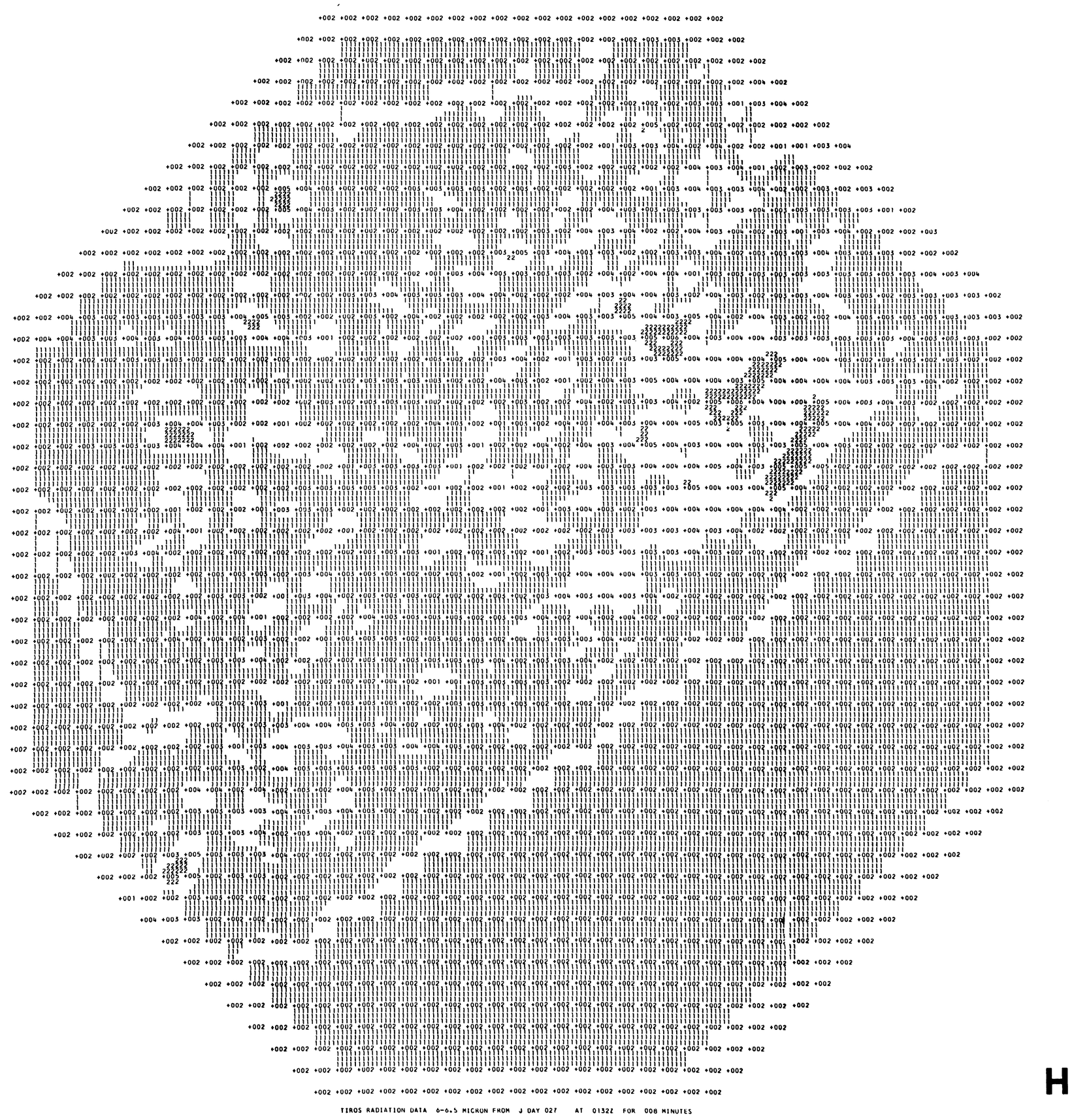
ORBIT 390

Channel 1

6–6.5 Microns



H

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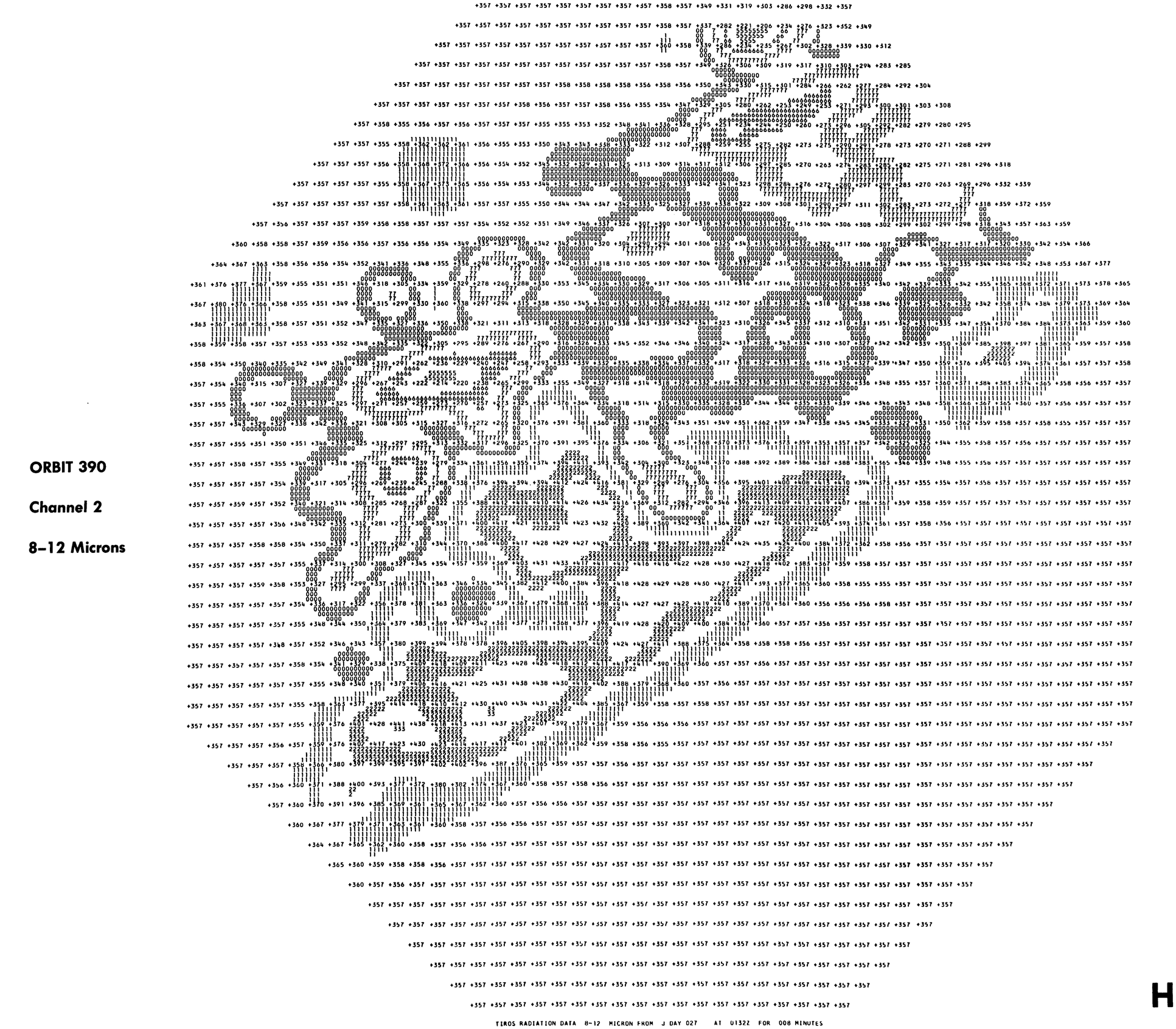
ORBIT 390

Channel 2

8–12 Microns



H

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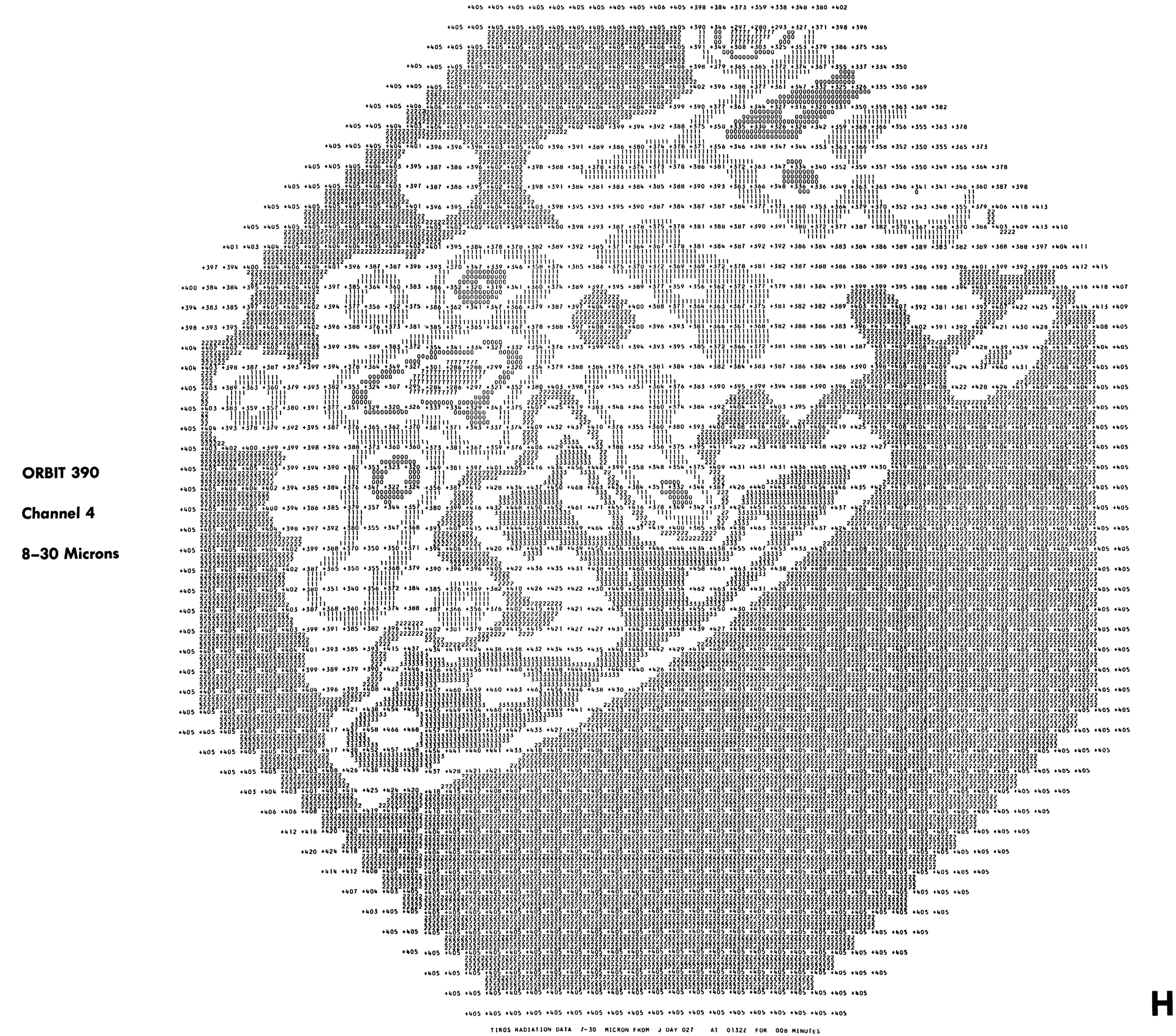
ORBIT 390

Channel 4

8–30 Microns



H

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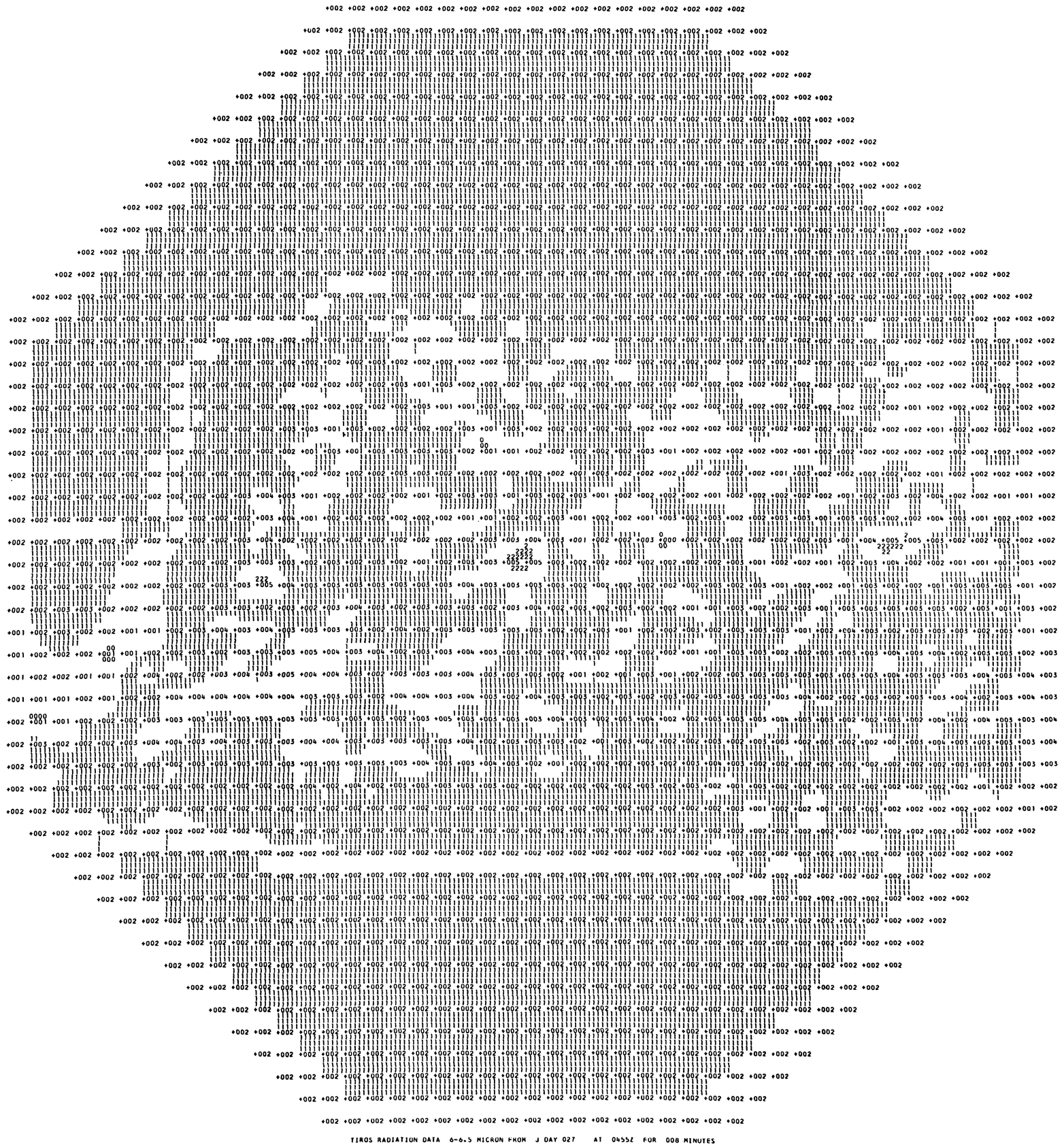
ORBIT 392

Channel 1

6–6.5 Microns



TIROS RADIATION DATA 6-6.5 MICRON FROM J DAY 027 AT 0455Z FOR 008 MINUTES

A

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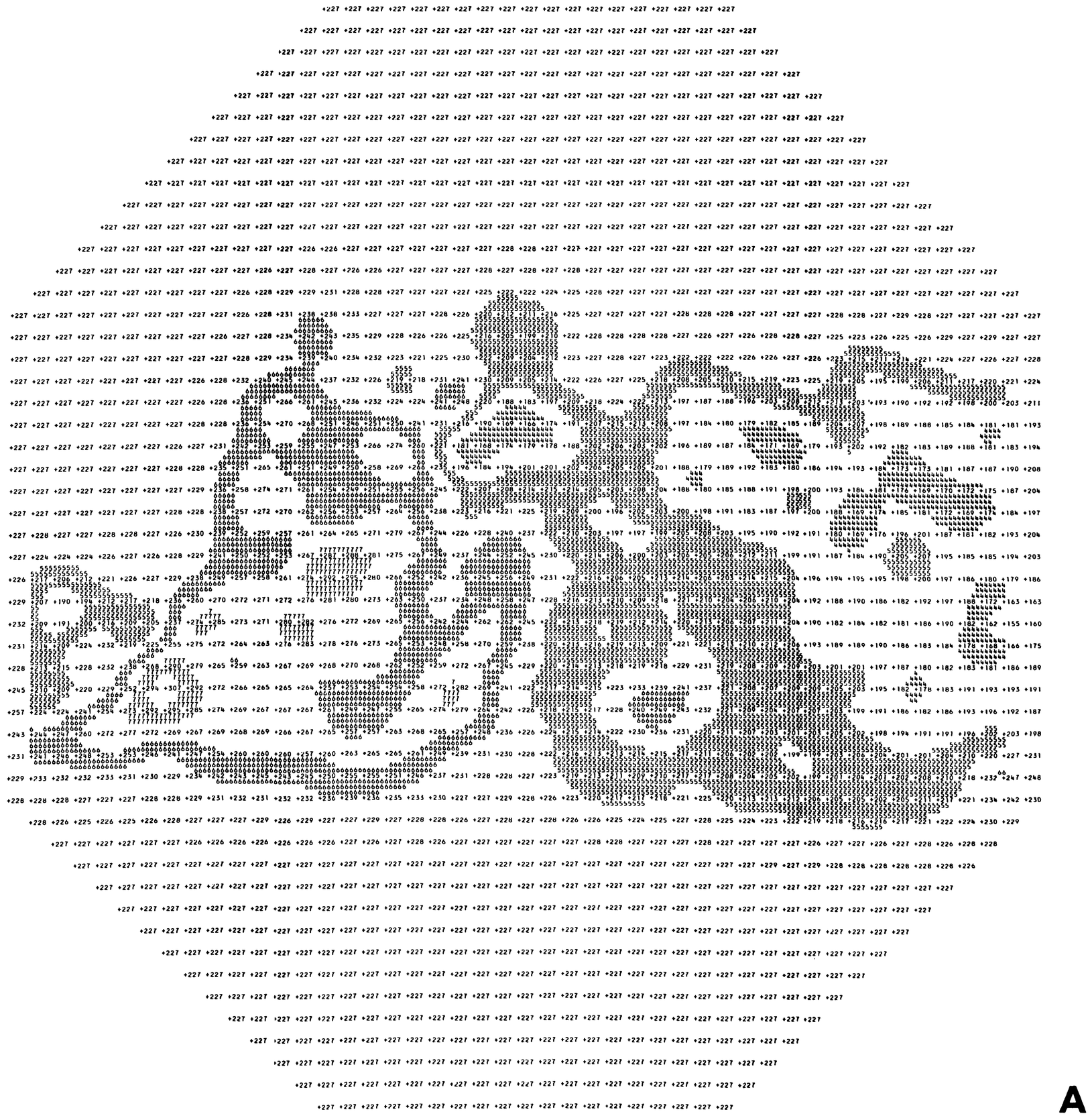
ORBIT 392

Channel 2

8–12 Microns



A

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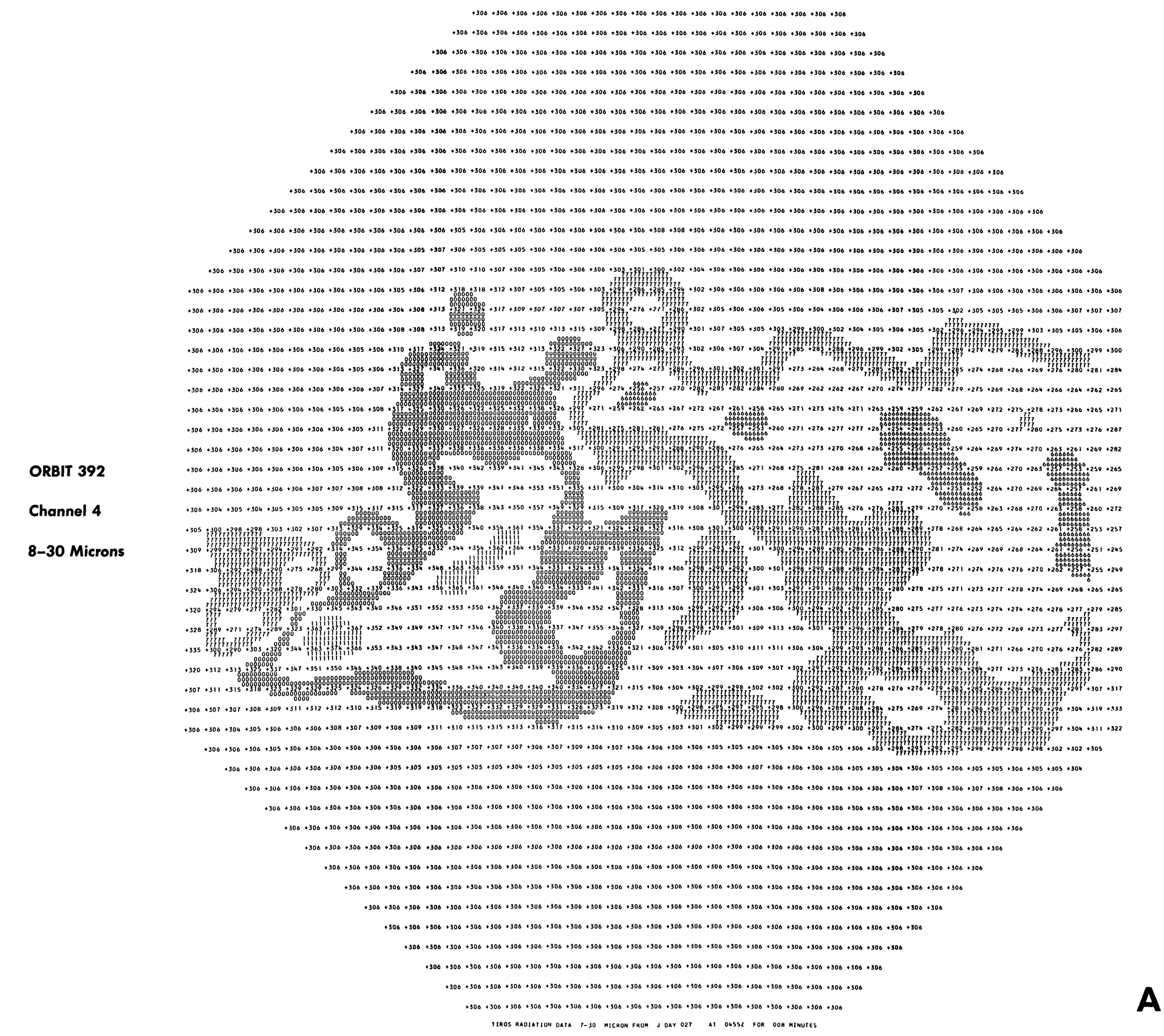
ORBIT 392

Channel 4

8–30 Microns



TIROS RADIATION DATA 7-30 MICRON FROM J DAY 027 AT 04552 FOR 008 MINUTES

A

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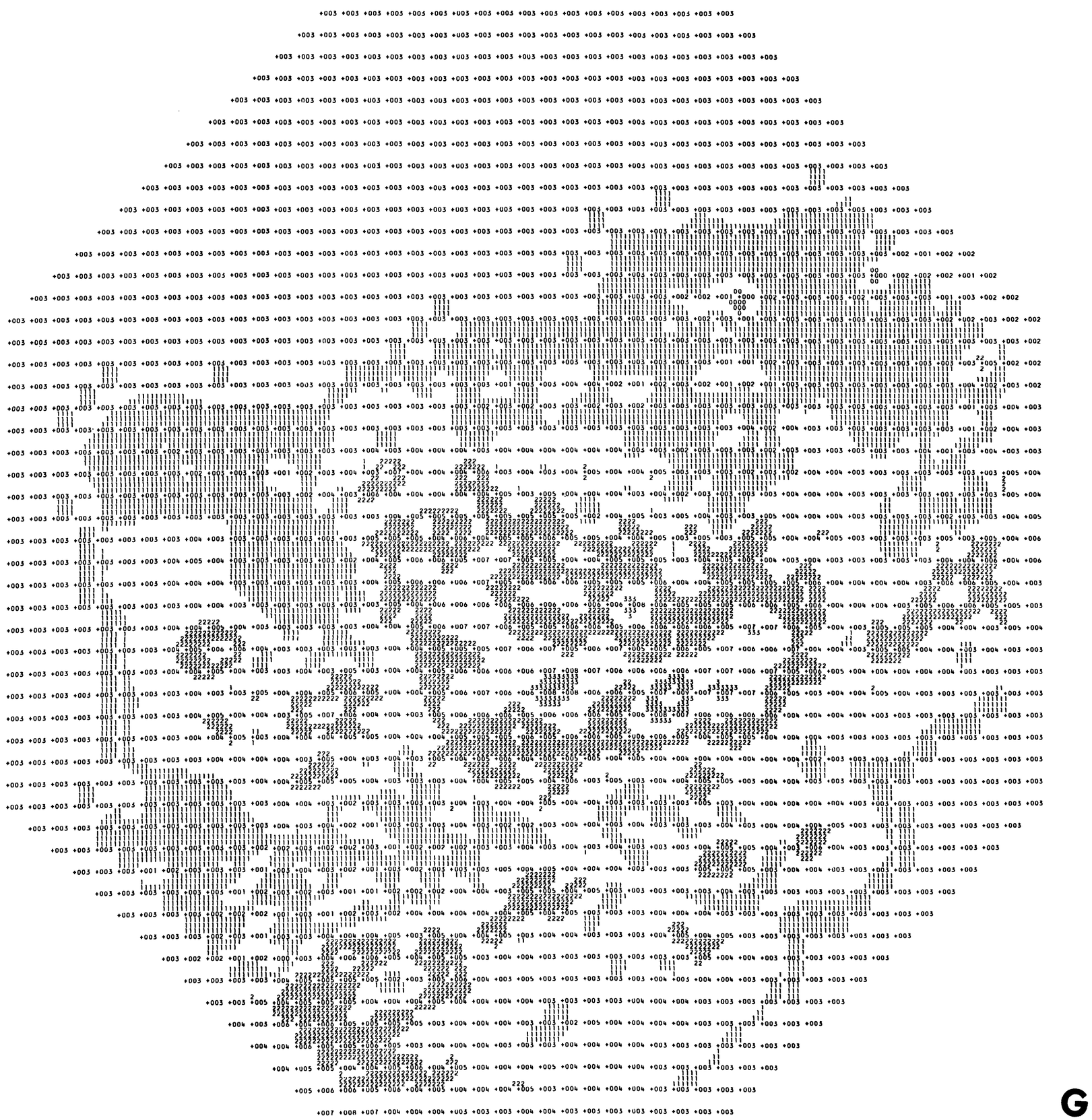
ORBIT 405

Channel 1

6–6.5 Microns



TIROS RADIATION DATA 6-6.5 MICRON FROM J DAY 028 AT 0202Z FOR 010 MINUTES

G

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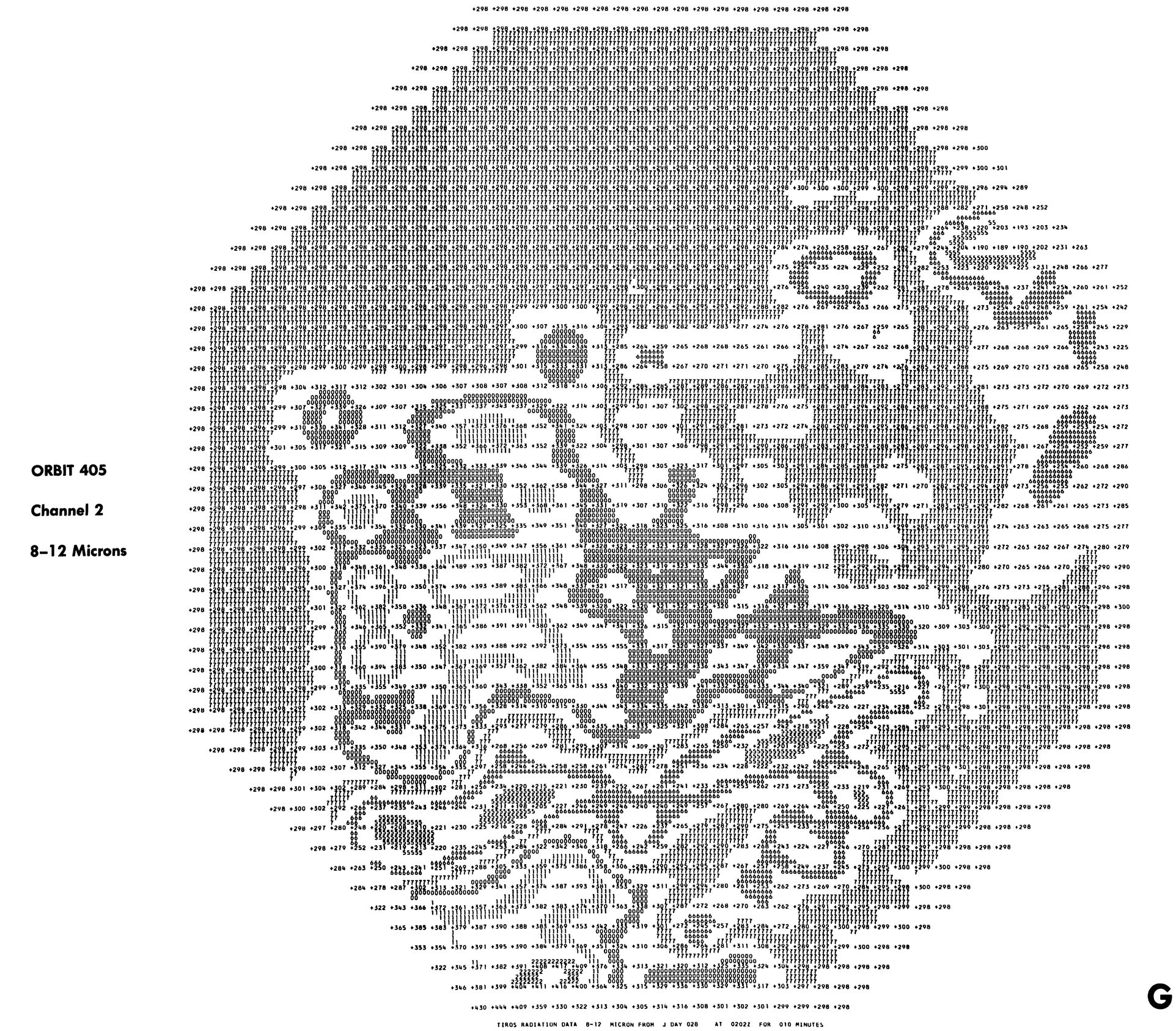
ORBIT 405

Channel 2

8–12 Microns



TIROS RADIATION DATA 8-12 MICRON FROM J DAY 028 AT 0202Z FOR 010 MINUTES

G

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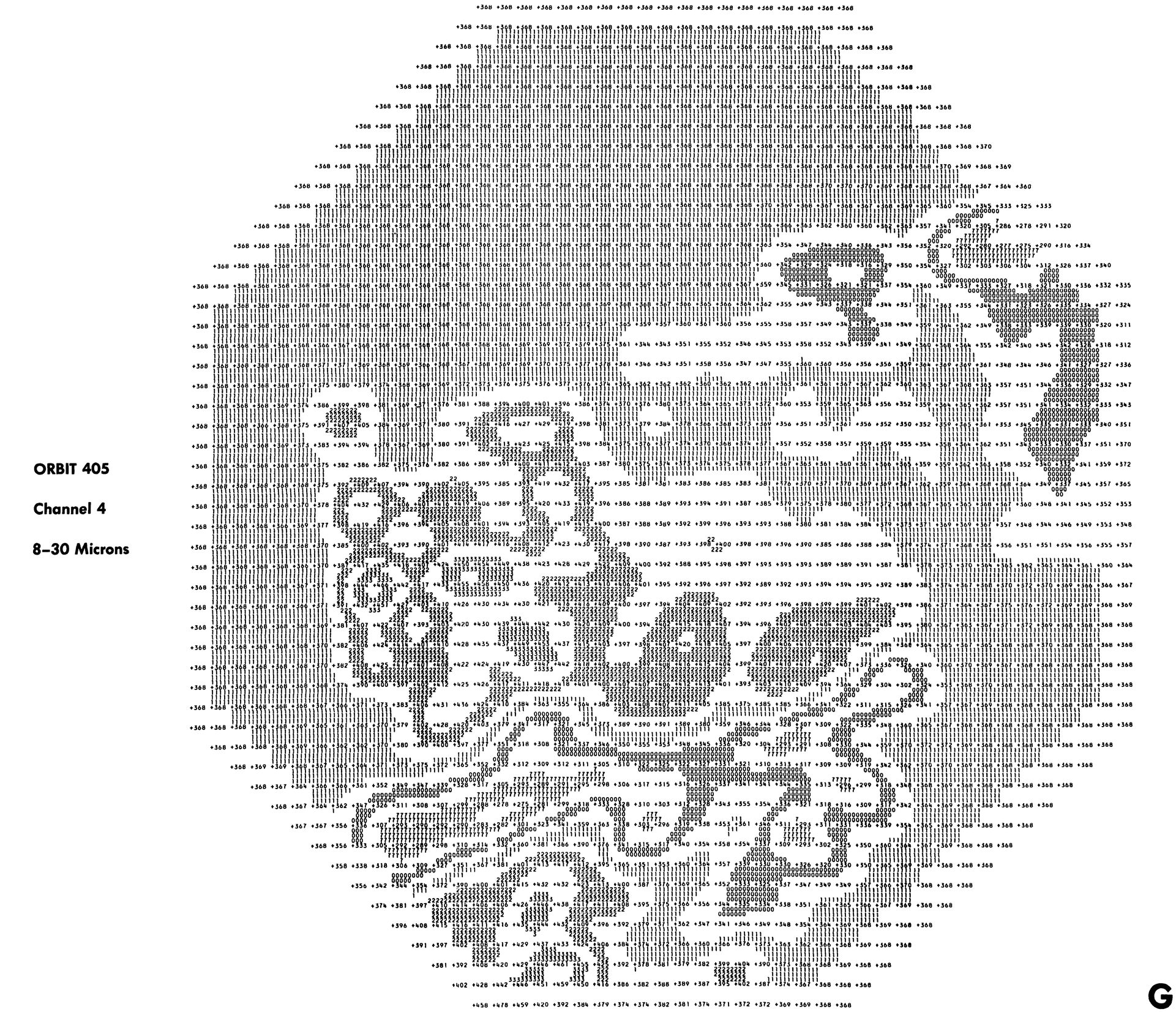
ORBIT 405

Channel 4

8–30 Microns



TIROS RADIATION DATA 7-30 MICRON FROM J DAY 028 AT 0202Z FOR 010 MINUTES

G

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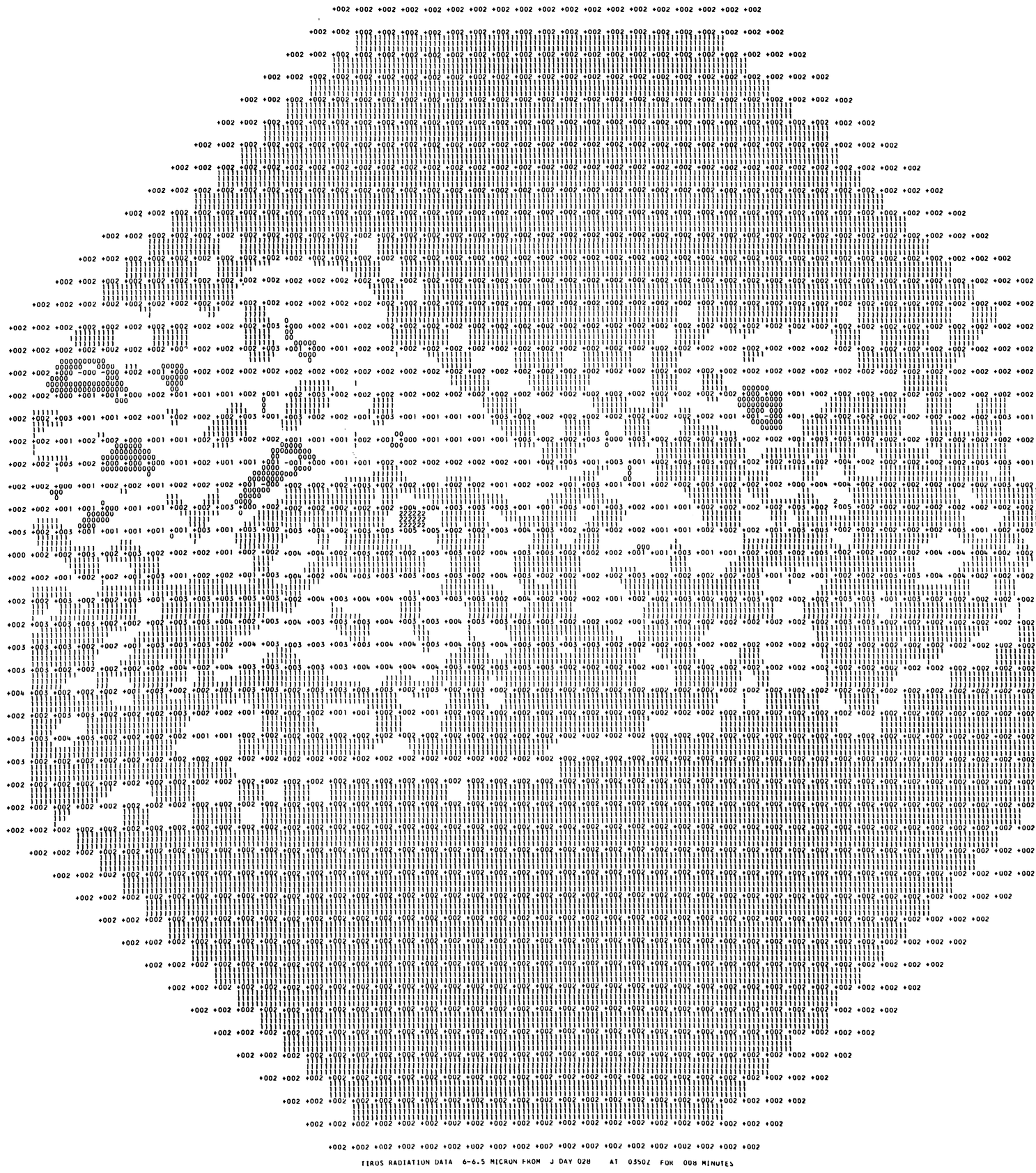
ORBIT 406

Channel 1

6–6.5 Microns



B

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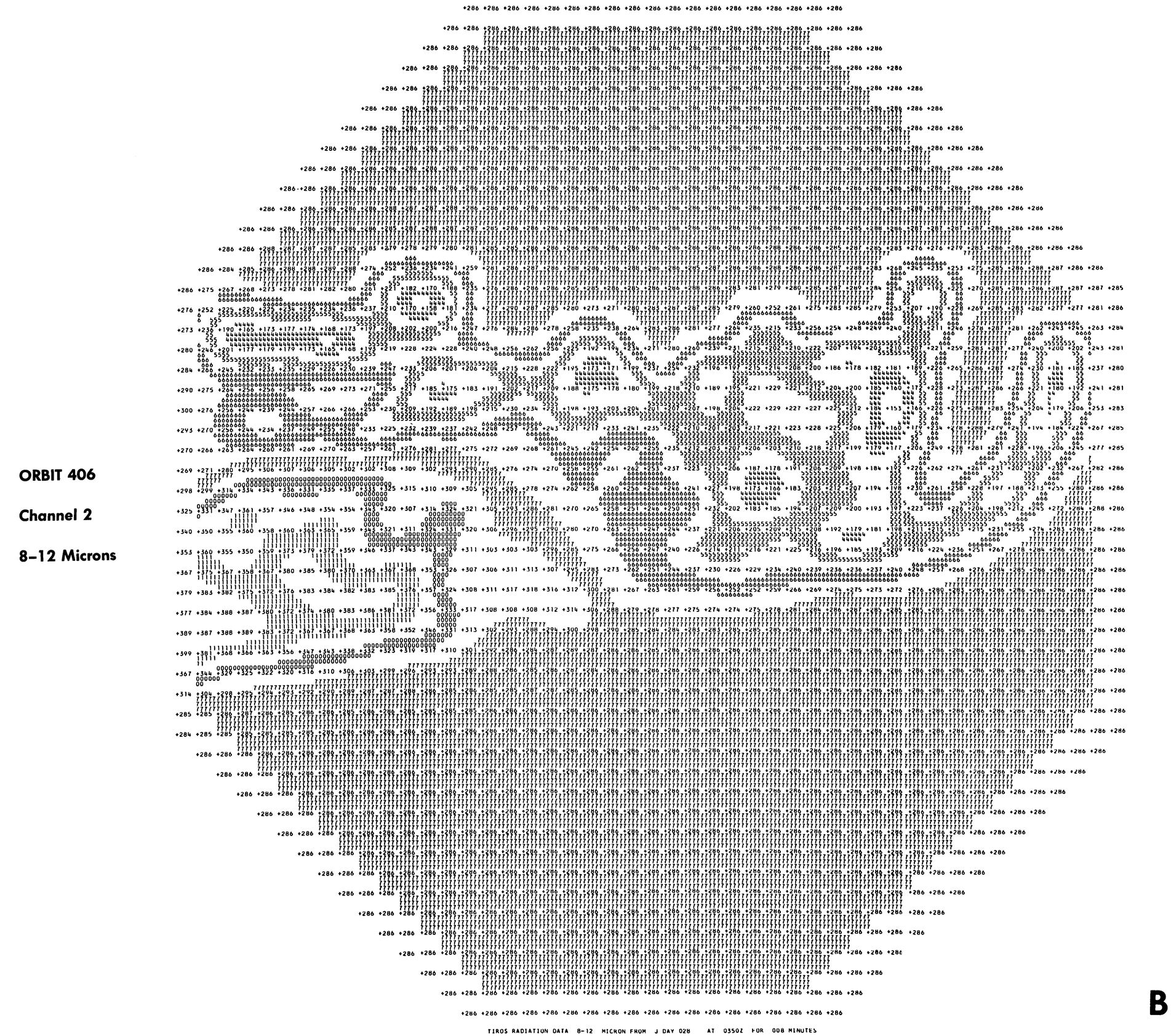
ORBIT 406

Channel 2

8–12 Microns



B

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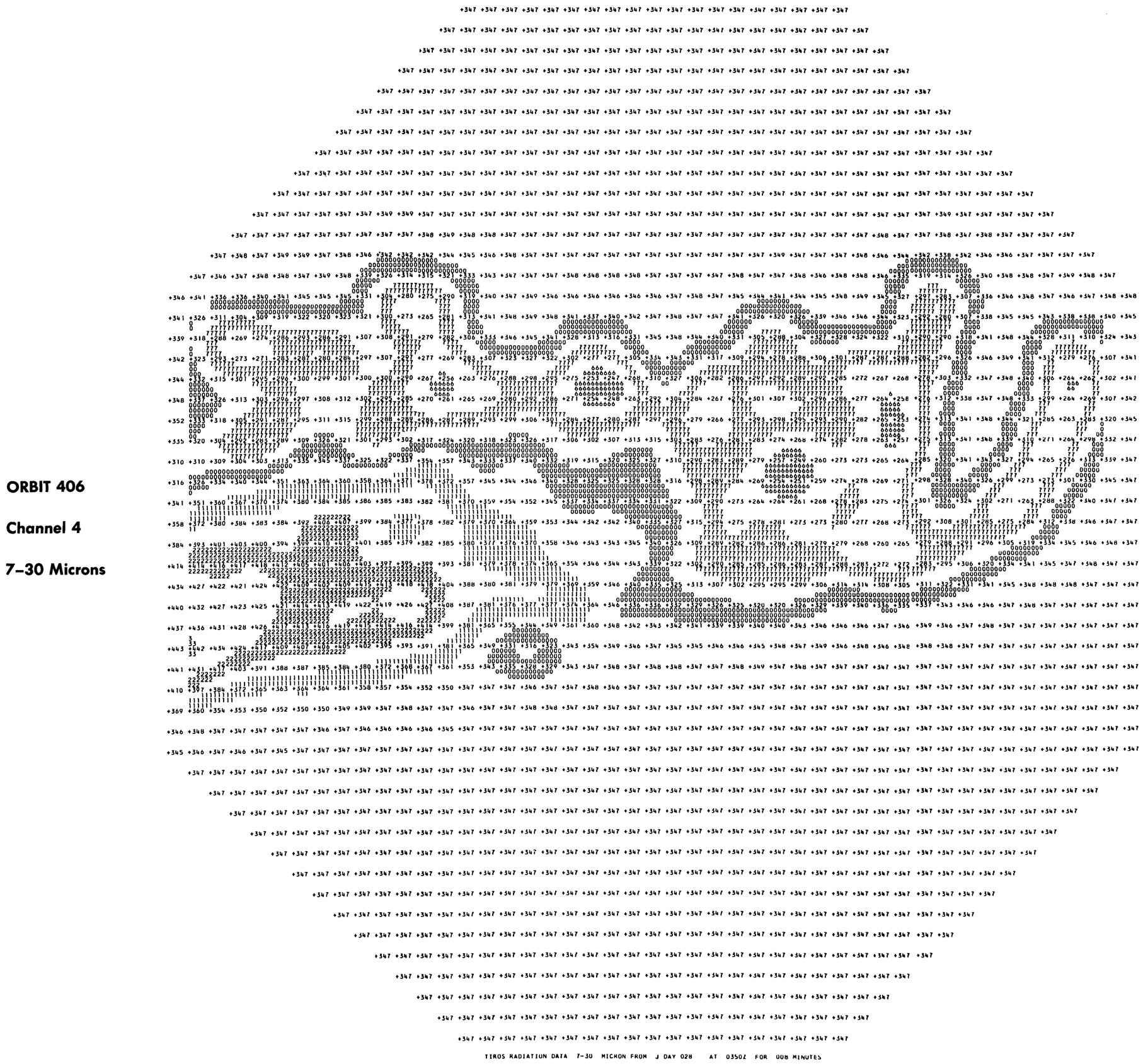
ORBIT 406

Channel 4

7–30 Microns



B

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ORBIT 407

Channel 1

6–6.5 Microns

TIROS RADIATION DATA 6-6.5 MICRON FROM J DAY 028 AT 0530Z FOR 007 MINUTES

A

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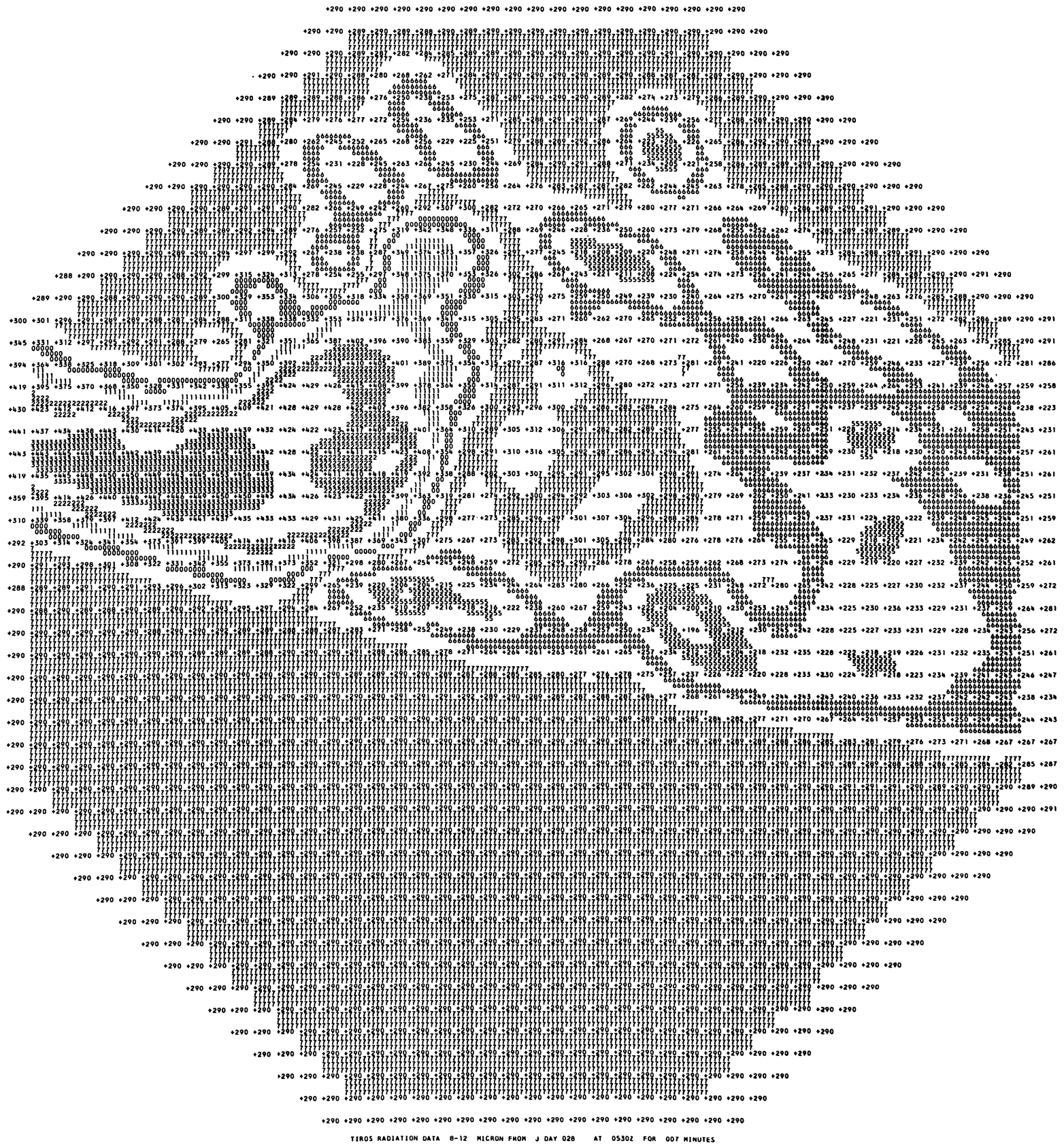
ORBIT 407

Channel 2

8–12 Microns



TIROS RADIATION DATA 8-12 MICRON FROM J DAY 028 AT 0530Z FOR 007 MINUTES

A

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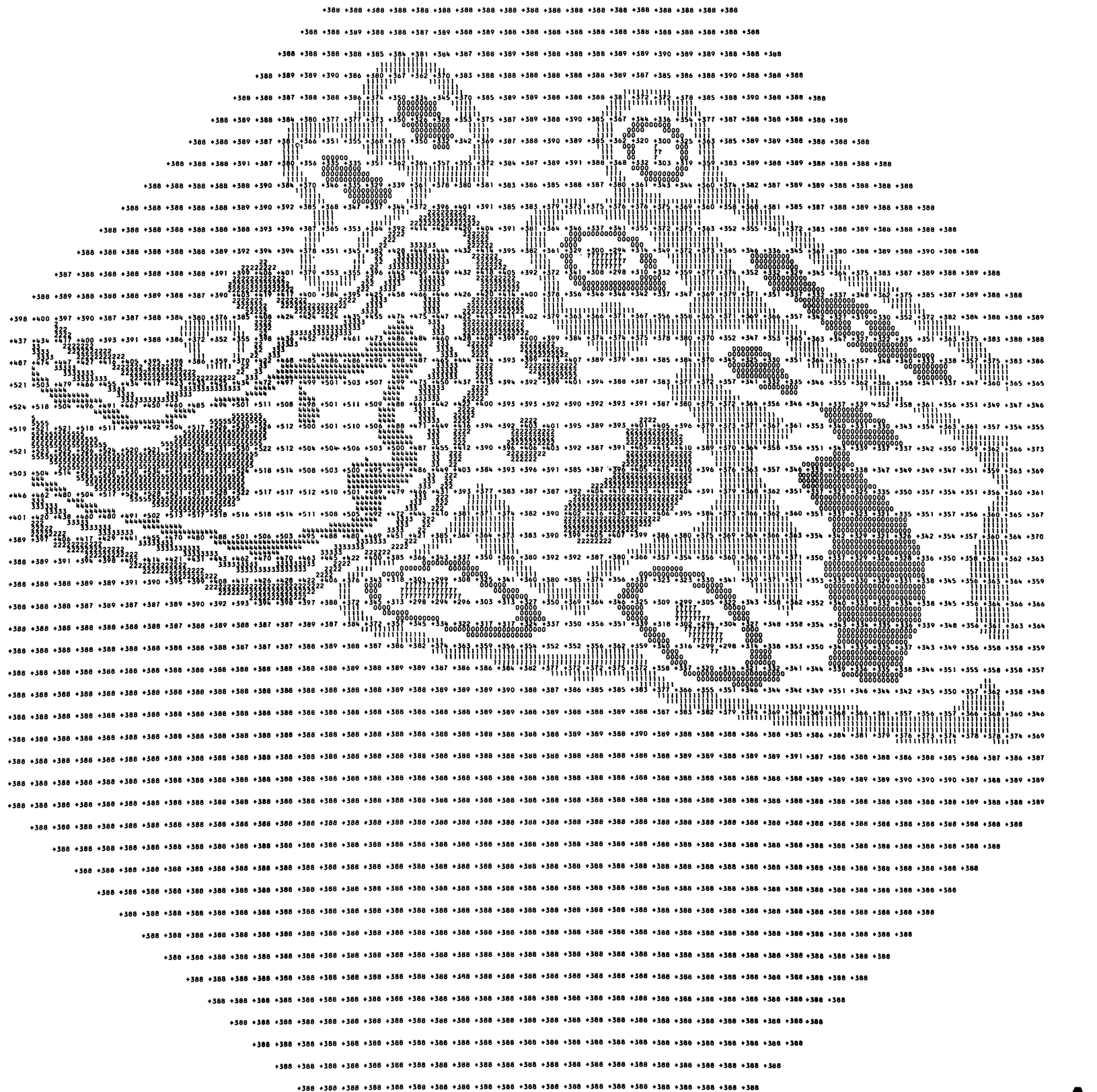
ORBIT 407

Channel 4

8–30 Microns



TIROS RADIATION DATA 7-30 MICRON FROM J DAY 028 AT 0530Z FOR 007 MINUTES

A

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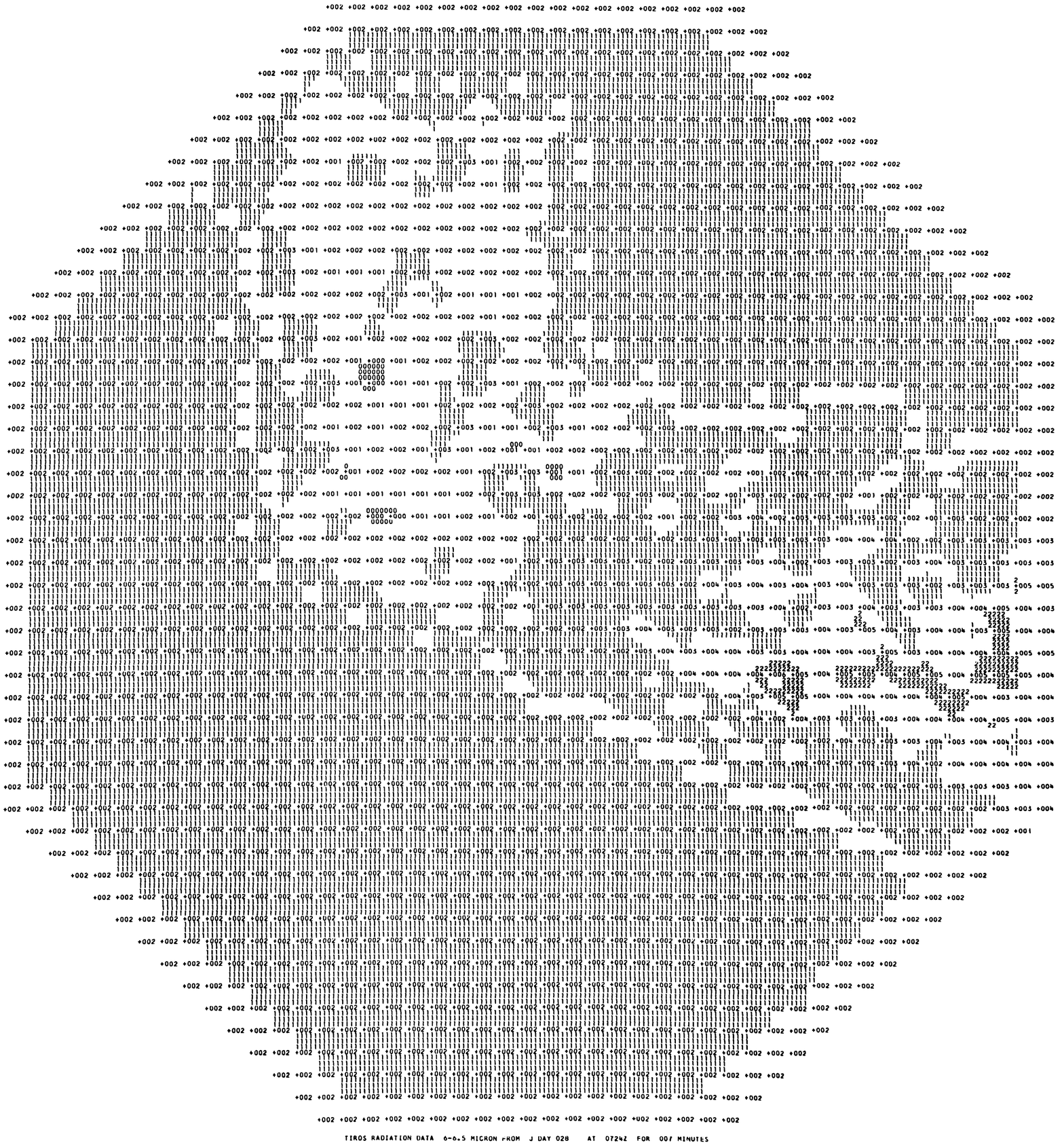
ORBIT 409

Channel 1

6–6.5 Microns



F

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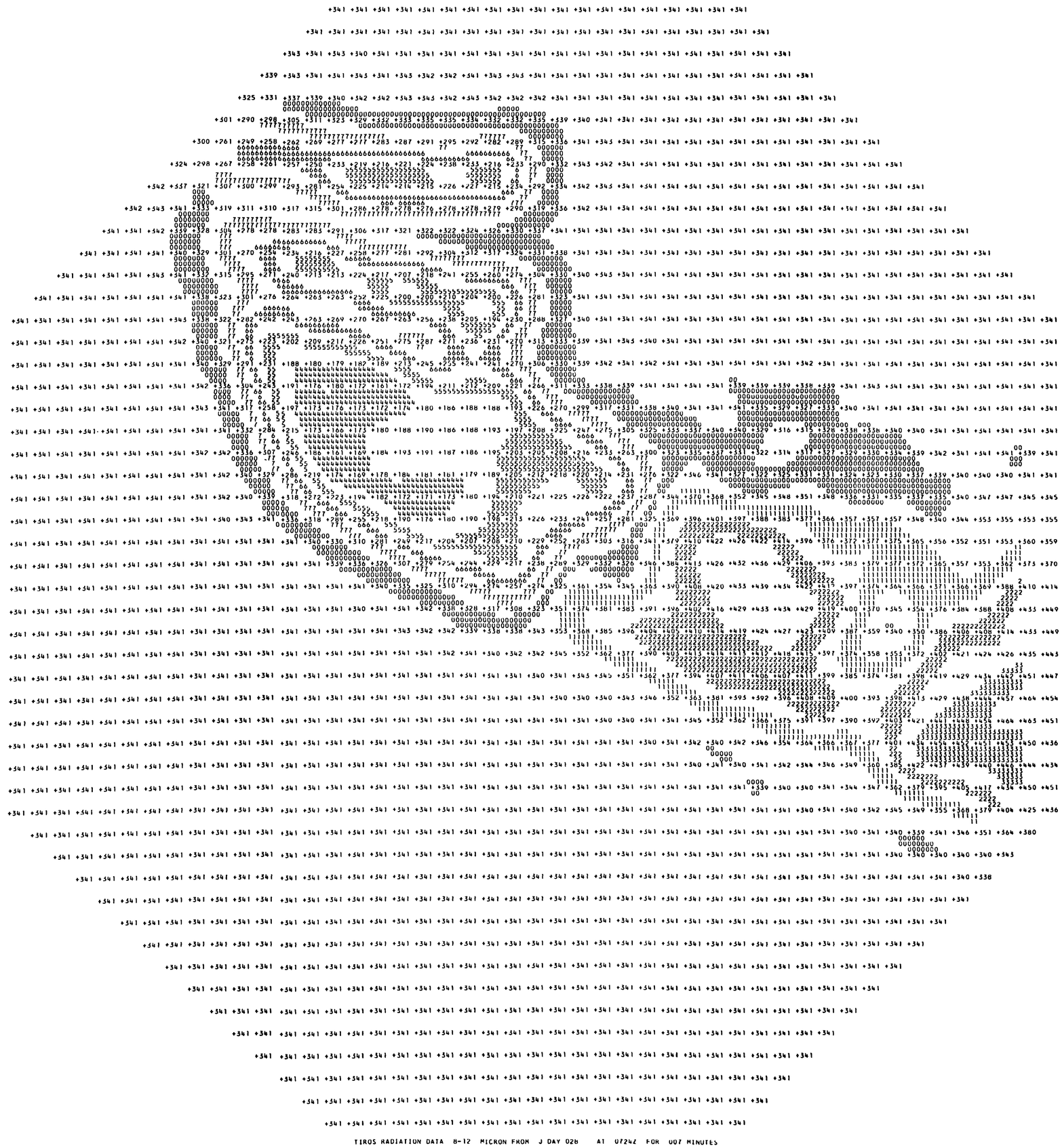
ORBIT 409

Channel 2

8–12 Microns



TIROS RADIATION DATA 8-12 MICRON FROM J DAY 028 AT 07242 FOR 007 MINUTES

F

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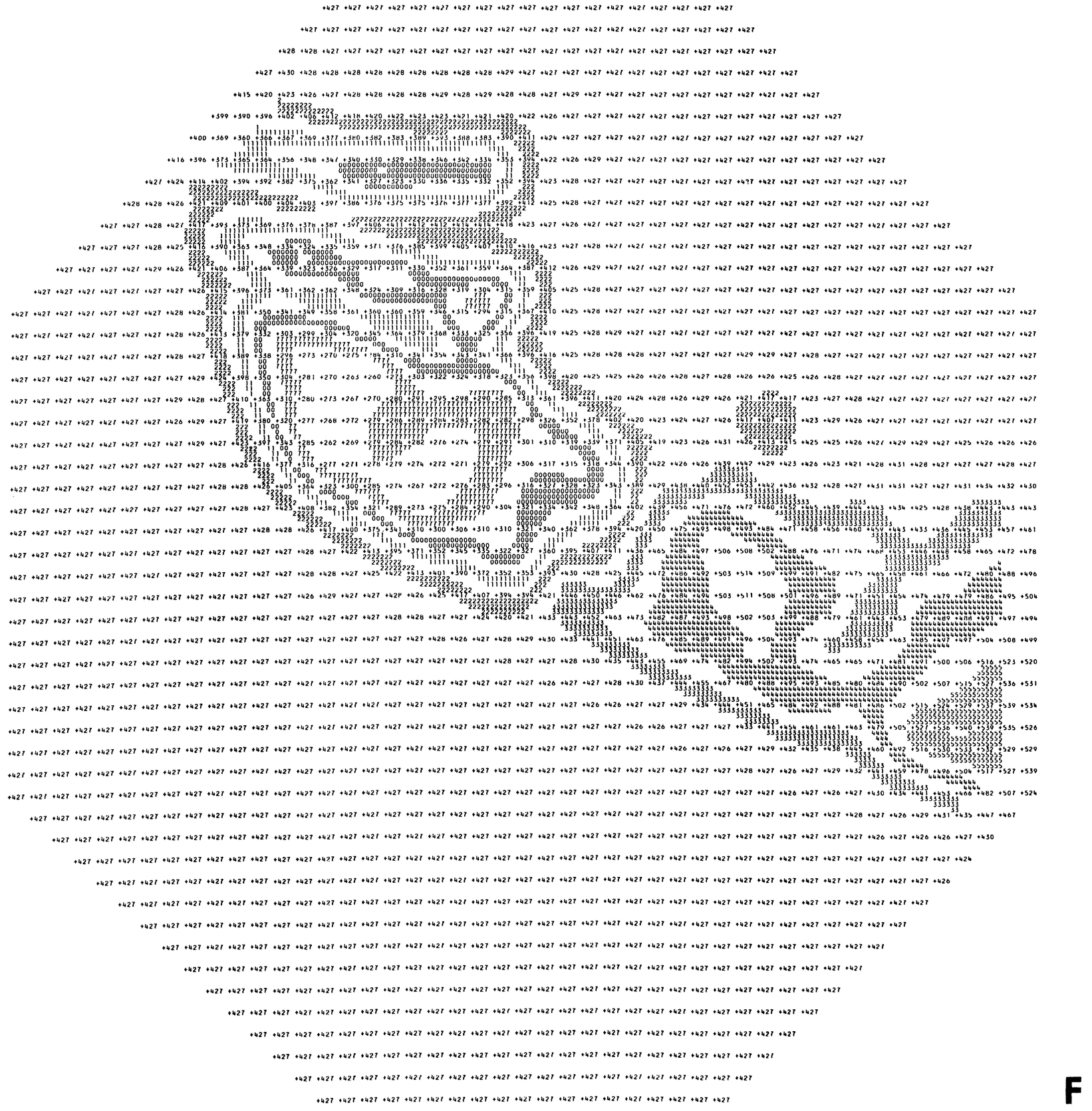
ORBIT 409

Channel 4

8–30 Microns



TIROS RADIATION DATA 7-30 MICRON FROM J DAY 028 AT 0724Z FOR 007 MINUTES

F

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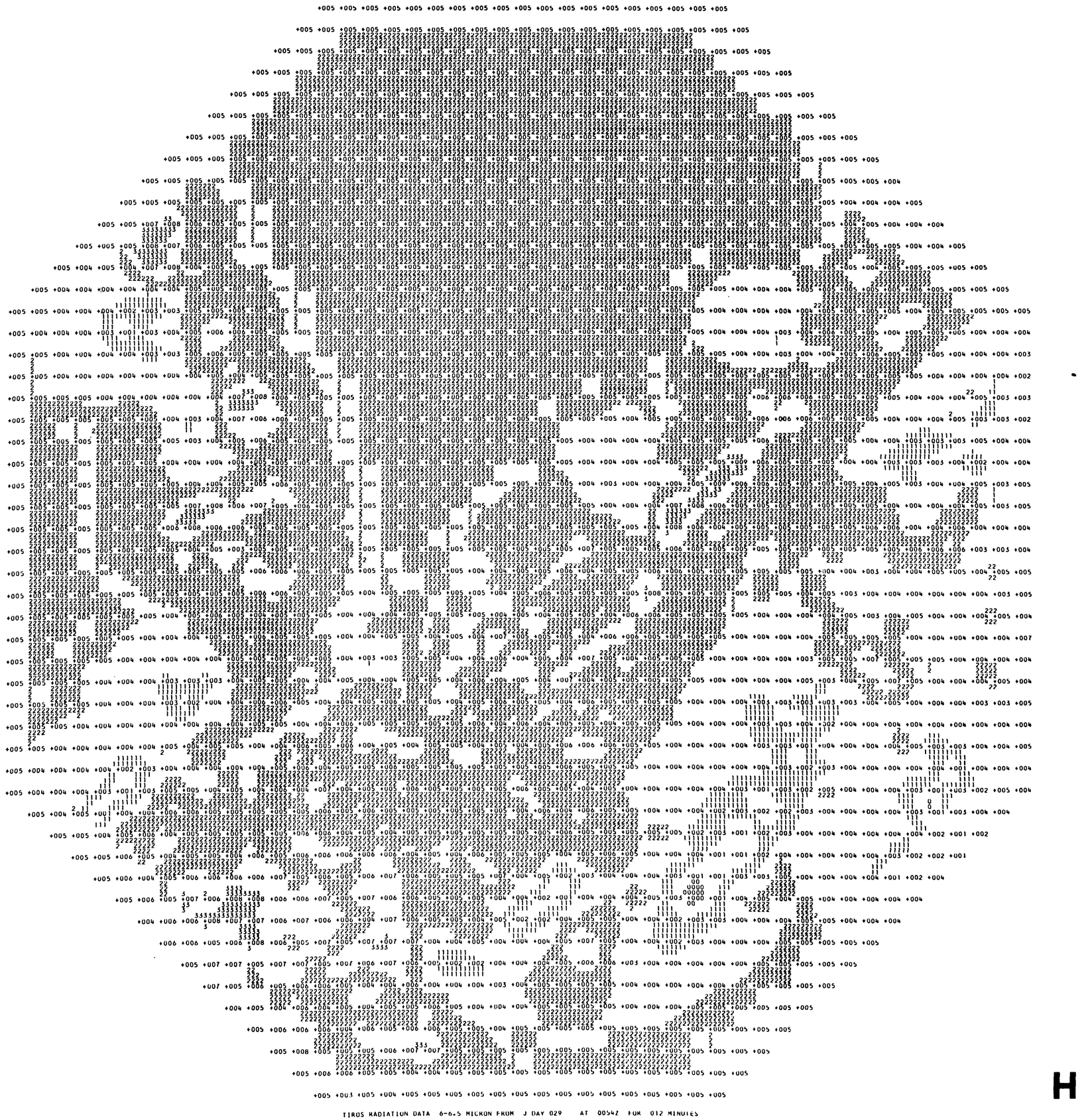
ORBIT 419

Channel 1

6–6.5 Microns



TIROS RADIATION DATA 6-6.5 MICRON FROM J DAY 029 AT 0054Z FOR 012 MINUTES

H

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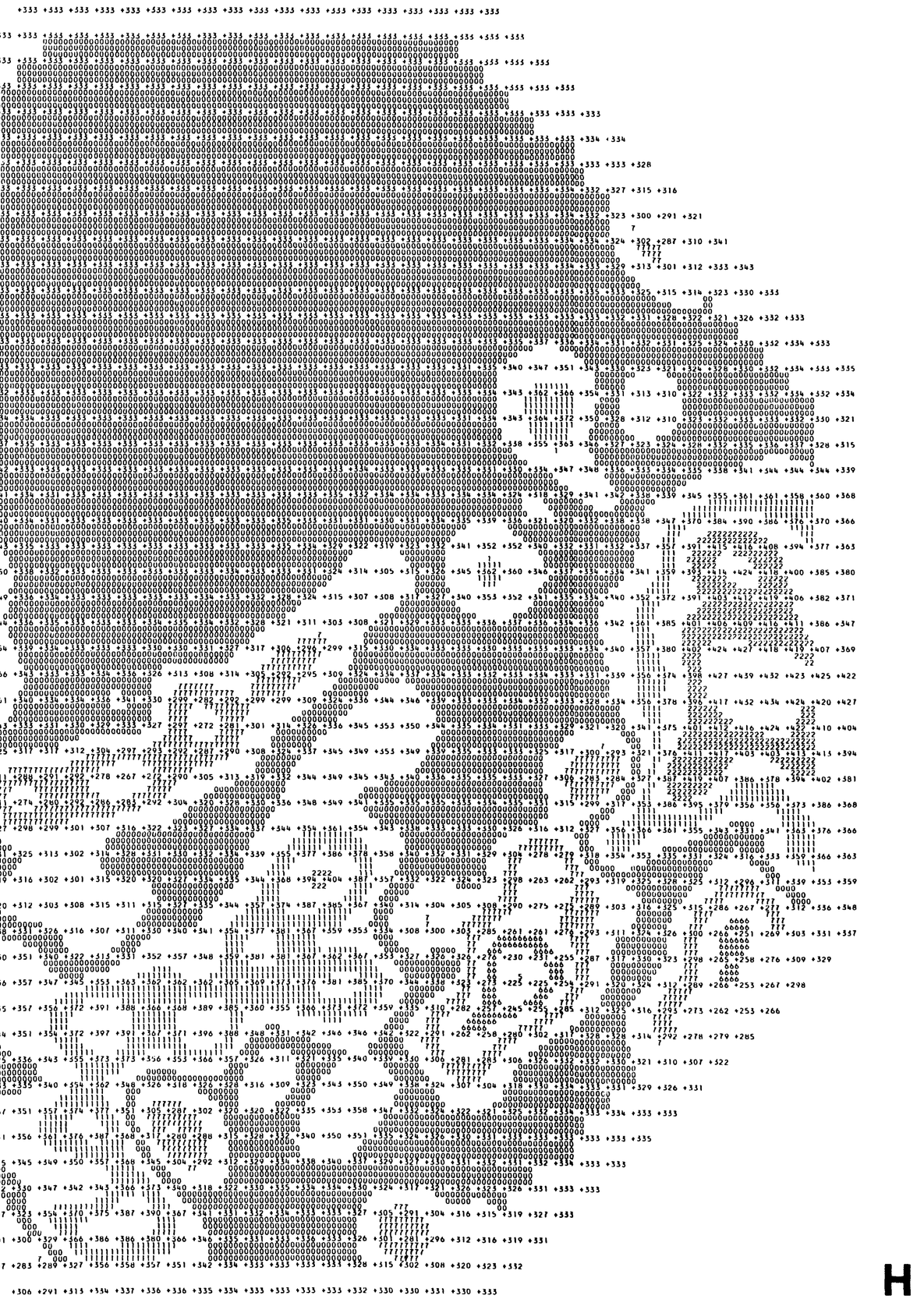
ORBIT 419

Channel 2

8-12 Microns



TIROS RADIATION DATA 8-12 MICRON FROM J DAY 029 AT 00542 FOR 012 MINUTES

H

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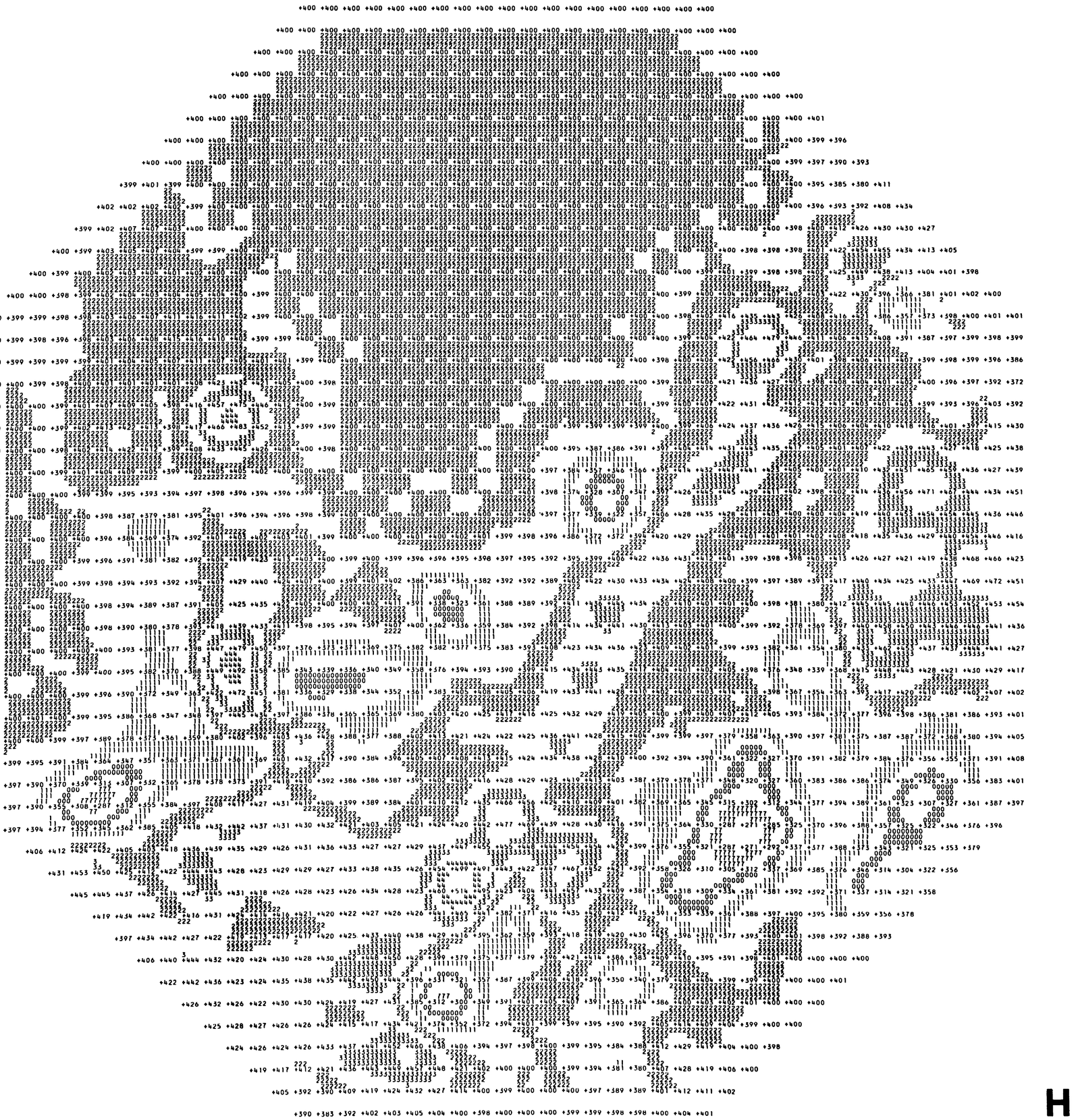
ORBIT 419

Channel 4

8–30 Microns



TIROS RADIATION DATA 7-30 MICRON FROM J DAY 029 AT 0054Z FOR 012 MINUTES

H

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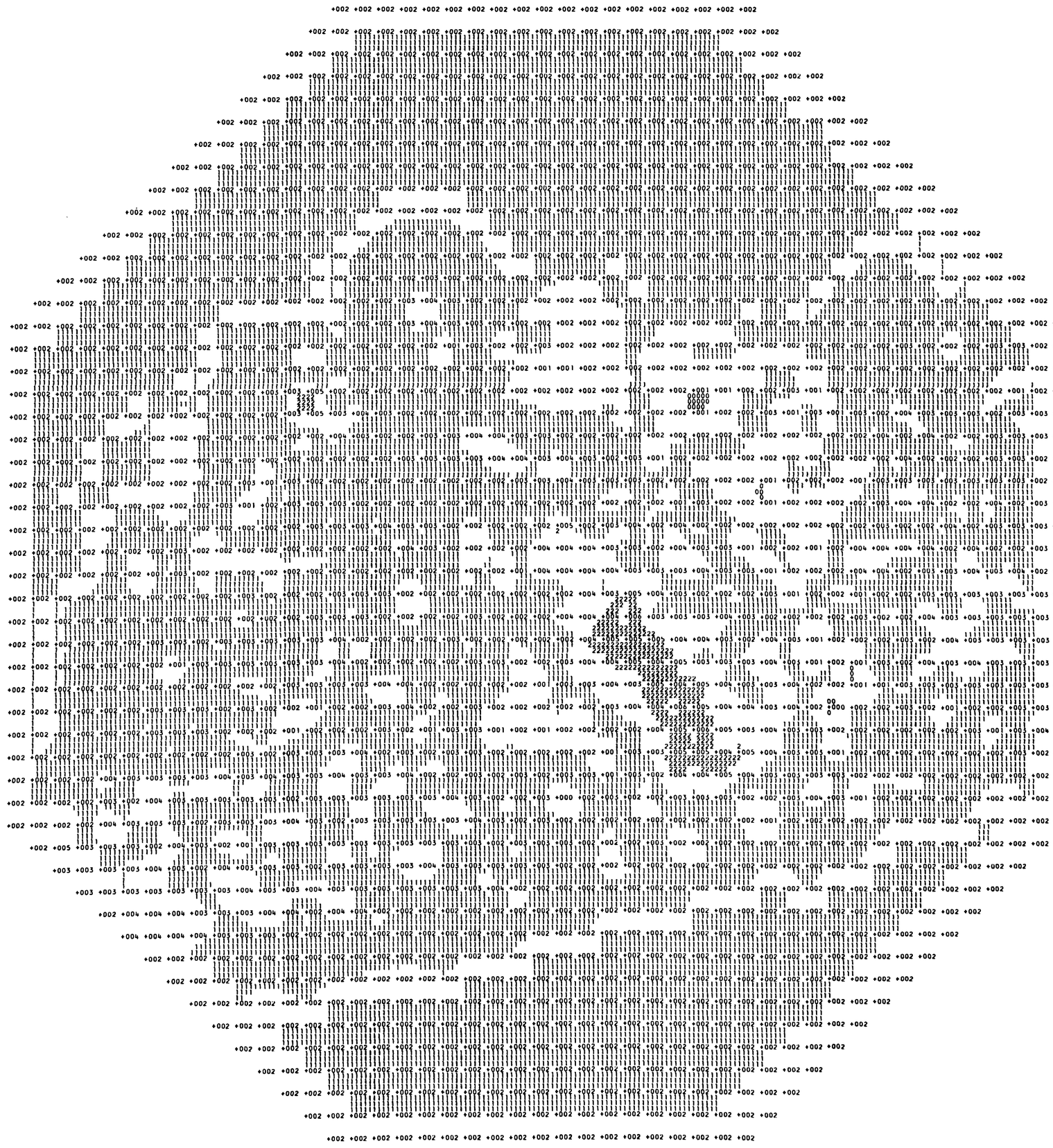
ORBIT 420

Channel 1

6–6.5 Microns



TIROS RADIATION DATA 6-6.5 MICRON FROM J DAY 029 AT 0240Z FOR 009 MINUTES

D

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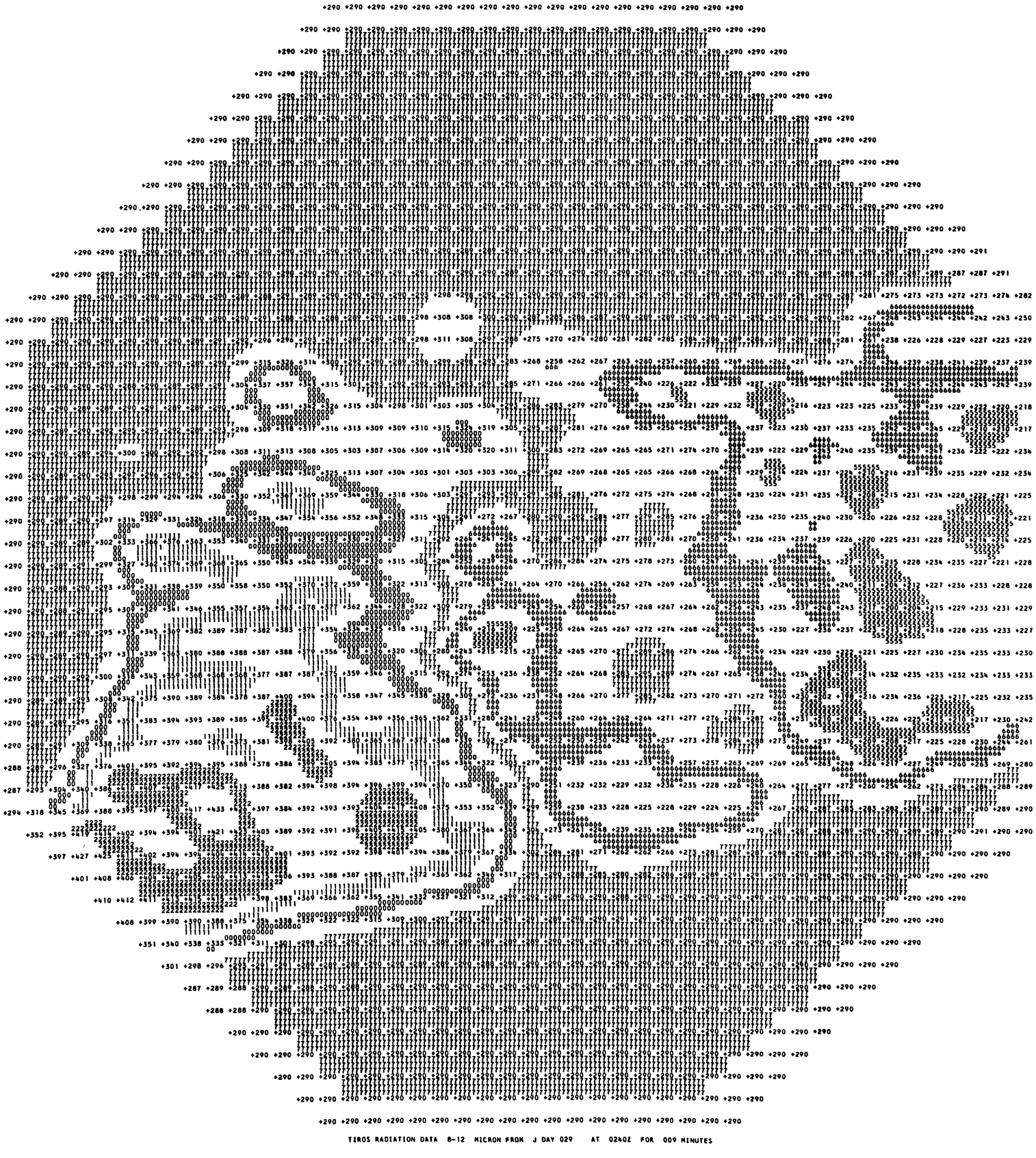
ORBIT 420

Channel 2

8–12 Microns



D

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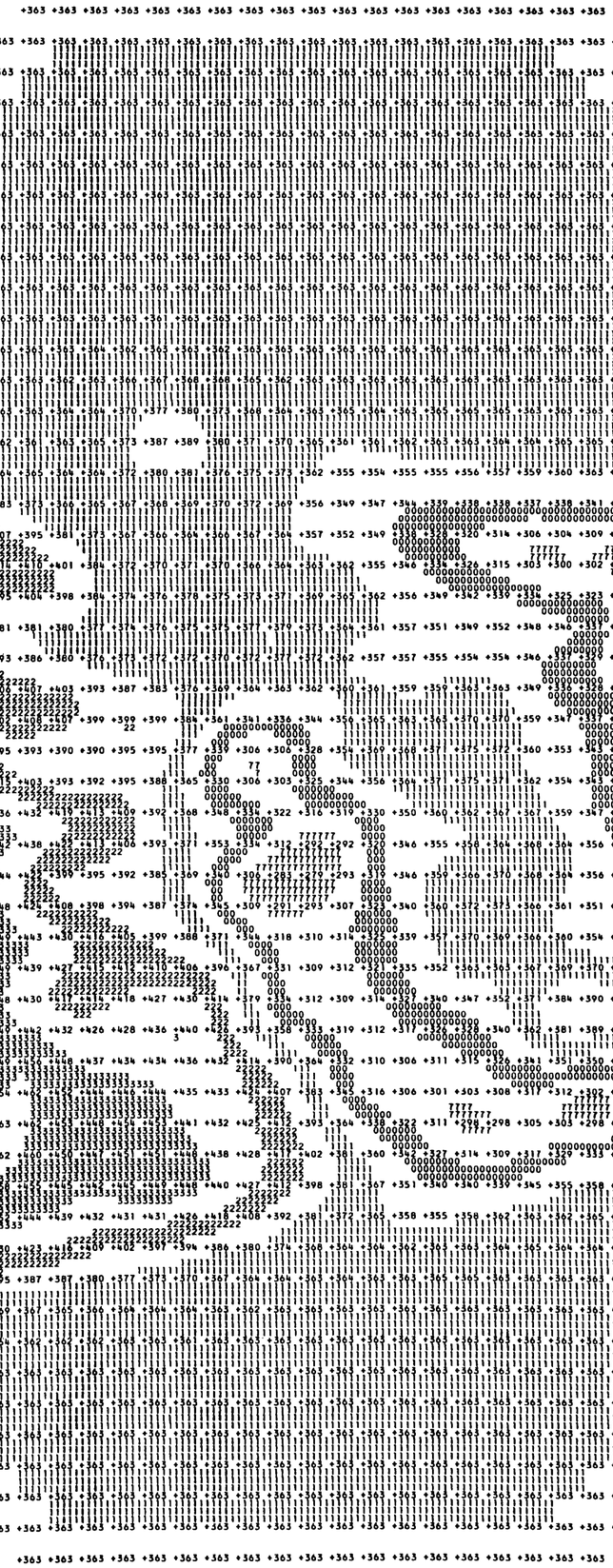
ORBIT 420

Channel 4

8–30 Microns



TIROS RADIATION DATA 7-30 MICRON FROM J DAY 029 AT 0240Z FOR 009 MINUTES

D

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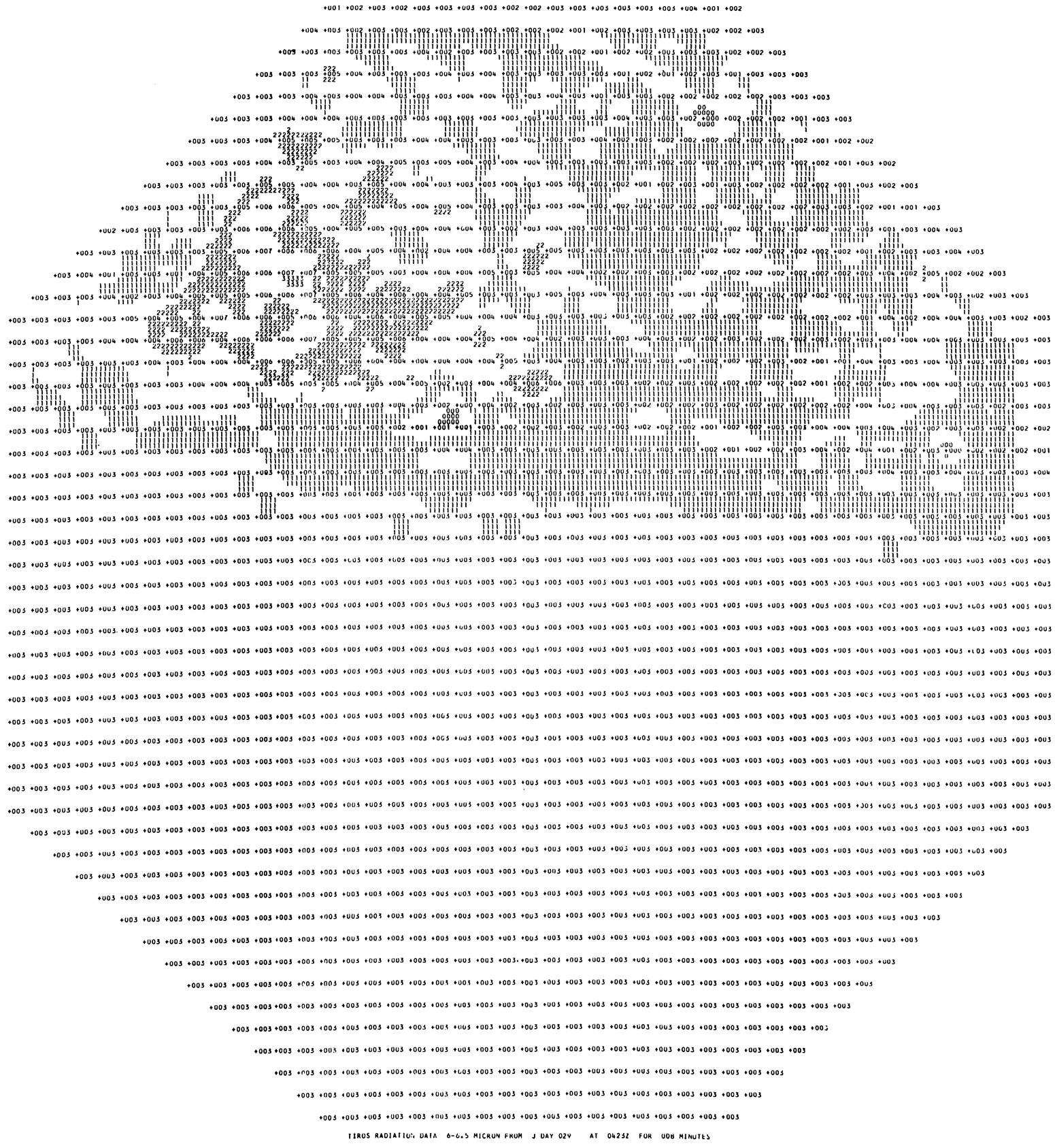
ORBIT 421

Channel 1

6–6.5 Microns



D

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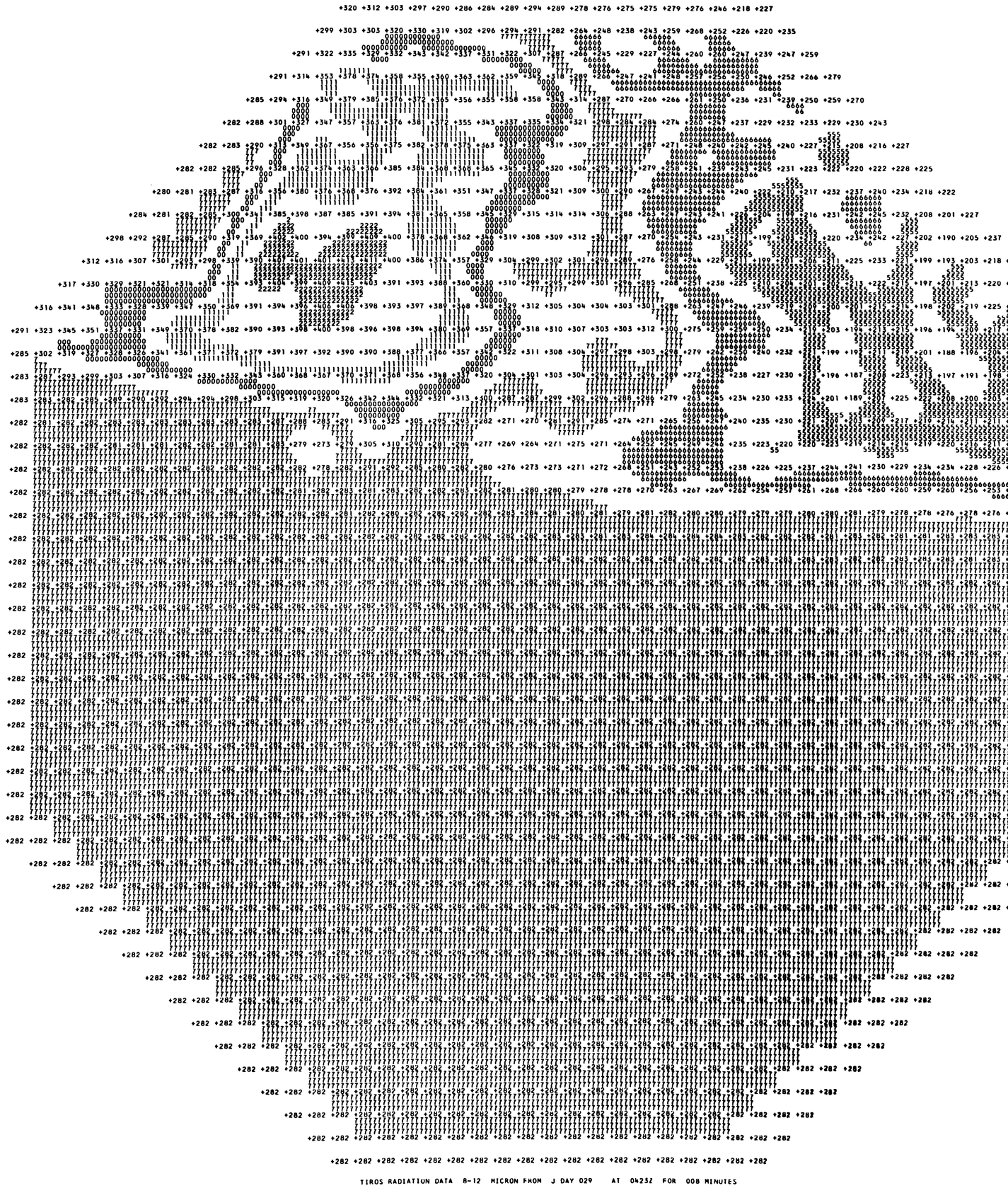
ORBIT 421

Channel 2

8–12 Microns



TIROS RADIATION DATA 8-12 MICRON FROM J DAY 029 AT 0423Z FOR 008 MINUTES

D

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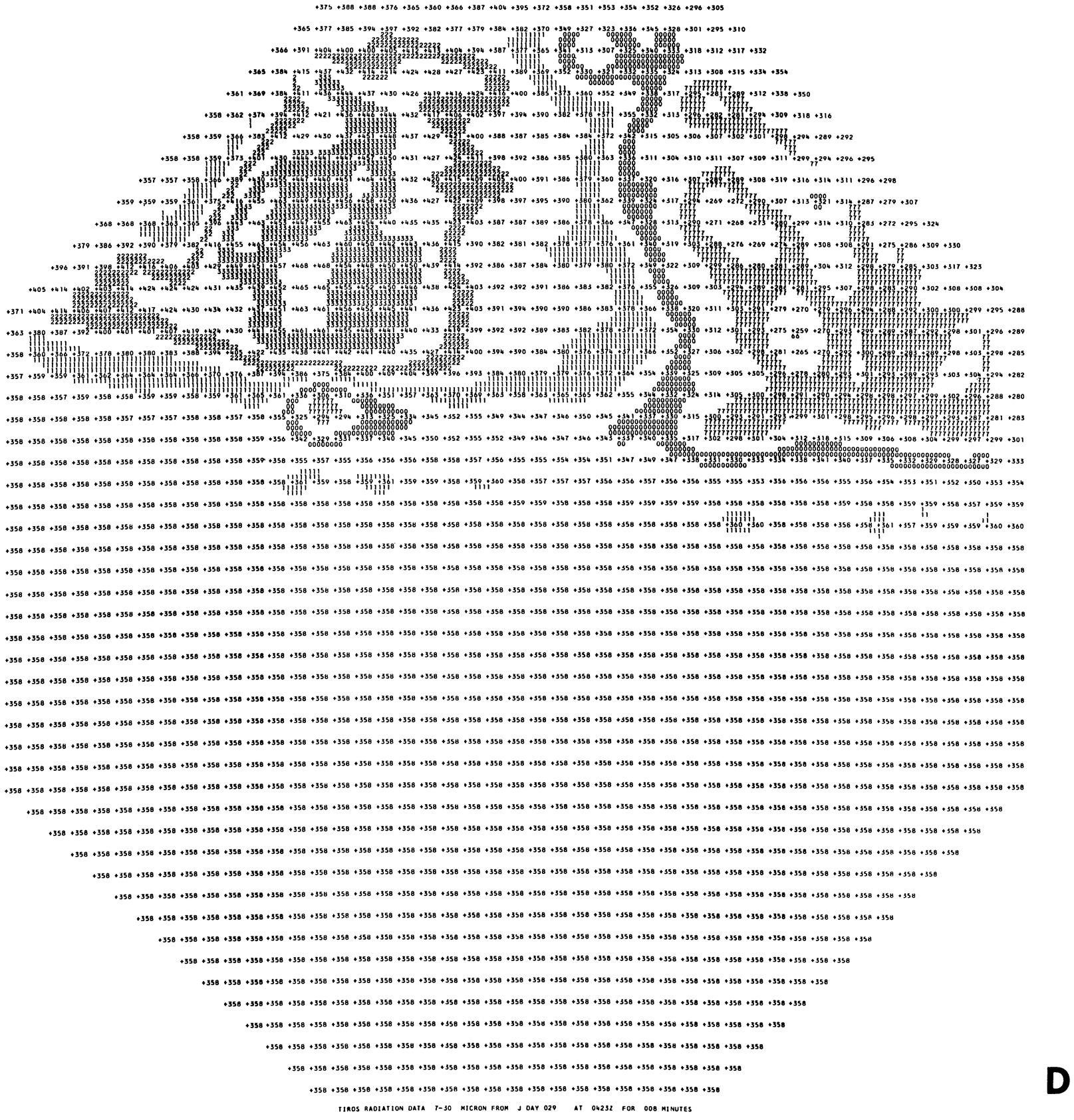
ORBIT 421

Channel 4

8–30 Microns



D

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ORBIT 433

Channel 1

6–6.5 Microns

TIROS RADIATION DATA 6-6.5 MICRON FROM J DAY 029 AT 23512 FOR 010 MINUTES

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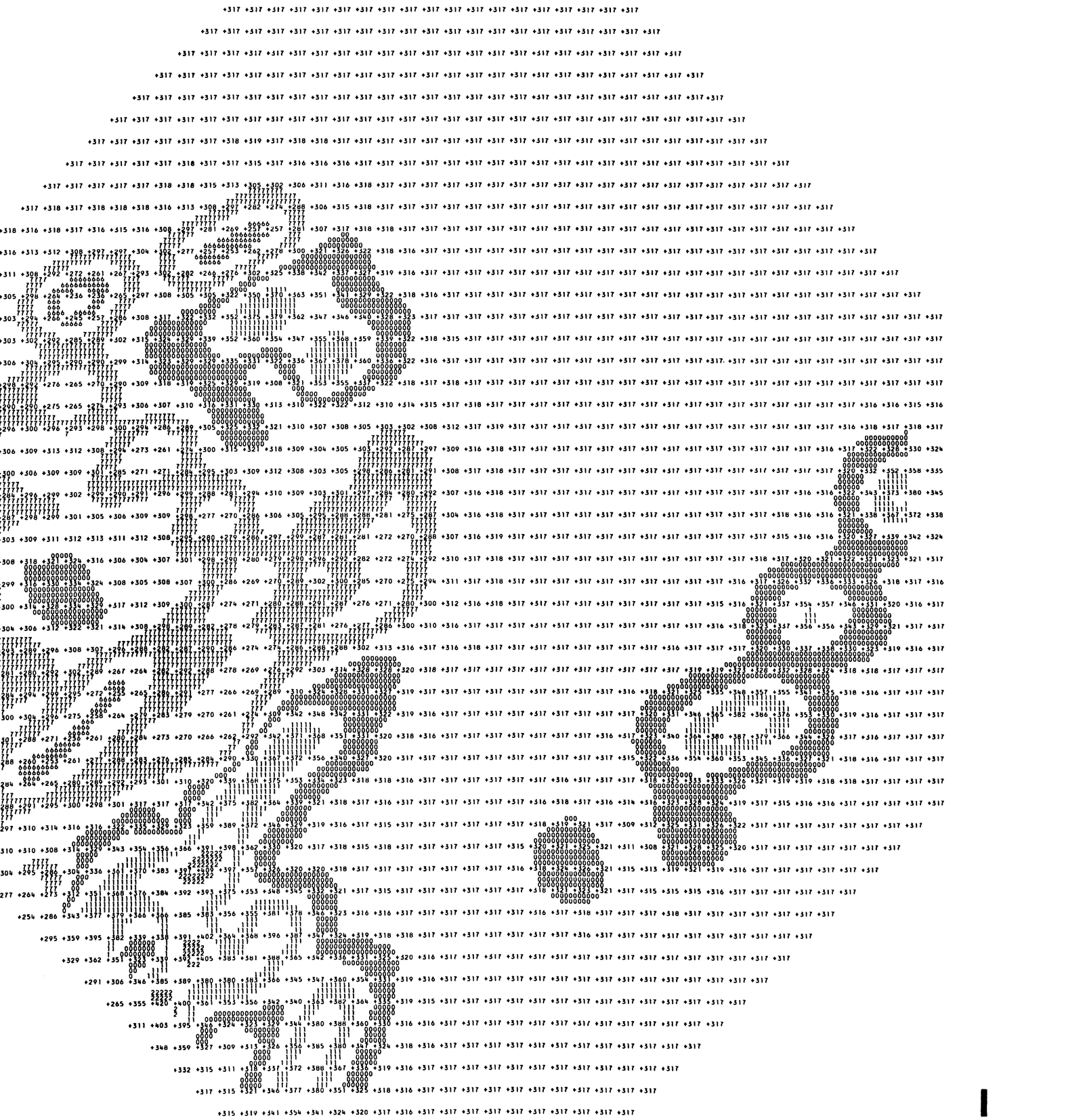
ORBIT 433

Channel 2

8-12 Microns



TIROS RADIATION DATA 8-12 MICRON FROM J DAY 029 AT 2351Z FOR 010 MINUTES

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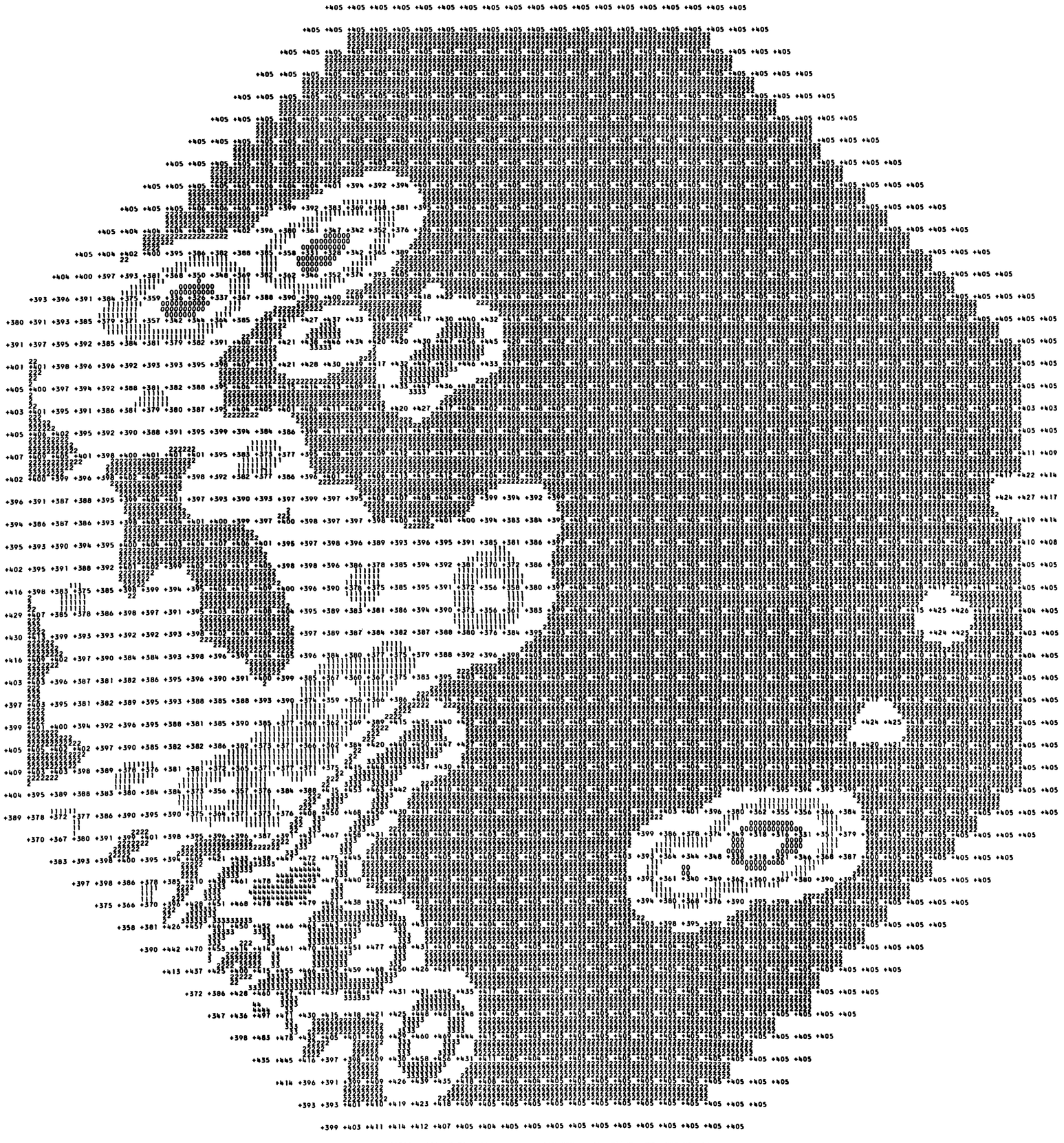
ORBIT 433

Channel 4

8–30 Microns



TIROS RADIATION DATA 7-30 MICRON FROM J DAY 029 AT 2351Z FOR 010 MINUTES

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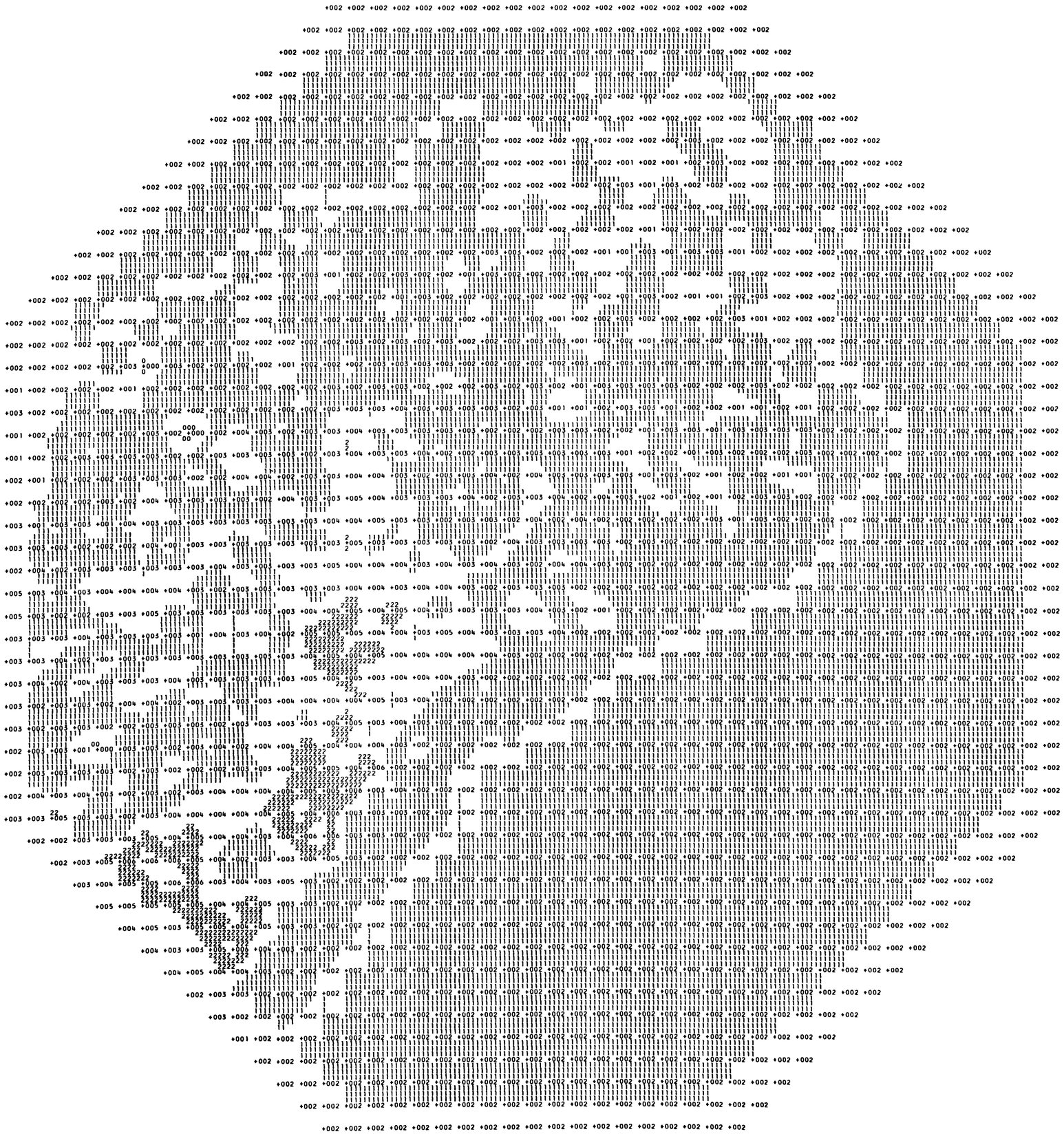
ORBIT 434

Channel 1

6–6.5 Microns



TIROS RADIATION DATA 6-6.5 MICRON FROM J DAY 030 AT 01332 FOR 009 MINUTES

E

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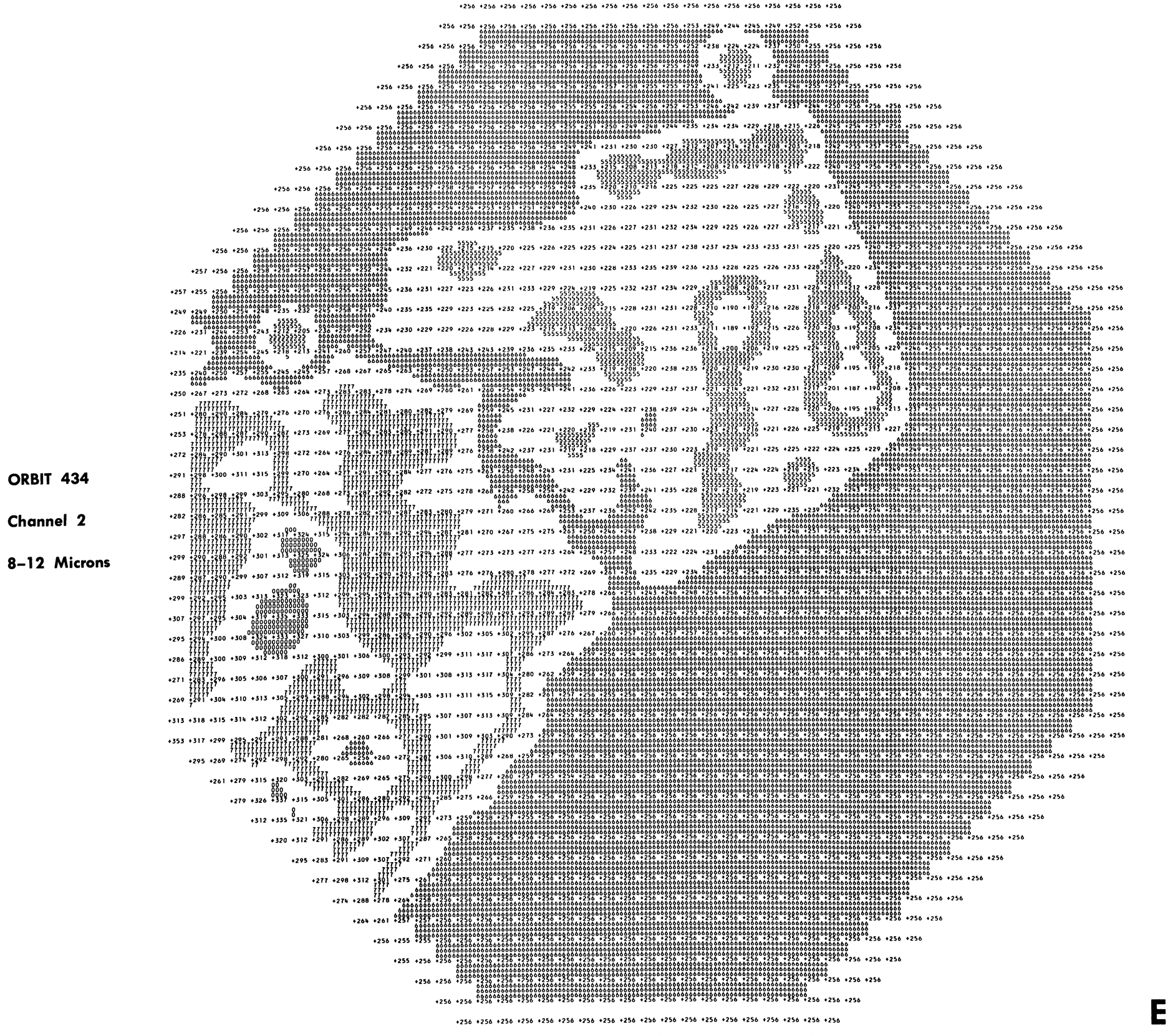
ORBIT 434

Channel 2

8–12 Microns



TIROS RADIATION DATA 8-12 MICRON FROM J DAY 030 AT 0133Z FOR 009 MINUTES

E

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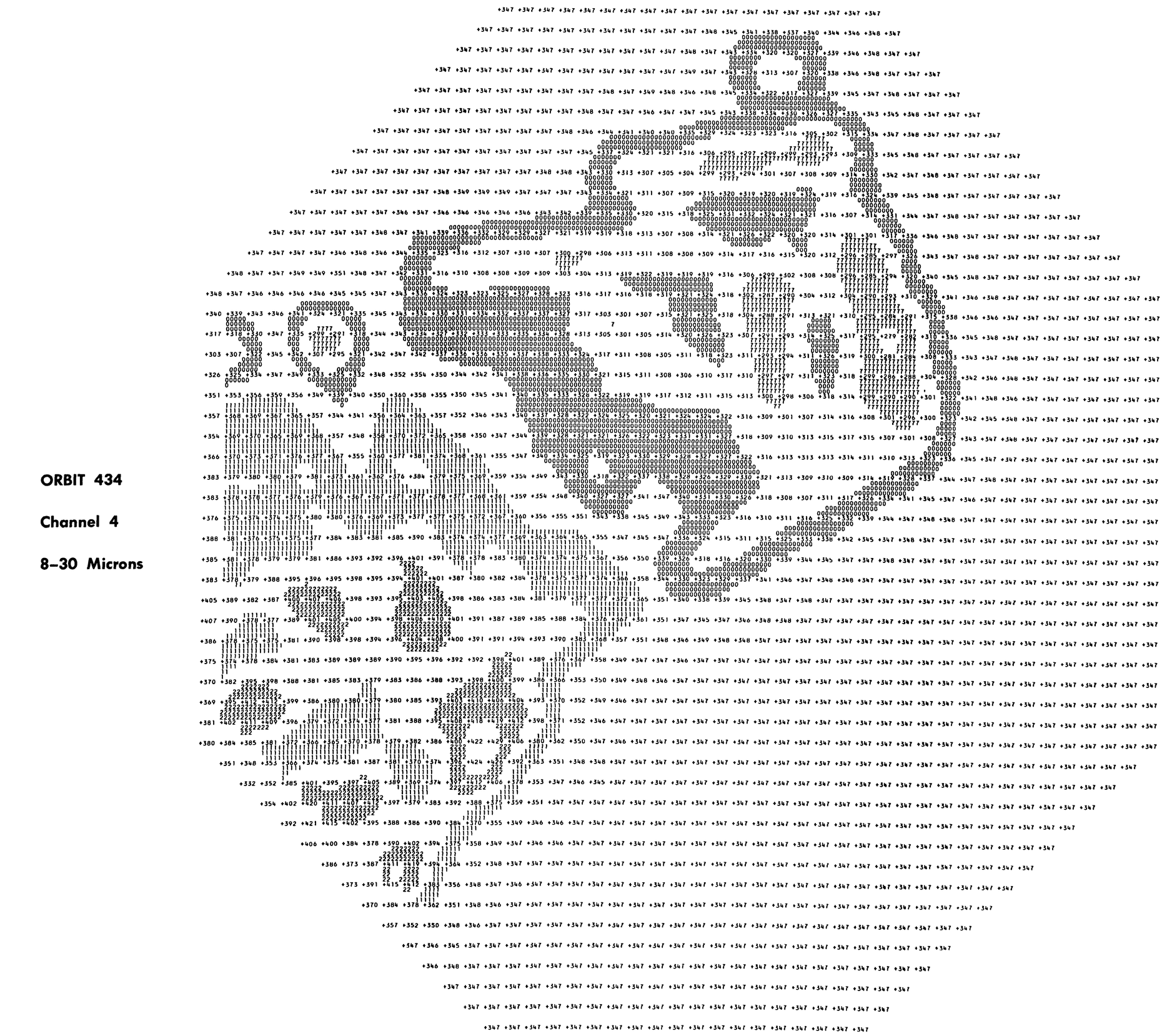
ORBIT 434

Channel 4

8–30 Microns



TIROS RADIATION DATA 7-30 MICRON FROM J DAY 030 AT 0133Z FOR 009 MINUTES

E

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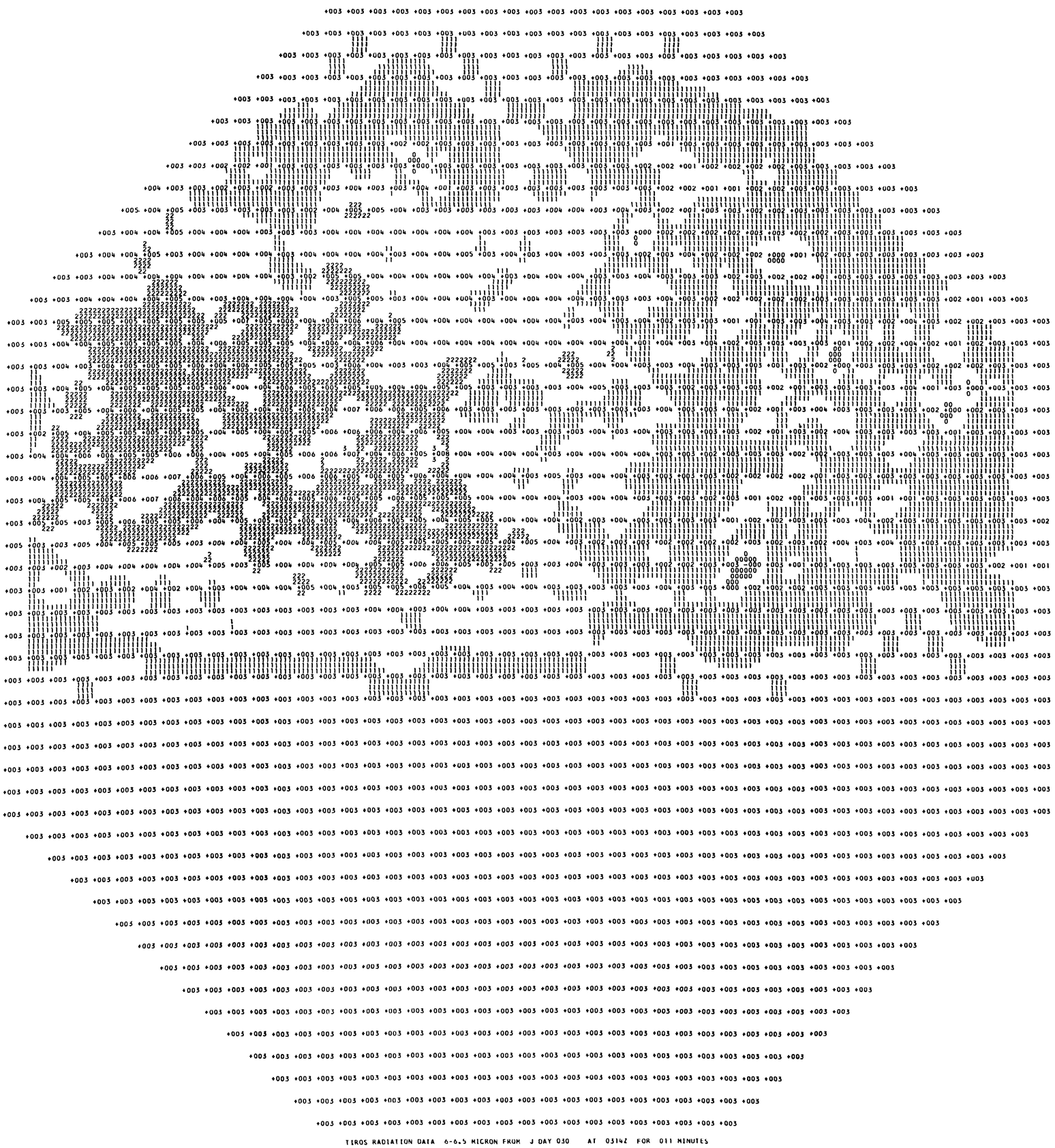
ORBIT 435

Channel 1

6–6.5 Microns



D

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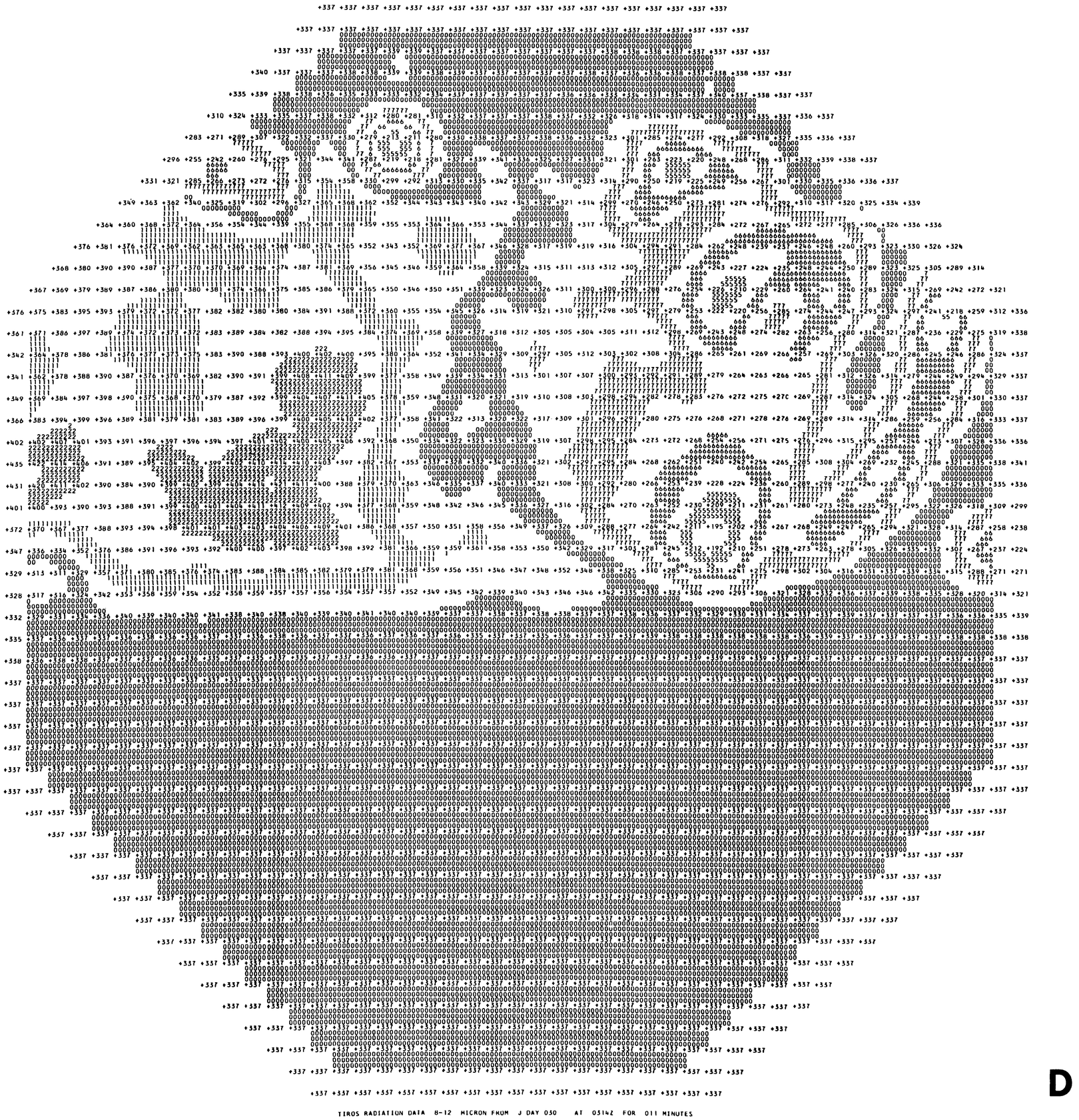
ORBIT 435

Channel 2

8–12 Microns



TIROS RADIATION DATA 8-12 MICRON FROM J DAY 030 AT 0314Z FOR 011 MINUTES

D

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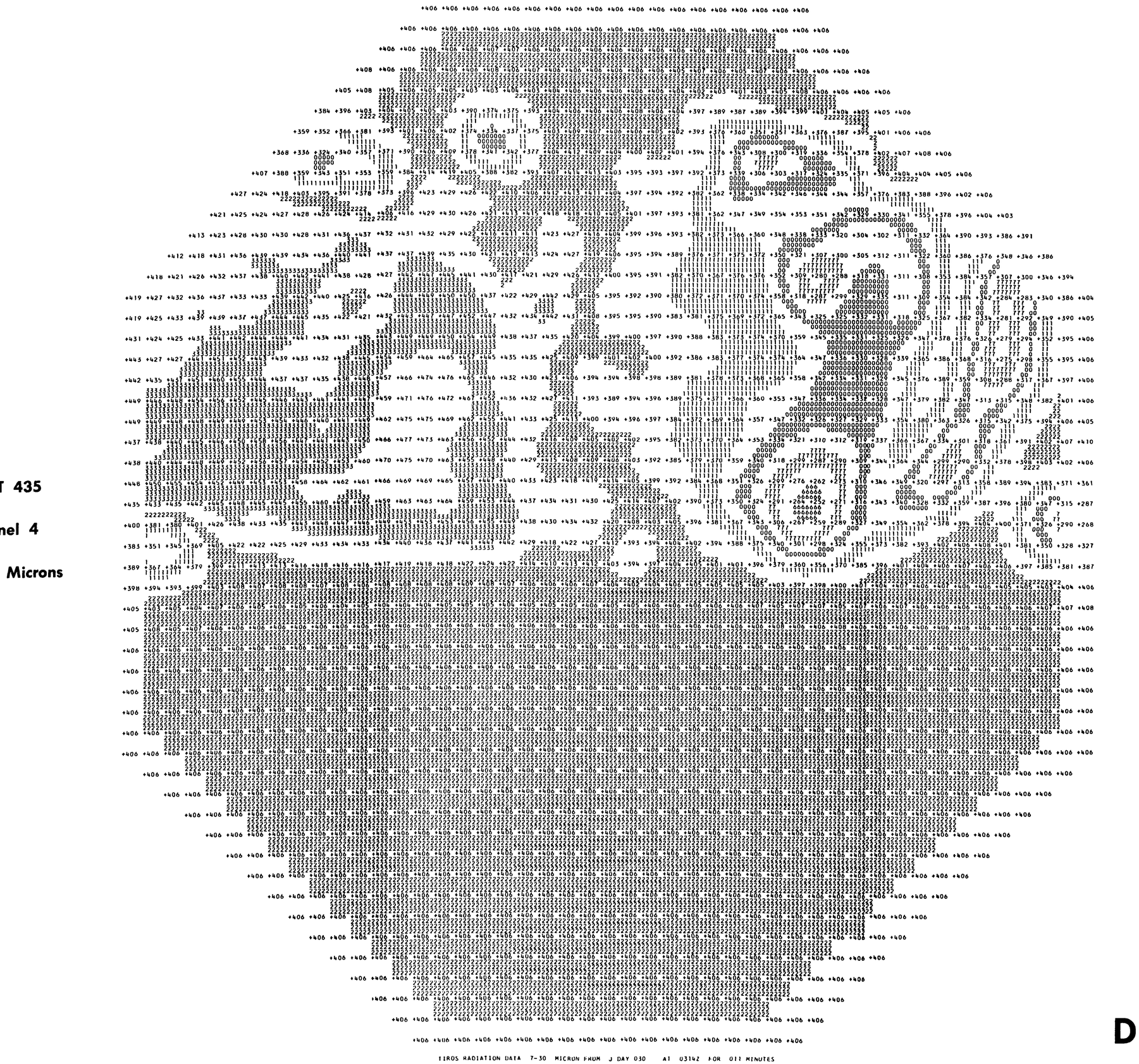
ORBIT 435

Channel 4

8–30 Microns



D

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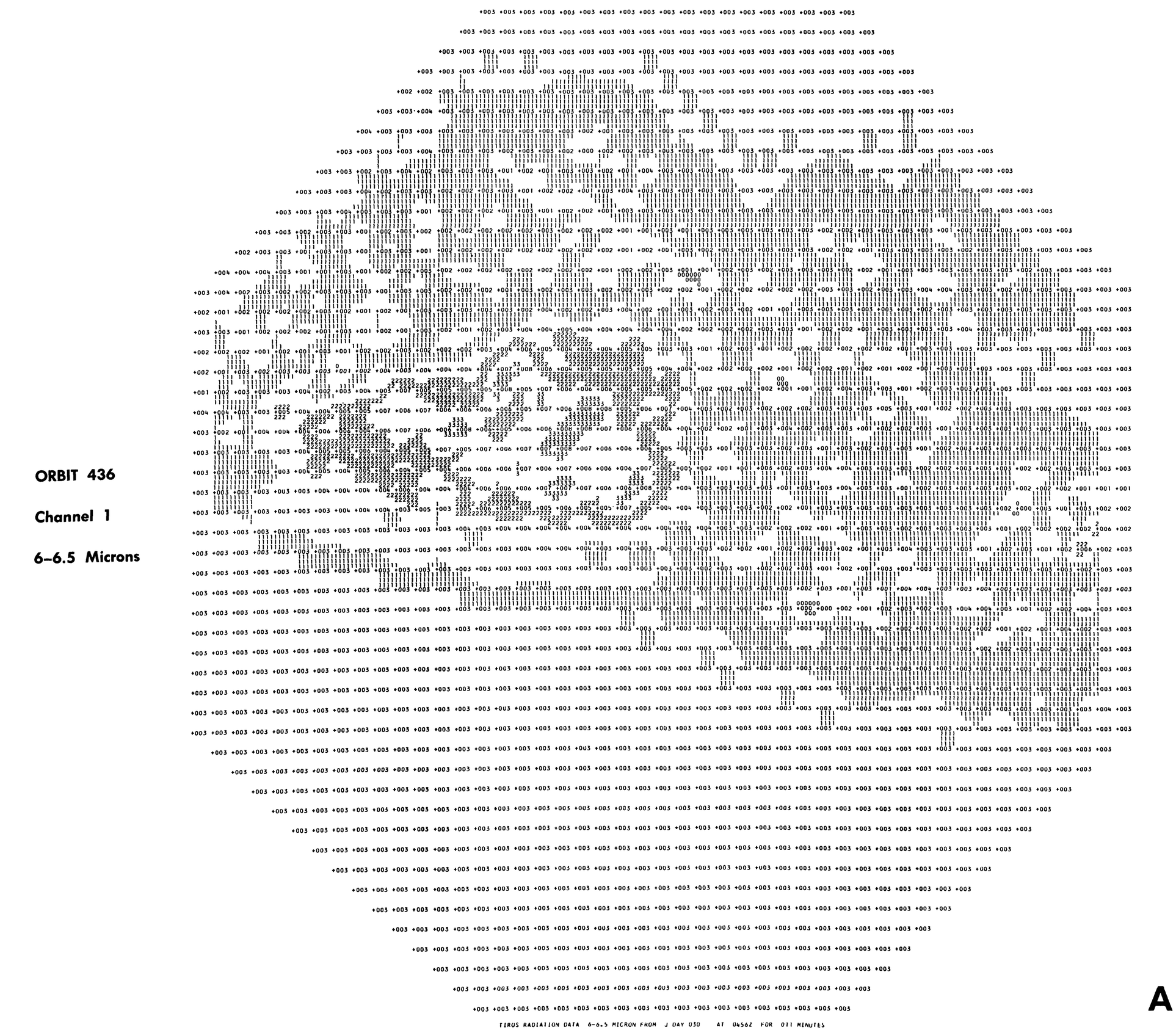
ORBIT 436

Channel 1

6–6.5 Microns



A

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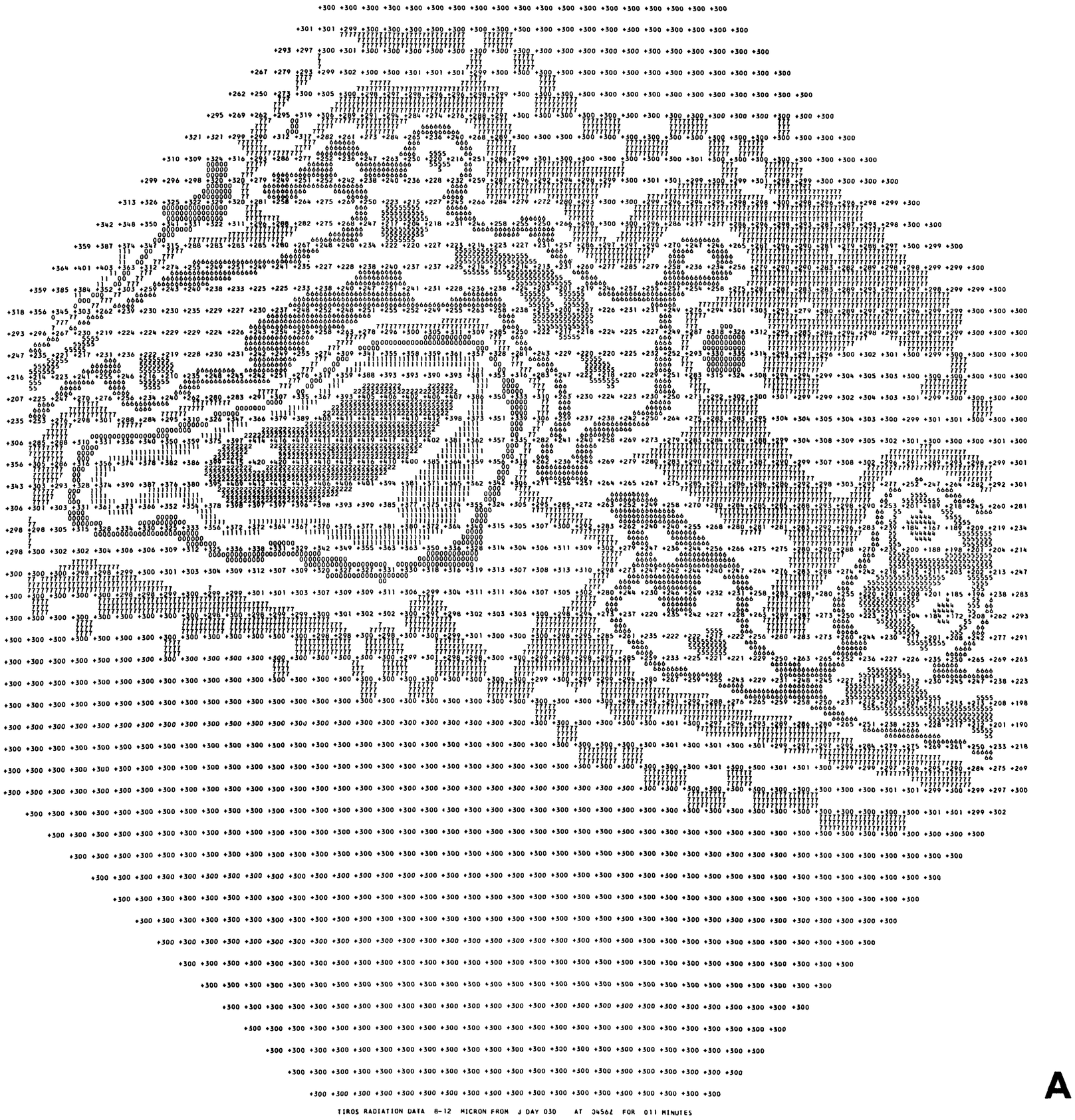
ORBIT 436

Channel 2

8–12 Microns



A

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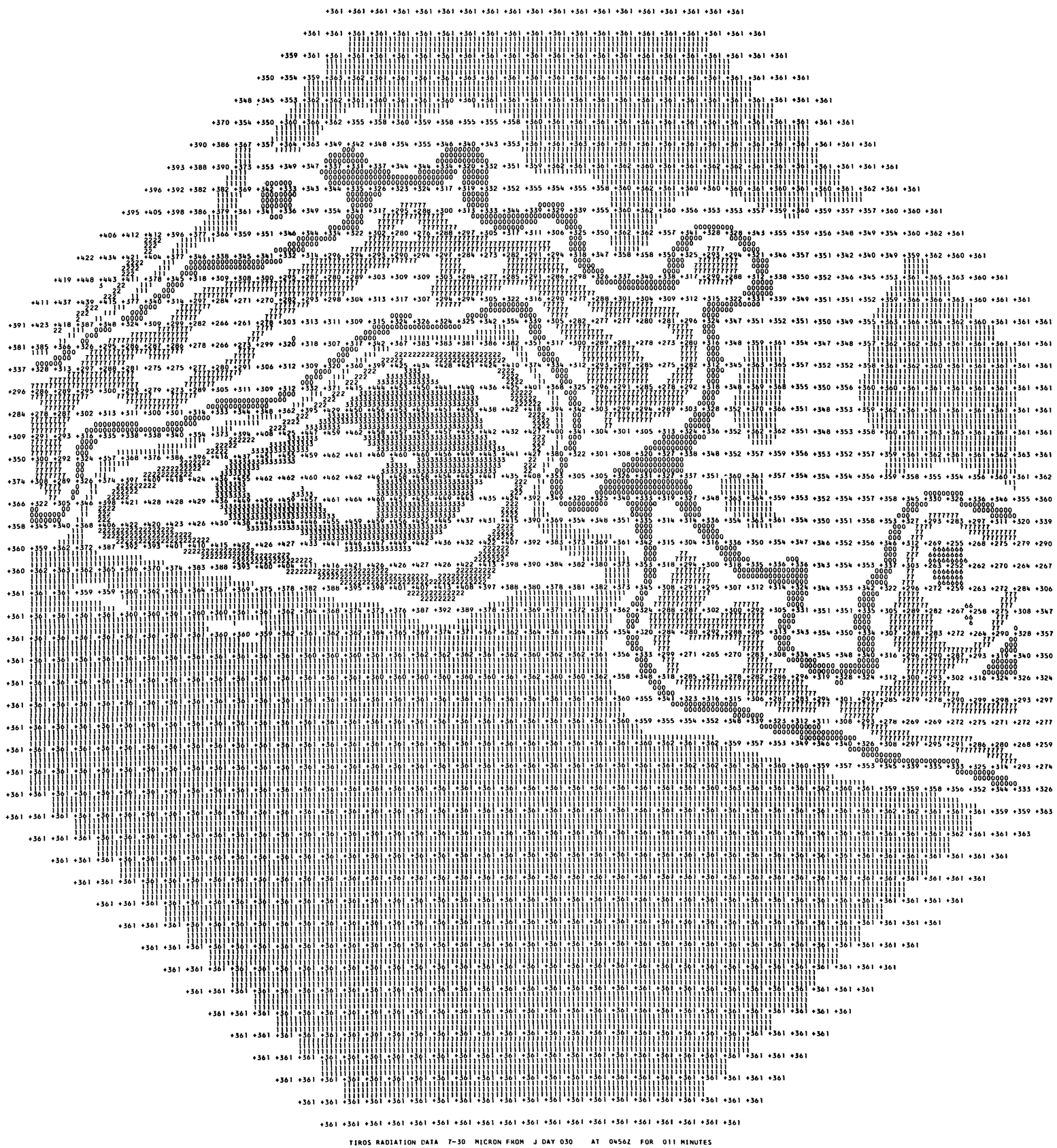
ORBIT 436

Channel 4

8–30 Microns



TIROS RADIATION DATA 7-30 MICRON FROM J DAY 030 AT 0456Z FOR 011 MINUTES

A

606227 O—61——23

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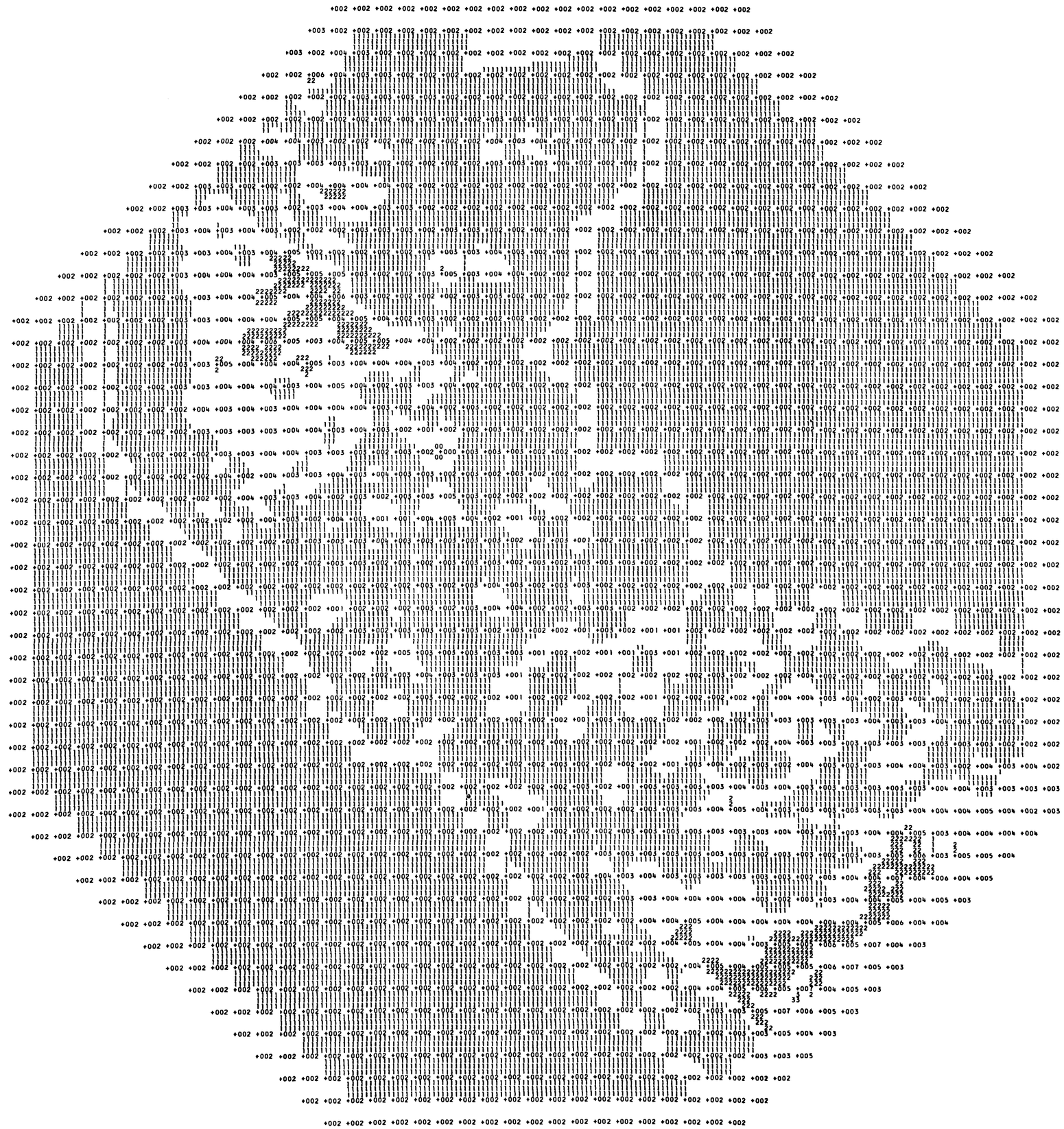
ORBIT 439

Channel 1

6–6.5 Microns



TIROS RADIATION DATA 6-6.5 MICRON FROM J DAY 030 AT 0834Z FOR 008 MINUTES

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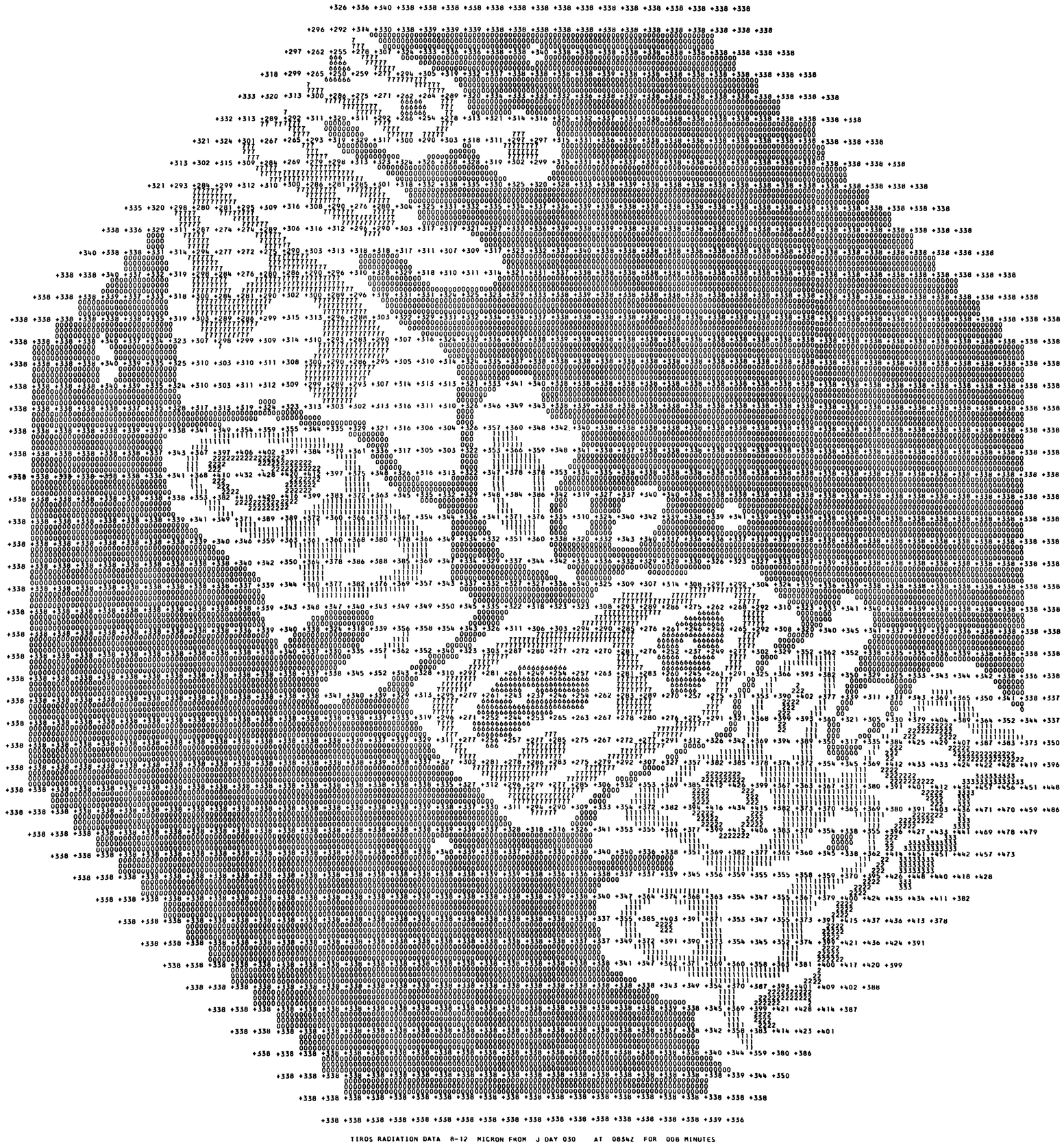
ORBIT 439

Channel 2

8–12 Microns



TIROS RADIATION DATA 8-12 MICRON FROM J DAY 030 AT 0854Z FOR 008 MINUTES

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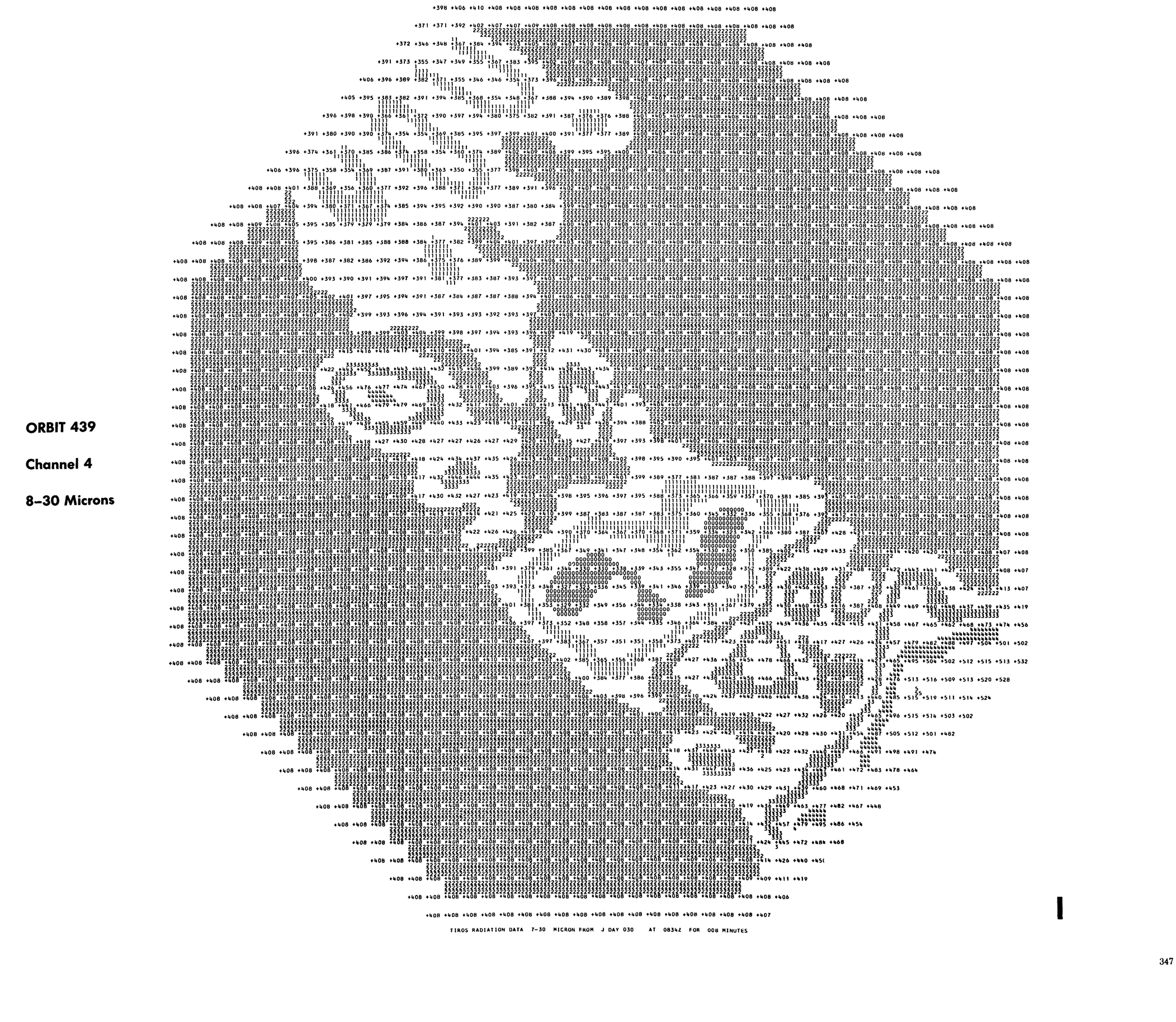
ORBIT 439
Channel 4
8–30 Microns
TIROS RADIATION DATA 7-30 MICRON FROM J DAY 030 AT 0834Z FOR 008 MINUTES

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V. INDEX OF EXISTING FINAL METEOROLOGICAL RADIATION TAPES

Table 1 lists all of the 126 Final Meteorological Radiation Tapes containing data from 672 individual orbits of TIROS II. It is designed to be used in conjunction with the Mercator World Map on page 356 and Orbital Overlay "0" in the envelope at the rear of the volume.

To illustrate the use of table I and overlay "0", the first entry in the table indicates that when TIROS II passed over the Fort Monmouth, N.J., Command and Data Acquisition Station (R) during orbit No. 1, radiation data were read out. The ascending node of orbit 1 was over Earth longitude W129.2° when TIROS II crossed the equator going from south to north at 1245:52 (GMT) on November 23, 1960, which, being the day of launch, was also termed "Julian Day 0." The Julian Day for TIROS II advances 1 for each succeeding calendar day after November 23, 1960. If the orbital overlay "0" is placed on the Mercator World Map such that the straight line is coincident with the equator and the ascending node is at longitude W129.2°, the orbital track shown is applicable to the data acquired during this interrogation. Further, it is seen that this data began 76.3 minutes before the ascending node when the satellite was over the mid-Atlantic Ocean and ended 17.7 minutes after the ascending node, or 1303:32 (GMT), when the satellite was over Lake Erie. Also, it is seen that dropouts (where there are no data) occur two times on the tape between −76.3 and −73.3, and between −10.3 and −2.3 minutes with respect to (w/r/t) the orbital ascending node (ANO). Finally, it is seen that this data is recorded on Final Meteorological Radiation Tape Reel No. 1.

There are some discrepancies in certain files of the existing FMR Tapes. These are explained in the footnotes at the end of the table. A continuing study to improve the date-handling system is underway, and it is hoped that most of these discrepancies will be corrected in future months. However, it was decided to present the index in accordance with its status as of this writing and to publish any pertinent changes in future volumes.

TABLE I.—*Index of Final Meteorological Radiation Tapes from TIROS II*

Key to Command and Data Acquisition (CDA) Stations:
R—Fort Monmouth, Belmar, N.J.
N—San Nicolas Island, Pacific Missile Range, Calif.

READOUT ORBIT		Satellite equator crossing at orbital ascending node (ANO)				TIME INTERVAL OF FILE ON FMR TAPE: Begin	End		Dropouts Minutes w/r/t ANO		FMR tape reel No.	Foot-notes
Orbit No.	CDA station	Earth longitude (degrees)	Hours; minutes; seconds (GMT)	Calendar date	Julian day	Minutes w/r/t ANO	Hours; minutes; seconds (GMT)	Minutes w/r/t ANO	From—	To—		
0001	R	W129.2	12 45 52	11-23-60	0	−76.3	13 03 32	+77.7	−76.3 −10.3	−73.3 −2.3	1	
0004	R	E155.6	17 40 28	11-23-60	0	−60.7	18 15 02	+34.6	−16.2	−4.2	1	
0031	R	W156.8	13 51 47	11-25-60	2	−73.4	14 12 32	+20.7	-----	-----	2	
0043	R	W98.0	09 30 09	11-26-60	3	−84.1	09 39 32	+9.4	−81.2 −30.2 −10.2	−80.2 −29.2 −1.2	3	
0044	R	W123.0	11 08 21	11-26-60	3	−74.6	11 21 32	+13.2	−30.4 −10.4	−29.4 −6.4	3	
0045	R	W147.9	12 46 42	11-26-60	3	−75.9	13 05 32	+18.8	−4.7	−0.7	3	
0046	R	W172.8	14 24 44	11-26-60	3	−71.0	14 48 32	+23.8	−71.0 +18.3	−69.3 +19.3	3	a
0058	R	W112.0	10 03 06	11-27-60	4	−79.1	10 15 02	+11.9	−29.1 −8.1 −4.1 −1.1	−28.1 −5.1 −2.1 −0.1	4	
0060	R	W136.9	11 41 18	11-27-60	4	−84.4	11 57 32	+16.2	−82.3 −15.3 +5.7	−81.3 −8.3 +6.7	4	
0061	N	W173.2	14 57 41	11-27-60	4	−21.1	15 30 02	+32.4	−8.7 +18.3	−6.7 +20.3	4	
0072	R	W101.0	08 57 51	11-28-60	5	−83.3	09 08 02	+10.2	−76.9 −5.9 −1.9	−75.9 −3.9 +0.1	5	
0073	R	W125.0	10 36 03	11-28-60	5	−80.0	10 49 32	+13.5	−78.0 −6.0	−76.0 +1.0	5	
0074	R	W150.9	12 14 15	11-28-60	5	−74.7	12 33 32	+19.3	−27.3 −3.3	−28.3 +2.3	5	
0075	R	W175.8	13 52 26	11-28-60	5	−69.2	14 17 02	+24.6	−26.4 +22.6	−25.4 +23.6	5	
0086	R	W90.0	07 52 36	11-29-60	6	−80.8	08 04 32	+11.9	−75.6 −25.6 −4.6	−74.6 −24.6 +3.4	6	
0087	R	W115.0	09 30 48	11-29-60	6	−80.8	09 44 32	+13.7	−76.8 −25.8 −3.8 −0.8	−74.8 −24.8 −1.8 +1.2	6	
0088	R	W139.9	11 09 00	11-29-60	6	−74.9	11 29 32	+20.5	−26.0 −4.0	−25.0 +2.0	6	
0089	R	W164.9	12 47 11	11-29-60	6	−70.0	13 12 32	+25.4	+1.0 +19.8	+2.0 +20.8	6	
0091	R	E145.2	16 03 35	11-29-60	6	−55.3	16 41 02	+37.5	−25.6 −3.6 +21.4	−24.6 +2.4 +23.4	6	
0092	N	E120.3	17 41 47	11-29-60	6	−55.0	18 13 02	+31.3	−3.6 +22.4	+2.4 +23.4	6	
0093	N	E95.4	19 19 59	11-29-60	6	−59.3	19 54 02	+34.0	−26.0 −4.0 +22.0	−25.0 +2.0 +23.0	6	
0235	N	E154.9	11 44 10	12- 9-60	16	−66.7	12 08 02	+23.9	−64.1	−63.1	7	
0237	N	E105.0	15 00 33	12- 9-60	16	−58.9	15 33 02	+32.5	-----	-----	7	
0245	R	W94.5	04 06 08	12-10-60	17	−79.2	04 16 32	+10.4	-----	-----	8	
0246	R	W119.4	05 44 19	12-10-60	17	−75.2	05 57 02	+12.7	-----	-----	8	
0247	R	W144.3	07 22 31	12-10-60	17	−71.0	07 41 02	+18.5	-----	-----	8	
0248	R	W169.3	09 00 43	12-10-60	17	−67.0	09 25 02	+24.3	-----	-----	8	
0249	N	E165.8	10 38 55	12-10-60	17	−67.3	11 00 02	+21.1	-----	-----	8	
0261	R	W133.4	06 17 16	12-11-60	18	−78.4	06 33 02	+15.7	-----	-----	9	
0274	R	W97.6	03 33 50	12-12-60	19	−82.2	03 44 32	+10.7	-----	-----	10	b
0275	R	W122.5	05 12 01	12-12-60	19	−78.0	05 26 32	+13.5	−65.0	−64.0	10	b
0276	R	W122.5	06 50 13	12-12-60	19	−37.5	07 09 32	+19.3	-----	-----	10	b
0277	R	W172.3	08 28 25	12-12-60	19	−67.3	08 53 02	+24.6	-----	-----	10	b
0280	N	E112.9	13 23 00	12-12-60	19	−62.0	13 54 02	+31.0	−58.0 +23.0 +29.0	−57.0 +24.0 +30.0	10	b
0290	R	W136.4	05 44 58	12-13-60	20	−76.7	06 02 02	+17.1	−72.0 −65.0 −57.0	−71.0 −62.0 −55.0	11	
0291	R	W161.4	07 23 10	12-13-60	20	−70.4	07 46 02	+22.8	−67.2 −56.2 −43.2 −2.2 +1.8 +24.8	−66.2 −55.2 −42.2 −1.2 +3.8 +25.8	11	c
0294	N	E123.8	12 17 45	12-13-60	20	−56.4	12 47 02	+29.3	−51.8 −1.8 +7.2	−50.8 −0.8 +12.2	11	c, d
0295	N	E98.9	13 55 57	12-13-60	20	−59.6	14 29 32	+33.6	−56.9 +5.1 +22.1	−54.9 +6.1 +23.1	11	
0303	R	W100.5	03 01 31	12-14-60	21	−82.6	03 12 32	+11.0	−82.6 −70.5 −54.5	−82.5 −68.5 −53.5	12	
0304	R	W125.5	04 39 43	12-14-60	21	−78.5	04 54 02	+14.3	−54.7	−52.7	12	
0305	R	W150.4	06 17 54	12-14-60	21	−73.8	06 37 55	+20.0	−54.9	−53.9	12	
0306	N	W175.3	07 56 06	12-14-60	21	−71.9	08 11 02	+14.9	−71.9 −54.1 −46.1 −4.1	−68.1 −52.1 −45.1 −3.1	12	
0307	N	E159.7	09 34 18	12-14-60	21	−60.1	09 58 02	+23.7	−54.3 +0.7	−53.3 +1.7	12	
0308	N	E134.8	11 12 27	12-14-60	21	−65.6	11 40 02	+27.5	−53.5	−52.5	12	
0310	N	E84.9	14 28 50	12-14-60	21	−55.8	15 06 02	+27.2	−53.8	−51.8	12	
0317	R	W80.6	01 56 12	12-15-60	22	−82.2	02 07 32	+11.3	-----	-----	13	e
0319	R	W130.5	05 12 35	12-15-60	22	−75.6	05 30 02	+17.5	-----	-----	13	e
0321	N	E170.7	08 28 59	12-15-60	22	−64.5	08 49 02	+20.0	-----	-----	13	f
0332	R	W103.6	02 29 08	12-16-60	23	−79.0	02 40 32	+11.4	-----	-----	14	
0333	R	W128.6	04 07 19	12-16-60	23	−78.9	04 22 02	+14.7	−51.3	−49.3	14	
0334	R	W153.4	05 45 31	12-16-60	23	−64.9	06 06 02	+20.5	-----	-----	14	
0335	R	W178.4	07 23 43	12-16-60	23	−62.7	07 49 32	+25.8	−50.7	−49.7	14	
0337	N	E131.8	10 40 05	12-16-60	23	−66.2	11 08 32	+28.4	-----	-----	14	
0339	N	E81.9	13 56 29	12-16-60	23	−54.4	14 36 02	+30.4	-----	-----	14	d
0346	R	W92.6	01 23 51	12-17-60	24	−75.7	01 34 32	+10.6	-----	-----	15	g
0349	R	W167.4	06 18 26	12-17-60	24	−66.0	06 42 02	+23.6	−50.4	−49.4	15	
0350	N	E167.6	07 56 38	12-17-60	24	−68.8	08 18 02	+21.4	−48.6	−47.6	15	
0351	N	E142.7	09 34 50	12-17-60	24	−66.2	10 01 32	+26.7	-----	-----	15	
0352	N	E117.8	11 13 01	12-17-60	24	−63.1	11 43 32	+30.5	−52.0 −48.0 +2.0 +5.0	−51.0 −47.0 +3.0 +6.0	15	
0353	N	E92.9	12 51 13	12-17-60	24	−68.0	13 26 02	+34.9	-----	-----	15	
0362	R	W131.5	03 34 58	12-18-60	25	−73.4	03 50 32	+15.5	-----	-----	16	
0365	N	E128.7	10 07 45	12-18-60	25	−64.1	10 36 32	+28.8	−46.8	−45.8	16	
0367	N	E103.8	11 45 56	12-18-60	25	−60.4	12 18 32	+32.6	−47.9	−46.9	16	
0368	N	E78.9	13 24 08	12-18-60	25	−52.7	14 04 02	+39.9	-----	-----	16	
0378	N	W170.5	05 46 05	12-19-60	26	−78.8	05 59 32	+13.4	−51.1 −46.1 −3.1 +8.9	−49.1 −43.1 −2.1 +11.9	17	h
0390	R	W109.6	01 24 24	12-20-60	27	−78.6	01 40 32	+16.1	−52.6 −45.6	−51.6 −43.6	18	i
0392	R	W159.5	04 40 48	12-20-60	27	−72.7	05 03 02	+22.2	−47.8 −44.8 −42.8 +5.2	−46.8 −43.8 −41.8 +8.2	18	
0395	N	E100.3	11 13 34	12-20-60	27	−59.3	11 47 02	+33.5	−48.6 +6.4 +30.4	−42.6 +7.4 +32.4	18	
0405	R	W123.6	01 57 19	12-21-60	28	−75.9	02 14 52	+17.6	−50.3 −43.3 +14.7	−45.3 −41.3 +16.7	19	
0406	R	W148.5	03 35 30	12-21-60	28	−67.5	03 57 52	+22.4	−67.5 −39.5 +5.5 +11.5	−66.5 −37.5 +8.5 +13.5	19	c
0407	R	W173.5	05 13 42	12-21-60	28	−67.7	05 37 52	+24.2	−67.7	−66.7	19	
0408	N	E161.6	06 51 54	12-21-60	28	−67.9	07 12 52	+21.0	-----	-----	19	
0409	N	E136.7	08 30 05	12-21-60	28	−65.8	08 56 52	+26.8	-----	-----	19	
0410	N	E111.7	10 08 17	12-21-60	28	−61.0	10 39 52	+31.6	-----	-----	19	
0411	N	E86.8	11 46 28	12-21-60	28	−64.2	12 22 52	+36.4	-----	-----	19	
0419	R	W112.7	00 52 01	12-22-60	29	−78.3	01 06 52	+14.9	−52.0 −42.0	−48.0 −41.0	20	
0420	R	W137.6	02 30 13	12-22-60	29	−74.9	02 48 52	+18.7	−43.2 +7.8	−40.2 +9.8	20	
0421	R	W162.5	04 08 25	12-22-60	29	−71.1	04 31 02	+22.6	−41.4 +8.6	−39.4 +9.6	20	
0422	N	E172.5	05 46 36	12-22-60	29	−69.7	06 05 52	+19.3	−69.7 −45.4 +15.6	−66.7 −44.4 +18.6	20	
0423	N	E147.5	07 24 48	12-22-60	29	−58.6	07 49 52	+25.1	-----	-----	20	
0424	N	E122.7	09 02 59	12-22-60	29	−61.9	09 32 52	+29.9	+27.0	+28.0	20	
0425	N	E97.7	10 41 11	12-22-60	29	−59.4	11 15 52	+34.0	−43.2 +8.8 +30.8	−41.2 +9.8 +31.8	20	
0433	R	W101.7	23 46 44	12-22-60	29	−77.7	00 00 22	+13.6	−77.7 −50.7 −39.7	−76.7 −47.7 −38.7	21	
0434	R	W126.7	01 24 55	12-23-60	30	−76.1	01 42 52	+17.9	−50.9 −45.9 −40.9	−48.9 −44.9 −39.9	21	j
0435	R	W151.6	03 03 07	12-23-60	30	−71.4	03 24 52	+21.8	−40.1 +9.9 +18.9	−39.1 +10.9 +19.9	21	
0436	R	W176.5	04 41 19	12-23-60	30	−57.6	05 06 52	+25.3	−40.3	−39.3	21	
0437	N	E156.5	06 19 30	12-23-60	30	−67.0	06 41 52	+22.4	−50.5 −40.5	−49.5 −39.5	21	
0438	N	E133.6	07 57 42	12-23-60	30	−64.5	08 25 52	+28.0	+13.3	+14.3	21	
0439	N	E108.7	09 35 53	12-23-60	30	−60.7	10 07 52	+32.0	−47.9 −40.1	−46.9 −39.1	21	
0440	N	E83.7	11 14 05	12-23-60	30	−56.3	11 51 52	+37.8	−0.1 +9.9 +11.9 +15.9	+0.9 +10.9 +14.9 +16.9	21	
0447	R	W90.8	22 41 26	12-23-60	30	−79.5	22 51 22	+9.9	-----	-----	22	
0448	R	W115.7	00 19 38	12-24-60	31	−77.5	00 35 52	+16.3	-----	-----	22	
0449	R	W140.6	01 57 49	12-24-60	31	−72.1	02 18 52	+21.1	−48.8 −38.8	−47.8 −37.8	22	
0450	R	W165.5	03 36 01	12-24-60	31	−69.4	03 59 52	+23.9	−39.0 +12.0	−38.0 +13.0	22	
0451	N	E169.5	05 14 12	12-24-60	31	−66.8	05 33 52	+19.7	+14.8	+17.8	22	
0452	N	E144.5	06 52 24	12-24-60	31	66.7	07 18 52	+26.5	+18.6	+21.6	22	
0453	N	E119.7	08 30 36	12-24-60	31	−62.6	09 00 52	+30.3	−62.6 −49.6 −38.6 +12.4 +23.4	−61.6 −48.6 −37.6 +14.4 +25.4	22	
0454	N	E94.7	10 08 47	12-24-60	31	−56.4	10 48 52	+35.1	−47.8 −38.8 +30.2	−43.8 −37.8 +31.2	22	
0462	R	W104.7	23 14 20	12-24-60	31	−79.9	23 28 22	+14.1	−79.9 −66.3 −52.3 −39.3	−74.8 −67.8 −47.3 −36.3	23	
0463	R	W129.7	00 52 31	12-25-60	32	−75.1	01 10 52	+18.4	−75.1	−73.5	23	
0464	R	W154.6	02 30 43	12-25-60	32	−70.3	02 53 52	+23.2	+14.3	+16.3	23	
0465	R	W179.5	04 08 54	12-25-60	32	−65.3	04 35 52	+27.0	−36.9 +12.1 +17.1	−35.9 +14.1 +19.1	23	
0466	N	E155.5	05 47 06	12-25-60	32	−62.5	06 10 52	+23.8	−58.1 −37.1 +11.9 +14.9 +21.9	−57.1 −36.1 +12.9 +17.9 +22.9	23	
0467	N	E130.6	07 25 17	12-25-60	32	−63.1	07 53 52	+28.6	−38.3 +13.7 +18.7 +26.7	−35.3 +15.7 +19.7 +27.7	23	
0468	N	E105.7	09 03 29	12-25-60	32	−60.5	09 35 52	+32.4	−36.5 −0.5 +12.5	−35.5 +2.5 +16.5	23	
0469	N	E80.7	10 41 41	12-25-60	32	−56.9	11 19 52	+38.2	−39.7 +22.3	−32.7 +23.3	23	
0476	R	W93.8	22 09 02	12-25-60	32	−82.7	22 20 22	+11.4	−82.7 −54.0 −41.0 −37.0	−78.0 −47.0 −39.0 −35.0	24	
0478	R	W143.6	01 25 25	12-26-60	33	−72.5	01 46 52	+21.5	−70.4 −35.4 +4.6 +14.6 +17.6	−68.4 −34.4 +5.6 +15.6 +20.6	24	k
0479	R	W168.6	03 03 36	12-26-60	33	−67.2	03 29 52	+26.3	−66.6 −51.6 −35.6 +14.4 +17.4 +25.4	−65.6 −46.6 −34.6 +15.4 +20.4 +26.4	24	
0480	N	E166.5	04 41 48	12-26-60	33	−66.7	05 02 52	+21.1	+2.2 +17.2	+4.2 +19.2	24	
0481	N	E141.6	06 19 59	12-26-60	33	−62.7	06 46 52	+28.9	−62.7 −55.0 −36.0	−61.0 −53.0 −34.0	24	
0482	N	E116.6	07 58 11	12-26-60	33	−54.9	08 29 52	+31.7	−35.2 +17.8	−34.2 +19.8	24	
0483	N	E91.7	09 36 22	12-26-60	33	−56.3	10 12 52	+36.5	−44.4 +15.6 +19.6 +31.6	−40.4 +17.6 +23.6 +32.6	24	
0491	R	W107.7	22 41 55	12-26-60	33	−79.7	22 56 22	+14.5	−72.9 −50.9 −45.9 −34.9	−71.9 −49.9 −44.9 −33.9	25	l
0492	R	W132.6	00 20 06	12-27-60	34	−75.3	00 38 52	+18.8	−64.1 −35.1 +15.9	−62.1 −33.1 +17.9	25	l
0493	R	W157.5	01 58 18	12-27-60	34	−70.2	02 21 52	+23.6	−66.3 −33.3 +20.7	−65.3 −32.3 +21.7	25	l
0494	R	E177.5	03 36 24	12-27-60	34	−67.5	04 02 52	+26.5	−50.4 −34.4 +17.6	−48.4 −32.4 +19.6	25	l
0505	R	W96.8	21 36 36	12-27-60	34	−83.4	21 46 52	+10.3	−77.6 −51.6 −36.6	−76.6 −50.6 −35.6	26	m
0509	N	E163.5	04 09 22	12-28-60	35	−66.5	04 31 22	+22.0	−32.4 +18.6	−31.4 +19.6	26	m
0519	R	W85.8	20 31 20	12-28-60	35	−80.9	20 41 22	+10.0	-----	-----	27	d
0520	R	W110.8	22 09 32	12-28-60	35	−78.1	22 24 52	+15.4	-----	-----	27	
0521	R	W135.7	23 47 43	12-28-60	35	−75.5	00 06 52	+19.2	−73.7 −66.7 −32.7	−72.7 −65.7 −30.7	27	
0523	N	E174.4	03 04 06	12-29-60	36	−66.7	03 23 02	+18.9	−45.1 −31.1 −0.1	−43.1 −30.1 +0.9	27	
0524	N	E149.5	04 42 18	12-29-60	36	−68.0	05 07 52	+25.6	−31.3 +19.7	−30.3 +21.7	27	
0525	N	E124.6	06 20 30	12-29-60	36	−62.8	06 49 52	+29.4	−31.5 +16.5 +19.5	−30.5 +17.5 +21.5	27	
0534	R	W99.8	21 04 13	12-29-60	36	−83.8	21 14 22	+10.2	−48.2 −31.2	−44.2 −30.2	28	n
0535	R	W124.7	22 42 25	12-29-60	36	−76.6	22 59 52	+17.5	−76.6 −31.4	−76.4 −30.4	28	n
0549	R	W113.8	21 37 06	12-30-60	37	−81.8	21 48 52	+11.8	−46.1 −31.1	−45.1 −30.1	29	o
0550	R	W138.7	23 15 17	12-30-60	37	−73.0	23 35 52	+20.6	-----	-----	29	
0551	R	W163.7	00 53 29	12-31-60	38	−68.5	01 18 52	+25.4	−66.5 +22.5	−65.5 +24.5	29	
0552	R	E171.4	02 31 40	12-31-60	38	−62.3	03 02 52	+31.3	−34.7 −31.7 +12.3 +18.3	−33.7 −27.7 +13.3 +19.3	29	
0553	N	E146.5	04 09 52	12-31-60	38	−60.6	04 35 52	+26.0	−60.6 −28.9 +22.1	−59.9 −27.9 +23.1	29	
0554	N	E121.6	05 48 03	12-31-60	38	−62.7	06 17 52	+29.8	−31.1 +21.9	−28.1 +25.9	29	
0555	N	E96.0	07 26 15	12-31-60	38	−57.9	08 00 52	+34.6	−31.3 +21.7 +27.7	−28.3 +25.7 +28.7	29	
0563	R	W102.8	20 31 47	12-31-60	38	−82.9	20 42 32	+10.7	-----	-----	30	
0564	R	W127.8	22 09 58	12-31-60	38	−80.4	22 24 32	+14.5	-----	-----	30	
0565	R	W152.7	23 48 10	12-31-60	38	−71.5	00 11 02	+22.8	-----	-----	30	
0577	R	W91.9	19 26 27	1- 1-61	39	−84.2	19 36 32	+10.1	-----	-----	31	
0578	R	W116.8	21 04 39	1- 1-61	39	−80.3	21 17 02	+12.3	-----	-----	31	
0579	R	W141.7	22 42 50	1- 1-61	39	−70.4	23 01 02	+18.2	−50.8	−48.8	31	
0580	R	W166.7	00 21 02	1- 2-61	40	−67.4	00 47 02	+26.0	−51.0	−49.0	31	
0581	N	W168.4	01 59 13	1- 2-61	40	−65.9	02 19 02	+19.8	−51.2 −48.2	−50.2 −47.2	31	
0582	N	E143.5	03 37 25	1- 2-61	40	−66.5	04 04 02	+26.6	−47.4	−46.4	31	
0583	N	E118.5	05 15 36	1- 2-61	40	−61.0	05 46 02	+30.4	−50.6	−48.6	31	
0584	N	E93.6	06 53 48	1- 2-61	40	−54.5	07 29 02	+35.2	−50.8	−48.8	31	
0592	R	W105.8	19 59 19	1- 2-61	40	−82.4	20 10 32	+11.2	−61.3 −50.3	−59.3 −46.3	32	
0593	R	W130.8	21 37 31	1- 2-61	40	−77.7	21 53 02	+15.5	−68.5 −51.5 −25.5	−67.5 −46.5 −24.5	32	
0594	R	W155.7	23 15 42	1- 2-61	40	−69.8	23 37 02	+21.8	−51.7	−46.7	32	
0595	R	W179.4	00 53 54	1- 3-61	41	−63.5	01 24 02	+30.1	−50.9 +26.1	−45.9 +28.1	32	
0596	N	E154.4	02 32 05	1- 3-61	41	−62.5	02 56 02	+23.9	−50.1 −46.1 −24.1	−47.1 −45.1 −23.1	32	
0597	N	E129.5	04 10 17	1- 3-61	41	−64.5	04 39 02	+28.7	−50.3 +26.7	−46.3 +28.7	32	
0598	N	E104.6	05 48 28	1- 3-61	41	−60.4	06 21 32	+29.0	−50.5 −37.5 +26.5 +28.5	−46.5 −36.5 +27.5 +29.5	32	
0606	R	W94.9	18 54 00	1- 3-61	41	−81.7	19 04 32	+10.5	−66.0 −50.0 −30.0 −24.0	−64.0 −45.0 −29.0 −23.0	33	p
0621	R	W108.8	19 26 52	1- 4-61	42	−82.8	19 38 32	+11.6	−49.9	−42.9	34	
0622	R	W133.8	21 05 03	1- 4-61	42	−79.0	21 21 02	+16.0	−51.1 −44.1	−45.1 −43.1	34	
0623	R	W158.7	22 43 14	1- 4-61	42	−51.0	23 05 02	+11.8	−51.0	−43.0	34	
0624	R	W176.4	00 21 26	1- 5-61	43	−63.4	00 52 02	+30.6	−50.4	−43.4	34	
0625	N	E151.4	01 59 37	1- 5-61	43	−60.6	02 24 02	+24.4	−49.6	−40.6	34	
0626	N	E126.5	03 37 49	1- 5-61	43	−60.8	04 07 32	+29.7	−53.8	−42.8	34	
0635	R	W97.9	18 21 22	1- 5-61	43	−82.4	18 32 02	+10.5	−50.5	−40.5	35	
0636	R	W122.8	19 59 43	1- 5-61	43	−79.9	20 13 02	+13.3	−51.7	−40.7	35	
0637	R	W147.7	21 37 54	1- 5-61	43	−73.7	21 57 02	+19.1	−50.9	−42.9	35	
0638	R	W172.7	23 16 06	1- 5-61	43	−66.7	23 41 02	+24.9	−67.1 −51.1	−66.1 −41.1	35	
0641	N	E112.5	04 10 40	1- 6-61	44	−60.8	04 42 32	+31.8	−50.7	−40.7	35	q
0642	N	E87.5	05 48 52	1- 6-61	44	+11.3	06 26 02	+37.8	+29.1	+31.1	35	q
0650	R	W111.8	18 54 23	1- 6-61	44	−76.3	19 10 32	+18.1	−73.4 −69.4 −66.4 −51.4 −22.4	−72.4 −68.4 −63.4 −40.4 −21.4	36	q
0651	R	W136.8	20 32 34	1- 6-61	44	−76.7	20 49 32	+16.9	−74.6 −51.6 −12.6	−64.6 −40.6 −10.6	36	q
0652	R	W161.7	22 10 46	1- 6-61	44	−70.5	22 33 32	+22.7	−70.5 −66.8 −50.8 −29.8 −20.8	−68.8 −65.8 −40.8 −28.8 −19.8	36	q
0653	N	E173.4	23 48 57	1- 6-61	44	−69.8	00 08 02	+19.1	−69.8 −58.9 −32.9 −21.9 −4.9	−68.9 −48.9 −31.9 −20.9 −2.9	36	
0667	R	W175.7	22 43 37	1- 7-61	45	−67.4	23 10 02	+26.5	−67.4 −50.6 −6.6	−66.6 −40.6 −5.6	37	
0669	N	E134.5	02 00 00	1- 8-61	46	−61.1	02 28 02	+28.0	−50.0 −32.0 −22.0 +19.0 +25.0	−40.0 −29.0 −20.0 +20.0 +28.0	37	
0670	N	E109.5	03 38 11	1- 8-61	46	−59.9	04 10 32	+32.3	−59.9 −50.2 −33.2 −27.2 −21.2 +22.8	−57.2 −40.2 −32.2 −25.2 −20.2 +32.8	37	
0671	N	E84.6	05 16 23	1- 8-61	46	−54.5	05 55 02	+38.6	−50.4 −30.4 −26.4 +29.6 +36.6	−40.4 −27.4 −17.4 +35.6 +38.6	37	
0693	R	W103.7	17 16 33	1- 9-61	47	−77.2	17 32 02	+15.4	−68.5 −48.5 −31.5 −21.5	−67.5 −39.5 −28.5 −20.5	38	
0694	R	W128.7	18 54 45	1- 9-61	47	−72.3	19 16 02	+21.2	−69.7 −64.7 −48.7 −18.7 −10.7 −1.7	−66.7 −63.7 −39.7 −13.7 −9.7 −0.7	38	
0695	R	W153.7	20 32 56	1- 9-61	47	−70.0	20 56 02	+23.1	−47.9 −28.7 −21.7	−39.7 −25.7 −17.7	38	
0696	R	W178.6	22 11 08	1- 9-61	47	−54.2	22 41 02	+29.9	−47.1 −32.1 +3.9 +13.9	−38.1 −31.1 +4.9 +16.9	38	
0707	R	W92.9	16 11 13	1-10-61	48	−82.3	16 22 02	+10.8	−75.2 −72.2 −69.2 −46.2 −21.2	−74.2 −71.2 −65.2 −39.2 −16.2	39	
0708	R	W117.8	17 49 24	1-10-61	48	−75.7	18 07 32	+18.1	−71.4 −67.4 −63.4 −46.4 −22.4	−69.4 −65.4 −62.4 −39.4 −16.4	39	
0710	R	W167.7	21 05 47	1-10-61	48	−69.8	21 30 02	+24.2	−69.8 −45.8 −8.8	−65.8 −39.8 −6.8	39	
0711	R	W167.3	22 43 58	1-10-61	48	−60.9	23 18 02	+34.0	−46.9 −19.9 −3.9 +18.1	−39.9 −18.9 −1.9 +23.1	39	
0712	N	E142.4	00 22 10	1-11-61	49	−28.2	00 50 02	+27.8	−28.2 −19.2 −0.2 +23.8	−27.2 −18.2 +0.8 +26.8	39	
0713	N	E117.5	02 00 21	1-11-61	49	−60.1	02 32 32	+32.2	−45.4 −22.4 +27.6	−40.4 −21.4 +32.6	39	
0714	N	E92.5	03 38 32	1-11-61	49	−55.6	04 15 02	+36.5	−55.6 −45.6 +29.4	−54.6 −39.6 +32.4	39	
0723	R	W131.8	18 22 15	1-11-61	49	−73.1	18 42 32	+20.3	−68.3 −43.3 −19.3 −9.3 +6.7	−63.3 −40.3 −16.3 −8.3 +7.7	40	
0724	R	W156.7	20 00 26	1-11-61	49	−71.7	20 22 32	+22.1	−43.4 −11.4	−39.4 −9.4	40	
0725	N	W178.3	21 38 38	1-11-61	49	−71.0	21 56 32	+17.9	−71.0 −66.6 −63.6 −42.6 −18.6 −5.6 +5.4	−69.6 −65.6 −62.6 −39.6 −17.6 −4.6 +7.4	40	
0726	R	E153.4	23 16 49	1-11-61	49	−61.9	23 48 02	+31.2	−43.8 −26.8 −17.8 −2.8 +15.2 +24.2	−39.8 −25.8 −16.8 −1.8 +17.2 +27.2	40	
0727	N	E128.5	00 55 00	1-12-61	50	−60.1	10 28 32	+30.5	+18.0 +24.0	+19.0 +26.0	40	
0728	N	E103.5	02 33 12	1-12-61	50	−57.2	03 07 02	+33.8	−57.2 −43.2 −18.2 +18.8 +29.8	−56.2 −40.2 −17.2 +21.8 +34.8	40	
0736	R	W95.9	15 38 43	1-12-61	50	−80.1	15 49 32	+10.8	−66.7	−60.7	41	
0737	R	W120.8	17 16 54	1-12-61	50	−74.6	17 35 32	+18.6	−68.9 −16.9 −10.9	−61.9 −14.9 −7.9	41	
0738	R	W145.8	18 55 05	1-12-61	50	−73.6	19 14 32	+19.4	−68.1 −59.1 −17.1 −11.1	−63.1 −58.1 −15.1 −10.1	41	
0739	N	W170.7	20 33 17	1-12-61	50	−73.5	20 51 32	+18.2	−68.3 −64.3 −57.3 −43.3 −29.3	−67.3 −63.3 −55.3 −38.3 −28.3	41	
0740	R	E164.4	22 11 28	1-12-61	50	−51.6	22 45 32	+34.0	−51.5 −42.5 −2.5 +15.5 +22.5 +30.5	−50.5 −38.5 −0.5 +18.5 +23.5 +31.5	41	

See footnotes at end of table.

Table I.—*Index of Final Meteorological Radiation Tapes from TIROS II*—Continued

Key to Command and Data Acquisition (CDA) Stations;
R—Fort Monmouth, Belmar, N.J.
N—San Nicolas Island, Pacific Missile Range, Calif.

Readout orbit		Satellite equator crossing at orbital ascending node (ANO)				Time interval of file on FMR tape: Begin	End		Dropouts Minutes w/r/t ANO		FMR tape reel No.	Footnote
Orbit No.	CDA station	Earth longitude (degrees)	Hours; minutes; seconds (GMT)	Calendar date	Julian day	Minutes w/r/t ANO	Hours; minutes; seconds (GMT)	Minutes w/r/t ANO	From—	To—		
0741	N	E139.4	23 49 39	1-12-61	50	−59.2	00 18 02	+28.4	−47.7 −3.7 +17.3 +25.3	−42.7 −2.7 +18.3 +28.3	41	
0742	N	E114.5	01 27 51	1-13-61	51	53.5	02 01 32	+33.7	−23.9 −16.9 −1.9 +19.1 +28.1 +31.1	−22.9 −15.9 −0.9 +22.1 +29.1 +32.1	41.	
0743	N	E89.6	03 06 02	1-13-61	51	−54.4	03 43 02	+37.0	−42.0 −22.0 +25.0	−37.0 −20.0 +37.0	41	
0779	R	W88.1	14 01 25	1-15-61	53	−80.9	14 11 32	+10.1	−48.4 −34.4 +0.6	−47.4 −30.4 +1.6	42	r
0780	R	W113.0	15 39 37	1-15-61	53	−77.0	15 56 02	+16.4	−69.6 −63.6 −34.6 −12.6	−67.6 −62.6 −27.6 −11.6	42	r
0781	R	W138.0	17 17 48	1-15-61	53	−71.9	17 38 32	+20.7	−71.9 −61.8 −33.8 −17.8 −8.8 +18.2	−69.8 −60.8 −26.8 −15.8 −2.8 +20.2	42	r
0782	R	W162.9	18 56 00	1-15-61	53	−68.9	19 19 32	+23.5	−67.0 −50.0 −34.0 −9.0 +1.0	−66.0 −49.0 −25.0 −4.0 +2.0	42	r
0785	N	E122.3	23 50 34	1-15-61	53	−54.1	00 21 02	+30.4	−48.6 −33.6 −22.6 −6.6 −2.6 +2.4	−47.6 −26.6 −21.6 −5.6 +0.4 +3.4	42	r
0794	R	W102.1	14 34 17	1-16-61	54	−82.9	14 45 02	+10.7	−68.3 −54.3 −31.3 −15.3	−66.3 −53.3 −27.3 −14.3	43	
0795	R	W127.0	16 12 29	1-16-61	54	−75.8	16 30 02	+17.5	−50.5 −30.5 −9.5 −2.5 +4.5	−49.5 −23.5 −8.5 −1.5 +7.5	43	
0797	R	W176.9	19 28 52	1-16-61	54	−64.4	19 58 32	+29.6	−53.9 −30.9 −5.9 +22.1	−42.9 −23.9 −2.9 +23.1	43	
0798	R	E158.2	21 07 03	1-16-61	54	−58.6	21 42 02	+35.0	−50.1 −30.1 −6.1 +15.9	−49.1 −23.1 +0.9 +16.9	43	
0799	N	E133.3	22 45 14	1-16-61	54	−57.6	23 18 32	+33.3	−50.2 −30.2 −3.2 +20.8	−46.2 −23.2 +0.8 +28.8	43	
0801	N	E83.4	02 01 37	1-17-61	55	−53.3	02 40 32	+38.9	−43.6 −30.6 −29.6 −9.6 −5.6 +25.4 +28.4	−42.6 −33.6 −22.6 −8.6 −3.6 +26.4 +29.4	43	
0811	R	W140.9	18 23 32	1-17-61	55	−66.2	18 51 02	+27.5	−51.5 −28.5 −8.5 −4.5	−42.5 −22.5 −7.5 −3.5	44	8
0812	R	E169.2	20 01 43	1-17-61	55	−61.6	20 34 02	+32.3	−57.7 −28.7 −4.7 −0.7	−56.7 −22.7 −2.7 +1.3	44	8
0813	N	E144.2	21 39 55	1-17-61	55	−61.0	22 08 02	+28.1	−61.0 −53.9 −28.9 −4.9 +19.1	−59.9 −45.9 −22.9 +2.1 +22.1	44	8
0814	N	E119.3	23 18 06	1-17-61	55	−59.9	23 52 32	+34.4	−59.9 −51.1 −28.1 −4.1 +6.9	−58.1 −43.1 −23.1 +0.9 +8.9	44	8
0815	N	E94.4	00 56 18	1-18-61	56	−59.4	01 31 02	+34.7	−47.3 −28.3 −2.3 +28.7 +31.7	−39.3 −22.3 −1.3 +29.7 +32.7	44	8
0823	R	W105.1	14 01 49	1-18-61	56	−79.6	14 17 02	+15.2	−78.8 −69.8 −50.8 −27.8 −16.8 −3.8	−77.8 −63.8 −55.8 −25.8 −15.8 −1.8	45	
0824	R	W130.0	15 40 01	1-18-61	56	−72.6	16 00 02	+20.0	−71.0 −44.0 −37.0 −27.0 −10.0 0.0 +8.0	−69.0 −42.0 −30.0 −24.0 −8.0 +1.0 +11.0	45	
0825	R	W154.9	17 18 12	1-18-61	56	−68.8	17 43 02	+24.8	−66.2 −48.2 −45.2 −35.2 −28.2 −16.2 −6.2 +17.8	−64.2 −47.2 −44.2 −33.2 −23.2 −14.2 −5.2 +24.8	45	
0826	R	W179.9	18 56 24	1-18-61	56	−63.3	19 27 02	+30.6	−59.4 −52.4 −33.4 −28.4 −8.4 +13.6 +24.6	−56.4 −36.4 −30.4 −21.4 +0.6 +15.6 +26.6	45	
0827	R	E155.2	20 34 35	1-18-61	56	−58.6	21 10 02	+35.4	−58.6 −55.6 −27.6 −16.6 −5.6 +18.4 +28.4	−57.6 −51.6 −21.6 −15.6 +1.4 +20.4 +31.4	45	
0828	N	E130.3	22 12 47	1-18-61	56	−57.1	22 44 02	+31.2	−51.8 −43.8 −30.8 −6.8 +13.2 +21.2	−48.8 −42.8 −21.8 +7.2 +14.2 +25.2	45	
0830	N	E80.4	01 29 10	1-19-61	57	−48.9	02 08 02	+38.8	−44.2 −27.2 −11.2 −5.2 +1.8 +21.8 +30.8	−37.2 −19.2 −8.2 −4.2 +15.8 +22.8 +34.8	45	
0837	R	W94.1	12 56 30	1-19-61	57	−81.5	13 09 00	+12.5	−81.5 −68.5 −44.5 −1.5	−80.5 −66.5 −43.5 −0.5	46	
0838	R	W119.0	14 34 41	1-19-61	57	−76.5	14 53 02	+18.3	−76.5 −73.7 −62.7 −35.7 −26.7 −11.7 +8.3 +13.3	−75.7 −72.7 −61.7 −34.7 −23.7 −10.7 +11.3 +18.3	46	
0839	R	W144.0	16 12 53	1-19-61	57	−69.7	16 35 02	+22.1	−69.7 −65.9 −49.9 −46.9 −33.9 −27.9 −16.9 +18.1	−67.9 −64.9 −48.9 −43.9 −32.9 −21.9 −14.9 +22.1	46	
0842	R	E141.2	21 07 27	1-19-61	57	−57.1	21 44 02	+37.7	−52.5 −29.5 −17.5 −7.5 −2.5 +12.5 +20.5	−44.5 −22.5 −16.5 −5.5 +3.5 +16.5 +22.5	46	
0843	N	E116.3	22 45 39	1-19-61	57	−54.4	23 21 02	+35.4	−50.7 −27.7 −5.7 +18.3 +26.3	−44.7 −17.7 +0.3 +20.3 +28.3	46	
0844	N	E91.4	00 23 50	1-20-61	58	−50.2	01 03 02	+39.2	−50.2 −26.8 −18.8 −2.8 +0.2 +21.2 +31.2	−41.8 −22.8 −17.8 −1.8 +1.2 +23.2 +35.2	46	
0853	R	W133.0	15 07 33	1-20-61	58	−73.0	15 28 02	+20.4	−50.5 −32.5 −26.5 −18.5 −8.5 +10.5 +15.5 +17.5	−45.5 −31.5 −21.5 −17.5 −7.5 +12.5 +16.5 +19.5	47	
0854	R	W 157.9	16 45 45	1-20-61	58	−67.2	17 11 02	+25.3	−63.8 −50.8 −45.8 −39.8 −29.8 −26.8 −8.8 −3.8 +11.2 +21.2	−62.8 −49.8 −42.8 −38.8 −28.8 −21.8 −7.8 −1.8 +14.2 +25.2	47	
0855	R	E 177.1	18 23 56	1-20-61	58	−64.4	18 53 02	+29.1	−51.9 −31.9 −27.9 −7.9 +0.1 +16.1 +25.1	−33.9 −30.9 −21.9 −1.9 +2.1 +17.1 +29.1	47	
0856	R	E 152.2	20 02 08	1-20-61	58	−58.3	20 38 02	+35.9	−55.1 −52.1 −48.1 −27.1 −16.1 −8.1 +11.9 +19.9 +28.9	−53.1 −50.1 −46.1 −20.1 −15.1 −6.1 +12.9 +20.9 +33.9	47	
0857	N	E 127.3	21 40 19	1-20-61	58	−55.8	22 13 02	+32.7	−51.3 −26.3 −16.3 −6.3 +16.7	−41.3 −20.3 −14.3 +2.7 +17.7	47	
0858	N	E 102.3	23 18 30	1-20-61	58	−55.8	23 57 02	+38.5	−52.5 −33.5 −26.5 −17.5 −4.5 +25.5 +31.5	−40.5 −29.5 −21.5 −16.5 +2.5 +26.5 +33.5	47	
0866	R	W 97.1	12 24 02	1-21-61	59	−80.0	12 38 02	+14.0	−77.0 −70.0 −50.0	−75.0 −64.0 −45.0	48	
0867	R	W 122.1	14 02 14	1-21-61	59	−74.8	14 21 02	+18.8	−52.2 −47.2 −26.2 −13.2 −0.2 +14.8	−50.2 −46.2 −21.2 −8.2 +0.8 +18.8	48	
0868	R	W 146.9	15 40 25	1-21-61	59	−69.7	16 04 02	+23.6	−58.4 −29.4 −13.4 −6.4 +8.6	−57.4 −20.4 −12.4 −5.4 +11.6	48	
0869	R	W 171.9	17 18 36	1-21-61	59	−64.1	17 48 02	+29.4	−49.6 −32.6 −9.6 +1.4 +23.4	−36.6 −20.6 −2.6 +2.4 +28.4	48	
0870	R	E163.1	18 56 48	1-21-61	59	−59.5	19 31 02	+34.2	−50.6 −47.6 −26.6 −15.6 −5.6 +10.4 +30.4	−49.6 −46.6 −19.6 −14.6 +2.4 +13.4 +31.4	48	
0871	R	E138.2	20 34 59	1-21-61	59	−56.8	21 12 02	+37.0	−47.0 −26.0 −8.0 +18.0	−45.0 −18.0 +4.0 +19.0	48	
0872	N	E113.3	22 13 11	1-21-61	59	−55.6	22 49 02	+35.8	−49.2 −35.2 −26.2 −4.2 +0.8	−41.2 −28.2 −20.2 −1.2 +2.8	48	
0873	N	E88.4	23 51 22	1-22-61	60	−43.9	00 31 02	+39.6	−50.4 −33.4 −15.4 +17.6	−38.4 −20.4 −14.4 +21.6	48	
0880	R	W86.2	11 18 42	1-22-61	60	−83.4	11 29 02	+10.3	−76.7 −67.7 −63.7 −48.7 −26.7 −22.7 −0.7	−75.7 −65.7 −61.7 −40.7 −25.7 −16.7 +1.3	49	
0881	R	W111.1	12 56 54	1-22-61	60	−76.8	13 13 02	+16.1	−76.8 −63.9 −60.9 −46.9 −34.9 −27.9 −25.9 −22.9 −15.9	−75.9 −62.9 −59.9 −45.9 −30.9 −26.9 −24.9 −21.9 −11.9	49	
0882	R	W136.0	14 35 05	1-22-61	60	−72.9	14 56 02	+20.9	−67.1 −50.1 −32.1 −28.1 −18.1 −8.1 +8.9 +14.9	−66.1 −43.1 −30.1 −21.1 −14.1 −6.1 +10.9 +20.9	49	
0883	R	W160.9	16 13 17	1-22-61	60	−66.7	16 40 02	+26.7	−66.3 −62.3 −50.3 −40.3 −27.3 −10.3 −5.3 +11.7 +19.7	−63.3 −60.3 −42.3 −39.3 −19.3 −9.3 −4.3 +13.7 +26.7	49	
0884	R	E174.1	17 51 28	1-22-61	60	−61.2	18 23 02	+31.5	−47.5 −43.5 −33.5 −28.5 −26.5 −17.5 −7.5 +9.5 +12.5 +15.5 +25.5	−45.5 −40.5 −31.5 −27.5 −19.5 −16.5 +2.5 +10.5 +13.5 +16.5 +31.5	49	
0885	R	E149.2	19 29 40	1-22-61	60	−57.4	20 06 02	+36.4	−46.7 −25.7 −8.7 −3.7 +31.3	−45.7 −19.7 −7.7 +3.3 +33.3	49	
0886	N	E124.3	21 07 51	1-22-61	60	−56.1	21 41 02	+33.1	−51.9 −26.9 −6.9 +15.1 +22.1 +24.1 +26.1	−40.9 −18.9 +6.1 +17.1 +23.1 +25.1 +27.1	49	
0887	N	E99.3	22 46 02	1-22-61	60	−55.6	23 25 02	+39.0	−50.0 −34.0 −17.0 −2.0 0.0 +15.0 +30.0 +35.0	−40.0 −19.0 −15.0 −1.0 +2.0 +23.0 +31.0 +37.0	49	
0895	R	W100.1	11 51 34	1-23-61	61	−79.0	12 06 02	+14.4	−79.0 −77.5 −61.5 −37.5 −16.5	−78.5 −76.5 −60.5 −36.5 −14.5	50	
0896	R	W125.1	13 29 45	1-23-61	61	−74.1	13 49 02	+19.2	−74.1 −66.7 −49.7 −45.7 −26.7 −16.7 −10.7 +1.3 +9.3 +17.3	−73.7 −65.7 −48.7 −44.7 −23.7 −14.7 −8.7 +2.3 +12.3 +19.3	50	
0897	R	W150.0	15 07 57	1-23-61	61	−69.8	15 32 02	+24.0	−67.9 −62.9 −47.9 −43.9 −25.9 −4.9 +14.1 +21.1	−66.9 −60.9 −45.9 −42.9 −18.9 −2.9 +15.1 +22.1	50	
0898	R	W174.9	16 46 08	1-23-61	61	−63.8	17 16 02	+29.9	−47.1 −33.1 −26.1 −8.1 −2.1 +3.9 +14.9	−41.1 −31.1 −17.1 −7.1 −1.1 +4.9 +16.9	50	
0899	R	E160.2	18 24 20	1-23-61	61	−59.3	18 59 02	+34.7	−59.3 −52.2 −30.2 −5.2 +1.8 +10.8	−59.2 −51.2 −18.2 −1.2 +2.8 +12.8	50	
0900	N	E135.2	20 02 31	1-23-61	61	−56.0	20 32 32	+30.0	−49.5 −26.5 −8.5 −0.5 +17.5	−42.5 −18.5 −4.5 +4.5 +18.5	50	
0901	N	E110.3	21 40 43	1-23-61	61	−56.7	22 17 32	+36.8	−56.7 −48.6 −38.6 −34.6 −25.6 −4.6 +0.4 +19.4	−56.6 −40.6 −36.6 −31.6 −17.6 −3.6 +1.4 +20.4	50	
0902	N	E85.4	23 18 54	1-23-61	61	−54.1	23 59 02	+40.1	−43.9 −26.9	−40.9 −18.9	50	
0909	R	W89.1	10 46 14	1-24-61	62	−83.1	10 56 32	+10.3	−48.2 −21.2	−39.2 −18.2	51	
0924	R	W103.1	11 19 06	1-25-61	63	−84.0	11 28 32	+14.9	−46.1 −37.1	−45.1 −35.1	52	
0925	R	W128.3	12 57 17	1-25-61	63	−75.4	13 11 32	+14.2	−75.4 −45.3 −41.3 −26.3 +15.7	−73.3 −44.3 −39.3 −23.3 +16.7	52	
0938	R	W92.2	10 13 46	1-26-61	64	−83.8	10 23 32	+9.7	−66.8 −47.8 −37.8 −19.8	−64.8 −42.8 −35.8 −15.8	53	
0939	R	W117.1	11 51 58	1-26-61	64	−78.2	12 07 02	+15.0	−76.0 −49.0 −45.0 −31.0 −26.0 −13.0 +13.0	−74.0 −48.0 −44.0 −30.0 −25.0 −12.0 +15.0	53	
0940	R	W142.0	13 30 09	1-26-61	64	−71.9	13 49 02	+18.8	−42.2 −25.2	−41.2 −21.2	53	
0941	R	W167.0	15 08 21	1-26-61	64	−60.2	15 31 02	+22.6	−49.4 −44.4 −25.4 −5.4	−48.4 −42.4 −17.4 −4.4	53	
0942	R	E168.1	16 46 32	1-26-61	64	−66.4	17 15 02	+28.5	−46.5 −38.5 −25.5 −5.5	−44.5 −36.5 −14.5 +0.5	53	
0953	R	W106.1	10 46 38	1-27-61	65	−83.2	10 57 02	+10.4	−47.6 −44.6 −33.6	−46.6 −43.6 −31.6	54	
0954	R	W131.0	12 24 49	1-27-61	65	−76.8	12 41 02	+16.2	−43.8 −25.8 +5.2	−38.8 −22.8 +6.2	54	
0955	R	W155.9	14 03 01	1-27-61	65	−69.6	14 23 02	+20.0	−25.0	−18.0	54	c
0956	R	W179.0	15 41 12	1-27-61	65	−67.4	16 07 02	+25.8	−43.2 −25.2 −7.2	−39.2 −16.2 −2.2	54	
0957	R	E154.1	17 19 24	1-27-61	65	−57.8	17 55 02	+35.6	−26.4 −3.4	−16.4 +5.6	54	
00958	N	E129.2	18 57 35	1-27-61	65	−57.7	19 26 02	+28.4	−24.6 +2.4	−16.6 +4.4	54	
0959	N	E104.2	20 35 47	1-27-61	65	−56.0	21 14 02	+38.2	−46.8 −32.8 −23.8	−39.8 −30.8 −15.8	54	
0960	N	E79.3	22 13 58	1-27-61	65	−54.7	22 53 02	+39.0	−25.0	−16.0	54	
0967	R	W95.2	09 41 18	1-28-61	66	−83.8	09 51 32	+10.2	−19.3	−16.3	55	
0968	R	W120.1	11 19 30	1-28-61	66	−80.8	11 33 02	+13.5	−80.8 −46.5 −25.5	−80.3 −43.5 −24.5	55	
0969	R	W145.0	12 57 41	1-28-61	66	−70.5	13 21 02	+23.3	−59.7 −24.7 +2.3 +6.3	−58.7 −20.7 +3.3 +7.3	55	
0970	R	W170.0	14 35 53	1-28-61	66	−68.8	15 00 02	+24.2	−43.9 −24.9 +14.1	−42.9 −15.9 +15.1	55	
0971	R	E165.1	16 14 04	1-28-61	66	−63.3	16 42 32	+28.4	−25.1 −6.1	−16.1 −0.1	55	
0972	R	E140.2	17 52 15	1-28-61	66	−58.4	18 27 02	+34.8	−26.3 −0.3 +3.7	−16.3 +0.7 +4.7	55	
0973	N	E115.2	19 30 27	1-28-61	66	−58.7	20 02 02	+31.6	−45.5 −41.5 −30.5 −25.5 −2.5 +2.5	−44.5 −38.5 −29.5 −15.5 −0.5 +3.5	55	
0974	N	E90.3	21 08 38	1-28-61	66	−55.5	21 49 02	+35.4	−25.6 −4.6	−12.6 −2.6	55	c
0981	R	W84.2	08 35 59	1-29-61	67	−83.4	08 46 12	+10.2	−21.0	−16.0	56	
0982	R	W109.1	10 14 10	1-29-61	67	−83.0	10 25 02	+10.8			56	
0983	R	W134.1	11 52 21	1-29-61	67	−77.6	12 08 02	+15.7	−41.4 −25.4 −0.4	−38.4 −21.4 +1.6	56	
0984	R	W159.0	13 30 33	1-29-61	67	−66.8	13 57 02	+26.5	−24.6	−17.6	56	
0985	R	E176.1	15 08 44	1-29-61	67	−66.7	15 35 02	+26.3	−50.7 −42.7 −35.7 −24.7	−49.7 −41.7 −34.7 −15.7	56	
0986	N	E151.1	16 46 56	1-29-61	67	−66.1	17 14 02	+27.1	−33.9 −24.9 −2.9	−31.9 −14.9 +2.1	56	
0996	R	W98.2	09 08 30	1-30-61	68	−82.8	09 19 32	+10.6	−17.8	−14.8	57	
0997	R	W123.1	10 47 02	1-30-61	68	−79.4	11 01 02	+14.0	−47.0 +3.0	−46.0 +8.0	57	

See footnotes at end of table.

TABLE I.—*Index of Final Meteorological Radiation Tapes from TIROS II*—Continued

Key to Command and Data Acquisition (CDA) Stations;
R—Fort Monmouth, Belmar, N.J.
N—San Nicolas Island, Pacific Missile Range, Calif.

READOUT ORBIT						TIME INTERVAL OF FILE ON FMR TAPE					FMR tape reel No.	Footnote
Orbit No.	CDA station	Satellite equator crossing at orbital ascending node (ANO)				Begin	End		Dropouts Minutes w/r/t ANO			
		Earth longitude (degrees)	Hours; minutes; seconds (GMT)	Calendar date	Julian day	Minutes w/r/t ANO	Hours; minutes; seconds (GMT)	Minutes w/r/t ANO	From—	To—		
0998	R	W148.0	12 25 13	1-30-61	68	−70.4	12 49 02	+23.8	−36.2 −23.2 +12.8	−35.2 −19.2 +13.8	57	
0999	R	W173.0	14 03 25	1-30-61	68	−64.5	14 33 02	+29.6	−44.4 −23.4 +15.6 +22.6	−39.4 −13.4 +17.6 +23.6	57	
1000	R	E162.1	15 41 36	1-30-61	68	−59.3	16 16 02	+34.4	−22.6 +22.4	−13.6 +24.4	57	
1001	R	E137.7	17 19 47	1-30-61	68	−59.0	17 55 02	+35.4	−29.8 −22.8 +6.2	−26.8 −13.8 +7.2	57	
1002	N	E112.2	18 57 59	1-30-61	68	−57.6	19 31 02	+32.0	−46.0 −38.0 −25.0	−45.0 −35.0 −13.0	57	c
1003	N	E87.3	20 36 10	1-30-61	68	−57.7	21 12 32	+36.3	−22.2	−13.2	57	
1010	R	W87.2	08 03 30	1-31-61	69	−82.6	08 13 02	+9.5	−80.5 −21.5	−79.5 −11.5	58	
1011	R	W112.1	09 41 42	1-31-61	69	−81.8	09 53 32	+11.8	−80.1 −14.1	−78.1 −11.1	58	
1012	R	W137.1	11 19 53	1-31-61	69	−76.7	11 37 02	+17.1	−75.9 −41.9 −37.9	−74.9 −40.9 −32.9	58	
1015	R	E148.1	16 14 28	1-31-61	69	−60.2	16 48 02	+33.5	−20.5 −0.5 +26.5	−11.5 +0.5 +27.5	58	
1016	N	E123.2	17 52 39	1-31-61	69	−59.5	18 23 02	+30.4	−20.6 +7.4	−10.6 +8.4	58	
1017	N	E98.3	19 30 51	1-31-61	69	−59.0	20 06 32	+35.6	−48.9 −42.9 −33.9 −19.9 +16.1	−47.9 −37.9 −31.9 −10.9 +18.1	58	
1054	R	W104.2	08 04 06	2- 3-61	72	−76.6	08 15 32	+11.4	−76.6 −15.1	−74.1 −4.1	59	
1055	R	W129.2	09 42 17	2- 3-61	72	−78.9	09 57 02	+14.7	−44.3 −13.3 +11.7	−43.3 −3.3 +14.7	59	
1056	R	W154.1	11 20 29	2- 3-61	72	−72.9	11 41 02	+20.5	−29.5 +12.5	−28.5 +20.5	59	
1057	R	W179.0	12 58 40	2- 3-61	72	−67.4	13 25 02	+26.3	−24.7 +10.3 +22.3	−23.7 +19.3 +23.3	59	
1058	R	E156.0	14 36 52	2- 3-61	72	−62.5	15 08 02	+31.1	−12.9 +12.1 +20.1	−2.9 +16.1 +22.1	59	
1059	N	E131.1	16 15 03	2- 3-61	72	−61.0	16 46 02	+31.0	−12.1 +14.9 +24.9	−3.1 +16.9 +26.9	59	
1060	N	E106.2	17 35 15	2- 3-61	72	−55.7	18 31 02	+38.8	−32.3 −12.3 +12.7 +29.7	−30.3 −3.3 +17.7 +30.7	59	
1061	N	E81.2	19 31 27	2- 3-61	72	−55.6	20 10 02	+38.5	−26.4 −1.4 +17.6 +24.6	−25.4 +7.6 +22.6 +26.6	59	
1070	R	W143.1	10 15 10	2- 4-61	73	−84.2	10 23 32	+8.3	−84.2 −28.2 −7.2	−76.2 −27.2 −2.2	60	
1071	R	W168.1	11 53 22	2- 4-61	73	−81.8	12 06 02	+12.7	−81.8 −76.4	−78.4 −72.4	60	
1072	R	E167.0	13 31 33	2- 4-61	73	−73.4	13 52 02	+20.4	−72.6 −36.6 −32.6 −18.6	−68.6 −35.6 −27.6 −17.6	60	
1073	R	E142.1	15 09 45	2- 4-61	73	−67.6	15 36 02	+26.2	−63.8 −25.8 −10.8 +11.2 +22.2	−62.8 −23.8 −0.8 +13.2 +26.2	60	
1080		E103.2	17 20 49	2- 5-61	74	−33.8	17 53 32	+32.7	−33.8 −23.8 −9.8 +10.2 +17.2	−32.8 −21.8 +0.2 +14.2 +19.2	61	
1098	R	W121.2	08 04 32	2- 6-61	75	−80.1	08 18 02	+13.5	−80.1 −46.5 −25.5 −8.5	−74.5 −45.5 −24.5 +1.5	62	t
1099	R	W146.2	09 42 44	2- 6-61	75	−74.3	10 02 02	+19.3	−74.3 −21.7 −6.7 +8.3 +14.3	−70.7 −19.7 +1.3 +10.3 +19.3	62	t
1100	R	W171.1	11 20 56	2- 6-61	75	−69.1	11 45 02	+24.1	−67.9 −28.9 +11.1 +15.1	−66.9 −25.9 +12.1 +21.1	62	t
1101	R	E164.0	12 59 07	1- 6-61	75	−64.8	13 28 02	+29.0	−63.1 −31.8 −28.8 −8.8 +14.2	−61.8 −30.8 −24.8 −3.8 +19.2	62	t
1102	R	E139.1	14 37 18	1- 6-61	75	−52.5	15 15 32	+38.2	−21.3 −9.3 +16.7 +27.7 +35.7	−20.3 +1.7 +20.7 +28.7 +36.7	62	t
1111	R	W85.3	05 21 02	2- 7-61	76	−83.9	05 31 02	+10.0	−78.0 −27.0 −21.0 −8.0	−77.0 −26.0 −20.0 +2.0	63	
1112	R	W110.3	06 59 13	2- 7-61	76	−80.9	07 11 02	+11.8	−80.2 −24.2 −15.2 −9.2	−72.2 −22.2 −14.2 +0.8	63	
1113	R	W135.2	08 37 25	2- 7-61	76	−77.0	08 54 02	+16.6	−77.0 −73.4 −7.4	−75.4 −71.4 +2.6	63	
1114	R	W160.1	10 15 36	2- 7-61	76	−71.0	10 38 02	+22.4	−69.6 −26.6 +0.4 +19.4	−68.6 −25.6 +1.4 +21.4	63	
1115	R	E174.9	11 53 48	2- 7-61	76	−65.4	12 22 02	+28.1	−64.8 −26.8 +16.2	−63.8 −25.8 +22.2	63	
1116	R	E150.0	13 32 00	2- 7-61	76	−60.8	14 06 02	+33.0	−24.0 −7.0 +19.0 +25.0	−21.0 +3.0 +22.0 +26.0	63	
1123	N	E86.2	17 21 15	2- 8-61	77	−55.6	17 57 32	+26.2	−32.2 −26.3 −23.3 −5.3 +14.7	−29.3 −24.3 −20.3 +4.7 +26.7	64	
1140	R	W88.3	04 48 36	2- 9-61	78	−82.6	04 59 32	+10.9	−77.6 −30.6 −5.6	−72.6 −20.6 +5.4	65	
1141	R	W113.3	06 26 47	2- 9-61	78	−81.8	06 39 02	+12.2	−80.8 −75.8 −65.8 −26.8 −22.8 −12.8 −4.8	−77.8 −73.8 −64.8 −24.8 −21.8 −11.8 +5.2	65	
1142	R	W138.2	08 04 59	2- 9-61	78	76.4	08 22 02	+17.0	−76.4 −73.0 −19.0 −13.0 −4.0 +15.0	−75.0 −72.0 −18.0 −12.0 +5.0 +16.0	65	
1143	R	W163.1	09 43 10	2- 9-61	78	−71.4	10 06 02	+22.8	−71.4 −24.2 +1.8 +13.8 +18.8	70.2 −22.2 +4.8 +16.8 +22.8	65	
1144	R	E171.9	11 21 22	2- 9-61	78	−66.3	11 49 02	+27.6	−24.4 +14.6 +17.6	−23.4 +15.6 +24.6	65	
1145	R	E147.0	12 59 33	2- 9-61	78	−60.6	13 33 02	+33.5	−24.6 −20.6 −17.6 −8.6 −4.6 +18.4 +21.4 +26.4	−22.6 −19.6 −16.6 −7.6 +5.4 +19.4 +23.4 +27.4	65	
1146	N	E122.1	14 37 45	2- 9-61	78	−59.2	15 12 32	+34.8	−23.8 −19.8 −15.8 −4.8 +15.2 +22.2 +30.2	−21.8 −18.8 −13.8 +5.2 +20.2 +24.2 +32.2	65	
1155	R	W102.3	05 21 29	2-10-61	79	−82.1	05 32 32	+11.0	−81.5 −78.5 70.5 −66.5 −25.5 −18.5 −3.5	−79.5 −73.5 −69.5 −65.5 −21.5 −12.5 +6.5	66	
1156	R	W127.3	06 59 40	2-10-61	79	−77.0	07 15 02	+15.3	−77.0 −14.7 −3.7	−71.7 −12.7 +6.3	66	
1157	R	W152.2	08 37 52	2-10-61	79	−72.3	08 59 02	+21.1	−71.9 −29.9 −26.9 −22.9 −2.9 +15.1 +18.1	−70.9 −27.9 −25.9 −21.9 +6.1 +16.1 +21.1	66	
1158	R	W177.1	10 16 03	2-10-61	79	−68.2	10 42 02	+26.0	−26.1 −23.1 +14.9 +19.9	−24.1 −20.1 +18.9 +24.9	66	
1159	R	E158.0	11 54 15	2-10-61	79	−63.1	12 25 02	+30.8	−61.3 −29.3 −18.3 −3.3 +19.7	−60.3 −28.3 −17.3 +0.7 +30.7	66	
1160	R	E133.0	13 32 26	2-10-61	79	−56.2	14 08 02	+35.6	−22.4 −8.4 −2.4 +13.6 +21.6 +28.6	−18.4 −7.4 +5.6 +19.6 +23.6 +32.6	66	
1162	N	E83.2	16 48 49	2-10-61	79	−55.5	17 26 02	+37.2	−2.8 +14.2	+6.2 +31.2	66	
1169	R	W91.4	04 16 10	2-11-61	80	−67.1	04 26 30	+10.3	−20.2 −3.2	−19.2 +6.8	67	
1170	R	W116.3	05 54 21	2-11-61	80	−80.1	06 07 02	+11.7	−80.1 −73.3 −24.3 −20.3 −15.3 −2.3	−77.3 −72.3 −23.3 −19.3 −13.3 +6.7	67	
1171	R	W141.2	07 32 33	2-11-61	80	−75.2	07 50 02	+17.5	−75.2 −19.5 −1.5	−69.5 −18.5 +7.5	67	
1172	R	W166.2	09 10 45	2-11-61	80	−69.5	09 34 02	+23.2	−54.6 −30.6 −26.6 +3.4 +15.4	−51.6 −29.6 −25.6 +7.4 +21.4	67	
1173	R	E168.9	10 48 56	2-11-61	80	−64.9	11 17 02	+28.1	−64.9 −18.9 −16.9 +0.1 +20.1 +25.1	−63.9 −17.9 −15.9 +1.1 +23.1 +27.1	67	
1174	R	E144.0	12 27 08	2-11-61	80	−61.1	13 00 02	+32.9	−23.1 −11.1 −2.1 +12.9 +22.9	−18.1 −8.1 +7.9 +19.9 +30.9	67	
1175	N	E119.0	14 05 19	2-11-61	80	−57.8	14 36 32	+31.2	−34.3 −22.3 −18.3 −5.3 −0.3 +12.7 +18.7	−33.3 −21.3 −16.3 −3.3 +8.7 +14.7 +30.7	67	
1176	N	E94.1	15 43 31	2-11-61	80	−56.0	16 19 02	+35.5	−36.0 −18.0 −2.0 +16.0	−35.0 −16.0 +9.0 +33.0	67	
1184	R	W105.3	04 49 03	2-12-61	81	−80.9	05 00 32	+11.5	−80.9 −76.1 −20.1 −15.1 −0.1	−80.1 −69.1 −19.1 −12.1 +8.9	68	
1185	R	W130.3	06 27 14	2-12-61	81	−77.9	06 43 02	+15.8	−77.9 −19.2 −0.2	−71.2 −18.2 +8.8	68	
1186	R	W155.2	08 05 26	2-12-61	81	−71.6	08 27 02	+21.6	−68.4 −0.4 +14.6	−66.4 +8.6 +21.6	68	
1187	R	E179.9	09 43 37	2-12-61	81	−67.6	10 10 02	+26.4	−63.6 −23.6 +7.4 +15.4	−62.6 −22.6 +9.4 +26.4	68	
1188	N	E154.9	11 21 49	2-12-61	81	−66.8	11 46 02	+24.2	−31.8 −28.8 −9.8 −0.8 +10.2 +20.2	−29.8 −19.8 −8.8 +1.2 +18.2 +24.2	68	
1189	N	E130.0	13 00 00	2-12-61	81	−64.4	13 29 02	+29.0	−8.0 0.0 +21.0 +24.0	−7.0 +9.0 +22.0 +29.0	68	
1191	N	E80.1	16 16 23	2-12-61	81	−48.6	16 55 02	+38.6	−30.4 −1.4 +16.6 +26.6	−29.4 +9.6 +23.6 +28.6	68	
1198	R	W94.4	03 43 44	2-13-61	82	−81.9	03 54 02	+10.3	−74.7 −22.7 −19.7 −15.7 +1.3	−69.7 −20.7 −18.7 −14.7 +10.3	69	
1199	R	W119.3	05 21 56	2-13-61	82	−78.1	05 35 02	+13.1	−76.9 −70.9 −16.9 +1.1	−75.9 −69.9 −15.9 +10.1	69	
1200	R	W144.2	07 00 07	2-13-61	82	−72.5	07 19 02	+18.1	−72.5 +0.9 +12.9 +16.9	−70.1 +9.9 +14.9 +18.9	69	
1201	R	W169.2	08 38 19	2-13-61	82	−68.9	09 03 02	+24.7	−68.3 +4.7 +15.7 +20.7	−66.3 +9.7 +18.7 +29.7	69	c
1202	N	E165.9	10 16 30	2-13-61	82	−63.8	10 37 12	+20.7	−59.5 −5.5 +14.5	−58.5 −4.5 +17.5	69	c
1203	N	E141.0	11 54 42	2-13-61	82	−67.2	12 21 02	+26.3	−67.2 −25.7 −15.7 −8.7 −1.7 +12.3 +19.3 +24.3	−65.7 −24.7 −14.7 −7.7 +10.3 +14.3 +21.3 +26.3	69	
1204	N	E116.0	13 32 53	2-13-61	82	−62.4	14 04 32	+31.6	−17.9 +2.1 +17.1 +23.1	−16.9 +10.1 +19.1 +28.1	69	
1205	N	E91.9	15 11 05	2-13-61	82	−57.4	15 48 02	+36.9	+2.1 +18.1 +32.1 +36.1	+14.1 +28.1 +33.1 +37.1	69	
1218	N	E127.0	12 27 30	2-14-61	83	−64.8	12 57 02	+29.5	−19.5 −16.5 +3.5 +13.5 +19.5 +25.5	−18.5 −15.5 +10.5 +15.5 +21.5 +29.5	70	
1219	N	E102.1	14 05 42	2-14-61	83	−57.7	14 39 02	+33.3	−3.7 +0.3 +3.3 +14.3 +22.3 +29.3	−0.7 +1.3 +11.3 +18.3 +26.3 +31.3	70	
1220	N	E77.2	15 43 53	2-14-61	83	−52.5	16 24 02	+40.1	−26.9 −1.9 +2.1	−24.9 +0.1 +31.1	70	
1231	N	E162.4	09 44 00	2-15-61	84	−68.7	10 05 02	+21.0	−68.7 −4.0 +10.0	−64.0 +1.0 +11.0	71	
1233	N	E113.0	13 00 22	2-15-61	84	−57.4	13 32 32	+32.1	−41.4 −20.4 −13.4 +2.6 +5.6 +17.6 +21.6 +27.6 +33.6	−39.4 −18.4 −8.4 +3.6 +11.6 +19.6 +24.6 +30.6 +35.6	71	c
1234	N	E88.1	14 38 34	2-15-61	84	−56.7	15 15 02	+36.4	−29.6 −22.6 −12.6 −4.6	−28.6 −21.6 −7.6 +23.4	71	
1242	R	W111.3	03 44 06	2-16-61	85	−81.6	03 56 02	+11.9	−77.1 −68.1 −50.1 −21.1 −12.1 +0.9	−76.1 −65.1 −48.1 −20.1 −11.1 +10.9	72	
1243	R	W136.3	05 22 17	2-16-61	85	−72.7	05 39 02	+16.7	−68.3 −61.3 −8.3 +7.7	−67.3 −60.3 −7.3 +11.7	72	c
1244	R	W161.2	07 00 24	2-16-61	85	−65.7	07 23 02	+22.6	−64.4 −59.4 −30.4 −25.4 +7.6 +20.6	−62.4 −58.4 −29.4 −24.4 +11.6 +27.6	72	c
1245	N	E173.9	08 38 40	2-16-61	85	−65.3	08 57 02	+18.3	−65.3 −60.7 −16.7 −6.7 +1.3 +9.3	−61.7 −57.7 −15.7 −3.7 +3.3 +11.3	72	c
1246	N	E148.9	10 16 52	2-16-61	85	−63.8	10 42 02	+25.1	−63.8 −19.9 −7.9 −1.9 +1.1 +18.1 +26.1	−58.9 −18.9 −6.9 +0.1 +2.1 +24.1 +29.1	72	c
1247	N	E124.0	11 55 03	2-16-61	85	−58.6	12 25 32	+30.5	−17.1 −13.1 −10.1 +7.9 +20.9 +29.9	−15.1 −12.1 −9.1 +10.9 +26.9 +34.9	72	c
1248	N	E99.1	13 33 15	2-16-61	85	−59.6	14 07 02	+33.8	−17.3 −14.3 −0.3 +8.7 +16.7	−16.3 −11.3 +0.7 +13.7 +28.7	72	
1261	N	E135.0	10 49 44	2-17-61	86	−66.1	11 17 02	+27.3	−66.1 −63.7 −56.7 −4.7 +17.3 +20.3	−65.7 −61.7 −55.7 −3.7 +18.3 +24.3	73	
1262	N	E110.0	12 27 55	2-17-61	86	−60.6	13 00 32	+32.6	−4.9 −1.9 +0.1 +19.1 +23.1	−2.9 −0.9 +1.1 +21.1 +28.1	73	
1271	R	W119.3	03 11 38	2-18-61	87	−81.1	03 24 02	+12.2	−81.1 −66.6	−77.6 −61.6	74	
1272	R	W139.3	04 49 50	2-18-61	87	−75.6	05 07 02	+17.2	−75.6 −10.8 +15.2	−72.8 −9.8 +17.2	74	
1273	R	W164.2	06 28 01	2-18-61	87	−69.8	06 51 02	+23.0	−69.8 −21.0 −13.0 +5.0 +17.0	−68.0 −20.0 −10.0 +9.0 +23.0	74	
1274	R	E170.9	08 06 13	2-18-61	87	−59.3	08 26 02	+19.8	−59.3 −54.2 −4.2 −0.2 +4.8 +20.8	−57.2 −51.2 −3.2 +1.8 +6.8 +22.8	74	
1275	R	E145.9	09 44 24	2-18-61	87	−54.0	10 10 02	+25. . 6	−51.4 −0.4 +4.6 +7.6 20.6	−49.4 +1.6 +5.6 +10.6 24.6	74	
1276	N	E121.0	11 22 36	2-18-61	87	−58.8	11 53 32	+30.4	−4.6 +15.7 +19.7	+1.4 +17.7 +30.4	74	
1277	N	E96.1	13 00 47	2-18-61	87	−58.9	13 35 02	+34.2	−25.8 −3.8 +17.2	−23.8 +1.2 +34.2	74	
1285	R	W103.4	02 06 19	2-19-61	88	−82.7	02 17 32	+11.2	−80.3 −66.3 −51.3 −48.3	−78.3 −63.3 −50.3 −44.3	75	
1286	R	W128.3	03 44 30	2-19-61	88	−79.1	03 59 02	+14.5	−74.5 −48.5 +9.5	−73.5 −47.5 +10.5	75	
1287	R	W153.2	05 22 42	2-19-61	88	−72.9	05 43 02	+20.3	−70.7 −6.7 +2.3 +16.3	−66.7 −4.7 +5.3 +20.3	75	
1288	R	W178.2	07 00 53	2-19-61	88	−66.0	07 27 02	+26.1	−65.9 −6.9	−64.9 −5.9	75	
1289	R	E156.9	08 39 05	2-19-61	88	−63.5	09 09 02	+29.9	+19.1 +15.9 +18.9 +23.9	+20.1 +16.9 +19.9 +24.9	75	
1290	R	E132.0	10 17 16	2-19-61	88	−57.7	10 53 02	+35.7	−2.3 +18.7 +21.7 +27.7	+0.7 +19.7 +22.7 +29.7	75	
1291	N	E107.0	11 55 28	2-19-61	88	−56.3	12 28 02	+32.5	−56.5 −3.5 +23.5 +27.5	−55.5 +1.5 +24.5 +29.5	75	
1292	N	E82.1	13 33 39	2-19-61	88	−55.1	14 12 02	+38.4	+27.3	+31.3	75	
1299	R	W92.5	01 01 05	2-20-61	89	−84.1	01 11 32	+10.4	−82.1 −68.1 −64.1 −47.1 −9.1	−81.1 −67.1 −61.1 −45.1 −8.1	76	
1301	R	W142.3	04 17 28	2-20-61	89	−75.7	04 35 02	+17.5	−72.5 −9.5 +3.5	−70.5 −8.5 +4.5	76	
1302	R	W167.2	05 55 40	2-20-61	89	−70.7	06 19 02	+23.3	−13.7 +19.3	−1.7 +23.3	76	
1303	R	E167.8	07 33 51	2-20-61	89	−66.2	08 02 02	+28.2	−66.2 −4.9 +14.1	−62.9 −3.9 +28.1	76	
1304	R	E142.9	09 12 03	2-20-61	89	−60.3	04 45 02	+32.9	−28.1 −7.1 −3.1 +1.9 +11.9 +30.9	−26.1 −6.1 −1.1 +2.9 +12.9 +32.9	76	

See footnotes at end of table.

Key to Command and Data Acquisition (CDA) Stations;
R—Fort Monmouth, Belmar, N.J.
N—San Nicolas Island, Pacific Missile Range, Calif.

Orbit No.	CDA station	Earth longitude (degrees)	Hours; minutes; seconds (GMT)	Calendar date	Julian day	Begin: Minutes w/r/t ANO	End: Hours; minutes; seconds (GMT)	End: Minutes w/r/t ANO	Dropouts From—	Dropouts To—	FMR tape reel No.	Footnote
1314	R	W106.4	01 33 58	2-21-61	90	−79.6	01 49 02	+15.0	−67.0 −65.0 −47.0	−66.0 −63.0 −45.0	77	
1315	R	W131.4	03 12 10	2-21-61	90	−77.8	03 27 02	+14.8	−77.8 −14.8 −6.8 +1.2	−75.8 −12.8 −5.8 +2.2	77	
1316	R	W156.3	04 50 21	2-21-61	90	−73.1	05 11 02	+20.7	−73.1 +7.6	−70.4 +11.6	77	
1317	R	E178.8	06 28 33	2-21-61	90	−67.3	06 55 02	+26.4	−67.3 +14.4	−66.6 +25.4	77	
1318	R	E153.8	08 06 44	2-21-61	90	−62.6	08 38 02	+31.3	−4.7 +12.3 +21.3 +29.3	−0.7 +16.3 +26.3 +31.3	77	
1329	R	W120.4	02 06 51	2-22-61	91	−80.4	02 20 02	+13.1	−78.9 −70.9 −53.9 −15.9 +8.1	−75.9 −68.9 −52.9 −14.9 +11.1	78	
1330	R	W145.3	03 45 03	2-22-61	91	−74.7	04 04 02	+19.2	−74.7 −10.1 −6.1 +3.9 +7.9 +17.9	−72.1 −9.1 −5.1 +5.9 +10.9 +19.9	78	
1331	R	W170.3	05 23 14	2-22-61	91	−70.2	05 47 02	+23.8	−70.2 −5.2 −3.2 +10.8 +14.8	−67.2 −4.2 −2.2 +11.8 +16.8	78	
1332	R	E164.8	07 01 26	2-22-61	91	−65.4	07 30 02	+28.6	−65.4 −0.4 +9.6 +13.6	−61.4 +0.6 +10.6 +15.6	78	
1343	R	W109.4	01 01 33	2-23-61	92	−83.0	01 13 32	+12.0	−67.6 −17.6 −10.6 −1.6	−64.6 −16.6 −9.6 +0.4	79	
1344	R	W134.4	02 39 44	2-23-61	92	−77.7	02 56 02	+16.3	−77.7 −73.7 −71.7 −69.7	−75.7 −72.7 −70.7 −68.7	79	
1345	R	W159.3	04 17 56	2-23-61	92	−70.9	04 40 02	+22.3	−66.9 −62.9 −4.9 +16.1	−65.9 −61.9 −0.9 +23.1	79	
1346	R	E175.8	05 56 07	2-23-61	92	−66.8	06 23 02	+26.9	−66.8 −64.1 −53.1 −0.1 +11.9	−65.1 −62.1 −52.1 +1.9 +26.9	79	
1347	R	E150.8	07 34 19	2-23-61	92	−62.1	08 06 02	+31.7	−61.3 −50.3 −6.3 −3.3 +12.7 +21.7 +26.7 +29.7	−60.3 −49.3 −5.3 −1.3 +13.7 +24.7 +27.7 +31.7	79	
1358	R	W123.4	01 34 26	2-24-61	93	−79.7	01 48 32	+14.1	−8.4 +0.6	−7.4 +5.6	80	u
1359	R	W148.3	03 12 37	2-24-61	93	−73.8	03 32 02	+19.4	−73.8 −66.6 −5.6	−71.6 −65.6 −4.6		
1360	R	W173.3	04 50 49	2-24-61	93	−68.9	05 15 02	+24.2	−68.9 −66.8 −63.8 −45.8 +12.2	−68.8 −65.8 −62.8 −43.8 +24.2	80	
1361	N	E161.8	06 29 00	2-24-61	93	−58.0	06 51 02	+22.0	−59.0 +1.0 +14.0	−56.0 +2.0 +15.0	80	
1362	N	E163.9	08 07 12	2-24-61	93	−65.7	08 35 02	+27.8	−64.2 −53.2 −8.2 +12.8	−63.2 −46.2 +3.8 +19.8	80	
1363	N	E111.9	09 45 23	2-24-61	93	−61.9	10 17 32	+32.2	−51.4 −46.4 −5.4 +20.6 +30.6	−50.4 −45.4 +2.6 +24.6 +31.6	80	
1364	N	E87.0	11 23 35	2-24-61	93	−56.2	12 00 02	+36.4	−43.6 −1.6 +11.4 +18.4 +25.4 +34.4	−41.6 +2.4 +12.4 +23.4 +31.4 +35.4	80	
1371	R	W87.5	22 50 56	2-24-61	93	−83.3	23 01 02	+10.1	−79.9 −70.9 −49.9 −30.9	−77.9 −65.9 −48.9 −29.9	81	
1372	R	W112.5	00 29 07	2-25-61	94	−78.1	00 41 02	+11.9	−78.1 −72.1 −49.1 −37.1	−76.1 −70.1 −46.1 −35.1	81	o
1373	R	W137.4	02 07 19	2-25-61	94	−76.3	02 24 02	+16.7	−75.3 −72.3 −70.3	−74.3 −71.3 −67.3	81	
1374	R	W162.3	03 45 30	2-25-61	94	−70.8	04 08 02	+22.5	+13.5	+21.5	81	
1375	N	E172.7	05 23 42	2-25-61	94	−69.6	05 43 02	+19.3	−69.6 −66.7 −48.7 −0.7 +14.3	−68.7 −63.7 −47.7 +0.3 +15.3		
1376	N	E147.8	07 01 53	2-25-61	94	−66.0	07 27 02	+25.1	−66.0 −52.9 −4.9 +13.1	−66.9 −51.9 −0.9 +20.1	81	
1377	N	E122.9	08 40 05	2-25-61	94	−61.7	09 12 28	+32.8	−51.1 −5.1 +2.9 +10.9 +21.9 +29.9	−50.1 −3.1 +3.9 +11.9 +24.9 +31.9	81	
1378	N	E98.0	10 18 16	2-25-61	94	−59.2	10 52 02	+33.7	−51.3 +26.7	−49.3 +29.7	81	
1386	R	W101.5	23 23 48	2-25-61	94	−23.2	23 34 32	+10.7	−18.8 −6.8 +9.2	−17.8 −5.8 +12.2	82	
1387	R	W126.4	01 02 00	2-26-61	95	−80.6	01 16 02	+14.0	−75.0 −49.0	−71.0 −48.0	82	
1404	N	E169.7	04 51 13	2-27-61	96	−66.8	05 13 02	+21.8	−67.2 −47.2 −42.2 +19.8	−66.2 −45.2 −41.2 +21.8	83	
1405	N	E144.8	06 29 24	2-27-61	96	−56.9	06 56 02	+25.6	−1.4 +10.6 +14.6	−0.4 +13.6 +18.6	83	
1406	N	E119.9	08 07 36	2-27-61	96	−62.3	08 38 32	+30.9	−49.6 −4.6 +13.4 +23.4	−45.6 −1.6 +16.4 +25.4	83	
1407	N	E94.9	09 45 47	2-27-61	96	−59.2	10 20 02	+34.2	−49.8 −30.8 +18.2 +27.2	−38.8 −29.8 +21.2 +31.2	83	
1416	N	W129.4	00 29 31	2-28-61	97	−86.3	00 37 32	+8.0	−77.5 −47.5	−76.5 −46.5	84	
1417	N	W154.4	02 07 43	2-28-61	97	−80.2	02 18 02	+10.8	−76.7 −72.7 +7.3	−75.7 −71.7 +9.3	84	
1418	N	W179.3	03 45 54	2-28-61	97	−77.4	04 02 02	+16.1	−74.9 −47.9 −32.1	−72.9 −45.9 −30.1	84	
1419	N	E155.8	05 24 05	2-28-61	97	−69.1	05 48 02	+23.9	−6.1 +11.9	+0.9 +22.9	84	
1420	N	E130.8	07 02 17	2-28-61	97	−64.4	07 31 02	+28.7	−49.3 −26.3 −6.3 +15.7 +24.7	−48.3 −25.3 −0.3 +19.7 +27.7	84	
1421	N	E105.9	08 40 28	2-28-61	97	−59.8	09 13 32	+33.0	−45.5 −31.5 +17.5 +28.5	−43.5 −26.5 +24.5 +31.5	84	
1422	N	E81.0	10 18 40	2-28-61	97	−54.5	10 57 02	+38.3	−44.7 −22.7 +12.3 +20.3 +31.3	−42.7 −21.7 +18.3 +28.3 +32.3	84	
1429	R	W93.5	21 46 00	2-28-61	97	−84.2	21 56 32	+10.5	−76.0 −52.0	−73.0 −40.0	85	
1431	R	W143.4	01 02 23	3- 1-61	98	−75.3	01 20 32	+18.1	−75.1 −11.4 −6.4	−74.4 −9.4 −5.4	85	
1432	R	W168.3	02 40 35	3- 1-61	98	−70.4	03 04 02	+23.4	−15.6 −3.6 +10.4 +22.4	−13.6 −2.6 +19.4 +23.4	85	
1433	N	E166.7	04 18 46	3- 1-61	98	−69.3	04 39 32	+20.8	−69.3 −43.8 −28.8 +15.2	−66.8 −42.8 −27.8 +20.2	85	
1434	N	E141.8	05 56 58	3- 1-61	98	−65.5	06 24 02	+27.0	−51.0 −31.0 −4.0 +24.0	−50.0 −30.0 −3.0 +26.0	85	
1435	N	E116.9	07 35 09	3- 1-61	98	−62.9	08 06 22	+31.2	−62.9 −26.2 +15.8 +27.8	−62.2 −25.2 +23.8 +30.8	85	
1436	N	E91.9	09 13 21	3- 1-61	98	−59.0	09 48 32	+35.1	−50.4 −44.4 +13.6 +20.6	−49.4 −42.4 +16.6 +31.6	85	
1444	R	W107.6	22 18 53	3- 1-61	98	−82.7	22 30 32	+11.6	−70.9 −66.9 −42.9	−69.9 −65.9 −40.9	86	
1445	R	W132.4	23 57 04	3- 1-61	98	−78.6	00 12 32	+15.4	−78.1 −33.1	−76.1 −31.1	86	
1446	R	W157.4	01 35 16	3- 2-61	99	−73.1	01 56 32	+21.2	−73.1 −26.3 −5.3 +13.7	−71.3 −25.3 −4.3 +20.7	86	v
1447	R	E177.7	03 13 27	3- 2-61	99	−66.6	03 39 32	+26.0	....	....	86	
1448	R	E152.8	04 51 39	3- 2-61	99	−65.0	05 16 02	+24.4	−54.7 −40.7 +14.3	−53.7 −39.7 +21.3	86	
1449	N	E127.8	06 29 50	3- 2-61	99	−64.2	06 58 32	+28.7	+16.2 +24.2	+19.2 +25.2	86	
1450	N	E102.9	08 08 01	3- 2-61	99	−60.2	08 41 02	+33.0	+13.0 +21.0 +27.0	+17.0 +23.0 +31.0	86	
1451	N	E78.0	09 46 13	3- 2-61	99	−47.0	10 25 32	+39.3	+11.8 +24.8 +30.8	+22.8 +26.8 +31.8	86	
1458	R	W96.5	21 13 33	3- 2-61	99	−88.0	21 24 02	+10.4	−67.6 −48.6 −43.6 −27.6	−66.6 −46.6 −41.6 −26.6	87	
1459	R	W121.5	22 51 45	3- 2-61	99	−80.6	23 05 02	+13.3	−80.6 −22.7 +3.3	−78.7 −21.7 +4.3	87	
1460	R	W146.4	00 29 56	3- 3-61	100	−75.6	00 48 32	+18.6	−75.6 −72.9 −25.9 −6.9 +11.1	−74.9 −71.9 −24.9 −4.9 +18.1	87	
1461	R	W171.3	02 08 08	3- 3-61	100	−69.9	02 32 02	+23.9	−69.1 −46.1 −28.1 −21.1 −4.1 +17.9	−68.1 −45.1 −27.1 −20.1 −2.1 +20.9	87	
1462	R	E163.7	03 46 19	3- 3-61	100	−64.5	04 15 32	+29.2	−43.3 −3.3 +16.7 +21.7	−38.3 −0.3 +19.7 +23.7	87	
1463	R	E138.8	05 24 31	3- 3-61	100	−59.6	05 58 32	+34.0	−6.5 −3.5 +22.5 +30.5	−5.5 −2.5 +24.5 +31.5	87	
1475	R	W160.4	01 02 49	3- 4-61	101	−71.5	01 24 32	+21.7	−71.5 −40.8 −36.8 −5.8 +13.2	−70.8 −39.8 −35.8 −3.8 +21.2	88	
1476	R	E174.7	02 41 00	3- 4-61	101	−65.0	03 07 32	+26.5	−65.0 −47.0 −41.0 +17.0 +21.0	−64.0 −43.0 −39.0 +19.0 +26.0	88	
1477	N	E149.8	04 19 12	3- 4-61	101	−64.7	04 44 02	+24.8	−54.2 −0.2 +13.8 +16.8	−53.2 +0.8 +14.8 +23.8	88	
1478	N	E124.8	05 57 23	3- 4-61	101	−63.4	06 27 02	+29.6	−1.4 +13.6 +15.6 +21.6 +23.6 +26.6	−0.4 +14.6 +19.6 +22.6 +24.6 +27.6	88	
1479	N	E99.9	07 35 35	3- 4-61	101	−60.5	08 08 32	+32.9	−44.6 +13.4 +17.4 +20.4 +23.4 +27.4	−42.6 +14.4 +18.4 +21.4 +24.4 +28.4	88	
1487	R	W99.6	20 41 07	3- 4-61	101	−84.0	20 51 32	+10.4	−49.1 −38.1	−48.1 −37.1	89	
1488	R	W124.5	22 19 18	3- 4-61	101	−79.7	22 33 02	+13.7	−79.3 −14.3 −11.3 +8.7	−78.3 −13.3 −10.3 +13.7	89	
1489	R	W149.4	23 57 30	3- 4-61	101	−74.4	00 17 02	+19.5	+11.5	+19.5	89	
1490	R	W174.4	01 35 41	3- 5-61	102	−68.6	02 00 32	+24.8	−47.7 +16.3	−46.7 +24.3	89	
1491	R	E160.7	03 13 [illegible]	3- 5-61	102	−63.4	03 43 02	+29.1	−2.9 +20.1	+0.1 +29.1	89	
1492	R	E135.8	04 52 04	3- 5-61	102	−57.9	05 27 02	+35.9	+16.9 +25.9	+18.9 +35.9	89	
1502	R	W113.5	21 13 59	3- 5-61	102	−53.2	21 30 02	+16.0	−53.2	−53.0	90	
1503	R	W138.5	22 52 10	3- 5-61	102	−75.1	23 09 32	+17.4	−75.1 +13.9	−74.1 +14.9	90	
1504	N	W163.4	00 30 14	3- 6-61	103	−75.3	00 46 02	+15.8	−75.3 −71.2 −37.2	−73.2 −70.2 −36.2	90	
1505	N	E171.7	02 08 26	3- 6-61	103	−73.6	02 28 02	+19.6	−73.0 −58.4 −41.4 −38.4 −35.4 −2.4 +16.6	−64.4 −57.4 −40.4 −38.4 −34.4 −0.4 +17.6	90	
1506	N	E146.8	03 46 37	3- 6-61	103	−67.2	04 13 02	+26.4	−67.2 −58.6 +18.4 +25.4 +29.4	−66.6 −57.6 +20.4 +26.4 +30.4	90	c
1507	N	E121.8	05 24 48	3- 6-61	103	−58.9	05 55 32	+30.7	−58.9 −24.8 +16.2	−56.8 −23.8 +24.2	90	c
1508	N	E96.9	07 03 00	3- 6-61	103	−58.7	07 37 02	+34.0	−58.7 −48.0 −25.0 +21.0 +29.0	−57.0 −29.0 −24.0 +25.0 +31.0	90	
1517	N	W127.5	21 46 43	3- 6-61	103	−79.8	21 55 02	+8.3	−79.8 −57.7 −36.7 −23.7 −9.7	−73.7 −55.7 −29.7 −22.7 −7.7	91	
1518	N	W152.4	23 24 54	3- 6-61	103	−79.2	23 39 02	+14.1	−79.2 −57.9 −35.9	−72.9 −54.9 −30.9	91	
1520	R	E157.7	02 41 17	3- 7-61	104	−63.9	03 11 32	+30.2	−63.9 −58.3 −43.3 −33.3 +1.7 +21.7 +24.7	−63.3 −54.3 −36.3 −23.3 +2.7 +22.7 +28.7	91	
1521	R	E132.8	04 19 28	3- 7-61	104	−58.1	04 55 02	+35.5	−58.1 −28.5 −20.5 −3.5 +3.5 +13.5 +21.5	−54.5 −22.5 −18.5 −2.5 +4.5 +17.5 +35.5	91	
1532	N	W141.4	22 19 33	3- 7-61	104	−77.3	22 32 02	+12.4	−77.3 −53.6	−72.6 −50.6	92	
1533	N	W166.3	23 57 45	3- 7-61	104	−80.3	00 10 02	+12.3	−80.3 −70.8 −56.8 −50.8 −39.8 −35.8	−72.8 −67.8 −53.8 −49.8 −37.8 −28.8	92	
1534	N	E168.7	01 35 57	3- 8-61	105	−73.2	01 56 02	+20.1	−73.2 −56.9 −33.9 −28.9 +17.1	−66.9 −52.9 −30.9 −25.9 +20.1	92	w
1536	N	E118.8	04 52 19	3- 8-61	105	−62.3	05 23 32	+31.2	−62.3 −56.3 −31.3 −19.3 +20.7 +29.7	−61.3 −52.3 −29.3 −18.3 +27.7 +31.7	92	
1537	N	E93.9	06 30 30	3-18-61	105	−57.3	07 05 02	+34.5	−55.5 −32.5 −29.5 +20.5 +24.5 +28.5	−52.5 −31.5 −27.5 +23.5 +26.5 +29.5	92	
1546	N	W130.5	21 14 13	3-18-61	105	−80.0	21 24 02	+10.3	−76.2 −53.2 −27.2 −7.2	−72.2 −50.2 −25.2 −6.2	93	
1547	N	W155.4	22 52 24	3- 8-61	105	−79.5	23 07 02	+14.6	−77.4 −53.4 −33.4 −31.4 −22.4	−69.4 −51.4 −32.4 −30.4 −21.4	93	
1548	N	E179.7	00 30 35	3- 9-61	106	−75.8	00 48 02	+17.4	−75.8 −51.6 −47.6 −30.6	−66.6 −50.6 −44.6 −24.6	93	
1549	N	E154.7	02 08 47	3- 9-61	106	−69.4	02 32 32	+23.7	−69.4 −62.8 −51.8 −20.8 +23.2	−64.8 −61.8 −49.8 −19.8 +24.2	93	
1550	N	E129.8	03 46 58	3-9-61	106	−64.0	04 16 02	+27.1	−51.0 −29.0	−50.0 −28.0	93	
1559	R	W94.6	18 30 41	3-9-61	106	−82.6	18 40 02	+9.3	−70.7 −68.7 −65.7 −62.7 −30.7 −12.7	−69.7 −67.7 −64.7 −61.7 −29.7 −10.7	94	
1560	R	W119.5	20 08 52	3-9-61	106	−75.6	20 25 02	+16.1	−25.9 −7.9	−24.9 −6.9	94	
1561	N	W144.4	21 47 03	3-9-61	106	−69.3	21 57 02	+10.0	−5.1	−4.1	94	
1562	N	W169.4	23 25 15	3-9-61	106	−79.7	23 39 02	+13.7	−77.3 −72.3 −69.3 −48.3 −40.3 −37.3 −23.3	−76.3 −71.3 −66.3 −47.3 −39.3 −36.3 −22.3	94	
1563	N	E165.7	01 03 26	3-10-61	107	−72.3	01 24 32	+21.1	−72.3 −63.4 −52.4 −29.4 +12.6	−66.4 −61.4 −51.4 −28.4 +13.6	94	
1574	R	W108.5	19 03 31	3-10-61	107	−80.8	19 16 02	+12.5	−46.5	−45.5	95	
1575	N	W133.5	20 41 42	3-10-61	107	−80.6	20 49 02	+7.3	−46.7	−45.7	95	
1576	N	W158.4	22 19 54	3-10-61	107	−79.9	22 33 02	+13.1	−45.9	−43.9	95	
1577	N	E176.7	23 58 05	3-10-61	107	−74.6	00 16 02	+18.0	−62.1 −53.1 −32.1	−61.1 −52.1 −30.1	95	
1578	N	E151.7	01 36 16	3-11-61	108	−68.4	02 00 02	+23.8	−47.3	−45.3	95	
1579	N	E126.8	03 14 28	3-11-61	108	−64.1	03 43 32	+29.0	−47.5	−43.5	95	
1580	N	E101.9	04 52 39	3-11-61	108	−59.1	05 26 02	+33.4	−46.7 −32.7	−44.7 −31.7	95	
1592	N	E162.7	00 30 55	3-12-61	109	−72.0	00 53 02	+22.1	−67.9 −46.9 −28.9 −22.9	−66.9 −43.9 −27.9 −21.9	96	
1594	N	E112.9	03 47 18	3-12-61	109	−62.6	04 19 02	+31.7	−48.5 −30.5 −16.5 +27.5	−42.5 −26.5 −14.5 +31.5	96	c
1595	N	E87.9	05 25 59	3-12-61	109	−47.9	06 02 02	+36.5	−46.5 −20.5 +9.5 +34.5	−42.5 −18.5 +11.5 +36.5	96	c
1602	R	W86.6	16 52 49	3-12-61	109	−84.9	17 02 02	+9.2	−79.1 −63.1 −60.1 −37.1	−73.1 −62.1 −54.1 −36.1	97	
1603	R	W111.6	18 31 00	3-12-61	109	−78.3	18 47 02	+16.0	−66.0 −46.0 −24.0	−58.0 −41.0 −23.0	97	
1604	N	W136.5	20 09 11	3-12-61	109	−77.5	20 16 02	+6.8	−46.2 −32.2 −28.2	−41.2 −30.2 −26.2	97	
1617	R	W100.6	17 25 44	3-13-61	110	−79.4	17 39 02	+13.3	−71.7 −65.7 −62.7 −45.7	−69.7 −64.7 −58.7 −38.7	98	
1618	R	W125.5	19 03 55	3-13-61	110	−79.1	19 19 02	+15.1	−65.9 −45.9	−64.9 −38.9	98	
1620	N	W175.4	22 20 18	3-13-61	110	−76.6	22 38 02	+17.7	−61.3 −48.3 −45.3 −29.3	−60.3 −47.3 −39.3 −24.3	98	
1621	N	E159.7	23 58 29	3-13-61	110	−72.2	00 20 02	+21.5	−55.5 −45.5 −34.5 −24.5 −21.5	−53.5 −38.5 −31.5 −22.5 −18.5	98	
1622	N	E134.8	01 36 41	3-14-61	111	−65.4	02 04 02	+27.3	−64.7 −44.7	−62.7 −38.7	98	
1623	N	E109.8	03 14 52	3-14-61	111	−61.7	03 46 32	+31.6	−44.9 −27.9 −22.9 +29.1	−38.9 −26.9 −19.9 +31.1	98	
1624	N	E84.9	04 53 03	3-14-61	111	−55.3	05 30 02	+37.1	−45.1 −34.1 −27.1 −20.1 −16.1 −7.1 +25.9	−38.1 −33.1 −22.1 −18.1 −13.1 −6.1 +26.9	98	
1636	N	E145.7	00 31 19	3-15-61	112	−66.3	00 57 02	+25.1	−66.3 −48.3 −44.3 −33.3 −29.3 −22.3 +23.7	−61.3 −47.3 −37.3 −32.3 −26.3 −21.3 +25.7	99	
1638	N	E95.9	03 47 42	3-15-61	112	−69.2	04 22 02	+34.3	−44.7 −33.7 −26.7 −19.7 −0.7 +25.3 +32.3	−36.7 −32.7 −21.7 −15.7 +0.3 +28.3 +33.3	99	

See footnotes at end of table.

TABLE I.—*Index of Final Meteorological Radiation Tapes from TIROS II*—Continued

Key to Command and Data Acquisition (CDA) Stations;
R—Fort Monmouth, Belmar, N.J.
N—San Nicolas Island, Pacific Missile Range, Calif.

Orbit No. (Readout orbit)	CDA station	Satellite equator crossing at orbital ascending node (ANO): Earth longitude (degrees)	Hours; minutes; seconds (GMT)	Calendar date	Julian day	Time interval of file on FMR tape: Begin, Minutes w/r/t ANO	End: Hours; minutes; seconds (GMT)	End: Minutes w/r/t ANO	Dropouts, Minutes w/r/t ANO: From—	To—	FMR tape reel No.	Footnote
1660	R	W92.6	15 47 50	3-16-61	113	−80.3	15 59 02	+11.2	−67.8 −64.8 −59.8 −52.8 −46.8 −28.8 −23.8 −21.8	−66.8 −62.8 −58.8 −51.8 −36.8 −27.8 −22.8 −19.8	100	
1661	R	W117.5	17 26 01	3-10-61	113	−75.8	17 43 02	+17.0	−66.0 −46.0 −32.0	−64.0 −36.0 −31.0	100	
1662	R	W142.5	19 04 13	3-10-61	113	−73.7	19 25 02	+21.8	−46.2 −30.2	−36.2 −27.2	100	
1665	N	E167.7	23 58 47	3-10-61	113	−34.5	00 24 02	+25.2	−27.8 −22.8	+25.8 −19.8	100	
1667	N	E92.9	03 15 09	3-17-61	114	−58.8	03 50 02	+34.8	−46.2 −29.2 +27.8 +32.8	−36.2 −27.2 +30.8 +33.8	100	
1675	R	W106.6	16 20 39	3-11-61	114	−77.7	16 36 02	+15.4	−45.7 −19.7 −15.7	−35.7 −17.7 −13.7	101	
1676	R	W131.5	17 58 51	3-11-61	114	−74.7	18 18 02	+19.2	−58.9 −44.9 −28.9	−56.9 −35.9 −25.9	101	
1678	N	E178.7	21 15 13	3-11-61	114	−68.8	21 34 02	+18.8	−62.2 −45.2 −28.2 −24.2 −7.2	−61.2 −35.2 −26.2 −21.2 −3.2	101	
1679	N	E153.7	22 53 24	3-17-61	114	−66.6	23 17 02	+23.6	−65.4 −62.4 −44.4 −24.4 −20.4	−63.4 −60.4 −35.4 −22.4 −19.4	101	
1680	N	E128.8	00 31 26	3-18-61	115	−65.2	01 00 02	+28.4	−44.6 +24.4	−35.6 +25.4	101	
1704	R	W109.5	15 48 06	3-19-61	116	−78.8	16 03 32	+15.4	−64.1 −61.1 −42.1 −26.1 −19.1 −13.1	−62.1 −58.1 −33.1 −23.1 −15.1 −12.1	102	
1705	R	W134.5	17 26 17	3-19-61	116	−73.9	17 46 32	+20.2	−41.3 −26.3 −21.3 −14.3	−32.3 −24.3 −20.3 −13.3	102	
1706	R	W 159.4	19 04 28	3-19-61	116	−69.1	19 30 02	+25.5	−65.5 −61.5 −50.5 −41.5 −22.5 −15.5 −12.5	−64.5 −60.5 −49.5 −32.5 −21.5 −13.5 −11.5	102	
1707	N	E 175.7	20 42 40	3-19-61	116	....	21 02 32	....	....	....	102	x
1708	N	E 150.7	22 20 51	3-19-61	116	−68.6	22 46 02	+25.1	−41.9 −2.9 +0.1 +23.1	−24.9 −1.9 +2.1 +25.1	102	
1709	N	E125.8	23 59 13	3-19-61	116	−65.0	00 28 32	+29.3	−41.2 −28.2 −25.2 +3.8 +26.8	−32.2 −26.2 −21.2 +5.8 +28.8	102	
1710	N	E100.8	01 37 24	3-20-61	117	−60.1	02 11 02	+33.6	−41.4 −22.4 +8.6 +18.6 +31.6	−42.4 −16.4 +10.6 +19.6 +33.6	102	
1718	R	W98.6	14 42 55	3-20-61	117	−81.6	14 56 02	+13.1	−38.9	−30.9	103	
1719	R	W123.5	16 21 06	3-20-61	117	−74.7	16 40 02	+18.9	−66.1 −57.1 −39.1 −13.1	−65.1 −56.1 −30.1 −12.1	103	
1721	R	W173.4	19 37 29	3-20-61	117	−68.7	20 03 32	+26.0	−58.5 −53.5 −50.5 −48.5 −31.5 −24.5 −15.5	−57.5 −52.5 −46.5 −36.5 −30.5 −19.5 −14.5	103	
1722	R	E161.7	21 15 40	3-20-61	117	−64.5	21 45 32	+29.8	−58.7 −51.7 −38.7 −26.7 −17.7 +18.3	−57.7 −50.7 −29.7 −21.7 −16.7 +19.3	103	
1723	R	E136.7	22 53 51	3-20-61	117	−58.3	23 29 02	+35.1	−54.9 −49.9 −38.9 −20.9 −0.9 +20.1 +33.1	−53.9 −48.9 −29.9 −14.9 +0.1 +30.1 +35.1	103	
1724	R	W137.5	16 53 56	3-21-61	118	−76.8	17 10 02	+16.1	−55.9 −43.9 −36.9 −24.9 −16.9 −10.9 −6.9 −2.9	−53.9 −42.9 −28.9 −23.9 −12.9 −9.9 −5.9 −1.9	104	
1725	R	W162.4	18 32 07	3-21-61	118	−70.8	18 55 02	+22.9	−51.0 −36.0 −26.0 −15.0 −9.0 −3.0	−48.0 −27.0 −25.0 −14.0 −8.0 −2.0	104	
1736	R	E172.6	20 10 18	3-21-61	118	−63.5	20 41 02	+30.7	−27.3	−26.3	104	
1737	R	E147.7	21 48 30	3-21-61	118	−61.2	22 21 02	+32.5	−50.5 −36.5 −0.5	−49.5 −28.5 +1.5	104	
1747	R	W101.6	14 10 23	3-22-61	119	−80.1	14 24 32	+14.1	−61.4 −35.4	−60.4 −27.4	105	
1748	R	W126.5	15 48 34	3-22-61	119	−78.6	16 02 02	+13.4	−34.6 −24.6 −13.6 −7.6	−26.6 −23.6 −11.6 −6.6	105	
1749	R	W151.5	17 26 45	3-22-61	119	−74.9	17 46 02	+19.2	−51.8 −34.8 −18.8 −9.8	−49.8 −25.8 −16.8 −4.8	105	
1750	R	W176.4	19 04 57	3-22-61	119	−66.1	19 34 02	+29.0	−48.9 −34.9 −8.9 −4.9	−43.9 −25.9 −6.9 −1.9	105	
1751	R	E156.7	20 43 08	3-22-61	119	−64.1	21 13 02	+29.9	−54.1 −34.1 −21.1	−53.1 −26.1 −20.1	105	
1752	R	E133.7	22 21 19	3-22-61	119	−58.9	22 57 02	+35.7	−48.3 −34.3 −22.3 +4.7	−47.3 −25.3 −21.3 +5.7	105	
1762	R	W115.6	14 43 12	3-23-61	120	−78.9	14 56 02	+14.8	−67.2 −32.2 −23.2 −15.2	−66.2 −25.2 −20.2 −14.2	106	
1763	R	W140.5	16 21 23	3-23-61	120	−71.3	16 39 32	+18.1	−42.4 −32.4 −14.4 −7.4	−41.4 −23.4 −11.4 −5.4	106	c
1764	R	W165.4	17 59 35	3-23-61	120	−70.4	18 23 02	+23.4	−49.6 −32.6 −7.6	−43.6 −23.6 −1.6	106	
1765	R	E169.7	19 37 46	3-23-61	120	−66.2	20 05 32	+27.7	−51.8 −32.7 −20.7 −6.7 −2.7	−50.8 −23.7 −19.7 −4.7 −0.7	106	
1766	R	E144.7	21 15 57	3-23-61	120	−61.0	21 49 02	+33.0	−48.9 −31.9 −21.9 +0.1	−47.9 −22.9 −18.9 +3.1	106	
1777	R	W129.5	15 16 01	3-24-61	121	−77.8	15 31 02	+15.0	−47.0 −31.0 −14.0	−45.0 −24.0 −10.0	107	y
1778	R	W154.4	16 54 13	3-24-61	121	−74.1	17 14 02	+19.8	−49.2 −45.2 −42.2 −31.2 −8.2	−48.2 −44.2 −40.2 −21.2 −3.2	107	y
1779	R	W179.4	18 32 24	3-24-61	121	−68.1	18 58 02	+25.6	−52.4 −48.4 −30.4 −5.4 −0.4	−50.4 −44.4 −21.4 −2.4 +0.6	107	y
1780	R	E155.7	20 10 35	3-24-61	121	−59.6	20 45 02	+34.4	−29.6 −5.6 −0.6	−18.6 −2.6 +0.4	107	y
1781	R	E130.8	21 48 46	3-24-61	121	−57.7	22 25 02	+36.2	−29.7 −17.7 +1.3	−20.7 −16.7 +3.3	107	y
1793	R	W168.4	17 27 02	3-25-61	122	−66.7	17 54 02	+27.0	−51.0 −28.0 −5.0	−42.0 −19.0 −3.0	108	z
1794	R	E166.7	19 05 13	3-25-61	122	−61.8	19 38 02	+32.8	−54.2 −43.2 −40.2 −30.2 −5.2 +0.8	−52.2 −41.2 −38.2 −19.2 −1.2 +1.8	108	z
1795	R	E141.7	20 43 24	3-25-61	122	−57.9	21 19 02	+35.6	−27.4 −16.4 −3.4 +29.6	−18.4 −15.4 +0.6 +30.6	108	z
1805	R	W107.6	13 05 17	3-26-61	123	−79.0	13 20 02	+14.7	−51.3 −16.3	−49.3 −15.3	109	
1808	R	E177.6	17 59 51	3-26-61	123	−56.9	18 31 02	+31.9	−50.9 −44.9 −25.9 −4.9	−49.9 −41.9 −16.9 −0.9	109	
1809	R	E152.7	19 38 02	3-26-61	123	−59.5	20 13 02	+35.0	−53.0 −27.0 −2.0	−52.0 −17.0 +1.0	109	
1819	R	W96.6	11 59 58	3-27-61	124	−64.6	12 13 02	+13.1	−51.9 −20.9 −0.9	−50.9 −15.9 +1.1	110	
1820	R	W121.5	13 38 09	3-27-61	124	−79.4	15 52 02	+13.8	−48.2 −42.2 −34.2 −14.2 +0.8	−46.2 −41.2 −33.2 −12.2 +7.8	110	
1821	R	W146.5	15 16 20	3-27-61	124	−72.7	15 37 02	+20.6	−36.3 −22.3 −10.3 +3.7	−32.3 −19.3 −9.3 +4.7	110	
1822	R	W171.4	16 54 32	3-27-61	124	−66.4	17 19 02	+24.5	−52.5 −43.5 −24.5 −7.5	−50.5 −41.5 −16.5 −3.5	110	
1823	R	E163.7	18 32 43	3-27-61	124	−58.4	19 07 02	+34.3	−37.7 −32.7 −22.7 −2.7	−34.7 −29.7 −14.7 −1.7	110	
1824	R	E138.7	20 10 54	3-27-61	124	−54.8	20 45 02	+34.1	−27.9 −21.9 +17.1	−25.9 −14.9 +18.1	110	
1833	R	W85.6	10 54 36	3-28-61	125	−83.9	11 04 32	+9.9	−28.6 −22.6	−25.6 −13.6	111	
1834	R	W110.6	12 32 47	3-28-61	125	−81.2	12 45 02	+12.2	−34.8 −23.8 −17.8 −0.8	−31.8 −22.8 −12.8 +1.2	111	
1836	R	W160.4	15 49 09	3-28-61	125	−26.1	16 11 02	+21.9	−20.2 −6.2 +1.8	−17.2 −4.2 +4.8	111	
1837	R	E174.6	17 27 21	3-28-61	125	−63.0	17 54 02	+26.6	−44.4 −33.4 −28.4 −20.4 +0.6	−41.4 −31.4 −25.4 −12.4 +1.6	111	c
1838	R	E149.7	19 05 32	3-28-61	125	−56.4	19 41 02	+35.5	−28.5 −24.5 −20.5 +16.5	−27.5 −22.5 −12.5 +17.5	111	
1848	R	W99.6	11 27 25	3-29-61	126	−84.2	11 37 02	+9.6	−84.2 −32.4 −19.4 −0.4	−81.4 −31.4 −11.4 +0.6	112	
1849	R	W124.5	13 05 36	3-29-61	126	−79.9	13 20 02	+14.4	−47.6 −33.6 −29.6 −12.6 −1.6	−45.6 −31.6 −26.6 −11.6 +7.4	112	
1850	R	W149.4	14 43 47	3-29-61	126	−72.0	15 05 32	+21.7	−39.8 −31.8 −19.8 −14.8 +1.2	−34.8 −29.8 −17.8 −10.8 +7.2	112	
1851	R	W174.4	16 21 58	3-29-61	126	−69.9	16 46 02	+24.1	−48.0 −42.0 −40.0 −32.0 −23.0 −20.0 −4.0 +8.0	−47.0 −41.0 −36.0 −27.0 −21.0 −12.0 −3.0 +9.0	112	
1852	R	E160.7	18 00 10	3-29-61	126	−60.4	18 34 02	+33.8	−54.2 −50.2 −22.2 +7.8 +11.8	−53.2 −48.2 −10.2 +8.8 +17.8	112	
1855	N	E85.9	22 54 43	3-29-61	126	−52.1	23 31 02	+36.3	−48.7 −27.7 −23.7 −18.7 −4.7 +5.3 +19.3	−45.7 −25.7 −21.7 −10.7 −1.7 +6.3 +20.3	112	
1862	R	W88.6	10 22 02	3-30-61	127	−84.7	10 31 32	+9.5	−18.0 −0.0	−9.0 +1.0	113	
1863	R	W113.5	12 00 13	3-30-61	127	−78.3	12 16 02	+15.8	−34.2 −28.2 −17.2 −1.2 +0.8 +8.8	−33.2 −26.2 −9.2 −0.2 +1.8 +9.8	113	
1864	R	W138.5	13 38 25	3-30-61	127	−75.5	13 56 02	+17.6	−22.4 +1.6	−21.4 +9.6	113	
1865	R	W163.4	15 16 36	3-30-61	127	−68.5	15 41 02	+24.4	−46.6 −17.6 +0.4 +8.4	−45.6 −15.6 +5.4 +10.4	113	
1866	R	E171.7	16 54 47	3-30-61	127	−61.5	17 27 02	+32.2	−18.7 +14.3	−8.7 +16.3	113	
1867	N	E196.7	18 32 58	3-30-61	127	−60.8	18 57 32	+24.5	−32.0 −18.0 +7.0	−30.0 −9.0 +9.0	113	
1868	N	E121.8	20 11 10	3-30-61	127	−64.9	20 40 32	+29.3	−46.2 −30.2 −18.2 +4.8 +12.8	−45.2 −24.2 −9.2 +10.8 +13.8	113	
1869	N	E96.9	21 49 21	3-30-61	127	−60.7	22 23 02	+33.7	−48.3 −33.3 −26.3 −17.3	−46.3 −29.3 −20.3 −8.3	113	
1878	R	W127.5	12 33 02	3-31-61	128	−74.9	12 51 02	+18.0	−46.0 −30.0 −21.0 −12.0 +16.0	−45.0 −29.0 −20.0 −8.0 +18.0	114	
1879	R	W152.4	14 11 13	3-31-61	128	−69.6	14 33 02	+21.8	+0.8	+7.8	114	
1880	R	W177.4	15 49 25	3-31-61	128	−63.1	16 19 02	+29.6	−50.4 −48.4 −35.4 −16.4	−49.4 −47.4 −33.4 −11.4	114	
1881	R	E157.7	17 27 36	3-31-61	128	−58.1	18 03 02	+35.4	−16.6	−7.6	114	
1882	N	E132.8	19 05 47	3-31-61	128	−56.4	19 36 02	+30.2	−27.8 −16.8 +9.2 +25.2	−26.8 −7.8 +10.2 +26.2	114	
1883	N	E107.8	20 43 58	3-31-61	128	−60.9	21 16 02	+32.1	−35.0 −27.0 −24.0 −17.0	−32.0 −26.0 −22.0 −7.0	114	
1884	N	E82.9	22 22 10	3-31-61	128	−54.9	23 01 32	+30.4	−40.2 −28.2 −16.2 −5.2 +6.8	−34.2 −24.2 −7.2 −3.2 +7.8	114	
1891	R	W91.6	09 49 28	4-1-61	129	−83.5	09 59 32	+10.0	−40.5 −27.5 −15.5 −1.5 +1.5	−39.5 −26.5 −6.5 −0.5 +2.5	115	
1892	R	W116.5	11 27 39	4-1-61	129	−76.7	11 48 02	+17.3	−15.7	−6.7	115	
1894	R	W166.4	14 44 02	4-1-61	129	−70.4	15 07 02	+23.0	−35.0 −25.0 −16.0	−32.0 −24.0 −14.0	115	
1895	R	E168.7	16 22 13	4-1-61	129	−66.1	16 50 02	+27.8	−27.2 −21.2 −15.2 −3.2	−25.2 −20.2 −6.2 −2.2	115	
1908	R	W155.4	13 38 39	4-2-61	130	−72.7	14 00 02	+21.4	−33.6 −26.6 +8.4 +18.4	−27.6 −22.6 +9.4 +19.4	116	
1909	R	E179.7	15 16 15	4-2-61	130	−63.6	15 46 32	+30.2	−32.3 −13.3 +11.7	−31.3 −11.3 +12.7	116	
1910	R	E154.7	16 55 02	4-2-61	130	−54.7	17 30 02	+35.0	−53.0 −27.0 −14.0 +15.0	−50.0 −26.0 −4.0 +17.0	116	c
1920	R	W94.6	09 16 52	4-3-61	131	−83.6	09 26 32	+9.6	−12.9	−3.9	117	
1921	R	W119.5	10 55 03	4-3-61	131	−76.9	11 12 02	+17.0	−29.1 −13.1	−28.1 −4.1	117	
1922	R	W144.4	12 33 15	4-3-61	131	−71.5	12 54 02	+20.7	−32.3 −24.3 −7.3	−26.3 −22.3 −4.3	117	
1923	R	W169.4	14 11 26	4-3-61	131	−69.5	14 35 02	+23.6	−32.4 −26.4 +5.6	−30.4 −24.4 +7.6	117	
1924	R	E165.7	15 49 47	4-3-61	131	−60.9	16 22 32	+32.7	−28.8 −12.8 +10.2	−26.8 −2.8 +16.2	117	
1925	N	E140.1	17 28 48	4-3-61	131	−59.4	17 54 02	+26.2	−30.8 −28.8 −12.8 +13.2 +17.2	−28.8 −22.8 −3.8 +14.2 +21.2	117	
1926	N	E115.8	19 05 59	4-3-61	131	−62.6	19 36 32	+30.6	−26.0 −20.0 −18.0 +13.0 +23.0	−25.0 −18.0 −4.0 +15.0 +24.0	117	
1927	N	E90.9	20 44 11	4-3-61	131	−23.7	21 23 02	+35.8	−23.7 −21.2 −12.2 +9.8 +27.8	−22.2 −19.2 −3.2 +17.8 +26.8	117	
1935	R	W108.5	09 40 30	4-4-61	132	−82.0	10 01 02	+11.5	−82.0 −11.5	−81.5 −2.5	118	
1936	R	W133.5	11 27 51	4-4-61	132	−78.6	11 48 02	+15.1	−10.9 +9.1	−2.9 +10.1	118	
1937	R	W158.4	13 06 03	4-4-61	132	−68.6	13 31 02	+25.0	−31.1 −24.1 +2.9	−28.1 −23.1 +3.9	118	
1938	R	E176.7	14 44 14	4-4-61	132	−56.3	15 11 02	+26.8	−31.2 −11.2 +11.8	−24.2 −8.2 +16.8	118	
1939	R	E151.8	16 22 25	4-4-61	132	−57.3	16 58 02	+35.4	−29.4 −20.4 −19.4 −10.4 +1.6 +9.6 +14.6	−28.4 −23.4 −17.4 −1.4 +8.6 +11.6 +21.6	118	
1963	R	W86.6	07 38 54	4-6-61	134	−84.0	07 48 32	+9.6	−84.0 −81.9 −36.9 −22.9 −19.9 −8.9	−83.9 −79.9 −35.9 −21.9 −18.9 −0.9	119	
1964	R	W111.5	09 17 05	4-6-61	134	−78.4	09 28 02	+11.0	−78.4 −17.1 −9.1 +8.9	−78.1 −15.1 −1.1 +10.9	119	
1965	R	W136.4	10 55 16	4-6-61	134	−71.1	11 16 02	+20.8	−29.3 −25.3 −8.3 +11.7	−27.3 −22.3 −1.3 +18.7	119	
1966	R	W161.4	12 33 37	4-6-61	134	−69.5	12 57 02	+23.5	−69.5 −48.5 −30.5 −26.5 −10.5 −2.5 +8.5 +13.5	−68.5 −47.5 −29.5 −22.5 −9.5 −1.5 +9.5 +16.5	119	
1967	R	E173.7	14 11 38	4-6-61	134	−60.5	14 44 02	+32.4	−31.6 −19.6 −14.6 −8.6 −4.6 +9.4 +18.4	−24.6 −18.6 −13.6 −6.6 −0.6 +16.4 +19.4	119	
1978	R	W100.5	08 11 41	4-7-61	135	−82.0	08 22 02	+10.3	−82.0 −27.7 −17.7 −6.7	−79.7 −25.7 −14.7 −0.7	120	
1980	R	W150.4	11 28 04	4-7-61	135	−72.1	11 50 42	+22.6	−27.1 −10.1 −5.1 +10.9 +18.9	−22.1 −8.1 −1.1 +12.9 +21.9	120	
1981	R	W175.3	13 06 15	4-7-61	135	−66.1	13 33 02	+26.7	−37.6 −26.6 −18.6 −5.6 +18.4 +23.4	−36.6 −21.6 −14.6 −4.6 +20.4 +24.4	120	
1982	R	E159.8	14 44 26	4-7-61	135	−59.0	15 19 02	+34.6	−32.0 −27.0 −23.0 −15.0 −6.0 +12.0	−30.0 −26.0 −21.0 −13.0 −0.0 +19.0	120	
1983	N	E134.8	16 22 37	4-7-61	135	−56.8	16 50 02	+27.4	−30.8 −9.8 −4.8 +3.2 +11.2	−17.8 −7.8 +1.2 +4.2 +29.2	120	
1985	N	E85.0	19 38 50	4-7-61	135	−50.2	20 19 02	+40.0	−29.2 −13.2 −3.2 +12.8 +35.8	−14.2 −7.2 +3.8 +32.8 +36.8	120	
1992	R	W89.5	07 06 18	4-8-61	136	−83.7	07 16 32	+10.2	−83.7 −62.3 −47.3 −39.3 −33.3 −30.3 −4.3 +9.7	−73.3 −61.3 −45.3 −35.3 −31.3 −14.3 +0.7 +10.7	121	
1993	R	W114.5	08 44 29	4-7-61	135	−81.4	08 56 02	+11.5	−81.4 −35.5 −29.5 −12.5 −3.5	−74.5 −32.5 −16.5 −10.5 +0.5	121	

See footnotes at end of table.

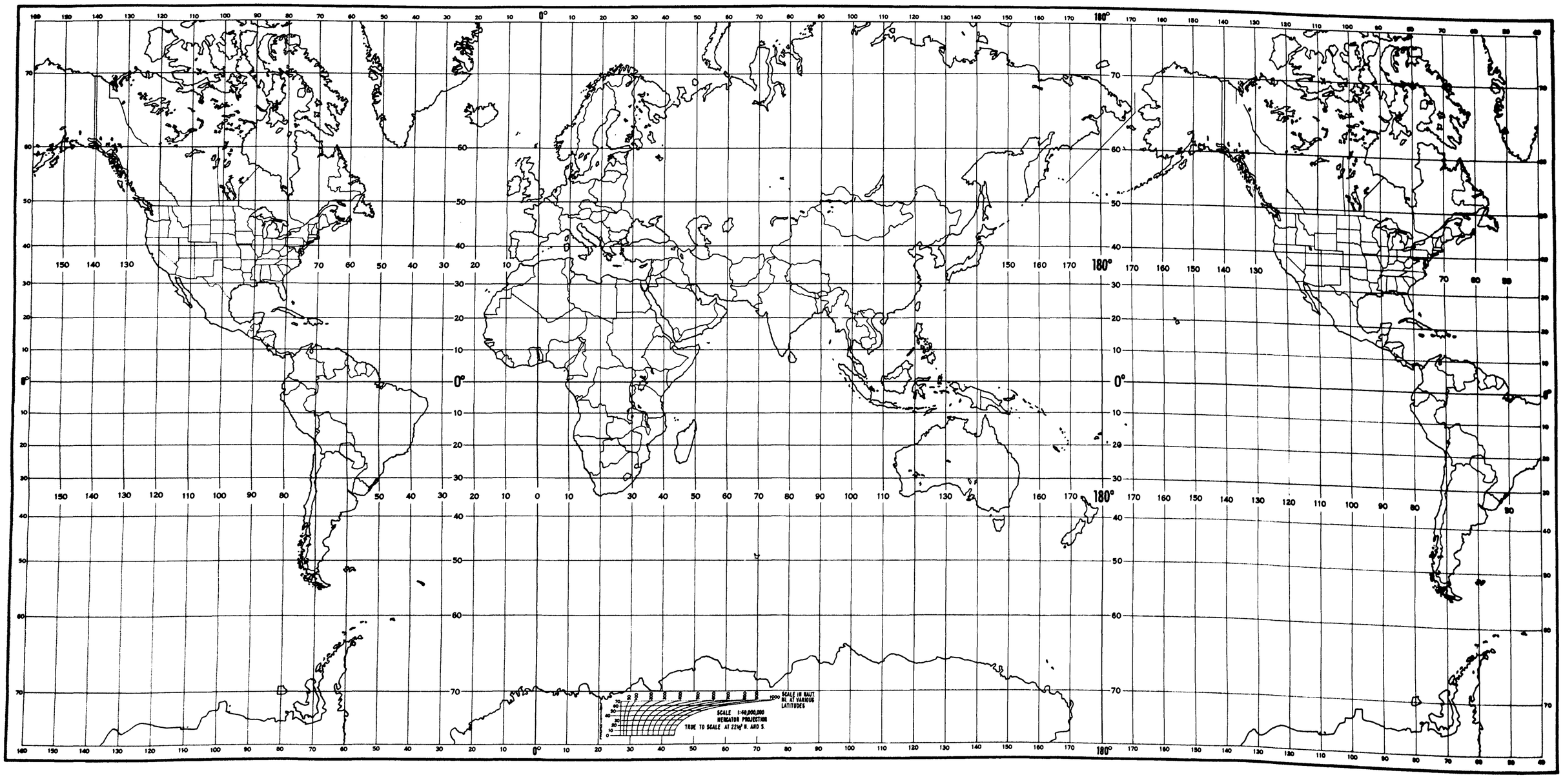
TABLE I.—*Index of Final Meteorological Radiation Tapes from TIROS II*—Continued

Key to Command and Data Acquisition (CDA) Stations;
R—Fort Monmouth, Belmar, N.J.
N—San Nicolas Island, Pacific Missile Range, Calif.

READOUT ORBIT						TIME INTERVAL OF FILE ON FME TAPE					FMR tape reel No.	Footnote
Orbit No.	CDA station	Satellite equator crossing at orbital ascending node (ANO)				Begin	End		Dropouts Minutes w/r/t ANO			
		Earth longitude (degrees)	Hours; minutes; seconds (GMT)	Calendar date	Julian day	Minutes w/r/t ANO	Hours; minutes; seconds (GMT)	Minutes w/r/t ANO	From—	To—		
1994	R	W139.4	10 22 40	4- 8-61	136	−76.4	10 40 02	+17.3	−76.4	−73.6	121	
									−71.6	−70.6		
									−35.5	−33.5		
									−30.6	−17.6		
									−15.6	−9.6		
									−4.6	−1.6		
									+8.4	+9.4		
									+11.4	+18.4		
1995	R	W164.3	12 00 51	4- 8-61	136	−68.8	12 26 02	+25.1	−35.8	−35.8	121	
									−26.8	−25.8		
									−23.8	−20.8		
									−16.8	−15.8		
									−10.8	−8.8		
									+9.2	+10.2		
									+16.2	+23.2		
1997	N	E145.8	15 17 14	4- 8-61	136	−60.6	15 42 02	+24.8	−4.2	−0.2	121	
1998	N	E120.9	16 55 25	4- 8-61	136	−63.1	17 25 32	+30.1	−22.4	−21.4	121	
									−4.4	−0.4		
2007	R	W103.5	07 39 05	4- 9-61	137	−79.7	07 50 50	+11.8	−3.1	−1.1	122	
2008	R	W128.4	09 17 16	4- 9-61	137	−77.9	09 32 02	+14.7	−2.3	−1.3	122	
									+4.7	+5.7		
									+13.7	+14.7		
2009	R	W153.3	10 55 28	4- 9-61	137	−57.9	11 16 02	+20.5	−23.5	−21.5	122	
									−2.5	−1.5		
									+15.5	+17.5		
2010	R	W178.3	12 33 39	4- 9-61	137	−64.2	13 01 02	+27.4	−16.7	−15.7	122	
									−6.7	−5.7		
									+19.3	+20.3		
									−25.8	−24.8		
									−1.8	−0.8		
									+15.2	+16.2		
									+21.2	+22.2		
2011	R	E156.8	14 11 50	4- 9-61	137	−57.7	14 47 02	+35.3	−25.8	−24.8	122	
									−1.8	−0.8		
									+15.2	+16.2		
									+31.2	+32.2		
2012	N	E131.8	15 50 01	4- 9-61	137	−55.3	16 18 02	+28.0	−22.0	−20.0	122	
									+19.0	+20.0		
2021	R	W92.5	06 33 38	4-10-61	138	−83.0	06 43 32	+9.9	−83.0	−82.6	123	
									−78.6	−74.6		
2022	R	W117.6	08 11 49	4-10-61	138	−80.8	08 24 02	+12.2	−80.8	−74.6	123	
									−67.8	−64.8		
									−29.8	−28.8		
									−21.8	−20.8		
									−13.8	−11.8		
									+2.2	+4.2		
2023	R	W142.3	09 50 00	4-10-61	138	−75.2	10 06 02	+18.0	−75.2	−72.0	123	
									−30.0	−29.0		
									−26.0	−21.0		
									−12.0	−11.0		
									+8.0	+9.0		
									+18.0	+18.0		
2024	R	W167.8	11 28 11	4-10-61	138	−69.7	11 52 02	+23.8	−97.2	−95.2	123	
									−33.2	−33.2		
									−29.2	−27.2		
									−24.2	−19.2		
									−17.2	−15.2		
									−11.2	−8.2		
									+16.8	+23.8		
2025	R	E167.8	13 06 23	4-10-61	138	−61.3	13 39 02	+32.6	−26.4	−19.4	123	
									+4.6	+5.6		
									+9.6	+15.6		
									+18.6	+20.6		
									+24.6	+25.6		
2026	N	E142.8	14 44 34	4-10-61	138	−58.4	15 11 02	+26.4	−27.6	−26.6	123	
									−24.6	−17.6		
									−14.6	−12.6		
									−1.6	+3.4		
									+14.4	+23.4		
2027	N	E117.9	16 22 45	4-10-61	138	−50.6	16 55 32	+32.7	−23.8	−20.8	123	
									−18.8	−17.8		
									−16.8	−15.8		
									−4.8	+2.2		
									+11.2	+12.2		
									+14.2	+24.2		
2028	N	E92.9	18 00 56	4-10-61	138	−55.2	18 39 02	+38.1	−26.9	−17.9	123	
									−1.9	+2.1		
									+7.1	+14.1		
									+17.1	+23.1		
2036	R	W106.5	07 06 25	4-11-61	139	−81.0	07 17 32	+11.1	−81.0	−80.4	124	
									−70.4	−68.4		
									−47.4	−46.4		
2037	R	W131.4	08 44 36	4-11-61	139	−78.2	09 00 02	+15.4	−77.6	−76.6	124	
									−75.6	−74.6		
									−65.6	−64.6		
									+13.4	+15.4		
2038	R	W156.3	10 23 47	4-11-61	139	−72.4	10 44 02	+21.2	−22.8	−21.8	124	
									−10.8	−9.8		
									+16.2	+21.2		
2039	R	E178.8	12 00 58	4-11-61	139	−65.1	12 30 02	+29.1	−27.0	−26.0	124	
									−23.0	−15.0		
									+9.0	+11.0		
									+16.0	+27.0		
2040	R	E153.8	13 39 09	4-11-61	139	−57.5	14 15 02	+35.9	−23.2	−17.2	124	
									−12.2	−11.2		
									−0.2	+2.8		
									+13.8	+18.8		
									+19.8	+23.8		
									+29.8	+31.8		
2041	N	E128.9	15 17 21	4-11-61	139	−50.5	15 47 02	+29.6	−21.4	−20.4	124	
									−17.4	−16.4		
									−7.4	−0.4		
									−0.4	+0.6		
									+16.6	+17.6		
									+23.6	+25.6		
2042	N	E104.0	16 55 32	4-11-61	139	−41.1	17 28 32	+33.0	−21.5	−20.5	124	
									−16.5	−15.5		
									+12.5	+25.5		
									+27.5	+28.5		

READOUT ORBIT						TIME INTERVAL OF FILE ON FME TAPE					FMR tape reel No.	Footnote
Orbit No.	CDA station	Satellite equator crossing at orbital ascending node (ANO)				Begin	End		Dropouts Minutes w/r/t ANO			
		Earth longitude (degrees)	Hours; minutes; seconds (GMT)	Calendar date	Julian day	Minutes w/r/t ANO	Hours; minutes; seconds (GMT)	Minutes w/r/t ANO	From—	To—		
2043	N	E79.0	18 33 43	4-11-61	139	−53.9	19 13 02	+39.3	−30.7	−28.7	124	
									−14.7	−13.7		
									−10.7	−9.7		
									+10.3	+11.3		
									+17.3	+25.3		
									+31.3	+34.3		
2050	R	W93.5	06 01 01	4-12-61	140	−83.4	06 11 32	+10.5	−80.0	−77.0	125	
									−75.0	−71.0		
									−66.0	−63.0		
									−51.0	−48.0		
									−13.0	−11.0		
2051	R	W120.4	07 39 12	4-12-61	140	−79.4	07 52 02	+12.8	−77.2	−73.2	125	
									−70.2	−69.2		
2052	R	W145.3	09 17 23	4-12-61	140	−75.1	09 36 02	+18.6	−73.4	−71.4	125	
									−18.4	−17.4		
									+16.6	+18.6		
2053	R	W170.3	10 55 34	4-12-61	140	−65.1	11 24 02	+28.4	−20.6	−12.6	125	
									−10.6	−13.6		
									−9.6	−5.6		
									+16.4	+28.4		
2054	R	E164.8	12 33 45	4-12-61	140	−61.0	13 07 02	+33.2	−3.8	−1.8	125	
									+21.2	+23.2		
									+31.2	+33.2		
2055	N	E115.0	15 50 07	4-12-61	140	−62.9	16 21 02	+30.9	−5.1	−4.1	125	
									+13.9	+14.9		
									+18.9	+25.9		
									+28.9	+29.9		
2057	N	E90.0	17 28 18	4-12-61	140	−58.2	18 04 02	+35.7	−14.3	−13.3	125	
									−11.3	−10.3		
									−2.3	+3.7		
									+9.7	+13.7		
									+17.7	+31.7		
2064	R	W84.5	04 55 36	4-13-61	141	−81.9	05 05 32	+9.9	−73.6	−72.6	126	
									−70.6	−65.6		
									−49.6	−48.6		
									−3.6	−1.6		
									+5.4	+10.4		
2067	N	W159.3	09 50 09	4-13-61	141	−82.8	10 01 02	+10.9	−80.2	−71.2	126	
									−16.2	−14.2		
									−13.2	−12.2		
									−11.2	−9.2		
									+5.8	+10.8		
2068	N	E175.8	11 28 21	4-13-61	141	−76.7	11 46 02	+17.6	−76.7	−65.4	126	
									−63.4	−62.4		
									−50.4	−49.4		
									−13.4	−11.4		
									−8.4	−3.4		
									+8.6	+10.6		
2069	N	E150.9	13 06 32	4-13-61	141	−69.7	13 31 02	+24.5	−69.7	−65.5	126	
									−63.5	−62.5		
									−16.5	−9.5		
									−2.5	+1.5		
									+4.5	+7.5		
									+8.5	+9.5		
									+17.5	+20.5		
2070	N	E125.9	14 44 43	4-13-61	141	−60.4	15 14 32	+29.8	−59.7	−55.7	126	
									−13.7	−12.7		
									+8.3	+11.3		
									+20.3	+30.3		
2071	N	E101.0	16 22 54	4-13-61	141	−58.2	16 56 02	+33.1	−27.9	−26.9	126	
									−10.9	−9.9		
									−2.9	+1.1		
									+6.1	+15.1		
									+18.1	+20.1		
									+22.1	+30.1		

a. The solar GHA is too large by about 0.8 of a degree, and the solar declination is too small by about 8.5 degrees.
b. Programers should note that reel 10 also contains files of orbits 278, 279, and 281 in numerical order on the tape. Each of these files contains less than 5 minutes of data whose absolute time correlation is doubtful. No attempt should be made to geographically locate and interpret these data.
c. An uncertainty in data correlation with geographic position equivalent to advancing the data about 4 minutes in the orbit possibly exists in the latter portion of the file. Hence, caution should be used in interpreting these data.
d. The solar ephemeris data are incorrect and should be disregarded.
e. Programers should note that reel 13 also contains files of orbits 318, 320, 322, 323, and 324 in numerical order on the tape. Each of these files contains less than 5 minutes of data whose absolute time correlation is doubtful. No attempt should be made to geographically locate and interpret these data.
f. An uncertainty in data correlation with geographic position equivalent to advancing the data about 12 minutes in the orbit possibly exists in the latter portion of the file. Hence, extreme caution should be used in interpreting these data.
g. The Julian day in this file documentation should be 24 instead of 23.
h. Programers should note that reel 17 also contains files of orbits 379, 380, 381, and 382 in numerical order on the tape. Each of these files contains less than 5 minutes of data whose absolute time correlation is doubtful. No attempt should be made to geographically locate and interpret these data.
i. The Julian day in this file documentation should be 27 instead of 26.
j. The Julian day in this file documentation should be 30 instead of 29.
k. The Julian day in this file documentation should be 33 instead of 32.
l. Programers should note that reel 25 also contains files of orbits 495, 496, 497, and 498 in numerical order on the tape. Each of these files contains less than 5 minutes of data whose absolute time correlation is doubtful. No attempt should be made to geographically locate and interpret these data.
m. Programers should note that reel 26 also contains files of orbits 506, 507, and 508 in numerical order on the tape. Each of these files contains less than 5 minutes of data whose absolute time correlation is doubtful. No attempt should be made to geographically locate and interpret these data.
n. Programers should note that reel 28 also contains files of orbits 536, 537, 538, and 540 in numerical order on the tape. Each of these files contains less than 5 minutes of data whose absolute time correlation is doubtful. No attempt should be made to geographically locate and interpret these data.
o. Due to a malfunction in the ground equipment during the interrogation, there was an uncertainty of the order of 30 seconds in the time of transmission of the End-of-Tape pulse.
p. Programers should note that reel 33 also contains files of orbits 607, 608, 609, 611, 612, and 613 in numerical order on the tape. Each of these files contains less than 5 minutes of data whose absolute time correlation is doubtful. No attempt should be made to geographically locate and interpret these data.
q. The calendar day in the tape documentation record should be January 6 instead of January 5.
r. Programers should note that reel 42 also contains files of orbits 783 and 784 in numerical order on the tape. Each of these files contains less than 5 minutes of data whose absolute time correlation is doubtful. No attempt should be made to geographically locate and interpret these data.
s. Programers should note that reel 44 also contains files of orbits 808 and 809 in numerical order on the tape. Each of these files contains less than 5 minutes of data whose absolute time correlation is doubtful. No attempt should be made to geographically locate and interpret these data.
t. Programers should note that reel 62 also contains a file of orbit 1104 in numerical order on the tape. This file contains less than 5 minutes of data whose absolute time correlation is doubtful. No attempt should be made to geographically locate and interpret these data.
u. The Julian day in this file documentation should be 93 instead of 92.
v. The Julian day in this file documentation should be 99 instead of 98
w. The Julian day in this file documentation should be 105 instead of 104.
x. A gross error in data correlation with geographic position equivalent to advancing the data about 85 minutes in the orbit exists throughout the entire file. Hence, the data in this file would be subject to to interpretation only with great difficulty.
y. Programers should note that reel 107 also contains a file of orbit 1776 in numerical order on the tape. This file contains less than 5 minutes of data whose absolute time correlation is doubtful. No attempt should be made to geographically locate and interpret these data.
z. Programers should note that reel 108 also contains a file of orbit 1792 in numerical order on the tape. This file contains less than 5 minutes of data whose absolute time correlation is doubtful. No attempt should be made to geographically locate and interpret these data.



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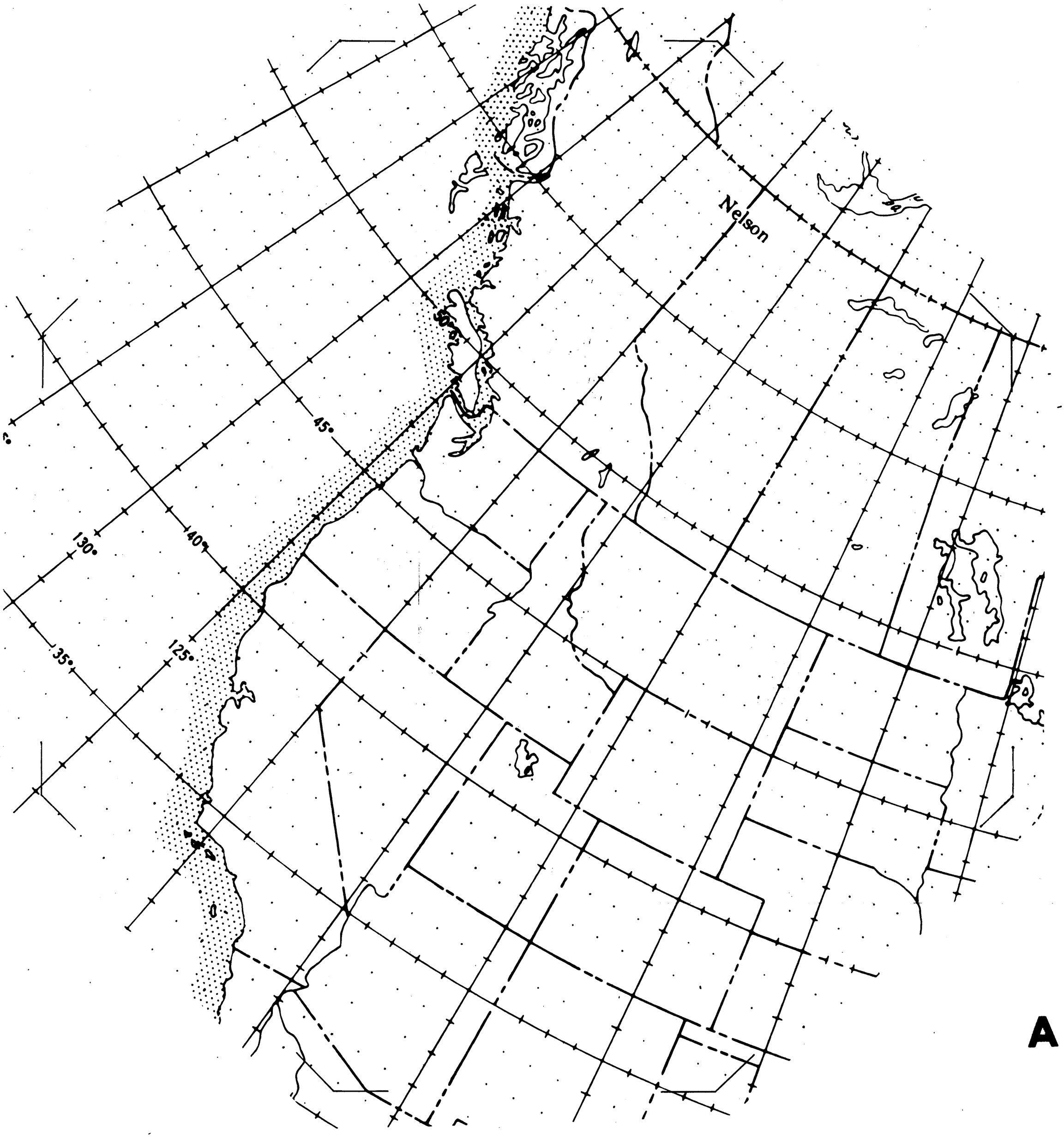

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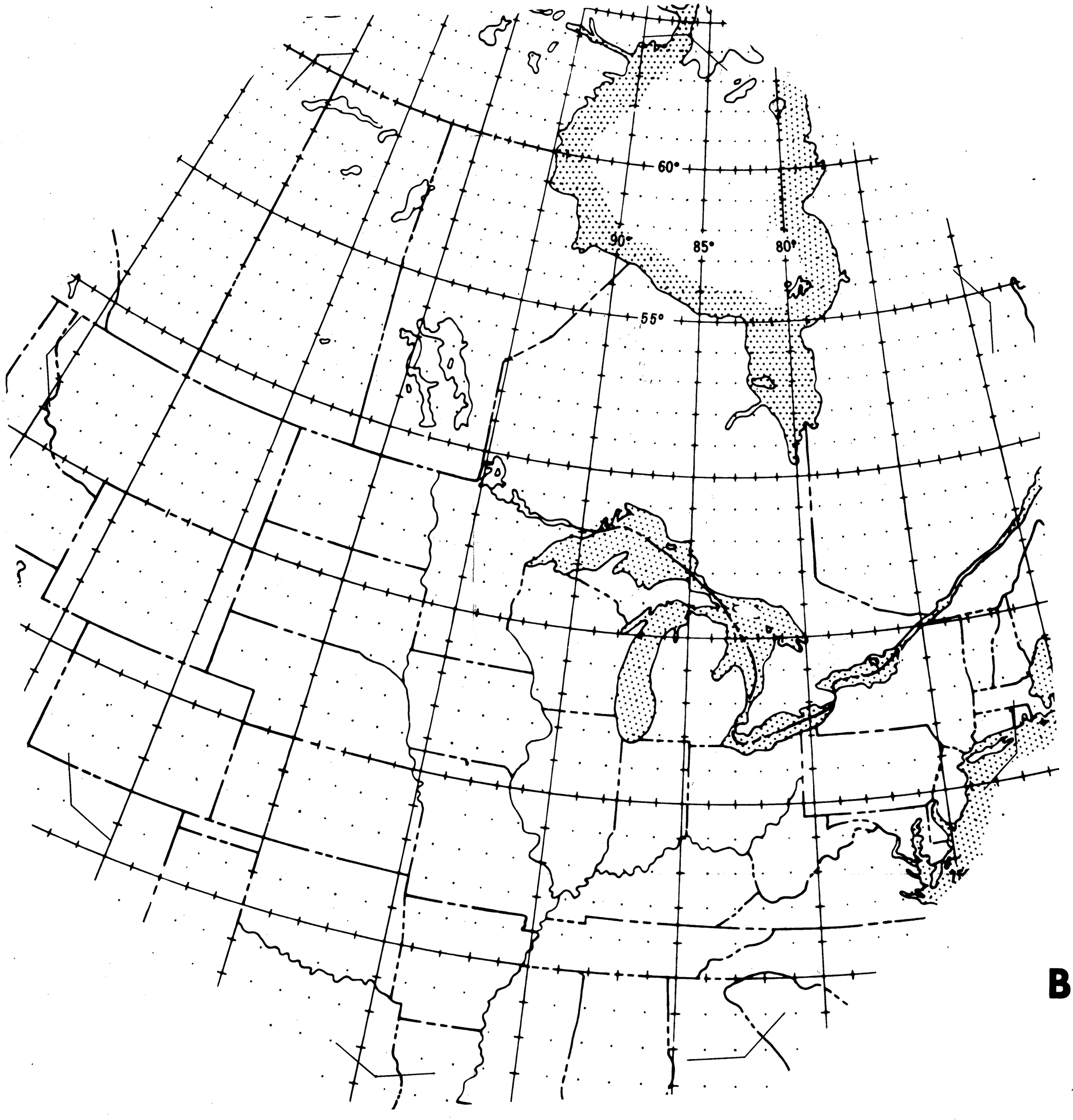

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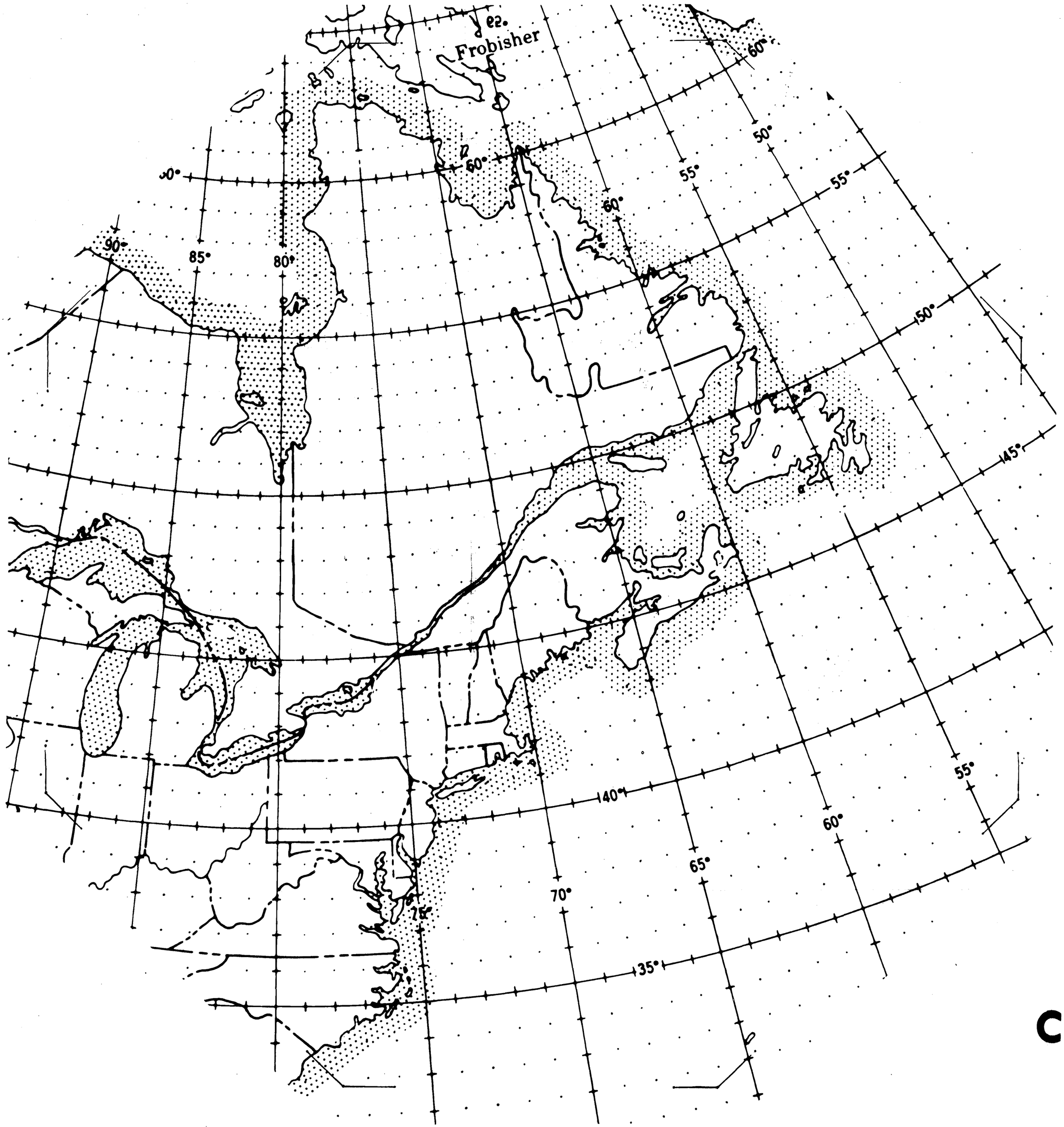

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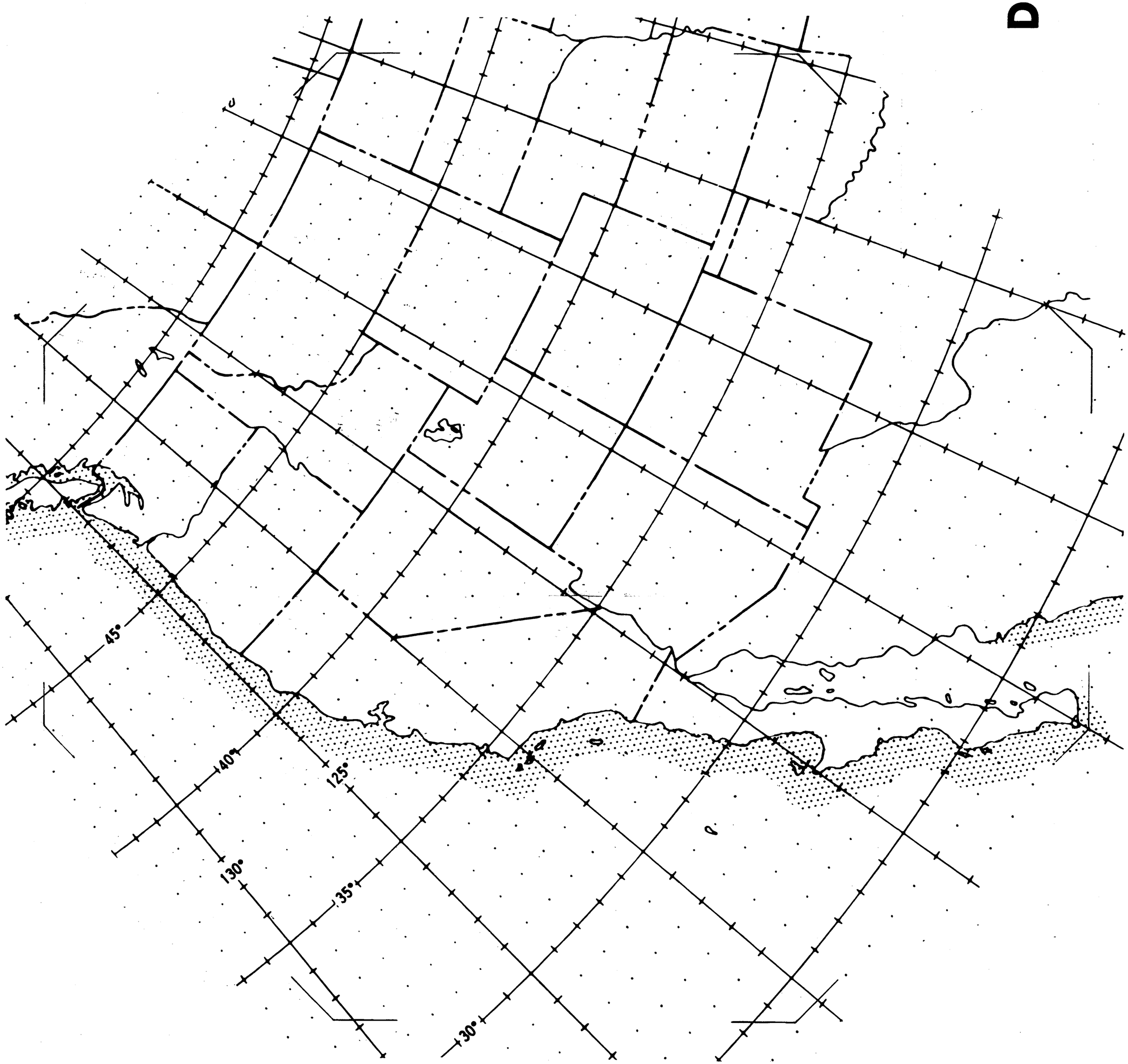
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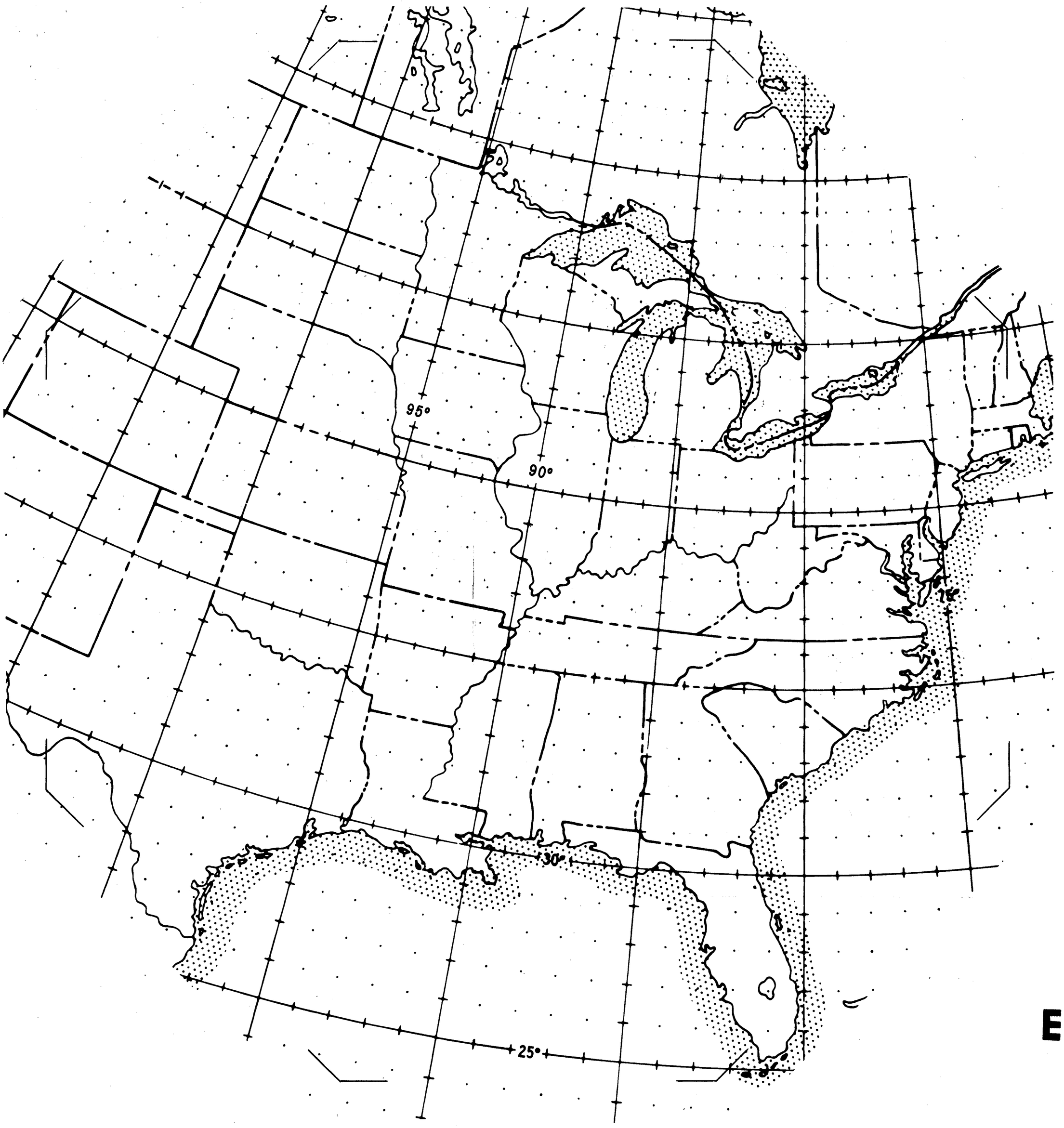
130°
35°
30°



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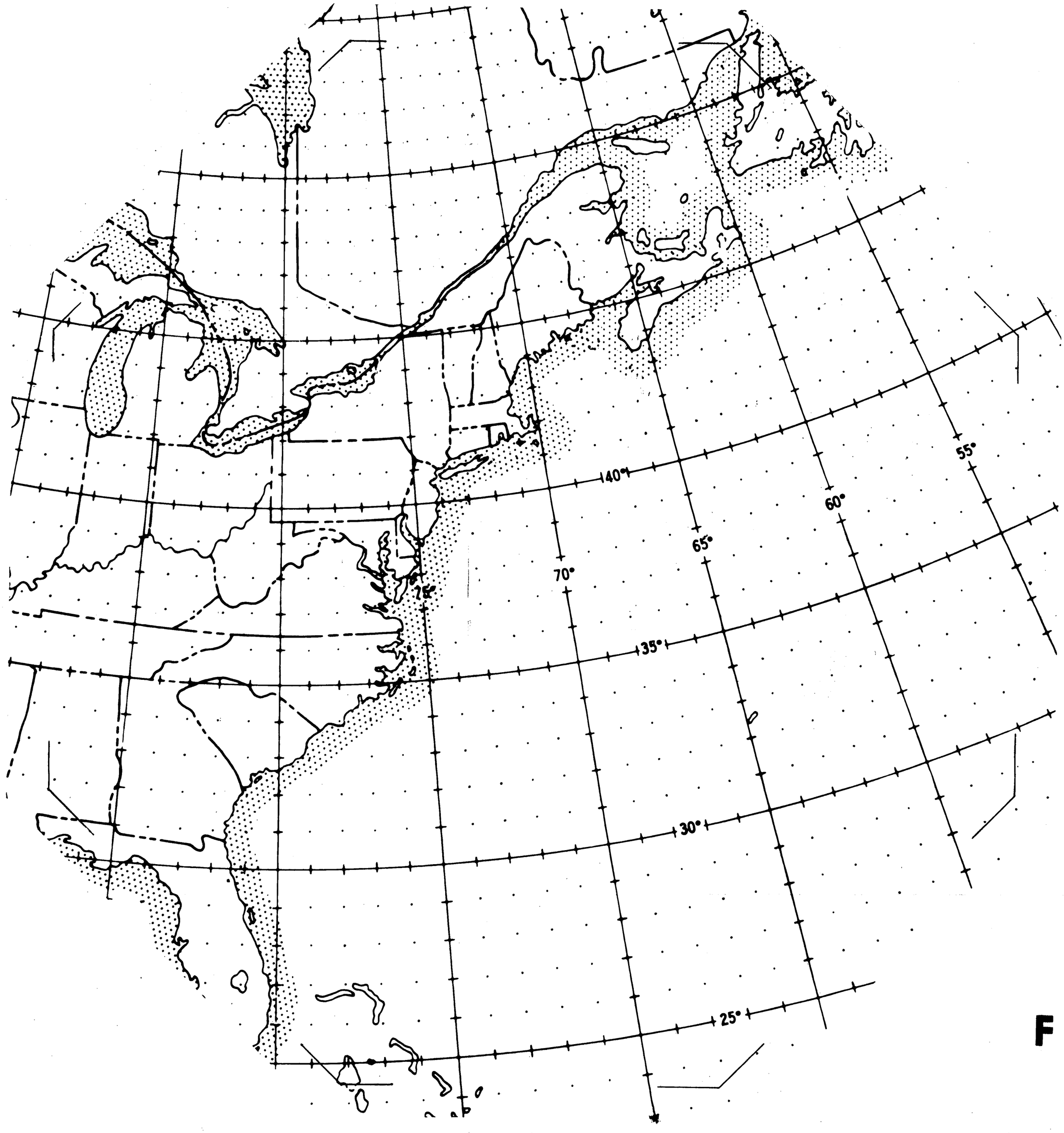

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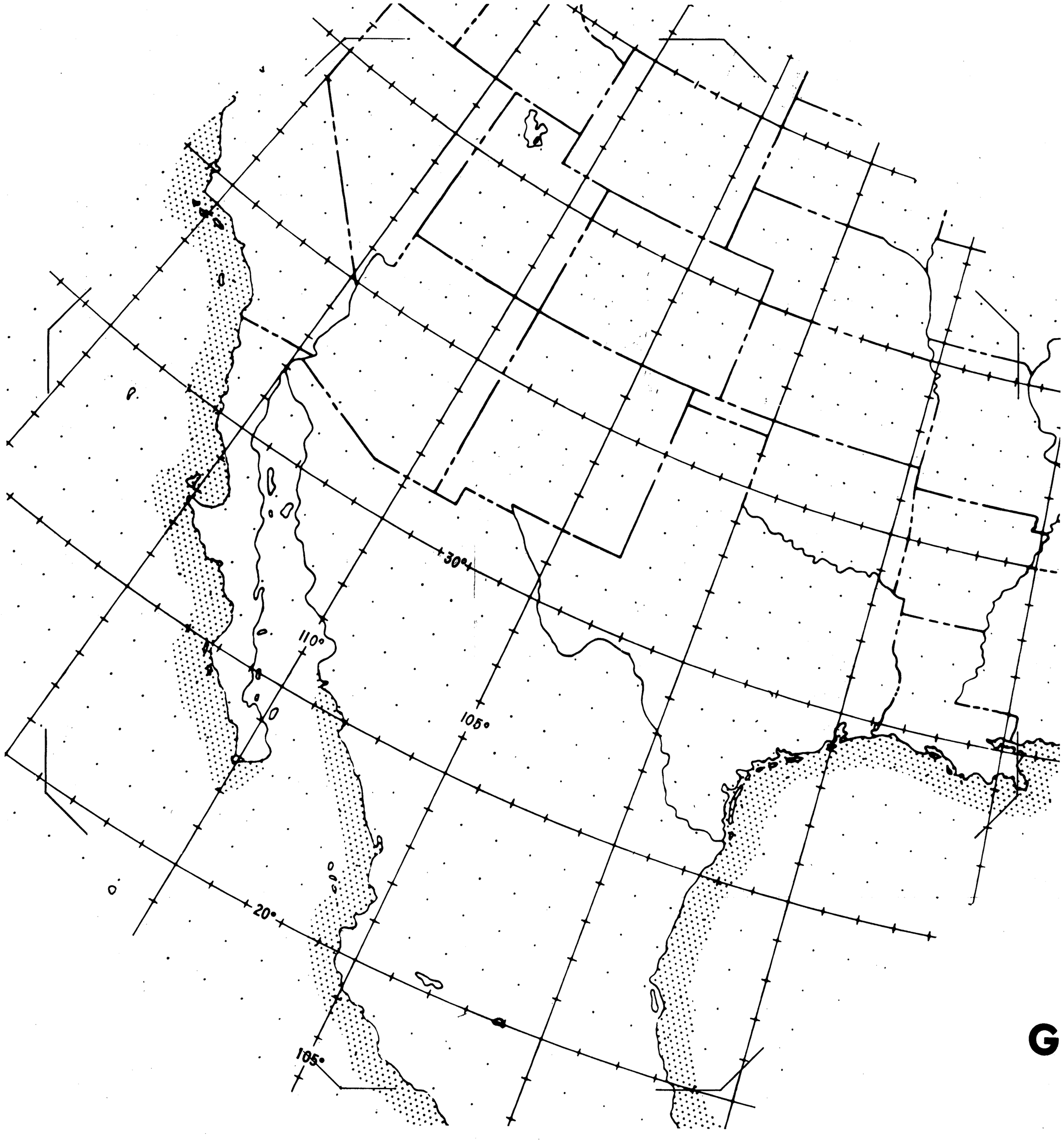

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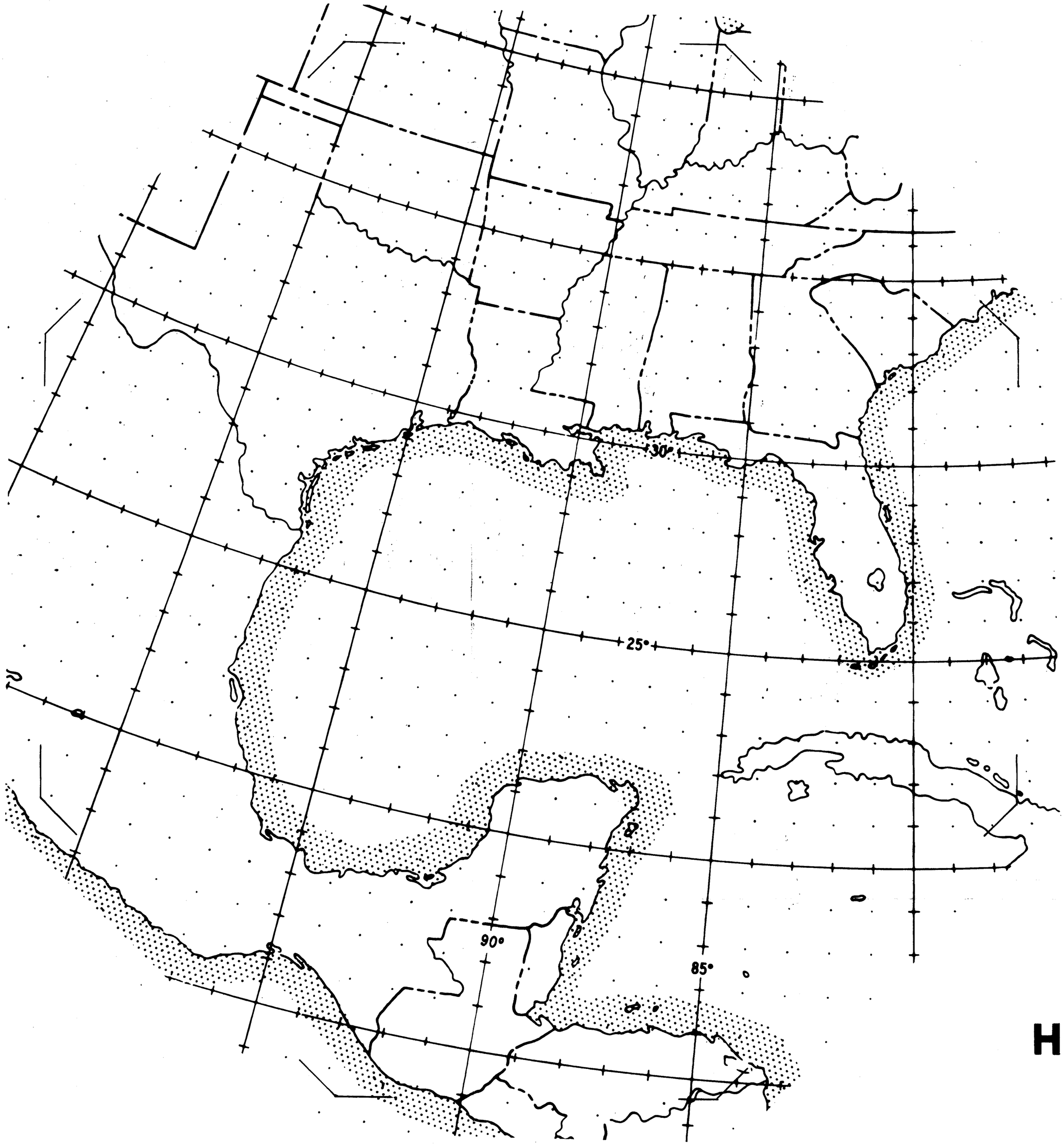

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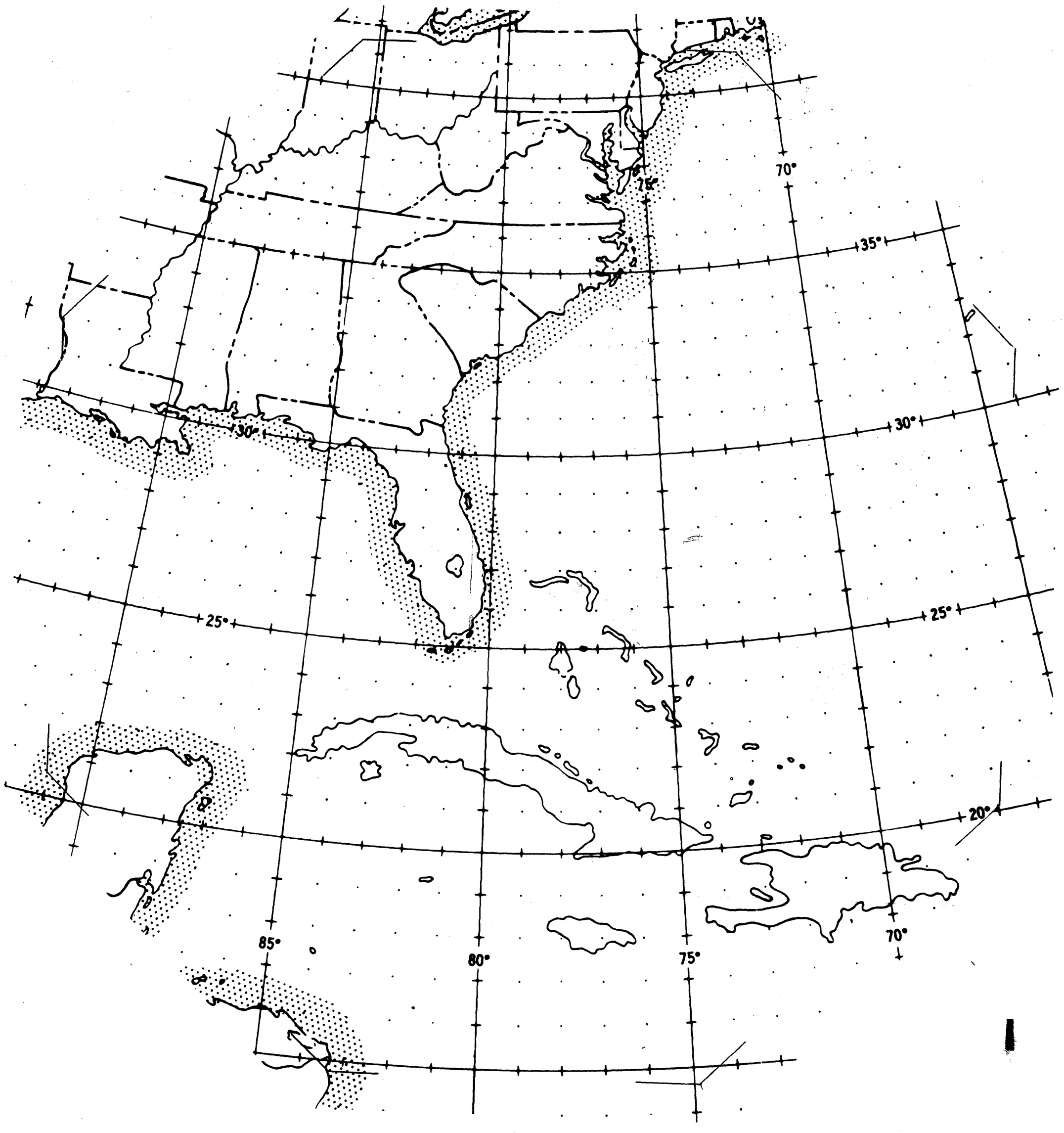
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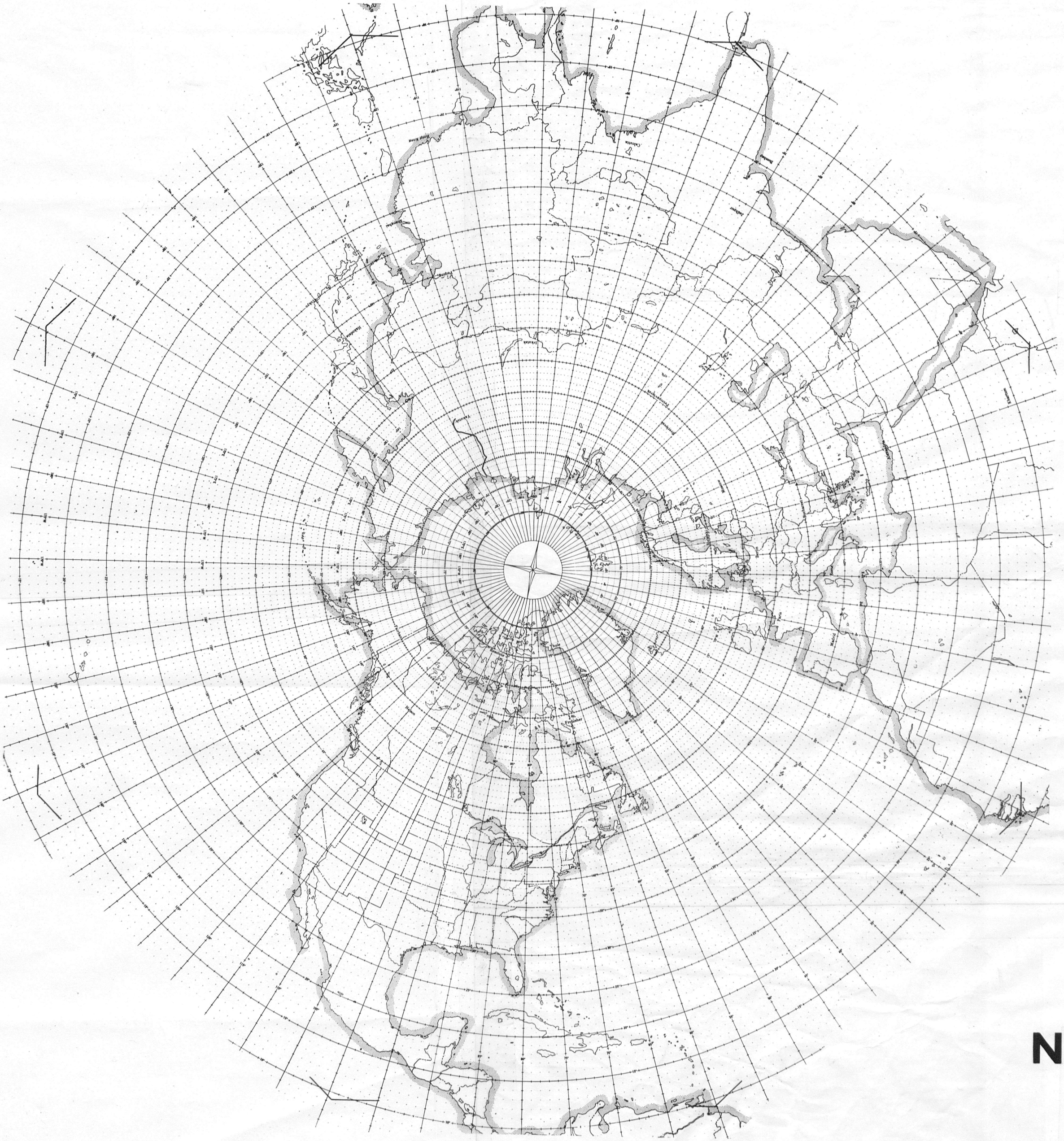
70°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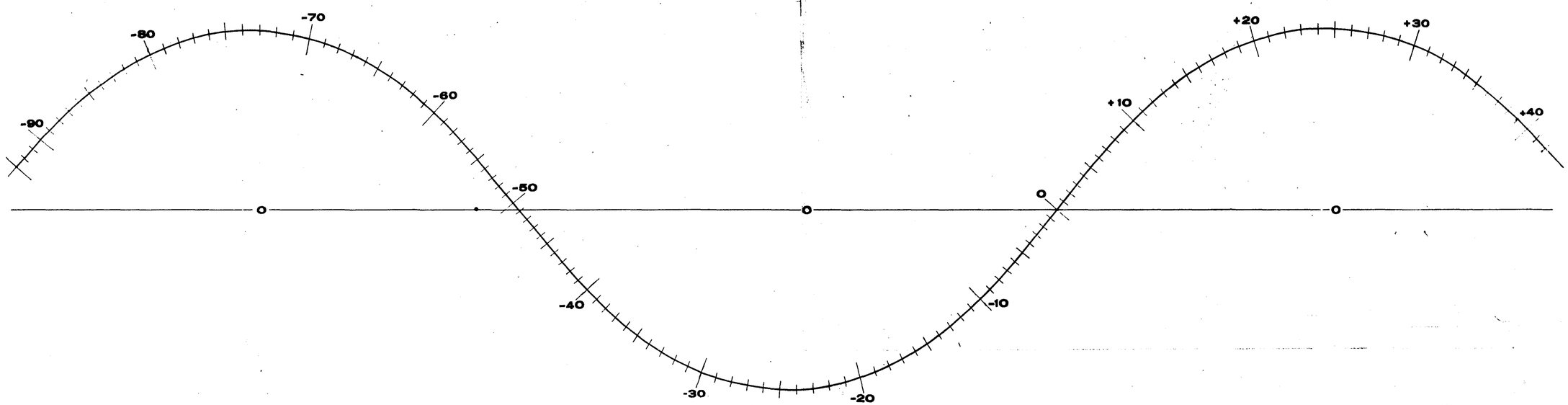

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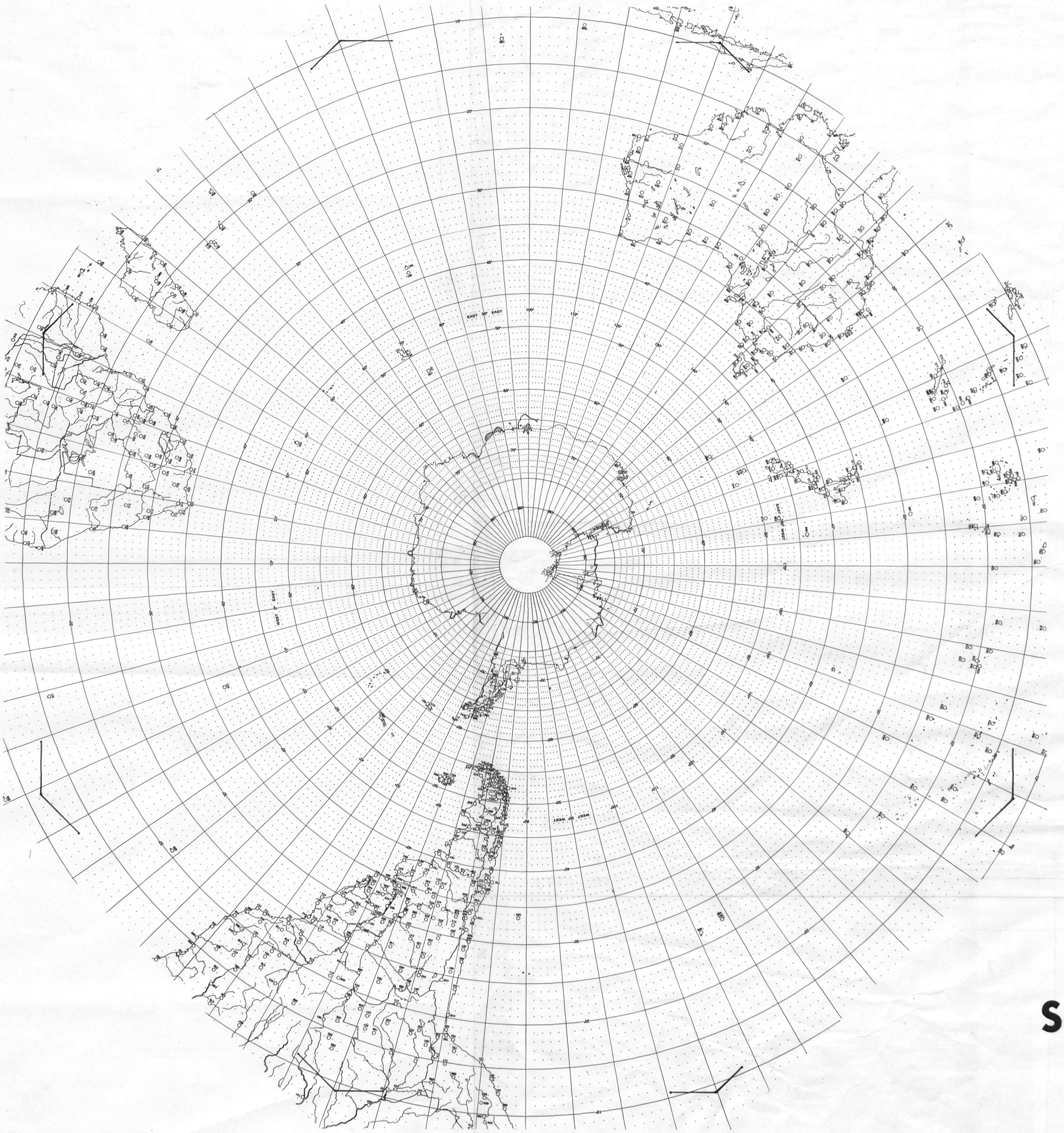

S