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THE NIMBUS 6 DATA CATALOG
VOLUME 5

1 MARCH 1976 THROUGH 30 APRIL 1976
DATA ORBITS 3522 THROUGH 4338

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GODDARD SPACE FLIGHT CENTER

GREENBELT, MARYLAND

SECTION 1

SUMMARY OF OPERATIONS

1.1 Introduction

Nimbus 6 was successfully launched from the Western Test Range, Vandenberg Air Force Base, California at 08 hr 12 min 00 sec GMT on 12 June 1975. The orbit was nearly circular at 1093 x 1105 km. Satellite operations from launch through 14 July (orbit 425) consisted of engineering evaluation of all spacecraft systems. As a result of that effort, data reception, accountability and processing were intermittent during that period. Therefore, Volume 1 in this catalog series mainly reflects documentation from orbit 426 (14 July) through orbit 1082 (31 August). Table 1-1 is a summary of the documentation for each Nimbus 6 Data Catalog volume.

Table 1-1

Nimbus 6 Catalog Documentation Summary

Volume	Dates	Orbits
1	12 June 75-31 Aug. 75	1-1082
2	1 Sept. 75-31 Oct. 75	1083-1900
3	1 Nov. 75-31 Dec. 75	1901-2717
4	1 Jan. 76-29 Feb. 76	2718-3521
5	1 Mar. 76-30 Apr. 76	3522-4338

Because the spacecraft power is limited, all experiments are not on at the same time. During this catalog period the HIRS*, THIR, SCAMS, TWERLE and PMR data were recorded for almost all orbits. The ERB and ESMR experiments normally split their operating time; the ERB was on for two day periods while ESMR was off, followed by the ESMR being on for two days while ERB was off. Due to the depletion of the methane in the cryogenic cooler; the last useable data from the LRIR experiment was received during orbit 2801 (7 January). The T&DRE was not operated during the month of March and only on five different occasions during the month of April, when ATS-6 operations were conducted. The on-off cycle for each experiment is shown in Table 2-2 in Section 2 of this catalog.

Because of an anomaly in the functioning of the High Data Range Storage subsystem (HDRSS) B, first noted during orbit 33 (14 June), HDRSS B has been limited to

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THE NIMBUS 6 DATA CATALOG

Volume 5

1 March 1976 through 30 April 1976
Data Orbits 3522 through 4338

Prepared by

Management and Technical Services Company
Beltsville, Maryland

For the

Landsat/Nimbus Project

December 1976

GODDARD SPACE FLIGHT CENTER
Greenbelt, Maryland

FOREWORD

This is the fifth volume of a series of catalogs to be published by the National Aeronautics and Space Administration to document data acquired from the Nimbus 6 meteorological satellites. This volume covers the period from 1 March 1976 through 30 April 1976. Subsequent catalogs will contain documentation for succeeding periods throughout the useful lifetime of Nimbus 6.

Background information concerning the Nimbus 6 meteorological satellite system and a description of the experiments and data formats has been published separately in The Nimbus 6 User's Guide. Post-launch User's Guide information changes and corrections are included in the data catalogs. The Nimbus 6 catalogs present the type of data available, anomalies in the data, if any, and geographic location and time of the data.

The assembly and editing of this catalog was accomplished by the Management and Technical Services Company (MATSCO), Beltsville, Maryland, under contract number NAS 5-23740 with the Goddard Space Flight Center, NASA, Greenbelt, Maryland.

D. Fordyce
Project Manager
Landsat/Nimbus Project
Goddard Space Flight Center

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65 minutes of record capability (out of a possible 120 minutes). With only HDRSS A available for full-time use, there are occasional periods when global experiment coverage is not obtained. (These occur when the Orroral, Australia STDN station is not available for playback of recorded experiment data.) The areas not covered are usually over the western part of the Pacific Ocean and/or the eastern part of the Atlantic Ocean.

The pitch of the Nimbus 6 satellite has been made to alternate between +2.0 degrees, +0.6 degrees, and 0.0 degrees since launch. Table 1-2 lists the orbits when each pitch position was used.

A positive pitch angle of 0.6 degrees moves the nadir-looking position 11.5 kilometers ahead of the subsatellite point. A positive pitch angle of 2.0 degrees moves the nadir-looking position 38.3 kilometers ahead of the subsatellite point.

At these pitch angles, a scanner-type instrument no longer scans the earth along a great circle arc through the subpoint, but scans along the small circle formed by the intersection of the scan plane with the earth. Since the plane of the small circle is tilted with respect to the nominal scan plane, points on the arc are displaced farther from the great circle as the scan angle increases. As noted above, a pitch angle of 0.6 degrees causes a displacement of 11.5 kilometers at nadir, but when the scanner turns 45 degrees away from nadir the displacement increases slightly to 12.8 kilometers. Similarly, for a 2.0 degree pitch the displacement is 38.3 kilometers at nadir and increases to 42.6 kilometers at a 45 degree scan angle. Thus, although the instrument records in lines normal to the orbit plane (in the absence of yaw) the perpendicular displacement from the perfect-attitude scan line is not uniform across the scan line.

Subsections 1.2 through 1.10 of this catalog summarize the operational highlights of the individual experiments, present preliminary experiment results, and call attention to known data anomalies. Section 2 lists the on-off times for each experiment and provides a method for determining the geographical coverage of each experiment. Section 3 shows selected HIRS, SCAMS and ESMR images, and Section 4 presents THIR montages. Section 5 presents corrections to The Nimbus 6 User's Guide.

The user is referred to The Nimbus 6 User's Guide for a complete description of each experiment and to section 1.7 of that Guide for the requesting procedure and sources for all data. Sections 2, 3, and 4 of this Data Catalog should help users select data to meet their needs.

Table 1-2

Pitch Positions for Nimbus 6
Between 1 March 1976 and 1 May 1976 Orbits 3530 to 4343

Pitch Change			Pitch Bias	
Date (1976)	Orbit and STDN	Time (GMT)	+0.6°	+0.0°
1 March	3530A*	1545	X	
3 March	3562O*	0216		X
5 March	3583A	1441	X	
7 March	3611A	1651		X
9 March	3637A	1532	X	
11 March	3663A	1407		X
13 March	3691A	1612	X	
15 March	3717A	1452		X
16 March	3731A	1551	X	
18 March	3757A	1434		X
20 March	3780A	0750	X	
22 March	3811A	1618		X
23 March	3828A	2137	X	
24 March	3833E*	0653		X
24 March	3839A	1721	X	
26 March	3866A	1739		X
27 March	3882A	2214	X	
28 March	3887A	0734		X
28 March	3896A	2324	X	
29 March	3899A	0512		X
30 March	3908A	2056	X	
30 March	3912E	0432		X
30 March	3922A	2201	X	
31 March	3925E	0348		X
31 March	3936W*	2326	X	
1 April	3943A	1150		X
1 April	3948A	2036	X	
2 April	3952E	0409		X
2 April	3961A	1953	X	
3 April	3964O	0226		X

*A = Fairbanks, Alaska; R = Rosman, North Carolina;
O = Orroral, Australia; W = Winkfield, England;
E = Goddard Space Flight Center, Maryland

Table 1-2 (continued)

Pitch Change			Pitch Bias	
Date (1976)	Orbit and STDN	Time (GMT)	+0.6°	+0.0°
3 April	3974A	1911	X	
4 April	3979E	0431		X
4 April	3987A	1830	X	
5 April	3991O	0256		X
5 April	4000A	1751	X	
6 April	4004O	0214		X
6 April	4015A	2040	X	
7 April	4019E	0414		X
7 April	4027A	1806	X	
8 April	4032W	0316		X
8 April	4041A	1915	X	
9 April	4047E	0619		X
10 April	4058O	0253	X	
10 April	4064A	1239		X
10 April	4070A	2314	X	
11 April	4071O	0218		X
11 April	4081A	1856	X	
12 April	4087E	0601		X
12 April	4097A	2339	X	
13 April	4102A	0848		X
13 April	4109A	2106	X	
14 April	4114E	0623		X
14 April	4122A	2026	X	
15 April	4129A	0914		X
15 April	4137A	2316	X	
16 April	4141E	0647		X
16 April	4149A	2048	X	
17 April	4156A	0934		X
17 April	4159A	1454	X	
17 April	4159A	1455		X
18 April	4166W	0323	X	
18 April	4171A	1223		X
19 April	4178O	0202	X	
19 April	4184A	1143		X
19 April	4190A	2215	X	
20 April	4196A	0914		X
20 April	4199A	1431	X	

Table 1-2 (continued)

Pitch Change			Pitch Bias	
Date (1976)	Orbit and STDN	Time (GMT)	+0.6°	+0.0°
20 April	4201A	1759		X
20 April	4202A	1945	X	
21 April	4207E	0507		X
21 April	4215A	1903	X	
22 April	4220E	0432		X
22 April	4228A	1823	X	
23 April	4234E	0530		X
23 April	4241A	1741	X	
24 April	4246O	0351		X
24 April	4255A	1844	X	
25 April	4261E	0550		X
25 April	4269A	1948	X	
26 April	4275E	0656		X
26 April	4282A	1907	X	
27 April	4289A	0755		X
27 April	4296A	2011	X	
28 April	4302E	0715		X
28 April	4309A	1931	X	
29 April	4316A	0816		X
29 April	4322A	1849	X	
30 April	4328E	0552		X
30 April	4336A	1951	X	
1 May	4343A	0839		X

1.2 The Temperature Humidity Infrared Radiometer (THIR) Subsystem

The quality of the THIR data from both channels (11.5 μm and 6.7 μm) and telemetry have been good since launch. Daily world montages of the THIR are presented in Section 4 of this catalog. All processed THIR film is archived and available through the National Space Science Data Center, as is all available THIR digital data. The THIR digital products are processed to final format only on request. Users should refer to Section 4 of this catalog, and to Sections 1.7 and 2.4 of The Nimbus 6 User's Guide for a discussion of the formats and procedure to order these products.

1.3 The High Resolution Infrared Radiation Sounder (HIRS) Experiment

The HIRS operated continuously, supplying data for the special Global Atmospheric Research Program (GARP) data system test, until orbit 4025 (7 April) when the GARP support was completed and the HIRS was turned off. HIRS remained off through the end of April, except for an instrument check from orbit 4319 through 4322 (29 April).

Instrument problems, as discussed in volume 4, continued to affect the data. The format of the bit stream from the HIRS continued to have errors, which affected at least ten percent of the data. Some of the effects of this problem are removed in the data processing system.

1.4 The Scanning Microwave Spectrometer (SCAMS) Experiment

The SCAMS instrumentation system experienced major scan problems during this reporting period. Specifically, the channel 2 reflector movement was not in sequence with the scan system due to posi-drive belt problems. This anomaly began during orbit 3862 (26 March), and continued through orbit 4268 (25 April). After orbit 4268, the channel 2 reflector movement returned to a normal sequence; however, it was improperly positioned and it remained that way throughout this catalog period.

1.5 The Electrically Scanning Microwave Radiometer (ESMR) Experiment

The ESMR performance continued to be satisfactory during this catalog period operating with a two day on and then a two day off cycle. Data quality is good. The Gunn oscillator and the hot reference temperatures continued to run at higher-than-expected temperatures with no adverse results on the data. Selected ESMR images for this catalog period appear in Section 3.

1.6 The Earth Radiation Budget (ERB) Experiment

The Solar and wide-angle Earth-Flux Channels continued to operate in the non-scanning mode in a 2-day on/off cycle. Data provided from both the total Earth-Flux and Solar channels was satisfactory. The scanning channels operate only in the nadir position because of mechanical scan problems.

1.7 The Limb Radiance Inversion Radiometer (LRIR) Experiment

The last useable data from the LRIR was received during orbit 2801 (7 January). By this orbit the methane used to cool the detector was depleted and the telemetry indicating the detector temperature was saturated at 73.6°K. The ammonia temperature was constant until orbit 2787 (6 January) when it began to increase and then became erratic-varying from 145.6°K to 150.0°K. At orbit 2802 (7 January) the temperature of 145.6°K began increasing and by orbit 2806 it was at 165.7°K, when the

LRIR was turned off. Since the above date, the experiment has been turned on during ten separate occasions to record the ammonia temperature. The latest reading (28 April) indicated a slightly higher temperature average of 161.62°K when compared to previous readings. This trend is expected to continue and thus exceed present temperature readings by much higher temperature values. The instruments' temperature will continue to be monitored.

1.8 The Pressure Modulator Radiometer (PMR) Experiment

The PMR performance this period was satisfactory. The instrument was on continuously. Data quality was good. All acquired data was routinely transmitted from GSFC to the experimenter at Oxford, England.

Since orbit 1727 (19 October) channel 1 has only operated in the nadir-looking mode. This is necessary because in the scan mode this channel appears to operate between ±10° from nadir rather than the normal ±15° from nadir. The operating mode has remained normal except for a test of the pressure modulators to test for gas leaks. This test began during orbit 3722 (16 March) and continued for approximately 24 hours. The test was successful and no pressure degradation was noted. The instrument was returned to normal operating conditions at the end of the test period.

1.9 The Tropical Wind Energy Conversion and Reference Level Experiment (TWERLE)

The TWERLE continued to operate very well during this catalog period. Determinations of locations for reference platforms indicate that most are located within 1.5 km of their true positions.

Over 600 platforms had been activated by 7 January 1976. Table 1-3 shows distribution of these platforms among the TWERLE experiments. The full address of each experimenter is given in Table 9-2 in The Nimbus 6 User's Guide. (Corrected addresses for many of these experimenters, and addresses for several new experimenters, are given in Section 5.8 of this catalog.) Anyone interested in results from a particular experiment should write to the principal investigator for that experiment.

1.10 The Tracking and Data Relay Experiment (T&DRE)

The T&DRE performance was satisfactory during this catalog period. The orbits when the T&DRE was operated are listed in Table 2-2 in Section 2. Significant accomplishments of T&DRE are discussed in Data Catalog volume 1, Section 1.10.

Table 1-3

TWERLE Platform Activity as of 7 January 1976

Principal Investigator	Platform			
	Type	Active	Inactive	Total
Dr. Paul R. Julian Boulder, Colorado	Balloons	126	208	334
Professor Norbert Untersteiner Seattle, Washington	Ice Buoys	22	2	24
Dr. Hanson Miami, Florida	Drifting Buoys	4	29	33
Mr. Vincent Lally Boulder, Colorado	Balloons	2	19	21
Dr. P. Richardson Woods Hole, Massachusetts	Drifting Buoys	0	1	1
Arnold Gordon Palisades, New York	Drifting Buoys	3	20	23
Tim P. Barnett La Jolla, California	Drifting Buoys	6	9	15
Mr. Robert Kee Washington, D.C.	Drifting Buoys	0	2	2
Mr. R. E. Vockeroth Ontario, Canada	Buoy	0	1	1
Mr. Jack Lentfer Anchorage, Alaska	Polar Bears	0	6	6
Mr. B. M. Buck Santa Barbara, California	Drifting Buoys	3	1	4
Fernando DeMendonca Sao Paulo, Brazil	Buoys	0	2	2
Mr. George Cresswell Cronulla, Australia	Drifting Buoys	9	4	13
Dr. A. Dyer Mordialloc, Australia	Drifting Buoys	0	3	3
Professor Lacombe Paris, France	Drifting Buoy	1	0	1

Table 1-3 (continued)

Principal Investigator	Platform			
	Type	Active	Inactive	Total
C. K. Jensen/J. Nordo Oslo, Norway	Buoys	2	0	2
T. Haegh/T. Vinje Oslo, Norway	Ice Buoys	0	5	5
Mr. Frank Anderson Congella, South Africa	Drifting Buoys	4	5	9
Professor H. Stommel Cambridge, Massachusetts	Drifting Buoys	0	5	5
Dr. A. D. Kirwan, Jr. College Station, Texas	Drifting Buoys	0	4	4
Mr. H. N. Brann Melbourne, Australia	Drifting Buoys	0	5	5
Professor Morel Paris, France	Balloons & Buoys	0	47	47
Mr. J. Garrett Victoria, B. C. Canada	Drifting Buoys	6	4	10
Professor Tchernia Paris, France	Drifting Buoys	0	5	5
R. R. Dickson Lowestoft, Suffolk, U. K.	Drifting Buoys	1	5	6
Dr. Michael Hall Bay St. Louis, Mississippi	Buoys	2	8	10
Mr. David Thomas, Jr. Hampton, Virginia	Ocean Platforms	0	6	6
Dr. J. Williamson La Jolla, California	Balloons	0	1	1
Mr. J. C. O'Rourke Calgary, Canada	Sea Ice Platforms	2	0	2
Mr. Robert Oehlkers Madison, Wisconsin	Buoys	2	8	10
Totals		195	415	610

SECTION 2

THE ORBITAL ELEMENTS AND DATA AVAILABILITY ON-OFF TIMES

This section presents the Nimbus orbital elements for selected epochs, tabulates the time when each of the experiments was recording data, and gives procedures for determining the time and orbit when the satellite is over a given geographical area (and thus determining the location of coverage for each experiment).

The Nimbus 6 Brouwer Mean orbital elements for selected epochs during March and April 1976 are listed in Table 2-1.

As the elements indicate, the orbital period is slowly increasing and the satellite is moving into a slightly higher orbit. This effect has been attributed to the thrust given by the solid methane and ammonia sublimating from the LRIR solid cooler. The effect on the orbit is the opposite of that caused by atmospheric drag. The elements listed in Table 2-1 do not account for this effect. When these elements are used more than seven days from epoch, location errors of more than 60 km (about ten seconds of time), can be expected. If more accurate ephemeris are needed for a specific time period, write to the Nimbus Project, Code 430, Goddard Space Flight Center, Greenbelt, Maryland 20771. As of January 1976 the methane was depleted, but the ammonia is still outgassing. It may be mid-1976 before the ammonia will be completely depleted, no longer giving a thrust to the satellite.

The data availability on-off times, listed in Table 2-2, are the times when the data from each experiment was recorded on a HDRSS and processed through the Meteorological Data Handling System (MDHS) at Goddard Space Flight Center. The Table 2-2 header labels and their meaning are as follows:

- INT ORBIT AND STDN

  The satellite orbit number in progress when the satellite data is relayed to a ground station is called the interrogation orbit (INT ORBIT). The ground stations receiving the Nimbus 6 satellite data are part of the Spacecraft and Tracking Data Network (STDN). There are four STDN stations receiving Nimbus 6 experiment data: Fairbanks, Alaska (denoted by the letter "A"), Rosman, North Carolina (R), Orroral, Australia (O), and Goddard Space Flight Center, Maryland (E).

- HDRS

  The HDRS (High Data Rate Storage System-HDRSS) is the acronym for the satellite tape recorder system. Recorder "A" or "B" (or both) is played back during each STDN station interrogation.

Table 2-1

Nimbus 6 Brouwer Mean Orbital Elements for March and April 1976

Epoch	GMT	5 Mar. 76 00 00 00	24 Mar. 76 00 00 00	5 Apr. 76 00 00 00	26 Apr. 76 00 00 00
Semi-Major Axis	Km	7483.973	7484.308	7484.519	7484.887
Eccentricity		.000742	.000728	.000737	.000801
Inclination	Degrees	99.960	99.959	99.958	99.957
Argument of Perigee	Degrees	326.625	276.510	244.524	192.691
Right Ascension of Ascending Node	Degrees	338.874	357.535	9.319	29.937
Height of Perigee	Km	1100.26	1100.69	1100.84	1100.73
Height of Apogee	Km	1111.36	1111.59	1111.87	1112.72
Anomalistic Period	Minutes	107.38802	107.39521	107.39976	107.40768
Motion of Perigee	Deg. per Day	-2.4207	-2.4205	-2.4203	-2.4200

- HDRSS TIME ON-OFF

  The HDRSS ON and OFF times are given in GMT to the nearest minute. The ON time is the time the (A or B) HDRSS begins recording experiment measurements; the OFF time is when it stops recording. Usually, the ON and OFF times occurs when the satellite is within acquisition range on one of the four STDN stations. The time span between each ON and OFF usually covers part of two DATA ORBITS.

- LRIR, THIR, TDRE, SCAM, ESMR, ERB, PMR, TWRL, HIRS

  These are the acronyms for each of the experiments on Nimbus 6. (Acronyms longer than four letters have been shortened.) The column beneath each acronym contains a series of "X's" or "blanks." Each "X" in the column indicates that the data for that experiment was processed at GSFC. A "blank" usually indicates that the experiment was turned off for the HDRSS ON-OFF time in that line. A single "blank" in the middle of a series of "X's" frequently means that the experiment was on during that time span but the data has not been processed, or is unavailable for any of several reasons.

- DATA ORBIT

  A DATA ORBIT begins when the satellite crosses the equator heading in a northbound direction, and ends after the satellite has circled the earth and is about to cross the equator heading in a northbound direction. The DATA ORBIT number increases by one with each successive northbound equator crossing. The ASCENDING NODE and DESCENDING NODE information is referenced to the DATA ORBIT number.

- ASCENDING NODE TIME (and) LONG

  The ASCENDING NODE is the point in the orbit when the satellite crosses the equator heading in a northbound direction. The TIME of ASCENDING NODE is given in hours (HR), minutes (MN), and seconds (SS) GMT. The longitude (LONG) of ASCENDING NODE is given to the nearest tenth of a degree of east (E) or west (W) longitude. For Nimbus 6, the ascending node crossings always occur during the daytime portion of the orbit at approximately 11:45 a.m. local time.

- DESCENDING NODE TIME (and) LONG

  The DESCENDING NODE is the point within a DATA ORBIT when the satellite crosses the equator heading in a southbound direction. The TIME of DESCENDING NODE is given in hours (HR), minutes (MN), and seconds (SS) GMT. The longitude (LONG) of DESCENDING NODE is given to the nearest degree of east (E) or west (W) longitude. The descending node crossings always occur during the nighttime portion of each orbit at approximately 11:45 p.m. local time.

Table 2-2 together with the World Map (Figure 2-1) and the vellum Subsatellite Tracks Overlay attached to the back of this catalog, can be used to determine approximate geographic coverages and times for experiment data that the user may wish to order. The Overlay contains 14 correctly spaced satellite subpoint tracks, which end at the approximate earth day-to-night transitions. The tracks contain time ticks spaced 5 minutes apart, approximately annotated at the edge of the overlay and referenced to the equator.

A Subsatellite Tracks Overlay is correctly oriented with the World Map when the ascending or descending node line (equator) on the overlay coincides with the 0-degree latitude line (equator) of the World Map.

Orbital coverage for all orbits on any day is then determined by placing one of the orbit tracks on the overlay at its appropriate ascending node (for daytime data) or descending node (for nighttime data) longitude. (The nodes for each day are listed in Table 2-2.) The orbit track (or tracks) which covers the area of interest is readily apparent.

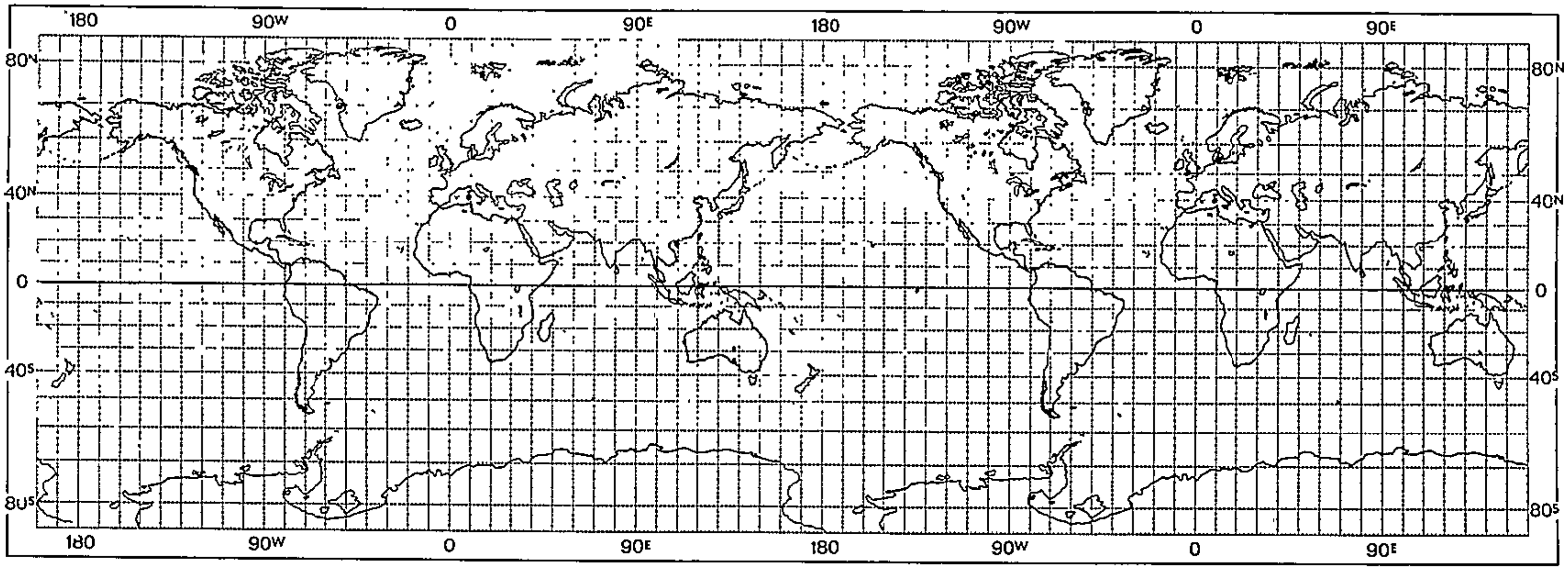


Figure 2-1. World Map

The time (GMT) of satellite passage over an area of interest is calculated by adding or subtracting the minutes from equator crossing (as determined from the overlay) to the appropriate node time (derived from Table 2-2). For daytime orbits, time is added to the ascending node for areas north of the equator, and subtracted from the ascending node for areas south of the equator. For nighttime orbits, time is subtracted from the descending node for areas north of the equator, and added to the descending node for areas south of the equator.

To determine if an experiment was ON during the calculated orbit and time of interest, the user must first "fit" the calculated time into the correct ON-OFF interval of an interrogation orbit listed in Table 2-2. Then the user must check the appropriate experiment column for that line. If an "X" is in the column, the experiment was on and the data has been processed. If the column is "blank", the experiment was off (or the data was not processed) and no data for that orbit is available.

An alternate method of determining geographic coverage and time of data is to use the method described in Section 4. The THIR montages and the vellum Location Guides (attached in the back of this catalog) are used to locate the geographical coverage of each orbit of THIR. The data coverage from other experiments will be within the limits of each THIR swath. The TIME of coverage over a particular area is obtained by using Table 4-1 and adding or subtracting this computed time to the appropriate ascending or descending node time given in Table 2-2.

Each request for data should contain, as a minimum, the name of the experiment for which data is requested, the calendar date of the data, the orbit, the time (GMT) interval of the data needed, and the geographic limits of the area of interest. The procedures described above will provide this information.

The nature and format of the data available from each experiment are explained in detail in the respective sections of The Nimbus 6 User's Guide. The appropriate sources for requesting the various data types are listed in Section 1.7 of the same manual.

TABLE 2-2
DATA AVAILABILITY ON-OFF TIMES
01 MARCH 1976

INT ORBIT AND STDN	HDRS	HDRSS TIME ON HRMN	HDRSS TIME OFF HRMN	LRIR	THIR	TDRE	SCAM	ESMR	ERB	PMR	TWRL	HIRS	DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGRE
35220	A	0029	0227				X	X		X	X	X	3522	005732	E161.7	015115	W031.
3524R	A	0236	0420		X		X	X		X	X	X	3523	024502	E134.8	033844	W058.
3524R	B	0419	0516		X		X	X		X	X	X	3524	043232	E107.9	052614	W087.
3525R	A	0516	0659		X		X	X		X	X	X	3525	062002	E081.0	071344	W112.
3526A	A	0704	0840		X		X	X		X	X	X	3526	080732	E054.2	090114	W139.
3527A	A	0844	1024		X		X	X		X	X	X	3527	095502	E027.3	104844	W166.
3528A	A	1028	1212		X		X	X		X	X	X	3528	114232	E000.4	123614	E167.
3529A	A	1216	1358		X		X	X		X	X	X	3529	133002	W026.5	142344	E140.
3530A	A	1402	1544		X		X	X		X	X	X	3530	151731	W053.3	161114	E113.
3531A	A	1549	1725		X		X		X	X	X	X	3531	170501	W080.2	175844	E086.
3532A	A	1729	1909		X		X		X	X	X	X	3532	185231	W107.1	194613	E059.
3533A	A	1913	2053		X		X		X	X	X	X	3533	204001	W134.0	213343	E032.
3534A	A	2058	2244		X		X		X	X	X	X	3534	222731	W160.9	232113	E005.
35350	B	2241	2345				X		X	X	X	X					

TABLE 2-2
DATA AVAILABILITY ON-OFF TIMES
02 MARCH 1976

INT ORBIT AND STDN	HDRS	HDRSS TIME ON HRMN	HDRSS TIME OFF HRMN	LRIR	THIR	TDRE	SCAM	ESMR	ERB	PMR	TWRL	HIRS	DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGRE
35350	A	2346	0144				X		X	X	X	X	3535	001501	E172.3	010843	W021.
35360	A	0153	0332				X		X	X	X	X	3536	020231	E145.4	025613	W048.
3537R	B	0332	0433		X		X		X	X	X	X	3537	035001	E118.5	044343	W074.
3538R	A	0431	0617		X		X		X	X	X	X	3538	053731	E091.7	063113	W101.
3539A	A	0621	0800		X		X		X	X	X	X	3539	072500	E064.8	081843	W128.
3540A	A	0804	0944		X		X		X	X	X	X	3540	091230	E037.9	100613	W155.
3541A	A	0948	1127		X		X		X	X	X	X	3541	110000	E011.0	115343	E177.
3542A	A	1131	1316		X		X		X	X	X	X	3542	124730	W015.9	134113	E150.
3543A	A	1320	1501		X		X		X	X	X	X	3543	143500	W042.8	152842	E123.
3544A	A	1505	1646		X		X		X	X	X	X	3544	162230	W069.6	171612	E097.
3545A	A	1650	1829		X		X		X	X	X	X	3545	181000	W096.4	190342	E070.
3546A	A	1833	2015		X		X		X	X	X	X	3546	195730	W123.3	205112	E043.
3547A	A	2019	2201		X		X		X	X	X	X	3547	214500	W150.2	223842	E016.
35480	B	2159	2302				X		X	X	X	X	3548	233230	W177.1	002612	W010.

TABLE 2-2
DATA AVAILABILITY ON-OFF TIMES
03 MARCH 1976

INT ORBIT AND STDN	H D R S	HDRSS TIME ON HRMN	HDRSS TIME OFF HRMN	L R I R	T H I R	T D R E	S C A M	E S M R	E R B	P M R	T W R L	H I R S	DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
35480	A	2303	0101				X		X	X	X	X	3549	012000	E156.1	021342	W037.4
35490	A	0110	0253				X		X	X	X	X	3550	030729	E129.2	040118	W064.3
3550R	B	0254	0351		X		X		X	X	X	X	3551	045459	E102.3	054842	W091.2
3551R	A	0351	0533		X		X		X	X	X	X	3552	064229	E075.4	073612	W118.0
3552A	A	0543	0715		X		X		X	X	X	X	3553	082959	E048.6	092342	W144.9
3553A	A	0719	0904		X		X		X	X	X	X	3554	101729	E021.7	111112	W171.8
3554A	A	0908	1049		X		X		X	X	X	X	3555	120459	W005.2	125842	E161.4
3555A	A	1053	1207		X		X		X	X	X	X	3556	135229	W032.1	144611	E134.5
3556A	A	1241	1423		X		X	X	X	X	X	X	3557	153959	W059.0	163341	E107.6
3557A	A	1427	1603		X		X	X		X	X	X	3558	172729	W085.8	182111	E080.7
3558A	A	1607	1747		X		X	X		X	X	X	3559	191459	W112.7	200841	E053.8
3559A	A	1751	1933		X		X	X		X	X	X	3560	210229	W139.6	215611	E027.0
3560A	A	1937	2119		X		X	X		X	X	X	3561	224959	W166.5	234341	E000.1
3561A	A	2123	2307		X		X	X		X	X	X					

TABLE 2-2
DATA AVAILABILITY ON-OFF TIMES
04 MARCH 1976

INT ORBIT AND STDN	H D R S	HDRSS TIME ON HRMN	HDRSS TIME OFF HRMN	L R I R	T H I R	T D R E	S C A M	E S M R	E R B	P M R	T W R L	H I R S	DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
35610	B	2304	0008				X	X		X	X	X	3562	003729	E166.7	013111	W026.7
35620	A	0008	0207				X	X		X	X	X	3563	022459	E139.8	031841	W053.6
3564R	A	0216	0358		X		X	X		X	X	X	3564	041228	E113.9	050611	W080.5
3564R	B	0357	0457		X		X	X		X	X	X	3565	055958	E086.1	065341	W107.4
3565R	A	0458	0638		X		X	X		X	X	X	3566	074728	E059.2	084111	W134.2
3566A	A	0642	0821		X		X	X		X	X	X	3567	093458	E032.3	102841	W161.1
3567A	A	0825	1005		X		X	X		X	X	X	3568	112228	E005.4	121611	E172.0
3568A	A	1010	1152		X		X	X		X	X	X	3569	130958	W021.5	140341	E145.1
3569A	A	1156	1338		X		X	X		X	X	X	3570	145728	W048.3	155111	E118.3
3570A	A	1342	1523		X		X	X		X	X	X	3571	164458	W075.2	173841	E091.4
3571A	A	1527	1707		X		X	X		X	X	X	3572	183228	W102.1	192611	E064.5
3572A	A	1711	1852		X		X	X		X	X	X	3573	201958	W129.0	211341	E037.6
3573A	A	1856	2038		X		X	X		X	X	X	3574	220728	W155.8	230111	E010.7
3574A	A	2042	2224		X		X	X		X	X	X	3575	235458	E177.3	004841	W016.1
35750	B	2220	2324				X	X		X	X	X					

TABLE 2-2
DATA AVAILABILITY ON-OFF TIMES
05 MARCH 1976

INT ORBIT AND STDN	HDRS	HDRSS TIME ON HRMN	HDRSS TIME OFF HRMN	LRIR	THIR	TDRE	SCAM	ESMR	ERB	PMR	TWRL	HIRS	DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
3575O	A	2325	0123				X	X		X	X	X	3576	014228	E150.4	023611	W043.0
3576O	A	0133	0313				X	X		X	X	X	3577	032958	E123.5	042341	W069.9
3577R	B	0313	0411		X		X	X		X	X	X	3578	051728	E096.7	061111	W096.8
3578R	A	0411	0556		X		X	X		X	X	X	3579	070458	E069.8	075840	W123.6
3579A	A	0601	0737		X		X	X		X	X	X	3580	085228	E042.9	094610	W150.5
3580A	A	0741	0925		X		X	X		X	X	X	3581	103958	E016.0	113340	W177.4
3581A	A	0929	1109		X		X	X		X	X	X	3582	122728	W010.8	132110	E155.7
3582A	A	1114	1258		X		X	X		X	X	X	3583	141458	W037.7	150840	E128.9
3583A	A	1302	1444		X		X	X		X	X	X	3584	160228	W064.6	165610	E102.0
3584A	A	1448	1625		X		X		X	X	X	X	3585	174958	W091.5	184340	E075.1
3585A	A	1630	1808		X		X		X	X	X	X	3586	193728	W118.3	203110	E048.2
3586A	A	1814	1956		X		X		X	X	X	X	3587	212458	W145.2	221840	E021.4
3587A	A	2001	2140		X		X		X	X	X	X	3588	231228	W172.1	000610	W005.5
3588A	A	2145	2329		X		X		X	X	X	X					

TABLE 2-2
DATA AVAILABILITY ON-OFF TIMES
06 MARCH 1976

INT ORBIT AND STDN	HDRS	HDRSS TIME ON HRMN	HDRSS TIME OFF HRMN	LRIR	THIR	TDRE	SCAM	ESMR	ERB	PMR	TWRL	HIRS	DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
3588O	B	2327	0031				X		X	X	X	X	3589	005958	E161.0	015340	W032.4
3589O	A	0032	0230				X		X	X	X	X	3590	024728	E134.2	034110	W059.3
3591R	A	0238	0422		X		X		X	X	X	X	3591	043457	E107.3	052840	W086.1
3591R	B	0421	0518		X		X		X	X	X	X	3592	062227	E080.4	071630	W113.0
3592R	A	0518	0700		X		X		X	X	X	X	3593	080957	E053.5	090340	W139.9
3593A	A	0704	0842		X		X		X	X	X	X	3594	095727	E026.7	105110	W166.8
3594A	A	0846	1028		X		X		X	X	X	X	3595	114457	W000.2	123840	E166.4
3595A	A	1032	1212		X		X		X	X	X	X	3596	133227	W027.1	142610	E139.5
3596A	A	1218	1359		X		X		X	X	X	X	3597	151957	W054.0	161340	E113.6
3597A	A	1403	1543		X		X		X	X	X	X	3598	170727	W080.8	180110	E085.7
3598A	A	1548	1726		X		X		X	X	X	X	3599	185457	W107.7	194840	E058.9
3599A	A	1730	1913		X		X		X	X	X	X	3600	204227	W134.6	213610	E032.0
3600A	A	1917	2058		X		X		X	X	X	X	3601	222957	W161.5	232340	E005.1
3601A	A	2102	2245		X		X		X	X	X	X					
3602O	B	2243	2347				X		X	X	X	X					

TABLE 2-2
DATA AVAILABILITY ON-OFF TIMES
07 MARCH 1976

INT ORBIT AND STDN	HDRS	HDRSS TIME ON HRMN	HDRSS TIME OFF HRMN	LRIR	THIR	TDRE	SCAM	ESMR	ERB	PMR	TWRL	HIRS	DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
3602O	A	2348	0146				X		X	X	X	X	3602	001730	E171.7	011113	W021.8
3603O	A	0153	0336				X		X	X	X	X	3603	020500	E144.8	025843	W048.7
3604R	B	0336	0434		X		X		X	X	X	X	3604	035230	E117.9	044613	W075.5
3605R	A	0434	0620		X		X		X	X	X	X	3605	054000	E091.0	063343	W102.4
3606A	A	0624	0801		X		X		X	X	X	X	3606	072730	E064.1	082113	W129.3
3607A	A	0805	0948		X		X		X	X	X	X	3607	091500	E037.3	100843	W156.2
3608A	A	0952	1133		X		X		X	X	X	X	3608	110230	E010.4	115613	E177.0
3609A	A	1137	1317		X		X		X	X	X	X	3609	125000	W016.5	134343	E150.1
3610A	A	1321	1506		X		X		X	X	X	X	3610	143730	W043.4	153113	E123.2
3611A	A	1510	1646		X		X	X		X	X	X	3611	162500	W070.2	171843	E096.3
3612A	A	1650	1830		X		X	X		X	X	X	3612	181230	W097.1	190613	E069.5
3613A	A	1835	2016		X		X	X		X	X	X	3613	200000	W124.0	205343	E042.6
3614A	A	2020	2202		X		X	X		X	X	X	3614	214730	W150.9	224113	E015.7
3615/3	B	2201	2305				X	X		X	X	X	3615	233500	W177.7	002843	W011.2

TABLE 2-2
DATA AVAILABILITY ON-OFF TIMES
08 MARCH 1976

INT ORBIT AND STDN	HDRS	HDRSS TIME ON HRMN	HDRSS TIME OFF HRMN	LRIR	THIR	TDRE	SCAM	ESMR	ERB	PMR	TWRL	HIRS	DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
3615O	A	2306	0104				X	X		X	X	X	3616	012230	E155.4	021613	W038.0
3616O	A	0113	0254				X	X		X	X	X	3617	031000	E128.5	040343	W064.9
3617R	B	0253	0352		X		X	X		X	X	X	3618	045730	E101.6	055113	W091.8
3618R	A	0351	0537		X		X	X		X	X	X	3619	064501	E074.8	073844	W118.7
3619A	A	0541	0718		X		X	X		X	X	X	3620	083231	E047.9	092614	W145.5
3620A	A	0722	0905		X		X	X		X	X	X	3621	102001	E021.0	111344	W172.4
3621A	A	0909	1051		X		X	X		X	X	X	3622	120731	W005.9	130114	E160.7
3622A	A	1056	1236		X		X	X		X	X	X	3623	135501	W032.7	144844	E133.8
3623A	A	1240	1420		X		X	X		X	X	X	3624	154231	W059.6	163614	E107.0
3624A	A	1424	1605		X		X	X		X	X	X	3625	173001	W086.5	182344	E080.1
3625A	A	1609	1749		X		X	X		X	X	X	3626	191731	W113.4	201114	E053.2
3626A	A	1753	1934		X		X	X		X	X	X	3627	210501	W140.3	215844	E026.4
3627A	A	1939	2120		X		X	X		X	X	X	3628	225231	W167.1	234614	W000.6
3628A	A	2124	2308		X		X	X		X	X	X					

TABLE 2-2
DATA AVAILABILITY ON-OFF TIMES
09 MARCH 1976

INT ORBIT AND STDN	HDRS	HDRSS TIME ON HRMN	HDRSS TIME OFF HRMN	LRIR	THIR	TDRE	SCAM	ESMR	ERB	PMR	TWRL	HIRS	DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
3628O	B	2306	0010				X	X		X	X	X	3629	004001	W166.0	013344	W027.4
3629O	A	0010	0209				X	X		X	X	X	3630	022731	E139.1	032114	W054.3
3631R	A	0216	0401		X		X	X		X	X	X	3631	041501	E112.3	050844	W081.0
3631R	B	0400	0458		X		X	X		X	X	X	3632	060231	E085.4	065614	W108.0
3632R	A	0458	0642		X		X	X		X	X	X	3633	075001	E058.5	084344	W134.9
3633A	A	0646	0823		X		X	X		X	X	X	3634	093731	E031.6	103115	W161.8
3634A	A	0827	1008		X		X	X		X	X	X	3635	112502	E004.8	121845	E171.3
3635A	A	1013	1156		X		X	X		X	X	X	3636	131232	W022.1	140615	E144.5
3636A	A	1200	1341		X		X	X		X	X	X	3637	150002	W049.0	155345	E117.6
3637A	A	1345	1524		X		X	X		X	X	X	3638	164732	W075.9	174115	E090.7
3638A	A	1529	1708		X		X		X	X	X	X	3603	183502	W103.7	192845	E063.8
3639A	A	1712	1851		X		X		X	X	X	X	3640	202232	W129.6	211615	E063.8
3640A	A	1855	2037		X		X		X	X	X	X	3641	221002	W156.5	230345	E010.1
3641A	A	2042	2225		X		X		X	X	X	X	3642	235732	E176.6	005115	W016.8
3642O	B	2223	2326				X		X	X	X	X					

TABLE 2-2
DATA AVAILABILITY ON-OFF TIMES
10 MARCH 1976

INT ORBIT AND STDN	HDRS	HDRSS TIME ON HRMN	HDRSS TIME OFF HRMN	LRIR	THIR	TDRE	SCAM	ESMR	ERB	PMR	TWRL	HIRS	DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
3642O	A	2328	0125				X		X	X	X	X	3643	014502	E149.8	023845	W043.7
3643O	A	0135	0318				X		X	X	X	X	3644	033232	E122.9	042615	W070.6
3644R	B	0319	0416		X		X		X	X	X	X	3645	052002	E096.0	061346	W097.4
3645R	A	0416	0558		X		X		X	X	X	X	3646	070732	E069.1	080116	W124.3
3646A	A	0603	0741		X		X		X	X	X	X	3647	085503	E042.3	094846	W151.2
3647A	A	0745	0926		X		X		X	X	X	X	3648	104233	E015.4	113616	W178.1
3648A	A	0930	1113		X		X		X	X	X	X	3649	123003	W011.5	132346	E155.1
3649A	A	1117	1256		X		X		X	X	X	X	3650	141733	W038.4	151116	E128.2
3650A	A	1300	1442		X		X		X	X	X	X	3651	160503	W065.2	165846	E101.3
3651A	A	1446	1626		X		X		X	X	X	X	3652	175233	W092.1	184616	E074.4
3652A	A	1630	1812		X		X		X	X	X	X	3653	194003	W119.0	203346	E047.6
3653A	A	1816	1955		X		X		X	X	X	X	3654	212733	W145.9	222117	E020.7
3654A	A	2000	2142		X		X		X	X	X	X	3655	231503	W172.7	000847	W006.2
3655A	A	2146	2332		X		X		X	X	X	X					

TABLE 2-2
DATA AVAILABILITY ON-OFF TIMES
11 MARCH 1976

INT ORBIT AND STDN	HDRS	HDRSS TIME ON HRMN	HDRSS TIME OFF HRMN	LRIR	THIR	TDRE	SCAM	ESMR	ERB	PMR	TWRL	HIRS	DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
3655O	B	2330	0034				X		X	X	X	X	3656	010233	E160.4	015617	W033.1
3656O	A	0034	0233				X		X	X	X	X	3657	025004	E133.5	034347	W059.9
3658R	A	0242	0425		X		X		X	X	X	X	3658	043734	E106.6	053117	W086.8
3658R	B	0424	0521		X		X		X	X	X	X	3659	062504	E079.7	071847	W133.7
3659R	A	0520	0703		X		X		X	X	X	X	3660	081234	E052.9	090617	W140.6
3660A	A	0707	0845		X		X		X	X	X	X	3661	100004	E026.0	105347	W167.4
3661A	A	0849	1031		X		X		X	X	X	X	3662	114734	W000.9	124118	E165.7
3662A	A	1035	1217		X		X		X	X	X	X	3663	133504	W027.8	142848	E138.8
3663A	A	1222	1403		X		X		X	X	X	X	3664	152234	W054.7	161618	E111.9
3664A	A	1407	1546		X		X	X		X	X	X	3665	171005	W081.5	180348	E085.1
3665A	A	1550	1732		X		X	X		X	X	X	3666	185735	W108.4	195118	E058.2
3666A	A	1736	1916		X		X	X		X	X	X	3667	204505	W135.3	213848	E031.3
3667A	A	1921	2101		X		X	X		X	X	X	3668	223235	W162.1	232618	E004.5
3668A	A	2105	2249		X		X	X		X	X	X					

TABLE 2-2
DATA AVAILABILITY ON-OFF TIMES
12 MARCH 1976

INT ORBIT AND STDN	HDRS	HDRSS TIME ON HRMN	HDRSS TIME OFF HRMN	LRIR	THIR	TDRE	SCAM	ESMR	ERB	PMR	TWRL	HIRS	DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
3671R	A	0136	0334		X		X	X		X	X	X	3669	002005	E171.0	011348	W022.4
3671R	B	0334	0438		X		X	X		X	X	X	3670	020735	E144.1	030119	W049.3
3672R	A	0440	0622		X		X			X	X	X	3671	035505	E117.2	044849	W076.2
3673A	A	0627	0802		X		X	X		X	X	X	3672	054235	E090.4	063619	W103.1
3674A	A	0810	0946		X		X	X		X	X	X	3673	073006	E063.5	082349	W130.0
3675A	A	0950	1132		X		X	X		X	X	X	3674	091736	E036.6	101119	W156.8
3676A	A	1137	1318		X		X	X		X	X	X	3675	110506	E009.7	115849	E176.3
3677A	A	1322	1503		X		X	X		X	X	X	3676	125236	W017.1	134620	E149.4
3678A	A	1507	1648		X		X	X		X	X	X	3677	144006	W044.0	153350	E122.5
3679A	A	1652	1833		X		X	X		X	X	X	3678	162736	W070.9	172120	E095.7
3680A	A	1837	2017		X		X	X		X	X	X	3679	181506	W097.8	190850	E068.8
3681A	A	2021	2202		X		X	X		X	X	X	3680	200237	W124.6	205620	E041.9
3682O	B	2203	2306				X	X		X	X	X	3681	215007	W151.5	224350	E015.1
													3682	233737	W178.4	003120	W011.8

TABLE 2-2
DATA AVAILABILITY ON-OFF TIMES
13 MARCH 1976

INT ORBIT AND STDN	HDRS	HDRSS TIME ON HRMN	OFF HRMN	LRIR	THIR	TDRE	SCAMR	ESMR	ERB	PMR	TWRL	HIRS	DATA ORBIT	ASCENDING NODE TIME HRMNSS	LONG DEGREE	DESCENDING NODE TIME HRMNSS	LONG DEGREE
3682O	A	2308	0105				X	X		X	X	X	3683	012507	E154.7	021851	W038.7
3683O	A	0115	0257				X	X		X	X	X	3684	031237	E127.9	040621	W065.6
3684R	B	0257	0355		X		X	X		X	X	X	3685	050007	E101.0	055351	W092.5
3685R	A	0354	0540		X		X	X		X	X	X	3686	064738	E074.1	074121	W119.3
3686A	A	0544	0720		X		X	X		X	X	X	3687	083508	E047.2	092851	W146.2
3687A	A	0724	0908		X		X	X		X	X	X	3688	102238	E020.3	111621	W173.1
3688A	A	0912	1054		X		X	X		X	X	X	3689	121008	W006.5	130352	E160.1
3689A	A	1058	1240		X		X	X		X	X	X	3690	135738	W033.4	145122	E133.2
3690A	A	1244	1425		X		X	X		X	X	X	3691	154508	W060.3	163852	E106.3
3691A	A	1429	1608		X		X	X		X	X	X	3692	173239	W087.2	182622	E079.4
3692A	A	1612	1736		X		X		X	X	X	X	3693	192009	W114.1	201352	E052.6
3693A	A	1740	1937		X		X		X	X	X	X	3694	210739	W140.9	220123	E025.6
3694A	A	1941	2125		X		X		X	X	X	X	3695	225509	W167.8	234853	W001.2
3695A	A	2130	2312		X		X		X	X	X	X					

TABLE 2-2
DATA AVAILABILITY ON-OFF TIMES
14 MARCH 1976

INT ORBIT AND STDN	HDRS	HDRSS TIME ON HRMN	OFF HRMN	LRIR	THIR	TDRE	SCAMR	ESMR	ERB	PMR	TWRL	HIRS	DATA ORBIT	ASCENDING NODE TIME HRMNSS	LONG DEGREE	DESCENDING NODE TIME HRMNSS	LONG DEGREE
36950	B	2309	0012				X		X	X	X	X	3696	004238	E165.3	013621	W028.1
36960	A	0014	0211				X		X	X	X	X	3697	023008	E138.5	032352	W055.0
3698R	A	0221	0405		X		X		X	X	X	X	3698	041738	E111.6	051122	W081.8
3698R	B	0403	0502		X		X		X	X	X	X	3699	060508	E084.7	065852	W108.7
3699R	A	0501	0644		X		X		X	X	X	X	3700	075239	E057.8	084622	W135.6
3700A	A	0648	0825		X		X		X	X	X	X	3701	094009	E031.0	103352	W162.5
3701A	A	0829	1015		X		X		X	X	X	X	3702	112739	E004.1	122123	E170.6
3702A	A	1020	1157		X		X		X	X	X	X	3703	131509	W022.8	140853	E143.8
3703A	A	1201	1344		X		X		X	X	X	X	3704	150239	W049.7	155623	E116.9
3704A	A	1348	1529		X		X		X	X	X	X	3705	165010	W076.5	174353	E090.0
3705A	A	1533	1713		X		X		X	X	X	X	3706	183740	W103.4	193123	E063.2
3706A	A	1717	1856		X		X		X	X	X	X	3707	202510	W130.3	211854	E036.3
3708A	B	1922	2026		X		X		X	X	X	X	3708	221240	W157.2	230624	E009.4
3708A	A	2026	2226		X		X		X	X	X	X					
37090	B	2232	2333				X		X	X	X	X					

TABLE 2-2
DATA AVAILABILITY ON-OFF TIMES
15 MARCH 1976

INT ORBIT AND STDN	HRS	HDRSS TIME ON HRMN	HDRSS TIME OFF HRMN	LRIR	THIR	TDRE	SCAM	ESMR	ERB	PMR	TWRL	HIRS	DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
3709O	A	2333	0132				X		X	X	X	X	3709	000010	E176.0	005354	W017.5
3710O	A	0138	0320				X		X	X	X	X	3710	014741	E149.1	024124	W044.4
3711R	B	0319	0416		X		X		X	X	X	X	3711	033511	E122.2	042854	W071.2
3712E	A	0416	0601		X		X		X	X	X	X	3712	052241	E095.4	061625	W098.1
3713A	A	0608	0743		X		X		X	X	X	X	3713	071011	E068.5	080355	W125.0
3714A	A	0747	0930		X		X		X	X	X	X	3714	085741	E041.6	095125	W151.9
3715A	A	0934	1116		X		X		X	X	X	X	3715	104512	E014.7	113855	W178.7
3716A	A	1120	1302		X		X		X	X	X	X	3716	123242	W012.2	132625	E154.4
3717A	A	1306	1448		X		X		X	X	X	X	3717	142012	W039.1	151356	E127.5
3718A	A	1453	1630		X		X	X		X	X	X	3718	160742	W065.9	170126	E100.7
3719A	A	1634	1816		X		X	X		X	X	X	3719	175512	W092.8	184956	E073.8
3720A	A	1820	2000		X		X	X		X	X	X	3720	194243	W119.7	203626	E046.9
3721A	A	2004	2149		X		X	X		X	X	X	3721	213013	W146.6	222357	E020.0
3722A	A	2153	2335		X		X	X		X	X	X	3722	231748	W173.4	001127	W006.9

E=GSFC ENGINEERING TEST CENTER.

TABLE 2-2
DATA AVAILABILITY ON-OFF TIMES
16 MARCH 1976

INT ORBIT AND STDN	HRS	HDRSS TIME ON HRMN	HDRSS TIME OFF HRMN	LRIR	THIR	TDRE	SCAM	ESMR	ERB	PMR	TWRL	HIRS	DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
37220	B	2333	0037				X	X		X	X	X	3723	010513	E159.7	015857	W033.7
37230	A	0037	0235				X	X		X	X	X	3724	025243	E132.8	034627	W060.6
3725E	A	0248	0428		X		X	X		X	X	X	3725	044014	E105.9	053357	W087.5
3726R	B	0426	0523		X		X	X		X	X	X	3726	062744	E079.1	072129	W114.4
3726R	A	0527	0708		X		X	X		X	X	X	3727	081514	E052.2	090858	W141.3
3727A	A	0713	0849		X		X	X		X	X	X	3728	100244	E025.3	105628	W168.1
3728A	A	0853	1035		X		X	X		X	X	X	3729	115015	W001.6	124358	E165.0
3729A	A	1039	1223		X		X	X		X	X	X	3730	133745	W028.4	143129	E138.1
3730A	A	1228	1404		X		X	X		X	X	X	3731	152515	W055.3	161859	E111.3
3731A	A	1408	1552		X		X	X	X	X	X	X	3732	171245	W082.2	180629	E084.4
3732A	A	1556	1735		X		X		X	X	X	X	3733	190016	W109.1	195359	E057.5
3733A	A	1738	1917		X		X		X	X	X	X	3734	204746	W136.0	214130	E030.6
3734A	A	1921	2104		X		X		X	X	X	X	3735	223516	W162.8	232900	E003.8
3735A	A	2109	2253		X		X		X	X	X	X					

TABLE 2-2
DATA AVAILABILITY ON-OFF TIMES
17 MARCH 1976

INT ORBIT AND STDN	HRS	HDRSS TIME ON HRMN	HDRSS TIME OFF HRMN	LRIR	THIR	TDRE	SCAM	ESMR	ERB	PMR	TWRL	HIRS	DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
3736O	A	2354	0150				X		X	X	X	X	3736	002246	E170.3	011630	W022.2
3737O	A	0200	0340				X		X	X	X	X	3737	021016	E143.4	030400	W050.0
3738R	B	0340	0437		X		X		X	X	X	X	3738	035747	E116.5	045131	W076.9
3739R	A	0436	0626		X		X		X	X	X	X	3739	054517	E089.7	063901	W103.8
3740A	A	0630	0806		X		X		X	X	X	X	3740	073247	E062.8	082631	W130.7
3741A	A	0810	0953		X		X		X	X	X	X	3741	092017	E035.9	101401	W157.5
3742A	A	0957	1139		X		X		X	X	X	X	3742	110748	E009.1	120132	E175.6
3743A	A	1143	1324		X		X		X	X	X	X	3743	125518	W017.8	134002	E148.7
3744A	A	1328	1509		X		X		X	X	X	X	3744	144248	W044.7	153632	E121.9
3745A	A	1514	1655		X	X	X		X	X	X	X	3745	163018	W071.6	172402	E094.9
3746A	A	1658	1841		X	X	X		X	X	X	X	3746	181749	W098.4	191133	E068.1
3747A	A	1845	2026		X	X	X		X	X	X	X	3747	200519	W125.4	205903	E041.2
3748A	A	2030	2209		X		X		X	X	X	X	3748	215249	W152.2	224633	W014.4
3749O	B	2207	2310				X		X	X	X	X	3749	234020	W179.1	003403	W012.5

TABLE 2-2
DATA AVAILABILITY ON-OFF TIMES
18 MARCH 1976

INT ORBIT AND STDN	HRS	HDRSS TIME ON HRMN	HDRSS TIME OFF HRMN	LRIR	THIR	TDRE	SCAM	ESMR	ERB	PMR	TWRL	HIRS	DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
3749O	A	2311	0109				X		X	X	X	X	3750	012750	E154.0	022134	W039.4
3750O	A	0121	0259				X		X	X	X	X	3751	031520	E127.2	040904	W066.3
3751R	B	0259	0358		X		X		X	X	X	X	3752	050250	E100.3	055634	W093.2
3752R	A	0358	0542		X		X		X	X	X	X	3753	065021	E073.4	074404	W120.1
3753A	A	0546	0724		X		X		X	X	X	X	3754	083751	E046.5	093135	W146.9
3754A	A	0728	0908		X		X		X	X	X	X	3755	102521	E019.7	111905	W173.8
3755A	A	0912	1056		X		X		X	X	X	X	3756	121251	W007.2	130635	E159.3
3756A	A	1100	1241	X	X		X		X	X	X	X	3757	140022	W034.1	145406	E132.5
3757A	A	1246	1430		X		X	X	X	X	X	X	3758	154752	W061.0	164137	E105.6
3758A	A	1434	1612		X		X	X		X	X	X	3759	173522	W087.8	182906	E078.7
3759A	A	1616	1756		X		X	X		X	X	X	3760	192253	W114.8	201636	E051.8
3760A	A	1800	1940		X		X	X		X	X	X	3761	211023	W141.6	220407	E025.0
3761A	A	1945	2126		X		X	X		X	X	X	3762	225753	W168.5	235137	W001.9
3762A	A	2131	2317		X		X	X		X	X	X					

TABLE 2-2
DATA AVAILABILITY ON-OFF TIMES
19 MARCH 1976

INT ORBIT AND STDN	H D R S	HDRSS TIME ON HRMN	HDRSS TIME OFF HRMN	L R I R	T H I R	T D R E	S C A M	E S M R	E R B	P M R	T W R L	H I R S	DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
3765E	A	0232	0400		X		X	X		X	X	X	3763	004523	E164.6	013907	W028.8
3765E	B	0400	0504		X		X	X		X	X	X	3764	023254	E137.8	032638	W055.7
3766E	A	0504	0644		X		X	X		X	X	X	3765	042024	E110.9	051408	W082.6
3767A	A	0648	0826		X		X	X		X	X	X	3766	060754	E084.0	070138	W109.4
3768A	A	0831	1014		X		X	X		X	X	X	3767	075525	E057.1	084909	W136.3
3769A	A	1018	1159		X		X	X		X	X	X	3768	094255	E030.3	103639	W163.2
3770A	A	1203	1345		X		X	X		X	X	X	3769	113025	E003.4	122409	E170.0
3771A	A	1349	1532		X		X	X		X	X	X	3770	131755	W023.5	141139	E143.1
3772A	A	1536	1716		X		X	X		X	X	X	3771	150526	W050.4	155910	E116.2
3773A	A	1721	1858		X		X	X		X	X	X	3772	165256	W077.2	174640	E089.3
3774A	A	1902	2045		X		X	X		X	X	X	3773	184026	W104.1	193410	E062.5
3775A	A	2049	2234		X		X	X		X	X	X	3774	202757	W131.0	212141	E036.6
3776D	B	2229	2333				X	X		X	X	X	3775	221527	W157.9	230911	E008.7

TABLE 2-2
DATA AVAILABILITY ON-OFF TIMES
20 MARCH 1976

INT ORBIT AND STDN	H D R S	HDRSS TIME ON HRMN	HDRSS TIME OFF HRMN	L R I R	T H I R	T D R E	S C A M	E S M R	E R B	P M R	T W R L	H I R S	DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
3776D	A	2333	0132				X	X		X	X	X	3776	000257	E175.2	005641	W018.2
3777D	A	0140	0324				X	X		X	X	X	3777	015028	E148.4	024412	W045.1
3778E	B	0322	0417		X		X	X		X	X	X	3778	033758	E121.5	043142	W072.0
3779E	A	0445	0602		X		X	X		X	X	X	3779	052528	E094.6	061912	W098.8
3780A	A	0606	0745		X		X	X		X	X	X	3780	071259	E067.8	080643	W125.7
3781A	A	0749	0930		X		X	X		X	X	X	3781	090029	E040.9	095413	W152.6
3782A	A	0935	1118		X		X	X		X	X	X	3782	104759	E014.0	114143	W179.4
3783A	A	1122	1304		X		X	X		X	X	X	3783	123530	W012.9	132914	E153.7
3784A	A	1308	1451		X		X	X	X	X	X	X	3784	142300	W039.8	151644	E126.8
3785A	A	1455	1633		X		X		X	X	X	X	3785	161030	W066.7	170414	E099.9
3786A	A	1637	1817		X		X		X	X	X	X	3786	175800	W093.5	185145	E073.1
3787A	A	1821	2004		X		X		X	X	X	X	3787	194531	W120.4	203915	E046.2
3788A	A	2008	2150		X		X		X	X	X	X	3788	213301	W147.3	222645	E019.3
3789A	A	2154	2338		X		X		X	X	X	X	3789	232031	W174.2	001416	W007.6

TABLE 2-2
DATA AVAILABILITY ON-OFF TIMES
21 MARCH 1976

INT ORBIT AND STDN	HDRS	HDRSS TIME ON HRMN	HDRSS TIME OFF HRMN	LRIR	THIR	TDRE	SCAM	ESMR	ERB	PMR	TWRL	HIRS	DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
37890	B	2335	0039				X		X	X	X	X	3790	010802	E159.0	020146	W034.5
37900	A	0040	0238				X		X	X	X	X	3791	025532	E132.1	034916	W061.3
3792E	A	0246	0431		X		X		X	X	X	X	3792	044303	E105.2	053647	W088.2
3792E	B	0430	0525		X		X		X	X	X	X	3793	063033	E078.4	072417	W115.1
3793E	A	0525	0706		X		X		X	X	X	X	3794	081803	E051.5	091147	W142.0
3794A	A	0711	0849		X		X		X	X	X	X	3795	100534	E024.6	105918	W168.9
3795A	A	0853	1037		X		X		X	X	X	X	3796	115304	W002.3	124648	E164.3
3796A	A	1041	1220		X		X		X	X	X	X	3797	134034	W029.2	143418	E137.4
3797A	A	1224	1409		X		X		X	X	X	X	3798	152805	W056.1	162149	E110.5
3798A	A	1414	1553		X		X		X	X	X	X	3799	171535	W082.9	180919	E083.6
3799A	A	1557	1736		X		X		X	X	X	X	3800	190305	W109.8	195649	E056.8
3800A	A	1740	1927		X		X		X	X	X	X	3801	205036	W136.7	214420	E029.9
3801A	A	1931	2109		X		X		X	X	X	X	3802	223806	W163.5	233150	E003.0
3802A	A	2113	2255		X		X		X	X	X	X					
38030	B	2251	2355				X		X	X	X	X					

TABLE 2-2
DATA AVAILABILITY ON-OFF TIMES
22 MARCH 1976

INT ORBIT AND STDN	HDRS	HDRSS TIME ON HRMN	HDRSS TIME OFF HRMN	LRIR	THIR	TDRE	SCAM	ESMR	ERB	PMR	TWRL	HIRS	DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
38030	A	2356	0154				X		X	X	X	X	3803	002536	E169.6	011921	W023.9
38040	A	0202	0348				X		X	X	X	X	3804	021307	E142.7	030651	W050.7
3806E	B	0349	0442		X		X		X	X	X	X	3805	040037	E115.8	045421	W077.6
3806E	A	0445	0624		X		X		X	X	X	X	3806	054808	E088.9	064152	W104.5
3807A	A	0628	0807		X		X		X	X	X	X	3807	073538	E062.1	082922	W131.4
3808A	A	0811	0955		X		X		X	X	X	X	3808	092308	E035.2	101652	W158.2
3809A	A	0959	1141		X		X		X	X	X	X	3809	111039	E008.3	120423	E174.9
3810A	A	1144	1327		X		X		X	X	X	X	3810	125809	W018.6	135153	E148.0
3811A	A	1331	1516		X		X	X	X	X	X	X	3811	144539	W045.4	153924	E121.1
3812A	A	1520	1654		X		X	X		X	X	X	3812	163310	W072.3	172654	E094.3
3813A	A	1658	1839		X		X	X		X	X	X	3813	182040	W099.2	191424	E067.4
3814A	A	1843	2026		X		X	X		X	X	X	3814	200811	W126.1	210155	E040.5
3815A	A	2031	2213		X		X	X		X	X	X	3815	215541	W152.9	224925	E013.6
38160	B	2209	2313				X	X		X	X	X	3816	234311	W179.8	003655	W013.3

TABLE 2-2
DATA AVAILABILITY ON-OFF TIMES
23 MARCH 1976

INT ORBIT AND STDN	HDRS	HDRSS TIME ON HRMN	HDRSS TIME OFF HRMN	LRIR	THIR	TDRE	SCAMS	ESMR	ERB	PMR	TWRL	HIRS	DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
38160	A	2314	0113				X	X		X	X	X	3817	013042	E153.3	022426	W040.1
38170	A	0122	0304				X	X		X	X	X	3818	031812	E126.4	041156	W067.0
3818E	B	0302	0359		X		X	X		X	X	X	3819	050542	E099.5	055927	W093.9
3819E	A	0359	0544		X		X	X		X	X	X	3820	065313	E072.7	074657	W120.8
3820A	A	0549	0725		X		X	X		X	X	X	3821	084043	E045.8	093427	W147.7
3821A	A	0729	0913		X		X	X		X	X	X	3822	102814	E018.9	112158	W174.5
3822A	A	0917	1100		X		X	X		X	X	X	3823	121544	W008.0	130928	E158.6
3823A	A	1105	1243		X		X	X		X	X	X	3824	140314	W034.8	145659	E131.7
3824A	A	1247	1430		X		X	X		X	X	X	3825	155045	W061.7	164429	E104.9
3825A	A	1434	1616		X		X	X		X	X	X	3826	173815	W088.6	183159	E078.0
3826A	A	1620	1759		X		X	X		X	X	X	3827	192546	W115.5	201930	E051.1
3827A	A	1803	1944		X		X	X		X	X	X	3828	211316	W142.4	220700	E024.2
3828A	A	1948	2133		X		X	X		X	X	X	3829	230046	W169.2	235431	W002.7
3829A	A	2137	2317		X		X	X		X	X	X					

TABLE 2-2
DATA AVAILABILITY ON-OFF TIMES
24 MARCH 1976

INT ORBIT AND STDN	HDRS	HDRSS TIME ON HRMN	HDRSS TIME OFF HRMN	LRIR	THIR	TDRE	SCAMS	ESMR	ERB	PMR	TWRL	HIRS	DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
38290	B	2315	0019				X	X		X	X	X	3830	004817	E163.9	014201	W029.5
38300	A	0020	0218				X	X		X	X	X	3831	023547	E137.0	032931	W056.4
3832E	A	0227	0412		X		X	X		X	X	X	3832	042318	E110.2	051702	W083.3
3832E	B	0410	0506		X		X	X		X	X	X	3833	061048	E083.3	070432	W110.2
3833E	A	0507	0648		X		X	X		X	X	X	3834	075818	E056.4	085203	W137.0
3834A	A	0652	0832		X		X	X		X	X	X	3835	094549	E029.5	103933	W163.9
3835A	A	0836	1017		X		X	X		X	X	X	3836	113319	E002.6	122703	E169.2
3836A	A	1021	1203		X		X	X		X	X	X	3837	132050	W024.3	141434	E142.3
3837A	A	1207	1349		X		X	X		X	X	X	3838	150820	W051.1	160204	E115.4
3838A	A	1353	1536		X		X	X	X	X	X	X	3839	165550	W078.0	174935	E088.6
3839A	A	1540	1717		X		X		X	X	X	X	3840	184321	W104.9	193705	E061.7
3840A	A	1721	1904		X		X		X	X	X	X	3841	203051	W131.7	212436	E034.8
3841A	A	1908	2047		X		X		X	X	X	X	3842	221622	W158.6	231206	E007.9
3842A	A	2051	2236		X		X		X	X	X	X					
38430	B	2232	2336				X		X	X	X	X					

TABLE 2-2
DATA AVAILABILITY ON-OFF TIMES
25 MARCH 1976

INT ORBIT AND STDN	HDRS	HDRSS TIME ON HRMN	HDRSS TIME OFF HRMN	LRIR	THIR	TDRE	SCAM	ESMR	ERB	PMR	TWRL	HIRS	DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
3843O	A	2337	0135				X		X	X	X	X	3843	000552	E174.5	005936	W018.9
3844O	A	0142	0323				X		X	X	X	X	3844	015323	E147.6	024707	W045.8
3845E	B	0327	0413		X		X		X	X	X	X	3845	034053	E120.7	043437	W072.7
3846E	A	0427	0606		X		X		X	X	X	X	3846	052823	E093.9	062208	W099.6
3847A	A	0410	0749		X		X		X	X	X	X	3847	071554	E067.0	080938	W126.5
3848A	A	0754	0934		X		X		X	X	X	X	3848	090324	E040.1	095709	W153.3
3849A	A	0938	1122		X		X		X	X	X	X	3849	105055	E013.2	114439	E179.8
3850A	A	1127	1307		X		X		X	X	X	X	3850	123825	W013.6	133209	E152.9
3851A	A	1312	1454	X	X		X		X	X	X	X	3851	142556	W040.5	151933	E126.1
3852A	A	1458	1636	X	X		X		X	X	X	X	3852	161326	W067.4	170710	E099.2
3853A	A	1640	1821		X		X		X	X	X	X	3853	180057	W094.3	185441	E072.3
3854A	A	1825	2008		X		X		X	X	X	X	3854	194827	W121.2	204211	E045.4
3855A	A	2012	2152		X		X		X	X	X	X	3855	213557	W148.0	222942	E018.5
3856A	A	2156	2340		X		X		X	X	X	X	3856	232328	W174.9	001712	W008.4

TABLE 2-2
DATA AVAILABILITY ON-OFF TIMES
26 MARCH 1976

INT ORBIT AND STDN	HDRS	HDRSS TIME ON HRMN	HDRSS TIME OFF HRMN	LRIR	THIR	TDRE	SCAM	ESMR	ERB	PMR	TWRL	HIRS	DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
3858E	A	0034	0233		X		X		X	X	X	X	3857	011058	E158.2	020443	W035.2
3859E	B	0233	0337		X		X		X	X	X	X	3858	025829	E131.3	035213	W062.1
3859E	A	0344	0525		X		X		X	X	X	X	3859	044559	E104.5	053943	W089.0
3860E	A	0531	0712		X		X		X	X	X	X	3860	063330	E077.6	072714	W115.8
3861A	A	0717	0852		X		X		X	X	X	X	3861	082100	E050.7	091444	W142.7
3862A	A	0857	1041		X		X		X	X	X	X	3862	100831	E023.8	110215	W169.6
3863A	A	1045	1225		X		X		X	X	X	X	3863	115601	W003.1	124945	E163.5
3864A	A	1229	1410		X		X		X	X	X	X	3864	134332	W029.9	143716	E136.6
3865A	A	1415	1558		X		X		X	X	X	X	3865	153102	W056.8	162446	E109.8
3866A	A	1603	1740		X		X	X		X	X	X	3866	171832	W083.7	181217	E082.9
3867A	A	1744	1928		X		X	X		X	X	X	3867	190603	W110.6	195947	E056.0
3868A	A	1932	2111		X		X	X		X	X	X	3868	205333	W137.4	214718	E029.2
3869A	A	2116	2257		X		X	X		X	X	X	3869	224104	W164.3	233448	E002.3
38700	B	2254	2358				X	X		X	X	X					

TABLE 2-2
DATA AVAILABILITY ON-OFF TIMES
27 MARCH 1976

INT ORBIT AND STDN	H D R S	HDRSS TIME ON HRMN	OFF HRMN	L R I R	T H I R	T D R E	S C A M	E S M R	E R B	P M R	T W R L	H I R S	DATA ORBIT	ASCENDING NODE TIME HRMNSS	LONG DEGREE	DESCENDING NODE TIME HRMNSS	LONG DEGREE
38700	A	2358	0146				X	X		X	X	X	3870	002834	E168.8	012219	W024.6
38710	A	0153	0349			X	X	X		X	X	X	3871	021605	E141.9	030949	W051.5
3872E	B	0349	0422		X		X	X		X	X	X	3872	040335	E115.1	045720	W078.4
3873E	A	0441	0630		X		X	X		X	X	X	3873	055106	E088.2	064450	W105.3
3874A	A	0634	0812		X		X	X		X	X	X	3874	073836	E061.3	083220	W132.1
3875A	A	0816	0959		X		X	X		X	X	X	3875	092607	E034.4	101951	W159.0
3876A	A	1003	1145		X		X	X		X	X	X	3876	111337	E007.6	120721	E174.1
3877A	A	1149	1331		X		X	X		X	X	X	3877	130108	W019.3	135452	E147.3
3878A	A	1335	1515		X		X	X		X	X	X	3878	144838	W046.2	154222	E120.4
3879A	A	1519	1658		X		X	X		X	X	X	3879	163609	W073.1	172953	E093.5
3880A	A	1702	1843		X		X	X		X	X	X	3880	182339	W100.0	191723	E066.6
3881A	A	1847	2028		X		X	X		X	X	X	3881	201110	W126.8	210454	E039.7
3882A	A	2033	2215		X		X	X		X	X	X	3882	215840	W153.7	225224	E012.9
38830	B	2212	2317				X	X		X	X	X	3883	234611	E179.4	003955	W014.0

TABLE 2-2
DATA AVAILABILITY ON-OFF TIMES
28 MARCH 1976

INT ORBIT AND STDN	H D R S	HDRSS TIME ON HRMN	OFF HRMN	L R I R	T H I R	T D R E	S C A M	E S M R	E R B	P M R	T W R L	H I R S	DATA ORBIT	ASCENDING NODE TIME HRMNSS	LONG DEGREE	DESCENDING NODE TIME HRMNSS	LONG DEGREE
38830	A	2317	0116				X	X		X	X	X	3884	013343	E152.5	022727	W040.9
38840	A	0123	0304				X	X		X	X	X	3885	032114	E125.7	041458	W067.8
3885E	B	0305	0402		X		X	X		X	X	X	3886	050844	E098.8	060228	W094.7
3886E	A	0401	0548		X		X	X		X	X	X	3887	065615	E071.9	074959	W121.5
3887A	A	0552	0729		X		X	X		X	X	X	3888	084345	E045.0	093729	W148.4
3888A	A	0733	0916		X		X	X		X	X	X	3889	103116	E018.1	112500	W175.3
3889A	A	0920	1103		X		X	X		X	X	X	3890	121846	E008.8	131231	E157.8
3890A	A	1108	1249		X		X	X		X	X	X	3891	140617	W035.6	150001	E130.9
3891A	A	1254	1436		X		X	X	X	X	X	X	3892	155348	W062.5	164732	E104.1
3892A	A	1440	1617		X		X		X	X	X	X	3893	174118	W089.4	183502	E077.2
3893A	A	1621	1802		X		X		X	X	X	X	3894	192848	W116.2	202233	E050.3
3894A	A	1806	1947		X		X		X	X	X	X	3895	211619	W143.1	221003	E023.5
3895A	A	1952	2134		X		X		X	X	X	X	3896	230349	W170.0	235734	W003.4
3896A	A	2138	2320		X		X		X	X	X	X					

TABLE 2-2
DATA AVAILABILITY ON-OFF TIMES
29 MARCH 1976

INT ORBIT AND STDN	HDRS	HDRSS TIME ON HRMN	HDRSS TIME OFF HRMN	LRIR	THIR	TDRE	SCAM	ESMR	ERB	PMR	TWRL	HIRS	DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
3896O	B	2318	0022				X		X	X	X	X	3897	005120	E163.1	014504	W030.3
3899E	A	0208	0414		X		X		X	X	X	X	3898	023851	E136.3	033235	W057.2
3899E	B	0412	0509		X		X		X	X	X	X	3899	042621	E109.4	052005	W084.1
3900E	A	0509	0652		X		X		X	X	X	X	3900	061352	E082.5	070736	W111.0
3901A	A	0656	0833		X		X		X	X	X	X	3901	080122	E055.6	085506	W137.8
3902A	A	0837	1020		X		X		X	X	X	X	3902	094853	E028.7	104237	W164.7
3903A	A	1024	1207		X		X		X	X	X	X	3903	113623	E001.8	123007	E168.4
3904A	A	1211	1352		X		X		X	X	X	X	3904	132354	W025.0	141738	E141.5
3905A	A	1356	1536		X		X		X	X	X	X	3905	151124	W051.9	160508	E114.7
3906A	A	1540	1721		X		X		X	X	X	X	3906	165855	W078.8	175239	E087.8
3907A	A	1725	1905		X		X		X	X	X	X	3907	184625	W105.7	194010	E060.9
3908A	A	1909	2051		X		X		X	X	X	X	3908	203356	W132.5	212740	E034.0
3909A	A	2055	2239		X		X		X	X	X	X	3909	222126	W159.4	231511	E007.2
3910O	B	2235	2339				X		X	X	X	X					

TABLE 2-2
DATA AVAILABILITY ON-OFF TIMES
30 MARCH 1976

INT ORBIT AND STDN	HDRS	HDRSS TIME ON HRMN	HDRSS TIME OFF HRMN	LRIR	THIR	TDRE	SCAM	ESMR	ERB	PMR	TWRL	HIRS	DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
3910O	A	2340	0138				X		X	X	X	X	3910	000857	E173.7	010241	W019.7
3911O	A	0145	0328				X		X	X	X	X	3911	015628	E146.8	025012	W046.6
3912E	B	0329	0420		X		X		X	X	X	X	3912	034358	E120.0	043742	W073.5
3913E	A	0424	0609		X		X		X	X	X	X	3913	053129	E093.1	062513	W100.4
3914A	A	0613	0751		X		X		X	X	X	X	3914	071859	E066.2	081243	W127.2
3915A	A	0755	0939		X		X		X	X	X	X	3915	090630	E039.3	100014	W154.1
3916A	A	0944	1124		X		X		X	X	X	X	3916	105400	E012.3	114745	E179.0
3917A	A	1128	1312		X		X		X	X	X	X	3917	124131	W014.5	133515	E152.1
3918A	A	1325	1459		X		X		X	X	X	X	3918	142901	W041.3	152246	E125.3
3919A	A	1503	1641		X		X	X		X	X	X	3919	161632	W068.2	171016	E098.4
3920A	A	1645	1825		X		X	X		X	X	X	3920	180403	W095.1	185747	E071.5
3921A	A	1829	2012		X		X	X		X	X	X	3921	195133	W121.9	204517	E044.6
3922A	A	2016	2157		X		X	X		X	X	X	3922	213904	W148.8	223248	E017.8
3923A	A	2221	2344		X		X	X		X		X	3923	232634	W175.7	002019	W009.1

TABLE 2-2
DATA AVAILABILITY ON-OFF TIMES
31 MARCH 1976

INT ORBIT AND STDN	HDRS	HDRSS TIME ON HRMN	HDRSS TIME OFF HRMN	LRIR	THIR	TDRE	SCAM	ESMR	ERB	PMR	TWRL	HIRS	DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
3923O	A	2349	0101				X	X		X	X	X	3924	011405	E157.4	020749	W036.0
3926E	B	0100	0158		X		X	X		X	X	X	3925	030135	E130.6	035520	W062.9
3925E	A	0158	0339		X		X	X		X	X	X	3926	044906	E103.7	054250	W089.8
3926E	A	0347	0528		X		X	X		X	X	X	3927	063637	E076.8	073021	W116.7
3927E	A	0532	0715		X		X	X		X	X	X	3928	082407	E049.9	091751	W143.5
3928A	A	0719	0857		X		X	X		X	X	X	3929	101138	E023.0	110522	W170.4
3929A	A	0901	1042		X		X	X		X	X	X	3930	115908	W003.9	125253	E162.7
3933E	A	1047	1249		X		X	X		X	X	X	3931	134639	W030.7	144023	E135.8
													3932	153410	W057.6	162754	E109.0
													3933	172140	W084.5	181524	E082.1
													3934	190911	W111.3	200255	E055.2
													3935	205641	W138.2	215026	E028.4
													3936	224412	W165.1	233756	E001.5

TABLE 2-2
DATA AVAILABILITY ON-OFF TIMES
01 APRIL 1976

INT ORBIT AND STDN	HDRS	HDRSS TIME ON HRMN	HDRSS TIME OFF HRMN	LRIR	THIR	TDRE	SCAM	ESMR	ERB	PMR	TWRL	HIRS	DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
3937O	B	2323	0017				X	X		X	X	X	3937	003143	E168.0	012527	W025.4
3937O	A	2322	0201				X	X		X	X	X	3938	021913	E141.1	031257	W052.3
3939E	B	0356	0444		X		X	X		X	X	X	3939	040644	E114.3	050028	W079.2
3940E	A	0446	0632		X		X	X		X	X	X	3940	055414	E087.4	064759	W106.1
3941A	A	0638	0814		X		X	X		X	X	X	3941	074145	E060.5	083529	W132.9
3942A	A	0818	1001		X		X	X		X	X	X	3942	092916	E033.6	102300	W159.8
3943A	A	1006	1146		X		X	X		X	X	X	3943	111646	E006.7	121030	E173.3
3944A	A	1150	1333		X		X	X		X	X	X	3944	130417	W020.1	135801	E146.4
3945A	A	1337	1519		X		X	X		X	X	X	3945	145147	W047.0	154532	E119.6
3946A	A	1523	1702		X	X	X		X	X	X	X	3946	163918	W073.9	173302	E092.7
3947A	A	1706	1846		X	X	X		X	X	X	X	3947	182649	W100.8	192033	E065.8
3948A	A	1850	2030		X	X	X		X	X	X	X	3948	201419	W127.7	210803	E038.9
3949A	A	2034	2219		X		X		X	X	X	X	3949	220150	W154.5	225534	E012.0
3950A	A	2223	0008		X		X		X	X	X	X	3950	234920	E178.6	004305	W014.8

TABLE 2-2
DATA AVAILABILITY ON-OFF TIMES
02 APRIL 1976

INT ORBIT AND STDN	HRS	HORSS TIME ON HRMN	HORSS TIME OFF HRMN	LRIR	THIR	TDRE	SCAM	ESMR	ERB	PMR	TWRL	HIRS	DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
3952E	A	0104	0301		X		X		X	X	X	X	3951	013651	E151.7	023035	W041.7
3952E	B	0302	0406		X		X		X	X	X	X	3952	032422	E124.9	041806	W068.6
3953E	A	0409	0551		X		X		X	X	X	X	3953	051152	E098.0	060537	W095.5
3954A	A	0556	0733		X		X		X	X	X	X	3954	065923	E071.1	075307	W122.3
3955A	A	0737	0920		X		X		X	X	X	X	3955	084654	E044.2	094038	W149.2
3956A	A	0924	1107		X		X		X	X	X	X	3956	103424	E017.3	112808	W176.1
3957A	A	1111	1251		X		X		X	X	X	X	3957	122155	W009.5	131539	E157.0
3958A	A	1255	1435		X		X		X	X	X	X	3958	140926	W036.4	150310	E130.2
3959A	A	1439	1620		X		X		X	X	X	X	3959	155656	W063.3	165040	E103.3
3960A	A	1624	1803		X		X		X	X	X	X	3960	174427	W090.2	183811	E076.4
3961A	A	1807	1948		X		X		X	X	X	X	3961	193157	W117.1	202542	E049.5
3962A	A	1952	2136		X		X		X	X	X	X	3962	211928	W143.9	221312	E022.6
3963A	A	2140	2324		X		X		X	X	X	X	3963	230659	W170.8	000043	W004.2

TABLE 2-2
DATA AVAILABILITY ON-OFF TIMES
03 APRIL 1976

INT ORBIT AND STDN	HRS	HORSS TIME ON HRMN	HORSS TIME OFF HRMN	LRIR	THIR	TDRE	SCAM	ESMR	ERB	PMR	TWRL	HIRS	DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
3963O	B	2321	0026				X		X	X	X	X	3964	005429	E162.3	014814	W031.1
3964O	A	0025	0223				X		X	X	X	X	3965	024200	E135.4	033544	W058.0
3966E	A	0232	0415		X		X		X	X	X	X	3966	042931	E108.5	052315	W084.9
3966E	B	0414	0512		X		X		X	X	X	X	3967	061701	E081.7	071045	W111.8
3967E	A	0516	0653		X		X		X	X	X	X	3968	080432	E054.8	085816	W138.6
3968A	A	0659	0837		X		X		X	X	X	X	3969	095203	E027.9	104547	W165.5
3969A	A	0841	1024		X		X		X	X	X	X	3970	113933	E001.1	123317	E167.6
3970A	A	1028	1210		X		X		X	X	X	X	3971	132704	W025.9	142048	E140.8
3971A	A	1214	1353		X		X		X	X	X	X	3972	151435	W052.7	160819	E113.9
3972A	A	1357	1540		X		X		X	X	X	X	3973	170205	W079.6	175549	E087.0
3973A	A	1544	1722		X		X	X		X	X	X	3974	184936	W106.5	194320	E060.1
3974A	A	1726	1907		X		X	X		X	X	X	3975	203707	W133.3	213051	E033.2
3975A	A	1911	2056		X		X	X		X	X	X	3976	222437	W160.2	231821	E006.4
3976A	A	2100	2240		X		X	X		X	X	X					
3977O	B	2238	2342				X	X		X	X	X					

TABLE 2-2
DATA AVAILABLITY ON-OFF TIMES
04 APRIL 1976

INT ORBIT AND STDN	HRS	TIME ON HRMN	TIME OFF HRMN	LRIR	THIR	TDRE	SCAMR	ESMR	ERB	PMR	TWRL	HIRS	DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
3977O	A	2342	0141				X	X		X	X	X	3977	001204	E172.9	010548	W020.5
3978O	A	0150	0328				X	X		X	X	X	3978	015934	E146.0	025319	W047.4
3979E	B	0330	0427		X		X	X		X	X	X	3979	034705	E119.2	044049	W074.3
3980E	A	0425	0613		X		X	X		X	X	X	3980	053436	E092.3	062820	W101.2
3981A	A	0618	0755		X		X	X		X	X	X	3981	072206	E065.4	081550	W128.0
3982A	A	0759	0942		X		X	X		X	X	X	3982	090937	E038.5	100321	W154.9
3983A	A	0947	1128		X		X	X		X	X	X	3983	105708	E011.6	115052	E178.2
3984A	A	1132	1312		X		X	X		X	X	X	3984	124438	W015.2	133822	E151.4
3985A	A	1316	1458		X		X	X		X	X	X	3985	143209	W042.1	152553	E124.5
3986A	A	1502	1641		X		X	X		X	X	X	3986	161940	W069.0	171324	E097.6
3987A	A	1645	1825		X		X	X		X	X	X	3987	180710	W095.9	190054	E070.7
3988A	A	1830	2010		X		X	X		X	X	X	3988	195441	W122.7	204825	E043.8
3989A	A	2014	2158		X		X	X		X	X	X	3989	214212	W149.6	223556	E017.0
3990A	A	2203	2346		X		X	X		X	X	X	3990	232942	W176.5	002326	W010.0

TABLE 2-2
DATA AVAILABILITY ON-OFF TIMES
05 APRIL 1976

INT ORBIT AND STDN	HRS	TIME ON HRMN	TIME OFF HRMN	LRIR	THIR	TDRE	SCAMR	ESMR	ERB	PMR	TWRL	HIRS	DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
3990O	B	2350	0047				X	X		X	X	X	3991	011713	E156.6	021057	W036.8
3991O	A	0050	0249				X	X		X	X	X	3992	030444	E129.8	035828	W063.7
3993E	A	0256	0441		X		X	X		X	X	X	3993	045214	E102.9	054558	W090.6
3993E	B	0440	0534		X		X	X		X	X	X	3994	063945	E076.0	073329	W117.4
3994E	A	0535	0716		X		X	X		X	X	X	3995	082716	E049.1	092100	W144.3
3995A	A	0720	0901		X		X	X		X	X	X	3996	101446	E022.2	110830	W171.2
3996A	A	0905	1047		X		X	X		X	X	X	3997	120217	W004.6	125601	E161.9
3997A	A	1052	1233		X		X	X		X	X	X	3998	134948	W031.5	144332	E135.0
3998A	A	1237	1420		X		X	X	X	X	X	X	3999	153719	W058.4	163103	E108.2
3999A	A	1425	1601		X		X		X	X	X	X	4000	172449	W085.3	181833	E081.3
4000A	A	1605	1744		X		X		X	X	X	X	4001	191220	W112.2	200604	E054.4
4001A	A	1748	1931		X		X		X	X	X	X	4002	205951	W139.0	215435	E027.5
4002A	A	1935	2118		X		X		X	X	X	X	4003	224721	W165.9	234105	E000.7
4003A	A	2122	2249		X		X		X	X	X	X					

TABLE 2-2
DATA AVAILABILITY ON-OFF TIMES
06 APRIL 1976

INT ORBIT AND STDN	HDRS	HDRSS TIME ON HRMN	OFF HRMN	LRIR	THIR	TDRE	SCAM	ESMR	ERB	PMR	TWRL	HIRS	DATA ORBIT	ASCENDING NODE TIME HRMNSS	LONG DEGREE	DESCENDING NODE TIME HRMNSS	LONG DEGREE
40040	A	2301	0005				X		X	X	X	X	4004	003452	E167.2	012836	W026.2
40040	B	0006	0204				X		X	X	X	X	4005	022223	E140.3	031607	W053.1
4006E	A	0212	0356		X		X		X	X	X	X	4006	040953	E113.4	050337	W080.0
4006E	B	0355	0452		X		X		X	X	X	X	4007	055724	E086.6	065108	W106.9
4007E	A	0453	0636		X		X		X	X	X	X	4008	074455	E059.7	083839	W133.7
4008A	A	0640	0817		X		X		X	X	X	X	4009	093225	E032.8	102609	W160.6
4009A	A	0821	1005		X		X		X	X	X	X	4010	111956	E006.0	121340	E172.5
4010A	A	1009	1150		X		X		X	X	X	X	4011	130727	W021.0	140111	E145.7
4011A	A	1154	1335		X		X		X	X	X	X	4012	145458	W047.8	154842	E118.7
4012A	A	1339	1523		X		X		X	X	X	X	4013	164228	W074.7	173612	E091.7
4013A	A	1527	1705		X		X		X	X	X	X	4014	182959	W101.6	192343	E065.0
4014A	A	1709	1848		X		X		X	X	X	X	4015	201730	W128.4	211114	E038.1
4015A	A	1852	2035		X		X		X	X	X	X	4016	220500	W155.3	225844	E011.3
4016A	A	2039	2221		X		X		X	X	X	X	4017	235231	E177.8	004615	W015.7
40170	B	2218	2321				X		X	X	X	X					

TABLE 2-2
DATA AVAILABILITY ON-OFF TIMES
07 APRIL 1976

INT ORBIT AND STDN	HDRS	HDRSS TIME ON HRMN	OFF HRMN	LRIR	THIR	TDRE	SCAM	ESMR	ERB	PMR	TWRL	HIRS	DATA ORBIT	ASCENDING NODE TIME HRMNSS	LONG DEGREE	DESCENDING NODE TIME HRMNSS	LONG DEGREE
40170	A	2322	0121				X		X	X	X	X	4018	014002	E150.9	023346	W042.5
40180	A	0125	0313				X		X	X	X	X	4019	032733	E124.1	042117	W069.4
4019E	B	0311	0406		X		X		X	X	X	X	4020	051503	E097.2	060847	W096.3
4020E	A	0406	0552		X		X		X	X	X	X	4021	070234	E070.3	075618	W123.2
4021A	A	0557	0736		X		X		X	X	X	X	4022	085005	E043.4	094349	W150.1
4022A	A	0740	0921		X		X		X	X	X	X	4023	103736	E016.5	113119	W176.9
4023A	A	0926	1107		X		X		X	X	X	X	4024	122506	W010.4	131850	E156.2
4024A	A	1111	1255		X		X		X	X	X	X	4025	141237	W037.2	150621	E129.3
4025A	A	1300	1444		X		X	X	X	X	X	X	4026	160008	W064.1	165352	E102.5
4026A	A	1448	1625		X		X	X		X	X		4027	174738	W091.0	184122	E075.6
4027A	A	1629	1808		X		X	X		X	X		4028	193509	W117.9	202853	E048.7
4028A	A	1812	1952		X		X	X		X	X		4029	212240	W144.8	221624	E021.8
4029A	A	1956	2140		X		X	X		X	X		4030	231011	W171.6	000355	W005.1
4030A	A	2144	2327		X		X	X		X	X						

TABLE 2-2
DATA AVAILABILITY ON-OFF TIMES
08 APRIL 1976

INT ORBIT AND STDN	H R S	HURSS TIME ON HRMN	HURSS TIME OFF HRMN	L R I R	T H I R	T D R E	S C A M	E S M R	E R B	P M R	T W R L	H I R S	DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
4030O	B	2325	0029				X	X		X	X		4031	005741	E161.5	015126	W031.9
4031O	A	0030	0225				X	X		X	X		4032	024512	E134.6	033856	W058.8
4033E	A	0236	0422		X		X	X		X	X		4033	043243	E107.7	052627	W085.7
4033E	B	0420	0518		X		X	X		X	X		4034	062014	E080.9	071358	W112.6
4034E	A	0515	0656		X		X	X		X	X		4035	080744	E054.0	090128	W139.5
4035A	A	0701	0840		X		X	X		X	X		4036	095515	E027.1	104859	W166.3
4036A	A	0845	1027		X		X	X		X	X		4037	114246	E000.2	123630	E166.8
4037A	A	1031	1214		X		X	X		X	X		4038	133017	W026.7	142401	E139.9
4038A	A	1218	1357		X		X	X		X	X		4039	151747	W053.5	161131	E113.0
4039A	A	1421	1541		X		X	X		X	X		4040	170518	W080.4	175902	E086.2
4040A	A	1545	1725		X		X	X		X	X		4041	185249	W107.3	194633	E059.3
4041A	A	1729	1911		X		X	X		X	X		4042	204020	W134.2	213404	E032.4
4042A	A	1915	2102		X		X	X		X	X		4043	222750	W161.1	232134	E005.5
4043A	A	2106	2245		X		X	X		X	X						

TABLE 2-2
DATA AVAILABILITY ON-OFF TIMES
09 APRIL 1976

INT ORBIT AND STDN	H R S	HURSS TIME ON HRMN	HURSS TIME OFF HRMN	L R I R	T H I R	T D R E	S C A M	E S M R	E R B	P M R	T W R L	H I R S	DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
4046E	A	0124	0322		X		X	X		X	X		4044	001521	E172.1	010905	W021.4
4047E	A	0439	0615		X		X	X		X	X		4045	020252	E145.2	025636	W048.2
4048A	A	0619	0759		X		X	X		X	X		4046	035023	E118.3	044407	W075.1
4049A	A	0803	0945		X		X	X		X	X		4047	053754	E091.4	063137	W101.9
4050A	A	0949	1130		X		X	X		X	X		4048	072524	E064.6	081908	W128.9
4051A	A	1135	1315		X		X	X		X	X		4049	091255	E037.7	100639	W155.8
4052A	A	1320	1504		X		X	X		X	X		4050	110026	E010.8	115410	E177.4
4053A	A	1508	1646		X		X	X	X	X	X		4051	124757	W016.1	134140	E150.5
4054A	A	1650	1830		X		X		X	X	X		4052	143527	W043.0	152911	E123.6
4055A	A	1834	2014		X		X		X	X	X		4053	162258	W069.8	171642	E096.7
4056A	A	2019	2202		X		X		X	X	X		4054	181029	W096.7	190413	E069.9
4057O	B	2159	2304				X		X	X	X		4055	195800	W123.6	205144	E043.0
													4056	214531	W150.5	223914	E016.1
													4057	233301	W177.4	002645	W010.8

TABLE 2-2
DATA AVAILABILITY ON-OFF TIMES
10 APRIL 1976

INT ORBIT AND STDN	HDRS	HDRSS TIME ON HRMN	HDRSS TIME OFF HRMN	LRIR	THIR	TDRE	SCAM	ESMR	ERB	PMR	TWRL	HIRS	DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
4057O	A	2304	0102				X		X	X	X		4058	012032	E155.8	021416	W037.7
4058O	A	0111	0254				X		X	X	X		4059	030803	E128.9	040147	W064.5
4059E	B	0253	0347		X		X		X	X	X		4060	045534	E102.0	054917	W091.4
4060E	A	0348	0533		X		X		X	X	X		4061	064304	E075.1	073648	W118.3
4061A	A	0538	0716		X		X		X	X	X		4062	083035	E048.3	092419	W145.2
4062A	A	0720	0902		X		X		X	X	X		4063	101806	E021.4	111150	W172.1
4063A	A	0907	1048		X		X		X	X	X		4064	120537	W005.5	125921	E161.1
4064A	A	1053	1234		X		X		X	X	X		4065	135308	W032.4	144651	E134.2
4065A	A	1238	1421		X		X		X	X	X		4066	154038	W059.3	163422	E107.3
4066A	A	1425	1604		X		X		X	X	X		4067	172809	W086.1	182153	E080.4
4067A	A	1608	1748		X		X		X	X	X		4068	191540	W113.0	200924	E053.6
4068A	A	1752	1933		X		X		X	X	X		4069	210311	W139.9	215655	E026.7
4069A	A	1938	2121		X		X		X	X	X		4070	225042	W166.8	234425	W000.2
4070A	A	2125	2308		X		X		X	X	X						

TABLE 2-2
DATA AVAILABILITY ON-OFF TIMES
11 APRIL 1976

INT ORBIT AND STDN	HDRS	HDRSS TIME ON HRMN	HDRSS TIME OFF HRMN	LRIR	THIR	TDRE	SCAM	ESMR	ERB	PMR	TWRL	HIRS	DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
4070O	B	2304	0009				X		X	X	X		4071	003813	E166.4	013157	W027.1
4071O	A	0009	0208				X		X	X	X		4072	022544	E139.5	031928	W054.0
4073E	A	0217	0400		X		X		X	X	X		4073	041315	E112.6	050659	W080.8
4073E	B	0358	0456		X		X		X	X	X		4074	060046	E085.7	065430	W107.7
4074E	A	0457	0635		X		X		X	X	X		4075	074817	E058.8	084200	W134.6
4075A	A	0639	0821		X		X		X	X	X		4076	093547	E032.0	102931	W161.5
4076A	A	0825	1007		X		X		X	X	X		4077	112318	E005.1	121702	E171.6
4077A	A	1012	1152		X		X		X	X	X		4078	131049	W021.8	140433	E144.8
4078A	A	1156	1338		X		X		X	X	X		4079	145820	W048.7	155204	E117.9
4079A	A	1342	1525		X		X	X	X	X	X		4080	164551	W075.6	173934	E091.0
4080A	A	1530	1708		X		X	X		X	X		4081	183322	W102.4	192705	E064.1
4081A	A	1712	1852		X		X	X		X	X		4082	202052	W129.3	211436	E037.3
4082A	A	1856	2038		X		X	X		X	X		4083	220823	W156.2	230207	E010.4
4083A	A	2042	2226		X		X	X		X	X		4084	235554	E176.9	004938	W016.5
4084O	B	2221	2326				X	X		X	X						

TABLE 2-2
DATA AVAILABILITY ON-OFF TIMES
12 APRIL 1976

INT ORBIT AND STDN	HDRS	HDRSS TIME ON HRMN	HDRSS TIME OFF HRMN	LRIR	THIR	TDRE	SCAMR	ESMR	ERB	PMR	TWRL	HIRS	DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
4084O	A	2326	0125				X	X		X	X		4085	014325	E150.1	023709	W043.4
4085O	A	0134	0317				X	X		X	X		4086	033056	E123.2	042439	W070.3
4087E	A	0410	0556		X		X	X		X	X		4087	051827	E096.3	061210	W097.1
4088A	A	0601	0739		X		X	X		X	X		4088	070557	E069.4	075941	W124.0
4089A	A	0743	0927		X		X	X		X	X		4089	085328	E042.5	094712	W150.9
4090A	A	0932	1112		X		X	X		X	X		4090	104059	E015.7	113443	W177.8
4091A	A	1116	1257		X		X	X		X	X		4091	122830	W011.2	132214	E155.4
4092A	A	1302	1439		X		X	X		X	X		4092	141601	W038.1	150944	E128.5
4093A	A	1443	1626		X		X	X		X	X		4093	160332	W065.0	165715	E101.6
4094A	A	1630	1812		X		X	X		X	X		4094	175103	W091.9	184446	E074.7
4095A	A	1816	1956		X		X	X		X	X		4095	193833	W118.7	203217	E047.8
4096A	A	2000	2140		X		X	X		X	X		4096	212604	W145.6	221949	E021.0
4097A	A	2144	2331		X		X	X		X	X		4097	231335	W172.5	000719	W005.9

TABLE 2-2
DATA AVAILABILITY ON-OFF TIMES
13 APRIL 1976

INT ORBIT AND STDN	HDRS	HDRSS TIME ON HRMN	HDRSS TIME OFF HRMN	LRIR	THIR	TDRE	SCAMR	ESMR	ERB	PMR	TWRL	HIRS	DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
4097O	B	2328	0033				X	X		X	X		4098	010106	E160.6	015450	W032.8
4098O	A	0032	0231				X	X		X	X		4099	024837	E133.8	034220	W059.7
4100E	A	0240	0422		X		X	X		X	X		4100	043608	E106.9	052951	W086.6
4100E	B	0421	0513		X		X	X		X	X		4101	062339	E080.0	071722	W113.4
4101E	A	0518	0701		X		X	X		X	X		4102	081109	E053.1	090453	W140.3
4102A	A	0705	0844		X		X	X		X	X		4103	095840	E026.2	105224	W167.2
4103A	A	0848	1026		X		X	X		X	X		4104	114611	W000.6	123955	E165.9
4104A	A	1030	1214		X		X	X		X	X		4105	133342	W027.5	142726	E139.1
4105A	A	1218	1402		X		X	X		X	X		4106	152113	W054.4	161456	E112.1
4106A	A	1406	1547		X		X	X		X	X		4107	170844	W081.3	180227	E085.3
4107A	A	1552	1730		X		X	X		X	X		4108	185615	W108.2	194958	E058.4
4108A	A	1734	1913		X		X		X	X	X		4109	204345	W135.1	213729	E031.5
4109A	A	1917	2101		X		X		X	X	X		4110	223116	W161.9	232500	E004.7
4110A	A	2105	2250		X		X		X	X	X						
4111O	B	2245	2349				X		X	X	X						

TABLE 2-2
DATA AVAILABILITY ON-OFF TIMES
14 APRIL 1976

INT ORBIT AND STDN	HDRS	HDRSS TIME ON HRMN	HDRSS TIME OFF HRMN	LRIR	THIR	TDRE	SCAM	ESMR	ERB	PMR	TWRL	HIRS	DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
4111O	A	2350	0148				X		X	X	X		4111	001847	E171.2	011231	W022.3
4112O	A	0156	0339				X		X	X	X		4112	020618	E144.3	030002	W049.1
4113E	B	0340	0430		X		X		X	X	X		4113	035349	E117.4	044733	W076.0
4114E	A	0431	0618		X		X		X	X	X		4114	054120	E090.5	063503	W102.9
4115A	A	0622	0801		X		X		X	X	X		4115	072851	E063.7	082234	W129.8
4116A	A	0805	0947		X		X		X	X	X		4116	091622	E036.8	101005	W156.6
4117A	A	0952	1133		X		X		X	X	X		4117	110353	E009.9	115736	E176.5
4118A	A	1137	1321		X		X		X	X	X		4118	125123	W017.0	134507	E149.6
4119A	A	1325	1505		X		X		X	X	X		4119	143854	W043.6	153238	E122.7
4120A	A	1509	1649		X		X		X	X	X		4120	162625	W070.7	172009	E095.9
4121A	A	1653	1832		X		X		X	X	X		4121	181356	W097.6	190740	E069.0
4122A	A	1836	2019		X		X		X	X	X		4122	200127	W124.5	205511	E042.1
4123A	A	2024	2206		X		X		X	X	X		4123	214858	W151.4	224241	E015.2
4124O	B	2202	2307				X		X	X	X		4124	233629	W178.2	003012	W011.7

TABLE 2-2
DATA AVAILABILITY ON-OFF TIMES
15 APRIL 1976

INT ORBIT AND STDN	HDRS	HDRSS TIME ON HRMN	HDRSS TIME OFF HRMN	LRIR	THIR	TDRE	SCAM	ESMR	ERB	PMR	TWRL	HIRS	DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
4124O	A	2306	0105				X		X	X	X		4125	012400	E154.9	021743	W038.5
4125O	A	0114	0256				X		X	X	X		4126	031131	E128.0	040514	W065.4
4126E	B	0256	0338		X		X		X	X	X		4127	045902	E101.1	055245	W092.3
4127E	A	0350	0537		X		X		X	X	X		4128	064632	E074.3	074016	W119.2
4129A	B	0558	0702		X		X		X	X	X		4129	083403	E047.4	092747	W146.1
4129A	A	0702	0902		X		X		X	X	X		4130	102134	E020.5	111518	W172.9
4130A	A	0911	1049		X		X		X	X	X		4131	120905	W006.4	130249	E160.2
4131A	A	1053	1238		X		X		X	X	X		4132	135636	W033.3	145020	E133.3
4132A	A	1242	1420		X		X		X	X	X		4133	154407	W060.1	163750	E106.4
4133A	A	1425	1605		X		X	X		X	X		4134	173138	W087.0	182521	E079.6
4134A	A	1609	1753		X	X	X	X		X	X		4135	191909	W113.9	201252	E052.7
4135A	A	1757	1934		X	X	X	X		X			4136	210640	W140.8	220028	E025.8
4136A	A	1938	2121		X	X	X	X		X	X		4137	225411	W167.7	234754	W001.1
4137A	A	2125	2312		X	X	X	X		X	X						

TABLE 2-2
DATA AVAILABILITY ON-OFF TIMES
16 APRIL 1976

INT ORBIT AND STDN	HDRS	HDRSS TIME ON HRMN	HDRSS TIME OFF HRMN	LRIR	THIR	TDRE	SCAM	ESMR	ERB	PMR	TWRL	HIRS	DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
4140E	A	0151	0350		X		X	X		X	X		4138	004142	E165.5	013525	W028.0
4140E	B	0350	0454		X		X	X		X	X		4139	022913	E138.6	032056	W054.8
4141E	A	0500	0642		X		X	X		X	X		4140	041644	E111.7	051027	W081.7
4142A	A	0647	0825		X		X	X		X	X		4141	060414	E084.8	065758	W103.6
4143A	A	0829	1012		X		X	X		X	X		4142	075145	E057.9	084529	W135.5
4144A	A	1016	1158		X		X	X		X	X		4143	093916	E031.1	103300	W162.4
4145A	A	1202	1342		X		X	X		X	X		4144	112647	E004.2	122031	E170.7
4146A	A	1346	1528		X		X	X		X	X		4145	131418	W022.7	140802	E143.9
4147A	A	1532	1710		X		X	X		X	X		4146	150149	W049.6	155532	E117.0
4148A	A	1714	1855		X		X	X		X	X		4147	164920	W076.5	174303	E090.1
4149A	A	1859	2043		X		X	X		X	X		4148	183651	W103.3	193034	E063.2
4150A	A	2048	2228		X		X	X		X	X		4149	202422	W130.2	211805	E036.4
4151O	B	2225	2329				X	X		X	X		4150	221153	W157.1	230536	E009.5
													4151	235924	E176.0	005307	W017.4

TABLE 2-2
DATA AVAILABILITY ON-OFF TIMES
17 APRIL 1976

INT ORBIT AND STDN	HDRS	HDRSS TIME ON HRMN	HDRSS TIME OFF HRMN	LRIR	THIR	TDRE	SCAM	ESMR	ERB	PMR	TWRL	HIRS	DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
4151O	A	2330	0228				X	X		X	X		4152	014655	E149.2	024038	W044.3
4152O	A	0136	0319				X	X		X	X		4153	033426	E122.3	042809	W071.2
4154E	B	0319	0416		X		X	X		X	X		4154	052157	E095.4	061540	W098.0
4154E	A	0422	0558		X		X	X		X	X		4155	070928	E068.5	080311	W124.9
4155A	A	0603	0744		X		X	X		X	X		4156	085659	E041.6	095042	W151.8
4156A	A	0749	0929		X		X	X		X	X		4157	104430	E014.8	113813	W178.7
4157A	A	0934	1118		X		X	X		X	X		4158	123201	W012.1	132544	E154.5
4158A	A	1122	1303		X		X	X		X	X		4159	141932	W039.0	151315	E127.6
4159A	A	1307	1447		X		X	X		X	X		4160	160702	W065.9	170046	E100.7
4160A	A	1452	1632		X		X		X	X	X		4161	175433	W092.8	184817	E073.8
4161A	A	1636	1815		X		X		X	X	X		4162	194204	W119.7	203548	E046.9
4162A	A	1819	2000		X		X		X	X	X		4163	212935	W146.5	222819	E020.1
4163A	A	2004	2150		X		X		X	X	X		4164	231706	W173.4	001050	W006.8
4164A	A	2155	2334		X		X		X	X	X						

TABLE 2-2
DATA AVAILABILITY ON-OFF TIMES
18 APRIL 1976

INT ORBIT AND STDN	HDRS	HDRSS TIME ON HRMN	HDRSS TIME OFF HRMN	LRIR	THIR	TDRE	SCAM	ESMR	ERB	PMR	TWRL	HIRS	DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
4164O	B	2332	0036				X		X	X	X		4165	010436	E159.7	015819	W033.7
4165O	A	0037	0235				X		X	X	X		4166	025207	E132.8	034550	W060.6
4167E	A	0243	0412		X		X		X	X	X		4167	043938	E105.9	053321	W087.5
4167E	B	0411	0515		X		X		X	X	X		4168	062709	E079.1	072052	W114.4
4168E	A	0521	0706		X		X		X	X	X		4169	081440	E052.2	090823	W141.3
4169A	A	0711	0846		X		X		X	X	X		4170	100211	E025.3	105554	W168.1
4170A	A	1033	0850		X		X		X	X	X		4171	114942	W001.6	124325	E165.0
4171A	A	1037	1219		X		X		X	X	X		4172	133713	W028.5	143056	E138.1
4172A	A	1223	1405		X		X		X	X	X		4173	152444	W055.3	161827	E111.2
4173A	A	1409	1551		X		X		X	X	X		4174	171215	W082.2	180558	E084.4
4174A	A	1556	1733		X		X		X	X	X		4175	185946	W109.1	195329	E057.5
4175A	A	1737	1917		X		X		X	X	X		4176	204717	W136.0	214100	E030.6
4176A	A	1921	2106		X		X		X	X	X		4177	223448	W162.9	232831	E003.7
4177A	A	2110	2250		X		X		X	X	X						
4178O	B	2248	2352				X		X	X	X						

TABLE 2-2
DATA AVAILABILITY ON-OFF TIMES
19 APRIL 1976

INT ORBIT AND STDN	HDRS	HDRSS TIME ON HRMN	HDRSS TIME OFF HRMN	LRIR	THIR	TDRE	SCAM	ESMR	ERB	PMR	TWRL	HIRS	DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
4178O	A	2348	0151			X		X		X	X		4178	002219	E170.3	011602	W023.2
4179O	A	0159	0342				X		X	X	X		4179	020950	E143.4	030333	W050.1
4180E	B	0341	0438		X		X		X	X	X		4180	035721	E116.5	045104	W076.9
4181E	A	0437	0622		X		X		X	X	X		4181	054452	E089.6	063835	W103.8
4182A	A	0626	0806		X		X		X	X	X		4182	073223	E062.7	082606	W130.7
4183A	A	0810	0952		X		X		X	X	X		4183	091954	E035.9	101337	W157.6
4184A	A	0956	1139		X		X		X	X	X		4184	110725	E009.0	120108	E175.6
4185A	A	1143	1325		X		X		X	X	X		4185	125456	W017.9	134839	E148.7
4186A	A	1329	1511		X		X		X	X	X		4186	144227	W044.8	153610	E121.8
4187A	A	1515	1652		X		X	X		X	X		4187	162958	W071.7	172341	E094.9
4188A	A	1656	1837		X		X	X		X	X		4188	181729	W098.5	191112	E068.0
4189A	A	1841	2022		X		X	X		X	X		4189	200500	W125.4	205843	E041.2
4190A	A	2027	2208		X		X	X		X	X		4190	215231	W152.3	224614	E014.3
4191O	B	2145	2309			X	X	X		X	X		4191	234002	W179.2	003345	W012.6

TABLE 2-2
DATA AVAILABILITY ON-OFF TIMES
20 APRIL 1976

INT ORBIT AND STDN	HDRS	HDRSS TIME ON HRMN	HDRSS TIME OFF HRMN	LRIR	THIR	TDRE	SCAM	ESMR	ERB	PMMR	TWRL	HIRS	DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
4191O	A	2310	0109				X	X		X	X		4192	012733	E154.0	022116	W039.5
4192O	A	0118	0300				X	X		X	X		4193	031504	E127.1	040847	W066.4
4193E	B	0300	0354		X		X	X		X	X		4194	050235	E100.2	055618	W093.2
4194E	A	0355	0540		X		X	X		X	X		4195	065006	E073.3	074349	W120.1
4195A	A	0545	0722		X		X	X		X	X		4196	083737	E046.4	093120	W147.0
4196A	A	0727	0910		X		X	X		X	X		4197	102508	E019.6	111851	W173.9
4197A	A	0914	1056		X		X	X		X	X		4198	121239	W007.3	130622	E159.2
4198A	A	1100	1242		X		X	X		X	X		4199	140010	W034.2	145353	E132.4
4199A	A	1246	1427		X		X	X		X	X		4200	154741	W061.1	164124	E105.5
4200A	A	1431	1610		X		X	X		X	X		4201	173512	W088.0	182855	E078.6
4201A	A	1614	1755		X		X	X		X	X		4202	192243	W114.9	201626	E051.7
4202A	A	1759	1940		X		X	X		X	X		4203	211014	W141.7	220357	E024.9
4203A	A	1944	2126		X		X	X		X	X		4204	225745	W168.6	235128	W002.0

TABLE 2-2
DATA AVAILABILITY ON-OFF TIMES
21 APRIL 1976

INT ORBIT AND STDN	HDRS	HDRSS TIME ON HRMN	HDRSS TIME OFF HRMN	LRIR	THIR	TDRE	SCAM	ESMR	ERB	PMMR	TWRL	HIRS	DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
4204O	B	2312	0016				X	X		X	X		4205	004516	E164.5	013859	W028.9
4205O	A	0016	0215				X	X		X	X		4206	023247	E137.6	032630	W055.8
4207E	A	0223	0408		X		X	X		X	X		4207	042018	E110.8	051401	W082.7
4207E	B	0406	0502		X		X	X		X	X		4208	060749	E083.9	070132	W109.6
4208E	A	0503	0646		X		X	X		X	X		4209	075520	E057.0	084903	W136.4
4209A	A	0650	0827		X		X	X		X	X		4210	094251	E030.1	103634	W163.3
4210A	A	0831	1013		X		X	X		X	X		4211	113022	E003.2	122405	E169.8
4211A	A	1017	1200		X		X	X		X	X		4212	131753	W023.6	141136	E142.9
4212A	A	1205	1345		X		X	X		X	X		4213	150524	W050.5	155907	E116.1
4213A	A	1349	1529		X		X	X		X	X		4214	165255	W077.4	174638	E089.2
4214A	A	1533	1714		X		X		X	X	X		4215	184027	W104.3	193409	E062.3
4215A	A	1719	1858		X		X		X	X	X		4216	202758	W131.2	212140	E035.4
4216A	A	1902	2045		X		X		X	X	X		4217	221529	W158.0	230911	E008.5
4217A	A	2049	2233		X		X		X	X	X						
4218O	B	2229	2333				X		X	X	X						

TABLE 2-2
DATA AVAILABILITY ON-OFF TIMES
22 APRIL 1976

INT ORBIT AND STDN	HDRS	HDRSS TIME ON HRMN	HDRSS TIME OFF HRMN	LRIR	THIR	TDRE	SCAM	ESMR	ERB	PMR	TWRL	HIRS	DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
4218O	A	2334	0132				X		X	X	X		4218	000300	E175.1	005642	W018.4
4219O	A	0139	0323				X		X	X	X		4219	015031	E148.2	024413	W045.2
4220E	B	0323	0418		X		X		X	X	X		4220	033802	E121.3	043145	W072.1
4221E	A	0417	0605		X		X		X	X	X		4221	052533	E094.4	061916	W099.0
4222A	A	0609	0745		X		X		X	X	X		4222	071304	E067.6	080647	W125.9
4223A	A	0749	0933		X		X		X	X	X		4223	090035	E040.7	095418	W152.8
4224A	A	0937	1120		X		X		X	X	X		4224	104806	E013.8	114149	W179.6
4225A	A	1124	1305		X		X		X	X	X		4225	123537	W013.1	132920	E153.5
4226A	A	1309	1450		X		X		X	X	X		4226	142308	W040.0	151651	E126.6
4227A	A	1454	1634		X	X	X		X	X	X		4227	161039	W066.8	170422	E099.7
4228A	A	1638	1818		X	X	X		X	X	X		4228	175810	W093.7	185153	E072.9
4229A	A	1823	2003		X	X	X		X	X	X		4229	194541	W120.6	203924	E046.0
4230A	A	2008	2151		X	X	X		X	X	X		4230	213313	W147.5	222655	E019.1
4231A	A	2156	2341		X		X		X	X	X		4231	232044	W174.4	001426	W007.8

TABLE 2-2
DATA AVAILABILITY ON-OFF TIMES
23 APRIL 1976

INT ORBIT AND STDN	HDRS	HDRSS TIME ON HRMN	HDRSS TIME OFF HRMN	LRIR	THIR	TDRE	SCAM	ESMR	ERB	PMR	TWRL	HIRS	DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
4234E	A	0221	0419		X		X		X	X	X		4232	010815	E158.8	020157	W034.7
4234E	B	0420	0524		X		X		X	X	X		4233	025546	E131.9	034928	W061.5
4235E	A	0526	0709		X		X		X	X	X		4234	044317	E105.0	053659	W088.4
4236A	A	0714	0852		X		X		X	X	X		4235	063048	E078.1	072431	W115.3
4237A	A	0856	1038		X		X		X	X	X		4236	081819	E051.2	091202	W142.2
4238A	A	1042	1224		X		X		X	X	X		4237	100550	E024.4	105933	W169.1
4239A	A	1228	1408		X		X		X	X	X		4238	115321	W002.5	124704	E164.1
4240A	A	1413	1555		X		X		X	X	X		4239	134052	W029.4	143435	E137.2
4241A	A	1559	1735		X		X	X		X	X		4240	152823	W056.3	162206	E110.3
4242A	A	1739	1920		X		X	X		X	X		4241	171554	W083.2	180937	E083.4
4243A	A	1925	2107		X		X	X		X	X		4242	190326	W110.0	195708	E056.5
4244A	A	2112	2254		X		X	X		X	X		4243	205057	W136.9	214439	E029.7
42450	B	2252	2357				X	X		X	X		4244	223828	W163.8	233210	E002.8

TABLE 2-2
DATA AVAILABILITY ON-OFF TIMES
24 APRIL 1976

INT ORBIT AND STDN	HRS	HDRSS TIME ON HRMN	HDRSS TIME OFF HRMN	LRIR	THIR	TDRE	SCAM	ESMR	ERB	PMMR	TWRL	HIRS	DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
4245O	A	2357	0156				X	X		X	X		4245	002559	E169.3	011941	W024.1
4246O	A	0203	0346				X	X		X	X		4246	021330	E142.5	030712	W051.0
4247E	B	0345	0438		X		X	X		X	X		4247	040101	E115.6	045444	W077.9
4248E	A	0438	0627		X		X	X		X	X		4248	054832	E088.7	064215	W104.7
4249A	A	0632	0810		X		X	X		X	X		4249	073603	E061.8	082946	W131.6
4250A	A	0814	0955		X		X	X		X	X		4250	092334	E034.9	101717	W158.5
4251A	A	0959	1142		X		X	X		X	X		4251	111106	E008.1	120448	E174.6
4252A	A	1146	1326		X		X	X		X	X		4252	125837	W018.8	135219	E147.7
4253A	A	1330	1512		X		X	X		X	X		4253	144608	W045.7	153950	E120.9
4254A	A	1517	1656		X		X	X		X	X		4254	163339	W072.6	172721	E094.0
4255A	A	1701	1840		X		X	X		X	X		4255	182110	W099.5	191452	E067.1
4256A	A	1844	2025		X		X	X		X	X		4256	200841	W126.4	210224	E040.2
4257A	A	2029	2212		X		X	X		X	X		4257	215612	W153.2	224955	E013.3
4258O	B	2209	2313				X	X		X	X		4258	234343	E179.9	003726	W013.5

TABLE 2-2
DATA AVAILABILITY ON-OFF TIMES
25 APRIL 1976

INT ORBIT AND STDN	HRS	HDRSS TIME ON HRMN	HDRSS TIME OFF HRMN	LRIR	THIR	TDRE	SCAM	ESMR	ERB	PMMR	TWRL	HIRS	DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
4258O	A	2314	0104				X	X		X	X		4259	013117	E153.0	022459	W040.4
4259O	A	0122	0304				X	X		X	X		4260	031848	E126.1	041231	W067.3
4260E	B	0302	0356		X		X	X		X	X		4261	050619	E099.2	060002	W094.2
4261E	A	0357	0545		X		X	X		X	X		4262	065350	E072.4	074733	W121.1
4262A	A	0549	0727		X		X	X		X	X		4263	084122	E045.5	093504	W148.0
4263A	A	0731	0913		X		X	X		X	X		4264	102853	E018.6	112235	W174.8
4264A	A	0917	1058		X		X	X		X	X		4265	121624	W008.3	131006	E158.3
4265A	A	1102	1247		X		X	X		X	X		4266	140355	W035.2	145737	E131.4
4266A	A	1251	1435		X		X	X		X	X		4267	155126	W062.0	164509	E104.5
4267A	A	1439	1614		X		X		X	X	X		4268	173857	W088.9	183240	E077.7
4268A	A	1618	1759		X		X		X	X	X		4269	192629	W115.8	202011	E050.8
4269A	A	1803	1943		X		X		X	X	X		4270	211400	W142.7	220742	E023.9
4270A	A	1947	2133		X		X		X	X	X		4271	230131	W169.6	235513	W003.0
4271A	A	2137	2318		X		X		X	X	X						

TABLE 2-2
DATA AVAILABILITY ON-OFF TIMES
26 APRIL 1976

INT RBIT AND STDN	HDRS	HDRSS TIME ON HRMN	HDRSS TIME OFF HRMN	LRIR	THIR	TDRE	SCAM	ESMR	ERB	PMR	TWRL	HIRS	DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
4271O	B	2316	0019				X		X	X	X		4272	004902	E163.6	014244	W029.9
4272O	A	0020	0218				X		X	X	X		4273	023633	E136.7	033015	W056.8
4274E	A	0226	0410		X		X		X	X	X		4274	042404	E109.8	051747	W083.6
4274E	B	0408	0548		X		X		X	X	X		4275	061136	E082.9	070518	W110.5
4275E	A	0548	0651		X		X		X	X	X		4276	075907	E056.0	085249	W137.4
4276A	A	0656	0832		X		X		X	X	X		4277	094638	E029.2	104020	W164.3
4277A	A	0836	1019		X		X		X	X	X		4278	113409	E002.3	122751	E168.9
4278A	A	1023	1205		X		X		X	X	X		4279	132140	W024.6	141522	E142.0
4279A	A	1209	1348		X		X		X	X	X		4280	150911	W051.5	160254	E115.1
4280A	A	1353	1535		X		X		X	X	X		4281	165643	W078.4	175025	E088.2
4281A	A	1555	1718		X		X		X	X	X		4282	184414	W105.3	193756	E061.3
4282A	A	1723	1902		X		X		X	X	X		4283	203145	W132.1	212527	E034.5
4283A	A	1906	2051		X		X		X	X	X		4284	221916	W159.0	231258	E007.6
4284A	A	2055	2236		X		X		X	X	X						
4285O	B	2232	2337				X		X	X	X						

TABLE 2-2
DATA AVAILABILITY ON-OFF TIMES
27 APRIL 1976

INT RBIT AND STDN	HDRS	HDRSS TIME ON HRMN	HDRSS TIME OFF HRMN	LRIR	THIR	TDRE	SCAM	ESMR	ERB	PMR	TWRL	HIRS	DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
4285O	A	2337	0136				X		X	X	X		4285	000647	E174.1	010029	W019.3
4286O	A	0144	0326				X		X	X	X		4286	015418	E147.2	024801	W046.2
4287E	B	0326	0413		X		X		X	X	X		4287	034150	E120.4	043532	W073.1
4288E	A	0421	0607		X		X		X	X	X		4288	052921	E093.5	062303	W100.0
4289A	A	0611	0750		X		X		X	X	X		4289	071652	E066.6	081034	W126.8
4290A	A	0755	0936		X		X		X	X	X		4290	090423	E039.7	095805	W153.7
4291A	A	0940	1121		X		X		X	X	X		4291	105154	E012.8	114536	E179.4
4292A	A	1125	1308		X		X		X	X	X		4292	123926	W014.1	133308	E152.5
4293A	A	1312	1453		X		X		X	X	X		4293	142657	W040.9	152039	E125.6
4294A	A	1458	1638		X	X	X		X	X	X		4294	161428	W067.8	170810	E098.8
4295A	A	1642	1821		X	X	X		X	X	X		4295	180159	W094.7	185541	E071.9
4296A	A	1825	2006		X	X	X		X	X	X		4296	194930	W121.6	204312	E045.0
4297A	A	2010	2153		X	X	X		X	X	X		4297	213702	W148.5	223044	E018.1
4298A	A	2157	2340		X		X		X	X	X		4298	232433	W175.3	001815	W008.8

TABLE 2-2
DATA AVAILABILITY ON-OFF TIMES
28 APRIL 1976

INT ORBIT AND STDN	HDRS	HDRSS TIME ON HRMN	HDRSS TIME OFF HRMN	LRIR	THIR	TDRE	SCAM	ESMR	ERB	PMR	TWRL	HIRS	DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
4298O	B	2340	0045				X		X	X	X		4299	011204	E157.8	020546	W035.6
4299O	A	0047	0244				X		X	X	X		4300	025935	E130.9	035317	W062.5
4301E	A	0250	0433		X		X		X	X	X		4301	044706	E104.0	054048	W089.4
4301E	B	0432	0529		X		X		X	X	X		4302	063438	E077.2	072820	W116.3
4302E	A	0529	0711		X		X		X	X	X		4303	082209	E050.3	091551	W143.2
4303A	A	0715	0853		X		X		X	X	X		4304	100940	E023.4	110322	W170.0
4304A	A	0857	1039		X		X		X	X	X		4305	115711	W003.5	125053	E163.1
4305A	A	1043	1230		X		X		X	X	X		4306	134442	W030.4	143824	E136.2
4306A	A	1234	1414	X	X		X		X	X	X		4307	153214	W057.3	162556	E109.3
4307A	A	1418	1600		X		X	X	X	X	X		4308	171945	W084.1	181327	E082.4
4308A	A	1604	1740		X		X	X		X	X		4309	190716	W111.0	200058	E055.6
4309A	A	1744	1926		X		X	X		X	X		4310	205447	W137.9	214829	E028.7
4310A	A	1930	2113		X		X	X		X	X		4311	224219	W164.8	233601	E001.8
4311A	A	2117	2300		X		X	X		X	X						

TABLE 2-2
DATA AVAILABILITY ON-OFF TIMES
29 APRIL 1976

INT ORBIT AND STDN	HDRS	HDRSS TIME ON HRMN	HDRSS TIME OFF HRMN	LRIR	THIR	TDRE	SCAM	ESMR	ERB	PMR	TWRL	HIRS	DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
4312O	B	2256	0001				X	X		X	X		4312	002950	E168.3	012332	W025.1
4312O	A	0000	0158				X	X		X	X		4313	021721	E141.5	031103	W052.0
4313O	A	0158	0209			X	X	X	X	X	X	X	4314	040452	E114.6	045834	W078.8
4314E	B	0348	0444		X		X	X		X	X		4315	055224	E087.7	064605	W105.7
4315E	A	0445	0631		X		X	X		X	X		4316	073955	E060.8	083337	W132.6
4316A	A	0635	0811		X		X	X		X	X		4317	092726	E033.9	102108	W159.5
4317A	A	0815	0958		X		X	X		X	X		4318	111457	E007.1	120839	E173.6
4318A	A	1003	1145		X		X	X		X	X		4319	130228	W019.8	135610	E146.8
4319A	A	1149	1333		X		X	X		X	X		4320	145000	W046.7	154342	E119.9
4320A	A	1338	1514		X		X	X		X	X		4321	163731	W073.6	173113	E093.0
4321A	A	1518	1659		X		X	X		X	X		4322	182502	W100.5	191844	E066.1
4322A	A	1704	1845		X		X	X		X	X		4323	201233	W127.3	210615	E039.2
4323A	A	1849	2030		X		X	X		X	X		4324	220005	W154.2	225347	E012.4
4324A	A	2035	2217		X		X	X		X	X		4325	234736	E178.9	004118	W014.5

TABLE 2-2
DATA AVAILABILITY ON-OFF TIMES
30 APRIL 1976

INT ORBIT AND STDN	HDRS	HDRSS TIME ON HRMN	HDRSS TIME OFF HRMN	LRIR	THIR	TDRE	SCAM	ESMR	ERB	PMR	TWRL	HIRS	DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
4327E	A	0101	0256		X		X	X		X	X		4326	013507	E152.0	022849	W041.4
4327E	B	0300	0404		X		X	X		X	X		4327	032238	E125.1	041620	W068.3
4328E	A	0406	0547		X		X	X		X	X		4328	051010	E098.3	060351	W095.2
4329A	A	0552	0731		X		X	X		X	X		4329	065741	E071.4	075123	W122.1
4330A	A	0735	0918		X		X	X		X	X		4330	084512	E044.5	093854	W148.9
4331A	A	0922	1102		X		X	X		X	X		4331	103243	E017.6	112625	W175.8
4332A	A	1107	1251		X		X	X		X	X		4332	122015	W009.3	131357	E157.3
4333A	A	1255	1437		X		X	X		X	X		4333	140746	W036.2	150128	E130.4
4334A	A	1441	1619		X		X		X	X	X		4334	155517	W063.0	164859	E103.6
4335A	A	1623	1804		X		X		X	X	X		4335	174249	W089.9	183630	E076.7
4336A	A	1808	1946		X		X		X	X	X		4336	193020	W116.8	202402	E049.8
4337A	A	1950	2136		X		X		X	X	X		4337	211751	W143.7	221133	E022.9
4338A	A	2140	2322		X		X		X	X	X		4338	230522	W170.6	235904	W004.0

SECTION 3

ORBIT DISPLAYS OF HIRS, SCAMS, AND ESMR

This section briefly describes the HIRS, SCAMS, and ESMR experiments, explains the formats of the image displays derived from the data of these three experiments, and presents image examples from each of them. Complete descriptions of the HIRS, SCAMS, and ESMR experiments are found in Sections 3, 4, and 5, respectively, of The Nimbus 6 User's Guide.

The HIRS is a 17-channel radiometer. Sixteen channels have central wavelengths between 3.7 μm and 15 μm, and one is centered at 0.69 μm to measure reflected sunlight. Spatial resolution at the nadir on the earth's surface is about 25 km (13 n.m.).

The SCAMS is a 5-channel scanning radiometer. Channel 1 lies on a water vapor line near 22 GHz. Channel 2 is on an atmospheric window near 32 GHz. Channels 3, 4, and 5 are within the oxygen band near 54 GHz. Spatial resolution varies from about 145 km (80 n.m.) near nadir to about 330 km (180 n.m.) at the scan limits.

The ESMR is a two-channel scanning radiometer receiving microwave radiation in a 250 MHz band centered at 37 GHz. One channel is used to measure the vertical polarization of the radiation, and the other measures the horizontal polarization. The antenna beam scans ahead of the spacecraft along a conical surface with a constant angle of 45 degrees with respect to the antenna axis. Spatial resolution of each element is about 20 km in the cross-track direction by 45 km in the direction parallel to the subpoint track.

All HIRS, SCAMS, and ESMR data are converted to 4" × 5" black and white images. Selected images from each experiment from March and April 1976 are presented in this section. Complete coverage times for each experiment are listed in the Data Availability On-Off Times in Table 2-2.

Sections 3, 4, and 5 of The Nimbus 6 User's Guide describe in detail the image formats of the HIRS, SCAMS, and ESMR. The following is a summary of the format, detailing changes to the User's Guide where needed. Each display contains the following similar items:

- NIMBUS 6 (HIRS, SCAMS, or ESMR)

  This identifies the satellite and the experiment.

- (DATE)

  This identifies the Greenwich month, day, and year the data were recorded on board the satellite.

- SCALE F (P2)

  All data from the three experiments have been displayed in the F (full-scale) mode with one exception. Since orbit 3933, ESMR has operated in the P (partial mode). For each experiment the data from each interrogation orbit is displayed on a single image. Each HIRS scan line is displayed once. Each of the 42 scan-spot elements across a scan is displayed four times. Each SCAMS scan line is displayed three times in succession. Each of the 13 scan-spot elements across a scan line is displayed ten times. Through orbit 3932 (31 March), each ESMR scan line is displayed once and twice after orbit 3933. Similarly, each of the 71 scan-spot elements is displayed once through orbit 3932 and twice after orbit 3933.

- INT ORBIT

  The interrogation orbit number identifies the orbit in progress when the recorded data is transmitted to a STDN station. Usually parts of two data orbits are on the same display. The interrogation orbit number will only identify the last orbit of each display.

- TIME (and) SUBPOINT

  Satellite time and latitude-longitude information are presented along the vertical line down the center of each display. The line represents the satellite subpoint track, which is located down the center of each of the swaths on each display. Time is GMT with ticks along the left side of the line at each five minute mark (on the five minutes). Time is annotated (hour and minute) every 15 minutes (on the quarter hour).

  Subpoint information presents latitude and longitude positions of the satellite subpoint. Each tick mark on the right side of the vertical line is annotated with the subpoint latitude and longitude (to the nearest degree). Latitude is labeled N (north) or S (south). Longitude is labeled E (east) or W (west).

  After orbit 3933, the ESMR data display was changed. The following condensed changes apply for TIME and SUBPOINT information: Satellite time information is presented along the vertical lines to the left and to the right of the data display. Time is GMT with 5 minute ticks marks. Time annotations consist of hour-minute displays with 15 minute intervals or quarter-hour notations.

  Latitude and longitude coordinates are in grid form centrally placed between two sets of data; each set is a compliment of the appropriate grid overlay immediately adjacent to it's border. For a complete description of new format see ESMR CHANNEL-RANGE DISPLAYS in this section of the catalog.

- GRAY SCALE

  Each image has an 18-step gray scale along the bottom of the display. The gray scales are used to define parameter value intervals for each image swath of each display by assigning different parameter values to the gray scale for each swath. Tables 3-1 through 3-5 define the parameter values versus gray scale for each HIRS, SCAMS, and ESMR image swath.

- 3200

  This identifies the computer used to process the data. All data was processed by the Control Data Corporation (CDC) 3200.

While the preceeding format information is similar for HIRS, SCAMS, and ESMR, the swath displays of the data from each experiment are different. Therefore, the following information describes the swath displays for each experiment for this catalog period.

HIRS CHANNEL-RANGE DISPLAYS

Each of the ten swaths on the HIRS displays is described by a "CHANNEL (and) RANGE." The CHANNEL is the HIRS channel number (1 through 17), and the RANGE is the computer program table used to display the data from each channel as temperatures (°K). The CHANNEL-RANGE program used during this catalog period is listed in Table 3-1. The HIRS displays shown in Section 3.1 are examples of the data displayed from each orbit during this period.

The HIRS displays through orbit 1140 (5 September) are similar to the example shown in Volume 2 Section 3.1 for orbit 1114 (3 September). Starting with orbit 1141, however, excessive bit slips began occurring and have continued through the end of this catalog period. These bit slips and increasing HIRS system noise make the imagery after orbit 1140 of limited usefulness. Therefore, only two images are included to illustrate the effects of these problems on the imagery. (See Section 2, Table 2-2, Data Availability for specific ON/OFF times for this catalog period.)

SCAMS PARAMETER DISPLAYS

The SCAMS displays currently contain eight vertical swaths of data, as shown in the SCAMS figures in Section 3.2. Each swath is labeled with a parameter number. After orbit 3675 (12 March 76), three distinct sets of parameters are displayed as

Table 3-1

Temperature Range of Gray Scale and Channel of HIRS Data for each Swath on each HIRS Image Display Between Orbits 748 and 4338 (7 August 1975 through 30 April 1976)

	Swath Number									
	1	2	3	4	5	6	7	8	9	10
HIRS Channel Display (channel-range)*	08-08	16-16	16-21	18-18	17-17	10-10	12-12	14-14	03-03	15-15
Temperature Range (°K) (black-white)	310-230	310-230	310-270	0-50	100-900	280-210	300-210	300-210 **	240-185	300-185 ***

*The HIRS channel number is number before the hyphen. The number after the hyphen is the computer program table used to display the data from each channel as temperatures (°K). The range of temperatures displayed in each swath is given beneath each "HIRS Channel Display." The 18 steps of the gray scale are used to represent the division of each temperature range into 18 approximately equal temperature intervals. The central wavelength (in μm) of each channel on these displays is: channel 3 = 14.4, 8 = 11.0, 9 = 8.2, 10 = 6.7, 12 = 4.52, 14 = 4.40, 15 = 4.24, 16 = 3.71, 17 = 0.61, and 18 is the temperature difference between channel 16 and channel 8. The values of channel 17-17 are albedo, represented as "counts" between 100 (blackest) and 900 (whitest). The values for 16-21 represent a second temperature range for channel 16 data. Table 3-1 on page 39 in the User's Guide provides detailed spectral information and the purpose of each of the HIRS channels.

**14-14 temperature range changed to 245-205 on orbit 3929A (31 March 1976).

***15-15 temperature range changed to 275-210 on orbit 3166A (26 January 1976).

Table 3-2

Parameter Limits of the Gray Scale for Parameters 1, 2, 3, 5, 11, 12, and 16 on the SCAMS Image Displays Between Orbits 478 and 4338 (17 July 1975 and 30 April 1976)

	Swath		1	2	3	4	5
Orbits 478 thru 1425 17 July 75 thru 26 Sept. 75	Parameter		3	2	16	11	12
	Gray Scale Value	black	280	320	10	60	1.5
			°K	°K	°K	g/mm^2	g/mm^2
		white	210	100	-22	0.0	-0.1
Orbits 1426 thru 3675 26 Sept. 75 thru 12 March 76	Parameter		3	2	16	11	12
	Gray Scale Value	black	280	320	10	60	2.0
			°K	°K	°K	g/mm^2	g/mm^2
		white	210	100	-22	0.0	0.0
Orbits 3676 thru 3899 12 March 76 thru 29 March 76	Parameter		5	2	16	11	12
	Gray Scale Value	black	240	320	10	70	2.0
			°K	°K	°K	g/mm^2	g/mm^2
		white	200	100	-22	0.0	0.0
Orbits 3900 thru 3929 29 March 76 thru 31 March 76	Parameter		1	1	1	5	3
	Gray Scale Value	black	220	265	300	240	280
			°K	°K	°K	°K	°K
		white	130	210	260	200	220
Orbits 3930 thru 4338 31 March 76 thru 30 April 76	Parameter		1	1	1	2	3
	Gray Scale Value	black	220	265	300	320	280
			°K	°K	°K	°K	°K
		white	130	210	260	100	220

Parameters 1, 2, 3, 5, and 16 represent uninverted antenna temperatures for channels 1 (22.24 GHz), 2 (31.65 GHz), 3 (52.85 GHz), and 5 (55.45 GHz). Parameter 16 is the temperature difference between channels 2 and 3. Parameters 11 and 12 represent inverted antenna temperatures of integrated atmospheric water vapor (channel 11) and integrated liquid water from clouds or precipitation.

Table 3-3

Contour Program Options Used for Parameters 13, 14, and 15 on the SCAMS Image Displays Between Orbit 426 and 4338 (14 July 1975 through 30 April 1976)

Contour Options	Parameters: 13 Mean Temperature Between 1000 mb and 500 mb	14 Mean Temperature Between 500 mb and 250 mb	15 Mean Temperature Between 250 mb and 100 mb	Valid for Orbits
Contour Interval	4°K	4°K	4°K	426-851
Contour Thickness	1°K	1°K	1°K	(14 July- 14 Aug. 1975)
Contour Interval	4°K	4°K	4°K	852-4338
Contour Thickness	2°K	2°K	2°K	(14 Aug. 1975- 30 Apr. 1976)

shown in Table 3-2. Included in Table 3-2 are the values of the gray scale for each image swath. The parameter values for the contoured swaths are given in Table 3-3.

Parameters 2, 3, and 16 represent uninverted antenna temperatures. Parameters 2 and 3 represent the antenna temperatures (T_A) for channels 2 (31.65 GHz) and 3 (52.85 GHz). Parameter 16 is the temperature difference between channel 2 and 3.

Parameters 16 and 2 are sensitive to surface characteristics such as ice and snow cover and soil moisture content, as well as the obvious difference in emissivity between land and water. Parameter 3 is principally a measure of lower tropospheric temperature, but is significantly perturbed by surface emissivity and to some extent by atmospheric water vapor and precipitation.

Parameters 11 and 12 represent inverted antenna temperatures. Parameter 11 portrays the integrated atmospheric water vapor and parameter 12 portrays the integrated liquid water from clouds or precipitation. These two parameters are valid only over the oceans. Only SCAMS channels 1 and 2 were used to estimate these two parameters. The data is inverted by a statistical method and the parameters are computed by linear operations on the antenna temperatures for each scan angle separately.

Parameters 13, 14, and 15 are mean temperatures (averaged over the logarithm of pressure) for the atmospheric layers between 1000 mb and 500 mb, 500 mb and 250 mb, and 250 mb and 100 mb, respectively. These temperatures are displayed by contour bands. The bands are spaced 4 degrees K apart, with alternate bands a darker shade of gray (although in some cases problems in photographic processing caused both shades to be saturated white). Prior to orbit 852, (14 August) the bands were approximately 1 degree thick. After this orbit, the thickness was increased to about 2 degrees, so that contour boundaries (between black and gray or white) are evenly spaced at about 2 degree intervals. Each band is labeled, space permitting, with the lowest temperature value within it, i.e., its lower boundary. Prior to orbit 778, (9 August) parameters 13, 14, and 15 were estimated using only the data from SCAMS channels 3, 4, and 5. The coefficients used in the calculations were determined under the assumption of an ocean surface, so the resulting values were incorrect over land. Starting with orbit 778, channels 1 and 2 were also incorporated into the inversion to correct for the effects of surface emissivity and water vapor. However, there is no correction for surface elevation, so mountains and plateaus still introduce errors in the estimated values.

From orbit 3900 (29 March) through the end of this catalog period, parameters 1, 2, and 5, represent uninverted antenna temperatures. The need to use data in this form was occasioned by the occurrence of major scan problems with the channel 2 scan reflector. Thus, parameter 16, temperature difference between channel 2 and channel 3 is not included in Table 3-2.

ESMR CHANNEL-RANGE DISPLAYS

Through orbit 3932 (31 March) the ESMR displays contained 20 swaths of data, as shown in the ESMR image displays up to orbit 3932 in Section 3.3. The swaths are numbered (numbers not shown) from 1 on the left to 20 on the right. Each of the ten swaths on the left has the same geographic coverage. However, each swath displays either horizontally or vertically polarized data at a temperature range as listed in Table 3-4. The right set of ten swaths has a similar format and displays the earliest recorded data. If the right swaths were cut and placed above the group on the left, the new display would show the continuous coverage recorded for that orbit. Swaths 1 and 11 have the same polarization and temperature range. Similarly, swaths 2 and 12, 3 and 13, etc., are the same. Table 3-4 is set up to show this duplication of parameter information.

The ESMR display format was modified at orbit 3933 (31 March 1976). After this orbit all displays will have the following new format.

The new displays contain ten swaths of data plus a geographic grid overlay for each swath, as shown in the ESMR image displays after orbit 3933 in Section 3.3.

Table 3-4

Brightness Temperature Value for each Step of the Gray Scale on ESMR Image Displays for Orbits 828 through 3932 (13 August 1975 through 31 March 1976)

(Brightness Temperatures are in °K)

Gray Scale Number	Swath Number and ESMR Display Parameter									
	1 and 11 (T_H)	2 and 12 (T_V)	3 and 13 $\left(\frac{T_H+T_V}{2}\right)$	4 and 14 (T_H)	5 and 15 (T_V)	6 and 16 $\left(\frac{T_H+T_V}{2}\right)$	7 and 17 (T_H)	8 and 18 (T_V)	9 and 19 $\left(\frac{T_H+T_V}{2}\right)$	10 and 20 (T_V-0.6T_H)
(black) 1	> 200	> 230	> 210	> 250	> 270	> 250	> 290	> 300	> 280	>140
2	196-200	226-230	206-210	246-250	267-270	247-250	287-290	298-300	278-280	136-140
3	191-196	223-226	203-206	243-246	264-267	244-247	284-287	295-298	275-278	133-136
4	187-191	219-223	199-203	239-243	261-264	241-244	281-284	293-295	273-275	129-133
5	183-187	215-219	195-199	235-239	258-261	238-241	278-281	290-293	270-273	125-129
6	178-183	211-215	191-195	231-235	254-258	234-238	274-278	288-290	268-270	121-125
7	174-178	208-211	188-191	228-231	251-254	231-234	271-274	285-288	265-268	118-121
8	169-174	204-208	184-188	224-228	248-251	228-231	268-271	283-285	263-265	114-118
9	165-169	200-204	180-184	220-224	245-248	225-228	265-268	280-283	260-263	110-114
10	161-165	196-200	176-180	216-220	242-245	222-225	262-265	278-280	258-260	106-110
11	156-161	193-196	173-176	213-216	239-242	219-222	259-262	275-278	255-258	103-106
12	152-156	189-193	169-173	209-213	236-239	216-219	256-259	273-275	253-255	99-103
13	148-152	185-189	165-169	205-209	233-236	213-216	253-256	270-273	250-253	95-99
14	143-148	181-185	161-165	201-205	229-233	209-213	249-253	268-270	248-250	91-95
15	139-143	178-181	158-161	198-201	226-229	206-209	246-249	265-268	245-248	88-91
16	134-139	174-178	154-158	194-198	223-226	203-206	243-246	263-265	243-245	84-88
17	130-134	170-174	150-154	190-194	220-223	200-203	240-243	260-263	240-243	80-84
(white) 18	< 130	< 170	< 150	< 190	< 220	< 200	< 240	< 260	< 240	< 80

T_H = Brightness temperature derived from the ESMR horizontal polarization data

T_V = Brightness temperature derived from the ESMR vertical polarization data

Table 3-5

Brightness Temperature Value for each Step of the Gray Scale on ESMR Image Displays for Orbits 3933 through 4338 (31 March through 30 April 1976)

(Brightness Temperatures are in °K)

Gray Scale Number	Swath Number and ESMR Display Parameter				
	1 and 6 (T_H)	2 and 7 (T_H)	3 and 8 (T_H)	4 and 9 (T_V)	5 and 10 $\left(\frac{T_H + T_V}{2}\right)$
(black) 1	>200	>230	>210	>250	>270
2	196-200	226-230	206-210	246-250	267-270
3	191-196	223-226	203-206	243-246	264-267
4	187-191	219-223	199-203	239-243	261-264
5	183-187	215-219	195-199	235-239	258-261
6	178-183	211-215	191-195	231-235	254-258
7	174-178	208-211	188-191	228-231	251-254
8	169-174	204-208	184-188	224-228	248-251
9	165-169	200-204	180-184	220-224	245-248
10	161-165	196-200	176-180	216-220	242-245
11	156-161	193-196	173-176	213-216	239-242
12	152-156	189-193	169-173	209-213	236-239
13	148-152	185-189	165-169	205-209	233-236
14	143-148	181-185	161-165	201-205	229-233
15	139-143	178-181	158-161	198-201	226-229
16	134-139	174-178	154-158	194-198	223-226
17	130-134	170-174	150-154	190-194	220-223
(white) 18	<130	<170	<150	<190	<220

T_H = Brightness temperature derived from the ESMR horizontal polarization data

T_V = Brightness temperature derived from the ESMR vertical polarization data

The swaths are numbered (numbers not displayed) from 1 on the left to 10 on the right. Each of the five swaths on the left has the same geographic coverage. However, each swath displays either horizontally or vertically polarized data at a temperature range as listed in Table 3-5. The right set of five swaths has a similar format, and displays the latest recorded data. If the right swaths were cut and placed below the group on the left, the new display would show the continuous coverage of that display.

Swaths 1 and 6 display the same parameter. That is, the temperature range and polarization for swaths 1 and 6 are the same. Similarly, swaths 2 and 7, 3 and 8, 4 and 9, and 5 and 10 display the same parameters. Table 3-5 is set up to show this duplication of parameter information.

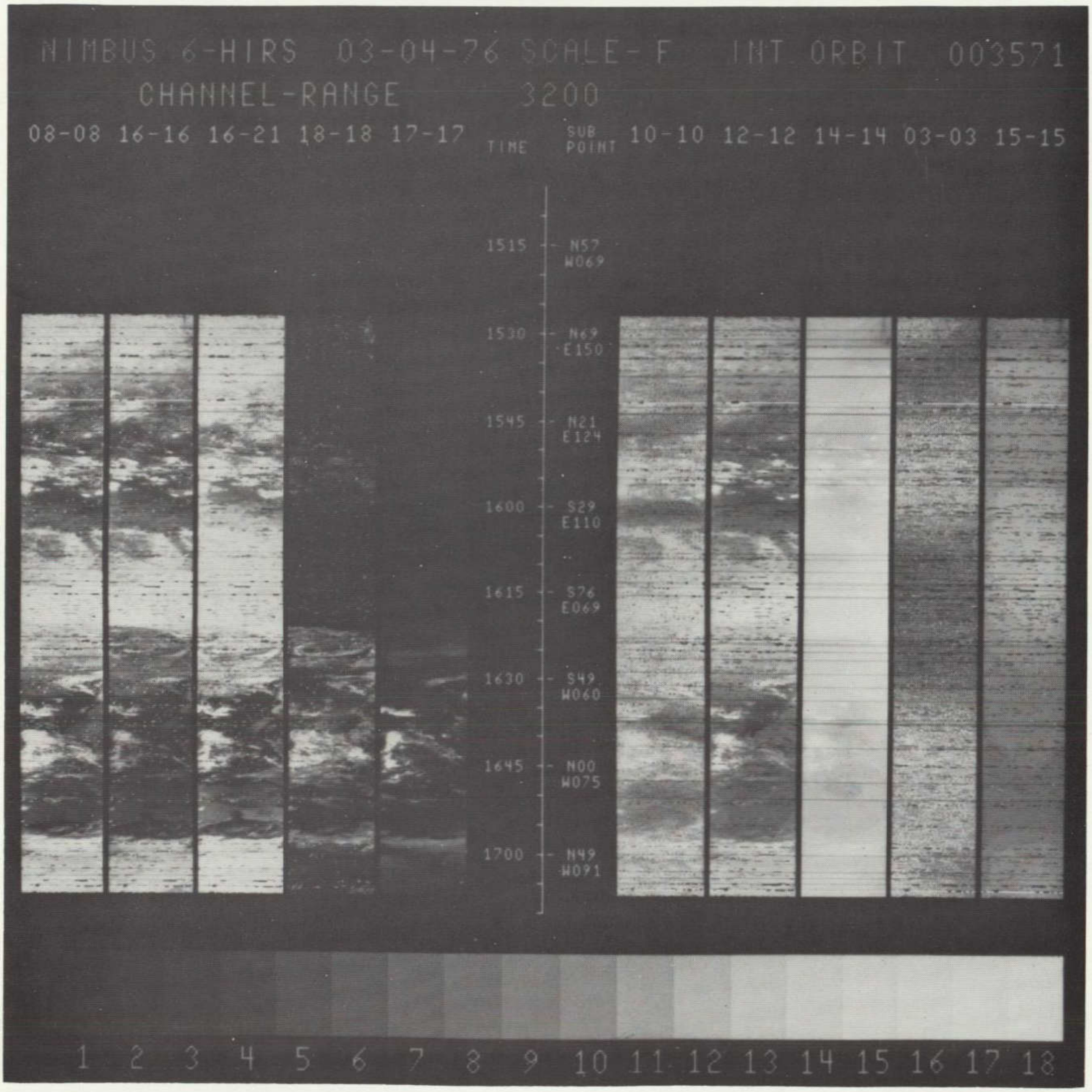
Data time (GMT) references for the left set of five swaths are shown adjacent to the vertical line at the left. Time tick marks are every five minutes with hour and minute annotation every fifteen minutes. Data time references for the right set of five swaths are shown in a similar manner adjacent to the vertical line at the right.

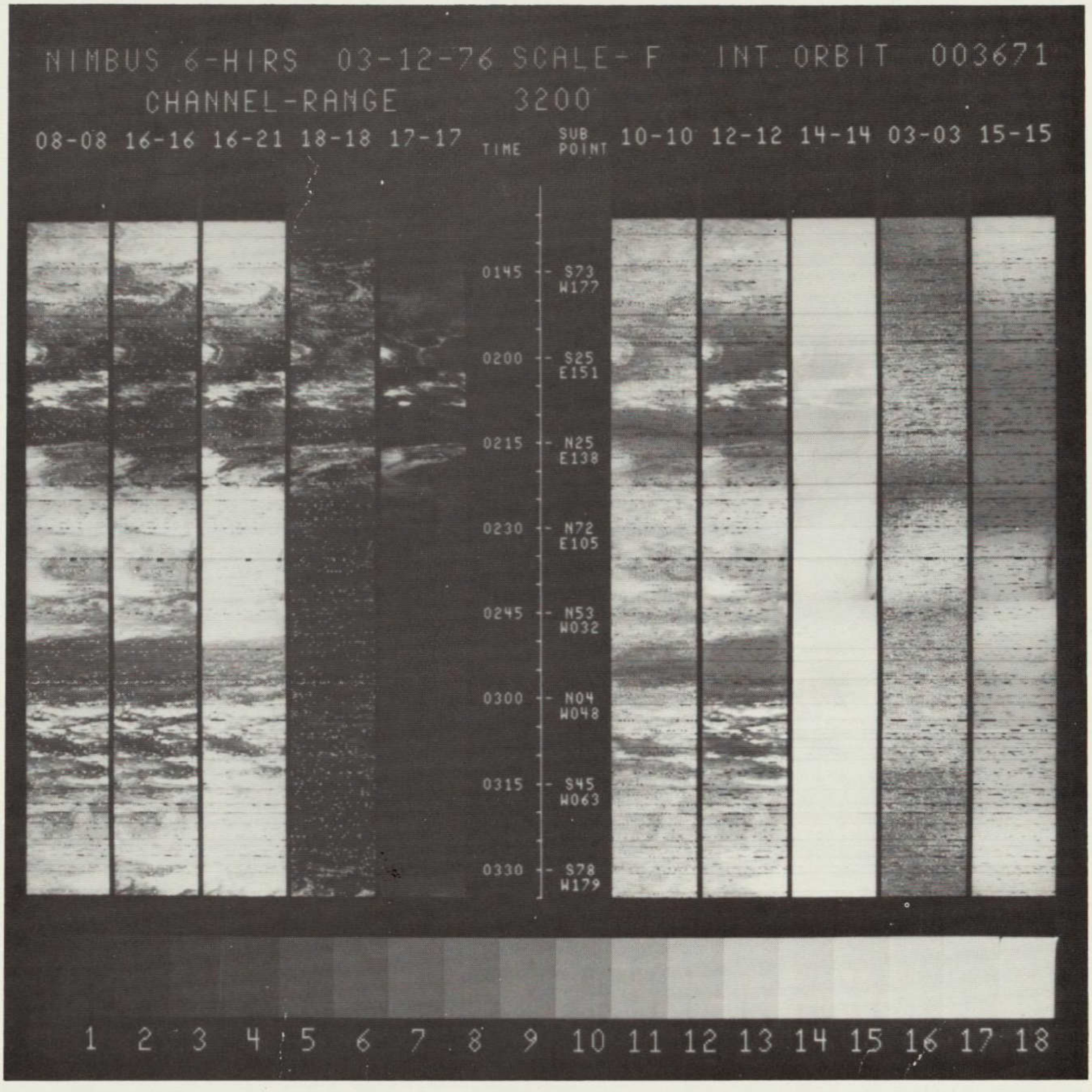
The center portion of the display contains two swaths of grid overlay information: the left grid for overlay on each of the five swaths on the left, and the right grid for overlay on each of the five swaths on the right. The grid longitudes are generated at ten degree intervals between 55 degrees south and 55 degrees north, and at 20 degree intervals from 55 degrees to the Poles. Latitude grids are generated every five degrees. All grid lines consist of a series of dots at one degree intervals. Latitudes are labeled at 60°S, 30°S, EQ, 30°N, and 60°N. Longitude labels are normally placed next to each latitude label.

SECTION 3.1

SELECTED HIRS IMAGE DISPLAYS

Only two displays of HIRS are shown here. Because of an instrument problem, displays after orbit 1140 (5 September) have limited usefulness. These displays are presented as examples of the information available in displays for orbits after 1140.

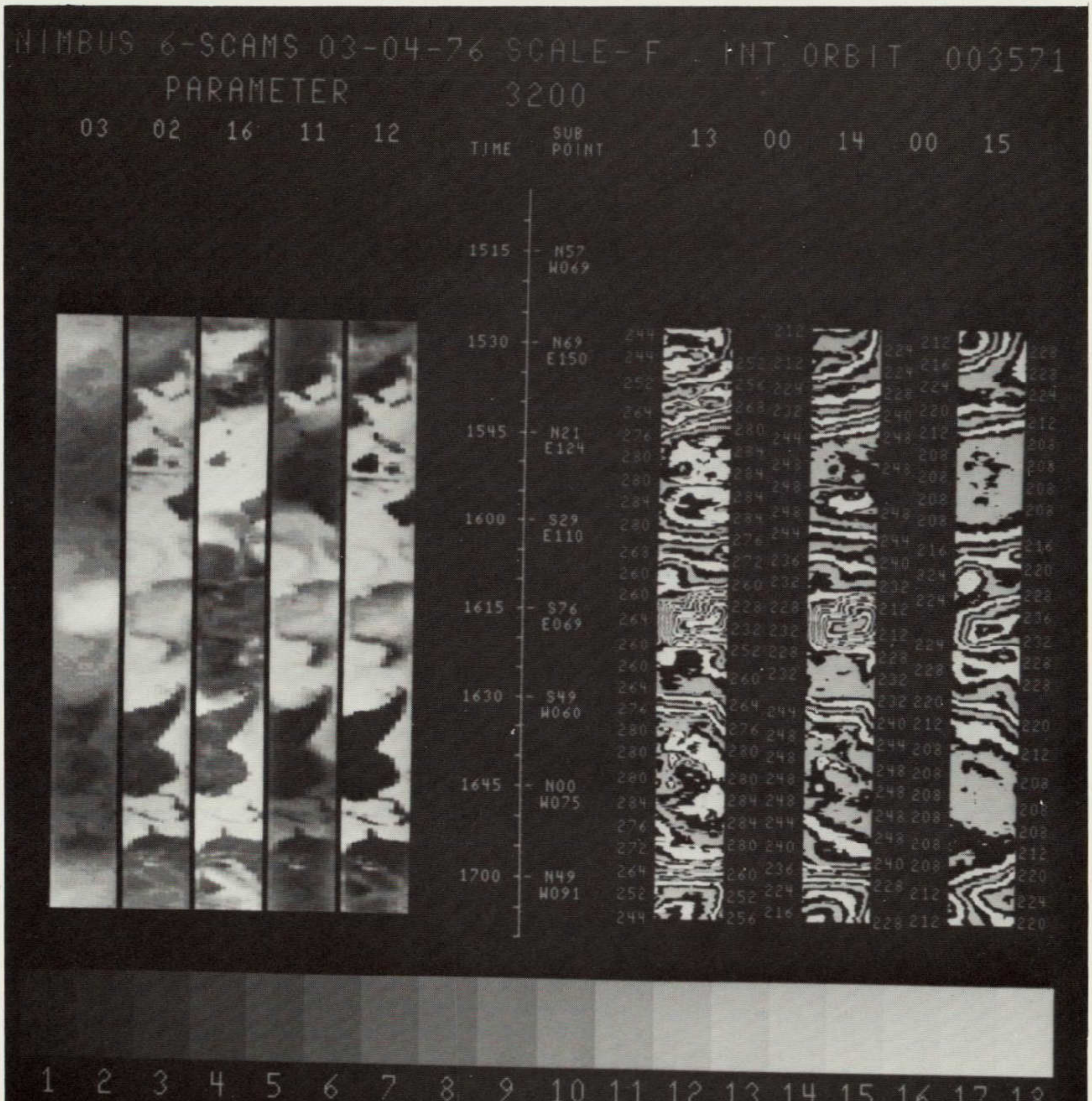

NIMBUS 6-HIRS 03-04-76 SCALE-F INT ORBIT 003571
CHANNEL-RANGE 3200
08-08 16-16 16-21 18-18 17-17
TIME
SUB POINT
10-10 12-12 14-14 03-03 15-15
1515 N57 W069
1530 N69 E150
1545 N21 E124
1600 S29 E110
1615 S76 E069
1630 S49 W060
1645 N00 W075
1700 N49 W091
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

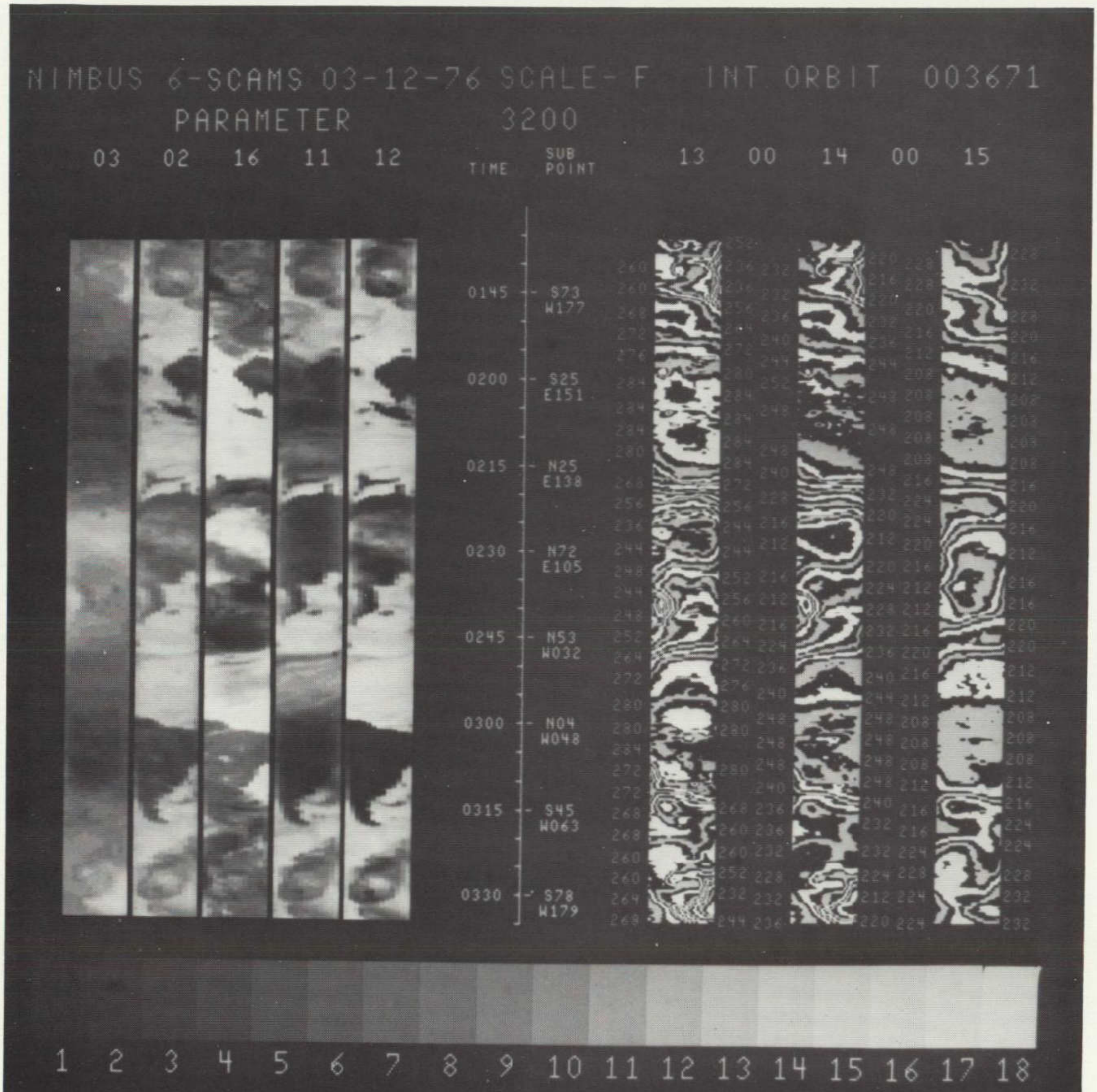

NIMBUS 6-HIRS 03-12-76 SCALE- F INT ORBIT 003671
CHANNEL-RANGE 3200
08-08 16-16 16-21 18-18 17-17 TIME SUB POINT 10-10 12-12 14-14 03-03 15-15
0145 S73 W177
0200 S25 E151
0215 N25 E138
0230 N72 E105
0245 N53 W032
0300 N04 W048
0315 S45 W063
0330 S78 W179
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

SECTION 3.2

SELECTED SCAMS IMAGE DISPLAYS

(The same orbits of ESMR images are shown in Section 3.3, less orbits 4053 and 4361.)


NIMBUS 6-SCAMS 03-04-76 SCALE-F INT ORBIT 003571
PARAMETER 3200
03 02 16 11 12
TIME SUB POINT
13 00 14 00 15
1515 N57 W069
1530 N69 E150
1545 N21 E124
1600 S29 E110
1615 S76 E069
1630 S49 W060
1645 N00 W075
1700 N49 W091
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18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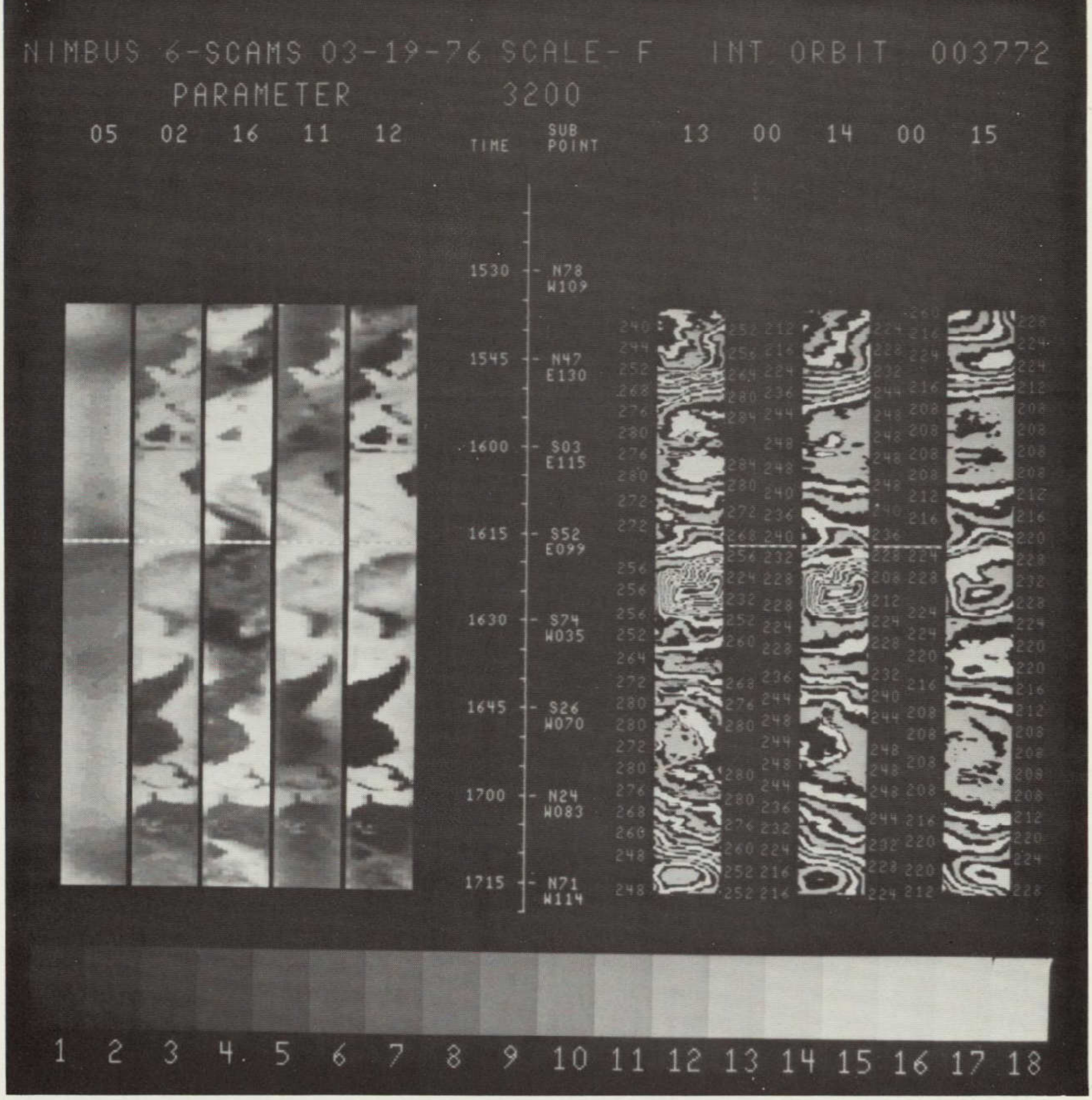
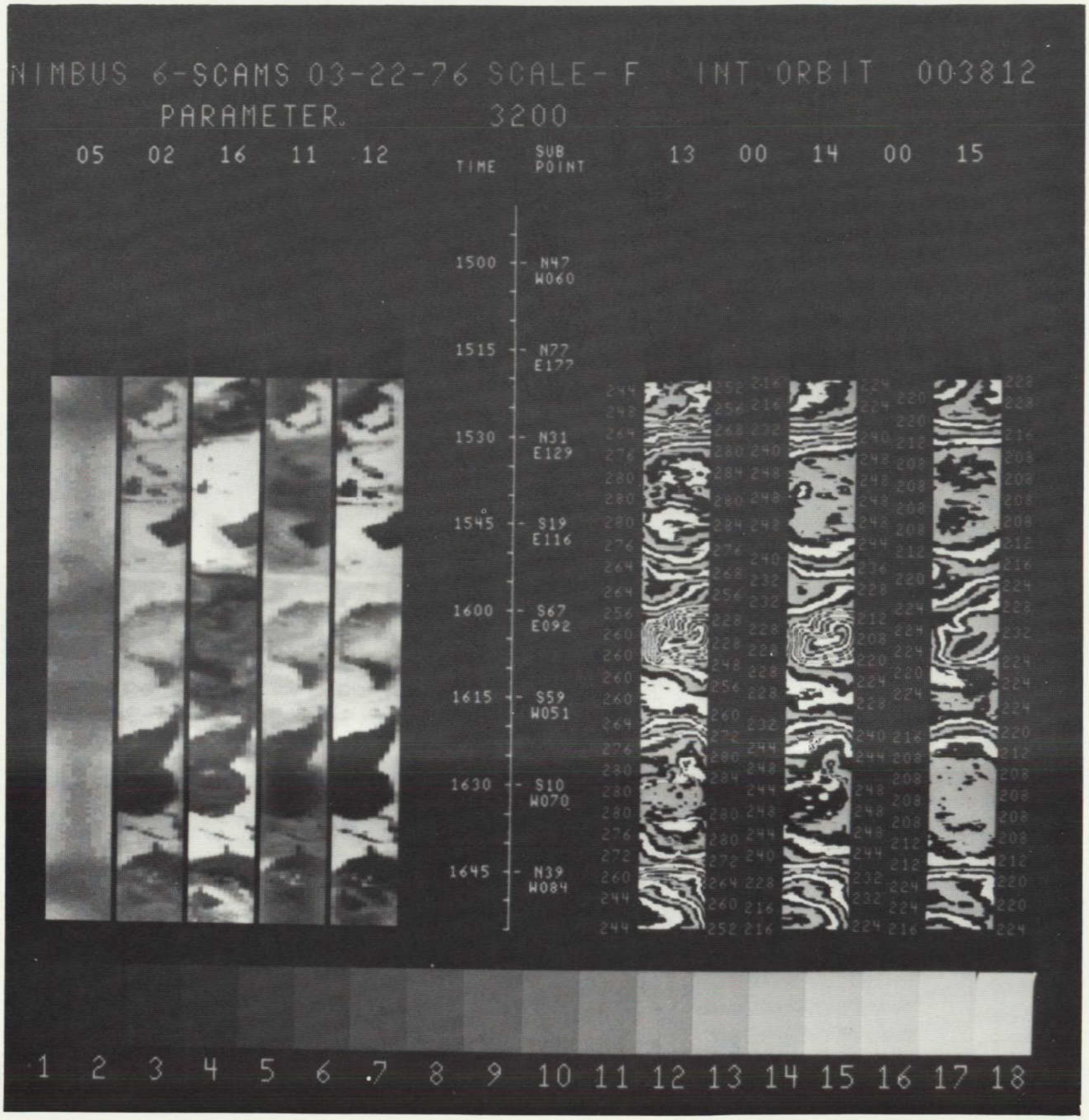
PARAMETER 3200
03 02 16 11 12
TIME
SUB POINT
13 00 14 00 15
0145 S73 W177
0200 S25 E151
0215 N25 E138
0230 N72 E105
0245 N53 W032
0300 N04 W048
0315 S45 W063
0330 S78 W179
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18


NIMBUS 6-SCAMS 03-19-76 SCALE- F INT ORBIT 003772
PARAMETER 3200
05 02 16 11 12
TIME
SUB POINT
13 00 14 00 15
1530 N78 W109
1545 N47 E130
1600 S03 E115
1615 S52 E099
1630 S74 W035
1645 S26 W070
1700 N24 W083
1715 N71 W114
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18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PARAMETER 3200
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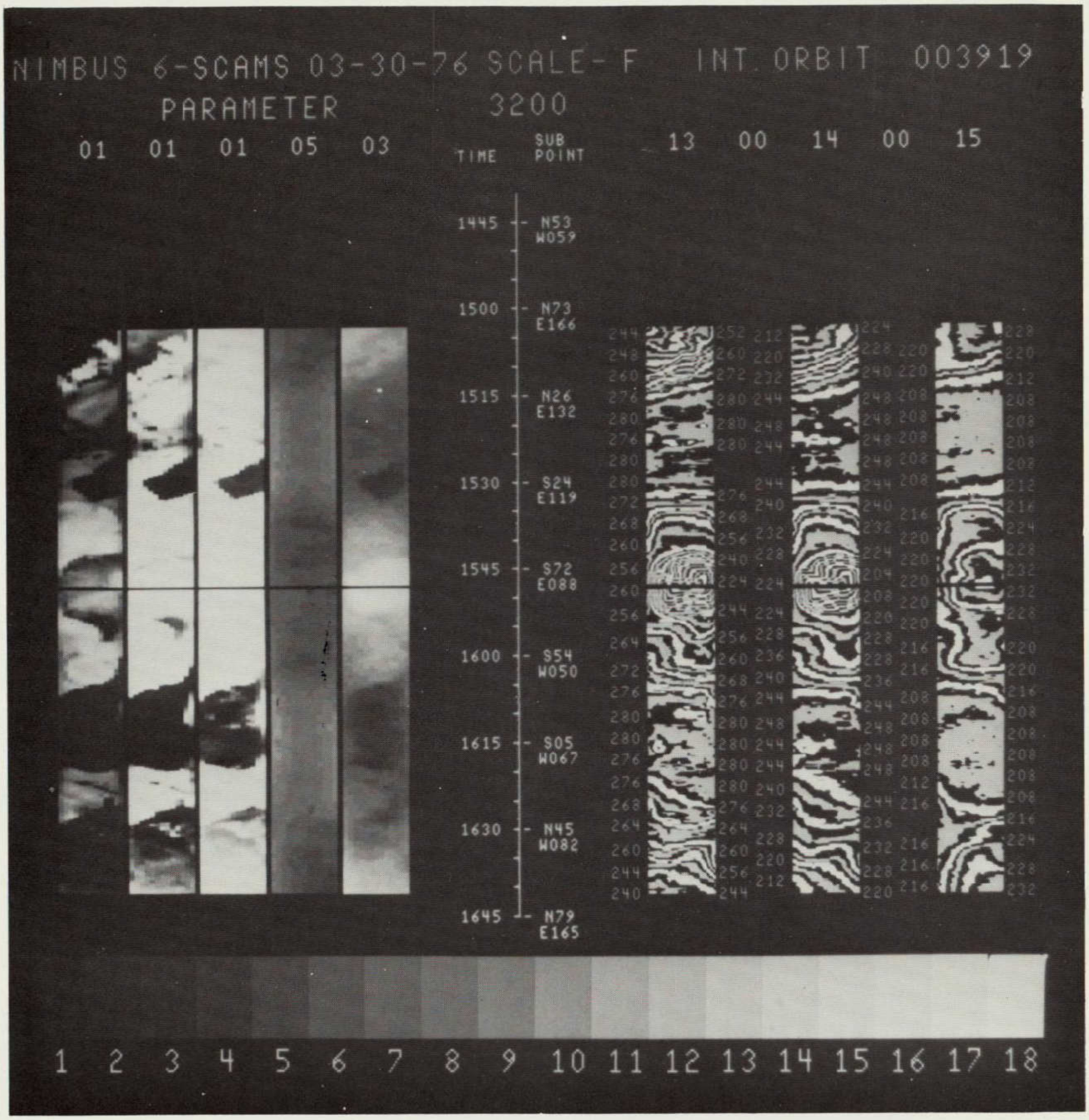
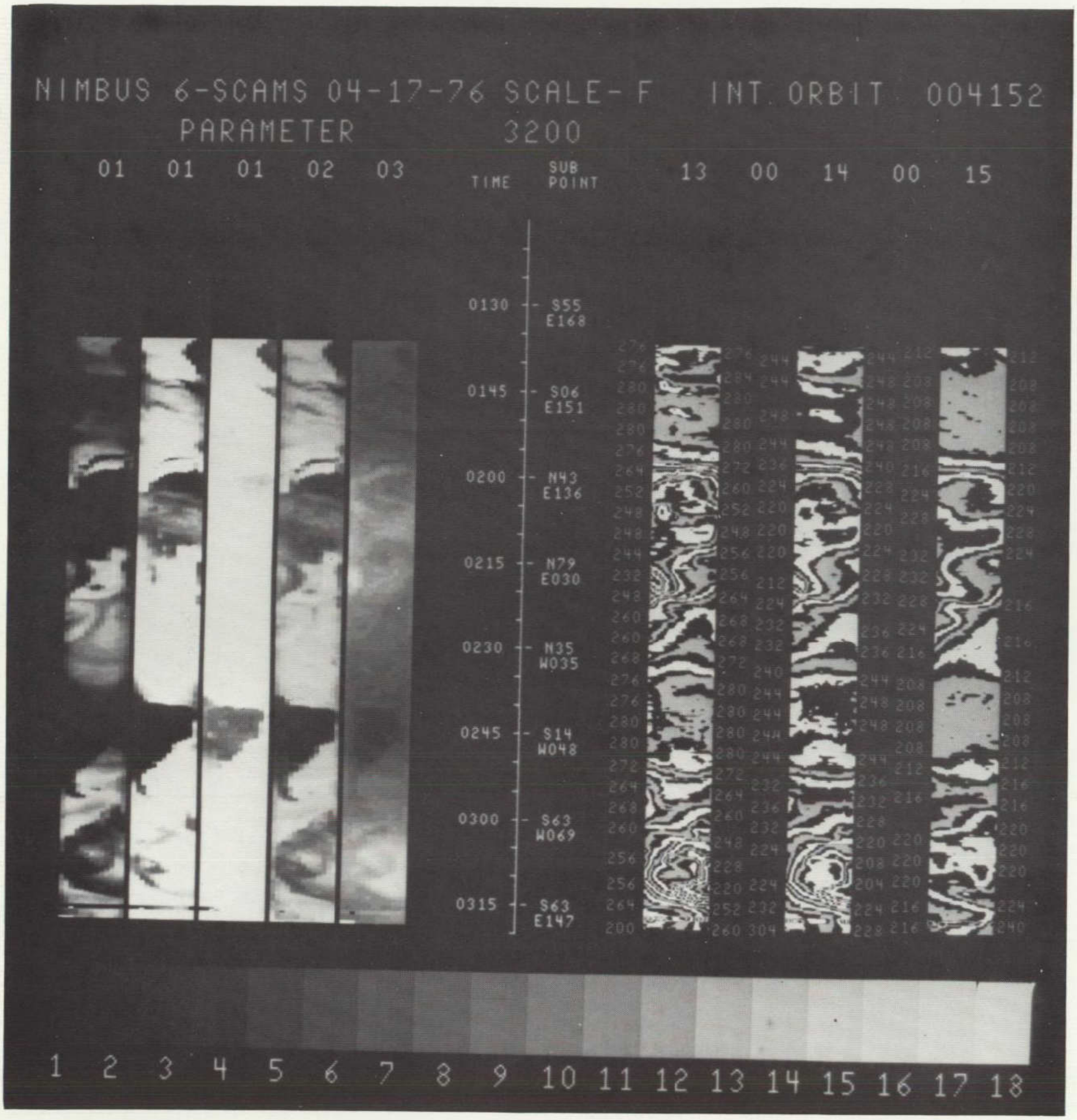
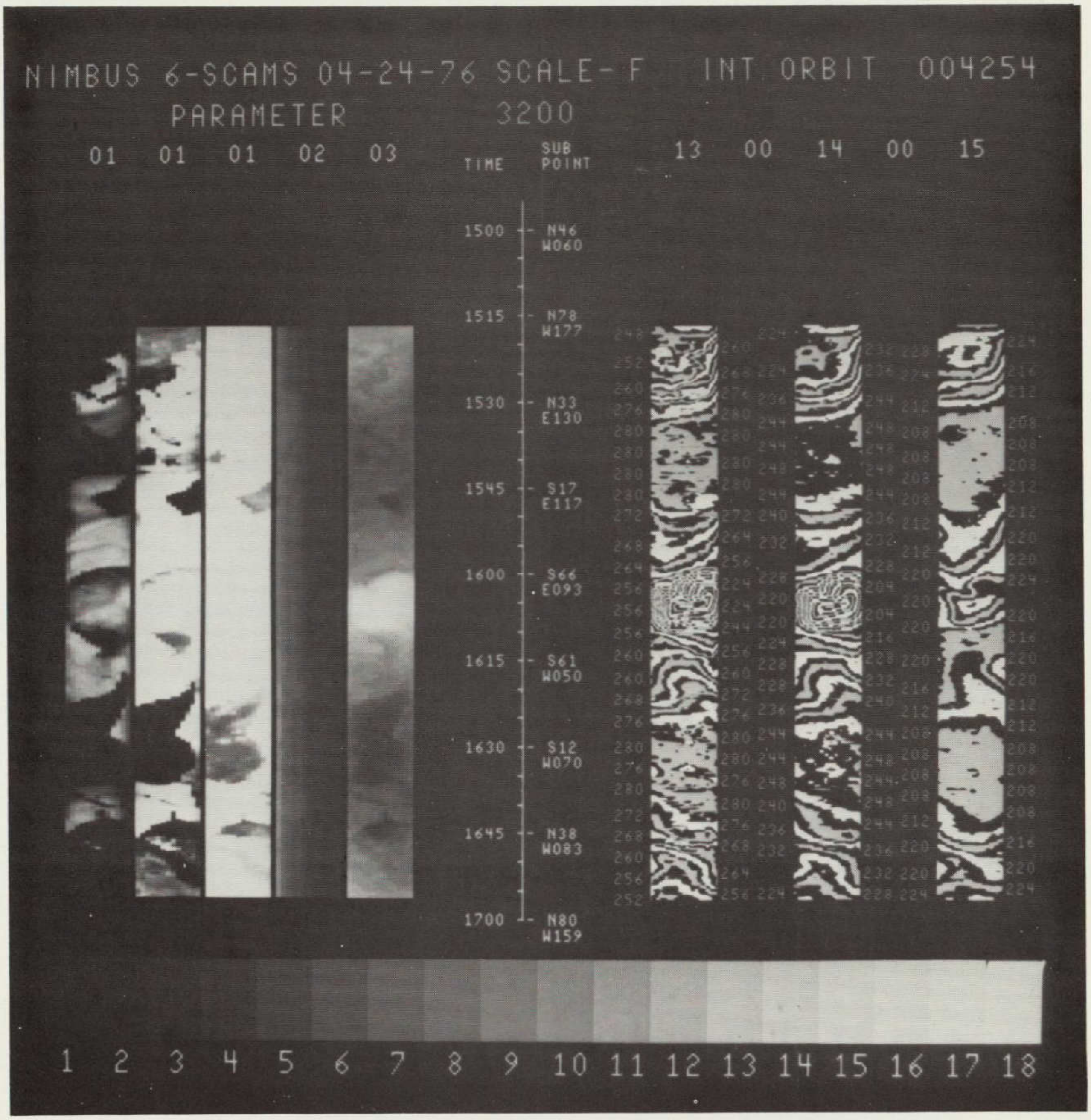
TIME
SUB POINT
13 00 14 00 15
1500 N47 W060
1515 N77 E177
1530 N31 E129
1545 S19 E116
1600 S67 E092
1615 S59 W051
1630 S10 W070
1645 N39 W084
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18


NIMBUS 6-SCAMS 03-30-76 SCALE- F INT. ORBIT 003919
PARAMETER 3200
01 01 01 05 03
TIME
SUB POINT
13 00 14 00 15
1445 N53 W059
1500 N73 E166
1515 N26 E132
1530 S24 E119
1545 S72 E088
1600 S54 W050
1615 S05 W067
1630 N45 W082
1645 N79 E165
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18


NIMBUS 6-SCAMS 04-17-76 SCALE- F INT. ORBIT 004152
PARAMETER 3200
01 01 01 02 03
TIME
SUB POINT
13 00 14 00 15
0130 S55 E168
0145 S06 E151
0200 N43 E136
0215 N79 E030
0230 N35 W035
0245 S14 W048
0300 S63 W069
0315 S63 E147
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18


NIMBUS 6-SCAMS 04-24-76 SCALE- F INT ORBIT 004254
PARAMETER 3200
01 01 01 02 03
TIME
SUB POINT
13 00 14 00 15
1500 N46 W060
1515 N78 W177
1530 N33 E130
1545 S17 E117
1600 S66 E093
1615 S61 W050
1630 S12 W070
1645 N38 W083
1700 N80 W159
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

SECTION 3.3

SELECTED ESMR IMAGE DISPLAYS

(The same orbits of SCAMS images are shown in Section 3.2, plus orbits 4053 and 4361.)

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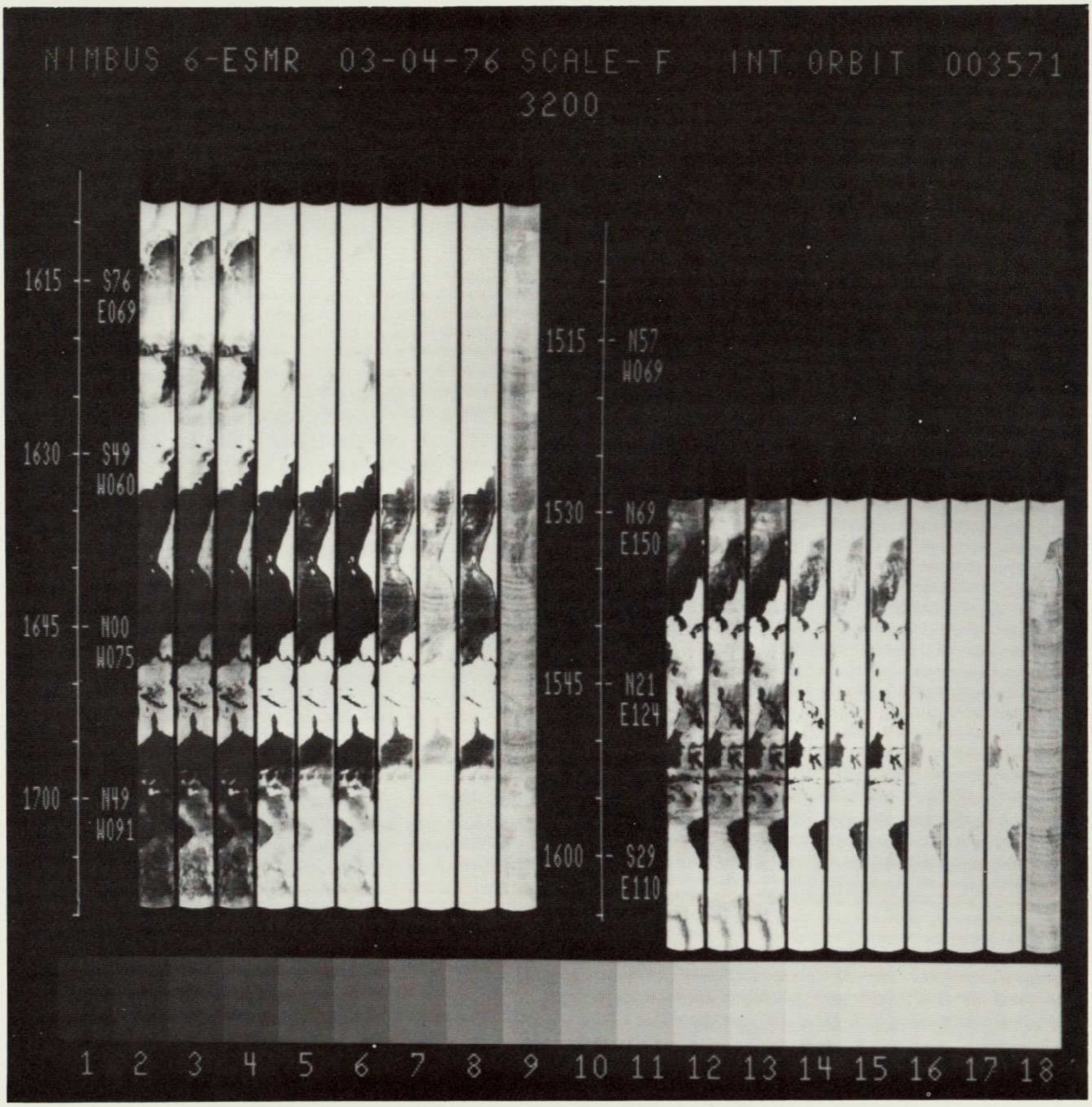
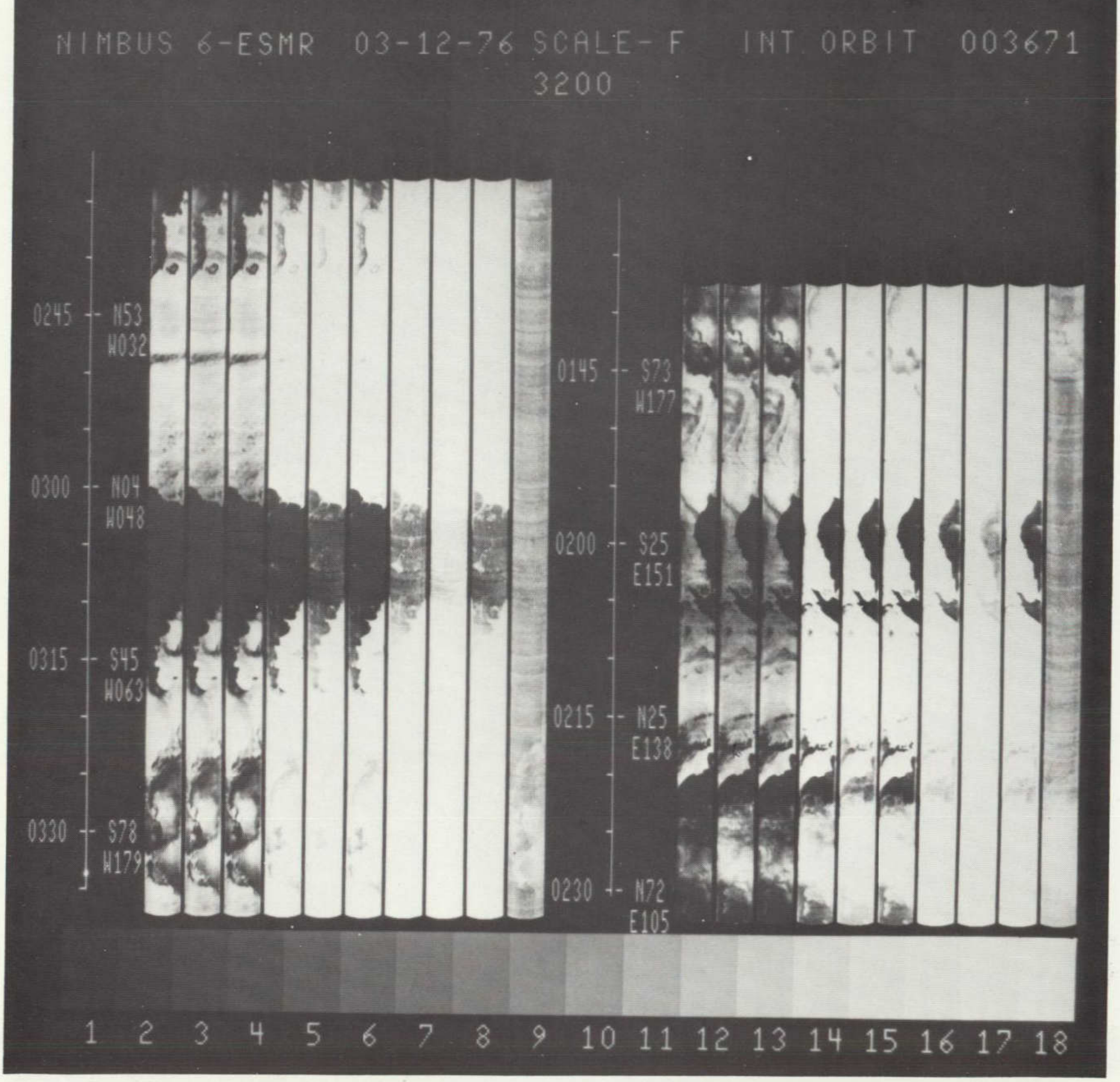
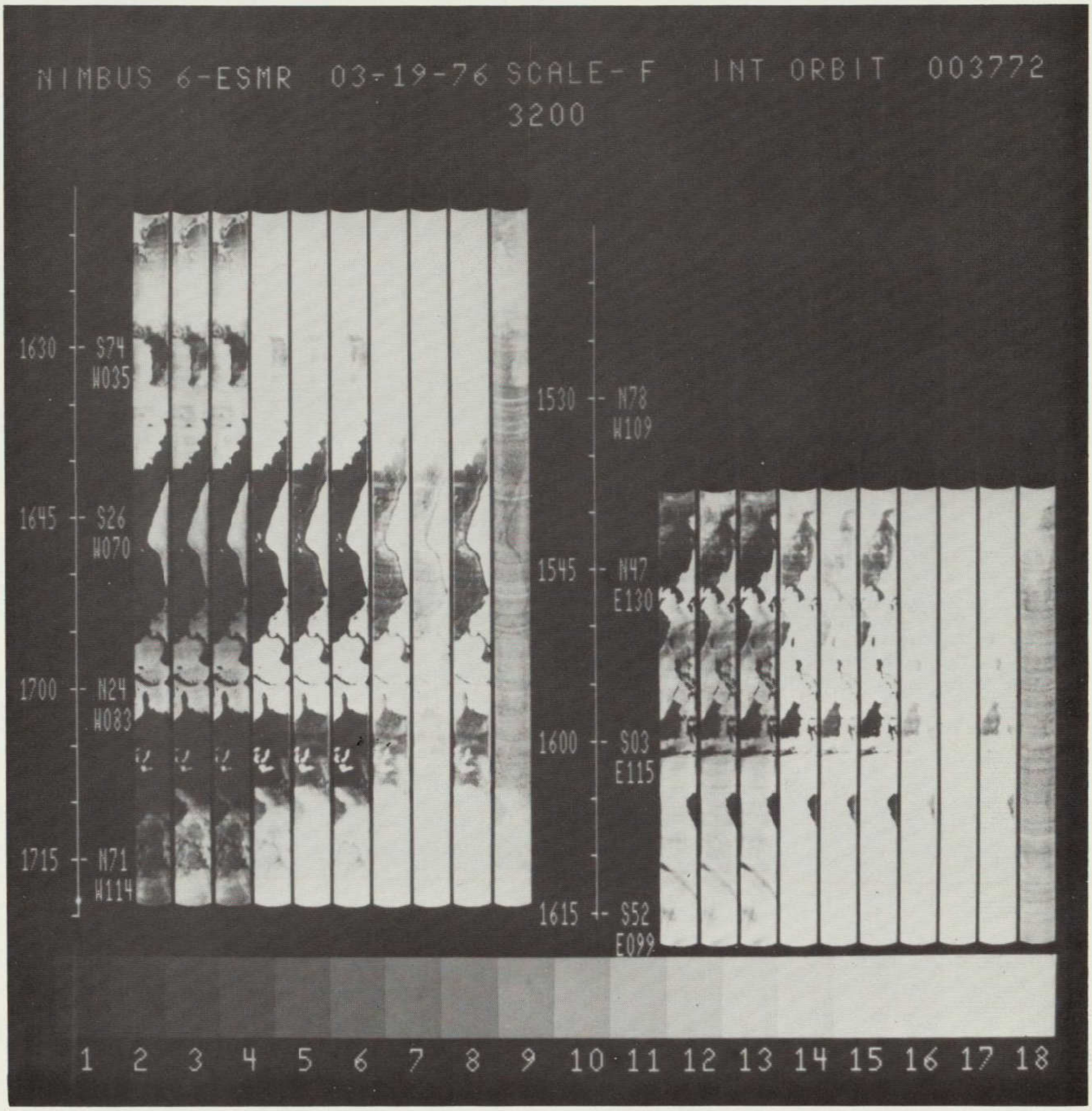
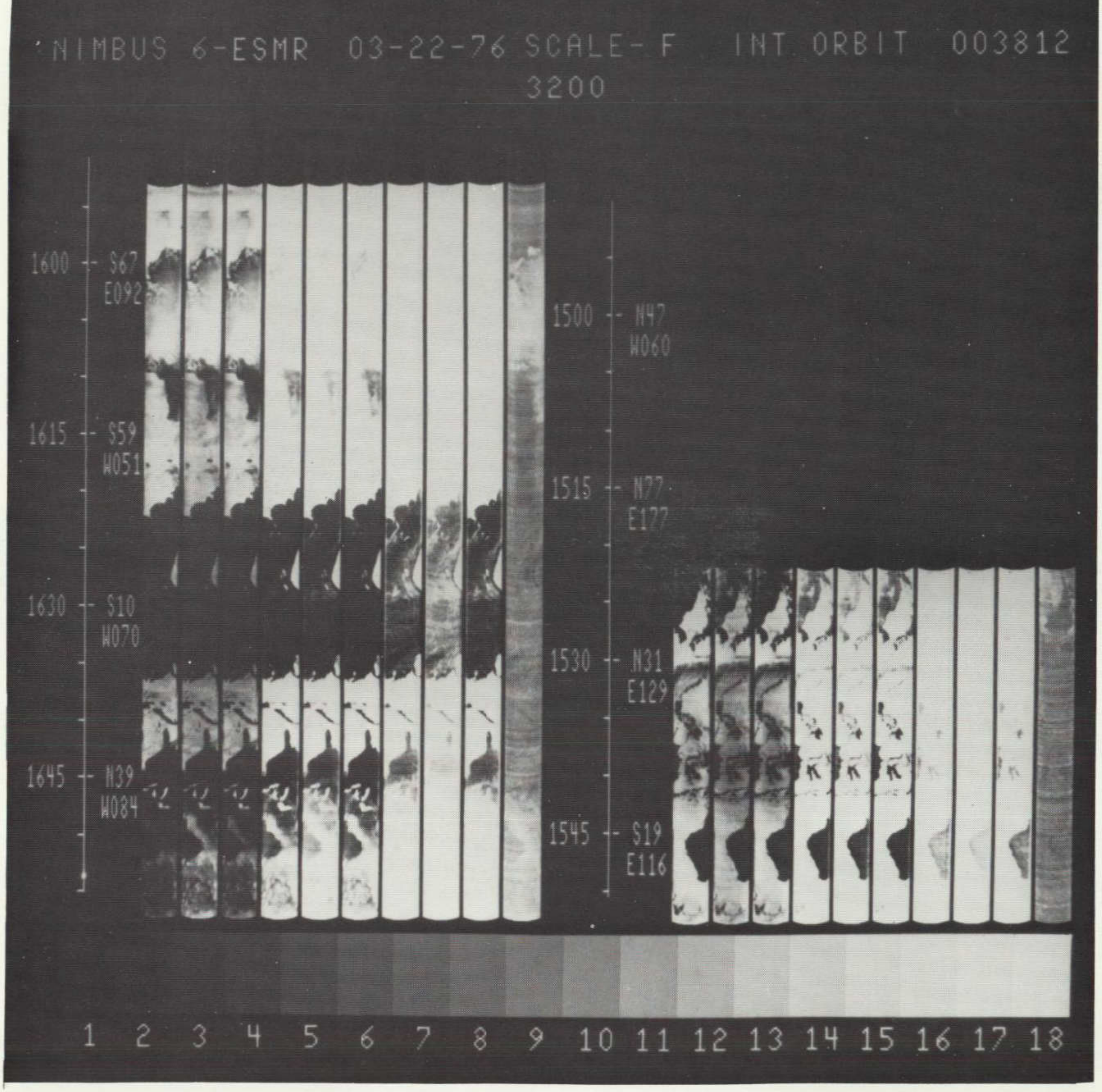
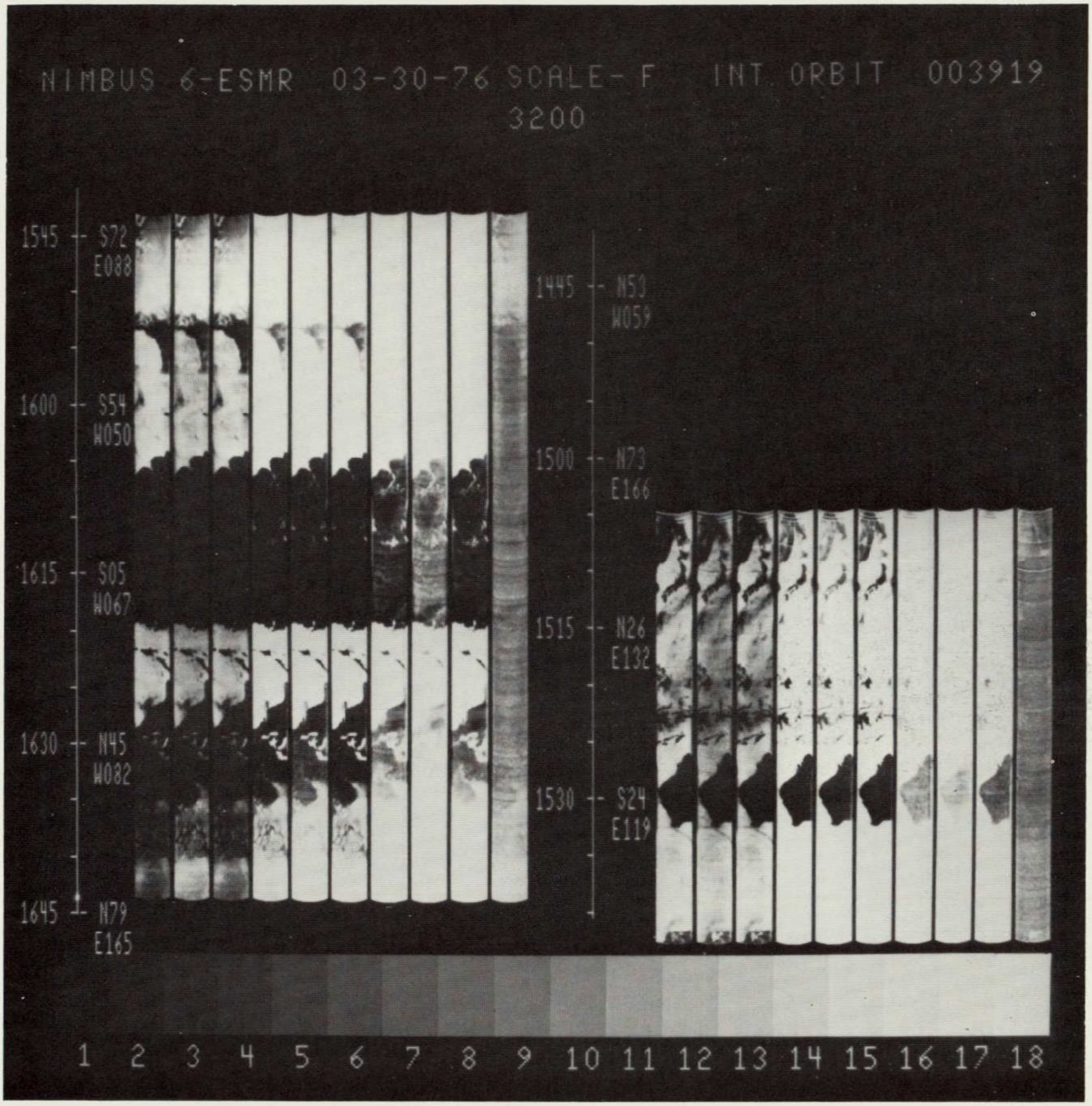



NIMBUS 6-ESMR 03-12-76 SCALE-F INT. ORBIT 003671
3200
0245 N53 W032
0300 N04 W048
0315 S45 W063
0330 S78 W179
0145 S73 W177
0200 S25 E151
0215 N25 E138
0230 N72 E105
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18


NIMBUS 6-ESMR 03-19-76 SCALE-F INT ORBIT 003772
3200
1630 S74 W035
1645 S26 W070
1700 N24 W083
1715 N71 W114
1530 N78 W109
1545 N47 E130
1600 S03 E115
1615 S52 E099
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18


NIMBUS 6-ESMR 03-22-76 SCALE-F INT ORBIT 003812
3200
1600 S67 E092
1615 S59 W051
1630 S10 W070
1645 N39 W084
1500 N47 W060
1515 N77 E177
1530 N31 E129
1545 S19 E116
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18



NIMBUS 6-ESMR 03-30-76 SCALE- F INT ORBIT 003919
3200
1545 S72 E088
1600 S54 W050
1615 S05 W067
1630 N45 W082
1645 N79 E165
1445 N53 W059
1500 N73 E166
1515 N26 E132
1530 S24 E119
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

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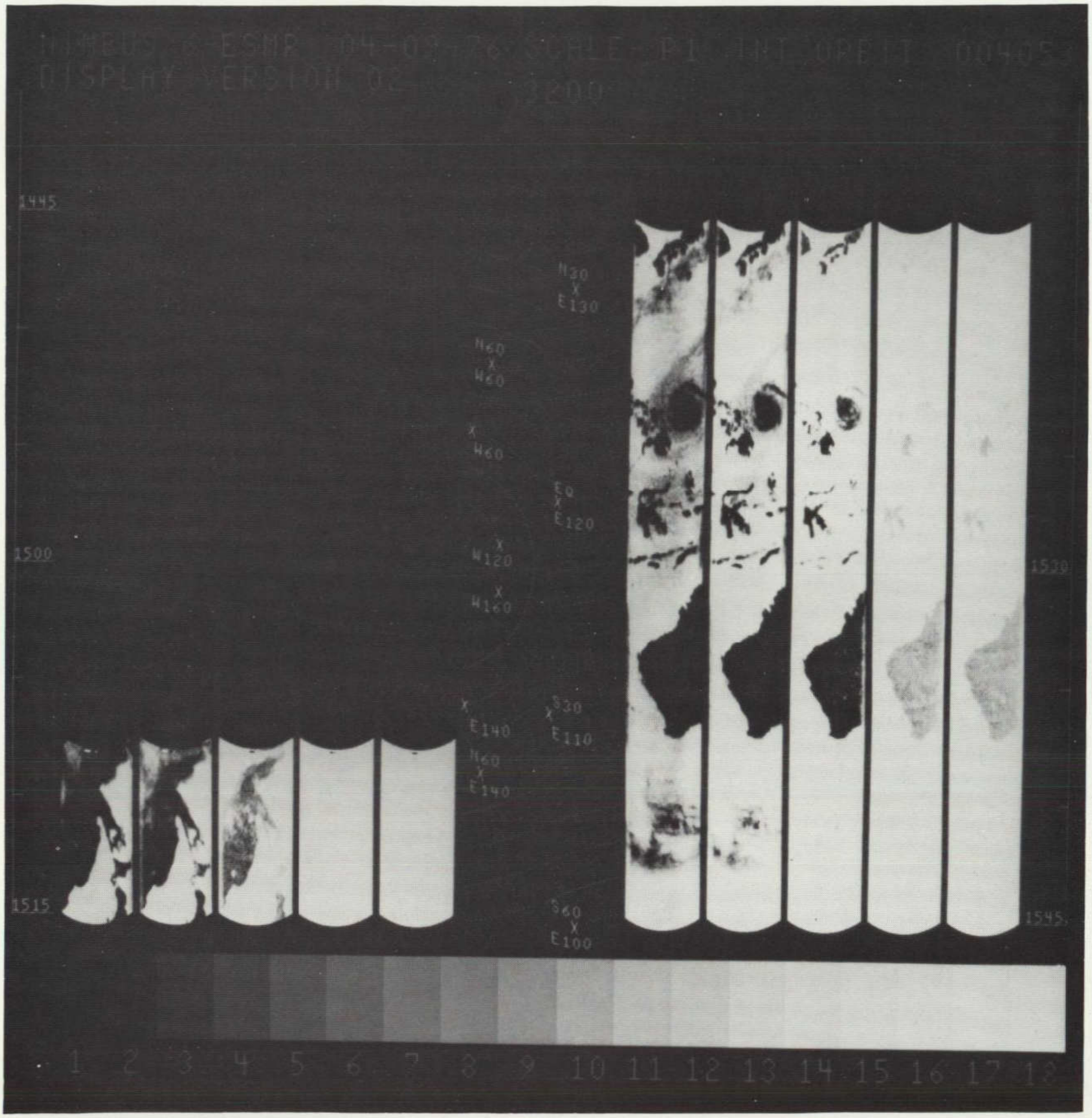
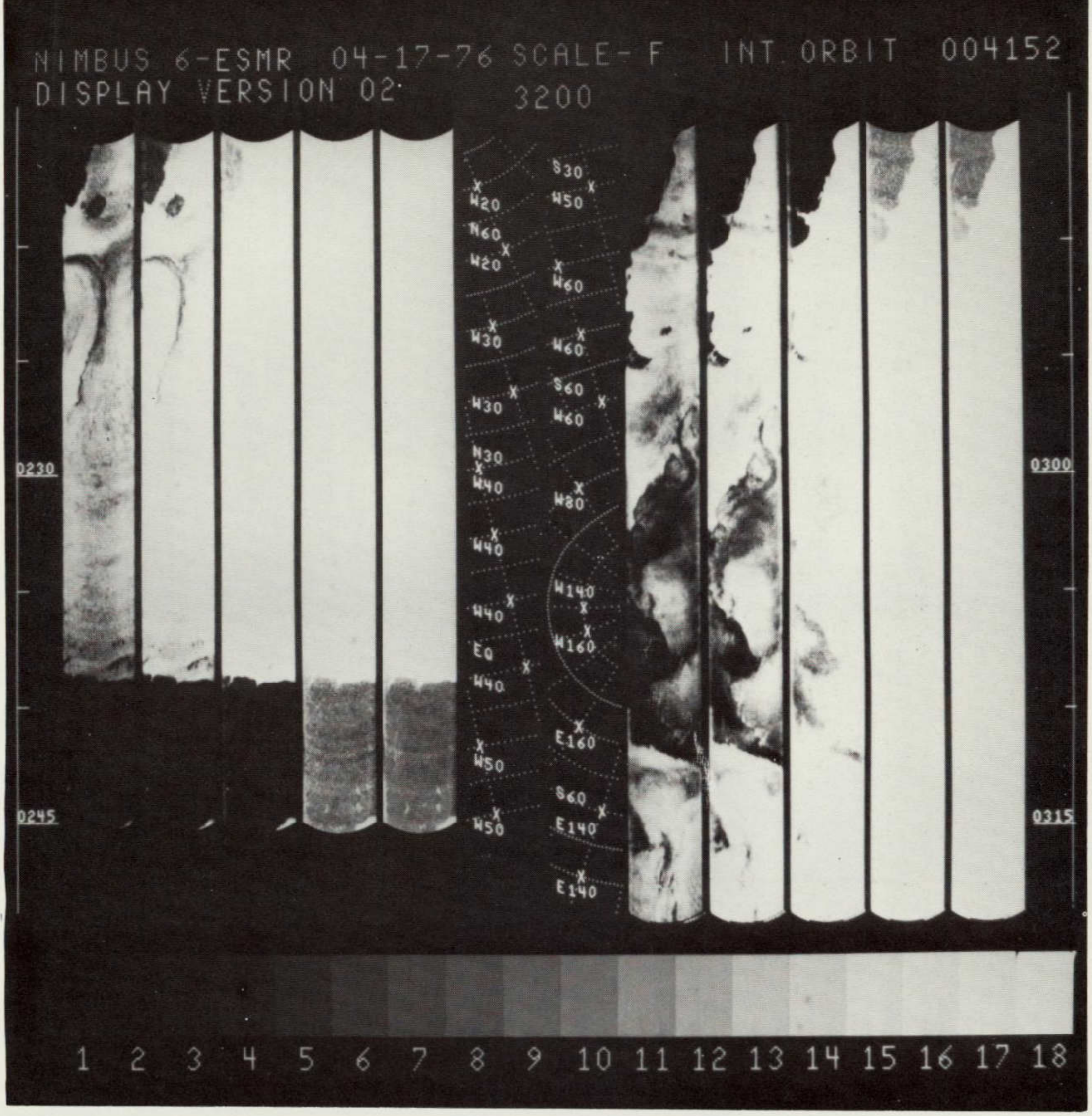
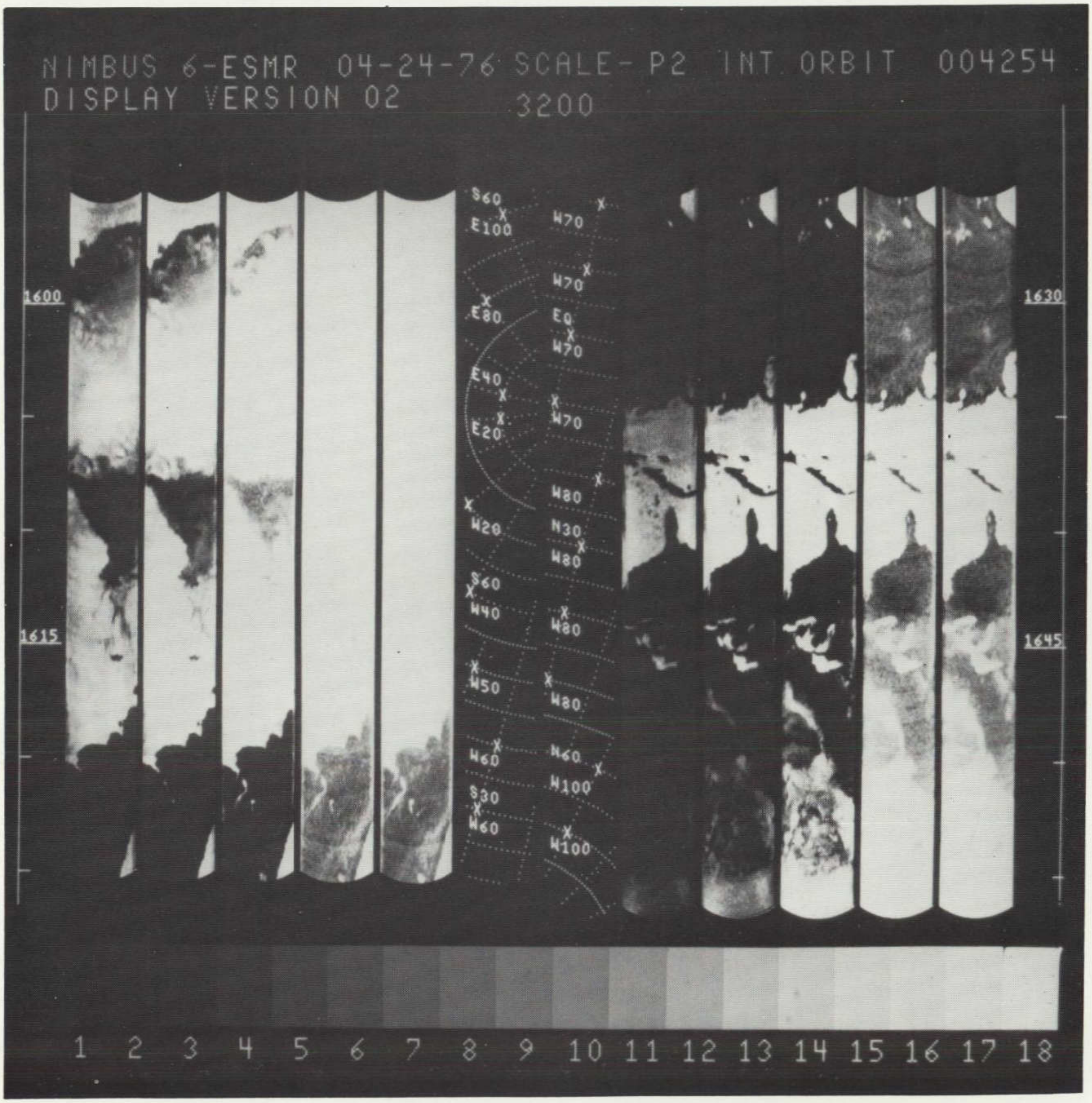



NIMBUS 6-ESMR 04-17-76 SCALE- F INT. ORBIT 004152
DISPLAY VERSION 02 3200
0230
0245
0300
0315
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18



NIMBUS 6-ESMR 04-24-76 SCALE- P2 INT ORBIT 004254
DISPLAY VERSION 02 3200
1600
1615
1630
1645
S60
E100
E80
E40
E20
W20
S60
W40
W50
W60
S30
W60
W70
W70
EQ
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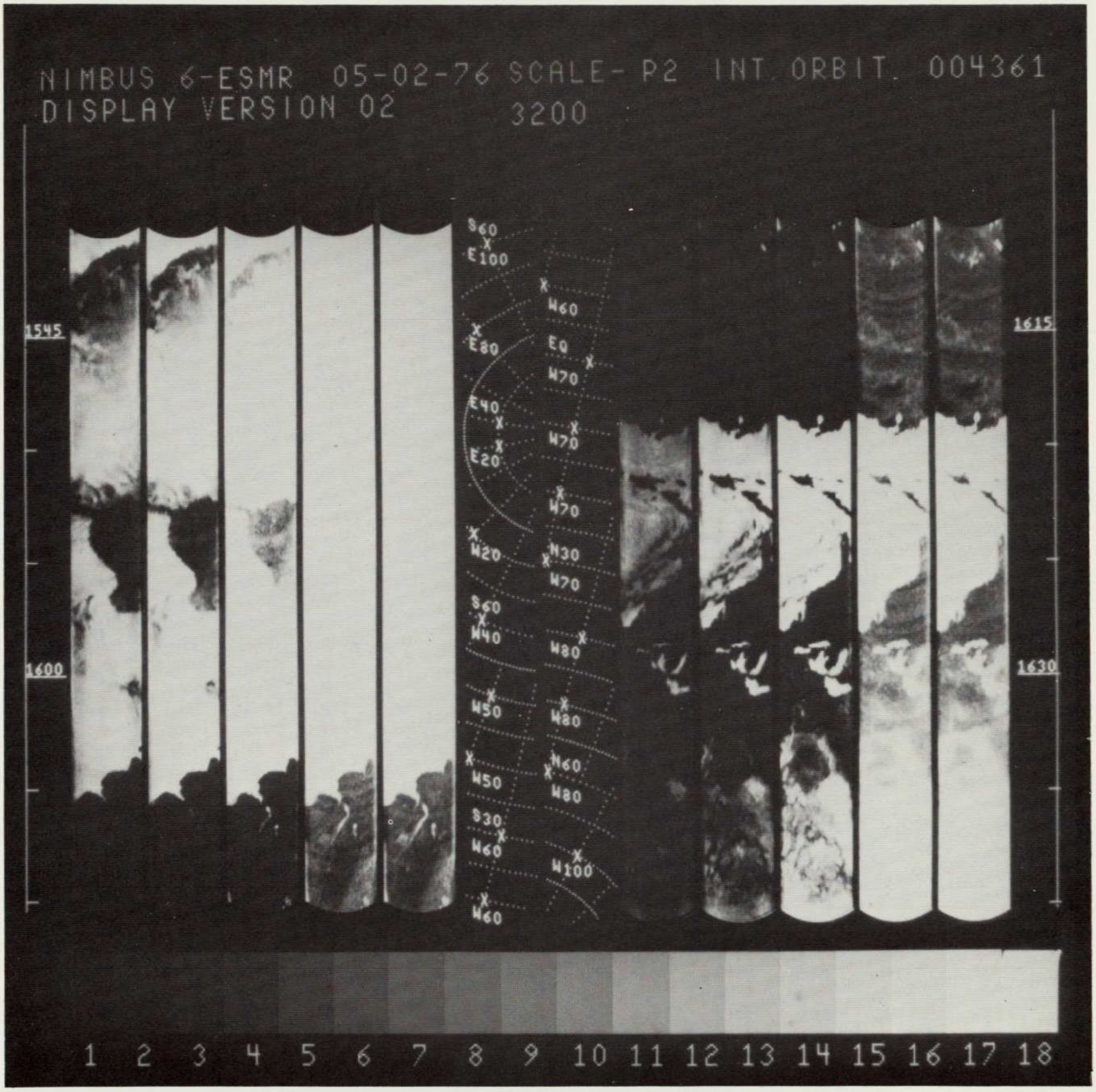

NIMBUS 6-ESMR 05-02-76 SCALE- P2 INT. ORBIT. 004361
DISPLAY VERSION 02 3200
1545
1600
1615
1630
S60
E100
W60
E80
EQ
W70
E40
W70
E20
W70
W20
W30
W70
S60
W40
W80
W50
W80
W50
N60
W80
S30
W60
W100
W60
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

SECTION 4

TEMPERATURE HUMIDITY INFRARED RADIOMETER MONTAGES

The Nimbus 6 Temperature Humidity Infrared Radiometer (THIR) subsystem is of the same design and operation as the THIR flown on Nimbus 4 and 5. The two-channel scanning radiometer measures earth radiation in two spectral bands. A 10.3 μm to 12.5 μm (11.5 μm) window channel provides an image of the cloud cover, and temperatures of the cloud tops, land, and ocean surfaces. A 6.5 μm to 7.1 μm (6.7 μm) channel provides information on the moisture content of the upper troposphere and stratosphere, and the location of jet streams and frontal systems. Ground resolution at the satellite subpoint is 8.2 km for the 11.5 μm channel and 22.5 km for the 6.7 μm channel. Both channels operate continuously to provide day and night global coverage. However, with only HDRSS recorder (A) available for full-time use on the satellite, gaps in global coverage occur over "blind" orbit areas, and sometimes over the Rosman and Alaska STDN stations, when the tape data are being transmitted to the ground. The blind orbits occur during a daytime pass over the western part of the Pacific Ocean and during a nighttime pass over the eastern part of the Atlantic Ocean. These blind orbit areas happen when the Orroral, Australia is not available for playback of recorded data. Then the time between successive playbacks of the tape recorder becomes longer than the record capability of the good HDRSS A plus the reduced capability of HDRSS B.

This section pictorially documents the data from the THIR. Section 4.1 contains all nighttime THIR 11.5 μm and 6.7 μm montages and Section 4.2 contains all daytime THIR 11.5 μm and 6.7 μm montages, arranged in chronological order. Key latitudes can be read from the superimposed grids. Grid points are identified where each swath crosses 60°N, 30°N, EQUATOR, 30°S and 60°S.

Vellum Location Guide overlays, attached to the back of this document, are to be used for general orientation with the data presented in each THIR montage. Proper alignment of the overlay grid is accomplished by matching the grid indices on the equator with the two "T" marks on each montage.

THIR photographic data and/or digital data can be ordered through the National Space Science Data Center (NSSDC), Code 601, Goddard Space Flight Center, Greenbelt, Maryland 20771.

THIR photographic data consist of 70 mm film strips produced from the radiometer output signals. The gray shades in each image correspond to temperature variations of the land, sea, and clouds. On a film positive the lightest tones represent cold temperatures, while the darkest tones represent warm temperatures. THIR photographic data are archived in separate 6.7 μm and 11.5 μm daytime and nighttime swaths. The approximate coverage of a full swath is from pole to pole.

When ordering THIR photographic data from NSSDC the following information should be given:

- Satellite (e.g. Nimbus 6)
- Date of data
- Data orbit number, channel (11.5 μm or 6.7 μm), and whether day or night data
- Data format, i.e., positive or negative transparencies, or prints
- Area of interest defined by latitude and longitude

In addition to the THIR film strips, photographic copies of the daily day or night montages prepared from film strips can be obtained.

Quantitative digital data are obtained when the original analog signals are digitized with full fidelity, and processed by an IBM 360 computer, where calibration and geographic referencing are applied. Each reduced radiation data tape prepared by the IBM 360 is called a Nimbus Meteorological Radiation Tape-THIR (NMRT-THIR). The NMRT can be used to generate grid print maps or to accomplish special scientific analyses. The format of this tape may be found in The Nimbus 6 User's Guide, Section 2.

Due to the large volume and the long computer running time required for processing THIR into NMRTs, Nimbus 6 THIR digital data are not routinely reduced to final NMRT format. Only those data which are specifically requested by the user will be processed. Requests should be made through NSSDC. It is anticipated that requested NMRT-THIR will begin to be available through NSSDC six months after launch. The user is urged to make full use of the film strips which are abundantly available in nearly real time from the NSSDC.

A series of programs at GSFC produce printed and contoured data referenced to a grid on Polar Stereographic or Mercator map bases. These are called grid print maps. The advantages of the grid print map presentation are the display of absolute values of temperatures in their approximate location and geographical rectification of the data. Grid print maps may be produced for either a single orbit or a composite of several orbits. The following standard options are available and should be specified when requesting grid print maps from NSSDC.

- Map and Approximate Scale

    a. Polar Stereographic, 1:30 million

b. Polar Stereographic, 1:10 Million

c. Multi-resolution Mercator maps are available down to 1:1 million scale.

- Maximum Scan Angle (50 degrees is practical limit)
- Field Values and Contouring. Unless otherwise specified, all maps will include field values and contouring except Mercator maps of scales larger than 1:20 million. A data population map, indicating the number of individual measurements contained in each grid point average, as well as a latitude-longitude description for geographically locating the data, will be provided along with each grid print map.

When ordering grid print map data, the following identifying information should be given:

- Satellite (e.g., Nimbus 6)
- Sensor (THIR)
- Channel (6.7 μm or 11.7 μm)
- Data Orbit Number
- Calendar Date of Equator Crossing
- Beginning and Ending Times of Data in GMT
- Latitude and Longitude Limits of Area of Interest
- Map Type and Map Scale
- Scan Angle Limits
- Contouring or No Contouring of Data Points

When ordering NMRTs, the "Calendar Date of Equator Crossing" and "Map type and Map Scale" can be omitted.

Beginning and ending times of data in GMT can be interpolated using Table 4-1 which gives the elapsed time from either ascending or descending node as a function of latitude. These elapsed time values can be appropriately added or subtracted from node times given in Table 2-2.

A complete description of the THIR experiment may be found in The Nimbus 6 User's Guide, Section 2.

Table 4-1

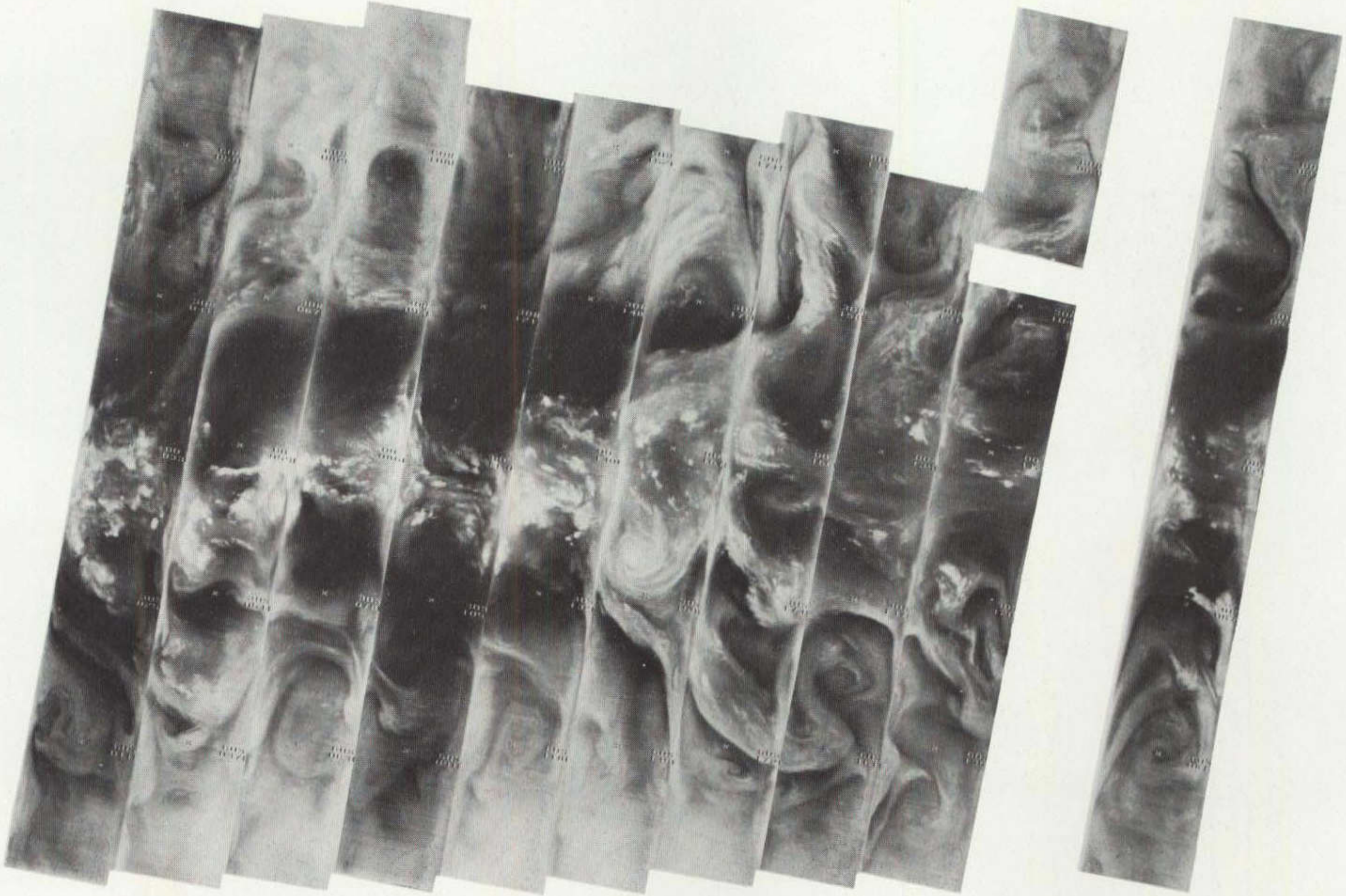
Latitude Versus Minutes From
Ascending or Descending Node

Latitude from AN or DN	Minutes and Seconds from AN or DN
0	0:00
5	1:31
10	3:02
15	4:33
20	6:03
25	7:34
30	9:05
35	10:36
40	12:08
45	13:40
50	15:12
55	16:44
60	18:18
65	19:52
70	21:33
75	23:26
78	24:44
80.1	26:49
78	29:00
75	30:09
70	31:51
65	33:35

SECTION 4.1

TEMPERATURE HUMIDITY INFRARED RADIOMETER

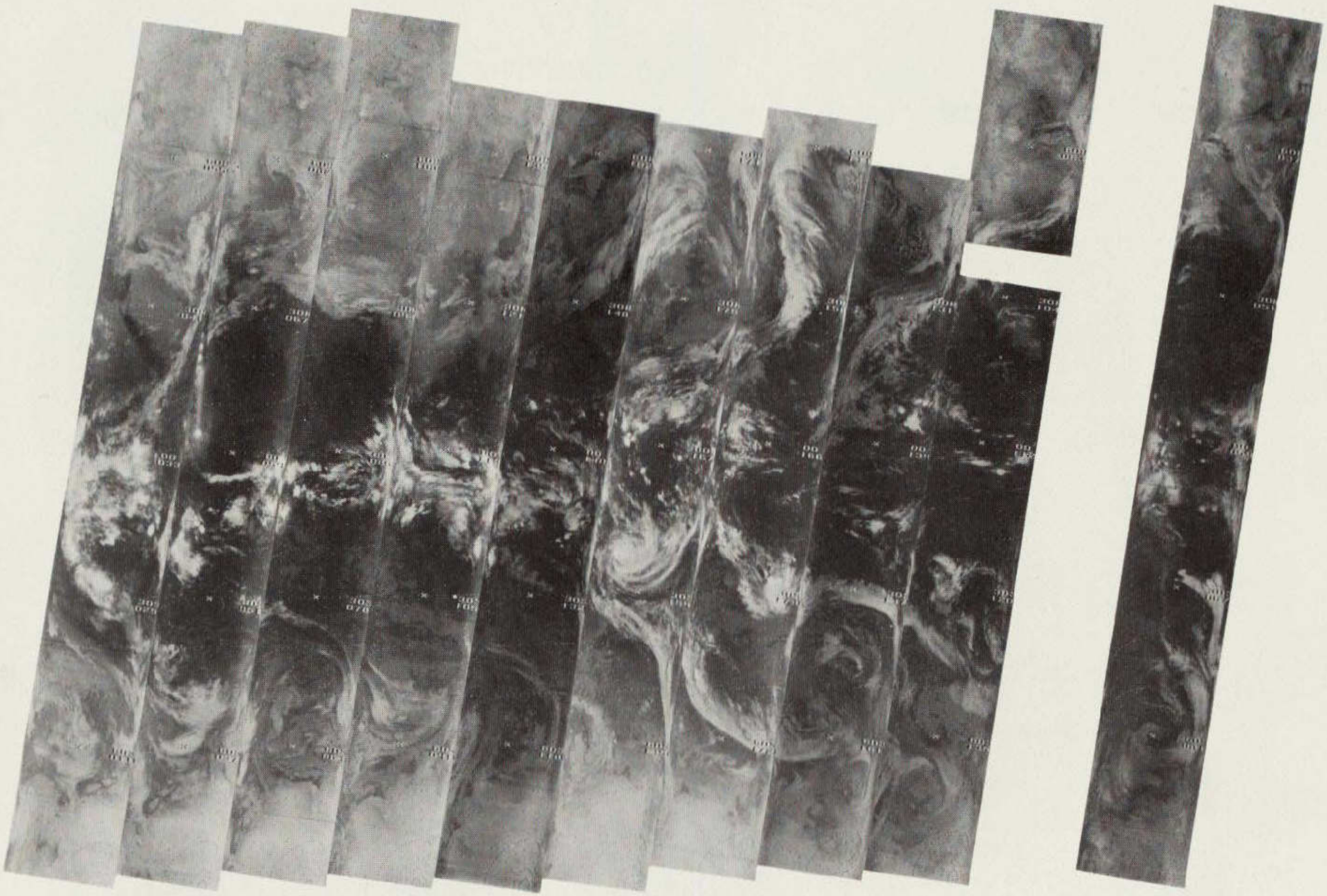
NIGHTTIME MONTAGES



3534 3533 3532 3531 3530 3529 3528 3527 3526 3525 3524 3523 3522

1 MARCH 1976

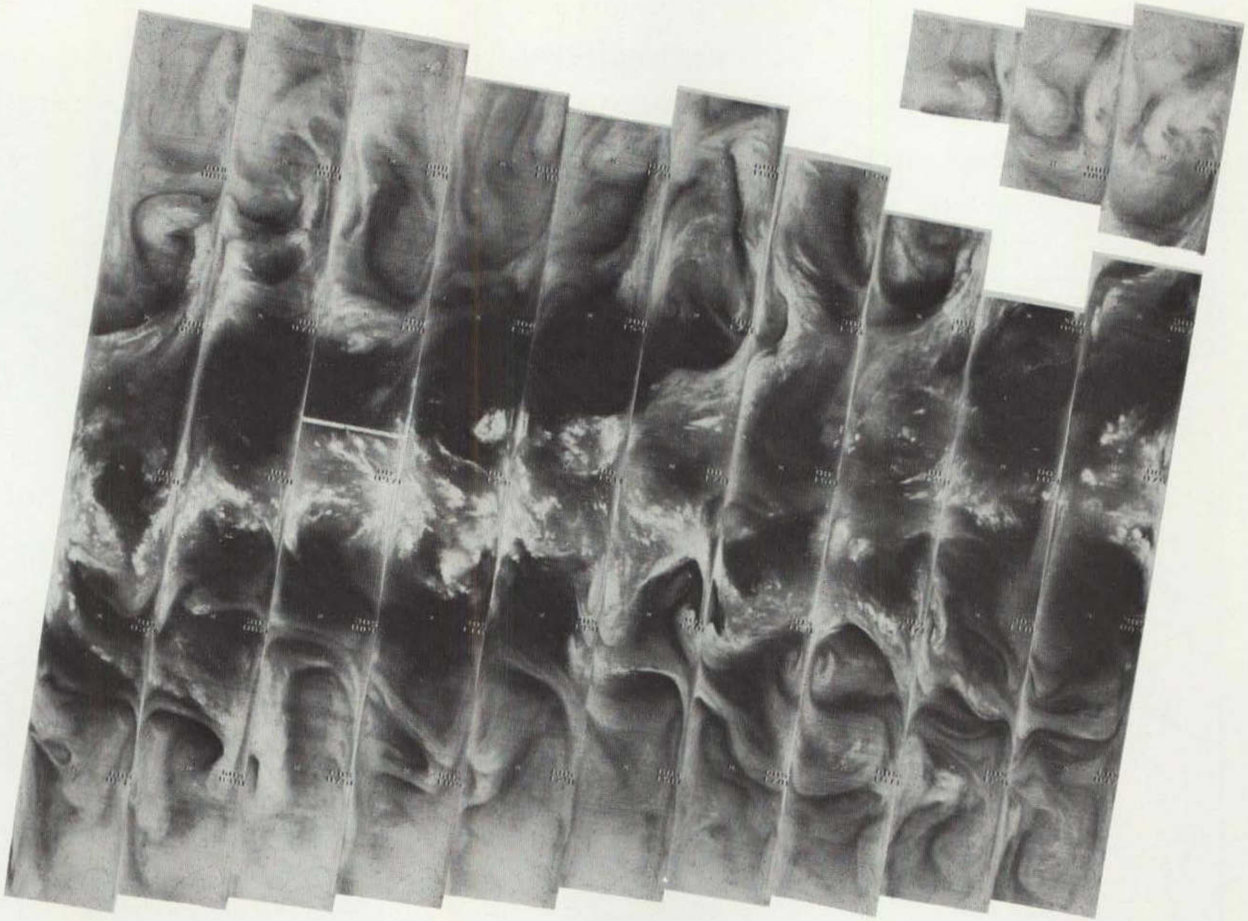
6.7 μm



3534 3533 3532 3531 3530 3529 3528 3527 3526 3525 3524 3523 3522

1 MARCH 1976

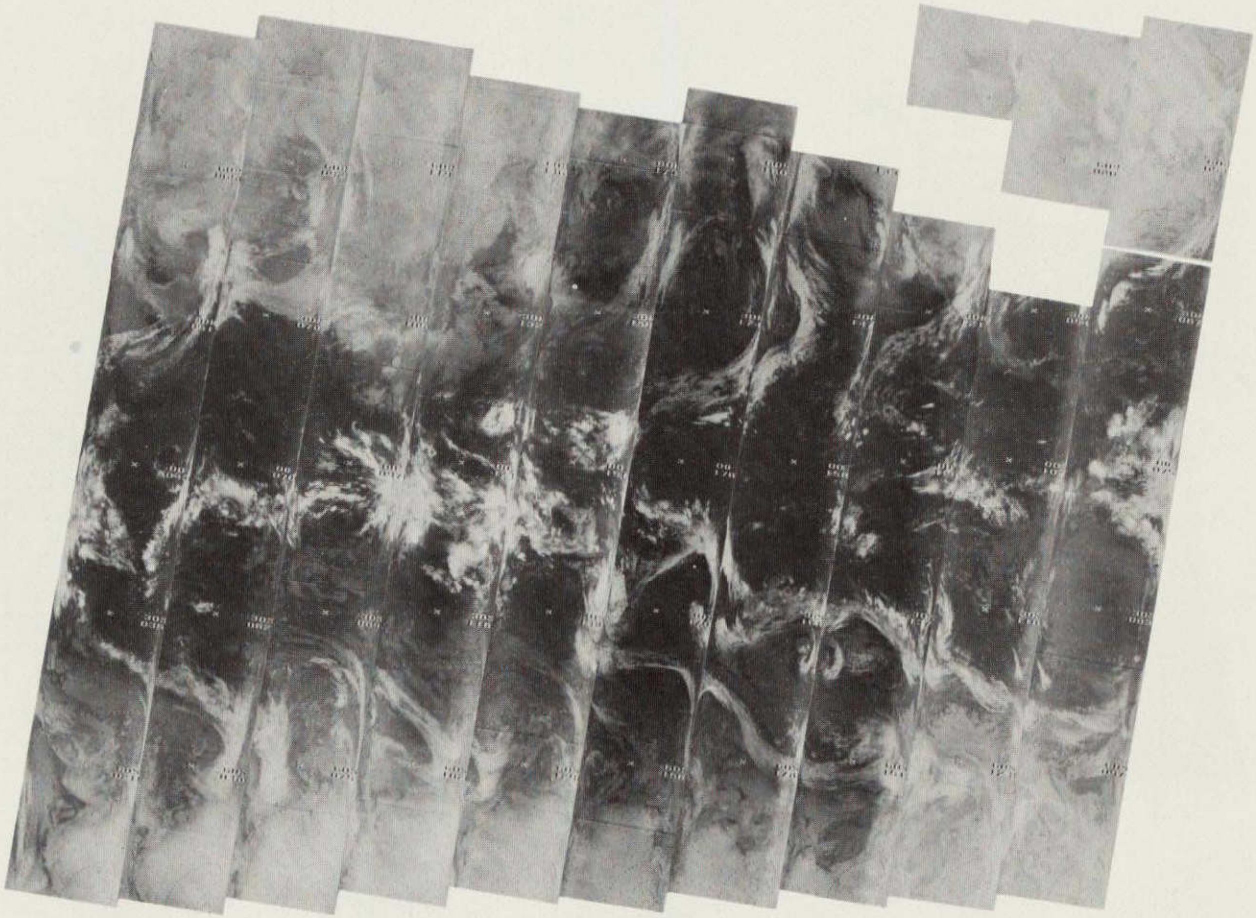
11.5 μm



3548 3547 3546 3545 3544 3543 3542 3541 3540 3539 3538 3537 3536 3535

2 MARCH 1976

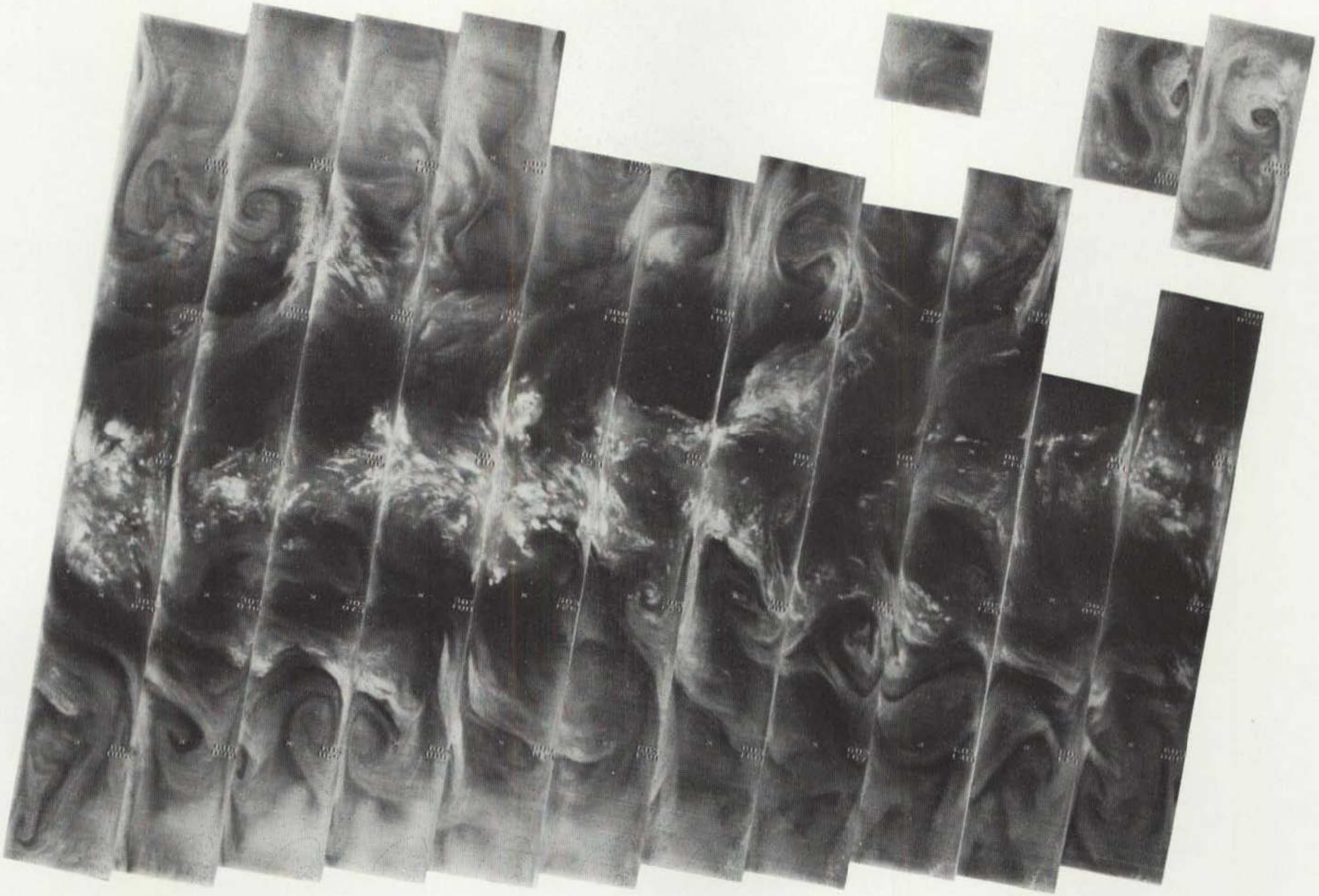
6.7 μm



3548 3547 3546 3545 3544 3543 3542 3541 3540 3539 3538 3537 3536 3535

2 MARCH 1976

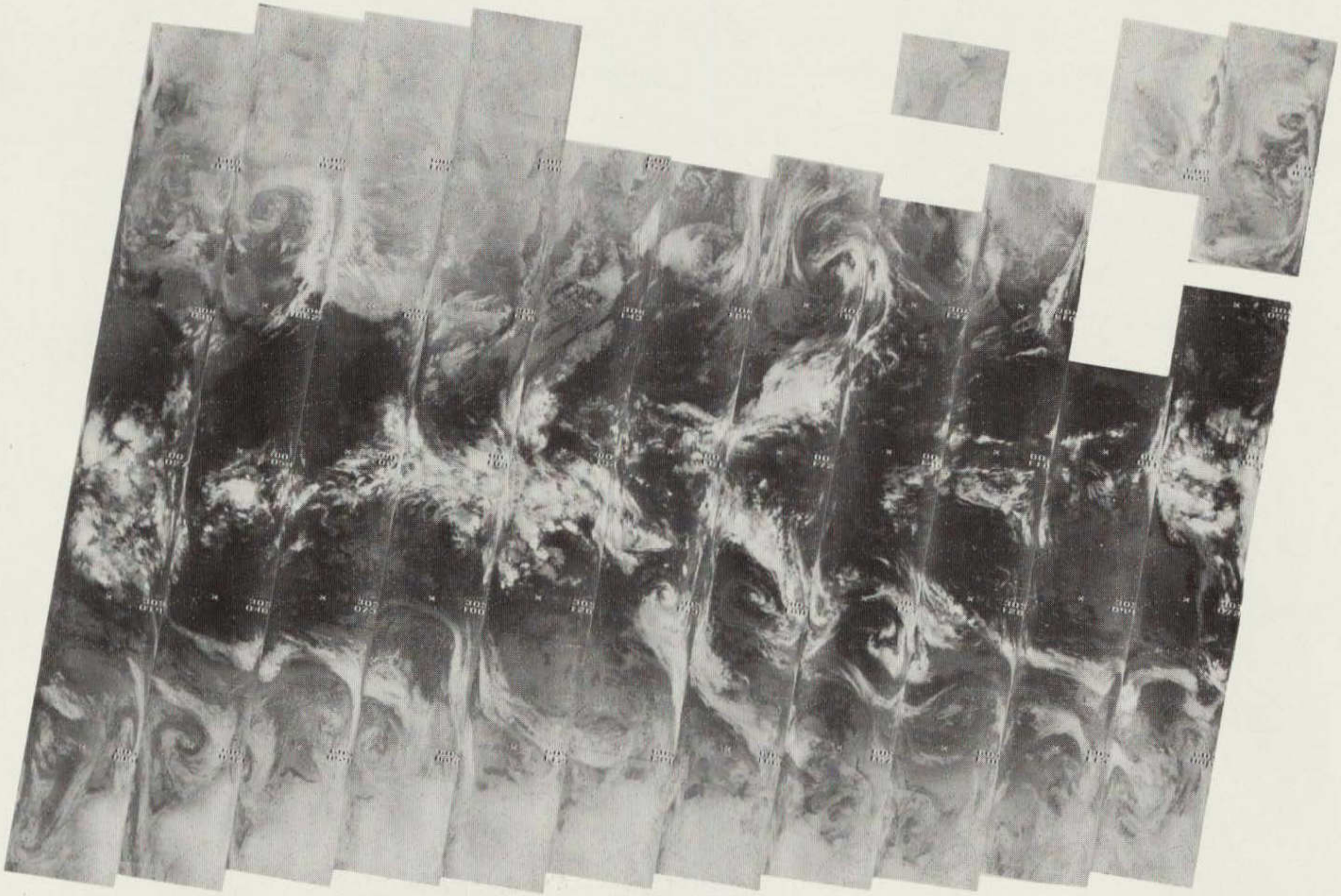
11.5 μm



3561 3560 3559 3558 3557 3556 3555 3554 3553 3552 3551 3550 3549

3 MARCH 1976

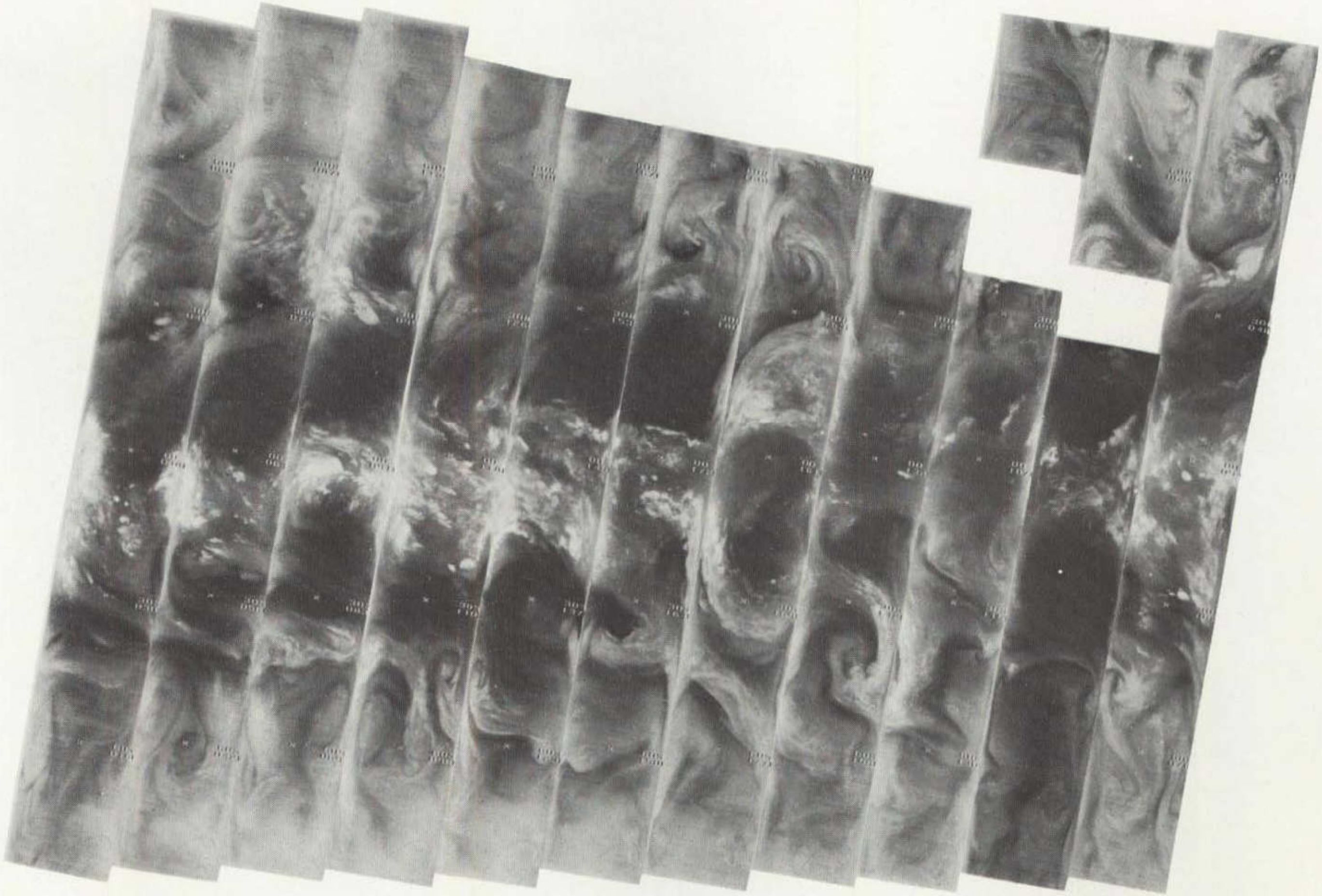
6.7 μm



3561 3560 3559 3558 3557 3556 3555 3554 3553 3552 3551 3550 3549

3 MARCH 1976

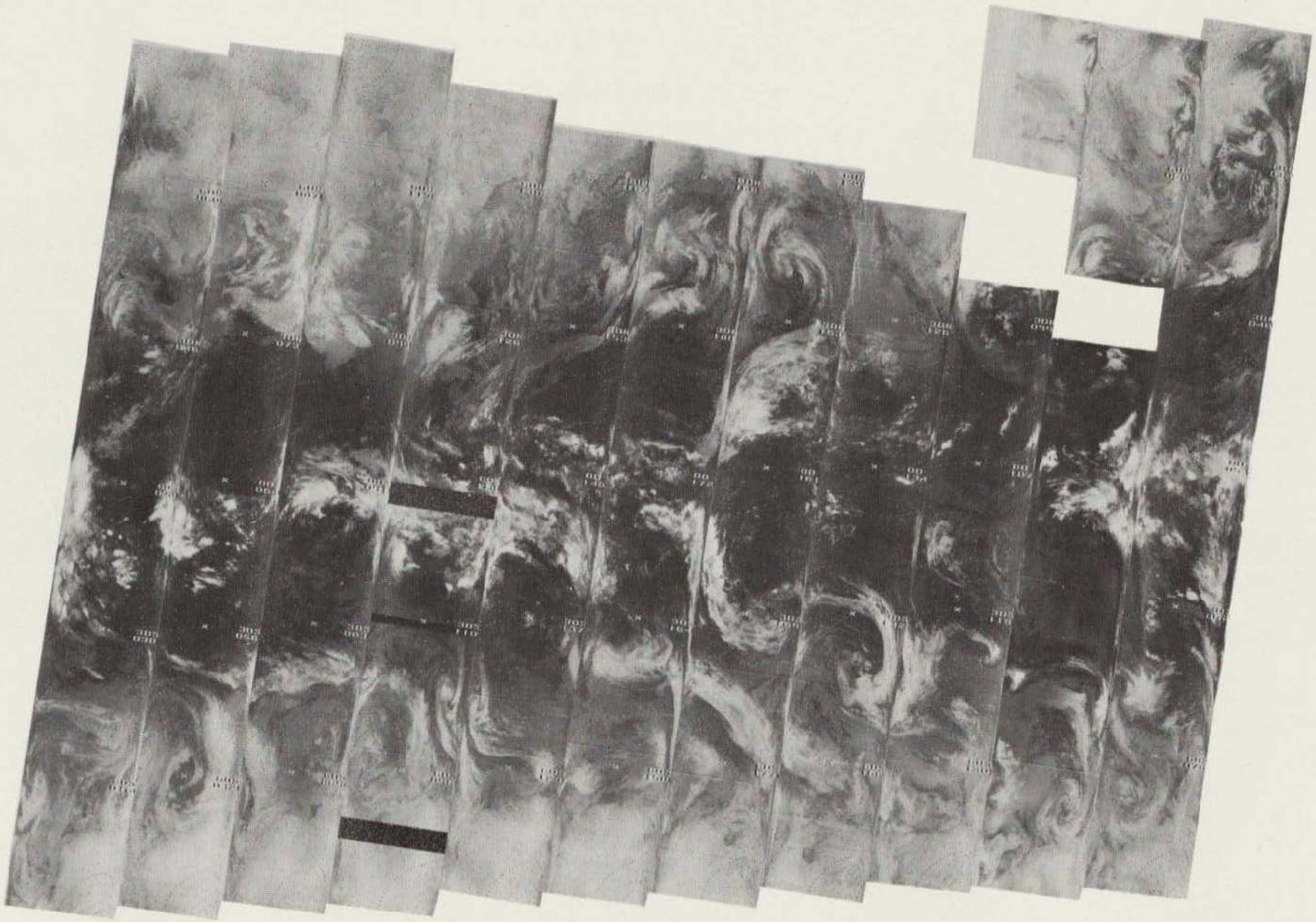
11.5 μm



3575 3574 3573 3572 3571 3570 3569 3568 3567 3566 3565 3564 3563 3562

4 MARCH 1976

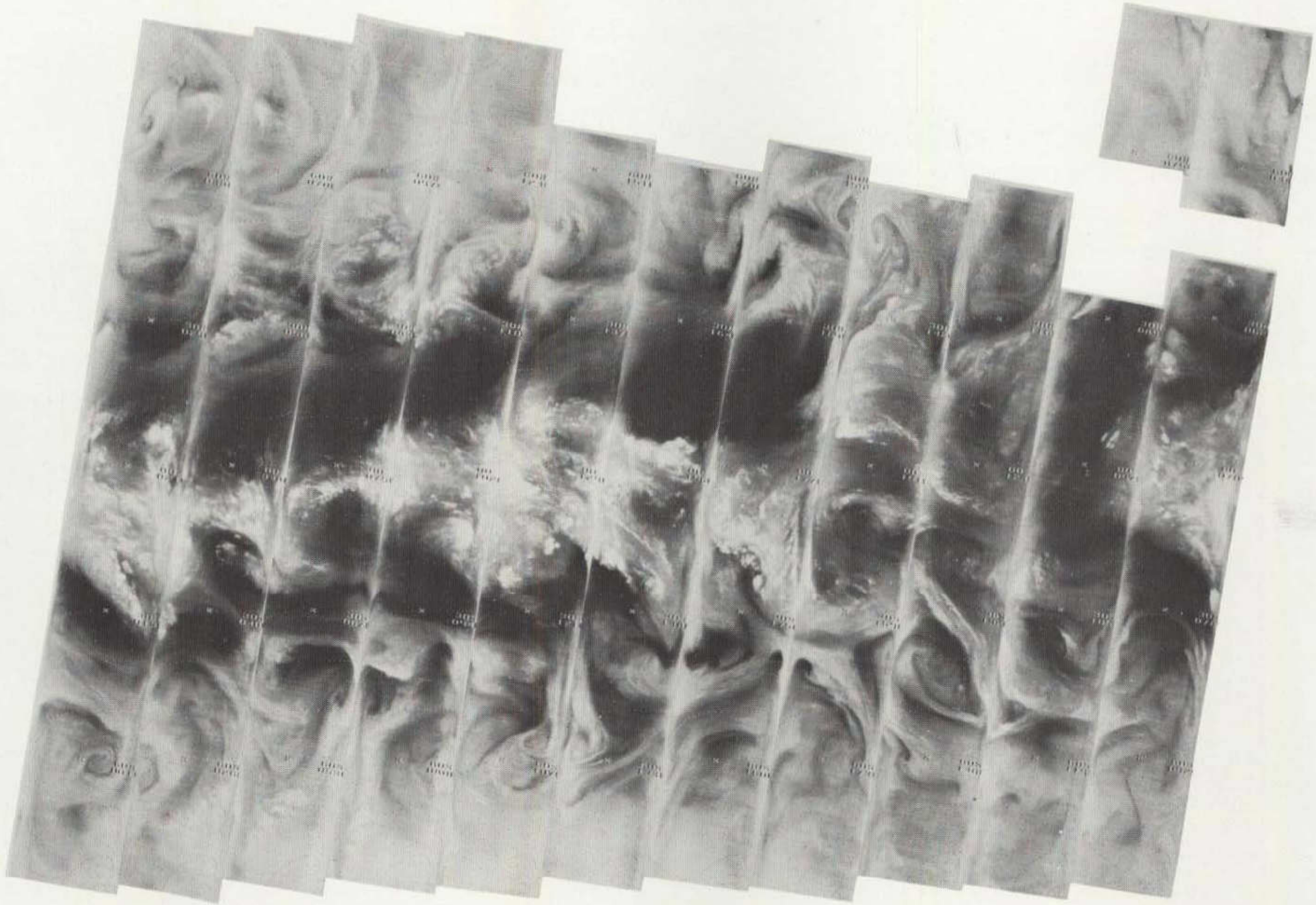
6.7 μm



3575 3574 3573 3572 3571 3570 3569 3568 3567 3566 3565 3564 3563 3562

4 MARCH 1976

11.5 μm

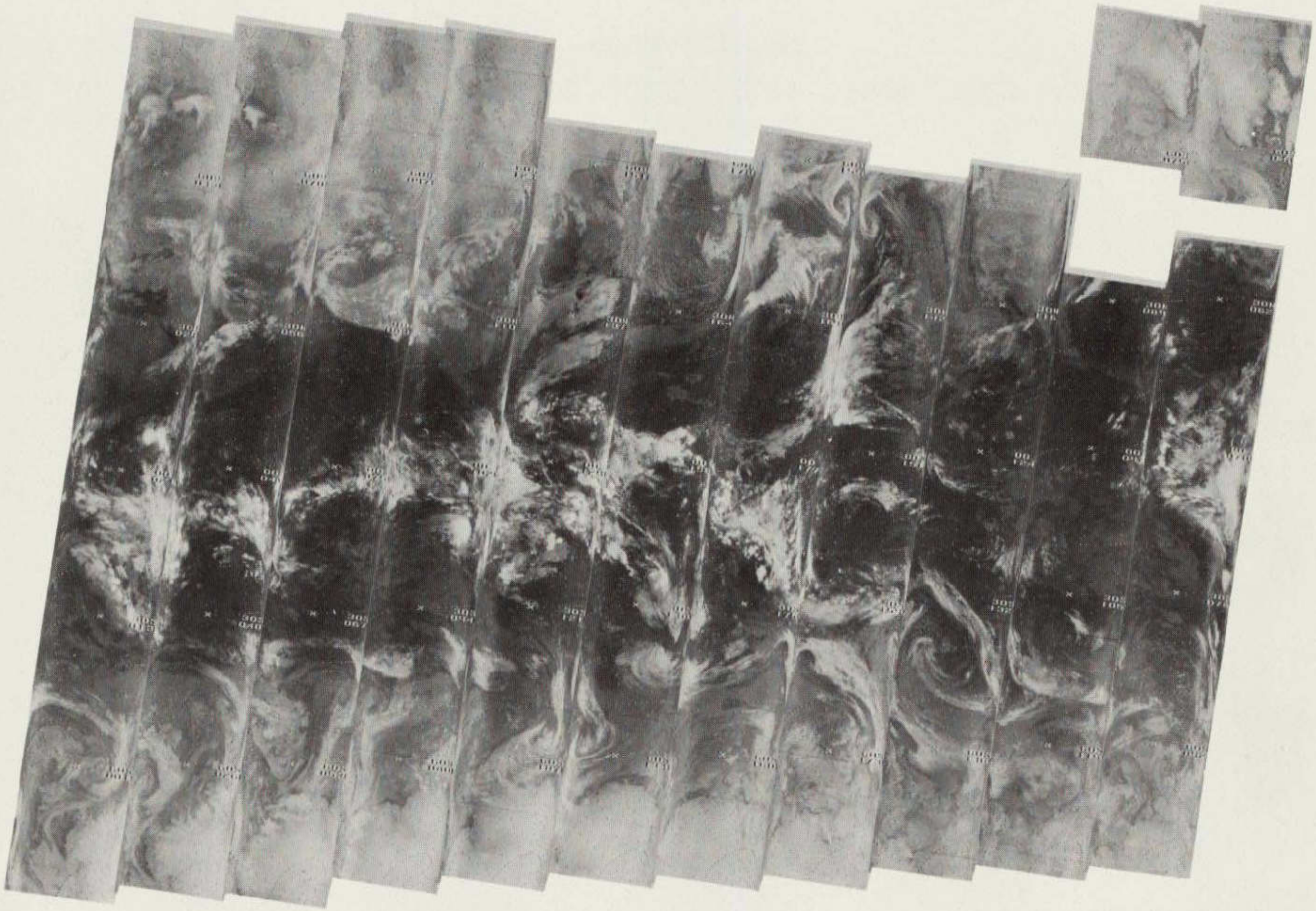


3588 3587 3586 3585 3584 3583 3582 3581 3580 3579 3578 3577 3576

5 MARCH 1976

6.7 μm

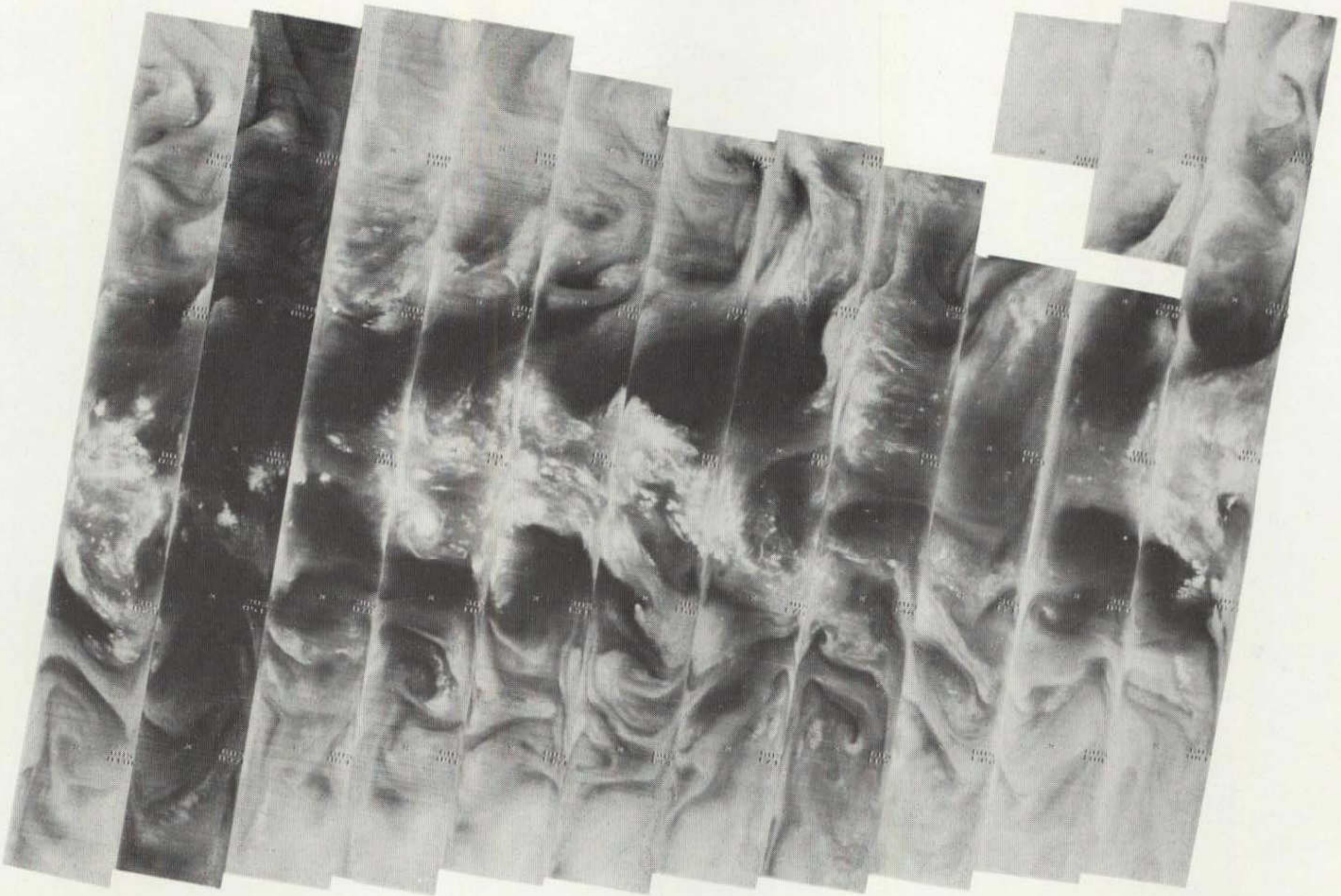
C↔2



3588 3587 3586 3585 3584 3583 3582 3581 3580 3579 3578 3577 3576

5 MARCH 1976

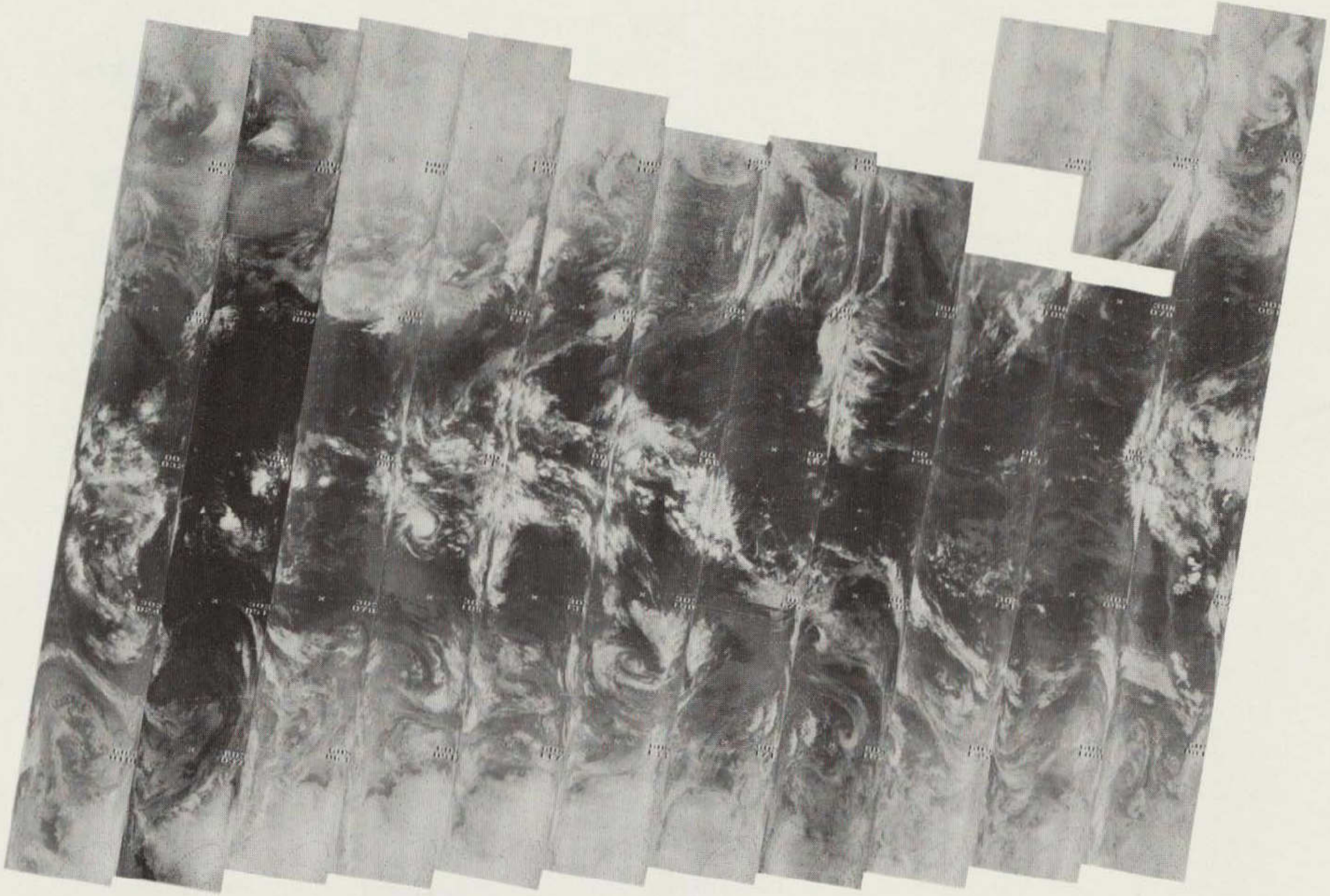
11.5 μm



3601 3600 3599 3598 3597 3596 3595 3594 3593 3592 3591 3590 3589

6 MARCH 1976

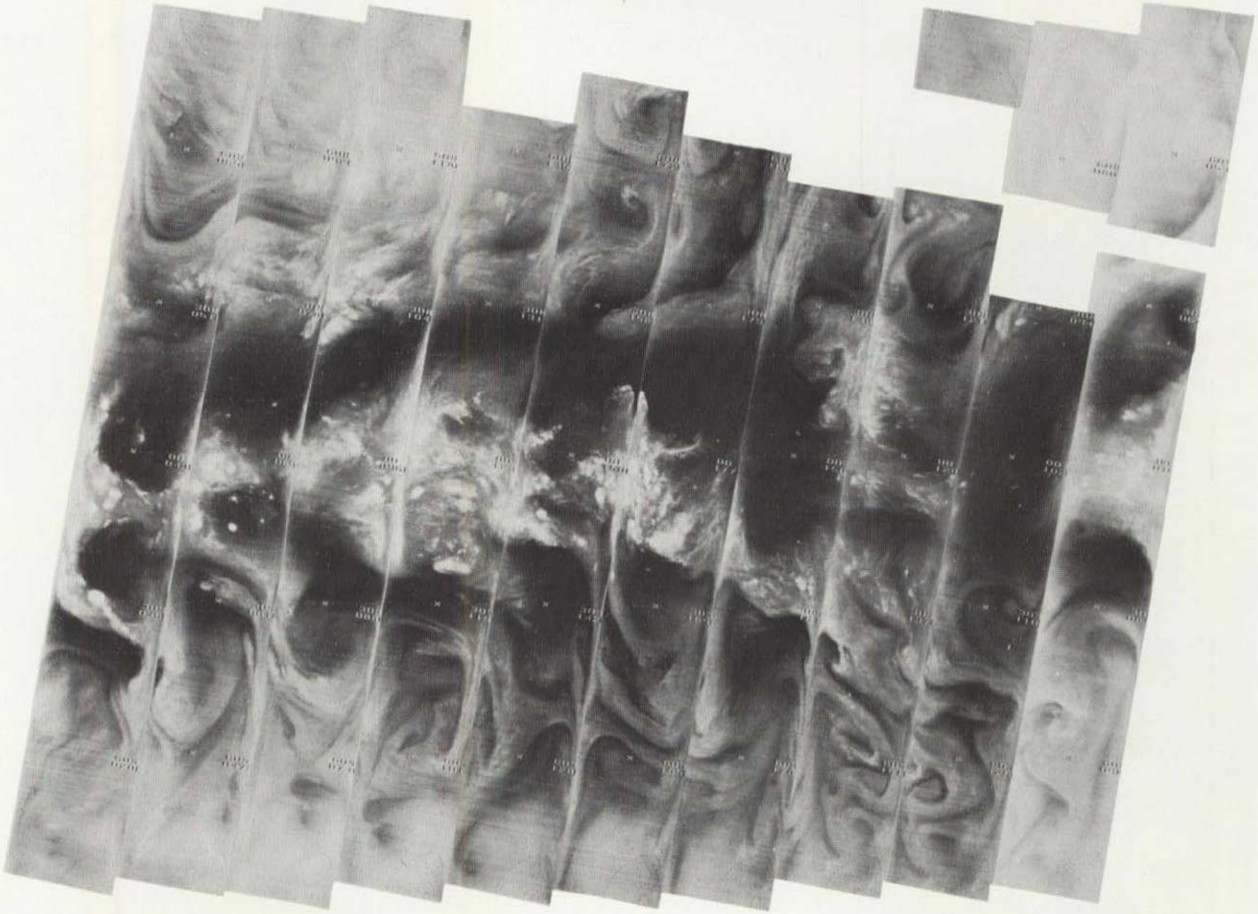
6.7 μm



3601 3600 3599 3598 3597 3596 3595 3594 3593 3592 3591 3590 3589

6 MARCH 1976

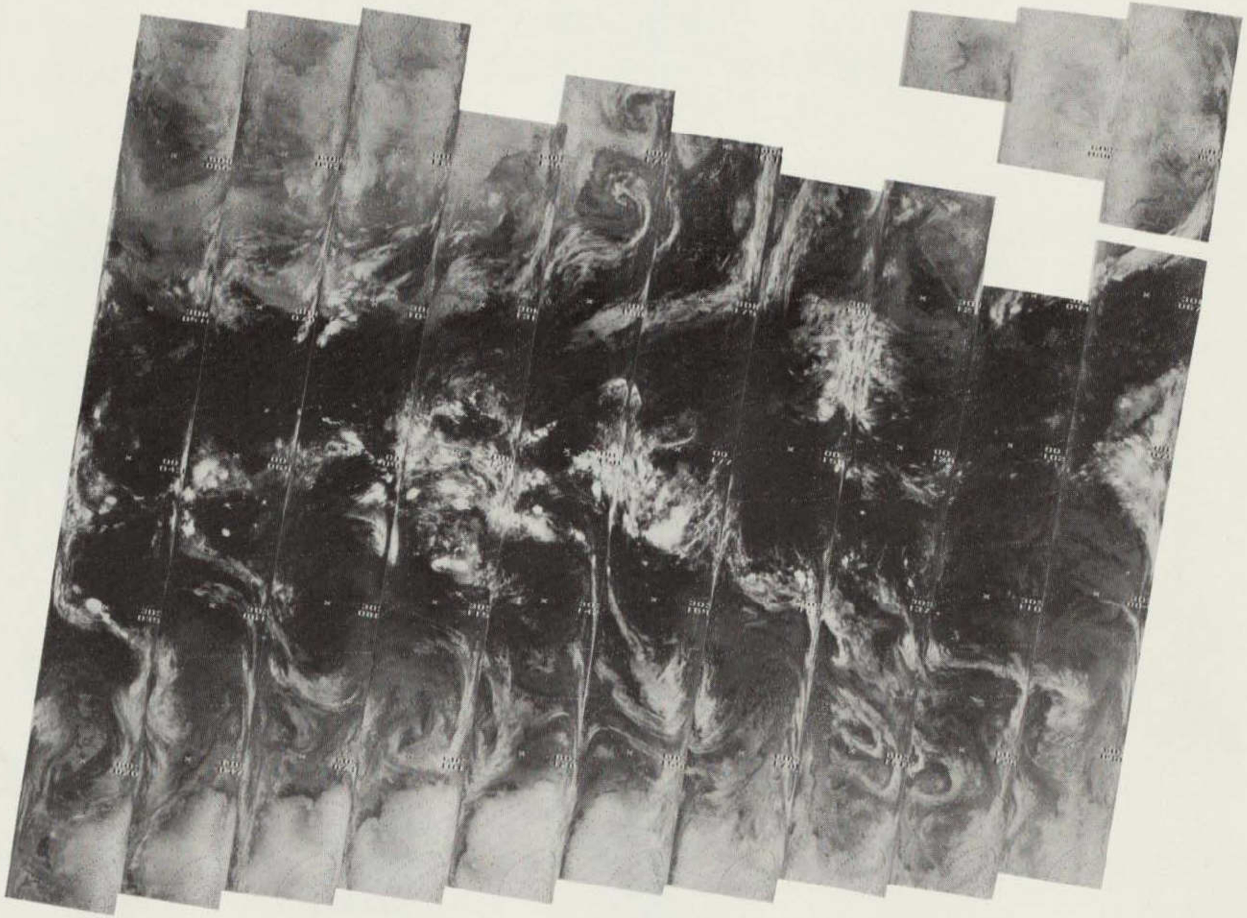
11.5 μm



3615 3614 3613 3612 3611 3610 3609 3608 3607 3606 3605 3604 3603 3602

7 MARCH 1976

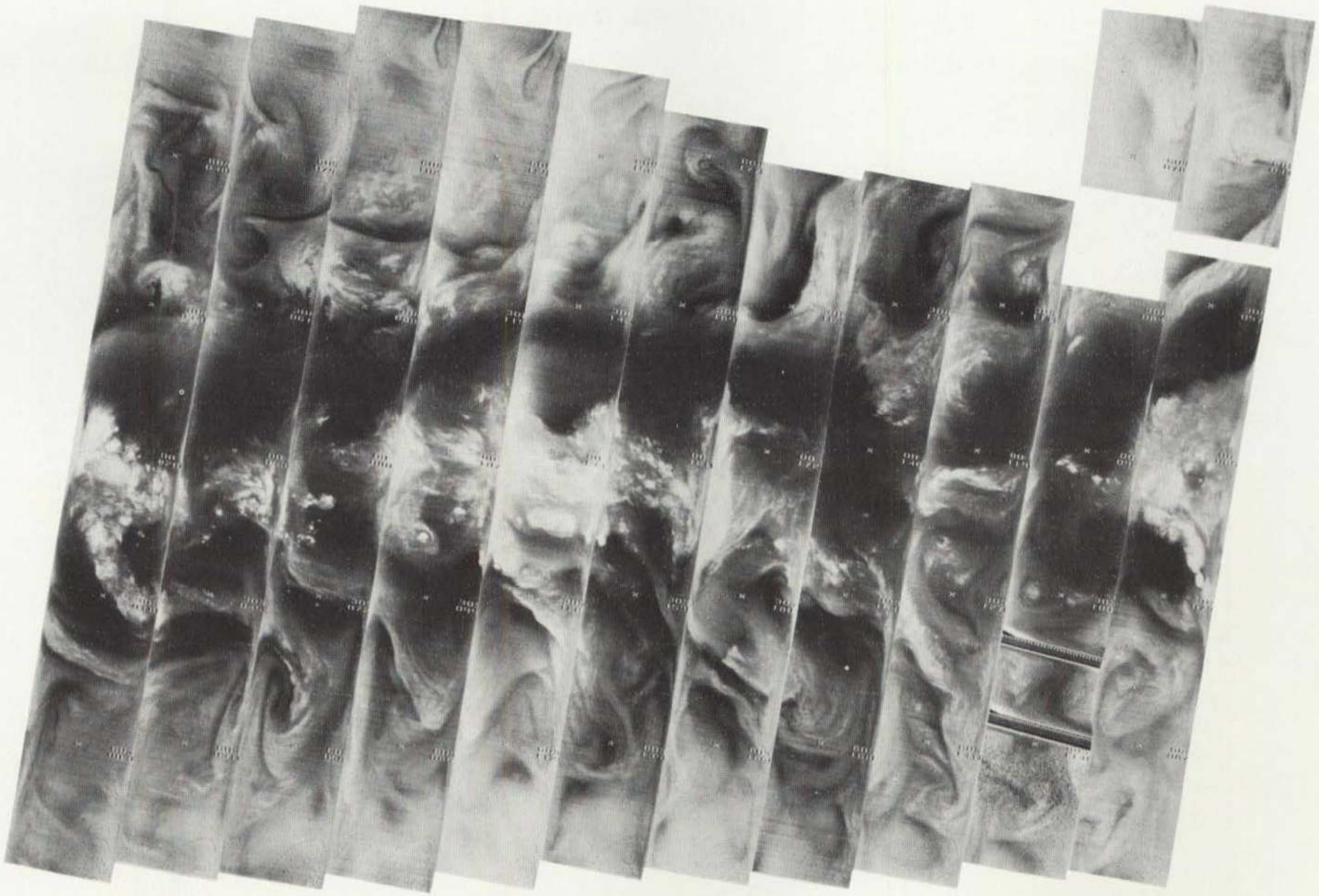
6.7 μm



3615 3614 3613 3612 3611 3610 3609 3608 3607 3606 3605 3604 3603 3602

7 MARCH 1976

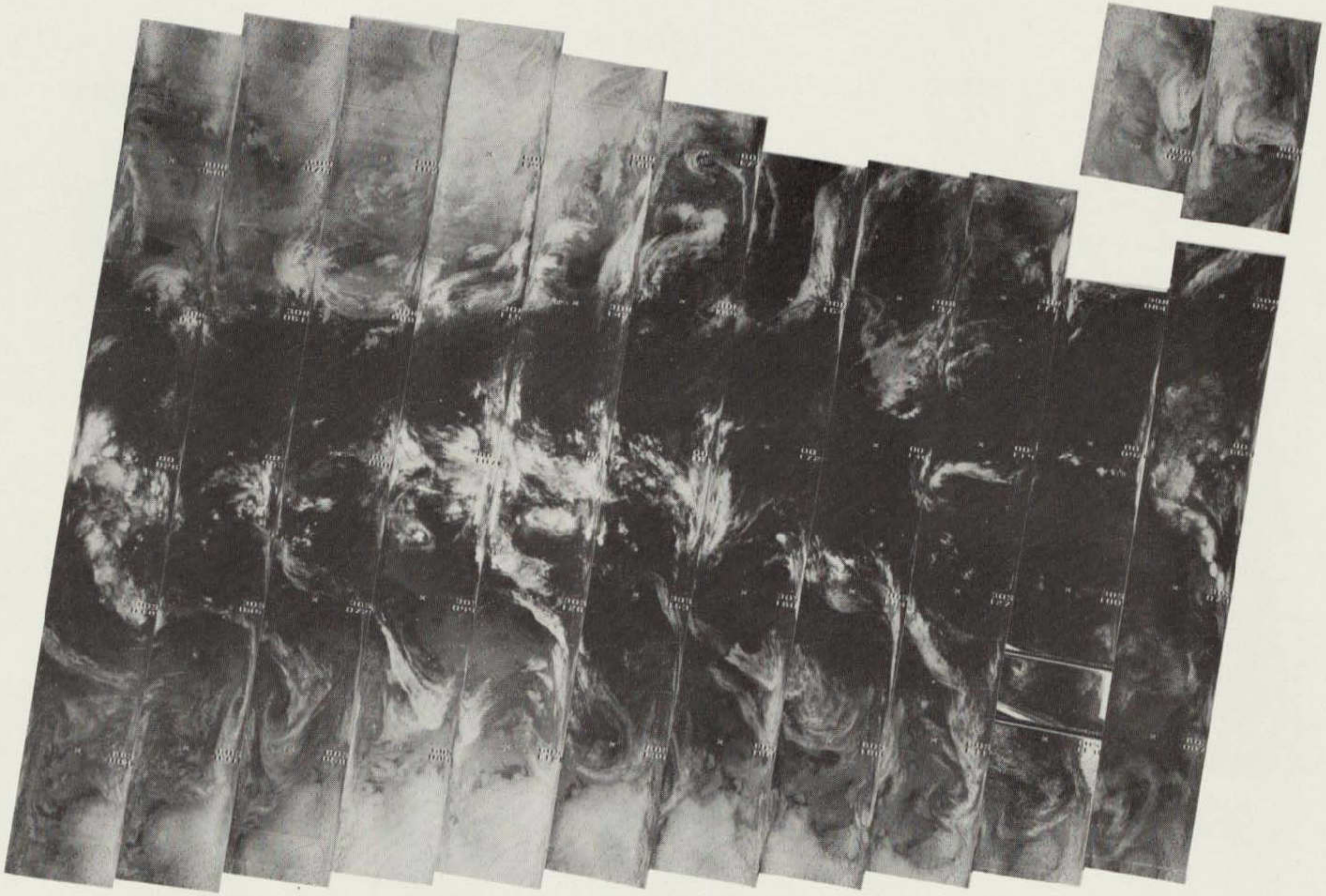
11.5 μm



3628 3627 3626 3625 3624 3623 3622 3621 3620 3619 3618 3617 3616

8 MARCH 1976

6.7 μm

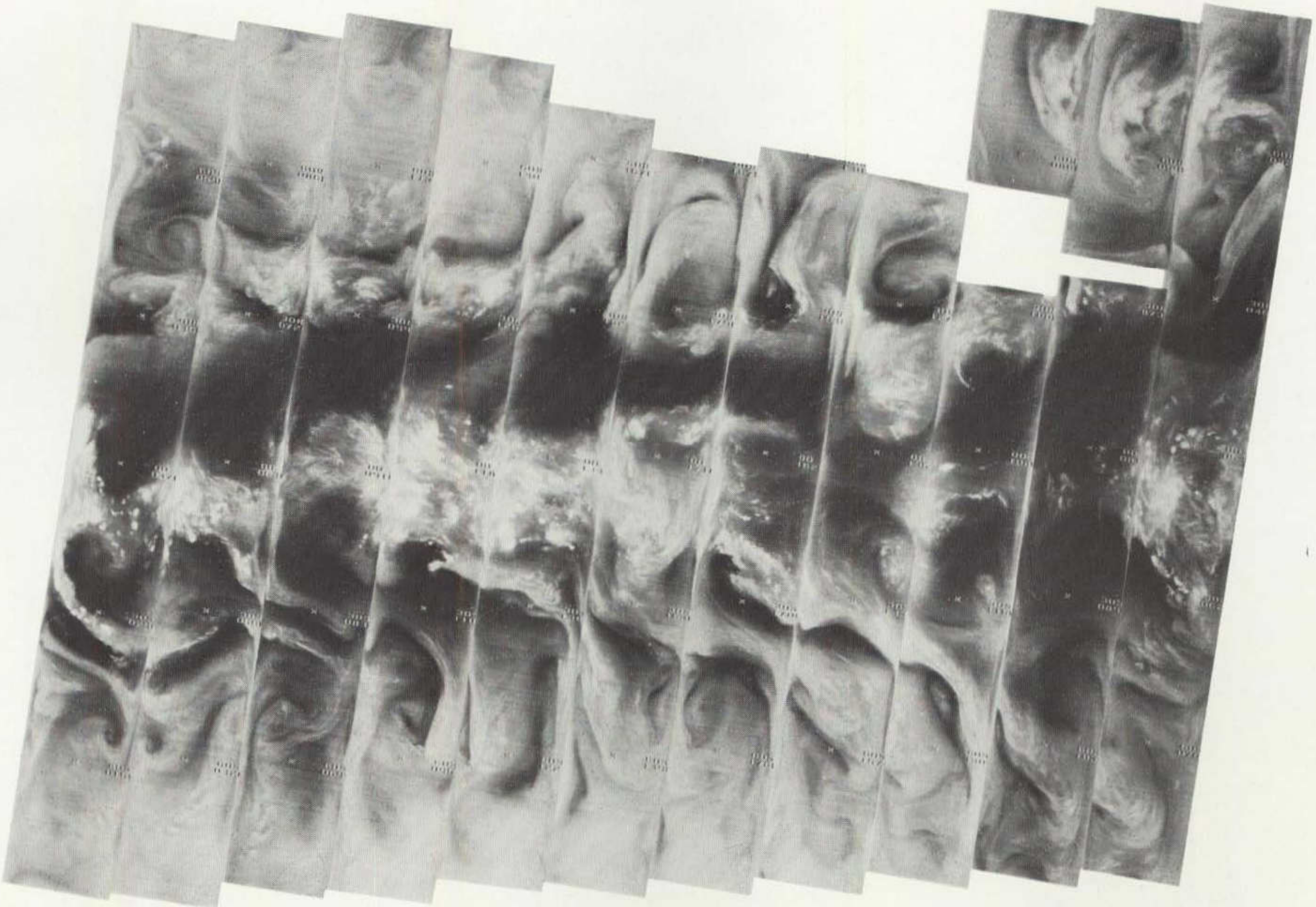


3628 3627 3626 3625 3624 3623 3622 3621 3620 3619 3618 3617 3616

8 MARCH 1976

11.5 μm

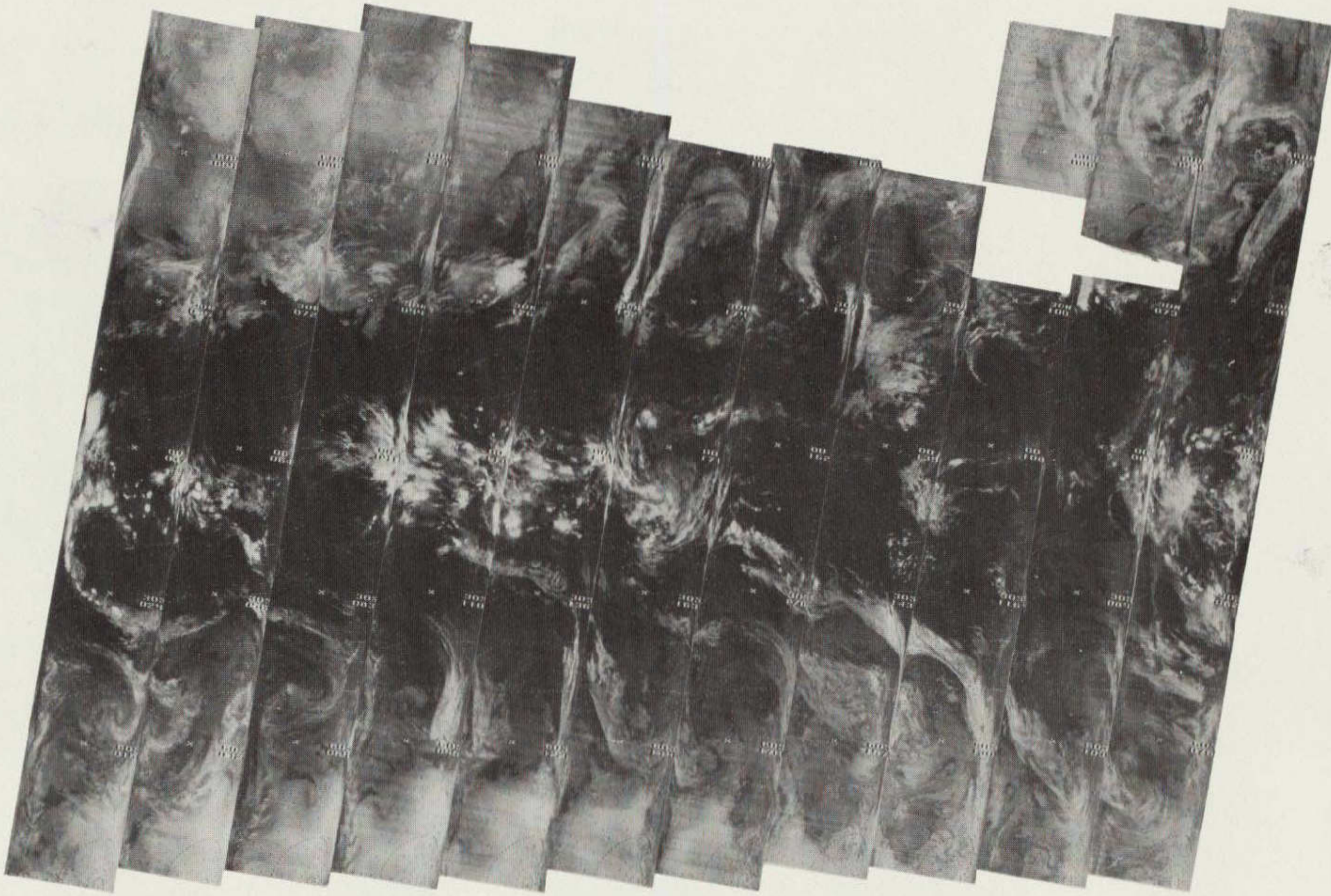
ORIGINAL PAGE IS
OF POOR QUALITY



3642 3641 3640 3639 3638 3637 3636 3635 3634 3633 3632 3631 3630 3629

9 MARCH 1976

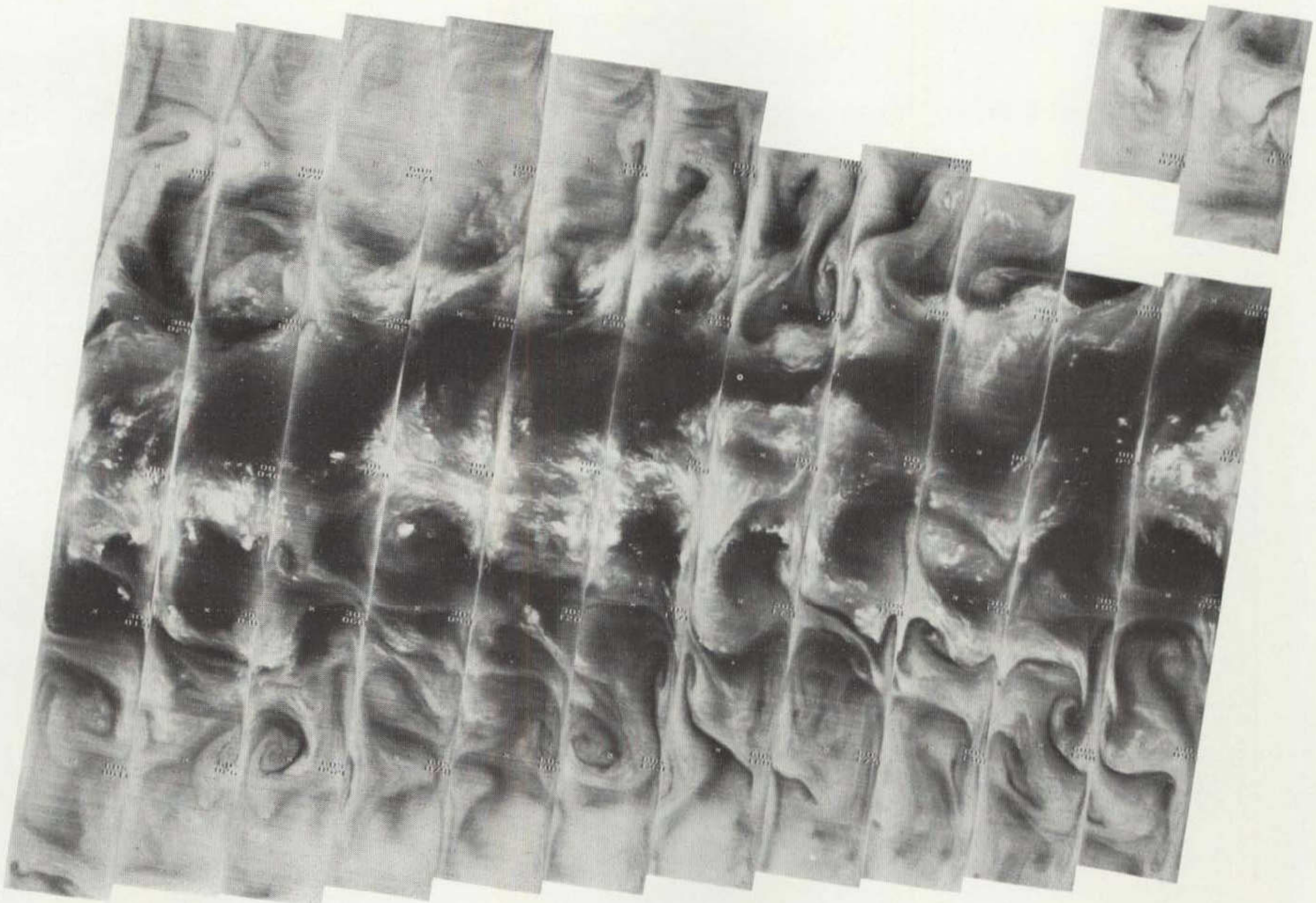
6.7 μm



3642 3641 3640 3639 3638 3637 3636 3635 3634 3633 3632 3631 3630 3629

9 MARCH 1976

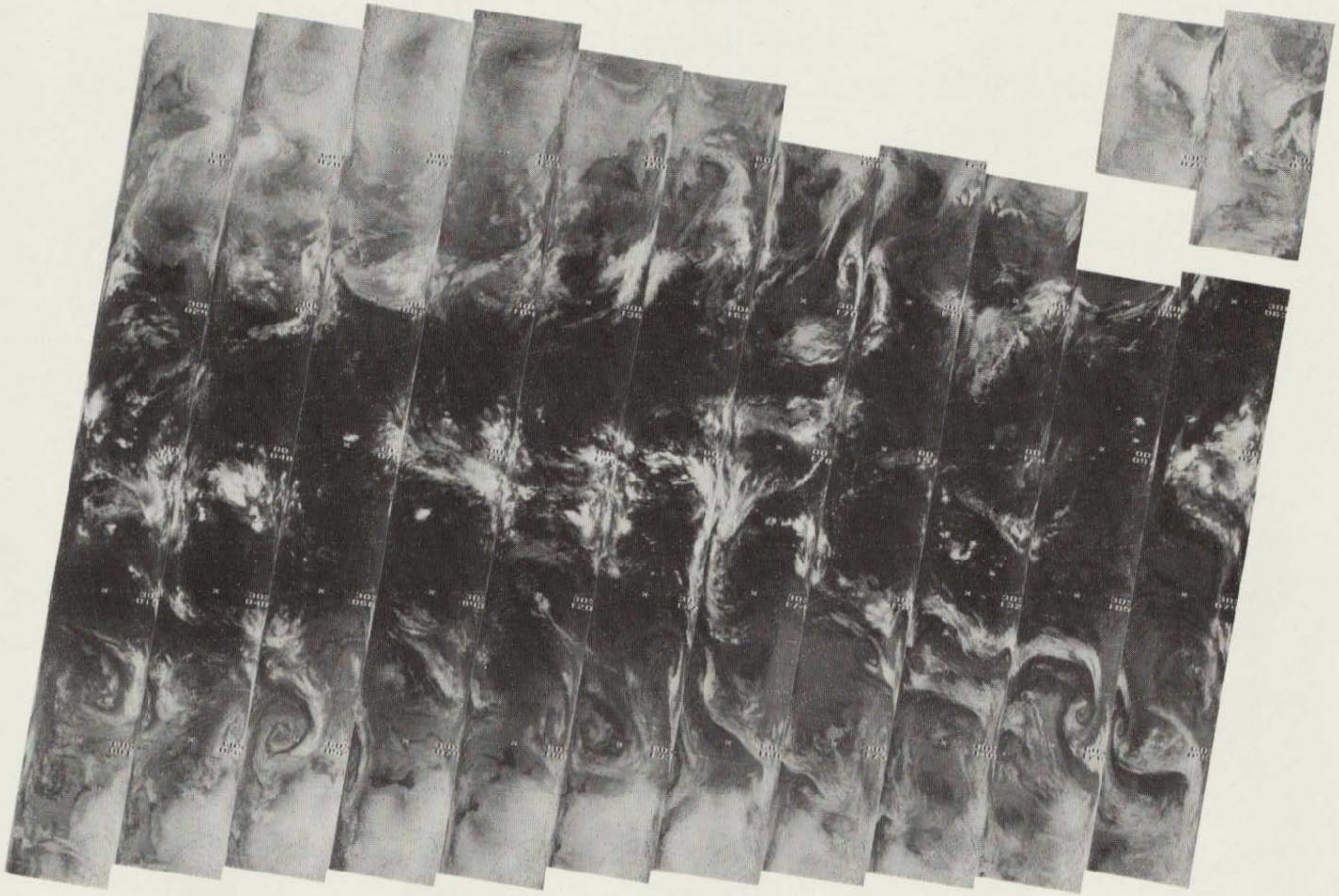
11.5 μm



3655 3654 3653 3652 3651 3650 3649 3648 3647 3646 3645 3644 3643

10 MARCH 1976

6.7 μm



3655 3654 3653 3652 3651 3650 3649 3648 3647 3646 3645 3644 3643

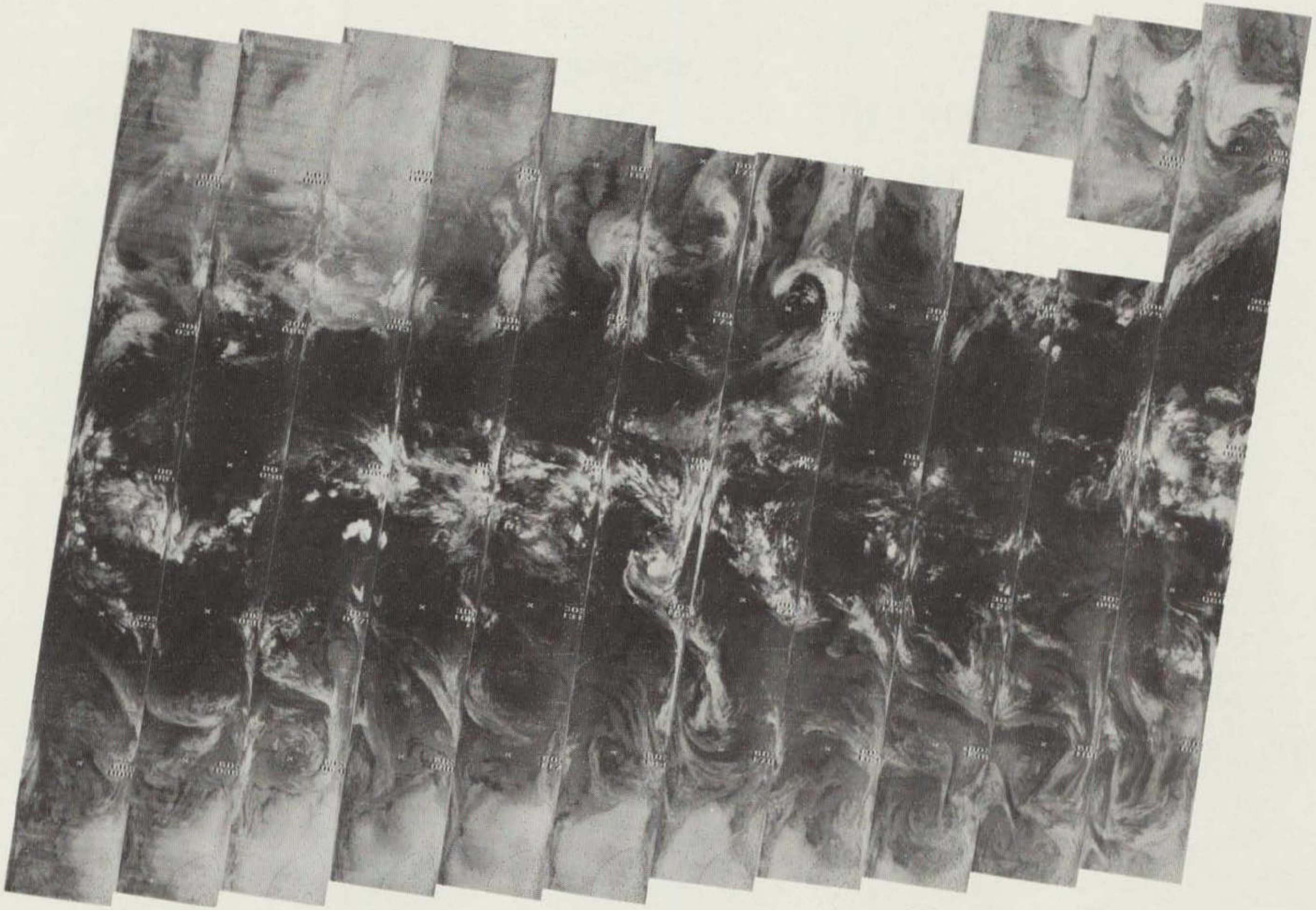
10 MARCH 1976

11.5 μm

3668 3667 3666 3665 3664 3663 3662 3661 3660 3659 3658 3657 3656

11 MARCH 1976

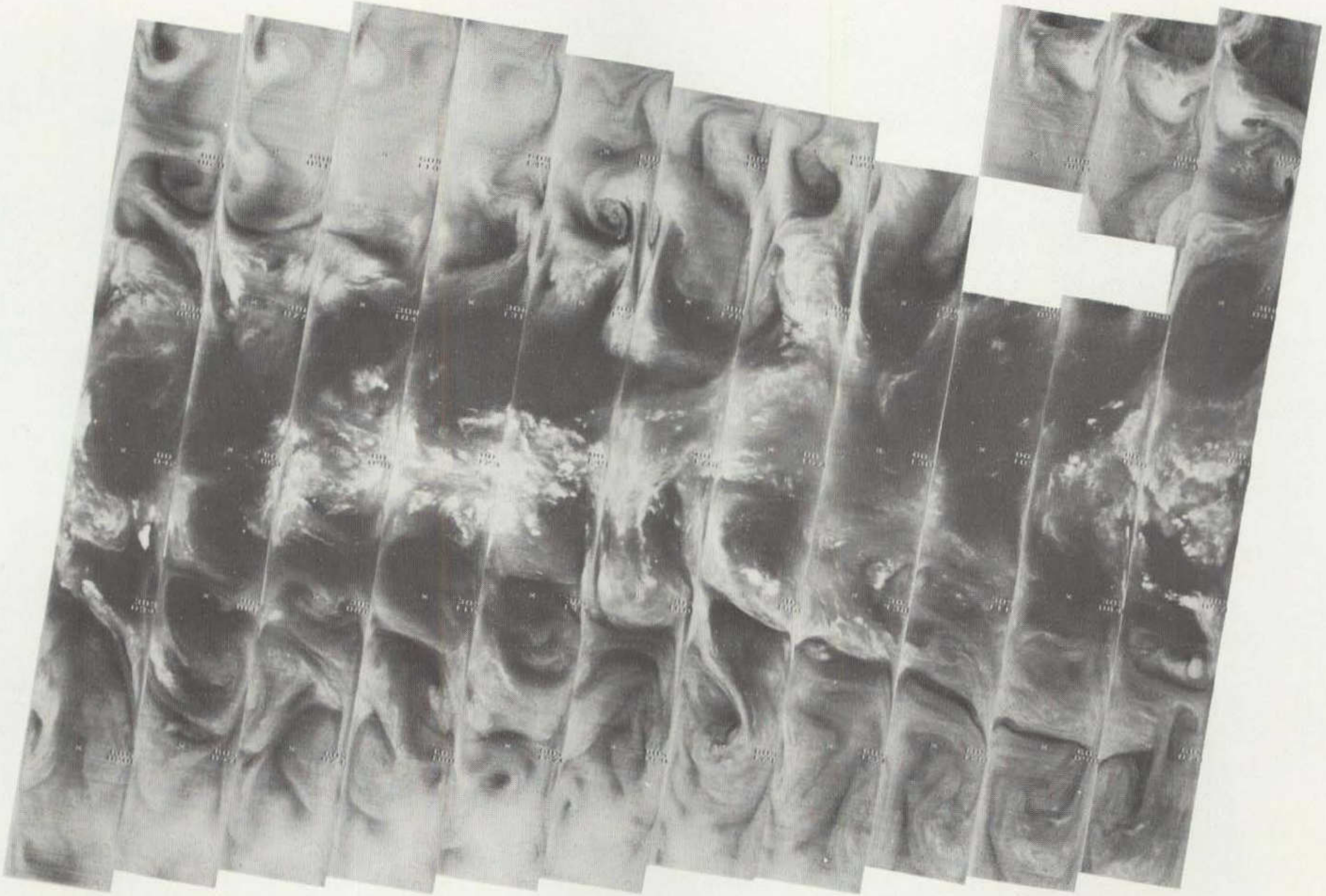
6.7 μm



3668 3667 3666 3665 3664 3663 3662 3661 3660 3659 3658 3657 3656

11 MARCH 1976

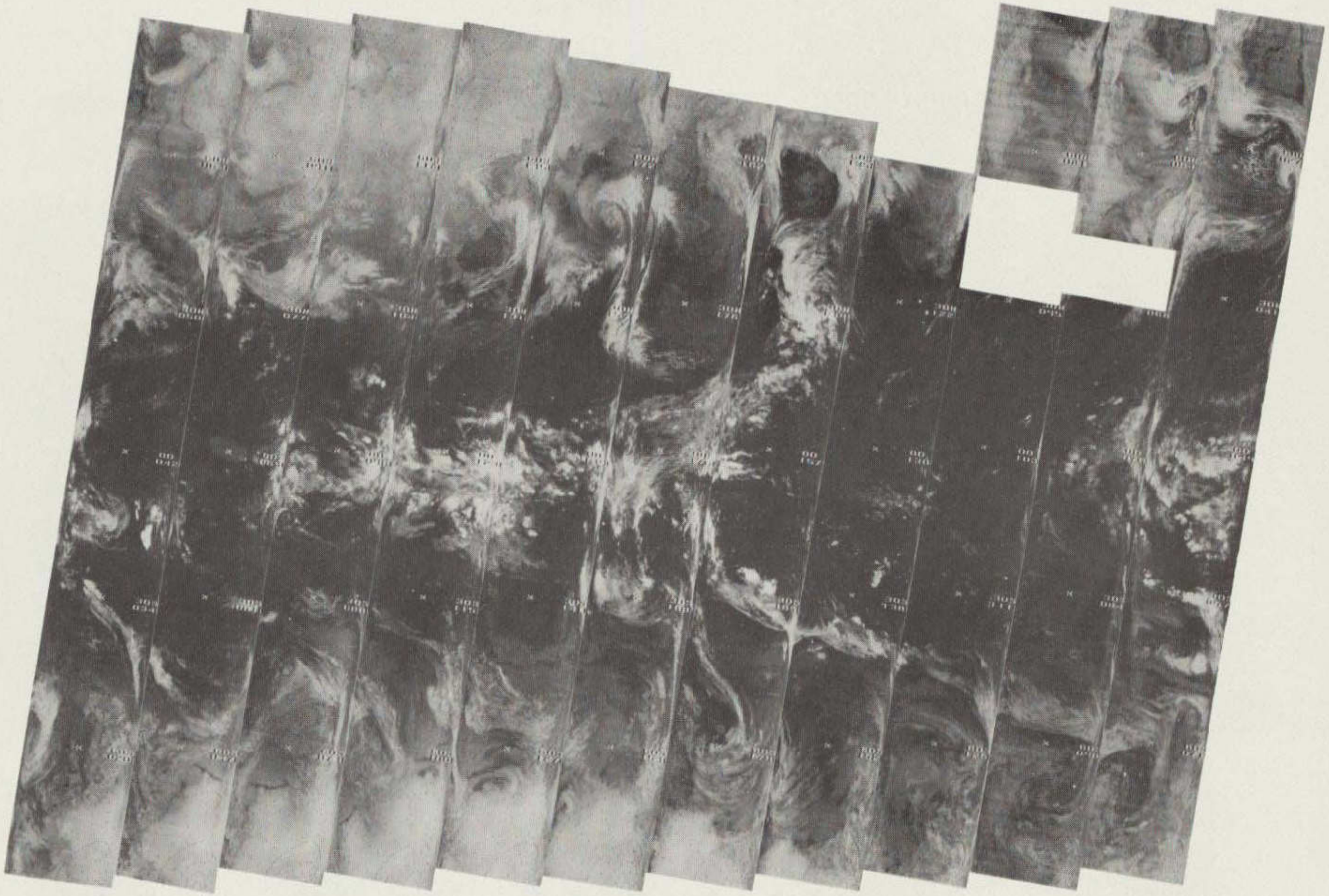
11.5 μm



3682 3681 3680 3679 3678 3677 3676 3675 3674 3673 3672 3671 3670 3669

12 MARCH 1976

6.7 μm



3682 3681 3680 3679 3678 3677 3676 3675 3674 3673 3672 3671 3670 3669

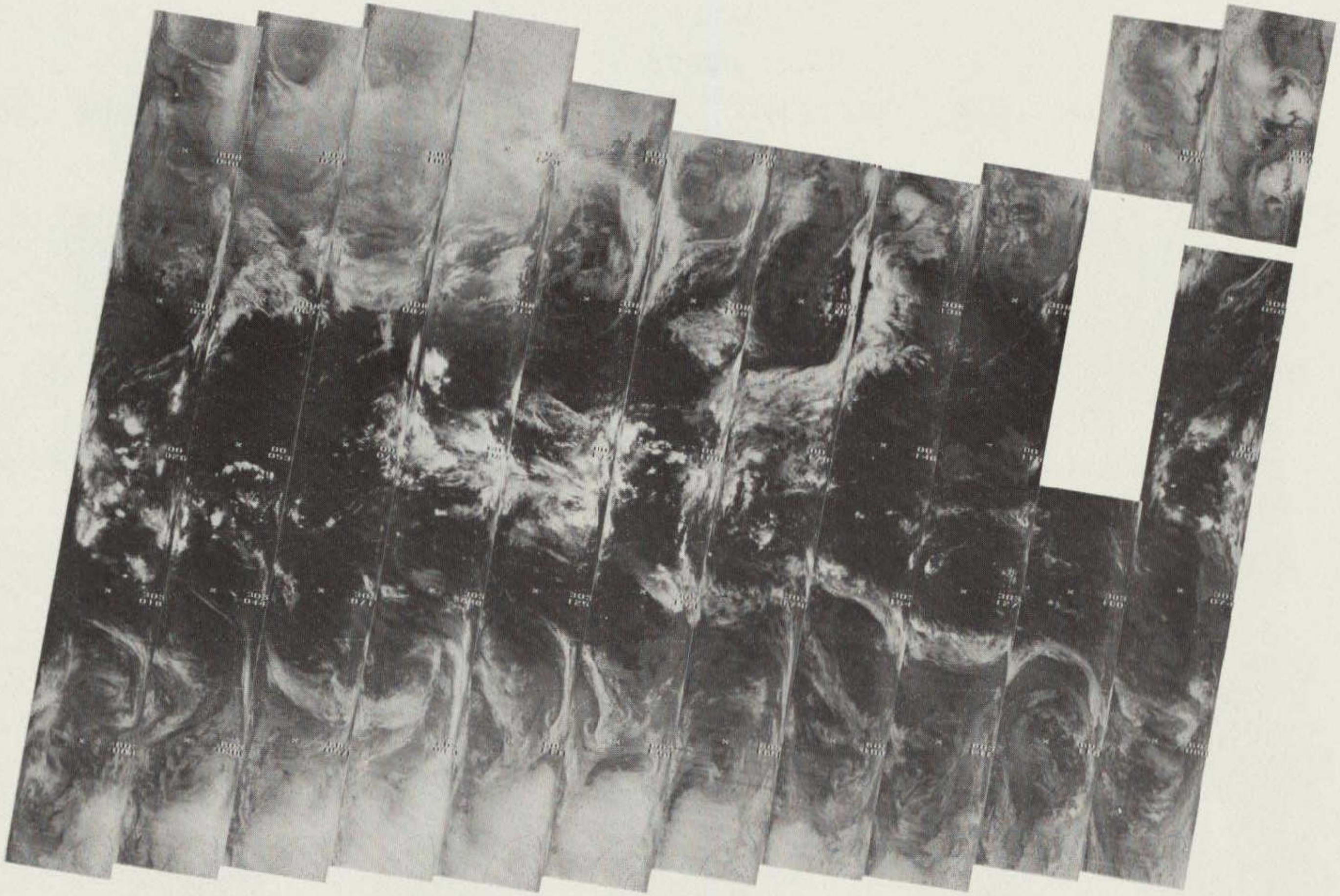
12 MARCH 1976

11.5 μm

3695 3694 3693 3692 3691 3690 3689 3688 3687 3686 3685 3684 3683

13 MARCH 1976

6.7 μm



3695 3694 3693 3692 3691 3690 3689 3688 3687 3686 3685 3684 3683

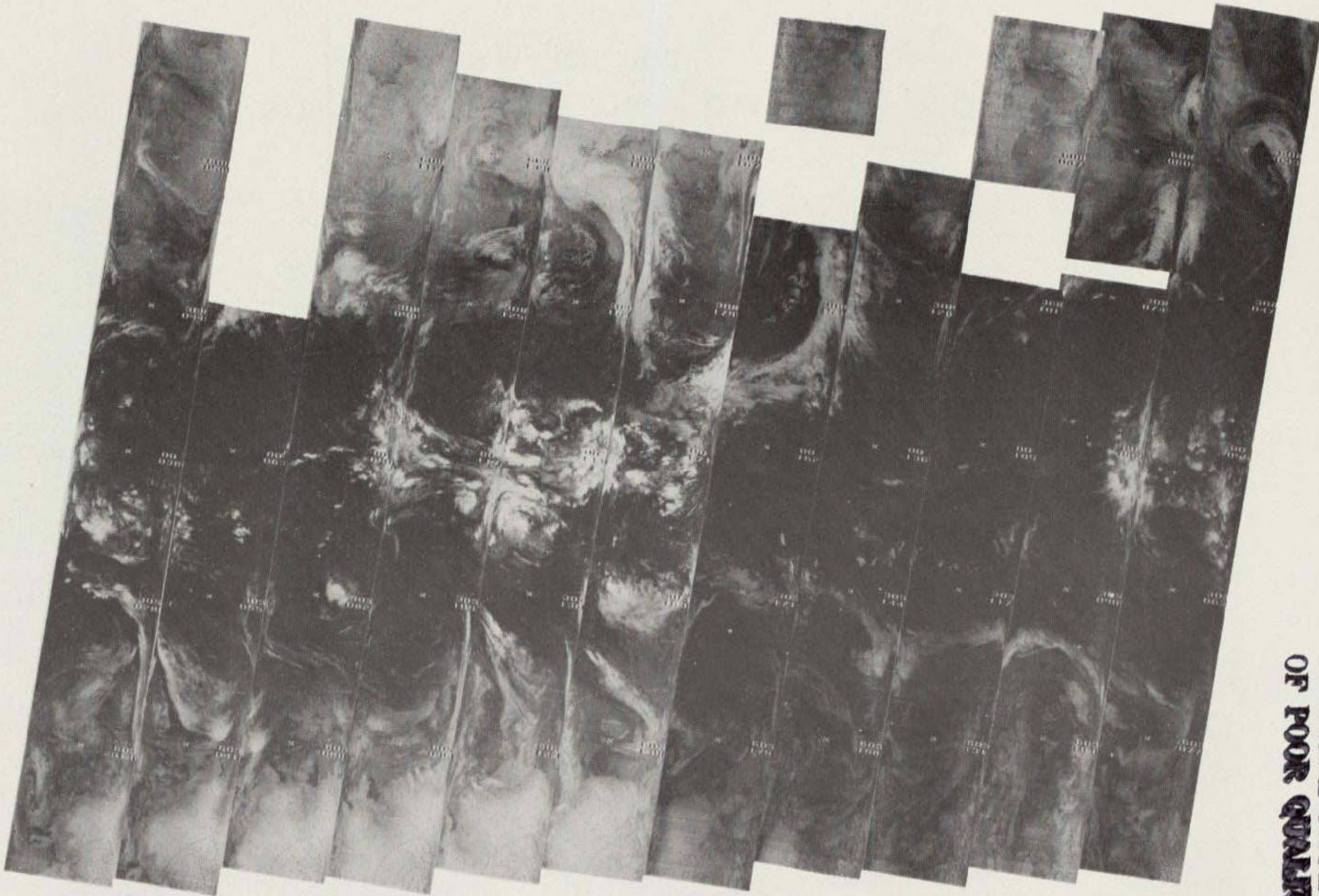
13 MARCH 1976

11.5 μm

3708 3707 3706 3705 3704 3703 3702 3701 3700 3699 3698 3697 3696

14 MARCH 1976

6.7 μm



3708 3707 3706 3705 3704 3703 3702 3701 3700 3699 3698 3697 3696

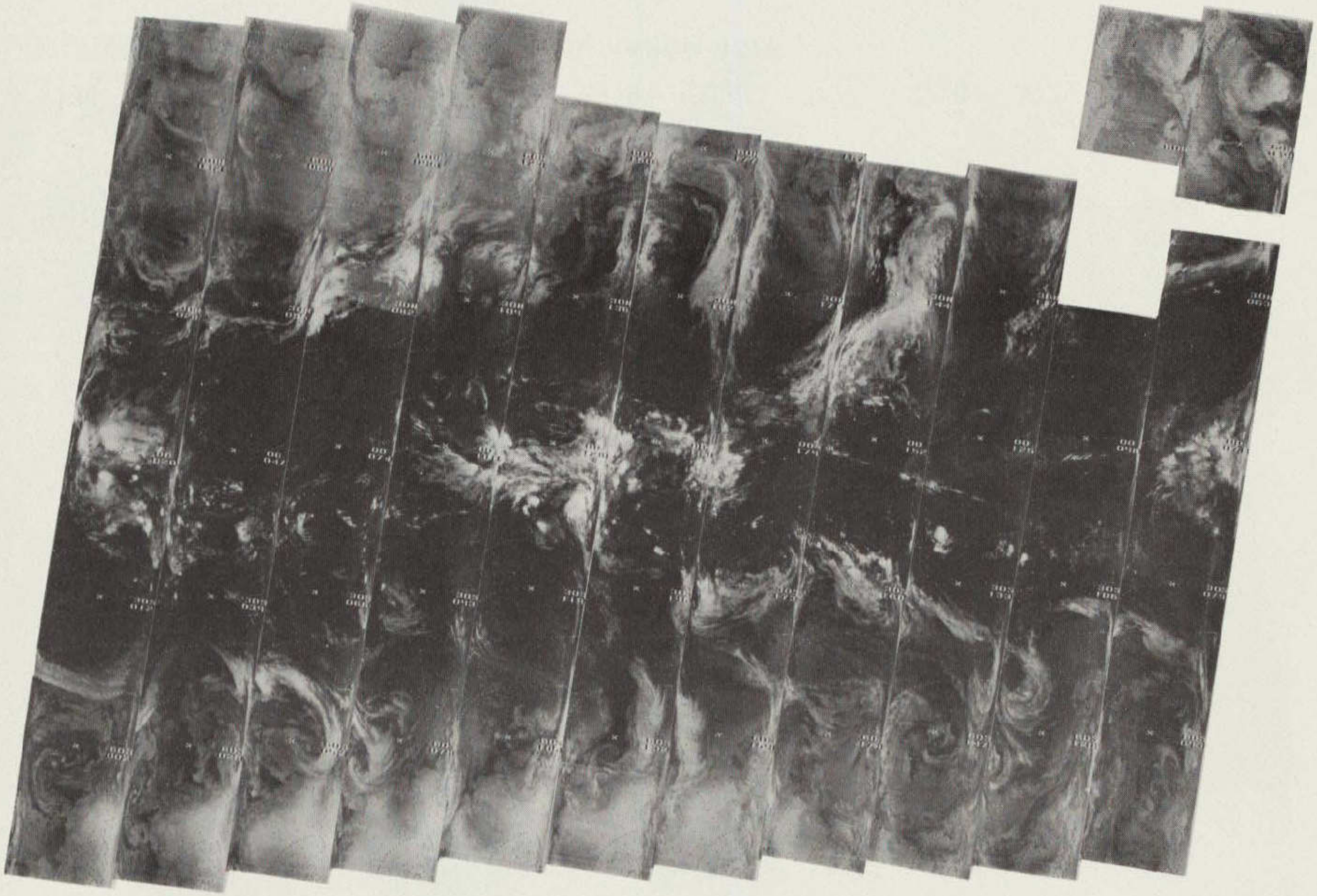
14 MARCH 1976

11.5 μm

3722 3721 3720 3719 3718 3717 3716 3715 3714 3713 3712 3711 3710 3709

15 MARCH 1976

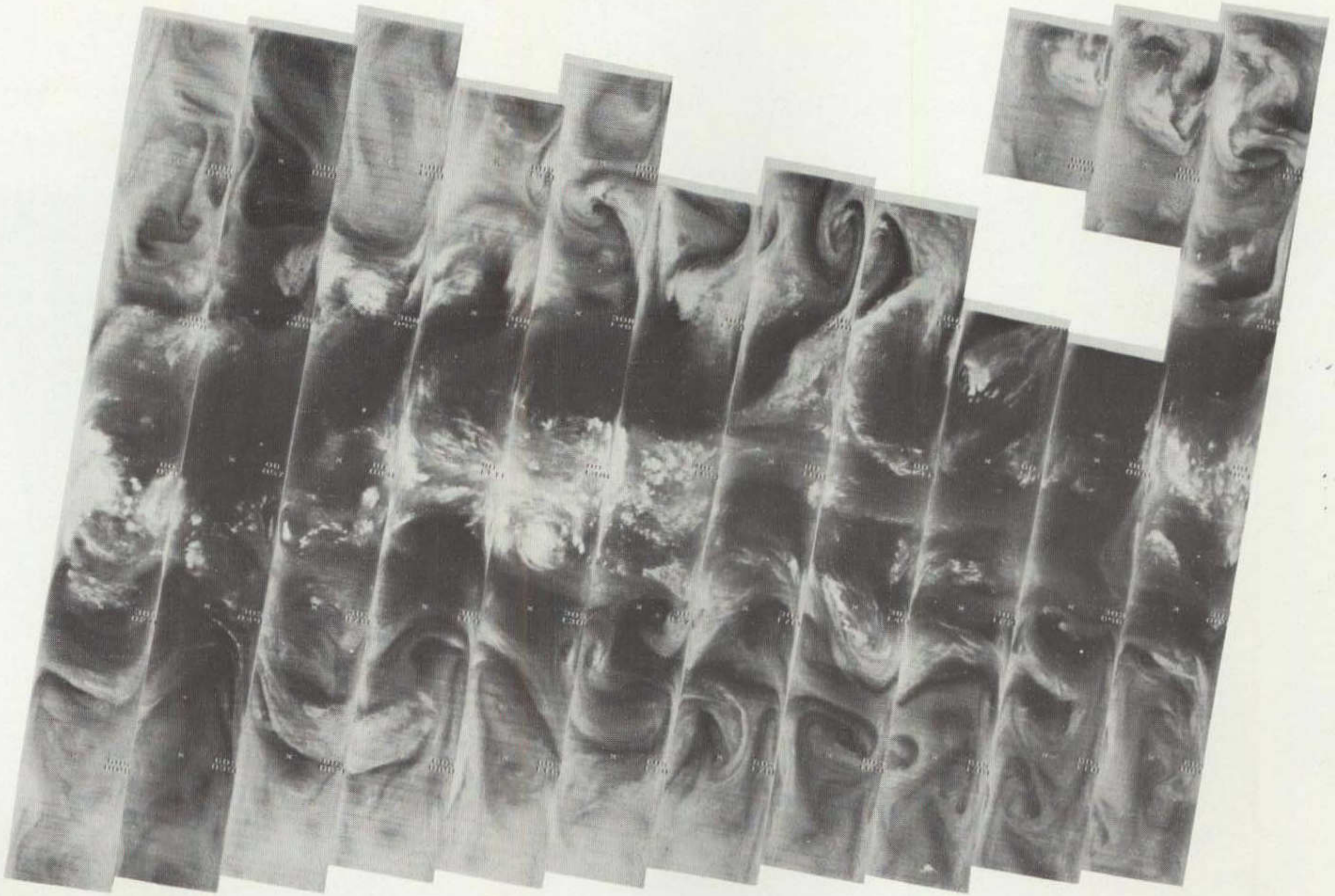
6.7 μm



3722 3721 3720 3719 3718 3717 3716 3715 3714 3713 3712 3711 3710 3709

15 MARCH 1976

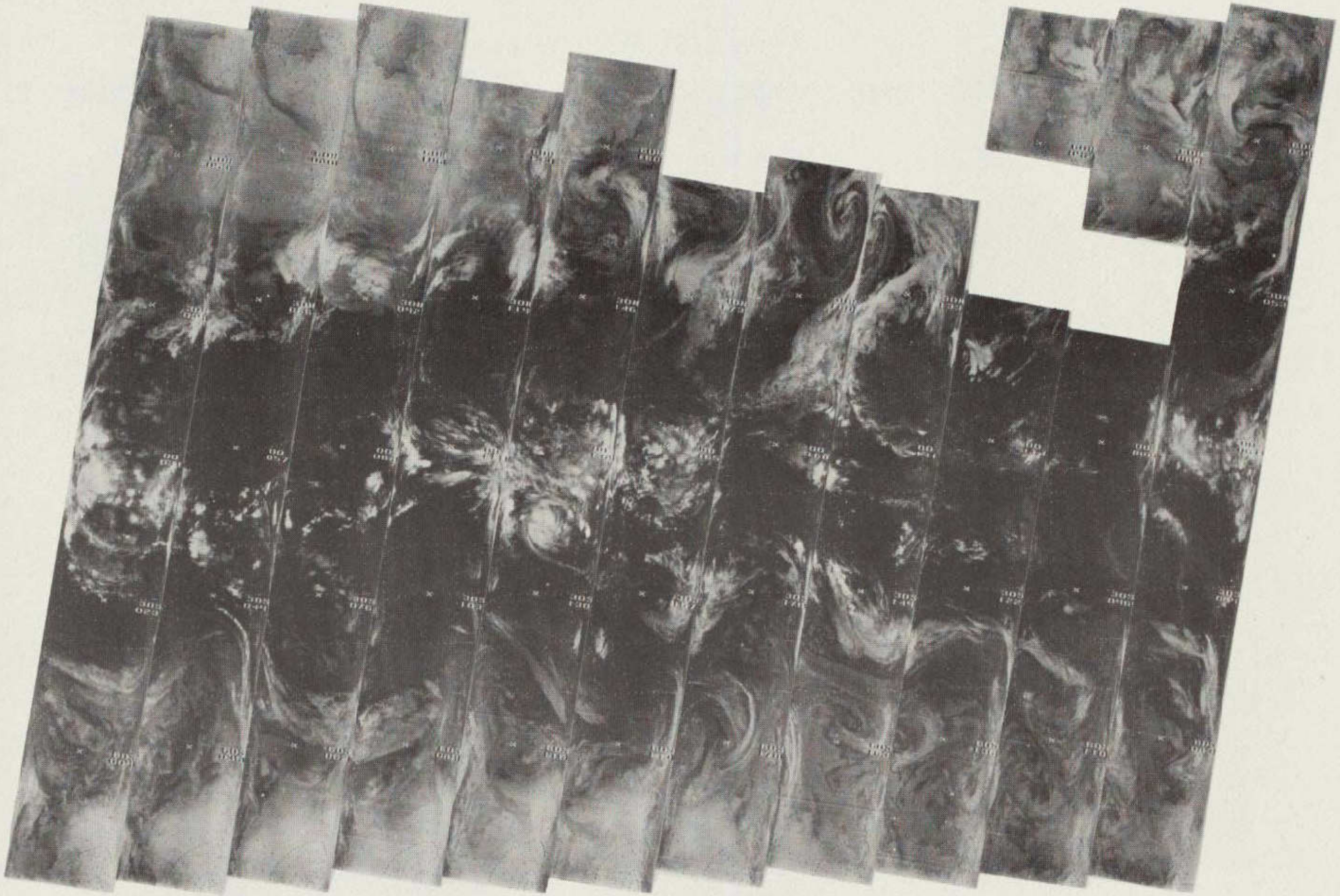
11.5 μm



3735 3734 3733 3732 3731 3730 3729 3728 3727 3726 3725 3724 3723

16 MARCH 1976

6.7 μm



3735 3734 3733 3732 3731 3730 3729 3728 3727 3726 3725 3724 3723

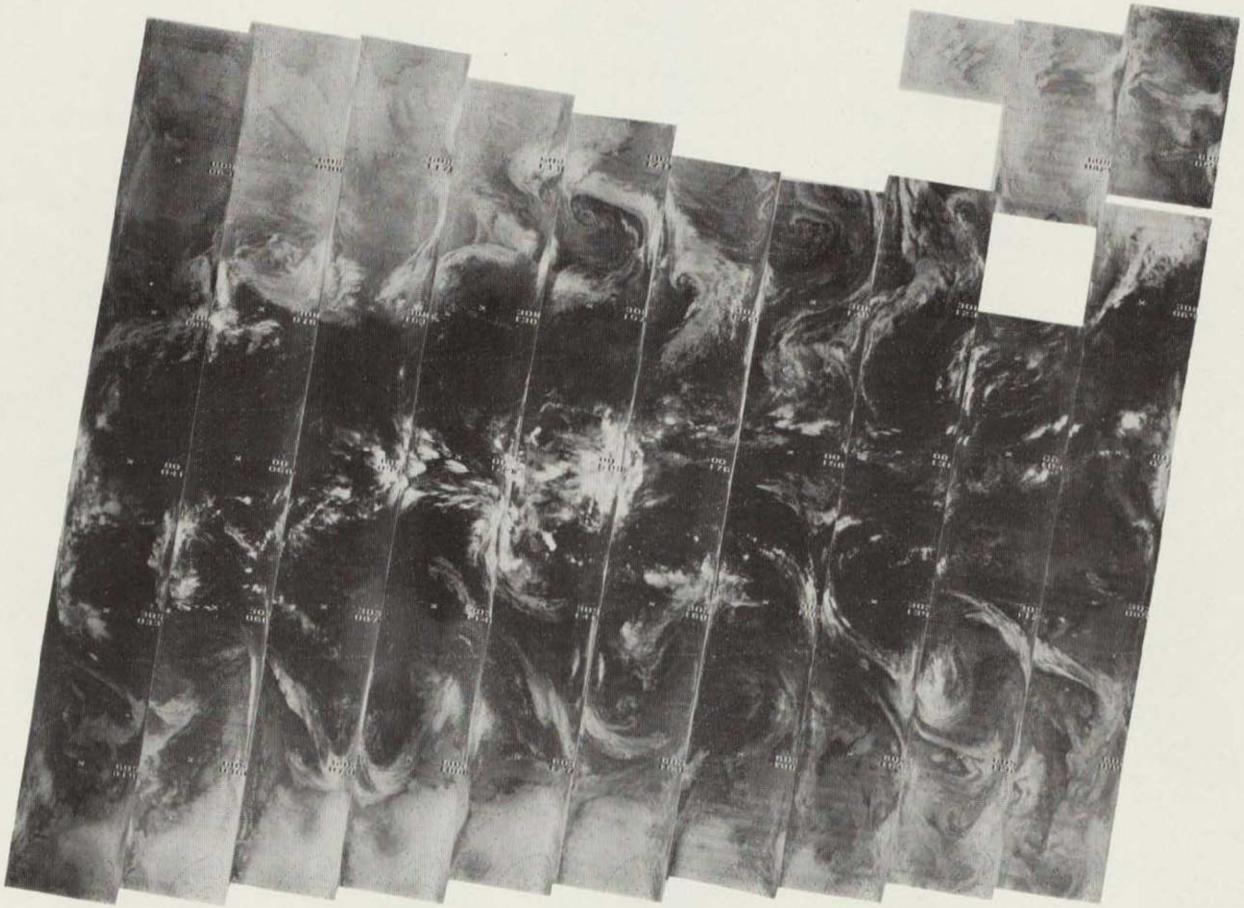
16 MARCH 1976

11.5 μm

3749 3748 3747 3746 3745 3744 3743 3742 3741 3740 3739 3738 3737 3736

17 MARCH 1976

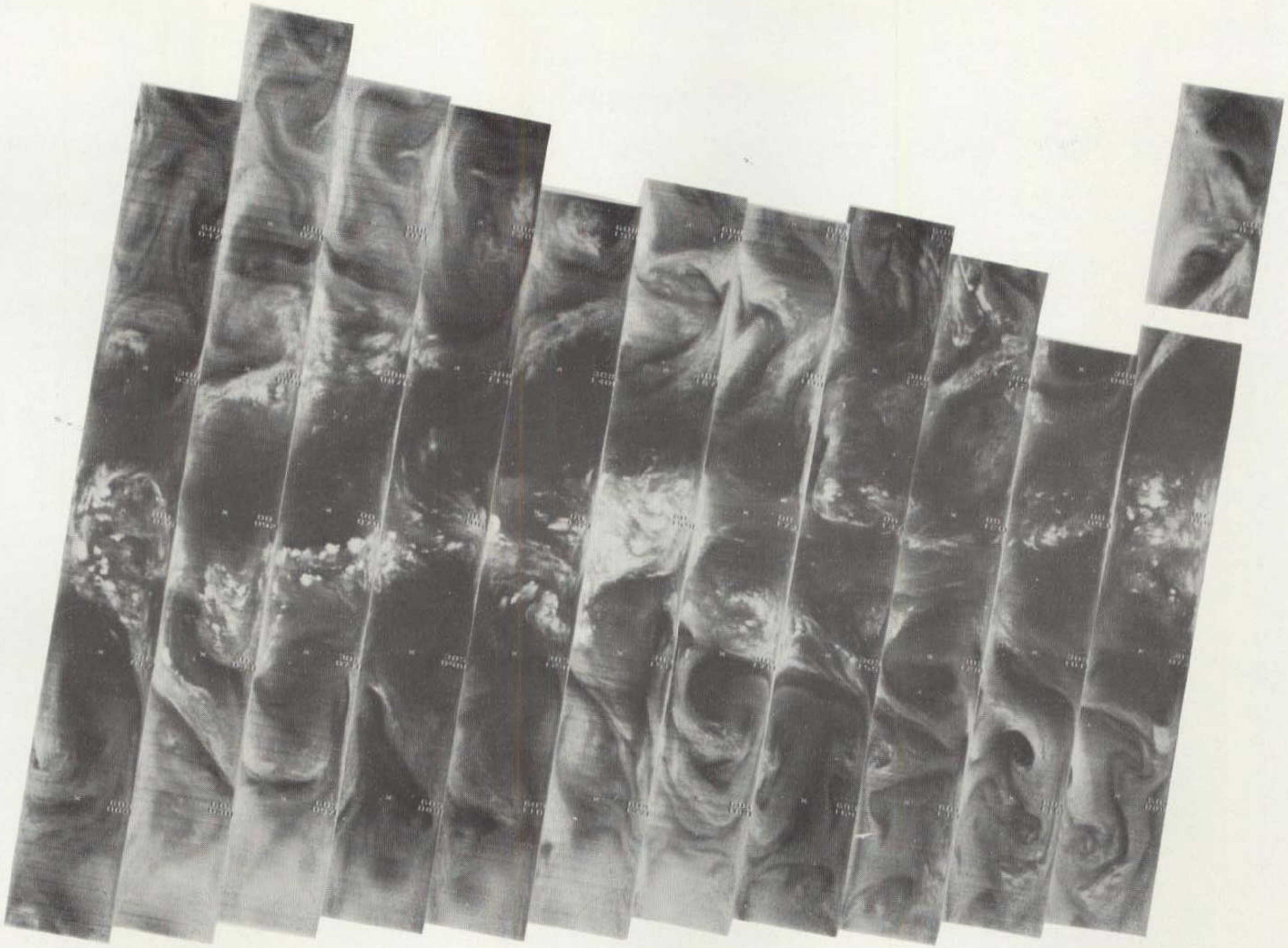
6.7 μm



3749 3748 3747 3746 3745 3744 3743 3742 3741 3740 3739 3738 3737 3736

17 MARCH 1976

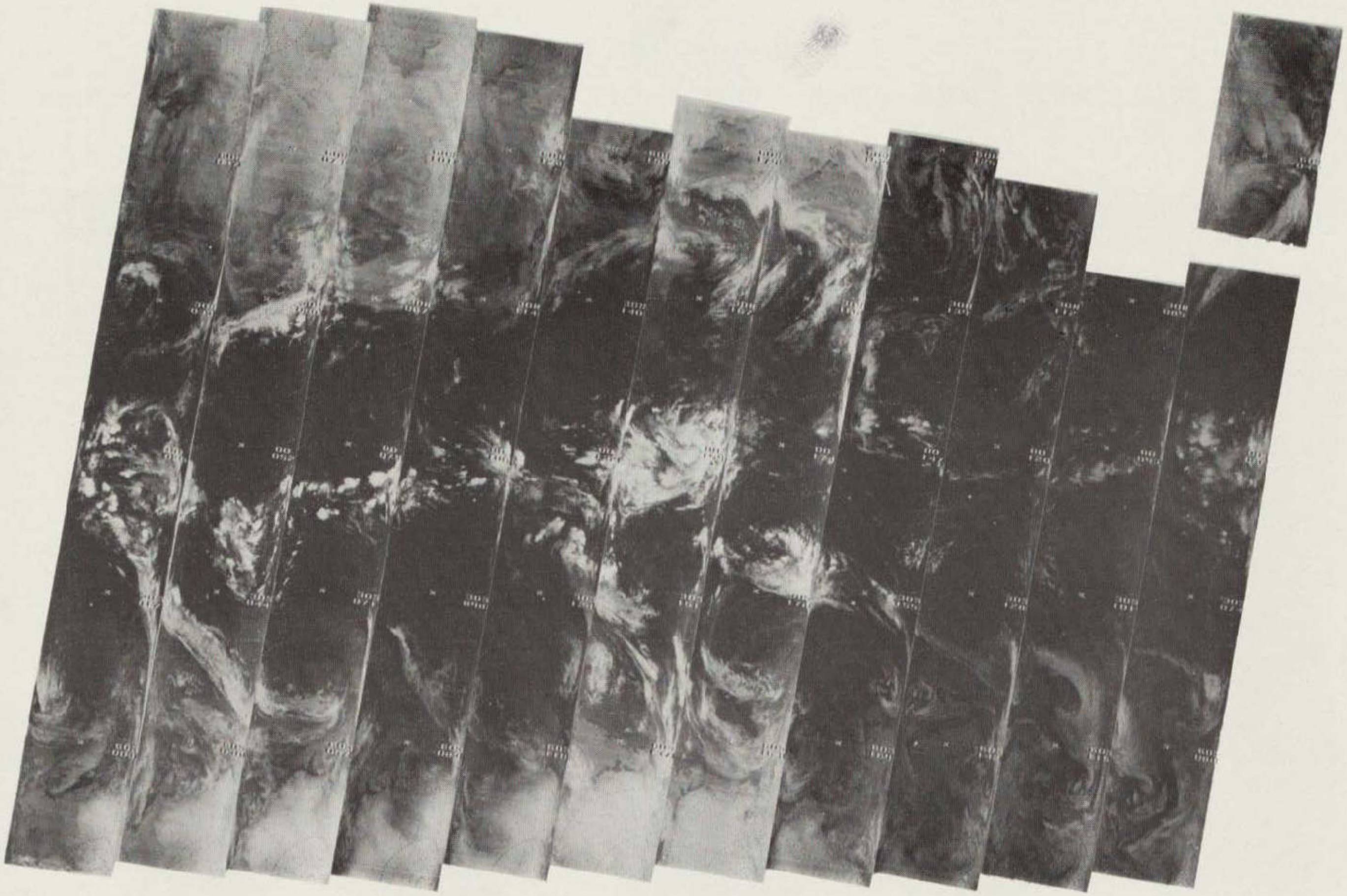
11.5 μm



3762 3761 3760 3759 3758 3757 3756 3755 3754 3753 3752 3751 3750

18 MARCH 1976

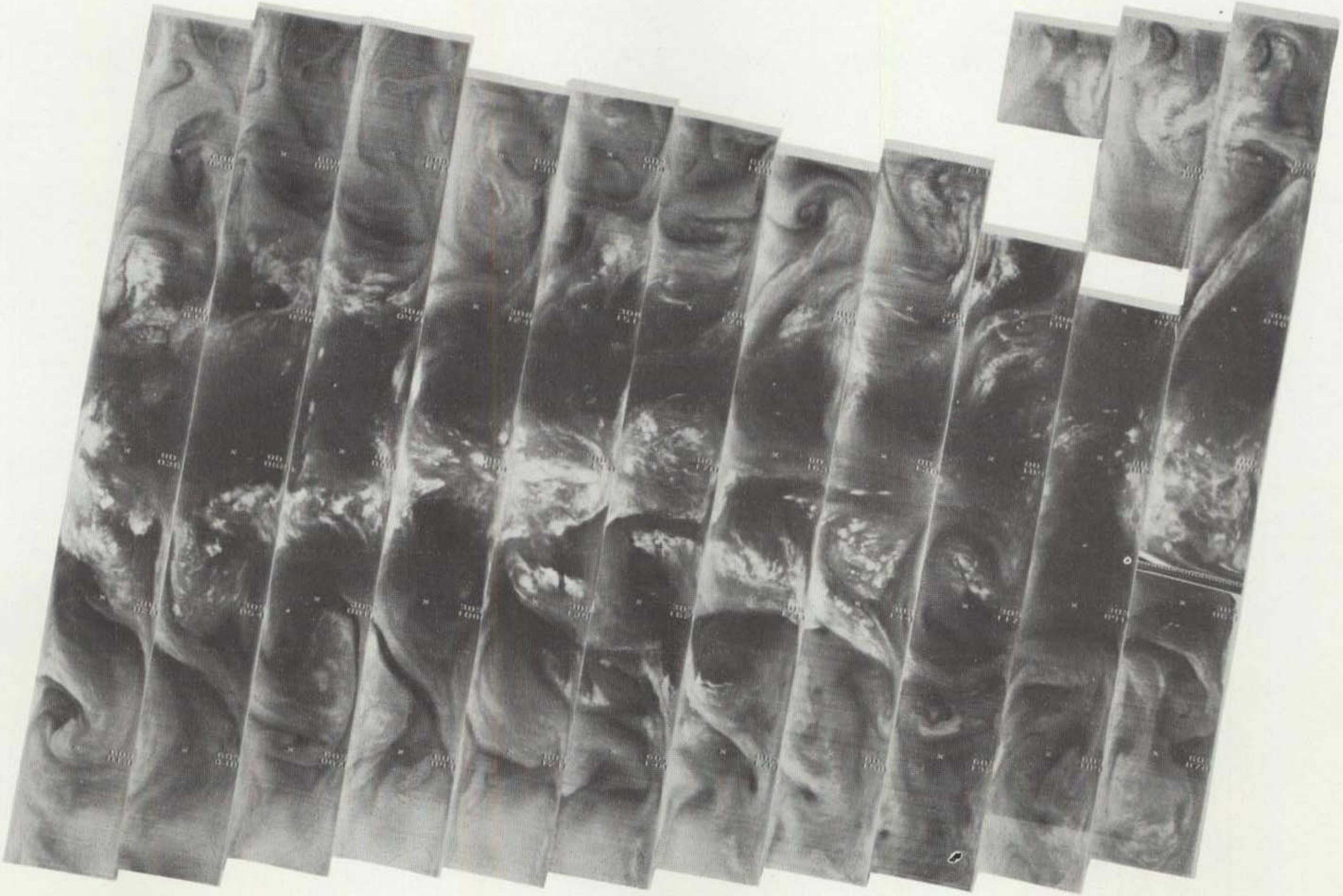
6.7 μm



3762 3761 3760 3759 3758 3757 3756 3755 3754 3753 3752 3751 3750

18 MARCH 1976

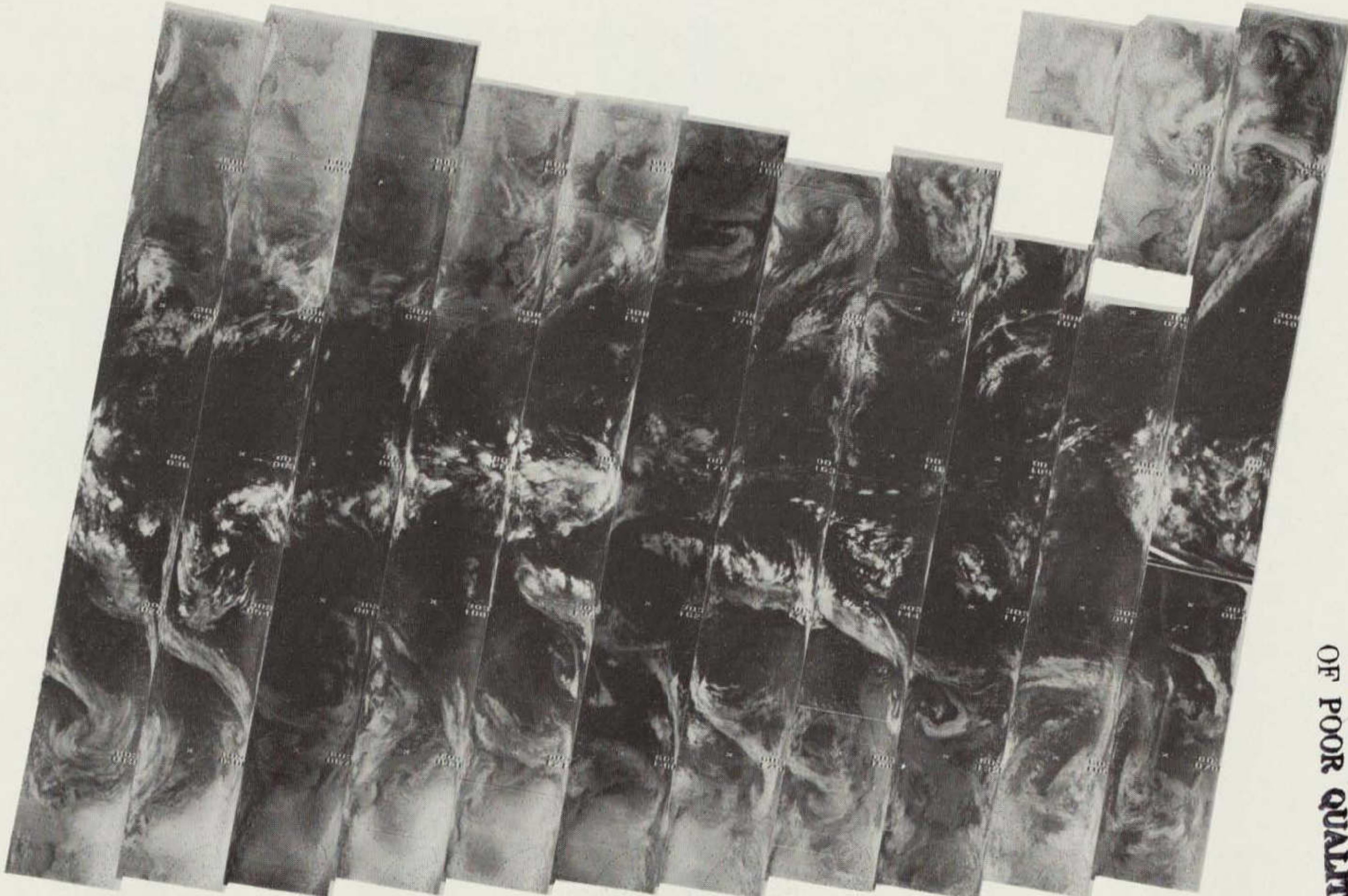
11.5 μm



3775 3774 3773 3772 3771 3770 3769 3768 3767 3766 3765 3764 3763

19 MARCH 1976

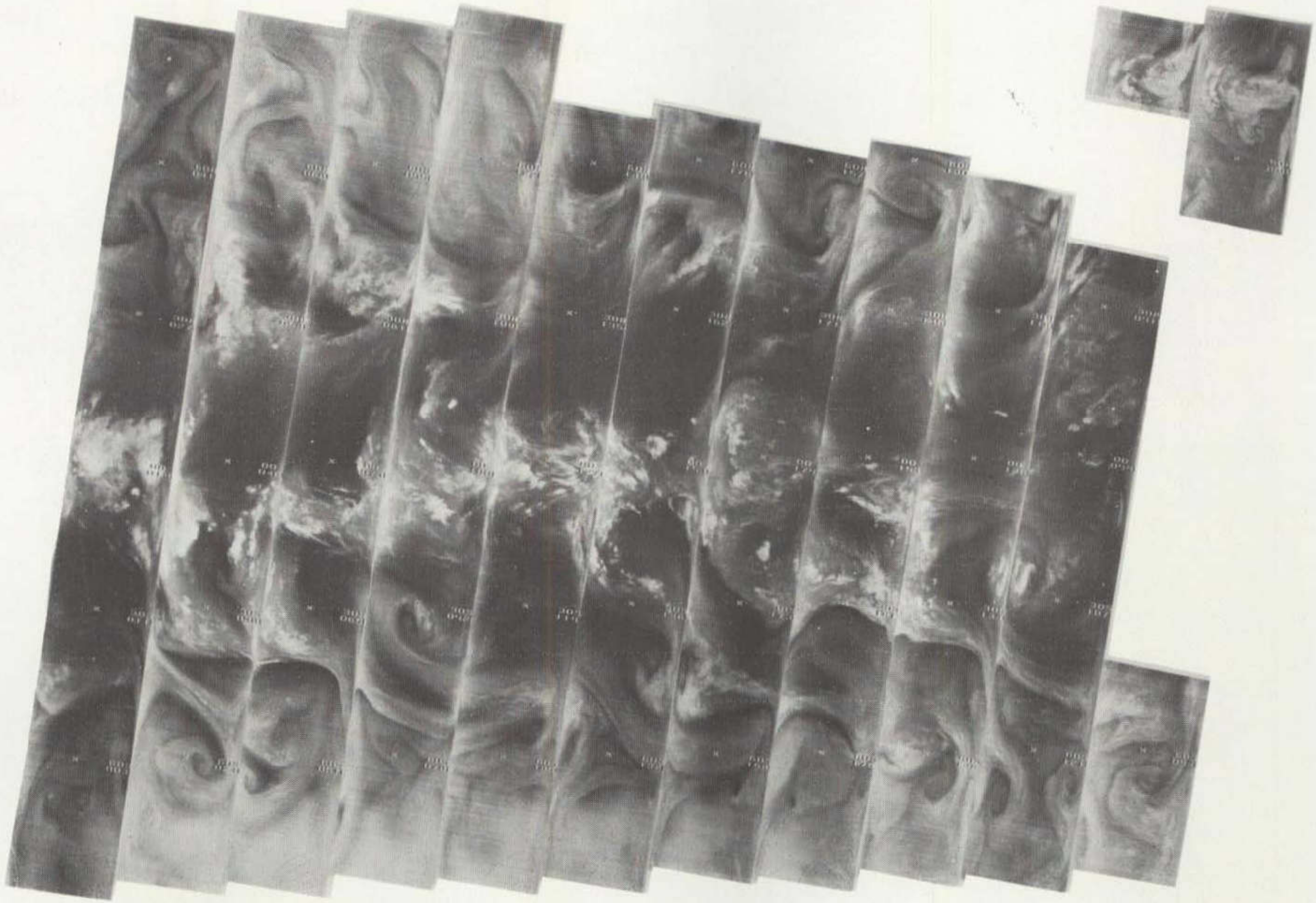
6.7 μm



3775 3774 3773 3772 3771 3770 3769 3768 3767 3766 3765 3764 3763

19 MARCH 1976

11.5 μm



3789 3788 3787 3786 3785 3784 3783 3782 3781 3780 3779 3778 3777 3776

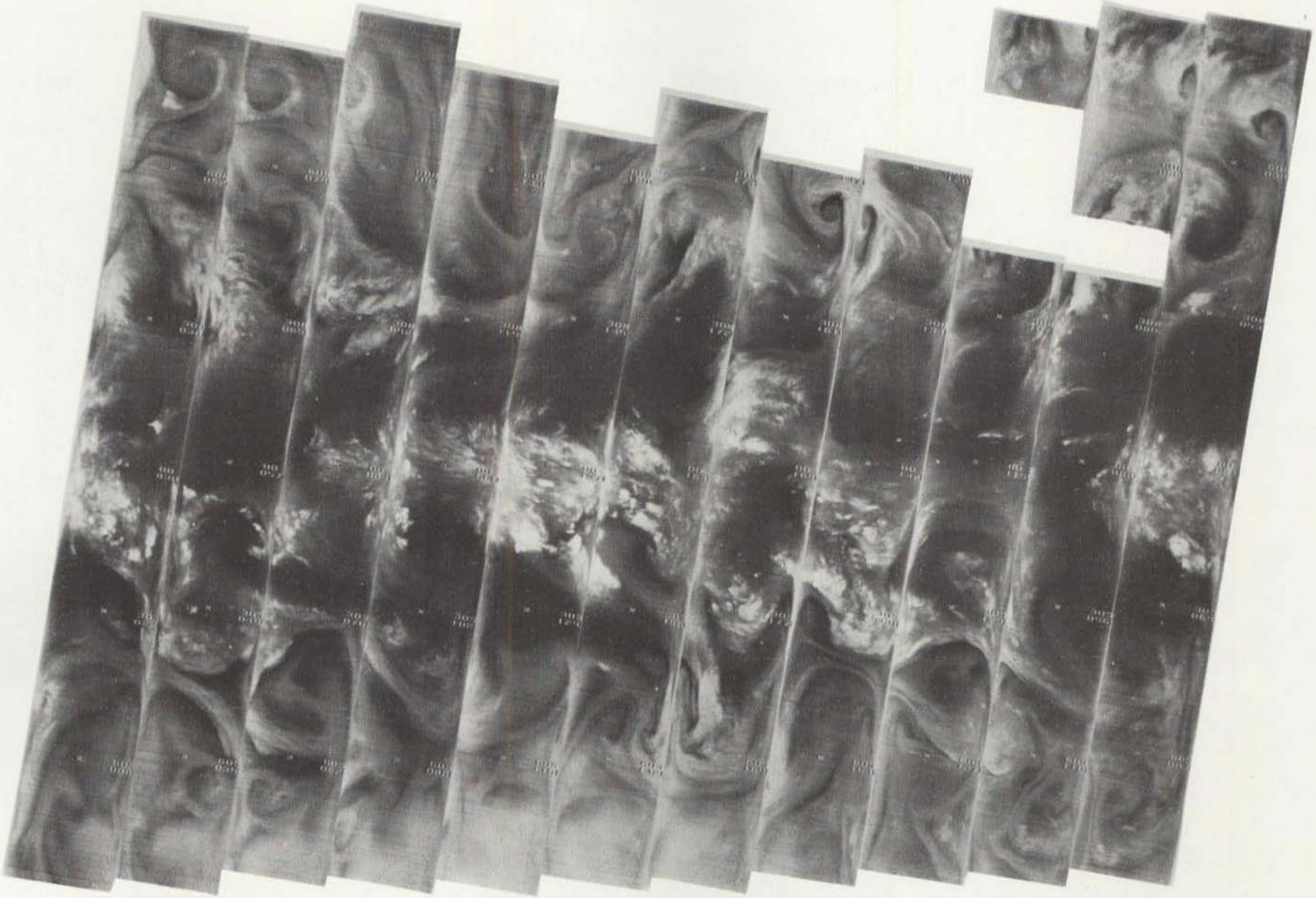
20 MARCH 1976

6.7 μm

3789 3788 3787 3786 3785 3784 3783 3782 3781 3780 3779 3778 3777 3776

20 MARCH 1976

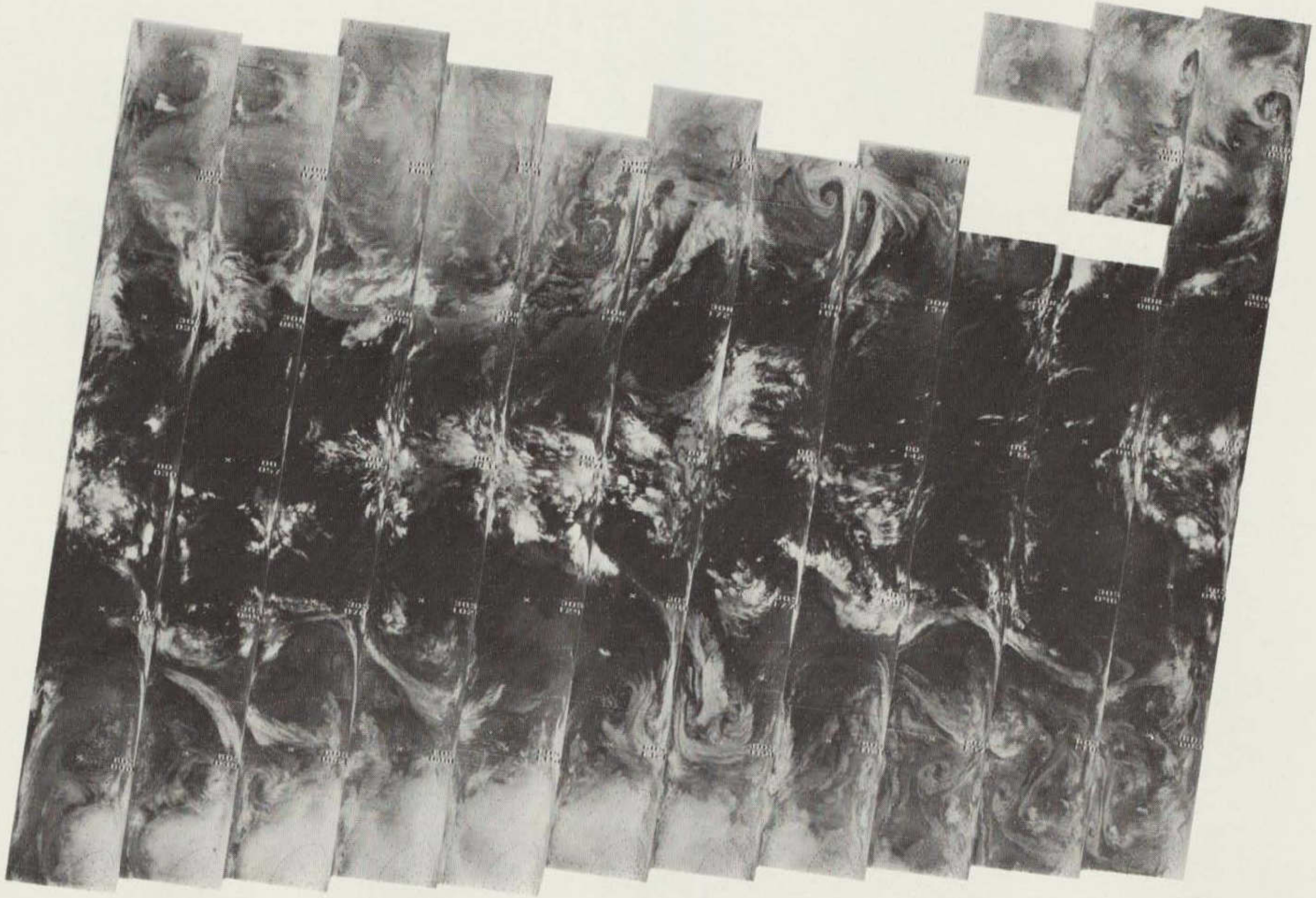
11.5 μm



3802 3801 3800 3799 3798 3797 3796 3795 3794 3793 3792 3791 3790

21 MARCH 1976

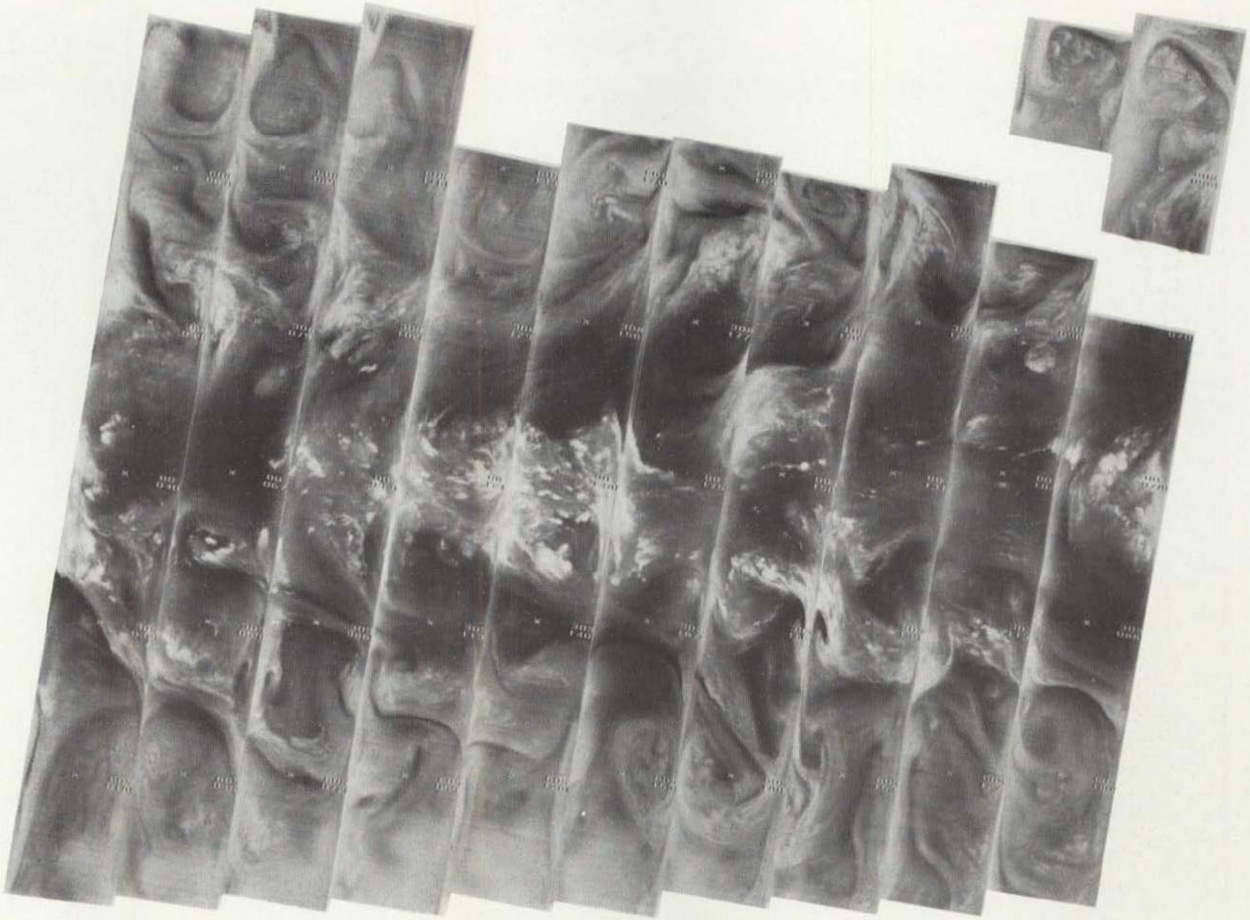
6.7 μm



3802 3801 3800 3799 3798 3797 3796 3795 3794 3793 3792 3791 3790

21 MARCH 1976

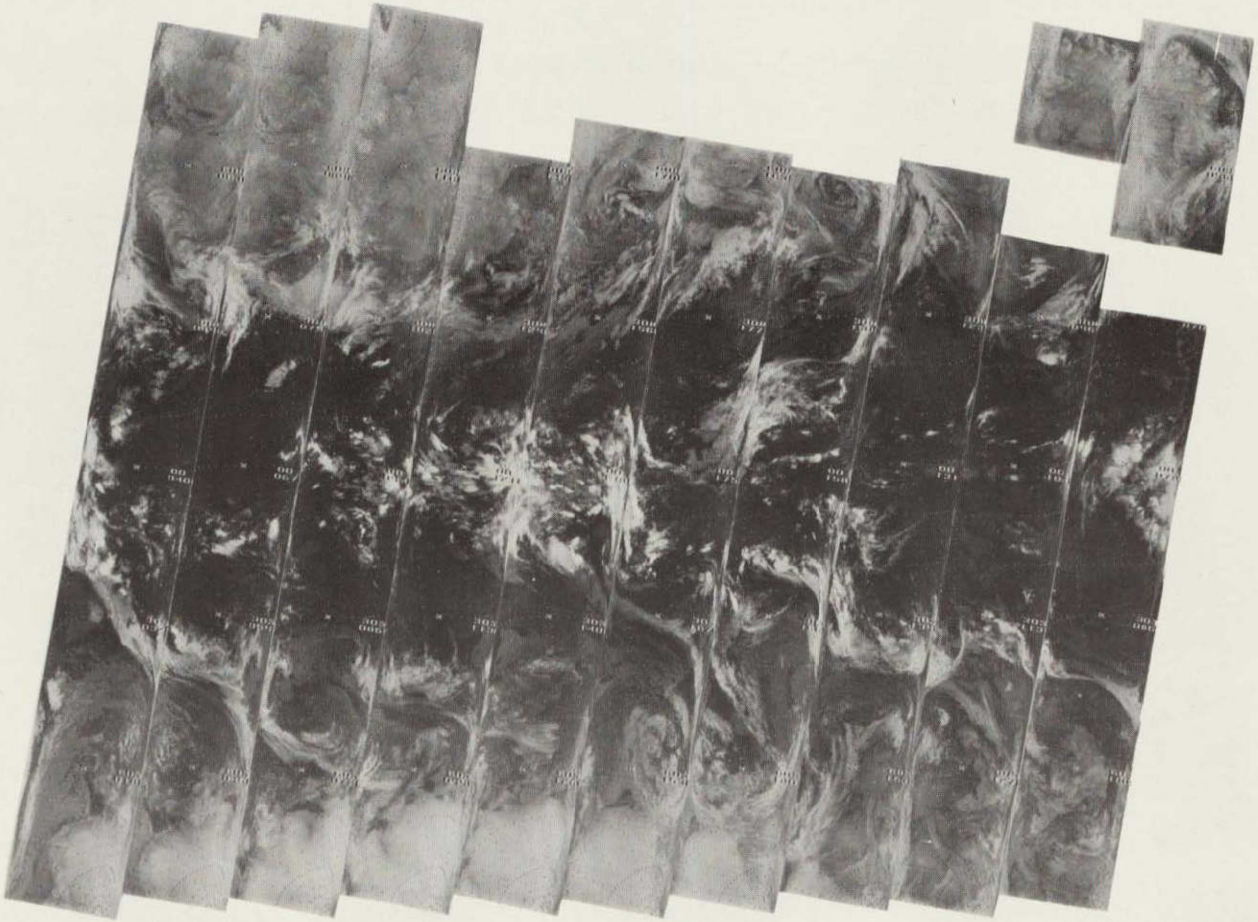
11.5 μm



3816 3815 3814 3813 3812 3811 3810 3809 3808 3807 3806 3805 3804 3803

22 MARCH 1976

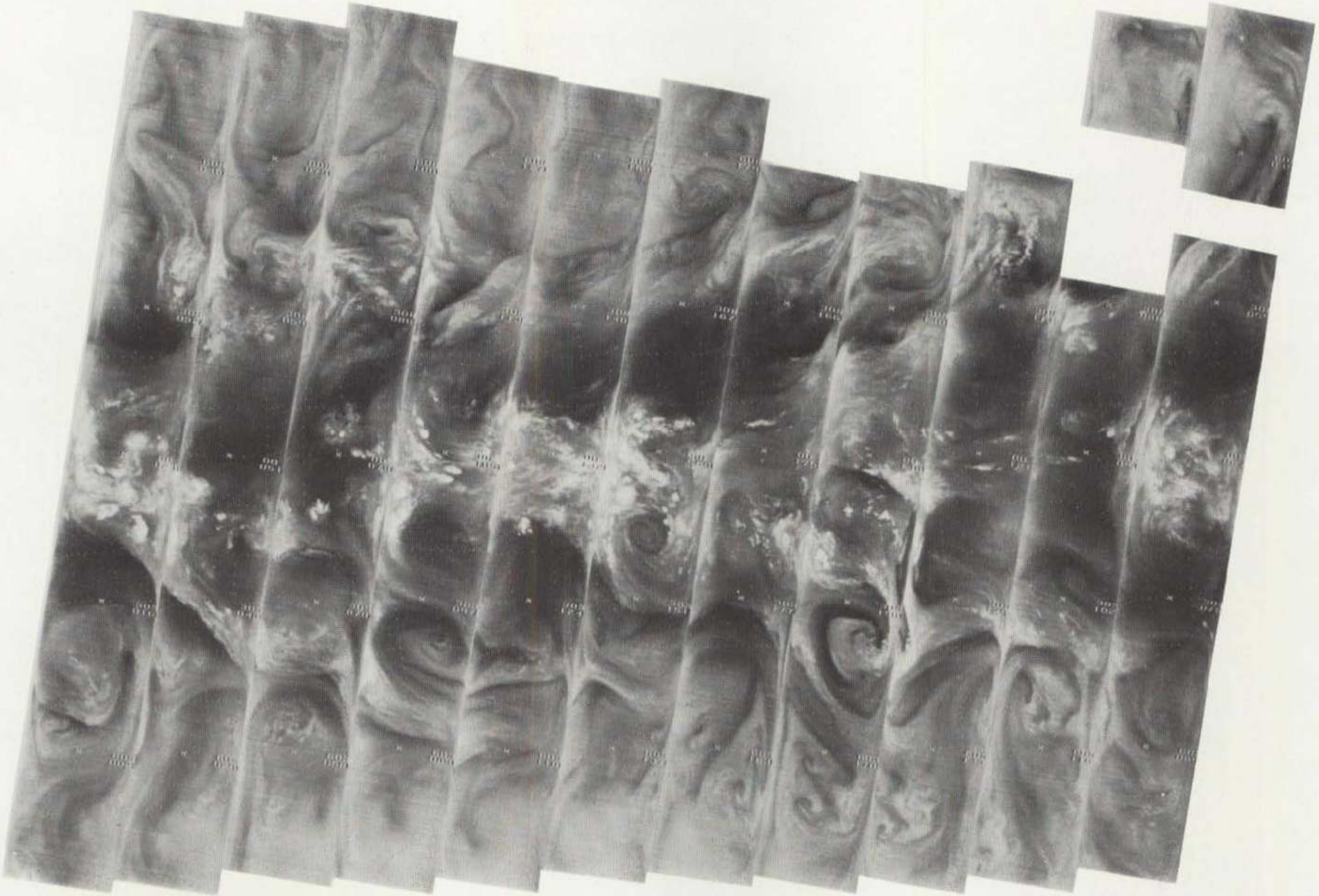
6.7 μm



3816 3815 3814 3813 3812 3811 3810 3809 3808 3807 3806 3805 3804 3803

22 MARCH 1976

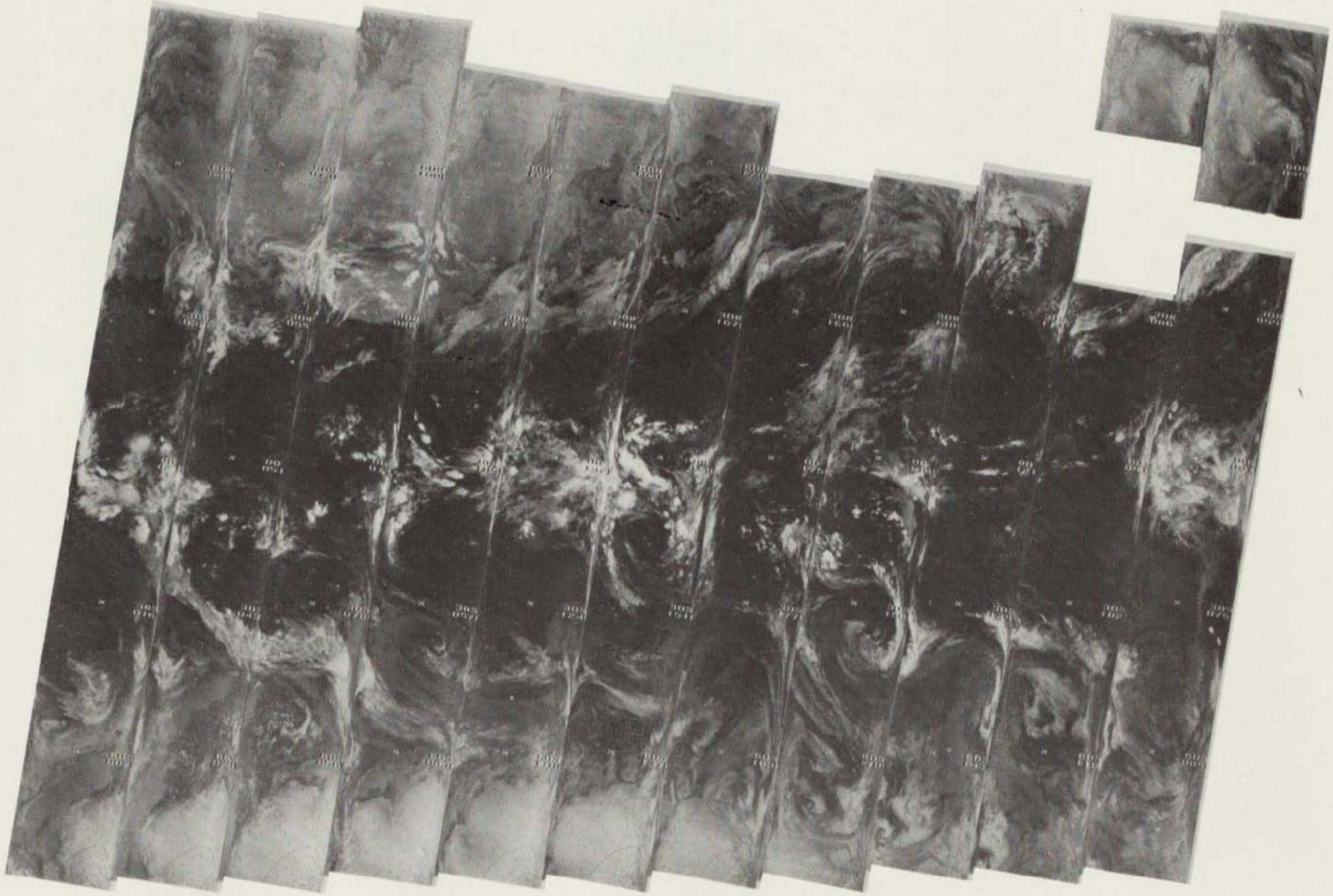
11.5 μm



3829 3828 3827 3826 3825 3824 3823 3822 3821 3820 3819 3818 3817

23 MARCH 1976

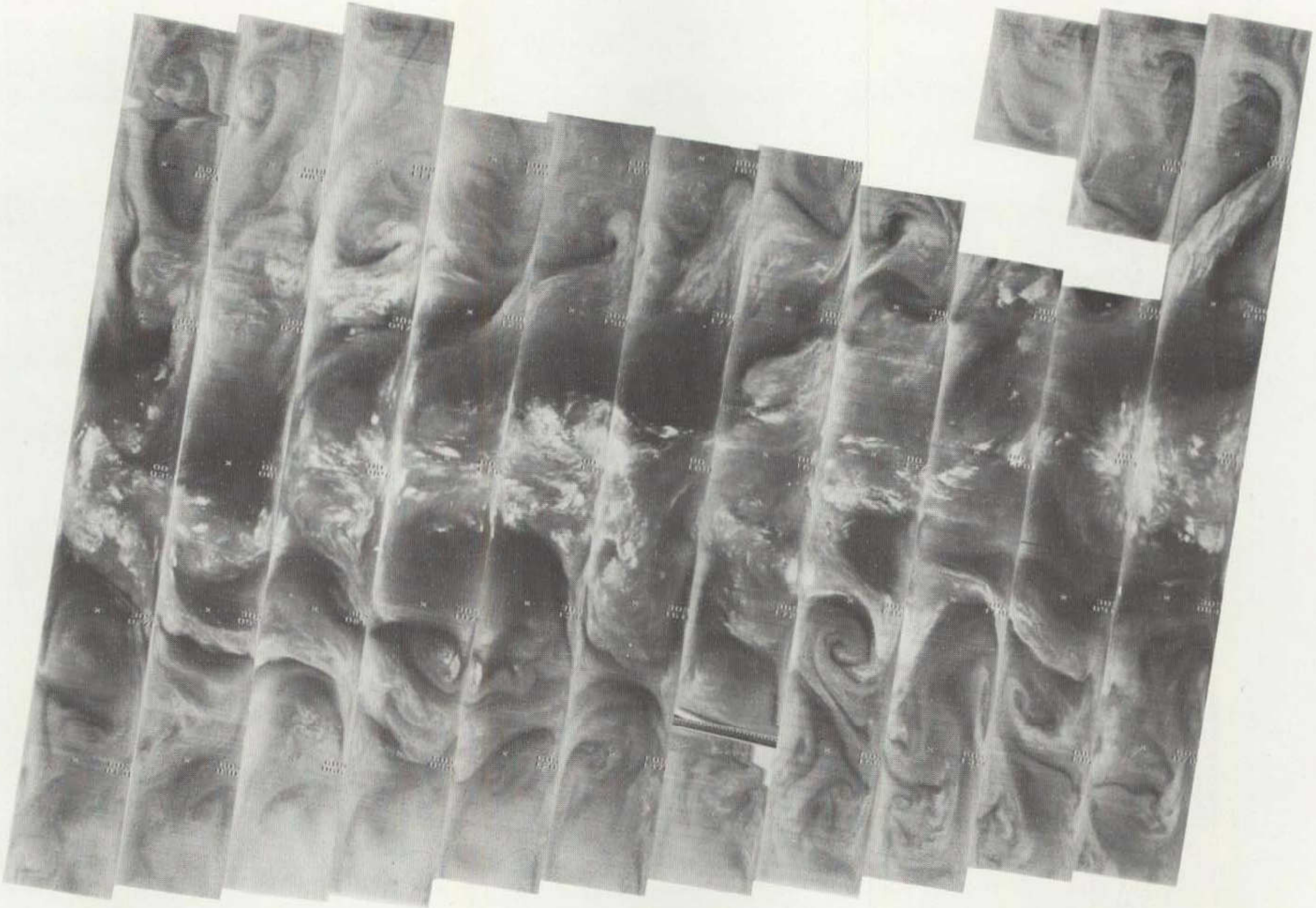
6.7 μm



3829 3828 3827 3826 3825 3824 3823 3822 3821 3820 3819 3818 3817

23 MARCH 1976

11.5 μm



3842 3841 3840 3839 3838 3837 3836 3835 3834 3833 3832 3831 3830

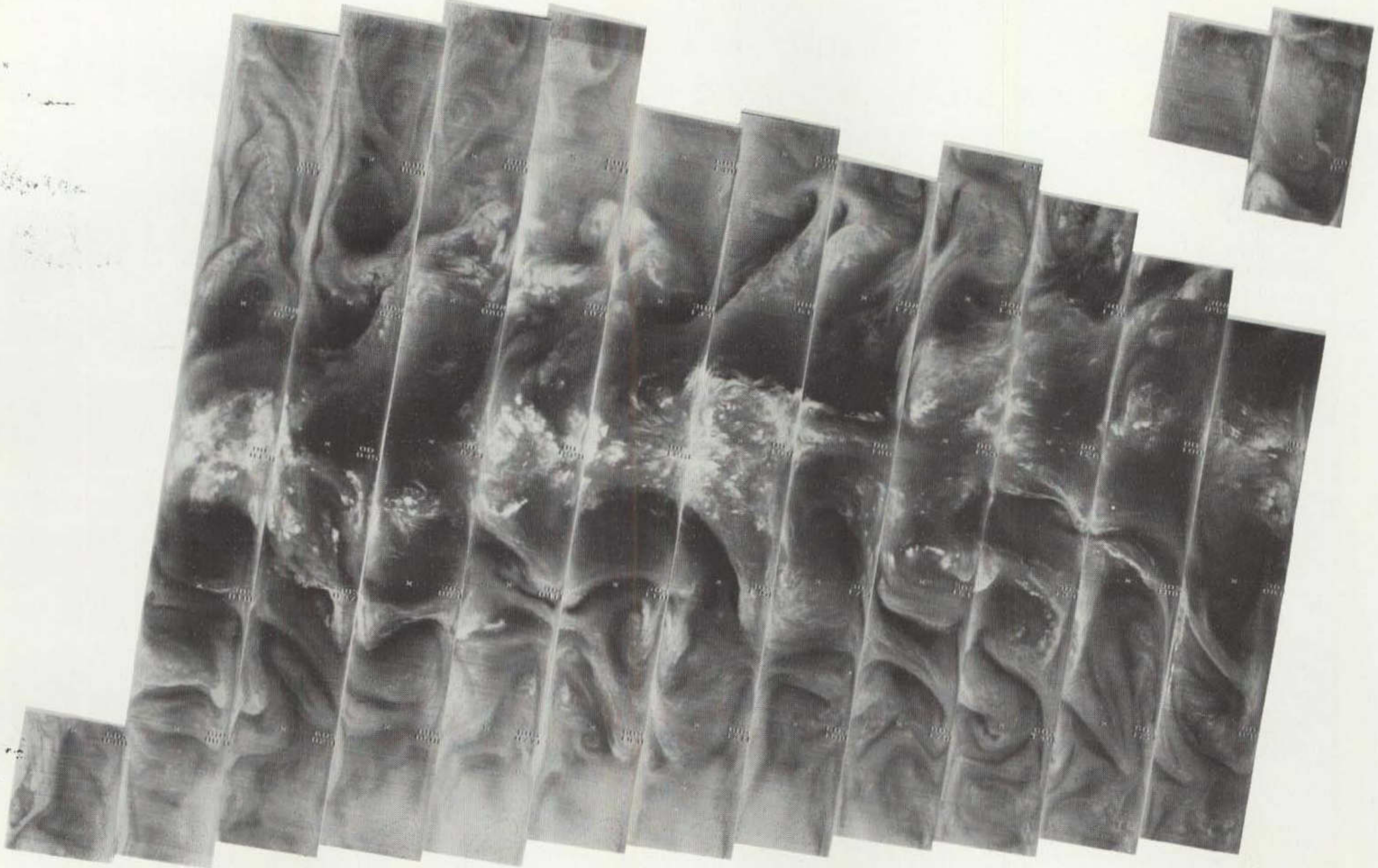
24 MARCH 1976

6.7 μm

3842 3841 3840 3839 3838 3837 3836 3835 3834 3833 3832 3831 3830

24 MARCH 1976

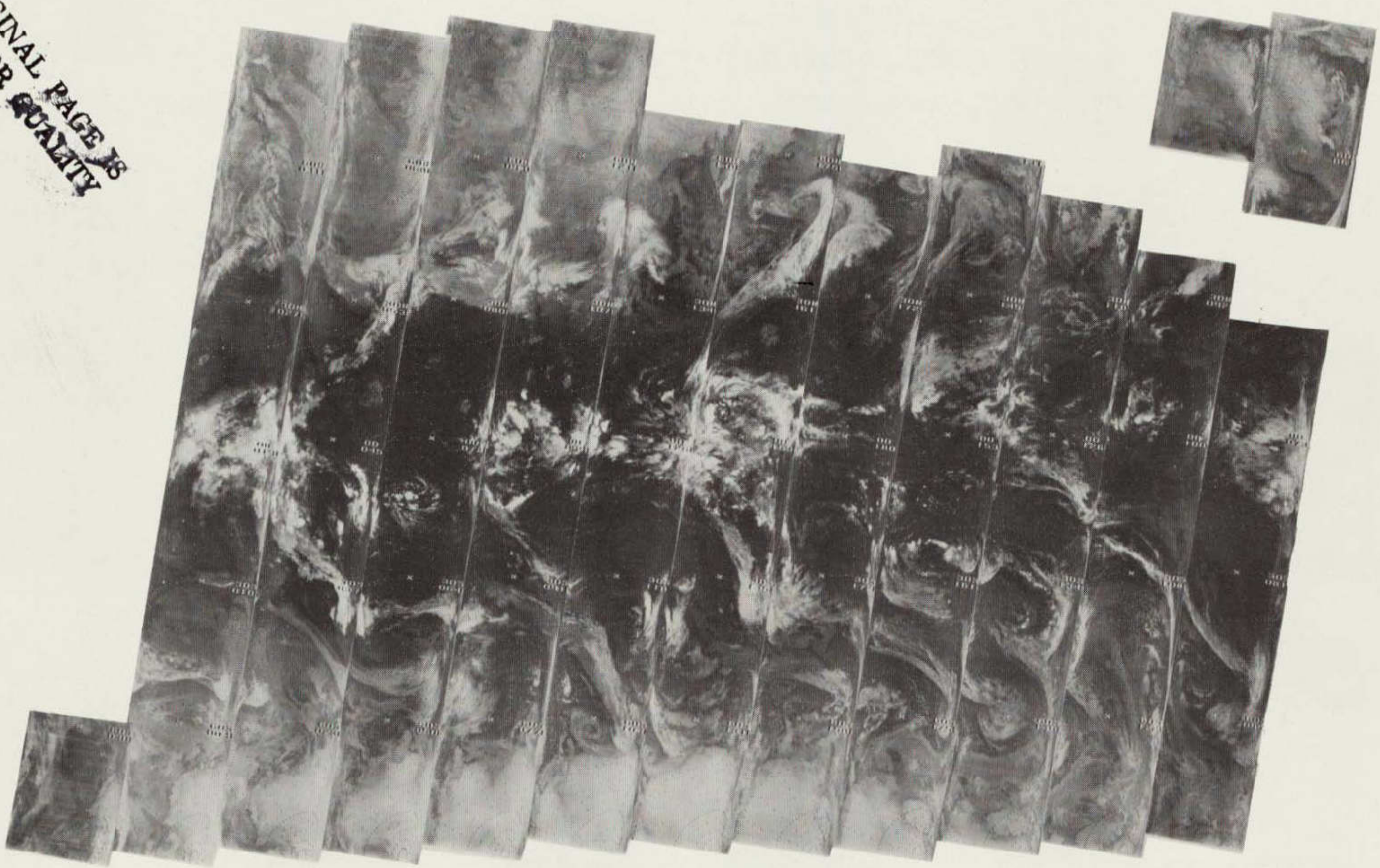
11.5 μm



3856 3855 3854 3853 3852 3851 3850 3849 3848 3847 3846 3845 3844 3843

25 MARCH 1976

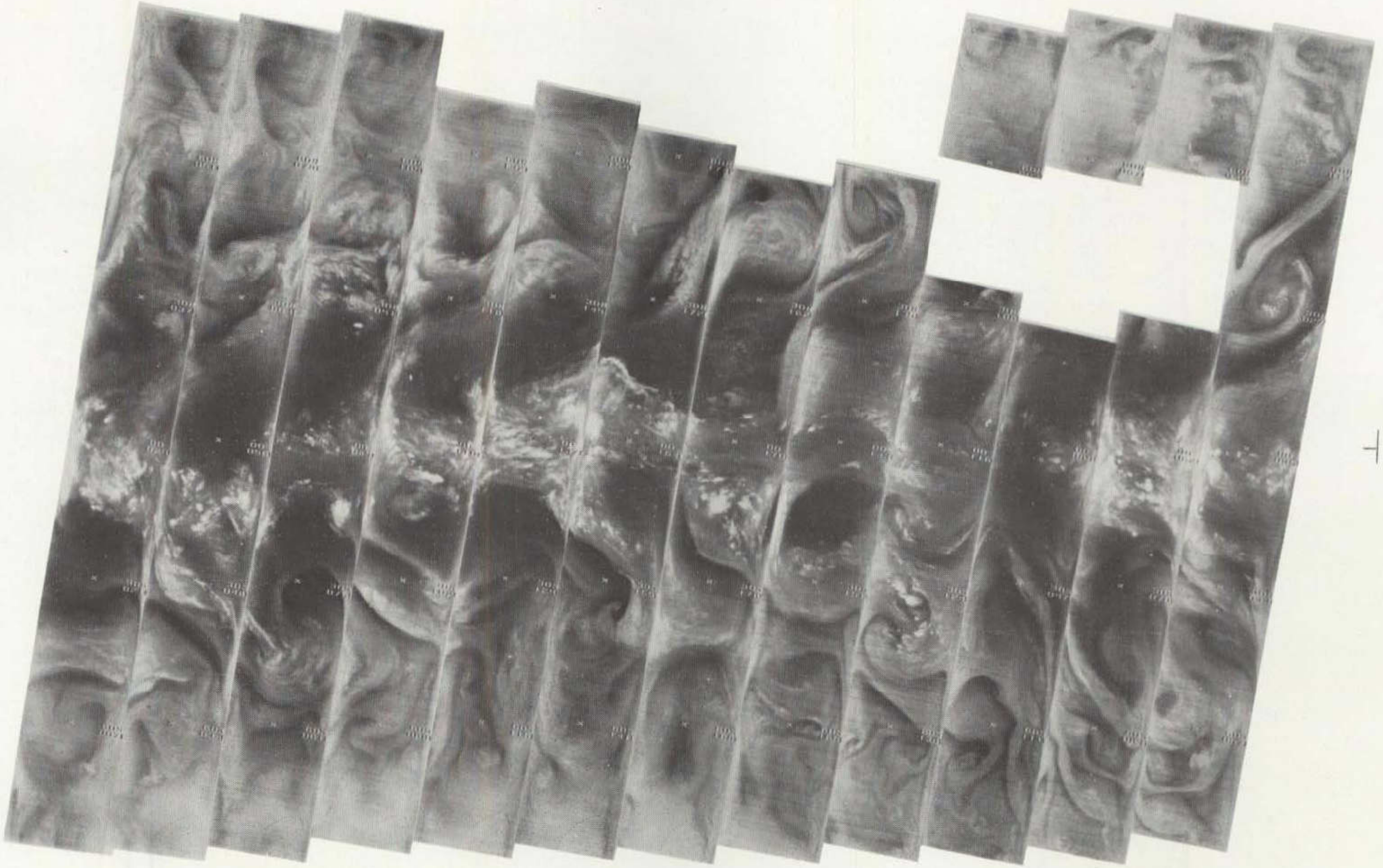
6.7 μm



3856 3855 3854 3853 3852 3851 3850 3849 3848 3847 3846 3845 3844 3843

25 MARCH 1976

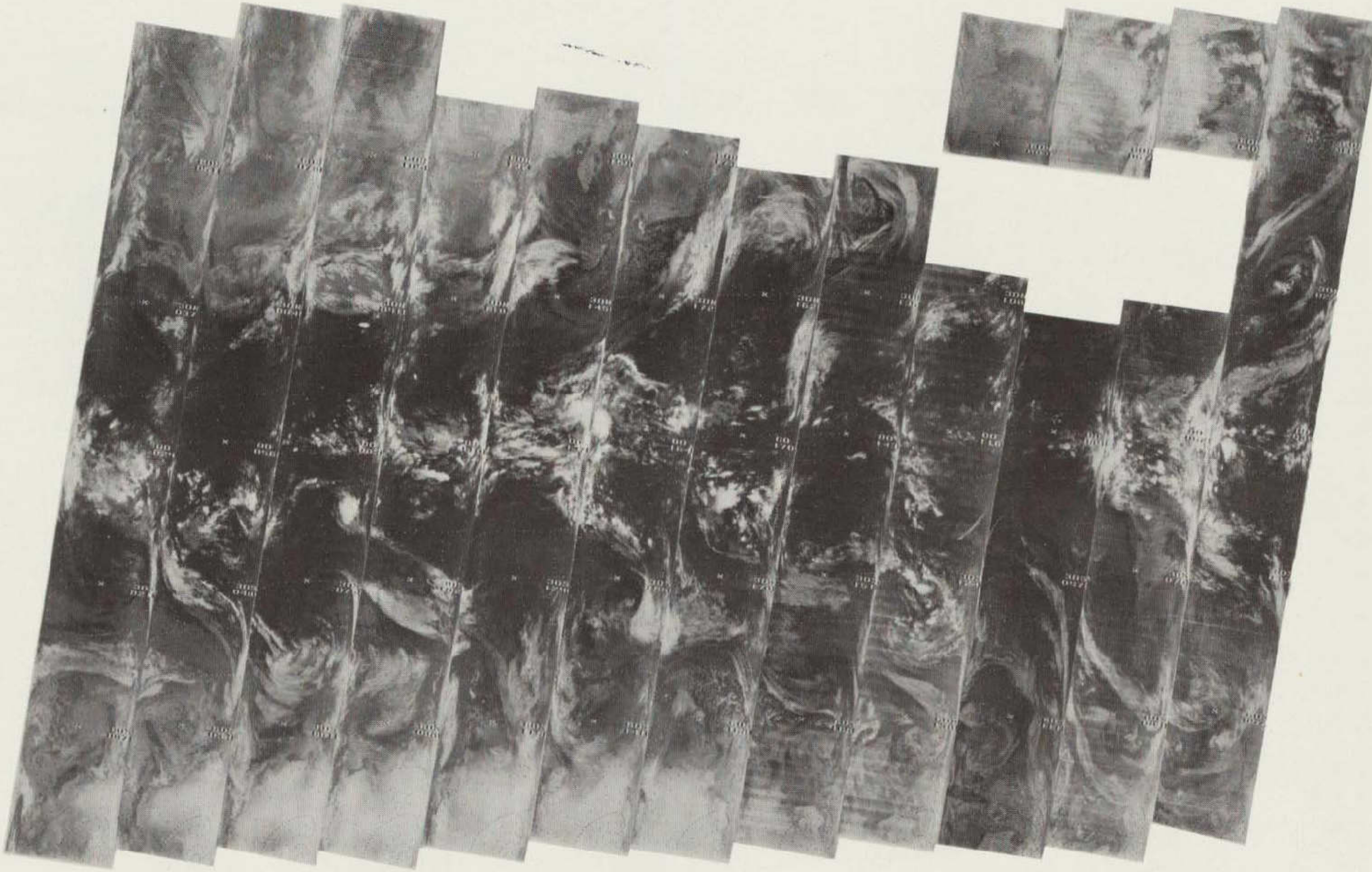
11.5 μm



3869 3868 3867 3866 3865 3864 3863 3862 3861 3860 3859 3858 3857

26 MARCH 1976

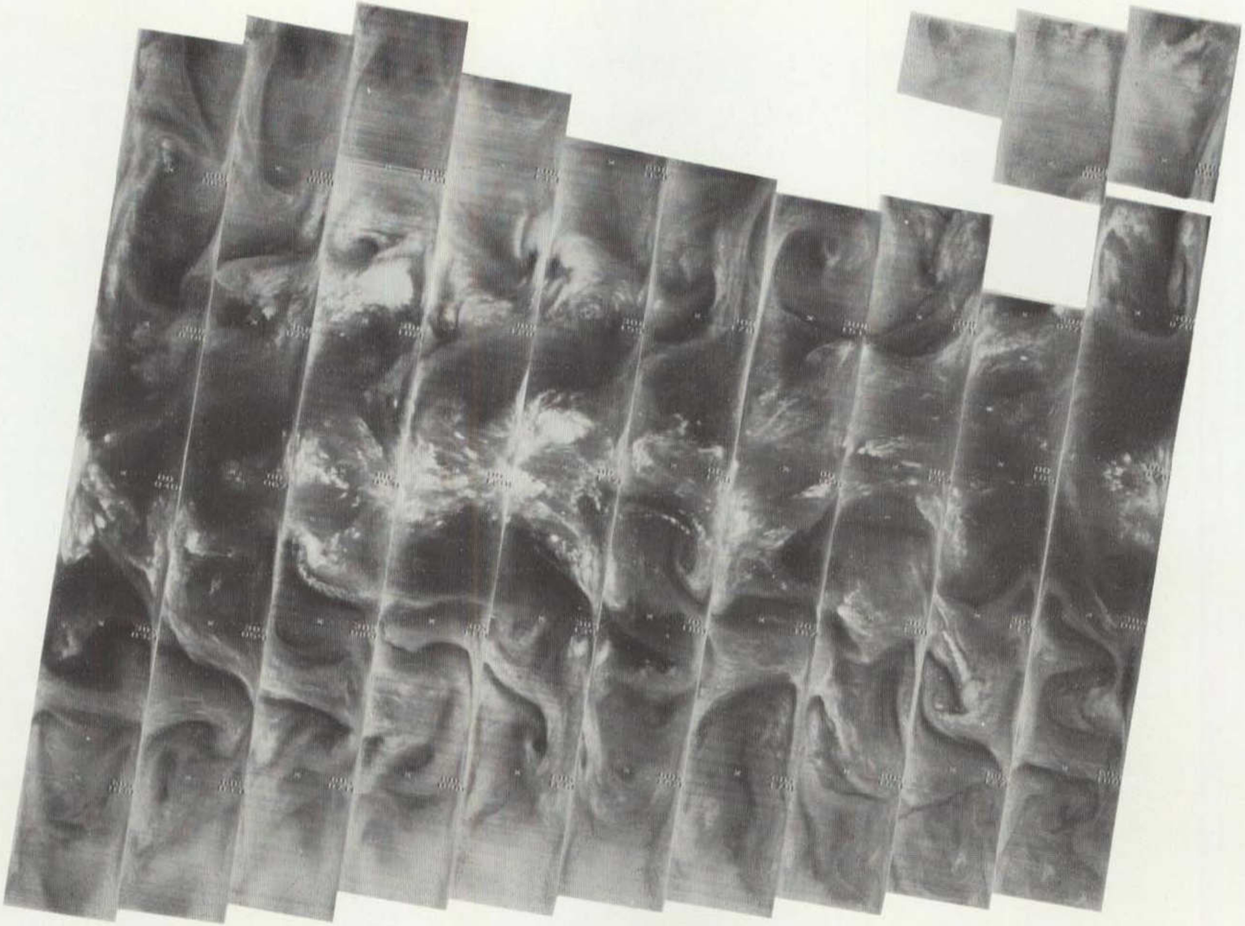
6.7 μm



3869 3868 3867 3866 3865 3864 3863 3862 386. 3860 3859 3858 3857

26 MARCH 1976

11.5 μm



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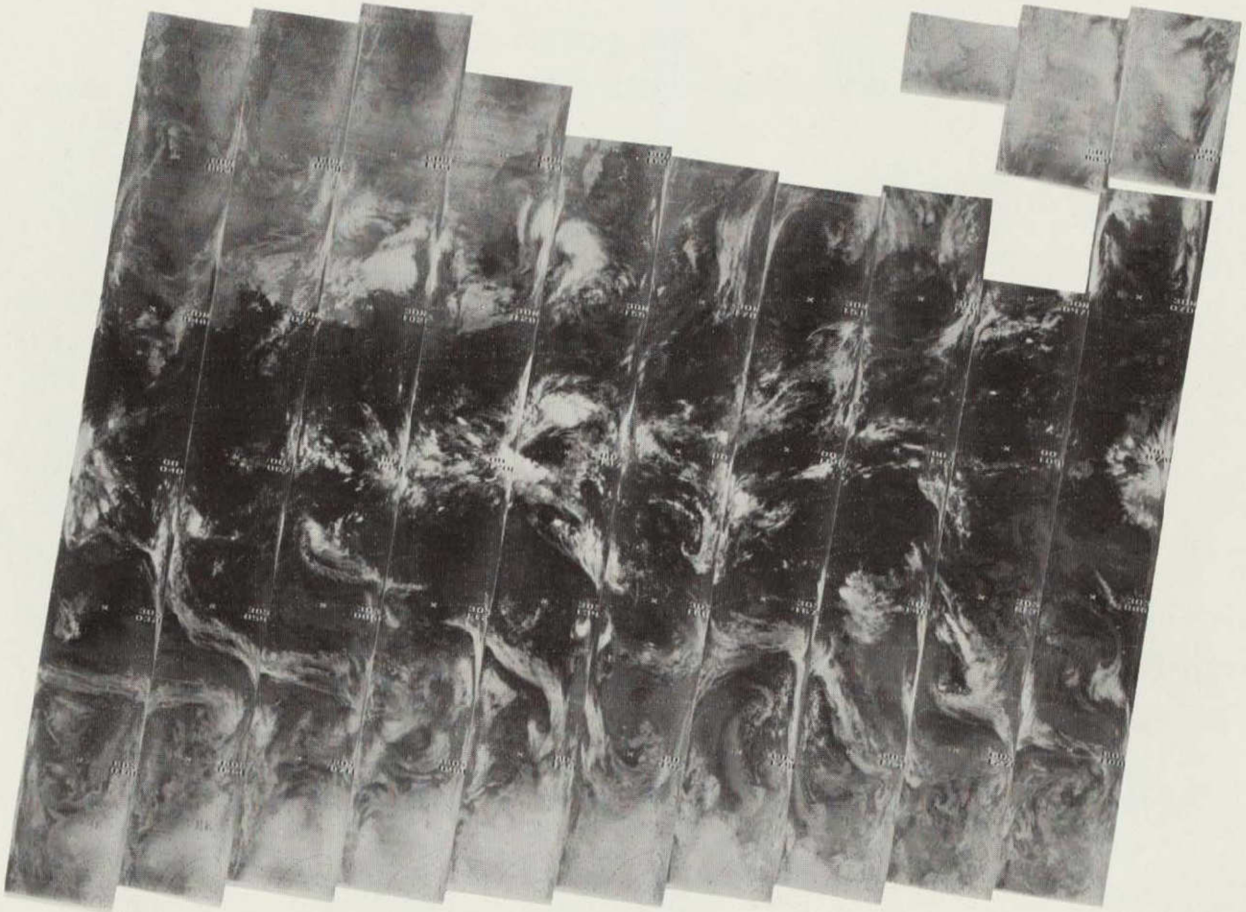
27 MARCH 1976

6.7 μm



3883 3882 3881 3880 3879 3878 3877 3876 3875 3874 3873 3872 3871 3870

27 MARCH 1976

11.5 μm

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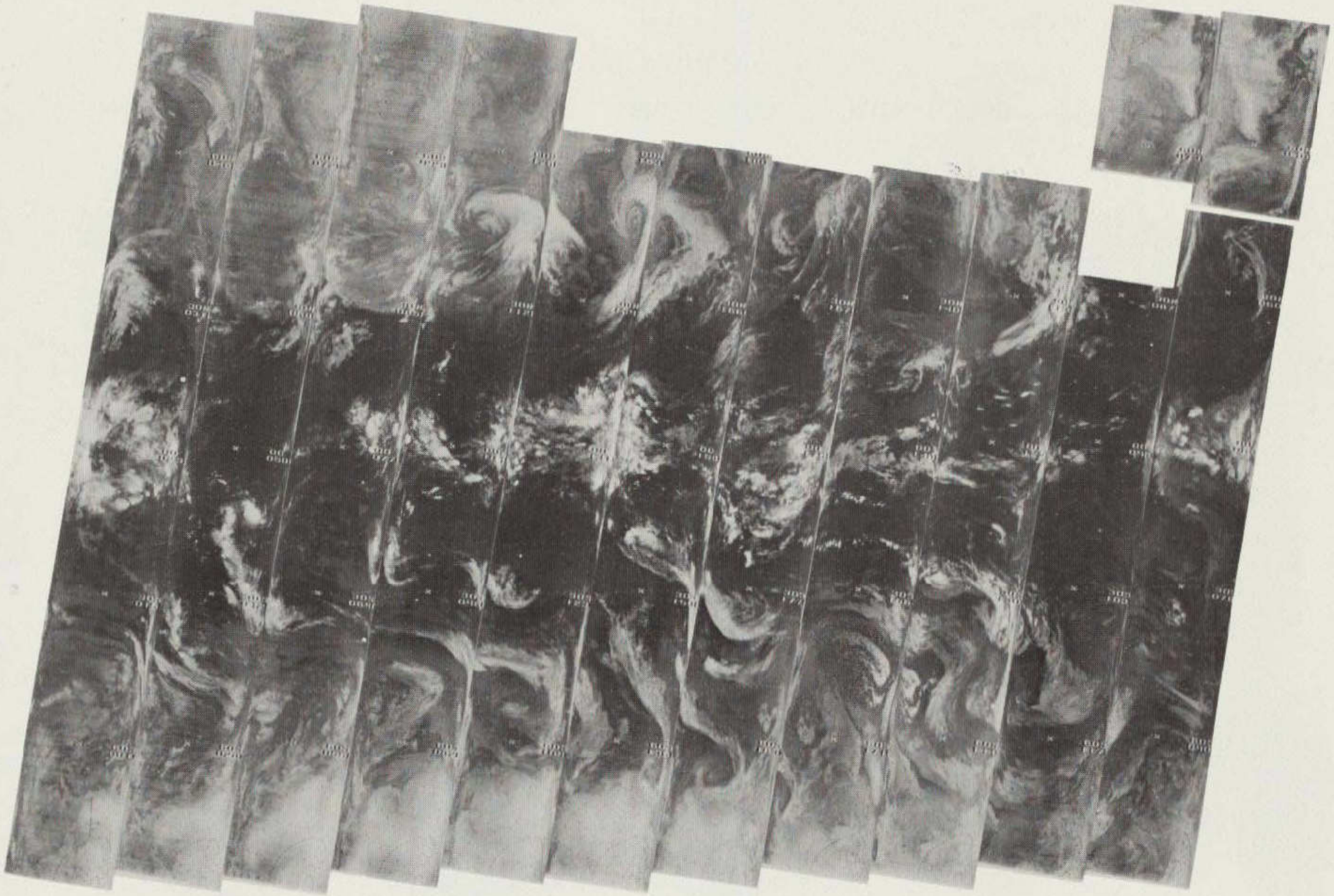
28 MARCH 1976

6.7 μm



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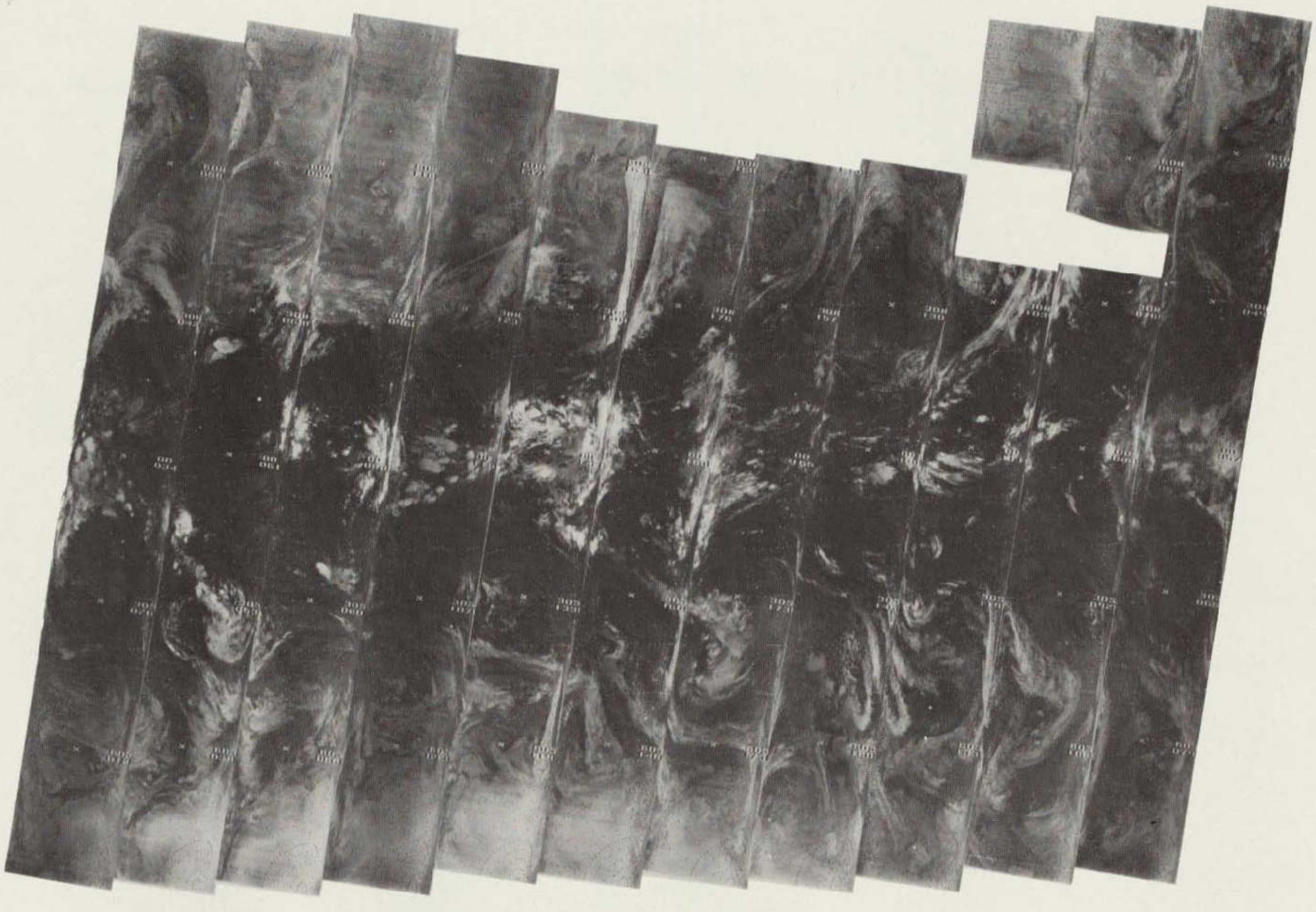
29 MARCH 1976

6.7 μm



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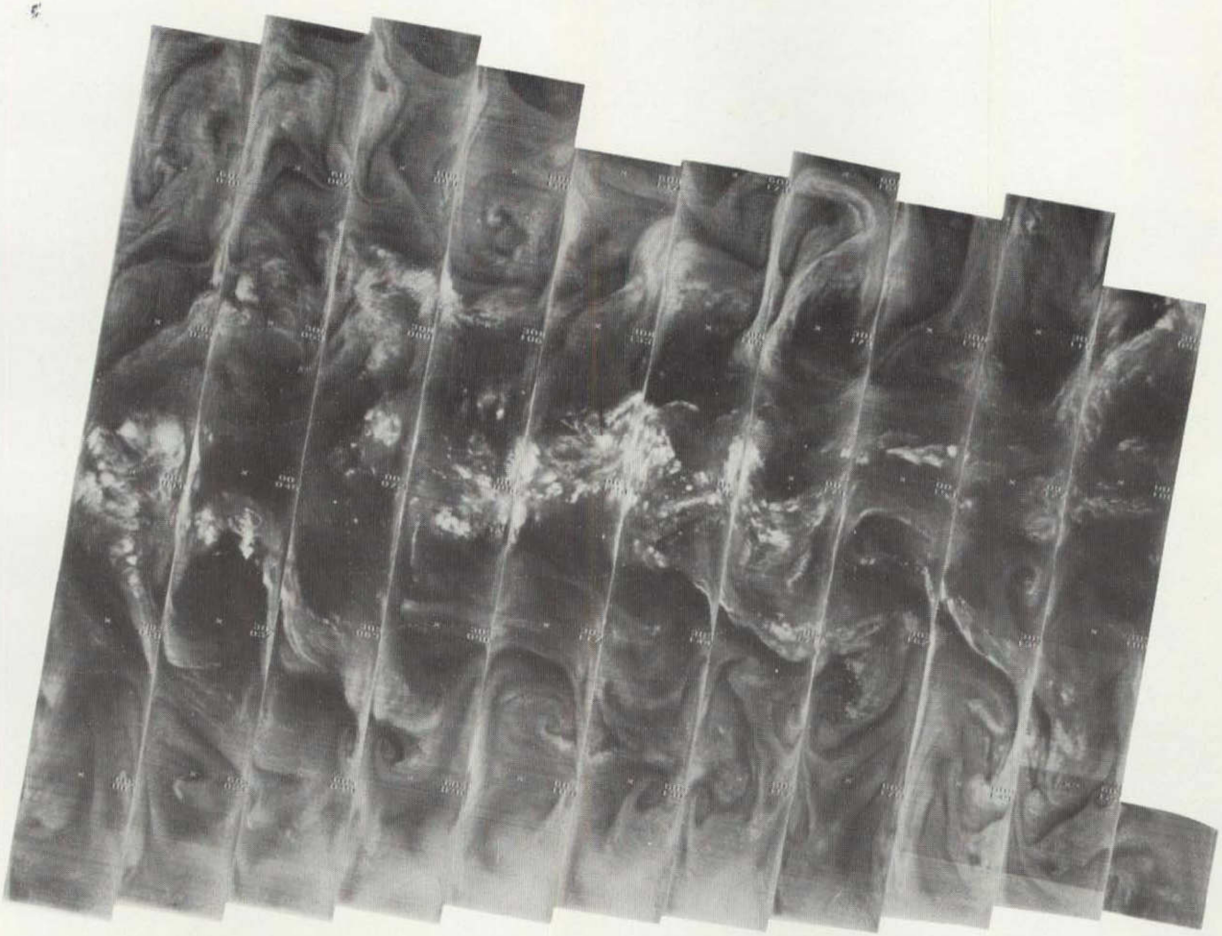
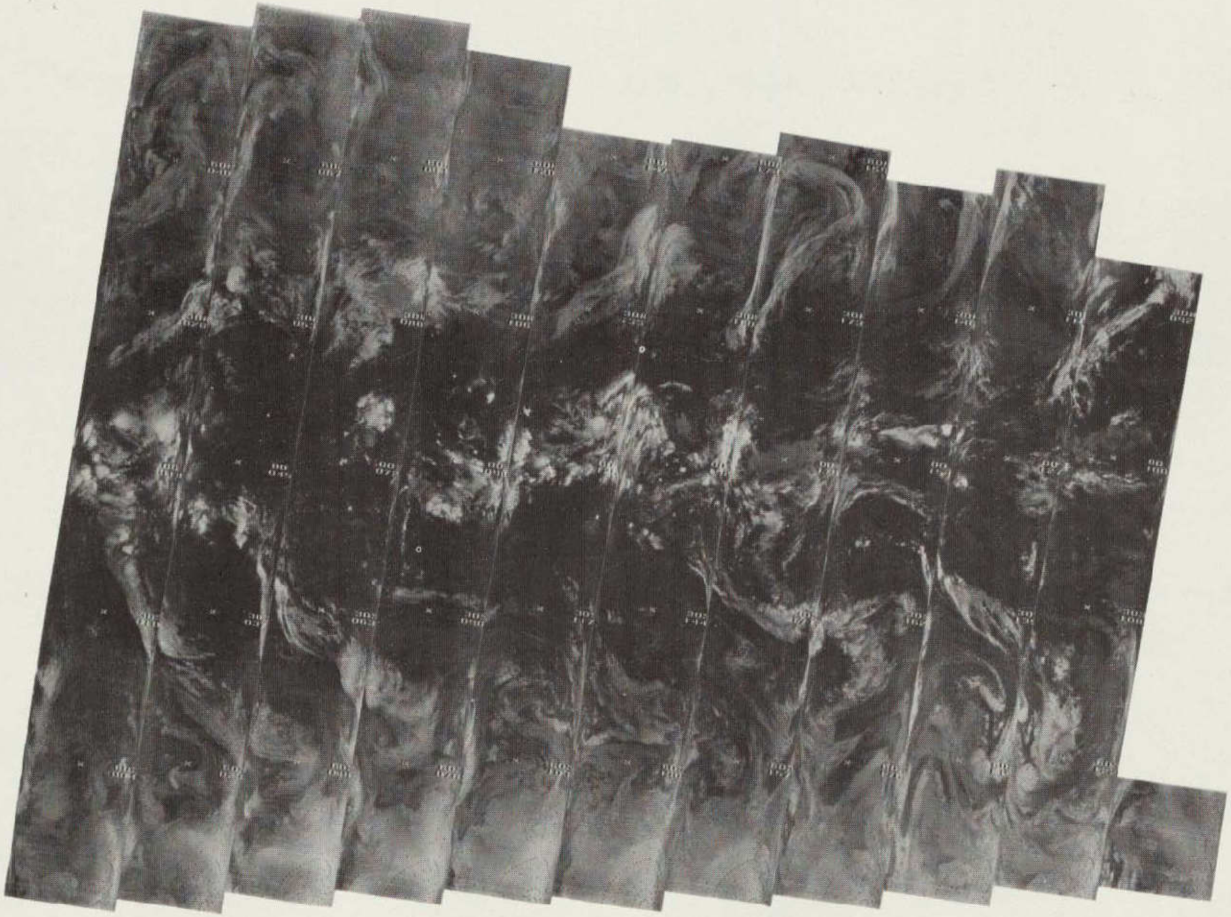
11.5 μm



3923 3922 3921 3920 3919 3918 3917 3916 3915 3914 3913 3912 3911 3910

30 MARCH 1976

6.7 μm



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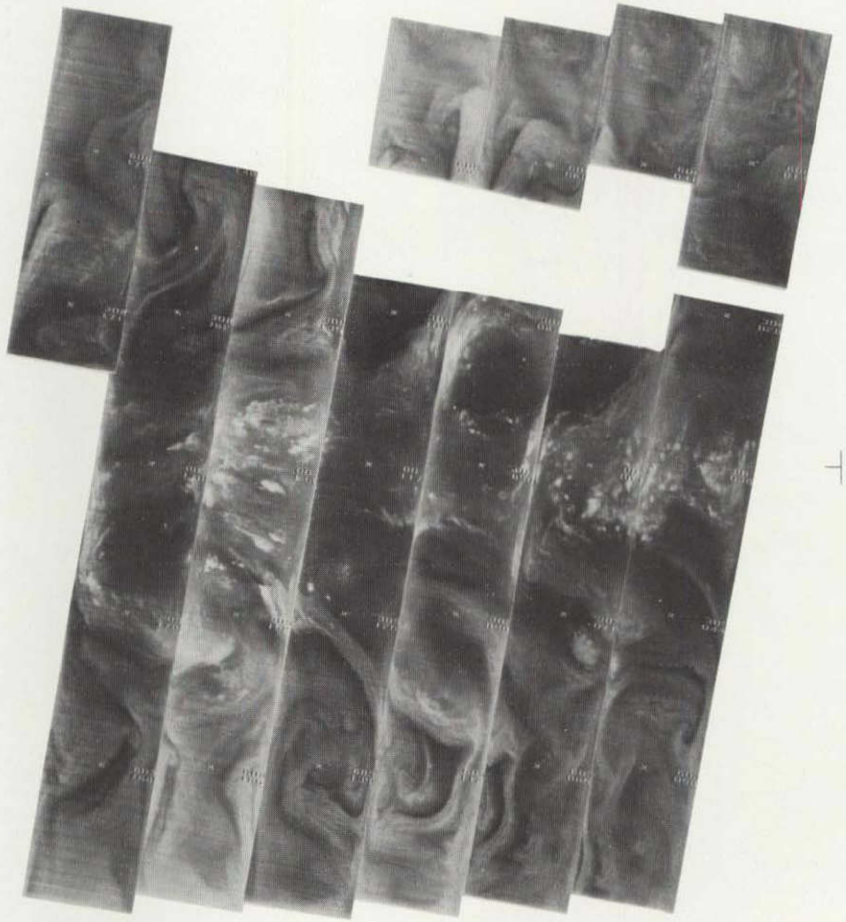
30 MARCH 1976

11.5 μm



3936 3935 3934 3933 3932 3931 3930 3929 3928 3927 3926 3925 3924

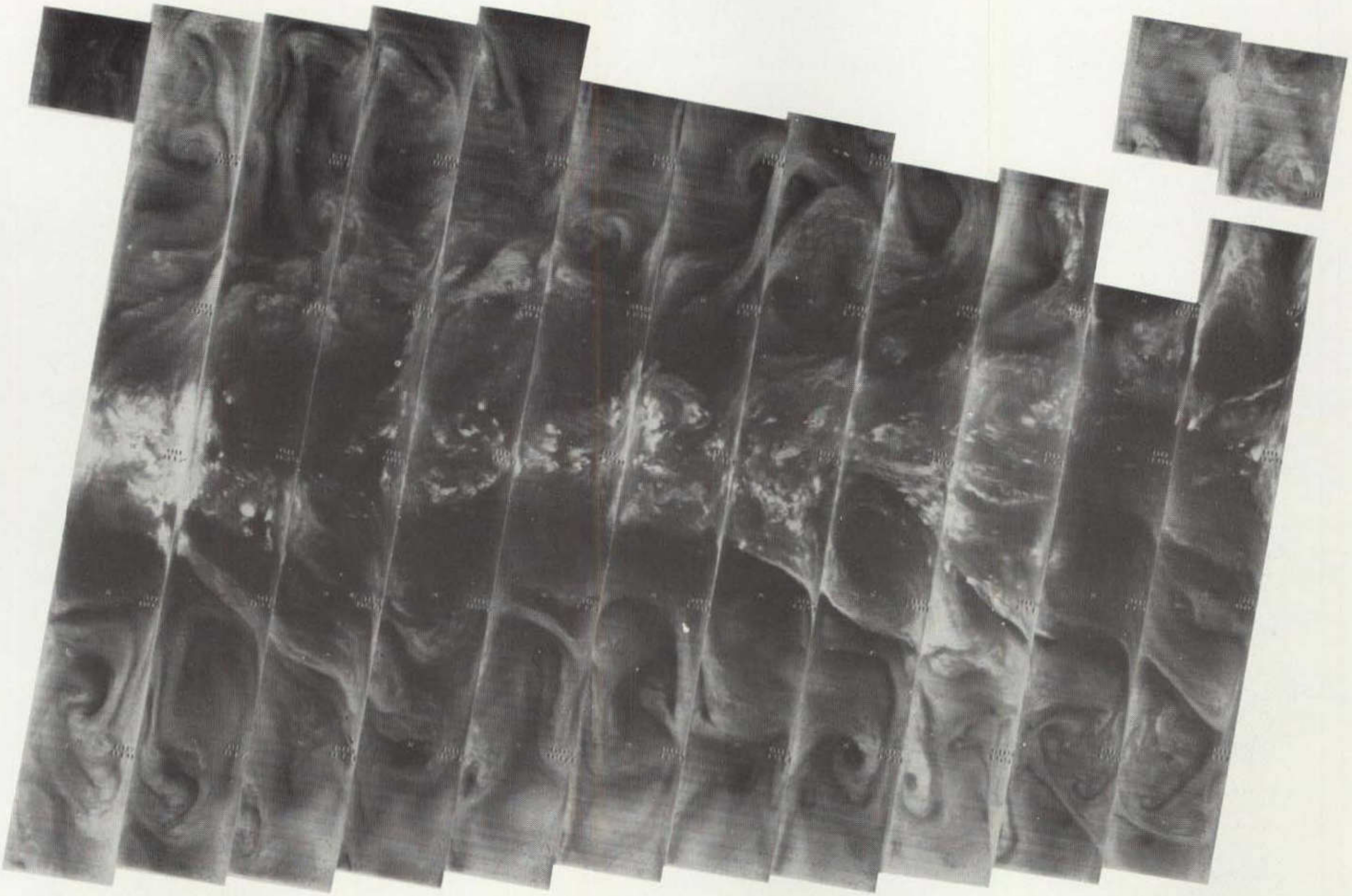
31 MARCH 1976

6.7 μm

3936 3935 3934 3933 3932 3931 3930 3929 3928 3927 3926 3925 3924

31 MARCH 1976

11.5 μm



3950 3949 3948 3947 3946 3945 3944 3943 3942 3941 3940 3939 3938 3937

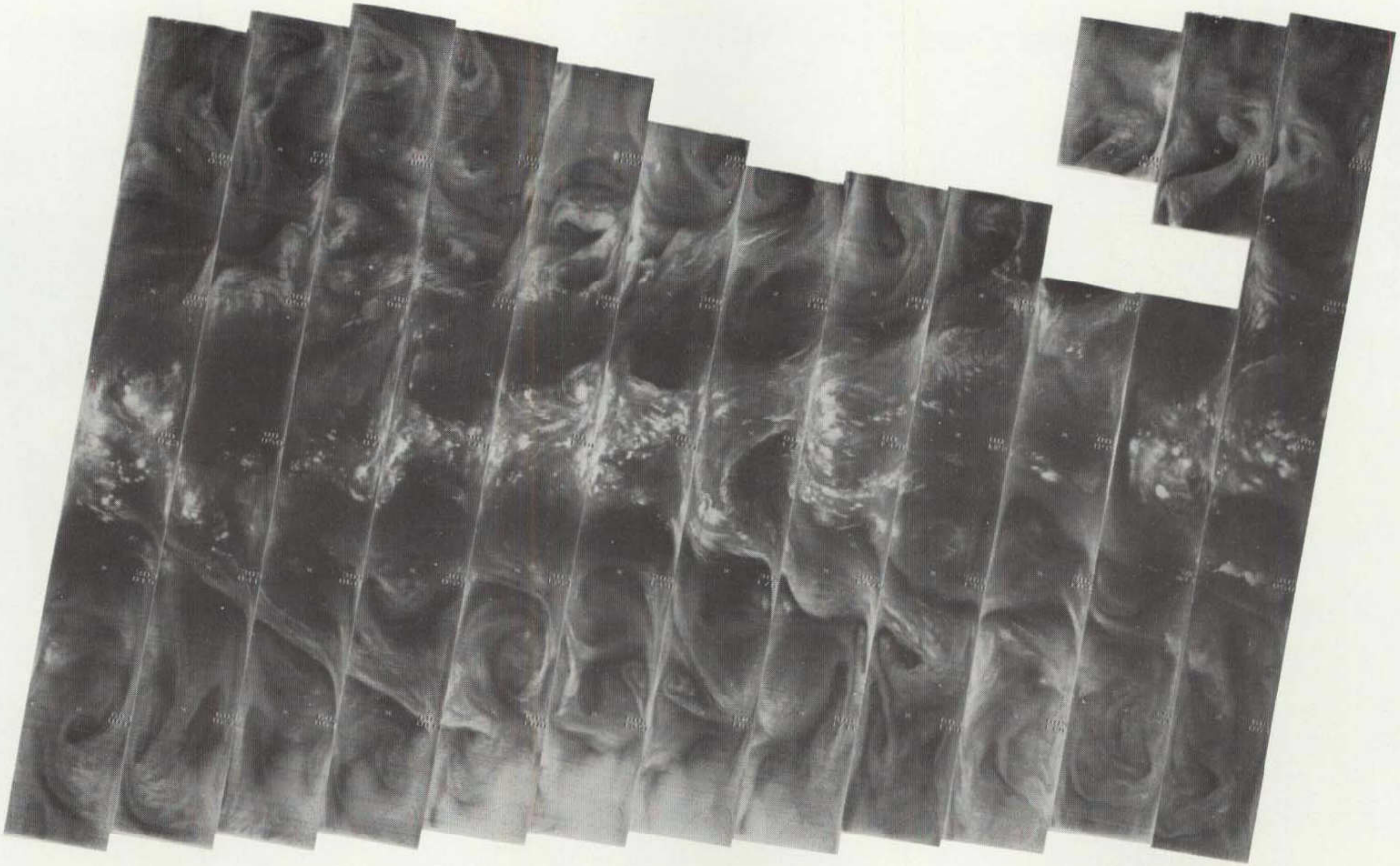
1 APRIL 1976

6.7 μm

3950 3949 3948 3947 3946 3945 3944 3943 3942 3941 3940 3939 3938 3937

1 APRIL 1976

11.5 μm



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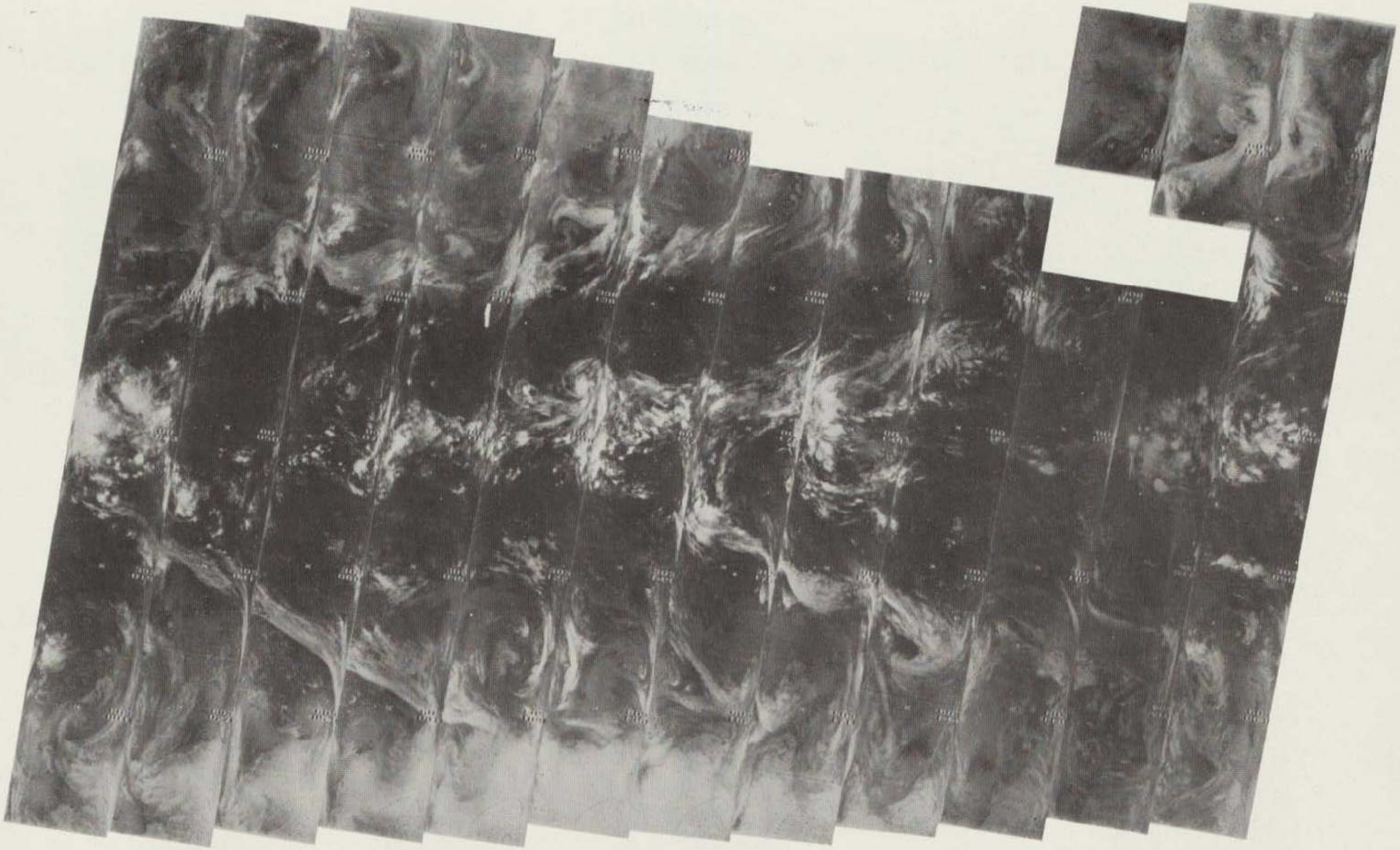
2 APRIL 1976

6.7 μm



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2 APRIL 1976

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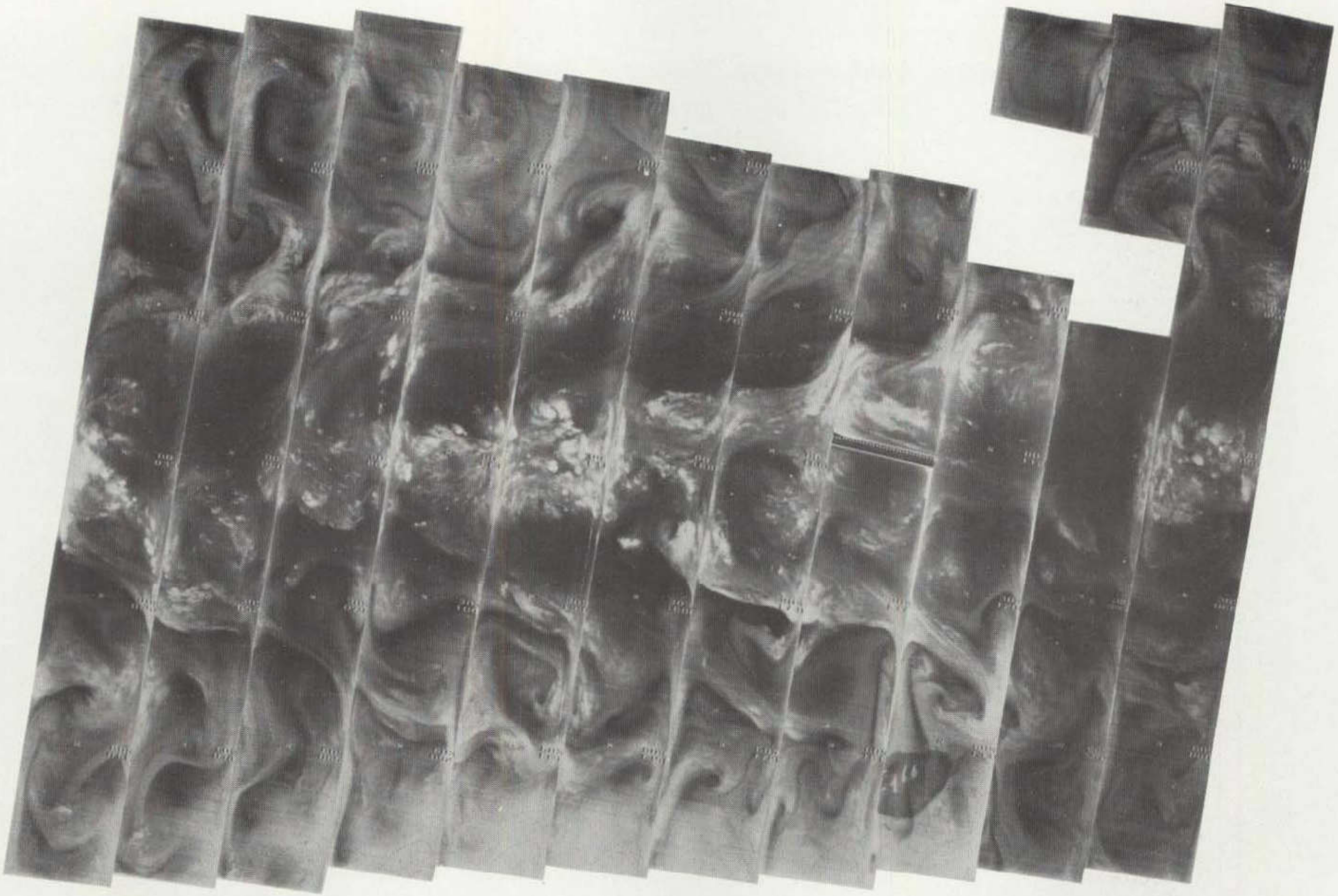

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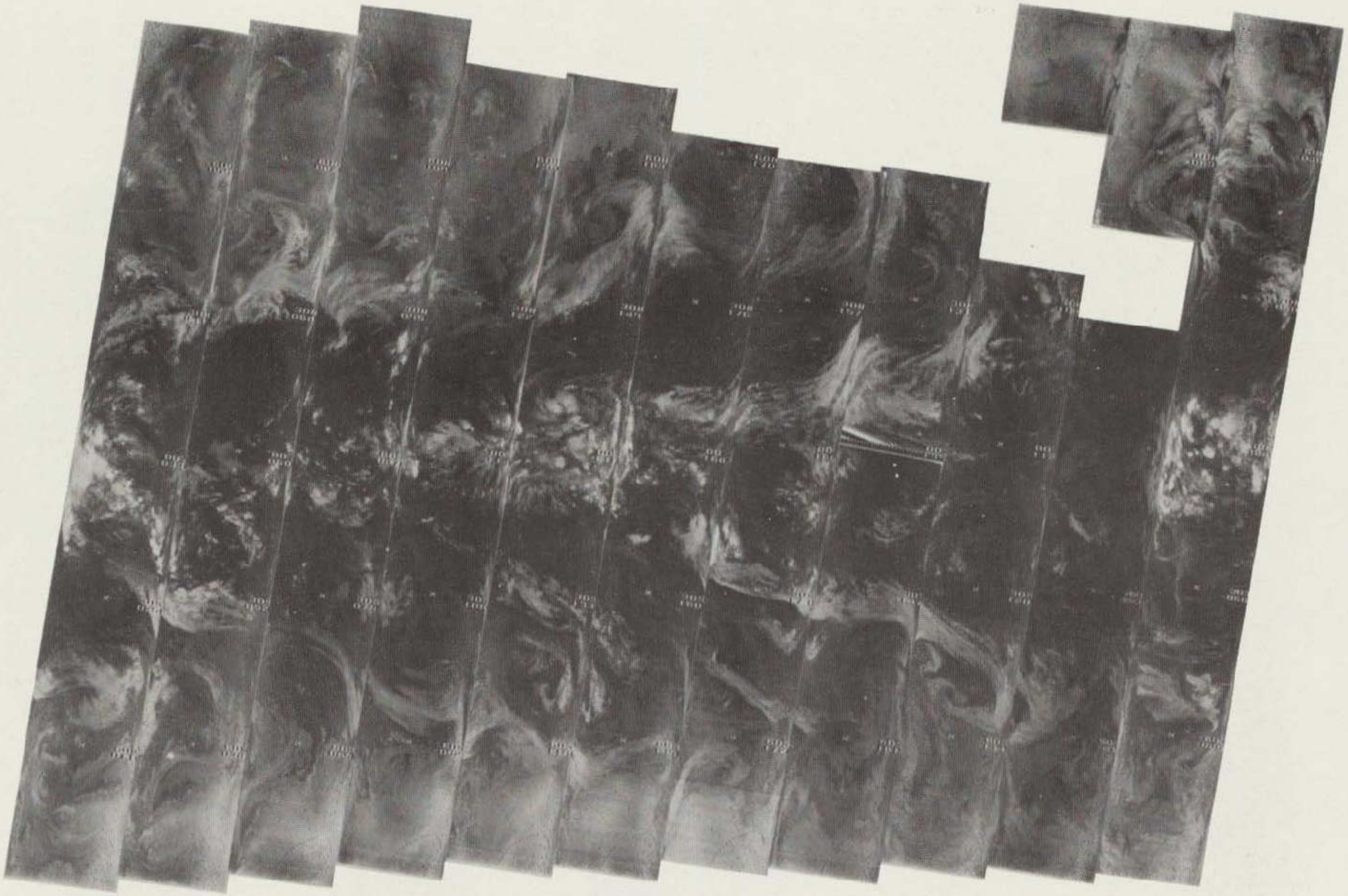
3 APRIL 1976

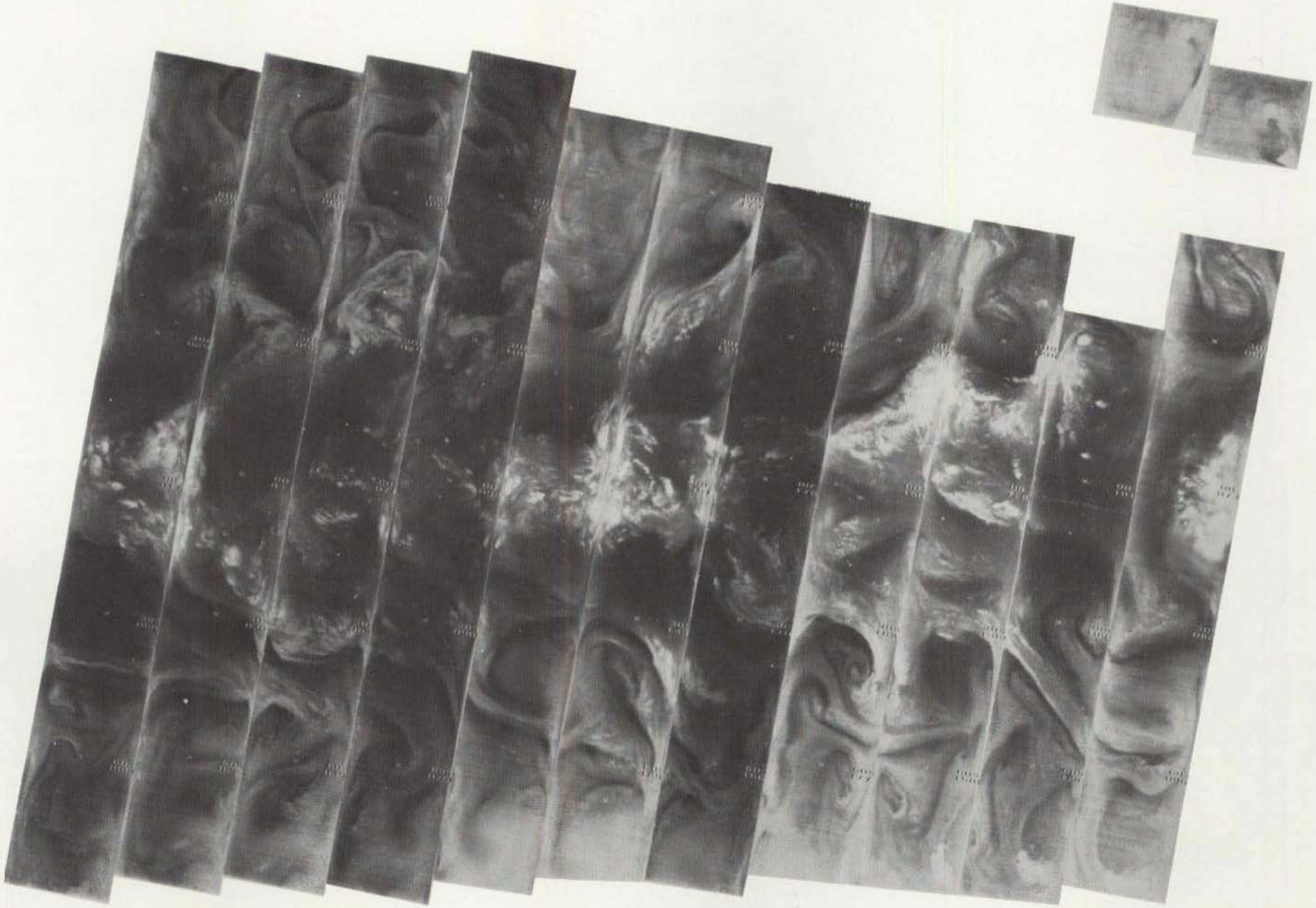
6.7 μm



3976 3975 3974 3973 3972 3971 3970 3969 3968 3967 3966 3965 3964

3 APRIL 1976

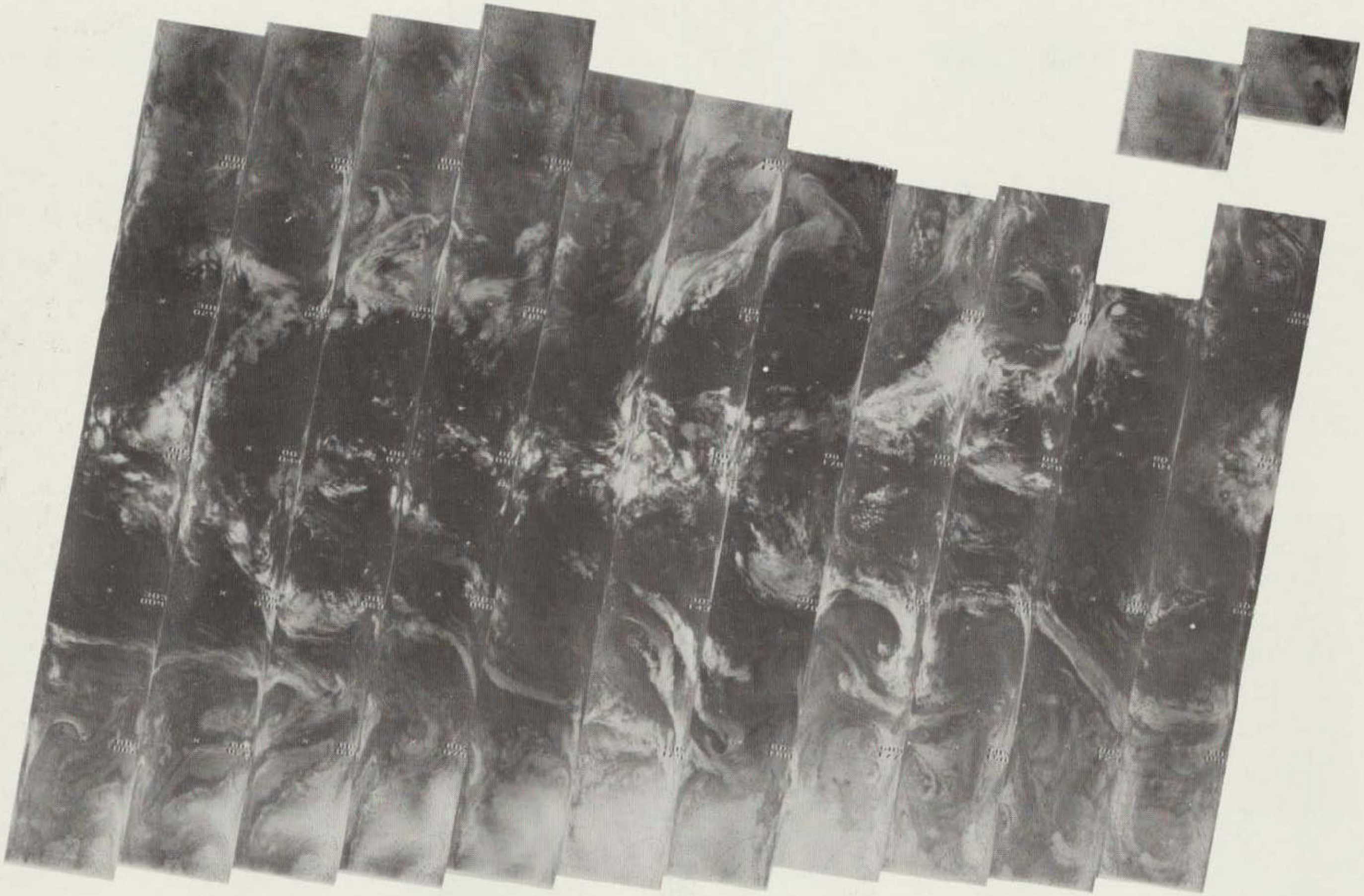
11.5 μm



3990 3989 3988 3987 3986 3985 3984 3983 3982 3981 3980 3979 3978 3977

4 APRIL 1976

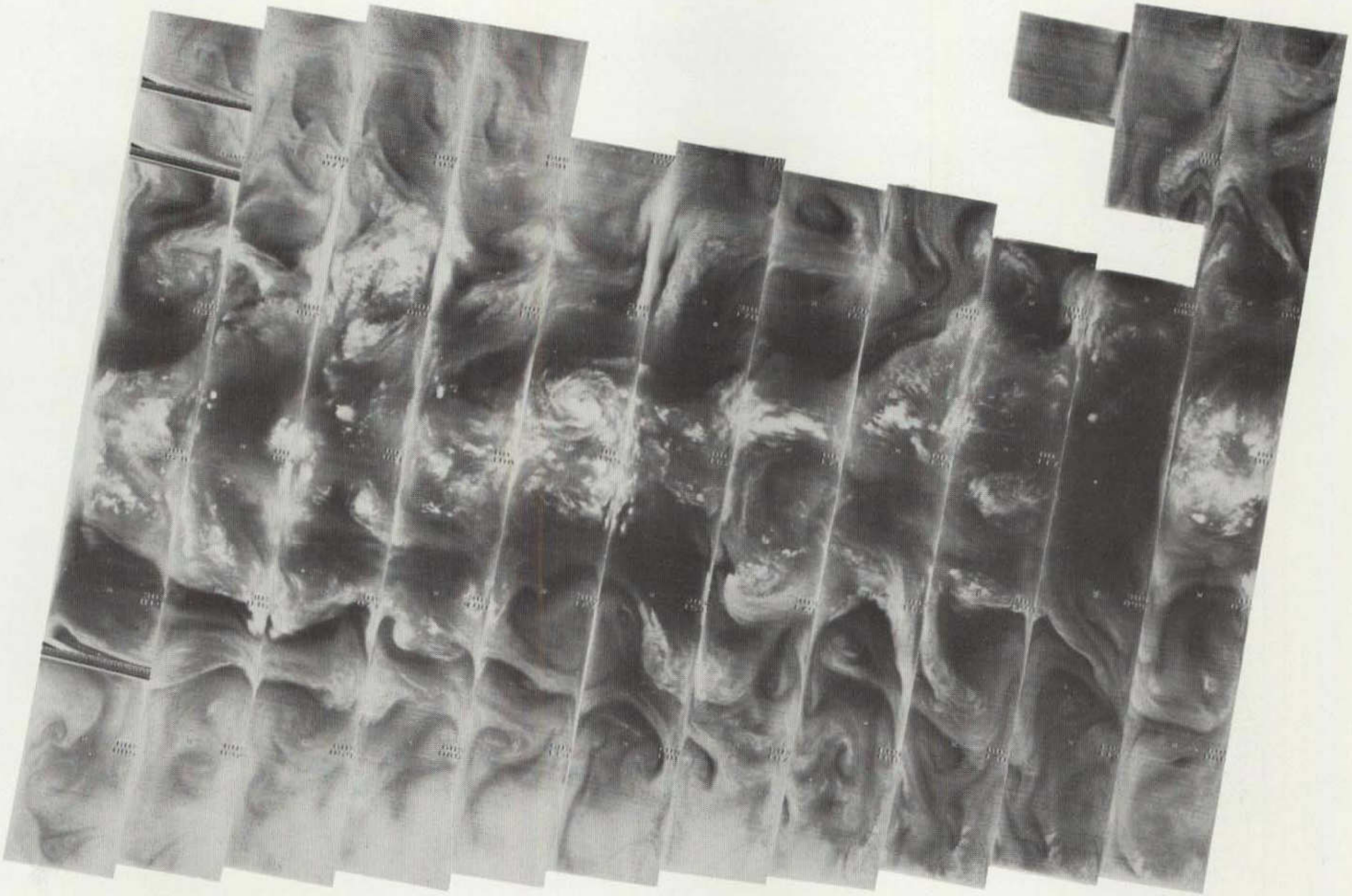
6.7 μm



3990 3989 3988 3987 3986 3985 3984 3983 3982 3981 3980 3979 3978 3977

4 APRIL 1976

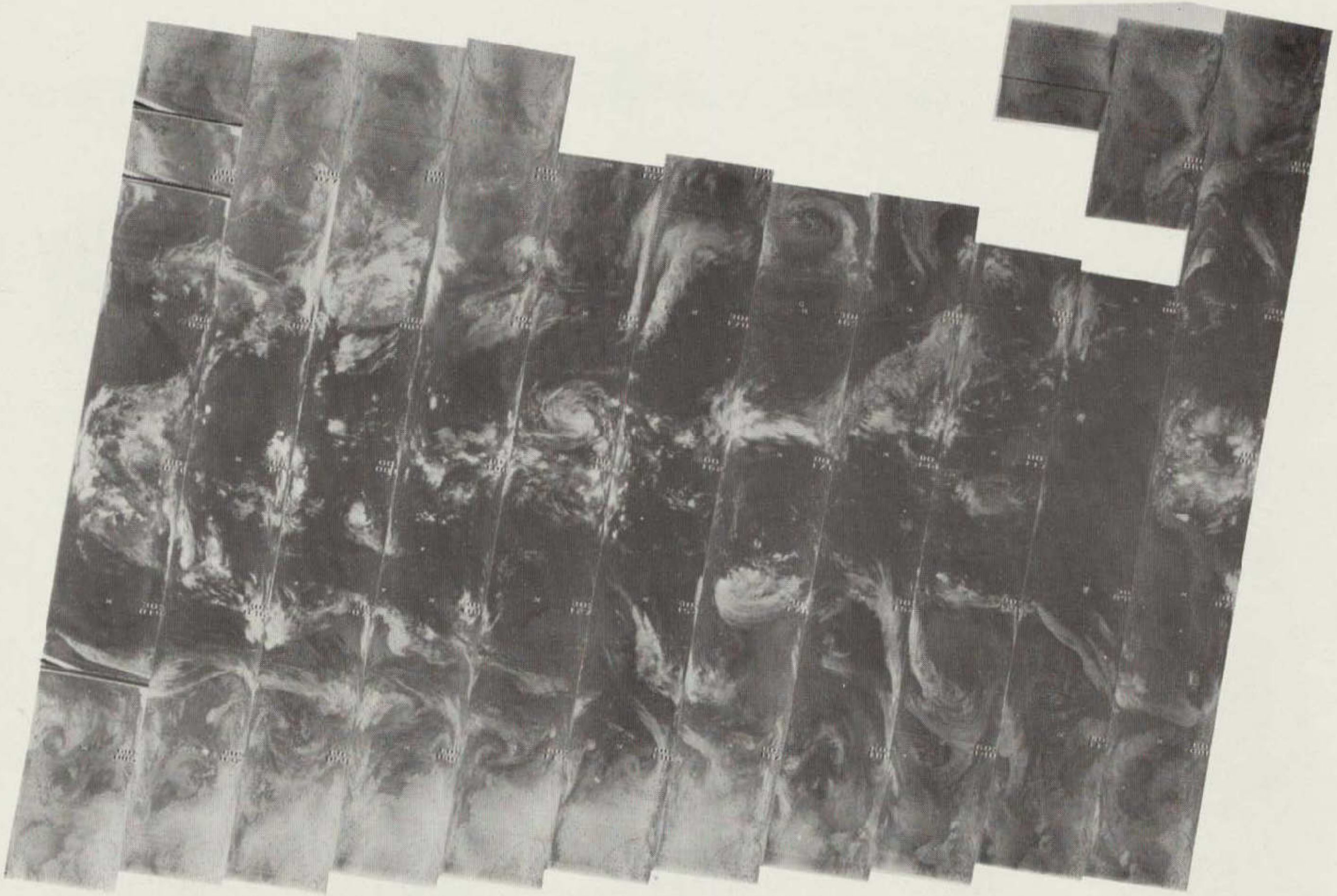
11.5 μm



4003 4002 4001 4000 3999 3998 3997 3996 3995 3994 3993 3992 3991

5 APRIL 1976

6.7 μm



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5 APRIL 1976

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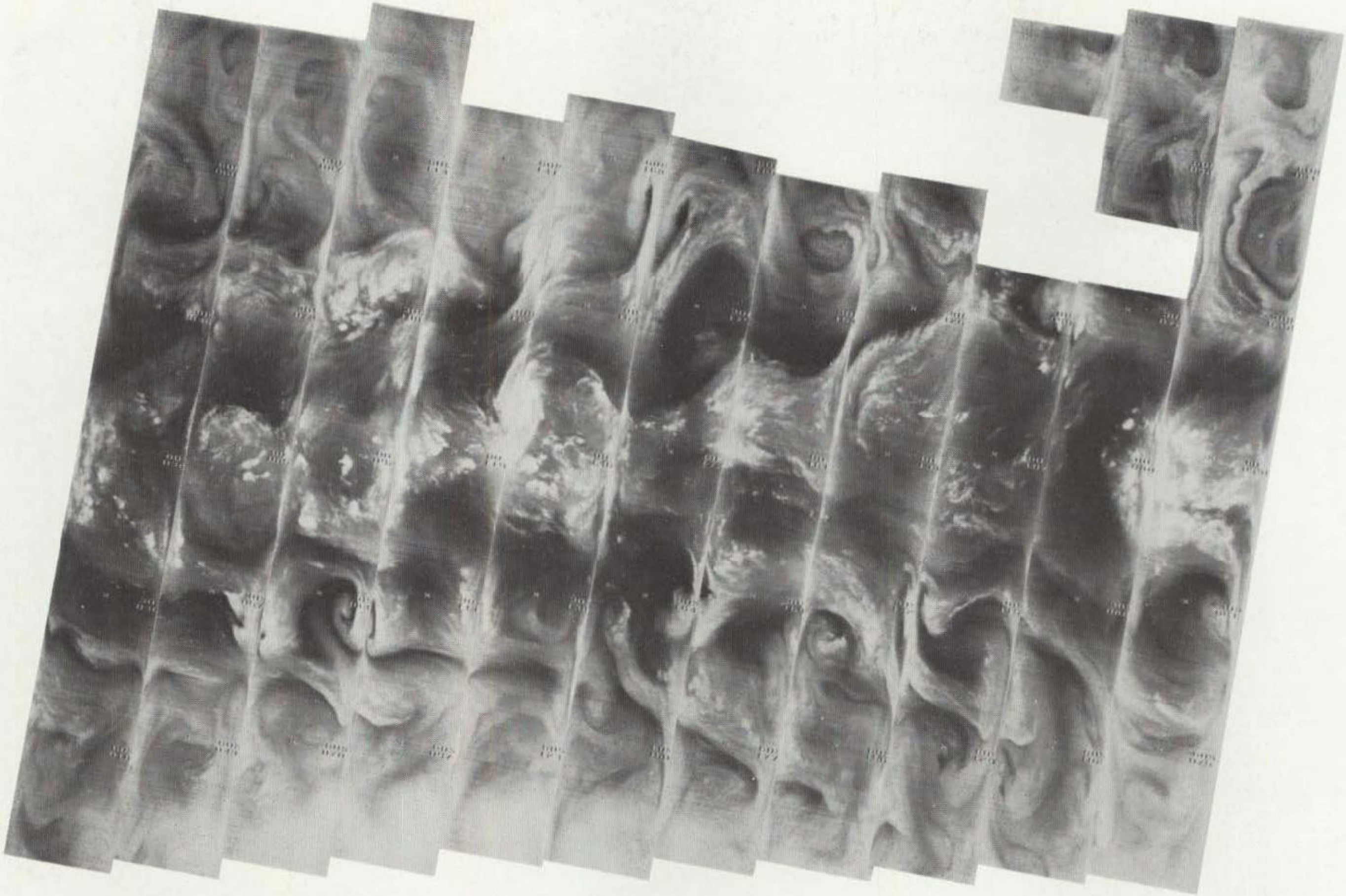

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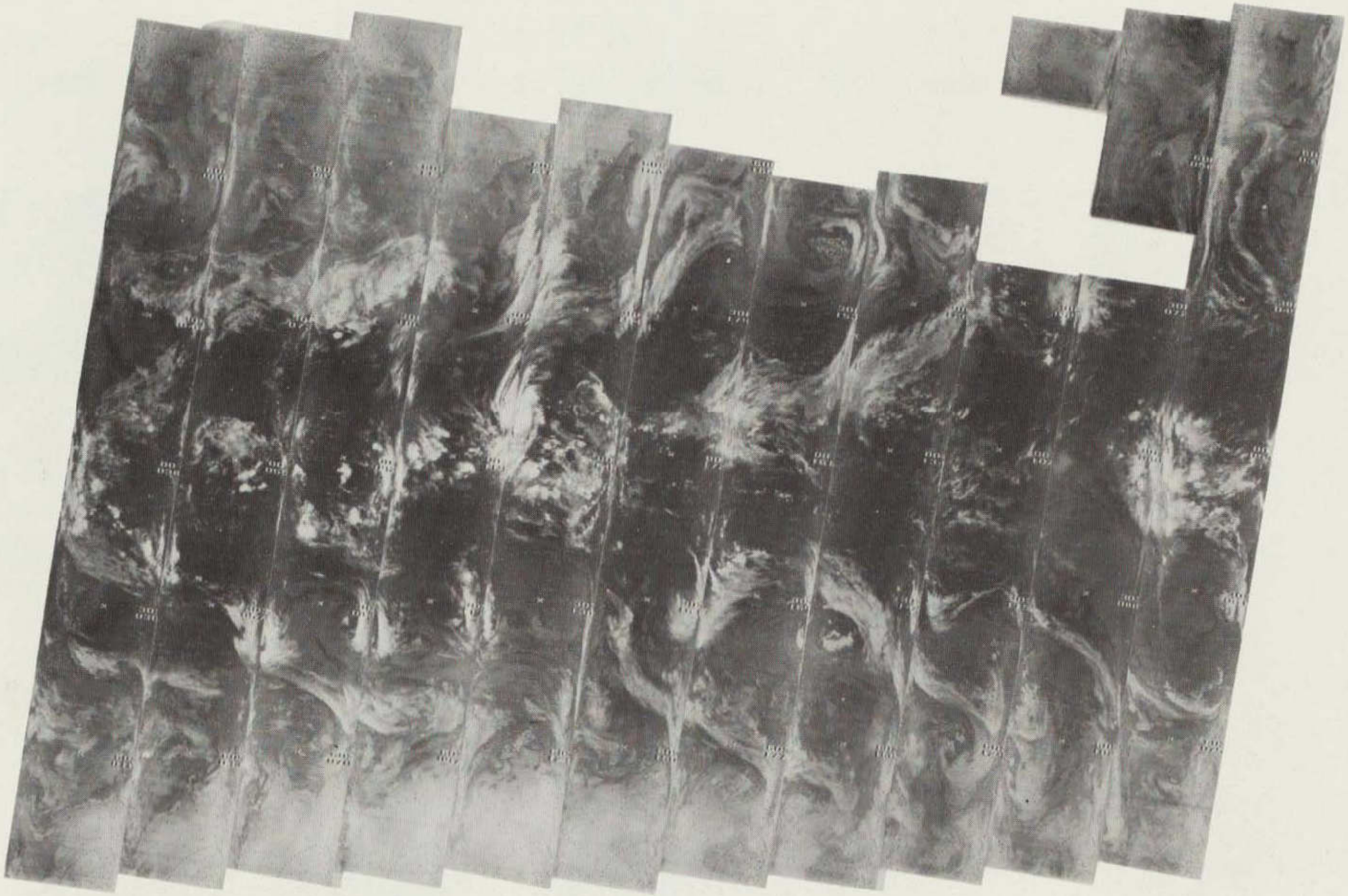
6 APRIL 1976

6.7 μm



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6 APRIL 1976

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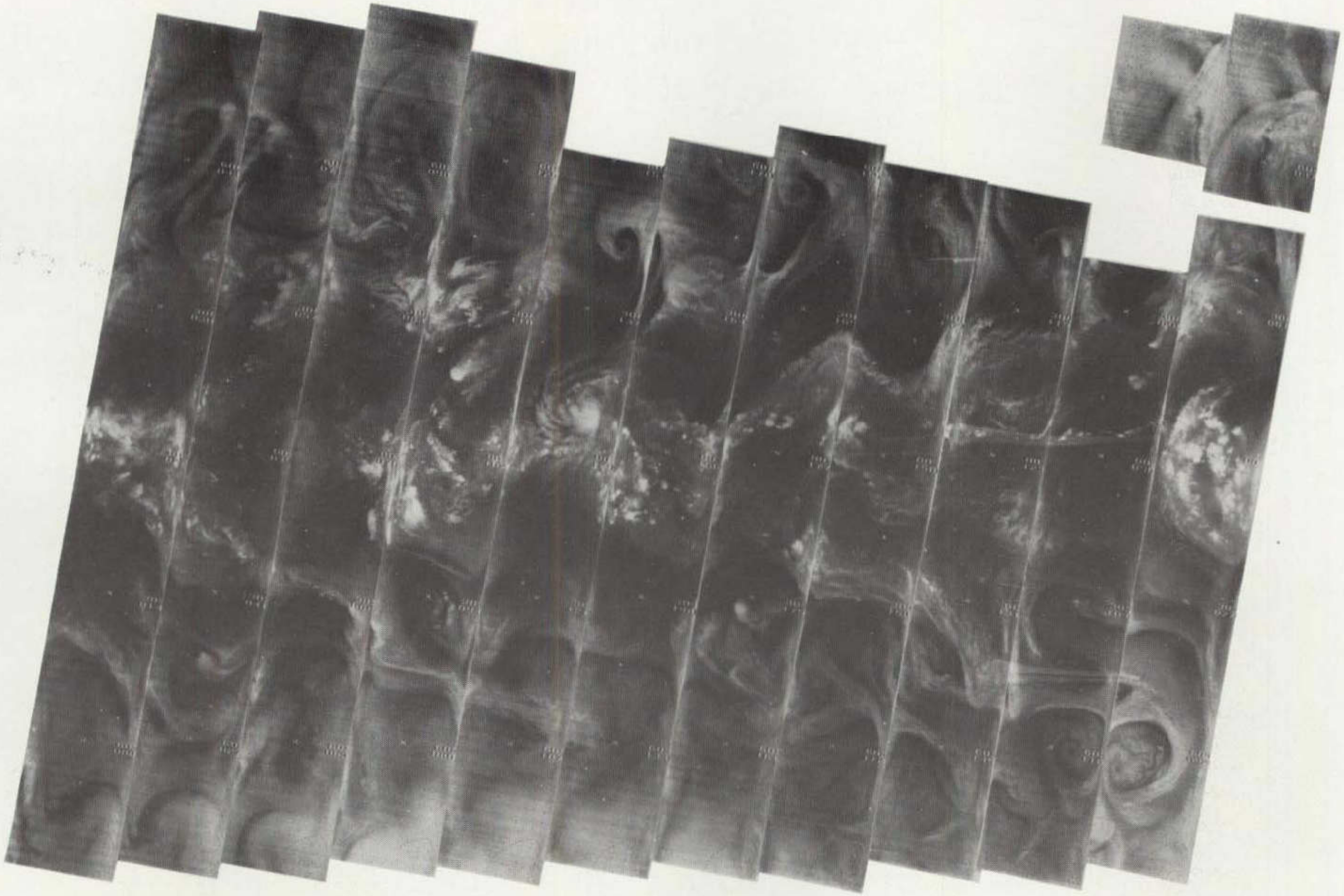
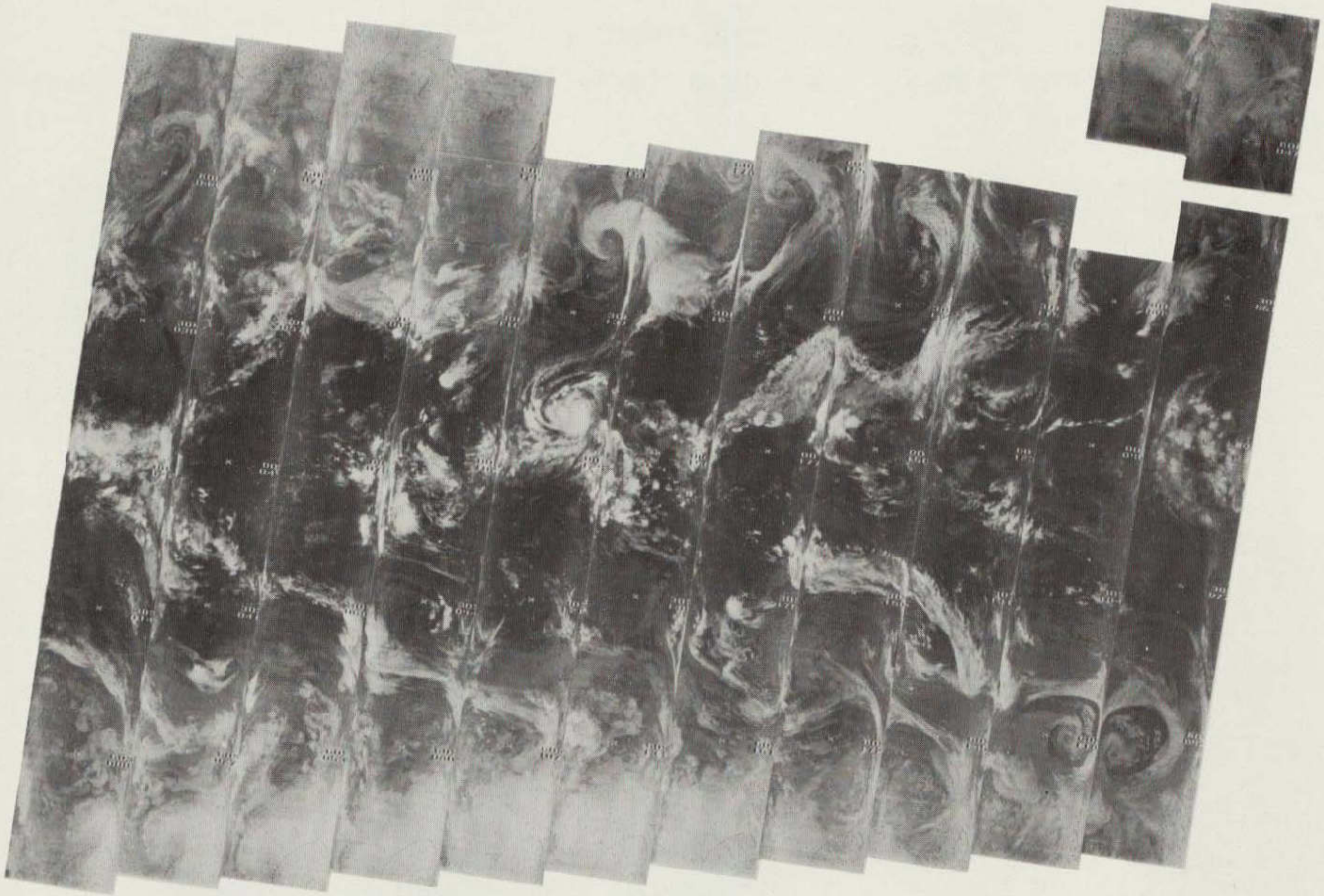


4030 4029 4028 4027 4026 4025 4024 4023 4022 4021 4020 4019 4018

7 APRIL 1976

6.7 μm



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7 APRIL 1976

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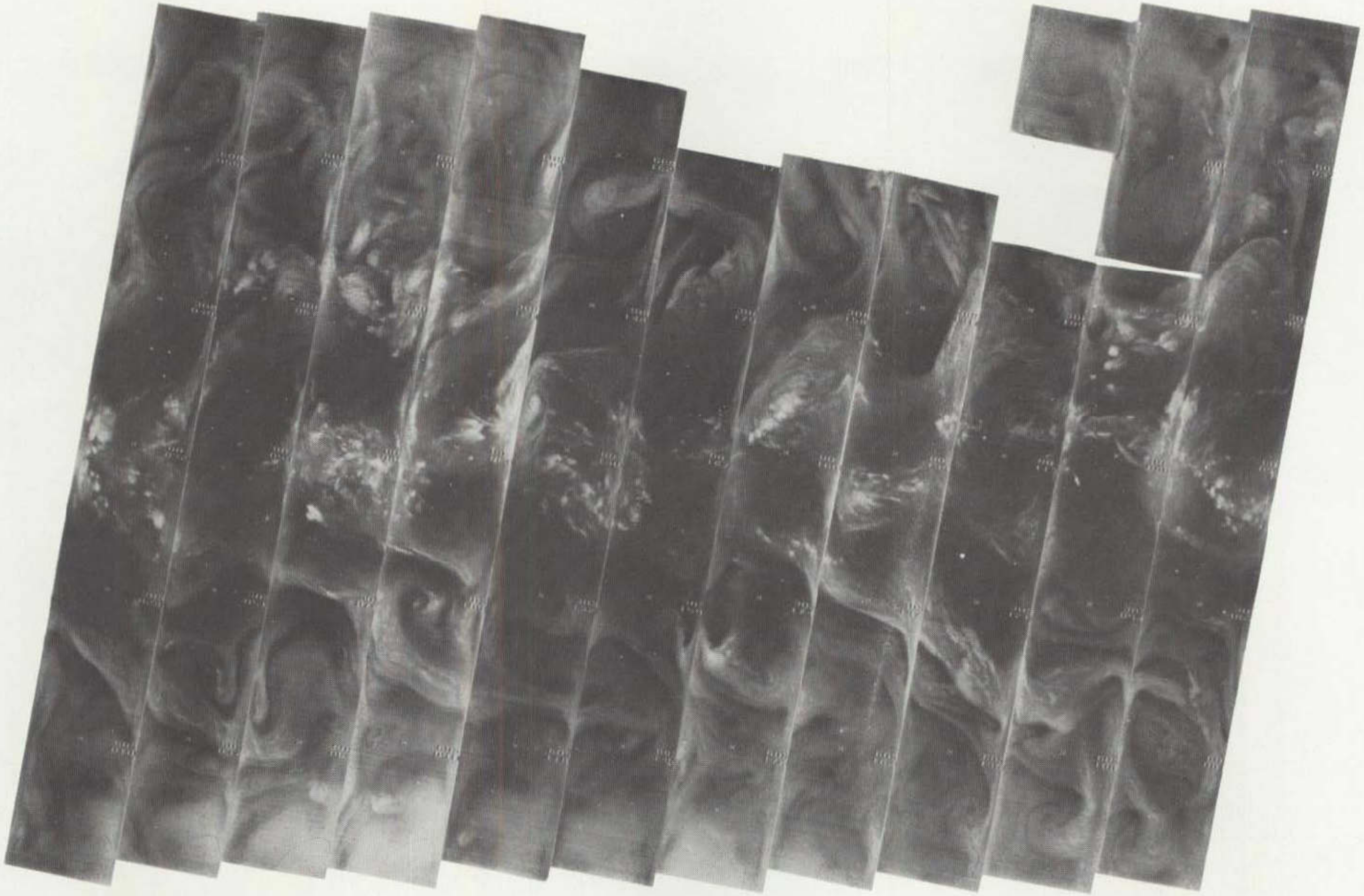
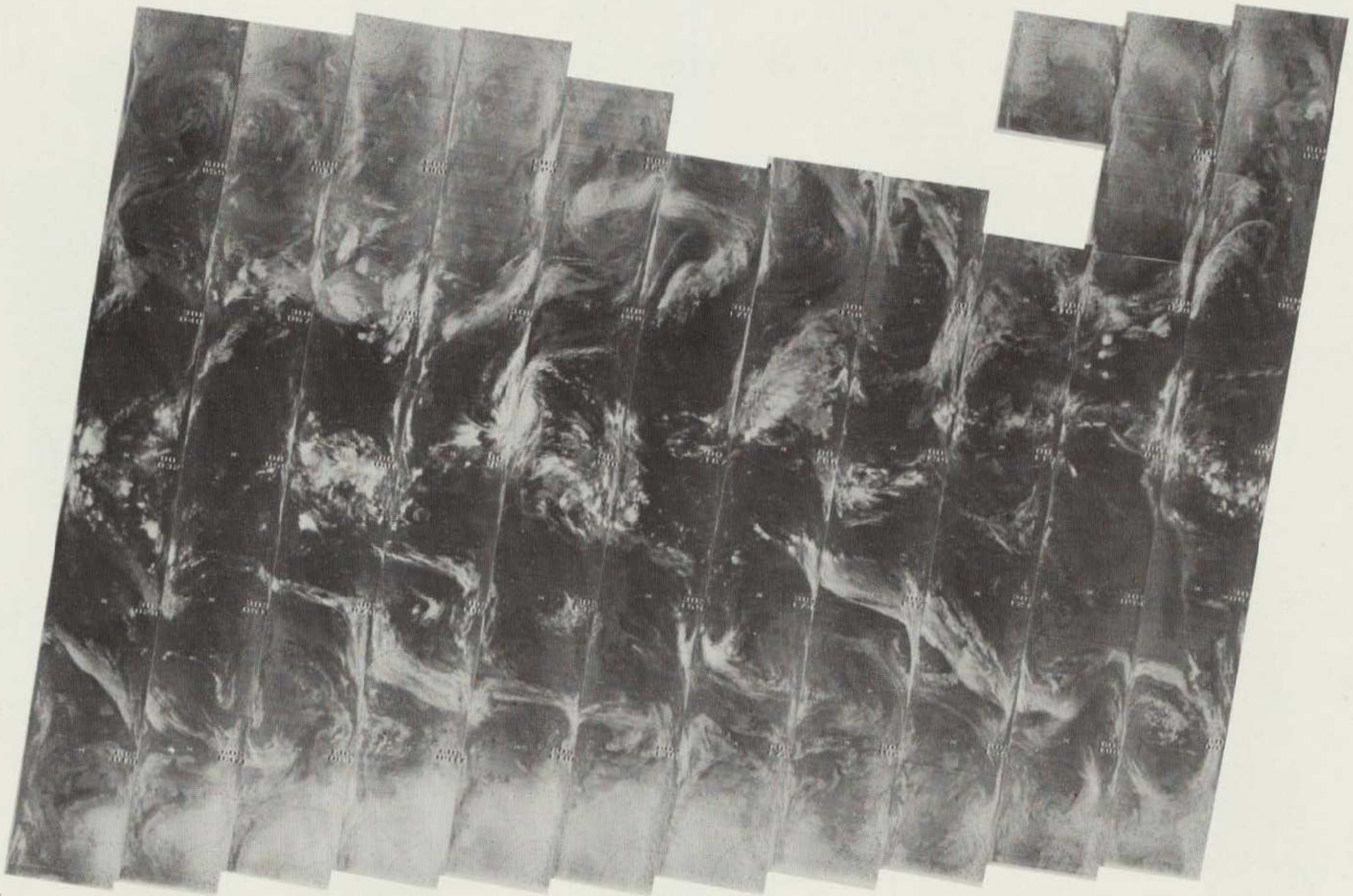


4043 4042 4041 4040 4039 4038 4037 4036 4035 4034 4033 4032 4031

8 APRIL 1976

6.7 μm



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8 APRIL 1976

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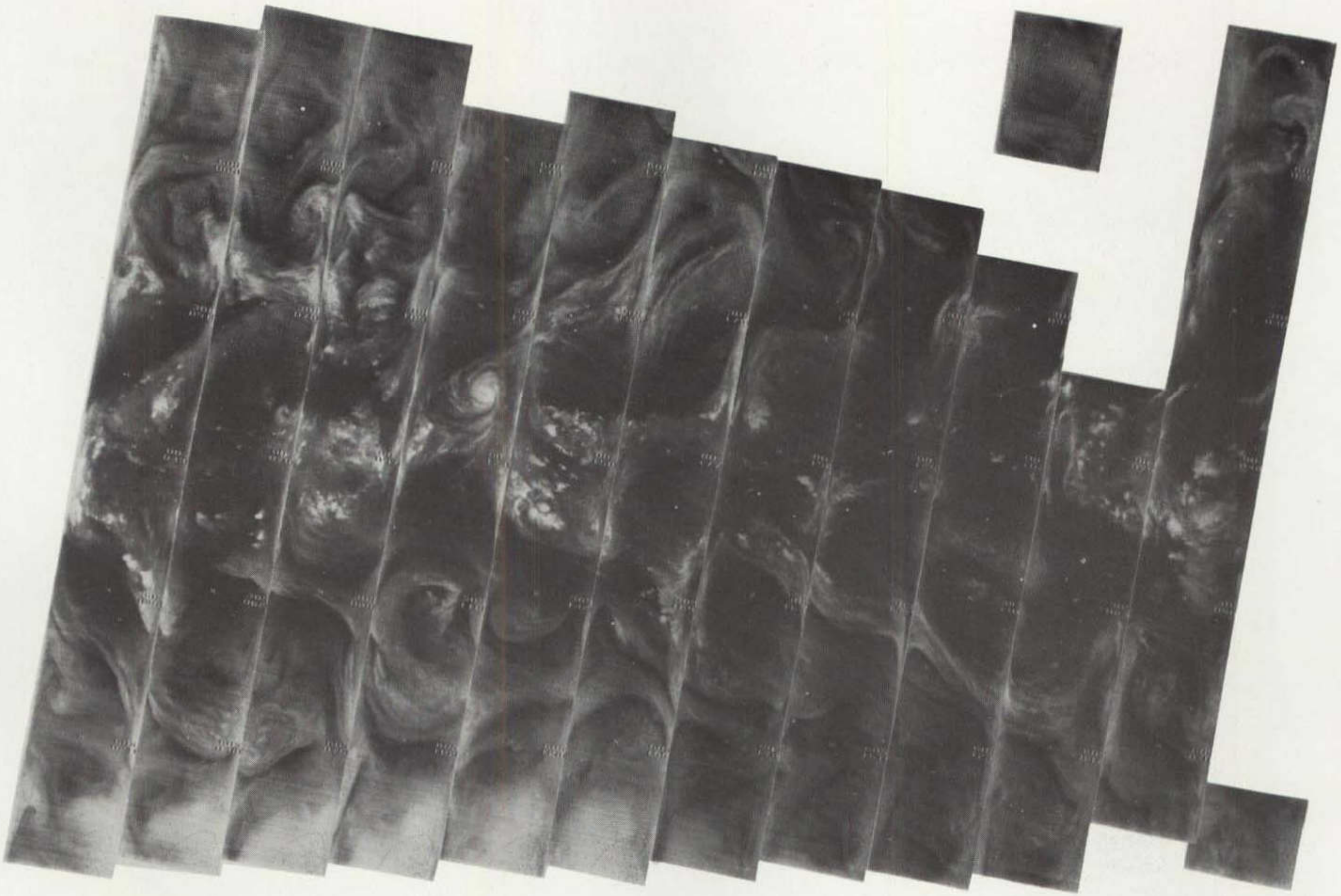

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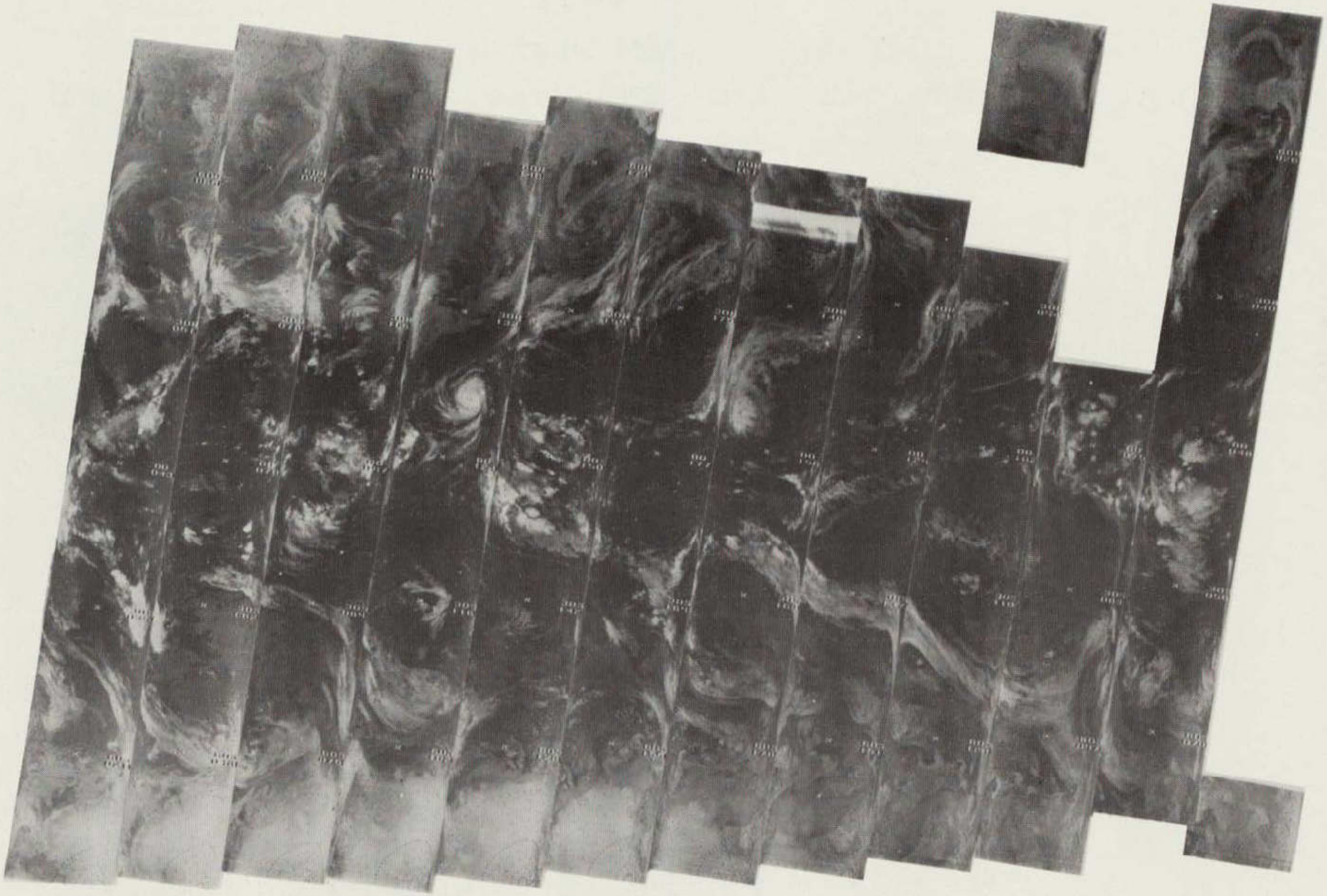
9 APRIL 1976

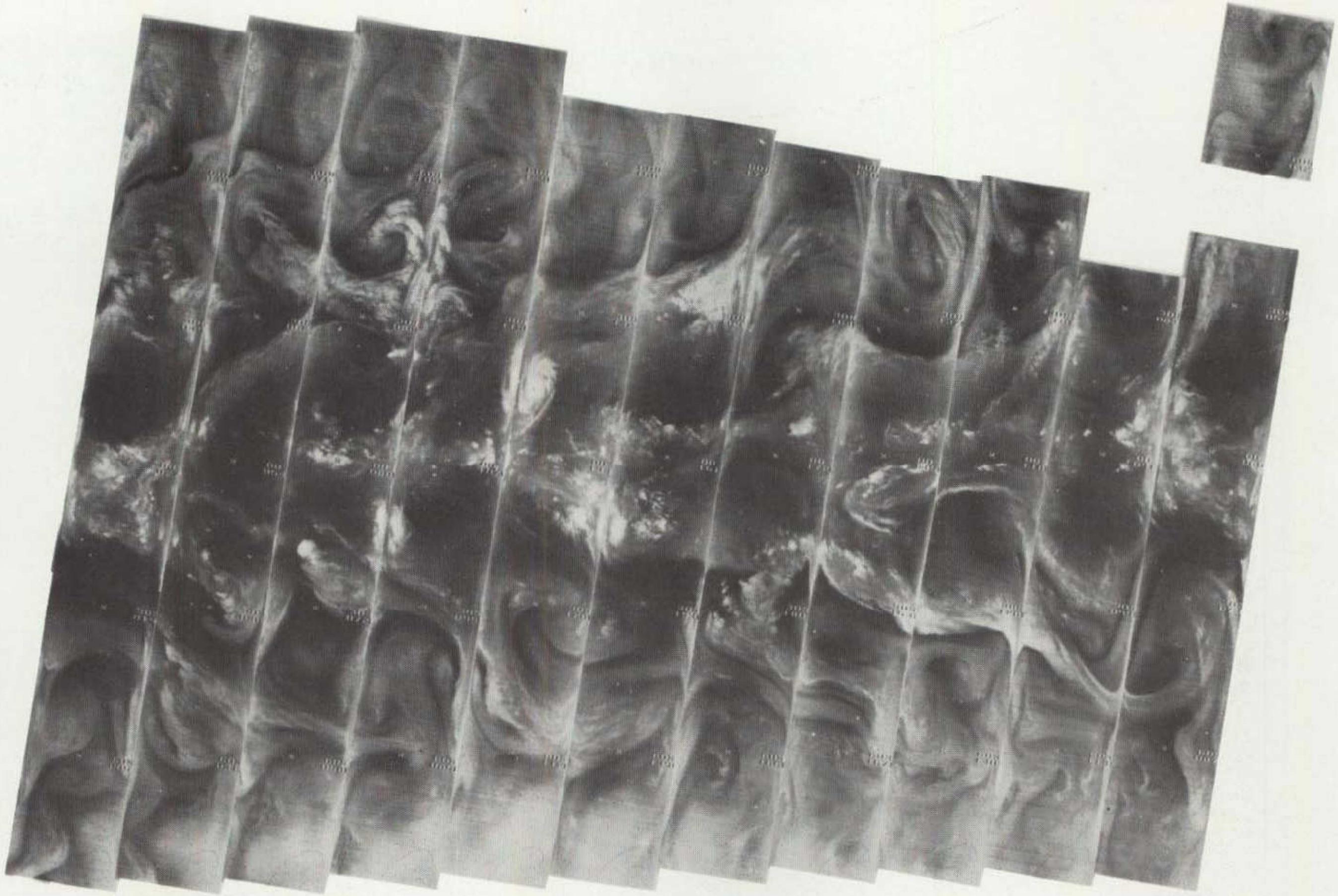
6.7 μm



4057 4056 4055 4054 4053 4052 4051 4050 4049 4048 4047 4046 4045 4044

9 APRIL 1976

11.5 μm



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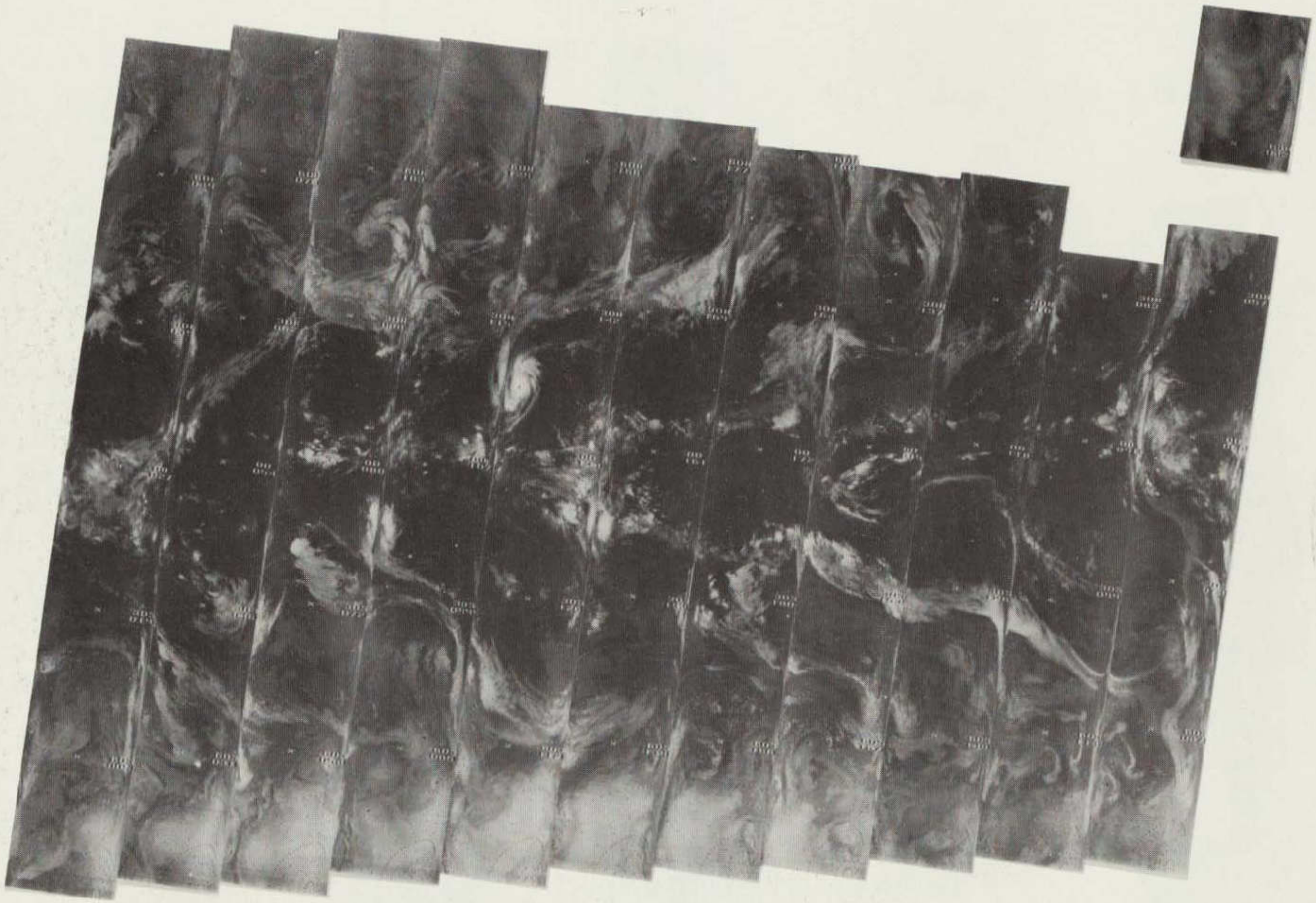
10 APRIL 1976

6.7 μm



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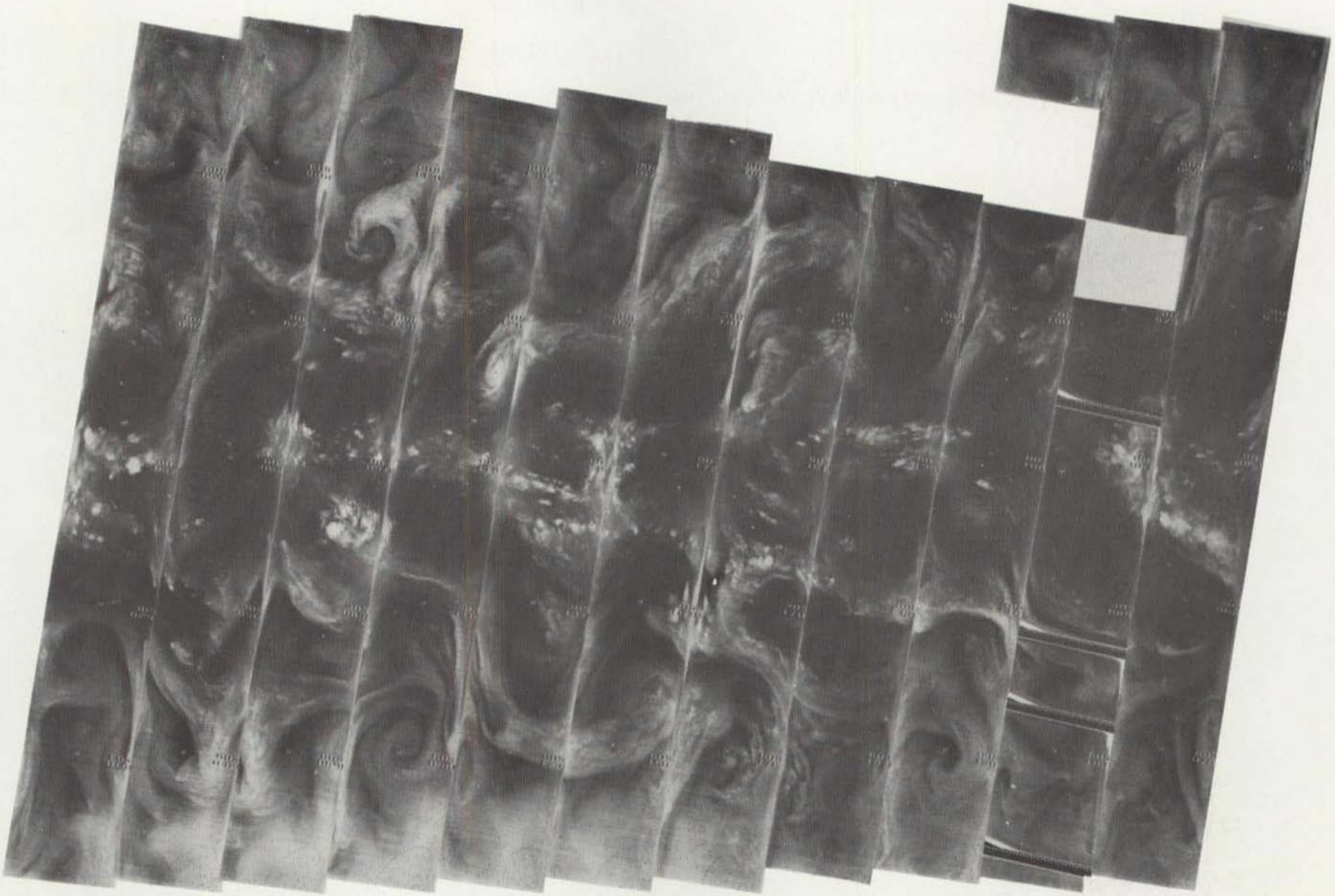
11.5 μm



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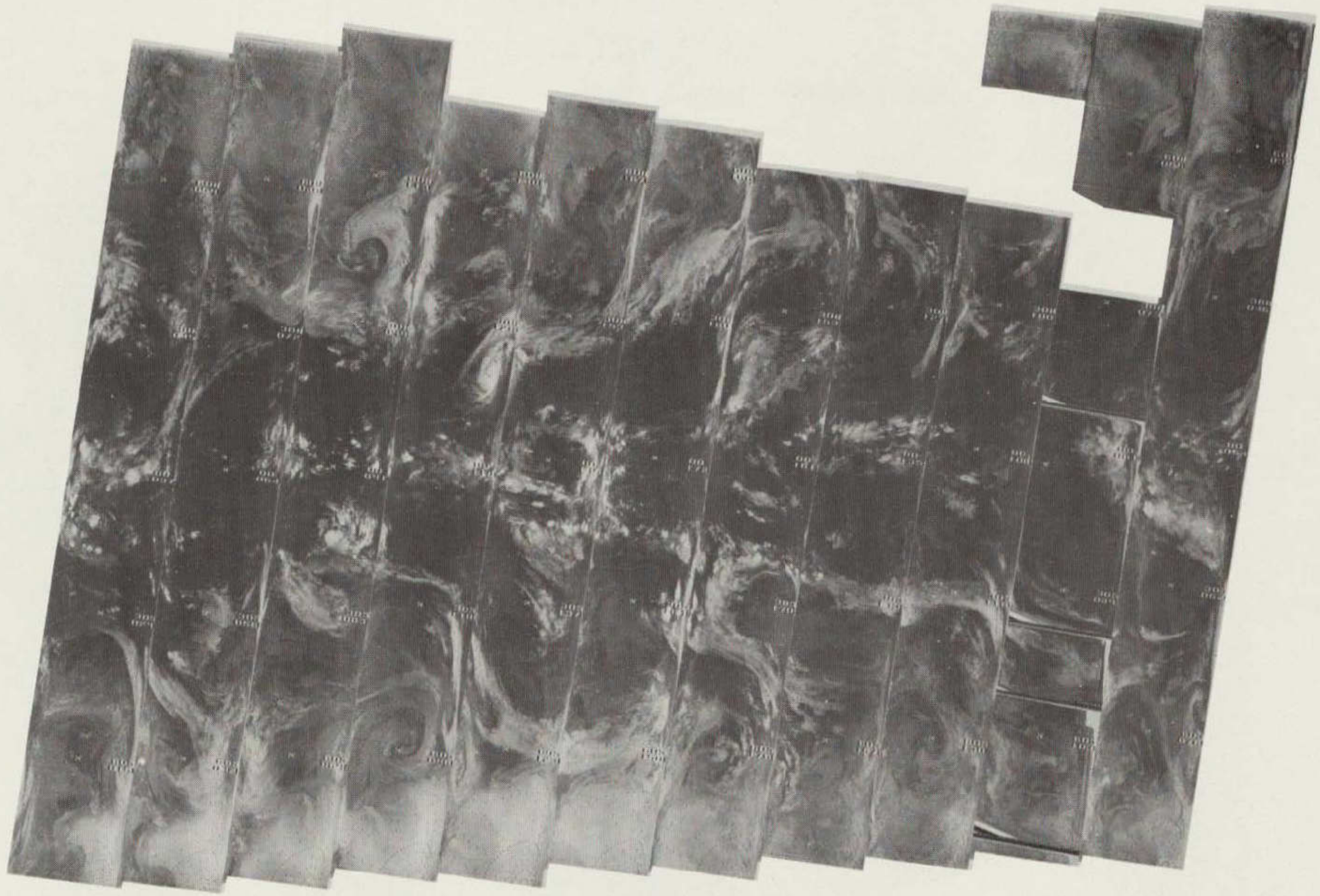
11 APRIL 1976

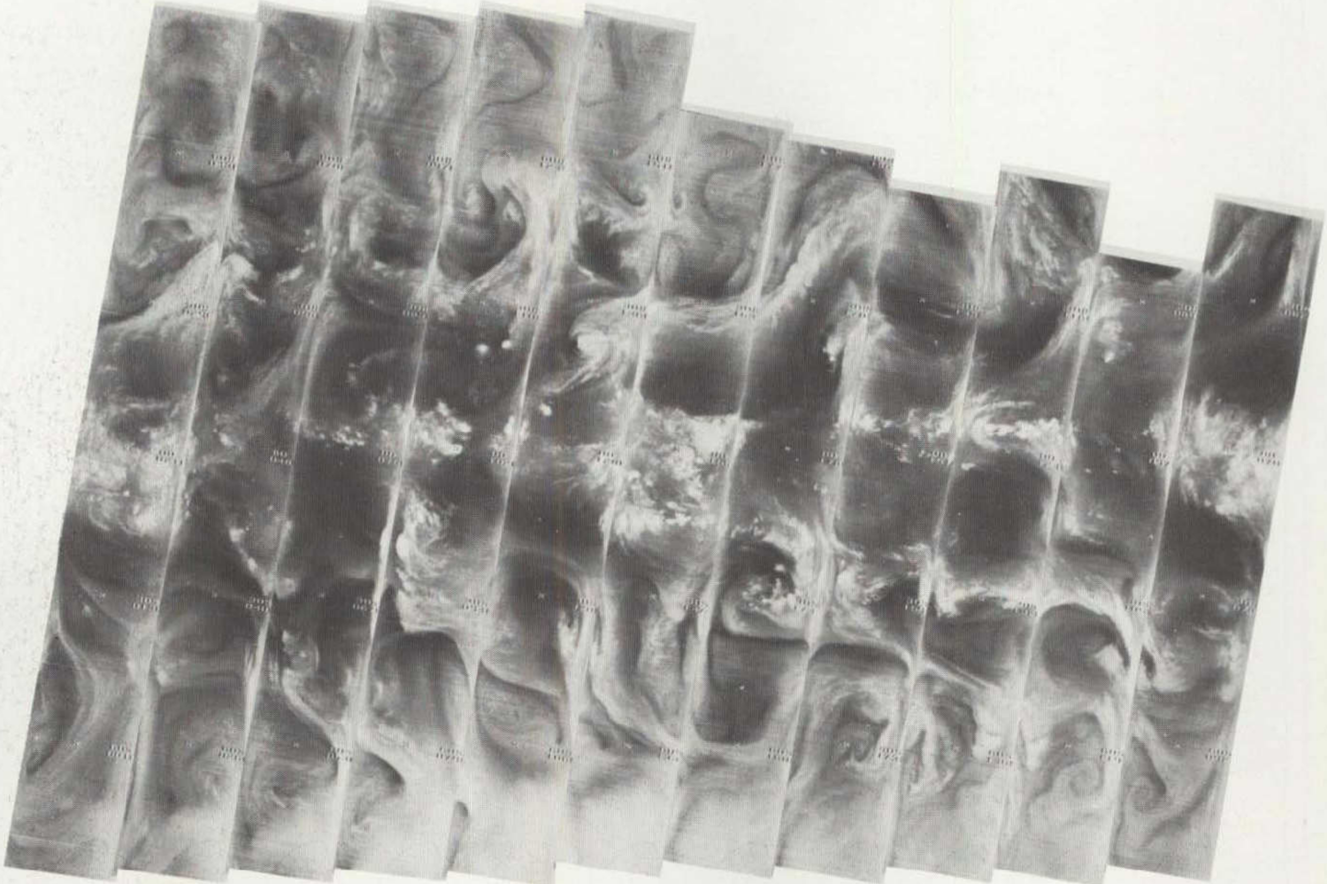
6.7 μm



4084 4083 4082 4081 4080 4079 4078 4077 4076 4075 4074 4073 4072 4071

11 APRIL 1976

11.5 μm



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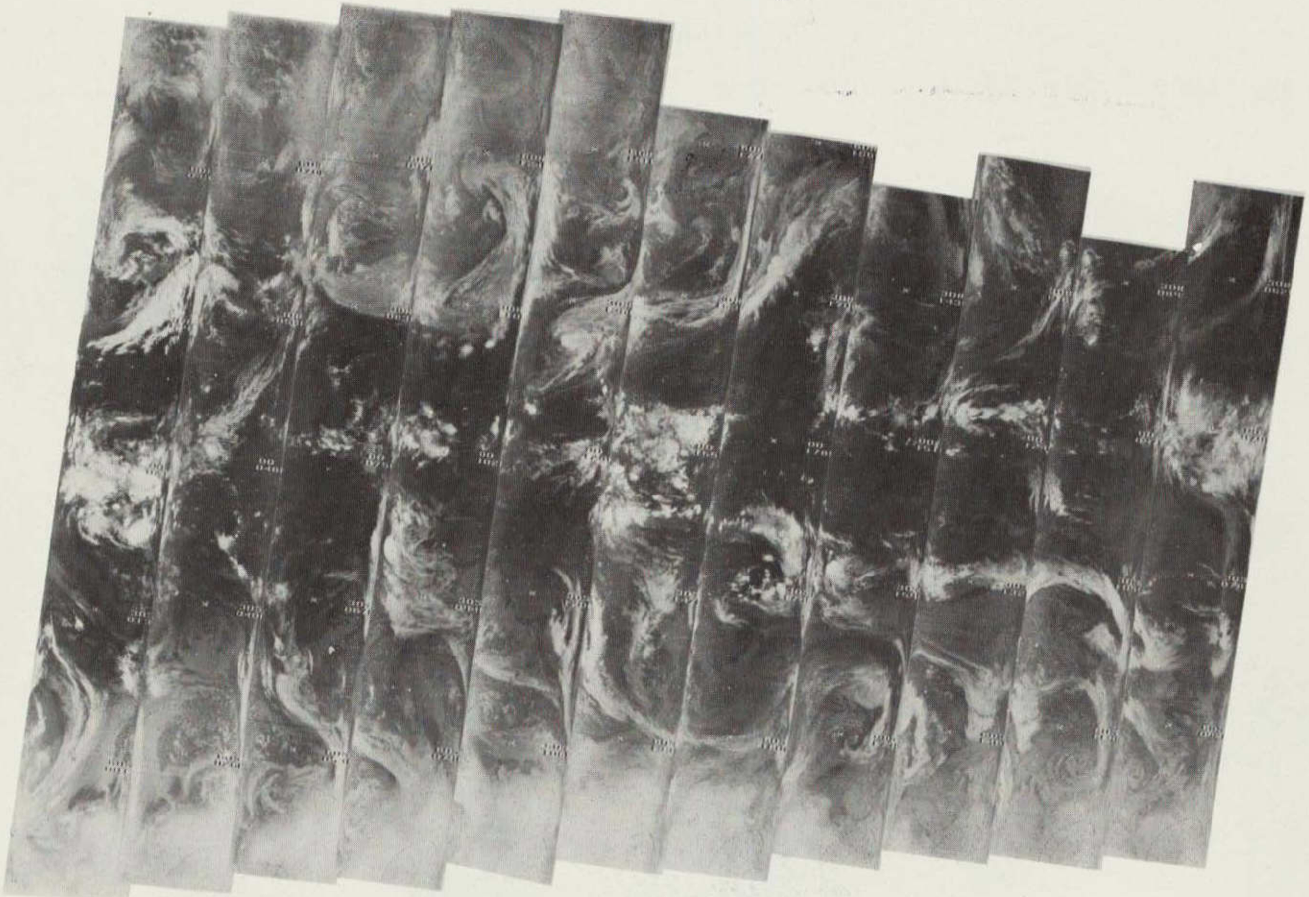
12 APRIL 1976

6.7 μm



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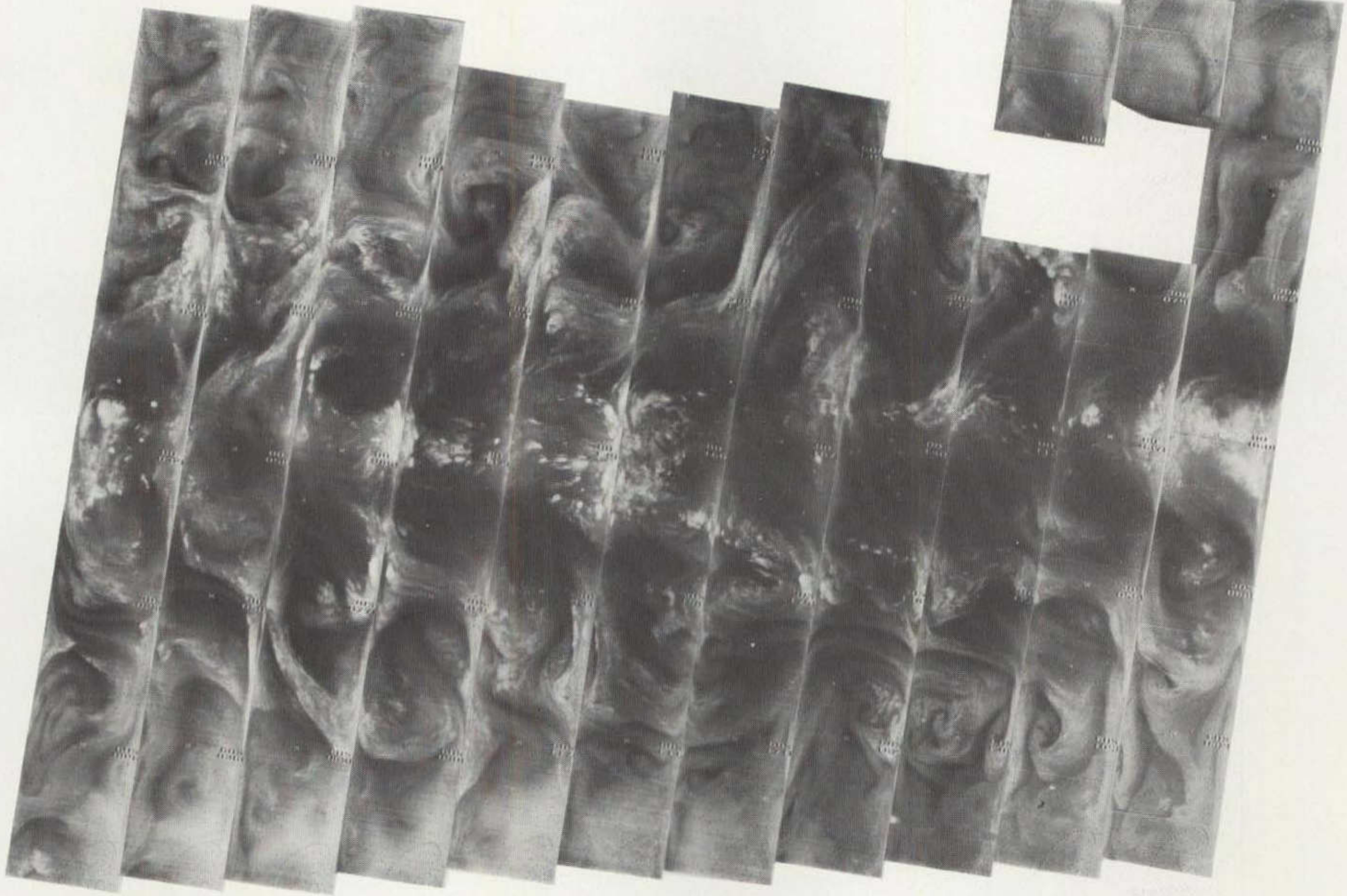
12 APRIL 1976

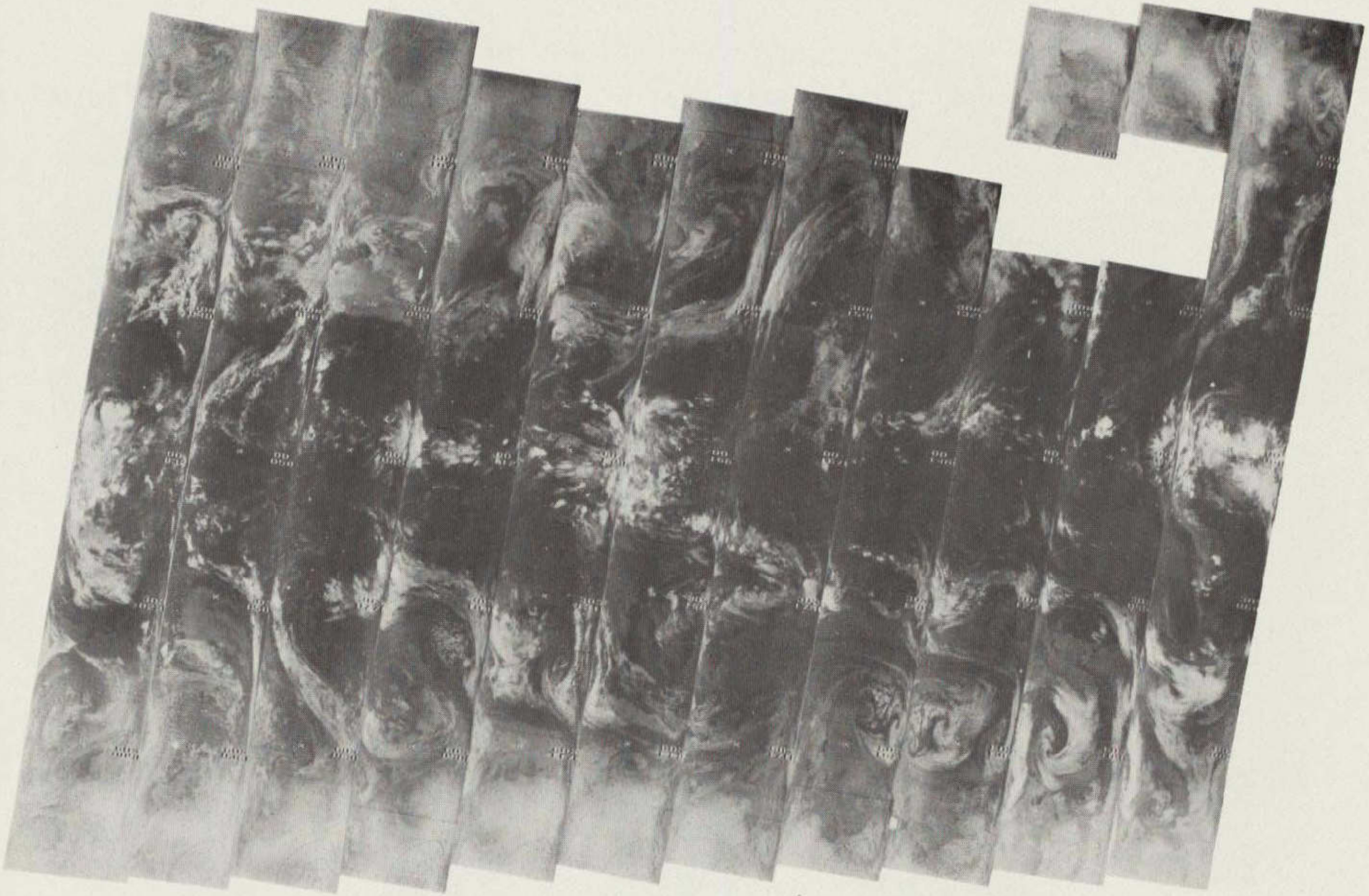
11.5 μm



4110 4109 4108 4107 4106 4105 4104 4103 4102 4101 4100 4099 4098

13 APRIL 1976

6.7 μm



4110 4109 4108 4107 4106 4105 4104 4103 4102 4101 4100 4099 4098

13 APRIL 1976

11.5 μm

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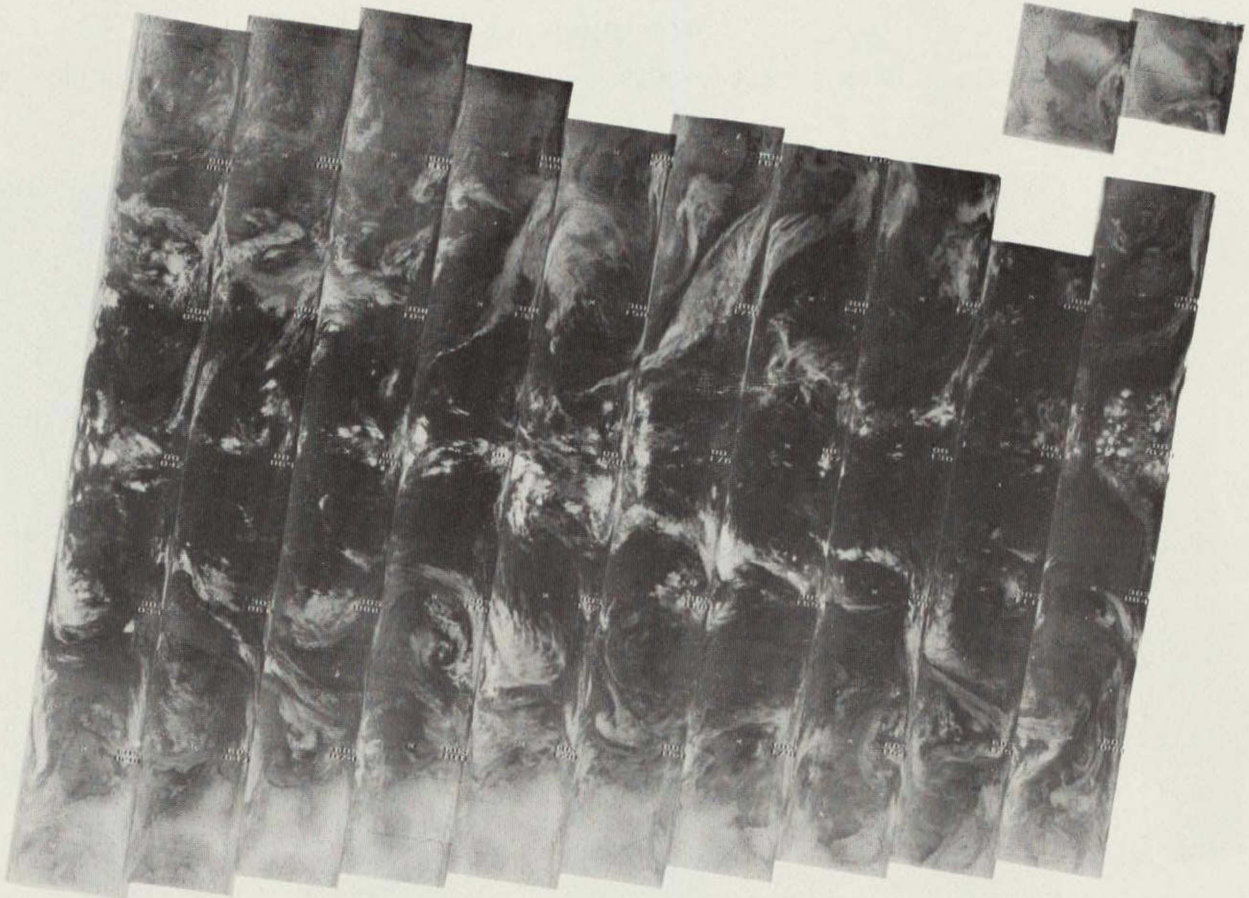
4124 4123 4122 4121 4120 4119 4118 4117 4116 4115 4114 4113 4112 4111

14 APRIL 1976

6.7 μm



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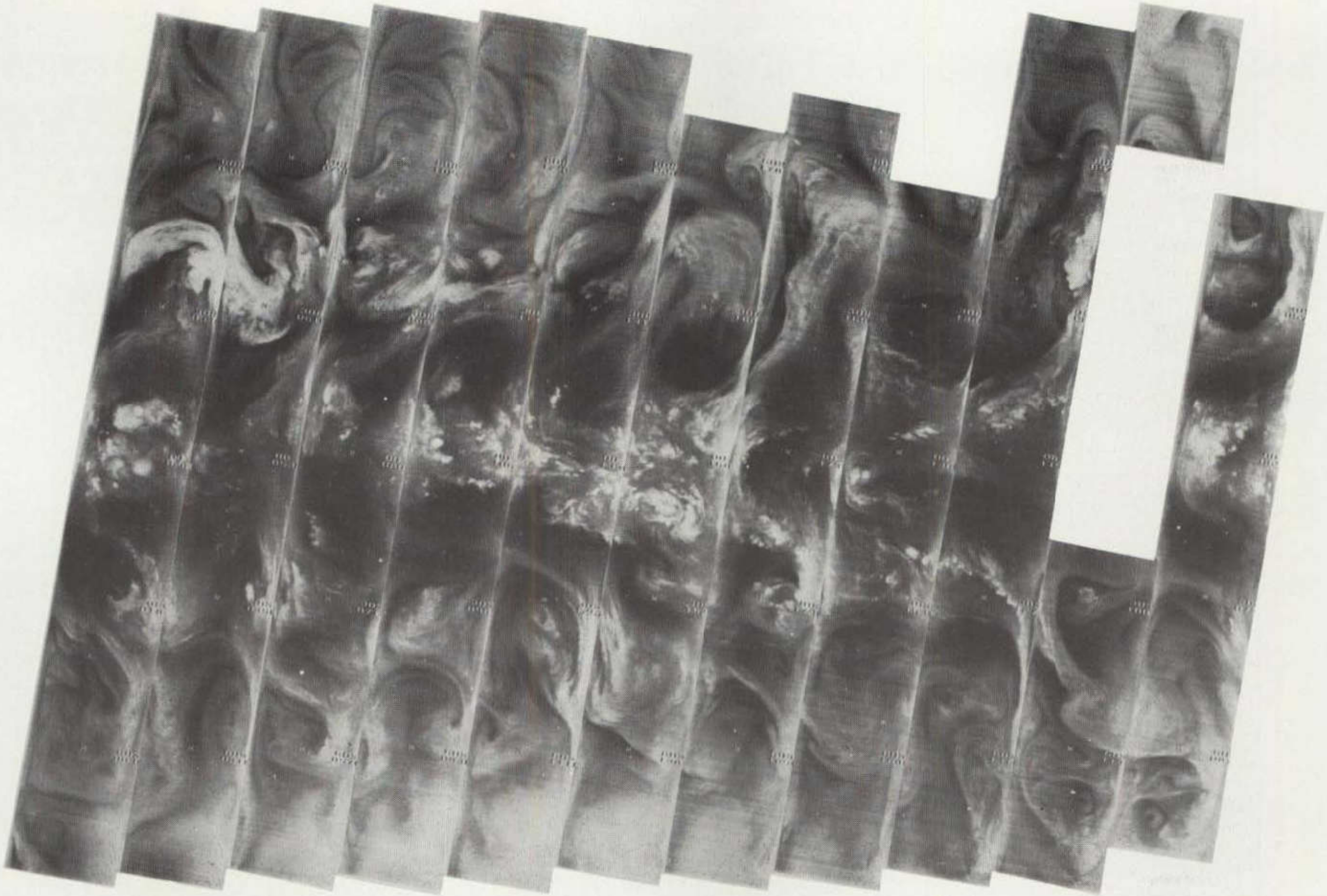
14 APRIL 1976

11.5 μm



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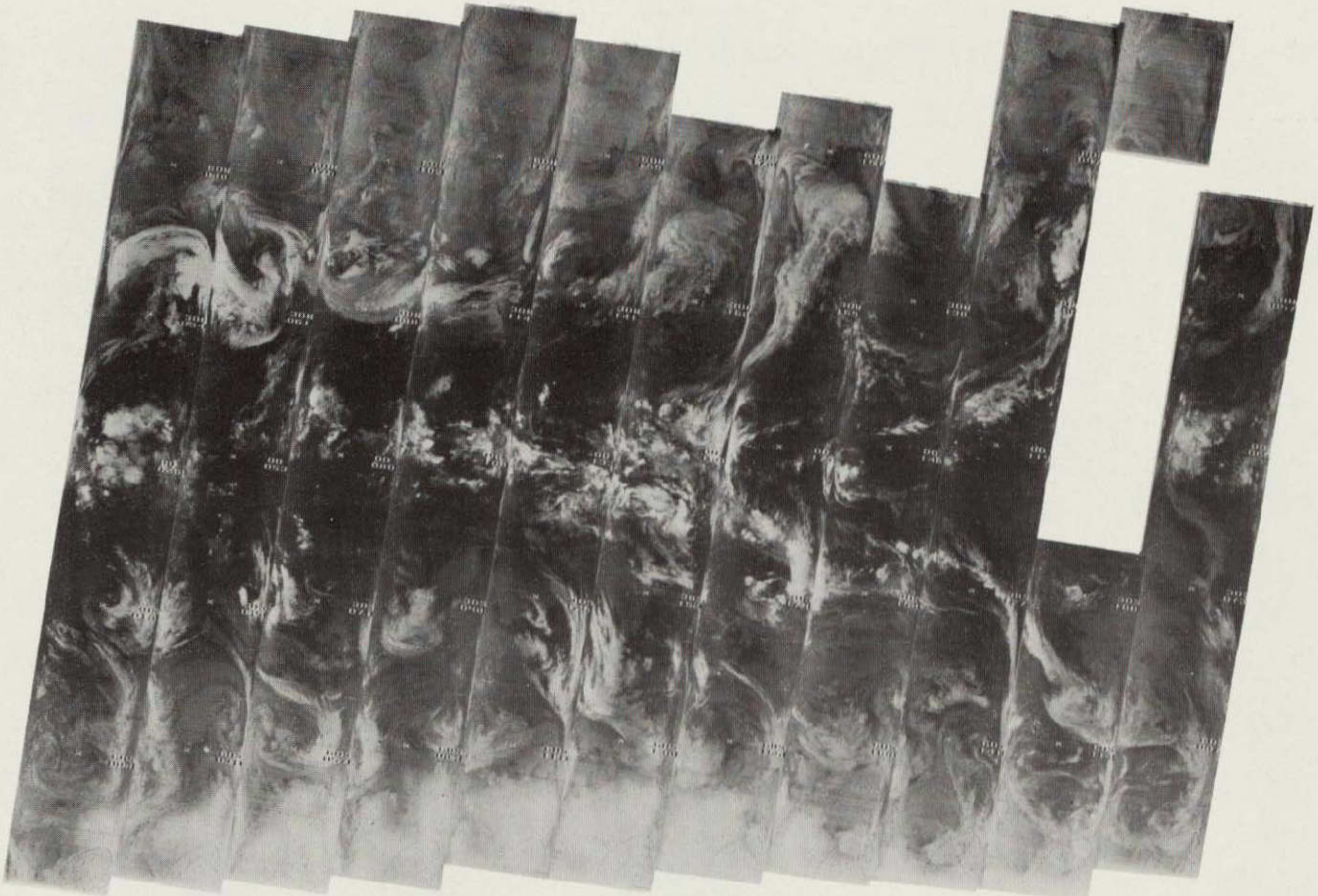
15 APRIL 1976

6.7 μm



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15 APRIL 1976

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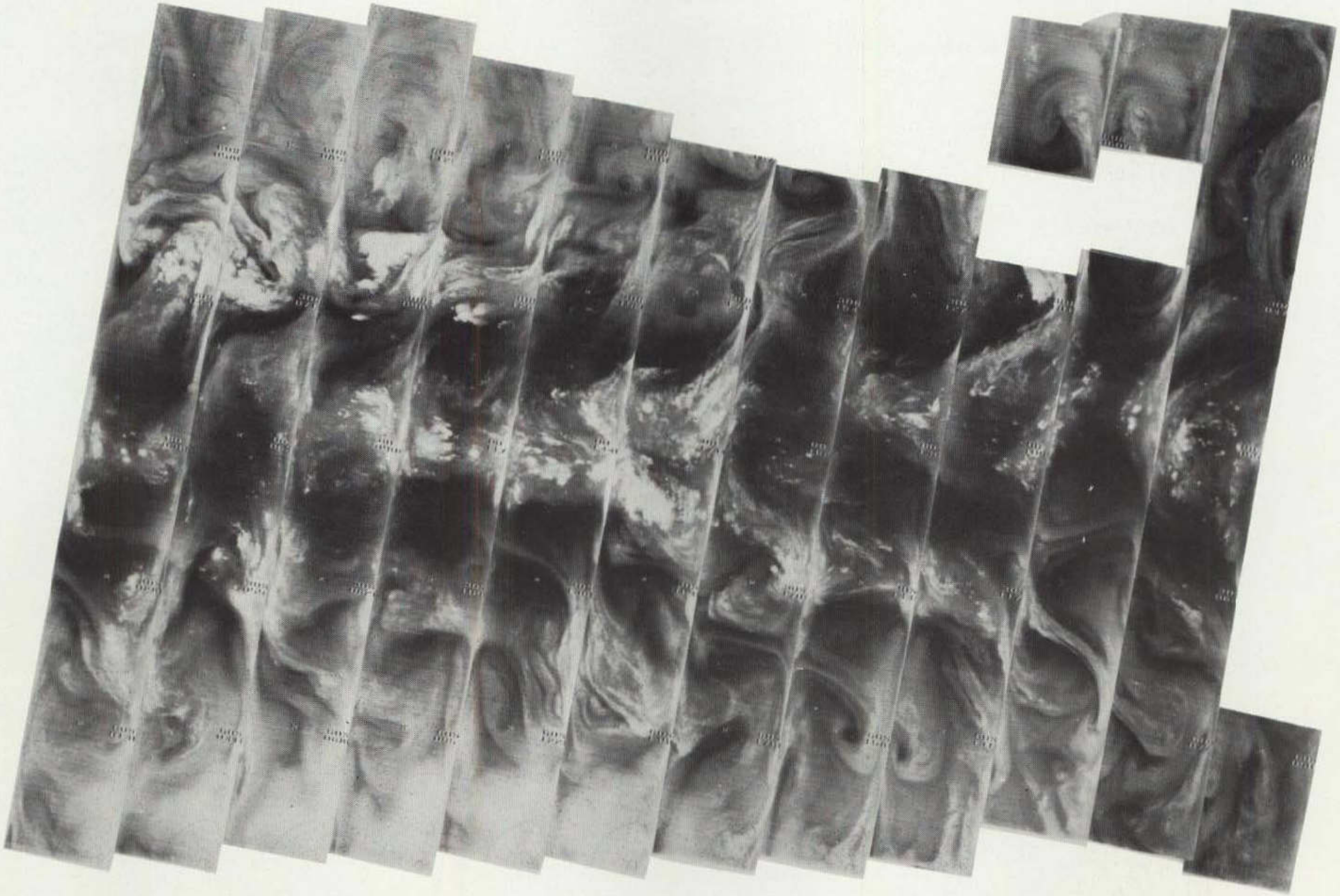

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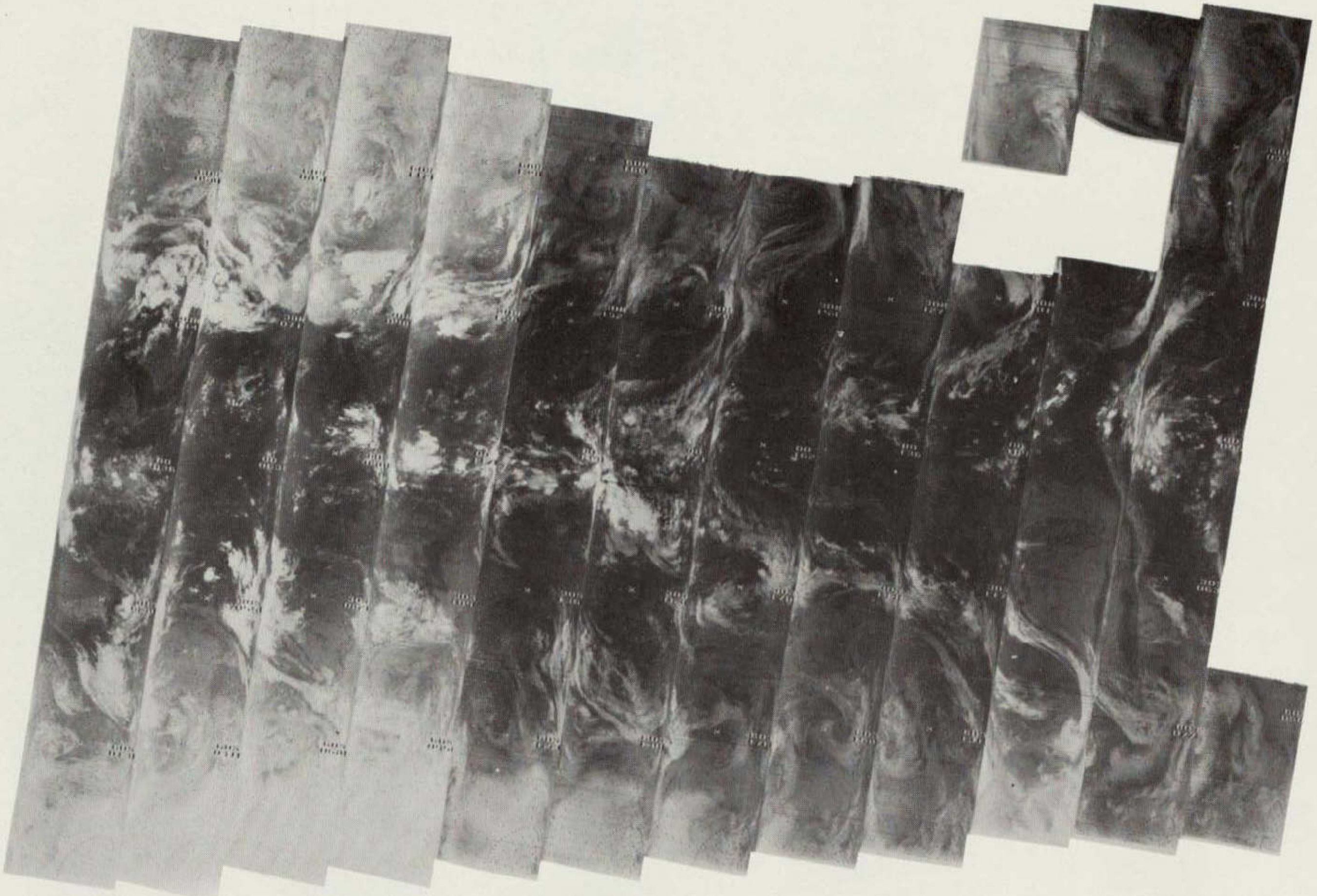
16 APRIL 1976

6.7 μm



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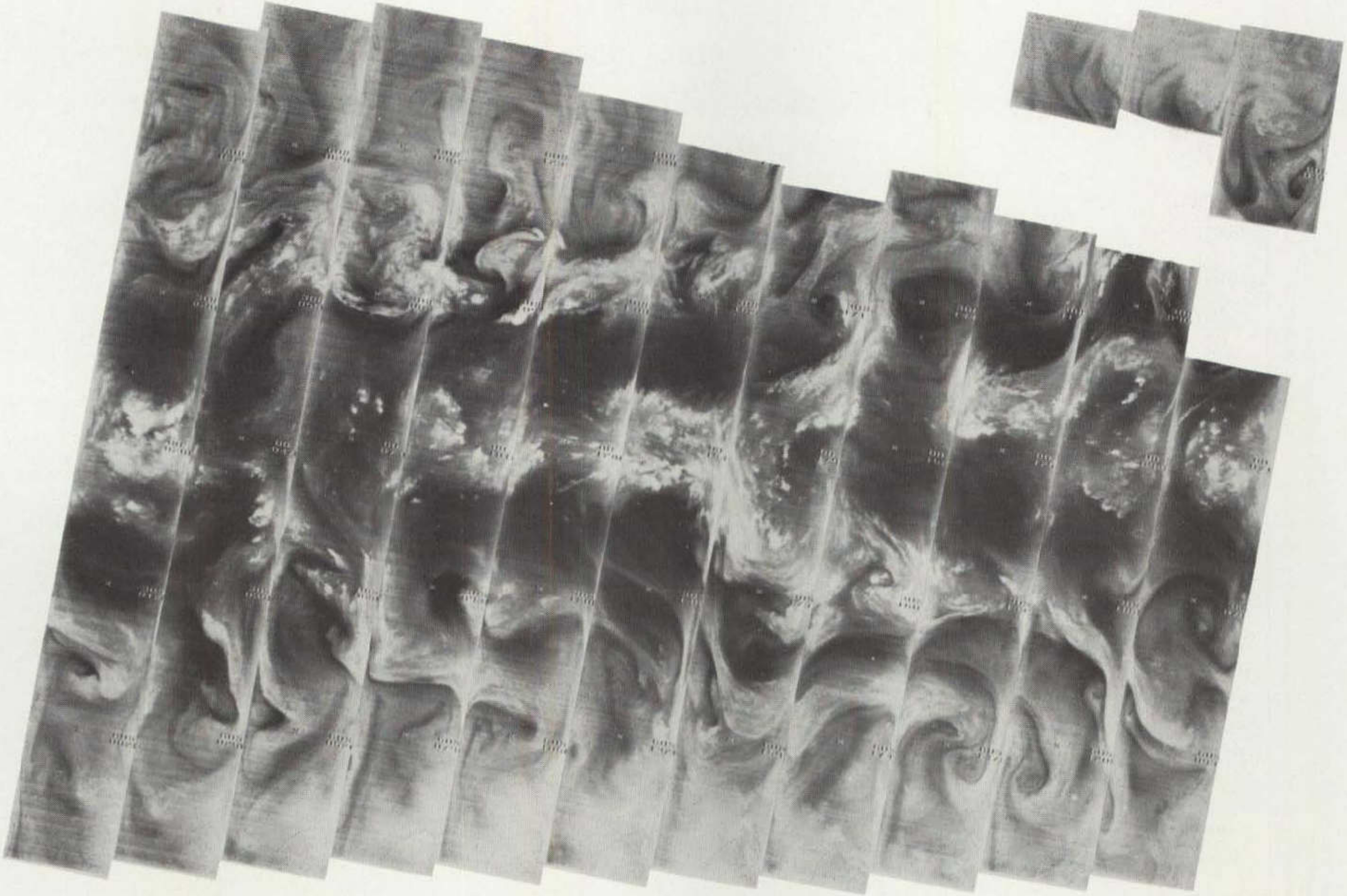
16 APRIL 1976

11.5 μm



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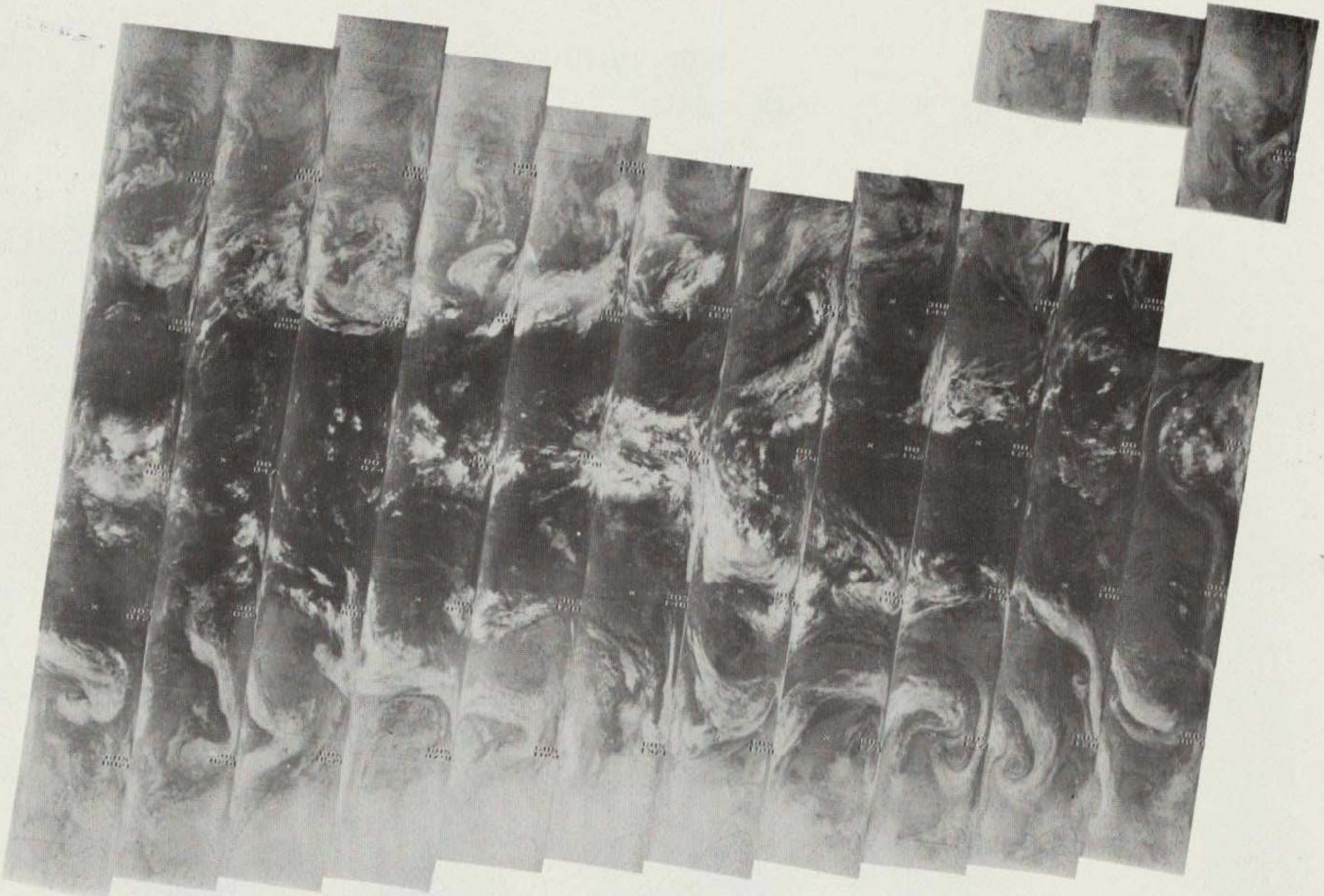
17 APRIL 1976

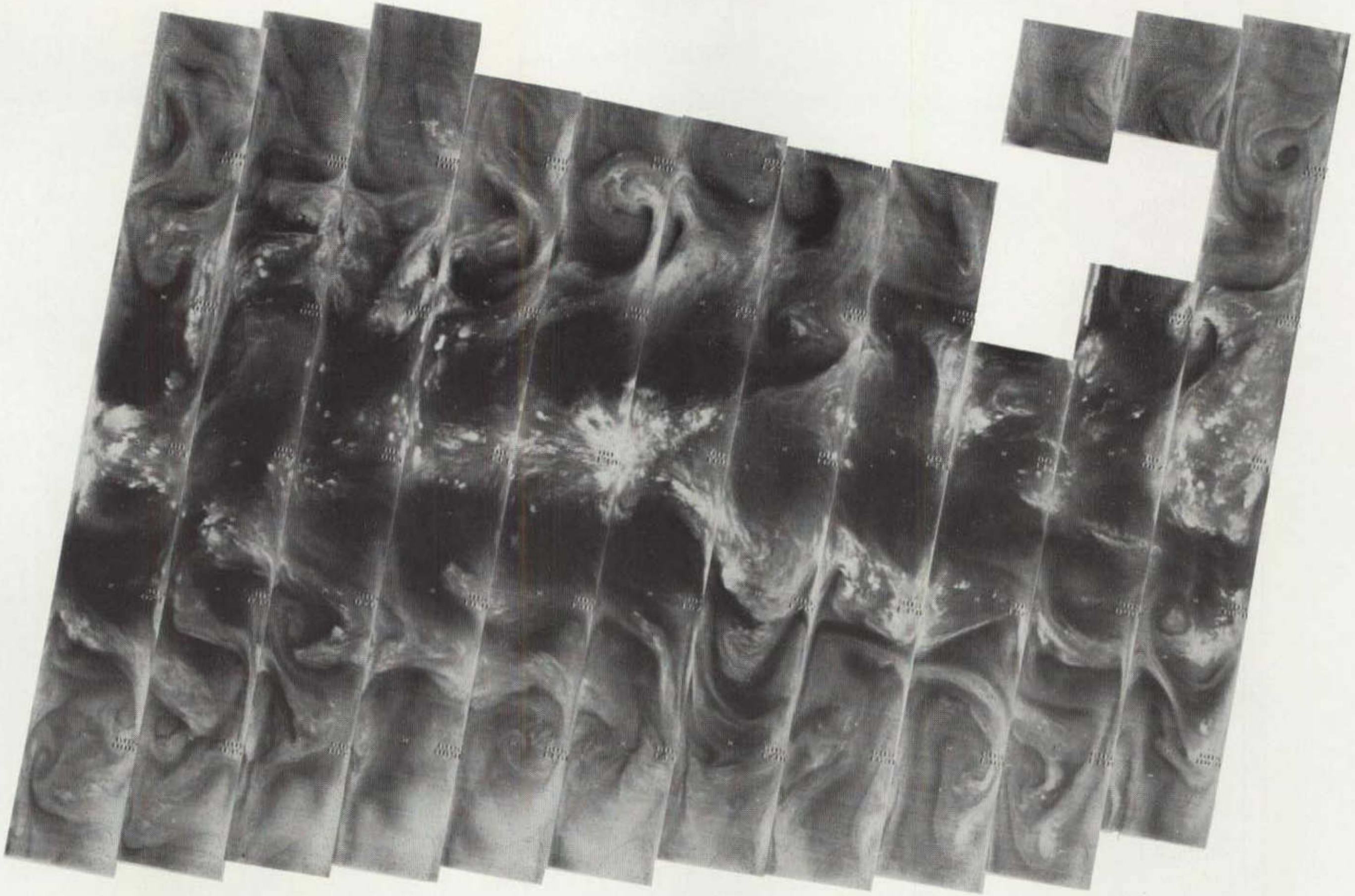
6.7 μm



4164 4163 4162 4161 4160 4159 4158 4157 4156 4155 4154 4153 4152

17 APRIL 1976

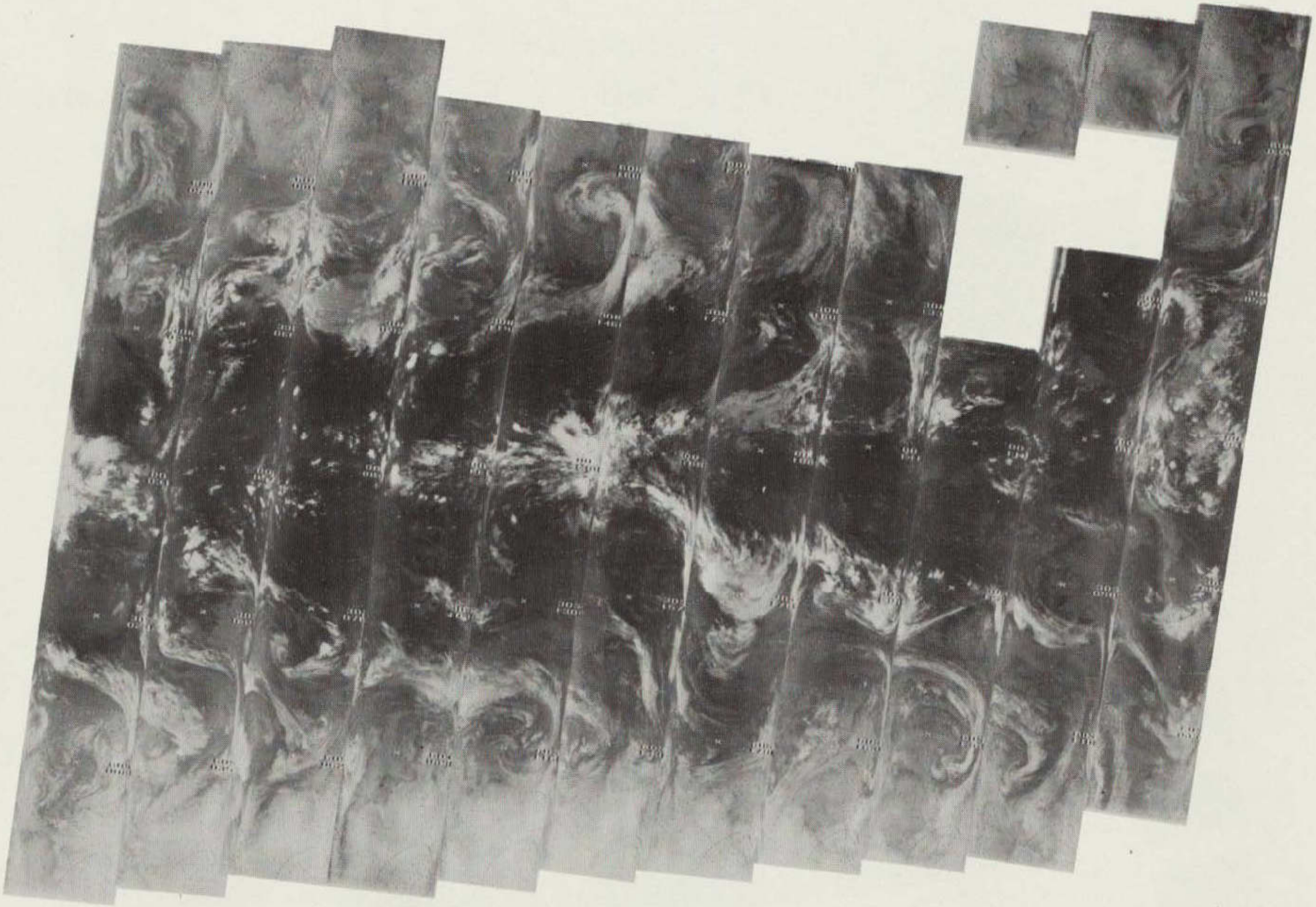
11.5 μm



4177 4176 4175 4174 4173 4172 4171 4170 4169 4168 4167 4166 4165

18 APRIL 1976

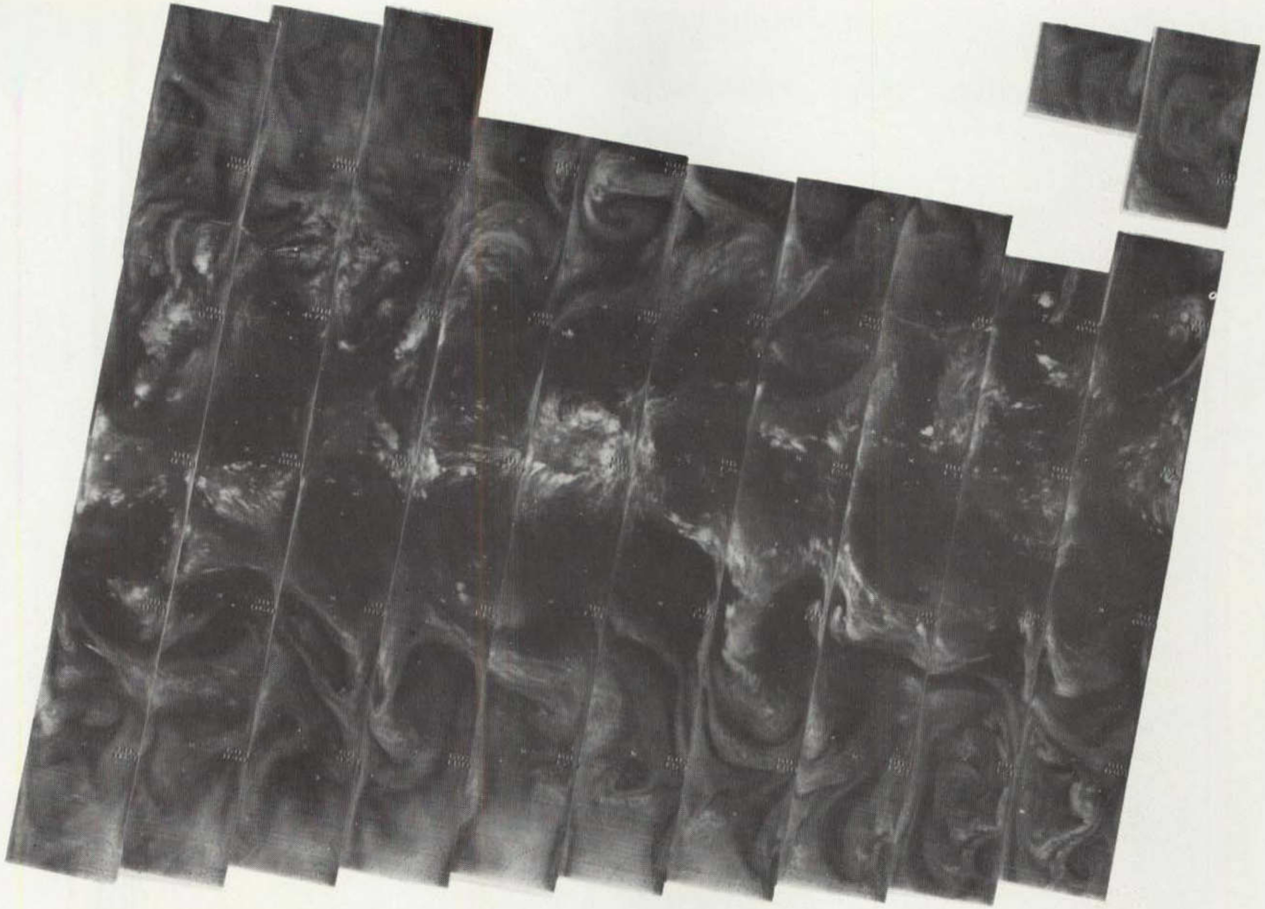
6.7 μm



4177 4176 4175 4174 4173 4172 4171 4170 4169 4168 4167 4166 4165

18 APRIL 1976

11.5 μm



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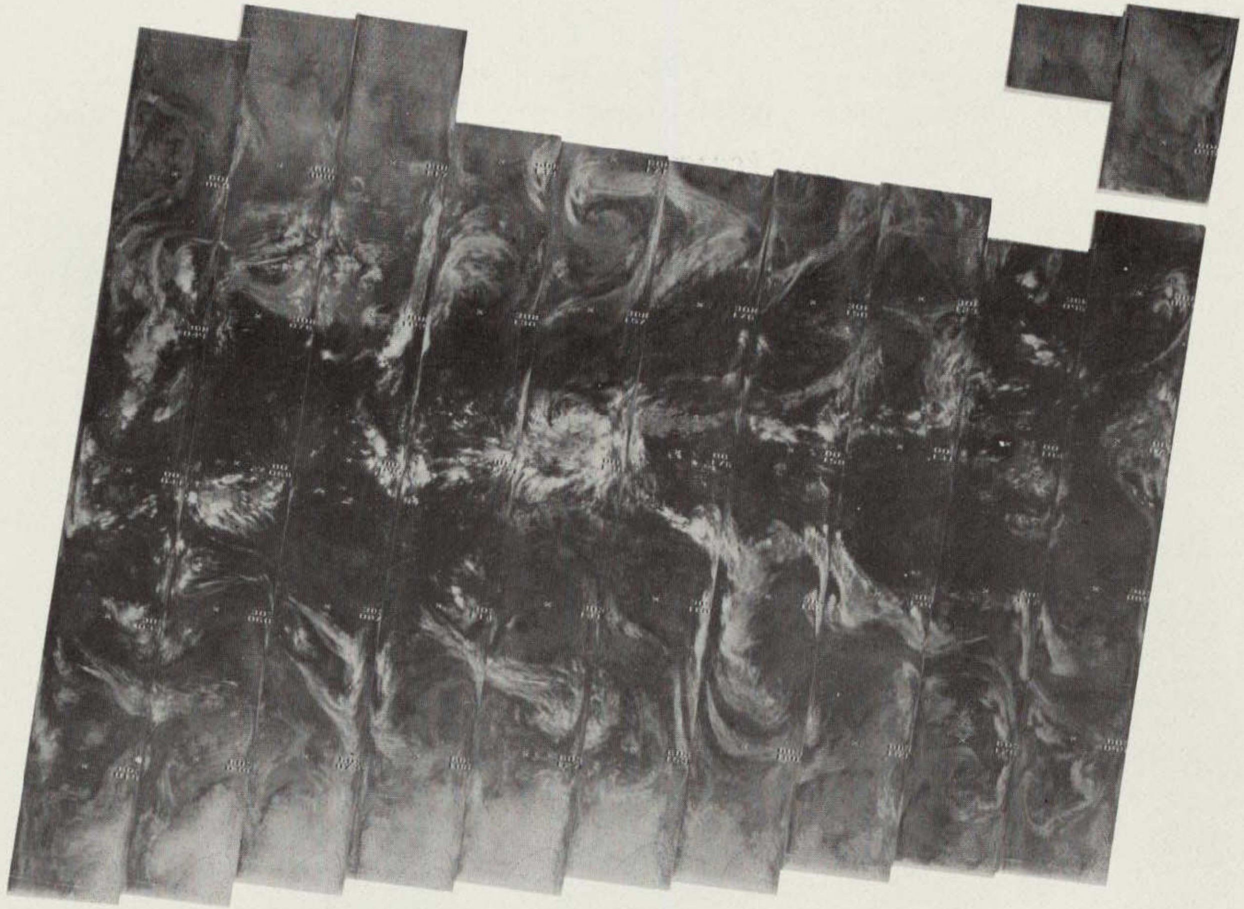
19 APRIL 1976

6.7 μm



4191 4190 4189 4188 4187 4186 4185 4184 4183 4182 4181 4180 4179 4178

19 APRIL 1976

11.5 μm

4204 4203 4202 4201 4200 4199 4198 4197 4196 4195 4194 4193 4192

20 APRIL 1976

6.7 μm

4204 4203 4202 4201 4200 4199 4198 4197 4196 4195 4194 4193 4192

20 APRIL 1976

11.5 μm

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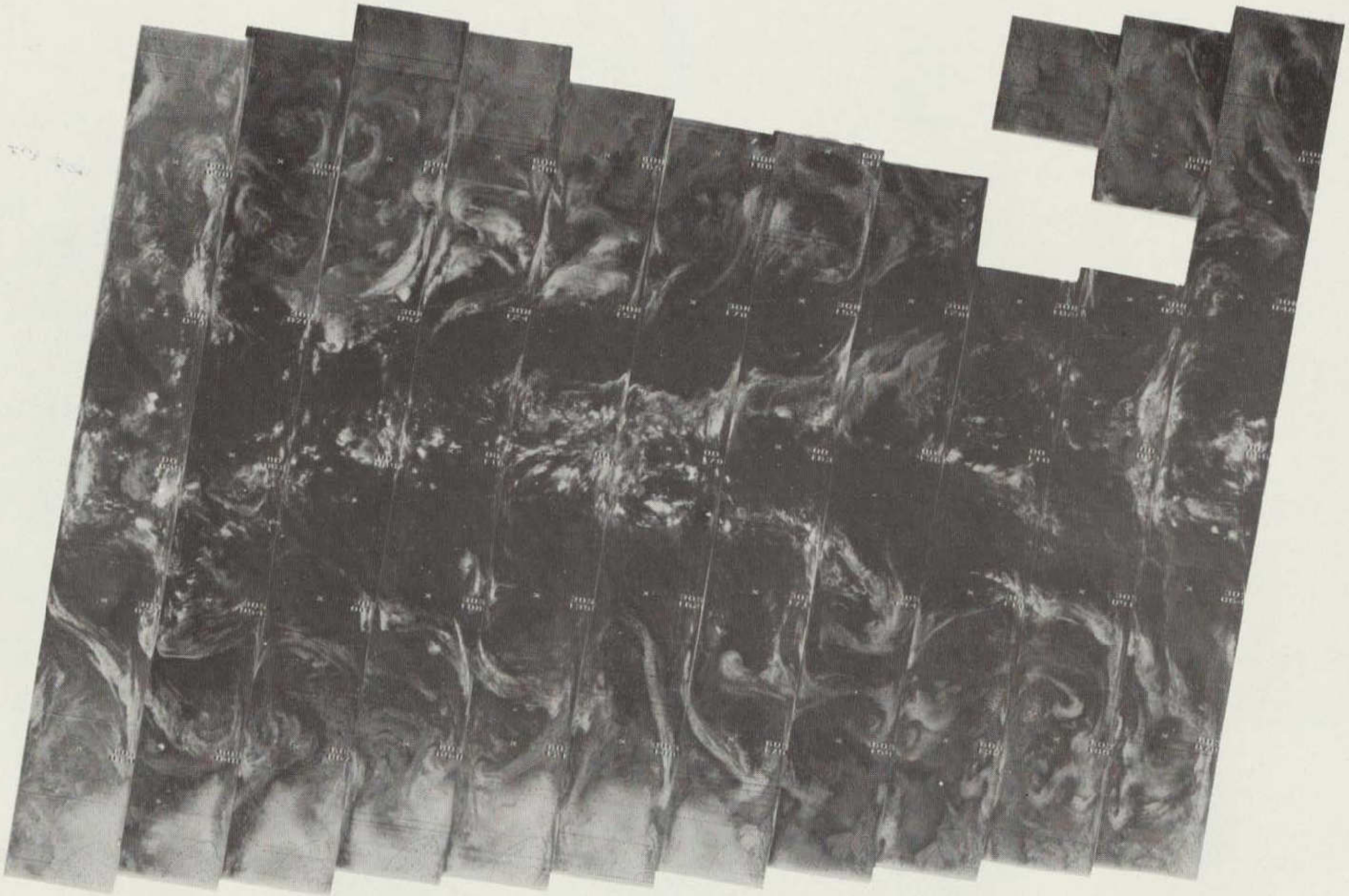
21 APRIL 1976

6.7 μm



4217 4216 4215 4214 4213 4212 4211 4210 4209 4208 4207 4206 4205

21 APRIL 1976

11.5 μm

4231 4230 4229 4228 4227 4226 4225 4224 4223 4222 4221 4220 4219 4218

22 APRIL 1976

6.7 μm

4231 4230 4229 4228 4227 4226 4225 4224 4223 4222 4221 4220 4219 4218

22 APRIL 1976

11.5 μm

C - 3

4244 4243 4242 4241 4240 4239 4238 4237 4236 4235 4234 4233 4232

23 APRIL 1976

6.7 μm

4244 4243 4242 4241 4240 4239 4238 4237 4236 4235 4234 4233 4232

23 APRIL 1976

11.5 μm

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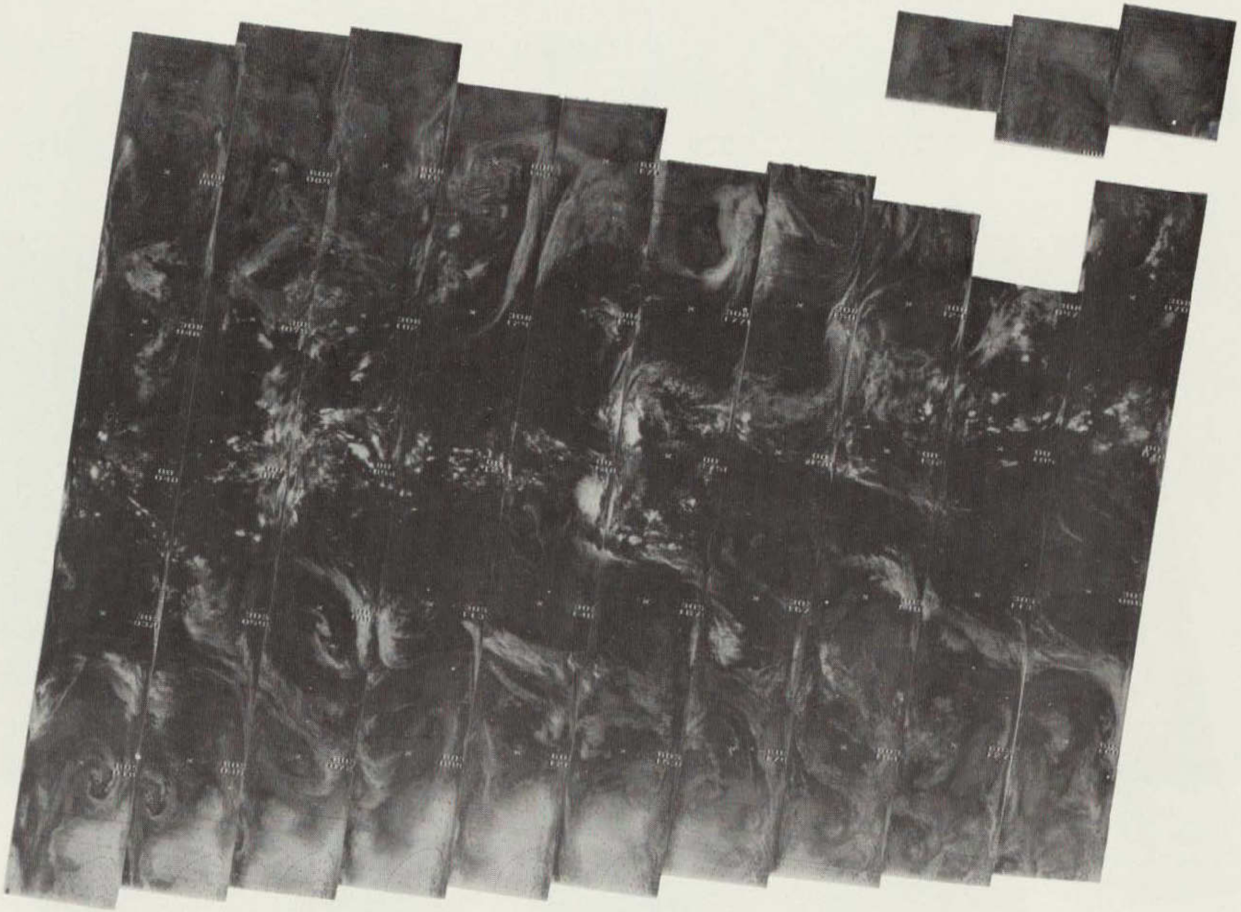
24 APRIL 1976

6.7 μm



4258 4257 4256 4255 4254 4253 4252 4251 4250 4249 4248 4247 4246 4245

24 APRIL 1976

11.5 μm

4271 4270 4269 4268 4267 4266 4265 4264 4263 4262 4261 4260 4259

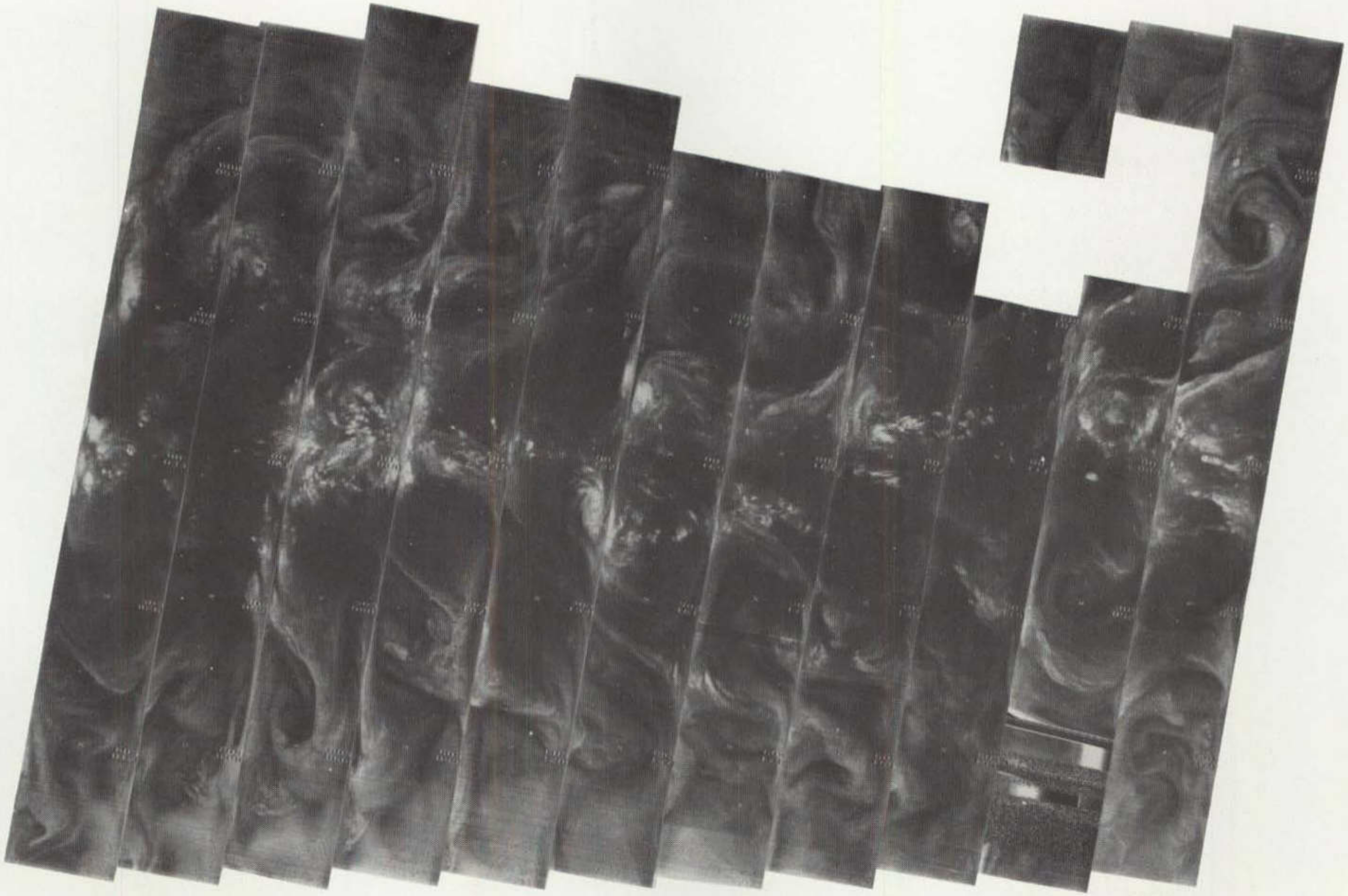
25 APRIL 1976

6.7 μm

4271 4270 4269 4268 4267 4266 4265 4264 4263 4262 4261 4260 4259

25 APRIL 1976

11.5 μm



4284 4283 4282 4281 4280 4279 4278 4277 4276 4275 4274 4273 4272

26 APRIL 1976

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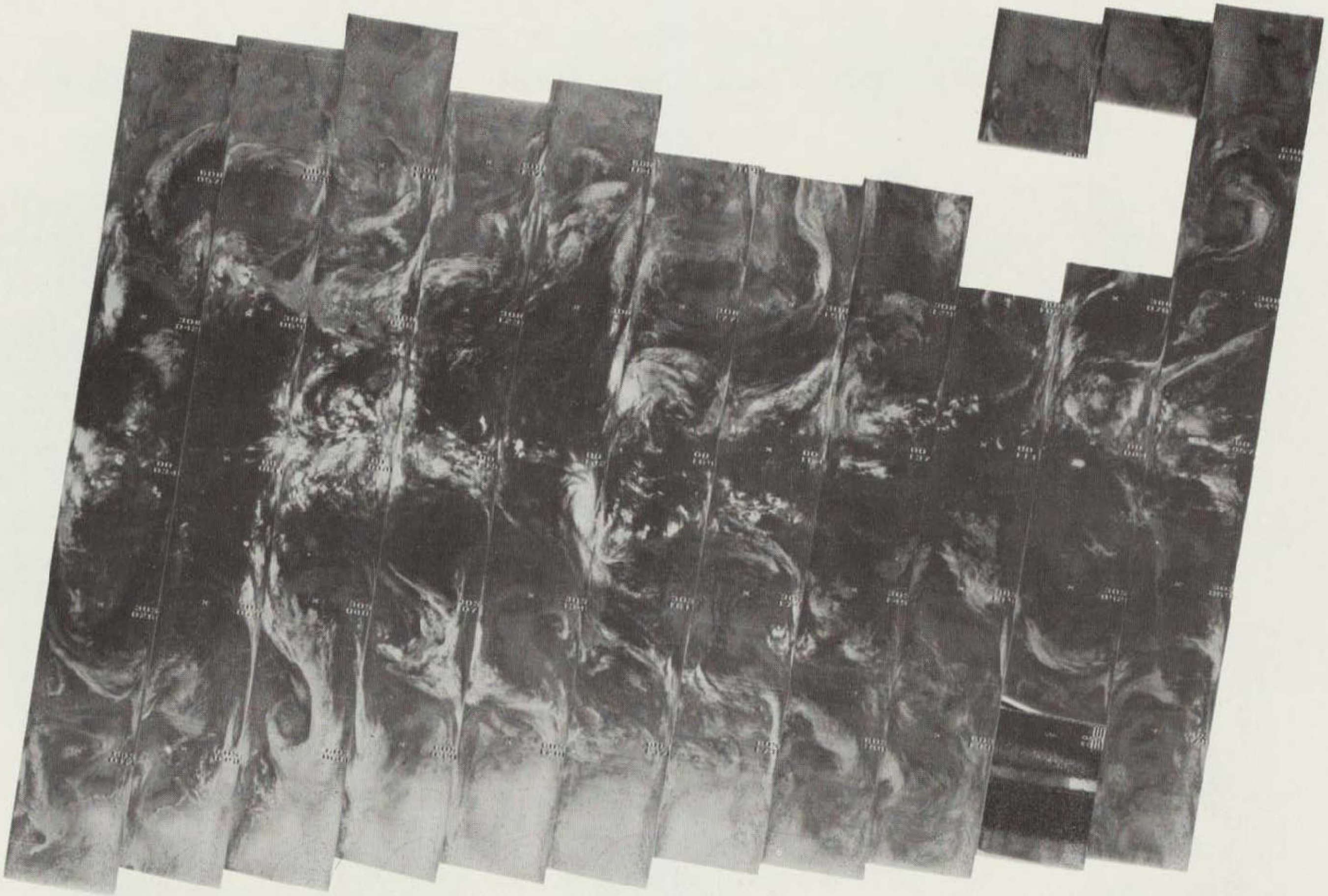

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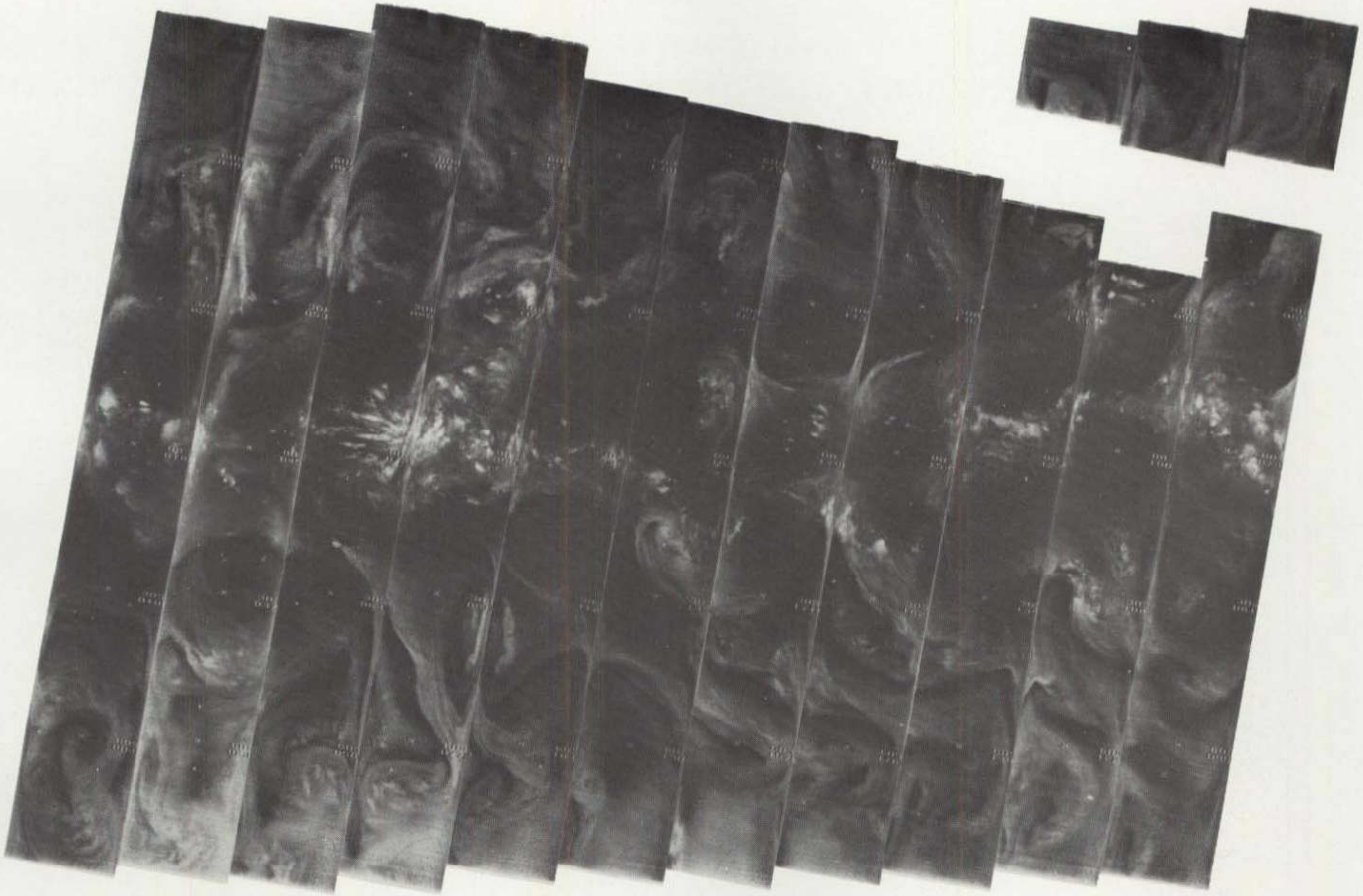
26 APRIL 1976

11.5 μm



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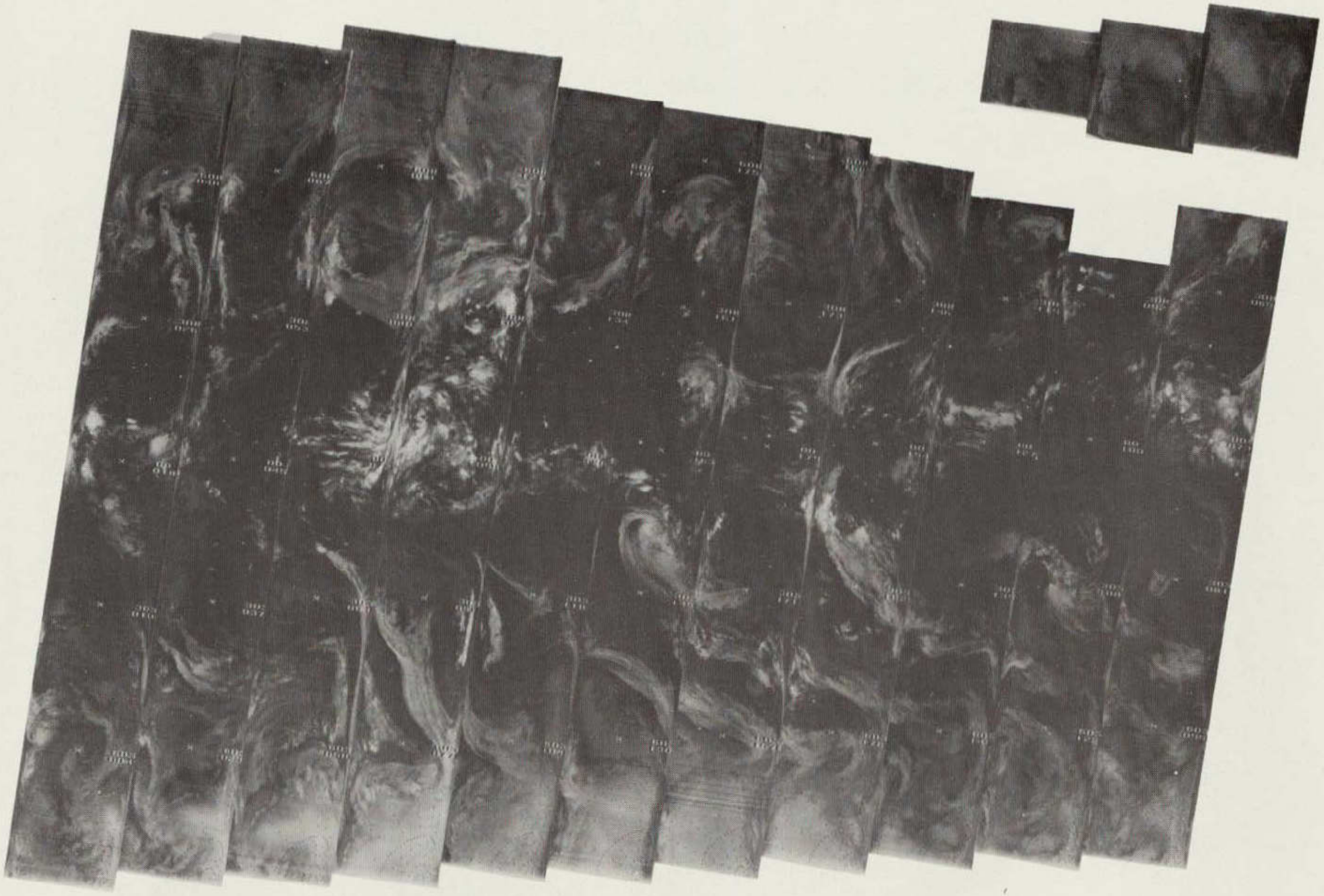
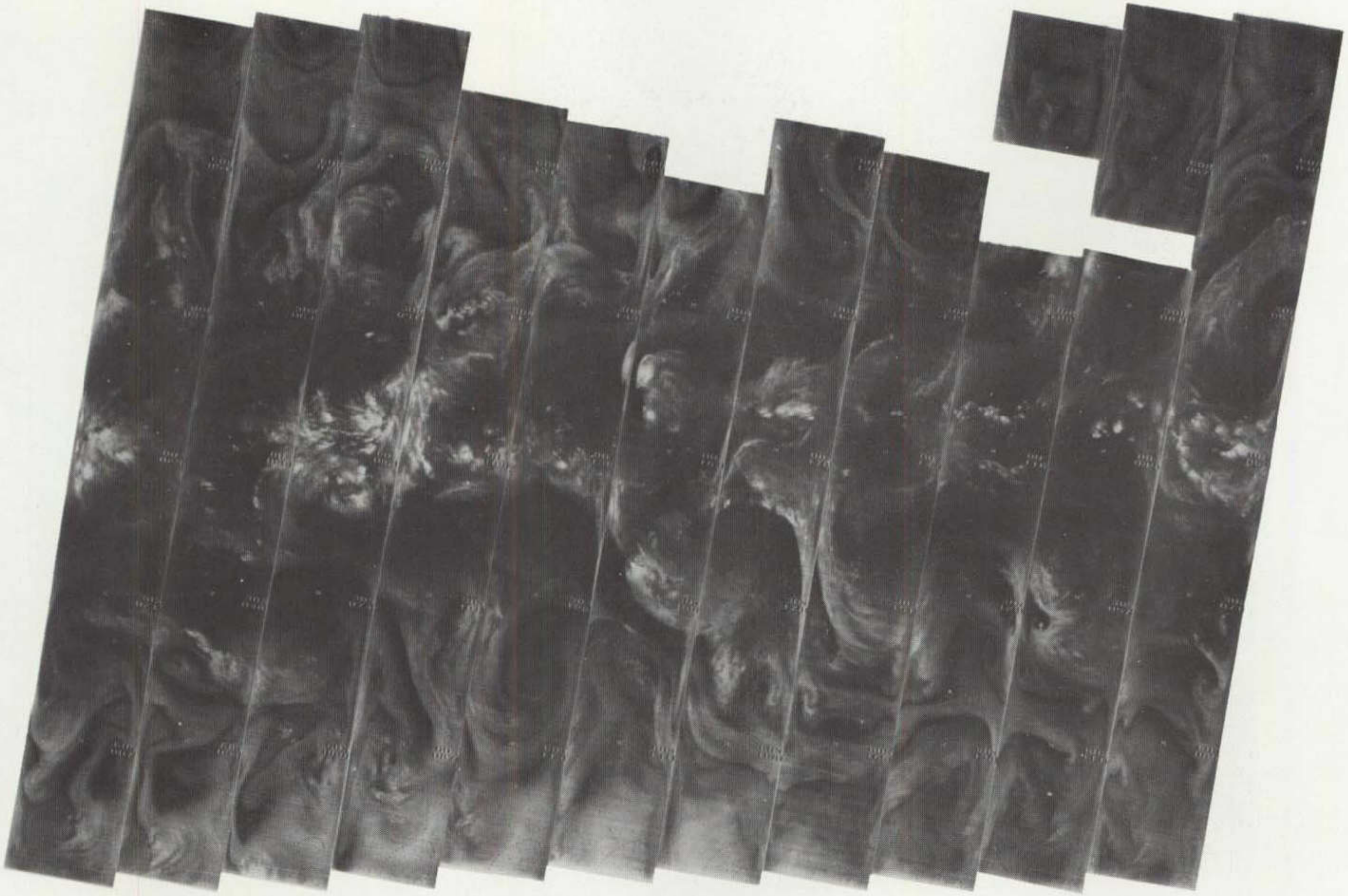


4298 4297 4296 4295 4294 4293 4292 4291 4290 4289 4288 4287 4286 4285

27 APRIL 1976

11.5 μm



4311 4310 4309 4308 4307 4306 4305 4304 4303 4302 4301 4300 4299

28 APRIL 1976

6.7 μm

4311 4310 4309 4308 4307 4306 4305 4304 4303 4302 4301 4300 4299

28 APRIL 1976

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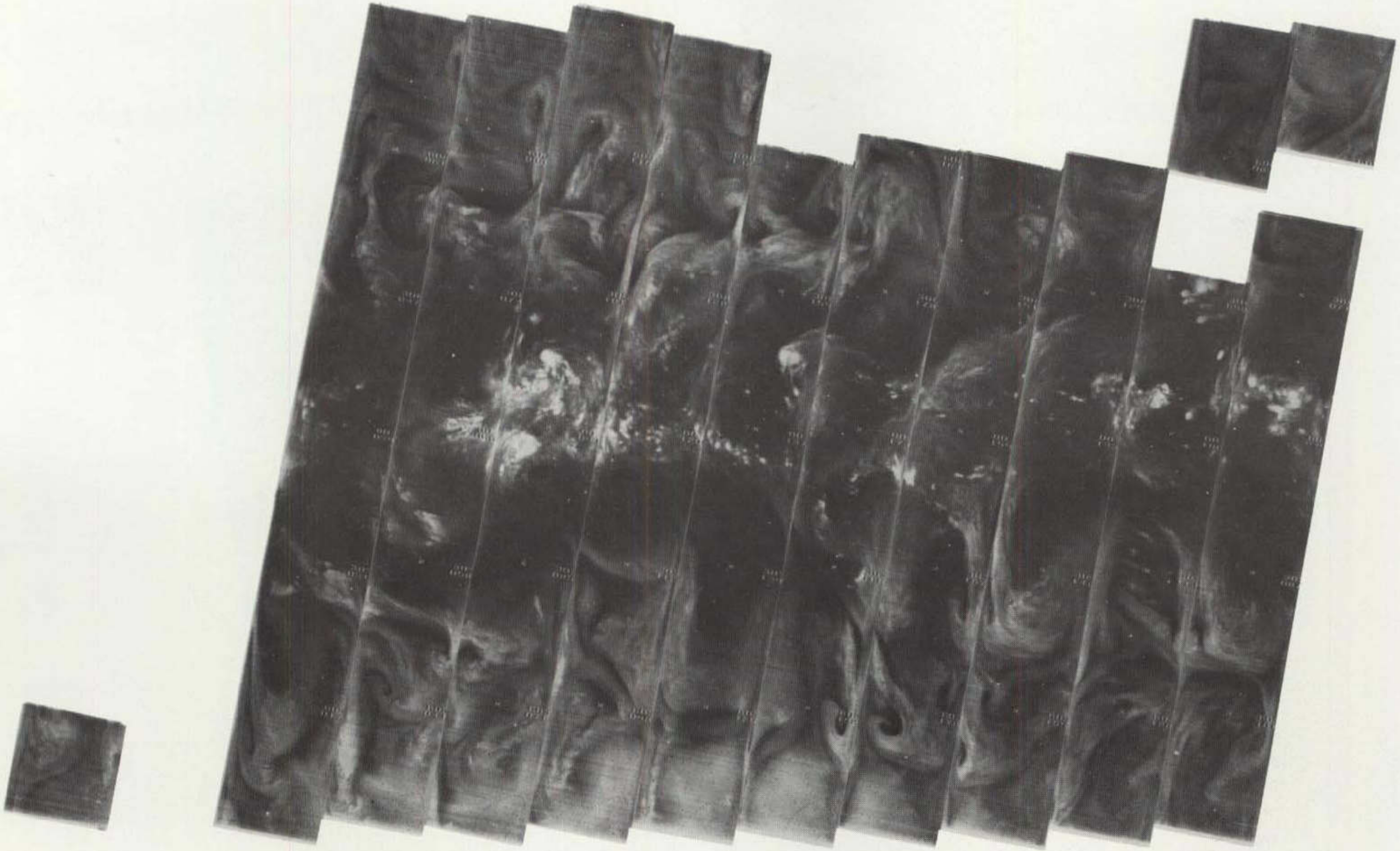

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29 APRIL 1976

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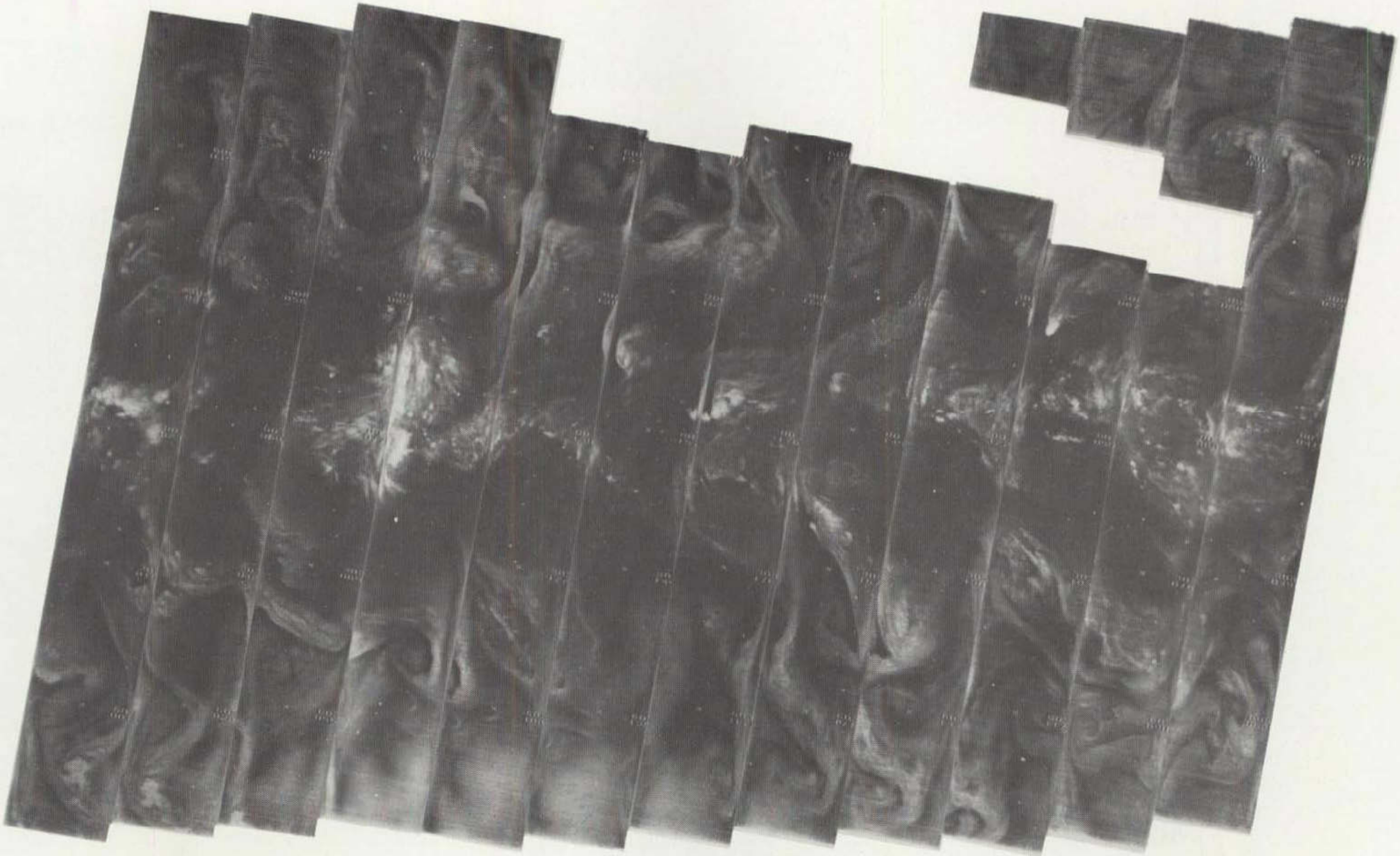

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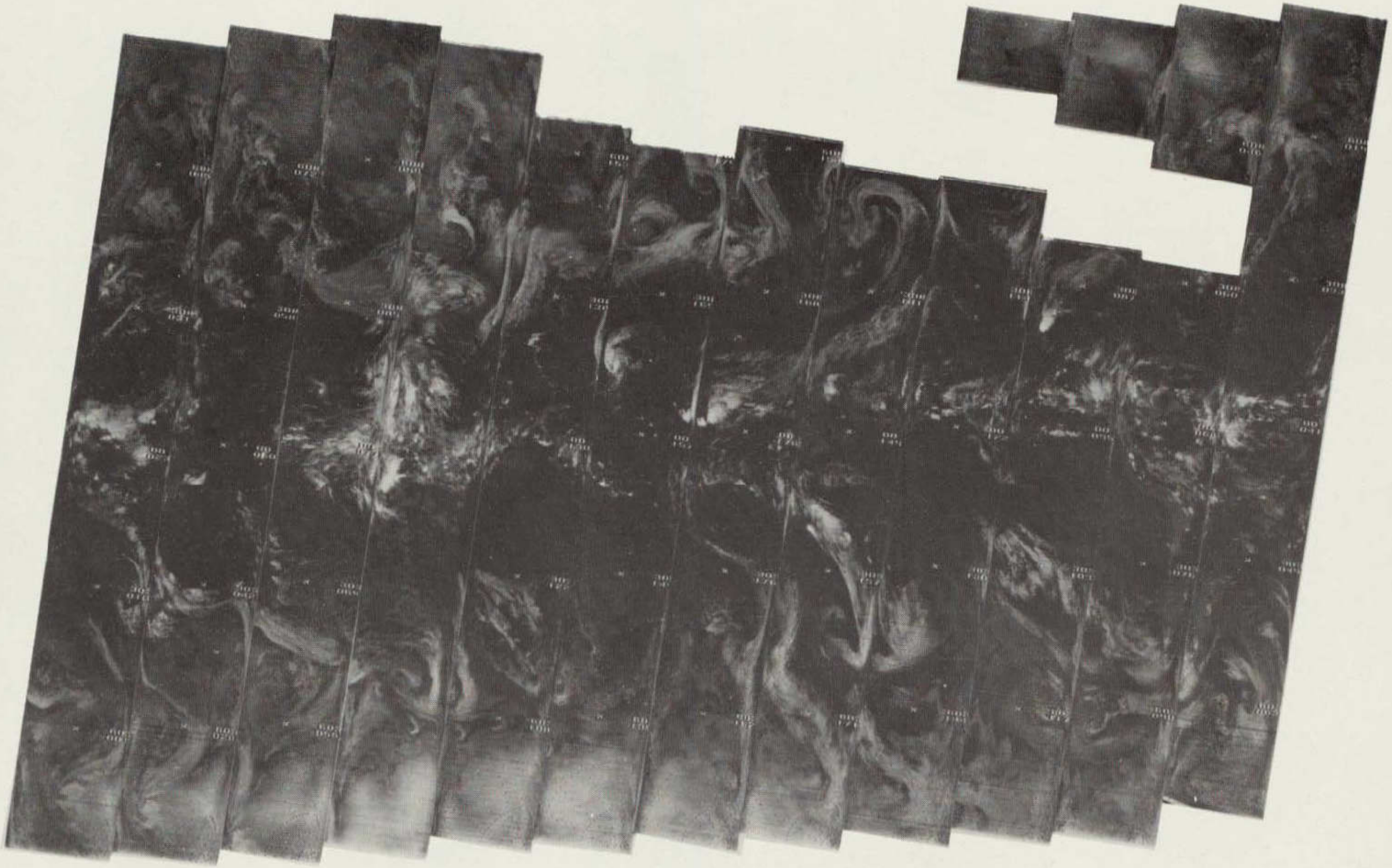
30 APRIL 1976

6.7 μm



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30 APRIL 1976

11.5 μm

SECTION 4.2

TEMPERATURE HUMIDITY INFRARED RADIOMETER

DAYTIME MONTAGES

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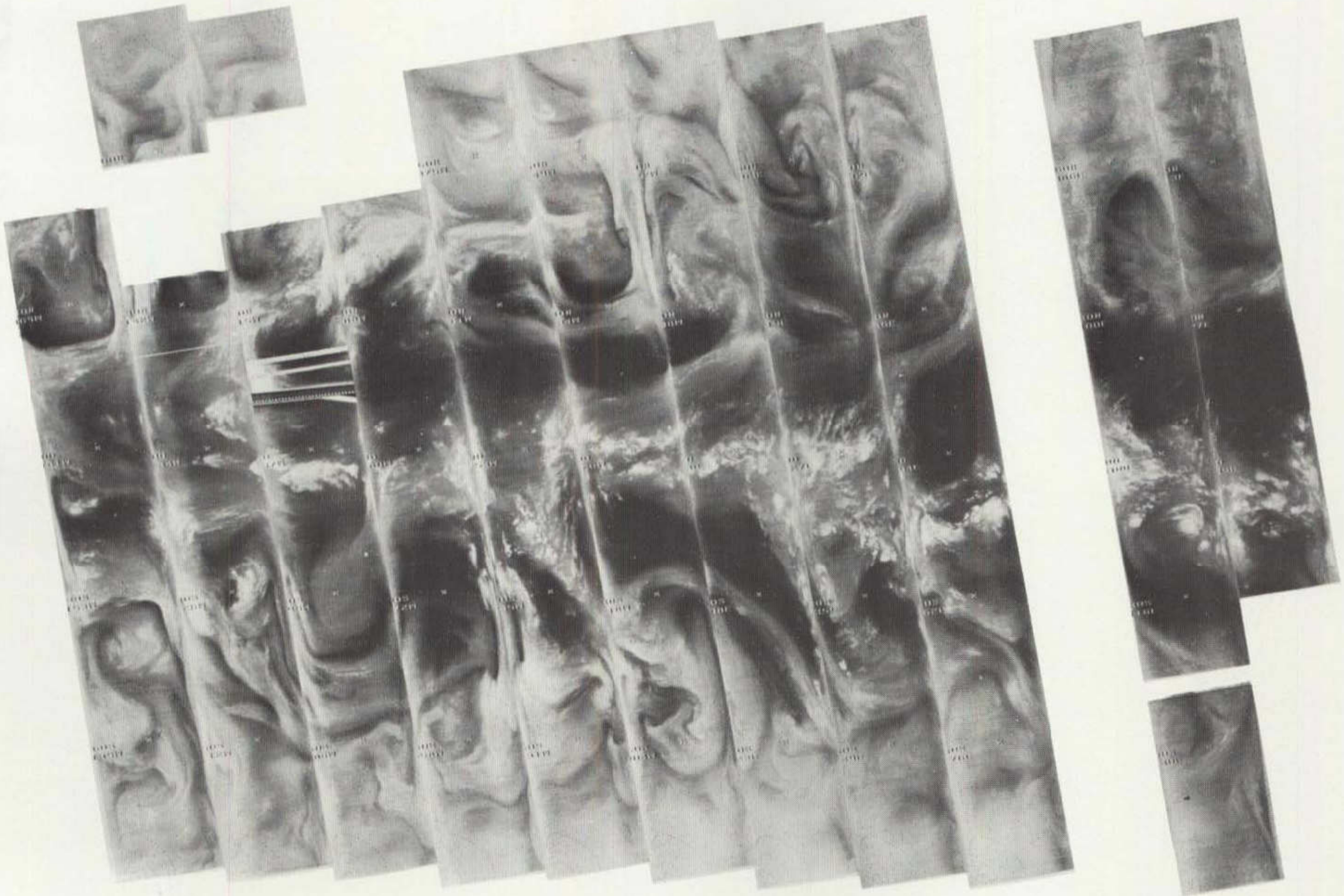
PRECEDING PAGE BLANK NOT FILMED



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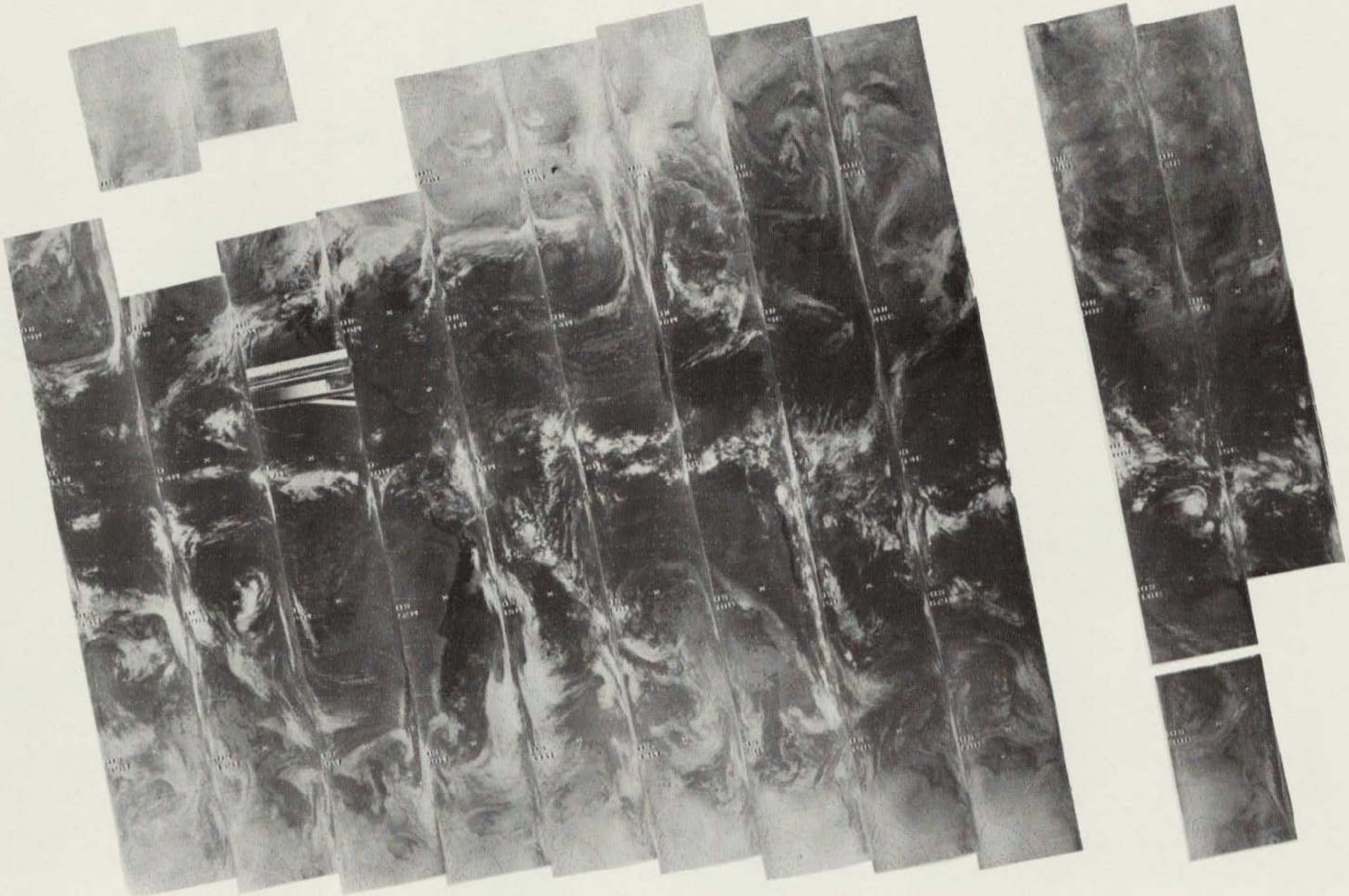
1 MARCH 1976

6.7 μm



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1 MARCH 1976

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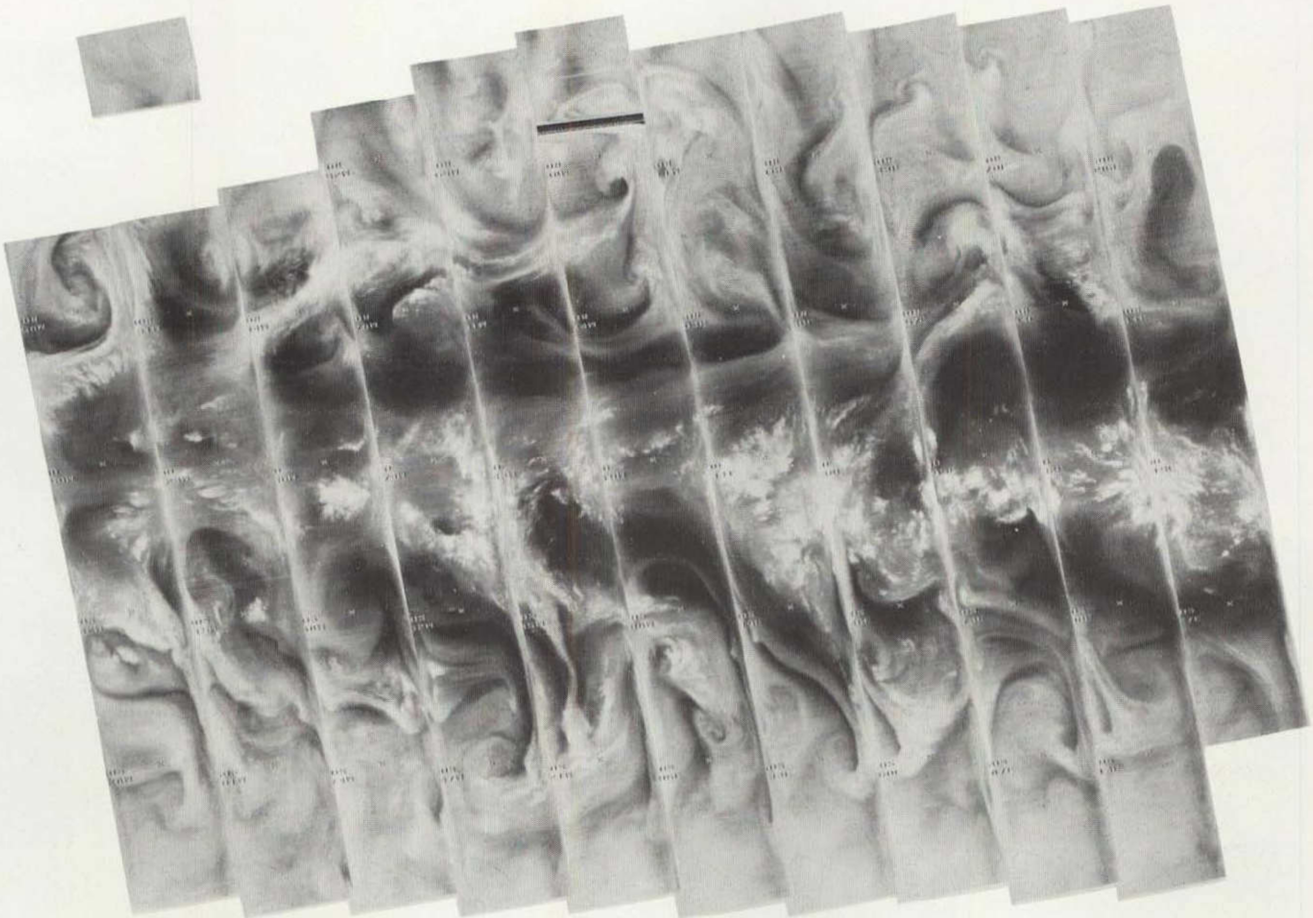

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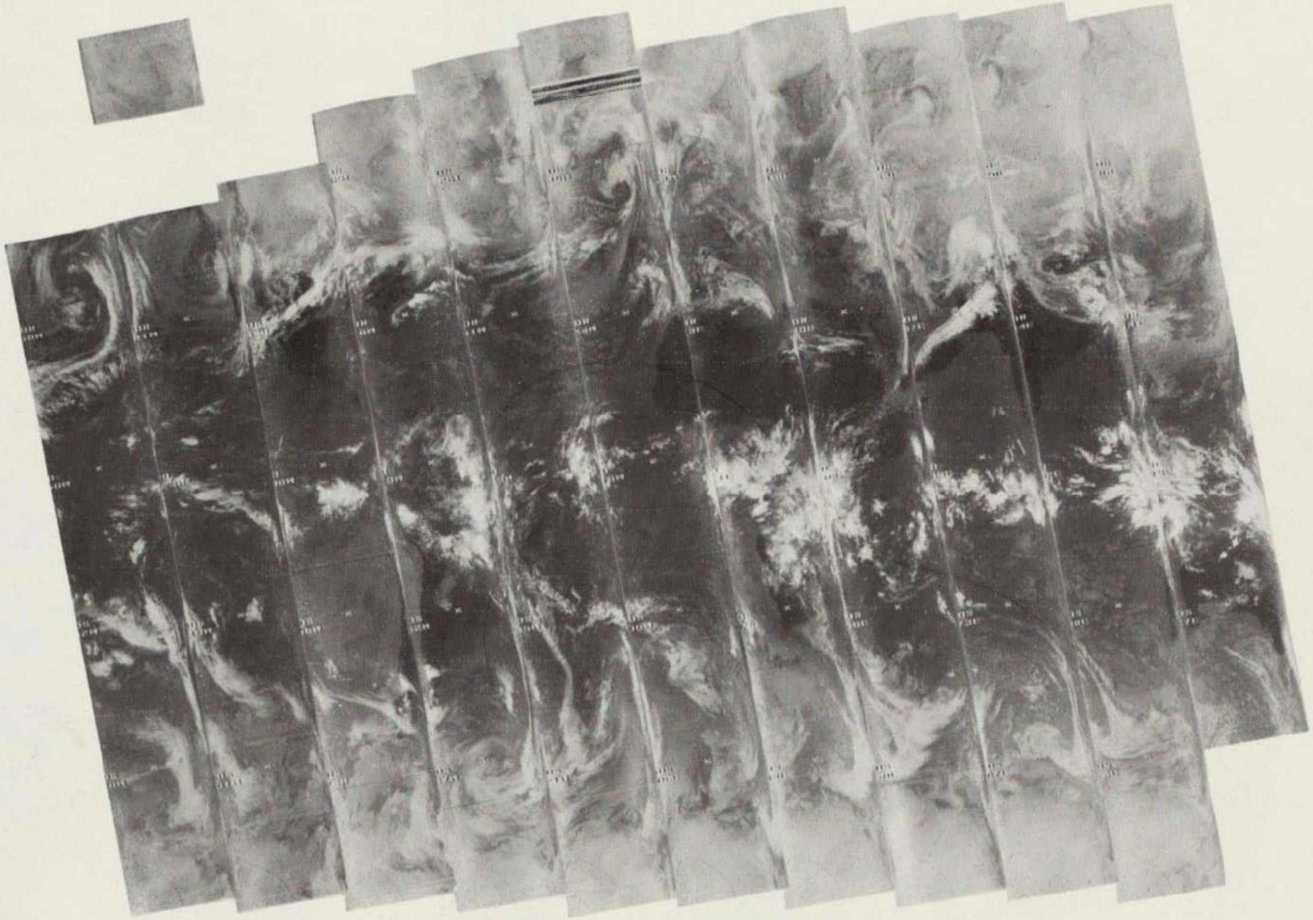
2 MARCH 1976

6.7 μm



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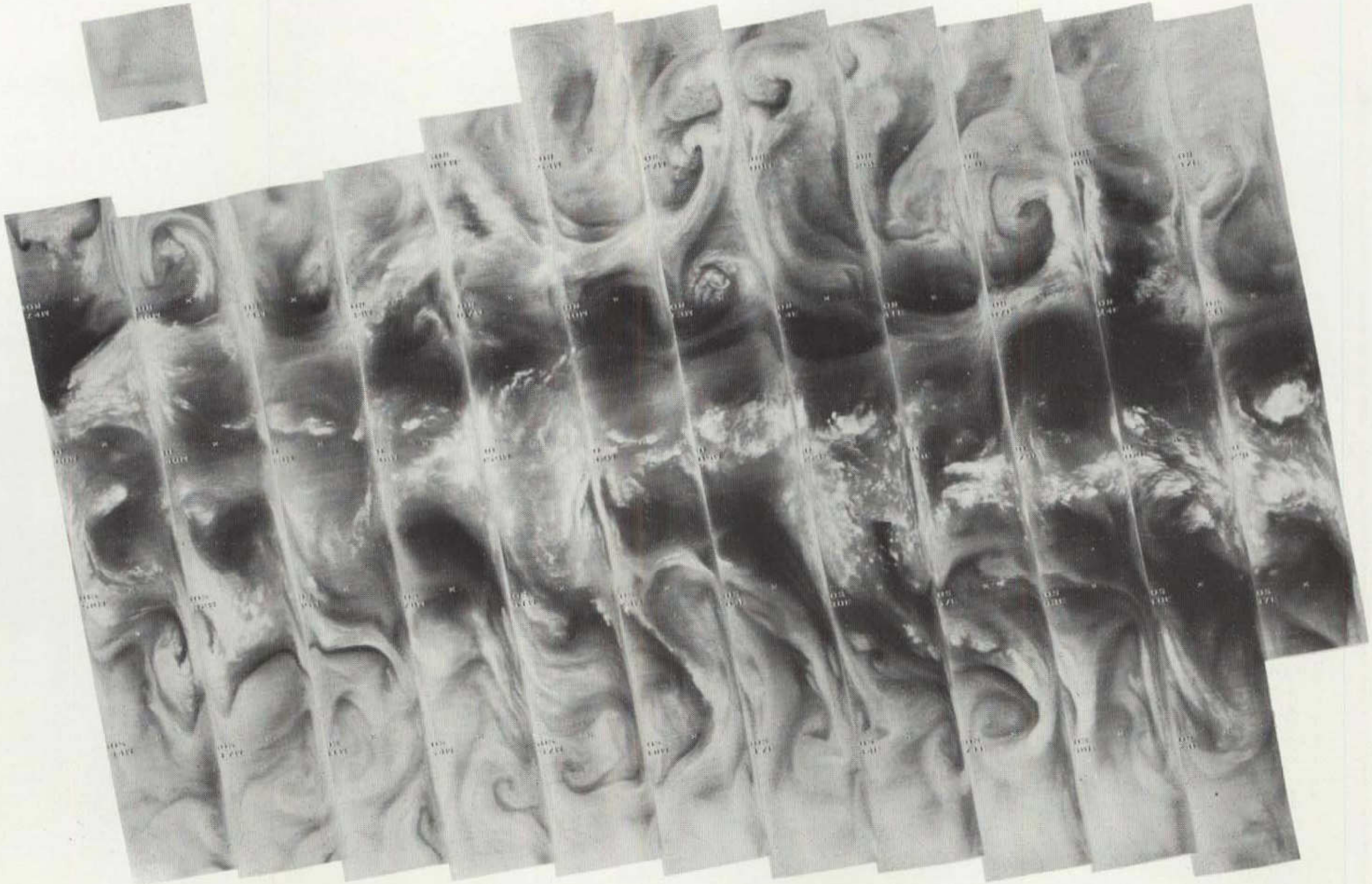
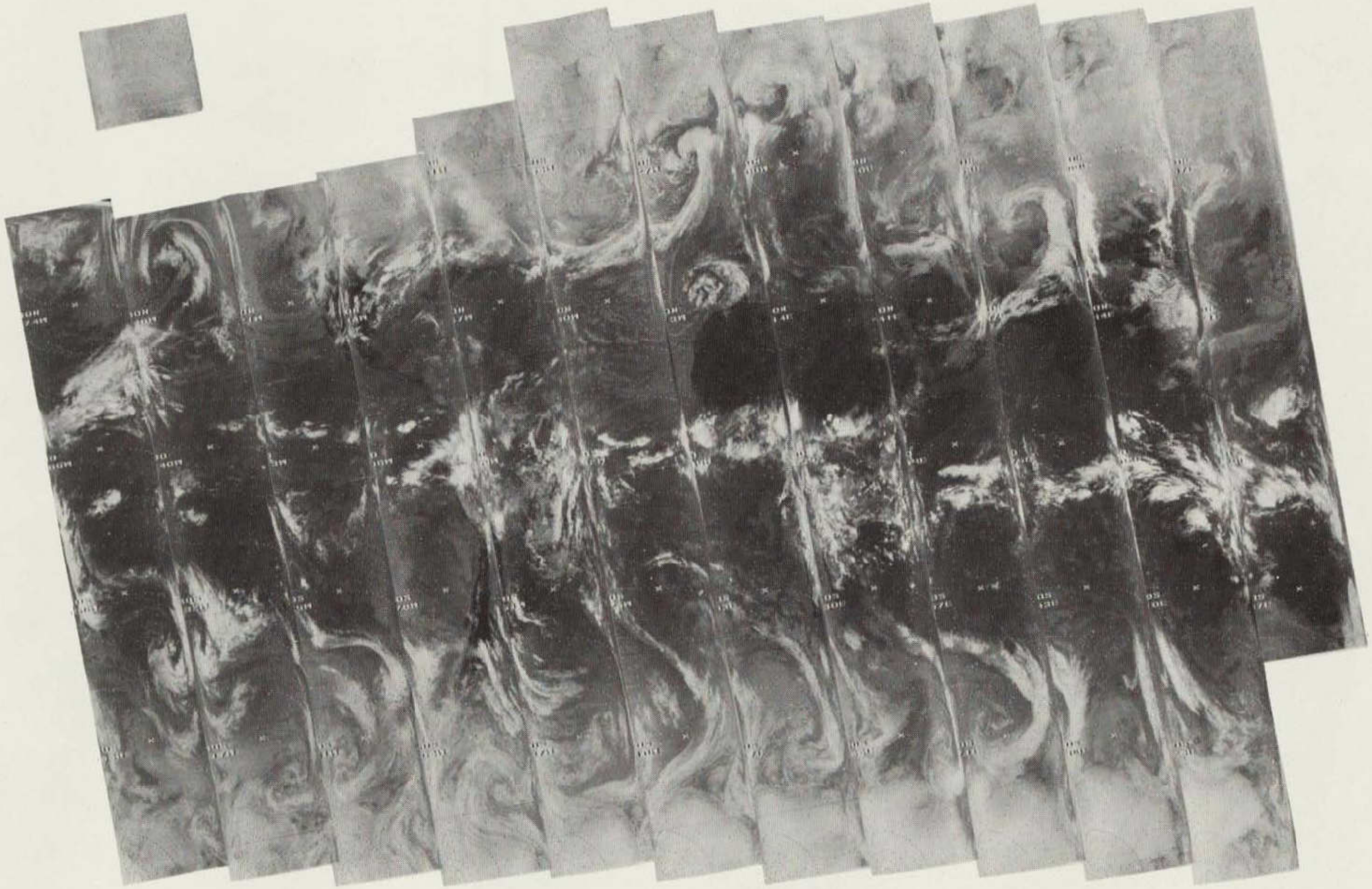


3561 3560 3559 3558 3557 3556 3555 3554 3553 3552 3551 3550 3549

3 MARCH 1976

6.7 μm



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3 MARCH 1976

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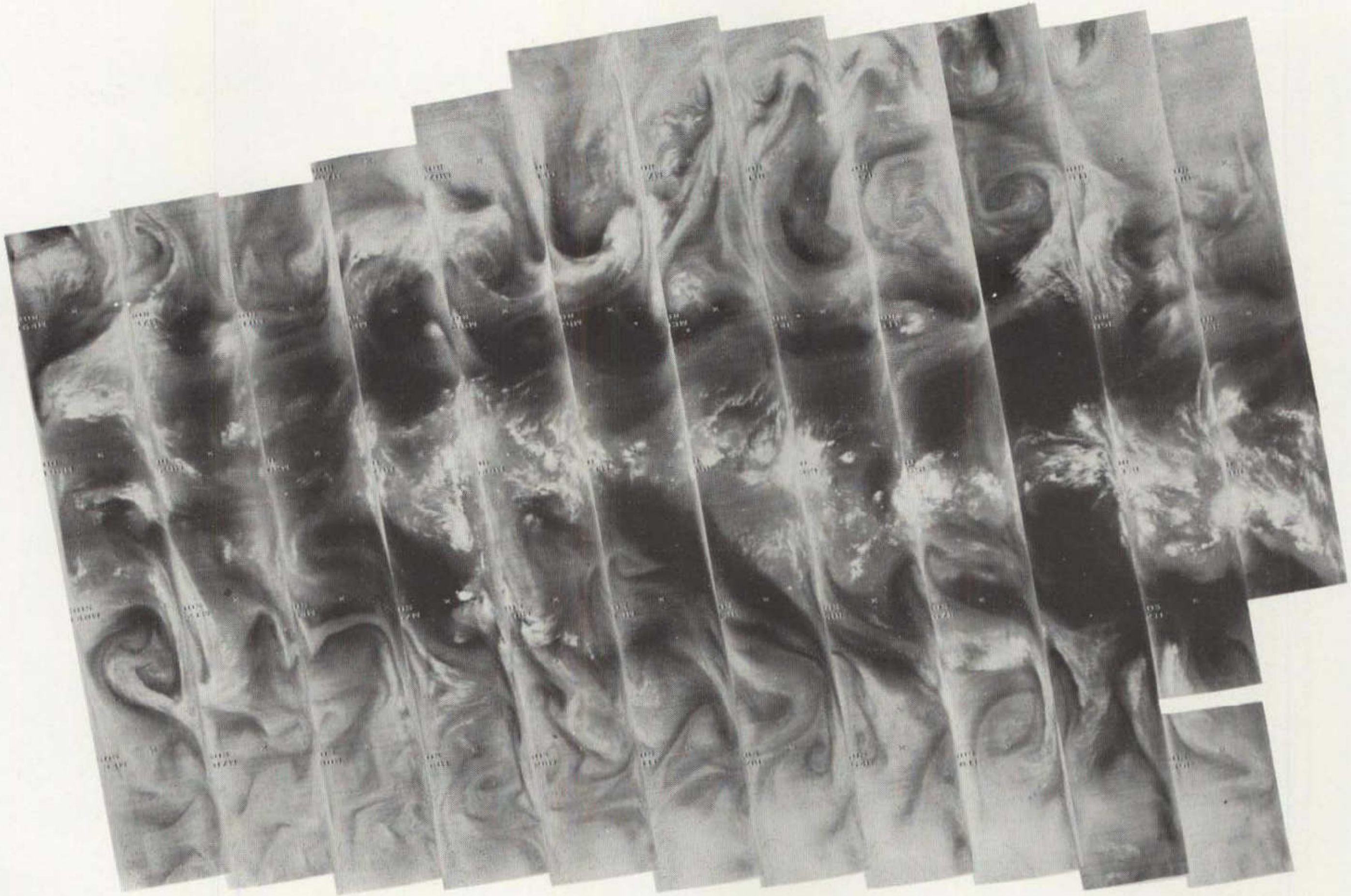

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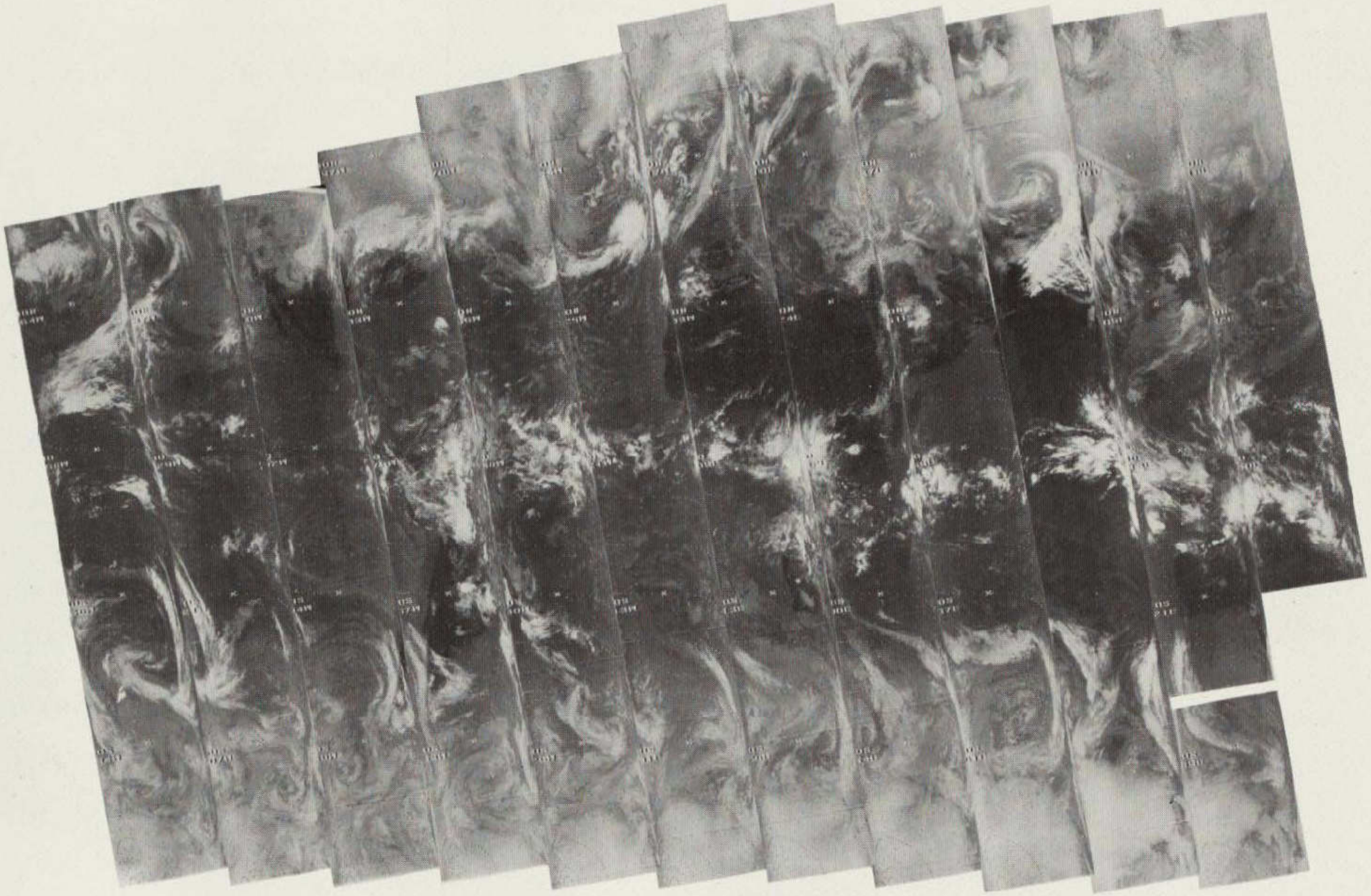
4 MARCH 1976

6.7 μm



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4 MARCH 1976

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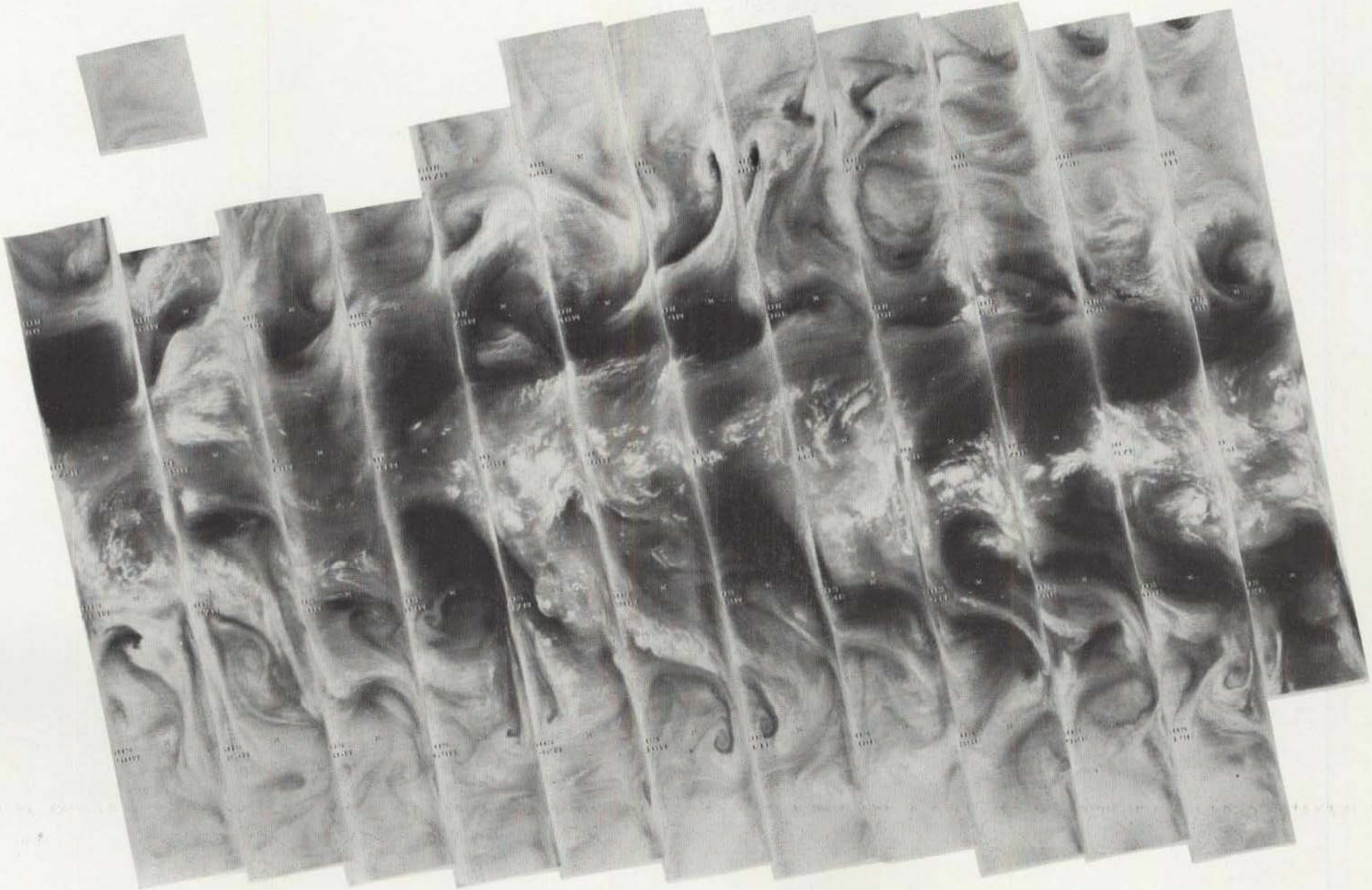

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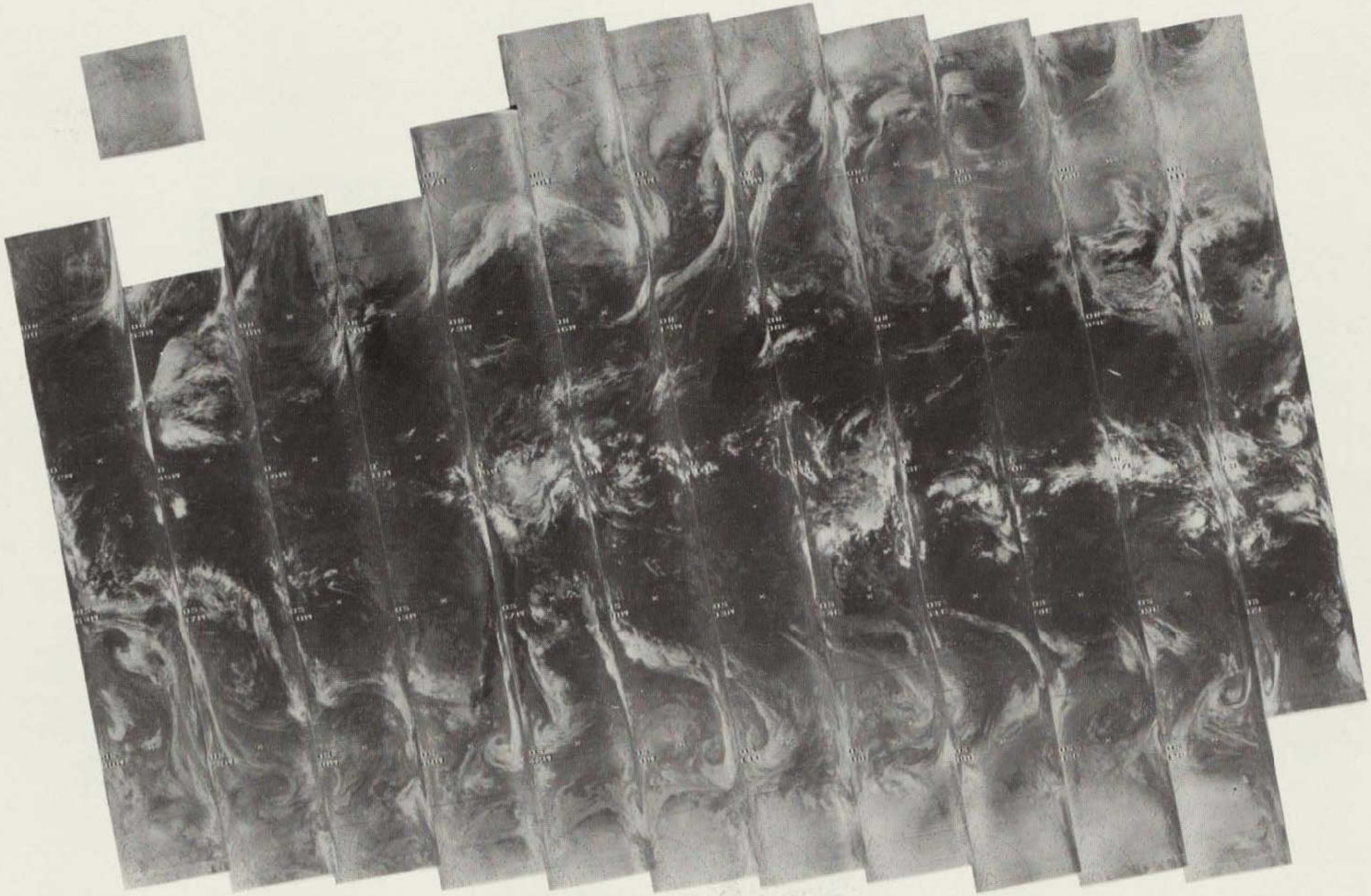

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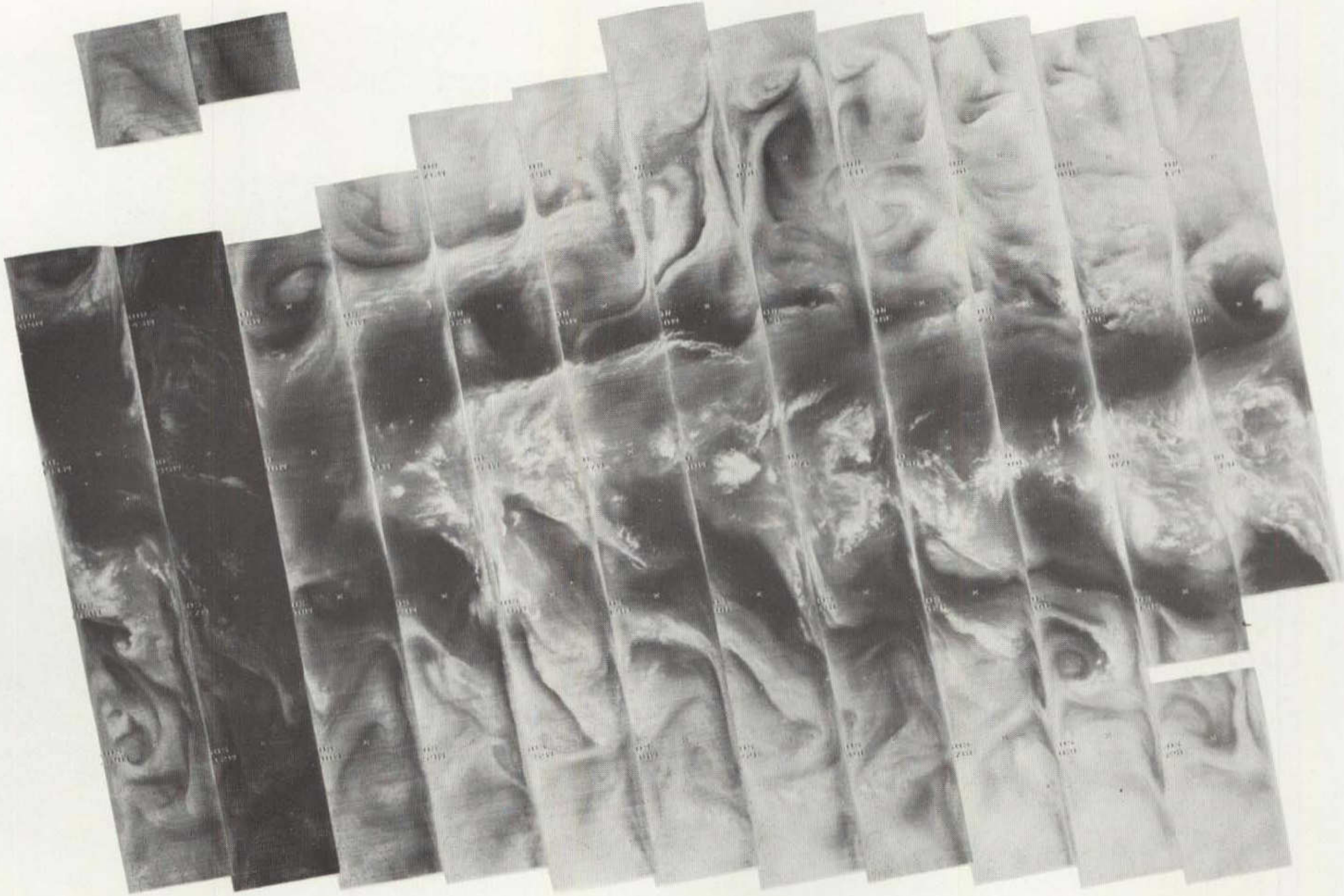

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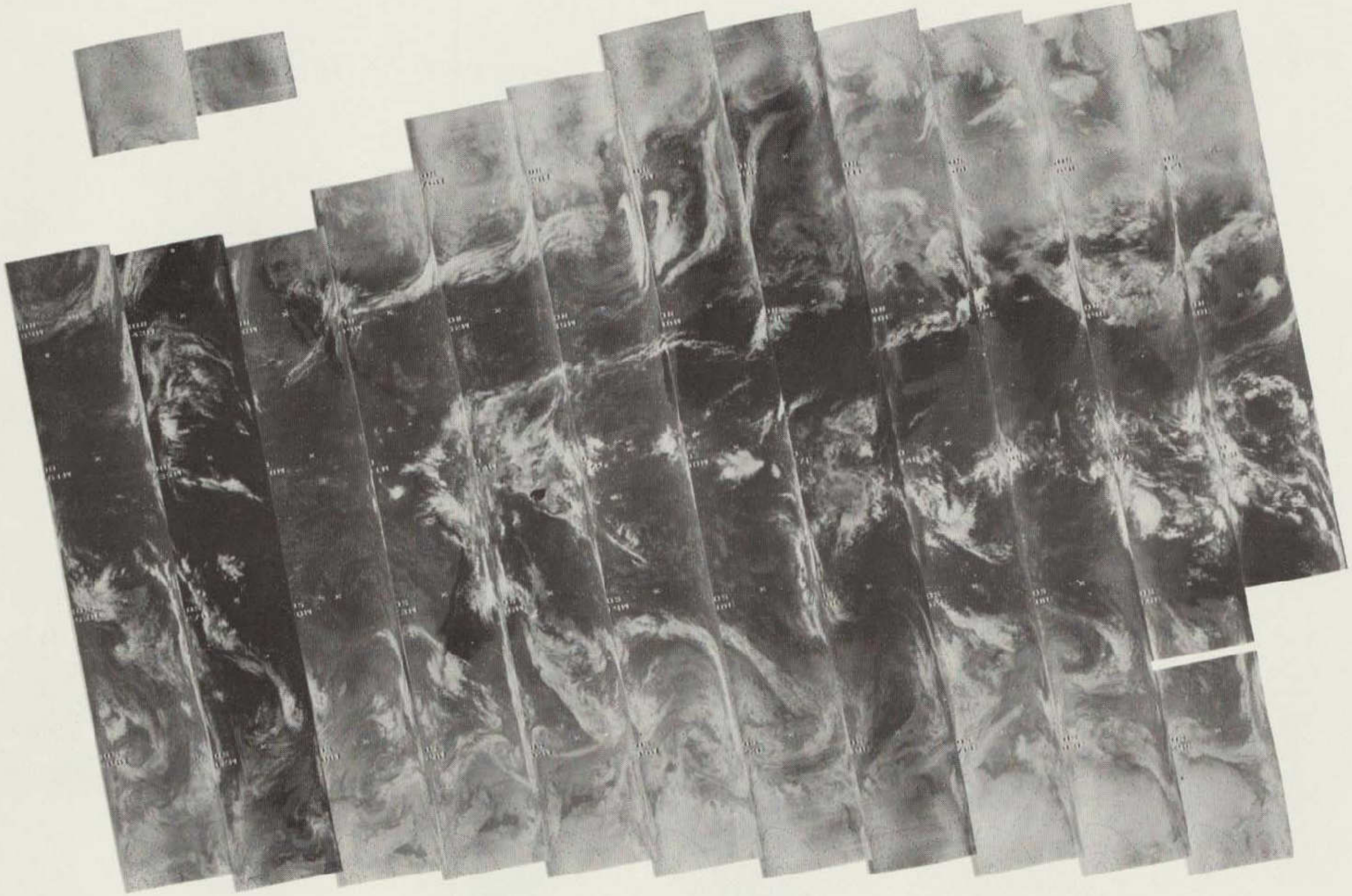
6 MARCH 1976

6.7 μm



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6 MARCH 1976

11.5 μm

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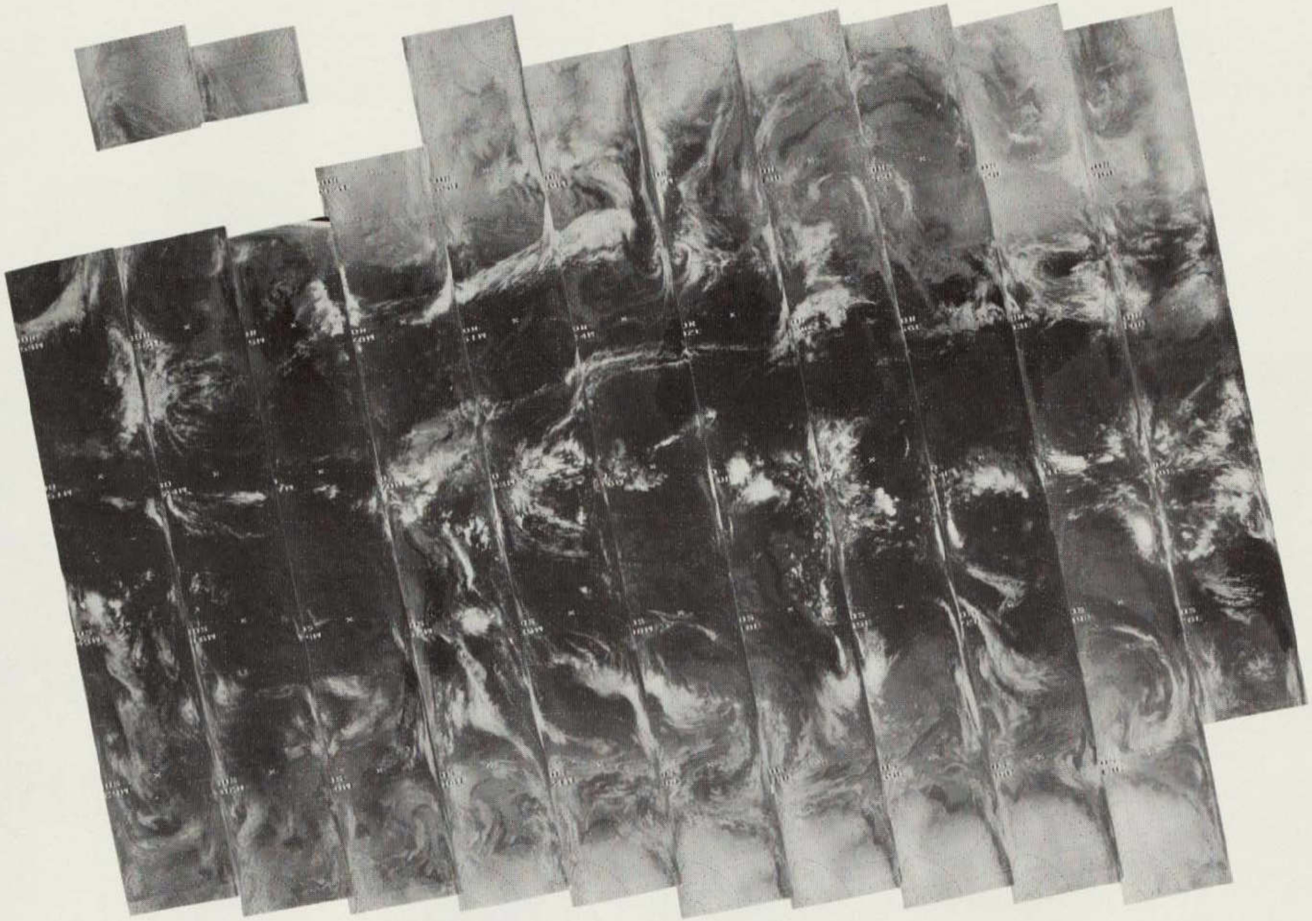
7 MARCH 1976

6.7 μm



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7 MARCH 1976

11.5 μm

3628 3627 3626 3625 3624 3623 3622 3621 3620 3619 3618 3617 3616

8 MARCH 1976

6.7 μm

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8 MARCH 1976

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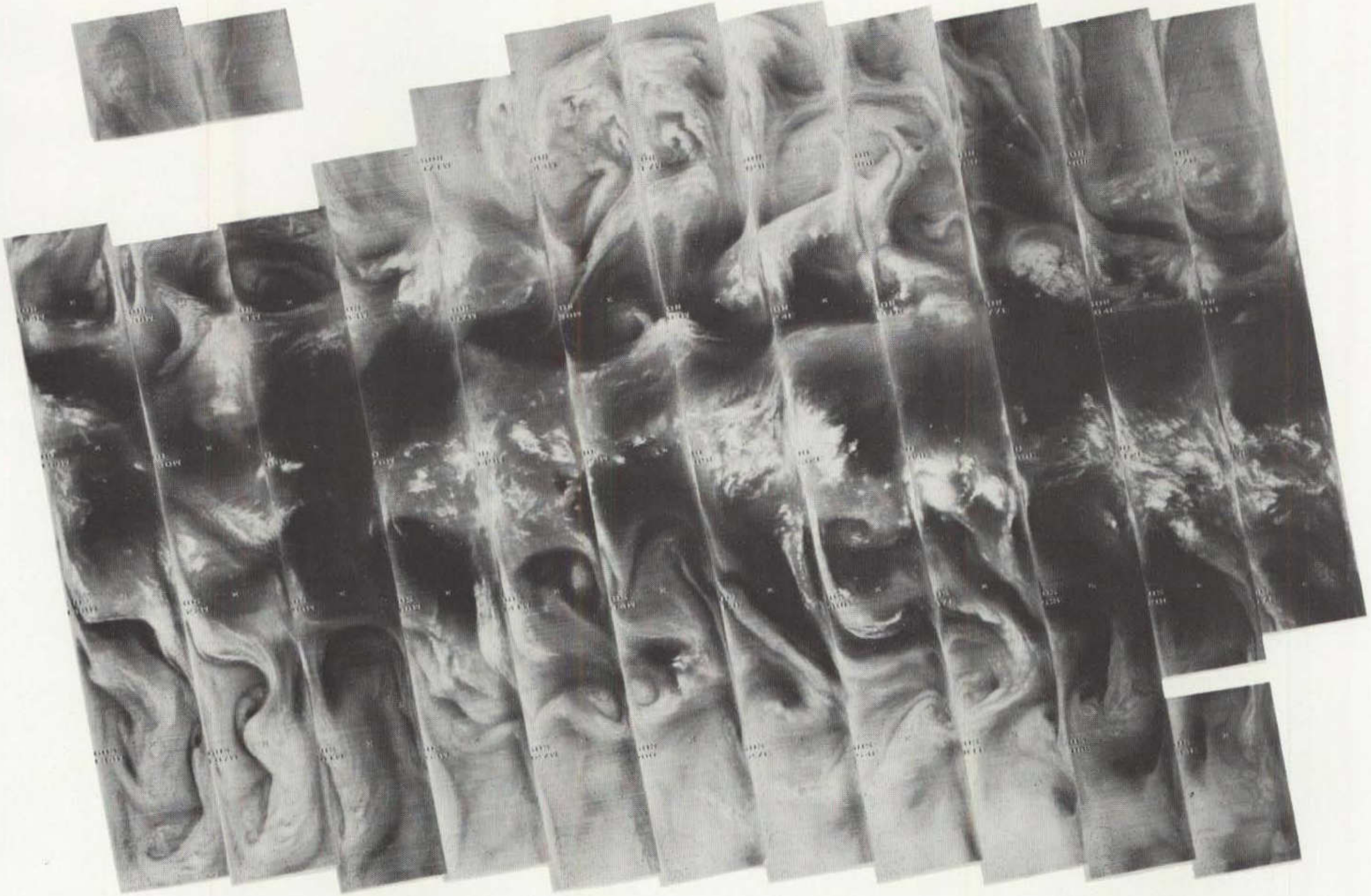

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9 MARCH 1976

6.7 μm

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9 MARCH 1976

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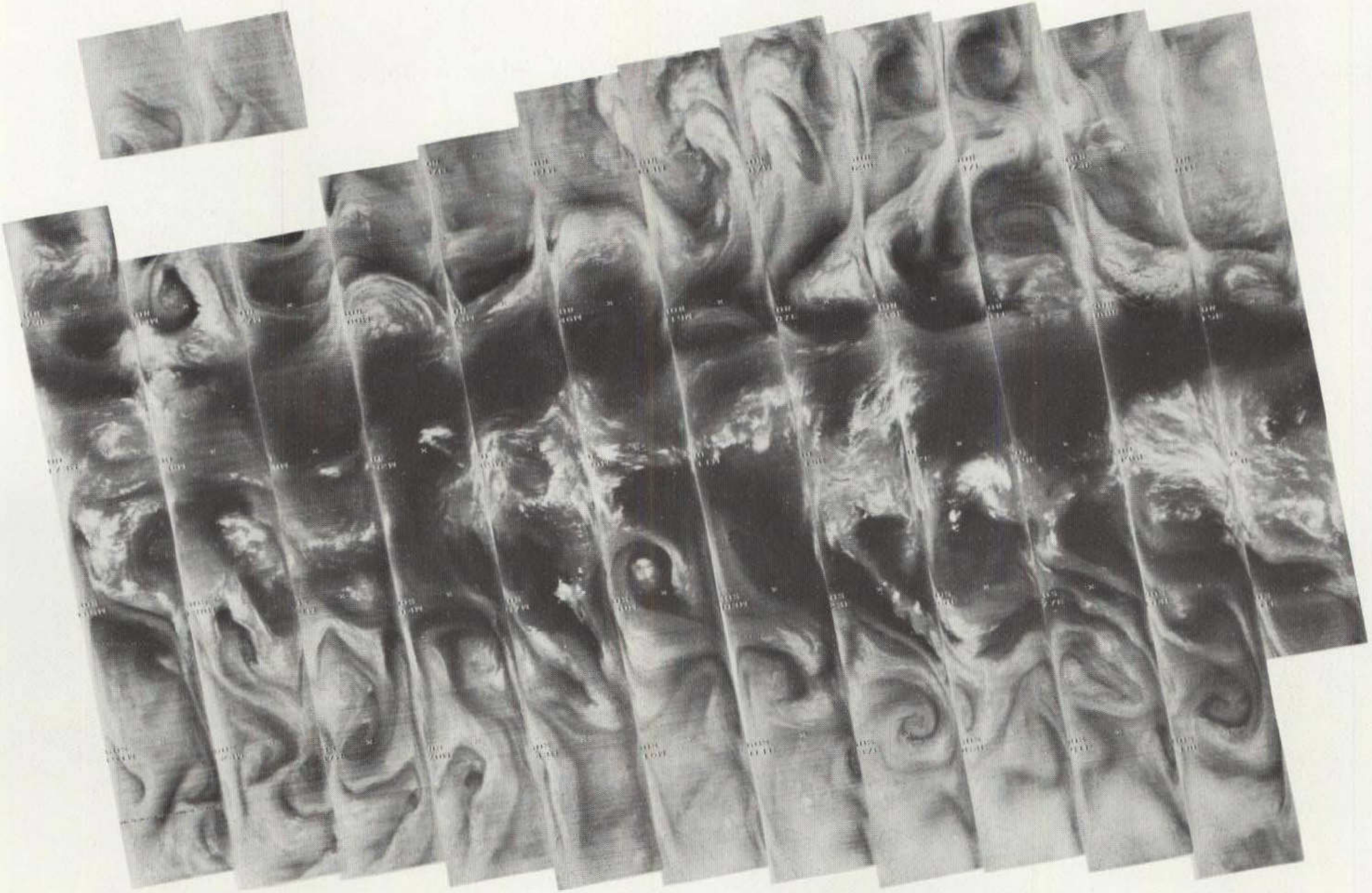

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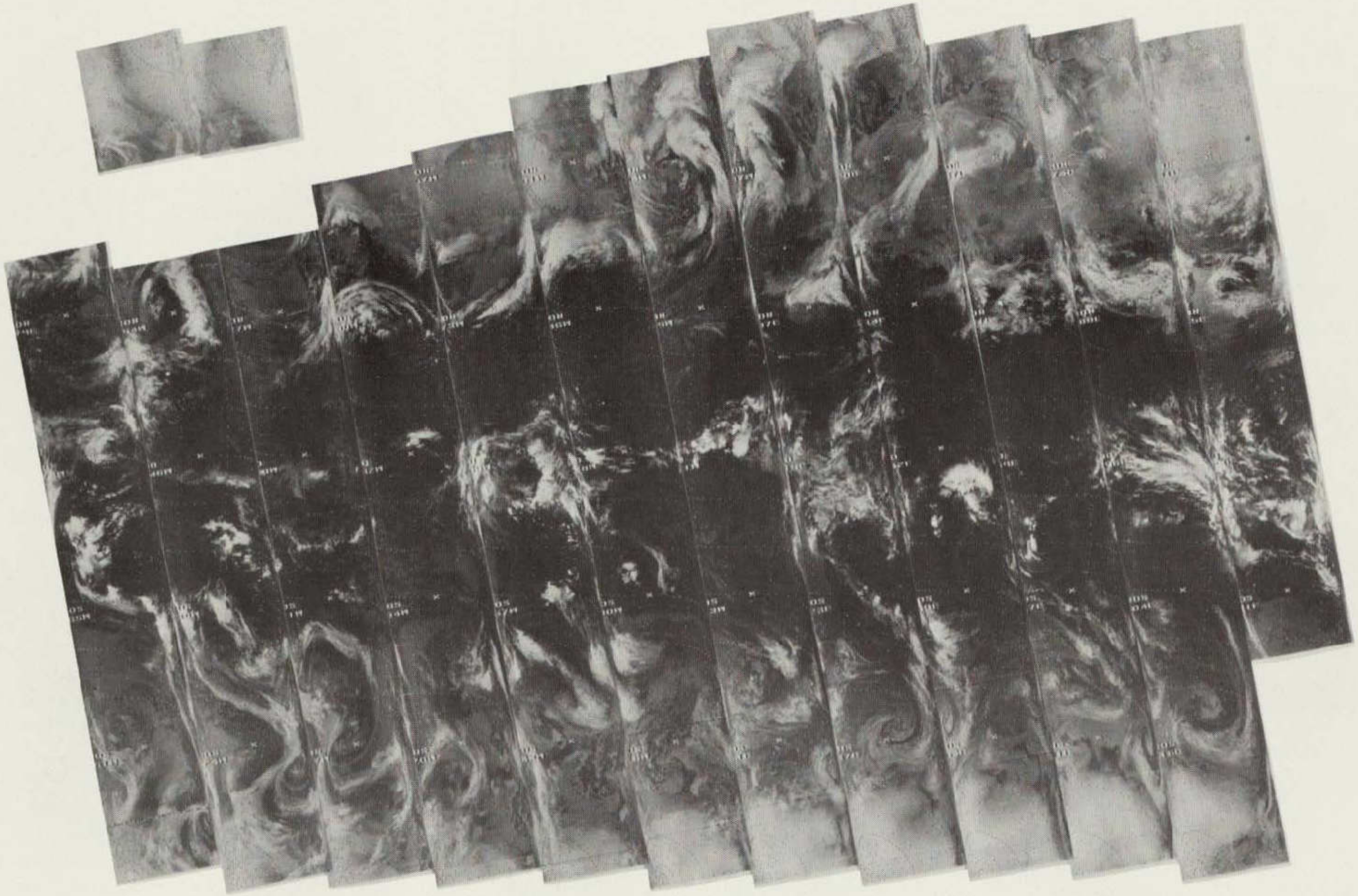

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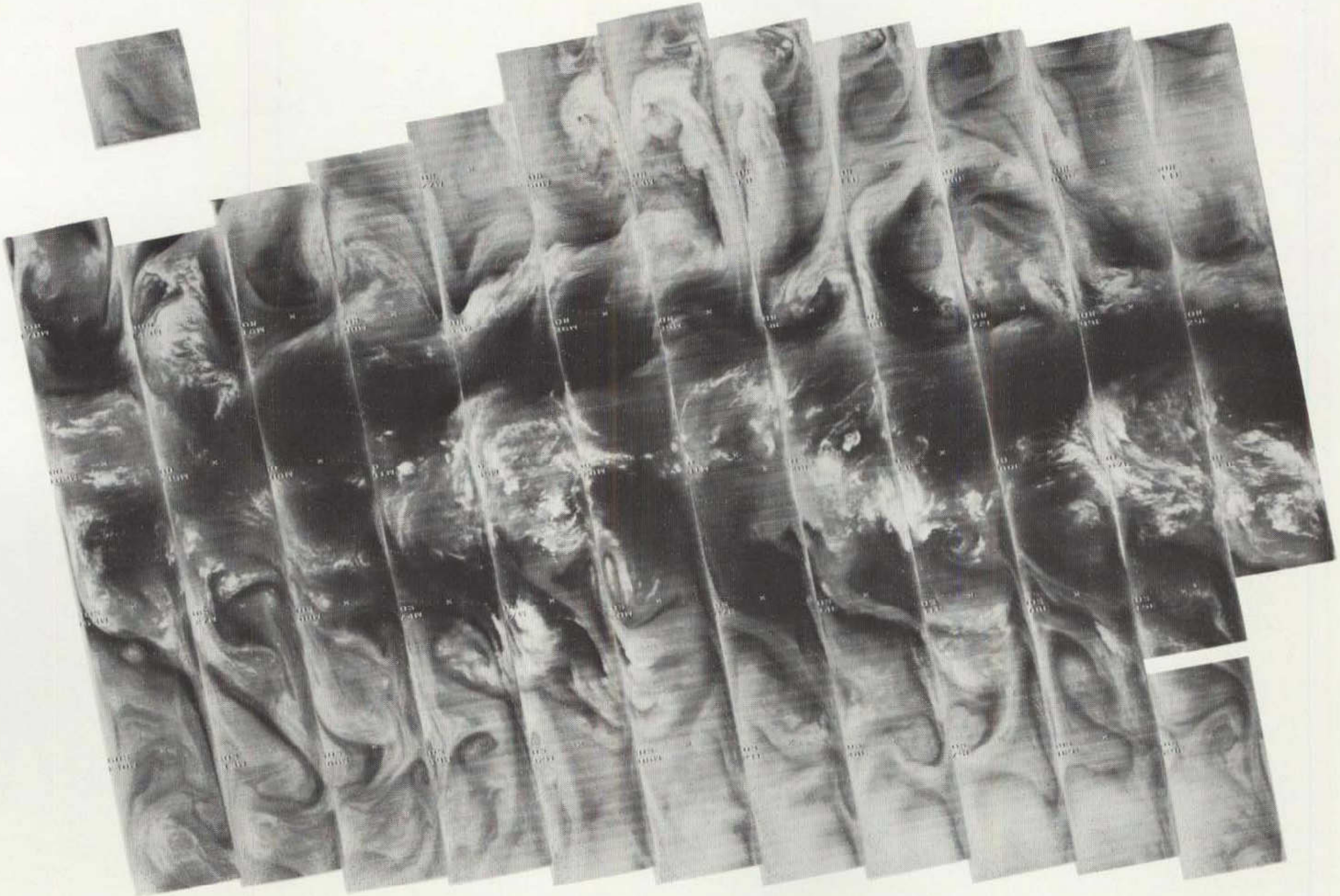

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11 MARCH 1976

6.7 μm

3668 3667 3666 3665 3664 3663 3662 3661 3660 3659 3658 3657 3656

11 MARCH 1976

11.5 μm

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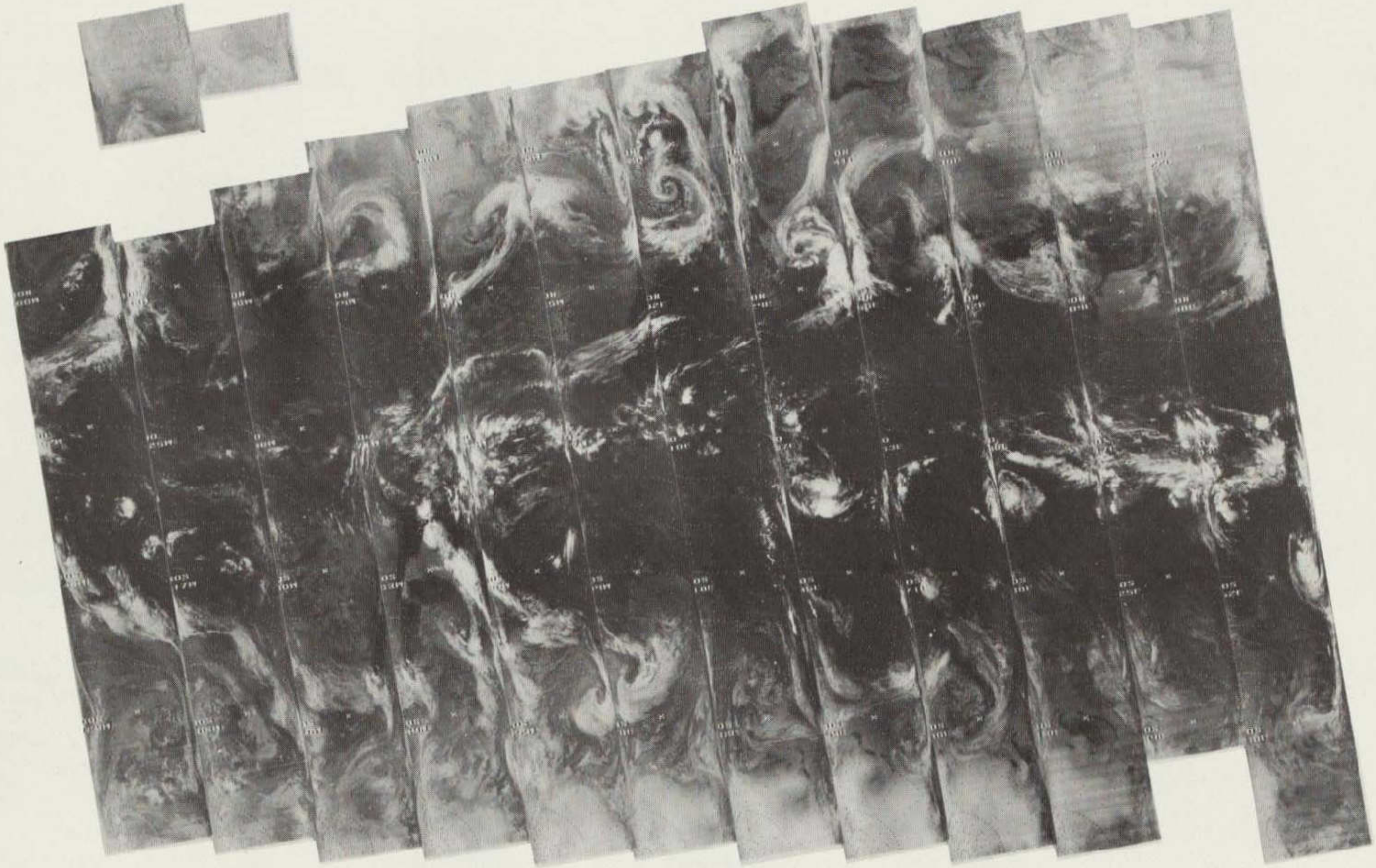

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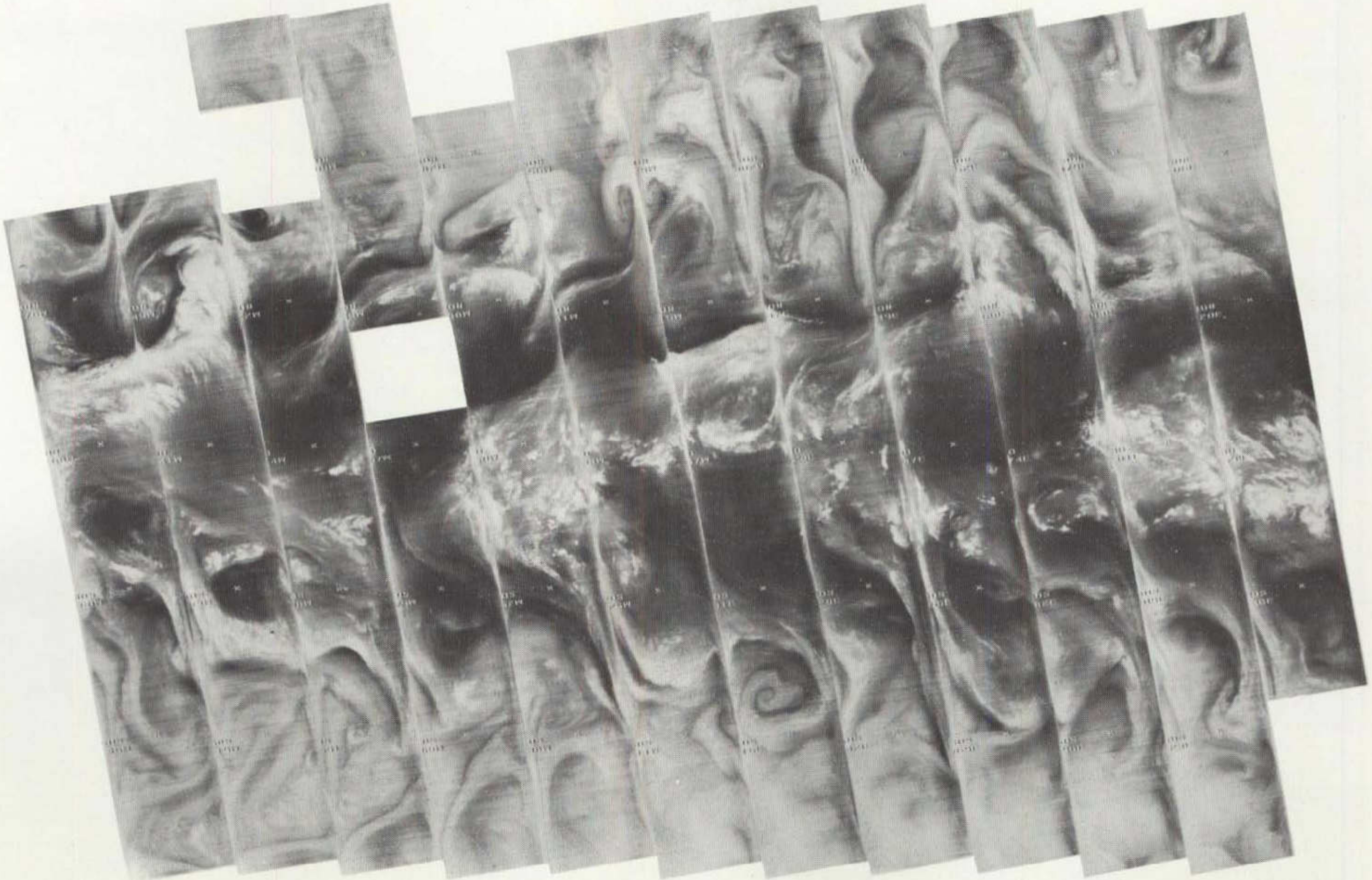

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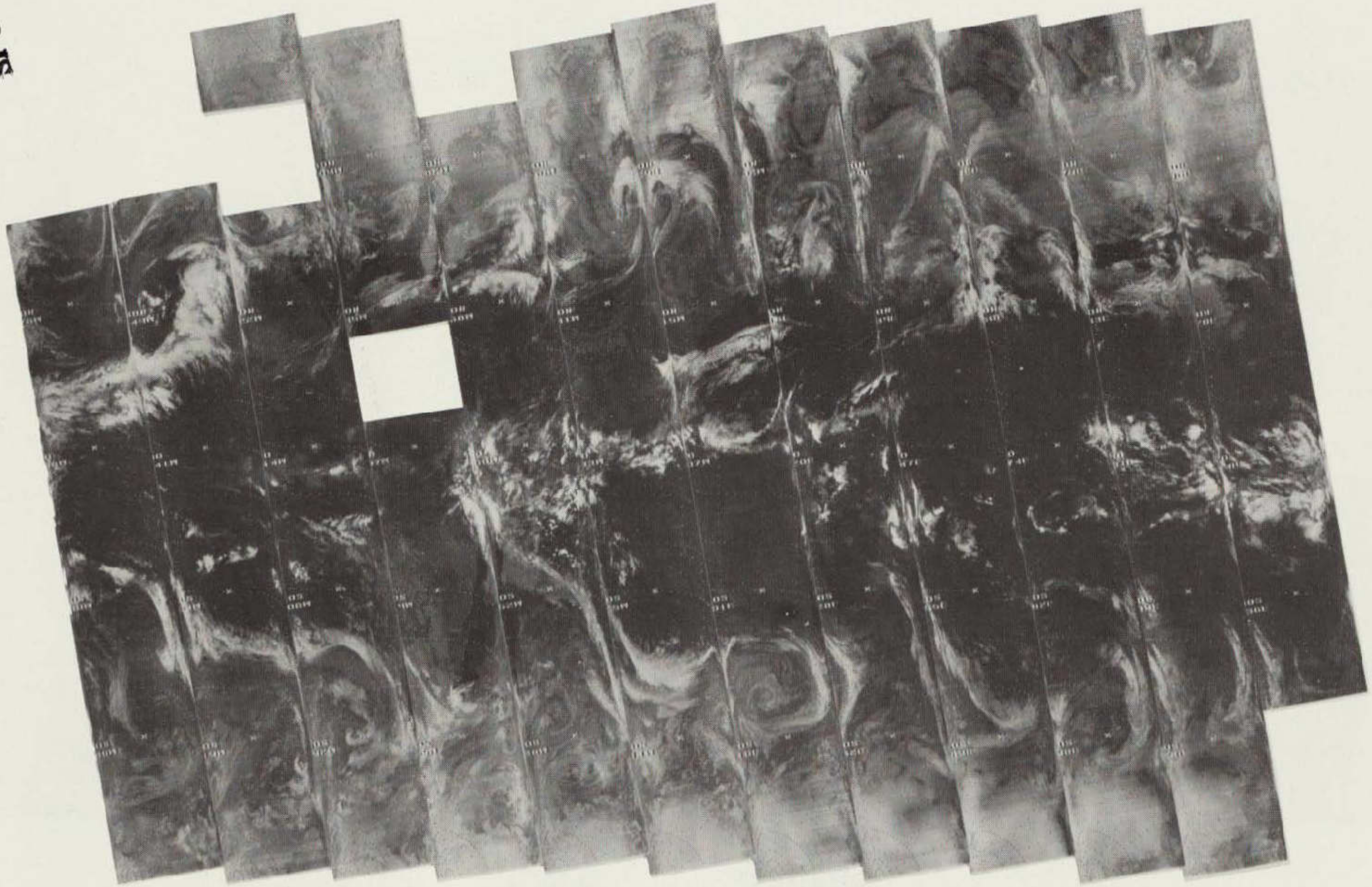

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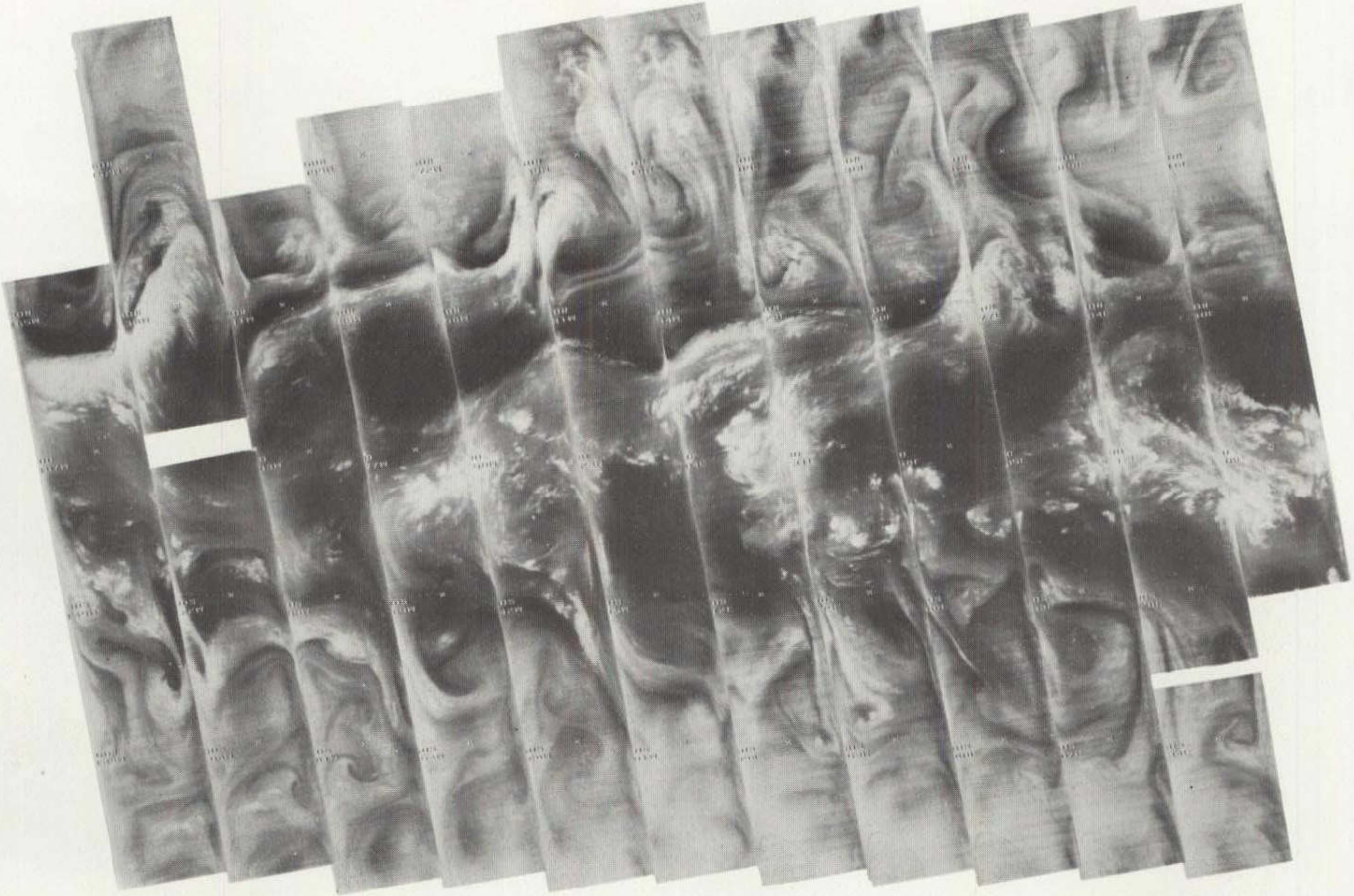

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14 MARCH 1976

6.7 μm

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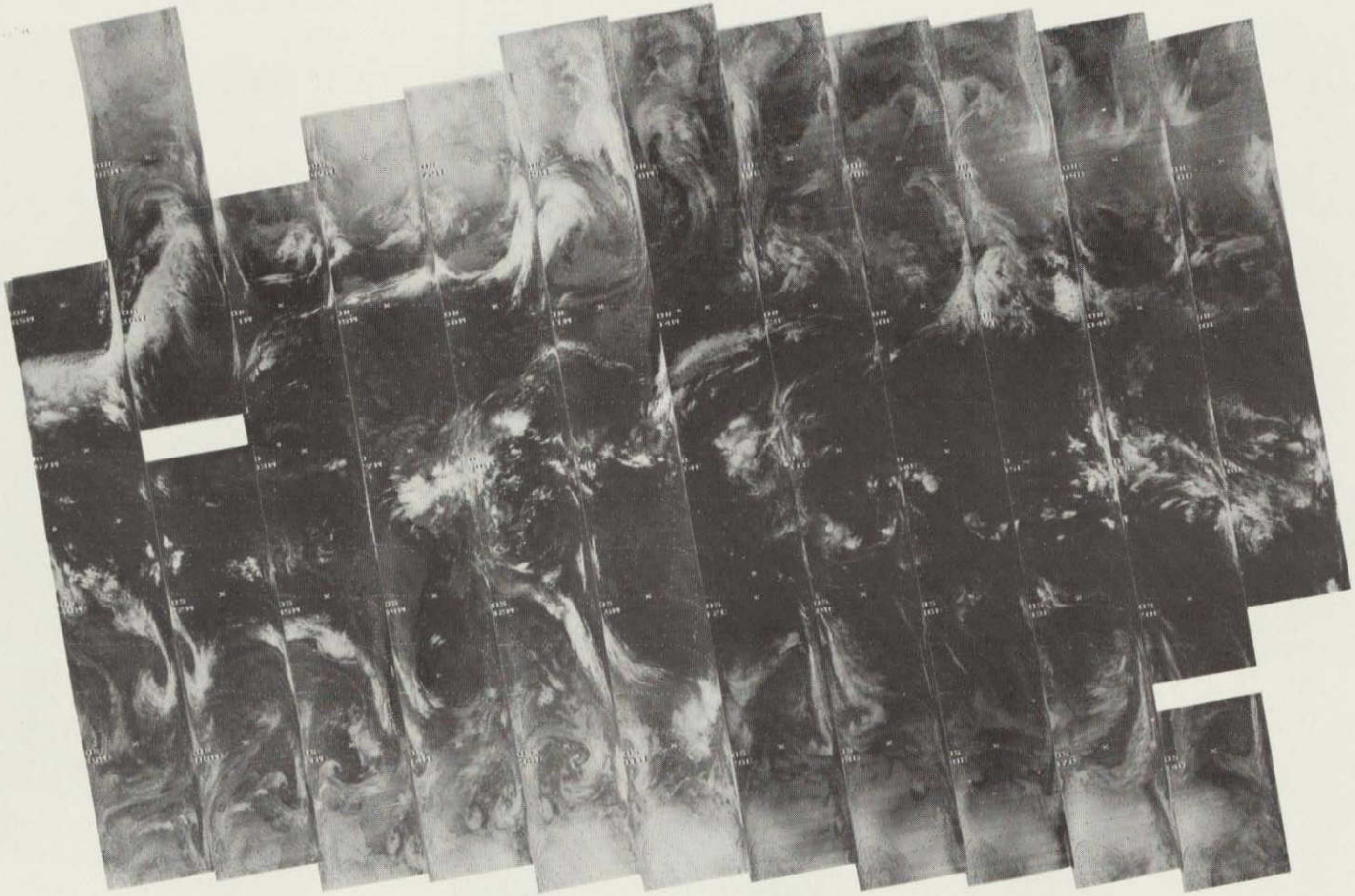

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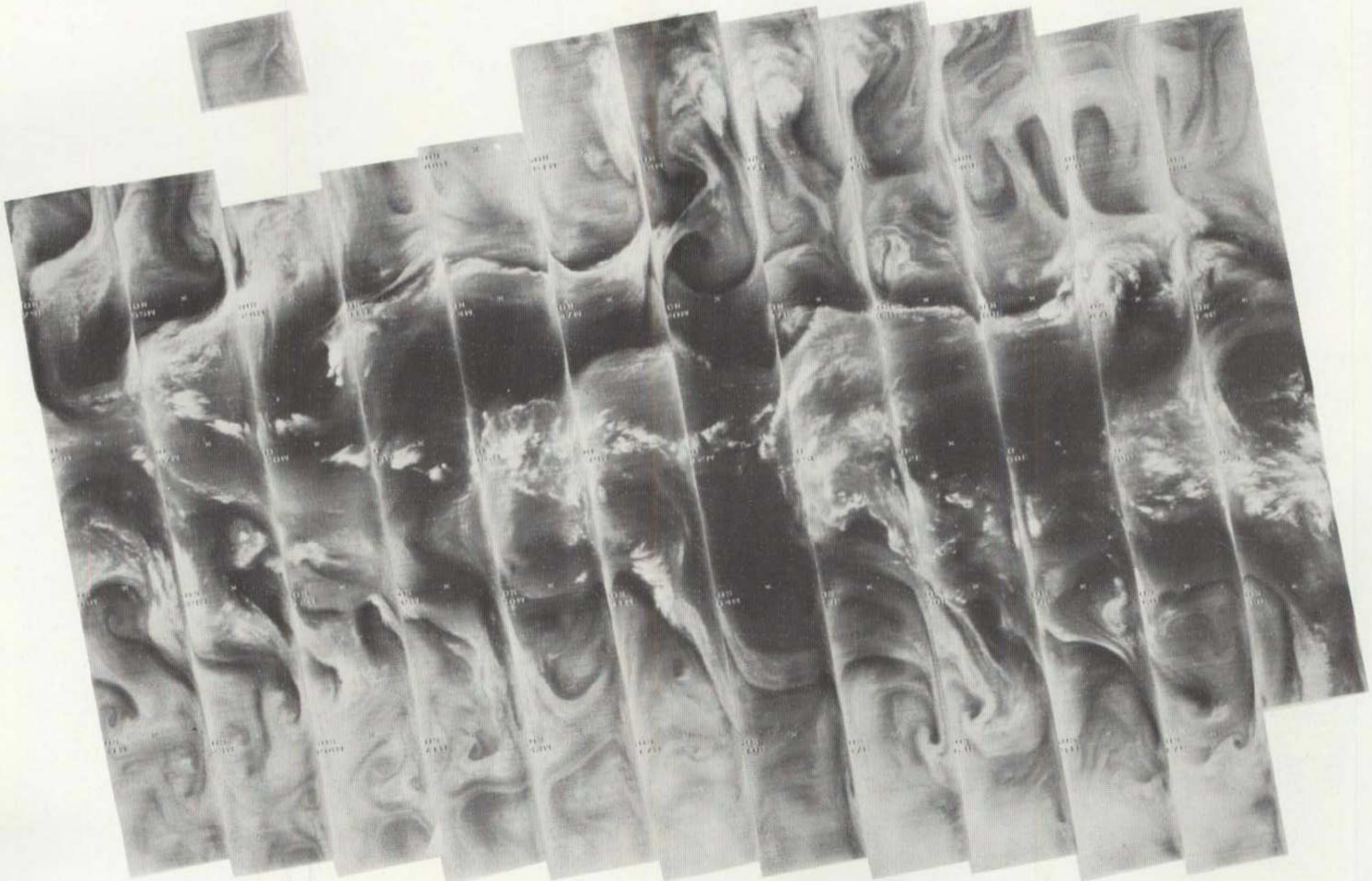

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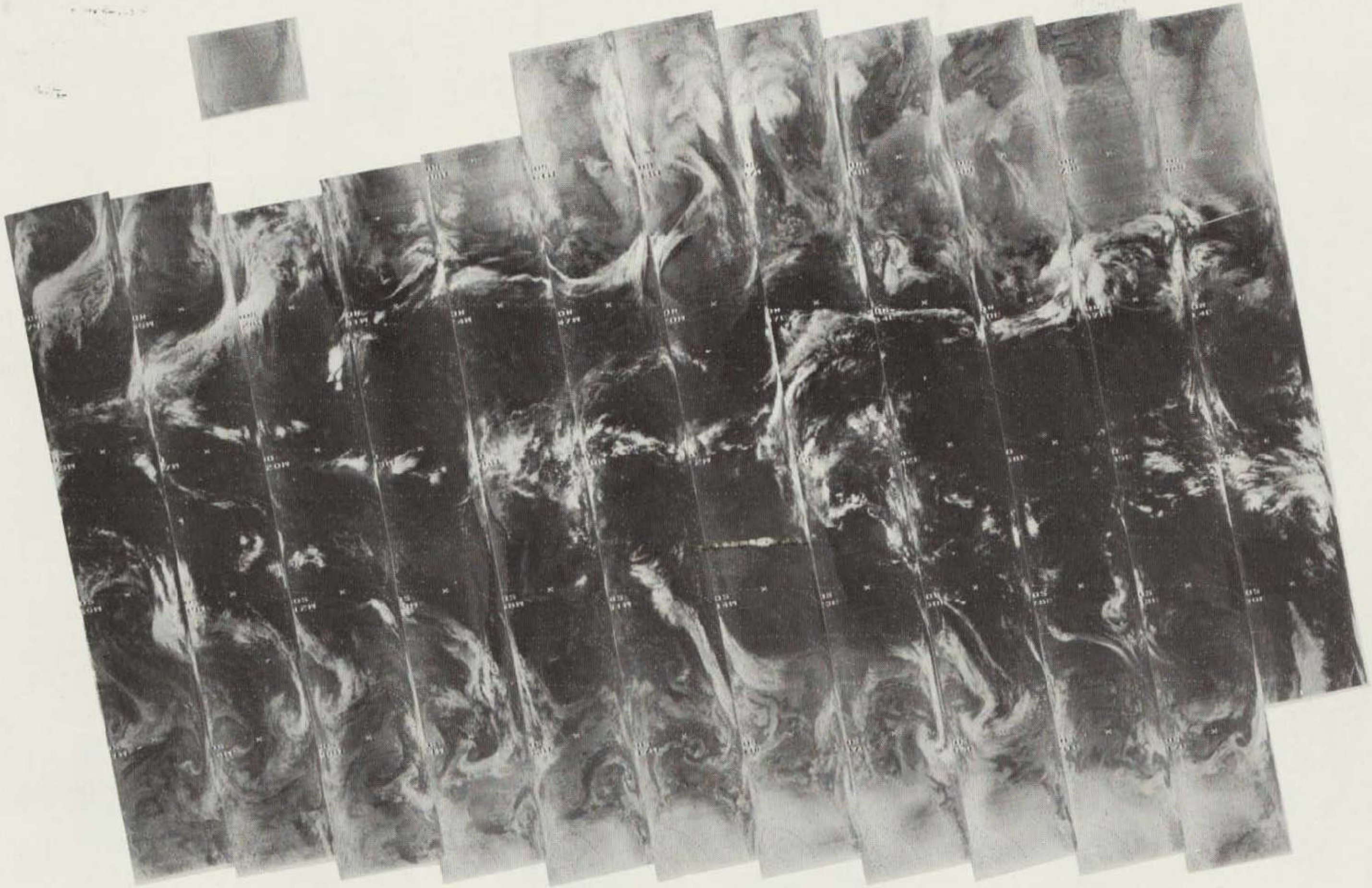

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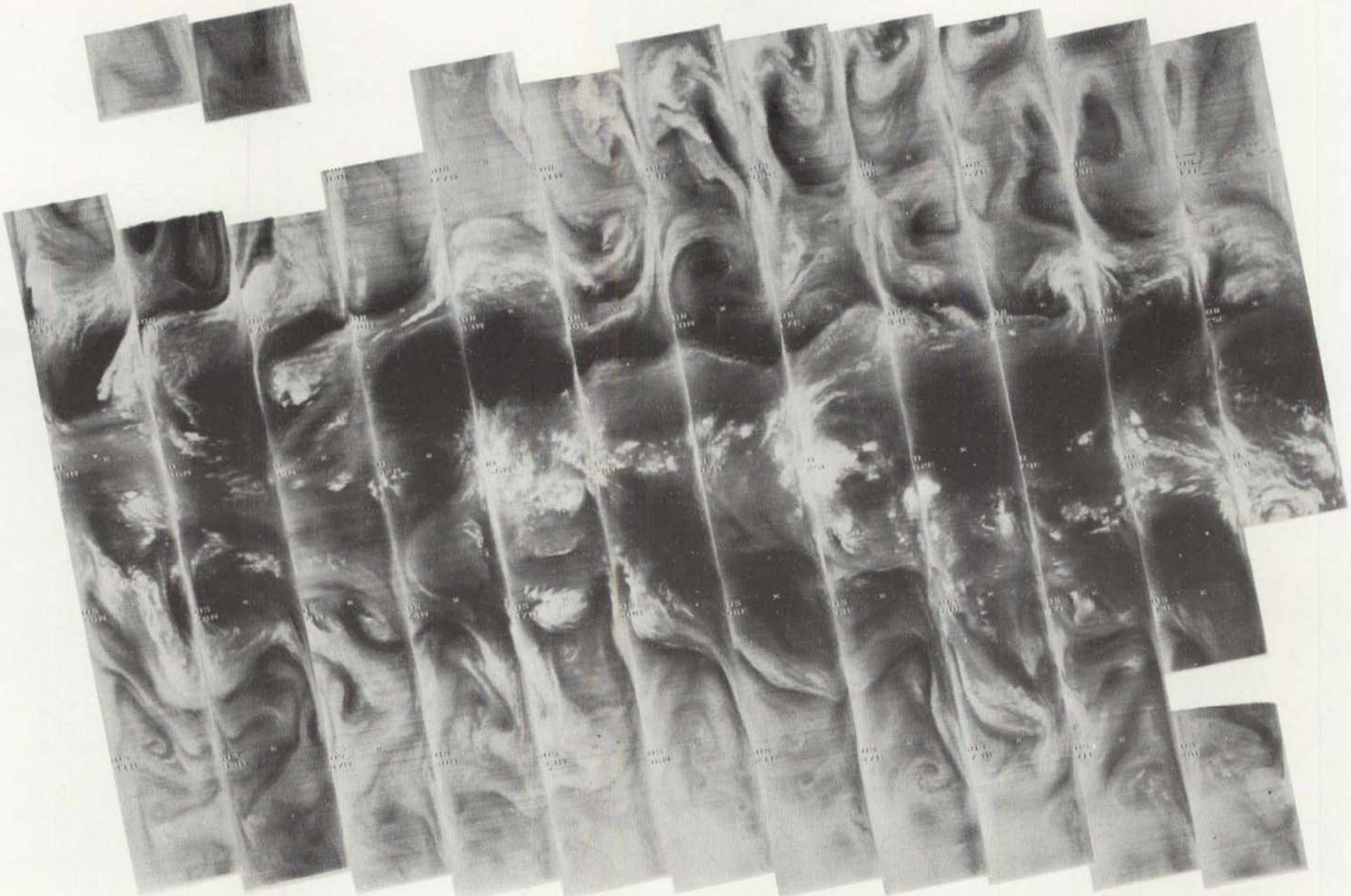

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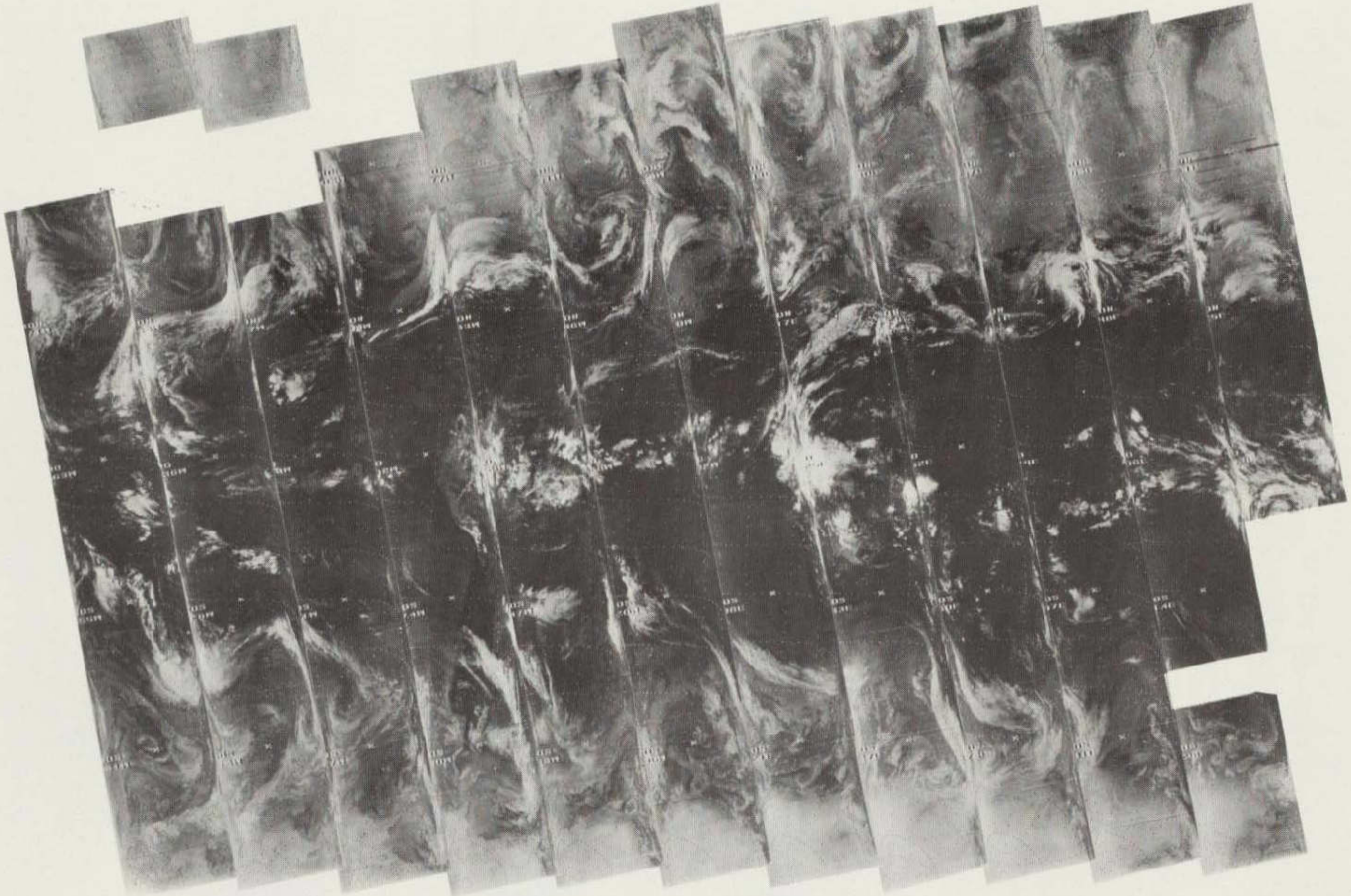

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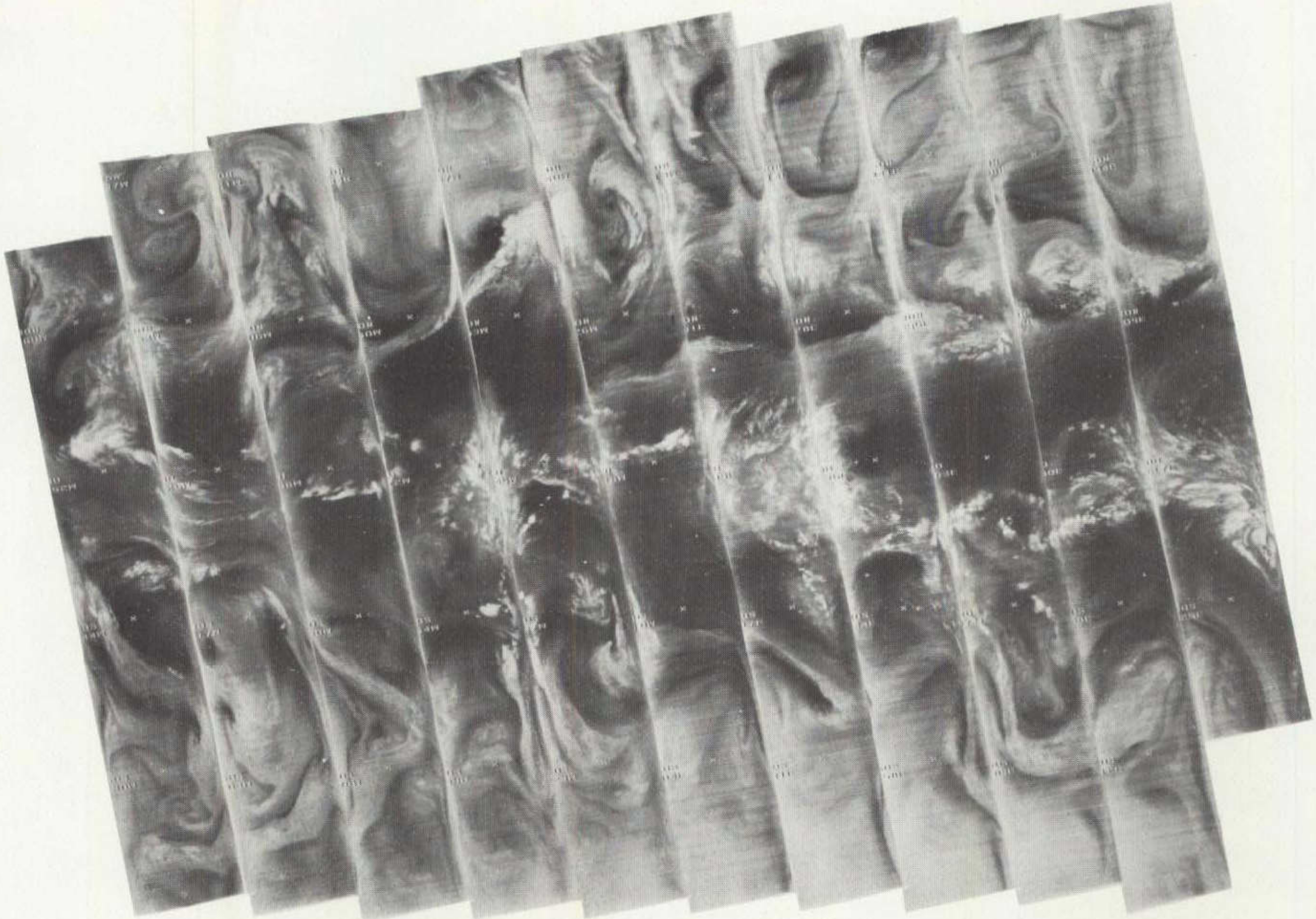

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17 MARCH 1976

6.7 μm

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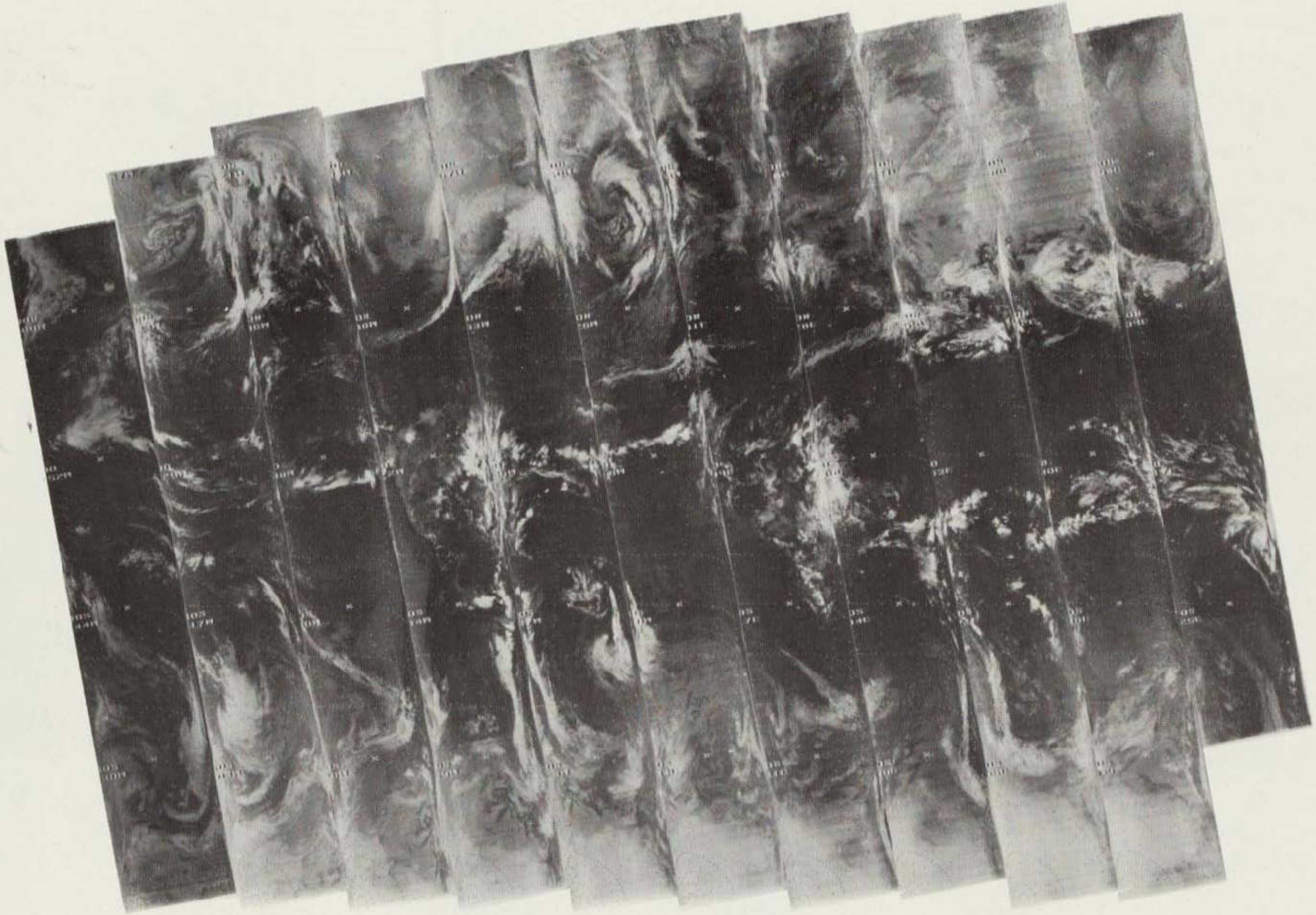

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17 MARCH 1976

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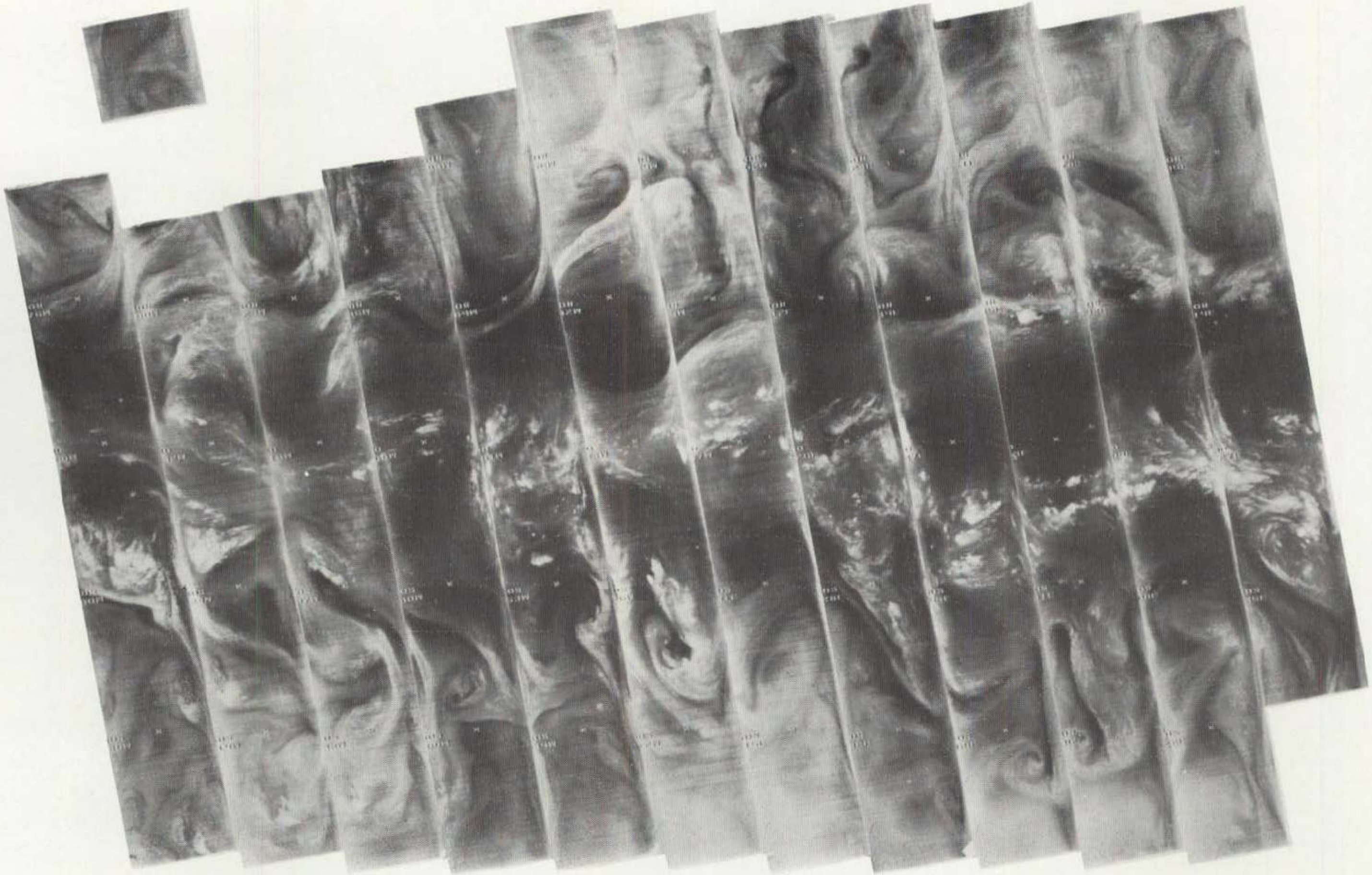

3762 3761 3760 3759 3758 3757 3756 3755 3754 3753 3752 3751 3750

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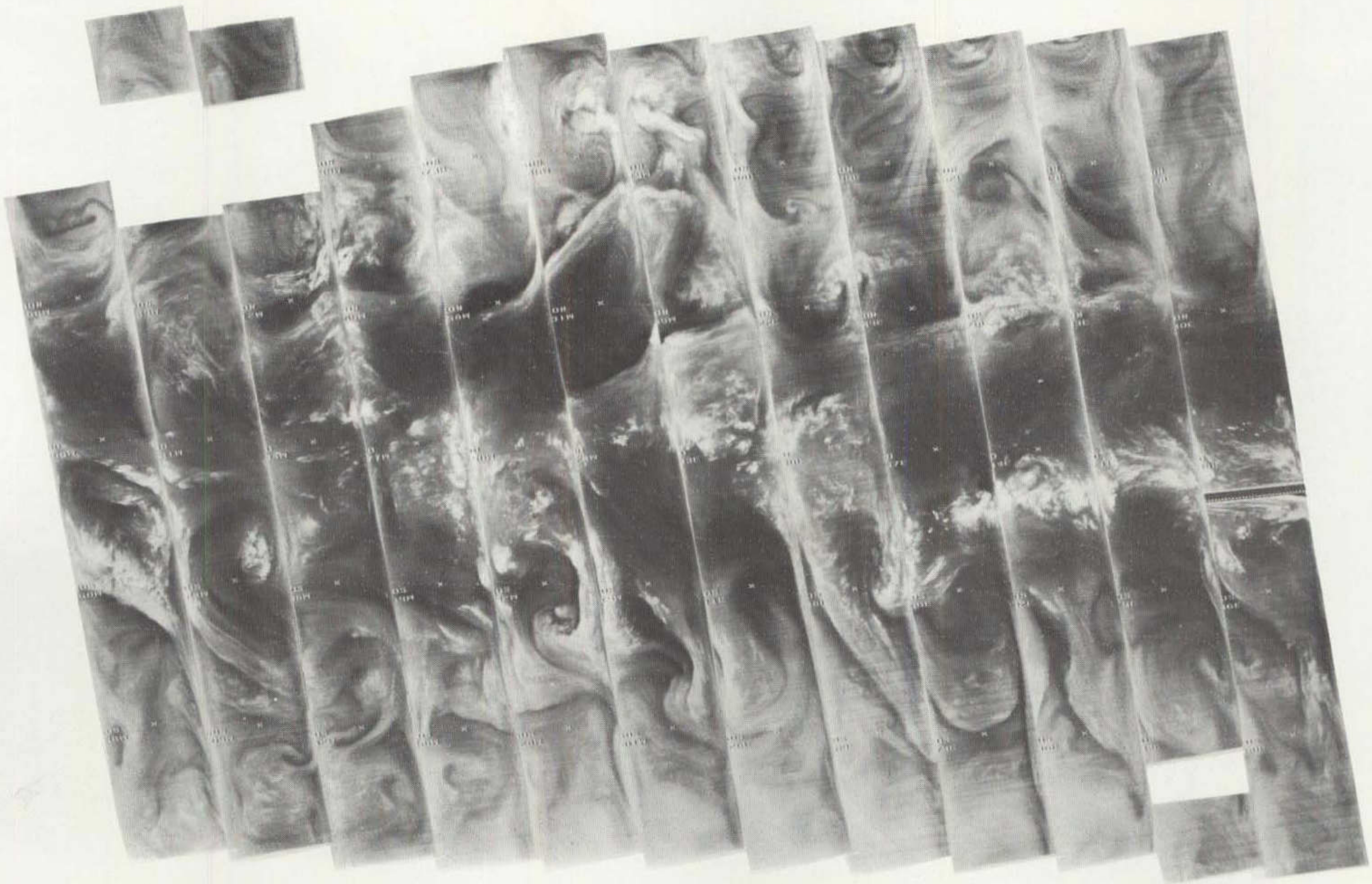

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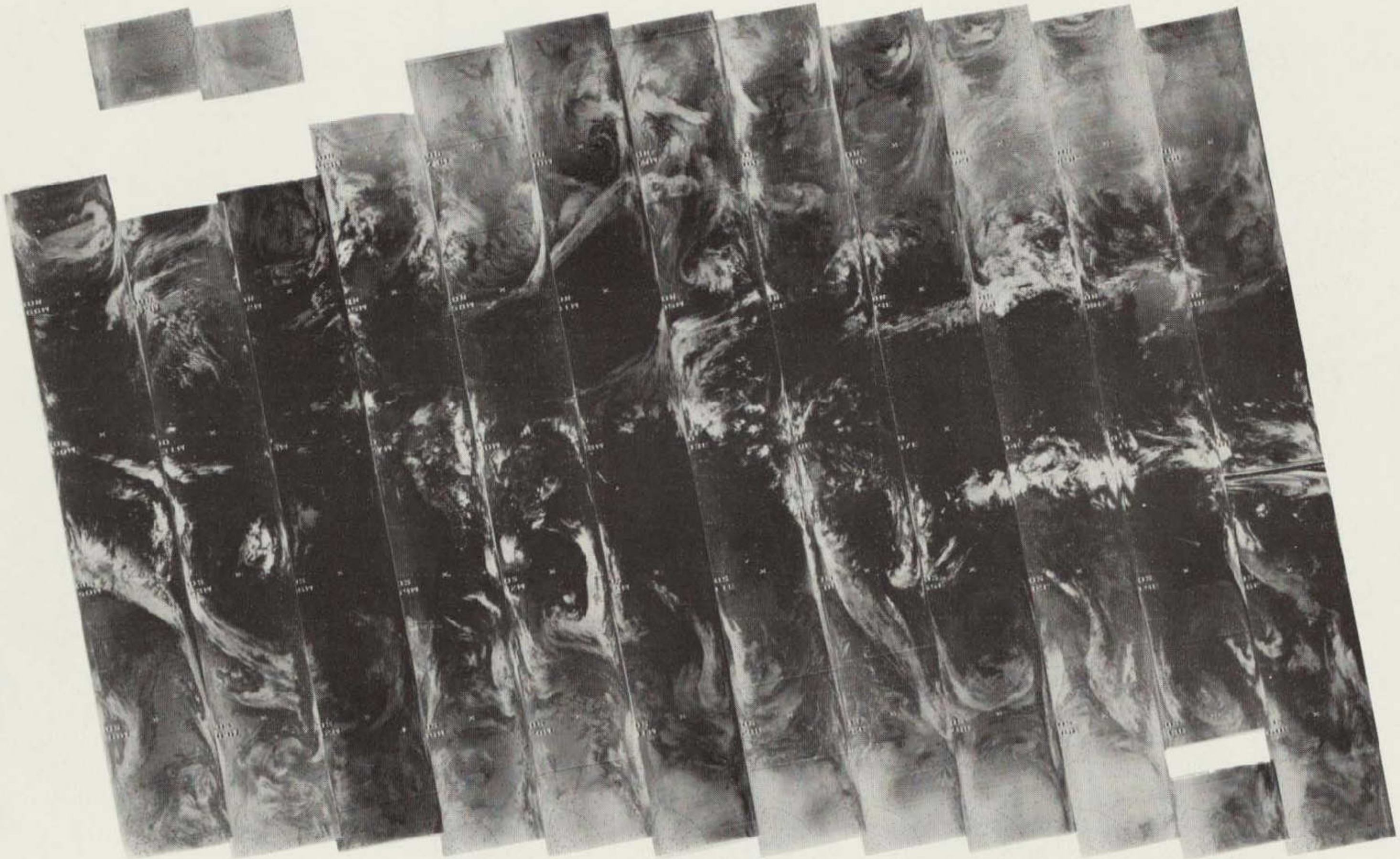
6.7 μm



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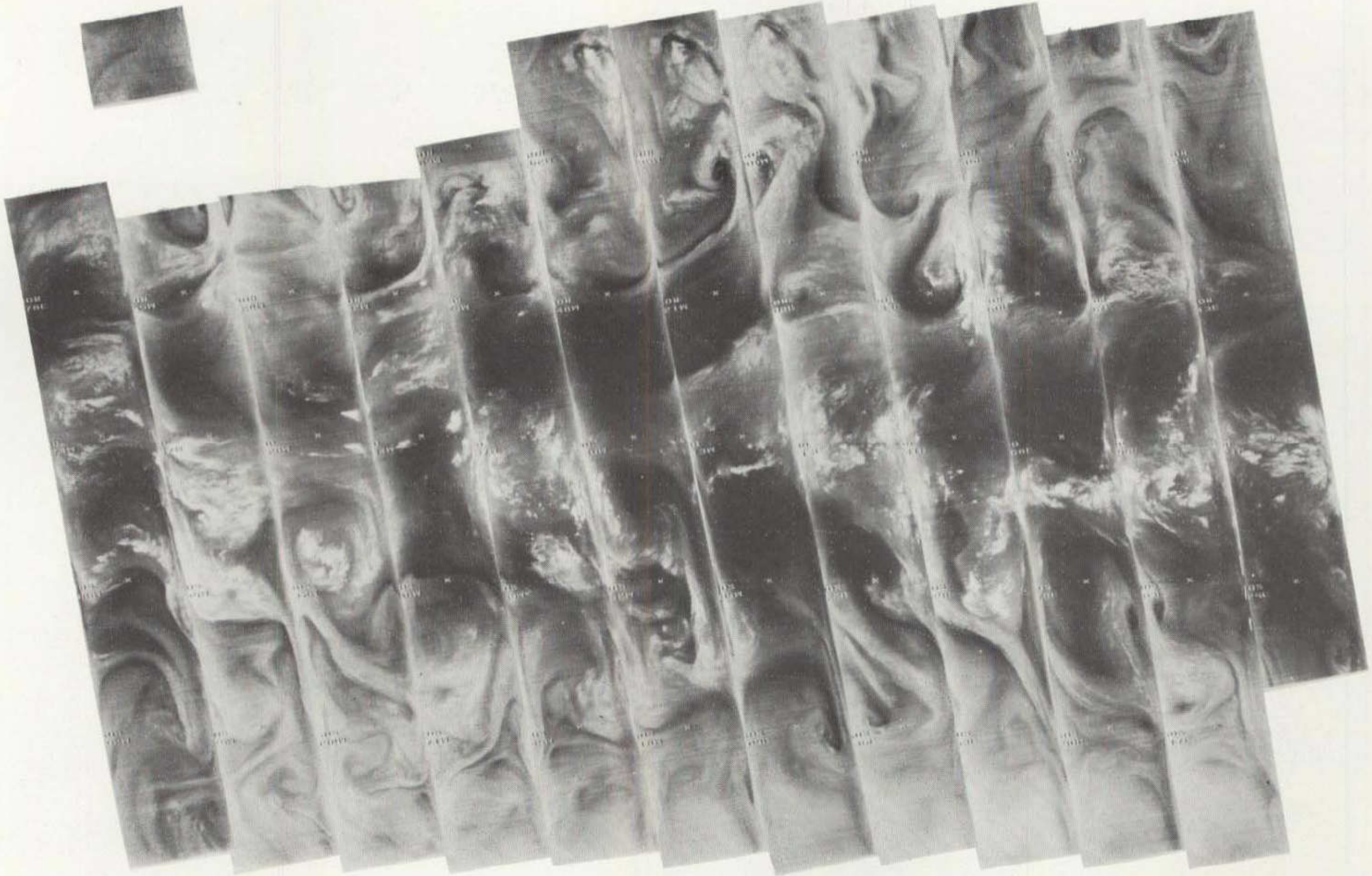

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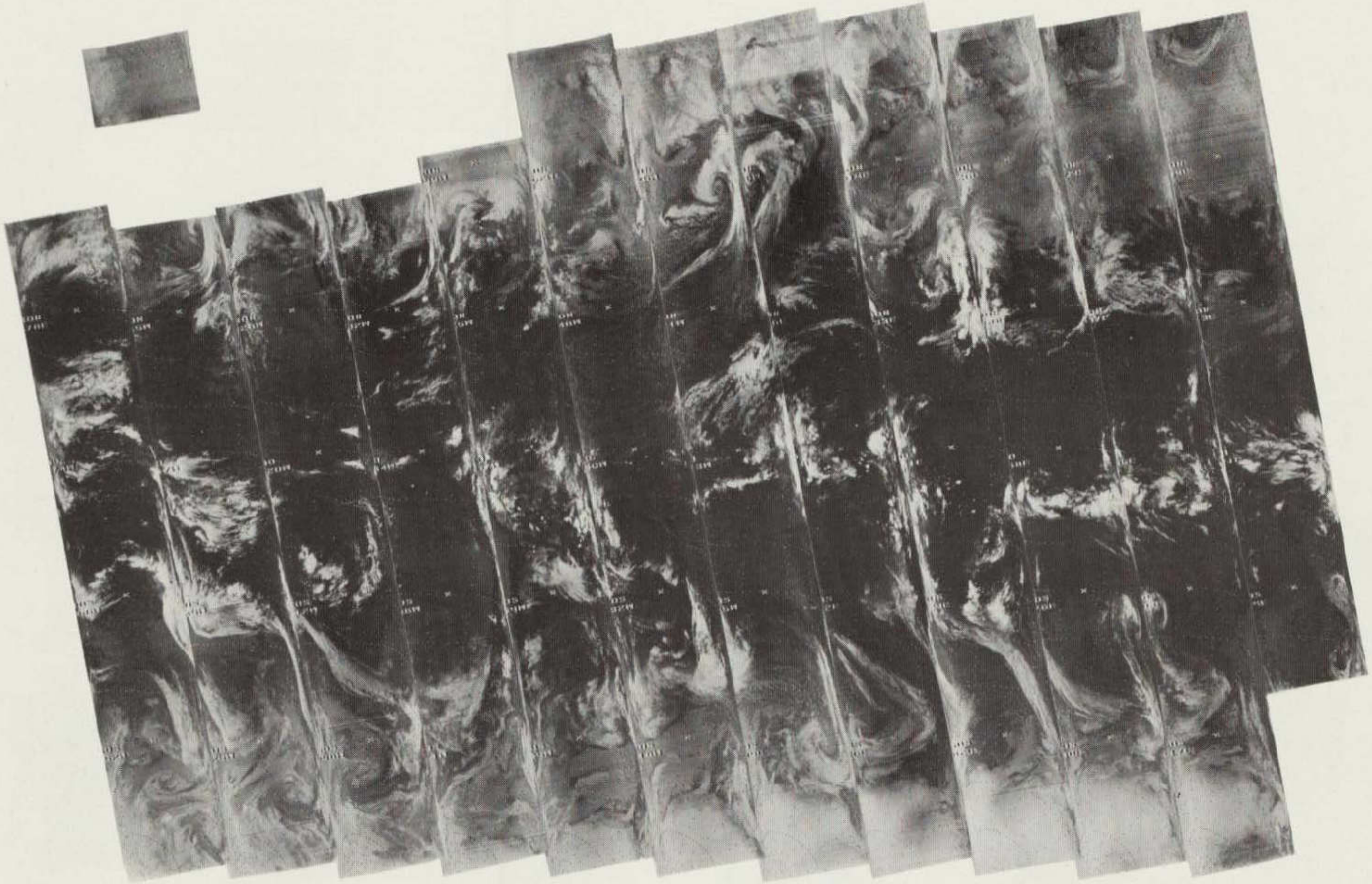
20 MARCH 1976

6.7 μm



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20 MARCH 1976

11.5 μm

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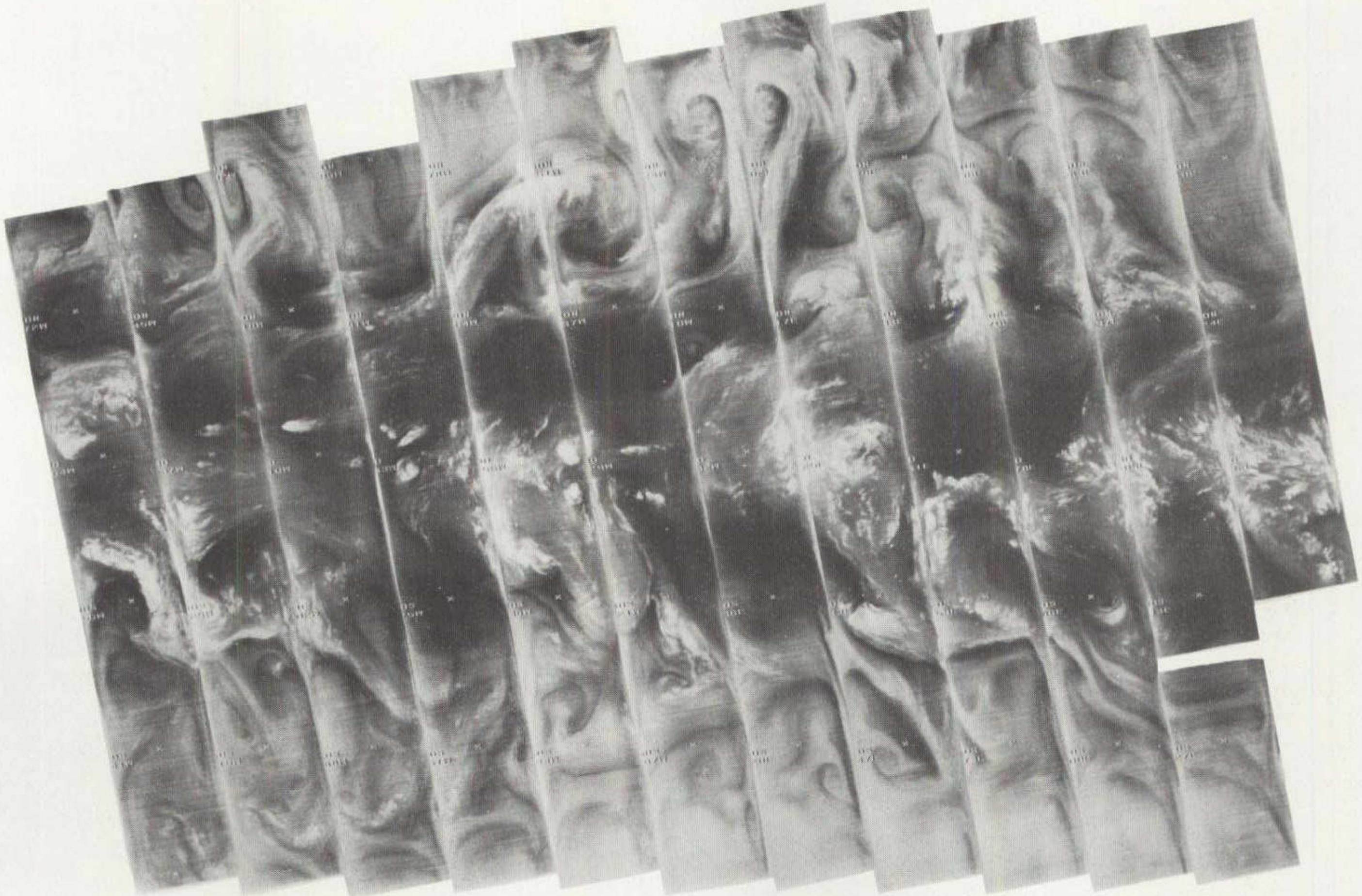

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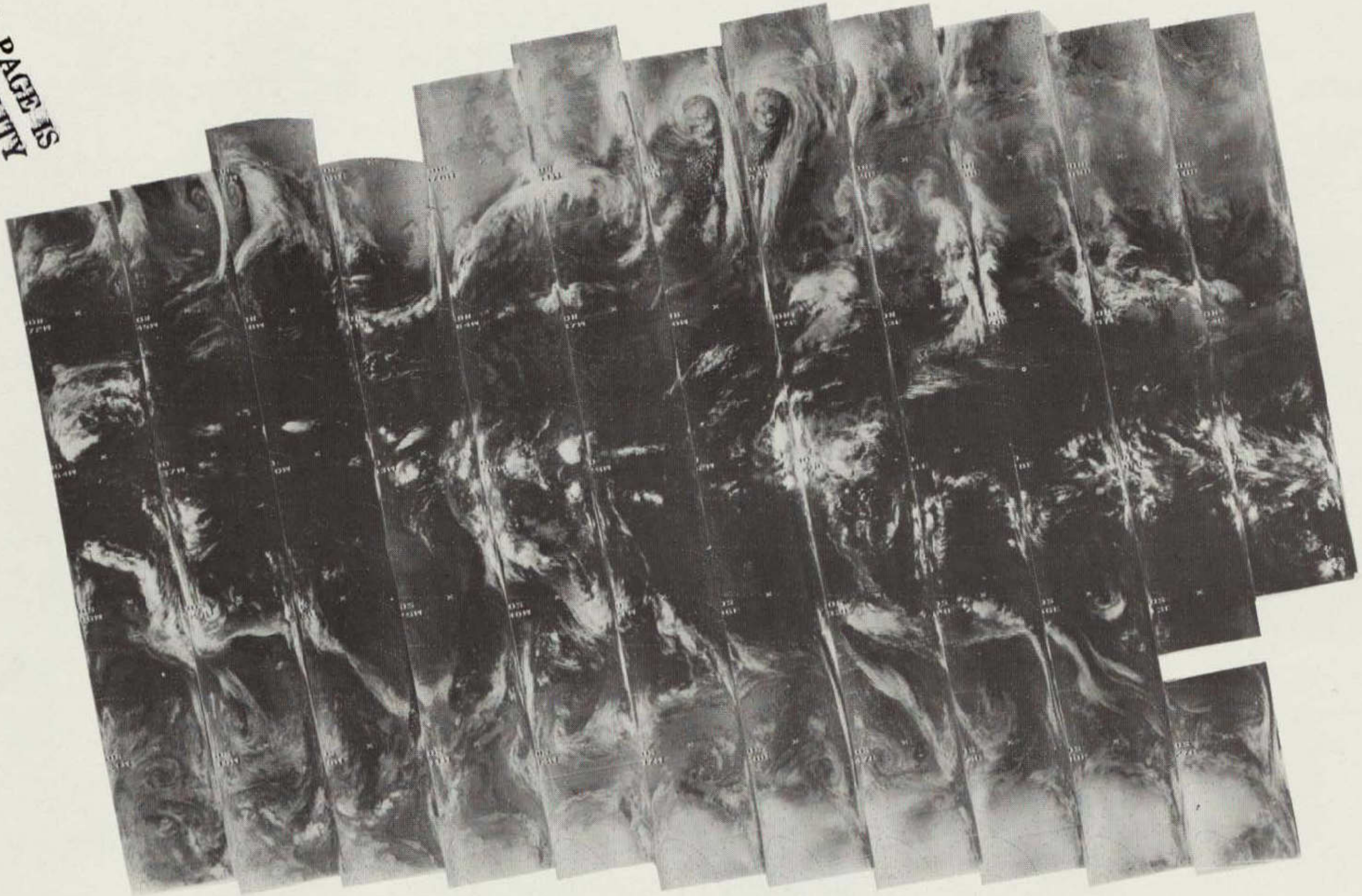

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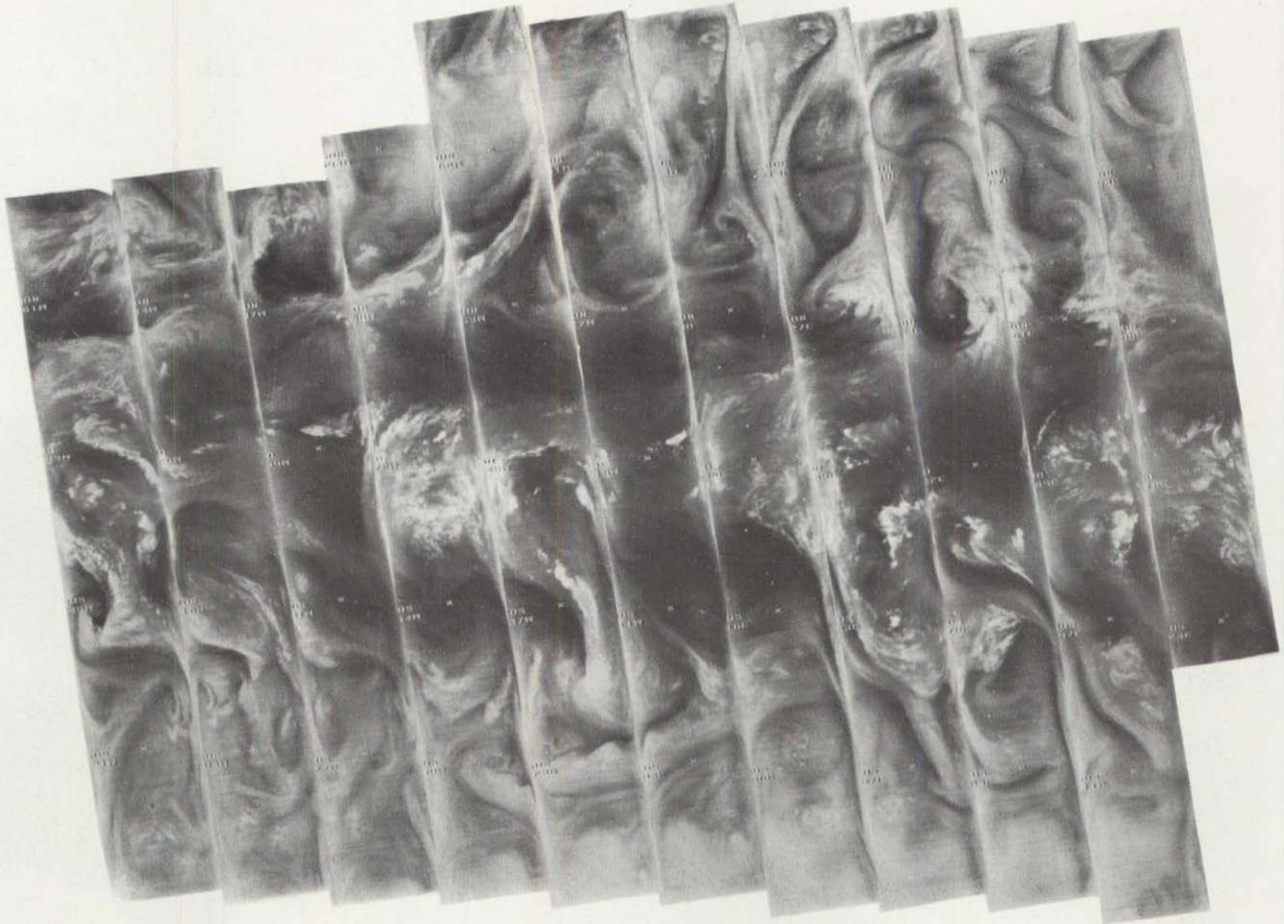

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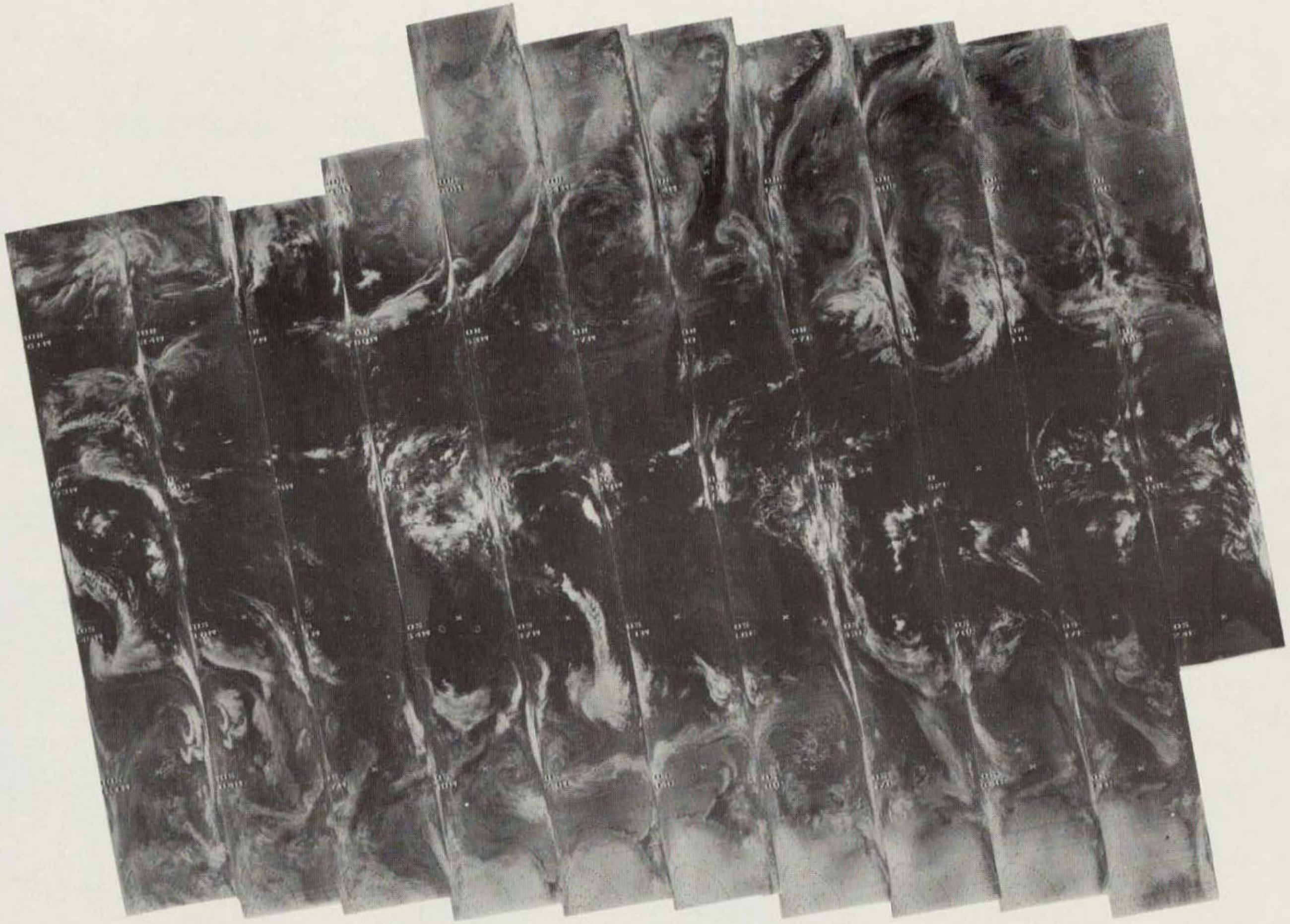
22 MARCH 1976

6.7 μm



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22 MARCH 1976

11.5 μm

3829 3828 3827 3826 3825 3824 3823 3822 3821 3820 3819 3818 3817

23 MARCH 1976

6.7 μm

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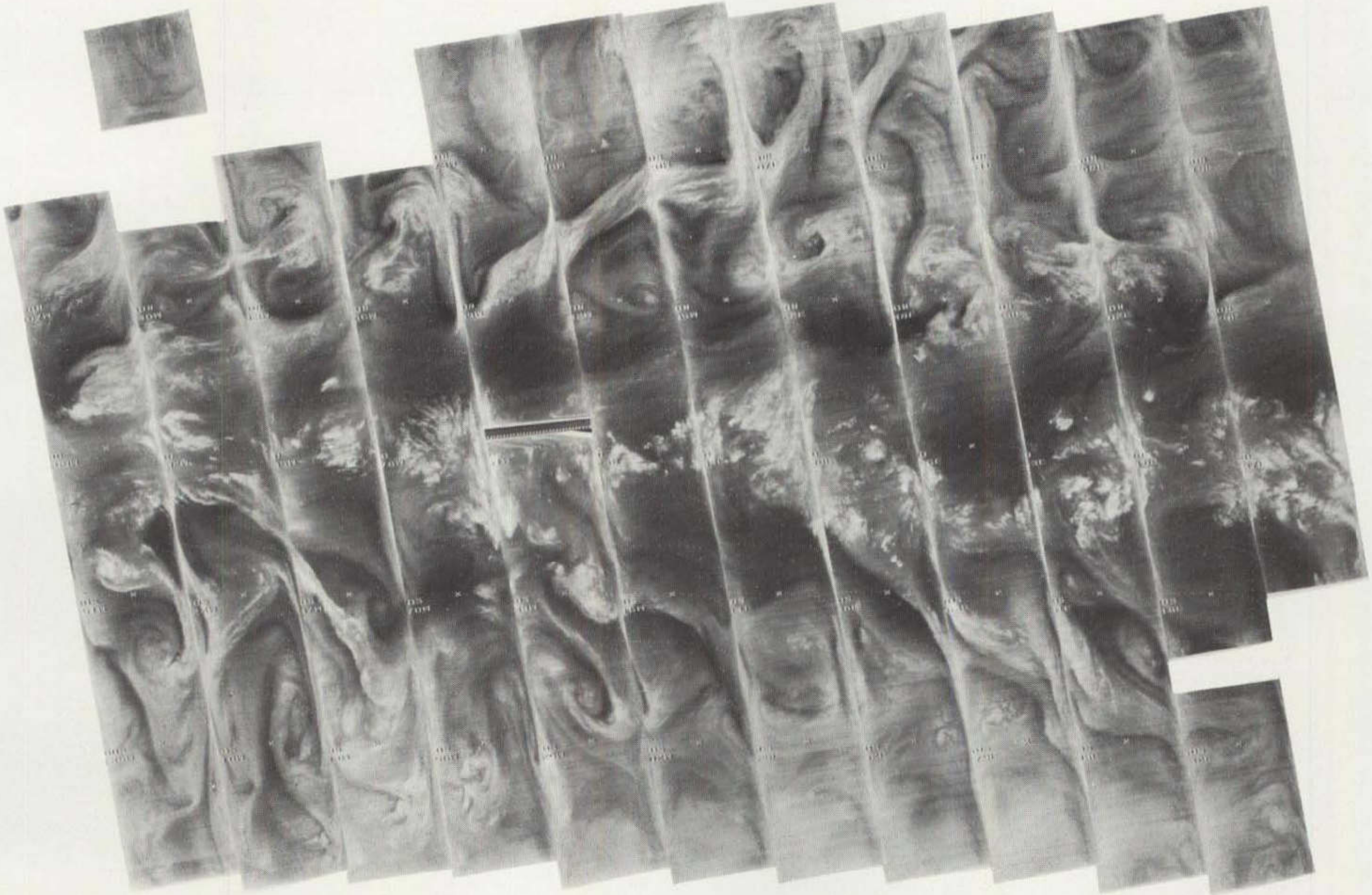
23 MARCH 1976

11.5 μm



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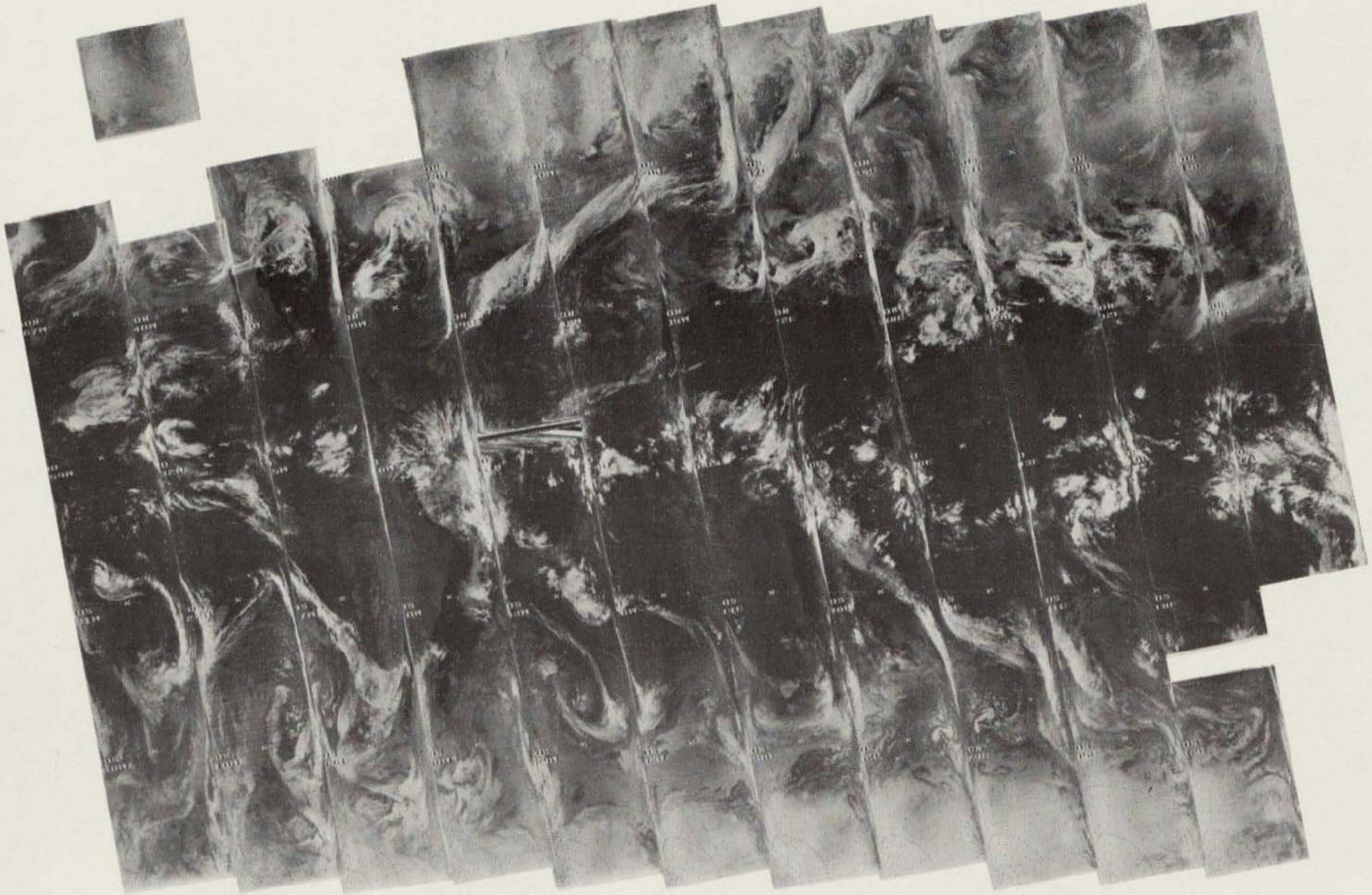
24 MARCH 1976

6.7 μm



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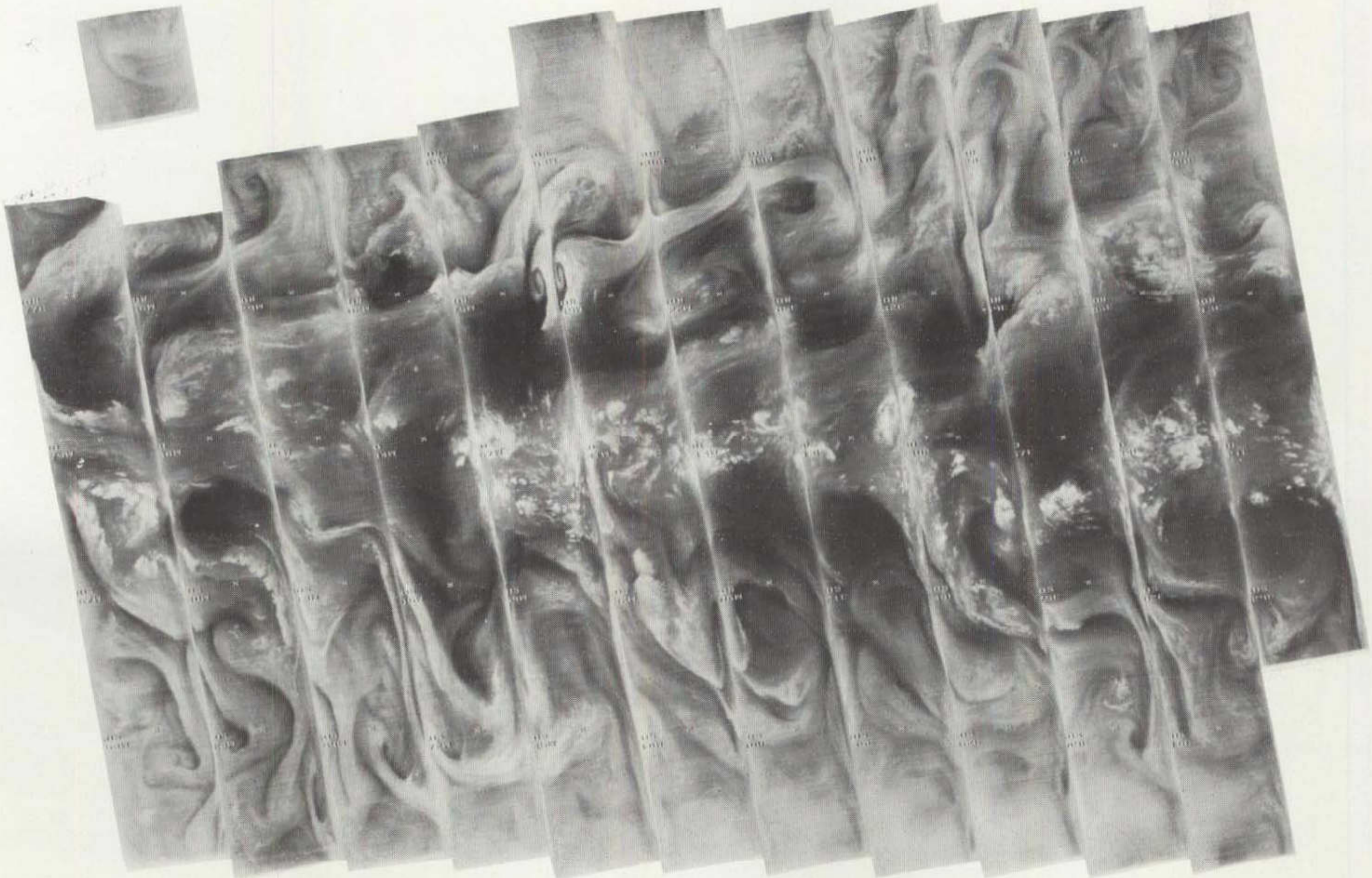

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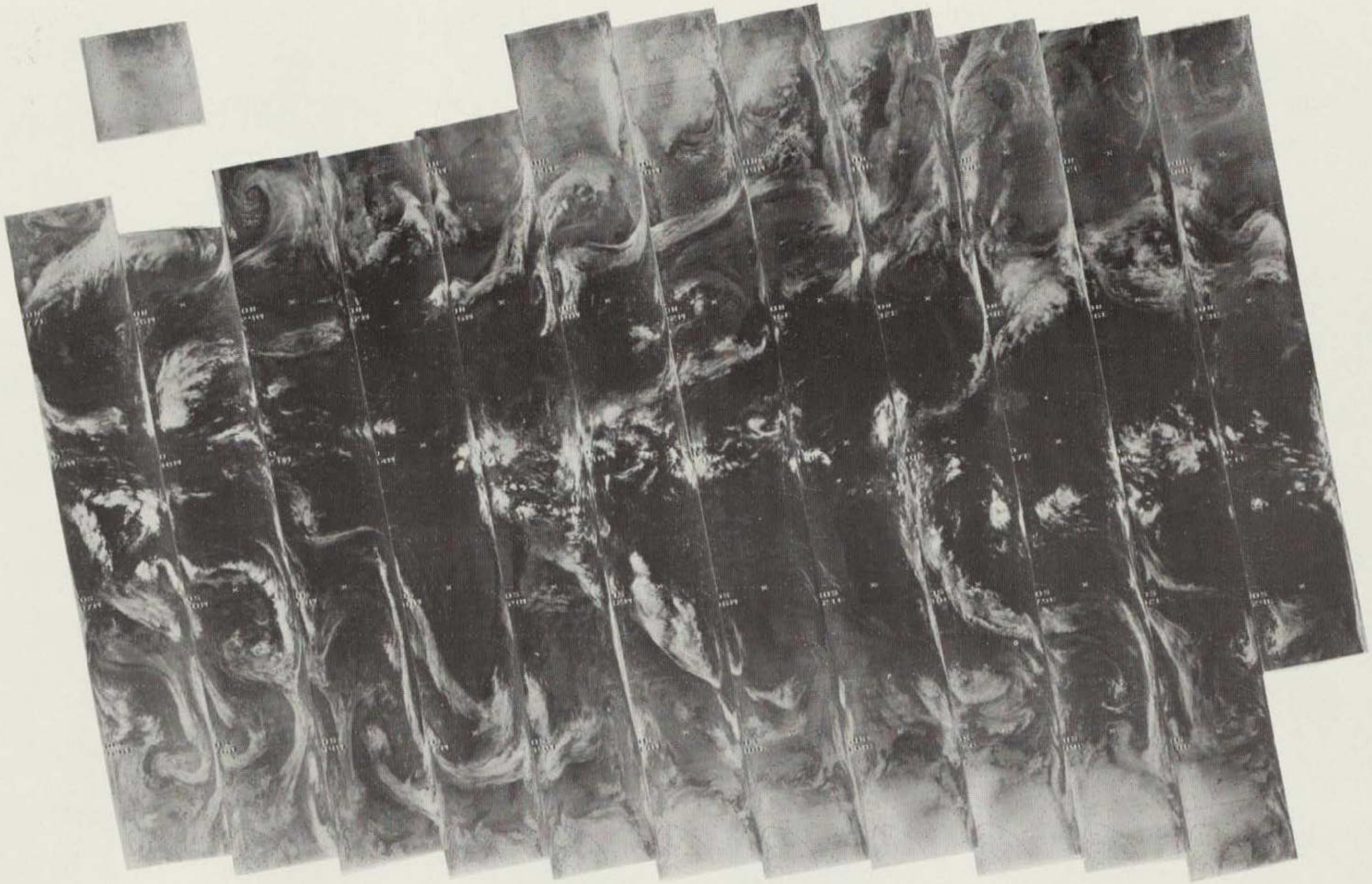

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26 MARCH 1976

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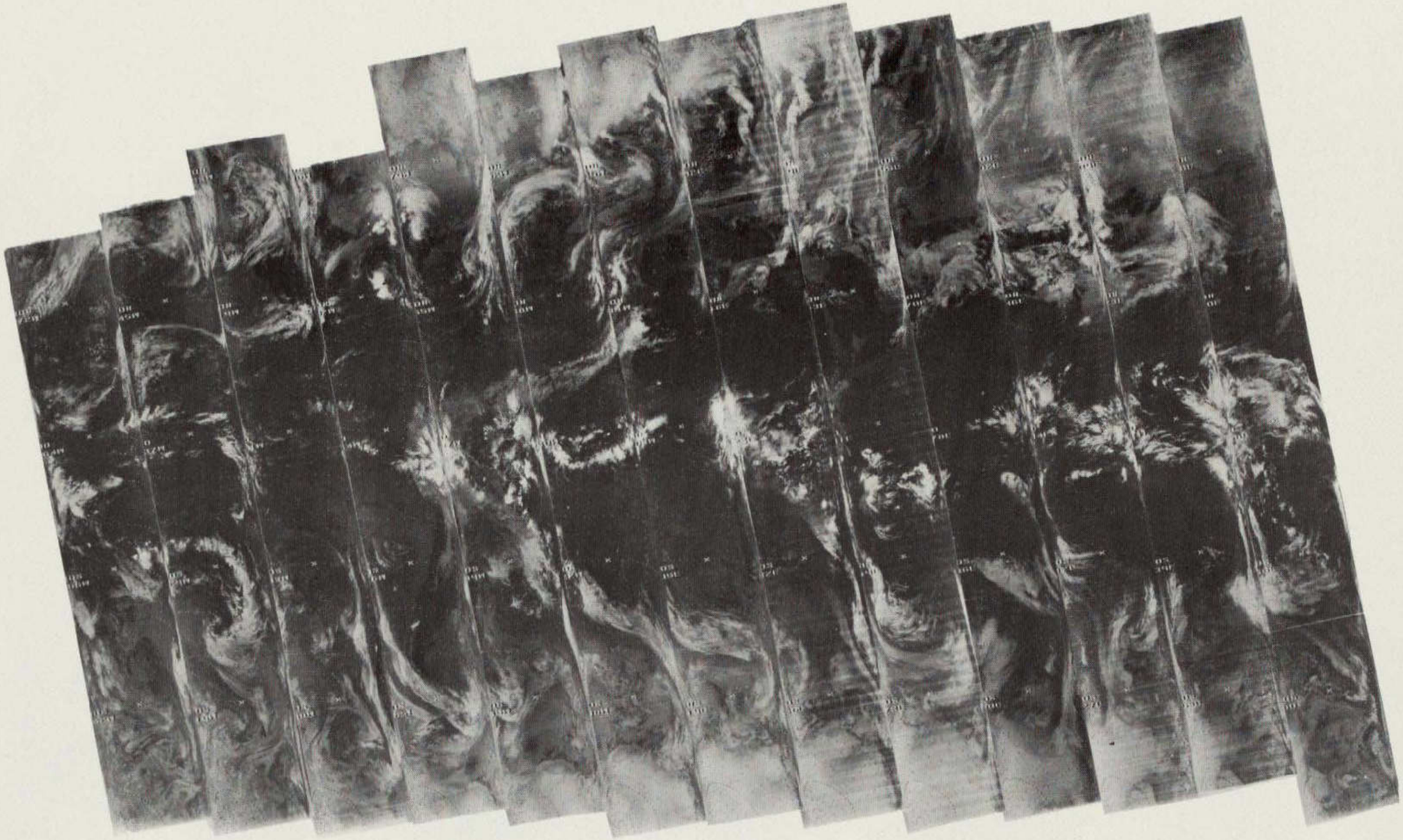

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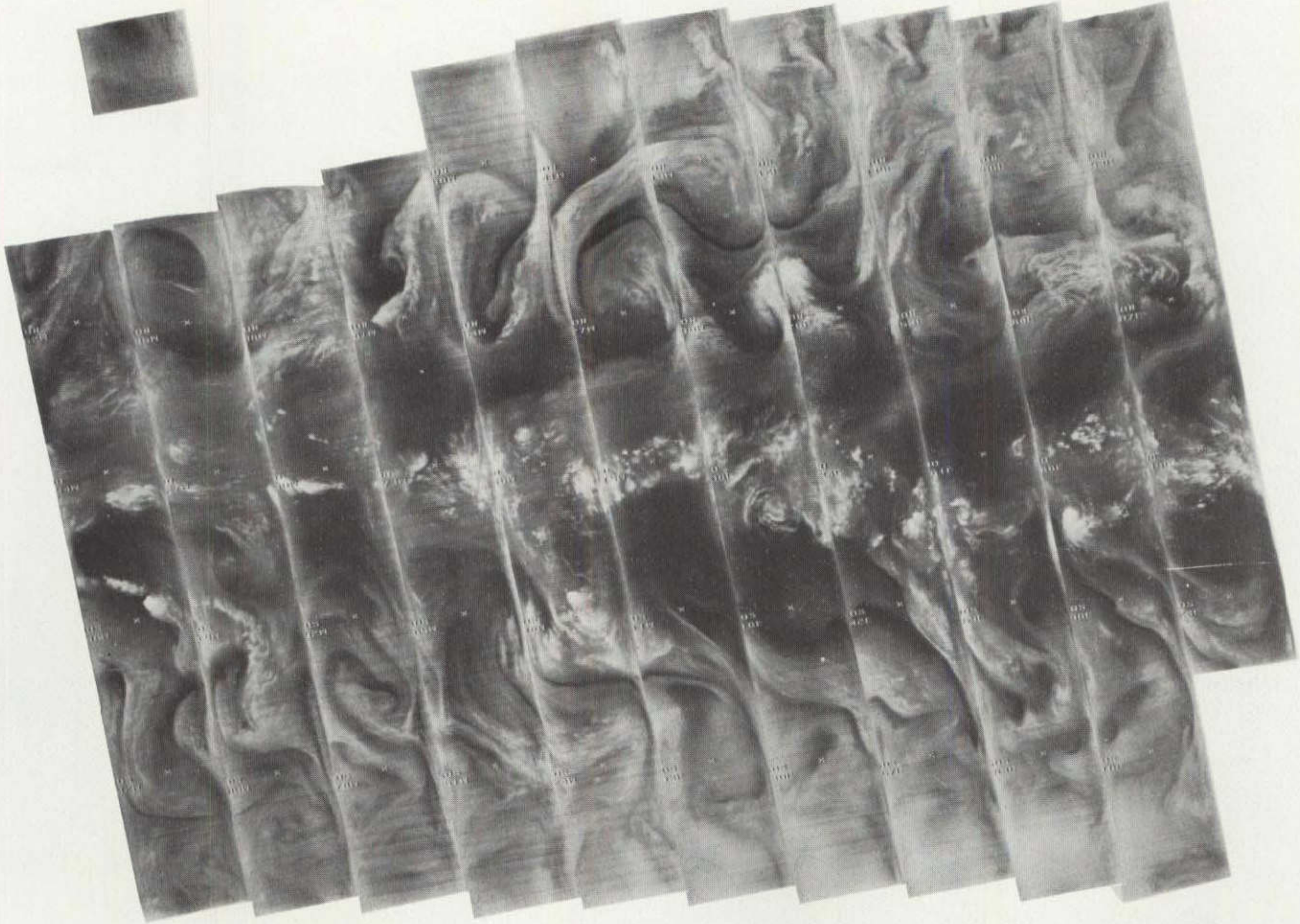

3883 3882 3881 3880 3879 3878 3877 3876 3875 3874 3873 3872 3871 3870

27 MARCH 1976

6.7 μm

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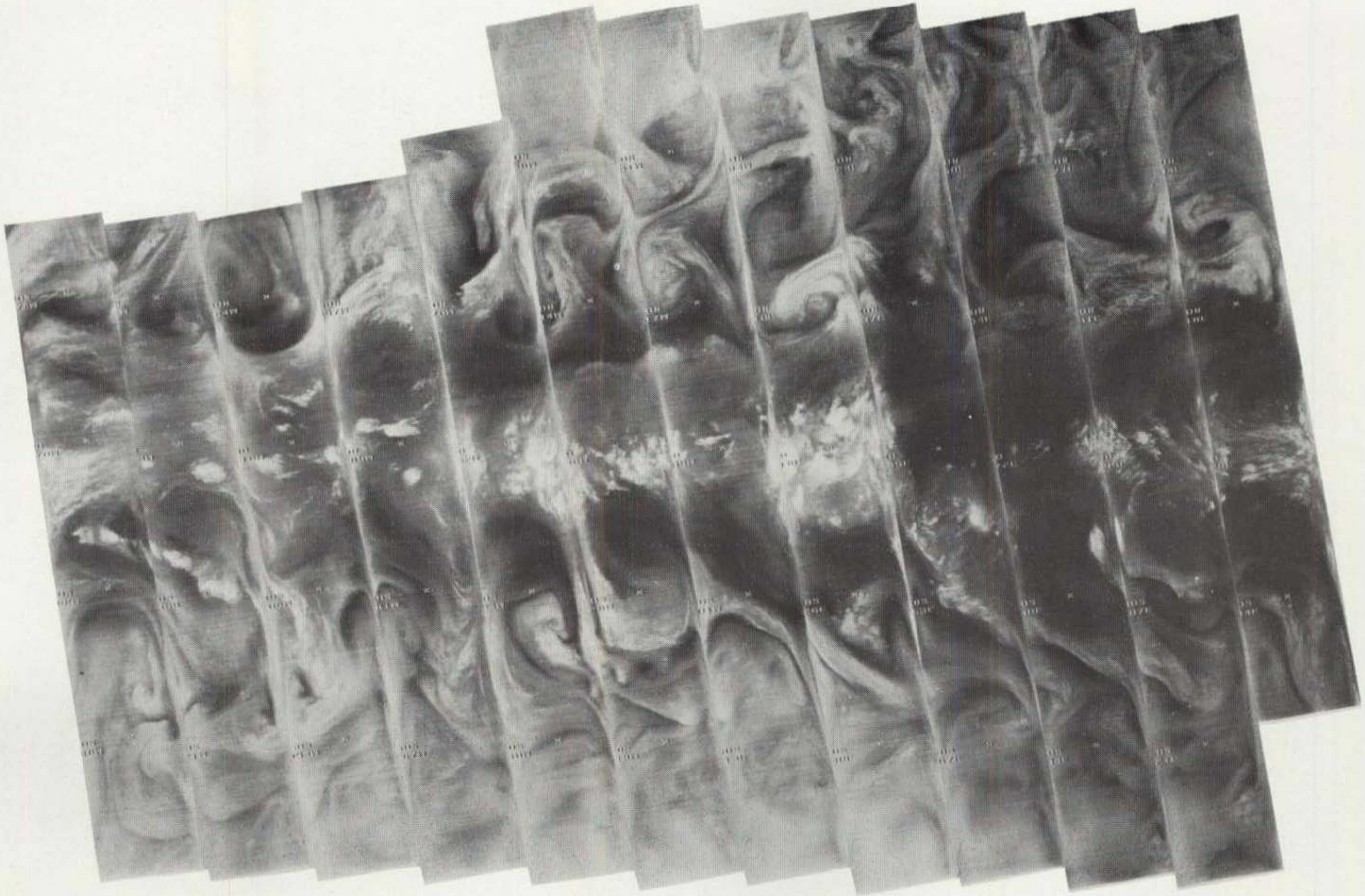

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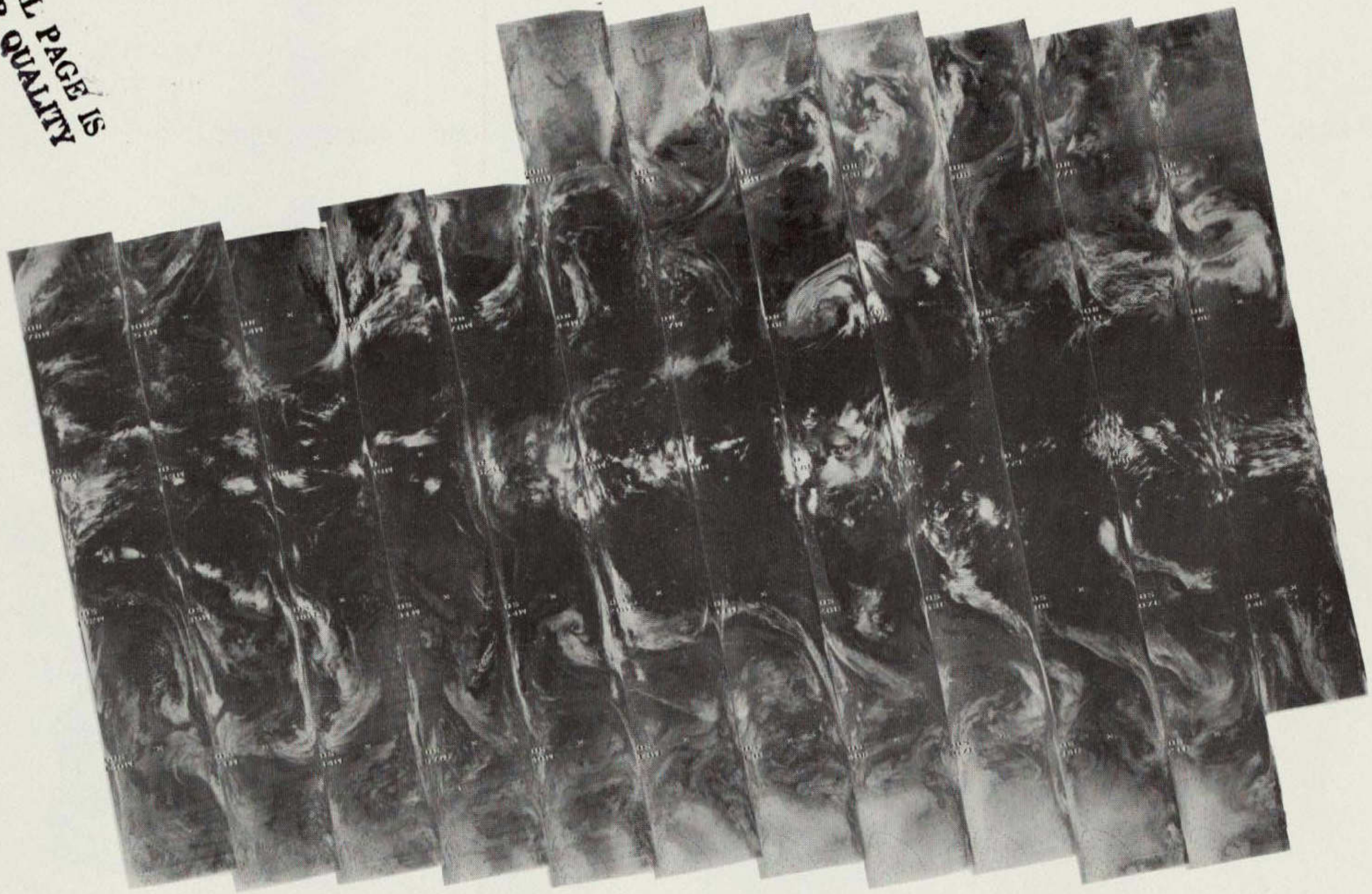

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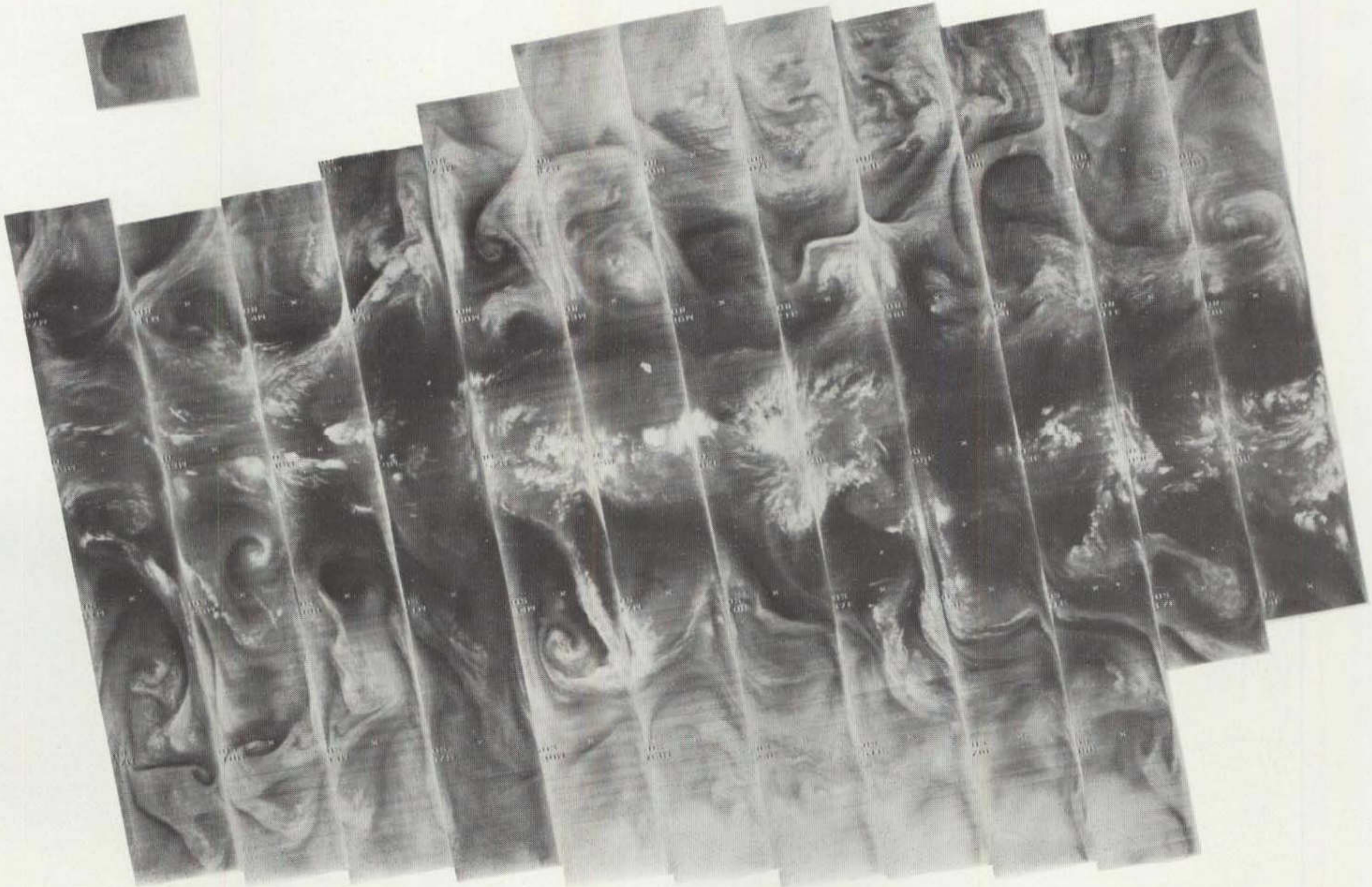

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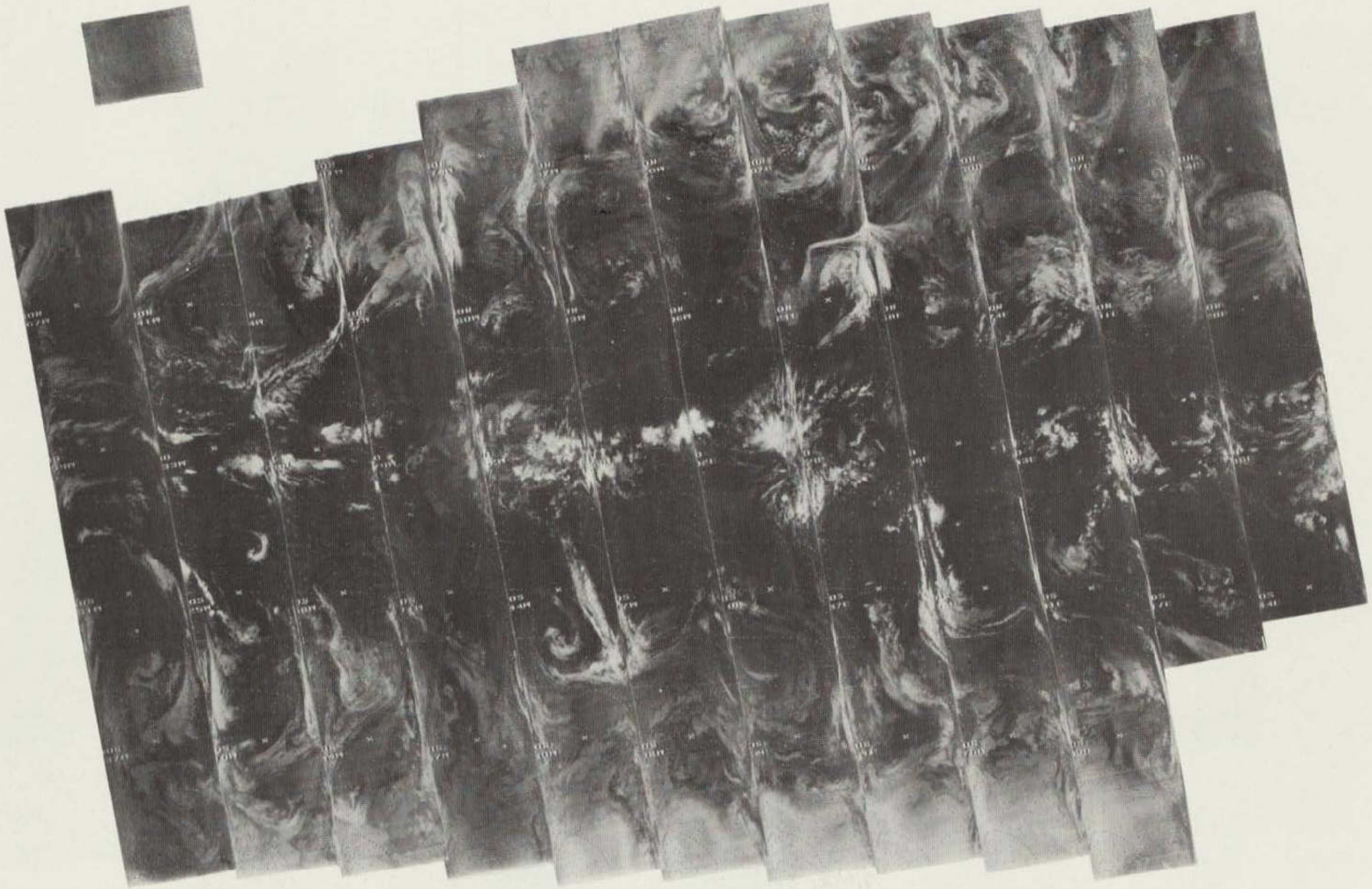

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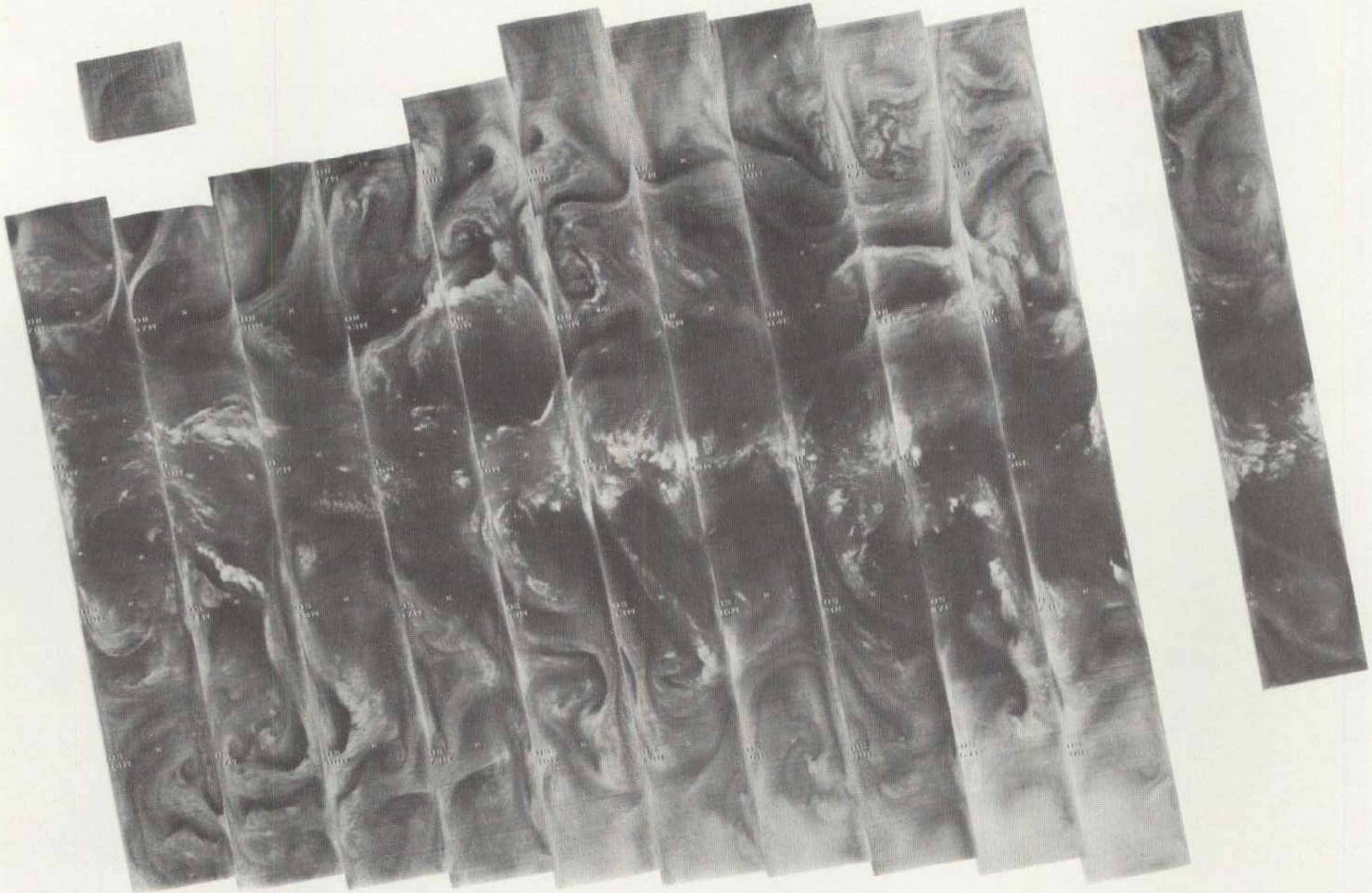


3923 3922 3921 3920 3919 3918 3917 3916 3915 3914 3913 3912 3911 3910

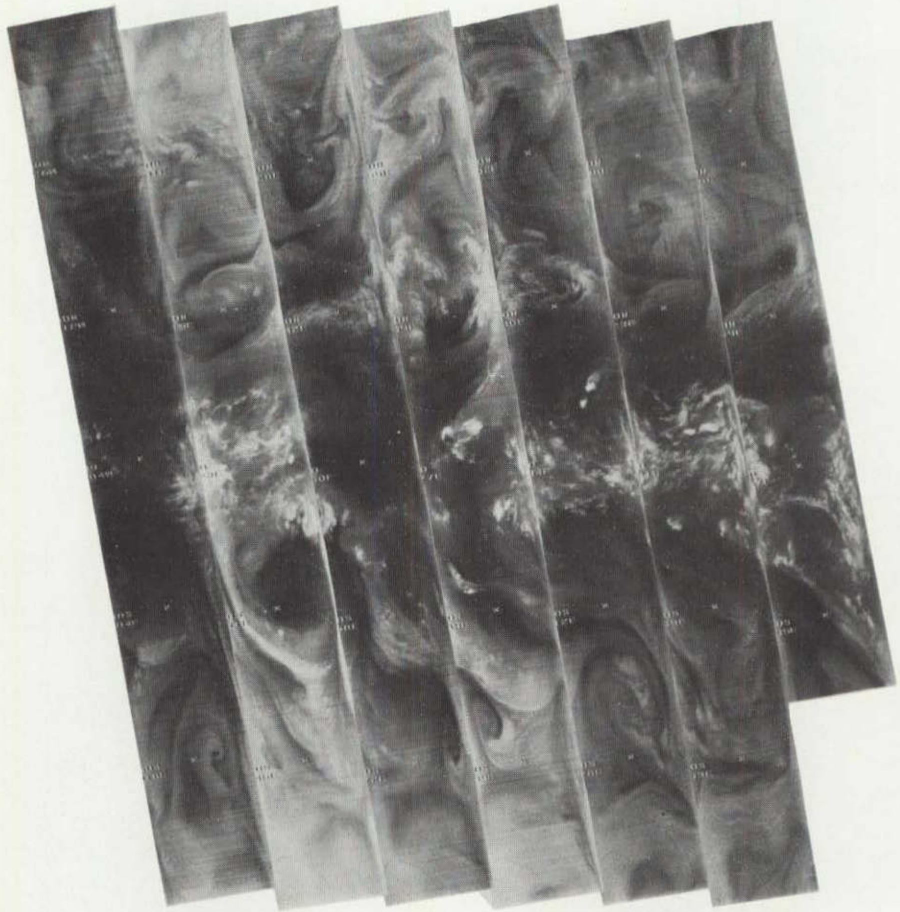
30 MARCH 1976

6.7 μm

3923 3922 3921 3920 3919 3918 3917 3916 3915 3914 3913 3912 3911 3910

30 MARCH 1976

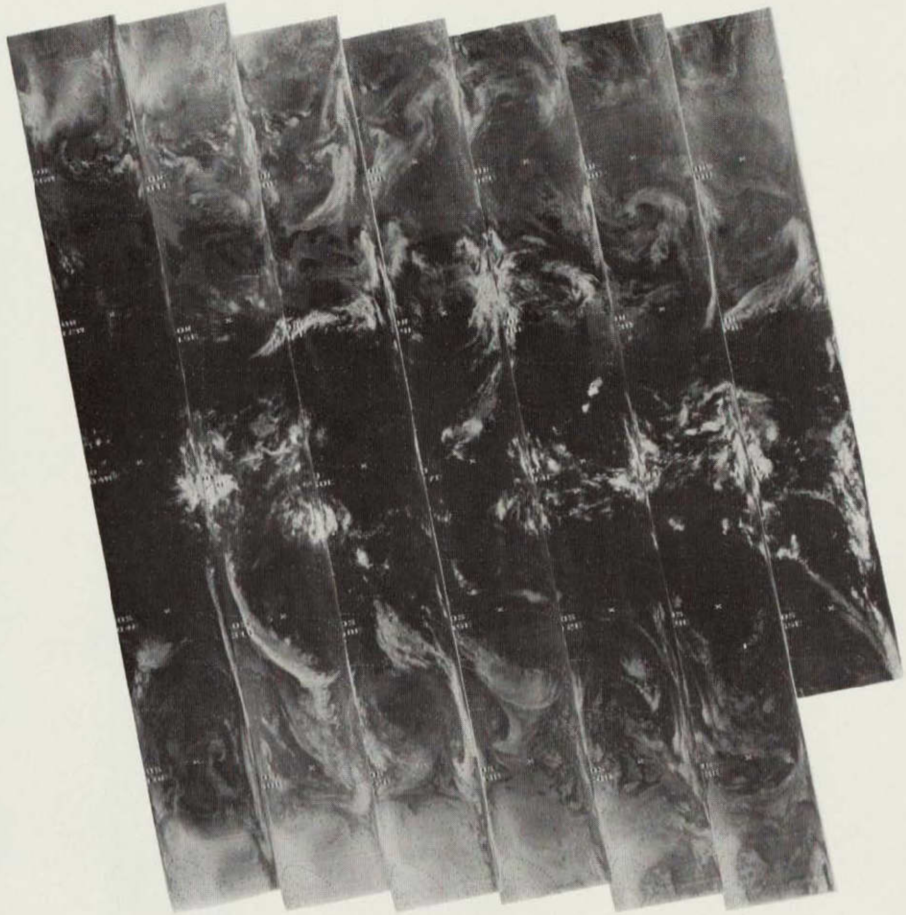
11.5 μm



3936 3935 3934 3933 3932 3931 3930 3929 3928 3927 3926 3925 3924

31 MARCH 1976

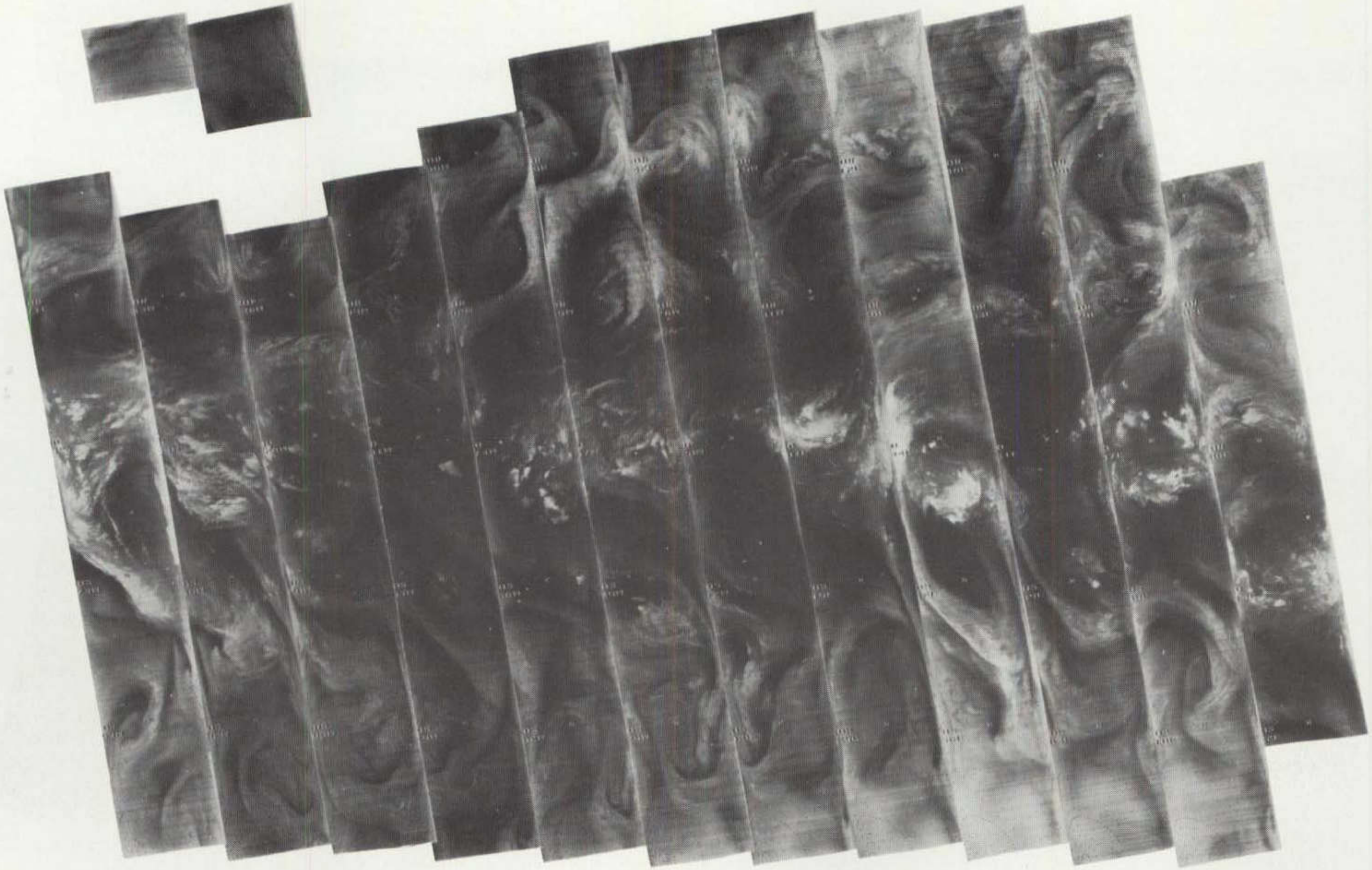
6.7 μm



3936 3935 3934 3933 3932 3931 3930 3929 3928 3927 3926 3925 3924

31 MARCH 1976

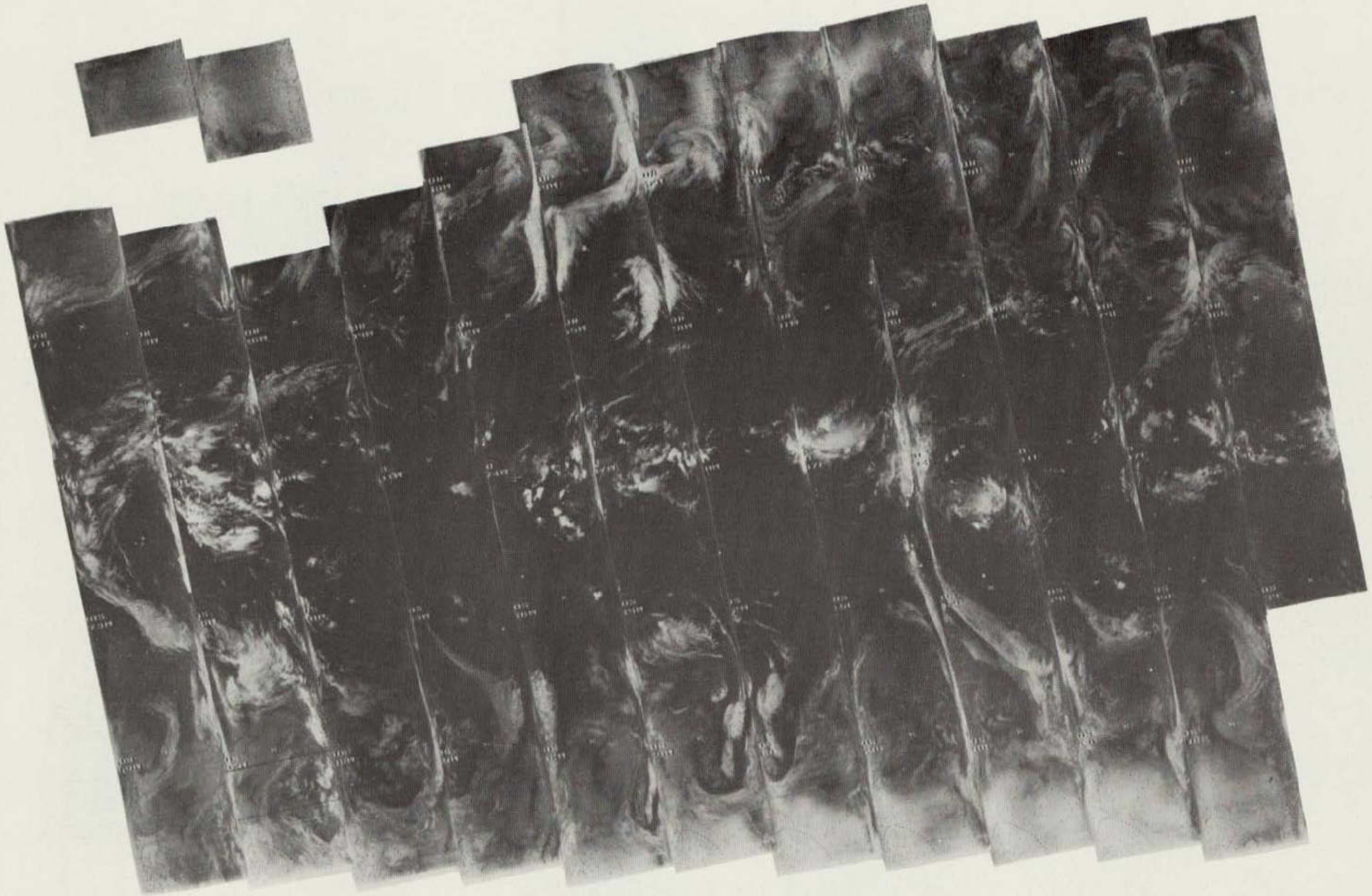
11.5 μm



3950 3949 3948 3947 3946 3945 3944 3943 3942 3941 3940 3939 3938 3937

1 APRIL 1976

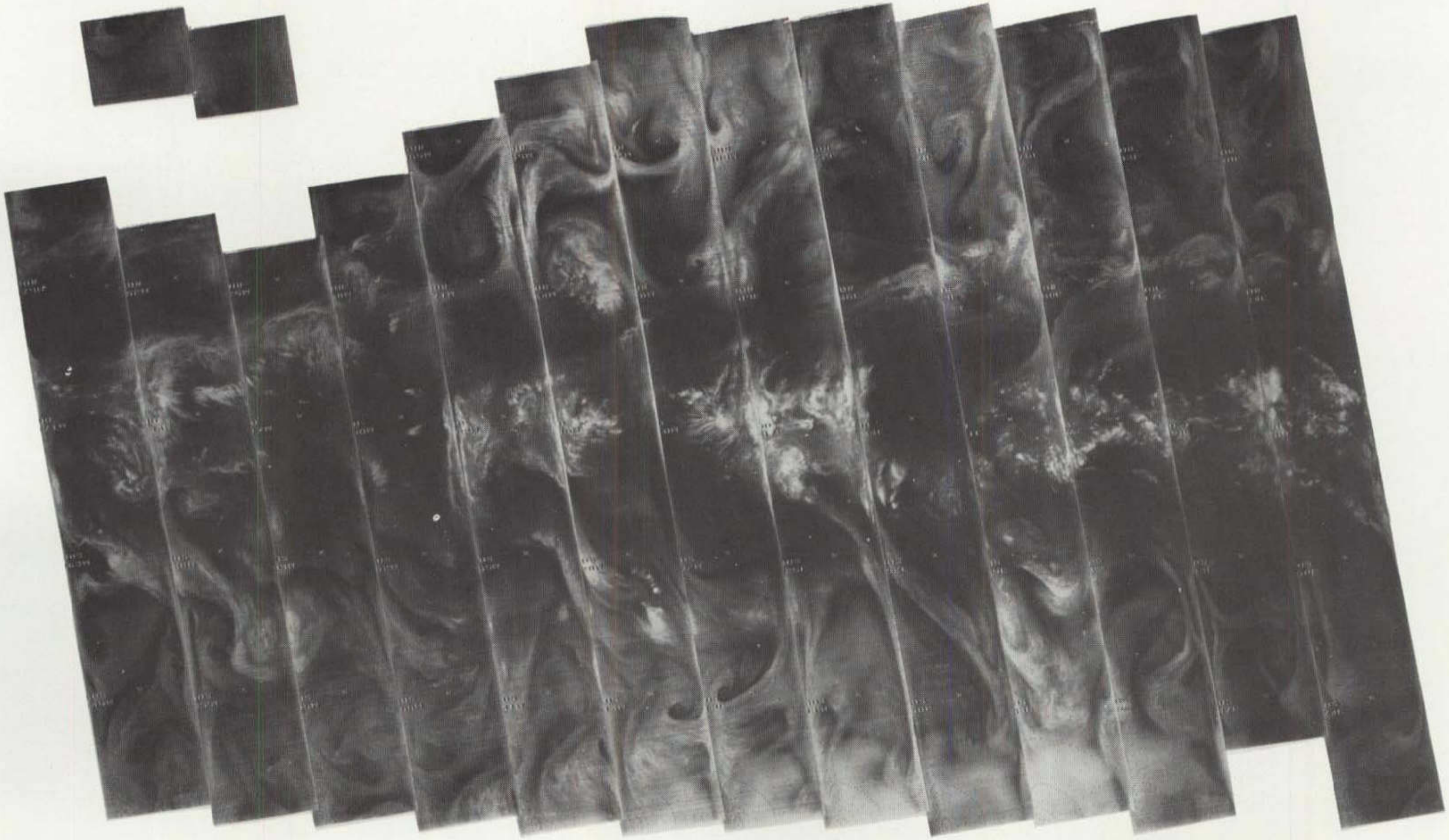
6.7 μm



3950 3949 3948 3947 3946 3945 3944 3943 3942 3941 3940 3939 3938 3937

1 APRIL 1976

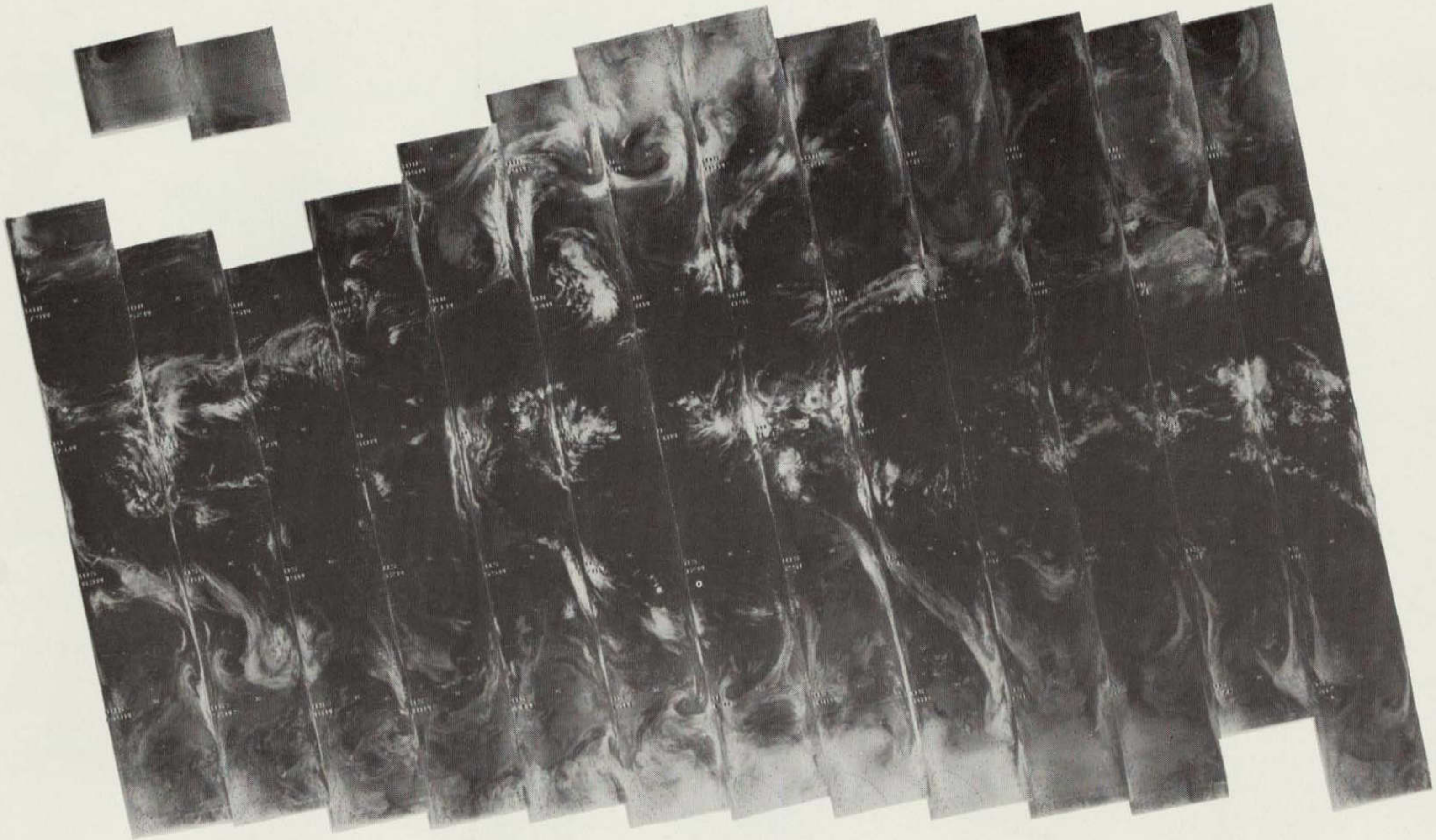
11.5 μm



3963 3962 3961 3960 3959 3958 3957 3956 3955 3954 3953 3952 3951

2 APRIL 1976

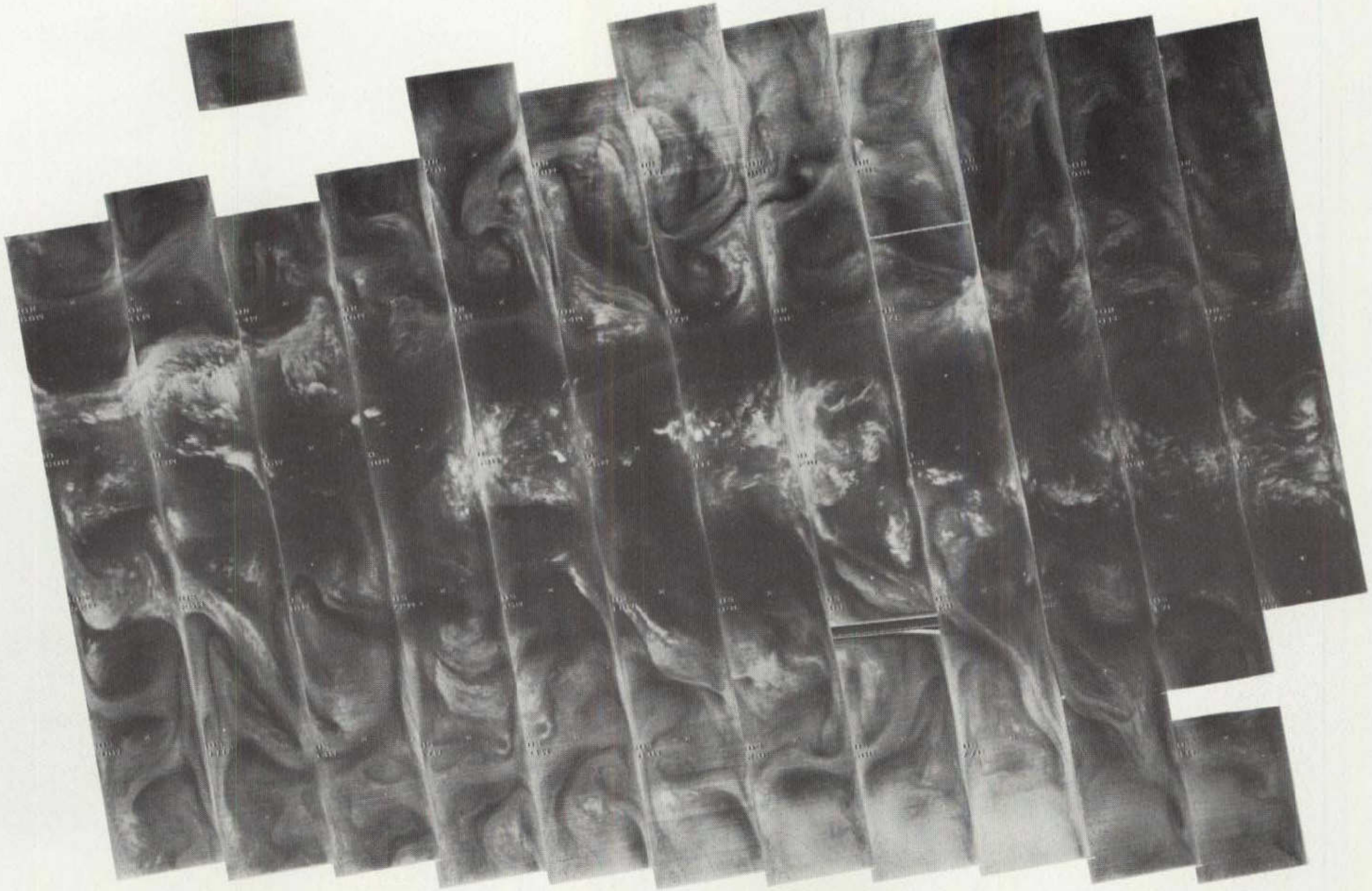
6.7 μm



3963 3962 3961 3960 3959 3958 3957 3956 3955 3954 3953 3952 3951

2 APRIL 1976

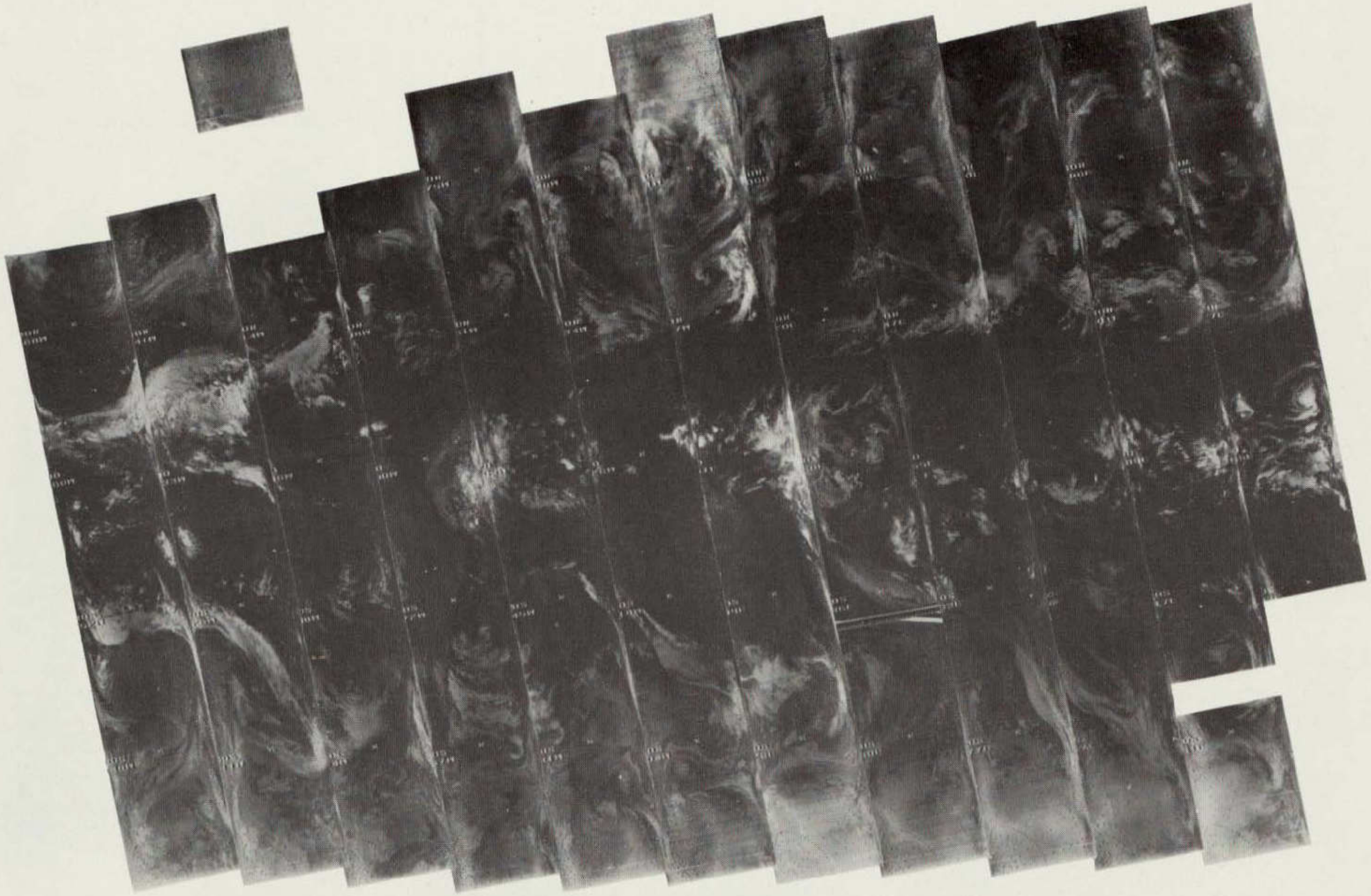
11.5 μm



3976 3975 3974 3973 3972 3971 3970 3969 3968 3967 3966 3965 3964

3 APRIL 1976

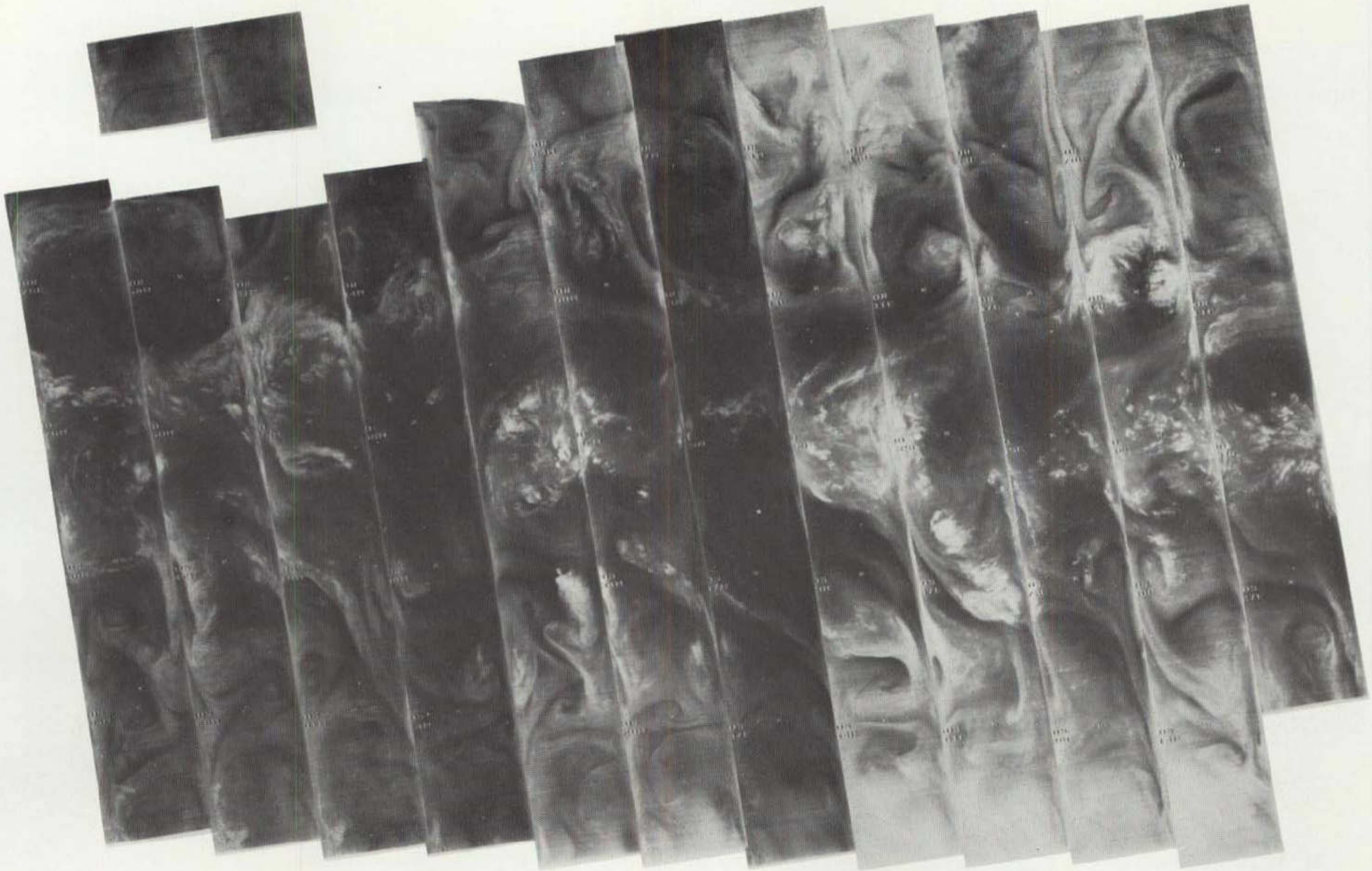
6.7 μm



3976 3975 3974 3973 3972 3971 3970 3969 3968 3967 3966 3965 3964

3 APRIL 1976

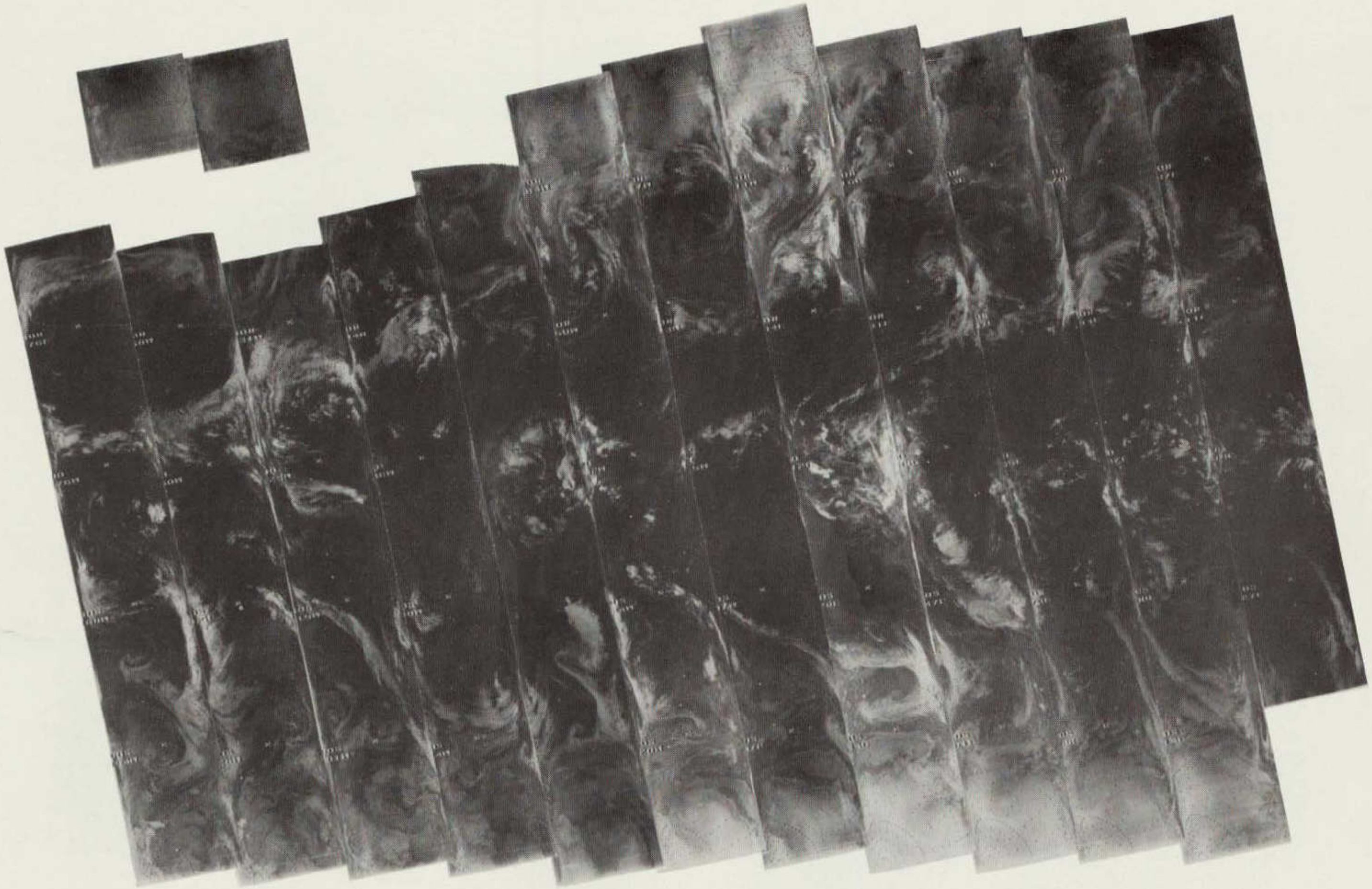
11.5 μm



3990 3989 3988 3987 3986 3985 3984 3983 3982 3981 3980 3979 3978 3977

4 APRIL 1976

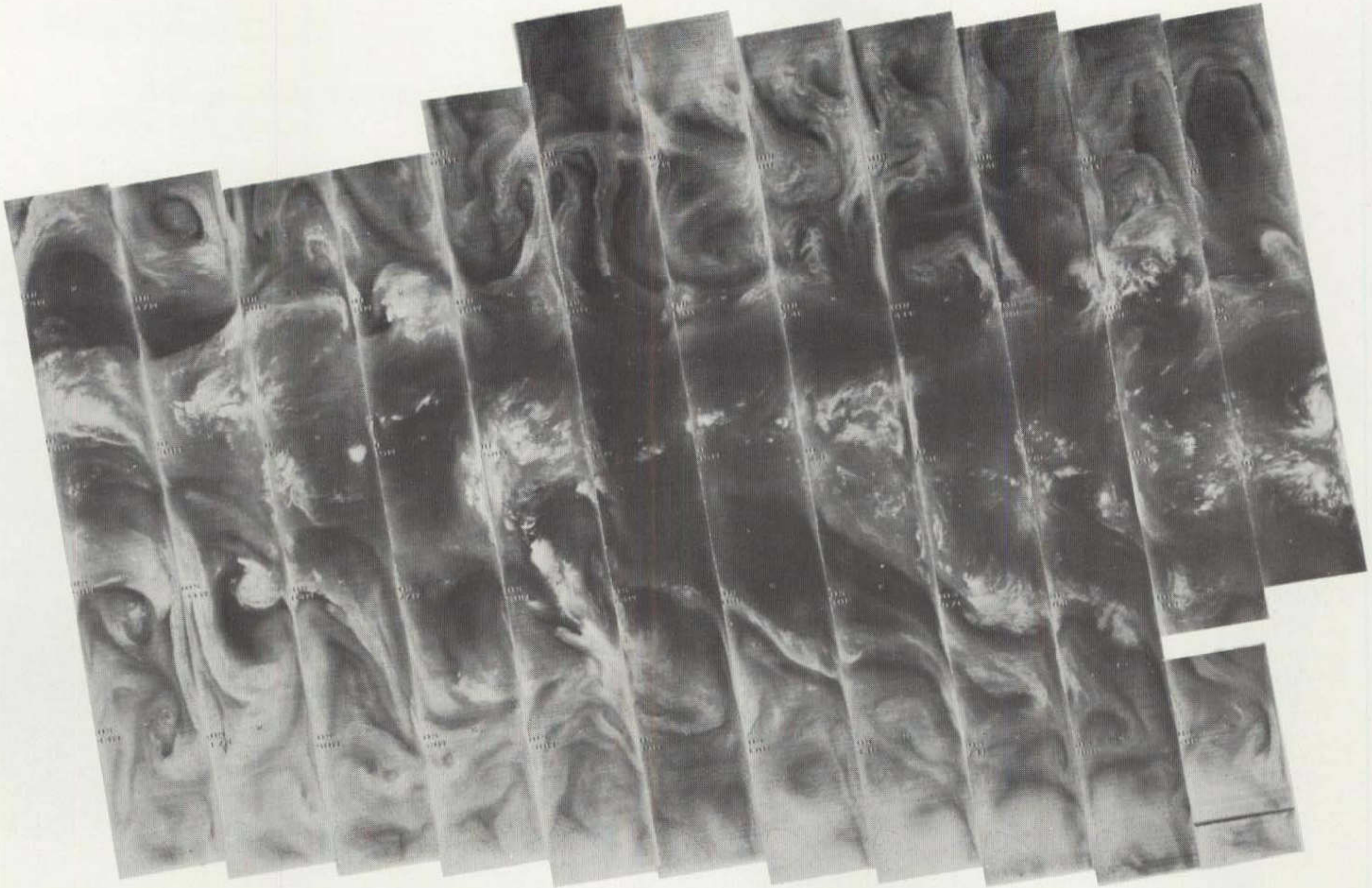
6.7 μm



3990 3989 3988 3987 3986 3985 3984 3983 3982 3981 3980 3979 3978 3977

4 APRIL 1976

11.5 μm



4003 4002 4001 4000 3999 3998 3997 3996 3995 3994 3993 3992 3991

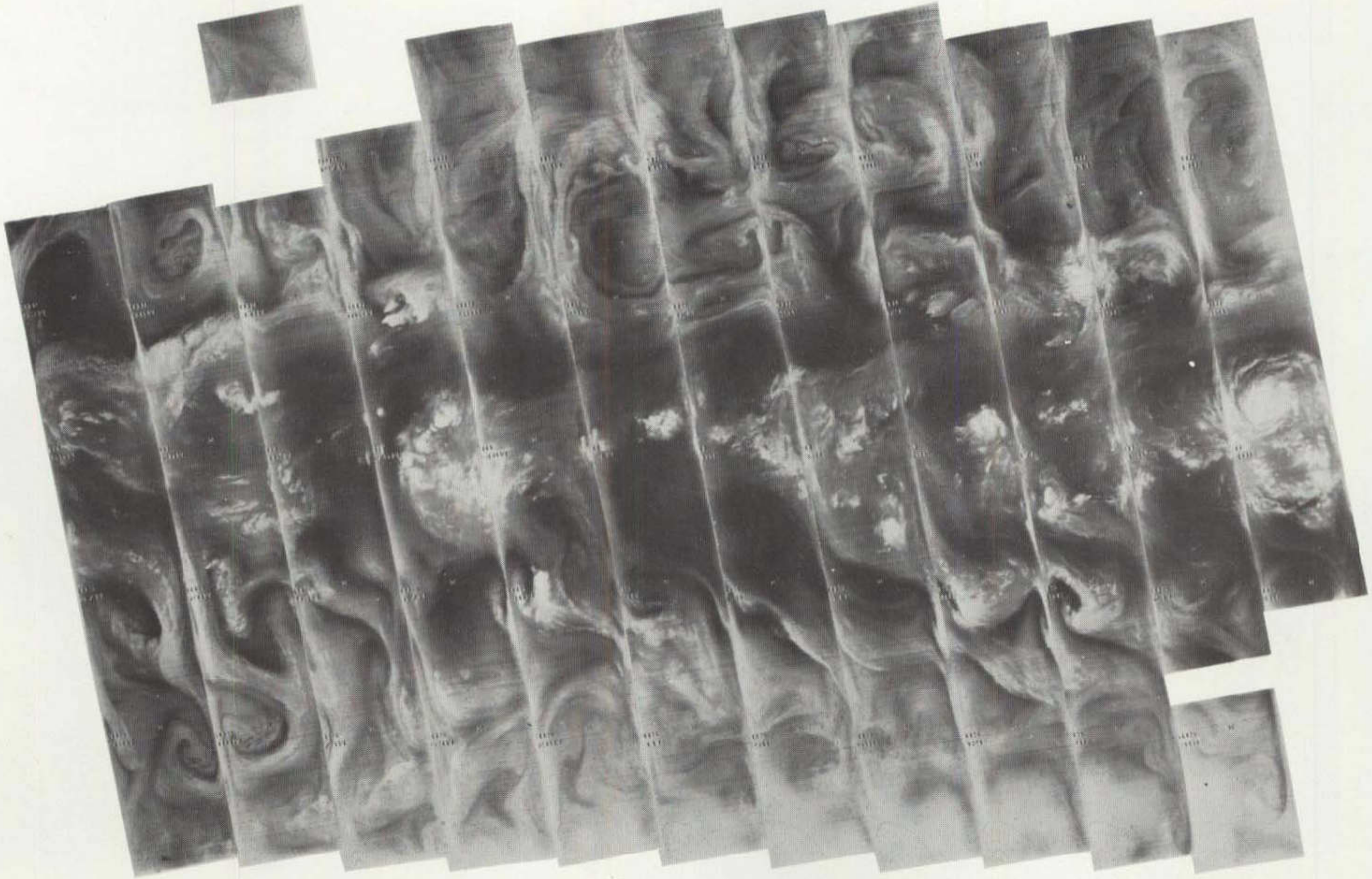
5 APRIL 1976

6.7 μm

4003 4002 4001 4000 3999 3998 3997 3996 3995 3994 3993 3992 3991

5 APRIL 1976

11.5 μm



4017 4016 4015 4014 4013 4012 4011 4010 4009 4008 4007 4006 4005 4004

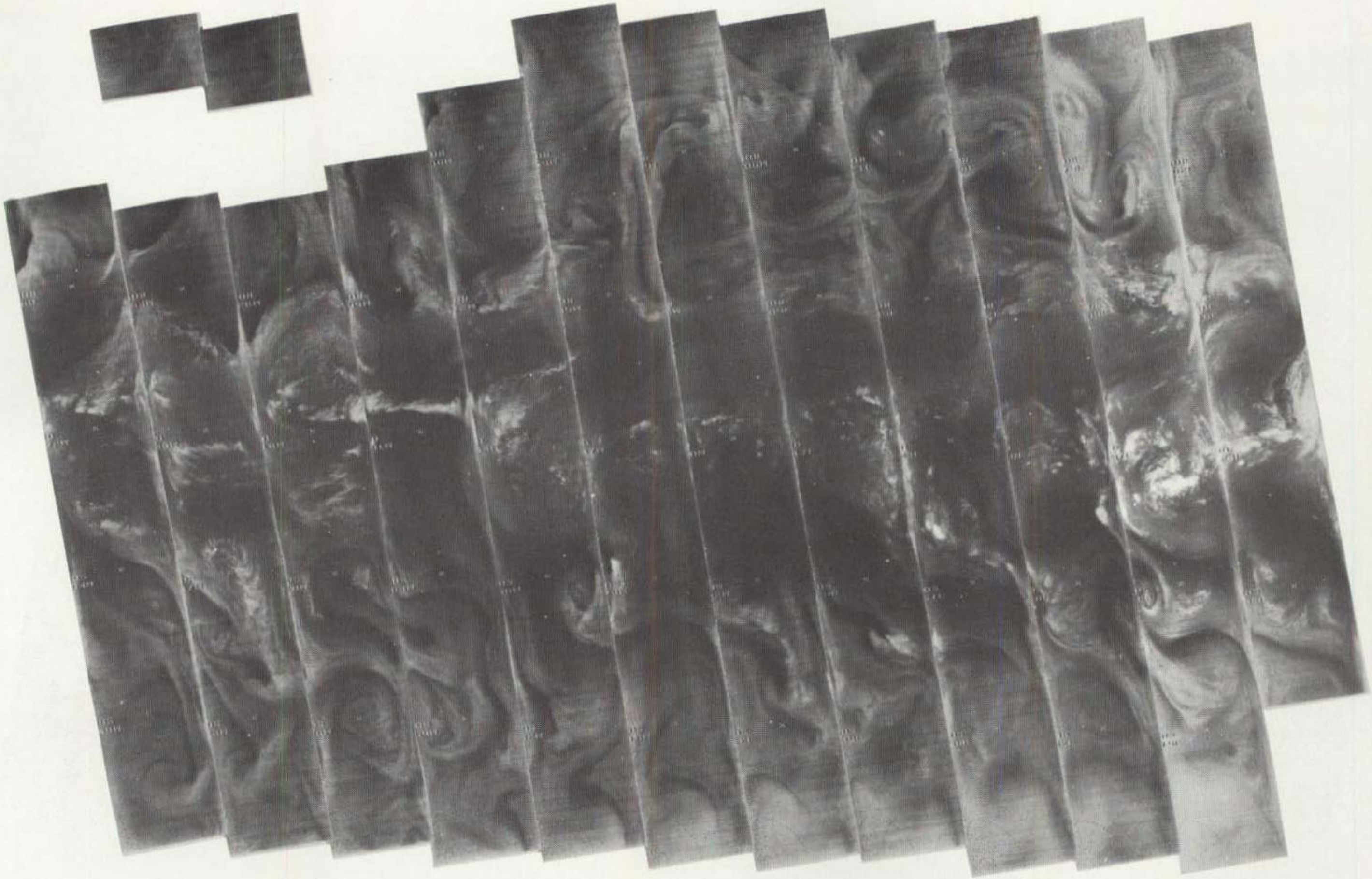
6 APRIL 1976

6.7 μm

4017 4016 4015 4014 4013 4012 4011 4010 4009 4008 4007 4006 4005 4004

6 APRIL 1976

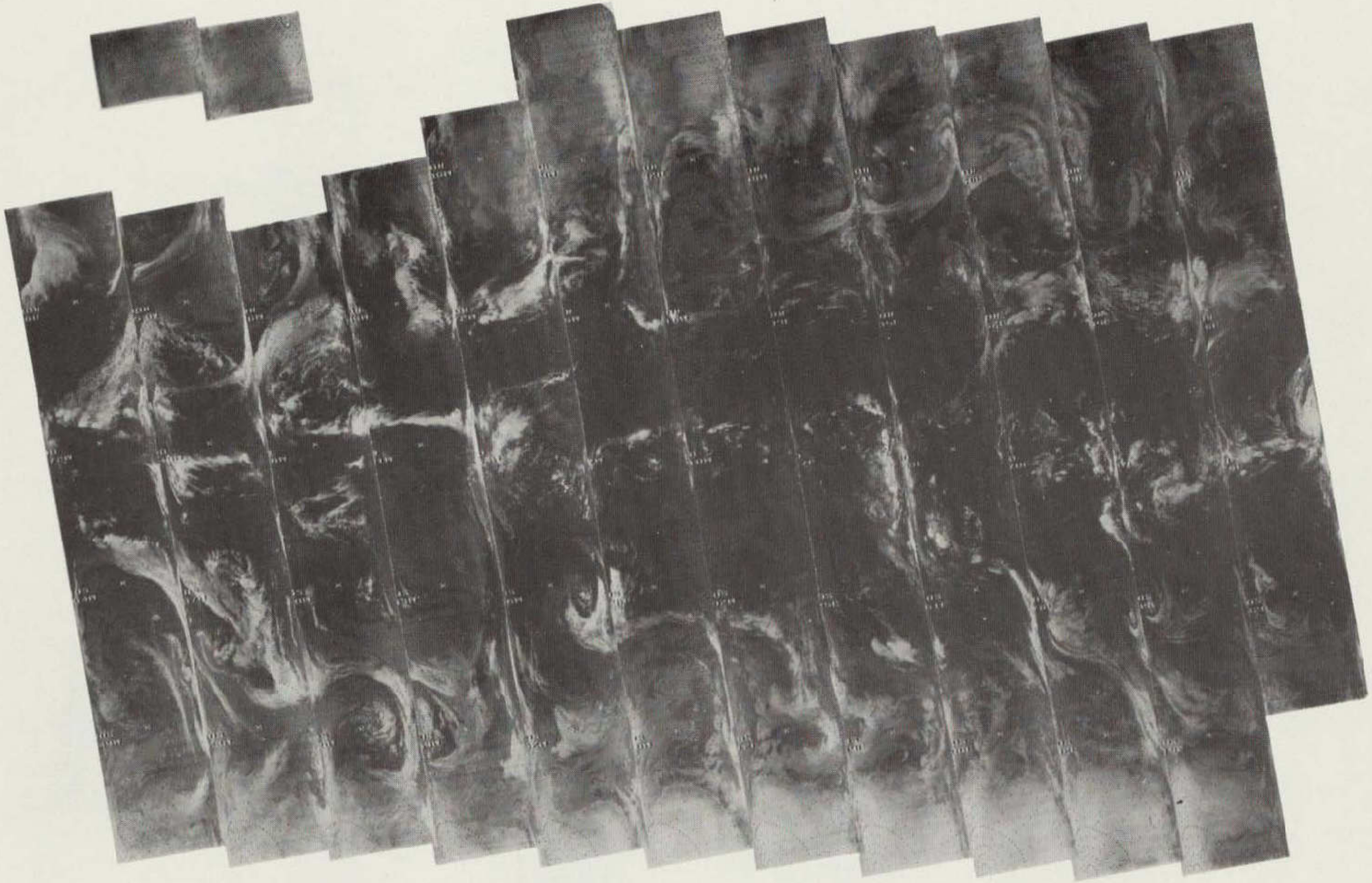
11.5 μm



4030 4029 4028 4027 4026 4025 4024 4023 4022 4021 4020 4019 4018

7 APRIL 1976

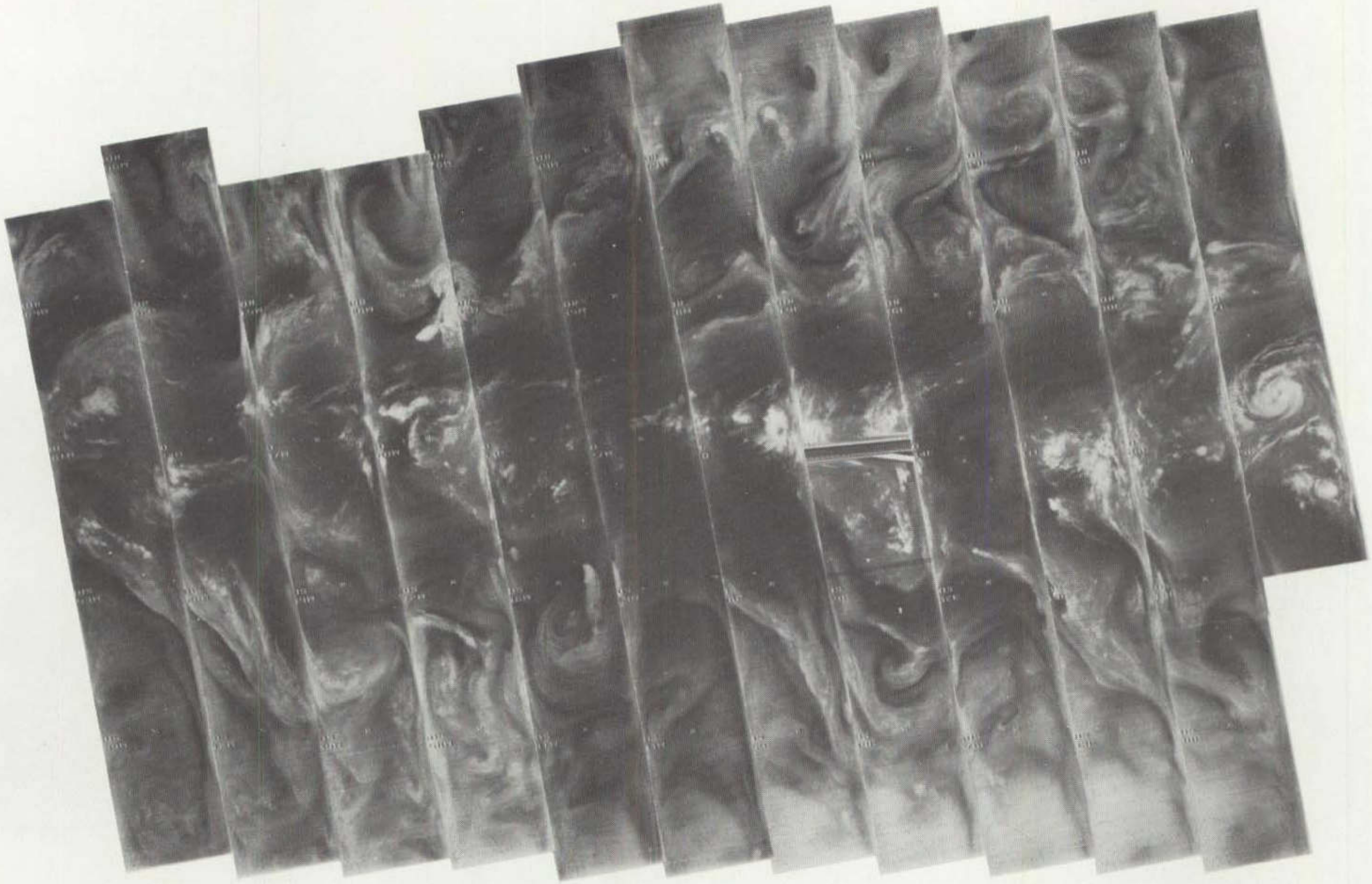
6.7 μm



4030 4029 4028 4027 4026 4025 4024 4023 4022 4021 4020 4019 4018

7 APRIL 1976

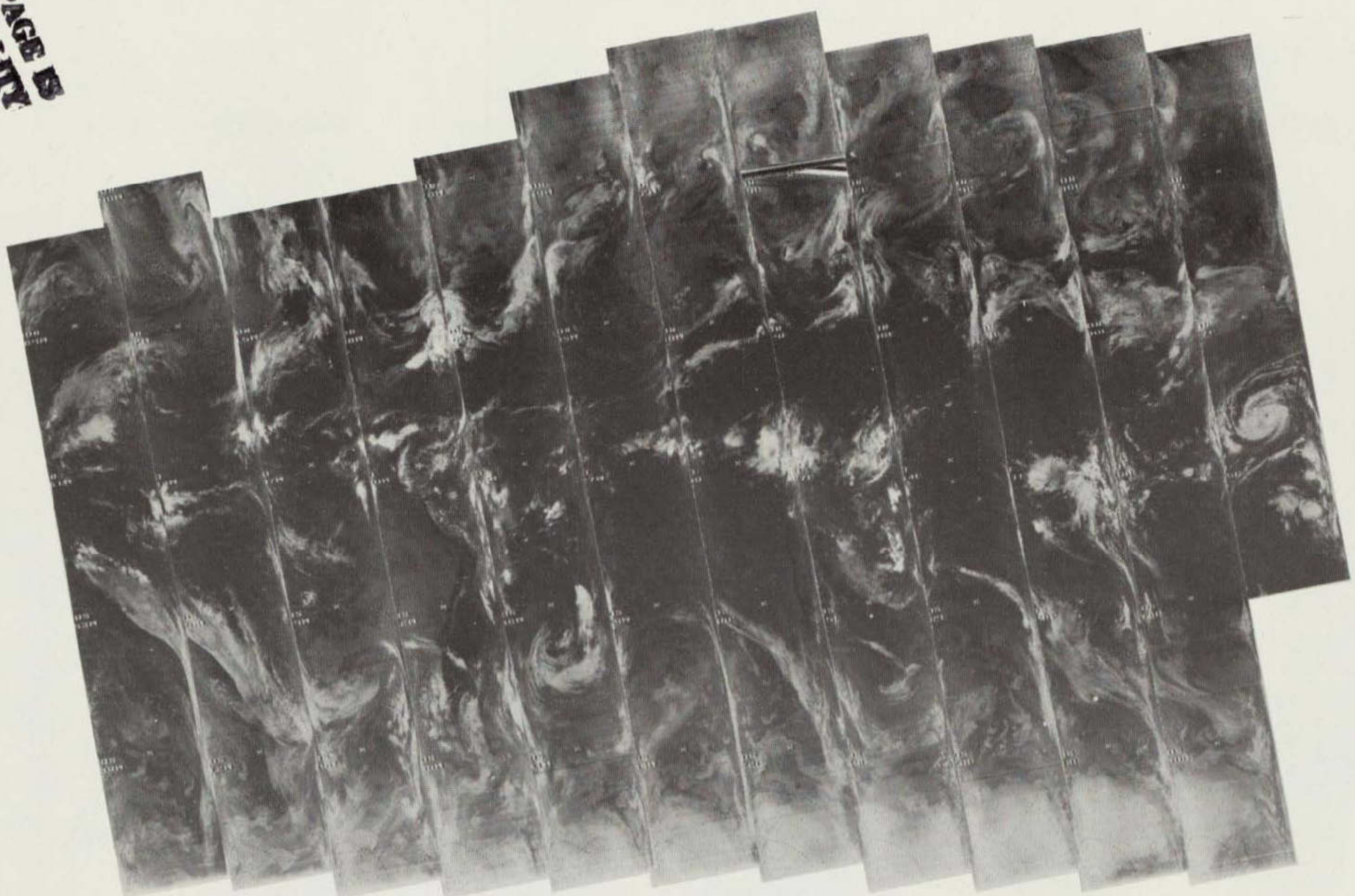
11.5 μm



4043 4042 4041 4040 4039 4038 4037 4036 4035 4034 4033 4032 4031

8 APRIL 1976

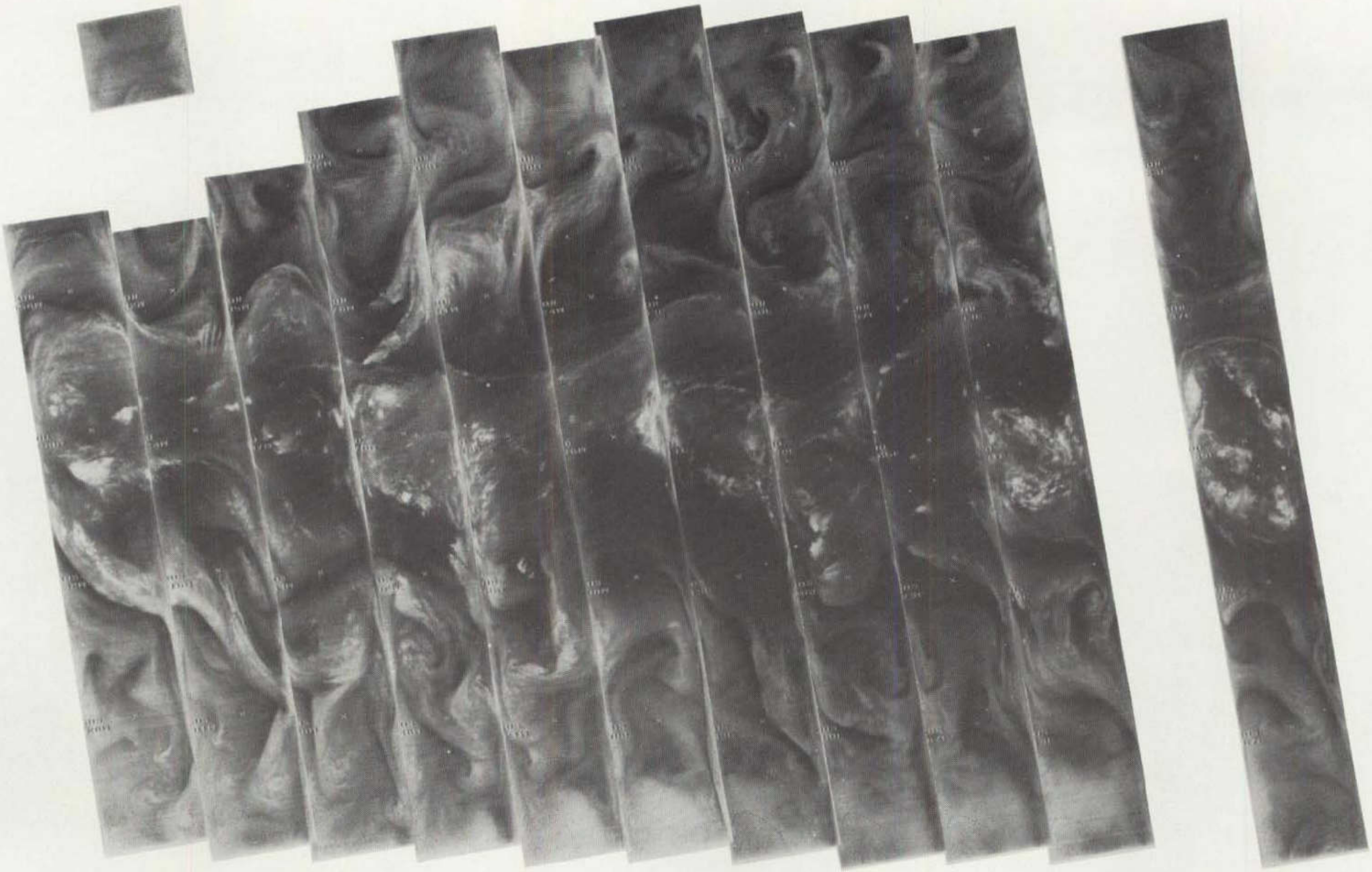
6.7 μm



4043 4042 4041 4040 4039 4038 4037 4036 4035 4034 4033 4032 4031

8 APRIL 1976

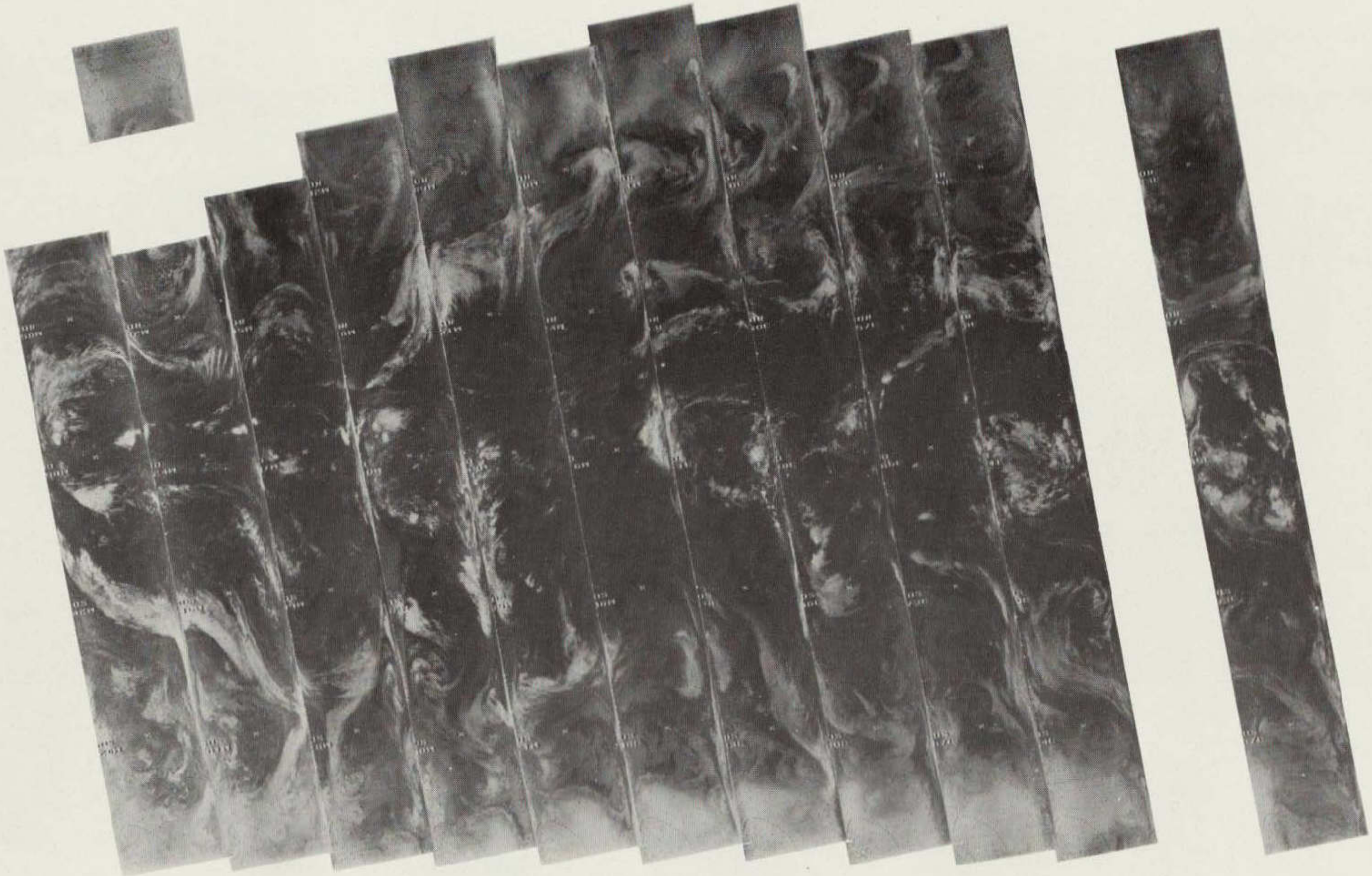
11.5 μm



4057 4056 4055 4054 4053 4052 4051 4050 4049 4048 4047 4046 4045 4044

9 APRIL 1976

6.7 μm

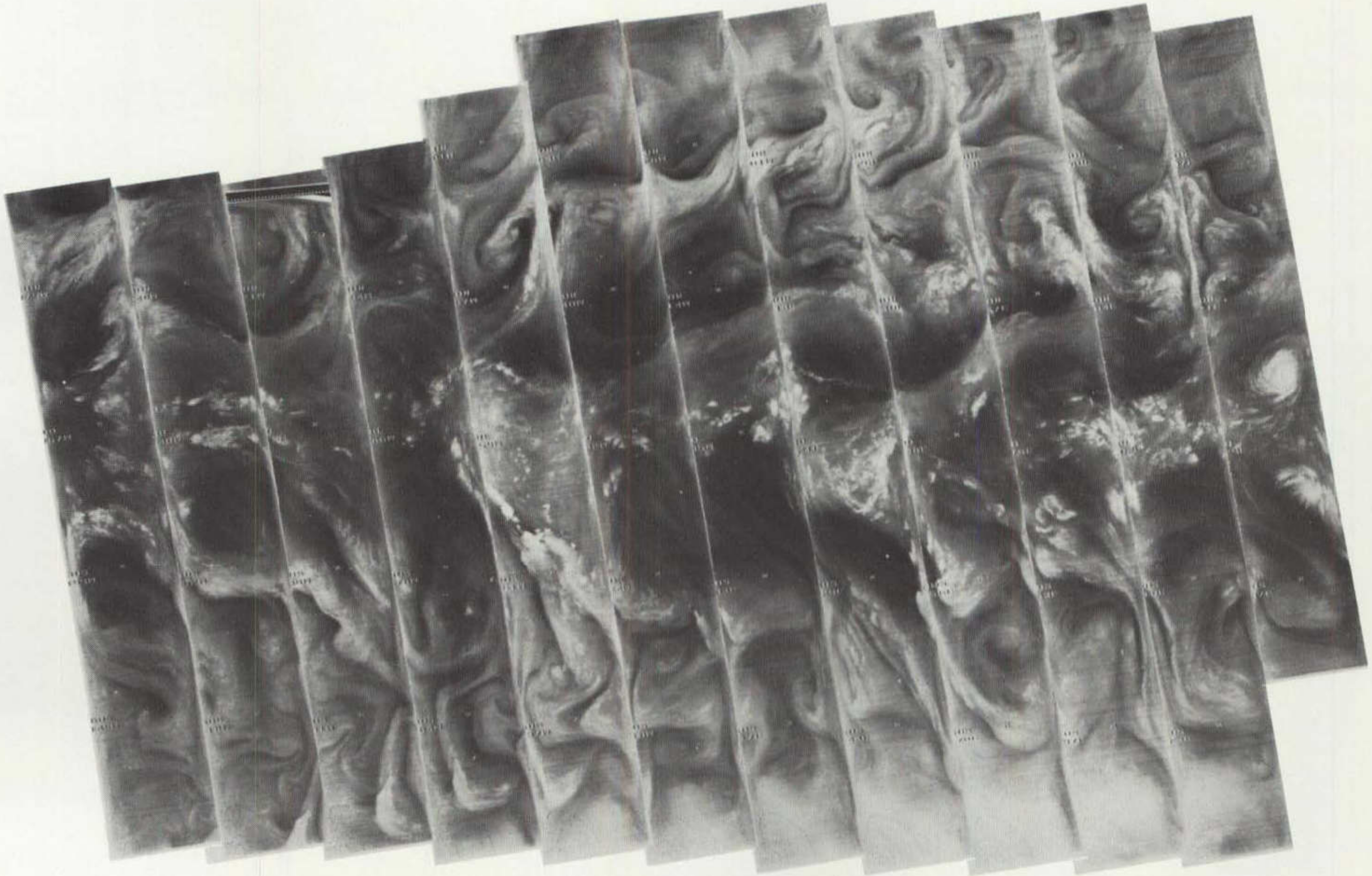


4057 4056 4055 4054 4053 4052 4051 4050 4049 4048 4047 4046 4045 4044

9 APRIL 1976

11.5 μm

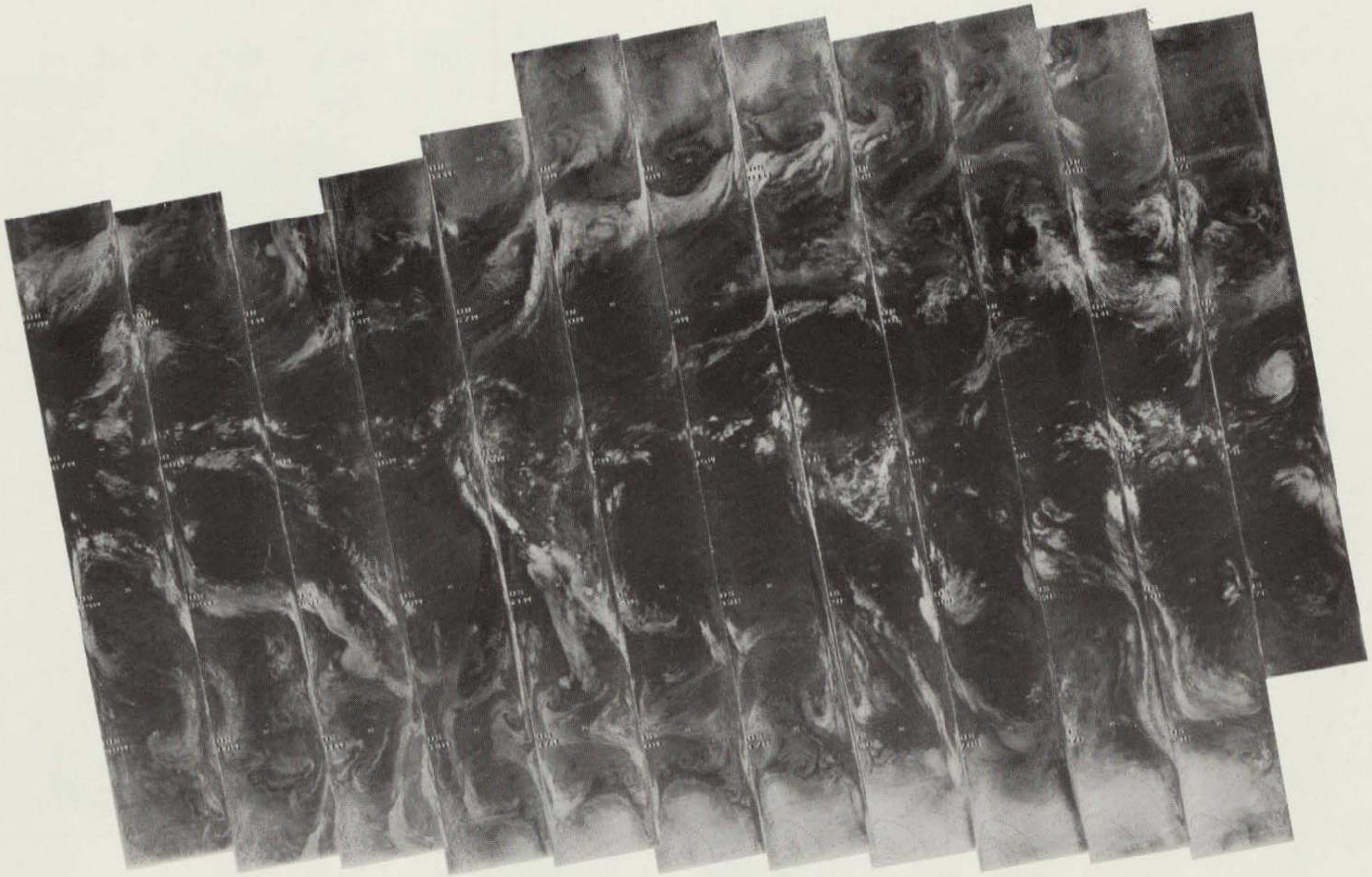
C-4



4070 4069 4068 4067 4066 4065 4064 4063 4062 4061 4060 4059 4058

10 APRIL 1976

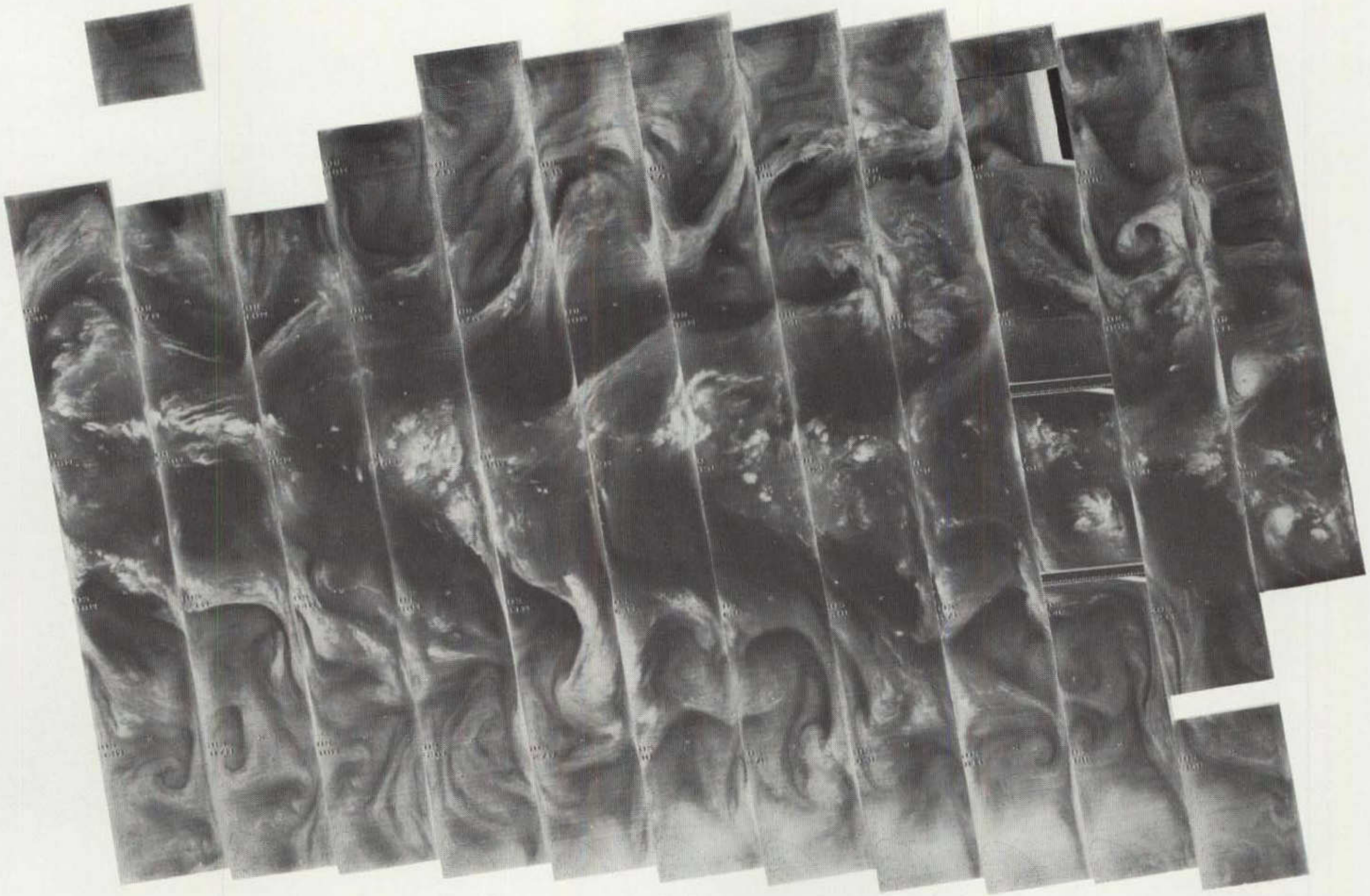
6.7 μm



4070 4069 4068 4067 4066 4065 4064 4063 4062 4061 4060 4059 4058

10 APRIL 1976

11.5 μm



4084 4083 4082 4081 4080 4079 4078 4077 4076 4075 4074 4073 4072 4071

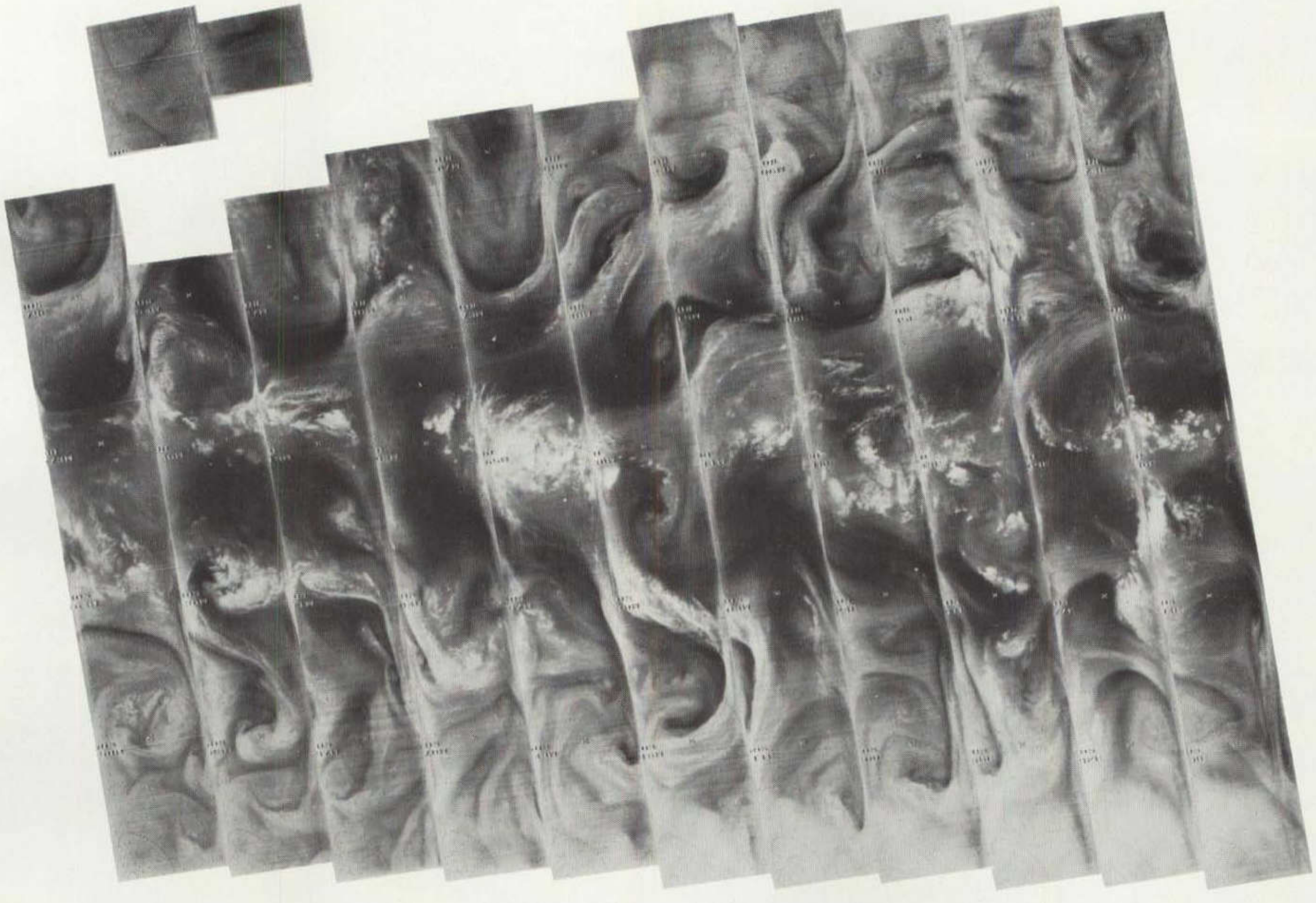
11 APRIL 1976

6.7 μm

4084 4083 4082 4081 4080 4079 4078 4077 4076 4075 4074 4073 4072 4071

11 APRIL 1976

11.5 μm



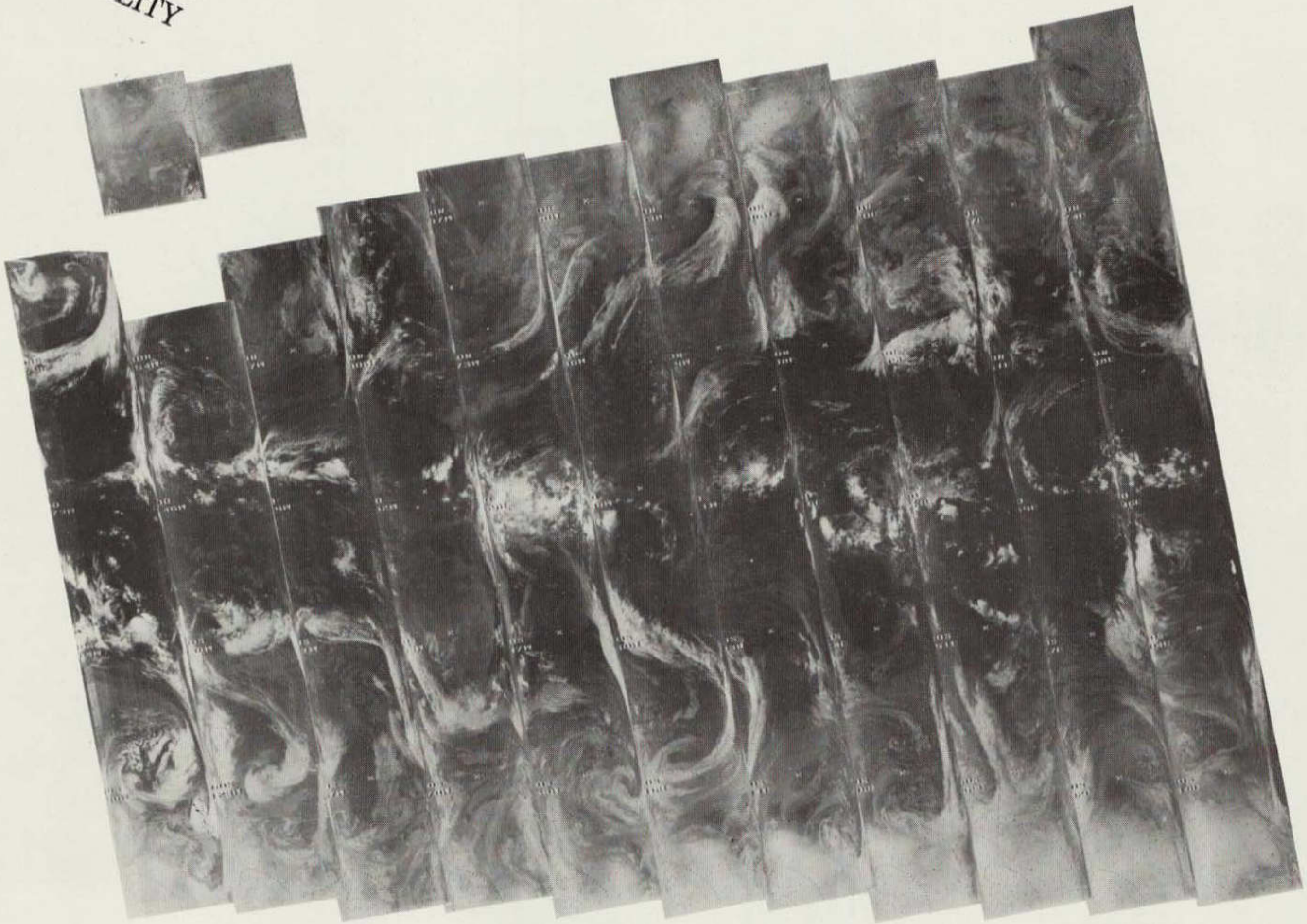
4097 4096 4095 4094 4093 4092 4091 4090 4089 4088 4087 4086 4085

12 APRIL 1976

6.7 μm

4-214

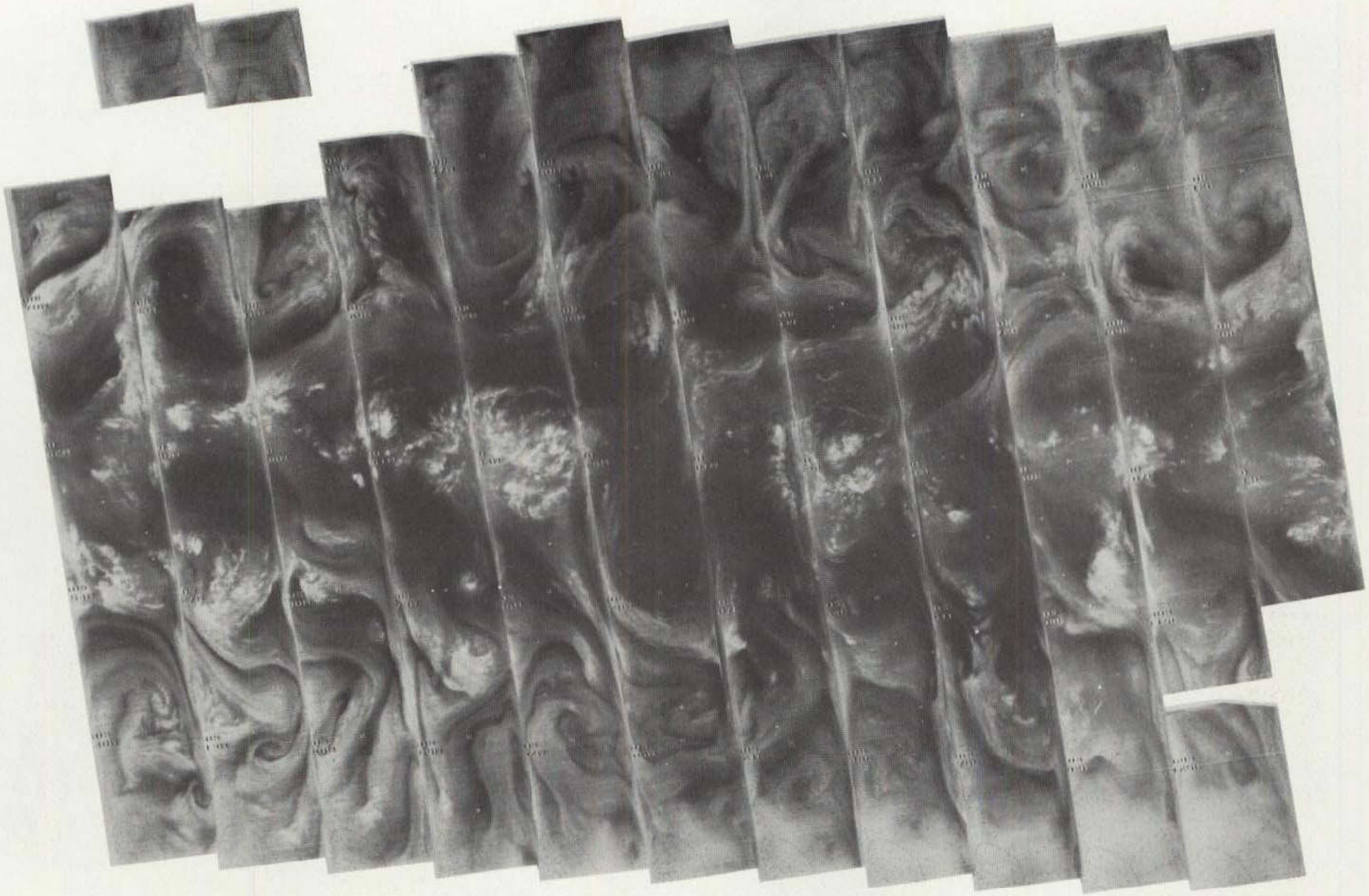
ORIGINAL PAGE IS
OF POOR QUALITY



4097 4096 4095 4094 4093 4092 4091 4090 4089 4088 4087 4086 4085

12 APRIL 1976

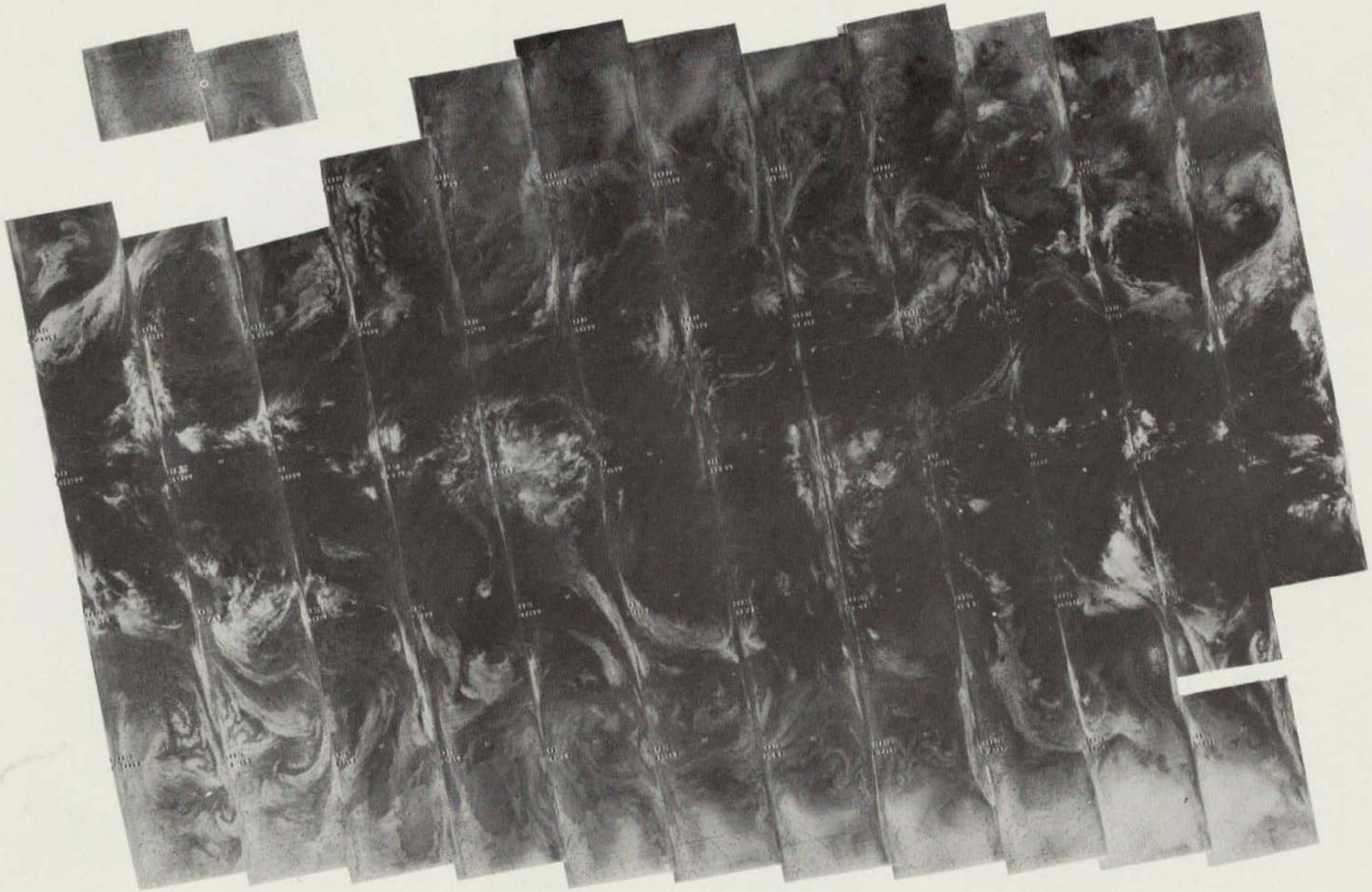
11.5 μm



4110 4109 4108 4107 4106 4105 4104 4103 4102 4101 4100 4099 4098

13 APRIL 1976

6.7 μm



4110 4109 4108 4107 4106 4105 4104 4103 4102 4101 4100 4099 4098

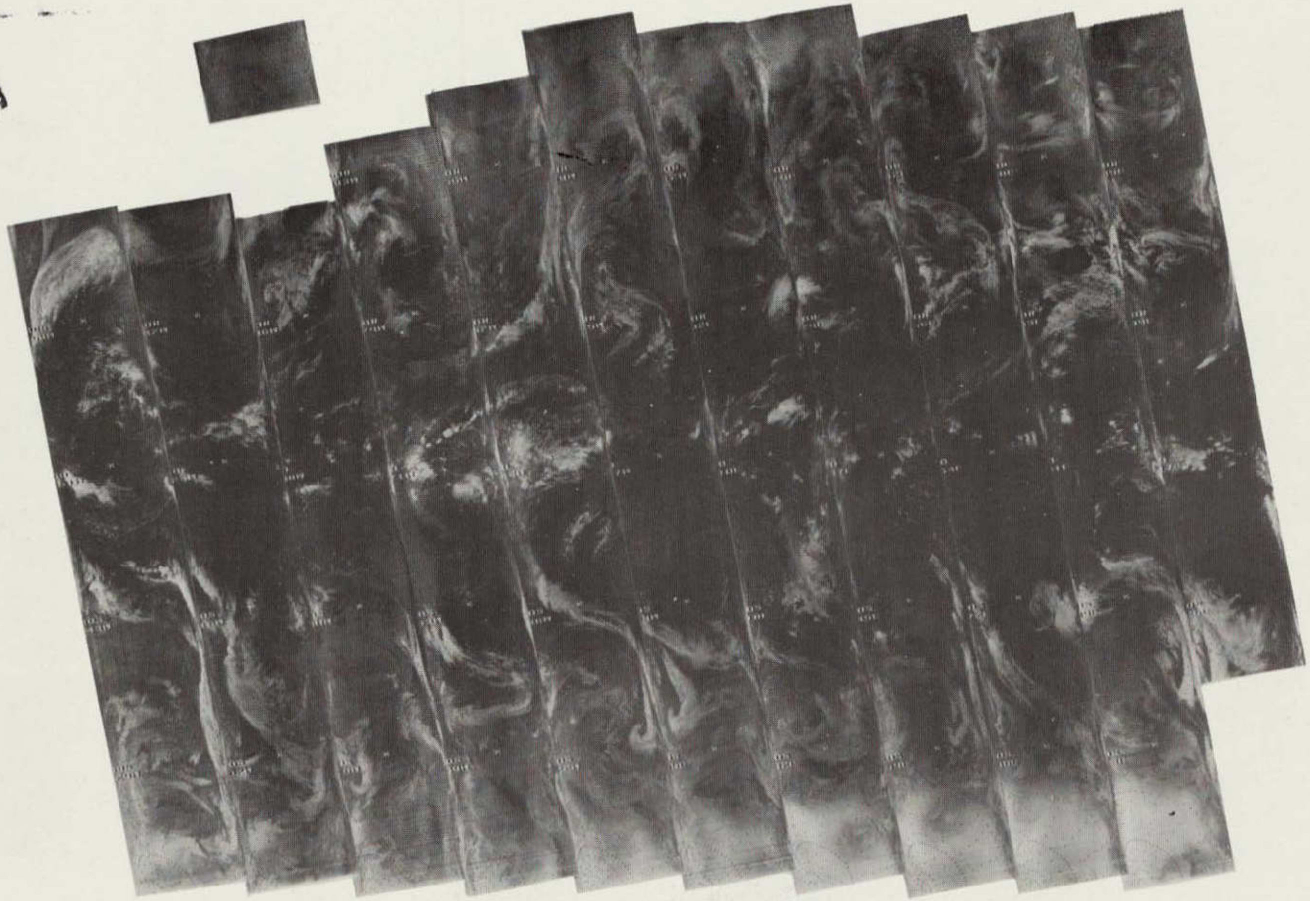
13 APRIL 1976

11.5 μm

4124 4123 4122 4121 4120 4119 4118 4117 4116 4115 4114 4113 4112 4111

14 APRIL 1976

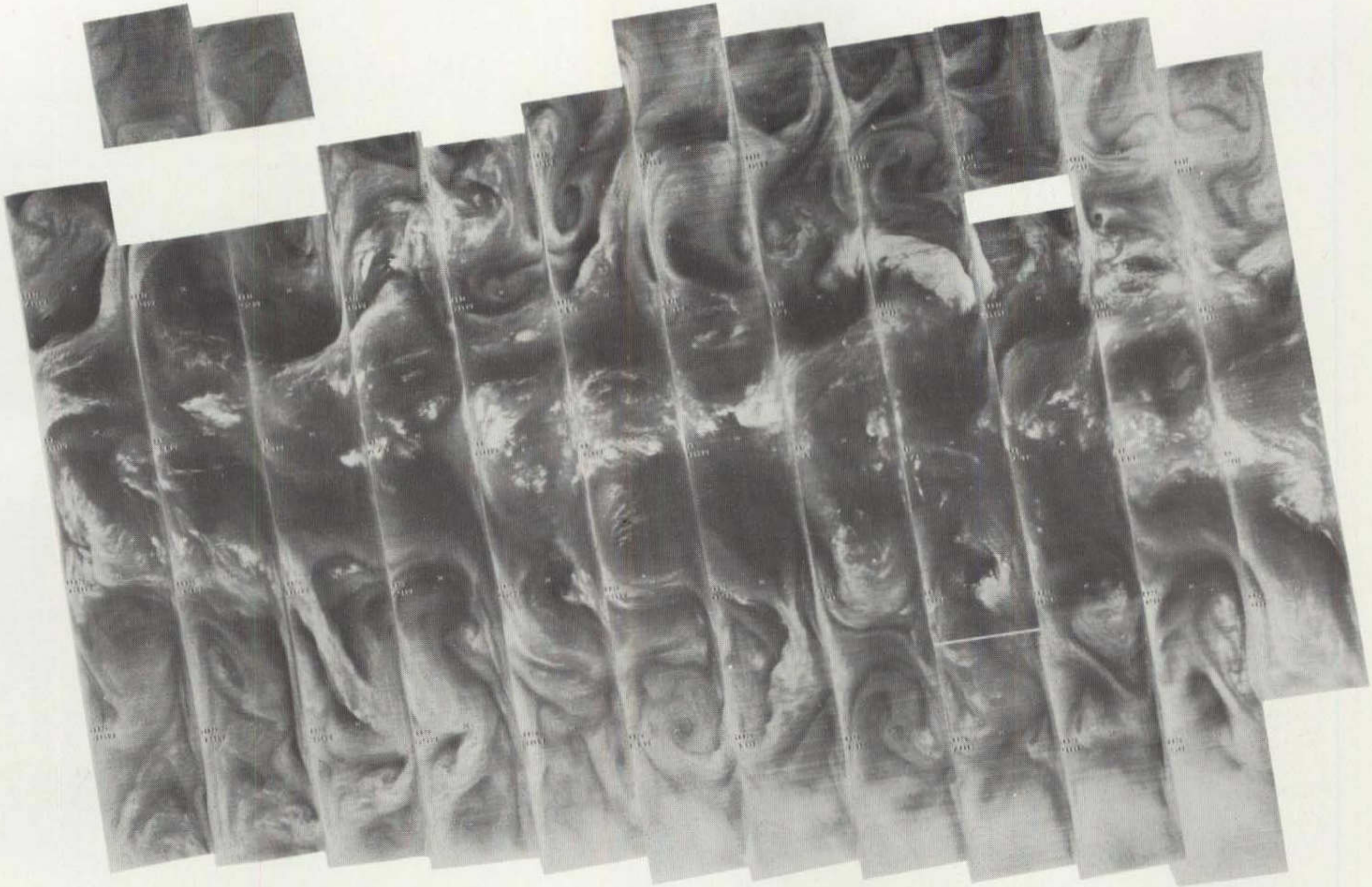
6.7 μm



4124 4123 4122 4121 4120 4119 4118 4117 4116 4115 4114 4113 4112 4111

14 APRIL 1976

11.5 μm



4137 4136 4135 4134 4133 4132 4131 4130 4129 4128 4127 4126 4125

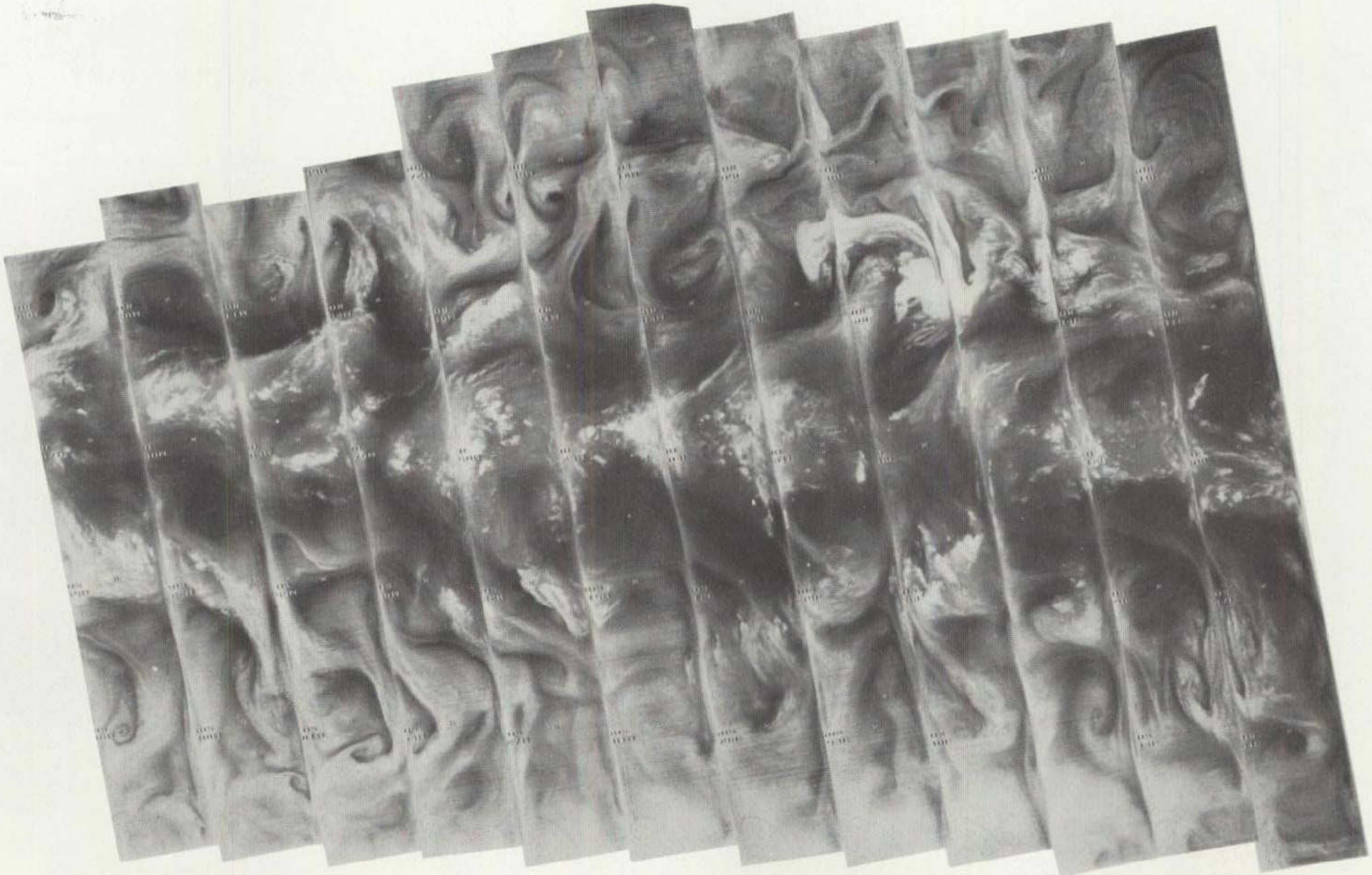
15 APRIL 1976

6.7 μm

4137 4136 4135 4134 4133 4132 4131 4130 4129 4128 4127 4126 4125

15 APRIL 1976

11.5 μm



4151 4150 4149 4148 4147 4146 4145 4144 4143 4142 4141 4140 4139 4138

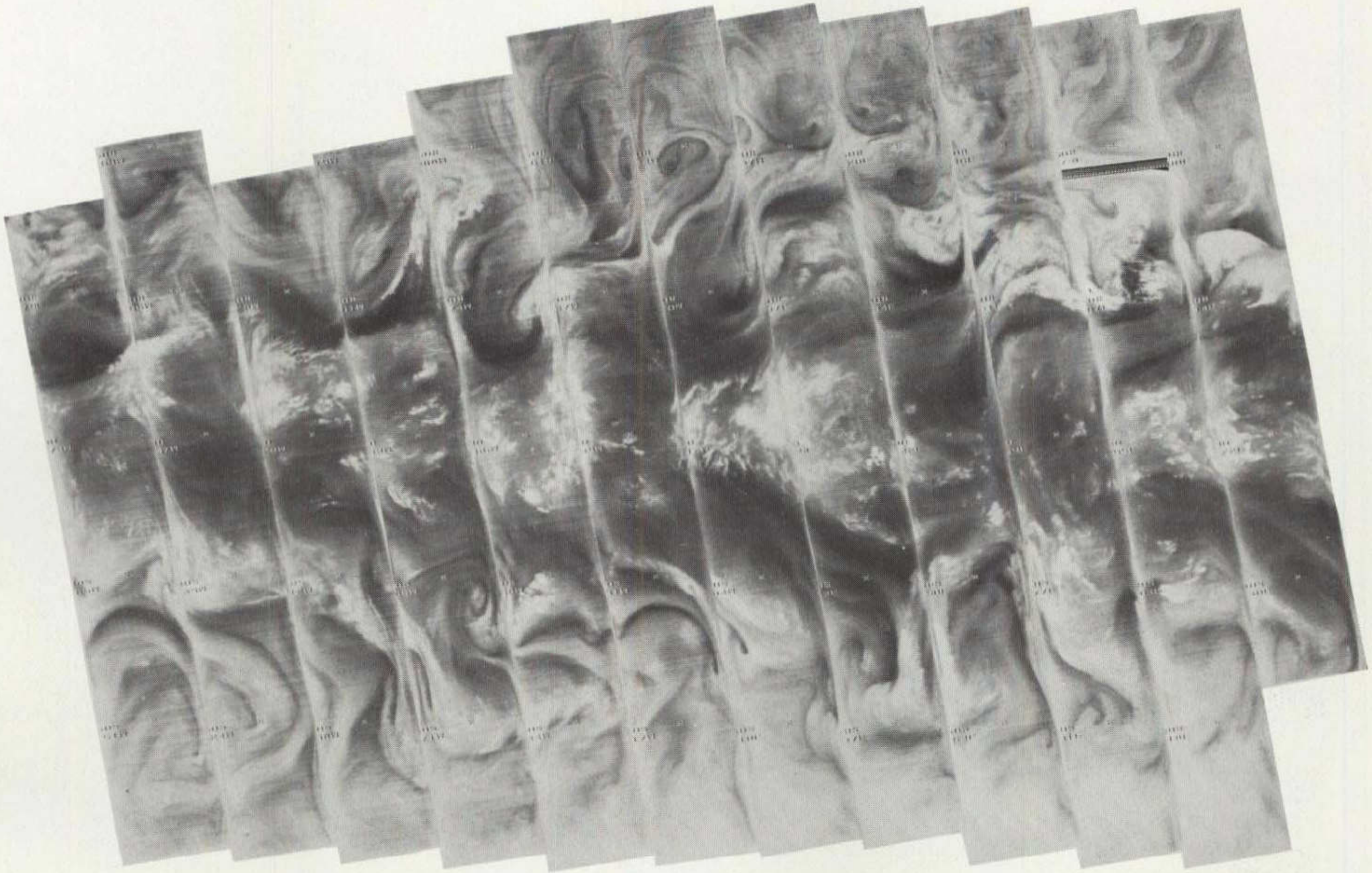
16 APRIL 1976

6.7 μm

4151 4150 4149 4148 4147 4146 4145 4144 4143 4142 4141 4140 4139 4138

16 APRIL 1976

11.5 μm



4164 4163 4162 4161 4160 4159 4158 4157 4156 4155 4154 4153 4152

17 APRIL 1976

6.7 μm

4164 4163 4162 4161 4160 4159 4158 4157 4156 4155 4154 4153 4152

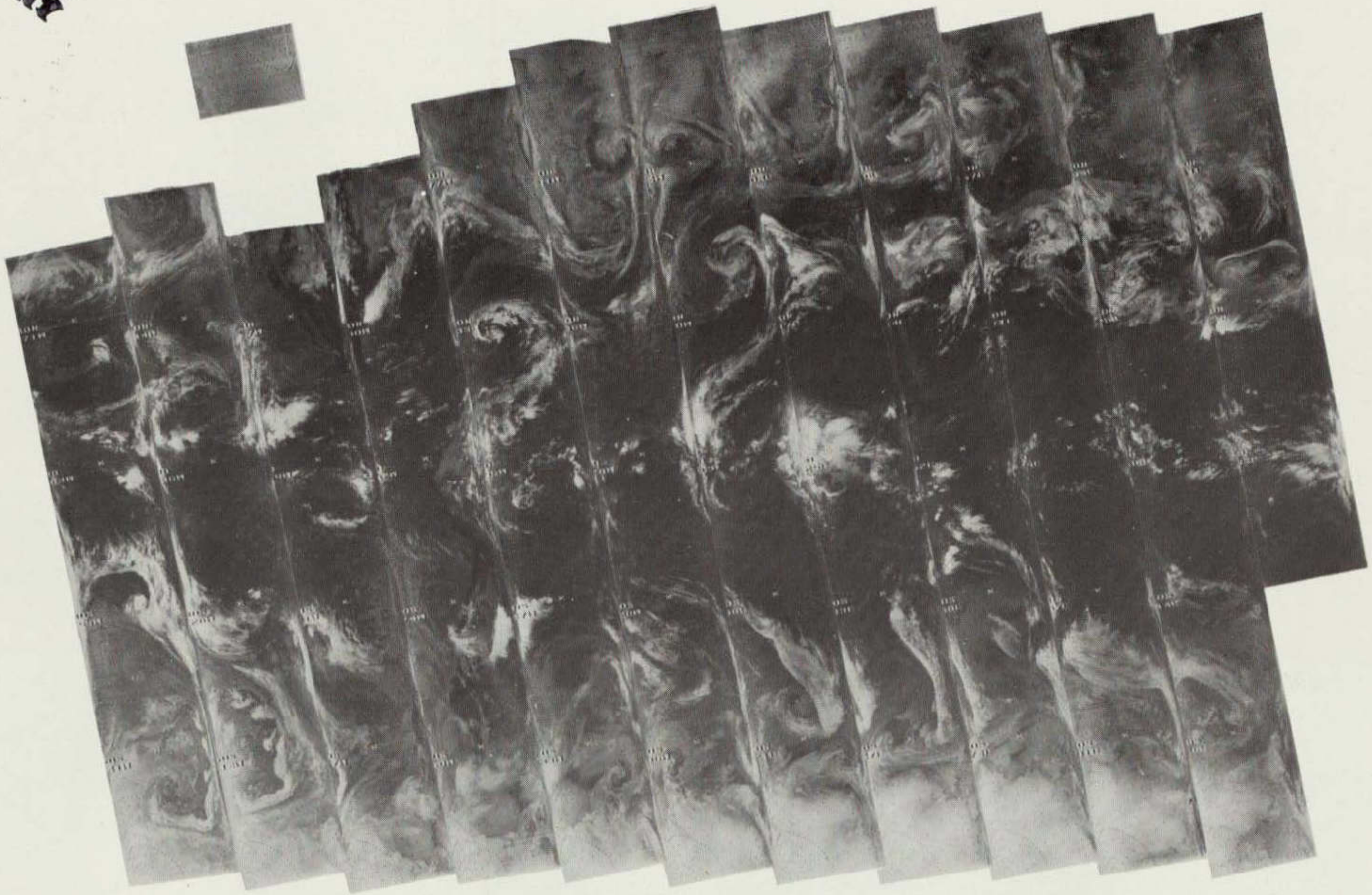
17 APRIL 1976

11.5 μm

4177 4176 4175 4174 4173 4172 4171 4170 4169 4168 4167 4166 4165

18 APRIL 1976

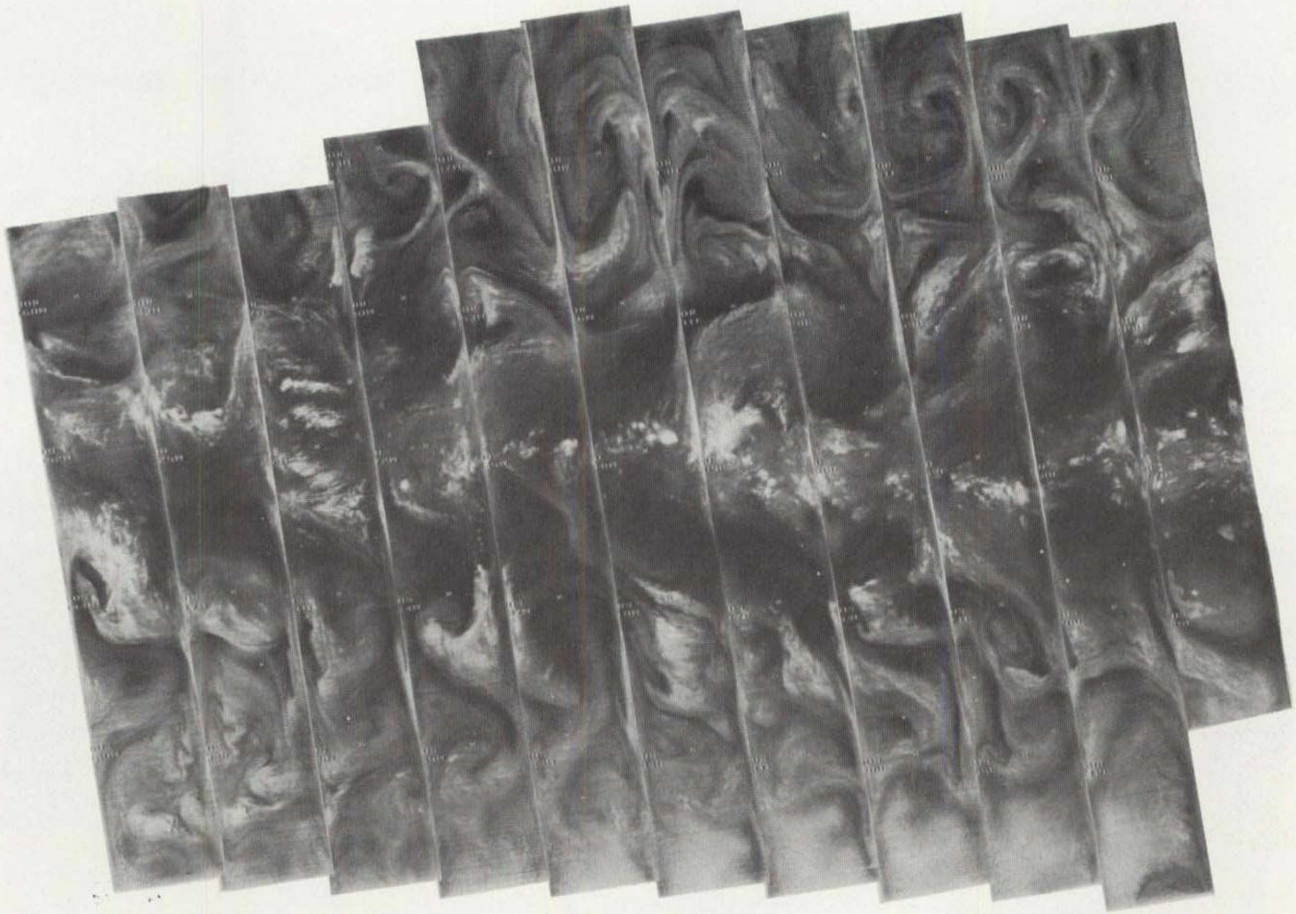
6.7 μm



4177 4176 4175 4174 4173 4172 4171 4170 4169 4168 4167 4166 4165

18 APRIL 1976

11.5 μm



4191 4190 4189 4188 4187 4186 4185 4184 4183 4182 4181 4180 4179 4178

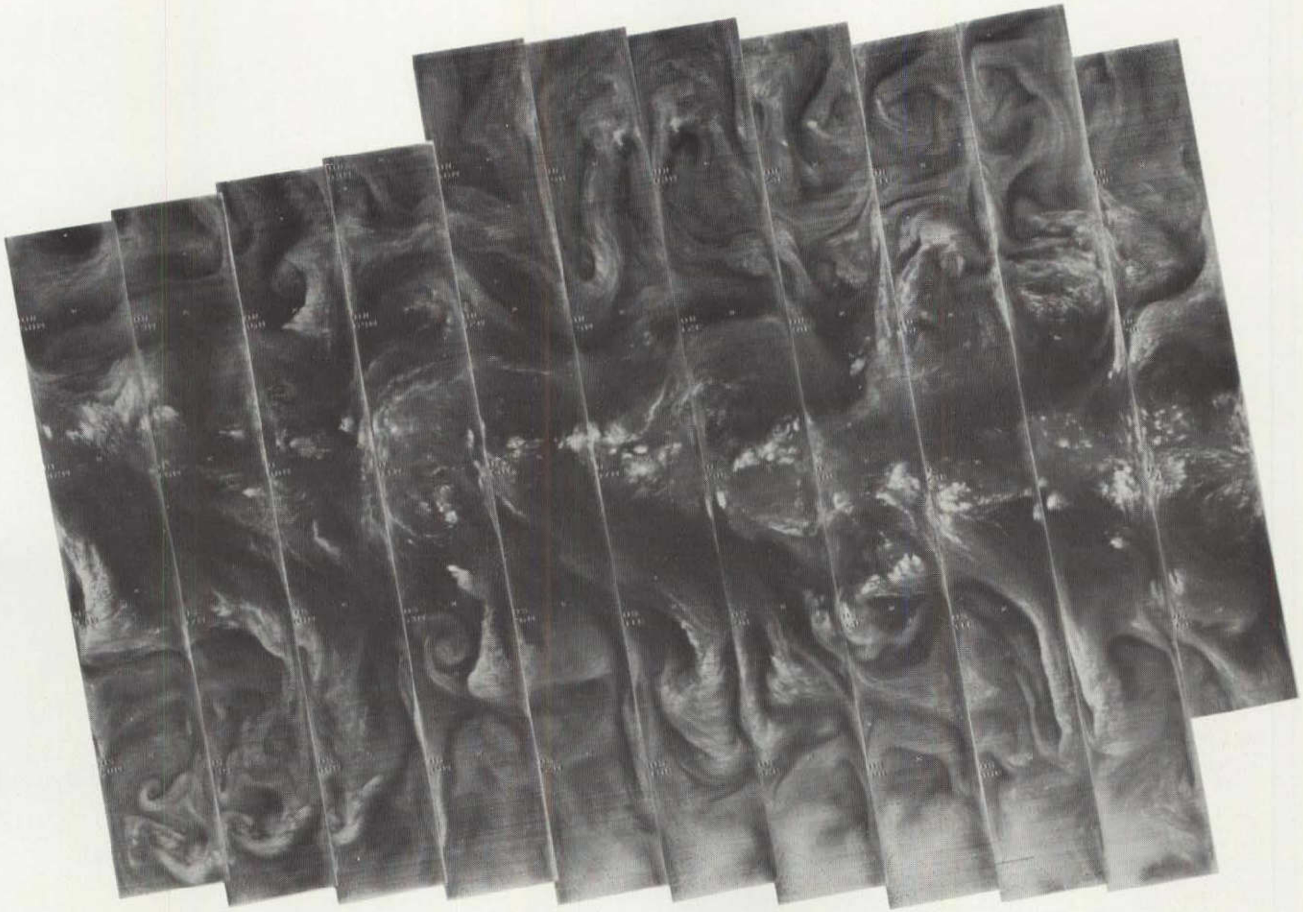
19 APRIL 1976

6.7 μm

4191 4190 4189 4188 4187 4186 4185 4184 4183 4182 4181 4180 4179 4178

19 APRIL 1976

11.5 μm



4204 4203 4202 4201 4200 4199 4198 4197 4196 4195 4194 4193 4192

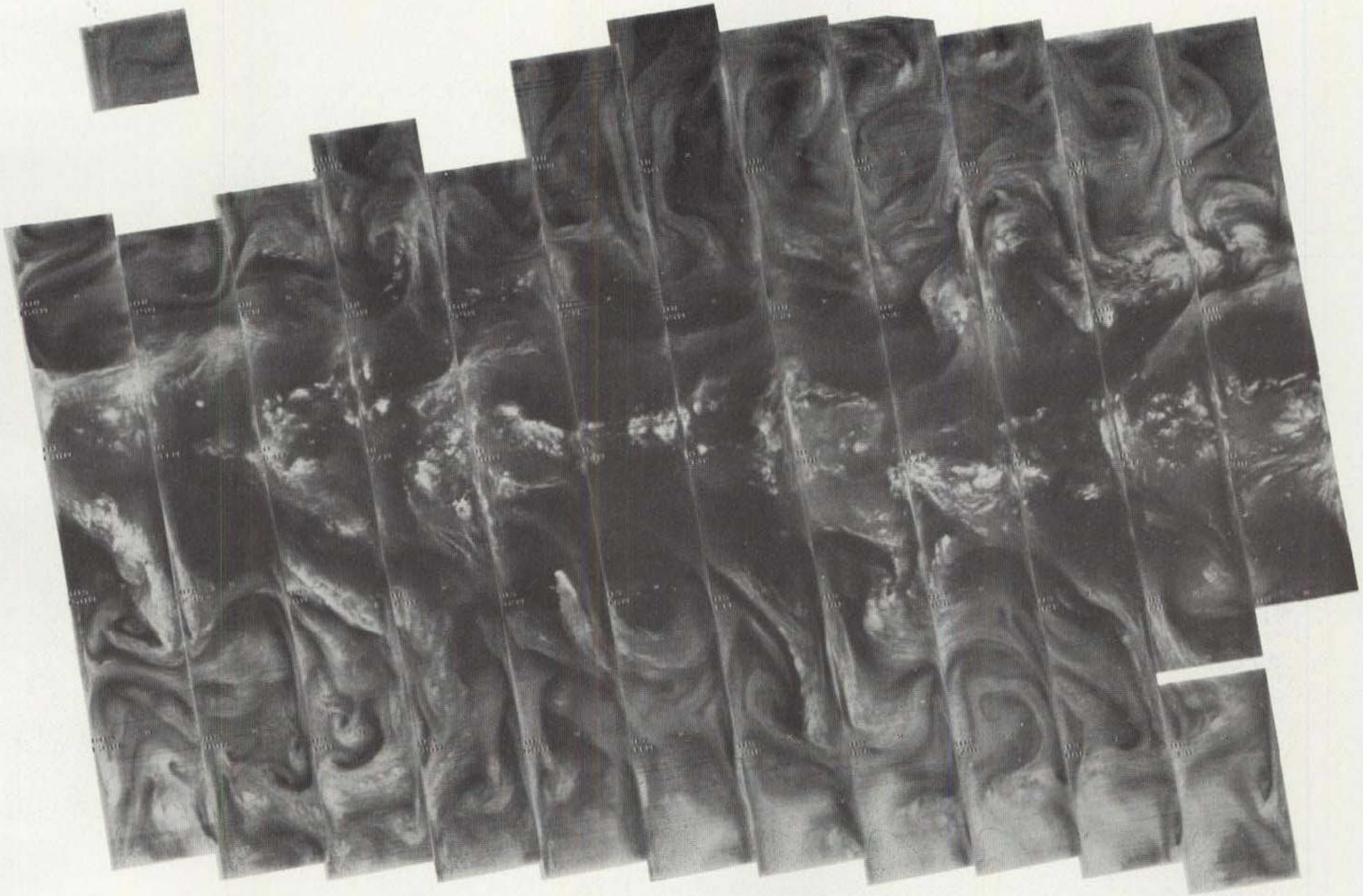
20 APRIL 1976

6.7 μm

4204 4203 4202 4201 4200 4199 4198 4197 4196 4195 4194 4193 4192

20 APRIL 1976

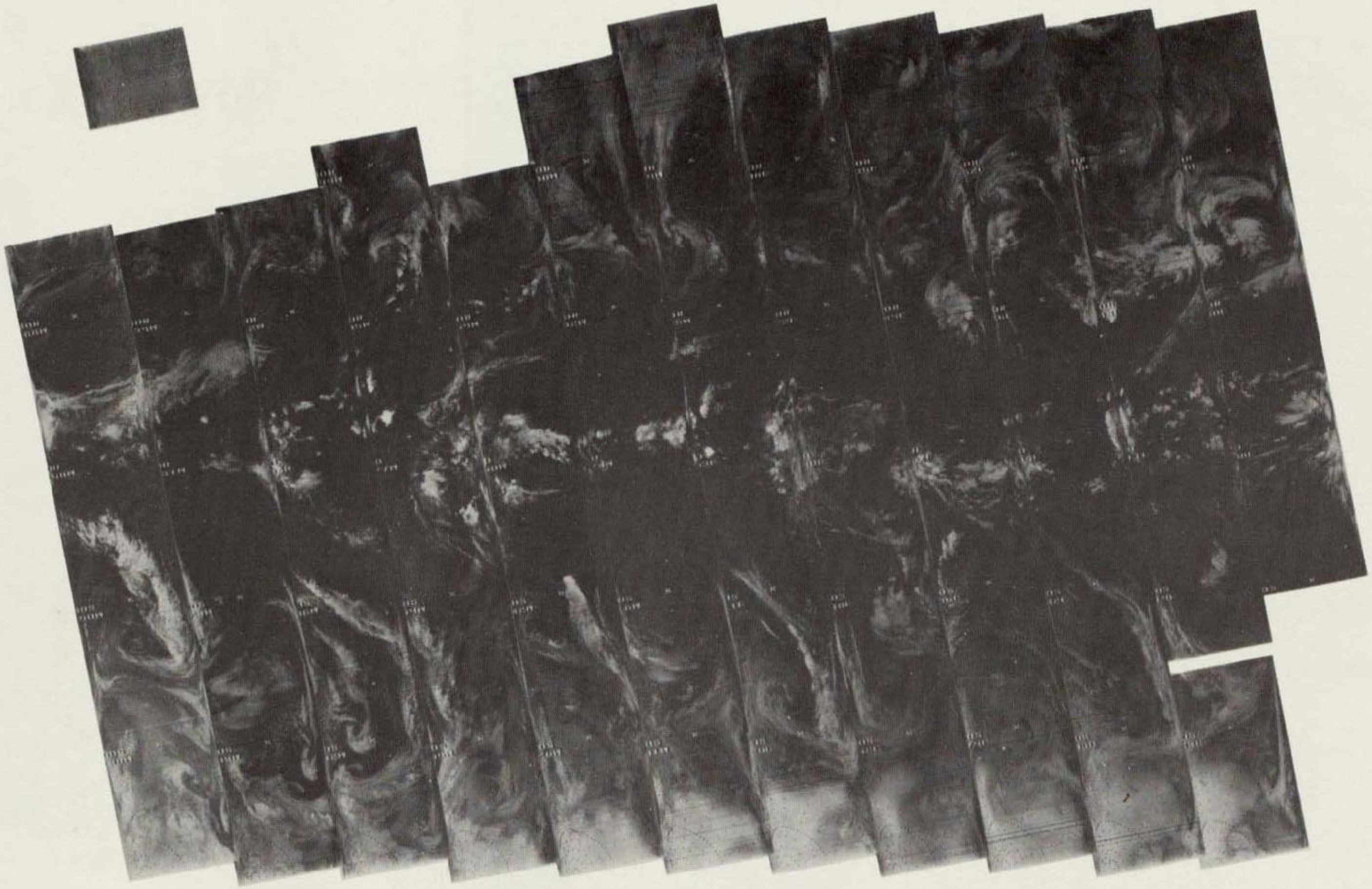
11.5 μm



4217 4216 4215 4214 4213 4212 4211 4210 4209 4208 4207 4206 4205

21 APRIL 1976

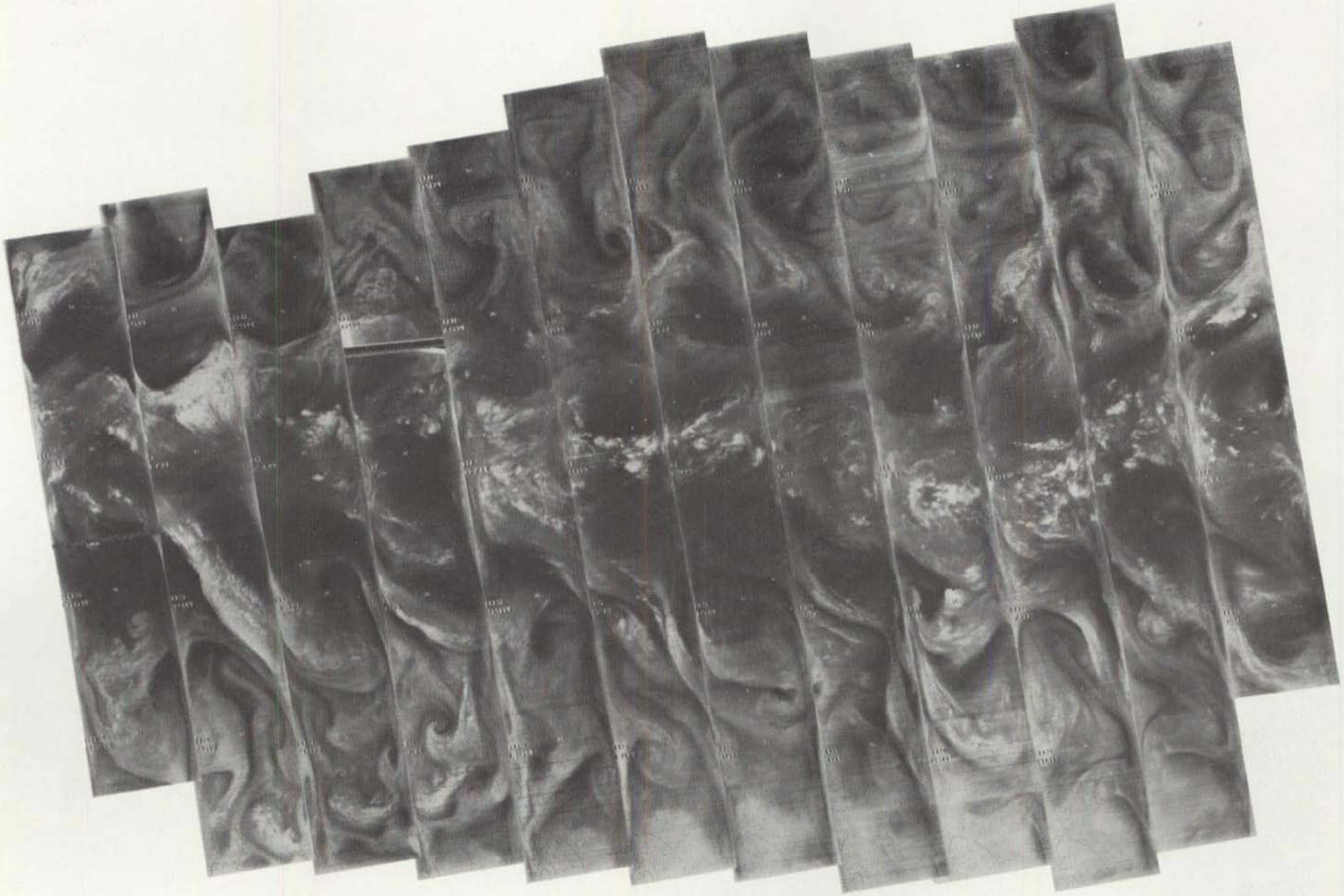
6.7 μm



4217 4216 4215 4214 4213 4212 4211 4210 4209 4208 4207 4206 4205

21 APRIL 1976

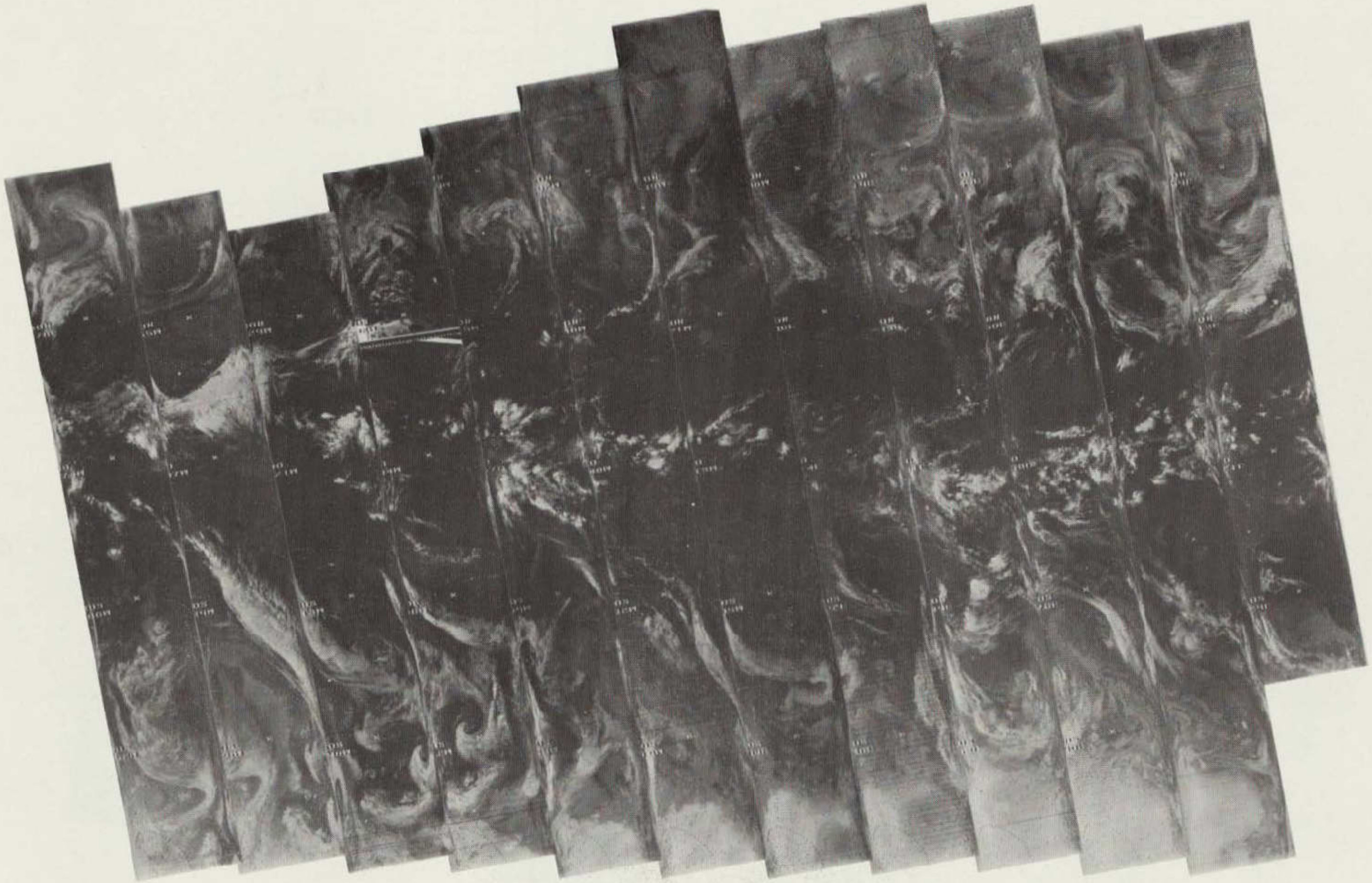
11.5 μm



4231 4230 4229 4228 4227 4226 4225 4224 4223 4222 4221 4220 4219 4218

22 APRIL 1976

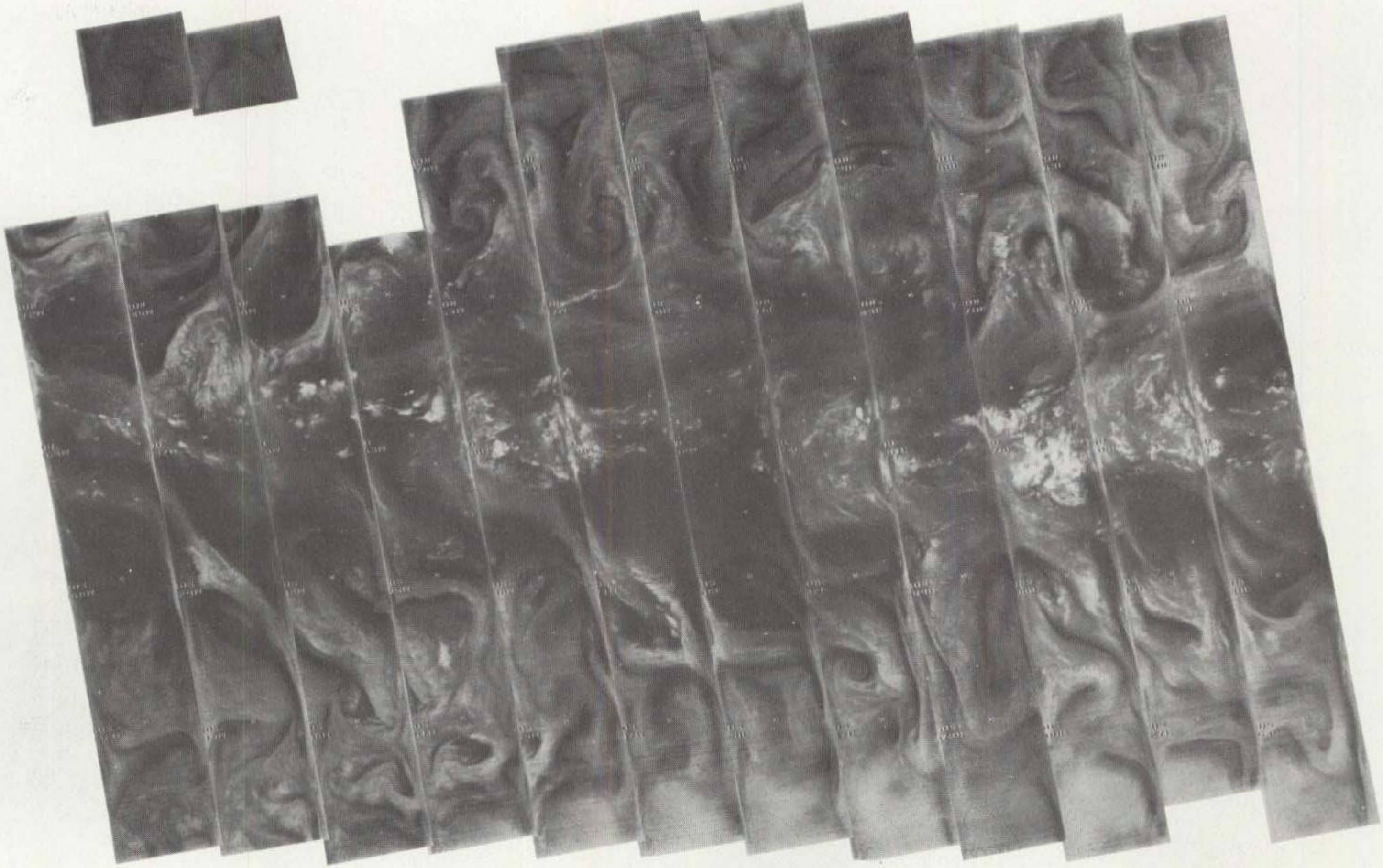
6.7 μm



4231 4230 4229 4228 4227 4226 4225 4224 4223 4222 4221 4220 4219 4218

22 APRIL 1976

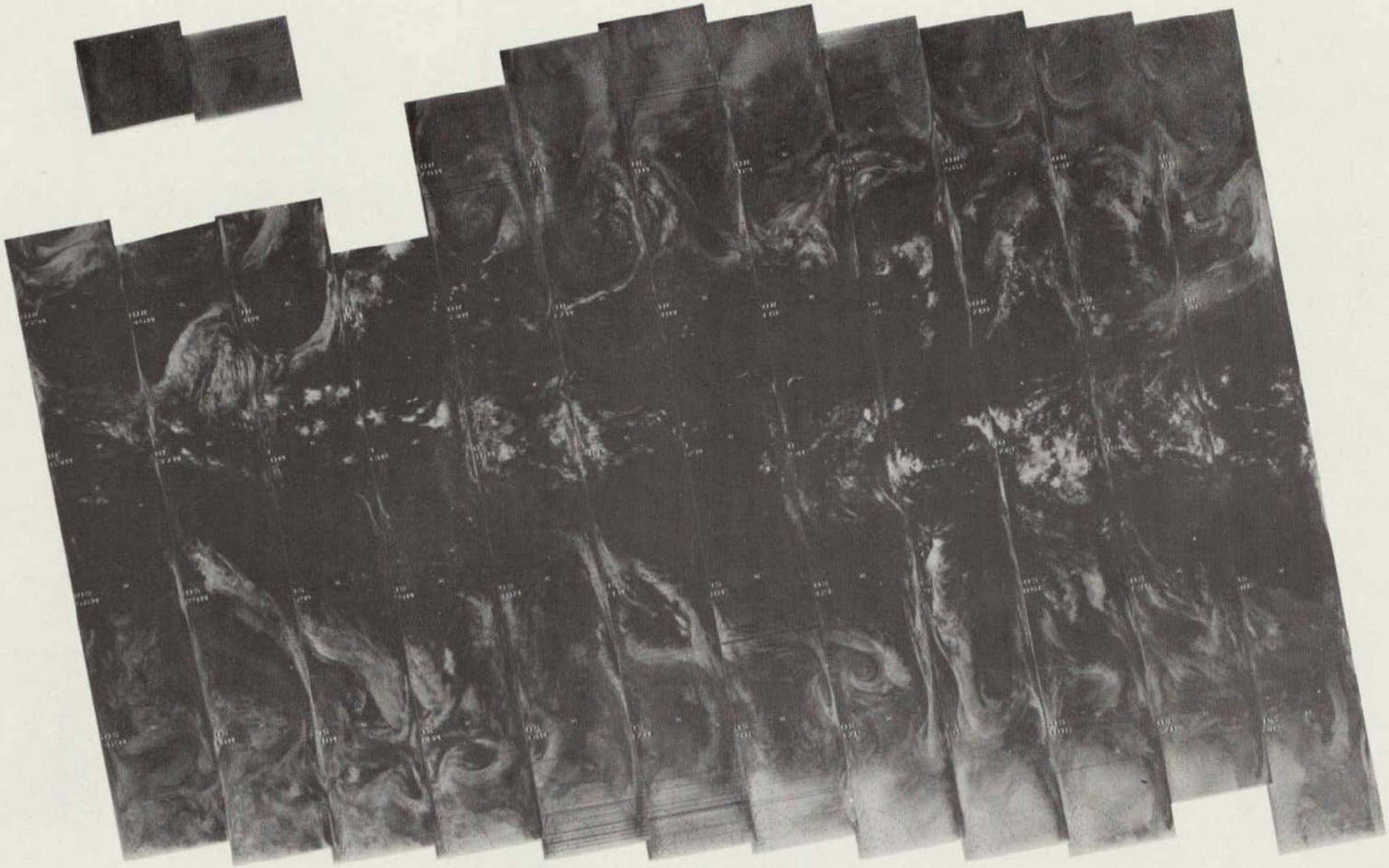
11.5 μm



4244 4243 4242 4241 4240 4239 4238 4237 4236 4235 4234 4233 4232

23 APRIL 1976

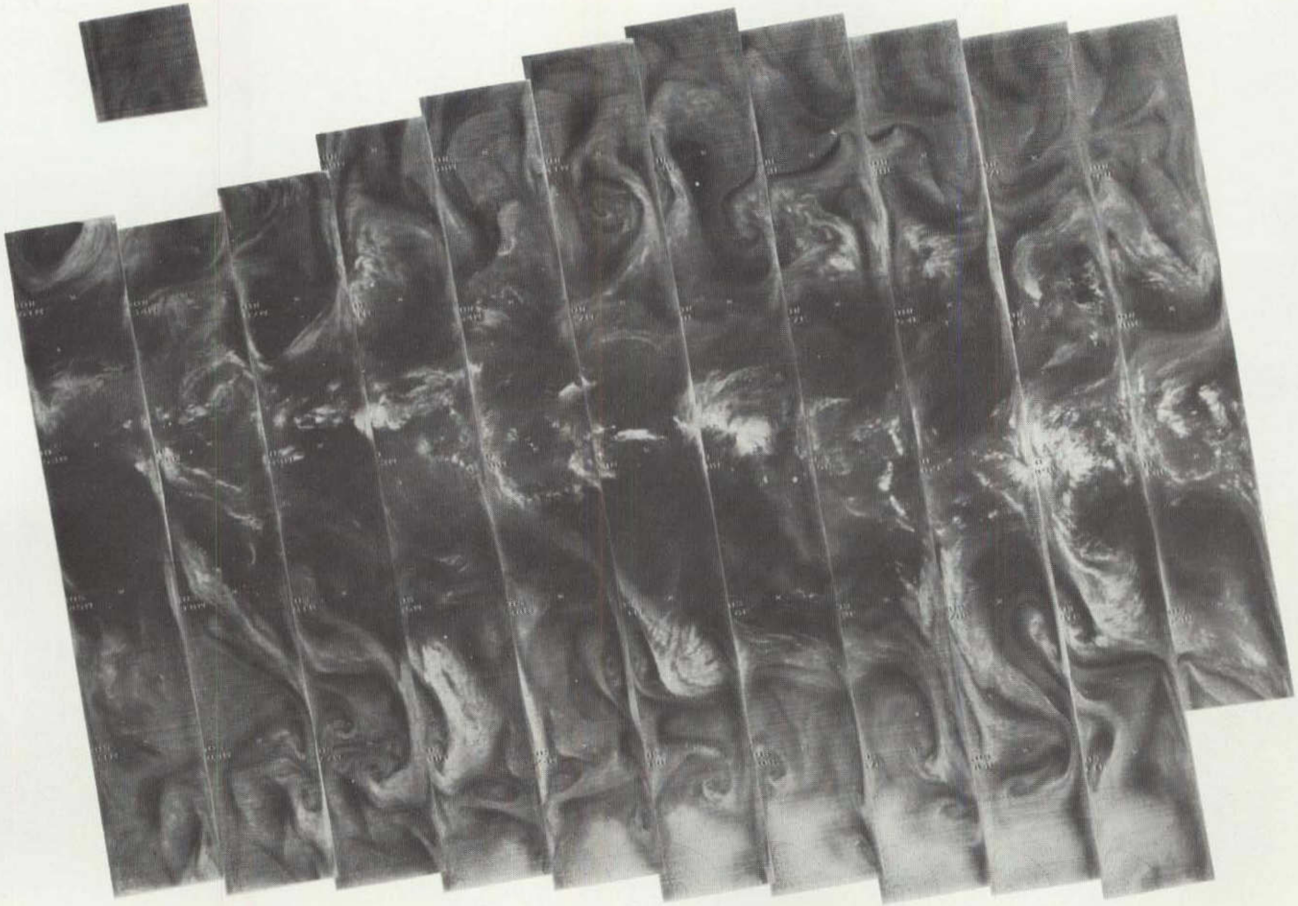
6.7 μm



4244 4243 4242 4241 4240 4239 4238 4237 4236 4235 4234 4233 4232

23 APRIL 1976

11.5 μm



4258 4257 4256 4255 4254 4253 4252 4251 4250 4249 4248 4247 4246 4245

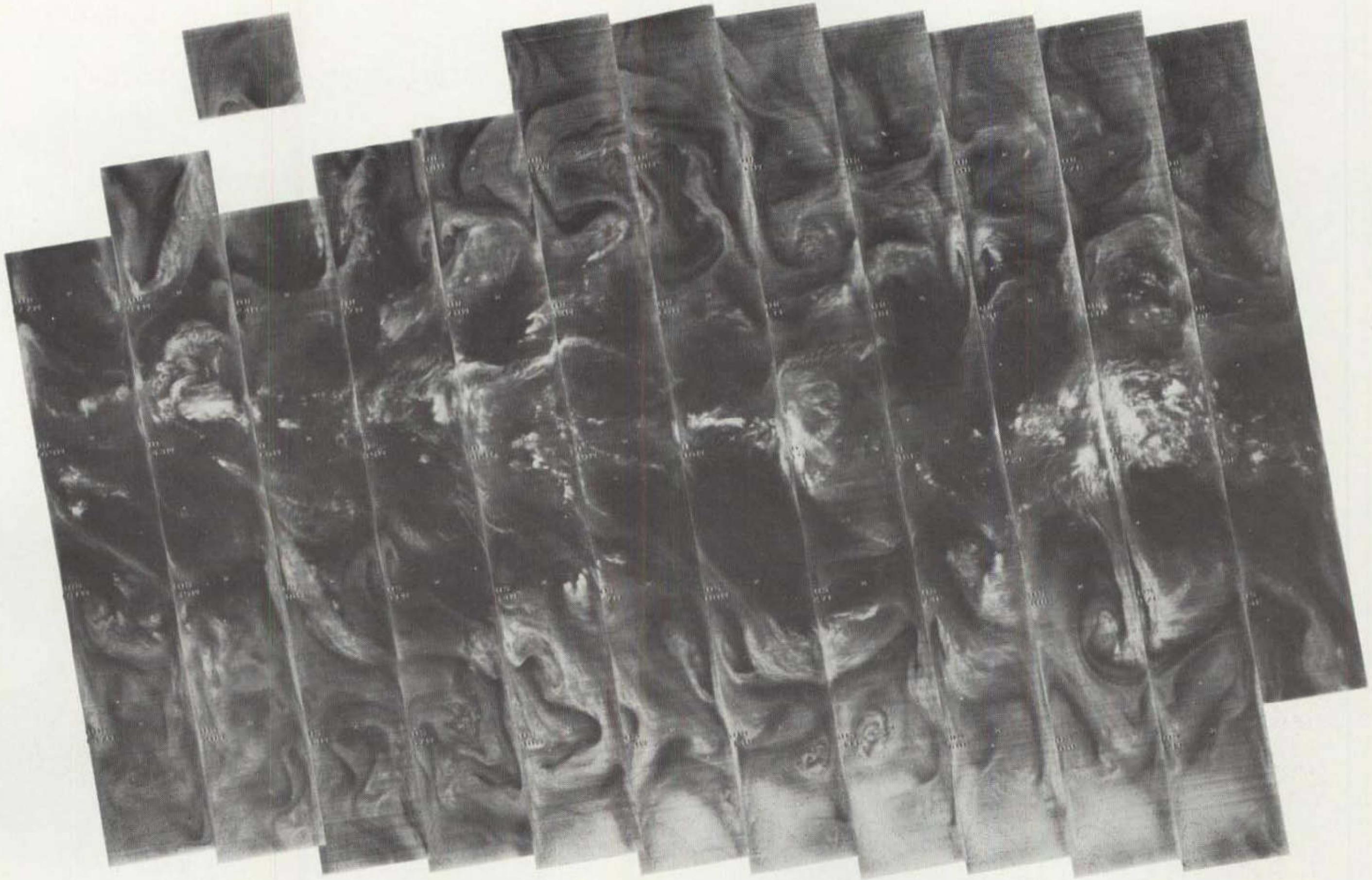
24 APRIL 1976

6.7 μm

4258 4257 4256 4255 4254 4253 4252 4251 4250 4249 4248 4247 4246 4245

24 APRIL 1976

11.5 μm



4271 4270 4269 4268 4267 4266 4265 4264 4263 4262 4261 4260 4259

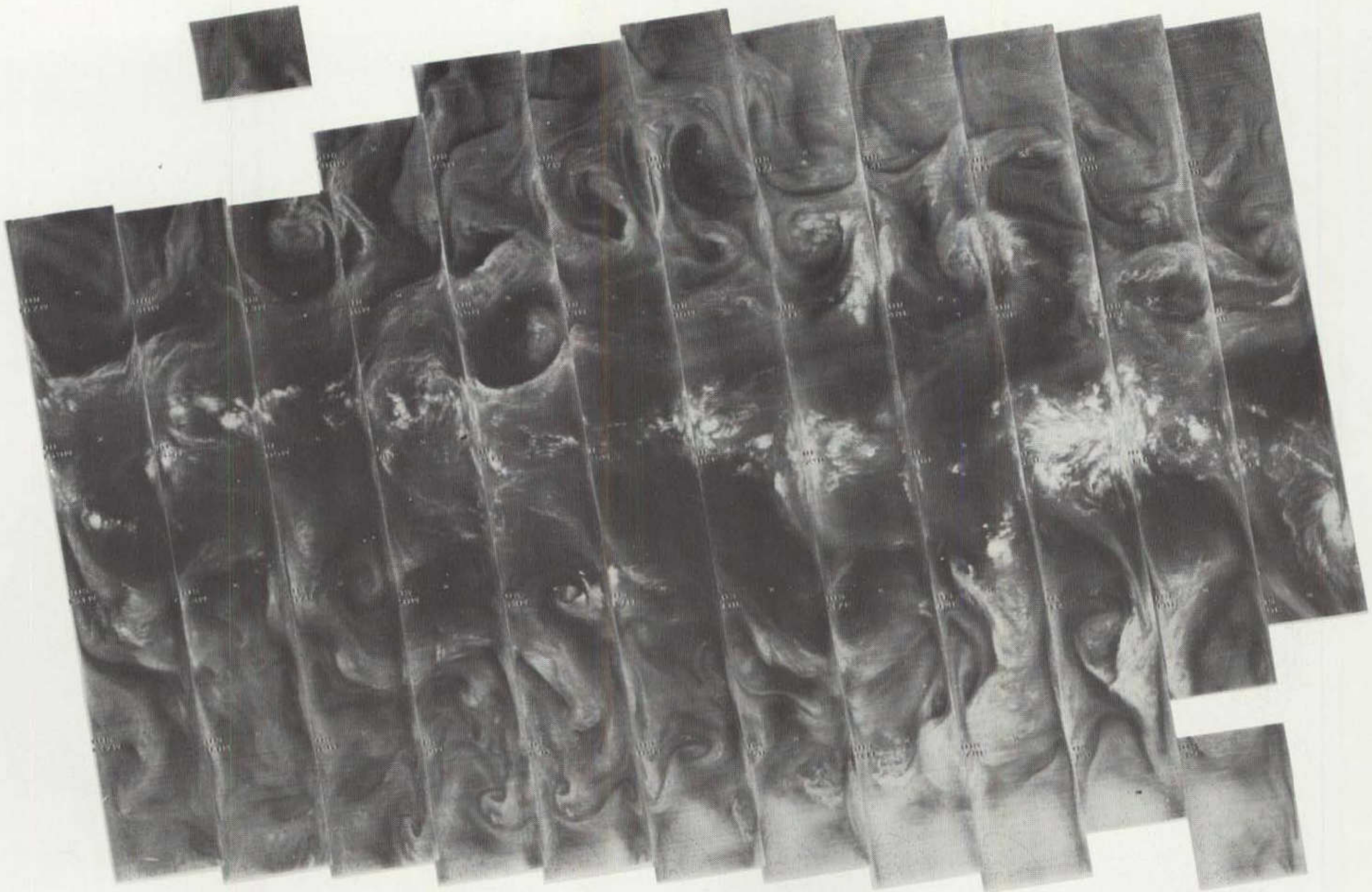
25 APRIL 1976

6.7 μm

4271 4270 4269 4268 4267 4266 4265 4264 4263 4262 4261 4260 4259

25 APRIL 1976

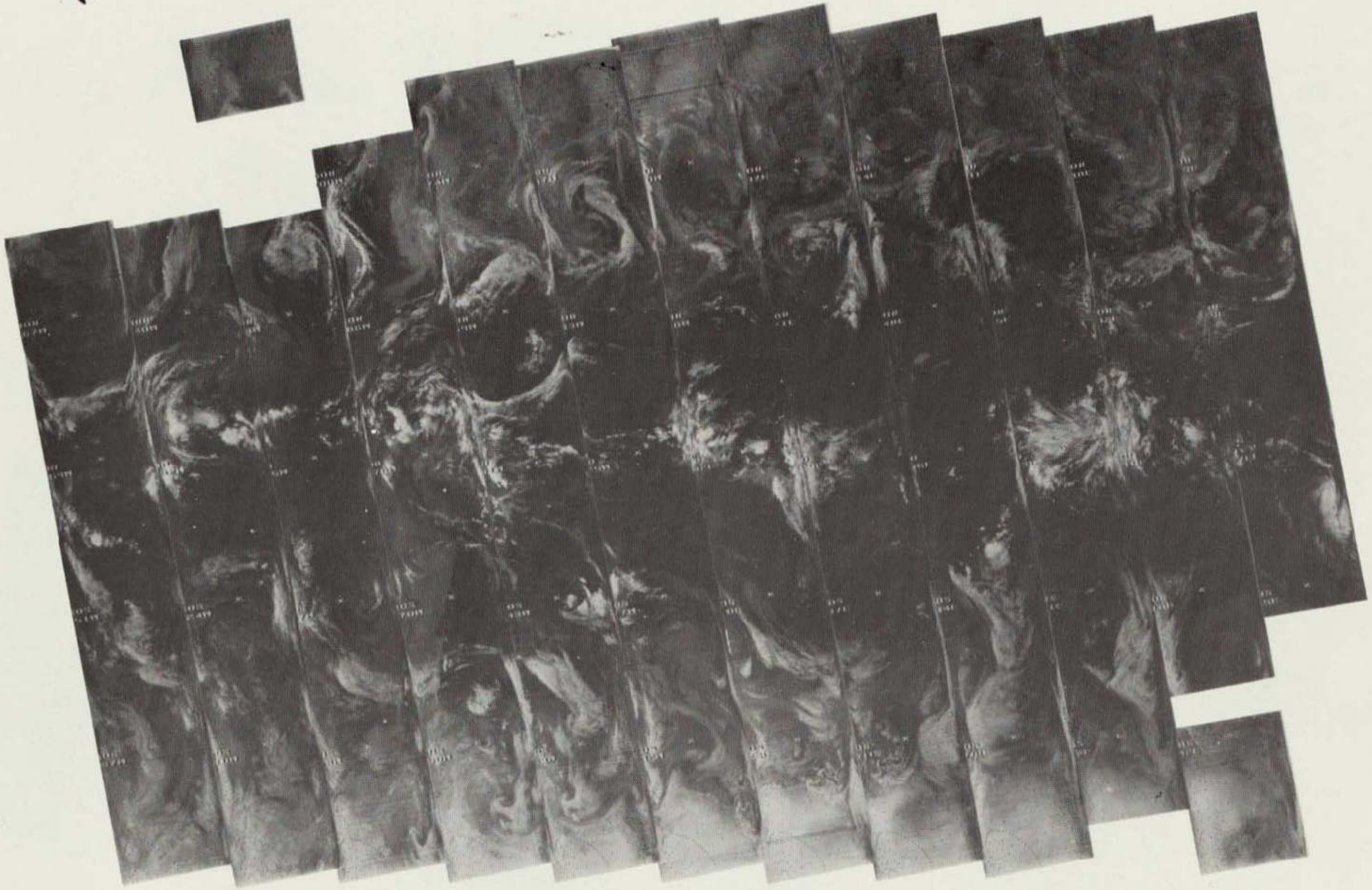
11.5 μm



4284 4283 4282 4281 4280 4279 4278 4277 4276 4275 4274 4273 4272

26 APRIL 1976

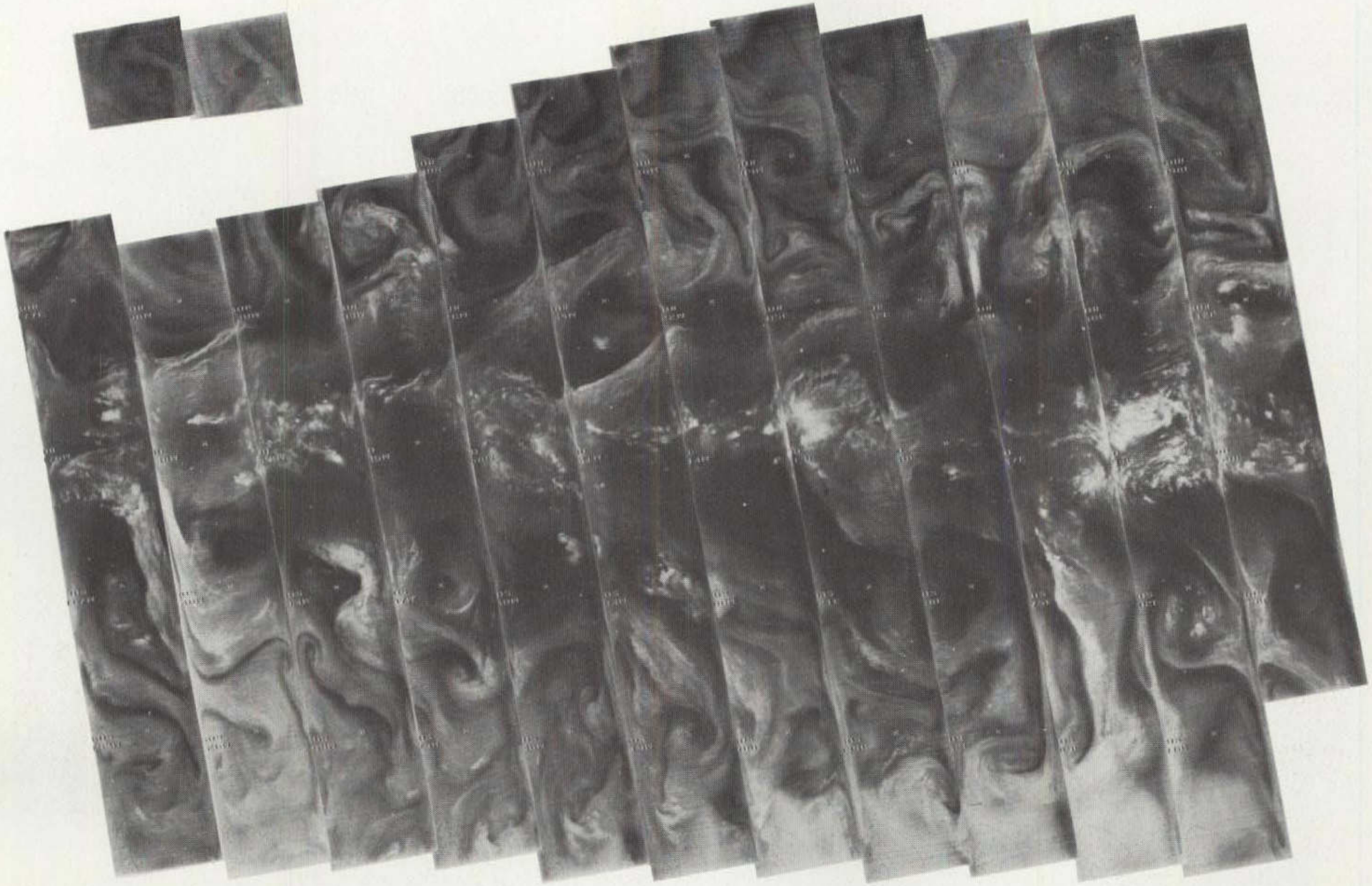
6.7 μm



4284 4283 4282 4281 4280 4279 4278 4277 4276 4275 4274 4273 4272

26 APRIL 1976

11.5 μm



4298 4297 4296 4295 4294 4293 4292 4291 4290 4289 4288 4287 4286 4285

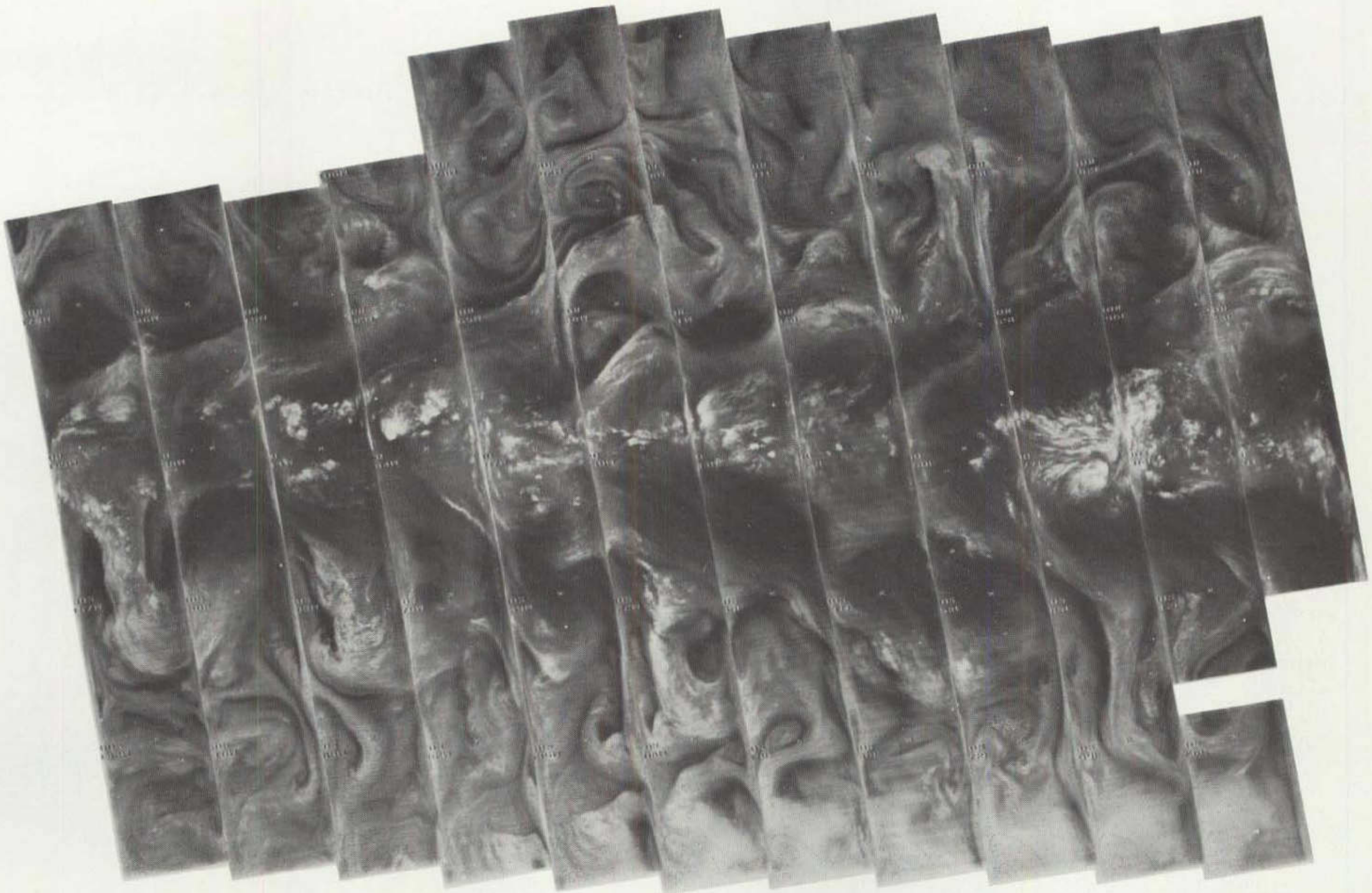
27 APRIL 1976

6.7 μm

4298 4297 4296 4295 4294 4293 4292 4291 4290 4289 4288 4287 4286 4285

27 APRIL 1976

11.5 μm



4311 4310 4309 4308 4307 4306 4305 4304 4303 4302 4301 4300 4299

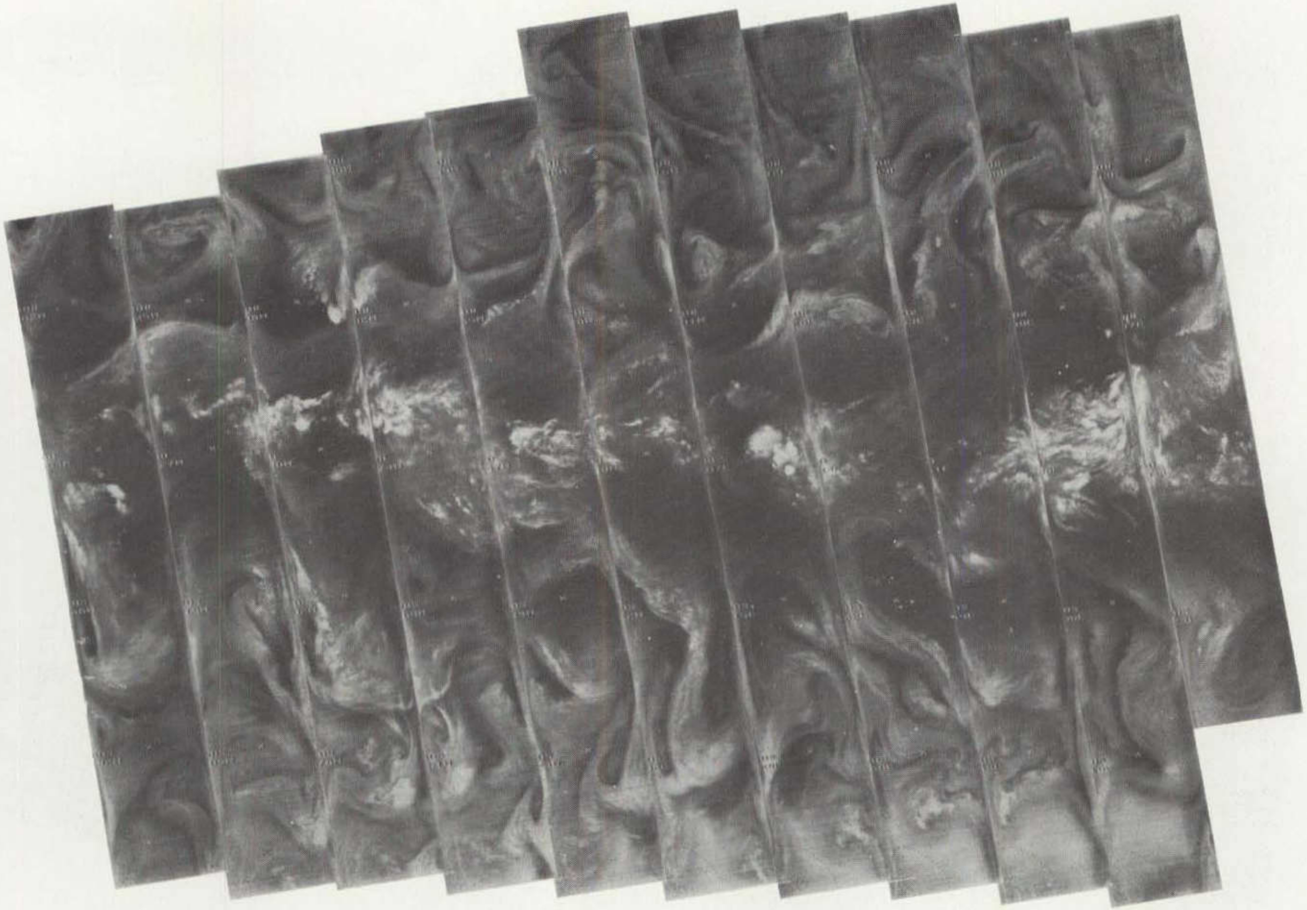
28 APRIL 1976

6.7 μm

4311 4310 4309 4308 4307 4306 4305 4304 4303 4302 4301 4300 4299

28 APRIL 1976

11.5 μm



4325 4324 4323 4322 4321 4320 4319 4318 4317 4316 4315 4314 4313 4312

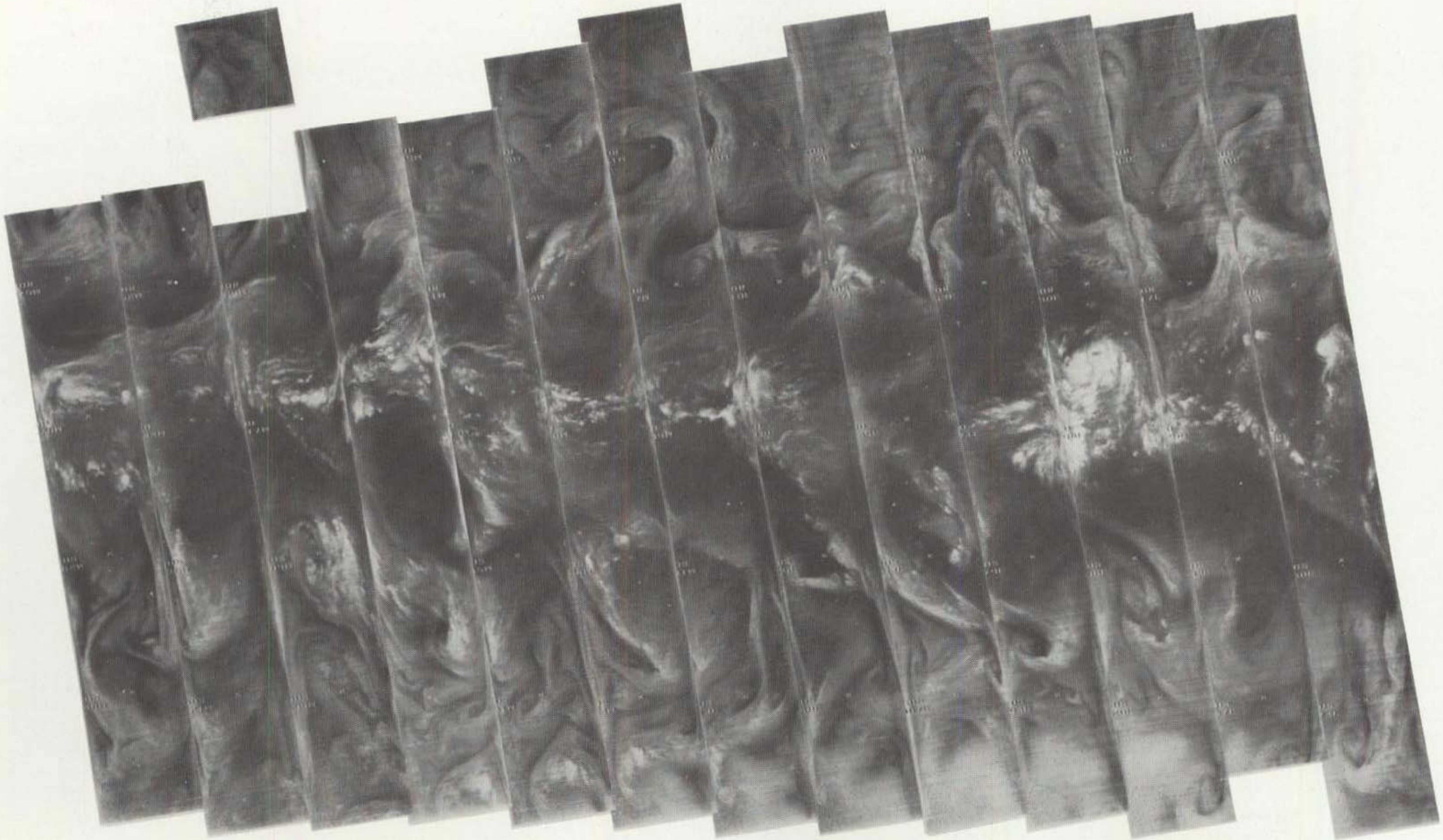
29 APRIL 1976

6.7 μm

4325 4324 4323 4322 4321 4320 4319 4318 4317 4316 4315 4314 4313 4312

29 APRIL 1976

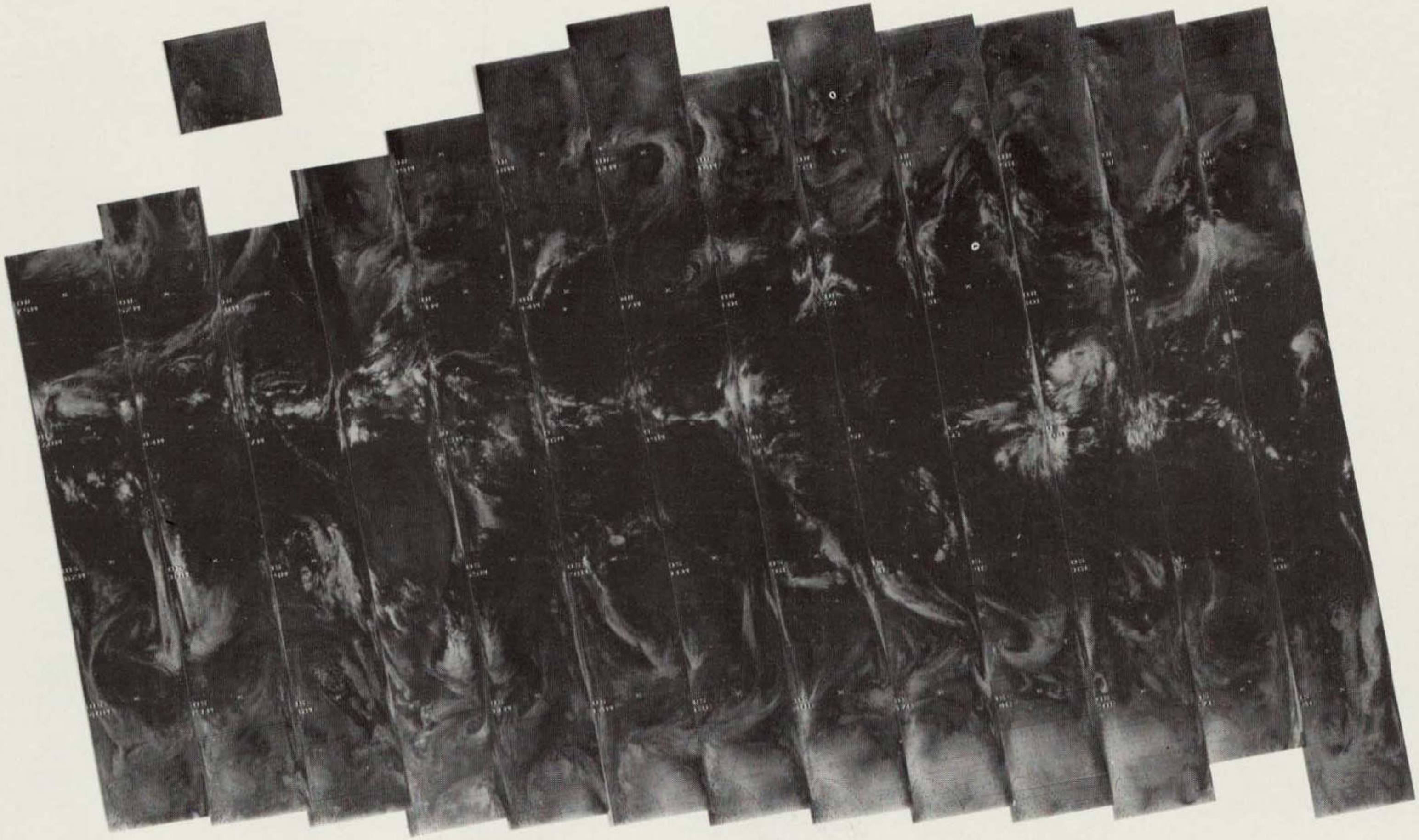
11.5 μm



4338 4337 4336 4335 4334 4333 4332 4331 4330 4329 4328 4327 4326

30 APRIL 1976

6.7 μm



4338 4337 4336 4335 4334 4333 4332 4331 4330 4329 4328 4327 4326

30 APRIL 1976

11.5 μm

SECTION 5

CORRECTIONS TO THE NIMBUS 6 USER'S GUIDE

This section presents all corrections or additions to The Nimbus 6 User's Guide, which now are known to be necessary. If additional corrections are required, they will appear in a subsequent catalog. All corrections will be carried forward cumulatively into each new catalog.

5.1 THIR Corrections to the User's Guide

The THIR mirror on Nimbus 6 rotates counter clockwise. Therefore, replace lines one through four on page 14 with the following:

> ". . . rotation is such that, when combined with the velocity vector of the satellite, a left-hand spiral results. Therefore, the mirror scans across the earth from west to east in the daytime when traveling northward, and from east to west at night when traveling southward."

The information in Figure 2-4 on page 17 is correct. However, the direction of scan is counter clockwise, and not clockwise as shown.

5.2 HIRS Corrections to the User's Guide

On page 40, Table 3-2, under "Detector Summary" change LnSe to LnSb.

The CHANNEL (and) RANGE information in the swath displays for HIRS has been changed since launch, making Table 3-5 on pages 54 and 55 in the User's Guide incorrect. The table below labeled Table 3-5 provides the correct information.

5.3 SCAMS Corrections to the User's Guide

The information contents of the image in the swath displays for SCAMS has been changed since launch, making Tables 4-5, 4-6, and 4-7 in the User's Guide incorrect. Thus, the table below labeled Table 4-5 and 6 replaces Tables 4-5 and 4-6 in the User's Guide, and the table labeled 4-7 replaces Table 4-7 in the User's Guide. All the images display the same parameters. Therefore, these new tables do not list all the possible displays, as were listed in the old Tables 4-5, 4-6, and 4-7.

On page 44, Figure 3-3, the SCAMS elements are shown with a right-to-left (clockwise) stepping pattern when looking in the direction of satellite motion. The SCAMS elements should be corrected to show a left-to-right (counterclockwise) stepping pattern.

Table 5-1

This table replaces Table 3-5 on pages 54 and 55 in The Nimbus 6 User's Guide

Table 3-5

Temperature Range of Gray Scale, and Channel of HIRS Data for each Swath on each HIRS Image Display Between Orbit 426 and 4338 (14 July 1975 through 30 April 1976)

		SWATH NUMBER									
		1	2	3	4	5	6	7	8	9	10
Coverage Period 14 July-20 July Orbits 426-513	HIRS Channel Display (channel-range)*	08-08	09-09	10-10	16-16	17-17	18-18	12-12	14-14	03-03	15-15
	Temperature Range (°K) (black to white)	300-200	290-210	260-210	310-270	100-900	0-30	290-210	260-210	240-210	280-210
Coverage Period 22 July-31 July Orbits 538-545 548-549 600-613 615-647 651-657 659	HIRS Channel Display (channel-range)*	08-08	09-09	10-10	16-16	17-17	17-17	12-12	14-14	03-03	15-15
	Temperature Range (°K) (black-white)	300-200	290-210	260-230	310-270	100-900	100-900	280-200	280-200	280-200	280-200
Coverage Period 23 July-6 Aug. Orbits 546-547 553-599 614 648-650 658 660-747	HIRS Channel Display (channel-range)*	08-08	16-16	16-21	18-18	17-17	10-10	12-12	14-14	03-03	15-15
	Temperature Range (°K) (black-white)	300-200	310-270	300-200	0-30	100-900	260-230	280-200	280-200	280-200	280-200

Table 3-5 (Continued)

		SWATH NUMBER									
		1	2	3	4	5	6	7	8	9	10
Coverage Period 7 Aug.-30 Apr. Orbits 748-4338	HIRS Channel Display (channel-range)*	08-08	16-16	16-21	18-18	17-17	10-10	12-12	14-14	03-03	15-15
	Temperature Range (°K) (black-white)	310-230	310-230	310-270	0-50	100-900	280-210	300-210	300-210 **	240-185	300-185 ***

*The HIRS channel number is number before the hyphen. The number after the hyphen is the computer program table used to display the data from each channel as temperatures (°K). The range of temperatures displayed in each swath is given beneath each "HIRS Channel Display." The 18 steps of the scale are used to represent the division of each temperature range into 18 approximately equal temperature intervals. The central wavelength (in μm) of each channel on these displays is: channel 3 = 14.4, 8 = 11.0, 9 = 8.2, 10 = 6.7, 12 = 4.52, 14 = 4.40, 15 = 4.24, 16 = 3.71, 17 = 0.61, and 18 is the temperature difference between channel 16 and channel 8. The values of channel 17-17 are albedo, represented as "counts" between 100 (blackest) and 900 (whitest). The values for 16-21 represent a second temperature range for channel 16 data Table 3-1 on page 39 of the User's Guide provides detailed spectral information and the purpose of each of the HIRS channels.

**14-14 temperature range changed to 245-205 on orbit 3929A (31 March 1976)

***15-15 temperature range changed to 275-210 on orbit 3166A (26 January 1976)

Table 5-2

This table replaces Tables 4-5 and 4-6 (on pages 79 through 81) in the Nimbus 6 User's Guide and Table 5-2 in the Nimbus 6 Data Catalog Volume 4

Table 4-5 and 6

Parameter Limits of the Gray Scale for Parameters 1, 2, 3, 5, 11, 12, and 16 on the SCAMS Image Displays between Orbits 478 and 4338 (17 July 1975 and 30 April 1976)

	Swath		1	2	3	4	5
Orbits 426 thru 1425 14 July 75 thru 26 Sept. 75	Parameter		3	2	16	11	12
	Gray Scale Value	black	280 °K	320 °K	10 °K	60 g/mm²	1.5 g/mm²
		white	210	100	-22	0.0	-0.1*
Orbits 1426 thru 3675 26 Sept. 75 thru 12 March 76	Parameter		3	2	16	11	12
	Gray Scale Value	black	280 °K	320 °K	10 °K	60 g/mm²	2.0 g/mm²
		white	210	100	-22	0.0	0.0
Orbits 3676 thru 3899 12 March 76 thru 29 March 76	Parameter		5	2	16	11	12
	Gray Scale Value	black	240 °K	320 °K	10 °K	70 g/mm²	2.0 g/mm²
		white	200	100	-22	0.0	0.0
Orbits 3900 thru 3929 29 March 76 thru 31 March 76	Parameter		1	1	1	5	3
	Gray Scale Value	black	220 °K	265 °K	300 °K	240 °K	280 °K
		white	130	210	260	200	220
Orbits 3930 thru 4338 31 March 76 thru 30 April 76	Parameter		1	1	1	2	3
	Gray Scale Value	black	220 °K	265 °K	300 °K	320 °K	280 °K
		white	130	210	260	100	220

*1.6 to 0.0 between orbit 426 and 477

Parameters 1, 2, 3, 5, and 16 represent uninverted antenna temperatures for channels 1 (22.24 GHz), 2 (31.65 GHz), 3 (52.85 GHz), and 5 (55.45 GHz). Parameter 16 is the temperature difference between channels 2 and 3. Parameters 11 and 12 represent inverted antenna temperatures of integrated atmospheric water vapor (channel 11) and integrated liquid water from clouds or precipitation.

Table 5-3

This table replaces Table 4-7 (on pages 82 and 83) in The Nimbus 6 User's Guide

Table 4-7

Contour Program Options used for Parameters 13, 14, and 15
on the SCAMS Image Display

Contour Options	Parameters			Valid for Orbits
	13 Mean Temperature Between 1000 mb and 500 mb	14 Mean Temperature Between 500 mb and 250 mb	15 Mean Temperature Between 250 mb and 100 mb	
Contour Interval	4°K	4°K	4°K	426-851
Contour Thickness	1°K	1°K	1°K	(14 July-14 Aug. 1975)
Contour Interval	4°K	4°K	4°K	852-4338
Contour Thickness	2°K	2°K	2°K	(14 Aug. 1975-30 Apr. 1976)

Section 4.5.3 "Tape Format" on page 83 of the User's Guide states that each tape will have "five files, i.e., a short header file ... and four data files,..." There will not be a header file on the archival tape. The sentence should be changed to read: "The tapes will be standard 9-track 1600 BPI tapes, each containing four data files, one for each of four days."

In Table 4-8 on page 80 the "Pitch error" and "Roll error" "Dimensional Units" should be changed to counts (from Deg) and the "Multiplier Used" should be changed to 1 (from 32). In the same table the "Playback orbit" should be followed by one "I*2 Spare", and then by the "Reference orbit", which should be changed to I*4 (rather than I*2). (Reference orbit = year * 100,00 + day *·100 + finish hour.) The "Dimensional Units" for the "Geopotential thicknesses" on page 85 of the same table should be changed to "°K" (from DM).

The following information, describing how the antenna temperatures are computed from the SCAMS instrument digital data, should be added after SCAMS Section 4.5 of the User's Guide.

4.6 Post-launch Calibration

Antenna temperatures are computed from the SCAMS instrument digital data for each of the five channels by the equation

$$T_A = T_{AS} + \frac{T_{AC} - T_{AS}}{d_{T_C} - d_s} (d - d_s)$$

where T_A is antenna temperature for the earth (positions 0-12), T_{AS} is the space antenna temperature (position 13), T_{AC} is the calibration target antenna temperature (position 14), d is earth data in counts, d_s is space data in counts, and d_c is calibration target data in counts. The digital data matrix is described in Table 4-2 of the Nimbus 6 User's Guide. The space calibration antenna temperature is assumed constant at 3°K for all five channels. The target antenna temperature is computed by

$$T_{AC} = T_C + T_{CO}$$

The constant offset T_{CO} is currently assumed to be zero for all channels, and the target temperatures (T_C) are given by

$$T_C = a_0 + a_1(R - R_{25}) + a_2(R - R_{25})^2$$

where the thermistor resistances (R) are computed by

$$R = R_1 + \frac{R_2 - R_1}{d_{R2} - d_{R1}} (d_R - d_{R1})$$

and values of the other constants are listed in Table 4-9. Note that channels 3, 4, and 5 share the same calibration target. Also listed in Table 4-9 are word numbers in the digital data matrix containing data values d_R, d_{R1}, and d_{R2}.

5.4 ESMR Corrections to the User's Guide

The following are corrected equations for the ESMR Section of the User's Guide:

page 90

$$X(km) = (636 + 10.8P = 0.32P^2) R_J$$

page 96

$$T_B = T_A - (T_A - T_C)\frac{(C - C_A)}{(C_C - C_A)}$$

page 101

$$T_{\substack{\text{Horizontal}\\ \text{True}}} = 1 + a\, T_{\substack{\text{Horizontal}\\ \text{Nominal}}} - T_{\substack{\text{Vertical}\\ \text{Nominal}}}$$

$$T_{\substack{\text{Vertical}\\ \text{True}}} = 1 + b\, T_{\substack{\text{Vertical}\\ \text{Nominal}}} - b\, T_{\substack{\text{Horizontal}\\ \text{Nominal}}}$$

Table 5-4

This table accompanies Section 4.6."Post-launch Calibration", and should be added to the end of the SCAMS section of the User's Guide

Table 4-9

Thermistor Calibration Constants
used to Calculate the SCAMS Target Temperatures

constant \ channel	1	2	3,4,5
a_0	298.16		
a_1	.46485	.46535	.46814
a_2	$3.0 \cdot 10^{-5}$	$2.9 \cdot 10^{-5}$	$3.0 \cdot 10^{-5}$
R_{25}	603.75	602.98	599.71
R_1	495.6		
R_2	603.4		
d_R (word no.)	1	11	2
d_{R1} (word no.)	61		62
d_{R2} (word no.)	71		72

page 106

$$N_i = 256\,(T_{Hi} - 100) + T_{Vi} - 100$$

The following information supplements Section 5.3.2 in the User's Guide.

The display format and temperature ranges of the images in the swath displays for ESMR has been changed since launch. The latest revision occurred after orbit 3932 in which each ESMR scan line is displayed once prior to orbit 3932 and twice after orbit 3933. Similarly, each of the 71 scan-spot elements is displayed once through orbit 3932 and twice after orbit 3933.

Through orbit 3932 (31 March) the ESMR displays contained 20 swaths of data, as shown in the ESMR image displays up to orbit 3932 in Section 3.3. The swaths are numbered (numbers not shown) from 1 on the left to 20 on the right. Each of the ten swaths on the left has the same geographic coverage. However, each swath displays either horizontally or vertically polarized data at a temperature range as listed in Table 5-5a. The right set of ten swaths has a similar format, and displays the earliest recorded data. If the right swaths were cut and placed above the group on the left, the new display would show the continuous coverage recorded for that orbit. Swaths 1 and 11 have the same polarization and temperature range. Similarly, swaths 2 and 12, 3 and 13, etc., are the same. The tables here labeled 5-5 and 5-5a replace Table 5-5 on page 105 of the User's Guide.

As stated above, the ESMR display format was modified at orbit 3933 (31 March 1976). After this orbit all displays will have the following new format.

The new displays contain ten swaths of data plus a geographic grid overlay for each swath, as shown in the ESMR image displays after orbit 3933 in Section 3.3., of the Nimbus 6 Data Catalog, Volume 5.

The swaths are numbered (numbers not displayed) from 1 on the left to 10 on the right. Each of the five swaths on the left has the same geographic coverage. However, each swath displays either horizontally or vertically polarized data at a temperature range as listed in Table 3-5. The right set of five swaths has a similar format, and displays the latest recorded data. If the right swaths were cut and placed below the group on the left, the new display would show the continuous coverage of that display.

Swaths 1 and 6 display the same parameter. That is, the temperature range and polarization for swaths 1 and 6 are the same. Similarly, swaths 2 and 7, 3 and 8, 4 and 9, and 5 and 10 display the same parameters. Table 3-5 is set up to show this duplication of parameter information.

Table 5-5

This table replaces Table 5-5 on page 105 in the User's Guide

Table 5-5

Brightness Temperature Value for each Step of the Gray Scale on ESMR Image Displays for Orbits 426 through 827 (14 July through 12 August 1975)

Gray Scale Number	Swath Number and ESMR Display Parameter									
	1 and 11 (T_H)	2 and 12 (T_V)	3 and 13 $\frac{T_H+T_V}{2}$	4 and 14 (T_H)	5 and 15 (T_V)	6 and 16 $\frac{T_H+T_V}{2}$	7 and 17 (T_H)	8 and 18 (T_V)	9 and 19 $\frac{T_H+T_V}{2}$	10 and 20 (T_V-T_H)
(black) 1	$>$ 200			$>$ 250			$>$ 300			$>$ 50
2	196-200	same	same	246-250	same	same	296-300	same	same	46-50
3	193-196	as	as	243-246	as	as	293-296	as	as	43-46
4	190-193	1 and 11	1 and 11	240-243	4 and 14	4 and 14	290-293	7 and 17	7 and 17	40-43
5	187-190			237-240			287-290			37-40
6	184-187			234-237			284-287			34-37
7	181-184			231-234			281-284			31-34
8	178-181			228-231			278-281			28-31
9	175-178			225-228			275-278			25-28
10	171-175			221-225			271-275			21-25
11	168-171			218-221			268-271			18-21
12	165-168			215-218			265-268			15-18
13	162-165			212-215			262-265			12-15
14	159-162			209-212			259-262			09-12
15	156-159			206-209			256-259			06-09
16	153-156			203-206			253-256			03-06
17	150-153			200-203			250-253			00-03
(white) 18	$<$ 150			$<$ 200			$<$ 250			$<$ 00

T_H = Brightness temperature derived from the ESMR horizontal polarization channel data

T_V = Brightness temperature derived from the ESMR vertical polarization channel data

Table 5-6

This table follows the new Table 5-5 (above), which replaced Table 5-5 on page 105 in the User's Guide

Table 5-5a

Brightness Temperature Value for each Step of the Gray Scale on ESMR Image Displays for Orbits 828 through 3932 (13 August 1975 through 31 March 1976)

(Brightness Temperatures are in °K)

Gray Scale Number	Swath Number and ESMR Display Parameter									
	1 and 11 (T_H)	2 and 12 (T_V)	3 and 13 $\frac{T_H+T_V}{2}$	4 and 14 (T_H)	5 and 15 (T_V)	6 and 16 $\frac{T_H+T_V}{2}$	7 and 17 (T_H)	8 and 18 (T_V)	9 and 19 $\frac{T_H+T_V}{2}$	10 and 20 (T_V-0.6T_H)
(black) 1	> 200	> 230	> 210	> 250	> 270	> 250	> 290	> 300	> 280	> 140
2	196-200	226-230	206-210	246-250	267-270	247-250	287-290	298-300	278-280	136-140
3	191-196	223-226	203-206	243-246	264-267	244-247	284-287	295-298	275-278	133-136
4	187-191	219-223	199-203	239-243	261-264	241-244	281-284	293-295	273-275	129-133
5	183-187	215-219	195-199	235-239	258-261	238-241	278-281	290-293	270-273	125-129
6	178-183	211-215	191-195	231-235	254-258	234-238	274-278	288-290	268-270	121-125
7	174-178	208-211	188-191	228-231	251-254	231-234	271-274	285-288	265-268	118-121
8	169-174	204-208	184-188	224-228	248-251	228-231	268-271	283-285	263-265	114-118
9	165-169	200-204	180-184	220-224	245-248	225-228	265-268	280-283	260-263	110-114
10	161-165	196-200	176-180	216-220	242-245	222-225	262-265	278-280	258-260	106-110
11	156-161	193-196	173-176	213-216	239-242	219-222	259-262	275-278	255-258	103-106
12	152-156	189-193	169-173	209-213	236-239	216-219	256-259	273-275	253-255	99-103
13	148-152	185-189	165-169	205-209	233-236	213-216	253-256	270-273	250-253	95-99
14	143-148	181-185	161-165	201-205	229-233	209-213	249-253	268-270	248-250	91-95
15	139-143	178-181	158-161	198-201	226-229	206-209	246-249	265-268	245-248	88-91
16	134-139	174-175	154-158	194-198	223-226	203-206	243-246	263-265	243-245	84-88
17	130-134	170-174	150-154	190-194	220-223	200-203	240-243	260-263	240-243	80-84
(white) 18	< 130	< 170	< 150	< 190	< 220	< 200	< 240	< 260	< 260	< 80

T_H = Brightness temperature derived from the ESMR horizontal polarization data

T_V = Brightness temperature derived from the ESMR vertical polarization data

Table 5-7

This table follows the new Table 5-5a (above), which replaced Table 5-5 on page 105 in the User's Guide

Table 5-5b

Brightness Temperature Value for each Step of the Gray Scale on ESMR Image Displays for Orbits 3933 through 4338 (31 March through 30 April 1976)

(Brightness Temperatures are in °K)

Gray Scale Number	Swath Number and ESMR Display Parameter				
	1 and 6 (T_H)	2 and 7 (T_H)	3 and 8 (T_H)	4 and 9 (T_V)	5 and 10 $\left(\frac{T_H + T_V}{2}\right)$
(black) 1	> 200	>230	>210	>250	>270
2	196-200	226-230	206-210	246-250	267-270
3	191-196	223-226	203-206	243-246	264-267
4	187-191	219-223	199-203	239-243	261-264
5	183-187	215-219	195-199	235-239	258-261
6	178-183	211-215	191-195	231-235	254-258
7	174-178	208-211	188-191	228-231	251-254
8	169-174	204-208	184-188	224-228	248-251
9	165-169	200-204	180-184	220-224	245-248
10	161-165	196-200	176-180	216-220	242-245
11	156-161	193-196	173-176	213-216	239-242
12	152-156	189-193	169-173	209-213	236-239
13	148-152	185-189	165-169	205-209	233-236
14	143-148	181-185	161-165	201-205	229-233
15	139-143	178-181	158-161	198-201	226-229
16	134-139	174-178	154-158	194-198	223-226
17	130-134	170-174	150-154	190-194	220-223
(white) 18	<130	<170	<150	<190	<220

T_H = Brightness temperature derived from the ESMR horizontal polarization data

T_V = Brightness temperature derived from the ESMR vertical polarization data

Data time (GMT) references for the left set of five swaths are shown adjacent to the vertical line at the left. Time tick marks are every five minutes with hour and minute annotation every fifteen minutes. Data time references for the right set of five swaths are shown in a similar manner adjacent to the vertical line at the right.

The center portion of the display contains two swaths of grid overlay information: the left grid for overlay on each of the five swaths on the left, and the right grid for overlay on each of the five swaths on the right. The grid longitudes are generated at ten degree intervals between 55 degrees south and 55 degrees north, and at 20 degree intervals from 55 degrees to the Poles. Latitude grids are generated every five degrees. All grid lines consist of a series of dots at one degree intervals. Latitudes are labeled at 60°S, 30°S, EQ, 30°N, and 60°N. Longitude labels are normally placed next to each latitude label.

5.5 ERB Corrections to the User's Guide

Post-launch calibration procedures are described below. While some numbers are for the period of this catalog, the calibration procedure is valid for all data. This information can be added as Section 6.5a to the User's Guide and would fit on page 134.

6.5a Post-launch Calibration

The observations from the wide-angle channels (11 and 12), which measure the total energy ($<0.2\ \mu m$ to $>50\ \mu m$) emitted and reflected by the earth, depend on the prelaunch calibration and pertinent instrument temperatures. Assuming unit emissivity for the target scene, the irradiance from the scene is given by,

$$H_T = [\Delta W - \epsilon_s F_s \sigma T_s^4 + \epsilon_d F_d \sigma (T_d + K v)^4]$$

where

ΔW = effective thermopile irradiance (w m^{-2})

$\sigma = 5.6697 \times 10^{-8}$ w m^{-2} (deg. K)$^{-4}$

ϵ_s = emissivity of FOV stop = 0.965

F_s = view factor of the FOV stop = 0.18892

T_s = temperature (°K) of the FOV stop

ϵ_d = emissivity of the thermopile = 0.977

F_d = view factor of the thermopile = 0.80461

T_d = temperature (°K) of the thermopile base

K = factor relating thermopile base temperature to thermopile surface temperature = 0.0031°K per count

v = thermopile output in digital counts

The effective thermopile irradiance (ΔW) is obtained from the thermopile output (v) as follows:

$$\Delta W = a_0(T_m) + a_1(T_m) \cdot v$$

where

$$a_0 = C_0 + C_1 T_m,$$

and

$$a_1 = d_0 + d_1 T_m$$

are derived from prelaunch calibrations and depend on the module temperature (T_m, °C). The coefficients C_0, C_1, d_0, d_1 are given below. In calibrating channel 11 and channel 12 (W) with the FOV stop out, the quantity F_s in the equation for H_T is set to zero.

	Ch. 11	Ch. 12 (W)	Ch. 12 (N)
C_0:	9.86	10.4	8.38
C_1:	0.18358	0.23235	0.18483
d_0:	0.6042	0.6035	0.6014
d_1:	-8.254×10^{-4}	-6.109×10^{-4}	-5.879×10^{-4}

The observations from the other two wide-angle channels (13 and 14), which measure the shortwave radiation (0.2 μm to 4.0 μm), and (0.7 μm to 3.0 μm), are transformed to irradiance (H) by,

$$H = \frac{(V - V_0)}{S_T}$$

where V is the digital counts, V_0 is the offset (in counts) observed from dark FOV's, and S_T is the sensitivity (w m^{-2} $count^{-1}$) obtained from the equation: $S_T + S_0 (1 + (0.01) \cdot (T - 25) \cdot STC)$, where S_0 is the sensitivity at 25°C, T is the detector temperature (°C), and STC is the sensitivity temperature coefficient (percent per degree C). These constants are given below:

Ch	V_0	S	STC
13	-41	2.004	0.04
14	-44	3.989	0.03

The interpretation of digital counts (V) from the shortwave scanning channels (15-18) gives the radiance (w m^{-2} sr^{-1}) of the scene (N_s) by,

$$N = \frac{(V - V_0)}{S_T}$$

where V_0 is the offset (counts) obtained during views of the internal blackbody or space. The sensitivity S_T at temperature T(°C) is obtained using the equation for S_T described above, and the constants given below.

Ch	V_0	S	STC
15	-3	3.155	0.0
16	0	3.275	0.03
17	-1	3.116	-0.01
18	15	2.963	-0.05

A series of checks on the sensitivity of these channels, using the on-board diffuse target, indicated no noticeable degradation over the July-August period of operation.

The longwave scanning channels (19-22) have had numerous inflight calibrations which have remained essentially unchanged since 3 July. The calibration coefficients, a_0 and a_1 relate digital counts (V) to the scene radiance N (w m^{-2} sr^{-1}) as follows:

$$N_s = N_m + a_0 + a_1 \cdot V$$

where N_m is the radiance of the detector module. The radiance N_s is the actual radiance measured within the spectral limits of the filter (4.5 μm to 50 μm). The calibration coefficients, obtained from inflight calibrations on 3 July, are as follows:

Ch	a_0	a_1
19	-0.82	0.09583
20	-0.60	0.10535
21	-1.26	0.10168
22	-0.29	0.10338

The deviations of these calibration coefficients as derived from inflight calibrations from 29 July to 20 August are shown in Table 6-6a. The only change which indicates a need for updating the calibration coefficients is the change in the intercept of channel 20.

Periodic checks of the electronic gains of channels 1 through 14 have shown that the electronic gains have remained within 0.5 percent of the prelaunch values, with few exceptions. Table 6-6a shows the percentage of maximum deviation in the gain ratios (current/prelaunch) for the three steps in the calibration staircase voltage. The 6.5 percent change in the high-level gain of channel 2 and the gain changes in channels 6, 7, and 8 are believed to be caused by radio-frequency interference with the electronic calibration circuit and is neither a real change in the electronic gain nor non-linearities of the channels.

Table 5-8

This table is part of the new Section 6.5a "Post-launch Calibration" to be added to the ERB section of the User's Guide

Table 6-6a

Stability of Calibration of the ERB Longwave Scanning Channels (between 29 July and 20 August 1975)

	Channel 19		Channel 20		Channel 21		Channel 22	
Date	Δa_0	Δa_1	Δa_0	Δa_1	Δa_0	Δa_1	Δa_0	Δa_1
7/29	-0.07	-0.4	1.12	0.5	-0.07	-0.4	0.36	-0.3
8/5	0.50	-0.3	1.22	0.1	0.08	-0.3	0.11	-0.2
8/8	0.68	-0.4	1.33	0.1	0.04	-0.2	-0.003	-0.1
8/12	-0.06	-0.2	0.74	-0.4	-0.09	-0.3	0.17	-0.2
8/17	0.69	-0.3	1.49	0.2	0.20	-0.3	0.16	-0.2
8/20	-0.22	-0.3	1.53	0.2	0.04	-0.2	0.13	-0.4

Δa_0 = change in intercept (w m^{-2} sr^{-1})

$$= (a_0)_{current} - (a_0)_{7/3/75}$$

Δa_1 = change in slope (% w m^{-2} sr^{-1} ct^{-1})

$$= \frac{[(a_1)_{current} - (a_1)_{7/3/75}]}{(a_1)_{7/3/75}} \times 100$$

Table 5-9

This table is part of the new Section 6.5a "Post-launch Calibration" to be added to the ERB section of the User's Guide

Table 6-6b

Percentage Change of the Maximum Deviation in the Gain Ratio between Post-launch and Prelaunch Gain Values for ERB Channels 1 through 14 (20 June and 17 August 1975)

Ch	G_{0-39}	G_{30-60}	G_{60-90}
1	-0.2	0.2	-0.1
2	0.1	-0.3	-6.5
3	±0.1	-0.1	-0.2
4	±0.1	-0.2	-0.1
5	±0.1	-0.2	0.2
6	2.6	1.8	-2.1
7	1.3	2.1	-0.6
8	1.6	1.3	-0.9
9	0.4	-0.6	±0.1
10	0.7	-0.5	±0.2
11	-0.4	0.3	0.4
12	0.2	-0.2	0.4
13	-0.3	0.2	0.3
14	+0.2	-0.1	0.3

Table 6-7, the ERB Compacted Archival Tape Format, on pages 136 through 139 of the User's Guide, should be changed as follows:

Directory Record (Page 136)

Delete last line of section A which reads:

"135-340 Zero fill 1"

and add the following:

135-149	Orbital Elements	
135	Day of Epoch	1
136	Year of Epoch	1
137	Hours	1
138	Minutes (including fraction)	100
139	Eccentricity	10^5
140	Argument of Perigee (integer part)	1
141	Argument of Perigee (fraction part)	10^3
142	Right Ascension (integer part)	1
143	Right Ascension (fraction part)	10^3
144	Inclination (integer part)	1
145	Inclination (fraction part)	10^3
146	Semimajor Axis (km, integer part)	1
147	Semimajor Axis (km, fraction part)	10^3
148	Mean Anomaly (integer part)	1
149	Mean Anomaly (fraction part)	10^3
150	Sun-Earth Distance (A.U.)	10^4
151-340	Zero fill	1

Orbital Summary Record (Page 139)

Delete last line of table, which reads:

17-340 Zero fill 1"

and add the following:

17-26	Solar Irradiances (Chs. 1-10) Normalized to mean sun-earth distance	Chs. 1-5:10 Chs. 6-10:100
27	Solar Channels Assembly Gamma Angle (positive to right of track)	1
28-340	Zero fill	1

5.6 LRIR Corrections to the User's Guide

Table 5-10

Post-launch analysis of relative spectral response data and orbital data leads to the following corrected values for Table 7-2, on page 154 of the User's Guide.

Table 7-2

Optical Characteristics of LRIR Channels

Channel		Band Pass (50% Peak Response)	Field-of-view (km)		Random Noise in Orbit* $\pm 1\sigma$ (watts/m^2-sr)
No.	Abbrev.		Vertical	Horizontal	
1	NCO_2	649-672 cm^{-1} (14.9-15.4 μm)	2.0	20	0.0023
2	BCO_2	592-700 cm^{-1} (14.3-16.9 μm)	2.0	20	0.0040
3	O_3	984-1169 cm^{-1} (8.6-10.2 μm)	2.0	20	0.011
4	H_2O	412-446 cm^{-1} (22.4-24.3 μm)	2.5	25	0.008

*Noise will gradually increase as the detector temperature increases during the useful life of the experiment.

5.7 PMR Corrections to the User's Guide

There are no PMR corrections to the User's Guide.

5.8 TWERLE Corrections to the User's Guide

Table 5-11

The following are address changes to Table 9-2 on page 186 in the User's Guide.

Table 9-2

Nimbus RAMS Experiments — Address Changes

Address Changes

OLD	NEW
Mr. G. R. Cresswell Division of Fisheries & Oceanography Commonwealth Scientific & Industrial Research Organization Melbourne, Australia	Mr. G. R. Cresswell Division of Fisheries & Oceanography CSIRO P.O. Box 21 Cronulla, N.S.W. 2230 Australia
A. J. Dyer CSIRO P.O. Box 77 Mordialloc, Vic 3195 Australia	Dr. A. J. Dyer Division of Atmospheric Physics CSIRO Station Street ASPENDALE 3195 Victoria, Australia
Professor Pierre Lacombe, Director Laboratory d'Oceanographic Museau Historie Naturelle de Paris 43 Rue Cuvier Paris, France	Professor Pierre Lacombe, Director Laboratoire d'Oceanographie Physique Museum National d'Histoire Naturelle 43-45 Rue Cuvier 75005 Paris, France
Professor P. Tchernia Museum d'Historie Naturelle de Paris 43 Rue Cuvier Paris, France	Professor P. Tchernia Laboratoire d'Oceanographie Physique Museum National d'Histoire Naturelle 43-45 Rue Cuvier 75005 Paris, France

Table 9-2 (Continued)

Dr. Norbert Untersteiner, Program Director Project AIDJEX 4059 Roosevelt Wave, N.E. Seattle, WA 98105	Dr. Norbert Untersteiner AIDJEX Coordinator University of Washington 4059 Roosevelt Way, N.E. Seattle, Washington 98105
Dr. Donald V. Hansen, Director Physical Oceanography AOWL NOAA U.S. Department of Commerce Miami, Florida	Dr. Donald V. Hansen, Director Physical Oceanography Laboratory AOML/NOAA 15 Rickenbacker Causeway Virginia Key Miami, Florida 33149
Vincent E. Lally National Center for Atmospheric Research P.O. Box 1470 Boulder, Colorado 80302	Mr. Vincent E. Lally National Center for Atmospheric Research P.O. Box 3000 Boulder, Colorado 80302
J. Lentfer Wildlife Research U.S. Department of Interior 813 D. Street Anchorage, Alaska	Mr. Jack W. Lentfer Fish and Wildlife Service Department of Interior 4454 Business Park Blvd. Anchorage, Alaska 99503
H. Brann Bureau of Meteorology Melbourne, Victoria Australia	Mr. H. N. Brann Bureau of Meteorology P.O. Box 1289K Melbourne, Victoria 3001 Australia
Robert Kee Development Engineering Division Code 6201 U.S. Naval Oceanographic Office Washington, D.C. 20390	Mr. Robert Kee Code 6220 U.S. Naval Oceanographic Office Washington, D.C. 20373
F. Anderson South African Council for Scientific & Industrial Research Congella, Natal, South Africa	Mr. Frank P. Anderson CSIR, Institute for Technology P.O. Box 17001 Congella 4013 South Africa

Table 9-2 (Concluded)

H. Stommel Professor of Oceanography MIT Cambridge, Massachusetts	Professor Henry Stommel Department of Meteorology Room 54-1416 Massachusetts Institute of Technology Cambridge, Massachusetts 02139
B. Buck Polar Research Lab. Santa Barbara California 93101	Mr. B. M. Buck, President Polar Research Laboratory, Inc. 123 Santa Barbara Street Santa Barbara, California 93101
John A. Knauss Graduate School of Oceanography University of Rhode Island Kingston, Rhode Island 02881	Dr. P. L. Richardson Woods Hole Ocean Institute Woods Hole, Massachusetts 02543

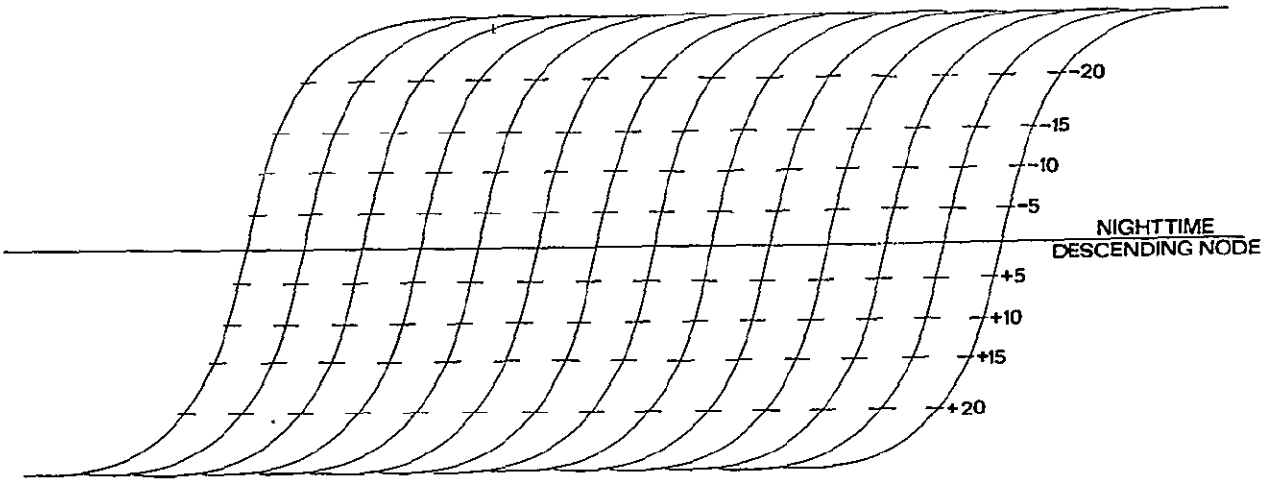
5.9 T&DRE Corrections to the User's Guide

There are no T&DRE corrections to the User's Guide.

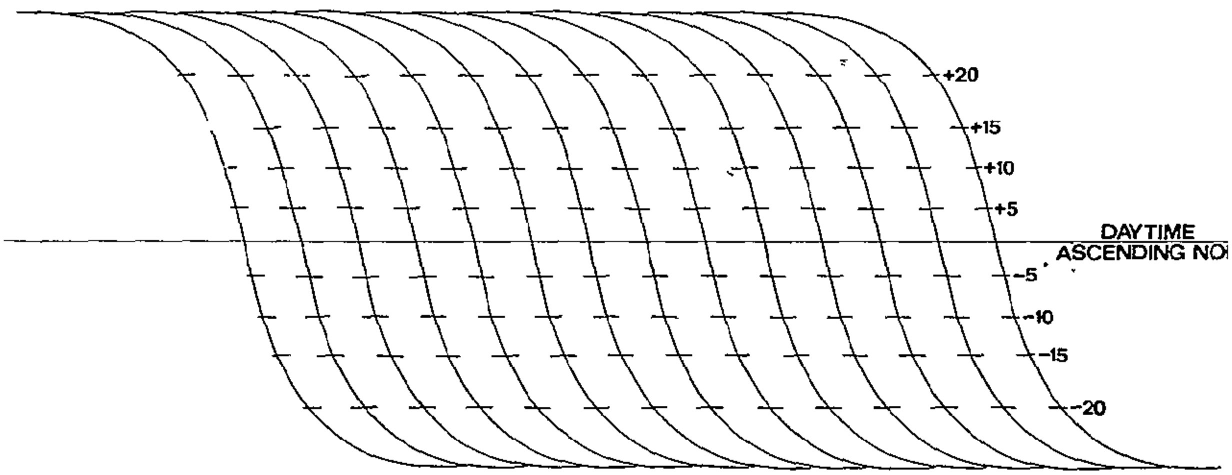
Table 5-12

The following are new TWERLE users, added since launch. This information should be added to Table 9-2 (Nimbus RAMS Experiments) on page 186 in the User's Guide.

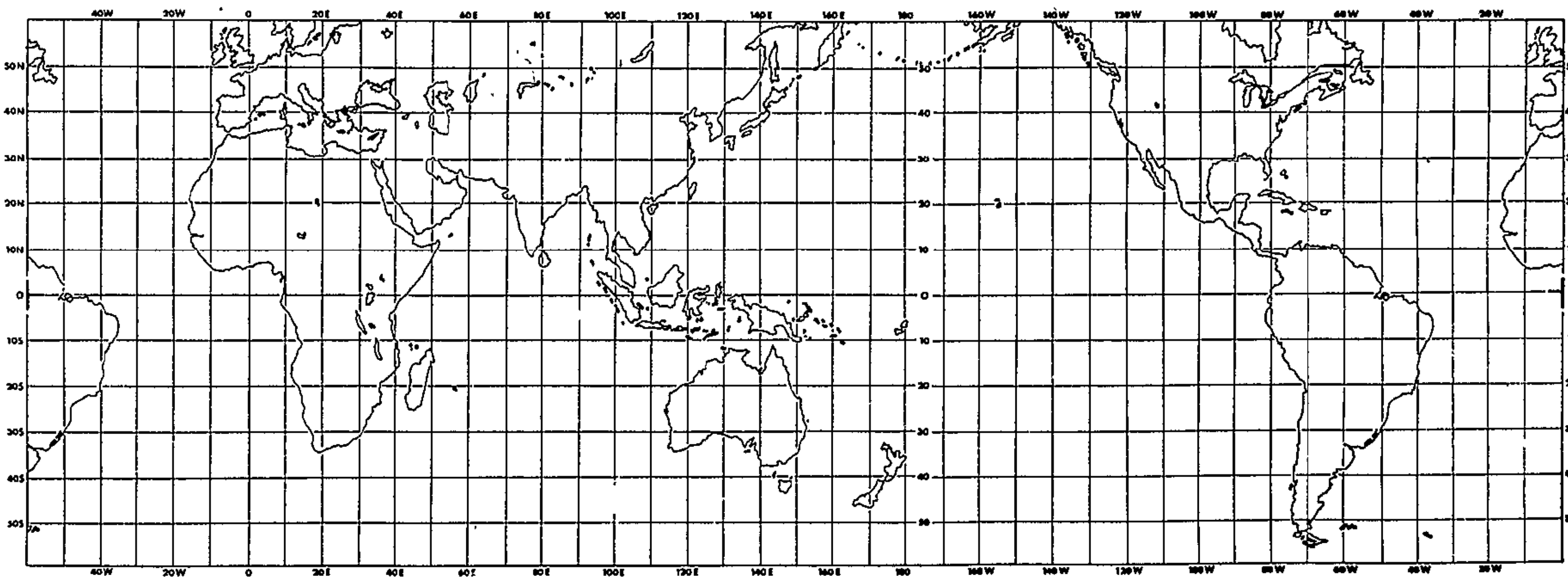
Principal Investigator	Experiment Title	Platform		
		Number	Type	Deployment Area
Dr. A. D. Kirwan, Jr. Department of Oceanography College of Geosciences Texas A & M University College Station, Texas 77843	Anomaly Dynamics Study (ADS)	32	Drifting Buoys	North Pacific
Mr. David F. Thomas, Jr. SATD-MEB-SDS, Mail Stop 322 NASA Langley Research Center Hampton, Virginia 23665	Air-droppable In Situ Platforms for Long Duration Measurements near Hurricanes	10	Ocean Platforms	Western Atlantic near North America
Dr. P. Roger Williamson Department of Applied Physics & Information Science University of California — San Diego La Jolla, California 92037	Stratospheric Monitoring with Longterm Balloon Flights	3	Super-pressure Balloons	Southern Hemisphere
Mr. J. C. O'Rourke Canadian Marine Drilling Ltd. P. O. Box 200 Calgary, Canada T2P 2H8	Arctic Ice Dynamics	2-4	Sea Ice Platforms	Beaufort Sea
Dr. J. Michael Hall NOAA Data Buoy Office National Space Tech Office Bay St. Louis, Mississippi 39520	East Coast Drifting Experiment	24	Drifting Buoys	Atlantic Ocean
	High Impact Detection and Determination on Large Buoys	10	Buoy	Atlantic Ocean, Gulf of Mexico, & North Pacific Ocean
	Reliability Enhancement Experiment	3	Buoy	Santa Barbara, California & Arctic Ocean
Mr. Robert Oehlkers University of Wisconsin Space Science and Engineering Center 1225 W. Dayton St. Madison, Wisconsin 53706	Buoy Experiments in Lake Michigan	10	Buoy	Lake Michigan



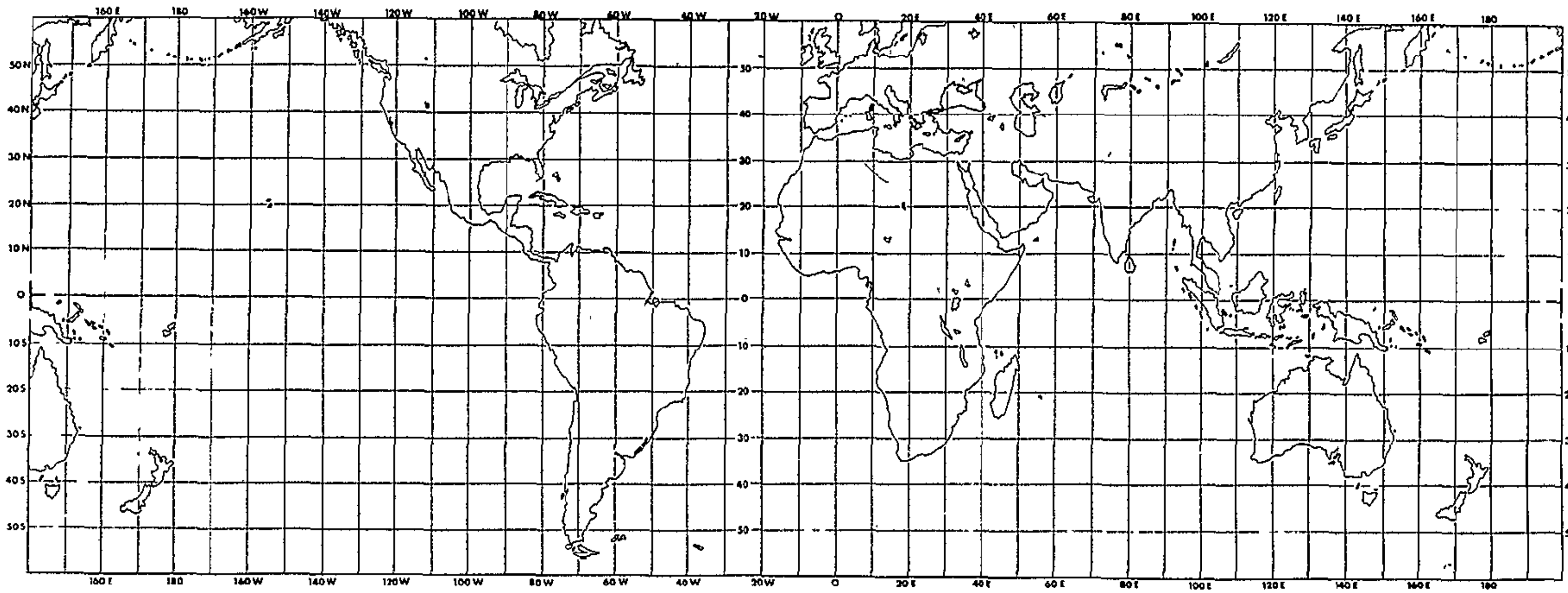
NIMBUS SUBSATELLITE TRACKS OVERLAY



NIMBUS SUBSATELLITE TRACKS OVERLAY



LOCATION GUIDE
AVERAGE SCALE FOR NIMBUS
THIR NIGHTTIME MONTAGES



Location Guide
Average Scale for Nimbus
THIR Daytime Montages