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AIRBORNE RESEARCH METEOROLOGICAL DATA COLLECTED BY THE NATIONAL HURRICANE RESEARCH LABORATORY DURING THE NOAA/RFC WP-3D ERA -- INVENTORY AND AVAILABILITY

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DEDICATION

This publication is dedicated to the memory of Billy M. Lewis, who died on December 23, 1980. Billy was a long-time member of the National Hurricane Research Laboratory (NHRL) professional staff. He was born in Atlanta, Georgia, in 1927, and entered the Federal service as an assistant messenger in 1943. His life was devoted to government service, with the exception of the years he attended the University of Georgia, New York University, and Florida State University. Billy also served honorably as a member of the U.S. Merchant Marine, the U.S. Army, and the U.S. Air Force.

Billy was an extremely energetic worker. His understanding of computers and their applications enabled him to develop innovative programs to convert, process, and analyze aircraft-gathered meteorological data from hurricane research missions and to provide scientists with these data in a form ready for research application. He was very active in the program to instrument the NOAA Research Facilities Center WP-3D aircraft, particularly concentrating on airborne radar systems to provide high quality quantitative data recorded on magnetic tape.

Billy also initiated a hurricane intercept program, (still an on-going NHRL effort and currently known as the NHRL "Land-Based Radar Program"). Under this program, he traveled to various NOAA/NWS WSR-57 radar sites nearest the forecasted location of a landfalling hurricane. He would record radar data on magnetic tape for processing, analysis, and research application.

"Billy was a lively friend...from pre-Barbados (BOMEX) through Hurricane ALLEN (1980) activities...and his embellished tales of hazardous hurricane flights enhanced the comradery of many a forced 'stop-over.' Billy will be missed!"

Stanley L. Rosenthal
Director, NHRL

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Assistant Director (Ret.)
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Coral Gables, Florida
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PREFACE

The nature, use, and availability of in-situ research meteorological data gathered by specially instrumented aircraft have already been documented in several publications. Hawkins et al. (1962), for example, described data collection efforts in the pre-DC-6 era, in which a 3-year joint Department of Defense (U.S. Air Force)/Department of Commerce (U.S. Weather Bureau) program was carried out in support of the National Hurricane Research Project (NHRP). The NOAA/Research Flight Facility's (RFF) aircraft (Figs. 1 through 3) and instrumentation, data collection and processing programs during portions of the DC-6 era have been described by Friedman (1970); Friedman, Ahrens, and Davis (1969); Friedman and Callahan (1970); Friedman, Cicirelli, and Freedman (1969); Friedman, Conrad, and McFadden (1970); and Friedman, Michie, and McFadden (1970).

By 1976, the RFF [now the Research Facilities Center (RFC)] replaced its DC-6's with new aircraft and vastly improved instrumentation systems. In addition, this facility attained an increased ability to process and analyze airborne meteorological data sets. Built on the experience gained during two decades of gathering and processing a wide variety of airborne meteorological research data and on the rapid advances of space-age technology since the early 1970's, NOAA is now in the WP-3D era.

This publication serves to inventory, document, and describe the research data available at the National Hurricane Research Laboratory, Coral Gables, Florida. These data have been gathered with the two NOAA/RFC WP-3D's (Fig. 4) and a C-130B[1] (Fig. 5) since 1976. Increased data reliability, coupled with innovative automated data processing and analysis capabilities, have rekindled the interests of many university and NOAA scientists in using these "new" data sets for hurricane research. This report is intended to facilitate such efforts.

Part I contains background material for reference, presenting a historical perspective of NOAA's efforts to collect in-situ meteorological data in hurricanes with aircraft.

A data inventory, by individual mission, is presented in Part II. Flight information has been grouped and storm-referenced in sequence (by year and date). Best-track plots (official National Hurricane Center positions) are shown for each storm investigated by NHRL. The exceptions are Australian Cyclones KERRY and ROSA (1979) tracks, which were provided by Greg Holland (Australian Bureau of Meteorology) and Dr. Robert C. Sheets (NHC). These figures also indicate where, in the storm's history, NHRL's research missions were conducted. In addition, satellite photographs [typically full-disc/infrared (FD/IR)] are included for reference, to visually represent each storm's gross structure at the approximate midpoint time of each mission.

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1. The NOAA/RFC C-130B was retired from service after the 1981 hurricane season.

Fig. 1. NOAA/RFF DC-6 aircraft.

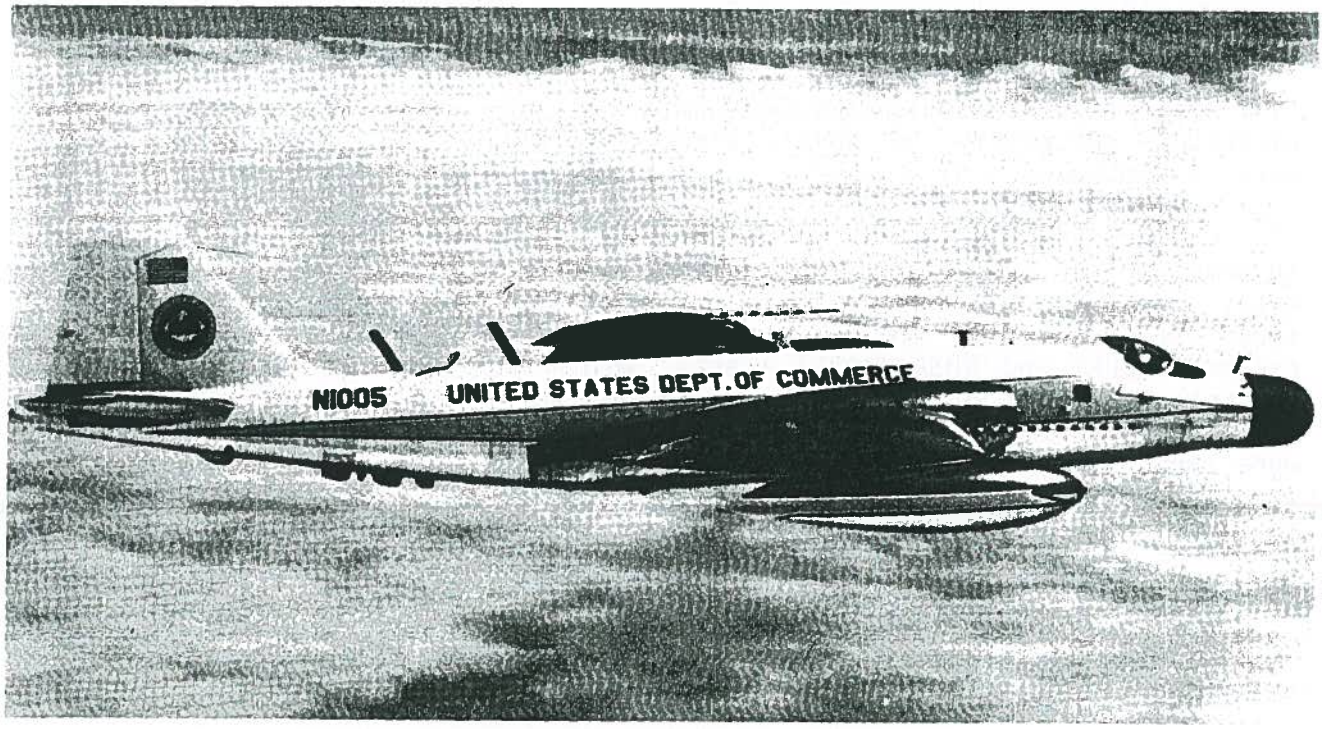


Fig. 2. NOAA/RFF B-57A aircraft.

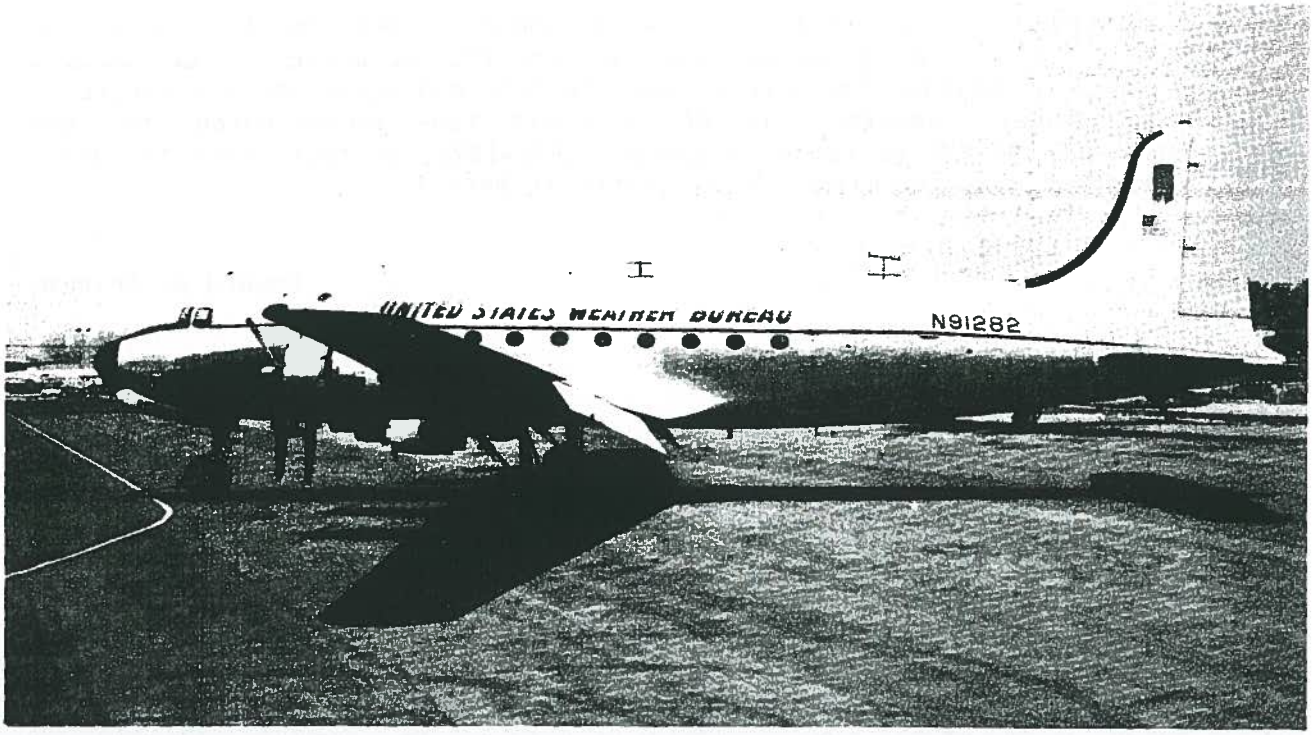


Fig. 3. NOAA/RFF C-54 aircraft.

Fig. 4. NOAA/RFC WP-3D aircraft.

No attempt has been made to fully document or describe the conversion/calibration factors or equations used by the RFC to convert "raw" data to "final" data in engineering units. Such factors and equations are subject to periodic change. However, the RFC standard tape format/output has been consistent during the period of interest (1976-1981) to facilitate its use by the researcher and, therefore, is described in Part II.

Howard A. Friedman

Coral Gables, Florida
February 1982

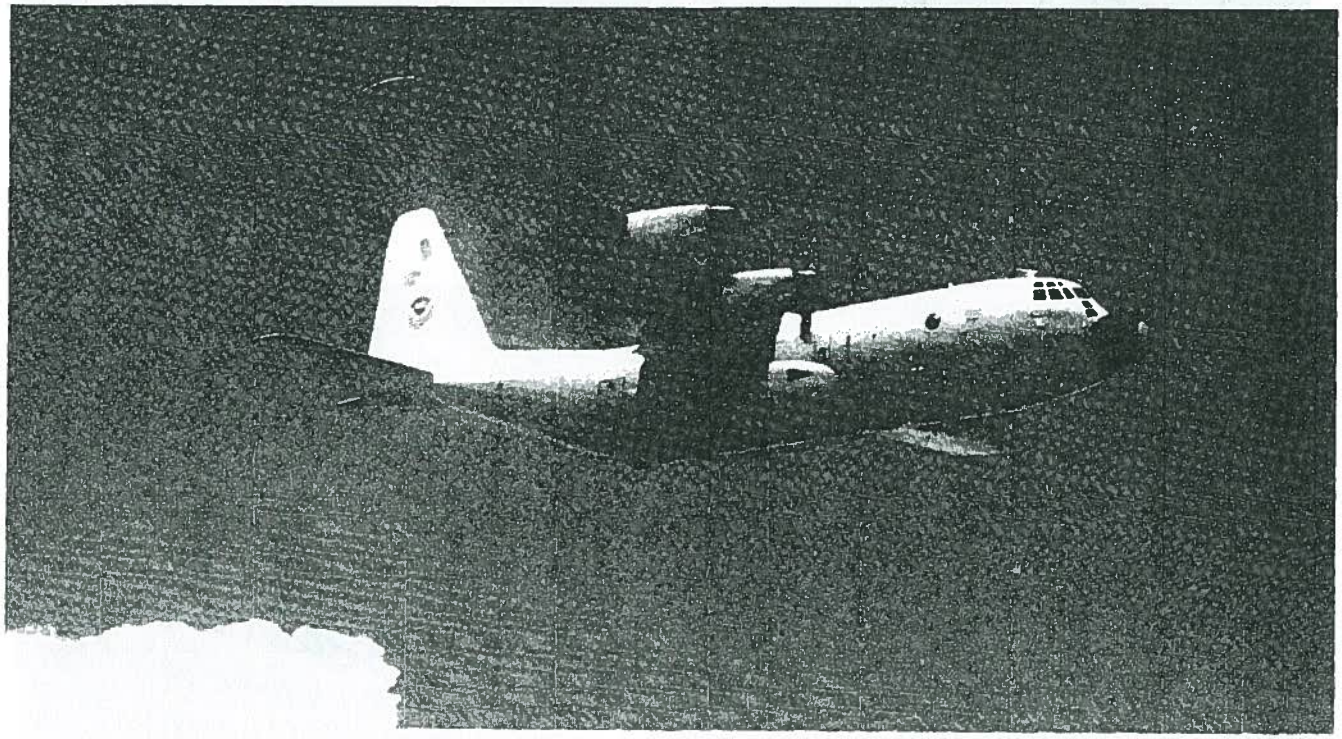


Fig. 5. NOAA/RFC C-130B aircraft.

PART I. THE NATIONAL HURRICANE RESEARCH LABORATORY: HISTORY

A series of devastating hurricanes that impacted the populous east coast of the United States in 1954 and 1955 provided the impetus to accelerate research efforts on the hurricane prediction problem. During 1955, the Congress appropriated funds for the United States Weather Bureau (USWB) and mandated that immediate action be taken to establish a major hurricane research program. This research became the responsibility of the National Hurricane Research Project (NHRP), which was established under the USWB's Office of Meteorological Research (OMR).

Initially, three aircraft were provided and operated by the U.S. Air Force (USAF) and instrumented by the USWB. These aircraft were used in support of NHRP's data collection function during the hurricane seasons of 1956 through 1958. During these 3 years, considerable strides were made in combining a variety of sensors and supporting instrumentation to provide in-situ meteorological data in a form suitable for research application (Reber and Friedman, 1964). As these data were analyzed, it became evident that additional investigative work would be necessary to provide scientists with a more complete description of the hurricane.

Accordingly, after the Department of Commerce/Department of Defense (DOC/DOD) agreement to provide aircraft support for this program expired, the USWB obtained, in 1959, two DC-6 airplanes. A B-57A aircraft was also transferred from the DOD (USAF) to the DOC. These three aircraft, which became known as "flying research laboratories," were instrumented and placed in service during the 1960 hurricane season. One year later, the Flight Operations Group of NHRP became a separate entity, the Research Flight Facility.

In 1965, the USWB became a major component of the Environmental Science Services Administration (ESSA). Subsequently, NHRP attained the status of a laboratory (NHRL). Five years later ESSA was reorganized and became the National Oceanic and Atmospheric Administration (NOAA). NHRL was temporarily (1975-1980) merged with the Experimental Meteorological Laboratory (EML) to form the National Hurricane and Experimental Meteorology Laboratory (NHEML). In 1980, the hurricane research program was transferred to the Atlantic Oceanographic and Meteorological Laboratories (AOML) and renamed the National Hurricane Research Laboratory (NHRL).

Part II. DATA COLLECTION AND INVENTORY

1. Section, Figure, and Table Categories

Part II of this report is a catalog of the data collected aboard the NOAA/RFC aircraft during the WP-3D era (1976-1981) in support of NHRL's Hurricane Field Program. Typical NHRL research flight patterns (section 2) are referenced to appropriate figures in table 1. Best-track storm plots (section 3), marked to identify storm locations during the period of specified NHRL missions, are figure-referenced in tables 2 through 7. Satellite photos (section 4) are presented to visually orient the user with reference to the gross synoptic meteorological conditions that existed during individual research missions. Typically, the satellite photos shown (refer to tables 8 through 13) are for the midtime of each mission specified. Therefore, individual mission data, including the flight log, tape log, and equipment status forms, are complemented by: (a) a reference to the research flight pattern completed (or otherwise described); (b) best-track storm plots, where appropriate; and (c) satellite photos that correspond to the approximate mid-time of the research missions in the data inventory.

Table 1 identifies the typical NHRL research flight patterns flown during the period 1976-1981; tables 2 through 7 relate best-track storm plots to individual NHRL missions (1976-1981); and tables 8 through 13 list the satellite photos shown, which are referenced to specific NHRL missions.

Data tape formats (section 5) are shown in Figs. 13 through 18. The information content of the flight logs, tape logs, and equipment status forms (sections 6 and 7, respectively) is discussed before the presentation of the data catalog for each NHRL mission (section 8).

2. Typical NHRL Research Flight Patterns

Table 1 cross-references the typical NHRL research flight patterns (Figs. 6 through 12) flown during 1976-1981 with the corresponding figure numbers used in this report. For further details, the reader is directed to the appropriate NHRL (NHEML) Hurricane Field Program Plans for 1976-1981.

In certain situations, such as when the center of a given storm was situated over land, standard (typical) research flight patterns were not flown. In such cases, the actual patterns completed were designed to optimize both the storm center location and useful research data collection objectives. Investigative research mission patterns for weak tropical systems (i.e., tropical waves, disturbances, or depressions) were structured on the basis of the size, strength, and location of the particular system -- usually at the discretion of the on-board senior NHRL scientist, in coordination with the RFC mission flight director (meteorologist).

For simplicity, whenever possible, typical flight pattern designations are indicated on individual mission flight logs (section 8). Deviations from typical flight patterns are noted on these forms.

Table 1. Typical NHRL flight patterns: 1976-1981

Figure	Pattern	Year(s)
6	A-3 (modified)	1976
6	A-4 (modified)	1976
6	II	1977-1980
7	III	1979-1980
7	IV (modified)	1980-1981
8	Single Aircraft Mission (modified)	1978-1979
8	BUTTERFLY	1976-1981
9	AS-1	1977-1979
10	I	1977-1980
11	VI	1979-1980
11	X (modified)	1980
11	II	1981
12	IV (modified)	1977-1978
12	IX	1980
12	I (modified)	1981

Note: Refer to the appropriate annual NHRL (NHEML) Hurricane Field Program Plan (1976, 1977, 1978, 1979, 1980, or 1981) for further details. (Available from NOAA/NHRL, Coral Gables, Fla.)

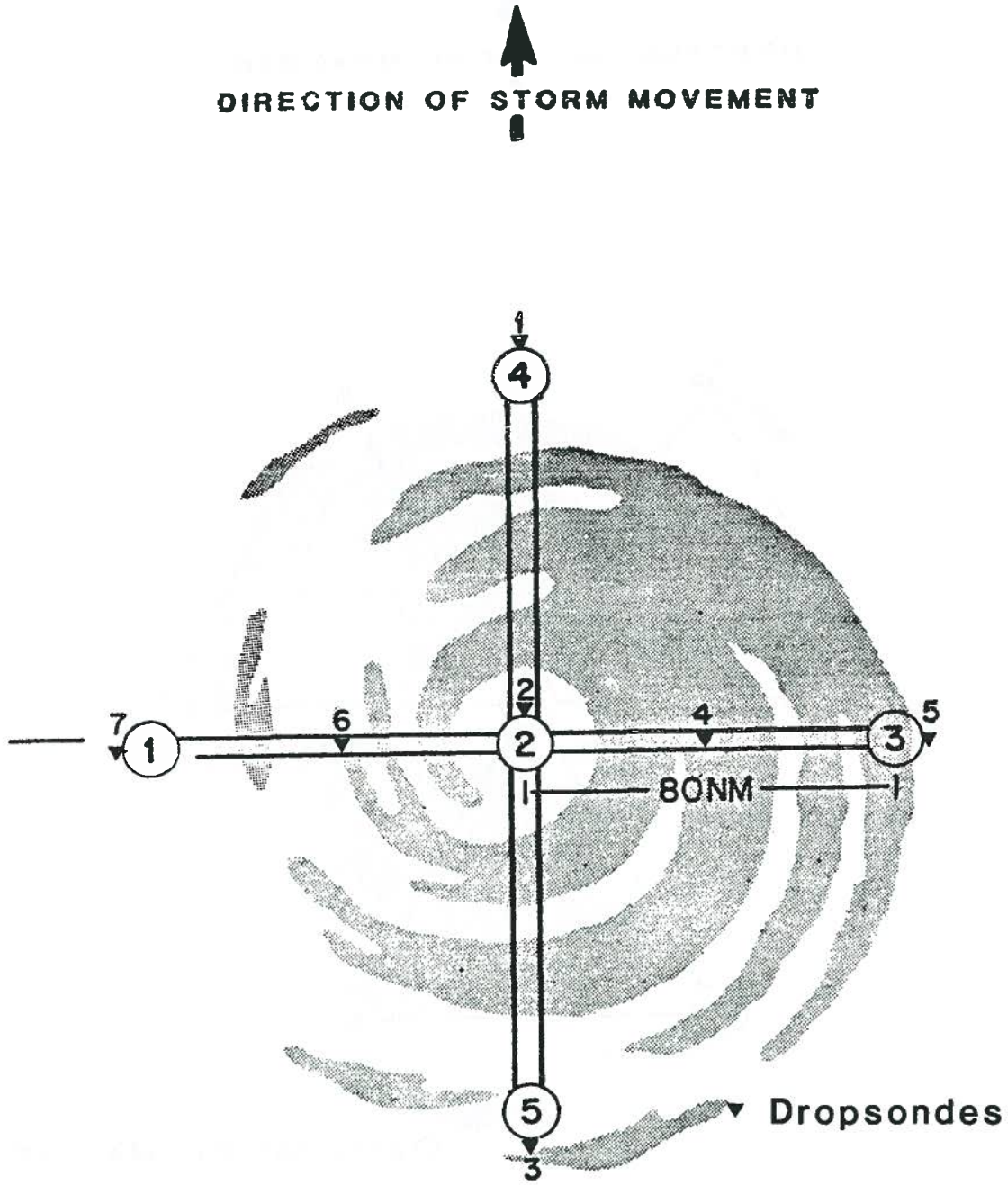


Fig. 6. Pattern designated A-3 (modified) (1976), A-4 (modified) (1976), and II (1977-1980).

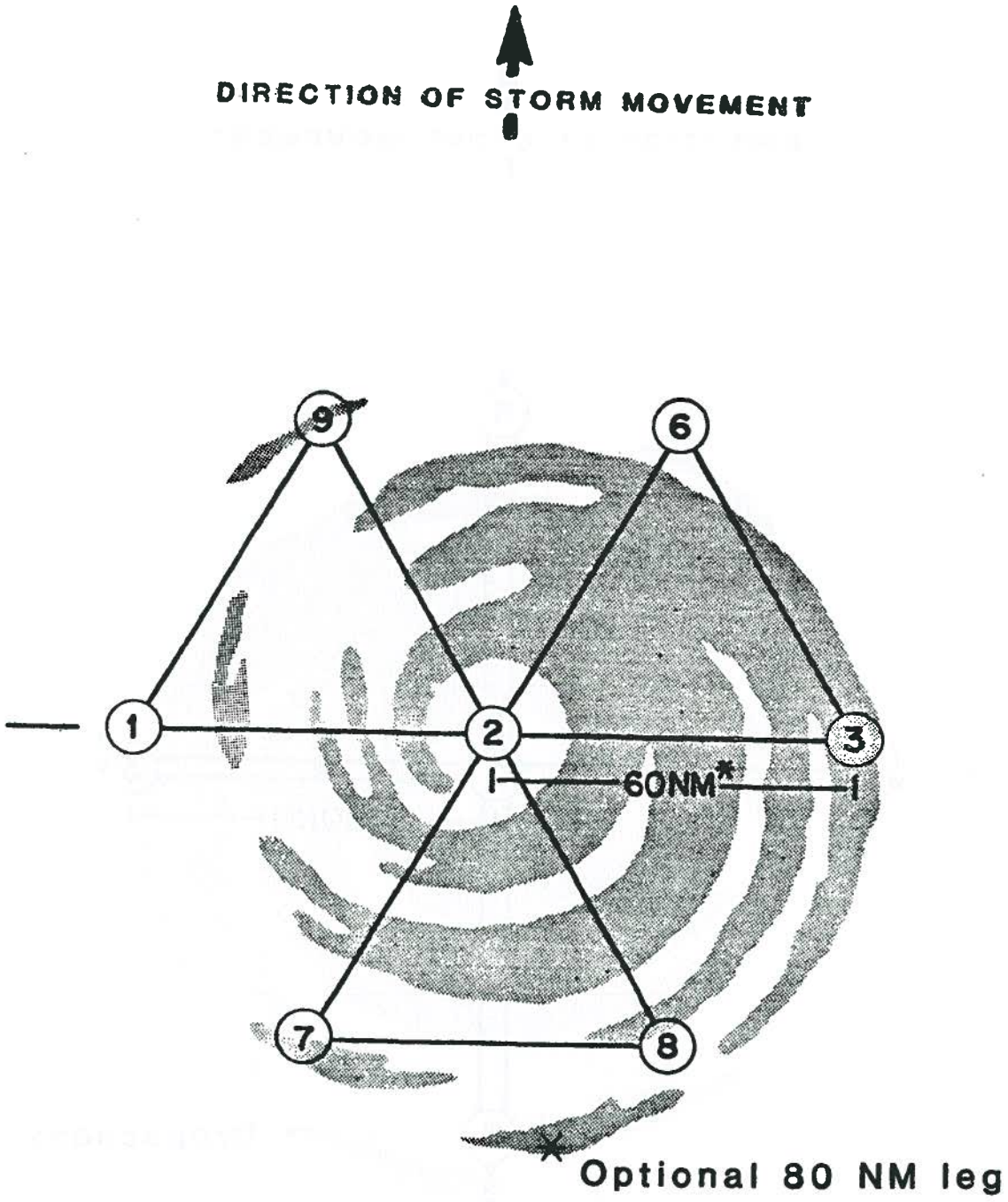


Fig. 7. Pattern designated III (1979-1980), and IV (modified) (1980-1981).

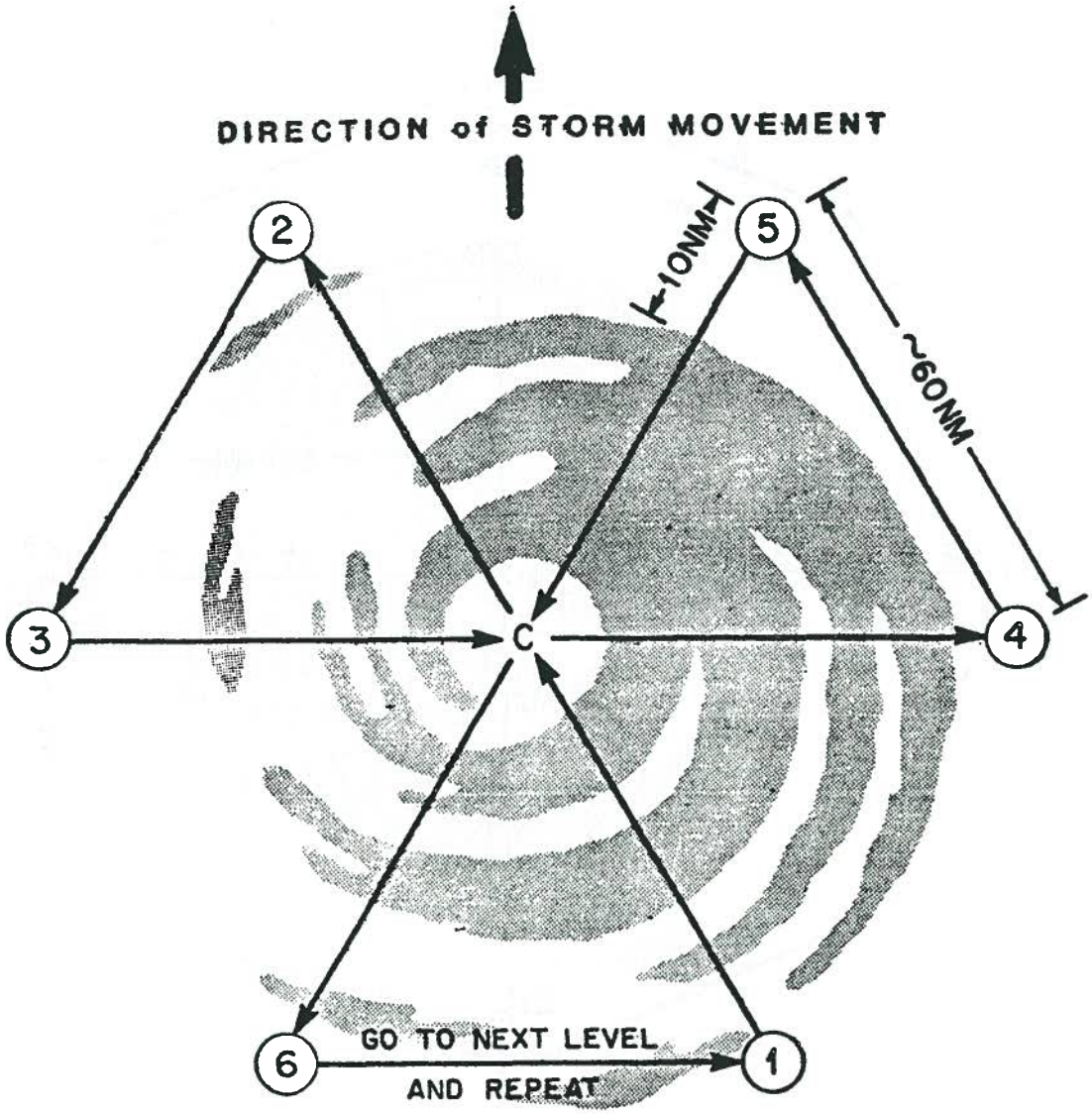
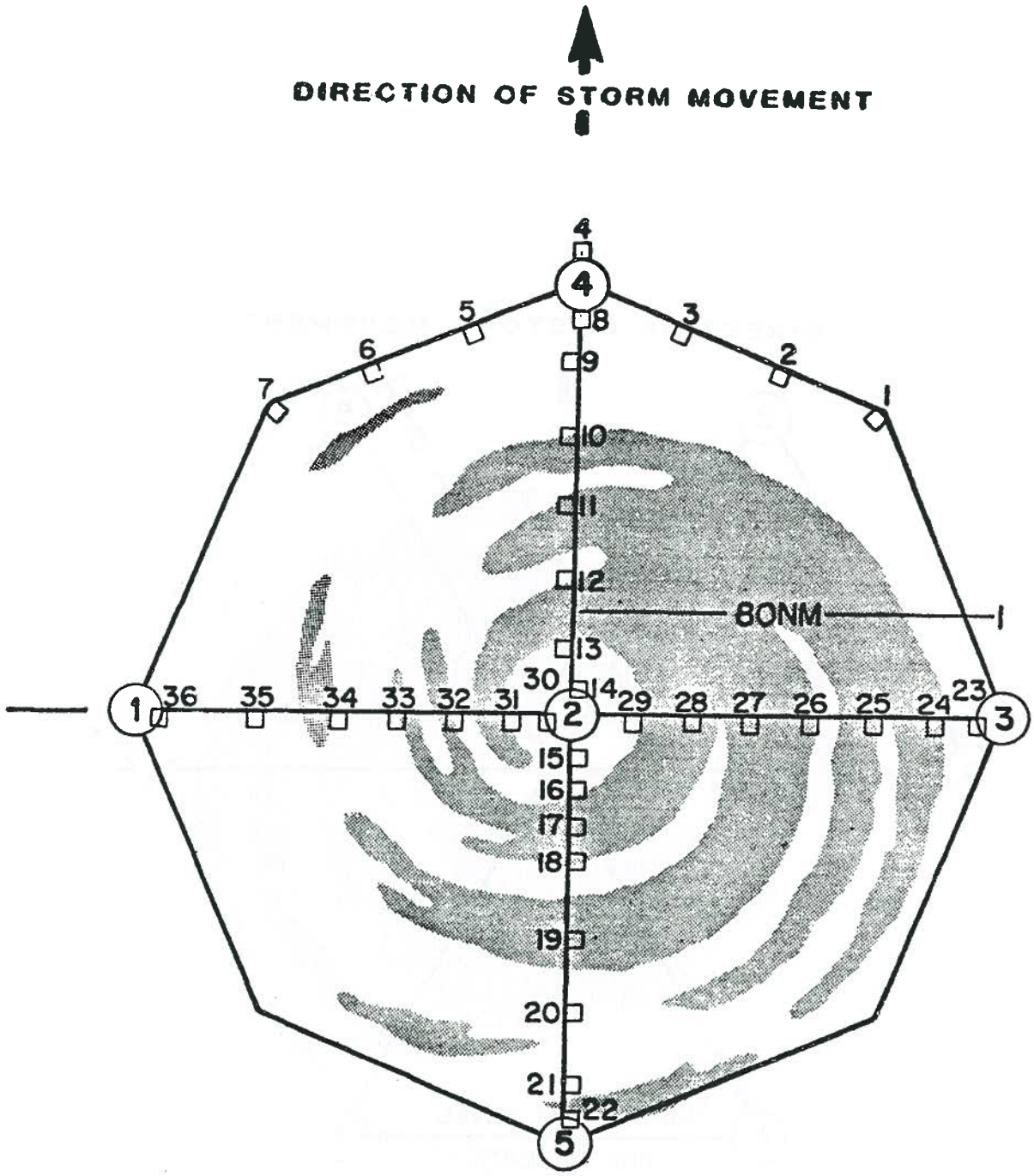


Fig. 8. Pattern designated Single Aircraft Mission (modified) (1978-1979), and BUTTERFLY (1976-1981).



□ AXBT # and Location

Fig. 9. Pattern designated AS-1 (1977-1979).

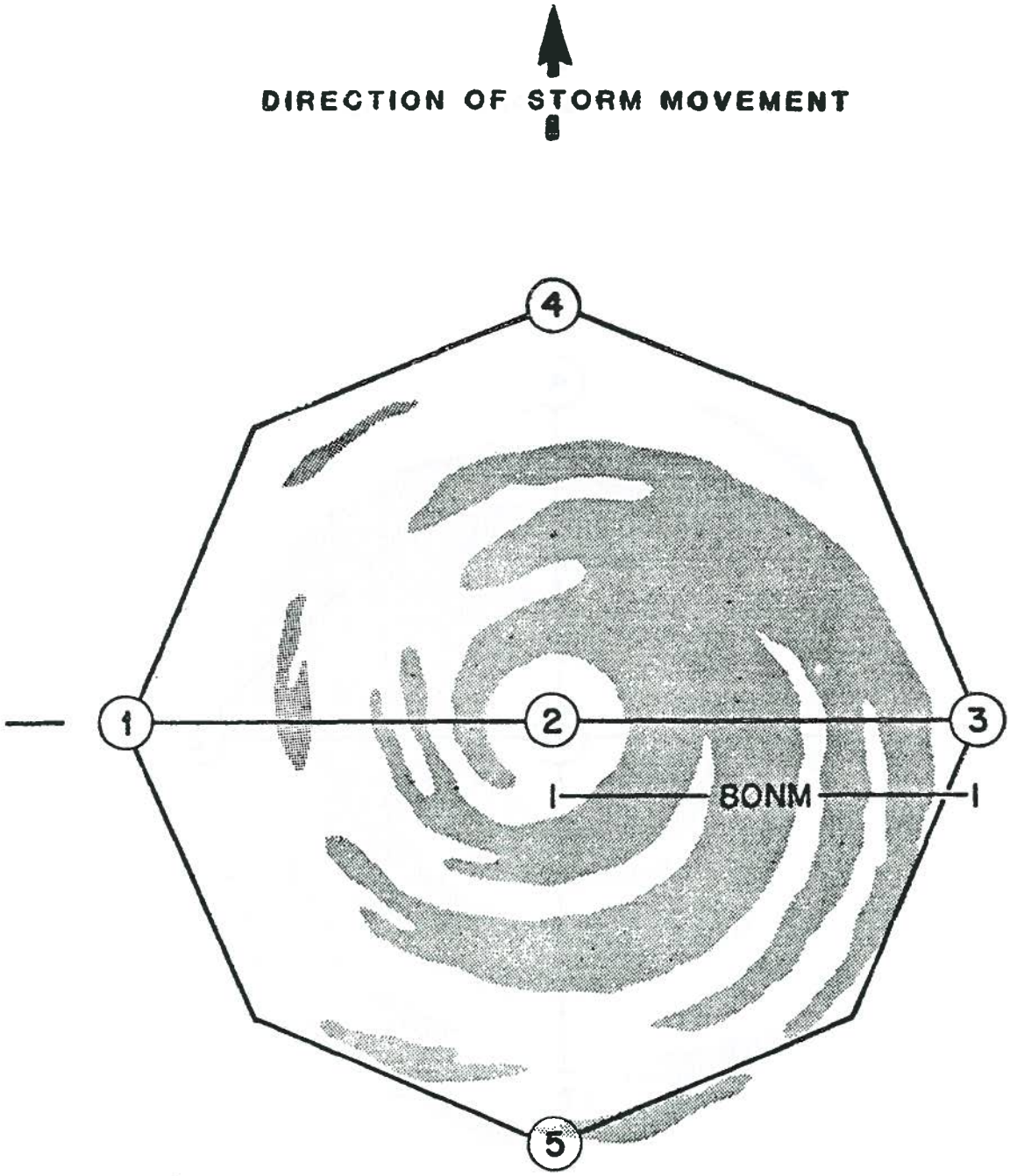


Fig. 10. Pattern designated I (1977-1980).

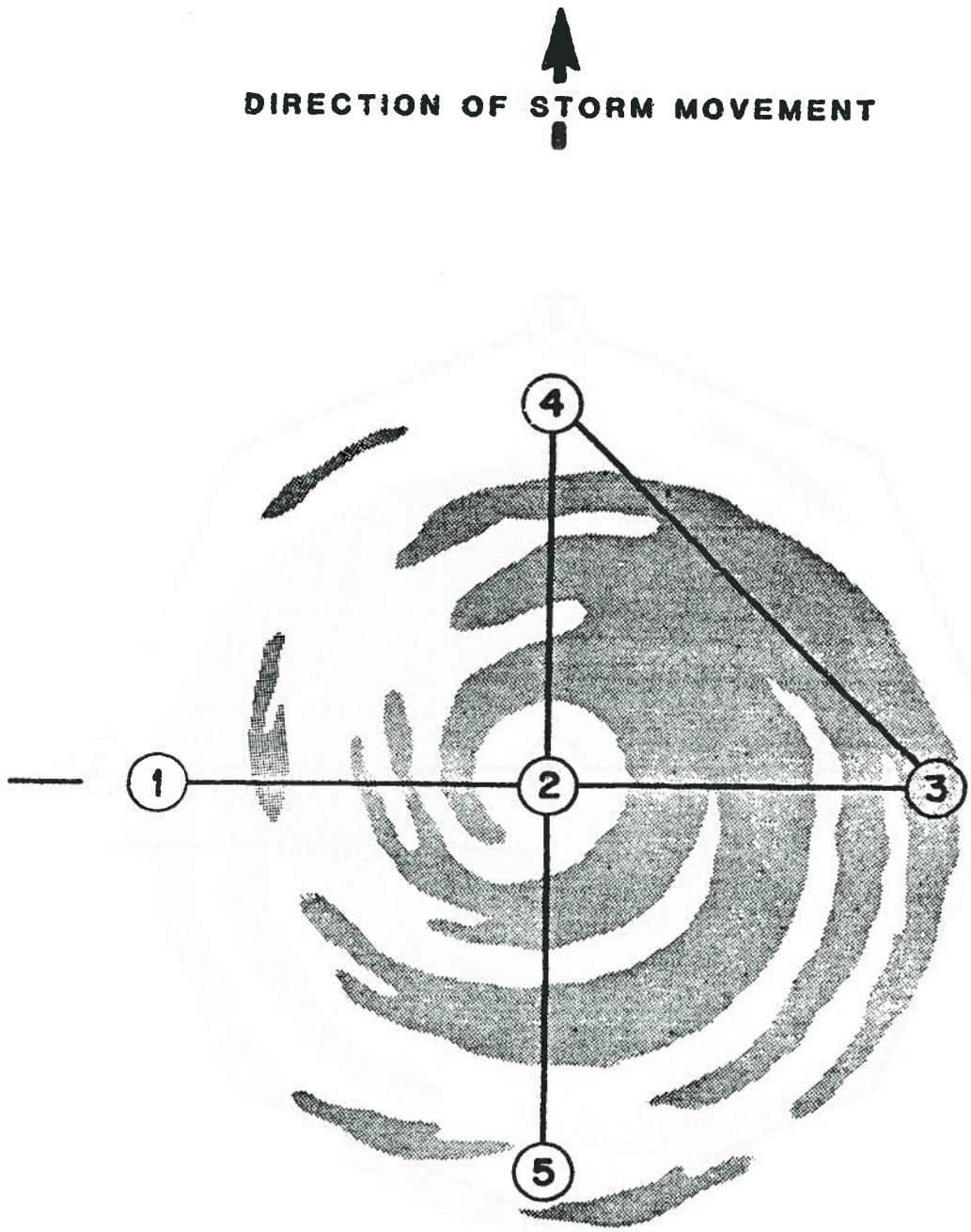


Fig. 11. Pattern designated VI (1979-1980), X (modified) (1980), and II (1981).

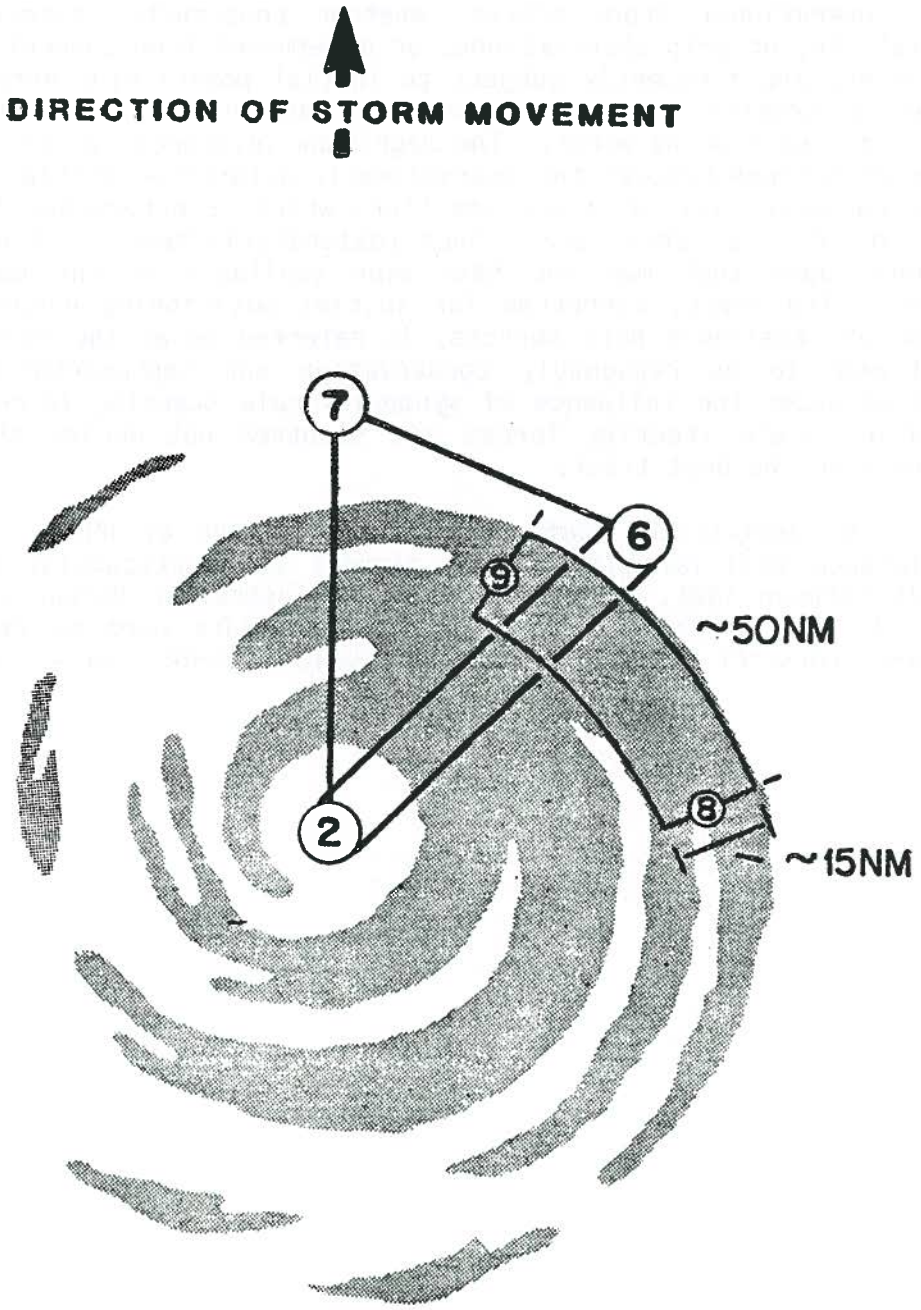


Fig. 12. Pattern designated IV (modified) (1977-1978), IX (1980), and I (modified) (1981).

3. Best-Track Storm Plots

Operational storm tracks, whether constructed directly from aircraft, satellite, or ship observations, or determined from conventional synoptic data sources, are frequently subject to initial positioning errors. The verification of tropical cyclone forecasts by NHC involves the determination of this initial positioning error. The magnitude (distance) of this error is given by the difference between the operationally determined initial storm position and the corrected initial storm position, which is determined from the postanalysis of all available data. Such postanalysis benefits from the use of additional data that may not have been available at the operational tracking time. The track, corrected for initial positioning errors, and constructed from all available data sources, is referred to as the "best track," which is believed to be reasonably conservative and representative of the storm's motion under the influence of synoptic-scale steering forces. Motions due to smaller scale steering forces are smoothed out during the process of constructing the best track.

The best-track storm plots were provided by NHC. Tables 2 through 7 reference official storm track figures to corresponding NHRL missions from 1976 through 1981. Mr. Greg Holland (Australian Bureau of Meteorology) and Dr. Robert C. Sheets (NHC) supplied the data used to construct best-track storm plots for Australian Tropical Cyclones KERRY (1979) and ROSA (1979).

Table 2. Official storm tracks and NHRL missions for 1976

Figure	Storm	Year	No. missions	Mission(s)[a]	Location
19	BONNY	1976	1 of 2	760627H	Eastern Pacific
			2 of 2	760627F	
21	BELLE	1976	1 of 1	760808F	Atlantic Ocean
21	EMMY	1976	1 of 2	760824F	Atlantic Ocean
			2 of 2	760825F	
21	FRANCES	1976	1 of 2	760831F	Atlantic Ocean
			2 of 2	760831H	
21	GLORIA	1976	1 of 6	760928H	Atlantic Ocean
			2 of 6	760928F	
			3 of 6	760929F	
			4 of 6	760929H	
			5 of 6	760930F	
			6 of 6	760930H	
29	MADELINE	1976	1 of 1	761008F	Eastern Pacific

a. F = NOAA/RFC C-130B aircraft 41; H = NOAA/RFC WP-3D aircraft 42; and I = NOAA/RFC WP-3D aircraft 43.

Flight (mission) identification code: YYMODAACn, where:

YY = year (80 = 1980); MO = month (08 = August); DA = day of the month; AC = aircraft (see designations for F, H, and I above); n = multiple missions by an aircraft on a given date.

Table 3. Official storm tracks and NHRL missions for 1977

Figure	Storm	Year	No. missions	Mission(s)[a]	Location
	Trop dist	1977	1 of 2	770824F	Caribbean Sea
			2 of 2	770824H	
32	ANITA	1977	1 of 6	770830H	Gulf of Mexico
			2 of 6	770830F	
			3 of 6	770831H	
			4 of 6	770831F	
			5 of 6	770901I	
			6 of 6	770901H	
32	Post-ANITA/BABE	1977	1 of 2	770902F	Gulf of Mexico
			2 of 2	770903F	
	Trop wave	1977	1 of 8	770920I	Atlantic Ocean
			2 of 8	770920H	
			3 of 8	770921I	
			4 of 8	770921F	
			5 of 8	770921H	
			6 of 8	770922I	
			7 of 8	770922F	
			8 of 8	770922H	
41	HEATHER	1977	1 of 2	771005F	Eastern Pacific
			2 of 2	771005H	

a. See table 2 footnote.

Table 4. Official storm tracks and NHRL missions for 1978

Figure	Storm	Year	No. missions	Mission(s)[a]	Location
43	DEBRA	1978	1 of 1	780828I	Gulf of Mexico
43	ELLA	1978	1 of 7	780901I	Atlantic Ocean
			2 of 7	780901F	
			3 of 7	780901H	
			4 of 7	780902I	
			5 of 7	780902F	
			6 of 7	780903I	
			7 of 7	780903F	
43	GRETA	1978	1 of 3	780916I	Caribbean Sea
			2 of 3	780918F	
			3 of 3	780918I	
	LOCUS[b]	1978	1 of 5	780921H	Atlantic Ocean/ Florida Peninsula
			2 of 5	780922I	
			3 of 5	780922H	
			4 of 5	780929I	
			5 of 5	780929H	

a. See table 2 footnote.

b. LOCUS = Land Ocean Cumulus Study: a program to investigate similarities and differences in convective clouds embedded in the same air mass over Florida and adjacent waters (within 100 km of the peninsula).

Table 5. Official storm tracks and NHRL missions for 1979

Figure	Storm	Year	No. missions	Mission(s)[a]	Location
53	KERRY	1979	1 of 3	790221H	South Pacific
			2 of 3	790222H	
			3 of 3	790303H	
57	ROSA	1979	1 of 1	790226H	South Pacific
59	Trop dep	1979	1 of 1	790827I	Gulf of Mexico
59	DAVID	1979	1 of 12	790830F	Atlantic Ocean/ Caribbean Sea
			2 of 12	790830I	
			3 of 12	790830H	
			4 of 12	790831F	
			5 of 12	790831H	
			6 of 12	790831I	
			7 of 12	790902F	
			8 of 12	790902I	
			9 of 12	790902H	
			10 of 12	790903F	
			11 of 12	790903I	
			12 of 12	790904H	
66	FREDERIC	1979	1 of 7	790911F	Atlantic Ocean/ Caribbean Sea/ Gulf of Mexico
			2 of 7	790911H	
			3 of 7	790911I	
			4 of 7	790912H1	
			5 of 7	790912F	
			6 of 7	790912H2	
			7 of 7	790913I	
66	Post-FREDERIC	1979	1 of 1	790914I	Gulf of Mexico
66	Pre-HENRI[b]	1979	1 of 1	790914H	Caribbean Sea

a. See table 2 footnote.

b. Pre-HENRI investigative flights (survey and AXBT mission).

Table 6. Official storm tracks and NHRL missions for 1980

Figure	Storm	Year	No. missions	Mission(s)[a]	Location
72	ALLEN	1980	1 of 12	800805F	Atlantic Ocean/ Caribbean Sea/ Gulf of Mexico
			2 of 12	800805H	
			3 of 12	800805I	
			4 of 12	800806H	
			5 of 12	800806I	
			6 of 12	800807H	
			7 of 12	800808F	
			8 of 12	800808H	
			9 of 12	800808I	
			10 of 12	800809I	
			11 of 12	800809H	
			12 of 12	800810F	
72	Trop dep/ Pre-GEORGES	1980	1 of 1	800906I	Atlantic Ocean

a. See table 2 footnote.

Table 7. Official storm tracks and NHRL missions for 1981

Figure	Storm	Year	No. missions	Mission(s)[a]	Location
80	DENNIS	1981	1 of 4	810815H	Caribbean Sea/ Florida Straits
			2 of 4	810816I	
			3 of 4	810816H	
			4 of 4	810817I	
80	FLOYD	1981	1 of 2	810907I	Atlantic Ocean
			2 of 2	810907H	
80	GERT	1981	1 of 6	810910H	Atlantic Ocean
			2 of 6	810910I	
			3 of 6	810911H1	
			4 of 6	810911I	
			5 of 6	810911H2	
			6 of 6	810912I	
80	IRENE	1981	1 of 4	810926I	Atlantic Ocean
			2 of 4	810926H	
			3 of 4	810927I	
			4 of 4	810927H	

a. See table 2 footnote.

4. Satellite Imagery

The satellite photos in the data inventory (section 8) have been selected to correspond to the approximate midtimes of the specified research missions (tables 8 through 13). With the exception of the three GMS-1 full-disc/visible (FD/VIS) photos that accompany Cyclone KERRY (1979) data, all satellite photos shown are full-disc/infrared (FD/IR) taken from geostationary systems (i.e., GOES, SMS, or GMS series), and were provided by the NOAA Environmental Data and Information Service/National Climatic Center, Satellite Services Division. (GMS photos were provided by the Australian Bureau of Meteorology.) Tables 8 through 13 also contain a reference to the specific satellite that provided each photo, and its approximate subpoint location.

Table 8. Satellite photos corresponding to the approximate midtime of referenced NHRL missions for 1976

Figure	Storm	Year	Mission(s)[a]	Location	Satellite[b, c]
20a	BONNY	1976	760627H	E. Pacific	GOES-1:FD/IR
20b	BONNY	1976	760627H	E. Pacific	SMS -2:FD/IR
20c	BONNY	1976	760627F	E. Pacific	GOES-1:FD/IR
20d	BONNY	1976	760627F	E. Pacific	SMS -2:FD/IR
22	BELLE	1976	760808F	Atlantic	GOES-1:FD/IR
23	EMMY	1976	760824F	Atlantic	GOES-1:FD/IR
24	EMMY	1976	760825F	Atlantic	GOES-1:FD/IR
25a	FRANCES	1976	760831F	Atlantic	GOES-1:FD/IR
25b	FRANCES	1976	760831H	Atlantic	GOES-1:FD/IR
26a	GLORIA	1976	760928H	Atlantic	GOES-1:FD/IR
26b	GLORIA	1976	760928F	Atlantic	GOES-1:FD/IR
27a	GLORIA	1976	760929F	Atlantic	GOES-1:FD/IR
27b	GLORIA	1976	760929H	Atlantic	GOES-1:FD/IR
28a	GLORIA	1976	760930F	Atlantic	GOES-1:FD/IR
28b	GLORIA	1976	760930H	Atlantic	GOES-1:FD/IR
30a	MADELINE	1976	761008F	E. Pacific	GOES-1:FD/IR
30b	MADELINE	1976	761008F	E. Pacific	SMS -2:FD/IR

a. See table 2 footnote.

b. Satellite subpoints are typically: (a) SMS/GOES-East: equator at 75°W
(b) SMS/GOES-West: equator at 135°W
(c) GMS-1: equator at 140°E

c. FD/IR designates full-disc/infrared. FD/VIS designates full-disc/visible.

Table 9. Satellite photos corresponding to the approximate midtime of referenced NHRL missions for 1977

Figure	Storm	Year	Mission(s)[a]	Location	Satellite[b, c]
31a	Trop dist	1977	770824F	Caribbean	GOES-2:FD/IR
31b	Trop dist	1977	770824H	Caribbean	GOES-2:FD/IR
33a	ANITA	1977	770830H	Gulf of Mex	GOES-2:FD/IR
33b	ANITA	1977	770830F	Gulf of Mex	GOES-2:FD/IR
34a	ANITA	1977	770831H	Gulf of Mex	GOES-2:FD/IR
34b	ANITA	1977	770831F	Gulf of Mex	GOES-2:FD/IR
35a	ANITA	1977	770901I	Gulf of Mex	GOES-2:FD/IR
35b	ANITA	1977	770901H	Gulf of Mex	GOES-2:FD/IR
36	ANITA and pre-BABE	1977	770902F	Gulf of Mex	GOES-2:FD/IR
37	Post-ANITA/BABE	1977	770903F	Gulf of Mex	GOES-2:FD/IR
38a	Trop wave	1977	770920I	Atlantic	GOES-2:FD/IR
38b	Trop wave	1977	770920H	Atlantic	GOES-2:FD/IR
39a	Trop wave	1977	770921I	Atlantic	GOES-2:FD/IR
39b	Trop wave	1977	770921F	Atlantic	GOES-2:FD/IR
39c	Trop wave	1977	770921H	Atlantic	GOES-2:FD/IR
40a	Trop wave	1977	770922I	Atlantic	GOES-2:FD/IR
40b	Trop wave	1977	770922F	Atlantic	GOES-2:FD/IR
40c	Trop wave	1977	770922H	Atlantic	GOES-2:FD/IR
42a	HEATHER	1977	771005F	E. Pacific	GOES-2:FD/IR
42b	HEATHER	1977	771005F	E. Pacific	SMS -2:FD/IR
42c	HEATHER	1977	771005H	E. Pacific	GOES-2:FD/IR
42d	HEATHER	1977	771005H	E. Pacific	SMS -2:FD/IR

a, b, c. See table 8 footnotes.

Table 10. Satellite photos corresponding to the approximate midtime of referenced NHRL missions for 1978

Figure	Storm	Year	Mission(s)[a]	Location	Satellite[b, c]
44	DEBRA	1978	780828I	Gulf of Mex	GOES-2:FD/IR
45a	ELLA	1978	780901I	Atlantic	GOES-2:FD/IR
45b	ELLA	1978	780901F	Atlantic	GOES-2:FD/IR
45c	ELLA	1978	780901H	Atlantic	GOES-2:FD/IR
46a	ELLA	1978	780902I	Atlantic	GOES-2:FD/IR
46b	ELLA	1978	780902F	Atlantic	GOES-2:FD/IR
47a	ELLA	1978	780903I	Atlantic	GOES-2:FD/IR
47b	ELLA	1978	780903F	Atlantic	GOES-2:FD/IR
48	GRETA	1978	780916I	Caribbean	GOES-2:FD/IR
49	GRETA	1978	780918F	Caribbean	GOES-2:FD/IR
49	GRETA	1978	780918I	Caribbean	GOES-2:FD/IR
50	LOCUS[d]	1978	780921H	Atlantic/ Florida	GOES-2:FD/IR
51	LOCUS	1978	780922I	Atlantic/ Florida	GOES-2:FD/IR
51	LOCUS	1978	780922H	Atlantic/ Florida	GOES-2:FD/IR
52	LOCUS	1978	780929I	Atlantic/ Florida	GOES-2:FD/IR
52	LOCUS	1978	780929H	Atlantic/ Florida	GOES-2:FD/IR

a, b, c. See table 8 footnotes.

d. See table 4 footnote.

Table 11. Satellite photos corresponding to the approximate midtime of referenced NHRL missions for 1979

Figure	Storm	Year	Mission(s)[a]	Location	Satellite[b, c]
54	KERRY	1979	790221H	S. Pacific	GMS -1:FD/VIS
55	KERRY	1979	790222H	S. Pacific	GMS -1:FD/VIS
56	KERRY	1979	790303H	S. Pacific	GMS -1:FD/VIS
58	ROSA	1979	790226H	S. Pacific	GMS -1:FD/IR
60	Trop dep	1979	790827I	Gulf of Mex	SMS -2:FD/IR
61a	DAVID	1979	790830F	Atlantic/	SMS -2:FD/IR
61a	DAVID	1979	790830I	Caribbean	SMS -2:FD/IR
61b	DAVID	1979	790830H		SMS -2:FD/IR
62a	DAVID	1979	790831F		SMS -2:FD/IR
62b	DAVID	1979	790831H		SMS -2:FD/IR
62c	DAVID	1979	790831I		SMS -2:FD/IR
63a	DAVID	1979	790902F		SMS -2:FD/IR
63b	DAVID	1979	790902I		SMS -2:FD/IR
63c	DAVID	1979	790902H		SMS -2:FD/IR
64a	DAVID	1979	790903F		SMS -2:FD/IR
64b	DAVID	1979	790903I		SMS -2:FD/IR
65	DAVID	1979	790904H		SMS -2:FD/IR
67a	FREDERIC	1979	790911F	Atlantic/	SMS -2:FD/IR
67b	FREDERIC	1979	790911H	Caribbean/	SMS -2:FD/IR
67c	FREDERIC	1979	790911I	Gulf of Mex	SMS -2:FD/IR
68a	FREDERIC	1979	790912H1		SMS -2:FD/IR
68b	FREDERIC	1979	790912F		SMS -2:FD/IR
68c	FREDERIC	1979	790912H2		SMS -2:FD/IR
69	FREDERIC	1979	790913I		SMS -2:FD/IR
70	Post-FREDERIC	1979	790914I	Gulf of Mex	SMS -2:FD/IR
71	Pre-HENRI	1979	790914H	Caribbean	SMS -2:FD/IR

a, b, c. See table 8 footnotes.

Table 12. Satellite photos corresponding to the approximate midtime of referenced NHRL missions for 1980

Figure	Storm	Year	Mission(s)[a]	Location	Satellite[b, c]
73a	ALLEN	1980	800805F	Atlantic/	SMS -2:FD/IR
73b	ALLEN	1980	800805H	Caribbean/	SMS -2:FD/IR
73b	ALLEN	1980	800805I	Gulf of Mex	SMS -2:FD/IR
74a	ALLEN	1980	800806H		SMS -2:FD/IR
74b	ALLEN	1980	800806I		SMS -2:FD/IR
75	ALLEN	1980	800807H		SMS -2:FD/IR
76	ALLEN	1980	800808F		SMS -2:FD/IR
76	ALLEN	1980	800808H		SMS -2:FD/IR
76	ALLEN	1980	800808I		SMS -2:FD/IR
77a	ALLEN	1980	800809I		SMS -2:FD/IR
77b	ALLEN	1980	800809H		SMS -2:FD/IR
78	ALLEN	1980	800810F		SMS -2:FD/IR
79	Trop dep/ pre-GEORGES	1980	800906I	Atlantic	SMS -2:FD/IR

a, b, c. See table 8 footnotes.

Table 13. Satellite photos corresponding to the approximate midtime of referenced NHRL missions for 1981

Figure	Storm	Year	Mission(s)[a]	Location	Satellite[b, c]
81	DENNIS	1981	810815H	Caribbean/	GOES-5:FD/IR
82a	DENNIS	1981	810816I	Fla Straits	GOES-5:FD/IR
82b	DENNIS	1981	810816H		GOES-5:FD/IR
83	DENNIS	1981	810817I		GOES-5:FD/IR
84	FLOYD	1981	810907I	Atlantic	GOES-5:FD/IR
84	FLOYD	1981	810907H		GOES-5:FD/IR
85a	GERT	1981	810910H	Atlantic	GOES-5:FD/IR
85b	GERT	1981	810910I		GOES-5:FD/IR
86a	GERT	1981	810911H1		GOES-5:FD/IR
86b	GERT	1981	810911I		GOES-5:FD/IR
86c	GERT	1981	810911H2		GOES-5:FD/IR
87	GERT	1981	810912I		GOES-5:FD/IR
88	IRENE	1981	810926I	Atlantic	GOES-5:FD/IR
88	IRENE	1981	810926H		GOES-5:FD/IR
89	IRENE	1981	810927I		GOES-5:FD/IR
89	IRENE	1981	810927H		GOES-5:FD/IR

a, b, c. See table 8 footnotes.

5. Tape Formats

Research mission data are recorded by systems on the NOAA/RFC C-130B and WP-3D aircraft, with magnetic tape as the recording medium. This section describes and illustrates the: (a) AWRS[2] (C-130B) original tape (characteristics and format, section 5.1); (b) RAMS[3] (WP-3D) original tape (characteristics and format, section 5.2); (c) RFC standard tape (purpose and format, section 5.3); (d) Radar tape (format, section 5.4); (e) Knollenberg forward scattering spectrometer probe (FSSP) data (system and tape format, section 5.5); and (f) Knollenberg two-dimensional (2-D) probe data (system and tape format, section 5.6).

5.1 AWRS (C-130) Original Tape

Data collected with the NOAA/RFC C-130B aircraft are recorded, in digital form, on a seven-track magnetic tape for postflight processing and analysis. The original data tape format is given in Fig. 13. Information is coded in packed binary coded decimal (BCD) [i.e., each six-bit data track section contains 1.5 BCD characters], with the exception of the BLOCK COUNT, PITCH, ROLL, and VERTICAL VELOCITY parameters, which are recorded in binary form. The tape density used is 200 bits per inch (BPI), with a sampling rate of one record per second.

---

2. Airborne Weather Reconnaissance System.

3. Research Aircraft Measurement System.

Word	Parameter (units)
1	LATITUDE (deg/min/tenths of min)
2	LONGTITUDE (deg/min/tenths of min)
3	RADAR ALTITUDE (ft)
4	TRUE AIRCRAFT HEADING (deg)
5	TIME (hr/min/sec)
6	AVERAGE WIND SPEED (kt)
7	AVERAGE WIND DIRECTION (deg)
8	TRUE AIRSPEED (kt)
9	STANDARD PRESSURE HEIGHT (gp ft)
10	DEW POINT (deg C)
11	DRIFT ANGLE (deg)
12	TEMPERATURE (deg C)
13	RELATIVE HUMIDITY (%)
14	STATIC PRESSURE (mb)
15	TRACK (deg)
16	AIR DENSITY (g m^{-3})
17	GROUND SPEED (kt)
18	D-VALUE (ft)
19	SPARE
20	DOWNWARD SURFACE TEMPERATURE (deg C)
21	FAULT CODE
22	PRESSURE ALTITUDE (ft)
23	VERTICAL WIND SPEED (m s^{-1})
24	SPARE
25	SPARE
26	SPARE
27	SPARE
28	JOHNSON-WILLIAMS LIQUID WATER CONTENT (g m^{-3})
29	SPARE
30	SPARE
31	SPARE
32	NOT AVAILABLE
33	SPARE
34	ROLL ANGLE (deg)
35	PITCH ANGLE (deg)
36	VERTICAL VELOCITY [DAMPENED] (count)
37	VERTICAL VELOCITY (count)
38	AVERAGE WIND SPEED (kt) [same as word 6]
39	AVERAGE WIND DIRECTION (deg) [same as word 7]
40	WIND SPEED (kt) [1-sec value]
41	WIND DIRECTION (deg) [1-sec value]
42	EQUIVALENT POTENTIAL TEMPERATURE (deg K)
43	ANGLE OF ATTACK PRESSURE (mb)
44	ANGLE OF YAW PRESSURE (mb)
45	SPARE
46	DYNAMIC PRESSURE (mb)
47	NOT AVAILABLE
48	NOT AVAILABLE
49	NOT AVAILABLE
50	SPARE

Figure 13. AWRS (C-130B) tape format.

5.2 RAMS (WP-3D) Original Tape

Data collected with the NOAA/RFC WP-3D aircraft are recorded, in raw digital form, on a seven-track magnetic tape. The information is coded binary, with the exception of WORDS 3, 4, and 5 (Fig. 14), which are in ASCII format. Either 556- or 800-BPI tape density is used, with 152 words (120 WORDS before 1979) per record, 10 records per BLOCK, and recorded at a rate of one record per second.

5.3 RFC Standard Tape

The RFC Standard Tape provides the user with data tapes that are common to all RFC aircraft. Parameters are already converted to engineering units. This tape is developed by a process that uses original aircraft tape data as input to produce a "convert" or standard tape. Two records are generated as output on the RFC standard tape for each original (input) record. The first of these records is simply a duplicate of the original (input) record, with 16-bit WORDS (no alterations). The second record on the output tape contains the original parameters and appropriately derived meteorological parameter values in engineering units. The RFC standard tape format is given in Fig. 15.

Word		Parameter (units: all data in count units)
1		WORDS/RECORD (152; 120 before 1979)
2		AIRCRAFT NUMBER
3		TABLE NAME (T.)
4		TABLE NAME (1H)
5		TABLE NAME (UR)
6		YEAR/MONTH
7		DAY/HOUR
8		MINUTE/SECOND
9		EVENT SWITCHES
10		EVENT SWITCHES
11	ONE	DATE
12		HOUR/MINUTE
13		SECOND
14		LATITUDE
15		LATITUDE
16		LONGITUDE
17		LONGITUDE
18		GROUND SPEED N/S
19		GROUND SPEED E/W
20		TRUE AIRCRAFT HEADING
21		PITCH ANGLE
22		ROLL ANGLE
23		POWER DROPOUT
24		ONE (Omega Navigation Equipment) STATUS
25		ONE STATUS
26		ONE STATUS
27		ONE STATUS
28		DOPPLER STATUS
29		INE 1 STATUS
30		INE 2 STATUS
31		DOPPLER GROUND SPEED
32		DOPPLER DRIFT
33		CHECK SUM
34	INE 1	PRESSURE ALTITUDE
35		LATITUDE
36		LATITUDE
37		LONGITUDE
38		LONGITUDE
39		GROUND SPEED N/S
40		GROUND SPEED E/W
41		VERTICAL SPEED
42		DRIFT ANGLE
43		TRUE AIRCRAFT HEADING
44		PITCH ANGLE
45		ROLL ANGLE

Figure 14. RAMS (WP-3D) original tape format.

Word		Parameter (units: all data in count units)
46	INE 2	PRESSURE ALTITUDE
47		LATITUDE
48		LATITUDE
49		LONGITUDE
50		LONGITUDE
51		GROUND SPEED N/S
52		GROUND SPEED E/W
53		VERTICAL SPEED
54		DRIFT ANGLE
55		TRUE AIRCRAFT HEADING
56		PITCH ANGLE
57		ROLL ANGLE
58		INDICATED DYNAMIC PRESSURE
59		INDICATED STATIC PRESSURE
60		RADAR ALTITUDE
61-70		ICE PARTICLE COUNT
71		TOTAL TEMPERATURE 1
72		TOTAL TEMPERATURE 2
73		DEW (FROST) POINT
74		ATTACK PRESSURE
75		DYNAMIC ATTACK PRESSURE
76		SLIP PRESSURE
77		DYNAMIC SLIP PRESSURE
78		JOHNSON-WILLIAMS CLOUD WATER
79		SPARE
80		RADIOMETER DOWN
81-84		ADC #1 CHANNELS 11-14 [VAC #2 CH 14 during 1981]
85		VERTICAL ACCELERATION (VAC)
86		VERTICAL ACCELERATION [VAC #2 CH 14 prior to 1981]
87-95		ADC #1 CHANNELS 17-25
96		AXBT TEMPERATURE 1
97		AXBT TEMPERATURE 2
98		AXBT TEMPERATURE 3
99-102		ADC #1 CHANNELS 29, 00
103-134		ADC #2 CHANNELS 01-31, 00
135-144		CLOUD PHYSICS STATUS
145		DAY
146		HOUR
147		MINUTE
148		SECOND
149-152		STATUS

Figure 14 (Continued). RAMS (WP-3D) original tape format.

Word	Parameter (units)
1	TYPE RECORD (5)
2	WORDS/RECORD
3	HOURS
4	MINUTES
5	SECONDS
6	RECORD COUNT
7	RECORD COUNT > 32767
8	SWITCHES
9	SWITCHES
10	ERROR FLAGS
11	ERROR FLAGS
12	LATITUDE (deg)
13	LATITUDE (min)
14	LONGITUDE (deg)
15	LONGITUDE (min)
16	RADAR ALTITUDE (m)
17	STATIC PRESSURE (mb)
18	TEMPERATURE (deg C)
19	FROST POINT (deg C)
20	RADIOMETER [DOWN] TEMPERATURE (deg C)
21	RADIOMETER [SIDE] TEMPERATURE CO_2 (deg C)
22	GROUND SPEED (m s^{-1})
23	TRUE AIRSPEED (m s^{-1})
24	INTEGRATED VERTICAL ACCELERATION (m s^{-1})
25	TRACK (deg)
26	TRUE AIRCRAFT HEADING (deg)
27	PITCH ANGLE (deg)
28	ROLL ANGLE (deg)
29	ATTACK ANGLE (deg)
30	SLIP ANGLE (deg)
31	LIQUID WATER CONTENT (g m^{-3})
32	DYNAMIC PRESSURE (mb)
33	DEW POINT (deg C)
34	BLANK
35	BLANK
36	BLANK
37	BLANK
38	BLANK
39	BLANK
40	GEOPOTENTIAL ALTITUDE (gpm)
41	PRESSURE ALTITUDE (m)
42	D-VALUE (m)
43	HEIGHT OF THE 500-mb STANDARD LEVEL (gpm)
44	SURFACE PRESSURE (mb)

Figure 15. RFC standard tape format.

Word	Parameter (units)
45	RELATIVE HUMIDITY (%)
46	VIRTUAL TEMPERATURE (deg K)
47	VERTICAL AIRSPEED (m s^{-1})
48	RATIO SPECIFIC HEAT (dimensionless)
49	MACH NUMBER (dimensionless)
50	DRIFT ANGLE (deg)
51	GROUND SPEED E/W (m s^{-1})
52	GROUND SPEED N/S (m s^{-1})
53	TRUE AIRSPEED E/W (m s^{-1})
54	TRUE AIRSPEED N/S (m s^{-1})
55	WIND SPEED E/W (m s^{-1})
56	WIND SPEED N/S (m s^{-1})
57	VERTICAL WIND SPEED (m s^{-1})
58	WIND SPEED (m s^{-1})
59	WIND DIRECTION (deg)
60	SURFACE TEMPERATURE (deg C)
61	VAPOR PRESSURE (mb)
62	MIXING RATIO (g kg^{-1})
63	POTENTIAL TEMPERATURE (deg K)
64	EQUIVALENT POTENTIAL TEMPERATURE (deg K)
65	E/W AVERAGE WIND SPEED (m s^{-1})
66	N/S AVERAGE WIND SPEED (m s^{-1})
67	AVERAGE WIND SPEED (m s^{-1})
68	AVERAGE WIND DIRECTION (deg)
69	LATITUDE CORRECTION (min of latitude)
70	LONGITUDE CORRECTION (min of longitude)
71	WIND AVERAGE (SECONDS) [averaging period (# of sec)]
72	AXBT CHANNEL 1
73	AXBT CHANNEL 2
74	AXBT CHANNEL 3
75	NAVIGATION UNIT USED (INE 1, INE 2)
76	TEMPERATURE UNIT USED (TEMP 1, TEMP 2)
77	BLANK
78	STORM LATITUDE (deg)
79	STORM LATITUDE (min)
80	STORM LONGITUDE (deg)
81	STORM LONGITUDE (min)
82	VIRTUAL LATITUDE (km)
83	VIRTUAL LONGITUDE (km)
84	STORM DISTANCE (km)
85	STORM SPEED (m s^{-1})
86	STORM TRACK (deg)
87	RADIAL WIND (m s^{-1})
88	TANGENTIAL WIND (m s^{-1})
89	RELATIVE RADIAL WIND (m s^{-1})
90	RELATIVE TANGENTIAL WIND (m s^{-1})
91	RELATIVE WIND SPEED (m s^{-1})
92	RELATIVE WIND DIRECTION (deg)

Figure 15 (Continued). RFC Standard tape format.

Word	Parameter (units)
93	REFERENCE PRESSURE (mb)
94	REFERENCE HEIGHT (m)
95	REFERENCE TEMPERATURE (deg C)
96	ADJUSTED TEMPERATURE (deg C)
97	ADJUSTED DEW POINT (deg C)
98	ADJUSTED D-VALUE (m)
99	ADJUSTED EQUIVALENT POTENTIAL TEMPERATURE (deg k)
100	BLANK
101	BLANK
102	BLANK
103	BLANK
104	BLANK
105	BLANK
106	BLANK

Figure 15 (Continued). RFC standard tape format.

5.4 Radar Tape

The RFC radar data tape is formatted in fixed record lengths (Fig. 16). Each record begins with "header data," which include: radar parameters, aircraft orientation, and time (when the data were acquired). Header data are followed by 10 data acquisitions (words 17 through 1303), which correspond to half-beam widths and contain azimuth and range bin information. Lower fuselage (LF), nose (N), and tail (T) radar data are recorded on the WP-3D aircraft; only nose (N) radar data are available from the C-130B aircraft.

5.5 Knollenberg Forward Scattering Spectrometer Probe Data

The Knollenberg forward scattering spectrometer probe (FSSP), a cloud physics instrument designed to measure cloud droplet sizes over the range of 0.5 to 45.0 μm, is mounted on the NOAA/RFC aircraft (under the wing tips) to insure a free flow of droplets through the device's sampling volume. The FSSP measures droplets over its total range in the following size intervals: 0.5 to 7.5 μm; 1.0 to 15.0 μm; 2.0 to 30.0 μm; and 3.0 to 45.0 μm. The physical principle of the FSSP's operation involves the detection of a laser light source after it has been scattered by the droplets that pass through the sampling volume. Droplet size information thus obtained is recorded on magnetic tape in the format given by Fig. 17.

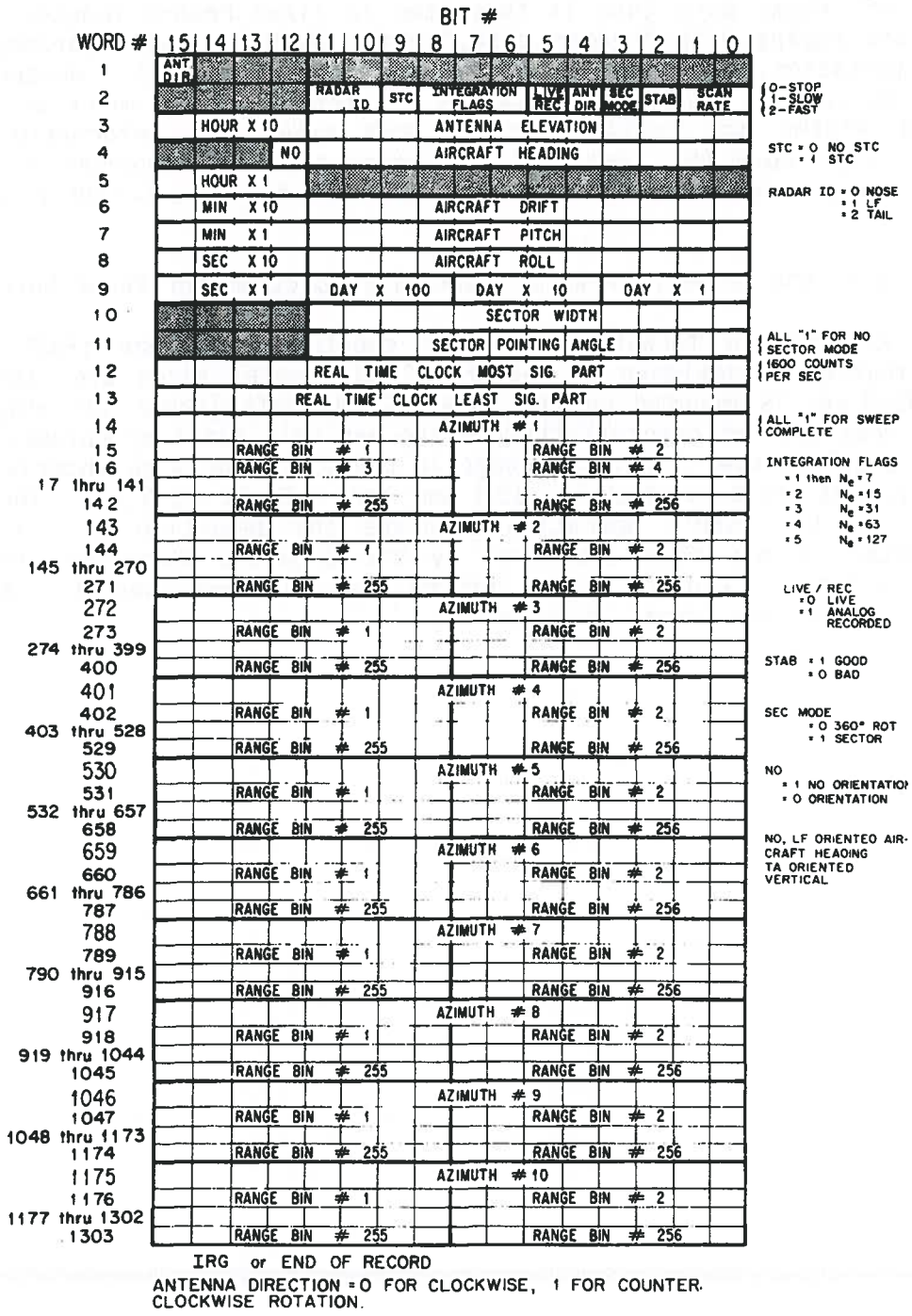


Fig. 16. Radar tape format.

Word	Parameter
1	MINUTES * 100 + SECONDS
2	MILLISECONDS FSSP RANGE (Bits 0 through 3)
3	YEAR * 100 + MONTH
4	DAY * 100 + HOUR
Words 1 through 4 are nonrepeating and BCD coded	
5	UNUSED
6	NOT AVAILABLE
7	UNUSED
.	"
.	"
.	"
18	UNUSED
19	2-D CLOCKING % * 100
20	FSSP A CHANNEL 1 COUNTS
.	"
.	"
.	"
34	FSSP A CHANNEL 15 COUNTS
35	2-D C PROBE OVERLOAD % * 100
36	2-D P PROBE OVERLOAD % * 100
37	2-D C TOTAL COUNTS
38	2-D P TOTAL COUNTS
39	UNUSED
.	"
.	"
.	"
50	UNUSED
51	FSSP B TOTAL COUNTS
52	FSSP B CHANNEL 1 COUNTS
.	"
.	"
.	"
66	FSSP B CHANNEL 15 COUNTS
67	2-D C DIODE 1 VOLTS * 1000
68	2-D P DIODE 1 VOLTS * 1000
69	UNUSED
.	"
.	"
.	"
82	UNUSED
83	2-D CLOCKING % * 100
84	FSSP A CHANNEL 1 COUNTS
.	"
.	"
.	"
98	FSSP A CHANNEL 15 COUNTS

Figure 17. Knollenberg forward scattering spectrometer probe (short record, BCD) tape format.

Word	Parameter
99	2-D C DIODE 32 VOLTS * 1000
100	2-D P DIODE 32 VOLTS * 1000
101	UNUSED
.	"
.	"
.	"
114	UNUSED
115	FSSP B TOTAL COUNTS
116	FSSP B CHANNEL 1 COUNTS
.	"
.	"
.	"
130	FSSP B CHANNEL 15 COUNTS
131	2-D C -15 VOLT SUPPLY
132	2-D P -15 VOLT SUPPLY
133	UNUSED
.	"
.	"
.	"
146	UNUSED
147	2-D CLOCKING % * 100
148	FSSP A CHANNEL 1 COUNTS
.	"
.	"
.	"
162	FSSP A CHANNEL 15 COUNTS
163	2-D C -12 VOLT SUPPLY
164	2-D P -12 VOLT SUPPLY
165	UNUSED
.	"
.	"
.	"
178	UNUSED
179	FSSP B TOTAL COUNTS
180	FSSP B CHANNEL 1 COUNTS
.	"
.	"
.	"
194	FSSP B CHANNEL 15 COUNTS
195	2-D C +5 VOLT A SUPPLY
196	2-D P +5 VOLT A SUPPLY
197	UNUSED
.	"
.	"
.	"
210	UNUSED

Figure 17 (Continued). Knollenberg forward scattering spectrometer probe (short record, BCD) tape format.

Word	Parameter
211	2-D C CLOCKING % * 100
212	FSSP A CHANNEL 1 COUNTS
.	"
.	"
.	"
226	FSSP A CHANNEL 15 COUNTS
227	2-D C +5 VOLT B SUPPLY
228	2-D P +5 VOLT B SUPPLY
229	UNUSED
.	"
.	"
.	"
242	UNUSED
243	FSSP B TOTAL COUNTS
244	FSSP B CHANNEL 1 COUNTS
.	"
.	"
.	"
258	FSSP B CHANNEL 15 COUNTS
259	2-D C +15 VOLT SUPPLY
260	2-D P +15 VOLT SUPPLY
261	UNUSED
.	"
.	"
.	"
274	UNUSED
275	2-D CLOCKING % * 100
276	FSSP A CHANNEL 1 COUNTS
.	"
.	"
.	"
290	FSSP A CHANNEL 15 COUNTS
291	2-D C TEMPERATURE
292	2-D P TEMPERATURE
293	UNUSED
.	"
.	"
.	"
306	UNUSED
307	FSSP B TOTAL COUNTS
308	FSSP B CHANNEL 1 COUNTS
.	"
.	"
.	"
322	FSSP B CHANNEL 15 COUNTS

Figure 17 (Continued). Knollenberg forward scattering spectrometer probe (short record, BCD) tape format.

5.6 Knollenberg Two-Dimensional Probe Data

The Knollenberg two-dimensional (2-D) probe is an imaging device used to measure precipitation-sized particles and operates by shining a laser source through a series of lenses on to a photodiode array. As particles pass through the sampling volume, they intercept this light, producing diode shading. Diodes that remain illuminated are unshaded. The corresponding diode-status is, then, either shaded (coded as 0) or unshaded (coded as 1). The diode-status is sampled very rapidly (in time), such that the two-dimensional images formed produce round images from round particles that pass through the sampling volume. The status of the diode array is recorded on magnetic tape in the format shown in Fig. 18.

Word	Parameter
1	MINUTES (BCD) SECONDS (BCD)
2	MILLISECONDS (BCD) PROBE IDENTITY/OVERLOADING
3	2-D IMAGES AND TIME CODES
.	"
.	"
.	"
2050	2-D IMAGES AND TIME CODES

Figure 18. Knollenberg two-dimensional (2-D) probe tape (record) format.

6. Flight Log/Tape Log Form

Individual sets of NHRL research mission data for 1976 through 1981 are documented in section 8. The information contained on the flight- and tape-log forms is self-explanatory. The flight log portion of the form provides date, flight (mission) and aircraft identification, departure and arrival terminals (and corresponding GMT times), mission purpose, and completed mission pattern information.

The tape log inventory (for each mission, as identified on the flight log portion of the form), provides information relative to the type of data tapes available (i.e., original, RFC standard, radar, Knollenberg), the number of such tapes, and, when available, the "start" (from) and "stop" (to) times, for the number of given tapes in each category taken as a data set.

7. Equipment Status Form

The equipment status form serves as an indication (to the user) of "gross" system(s) operation during each specified mission. The status of major systems and their corresponding subsystems, when appropriate, are listed categorically as "up" (normal operation), "down" (not operating, or malfunctioning during the mission), or "not used" (system not in use, or not installed on the aircraft during the mission), and marked accordingly on this form. A "remarks" section is also provided for appropriate comments concerning the status of the equipment.

Table 14 provides (a) a breakdown of the items listed on mission equipment status forms; (b) parameters obtained from listed sensors/systems; and (c) appropriate remarks.

Data that are not part of the so-called "standard meteorological package" are recorded on separate systems as shown in table 14. Knollenberg data from the C-130B aircraft were recorded on tapes designated as "cloud physics" tapes, along with the other data. (This system is contrasted with the recording of Knollenberg data on the WP-3D aircraft, where only Knollenberg data appear on the Knollenberg tapes.)

Table 14. Equipment status form breakdown

Sensor or system	Equip. status sheet code	Remarks/parameter
Navigation:		(Figs. 13-15)
Inertial navigation	INE 1	Time of day
	INE 2	Latitude
Omega navigation	ONE	Longitude
Doppler navigation	DOPL	Ground speed
		Heading
		Track
		Pitch
		Roll
		Vertical speed
		Drift
Radar system:		Separate recording system (Fig. 16)
Nose	NOSE	240° horizontal scan
Lower fuselage	LF	360° horizontal scan
Tail	TAIL	360° vertical scan
Data system	DATA SYSTEM	Computer, recorder, and display
AWRS data system:	AWRS	Computer, recorder, and display C-130B (Fig. 13)
RAMS data system:	RAMS	Computer, recorder, and display WP-3D (Fig. 14)
Total temperature	TOT. TEMP. 1	Ambient temperature (System #1)
	TOT. TEMP. 2	Ambient temperature (System #2)
Dew point	DEW POINT	Dew (frost) point temperature
Attack angle	ATTACK ANGLE	Attack pressure
Slip angle	SLIP ANGLE	Slip pressure
Absolute pressure	ABS. PRESSURE	Ambient pressure
Differential press.	DIFF. PRESSURE	Dynamic pressure
Radar altimeter	RADAR ALT.	True altimeter (altitude)
Liquid water	JOHNSON-WILLIAMS	Cloud liquid water
Knollenberg/cloud physics system:		Separate recording system(s) (Figs. 17 and 18)
PMS	OAP-2 DP	Cloud droplet spectrum
	OAP-2 DC	Hydrometeor size spectrum
	FSSP-100	Small cloud droplet spectrum
	DATA SYSTEM	Computer, recorder, and display

Table 14 (Continued). Equipment status form breakdown

Sensor or system	Equip. status sheet code	Remarks/parameters
Ice particle counter:		
	IPC	Ice particle counts (number)
Foil impactor:		Separate recording system
	FOIL	Hydrometeor size spectrum
CO_2 radiometer:		
	CO_2 RADIOMETER	Air temperature (from CO_2 radiometer)
Microwave radiometer:		
	MICROWAVE RAD.	Microwave radiometer temperature
Surface radiometer:		
	SFC. RADIOMETER	Sea-surface temperature
Formvar replicator:		Separate recording system
	FORMVAR	Cloud particle replicator
Photography:		Separate recording system(s)
	FWD	Forward-looking 16 mm camera
	LS	Left-side-looking 16 mm camera
	RS	Right-side-looking 16 mm camera
	DWN	Downward-looking 16 mm camera
	RADAR	Radar scope camera
Bathythermograph:		
	AXBT TUBES/ RECEIVERS	Ocean temperature
Omega dropwindsonde:		Separate recording system
	ODW	Launch mechanism and recorder/ atmospheric sounding (temperature, pressure, humidity, wind)

8. Individual Mission Data Catalog

Tables 15 through 20 list the NHRL missions that are included in this section for 1976 through 1981. The tables also provide information, for cross reference, by storm, year, best-track, and satellite figure reference numbers, and availability of flight log/tape log and equipment status forms.

Table 15. Data documented in part II, section 8.1 (1976)

Section	Storm/ year	Mission(s)[a]	Best-track figure	Satellite figure	Flight/tape logs	Equipment status
8.1	BONNY 1976	760627H	19	20a,b	Yes / Yes	Yes
		760627F	19	20c,d	Yes / Yes	Yes
8.1	BELLE 1976	760808F	21	22	Yes / Yes	Yes
8.1	EMMY 1976	760824F	21	23	Yes / Yes	Yes
		760825F	21	24	Yes / Yes	Yes
8.1	FRANCES 1976	760831F	21	25a	Yes / Yes	Yes
		760831H	21	25b	Yes / Yes	Yes
8.1	GLORIA 1976	760928H	21	26a	Yes / Yes	Yes
		760928F	21	26b	Yes / Yes	Yes
		760929F	21	27a	Yes / Yes	Yes
		760929H	21	27b	Yes / Yes	Yes
		760930F	21	28a	Yes / Yes	Yes
		760930H	21	28b	Yes / Yes	Yes
8.1	MADELINE 1976	761008F	29	30a,b	Yes / Yes	Yes

a. See table 2 footnote.

Table 16. Data documented in part II, section 8.2 (1977)

Section	Storm/ year	Mission(s)[a]	Best-track figure	Satellite figure	Flight/tape logs	Equipment status
8.2	Trop dist 1977	770824F		31a	Yes / Yes	Yes
		770824H		31b	Yes / Yes	Yes
8.2	ANITA 1977	770830H	32	33a	Yes / Yes	Yes
		770830F	32	33b	Yes / Yes	Yes
		770831H	32	34a	Yes / Yes	Yes
		770831F	32	34b	Yes / Yes	Yes
		770901I	32	35a	Yes / Yes	Yes
		770901H	32	35b	Yes / Yes	Yes
8.2	Post-ANITA/ BABE 1977	770902F	32	36	Yes / Yes	Yes
		770903F	32	37	Yes / Yes	Yes
8.2	Trop wave 1977	770920I		38a	Yes / Yes	Yes
		770920H		38b	Yes / Yes	Yes
		770921I		39a	Yes / Yes	Yes
		770921F		39b	Yes / Yes	Yes
		770921H		39c	Yes / Yes	Yes
		770922I		40a	Yes / Yes	Yes
		770922F		40b	Yes / Yes	Yes
		770922H		40c	Yes / Yes	Yes
8.2	HEATHER 1977	771005F	41	42a,b	Yes / Yes	Yes
		771005H	41	42c,d	Yes / Yes	Yes

a. See table 2 footnote.

Table 17. Data documented in part II, section 8.3 (1978)

Section	Storm/ year	Mission(s)[a]	Best-track figure	Satellite figure	Flight/tape logs	Equipment status
8.3	DEBRA 1978	780828I	43	44	Yes / Yes	Yes
8.3	ELLA 1978	780901I	43	45a	Yes / Yes	Yes
		780901F	43	45b	Yes / Yes	Yes
		780901H	43	45c	Yes / Yes	Yes
		780902I	43	46a	Yes / Yes	Yes
		780902F	43	46b	Yes / Yes	Yes
		780903I	43	47a	Yes / Yes	Yes
		780903F	43	47b	Yes / Yes	Yes
8.3	GRETA 1978	780916I	43	48	Yes / Yes	Yes
		780918F	43	49	Yes / Yes	Yes
		780918I	43	49	Yes / Yes	Yes
8.3	LOCUS[b] 1978	780921H		50	Yes / Yes	Yes
		780922I		51	Yes / Yes	Yes
		780922H		51	Yes / Yes	Yes
		780929I		52	Yes / Yes	Yes
		780929H		52	Yes / Yes	Yes

a. See table 2 footnote.
b. See table 4 footnote.

Table 18. Data documented in part II, section 8.4 (1979)

Section	Storm/ year	Mission(s)[a]	Best-track figure	Satellite figure	Flight/tape logs	Equipment status
8.4	KERRY 1979	790221H	53	54	Yes / Yes	Yes
		790222H	53	55	Yes / Yes	Yes
		790303H	53	56	Yes / Yes	Yes
8.4	ROSA 1979	790226H	57	58	Yes / Yes	Yes
8.4	Trop dep 1979	790827I	59	60	Yes / Yes	Yes
8.4	DAVID 1979	790830F	59	61a	Yes / Yes	Yes
		790830I	59	61a	Yes / Yes	Yes
		790830H	59	61b	Yes / Yes	Yes
		790831F	59	62a	Yes / Yes	Yes
		790831H	59	62b	Yes / Yes	Yes
		790831I	59	62c	Yes / Yes	Yes
		790902F	59	63a	Yes / Yes	Yes
		790902I	59	63b	Yes / Yes	Yes
		790902H	59	63c	Yes / Yes	Yes
		790903F	59	64a	Yes / Yes	Yes
		790903I	59	64b	Yes / Yes	Yes
		790904H	59	65	Yes / Yes	Yes
8.4	FREDERIC 1979	790911F	66	67a	Yes / Yes	Yes
		790911H	66	67b	Yes / Yes	Yes
		790911I	66	67c	Yes / Yes	Yes
		790912H1	66	68a	Yes / Yes	Yes
		790912F	66	68b	Yes / Yes	Yes
		790912H2	66	68c	Yes / Yes	Yes
		790913I	66	69	Yes / Yes	Yes
8.4	Post-FREDERIC 1979	790914I	66	70	Yes / Yes	Yes
8.4	Pre-HENRI 1979	790914H	66	71	Yes / Yes	Yes

a. See table 2 footnote.

Table 19. Data documented in part II, section 8.5 (1980)

Section	Storm/ year	Mission(s)[a]	Best-track figure	Satellite figure	Flight/tape logs	Equipment status
8.5	ALLEN 1980	800805F	72	73a	Yes / Yes	Yes
		800805H	72	73b	Yes / Yes	Yes
		800805I	72	73b	Yes / Yes	Yes
		800806H	72	74a	Yes / Yes	Yes
		800806I	72	74b	Yes / Yes	Yes
		800807H	72	75	Yes / Yes	Yes
		800808F	72	76	Yes / Yes	Yes
		800808H	72	76	Yes / Yes	Yes
		800808I	72	76	Yes / Yes	Yes
		800809I	72	77a	Yes / Yes	Yes
		800809H	72	77b	Yes / Yes	Yes
		800810F	72	78	Yes / Yes	Yes
8.5	Trop dep/ pre-GEORGES 1980	800906I	72	79	Yes / Yes	Yes

a. See table 2 footnote.

Table 20. Data documented in part II, section 8.6 (1981)

Section	Storm/ year	Mission(s)[a]	Best-track figure	Satellite figure	Flight/tape logs	Equipment status
8.6	DENNIS 1981	810815H	80	81	Yes / Yes	Yes
		810816I	80	82a	Yes / Yes	Yes
		810816H	80	82b	Yes / Yes	Yes
		810817I	80	83	Yes / Yes	Yes
8.6	FLOYD 1981	810907I	80	84	Yes / Yes	Yes
		810907H	80	84	Yes / Yes	Yes
8.6	GERT 1981	810910H	80	85a	Yes / Yes	Yes
		810910I	80	85b	Yes / Yes	Yes
		810911H1	80	86a	Yes / Yes	Yes
		810911I	80	86b	Yes / Yes	Yes
		810911H2	80	86c	Yes / Yes	Yes
		810912I	80	87	Yes / Yes	Yes
8.6	IRENE 1981	810926I	80	88	Yes / Yes	Yes
		810926H	80	88	Yes / Yes	Yes
		810927I	80	89	Yes / Yes	Yes
		810927H	80	89	Yes / Yes	Yes

a. See table 2 footnote.

8.1 1976 Data

Item	Storm	Page
Fig. 19	BONNY	47
Fig. 20a	BONNY	48
Fig. 20b	BONNY	49
Mission 760627H	BONNY	50-51
Fig. 20c	BONNY	52
Fig. 20d	BONNY	53
Mission 760627F	BONNY	54-55
Fig. 21	BELLE, EMMY, FRANCES, GLORIA	56
Fig. 22	BELLE	57
Mission 760808F	BELLE	58-59
Fig. 23	EMMY	60
Mission 760824F	EMMY	61-62
Fig. 24	EMMY	63
Mission 760825F	EMMY	64-65
Fig. 25a	FRANCES	66
Mission 760831F	FRANCES	67-68
Fig. 25b	FRANCES	69
Mission 760831H	FRANCES	70-71
Fig. 26a	GLORIA	72
Mission 760928H	GLORIA	73-74
Fig. 26b	GLORIA	75
Mission 760928F	GLORIA	76-77
Fig. 27a	GLORIA	78
Mission 760929F	GLORIA	79-80
Fig. 27b	GLORIA	81
Mission 760929H	GLORIA	82-83
Fig. 28a	GLORIA	84
Mission 760930F	GLORIA	85-86
Fig. 28b	GLORIA	87
Mission 760930H	GLORIA	88-89
Fig. 29	MADELINE	90
Fig. 30a	MADELINE	91
Fig. 30b	MADELINE	92
Mission 761008F	MADELINE	93-94

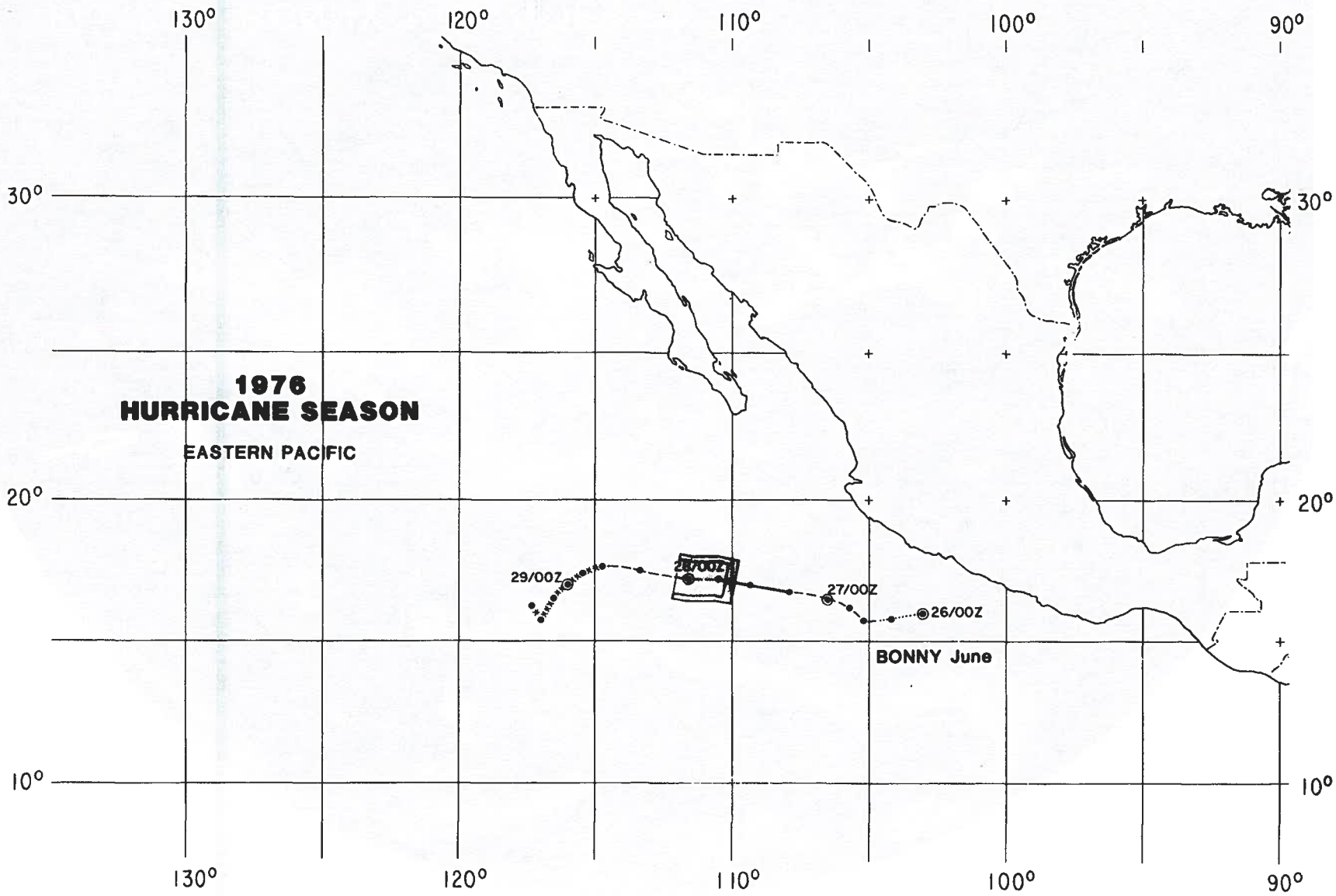


Fig. 19. Storm track and NHRL missions for BONNY.

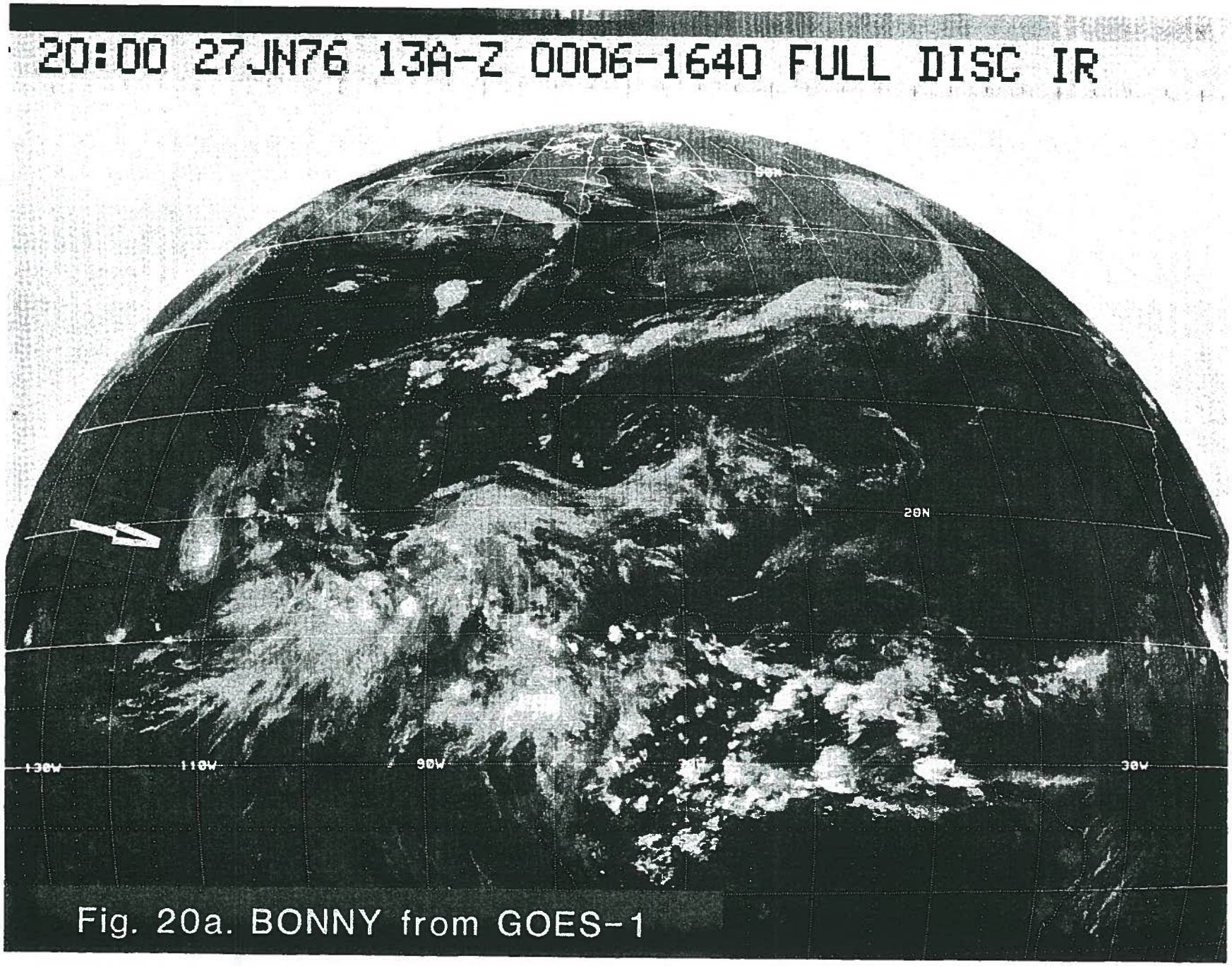


Fig. 20a. BONNY from GOES-1

2015 27JN76 32F-4ZA 00021 19111 FULL DISC IR

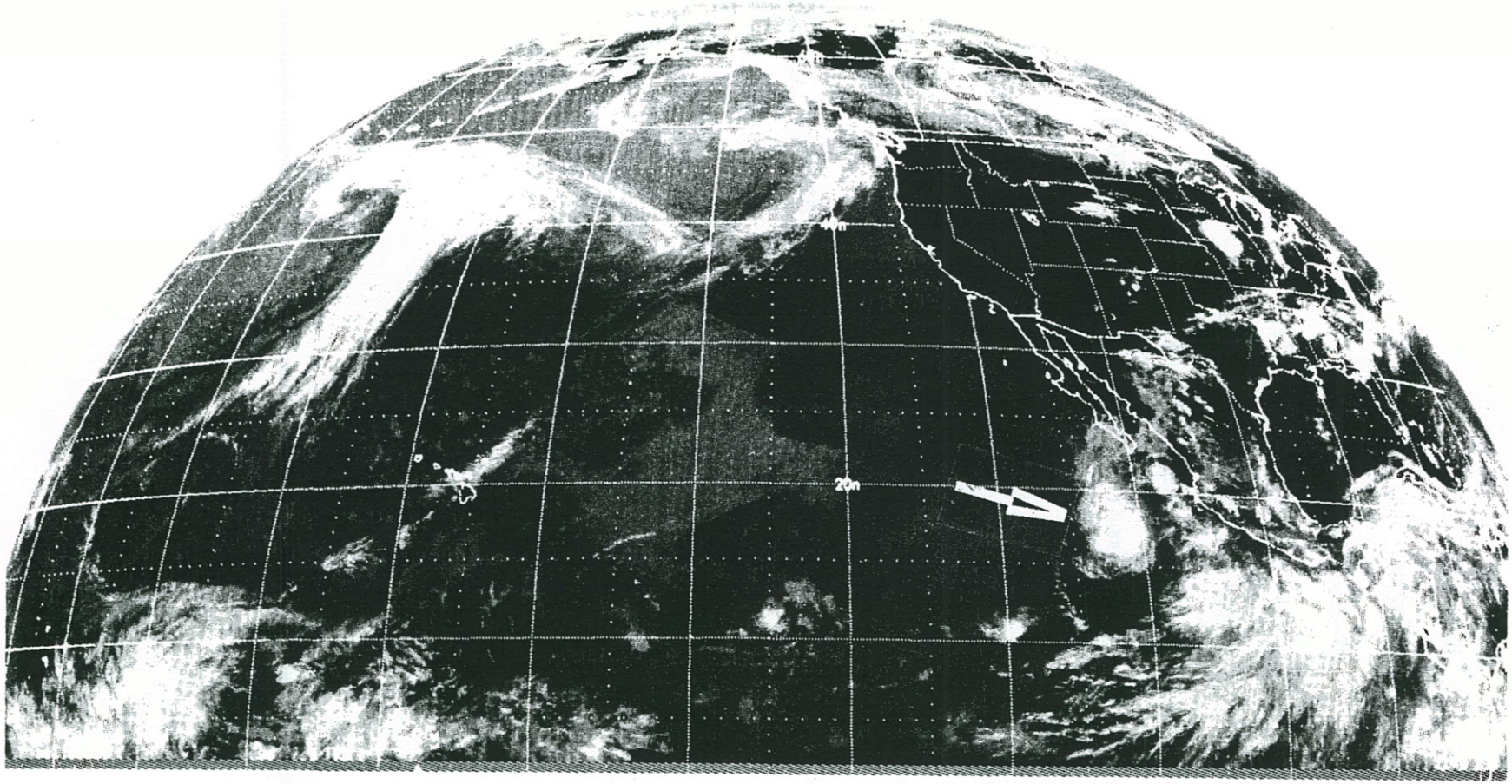


Fig. 20b. BONNY from SMS-2.

FLIGHT LOG

Date:	June 27, 1976
Flight Identification:	760627H
Aircraft:	WP-3D/N42RF
Departed:	Acapulco, Mexico, at 27/1500Z
Arrived:	Acapulco, Mexico, at 28/0130Z
Purpose:	Tropical Storm BONNY research
Pattern:	Fig. 8 (modified) at 1500, 12000, 28000, and 20000 ft

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
RFC Standard	2	27/1505	28/0125
Original	1	27/1500	28/0130
Knollenberg	13	-	-

EQUIPMENT STATUS: 760627H

SYSTEM	STATUS /	UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			
	INE 2	X			
	ONE	X			
	DOPL			X	
RADAR	NOSE	X			
	LF	X			
	TAIL	X			
	DATA SYSTEM			X	
RAMS	DATA SYSTEM	X			
	TOTAL TEMP. 1	X			
	TOTAL TEMP. 2	X			
	DEW POINT	X			
	ATTACK ANGLE	X			
	SLIP ANGLE	X			
	ABS. PRESS.	X			
	DIFF. PRESS.	X			
	RADAR ALT.	X			
	J & W	X			
PMS	OAP 2DP	X			
	OAP 2DC	X			
	FSSP 100	X			
	DATA SYSTEM	X			
IPC		X			
FOIL		X			
CO_2 RADIOMETER				X	
MICROWAVE RADIOMETER				X	
SFC. RADIOMETER		X			
FORMVAR				X	
PHOTOGRAPHY	FWD			X	
	LS			X	
	RS			X	
	DWN			X	
	RADAR	X			
AXBT	TUBES			X	
	RECEIVERS			X	
ODW				X	

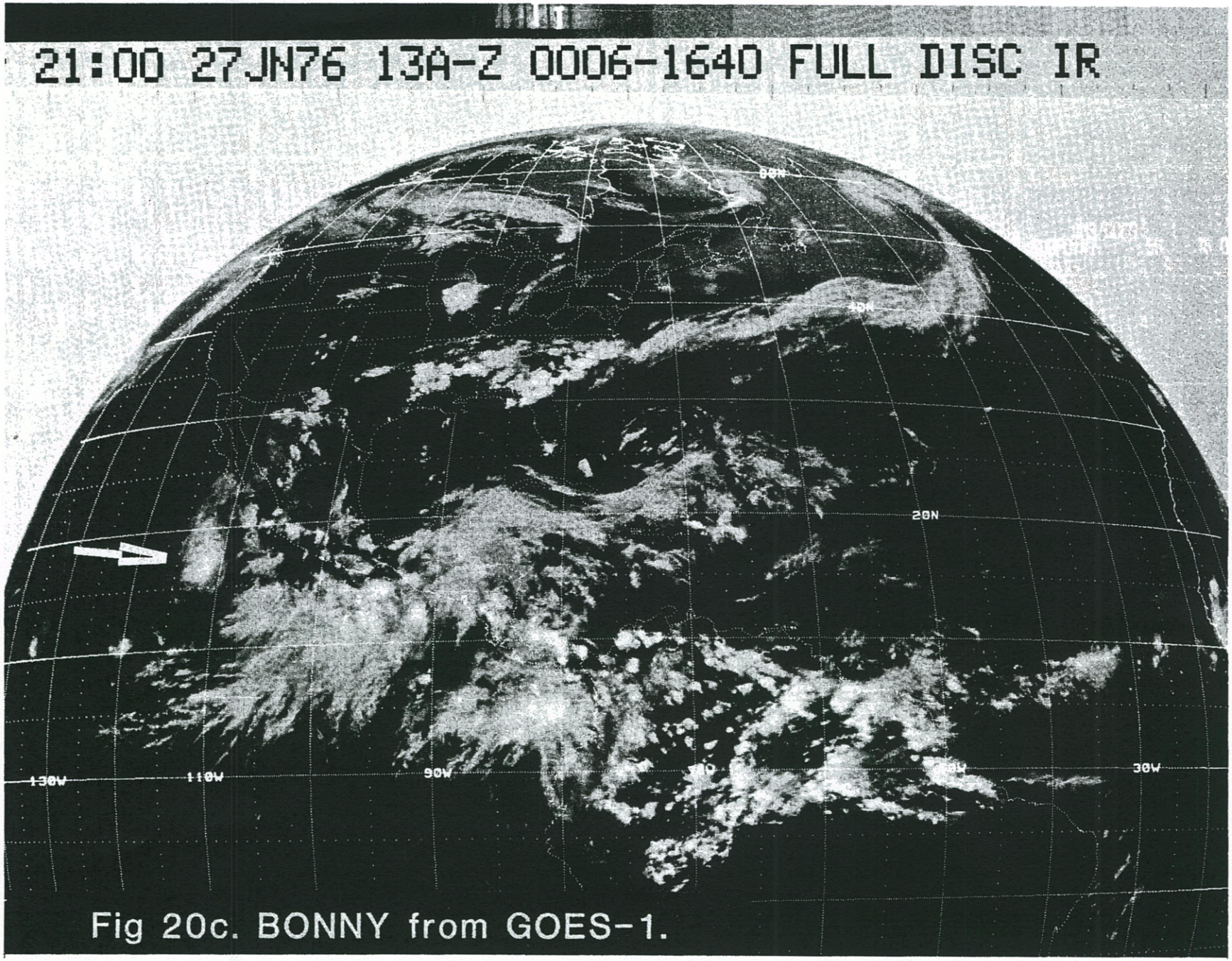


Fig 20c. BONNY from GOES-1.

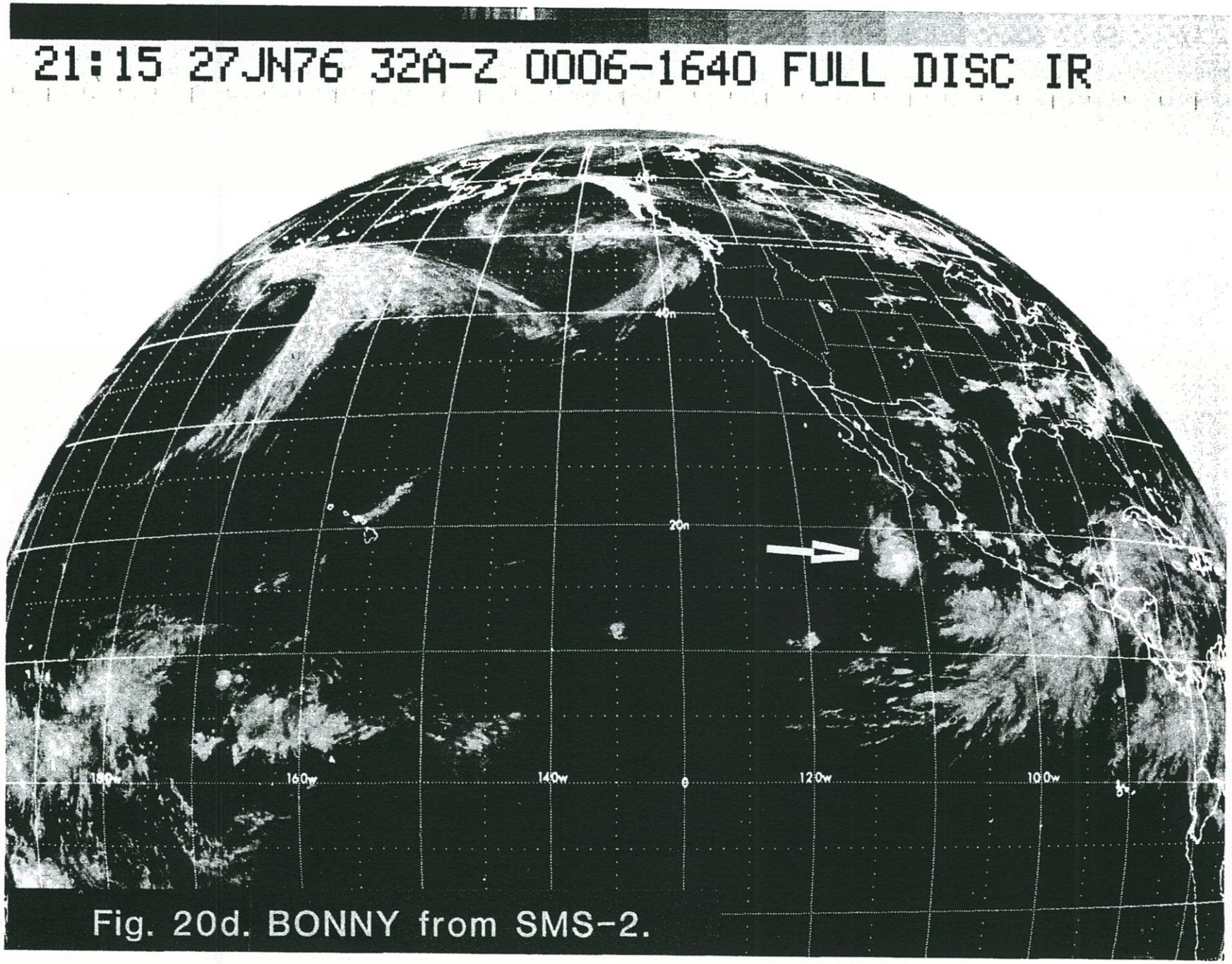


Fig. 20d. BONNY from SMS-2.

FLIGHT LOG

Date:	June 27, 1976
Flight Identification:	760627F
Aircraft:	C-130B/N6541C
Departed:	Acapulco, Mexico, at 27/1655Z
Arrived:	Acapulco, Mexico, at 28/0120Z
Purpose:	Tropical Storm BONNY research
Pattern:	Fig. 6 (modified) at 1500 and 20000 ft

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
RFC Standard	1	27/1659	28/0117
Original	2	27/1659	28/0117

EQUIPMENT STATUS: 760627F

SYSTEM	STATUS /	UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			
	INE 2	X			
	ONE	X			
	DOPL			X	
RADAR	NOSE	X			
	LF			X	
	TAIL			X	
	DATA SYSTEM			X	
AWRS	DATA SYSTEM	X			
	TOTAL TEMP. 1	X			
	TOTAL TEMP. 2			X	
	DEW POINT	X			
	ATTACK ANGLE	X			
	SLIP ANGLE	X			
	ABS. PRESS.	X			
	DIFF. PRESS.	X			
	RADAR ALT.	X			
	J & W	X			
PMS	OAP 2DP			X	
	OAP 2DC			X	
	FSSP 100			X	
	DATA SYSTEM			X	
IPC		X			
FOIL		X			
CO_2 RADIOMETER				X	
MICROWAVE RADIOMETER				X	
SFC. RADIOMETER		X			
FORMVAR				X	
PHOTOGRAPHY	FWD	X			
	LS	X			
	RS	X			
	DWN			X	
	RADAR	X			
AXBT	TUBES			X	
	RECEIVERS			X	
ODW		X			

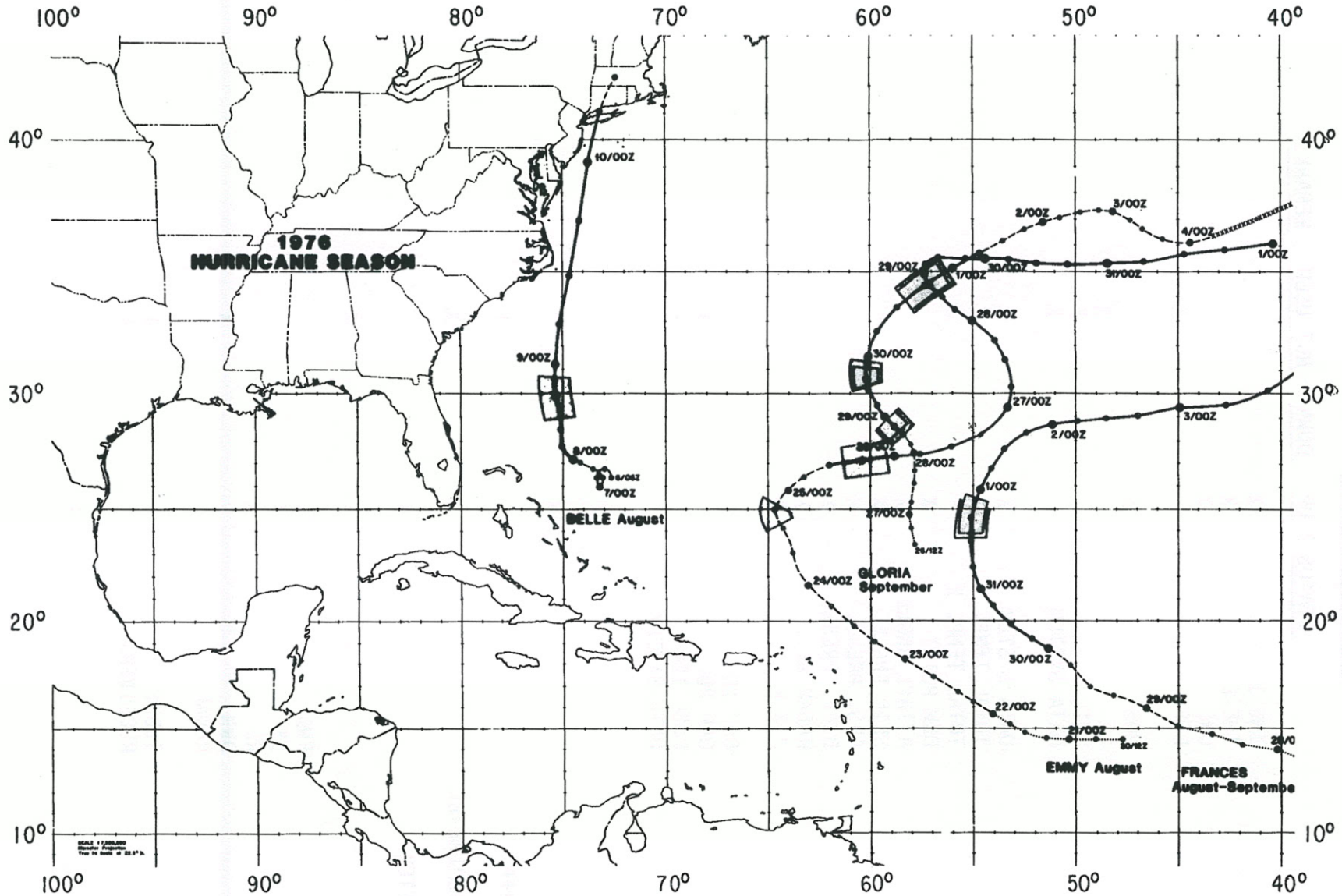


Fig. 21. Storm tracks and NHRL missions for BELLE, EMMY, FRANCES, and GLORIA.

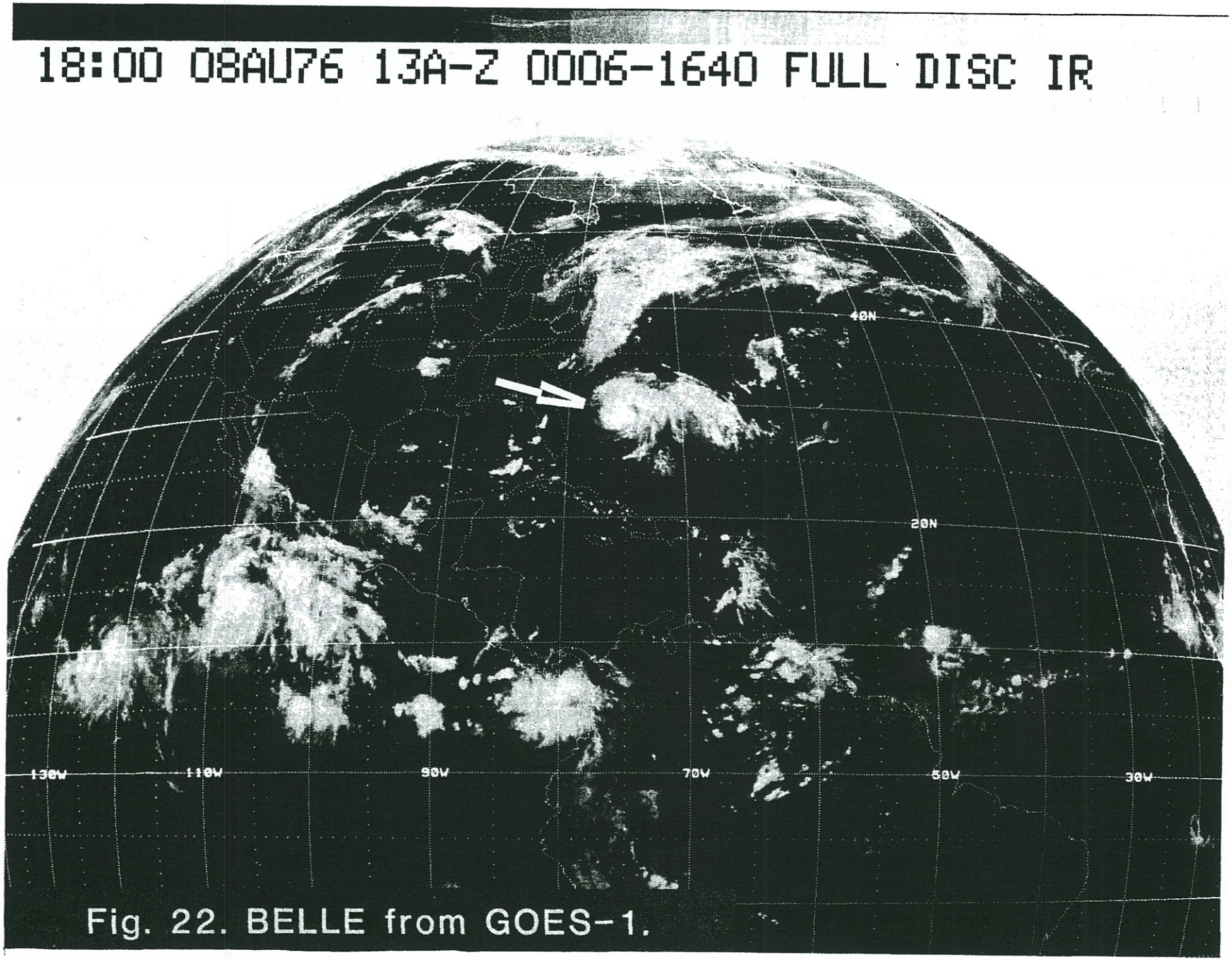


Fig. 22. BELLE from GOES-1.

FLIGHT LOG

Date:	August 8, 1976
Flight Identification:	760808F
Aircraft:	C-130B/N6541C
Departed:	Miami, Florida, at 08/1350Z
Arrived:	Miami, Florida, at 08/2145Z
Purpose:	Hurricane BELLE research
Pattern:	East-to-west passes at 500, 10000, 20000, and 24000 ft

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
RFC Standard	1	08/1400	08/2144
Original	3	08/1400	08/2140
Cloud Physics	1	-	-

EQUIPMENT STATUS: 760808F

SYSTEM	STATUS /	UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			
	INE 2			X	
	ONE			X	
	DOPL			X	
RADAR	NOSE	X			
	LF			X	
	TAIL			X	
	DATA SYSTEM			X	
AWRS	DATA SYSTEM	X			
	TOTAL TEMP. 1	X			
	TOTAL TEMP. 2			X	
	DEW POINT	X			
	ATTACK ANGLE	X			
	SLIP ANGLE	X			
	ABS. PRESS.	X			
	DIFF. PRESS.	X			
	RADAR ALT.	X			
	J & W	X			
PMS	OAP 2DP	X			
	OAP 2DC			X	
	FSSP 100			X	
	DATA SYSTEM	X			
IPC		X			
FOIL		X			
CO_2 RADIOMETER				X	
MICROWAVE RADIOMETER				X	
SFC. RADIOMETER		X			
FORMVAR		X			
PHOTOGRAPHY	FWD	X			
	LS	X			
	RS	X			
	DWN			X	
	RADAR	X			
AXBT	TUBES			X	
	RECEIVERS			X	
ODW		X			

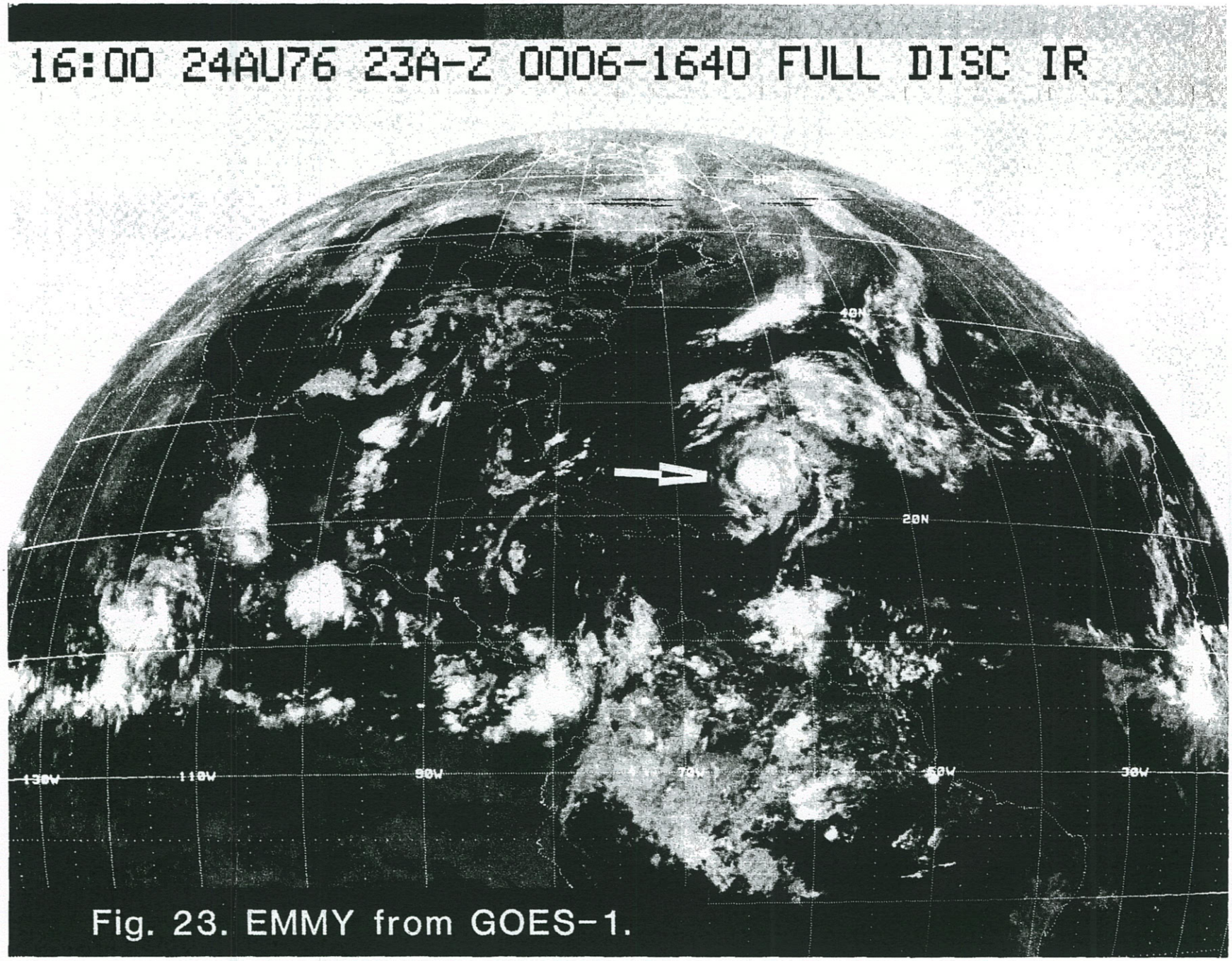


Fig. 23. EMMY from GOES-1.

FLIGHT LOG

Date:	August 24, 1976
Flight Identification:	760824F
Aircraft:	C-130B/N6541C
Departed:	San Juan, Puerto Rico, at 24/1300Z
Arrived:	San Juan, Puerto Rico, at 24/1940Z
Purpose:	Tropical Storm EMMY research
Pattern:	East-to-west passes at 20000, 500, and 5000 ft

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
RFC Standard	1	24/1305	24/1934
Original	2	24/1305	24/1934
Cloud Physics	1	-	-

EQUIPMENT STATUS: 760824F

SYSTEM	STATUS /	UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			
	INE 2			X	
	ONE			X	
	DOPL			X	
RADAR	NOSE	X			
	LF			X	
	TAIL			X	
	DATA SYSTEM			X	
AWRS	DATA SYSTEM	X			
	TOTAL TEMP. 1	X			
	TOTAL TEMP. 2			X	
	DEW POINT	X			
	ATTACK ANGLE	X			
	SLIP ANGLE	X			
	ABS. PRESS.	X			
	DIFF. PRESS.	X			
	RADAR ALT.	X			
	J & W	X			
PMS	OAP 2DP			X	
	OAP 2DC			X	
	FSSP 100			X	
	DATA SYSTEM			X	
IPC		X			
FOIL		X			
CO_2 RADIOMETER				X	
MICROWAVE RADIOMETER				X	
SFC. RADIOMETER		X			
FORMVAR				X	
PHOTOGRAPHY	FWD	X			
	LS	X			
	RS	X			
	DWN			X	
	RADAR	X			
AXBT	TUBES			X	
	RECEIVERS			X	
ODW				X	

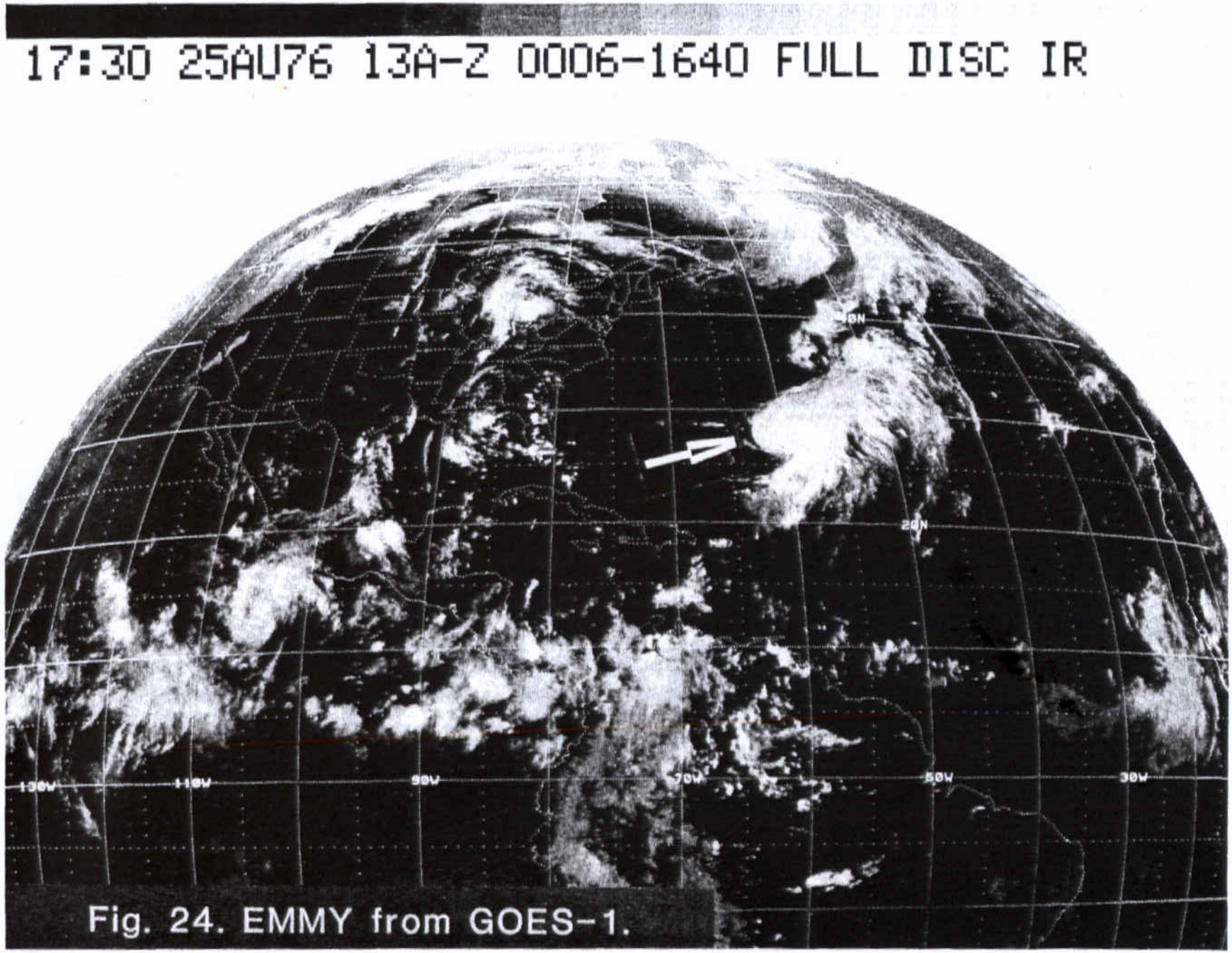


Fig. 24. EMMY from GOES-1.

FLIGHT LOG

Date:	August 25, 1976
Flight Identification:	760825F
Aircraft:	C-130B/N6541C
Departed:	San Juan, Puerto Rico, at 25/1430Z
Arrived:	Miami, Florida, at 25/2210Z
Purpose:	Hurricane EMMY research
Pattern:	East-to-west passes at 500, 1500, and 20000 ft

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
RFC Standard	1	25/1533	25/2205
Original	2	25/1533	25/2205
Cloud Physics	3	-	-

EQUIPMENT STATUS: 760825F

SYSTEM	STATUS /	UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			
	INE 2			X	
	ONE			X	
	DOPL			X	
RADAR	NOSE	X			
	LF			X	
	TAIL			X	
	DATA SYSTEM			X	
AWRS	DATA SYSTEM	X			
	TOTAL TEMP. 1	X			
	TOTAL TEMP. 2			X	
	DEW POINT	X			
	ATTACK ANGLE	X			
	SLIP ANGLE	X			
	ABS. PRESS.	X			
	DIFF. PRESS.	X			
	RADAR ALT.	X			
	J & W	X			
PMS	OAP 2DP			X	
	OAP 2DC			X	
	FSSP 100			X	
	DATA SYSTEM			X	
IPC		X			
FOIL		X			
CO_2 RADIOMETER				X	
MICROWAVE RADIOMETER				X	
SFC. RADIOMETER		X			
FORMVAR				X	
PHOTOGRAPHY	FWD	X			
	LS	X			
	RS	X			
	DWN			X	
	RADAR	X			
AXBT	TUBES			X	
	RECEIVERS			X	
ODW				X	

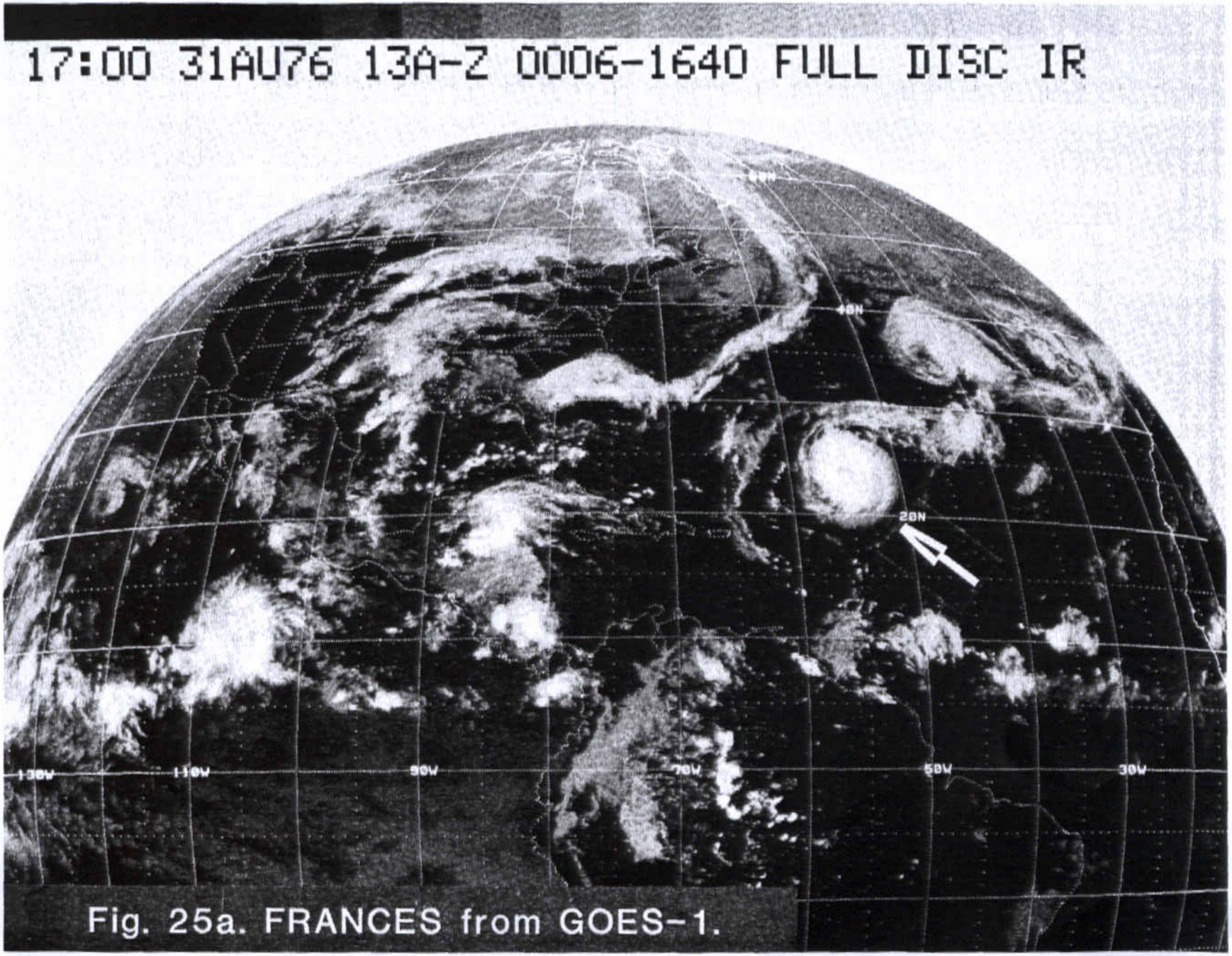


Fig. 25a. FRANCES from GOES-1.

FLIGHT LOG

Date:	August 31, 1976
Flight Identification:	760831F
Aircraft:	C-130B/N6541C
Departed:	San Juan, Puerto Rico, at 31/1230Z
Arrived:	San Juan, Puerto Rico, at 31/2050Z
Purpose:	Hurricane FRANCES research
Pattern:	Fig. 6 (modified) at 10000, and 20000 ft

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
RFC Standard	1	31/1239	31/2044
Original	2	31/1238	31/2045
Cloud Physics	2	-	-

EQUIPMENT STATUS: 760831F

SYSTEM	STATUS /	UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			
	INE 2			X	
	ONE			X	
	DOPL			X	
RADAR	NOSE	X			
	LF			X	
	TAIL			X	
	DATA SYSTEM			X	
AWRS	DATA SYSTEM	X			
	TOTAL TEMP. 1	X			
	TOTAL TEMP. 2			X	
	DEW POINT	X			
	ATTACK ANGLE	X			
	SLIP ANGLE	X			
	ABS. PRESS.	X			
	DIFF. PRESS.	X			
	RADAR ALT.	X			
	J & W	X			
PMS	OAP 2DP			X	
	OAP 2DC			X	
	FSSP 100			X	
	DATA SYSTEM			X	
IPC		X			
FOIL		X			
CO_2 RADIOMETER				X	
MICROWAVE RADIOMETER				X	
SFC. RADIOMETER		X			
FORMVAR				X	
PHOTOGRAPHY	FWD	X			
	LS	X			
	RS	X			
	DWN			X	
	RADAR	X			
AXBT	TUBES			X	
	RECEIVERS			X	
ODW		X			

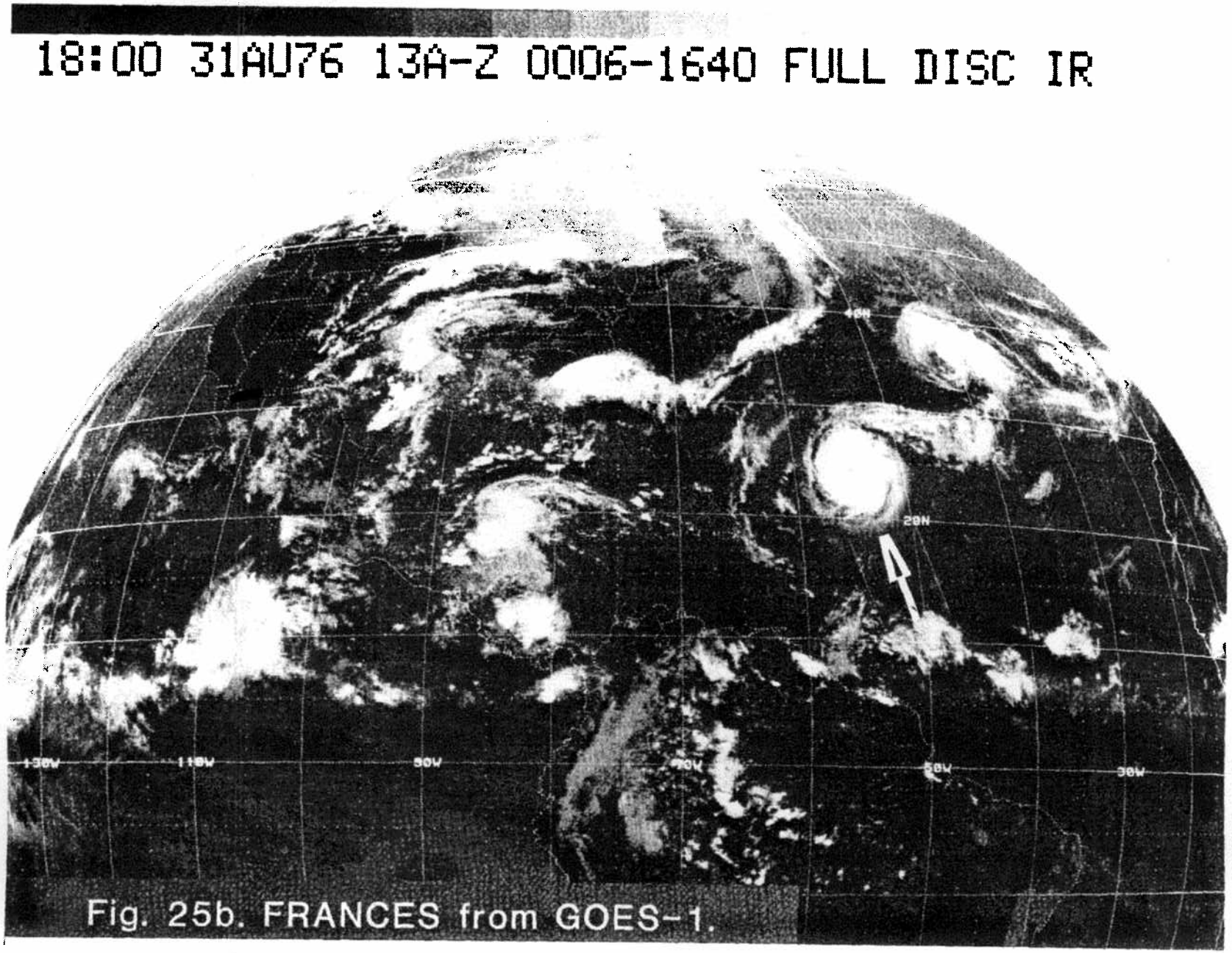


Fig. 25b. FRANCES from GOES-1.

FLIGHT LOG

Date:	August 31, 1976
Flight Identification:	760831H
Aircraft:	WP-3D/N42RF
Departed:	San Juan, Puerto Rico, at 31/1450Z
Arrived:	San Juan, Puerto Rico, at 31/2230Z
Purpose:	Hurricane FRANCES research
Pattern:	Fig. 8 at 10000 and 25000 ft

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
RFC Standard	2	31/1509	31/2225
Original	1	31/1500	31/2230
Knollenberg	18	-	-

EQUIPMENT STATUS: 760831H

SYSTEM	STATUS /	UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			
	INE 2	X			
	ONE	X			
	DOPL			X	
RADAR	NOSE	X			
	LF	X			
	TAIL	X			
	DATA SYSTEM			X	
RAMS	DATA SYSTEM	X			
	TOTAL TEMP. 1	X			
	TOTAL TEMP. 2	X			
	DEW POINT	X			
	ATTACK ANGLE	X			
	SLIP ANGLE	X			
	ABS. PRESS.	X			
	DIFF. PRESS.	X			
	RADAR ALT.	X			
	J & W	X			
PMS	OAP 2DP	X			
	OAP 2DC	X			
	FSSP 100	X			
	DATA SYSTEM	X			
IPC		X			
FOIL				X	
CO_2 RADIOMETER				X	
MICROWAVE RADIOMETER				X	
SFC. RADIOMETER				X	
FORMVAR				X	
PHOTOGRAPHY	FWD			X	
	LS			X	
	RS			X	
	DWN			X	
	RADAR	X			
AXBT	TUBES			X	
	RECEIVERS			X	
ODW				X	

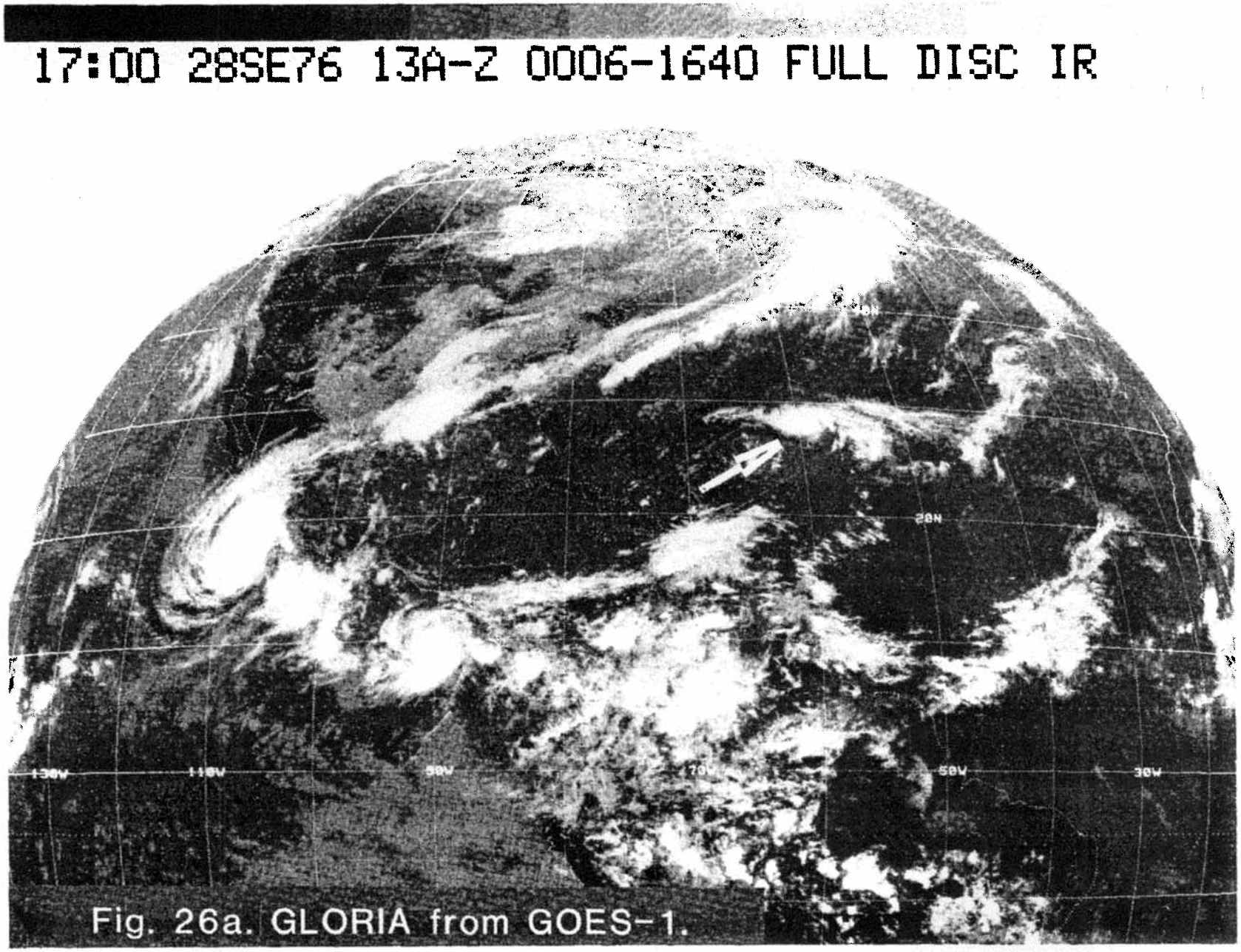


Fig. 26a. GLORIA from GOES-1.

FLIGHT LOG

Date:	September 28, 1976
Flight Identification:	760928H
Aircraft:	WP-3D/N42RF
Departed:	Miami, Florida, at 28/1200Z
Arrived:	Kindley NAS, Bermuda, at 28/2225Z
Purpose:	Hurricane GLORIA research
Pattern:	Fig. 6 (modified) at 1500 ft; Fig. 11 at 10000 and 28000 ft

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
RFC Standard	2	28/1201	28/2222
Original	1	28/1200	28/2230
Knollenberg	11	-	-

EQUIPMENT STATUS: 760928H

SYSTEM	STATUS /	UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			
	INE 2	X			
	ONE	X			
	DOPL			X	
RADAR	NOSE	X			
	LF	X			
	TAIL			X	
	DATA SYSTEM			X	
RAMS	DATA SYSTEM	X			
	TOTAL TEMP. 1	X			
	TOTAL TEMP. 2	X			
	DEW POINT	X			
	ATTACK ANGLE	X			
	SLIP ANGLE	X			
	ABS. PRESS.	X			
	DIFF. PRESS.	X			
	RADAR ALT.	X			
	J & W	X			
PMS	OAP 2DP	X			
	OAP 2DC	X			
	FSSP 100	X			
	DATA SYSTEM	X			
IPC		X			
FOIL				X	
CO_2 RADIOMETER				X	
MICROWAVE RADIOMETER				X	
SFC. RADIOMETER				X	
FORMVAR				X	
PHOTOGRAPHY	FWD			X	
	LS			X	
	RS			X	
	DWN			X	
	RADAR	X			
AXBT	TUBES			X	
	RECEIVERS			X	
ODW				X	

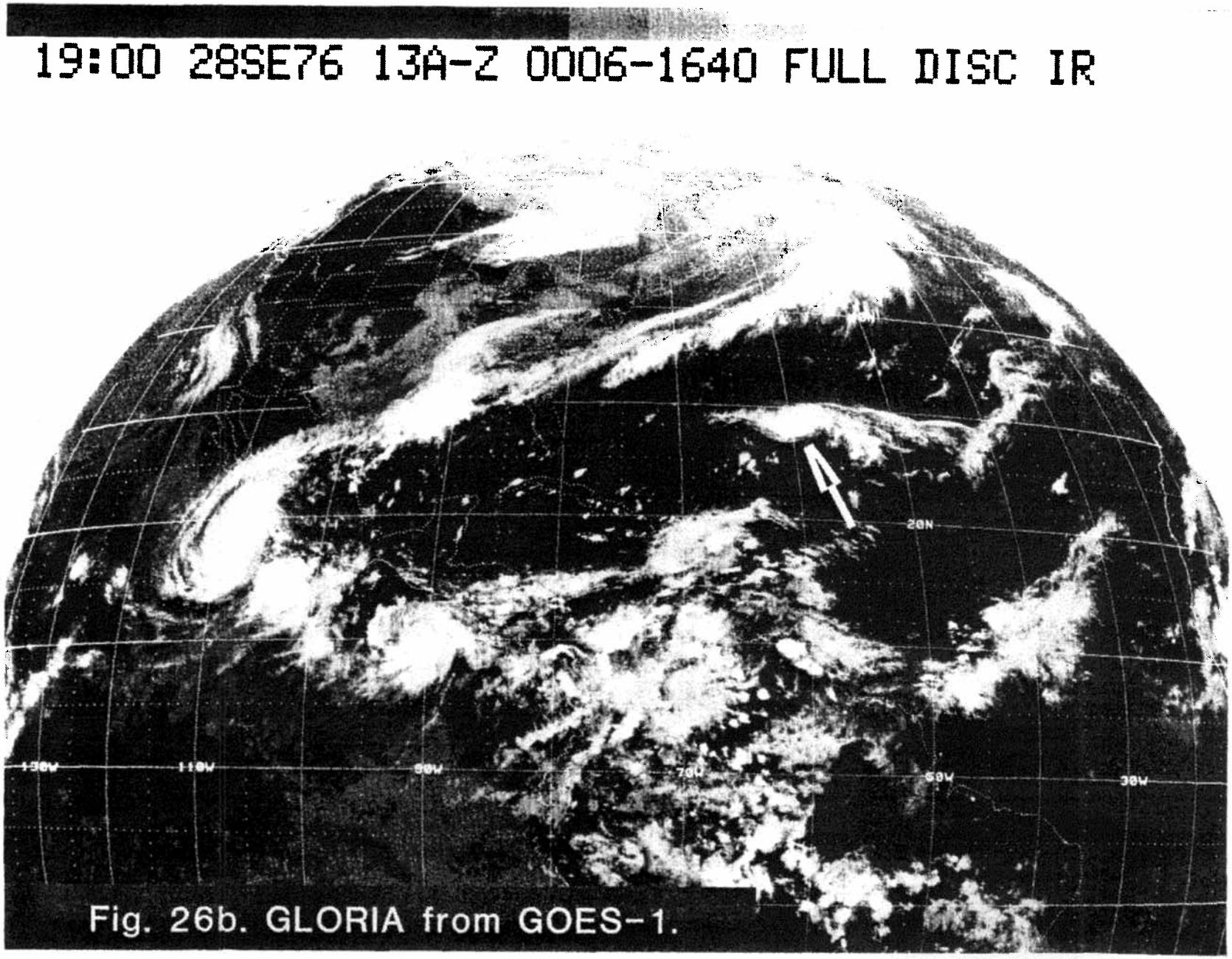


Fig. 26b. GLORIA from GOES-1.

FLIGHT LOG

Date:	September 28, 1976
Flight Identification:	760928F
Aircraft:	C-130B/N6541C
Departed:	Miami, Florida, at 28/1510Z
Arrived:	Kindley NAS, Bermuda, at 28/2235Z
Purpose:	Hurricane GLORIA research
Pattern:	Fig. 6 (modified) at 20000 ft

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
RFC Standard	1	28/1515	28/2228
Original	2	28/1515	28/2228
Cloud Physics	2	-	-

EQUIPMENT STATUS: 760928F

SYSTEM	STATUS /	UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			
	INE 2			X	
	ONE			X	
	DOPL			X	
RADAR	NOSE	X			
	LF			X	
	TAIL			X	
	DATA SYSTEM			X	
AWRS	DATA SYSTEM	X			
	TOTAL TEMP. 1	X			
	TOTAL TEMP. 2			X	
	DEW POINT	X			
	ATTACK ANGLE	X			
	SLIP ANGLE	X			
	ABS. PRESS.	X			
	DIFF. PRESS.	X			
	RADAR ALT.	X			
	J & W	X			
PMS	OAP 2DP			X	
	OAP 2DC			X	
	FSSP 100			X	
	DATA SYSTEM			X	
IPC		X			
FOIL		X			
CO_2 RADIOMETER				X	
MICROWAVE RADIOMETER				X	
SFC. RADIOMETER		X			
FORMVAR				X	
PHOTOGRAPHY	FWD	X			
	LS	X			
	RS	X			
	DWN	X			
	RADAR	X			
AXBT	TUBES			X	
	RECEIVERS			X	
ODW		X			

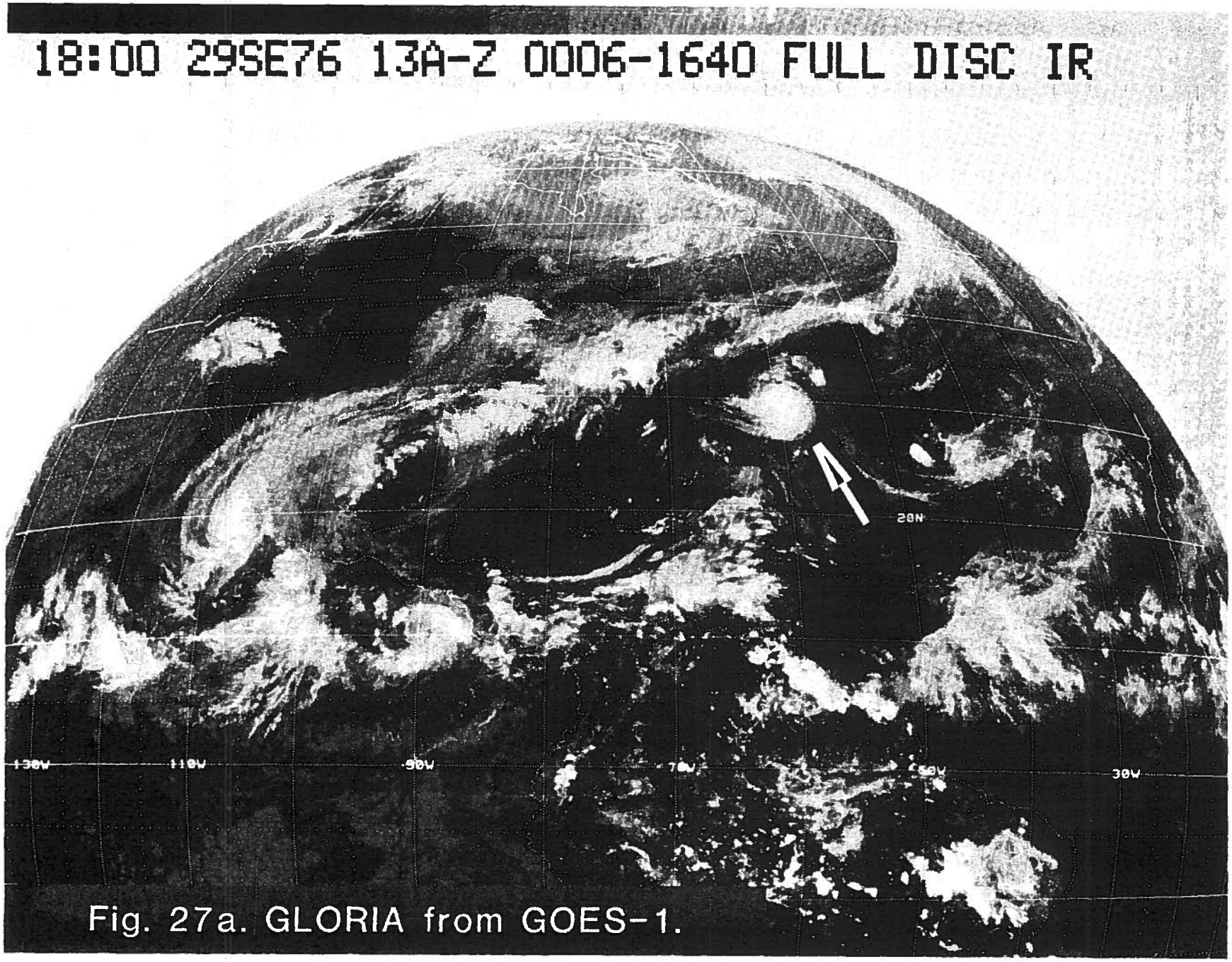


Fig. 27a. GLORIA from GOES-1.

FLIGHT LOG

Date:	September 29, 1976
Flight Identification:	760929F
Aircraft:	C-130B/N6541C
Departed:	Kindley NAS, Bermuda, at 29/1435Z
Arrived:	Kindley NAS, Bermuda, at 29/2125Z
Purpose:	Hurricane GLORIA research
Pattern:	Fig. 6 (modified) at 500, 5000 and 20000 ft

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
RFC Standard	1	29/1448	29/2041
Original	2	29/1443	29/2041
Cloud Physics	2	-	-

EQUIPMENT STATUS: 760929F

SYSTEM	STATUS /	UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			
	INE 2			X	
	ONE			X	
	DOPL			X	
RADAR	NOSE	X			60 Hz pwr fail 20Z
	LF			X	
	TAIL			X	
	DATA SYSTEM			X	
AWRS	DATA SYSTEM	X			
	TOTAL TEMP. 1	X			
	TOTAL TEMP. 2			X	
	DEW POINT	X			60 Hz pwr fail 20Z
	ATTACK ANGLE	X			
	SLIP ANGLE	X			60 Hz pwr fail 20Z
	ABS. PRESS.	X			
	DIFF. PRESS.	X			
	RADAR ALT.	X			
	J & W	X			60 Hz pwr fail 20Z
PMS	OAP 2DP			X	
	OAP 2DC			X	
	FSSP 100			X	
	DATA SYSTEM			X	
IPC		X			
FOIL		X			
CO_2 RADIOMETER				X	
MICROWAVE RADIOMETER				X	
SFC. RADIOMETER		X			60 Hz pwr fail 20Z
FORMVAR				X	
PHOTOGRAPHY	FWD	X			60 Hz pwr fail 20Z
	LS	X			60 Hz pwr fail 20Z
	RS	X			60 Hz pwr fail 20Z
	DWN	X			60 Hz pwr fail 20Z
	RADAR	X			60 Hz pwr fail 20Z
AXBT	TUBES			X	
	RECEIVERS			X	
ODW				X	

19:00 29SE76 13A-Z 0006-1640 FULL DISC IR

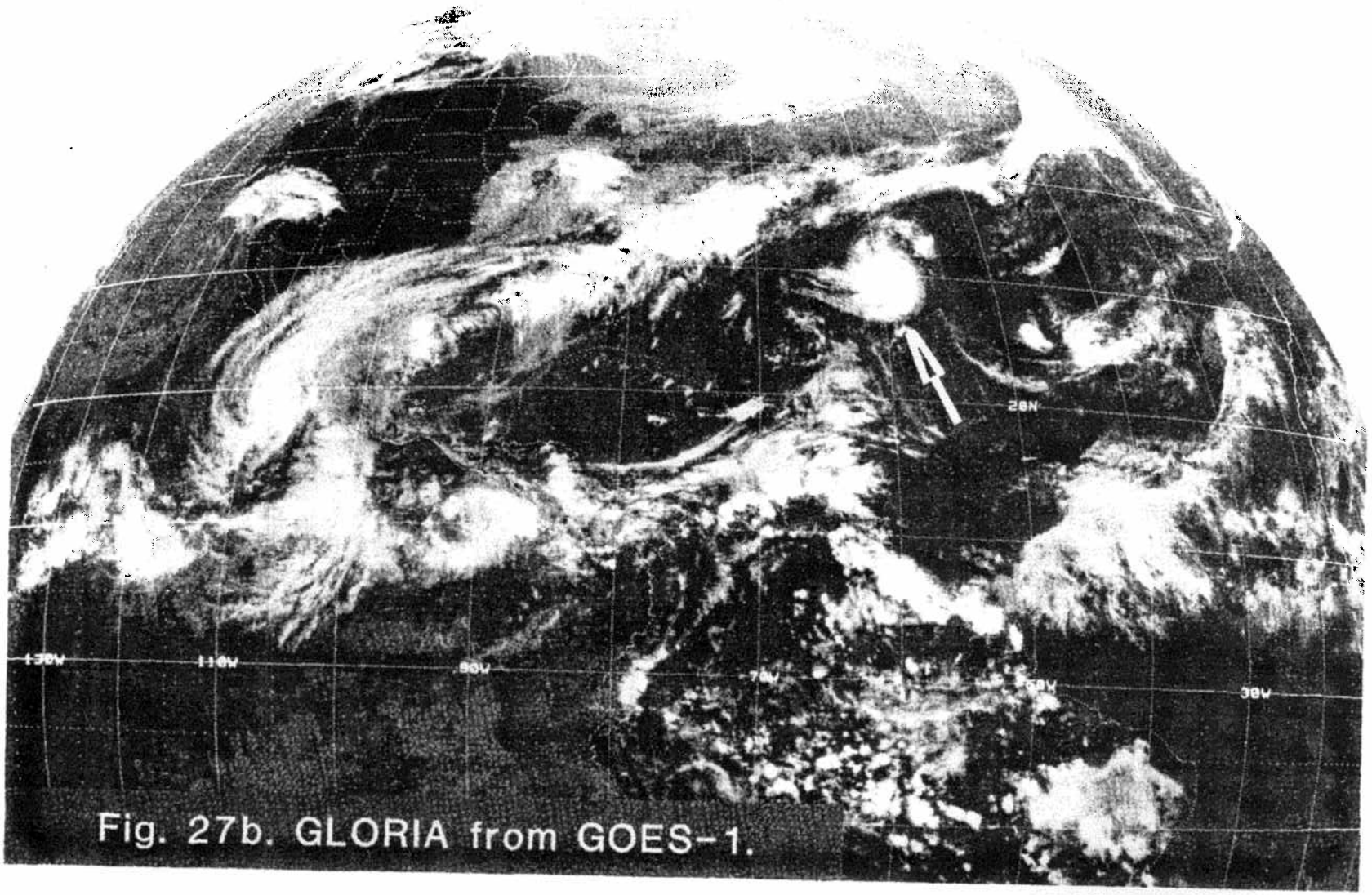


Fig. 27b. GLORIA from GOES-1.

FLIGHT LOG

Date:	September 29, 1976
Flight Identification:	760929H
Aircraft:	WP-3D/N42RF
Departed:	Kindley NAS, Bermuda, at 29/1425Z
Arrived:	Kindley NAS, Bermuda, at 29/2300Z
Purpose:	Hurricane GLORIA research
Pattern:	Fig. 6 (modified) at 10000 and 28000 ft

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
RFC Standard	2	29/1528	29/2300
Original	1	29/1425	29/2300
Knollenberg	15	-	-

EQUIPMENT STATUS: 760929H

SYSTEM	STATUS /	UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			
	INE 2	X			
	ONE	X			
	DOPL			X	
RADAR	NOSE	X			
	LF	X			
	TAIL			X	
	DATA SYSTEM			X	
RAMS	DATA SYSTEM	X			
	TOTAL TEMP. 1	X			
	TOTAL TEMP. 2	X			
	DEW POINT	X			
	ATTACK ANGLE		X		
	SLIP ANGLE		X		
	ABS. PRESS.	X			
	DIFF. PRESS.	X			
	RADAR ALT.	X			
	J & W	X			
PMS	OAP 2DP	X			
	OAP 2DC	X			
	FSSP 100	X			
	DATA SYSTEM	X			
IPC				X	
FOIL				X	
CO_2 RADIOMETER			X		
MICROWAVE RADIOMETER				X	
SFC. RADIOMETER			X		
FORMVAR				X	
PHOTOGRAPHY	FWD			X	
	LS			X	
	RS			X	
	DWN			X	
	RADAR	X			
AXBT	TUBES			X	
	RECEIVERS			X	
ODW				X	

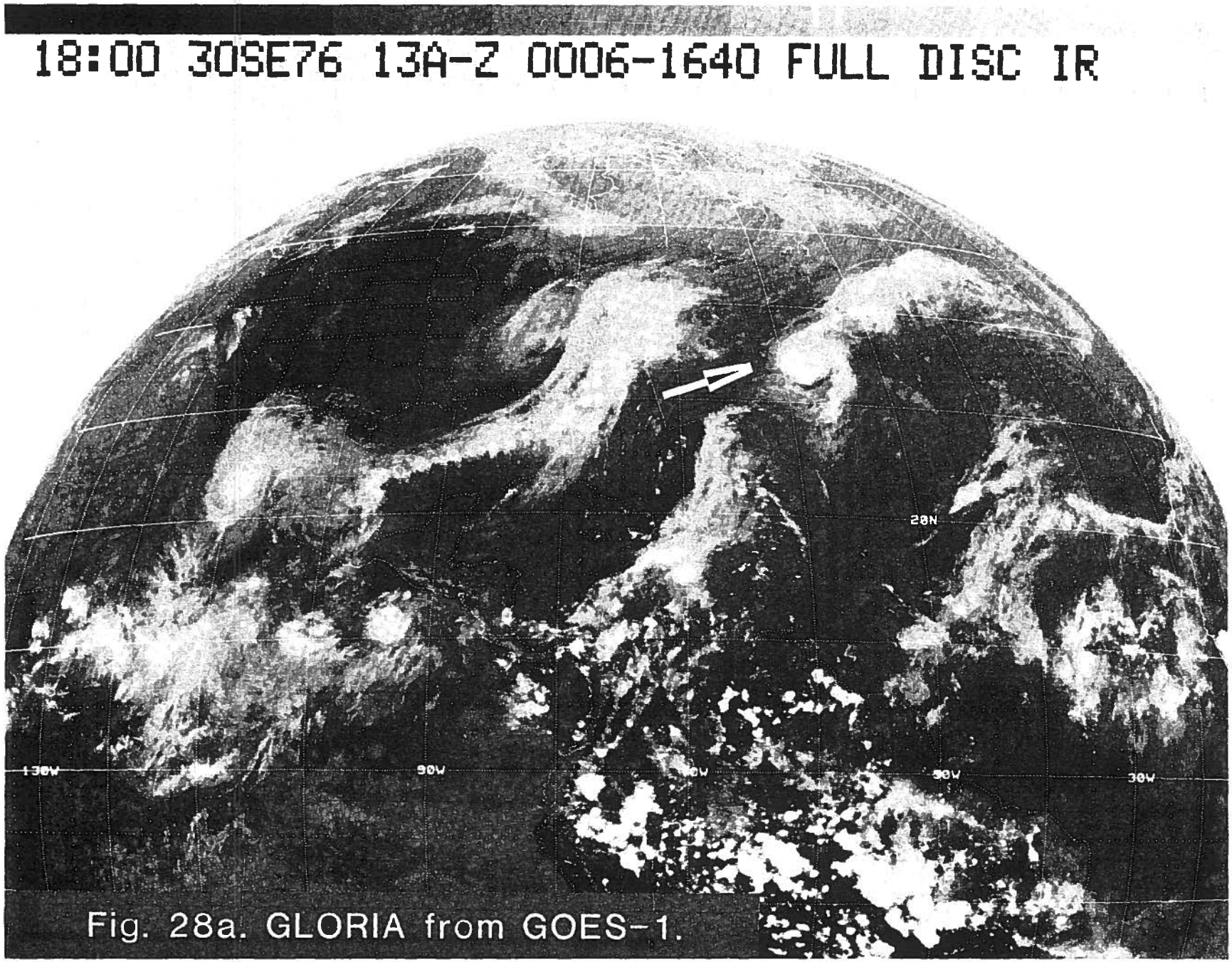


Fig. 28a. GLORIA from GOES-1.

FLIGHT LOG

Date:	September 30, 1976
Flight Identification:	760930F
Aircraft:	C-130B/N6541C
Departed:	Kindley NAS, Bermuda, at 30/1400Z
Arrived:	Kindley NAS, Bermuda, at 30/2200Z
Purpose:	Hurricane GLORIA research
Pattern:	Fig. 6 (modified) at 20000 ft; Fig. 12 (modified) at 500 ft

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
RFC Standard	1	30/1407	30/2156
Cloud Physics	2	-	-

EQUIPMENT STATUS: 760930F

SYSTEM	STATUS /	UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			
	INE 2			X	
	ONE			X	
	DOPL			X	
RADAR	NOSE	X			
	LF			X	
	TAIL			X	
	DATA SYSTEM			X	
AWRS	DATA SYSTEM	X			
	TOTAL TEMP. 1	X			
	TOTAL TEMP. 2			X	
	DEW POINT	X			
	ATTACK ANGLE	X			
	SLIP ANGLE	X			
	ABS. PRESS.	X			
	DIFF. PRESS.	X			
	RADAR ALT.	X			
	J & W	X			
PMS	OAP 2DP			X	
	OAP 2DC			X	
	FSSP 100			X	
	DATA SYSTEM			X	
IPC		X			
FOIL		X			
CO_2 RADIOMETER				X	
MICROWAVE RADIOMETER				X	
SFC. RADIOMETER		X			
FORMVAR				X	
PHOTOGRAPHY	FWD	X			
	LS	X			
	RS	X			
	DWN	X			
	RADAR	X			
AXBT	TUBES	X			
	RECEIVERS	X			
ODW				X	

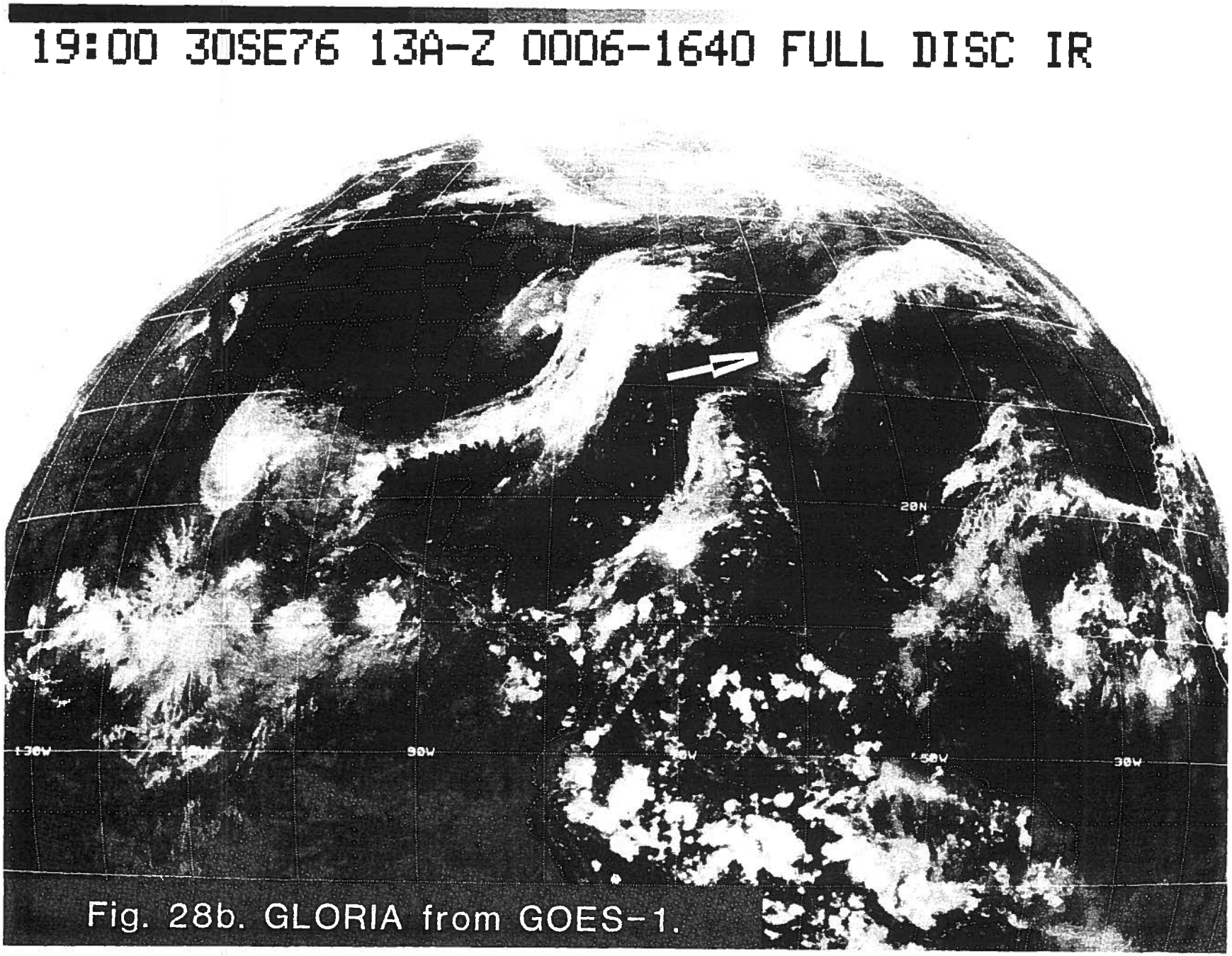


Fig. 28b. GLORIA from GOES-1.

FLIGHT LOG

Date:	September 30, 1976
Flight Identification:	760930H
Aircraft:	WP-3D/N42RF
Departed:	Kindley NAS, Bermuda, at 30/1355Z
Arrived:	Kindley NAS, Bermuda, at 30/2310Z
Purpose:	Hurricane GLORIA research
Pattern:	Fig. 8 at 5000 ft; Fig. 8 (modified) at 12000 and 28000 ft; East-to-west pass at 10000 ft for 00Z reconnaissance fix

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
RFC Standard	2	30/1400	30/2310
Original	1	30/1400	30/2310
Knollenberg	7	-	-

EQUIPMENT STATUS: 760930H

SYSTEM	STATUS /	UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			
	INE 2	X			
	ONE	X			
	DOPL			X	
RADAR	NOSE	X			
	LF	X			
	TAIL			X	
	DATA SYSTEM			X	
RAMS	DATA SYSTEM	X			
	TOTAL TEMP. 1	X			Equip. out 2017Z
	TOTAL TEMP. 2	X			Equip. out 2017Z
	DEW POINT	X			
	ATTACK ANGLE	X			
	SLIP ANGLE	X			
	ABS. PRESS.	X			
	DIFF. PRESS.	X			Equip. out 2017Z
	RADAR ALT.	X			
	J & W	X			
PMS	OAP 2DP	X			
	OAP 2DC	X			
	FSSP 100	X			
	DATA SYSTEM	X			
IPC		X			
FOIL				X	
CO_2 RADIOMETER				X	
MICROWAVE RADIOMETER				X	
SFC. RADIOMETER		X			
FORMVAR				X	
PHOTOGRAPHY	FWD			X	
	LS			X	
	RS			X	
	DWN			X	
	RADAR	X			
AXBT	TUBES			X	
	RECEIVERS			X	
ODW				X	

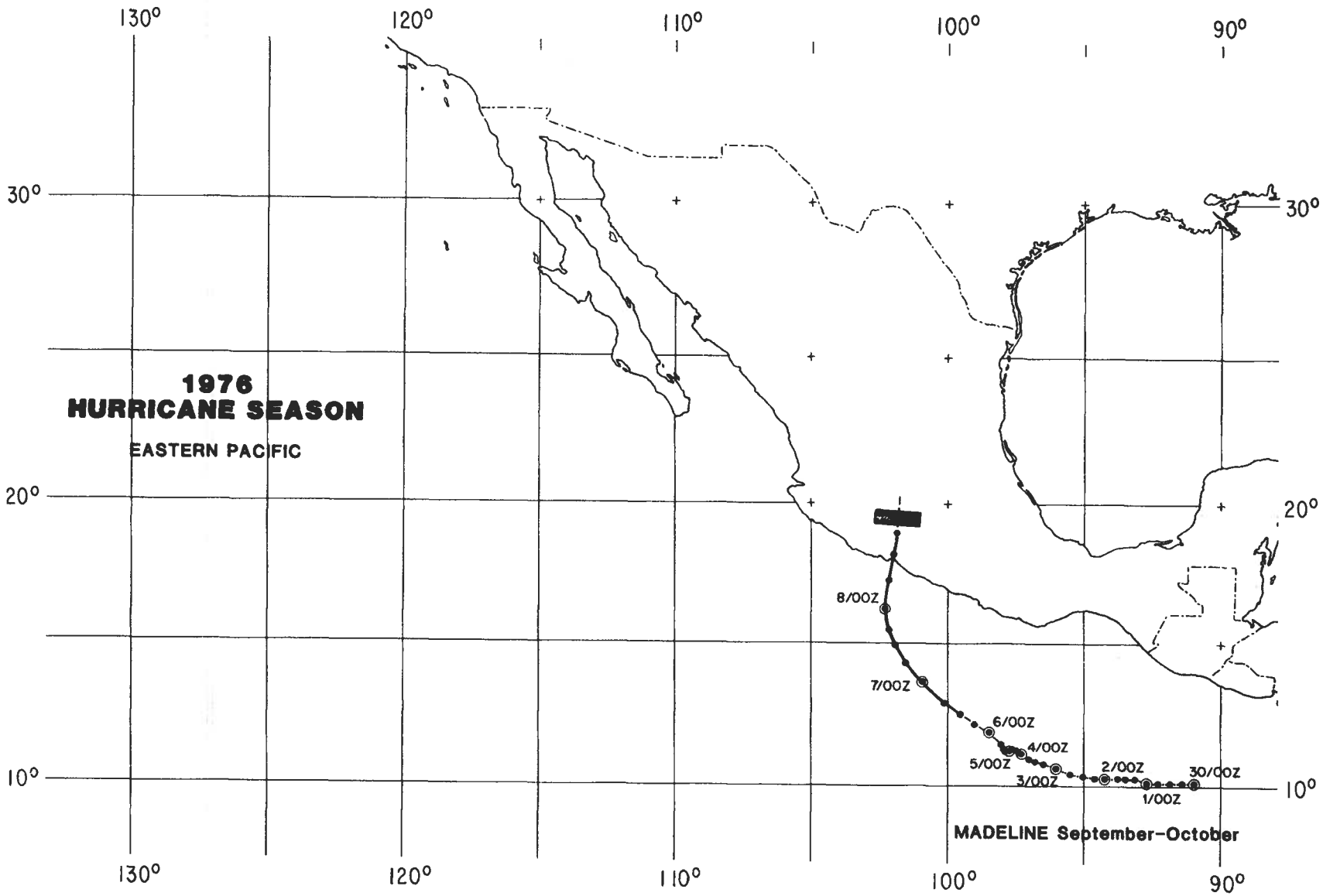


Fig. 29. Storm track for MADELINE, and NHRL mission, post-MADELINE.

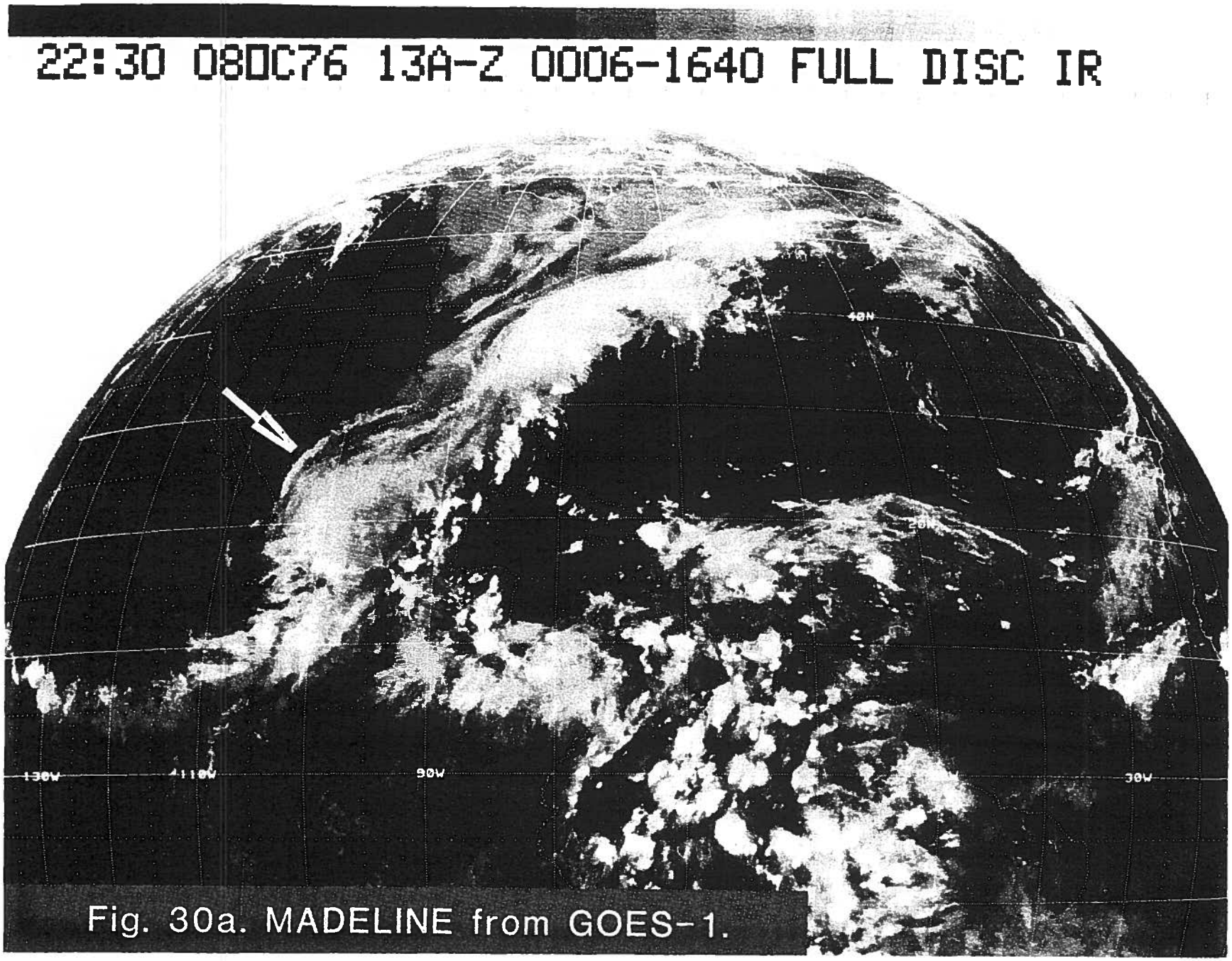


Fig. 30a. MADELINE from GOES-1.

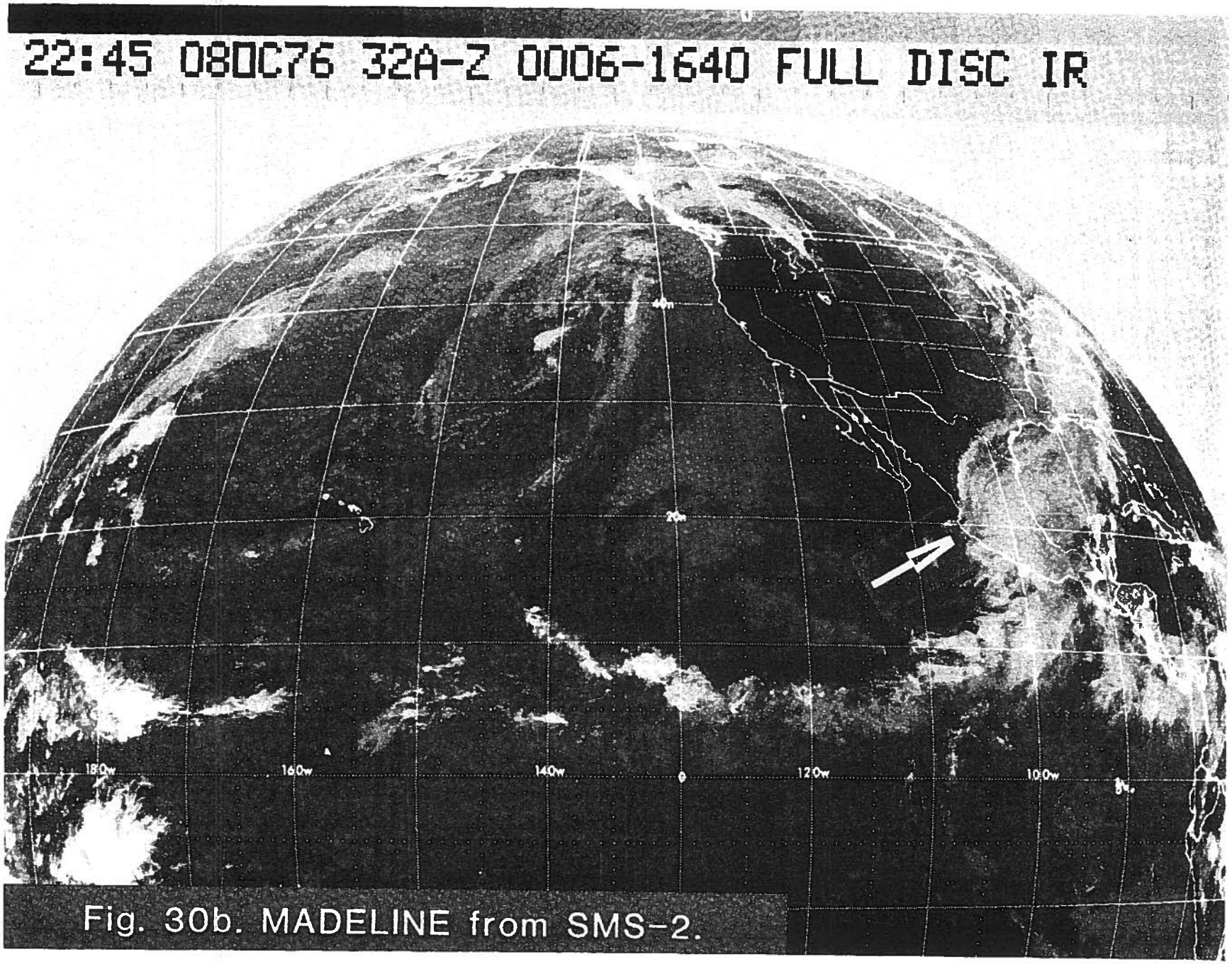


Fig. 30b. MADELINE from SMS-2.

FLIGHT LOG

Date:	October 8, 1976
Flight Identification:	761008F
Aircraft:	C-130B/N6541C
Departed:	Acapulco, Mexico, at 08/2015Z
Arrived:	Acapulco, Mexico, at 08/2330Z
Purpose:	Post-MADELINE (AXBT mission)
Pattern:	Across track of storm at 500 ft

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
Original	1	08/2017	08/2323
Cloud Physics	2	-	-

EQUIPMENT STATUS: 761008F

SYSTEM	STATUS /	UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			
	INE 2			X	
	ONE			X	
	DOPL			X	
RADAR	NOSE	X			
	LF			X	
	TAIL			X	
	DATA SYSTEM			X	
AWRS	DATA SYSTEM	X			
	TOTAL TEMP. 1	X			
	TOTAL TEMP. 2			X	
	DEW POINT	X			
	ATTACK ANGLE	X			
	SLIP ANGLE	X			
	ABS. PRESS.	X			
	DIFF. PRESS.	X			
	RADAR ALT.	X			
	J & W	X			
PMS	OAP 2DP			X	
	OAP 2DC			X	
	FSSP 100			X	
	DATA SYSTEM			X	
IPC		X			
FOIL		X			
CO_2 RADIOMETER				X	
MICROWAVE RADIOMETER				X	
SFC. RADIOMETER		X			
FORMVAR				X	
PHOTOGRAPHY	FWD	X			
	LS			X	
	RS			X	
	DWN	X			
	RADAR	X			
AXBT	TUBES	X			
	RECEIVERS	X			
ODW				X	

8.2 1977 Data

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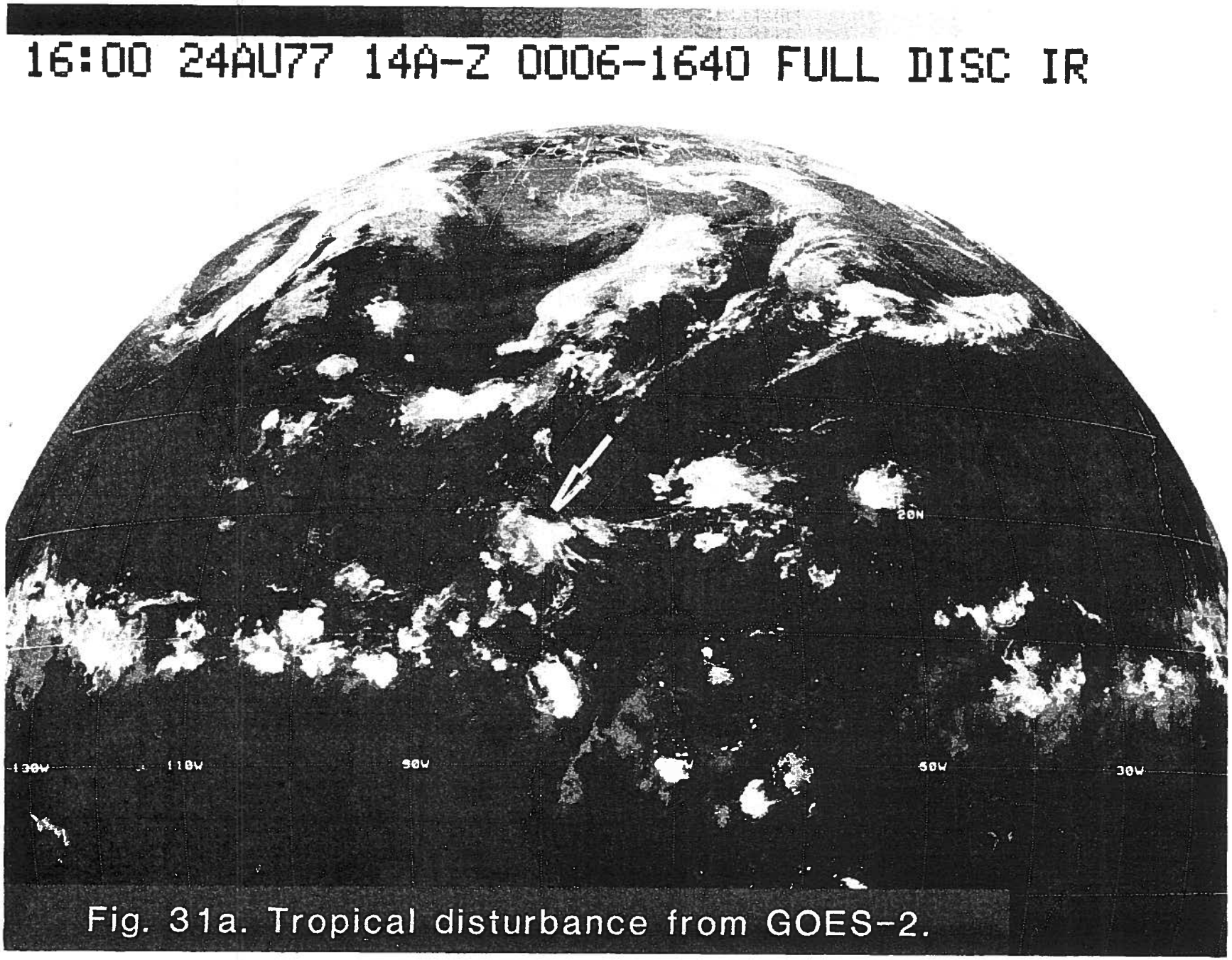

Fig. 31a. Tropical disturbance from GOES-2.

FLIGHT LOG

Date:	August 24, 1977
Flight Identification:	770824F
Aircraft:	C-130B/N6541C
Departed:	Miami, Florida, at 24/1205Z
Arrived:	Miami, Florida, at 24/1920Z
Purpose:	Investigation of tropical disturbance [western Caribbean Sea (near 18°N 82°W)]
Pattern:	Cloud physics at 20000 ft; and, low-level reconnaissance

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
Original	2	24/1211	24/1917
Cloud Physics	1	-	-

EQUIPMENT STATUS: 770824F

SYSTEM	STATUS /	UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			
	INE 2	X			
	ONE	X			
	DOPL			X	
RADAR	NOSE	X			
	LF			X	
	TAIL			X	
	DATA SYSTEM			X	
AWRS	DATA SYSTEM	X			
	TOTAL TEMP. 1	X			
	TOTAL TEMP. 2			X	
	DEW POINT	X			
	ATTACK ANGLE	X			
	SLIP ANGLE	X			
	ABS. PRESS.	X			
	DIFF. PRESS.	X			
	RADAR ALT.	X			
	J & W	X			
PMS	OAP 2DP	X			
	OAP 2DC			X	
	FSSP 100			X	
	DATA SYSTEM	X			
IPC		X			
FOIL		X			
CO_2 RADIOMETER				X	
MICROWAVE RADIOMETER				X	
SFC. RADIOMETER		X			
FORMVAR				X	
PHOTOGRAPHY	FWD			X	
	LS			X	
	RS			X	
	DWN			X	
	RADAR			X	
AXBT	TUBES			X	
	RECEIVERS			X	
ODW				X	

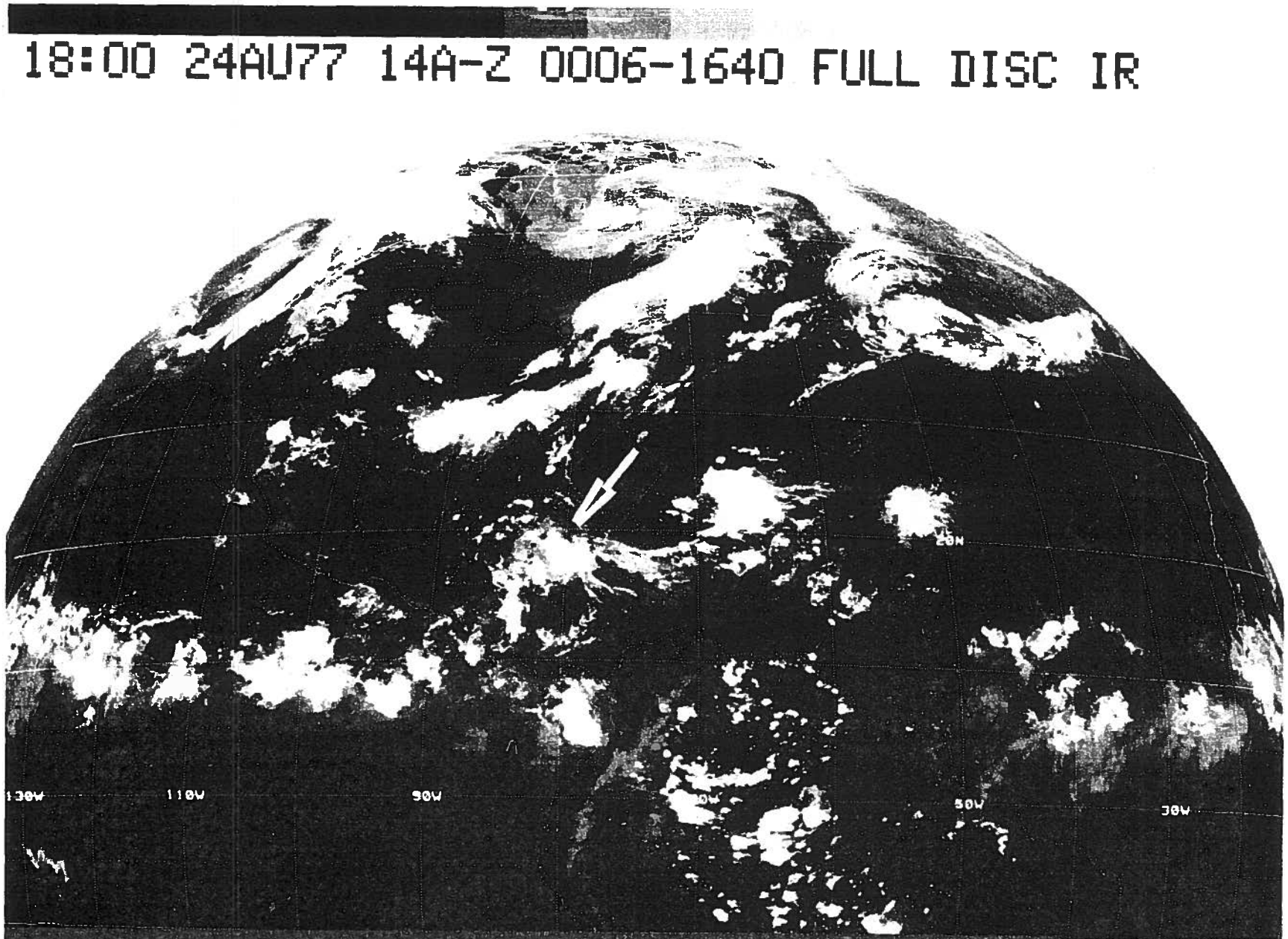

Fig. 31b. Tropical disturbance from GOES-2.

FLIGHT LOG

Date:	August 24, 1977
Flight Identification:	770824H
Aircraft:	WP-3D/N42RF
Departed:	Miami, Florida, at 24/1420Z
Arrived:	Miami, Florida, at 24/2245Z
Purpose:	Tropical disturbance reconnaissance and research Western Caribbean Sea
Pattern:	Fig. 11 (modified) at 18000, 10000 and (part) 1500 ft

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
RFC Standard	2	24/1438	24/2239
Knollenberg	4	-	-

EQUIPMENT STATUS: 770824H

SYSTEM	STATUS /	UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			
	INE 2	X			
	ONE	X			
	DOPL			X	
RADAR	NOSE	X			
	LF	X			
	TAIL	X			
	DATA SYSTEM	X			
RAMS	DATA SYSTEM	X			
	TOTAL TEMP. 1	X			
	TOTAL TEMP. 2	X			
	DEW POINT	X			
	ATTACK ANGLE	X			
	SLIP ANGLE	X			
	ABS. PRESS.	X			
	DIFF. PRESS.	X			
	RADAR ALT.	X			
	J & W	X			
PMS	OAP 2DP	X			
	OAP 2DC			X	
	FSSP 100			X	
	DATA SYSTEM	X			
IPC		X			
FOIL		X			
CO_2 RADIOMETER				X	
MICROWAVE RADIOMETER				X	
SFC. RADIOMETER		X			
FORMVAR				X	
PHOTOGRAPHY	FWD			X	
	LS			X	
	RS			X	
	DWN			X	
AXBT	TUBES			X	
	RECEIVERS			X	
ODW				X	

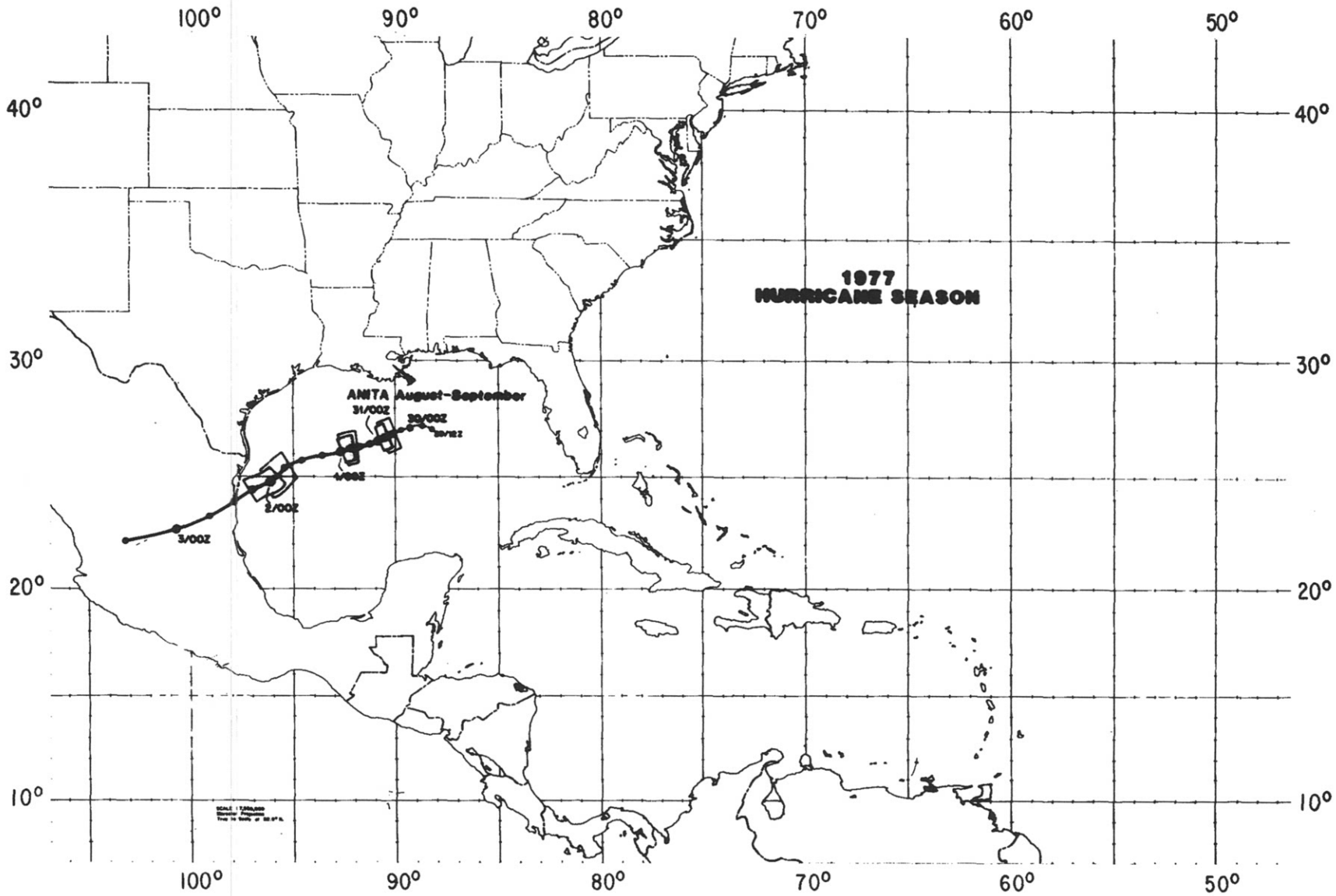

Fig. 32. Storm track for ANITA, and NHRL missions for ANITA and post-ANITA/BABE.

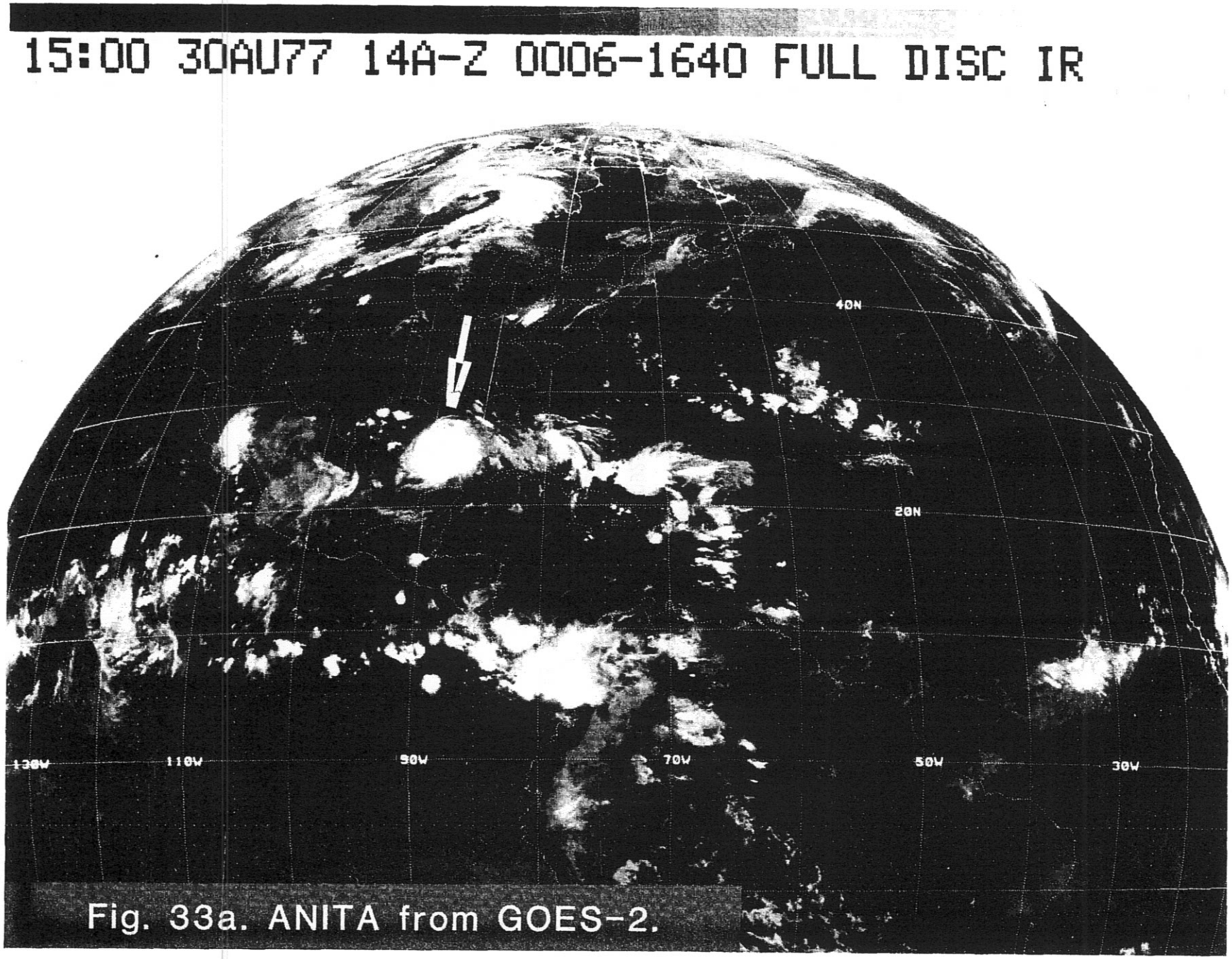

Fig. 33a. ANITA from GOES-2.

FLIGHT LOG

Date:	August 30, 1977
Flight Identification:	770830H
Aircraft:	WP-3D/N42RF
Departed:	Miami, Florida, at 30/0940Z
Arrived:	New Orleans, Louisiana, at 30/1930Z
Purpose:	Tropical Storm ANITA research and reconnaissance
Pattern:	Fig. 6 (modified) at 1500 ft; Fig. 11 at 18000 ft

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
RFC Standard	2	30/0929	30/1927
Original	1	30/0933	30/1927
Radar	13	30/1001	30/1900
Knollenberg	19	-	-

EQUIPMENT STATUS: 770830H

SYSTEM	STATUS /	UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			
	INE 2	X			
	ONE	X			
	DOPL			X	
RADAR	NOSE	X			
	LF	X			
	TAIL	X			
	DATA SYSTEM	X			
RAMS	DATA SYSTEM	X			
	TOTAL TEMP. 1	X			
	TOTAL TEMP. 2	X			
	DEW POINT	X			
	ATTACK ANGLE	X			
	SLIP ANGLE	X			
	ABS. PRESS.	X			
	DIFF. PRESS.	X			
	RADAR ALT.	X			
	J & W	X			
PMS	OAP 2DP	X			
	OAP 2DC	X			
	FSSP 100	X			
	DATA SYSTEM	X			
IPC		X			
FOIL		X			
CO_2 RADIOMETER				X	
MICROWAVE RADIOMETER				X	
SFC. RADIOMETER		X			
FORMVAR				X	
PHOTOGRAPHY	FWD			X	
	LS			X	
	RS			X	
	DWN			X	
AXBT	TUBES			X	
	RECEIVERS			X	
ODW				X	

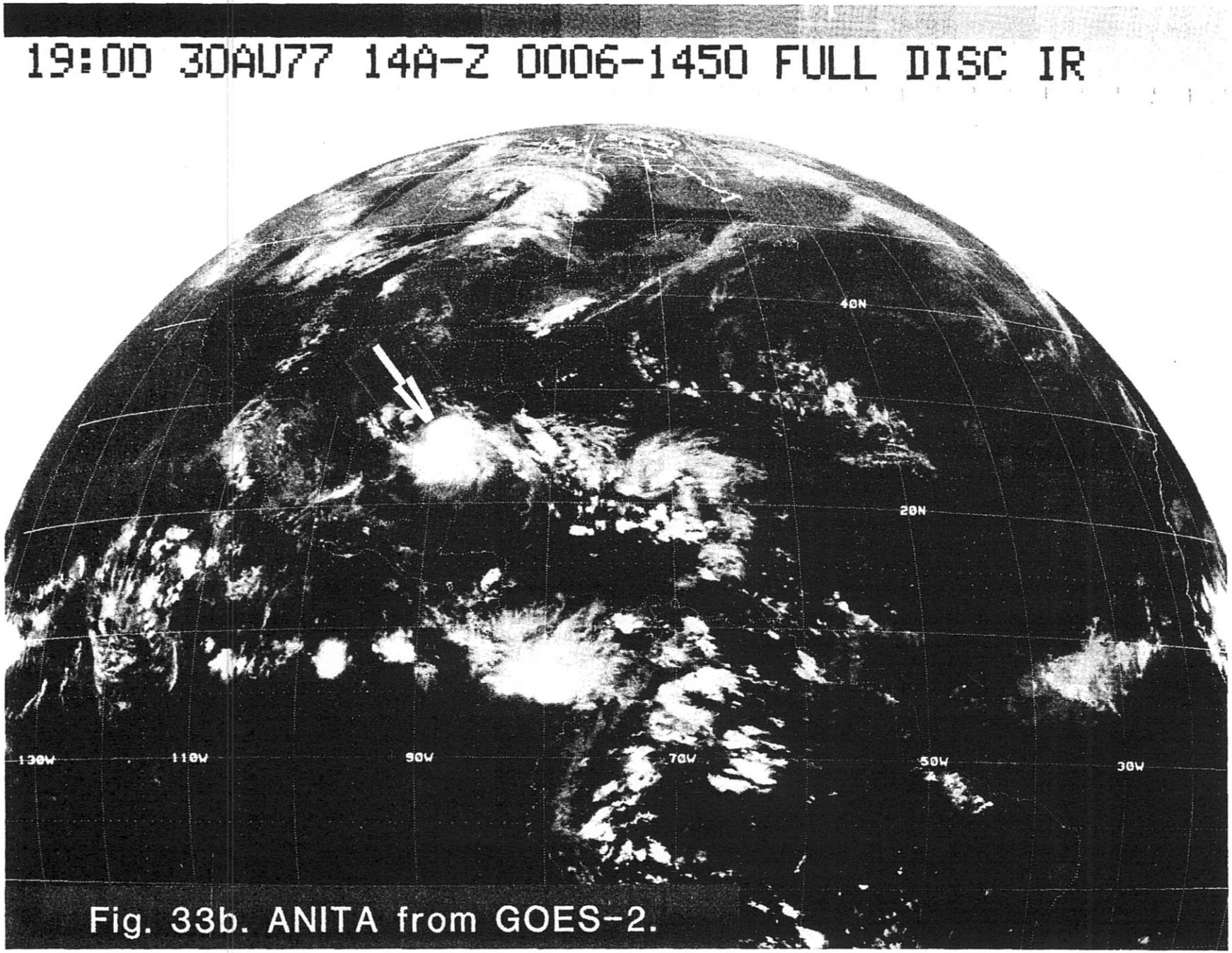

Fig. 33b. ANITA from GOES-2.

FLIGHT LOG

Date:	August 30, 1977
Flight Identification:	770830F
Aircraft:	C-130B/N6541C
Departed:	Miami, Florida, at 30/1500Z
Arrived:	New Orleans, Louisiana, at 30/2240Z
Purpose:	Tropical Storm ANITA research
Pattern:	Fig. 11 (modified) at 24000, 1500 and 12000 ft

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
Original	2	30/1515	30/2232
RFC Standard	1	30/1515	30/2232
Cloud Physics	2	-	-

EQUIPMENT STATUS: 770830F

SYSTEM	STATUS /	UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			
	INE 2	X			
	ONE	X			
	DOPL			X	
RADAR	NOSE	X			
	LF			X	
	TAIL			X	
	DATA SYSTEM		X		
AWRS	DATA SYSTEM	X			
	TOTAL TEMP. 1	X			
	TOTAL TEMP. 2			X	
	DEW POINT	X			
	ATTACK ANGLE	X			
	SLIP ANGLE	X			
	ABS. PRESS.	X			
	DIFF. PRESS.	X			
	RADAR ALT.	X			
	J & W	X			
PMS	OAP 2DP	X			
	OAP 2DC			X	
	FSSP 100			X	
	DATA SYSTEM			X	
IPC		X			
FOIL		X			
CO_2 RADIOMETER				X	
MICROWAVE RADIOMETER				X	
SFC. RADIOMETER		X			
FORMVAR				X	
PHOTOGRAPHY	FWD			X	
	LS			X	
	RS			X	
	DWN			X	
AXBT	TUBES	X			
	RECEIVERS	X			
ODW				X	

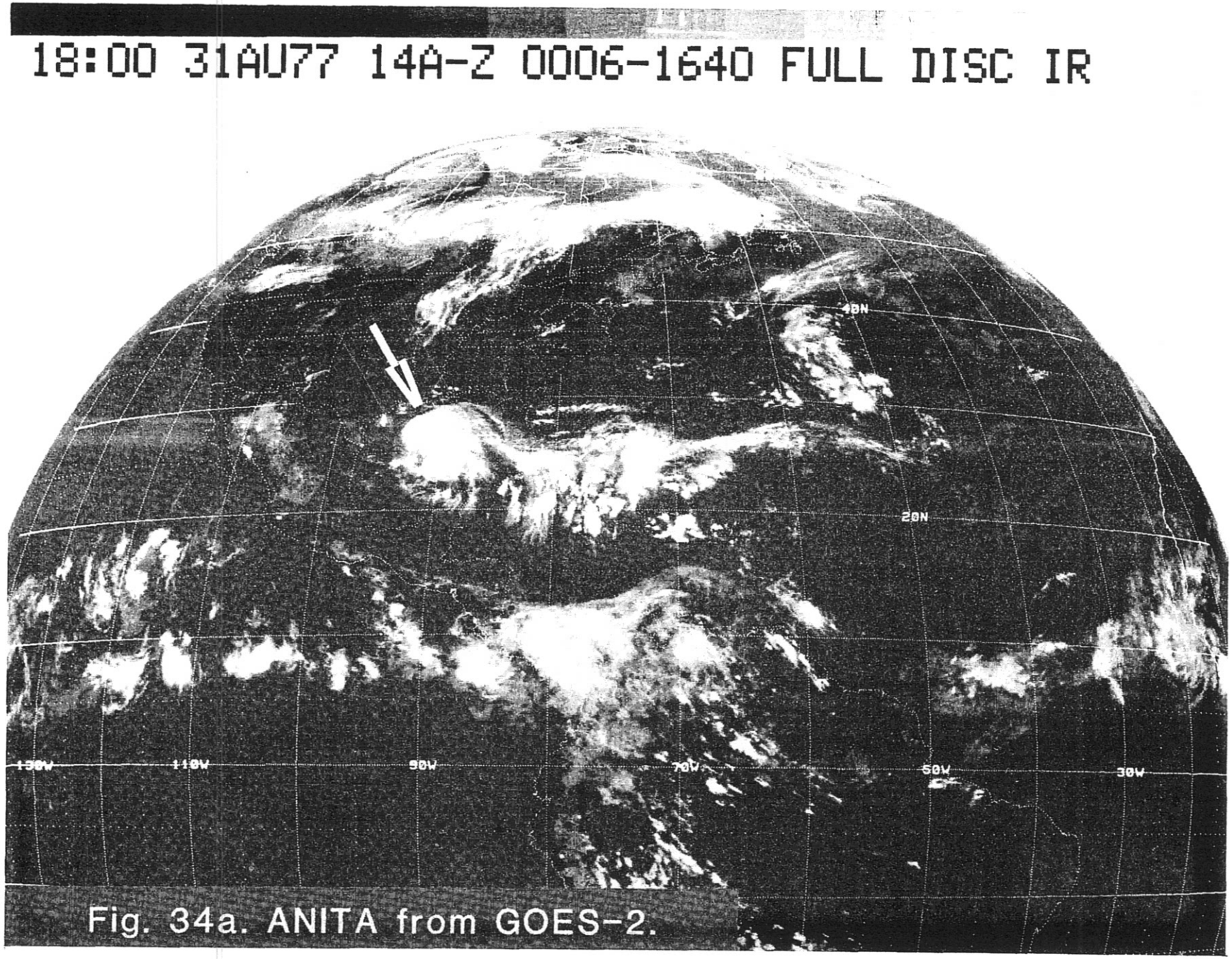

Fig. 34a. ANITA from GOES-2.

FLIGHT LOG

Date:	August 31, 1977
Flight Identification:	770831H
Aircraft:	WP-3D/N42RF
Departed:	New Orleans, Louisiana, at 31/1325Z
Arrived:	Miami, Florida, at 31/2225Z
Purpose:	Hurricane ANITA research and reconnaissance
Pattern:	Fig. 6 (modified) at 1500, 18000 and 28000 ft

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
RFC Standard	2	31/1323	31/2218
Original	1	31/1324	31/2219
Radar	11	31/1340	31/2200
Knollenberg	12	31/1356	31/2050

EQUIPMENT STATUS: 770831H

SYSTEM	STATUS /	UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			
	INE 2	X			
	ONE	X			
	DOPL			X	
RADAR	NOSE	X			
	LF	X			
	TAIL	X			
	DATA SYSTEM	X			
RAMS	DATA SYSTEM	X			
	TOTAL TEMP. 1	X			
	TOTAL TEMP. 2	X			
	DEW POINT	X			
	ATTACK ANGLE	X			
	SLIP ANGLE	X			
	ABS. PRESS.	X			
	DIFF. PRESS.	X			
	RADAR ALT.	X			
	J & W	X			
PMS	OAP 2DP	X			
	OAP 2DC	X			
	FSSP 100	X			
	DATA SYSTEM	X			
IPC		X			
FOIL		X			
CO_2 RADIOMETER				X	
MICROWAVE RADIOMETER		X			
SFC. RADIOMETER		X			
FORMVAR				X	
PHOTOGRAPHY	FWD			X	
	LS			X	
	RS			X	
	DWN			X	
AXBT	TUBES			X	
	RECEIVERS			X	
ODW				X	

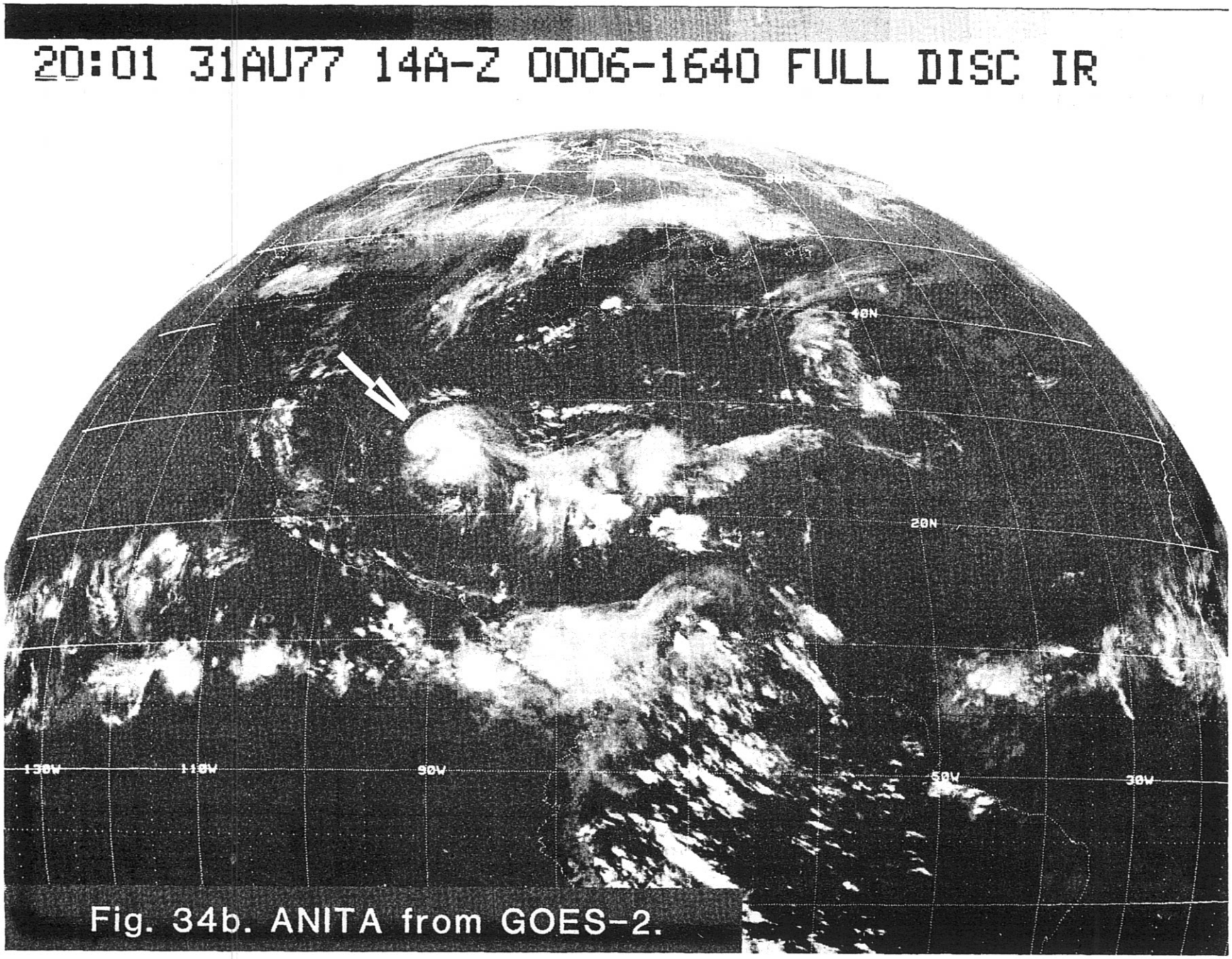

Fig. 34b. ANITA from GOES-2.

FLIGHT LOG

Date:	August 31, 1977
Flight Identification:	770831F
Aircraft:	C-130B/N6541C
Departed:	New Orleans, Louisiana, at 31/1555Z
Arrived:	Miami, Florida, at 31/2340Z
Purpose:	Hurricane ANITA research
Pattern:	Fig. 11 at 20000, 1500 and 23000 ft

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
RFC Standard	1	31/1600	31/2336
Original	2	31/1558	31/2336
Cloud Physics	2	-	-

EQUIPMENT STATUS: 770831F

SYSTEM	STATUS /	UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			
	INE 2	X			
	ONE	X			
	DOPL			X	
RADAR	NOSE	X			
	LF			X	
	TAIL			X	
	DATA SYSTEM			X	
AWRS	DATA SYSTEM	X			
	TOTAL TEMP. 1	X			
	TOTAL TEMP. 2			X	
	DEW POINT	X			
	ATTACK ANGLE	X			
	SLIP ANGLE	X			
	ABS. PRESS.	X			
	DIFF. PRESS.	X			
	RADAR ALT.	X			
	J & W	X			
PMS	OAP 2DP	X			
	OAP 2DC			X	
	FSSP 100			X	
	DATA SYSTEM	X			
IPC		X			
FOIL		X			
CO_2 RADIOMETER				X	
MICROWAVE RADIOMETER				X	
SFC. RADIOMETER		X			
FORMVAR				X	
PHOTOGRAPHY	FWD			X	
	LS			X	
	RS			X	
	DWN			X	
AXBT	TUBES	X			
	RECEIVERS	X			
ODW				X	

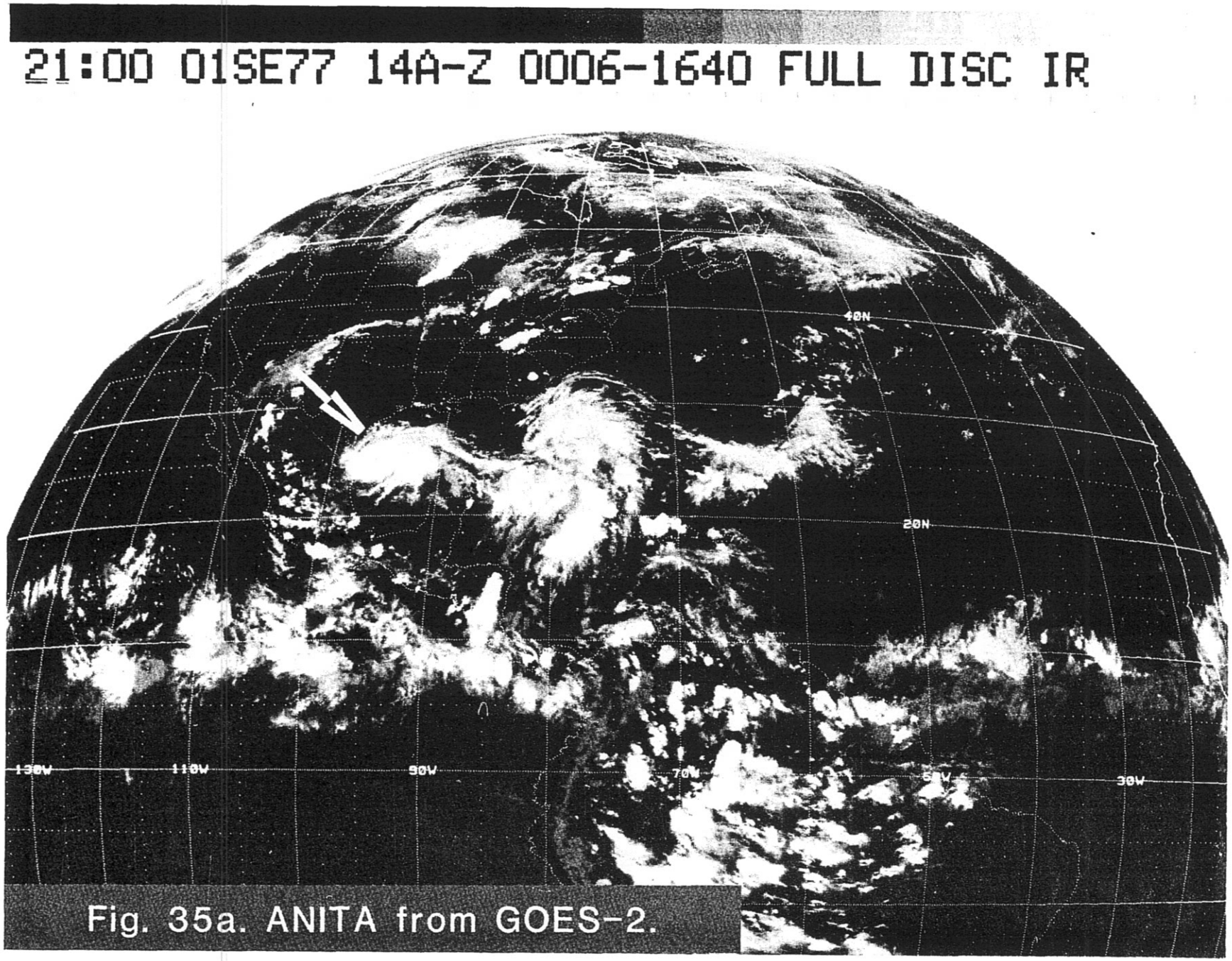

Fig. 35a. ANITA from GOES-2.

FLIGHT LOG

Date:	September 1, 1977
Flight Identification:	770901I
Aircraft:	WP-3D/N43RF
Departed:	Miami, Florida, at 01/1625Z
Arrived:	Miami, Florida, at 02/0200Z
Purpose:	Hurricane ANITA (Wave Height Study)
Pattern:	Fig. 8 (modified); circumnavigation of storm at low levels for laser wave height measurements

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
RFC Standard	2	01/1625	02/0154
Original	1	01/1625	02/0154
Knollenberg	7	-	-

EQUIPMENT STATUS: 770901I

SYSTEM	STATUS /	UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			
	INE 2	X			
	ONE	X			
	DOPL			X	
RADAR	NOSE	X			
	LF	X			
	TAIL			X	
	DATA SYSTEM			X	
RAMS	DATA SYSTEM	X			
	TOTAL TEMP. 1	X			
	TOTAL TEMP. 2	X			
	DEW POINT	X			
	ATTACK ANGLE	X			
	SLIP ANGLE	X			
	ABS. PRESS.	X			
	DIFF. PRESS.	X			
	RADAR ALT.	X			
	J & W	X			
PMS	OAP 2DP	X			
	OAP 2DC	X			
	FSSP 100	X			
	DATA SYSTEM	X			
IPC				X	
FOIL				X	
CO_2 RADIOMETER				X	
MICROWAVE RADIOMETER				X	
SFC. RADIOMETER		X			
FORMVAR				X	
PHOTOGRAPHY	FWD			X	
	LS			X	
	RS			X	
	DWN			X	
AXBT	TUBES			X	
	RECEIVERS			X	
ODW				X	

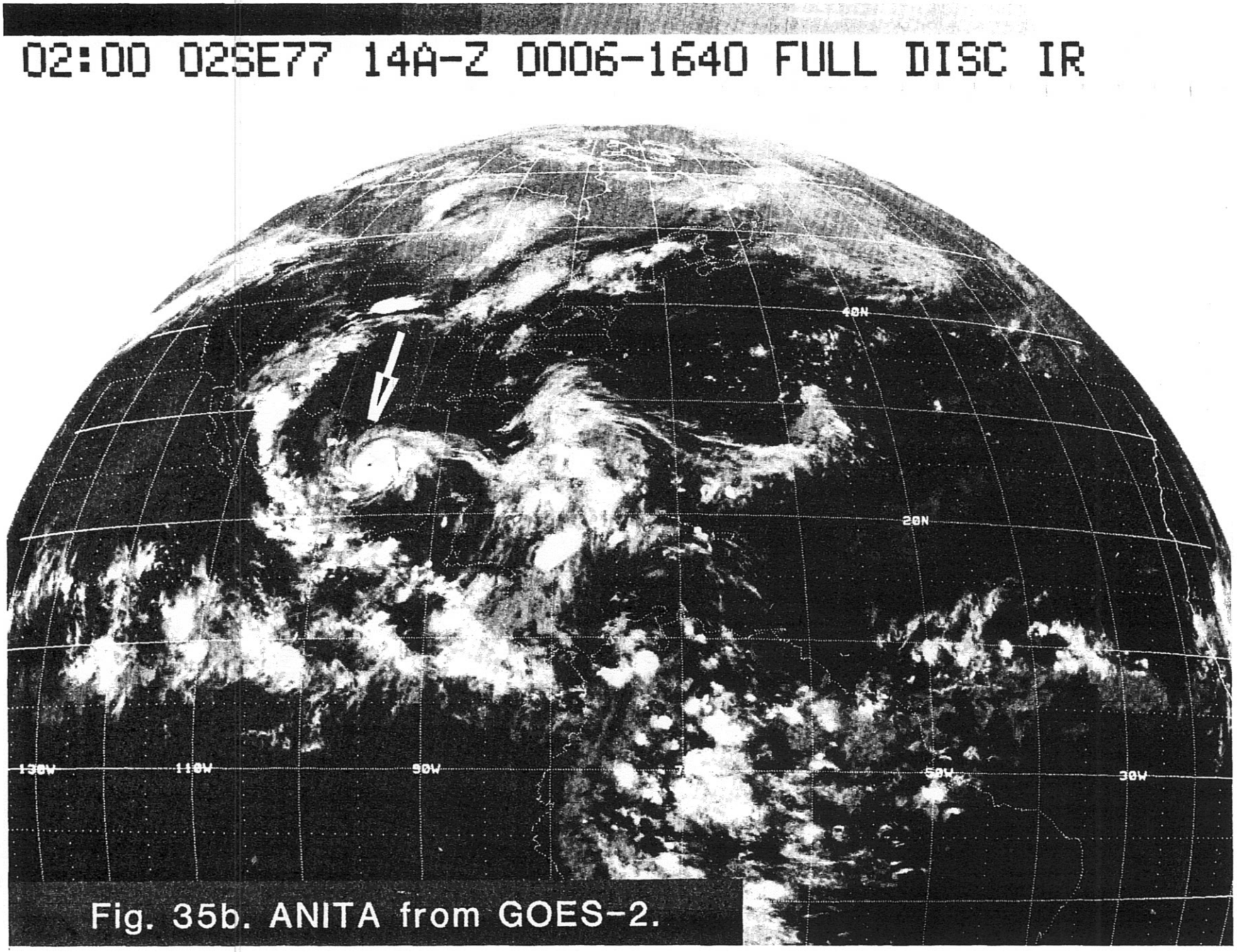

Fig. 35b. ANITA from GOES-2.

FLIGHT LOG

Date:	September 1, 1977
Flight Identification:	770901H
Aircraft:	WP-3D/N42RF
Departed:	Miami, Florida, at 01/2135Z
Arrived:	Houston, Texas, at 02/0740Z
Purpose:	Hurricane ANITA research and reconnaissance
Pattern:	Fig. 6 (modified) at 10000 ft

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
RFC Standard	2	01/2130	02/0734
Original	1	01/2130	02/0700
Radar	12	01/2202	02/0700
Knollenberg	25	-	-

EQUIPMENT STATUS: 770901H

SYSTEM	STATUS /	UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			
	INE 2	X			
	ONE	X			
	DOPL			X	
RADAR	NOSE	X			
	LF	X			
	TAIL	X			
	DATA SYSTEM	X			
RAMS	DATA SYSTEM	X			
	TOTAL TEMP. 1	X			
	TOTAL TEMP. 2	X			
	DEW POINT	X			
	ATTACK ANGLE	X			
	SLIP ANGLE	X			
	ABS. PRESS.	X			
	DIFF. PRESS.	X			
	RADAR ALT.	X			
	J & W	X			
PMS	OAP 2DP	X			
	OAP 2DC	X			
	FSSP 100	X			
	DATA SYSTEM	X			
IPC		X			
FOIL		X			
CO_2 RADIOMETER				X	
MICROWAVE RADIOMETER		X			
SFC. RADIOMETER		X			
FORMVAR				X	
PHOTOGRAPHY	FWD			X	
	LS			X	
	RS			X	
	DWN			X	
AXBT	TUBES			X	
	RECEIVERS			X	
ODW				X	

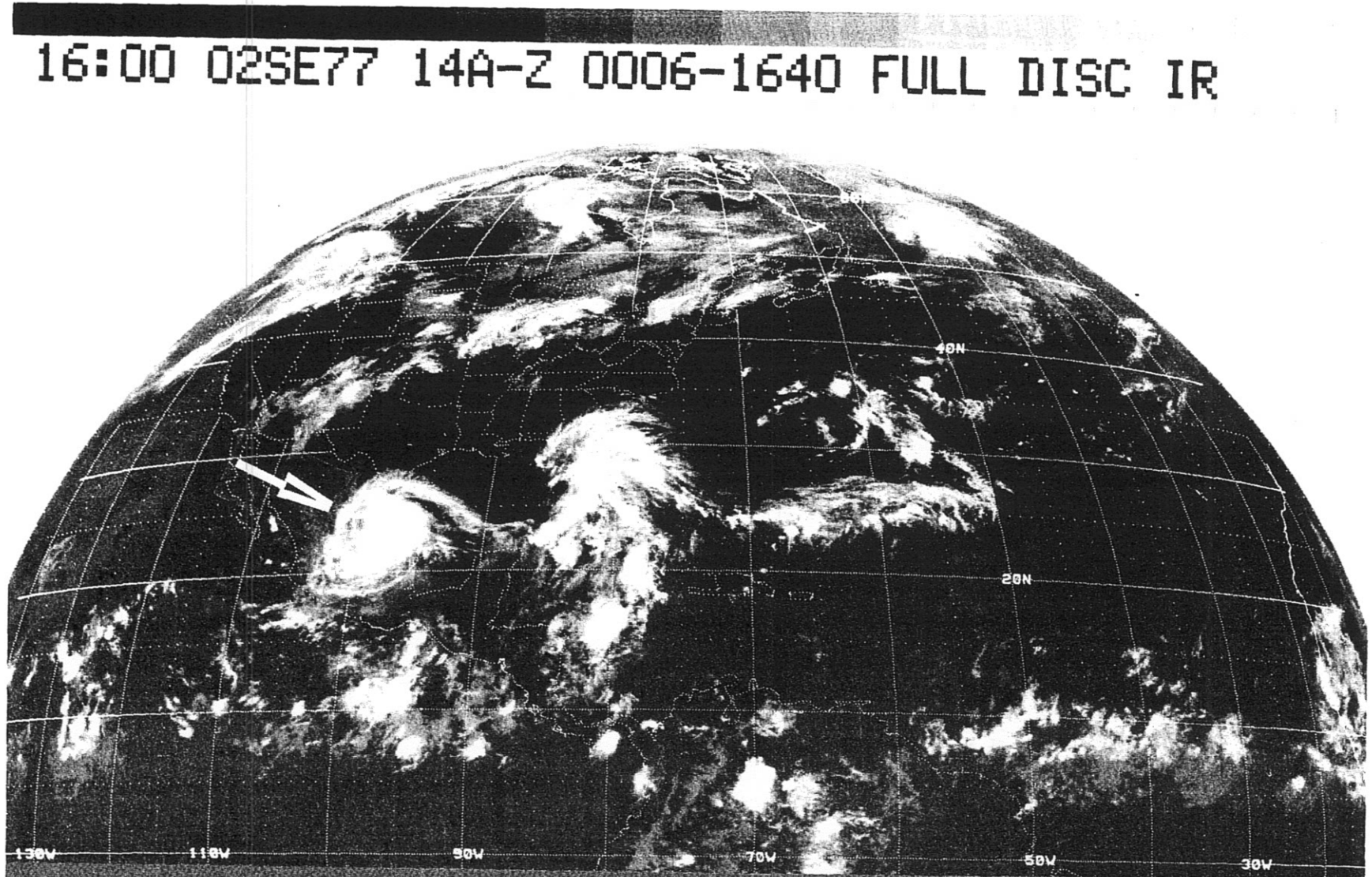

Fig. 36. ANITA from GOES-2. Note conditions to east of ANITA, over the eastern Gulf of Mexico, that led to Tropical Storm BABE.

FLIGHT LOG

Date:	September 2, 1977
Flight Identification:	770902F
Aircraft:	C-130B/N6541C
Departed:	Miami, Florida, at 02/1200Z
Arrived:	Houston, Texas, at 02/2015Z
Purpose:	Post-ANITA (AXBT mission)
Pattern:	Along 25°N to 90°W to 27°N and diagonally to 25°N repeating across Gulf of Mexico to Houston, Texas

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
RFC Standard	1	02/1204	02/2008
Original	2	02/1204	02/2008
Cloud Physics	1	-	-

EQUIPMENT STATUS: 770902F

SYSTEM	STATUS /	UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			
	INE 2	X			
	ONE	X			
	DUPL			X	
RADAR	NOSE	X			
	LF			X	
	TAIL			X	
	DATA SYSTEM			X	
AWRS	DATA SYSTEM	X			
	TOTAL TEMP. 1	X			
	TOTAL TEMP. 2			X	
	DEW POINT	X			
	ATTACK ANGLE	X			
	SLIP ANGLE	X			
	ABS. PRESS.	X			
	DIFF. PRESS.	X			
	RADAR ALT.	X			
	J & W	X			
PMS	OAP 2DP	X			
	OAP 2DC			X	
	FSSP 100			X	
	DATA SYSTEM	X			
IPC				X	
FOIL				X	
CO_2 RADIOMETER				X	
MICROWAVE RADIOMETER				X	
SFC. RADIOMETER		X			
FORMVAR				X	
PHOTOGRAPHY	FWD			X	
	LS			X	
	RS			X	
	DWN			X	
AXBT	TUBES	X			
	RECEIVERS	X			
ODW				X	

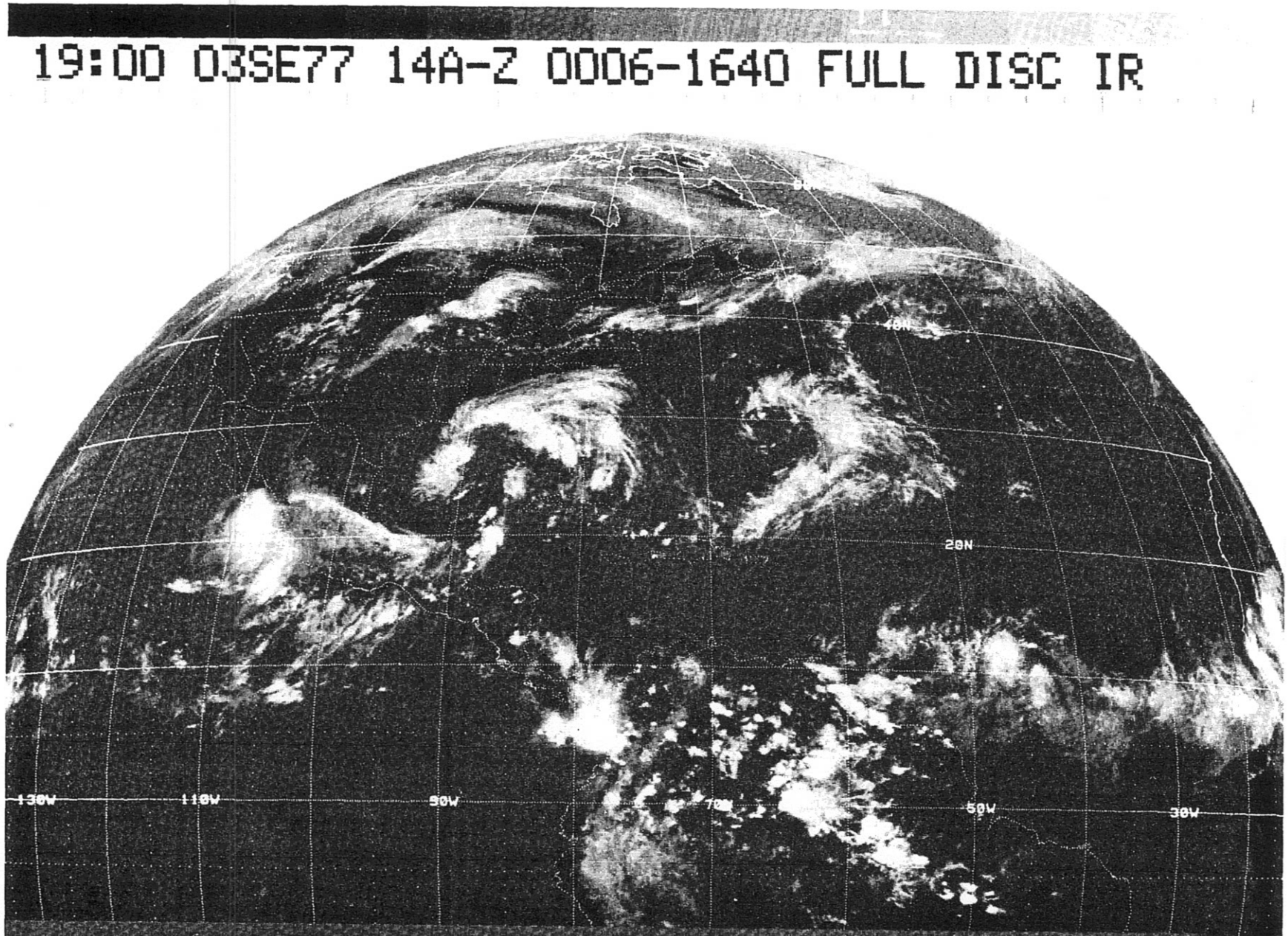

Fig. 37. Post-ANITA/BABE conditions from GOES-2.

FLIGHT LOG

Date:	September 3, 1977
Flight Identification:	770903F
Aircraft:	C-130B/N6541C
Departed:	Houston, Texas, at 03/1500Z
Arrived:	Miami, Florida, at 03/2210Z
Purpose:	Post-ANITA (AXBT) and Tropical Storm BABE reconnaissance
Pattern:	AXBT drops along 26°N; followed by diversion to investigate Tropical Storm BABE

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
RFC Standard	1	03/1509	03/2203
Original	2	03/1509	03/2203

EQUIPMENT STATUS: 770903F

SYSTEM	STATUS /	UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			
	INE 2	X			
	ONE	X			
	DOPL			X	
RADAR	NOSE	X			
	LF			X	
	TAIL			X	
	DATA SYSTEM			X	
AWRS	DATA SYSTEM	X			
	TOTAL TEMP. 1	X			
	TOTAL TEMP. 2			X	
	DEW POINT	X			
	ATTACK ANGLE	X			
	SLIP ANGLE	X			
	ABS. PRESS.	X			
	DIFF. PRESS.	X			
	RADAR ALT.	X			
	J & W	X			
PMS	OAP 2DP	X			
	OAP 2DC			X	
	FSSP 100			X	
	DATA SYSTEM	X			
IPC				X	
FOIL				X	
CO_2 RADIOMETER				X	
MICROWAVE RADIOMETER				X	
SFC. RADIOMETER		X			
FORMVAR				X	
PHOTOGRAPHY	FWD			X	
	LS			X	
	RS			X	
	DWN			X	
AXBT	TUBES	X			
	RECEIVERS	X			
ODW				X	

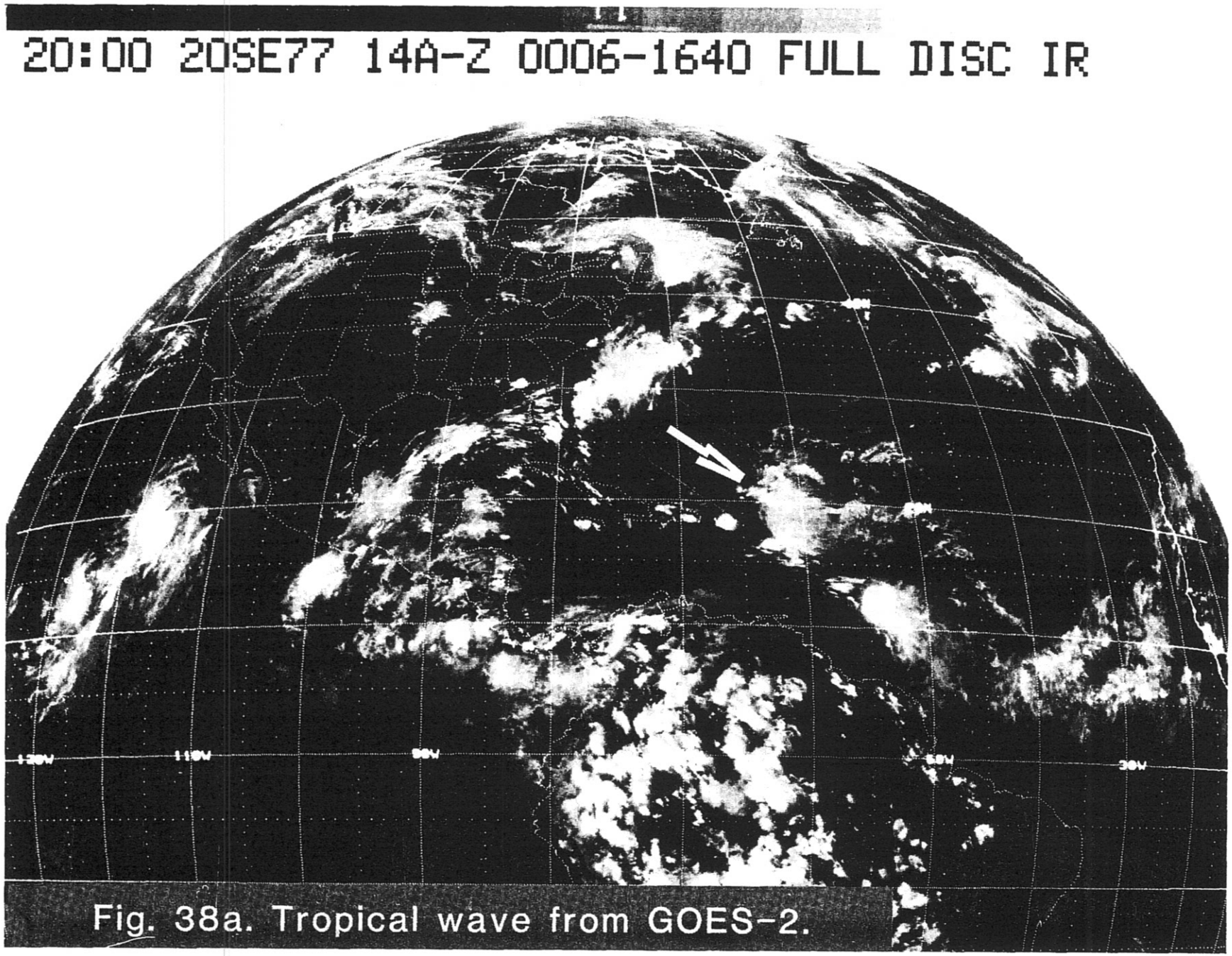

Fig. 38a. Tropical wave from GOES-2.

FLIGHT LOG

Date:	September 20, 1977
Flight Identification:	770920I
Aircraft:	WP-3D/N43RF
Departed:	Miami, Florida, at 20/1700Z
Arrived:	San Juan, Puerto Rico, at 20/2310Z
Purpose:	Investigation of tropical wave
Pattern:	Aircraft data intercomparison en route to Puerto Rico; pass through tropical wave north of Puerto Rico at 10000 ft

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
RFC Standard	2	20/1700	20/2304
Original	1	20/1700	20/2304

EQUIPMENT STATUS: 770920I

SYSTEM	STATUS/	UP	DOWN	NOT USED
NAV	INE 1	X		
	INE 2	X		
	ONE	X		
	DOPL			X
RADAR	NOSE	X		
	LF	X		
	TAIL			X
	DATA SYSTEM			X
RAMS	DATA SYSTEM	X		
	TOTAL TEMP. 1	X		
	TOTAL TEMP. 2	X		
	DEW POINT	X		
	ATTACK ANGLE	X		
	SLIP ANGLE	X		
	ABS. PRESS.	X		
	DIFF. PRESS.	X		
	RADAR ALT.	X		
	J & W	X		
PMS	OAP 2DP	X		
	OAP 2DC	X		
	FSSP 100	X		
	DATA SYSTEM	X		
IPC		X		
FOIL		X		
CO_2 RADIOMETER				X
MICROWAVE RADIOMETER				X
SFC. RADIOMETER		X		
FORMVAR				X
PHOTOGRAPHY	FWD			X
	LS			X
	RS			X
	DWN			X
AXBT	TUBES			X
	RECEIVERS			X
ODW				X

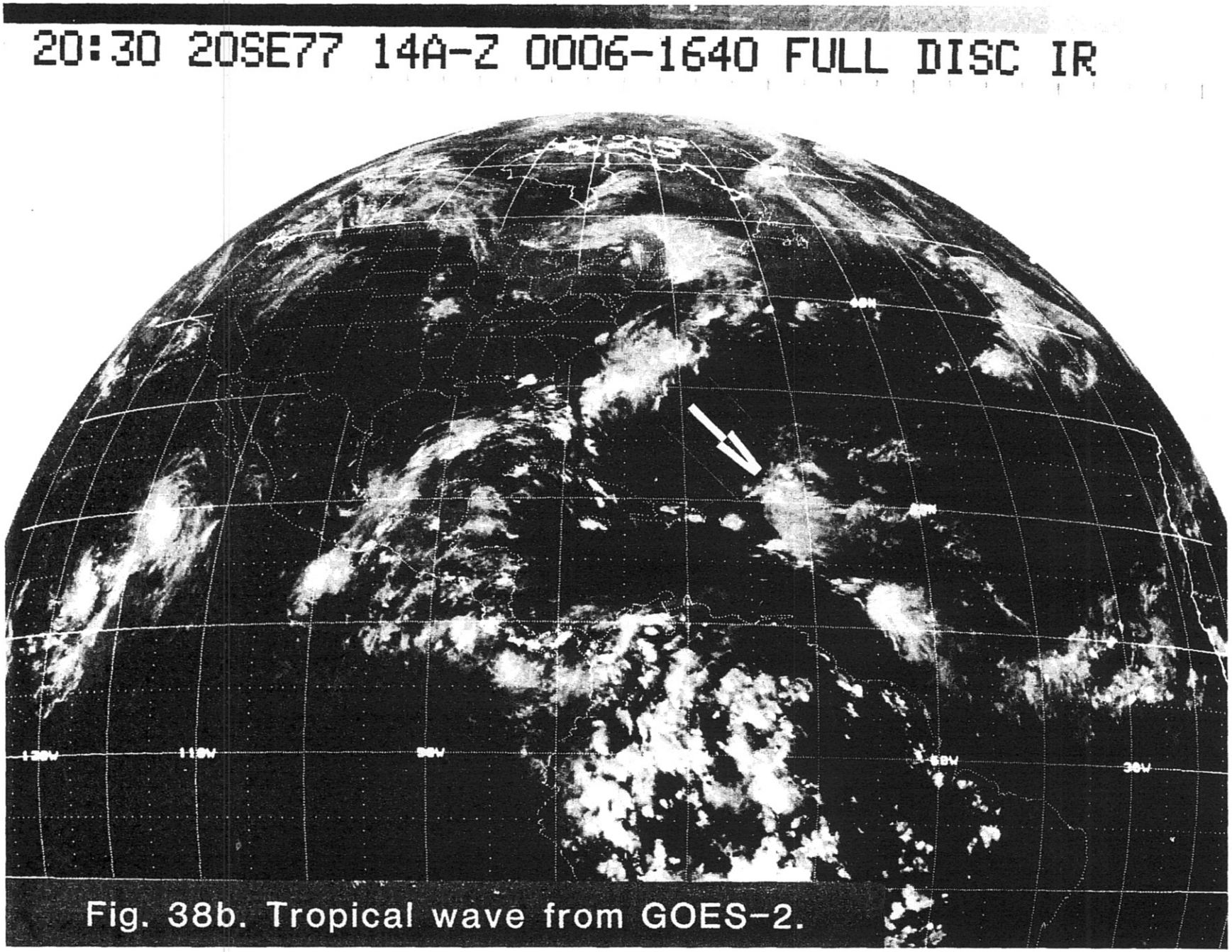

Fig. 38b. Tropical wave from GOES-2.

FLIGHT LOG

Date:	September 20, 1977
Flight Identification:	770920H
Aircraft:	WP-3D/N42RF
Departed:	Miami, Florida, at 20/1645Z
Arrived:	San Juan, Puerto Rico, at 21/0000Z
Purpose:	Investigation of tropical wave
Pattern:	"Zigzag" at 10000 and 1500 ft north of Puerto Rico

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
RFC Standard	2	20/1600	20/2345
Original	1	20/1600	20/2345
Radar	5	20/2021	20/2332
Knollenberg	4	-	-

EQUIPMENT STATUS: 770920H

SYSTEM	STATUS /	UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			
	INE 2	X			
	ONE	X			
	DOPL			X	
RADAR	NOSE	X			
	LF	X			
	TAIL	X			
	DATA SYSTEM	X			
RAMS	DATA SYSTEM	X			
	TOTAL TEMP. 1	X			
	TOTAL TEMP. 2	X			
	DEW POINT	X			
	ATTACK ANGLE	X			
	SLIP ANGLE	X			
	ABS. PRESS.	X			
	DIFF. PRESS.	X			
	RADAR ALT.	X			
	J & W	X			
PMS	OAP 2DP	X			
	OAP 2DC	X			
	FSSP 100	X			
	DATA SYSTEM	X			
IPC		X			
FOIL			X		
CO_2 RADIOMETER				X	
MICROWAVE RADIOMETER		X			
SFC. RADIOMETER		X			
FORMVAR				X	
PHOTOGRAPHY	FWD			X	
	LS			X	
	RS			X	
	DWN			X	
AXBT	TUBES			X	
	RECEIVERS			X	
ODW				X	

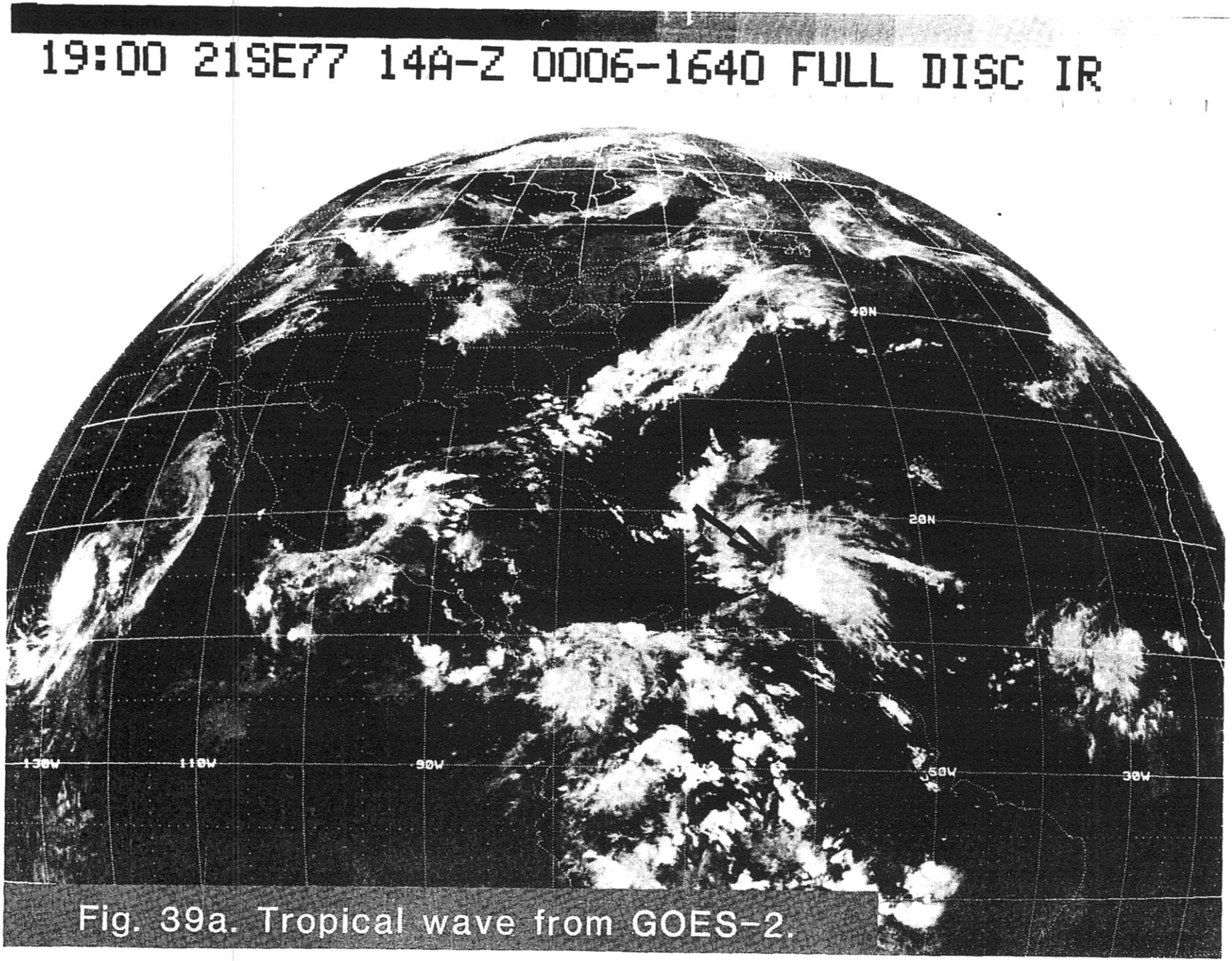

Fig. 39a. Tropical wave from GOES-2.

FLIGHT LOG

Date:	September 21, 1977
Flight Identification:	770921I
Aircraft:	WP-3D/N43RF
Departed:	San Juan, Puerto Rico, at 21/1410Z
Arrived:	San Juan, Puerto Rico, at 21/2325Z
Purpose:	Investigation of tropical wave
Pattern:	Box 15°N 60°W - 13°N 60°W - 13°N 63°W - 15°N 63°W at 1000 ft; Fig. 11 (modified) at 10000 ft; low-level cloud investigation with C-130B (41C) at 1000 ft

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
RFC Standard	2	21/1413	21/2323
Original	1	21/1413	21/2323
Radar	11	21/1513	21/2031

EQUIPMENT STATUS: 770921I

SYSTEM	STATUS /	UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			
	INE 2	X			
	ONE	X			
	DOPL			X	
RADAR	NOSE	X			
	LF	X			
	TAIL	X			
	DATA SYSTEM	X			
RAMS	DATA SYSTEM	X			
	TOTAL TEMP. 1	X			
	TOTAL TEMP. 2	X			
	DEW POINT	X			
	ATTACK ANGLE	X			
	SLIP ANGLE	X			
	ABS. PRESS.	X			
	DIFF. PRESS.	X			
	RADAR ALT.	X			
	J & W	X			
PMS	OAP 2DP	X			
	OAP 2DC	X			
	FSSP 100	X			
	DATA SYSTEM	X			
IPC		X			
FOIL		X			
CO_2 RADIOMETER				X	
MICROWAVE RADIOMETER				X	
SFC. RADIOMETER		X			
FORMVAR				X	
PHOTOGRAPHY	FWD			X	
	LS			X	
	RS			X	
	DWN			X	
AXBT	TUBES			X	
	RECEIVERS			X	
ODW				X	

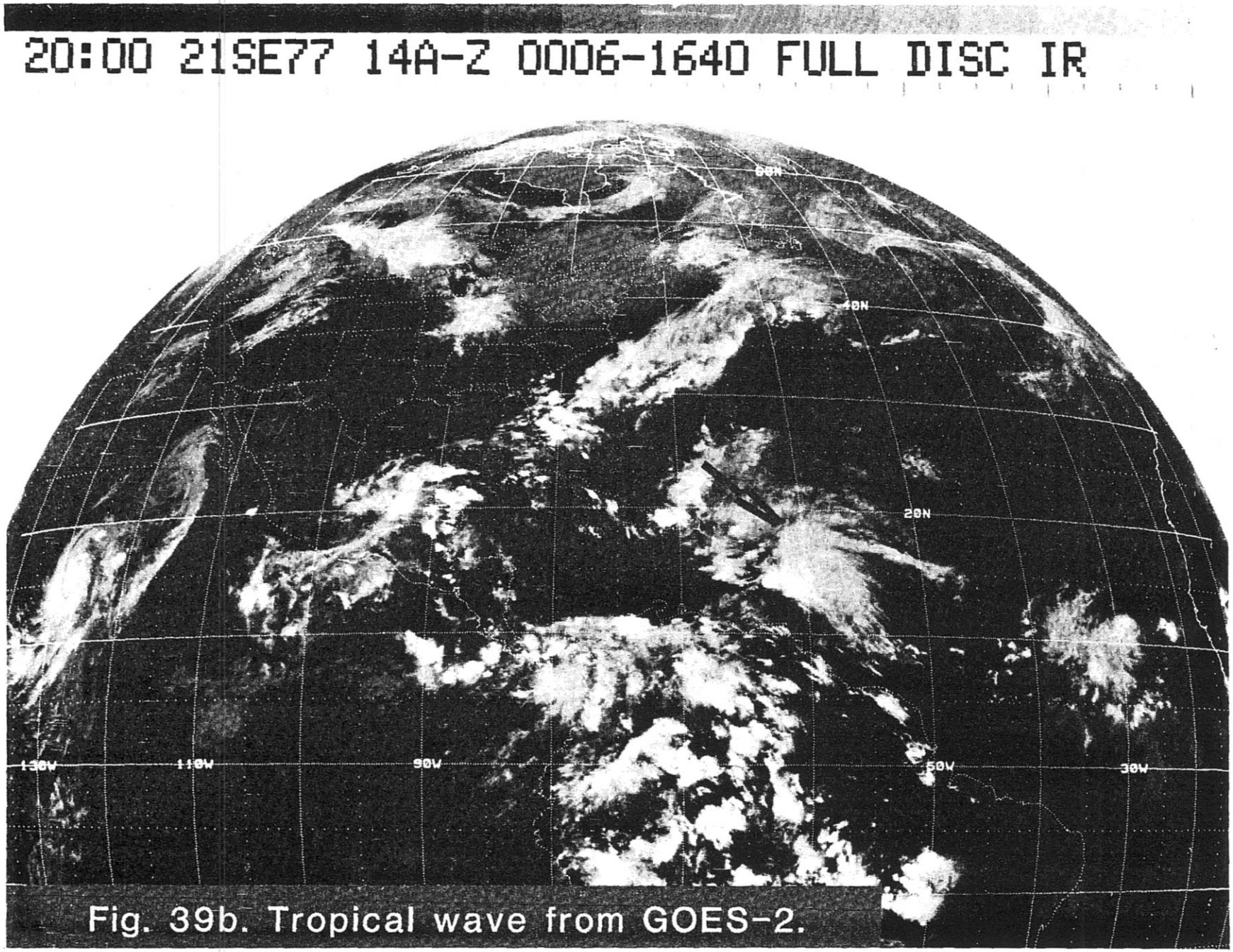

Fig. 39b. Tropical wave from GOES-2.

FLIGHT LOG

Date:	September 21, 1977
Flight Identification:	770921F
Aircraft:	C-130B/N6541C
Departed:	San Juan, Puerto Rico, at 21/1600Z
Arrived:	San Juan, Puerto Rico, at 21/2340Z
Purpose:	Investigation of tropical wave
Pattern:	Fig. 11 (modified) and cloud box (with diagonal passes) at -5°C and -15°C temperature levels

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
RFC Original	4	21/1608	21/2332
Cloud Physics	1	-	-

EQUIPMENT STATUS: 770921F

SYSTEM	STATUS /	UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			
	INE 2	X			
	ONE	X			
	DOPL			X	
RADAR	NOSE	X			
	LF			X	
	TAIL			X	
	DATA SYSTEM	X			
AWRS	DATA SYSTEM	X			
	TOTAL TEMP. 1	X			
	TOTAL TEMP. 2			X	
	DEW POINT	X			
	ATTACK ANGLE	X			
	SLIP ANGLE	X			
	ABS. PRESS.	X			
	DIFF. PRESS.	X			INOP before 21/1853Z
	RADAR ALT.	X			
	J & W	X			
PMS	OAP 2DP	X			
	OAP 2DC			X	
	FSSP 100			X	
	DATA SYSTEM	X			
IPC		X			
FOIL		X			
CO_2 RADIOMETER				X	
MICROWAVE RADIOMETER				X	
SFC. RADIOMETER		X			
FORMVAR				X	
PHOTOGRAPHY	FWD			X	
	LS			X	
	RS			X	
	DWN			X	
AXBT	TUBES			X	
	RECEIVERS			X	
ODW				X	

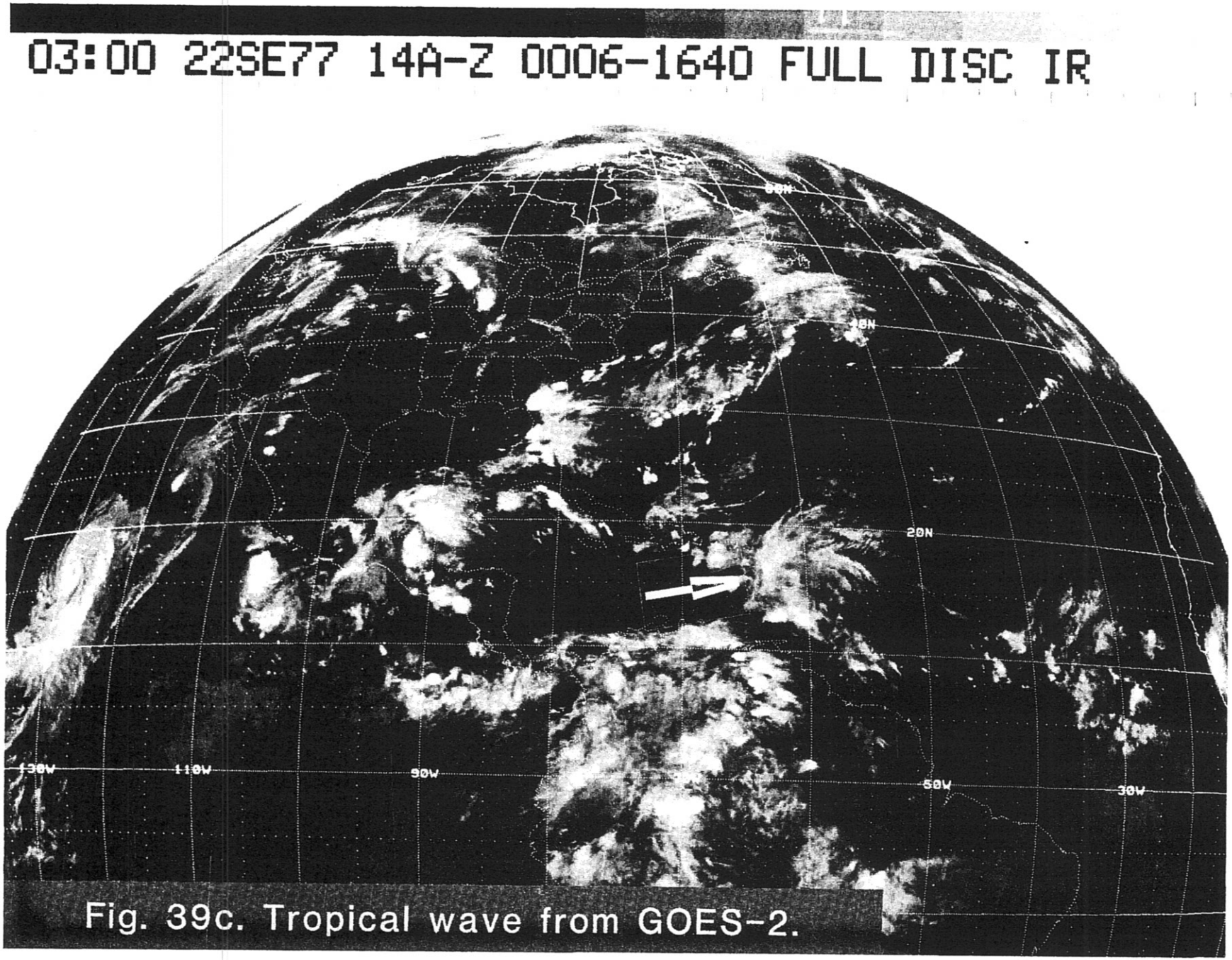

Fig. 39c. Tropical wave from GOES-2.

FLIGHT LOG

Date:	September 21, 1977
Flight Identification:	770921H
Aircraft:	WP-3D/N42RF
Departed:	San Juan, Puerto Rico, at 21/2155Z
Arrived:	San Juan, Puerto Rico, at 22/0635Z
Purpose:	Investigation of tropical wave
Pattern:	Fig. 11 (modified) at 1500, 10000, and 20000 ft centered near 14°N 64°W

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
RFC Standard	2	21/2230	22/0630
Original	1	21/2300	22/0630
Radar	9	21/2257	22/0600
Knollenberg	3	-	-

EQUIPMENT STATUS: 770921H

SYSTEM	STATUS /	UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			
	INE 2	X			
	ONE	X			
	DOPL			X	
RADAR	NOSE	X			
	LF	X			
	TAIL	X			
	DATA SYSTEM	X			
RAMS	DATA SYSTEM	X			
	TOTAL TEMP. 1	X			
	TOTAL TEMP. 2	X			
	DEW POINT	X			
	ATTACK ANGLE	X			
	SLIP ANGLE	X			
	ABS. PRESS.	X			
	DIFF. PRESS.	X			
	RADAR ALT.	X			
	J & W	X			
PMS	OAP 2DP	X			
	OAP 2DC	X			
	FSSP 100	X			
	DATA SYSTEM	X			
IPC		X			
FOIL		X			Broke early in flt.
CO_2 RADIOMETER				X	
MICROWAVE RADIOMETER		X			
SFC. RADIOMETER		X			
FORMVAR		X			Broke early in flt.
PHOTOGRAPHY	FWD			X	
	LS			X	
	RS			X	
	DWN			X	
AXBT	TUBES			X	
	RECEIVERS			X	
ODW				X	

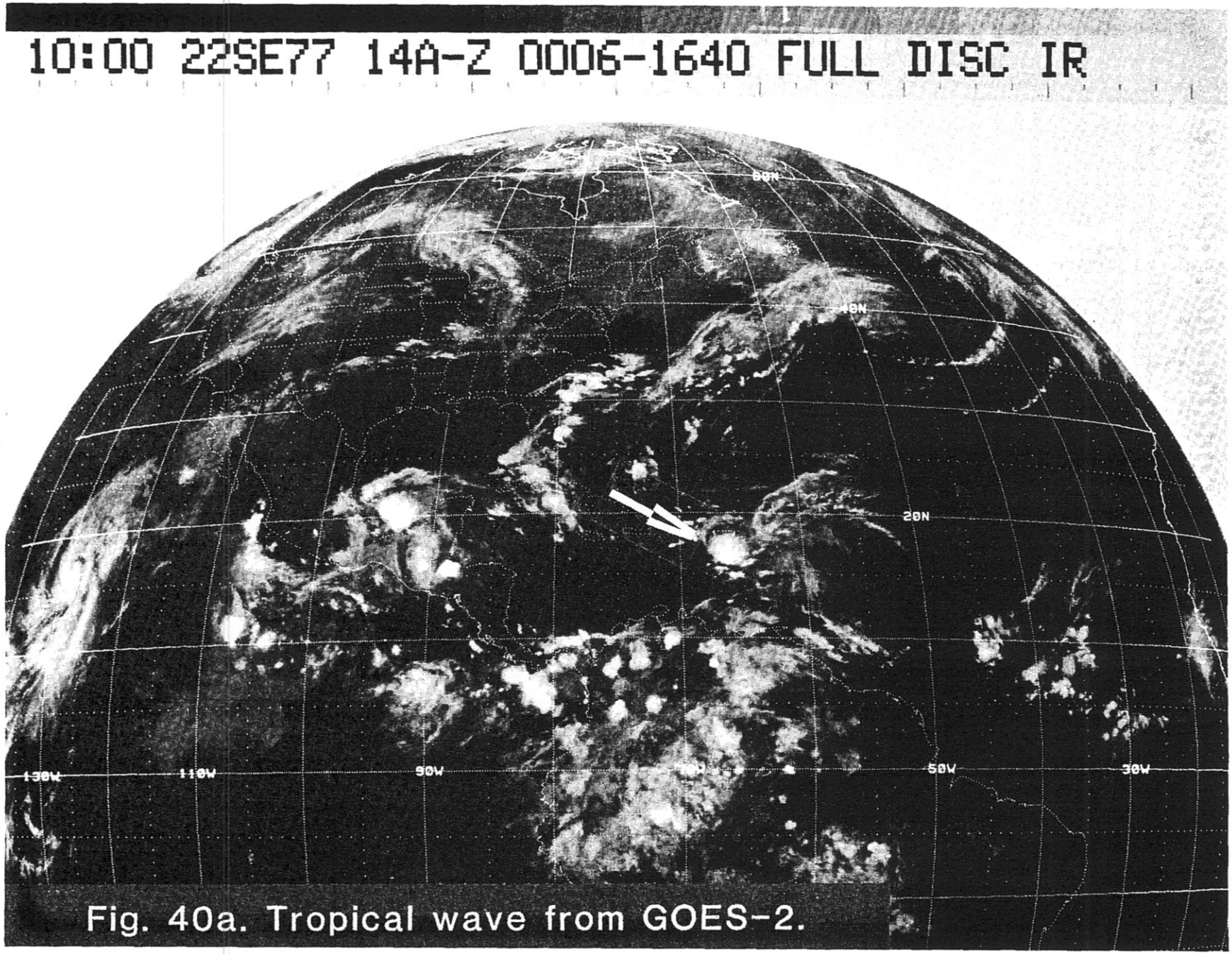

Fig. 40a. Tropical wave from GOES-2.

FLIGHT LOG

Date:	September 22, 1977
Flight Identification:	770922I
Aircraft:	WP-3D/N43RF
Departed:	San Juan, Puerto Rico, at 22/0610Z
Arrived:	San Juan, Puerto Rico, at 22/1430Z
Purpose:	Tropical wave research
Pattern:	Fig. 11 (modified) at 1500 and 10000 ft

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
RFC Standard	2	22/0612	22/1420
Original	1	22/0612	22/1420
Radar	11	22/0713	22/1421

EQUIPMENT STATUS: 770922I

SYSTEM	STATUS /	UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			
	INE 2	X			
	ONE	X			
	DOPL			X	
RADAR	NOSE	X			
	LF	X			
	TAIL	X			
	DATA SYSTEM	X			
RAMS	DATA SYSTEM	X			
	TOTAL TEMP. 1	X			
	TOTAL TEMP. 2	X			
	DEW POINT	X			
	ATTACK ANGLE	X			
	SLIP ANGLE	X			
	ABS. PRESS.	X			
	DIFF. PRESS.	X			
	RADAR ALT.	X			
	J & W	X			
PMS	OAP 2DP			X	
	OAP 2DC			X	
	FSSP 100			X	
	DATA SYSTEM			X	
IPC				X	
FOIL				X	
CO_2 RADIOMETER				X	
MICROWAVE RADIOMETER				X	
SFC. RADIOMETER		X			
FORMVAR				X	
PHOTOGRAPHY	FWD			X	
	LS			X	
	RS			X	
	DWN			X	
AXBT	TUBES			X	
	RECEIVERS			X	
ODW				X	

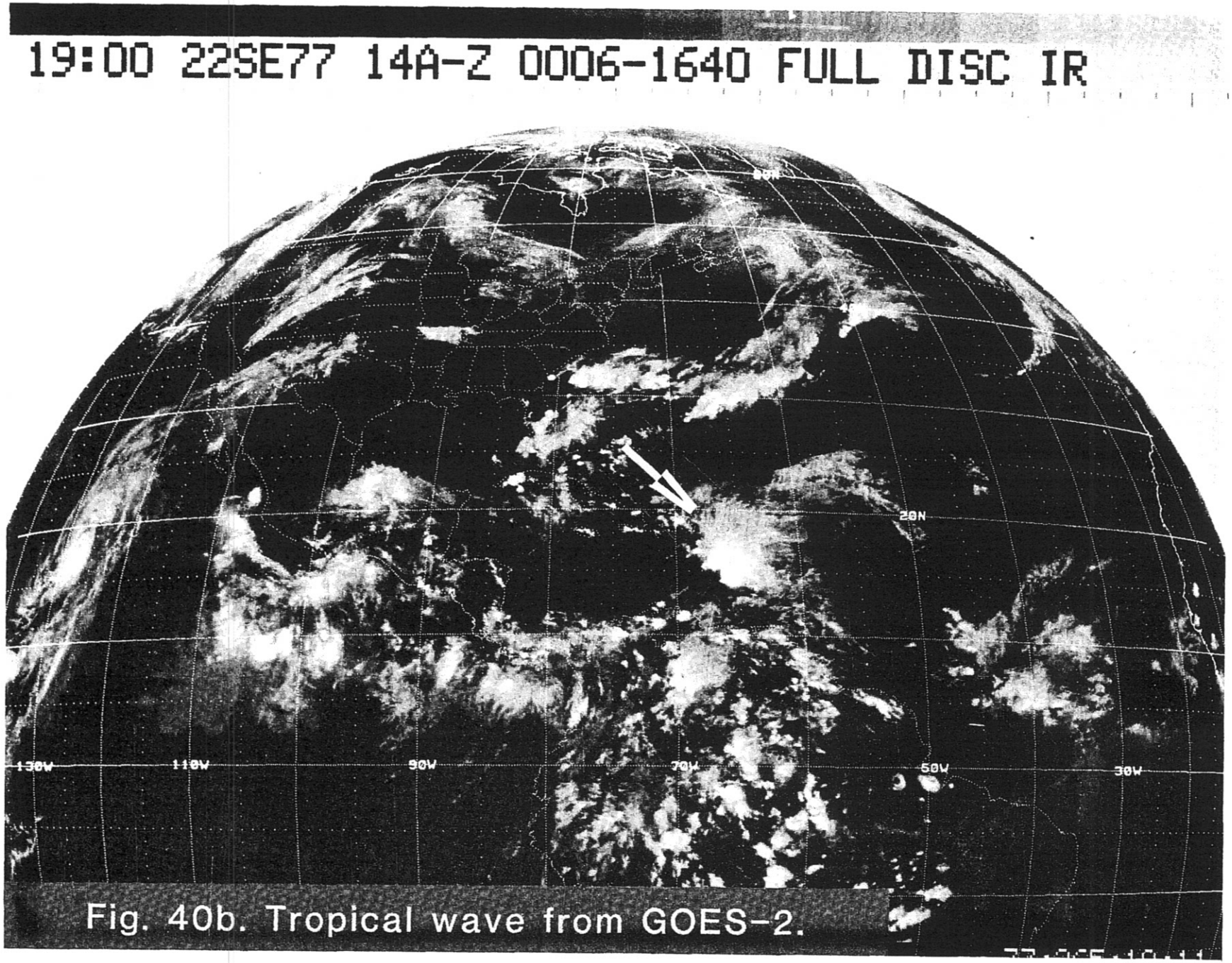

Fig. 40b. Tropical wave from GOES-2.

FLIGHT LOG

Date:	September 22, 1977
Flight Identification:	770922F
Aircraft:	C-130B/N6541C
Departed:	San Juan, Puerto Rico, at 22/1457Z
Arrived:	San Juan, Puerto Rico, at 22/2310Z
Purpose:	Tropical wave research
Pattern:	Fig. 11 (modified) BUTTERFLY at 18000 and 24000 ft

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
RFC Standard	1	22/1502	22/2304
Cloud Physics	-	22/1501	22/2059

EQUIPMENT STATUS: 770922F

SYSTEM	STATUS /	UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			
	INE 2	X			
	ONE	X			
	DOPL			X	
RADAR	NOSE	X			
	LF			X	
	TAIL			X	
	DATA SYSTEM			X	
AWRS	DATA SYSTEM	X			
	TOTAL TEMP. 1	X			
	TOTAL TEMP. 2			X	
	DEW POINT	X			
	ATTACK ANGLE	X			
	SLIP ANGLE	X			
	ABS. PRESS.	X			
	DIFF. PRESS.	X			
	RADAR ALT.	X			
	J & W	X			
PMS	OAP 2DP	X			
	OAP 2DC	X			
	FSSP 100	X			
	DATA SYSTEM	X			
IPC		X			
FOIL		X			
CO_2 RADIOMETER				X	
MICROWAVE RADIOMETER				X	
SFC. RADIOMETER		X			
FORMVAR				X	
PHOTOGRAPHY	FWD			X	
	LS			X	
	RS			X	
	DWN			X	
AXBT	TUBES			X	
	RECEIVERS			X	
ODW				X	

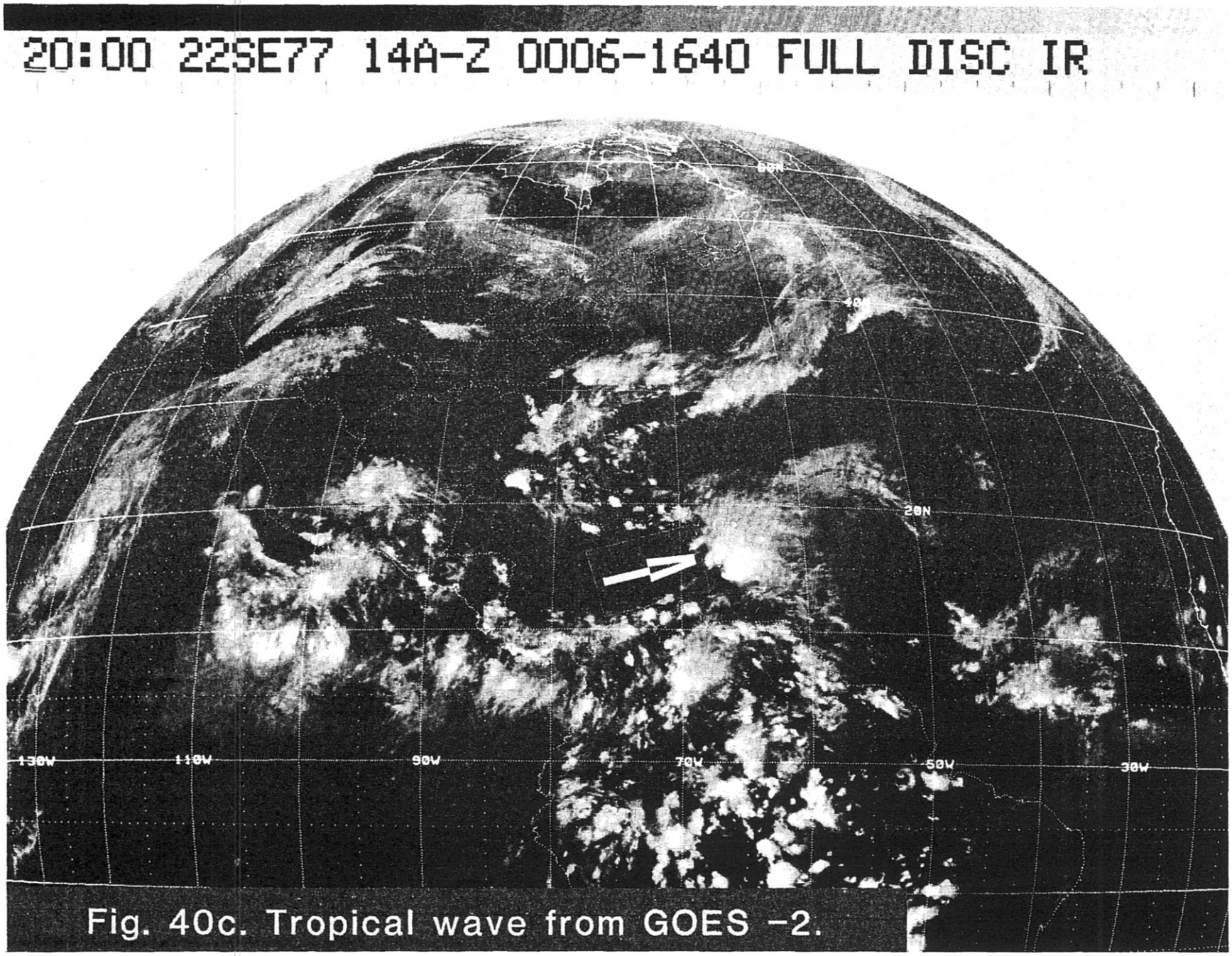

Fig. 40c. Tropical wave from GOES -2.

FLIGHT LOG

Date:	September 22, 1977
Flight Identification:	770922H
Aircraft:	WP-3D/N42RF
Departed:	San Juan, Puerto Rico, at 22/1605Z
Arrived:	San Juan, Puerto Rico, at 23/0035Z
Purpose:	Tropical wave research
Pattern:	Fig. 11 (modified) centered on 16.5°N 68°W at 1500 ft

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
RFC Standard	2	22/1600	23/0030
Radar	10	22/1637	22/2300

EQUIPMENT STATUS: 770922H

SYSTEM	STATUS /	UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			
	INE 2	X			
	ONE	X			
	DOPL			X	
RADAR	NOSE	X			
	LF	X			
	TAIL	X			
	DATA SYSTEM	X			
RAMS	DATA SYSTEM	X			
	TOTAL TEMP. 1	X			
	TOTAL TEMP. 2	X			
	DEW POINT	X			
	ATTACK ANGLE	X			
	SLIP ANGLE	X			
	ABS. PRESS.	X			
	DIFF. PRESS.	X			
	RADAR ALT.	X			
	J & W	X			
PMS	OAP 2DP	X			
	OAP 2DC	X			
	FSSP 100	X			
	DATA SYSTEM	X			No tapes available
IPC				X	
FOIL				X	
CO_2 RADIOMETER				X	
MICROWAVE RADIOMETER				X	
SFC. RADIOMETER		X			
FORMVAR				X	
PHOTOGRAPHY	FWD			X	
	LS			X	
	RS			X	
	DWN			X	
AXBT	TUBES			X	
	RECEIVERS			X	
ODW				X	

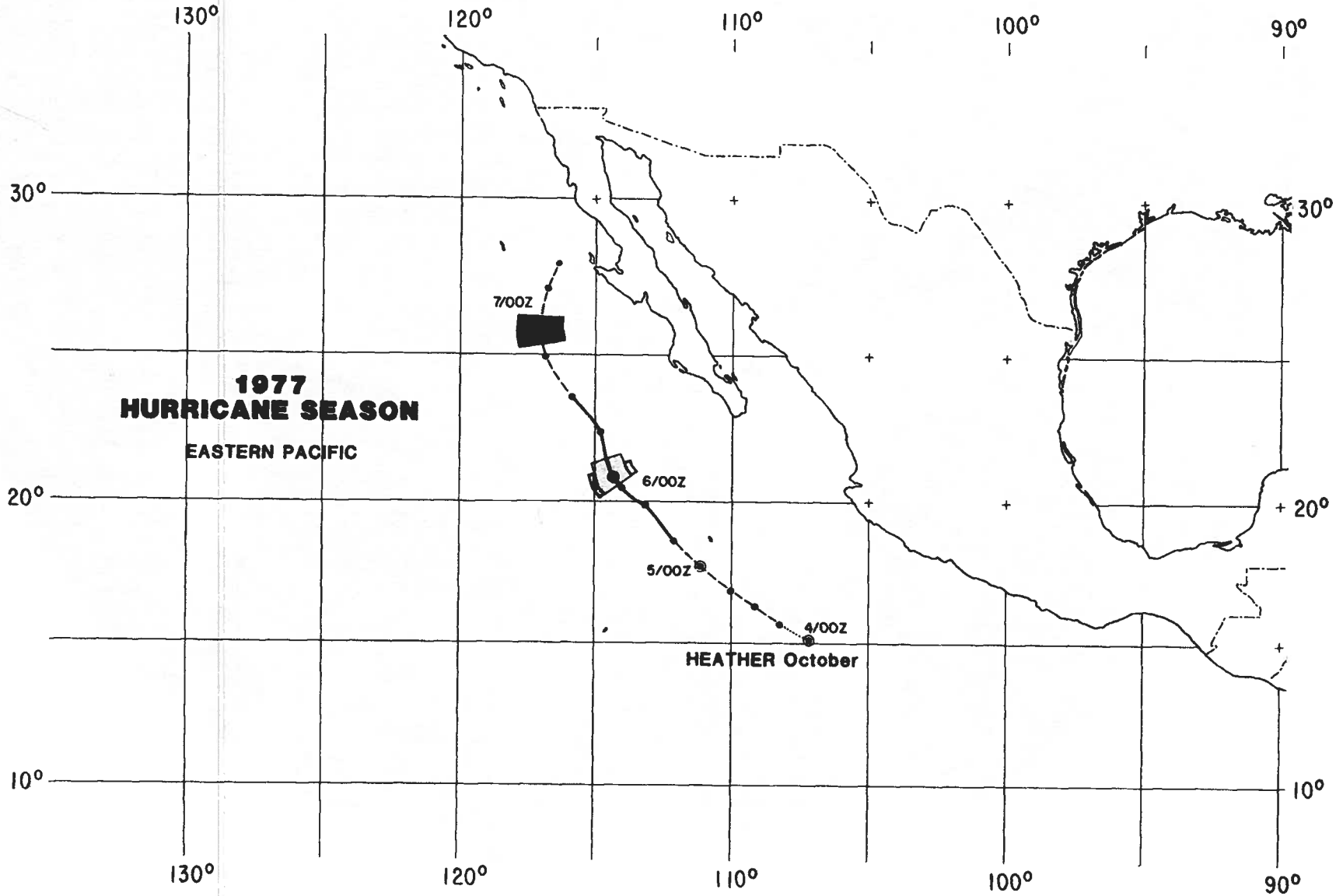

Fig. 41. Storm track and NHRL missions for HEATHER.

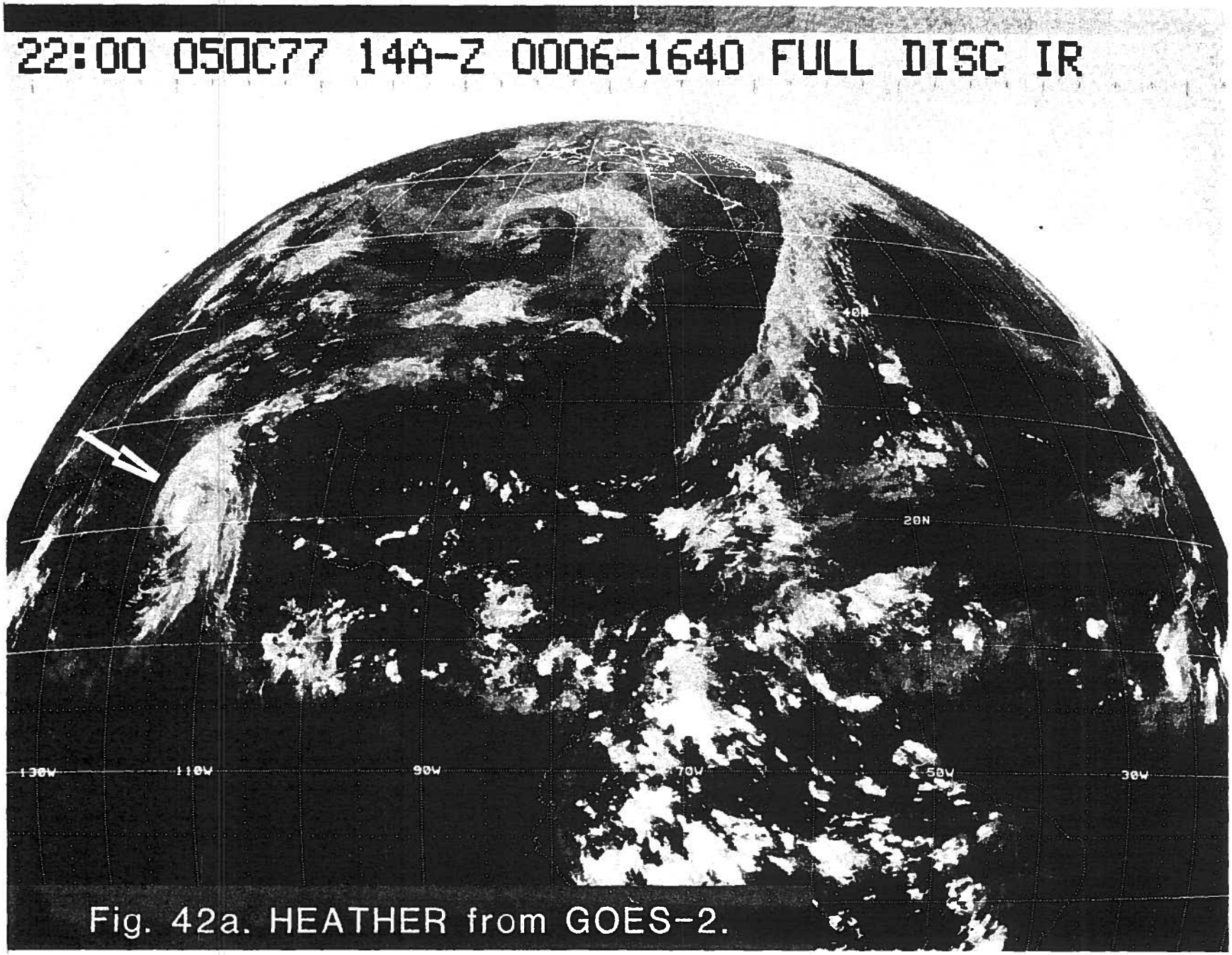

Fig. 42a. HEATHER from GOES-2.

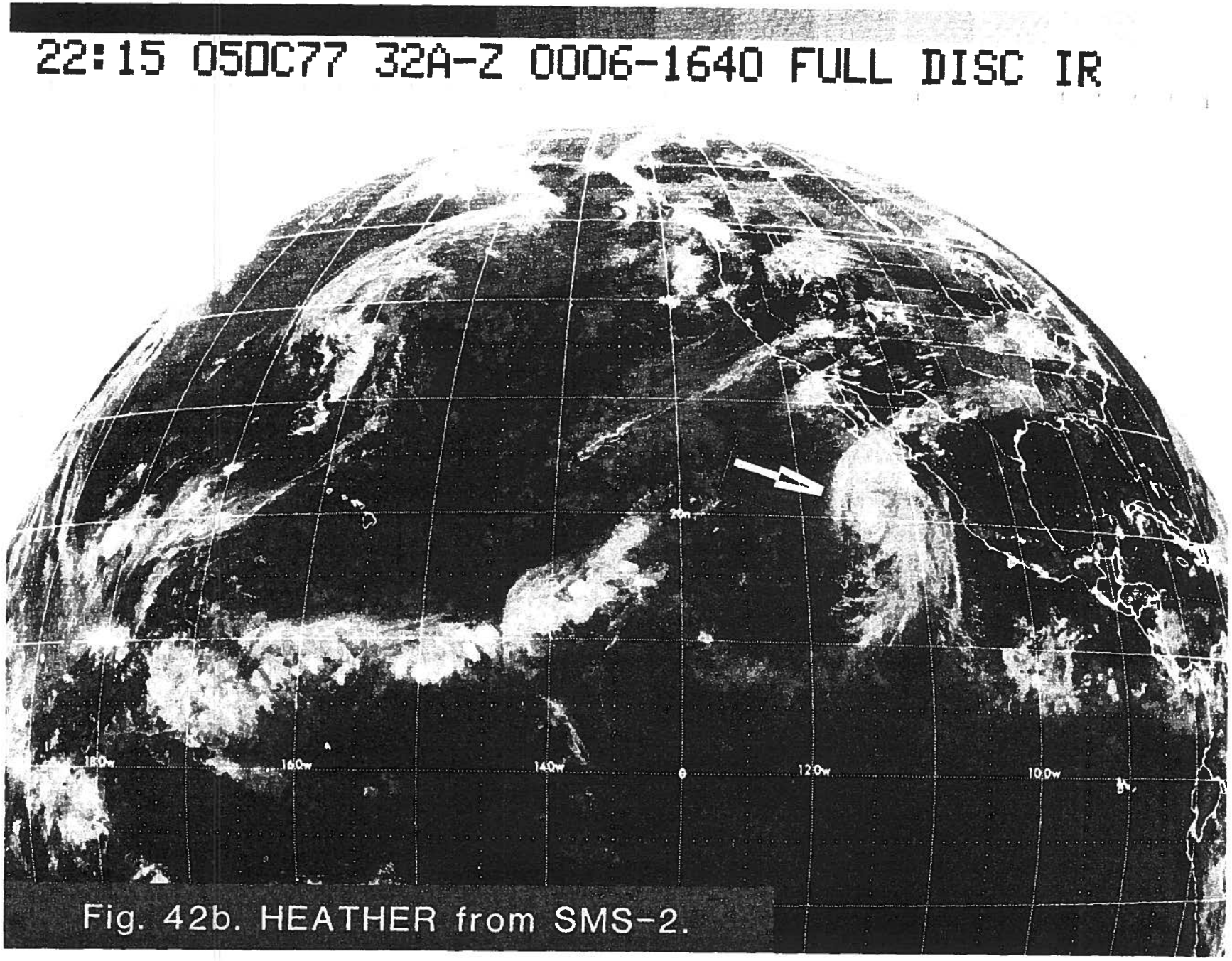

Fig. 42b. HEATHER from SMS-2.

FLIGHT LOG

Date:	October 5, 1977
Flight Identification:	771005F
Aircraft:	C-130B/N6541C
Departed:	Guadalajara, Mexico, at 05/1925Z
Arrived:	Guadalajara, Mexico, at 06/0130Z
Purpose:	Hurricane HEATHER research
Pattern:	Fig. 12 (modified) at 10000 ft

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
RFC Standard	2	05/1928	06/0117
Original	1	05/1928	06/0117

EQUIPMENT STATUS: 771005F

SYSTEM	STATUS /	UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			
	INE 2	X			
	ONE	X			
	DUPL			X	
RADAR	NOSE	X			DWN at end of flt.
	LF			X	
	TAIL			X	
	DATA SYSTEM			X	
AWRS	DATA SYSTEM	X			
	TOTAL TEMP. 1	X			
	TOTAL TEMP. 2			X	
	DEW POINT	X			
	ATTACK ANGLE	X			
	SLIP ANGLE	X			
	ABS. PRESS.	X			
	DIFF. PRESS.	X			
	RADAR ALT.	X			
	J & W	X			
PMS	OAP 2DP	X			
	OAP 2DC			X	
	FSSP 100			X	
	DATA SYSTEM	X			
IPC		X			
FOIL		X			
CO_2 RADIOMETER				X	
MICROWAVE RADIOMETER				X	
SFC. RADIOMETER		X			
FORMVAR				X	
PHOTOGRAPHY	FWD			X	
	LS			X	
	RS			X	
	DWN			X	
AXBT	TUBES			X	
	RECEIVERS			X	
ODW				X	

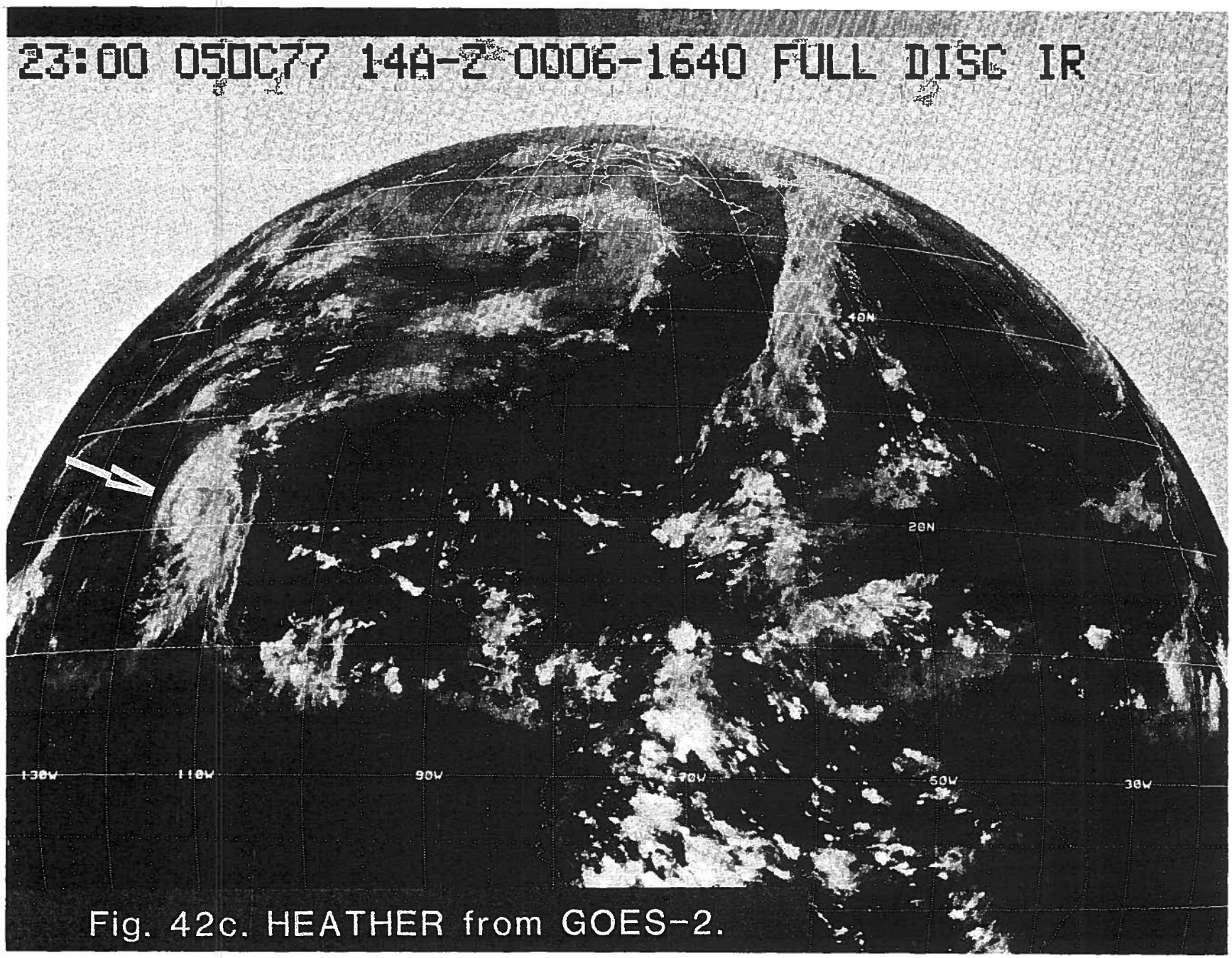

Fig. 42c. HEATHER from GOES-2.

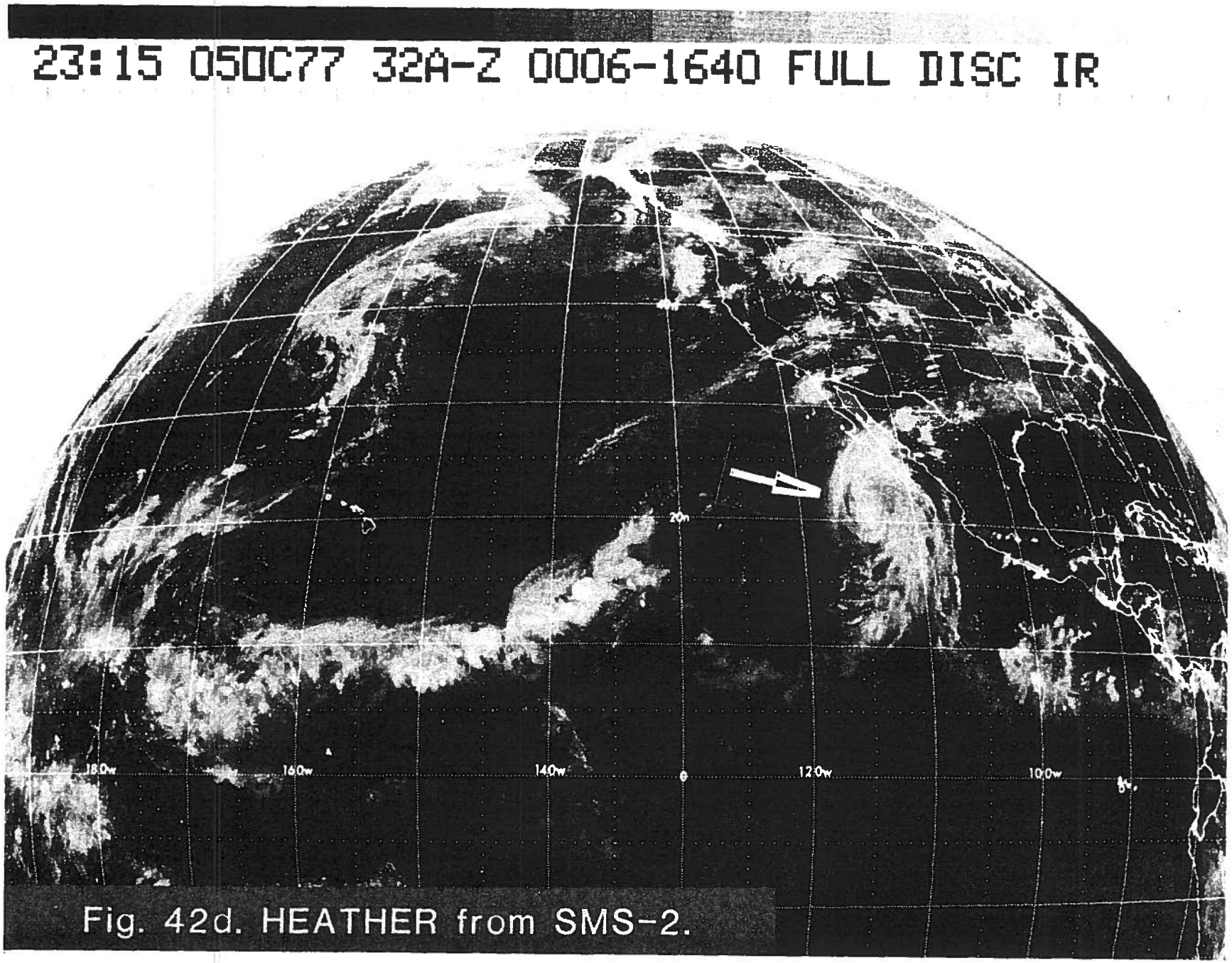

Fig. 42d. HEATHER from SMS-2.

FLIGHT LOG

Date:	October 5, 1977
Flight Identification:	771005H
Aircraft:	WP-3D/N42RF
Departed:	Guadalajara, Mexico, at 05/1925Z
Arrived:	Guadalajara, Mexico, at 06/0215Z
Purpose:	Hurricane HEATHER research
Pattern:	Fig. 12 (modified) at 20000 ft; Fig. 6 (modified) at 1500 ft

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
RFC Standard	2	05/1934	06/0208
Original	1	05/1934	06/0208
Radar	4	05/2126	06/0030
Knollenberg	6	-	-

EQUIPMENT STATUS: 771005H

SYSTEM	STATUS /	UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			
	INE 2	X			
	ONE	X			
	DOPL			X	
RADAR	NOSE	X			
	LF	X			
	TAIL	X			
	DATA SYSTEM	X			
RAMS	DATA SYSTEM	X			
	TOTAL TEMP. 1	X			
	TOTAL TEMP. 2	X			
	DEW POINT	X			
	ATTACK ANGLE	X			
	SLIP ANGLE	X			
	ABS. PRESS.	X			
	DIFF. PRESS.	X			
	RADAR ALT.	X			
	J & W	X			
PMS	OAP 2DP	X			
	OAP 2DC	X			
	FSSP 100	X			
	DATA SYSTEM	X			
IPC		X			
FOIL		X			
CO_2 RADIOMETER				X	
MICROWAVE RADIOMETER				X	
SFC. RADIOMETER		X			
FORMVAR				X	
PHOTOGRAPHY	FWD			X	
	LS			X	
	RS			X	
	DWN			X	
AXBT	TUBES			X	
	RECEIVERS			X	
ODW		X			One ODW test drop

8.3 1978 Data

Item	Storm	Page
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* See table 4 footnote.

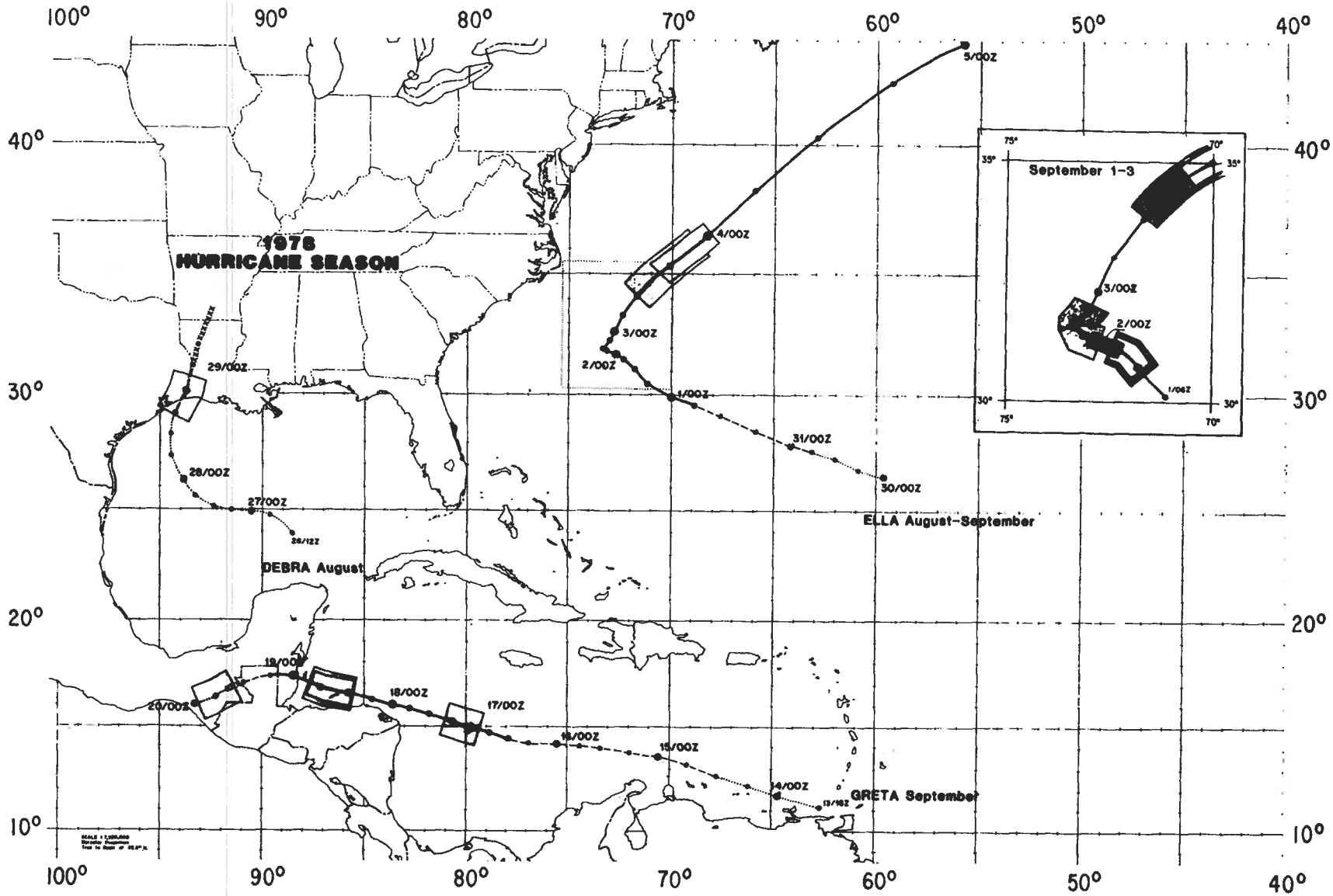

Fig. 43. Storm tracks and NHRL missions for DEBRA, ELLA, and GRETA.

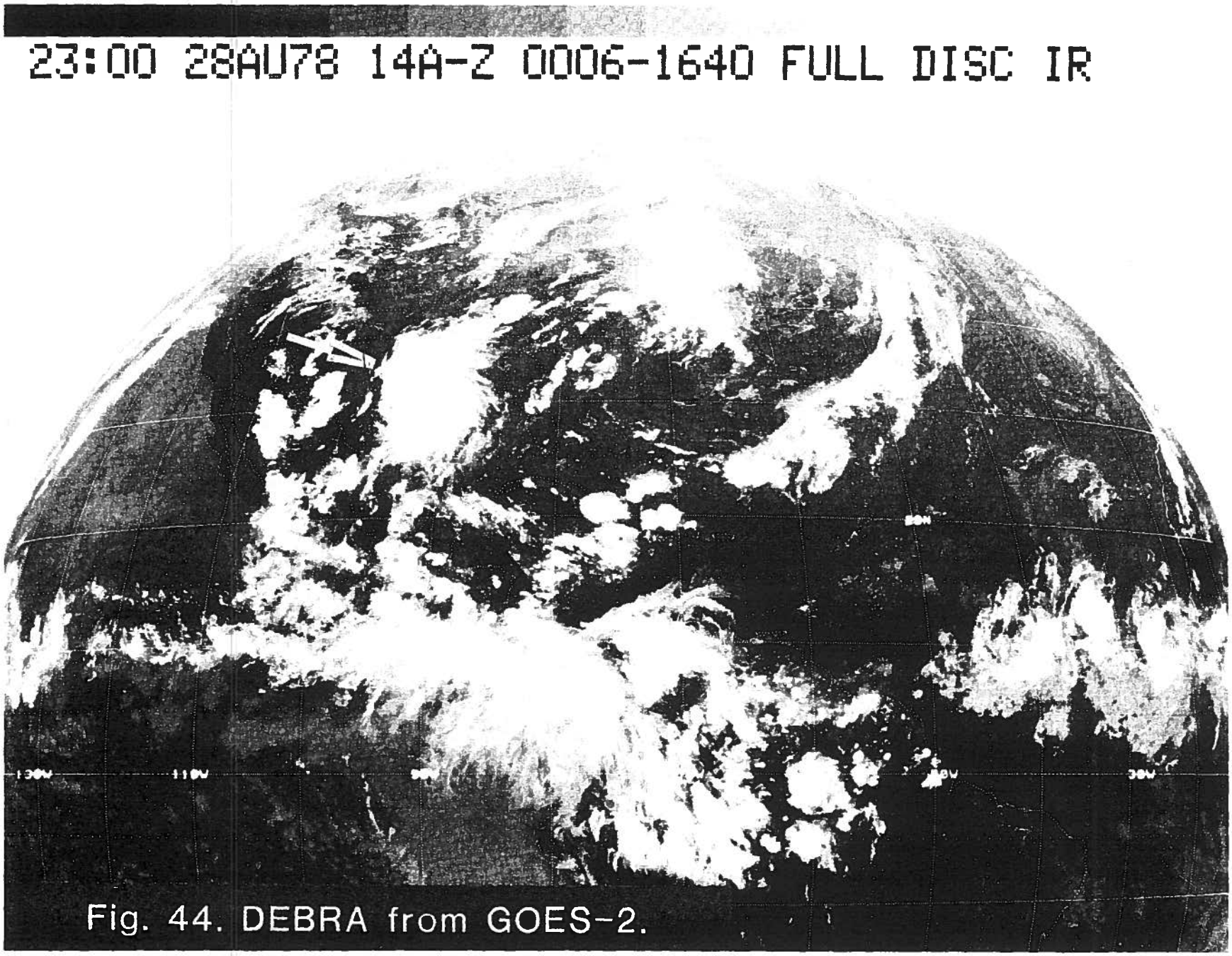

Fig. 44. DEBRA from GOES-2.

FLIGHT LOG

Date:	August 28, 1978
Flight Identification:	780828I
Aircraft:	WP-3D/N43RF
Departed:	Miami, Florida, at 28/1735Z
Arrived:	Miami, Florida, at 29/0345Z
Purpose:	Tropical Storm DEBRA research and reconnaissance
Pattern:	Along 26°N and within 10 miles of Louisiana coast for storm reconnaissance and AXBT drops; eye onshore; landed briefly in Houston, Texas, to repair broken antenna

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
RFC Standard	2	28/1751	29/0343
Slow	2	28/1751	29/0343
Radar	9	28/1848	29/0321
Fast	2	-	-

EQUIPMENT STATUS: 780828I

SYSTEM	STATUS /	UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			
	INE 2	X			
	ONE	X			
	DOPL			X	
RADAR	NOSE	X			
	LF	X			
	TAIL			X	
	DATA SYSTEM	X			
RAMS	DATA SYSTEM	X			
	TOTAL TEMP. 1	X			
	TOTAL TEMP. 2	X			
	DEW POINT	X			
	ATTACK ANGLE	X			
	SLIP ANGLE	X			
	ABS. PRESS.	X			
	DIFF. PRESS.	X			
	RADAR ALT.	X			
	J & W	X			
PMS	OAP 2DP	X			
	OAP 2DC	X			
	FSSP 100	X			
	DATA SYSTEM	X			No data recorded
IPC				X	
FOIL				X	
CO_2 RADIOMETER				X	
MICROWAVE RADIOMETER				X	
SFC. RADIOMETER		X			
FORMVAR				X	
PHOTOGRAPHY	FWD	X			
	LS	X			
	RS	X			
	DWN			X	
AXBT	TUBES	X			2 of 3 dropped NG
	RECEIVERS	X			
ODW				X	

15:00 01SE78 14A-Z 0006-1640 FULL DISC IR

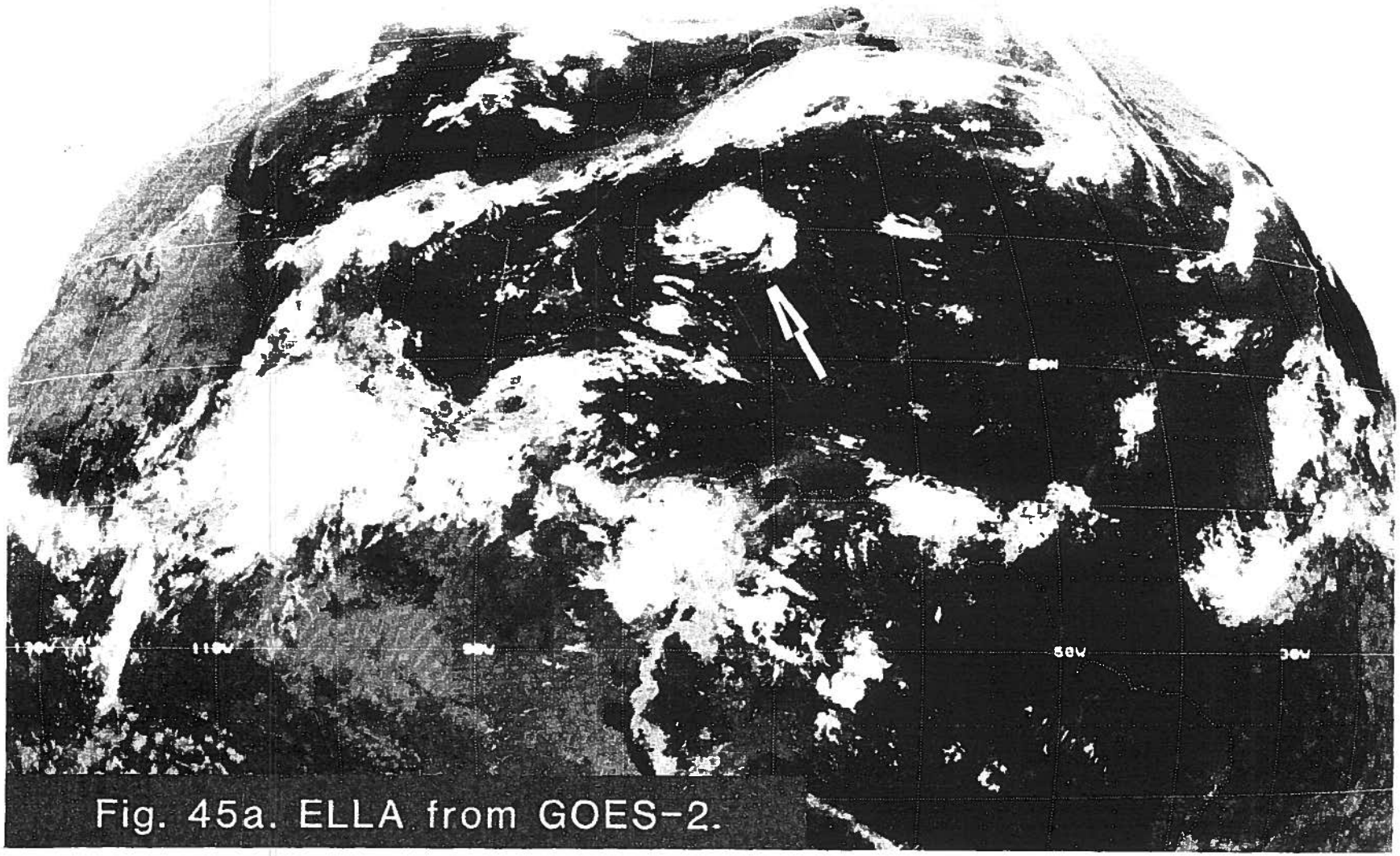

Fig. 45a. ELLA from GOES-2.

FLIGHT LOG

Date:	September 1, 1978
Flight Identification:	780901I
Aircraft:	WP-3D/N43RF
Departed:	Miami, Florida, at 01/1025Z
Arrived:	Miami, Florida, at 01/1940Z
Purpose:	Hurricane ELLA research (Long-Term Monitoring)
Pattern:	Diagonal pass through center at 1500 ft; circumnavigation of storm at 700 ft

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
RFC Standard	2	01/0930	01/1930
Original	1	01/0930	01/1935
Radar	6	01/1045	01/1745
Knollenberg	6	-	-

EQUIPMENT STATUS: 780901I

SYSTEM	STATUS /	UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			
	INE 2	X			
	ONE	X			
	DOPL			X	
RADAR	NOSE	X			
	LF	X			
	TAIL			X	
	DATA SYSTEM	X			Tape unit No. 2 INOP
RAMS	DATA SYSTEM	X			
	TOTAL TEMP. 1	X			
	TOTAL TEMP. 2	X			
	DEW POINT	X			
	ATTACK ANGLE	X			
	SLIP ANGLE	X			
	ABS. PRESS.	X			
	DIFF. PRESS.	X			
	RADAR ALT.	X			
	J & W	X			
PMS	OAP 2DP	X			
	OAP 2DC	X			
	FSSP 100	X			
	DATA SYSTEM	X			
IPC				X	
FOIL				X	
CO_2 RADIOMETER				X	
MICROWAVE RADIOMETER				X	
SFC. RADIOMETER		X			
FORMVAR				X	
PHOTOGRAPHY	FWD	X			
	LS	X			
	RS	X			
	DWN	X			
AXBT	TUBES	X			
	RECEIVERS	X			
ODW				X	

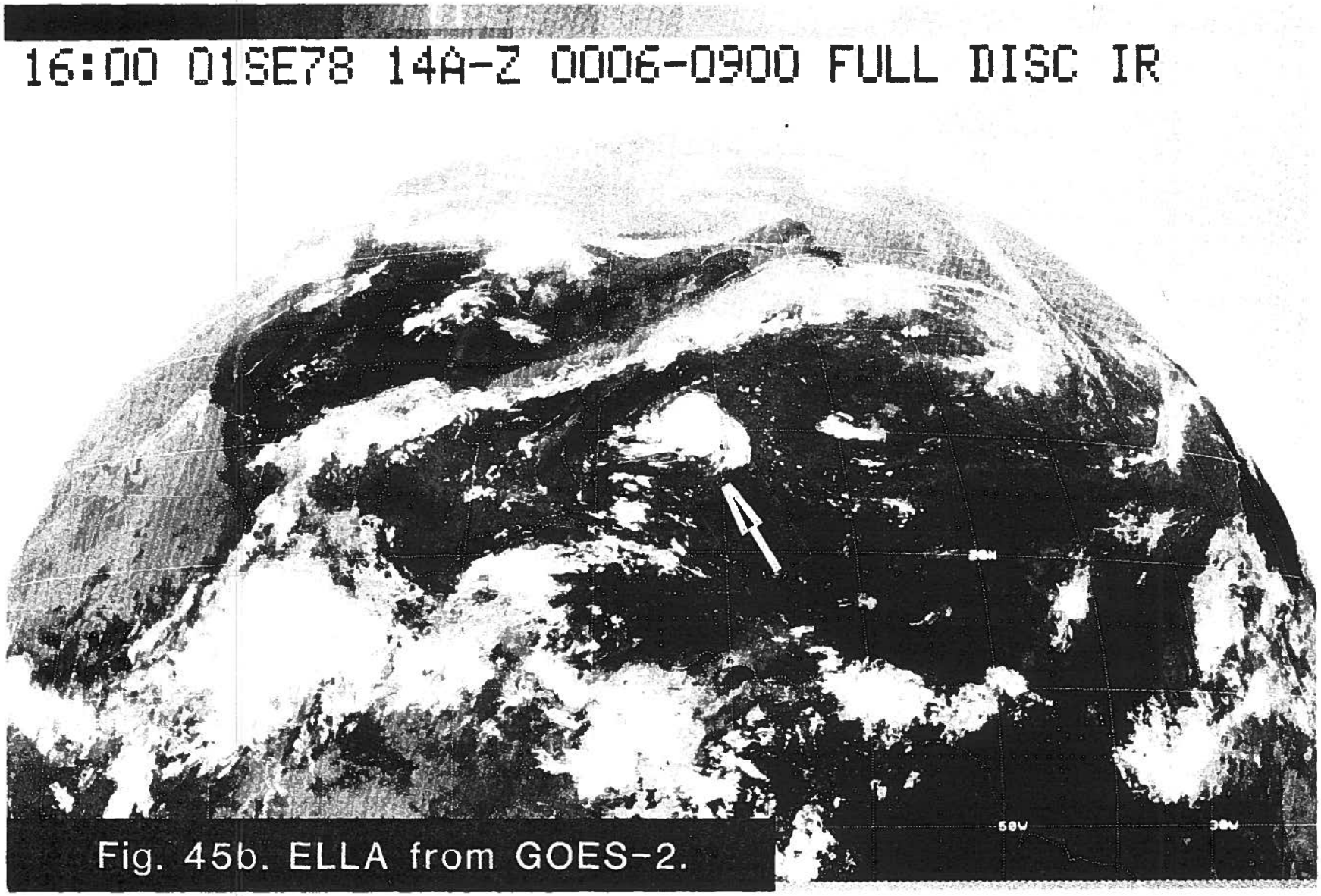

Fig. 45b. ELLA from GOES-2.

FLIGHT LOG

Date:	September 1, 1978
Flight Identification:	780901F
Aircraft:	C-130B/N6541C
Departed:	Miami, Florida, at 01/1135Z
Arrived:	Miami, Florida, at 01/1945Z
Purpose:	Hurricane ELLA research (Cloud Physics)
Pattern:	Fig. 11 and Fig. 12 (modified) at 20000 and 24000 ft; 01/18Z operational fix for NHC at 10000 ft

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
RFC Standard	1	01/1137	01/1943
Original	2	01/1137	01/1943
Cloud Physics	1	-	-
Radar	2	01/1144	01/1828

EQUIPMENT STATUS: 780901F

SYSTEM	STATUS /	UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			
	INE 2			X	
	ONE	X			
	DOPL			X	
RADAR	NOSE	X			
	LF			X	
	TAIL			X	
	DATA SYSTEM	X			
AWRS	DATA SYSTEM	X			
	TOTAL TEMP. 1	X			
	TOTAL TEMP. 2			X	
	DEW POINT	X			
	ATTACK ANGLE	X			
	SLIP ANGLE	X			
	ABS. PRESS.	X			
	DIFF. PRESS.	X			
	RADAR ALT.	X			
	J & W		X		
PMS	OAP 2DP	X			
	OAP 2DC			X	
	FSSP 100			X	
	DATA SYSTEM	X			
IPC			X		
FOIL		X			
CO_2 RADIOMETER				X	
MICROWAVE RADIOMETER				X	
SFC. RADIOMETER		X			
FORMVAR		X			
PHOTOGRAPHY	FWD	X			
	LS	X			
	RS	X			
	DWN			X	
AXBT	TUBES			X	
	RECEIVERS			X	
ODW		X			All sondes failed

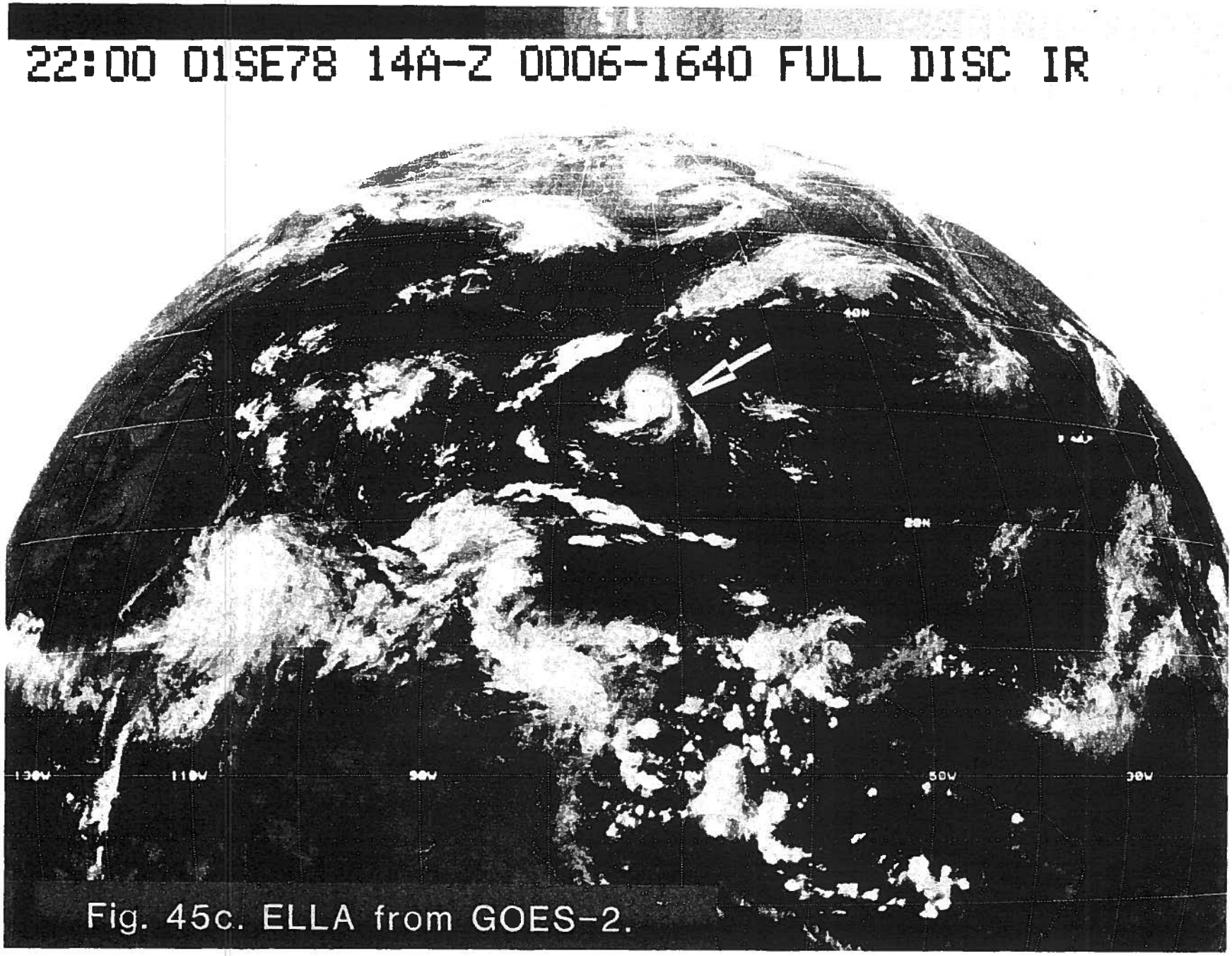

Fig. 45c. ELLA from GOES-2.

FLIGHT LOG

Date:	September 1, 1978
Flight Identification:	780901H
Aircraft:	WP-3D/N42RF
Departed:	Miami, Florida, at 01/1705Z
Arrived:	Miami, Florida, at 02/0315Z
Purpose:	Hurricane ELLA research
Pattern:	Fig. 11 at 20000 and 24000 ft; Fig. 12 (modified) at 18000 and 24000 ft

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
RFC Standard	2	01/1930	02/0310
Slow	1	01/1930	02/0310
Radar	11	01/1724	02/0221
Fast	4	01/1924	02/0200
Knollenberg	21	01/1851	02/0138

EQUIPMENT STATUS: 780901H

SYSTEM	STATUS /	UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			
	INE 2	X			
	ONE	X			
	DOPL			X	
RADAR	NOSE	X			
	LF	X			
	TAIL			X	
	DATA SYSTEM	X			
RAMS	DATA SYSTEM	X			
	TOTAL TEMP. 1	X			
	TOTAL TEMP. 2	X			
	DEW POINT	X			
	ATTACK ANGLE	X			
	SLIP ANGLE	X			
	ABS. PRESS.	X			
	DIFF. PRESS.	X			
	RADAR ALT.	X			
	J & W	X			
PMS	OAP 2DP	X			
	OAP 2DC	X			
	FSSP 100	X			
	DATA SYSTEM	X			
IPC		X			
FOIL		X			
CO_2 RADIOMETER				X	
MICROWAVE RADIOMETER				X	
SFC. RADIOMETER		X			
FORMVAR		X			
PHOTOGRAPHY	FWD	X			
	LS	X			
	RS	X			
	DWN			X	
AXBT	TUBES			X	
	RECEIVERS			X	
ODW		X			8 ODW's used

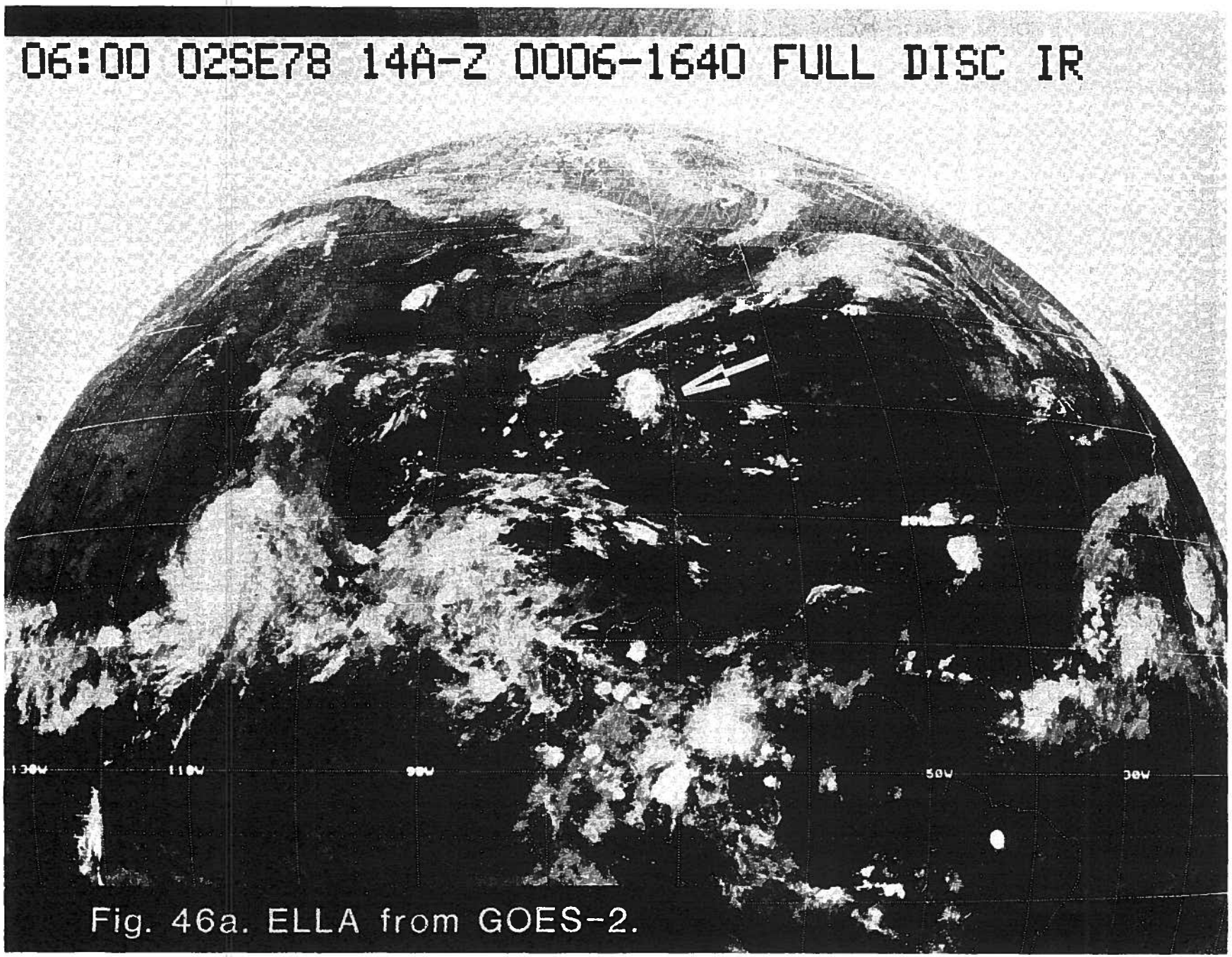

Fig. 46a. ELLA from GOES-2.

FLIGHT LOG

Date:	September 2, 1978
Flight Identification:	780902I
Aircraft:	WP-3D/N43RF
Departed:	Miami, Florida, at 02/0050Z
Arrived:	Miami, Florida, at 02/1115Z
Purpose:	Hurricane ELLA research/reconnaissance
Pattern:	Fig. 9 (modified) at 1500 ft; operational fixes at 02/03Z, 06Z and 09Z

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
RFC Standard	2	02/0114	02/1108
Fast	2	-	-
Radar	9	02/0113	02/1045
Knollenberg	12	02/0242	02/0953

EQUIPMENT STATUS: 780902I

SYSTEM	STATUS /	UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			
	INE 2	X			
	ONE	X			
	DOPL	X			
RADAR	NOSE	X			
	LF	X			
	TAIL			X	
	DATA SYSTEM	X			
RAMS	DATA SYSTEM	X			
	TOTAL TEMP. 1	X			
	TOTAL TEMP. 2	X			
	DEW POINT	X			
	ATTACK ANGLE	X			
	SLIP ANGLE	X			
	ABS. PRESS.	X			
	DIFF. PRESS.	X			
	RADAR ALT.	X			
	J & W	X			
PMS	OAP 2DP	X			
	OAP 2DC	X			
	FSSP 100	X			
	DATA SYSTEM	X			
IPC				X	
FOIL				X	
CO_2 RADIOMETER				X	
MICROWAVE RADIOMETER				X	
SFC. RADIOMETER		X			
FORMVAR				X	
PHOTOGRAPHY	FWD			X	
	LS			X	
	RS			X	
	DWN			X	
AXBT	TUBES	X			22 used
	RECEIVERS	X			
ODW				X	

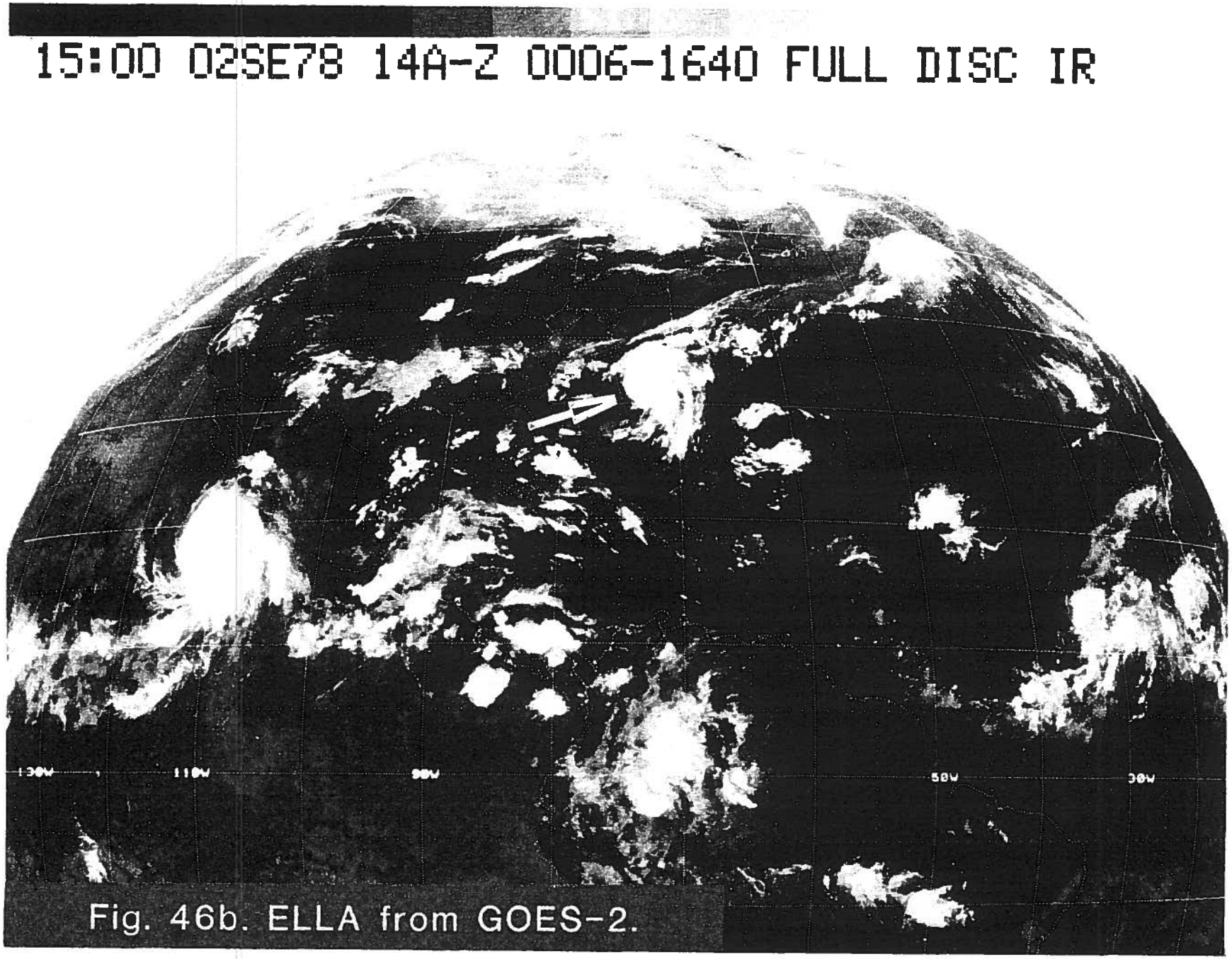

Fig. 46b. ELLA from GOES-2.

FLIGHT LOG

Date:	September 2, 1978
Flight Identification:	780902F
Aircraft:	C-130B/N6541C
Departed:	Miami, Florida, at 02/1110Z
Arrived:	Miami, Florida, at 02/1935Z
Purpose:	Hurricane ELLA research
Pattern:	Fig. 11 and Fig. 12 (modified) at 20000 ft

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
RFC Standard	1	02/1119	02/1918
Original	2	02/1119	02/1918
Radar	2	02/1134	02/1746
Cloud Physics	1	-	-

EQUIPMENT STATUS: 780902F

SYSTEM	STATUS /	UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			
	INE 2	X			
	ONE	X			
	DOPL			X	
RADAR	NOSE	X			
	LF			X	
	TAIL			X	
	DATA SYSTEM	X			
AWRS	DATA SYSTEM	X			
	TOTAL TEMP. 1	X			
	TOTAL TEMP. 2			X	
	DEW POINT	X			
	ATTACK ANGLE	X			
	SLIP ANGLE	X			
	ABS. PRESS.	X			
	DIFF. PRESS.	X			
	RADAR ALT.	X			
	J & W	X			
PMS	OAP 2DP	X			
	OAP 2DC			X	
	FSSP 100			X	
	DATA SYSTEM	X			
IPC		X			
FOIL		X			
CO_2 RADIOMETER				X	
MICROWAVE RADIOMETER				X	
SFC. RADIOMETER		X			
FORMVAR		X			
PHOTOGRAPHY	FWD	X			
	LS	X			
	RS	X			
	DWN			X	
AXBT	TUBES			X	
	RECEIVERS			X	
ODW				X	

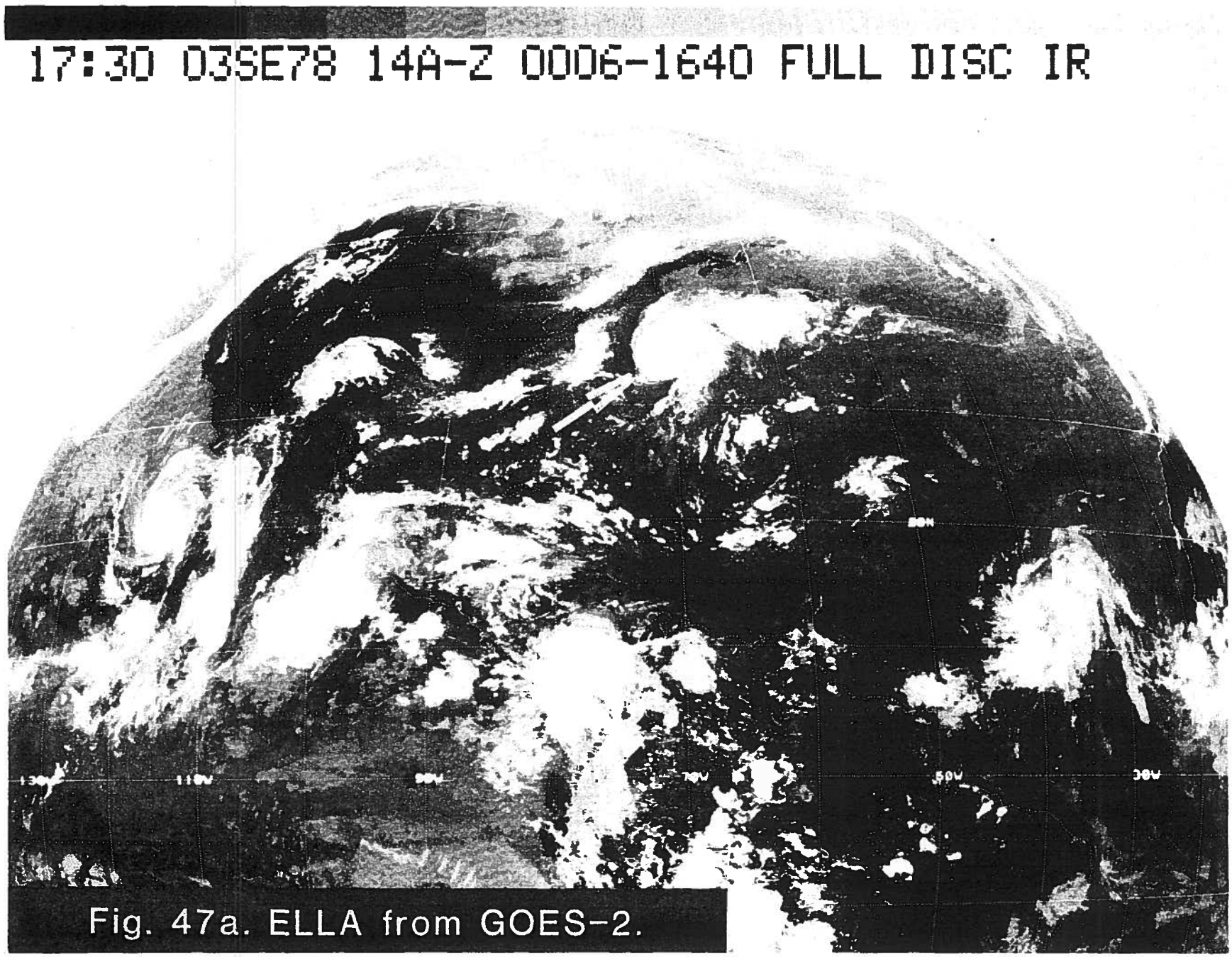

Fig. 47a. ELLA from GOES-2.

FLIGHT LOG

Date:	September 3, 1978
Flight Identification:	780903I
Aircraft:	WP-3D/N43RF
Departed:	Miami, Florida, at 03/1215Z
Arrived:	Miami, Florida, at 03/2240Z
Purpose:	Hurricane ELLA research
Pattern:	Fig. 9 (modified) -- penetrations at 1500 ft, circumnavigation at 200 to 1000 ft

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
RFC Standard	2	03/1227	03/2237
Fast	7	03/1415	03/2101
Slow	1	03/1227	03/2237
Radar	8	03/1309	03/1958

EQUIPMENT STATUS: 780903I

SYSTEM	STATUS /	UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			
	INE 2	X			
	ONE	X			
	DOPL	X			
RADAR	NOSE	X			
	LF	X			
	TAIL			X	
	DATA SYSTEM	X			Tape unit No. 2 INOP
RAMS	DATA SYSTEM	X			
	TOTAL TEMP. 1	X			
	TOTAL TEMP. 2	X			
	DEW POINT	X			
	ATTACK ANGLE	X			
	SLIP ANGLE	X			
	ABS. PRESS.	X			
	DIFF. PRESS.	X			
	RADAR ALT.	X			
	J & W	X			
PMS	OAP 2DP			X	
	OAP 2DC			X	
	FSSP 100			X	
	DATA SYSTEM			X	
IPC				X	
FOIL				X	
CO_2 RADIOMETER				X	
MICROWAVE RADIOMETER				X	
SFC. RADIOMETER		X			
FORMVAR				X	
PHOTOGRAPHY	FWD	X			
	LS	X			
	RS	X			
	DWN	X			
AXBT	TUBES	X			
	RECEIVERS	X			
ODW				X	

20:01 03SE78 14A-Z 0006-1640 FULL DISC IR

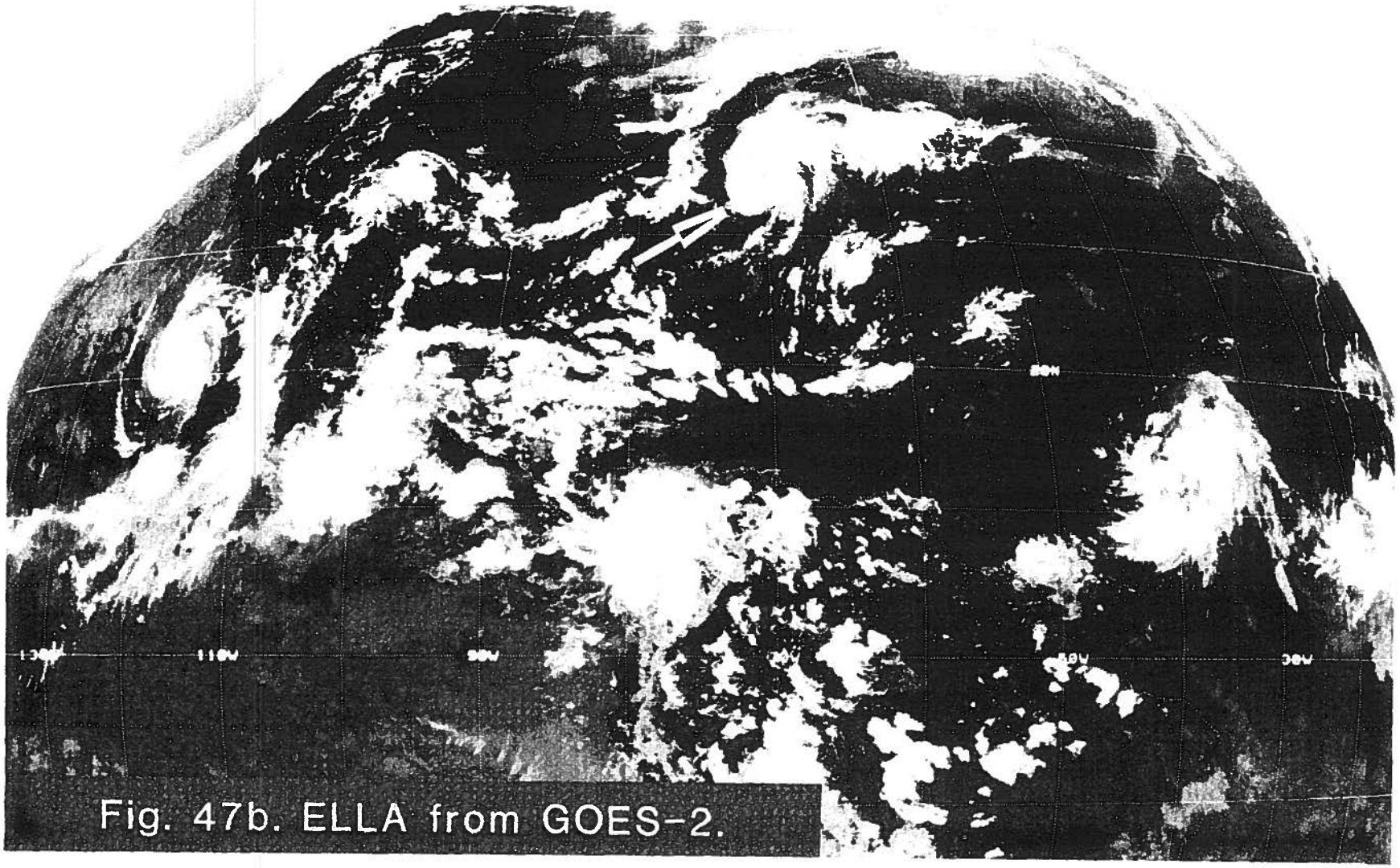

Fig. 47b. ELLA from GOES-2.

FLIGHT LOG

Date:	September 3, 1978
Flight Identification:	780903F
Aircraft:	C-130B/N6541C
Departed:	Miami, Florida, at 03/1610Z
Arrived:	Miami, Florida, at 04/0025Z
Purpose:	Hurricane ELLA research
Pattern:	Fig. 6 (modified) at 18000; operational fix 03/21Z at 1500 ft

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
RFC Standard	1	03/1615	04/0019
Original	2	03/1615	04/0019
Radar	1	03/1811	03/2220
Cloud Physics	13	-	-

EQUIPMENT STATUS: 780903F

SYSTEM	STATUS /	UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			
	INE 2	X			
	ONE	X			
	DOPL			X	
RADAR	NOSE	X			
	LF			X	
	TAIL			X	
	DATA SYSTEM	X			
AWRS	DATA SYSTEM	X			
	TOTAL TEMP. 1	X			
	TOTAL TEMP. 2	X			
	DEW POINT	X			
	ATTACK ANGLE	X			
	SLIP ANGLE	X			
	ABS. PRESS.	X			
	DIFF. PRESS.	X			
	RADAR ALT.	X			
	J & W	X			
PMS	OAP 2DP	X			
	OAP 2DC			X	
	FSSP 100			X	
	DATA SYSTEM	X			
IPC		X			
FOIL			X		
CO_2 RADIOMETER				X	
MICROWAVE RADIOMETER				X	
SFC. RADIOMETER		X			
FORMVAR		X			
PHOTOGRAPHY	FWD	X			
	LS	X			
	RS	X			
	DWN		X		
AXBT	TUBES			X	
	RECEIVERS			X	
ODW		X			

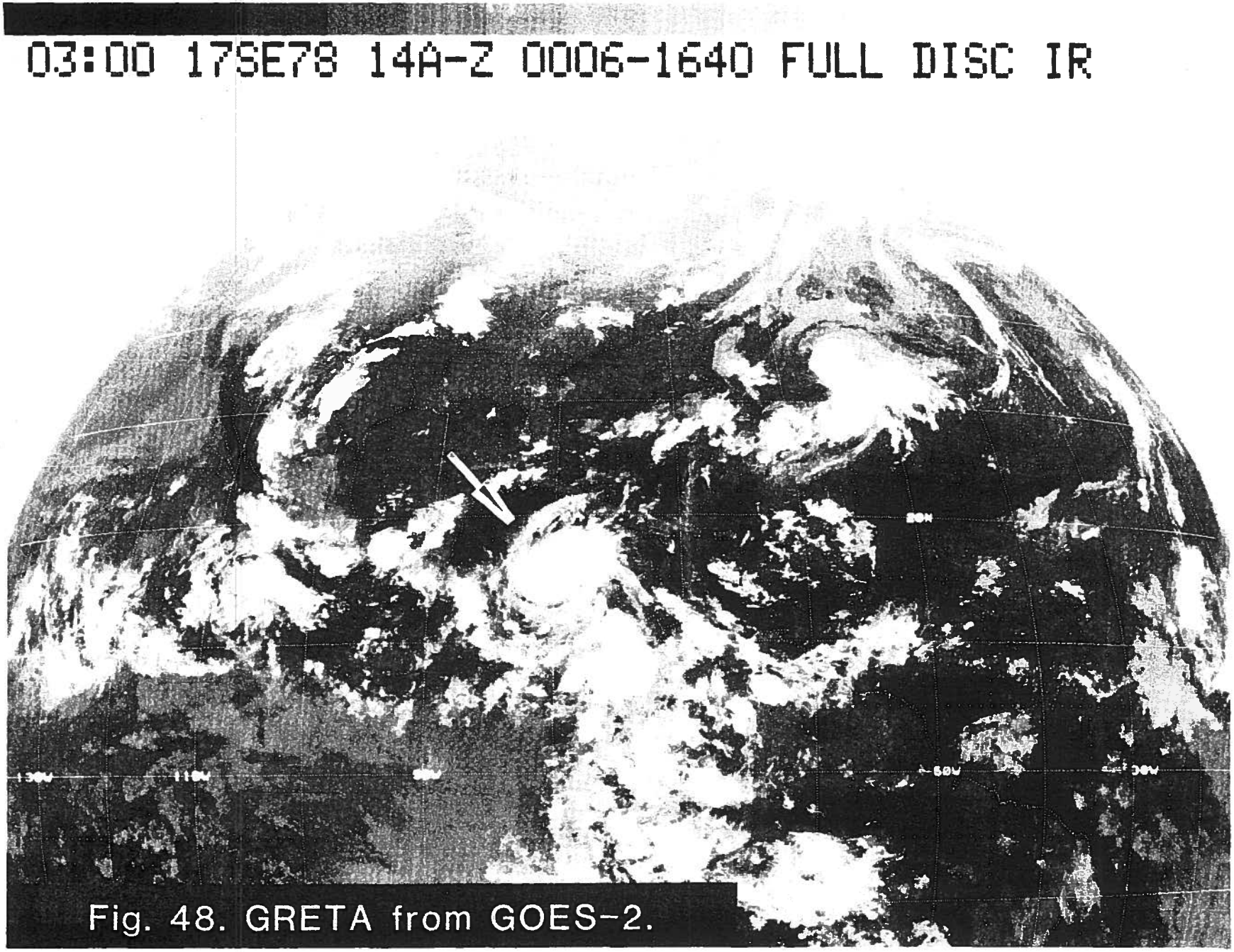

Fig. 48. GRETA from GOES-2.

FLIGHT LOG

Date:	September 16, 1978
Flight Identification:	780916I
Aircraft:	WP-3D/N43RF
Departed:	Miami, Florida, at 16/2130Z
Arrived:	Miami, Florida, at 17/0800Z
Purpose:	Hurricane GRETA research and reconnaissance
Pattern:	Fig. 11 at 1500 ft; operational fixes at 5000 ft

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
RFC Standard	2	16/2145	17/0755
Fast	2	17/0100	-
Original	1	16/2145	17/0755
Radar	11	16/2148	17/0734
Knollenberg	11*	16/2256	17/0555

*Not in library

EQUIPMENT STATUS: 780916I

SYSTEM	STATUS /	UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			
	INE 2	X			
	ONE	X			
	DOPL			X	
RADAR	NOSE	X			
	LF	X			
	TAIL			X	
	DATA SYSTEM	X			
RAMS	DATA SYSTEM	X			
	TOTAL TEMP. 1	X			
	TOTAL TEMP. 2	X			
	DEW POINT	X			
	ATTACK ANGLE	X			
	SLIP ANGLE	X			
	ABS. PRESS.	X			
	DIFF. PRESS.	X			
	RADAR ALT.	X			
	J & W	X			
PMS	OAP 2DP	X			
	OAP 2DC	X			
	FSSP 100	X			
	DATA SYSTEM	X			
IPC				X	
FOIL				X	
CO_2 RADIOMETER				X	
MICROWAVE RADIOMETER				X	
SFC. RADIOMETER		X			
FORMVAR				X	
PHOTOGRAPHY	FWD	X			
	LS	X			
	RS	X			
	DWN			X	
AXBT	TUBES	X			
	RECEIVERS	X			
ODW				X	

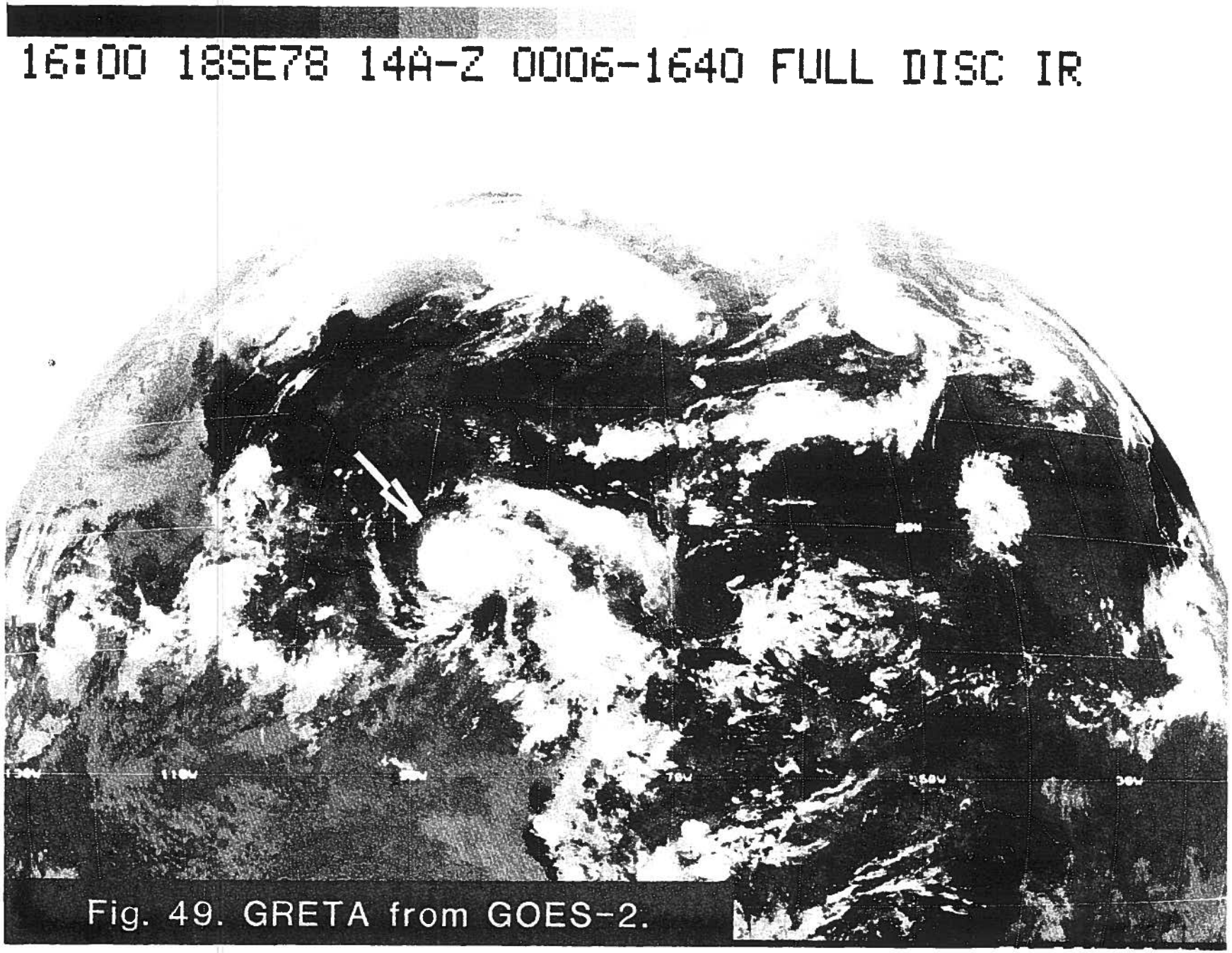

Fig. 49. GRETA from GOES-2.

FLIGHT LOG

Date:	September 18, 1978
Flight Identification:	780918F
Aircraft:	C-130B/N6541C
Departed:	Miami, Florida, at 18/1126Z
Arrived:	Miami, Florida, at 18/2000Z
Purpose:	Hurricane GRETA research
Pattern:	Fig. 6 at 20000 ft (modified due to proximity to land)

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
RFC Standard	1	18/1130	18/1952
Original	2	18/1130	18/1952
Radar	2	18/1155	18/1924

EQUIPMENT STATUS: 780918F

SYSTEM	STATUS /	UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			
	INE 2	X			
	ONE	X			
	DOPL			X	
RADAR	NOSE	X			
	LF			X	
	TAIL			X	
	DATA SYSTEM	X			
AWRS	DATA SYSTEM	X			
	TOTAL TEMP. 1	X			
	TOTAL TEMP. 2			X	
	DEW POINT	X			
	ATTACK ANGLE	X			
	SLIP ANGLE	X			
	ABS. PRESS.	X			
	DIFF. PRESS.	X			
	RADAR ALT.	X			
	J & W	X			
PMS	OAP 2DP	X			
	OAP 2DC			X	
	FSSP 100			X	
	DATA SYSTEM	X			
IPC		X			
FOIL		X			
CO_2 RADIOMETER				X	
MICROWAVE RADIOMETER				X	
SFC. RADIOMETER		X			
FORMVAR		X			
PHOTOGRAPHY	FWD	X			
	LS	X			
	RS	X			
	DWN			X	
AXBT	TUBES			X	
	RECEIVERS			X	
ODW		X			5 used

FLIGHT LOG

Date:	September 18, 1978
Flight Identification:	780918I
Aircraft:	WP-3D/N43RF
Departed:	Miami, Florida, at 18/1110Z
Arrived:	Miami, Florida, at 18/2035Z
Purpose:	Hurricane GRETA research
Pattern:	Fig. 6 (modified) at 1500 ft

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
RFC Standard	2	18/1120	18/2026
Slow	1	18/1120	18/2026
Fast	3	18/330	18/1808
Knollenberg	8	-	-
Radar	9	18/1115	18/1940

EQUIPMENT STATUS: 780918I

SYSTEM	STATUS /	UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			
	INE 2	X			
	ONE	X			
	DOPL			X	
RADAR	NOSE	X			
	LF	X			
	TAIL			X	
	DATA SYSTEM	X			
RAMS	DATA SYSTEM	X			
	TOTAL TEMP. 1	X			
	TOTAL TEMP. 2	X			
	DEW POINT	X			
	ATTACK ANGLE	X			
	SLIP ANGLE	X			
	ABS. PRESS.	X			
	DIFF. PRESS.	X			
	RADAR ALT.	X			
	J & W	X			
PMS	OAP 2DP	X			
	OAP 2DC	X			
	FSSP 100	X			
	DATA SYSTEM	X			
IPC		X			
FOIL				X	
CO_2 RADIOMETER				X	
MICROWAVE RADIOMETER				X	
SFC. RADIOMETER		X			
FORMVAR				X	
PHOTOGRAPHY	FWD	X			
	LS	X			
	RS	X			
	DWN	X			
AXBT	TUBES	X			
	RECEIVERS	X			
ODW				X	

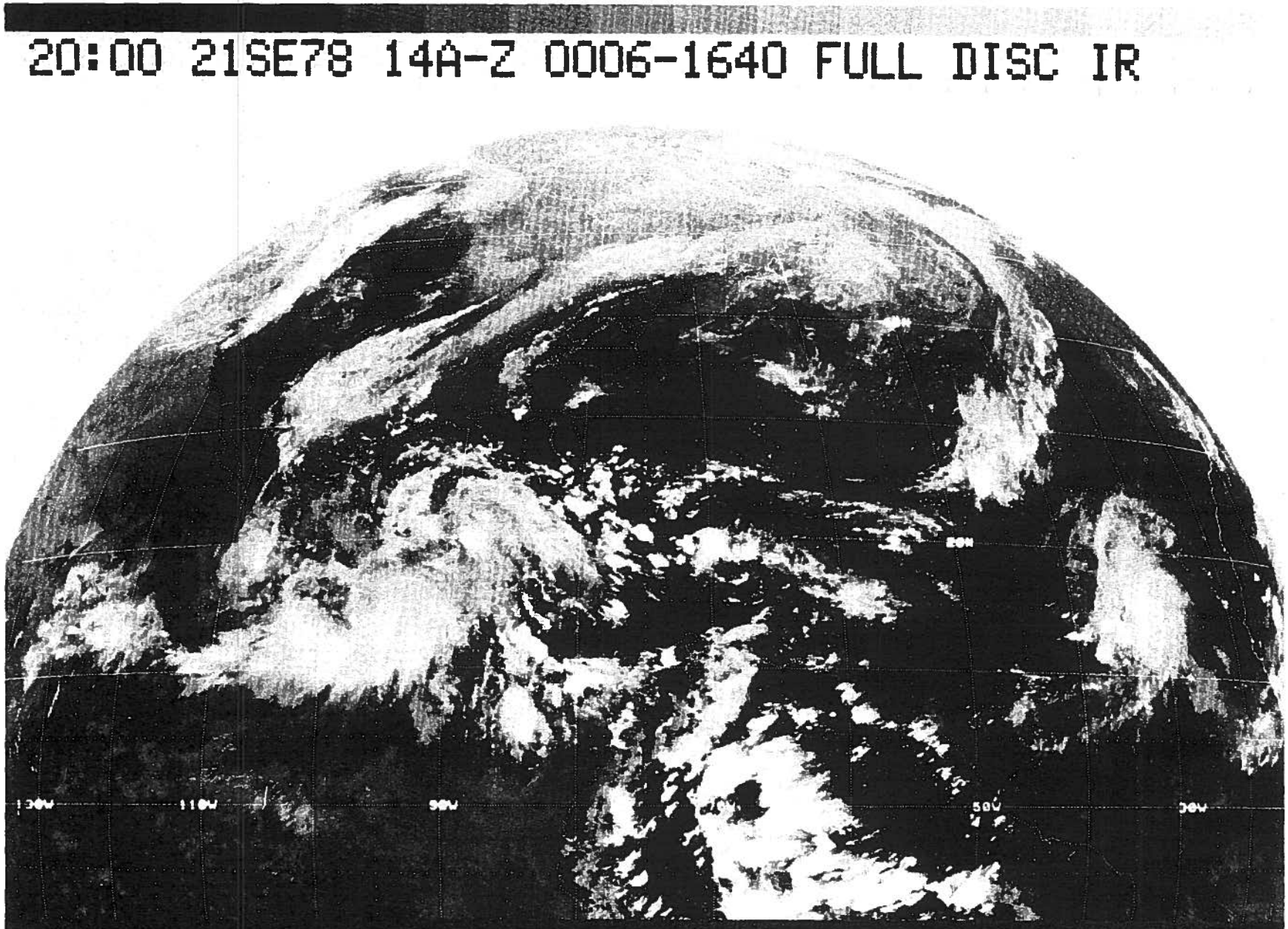

Fig. 50. Land/Ocean Cumulus Study (LOCUS) from GOES-2.

FLIGHT LOG

Date:	September 21, 1978
Flight Identification:	780921H
Aircraft:	WP-3D/N42RF
Departed:	Miami, Florida, at 21/1825Z
Arrived:	Miami, Florida, at 21/2145Z
Purpose:	LOCUS
Pattern:	Penetration of towering cumulus over south Florida and Atlantic Ocean from 14000 to 20000 ft

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
RFC Standard	1	21/1833	21/2143
Slow	1	21/1833	21/2143

EQUIPMENT STATUS: 780921H

SYSTEM	STATUS /	UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			
	INE 2	X			
	ONE	X			
	DOPL			X	
RADAR	NOSE	X			
	LF	X			
	TAIL			X	
	DATA SYSTEM	X			
RAMS	DATA SYSTEM	X			
	TOTAL TEMP. 1	X			
	TOTAL TEMP. 2	X			
	DEW POINT	X			
	ATTACK ANGLE	X			
	SLIP ANGLE	X			
	ABS. PRESS.	X			
	DIFF. PRESS.	X			
	RADAR ALT.	X			
	J & W	X			
PMS	OAP 2DP	X			
	OAP 2DC	X			
	FSSP 100	X			
	DATA SYSTEM	X			
IPC		X			
FOIL		X			
CO_2 RADIOMETER		X			
MICROWAVE RADIOMETER		X			
SFC. RADIOMETER				X	
FORMVAR		X			
PHOTOGRAPHY	FWD	X			
	LS	X			
	RS	X			
	DWN			X	
AXBT	TUBES			X	
	RECEIVERS			X	
ODW				X	

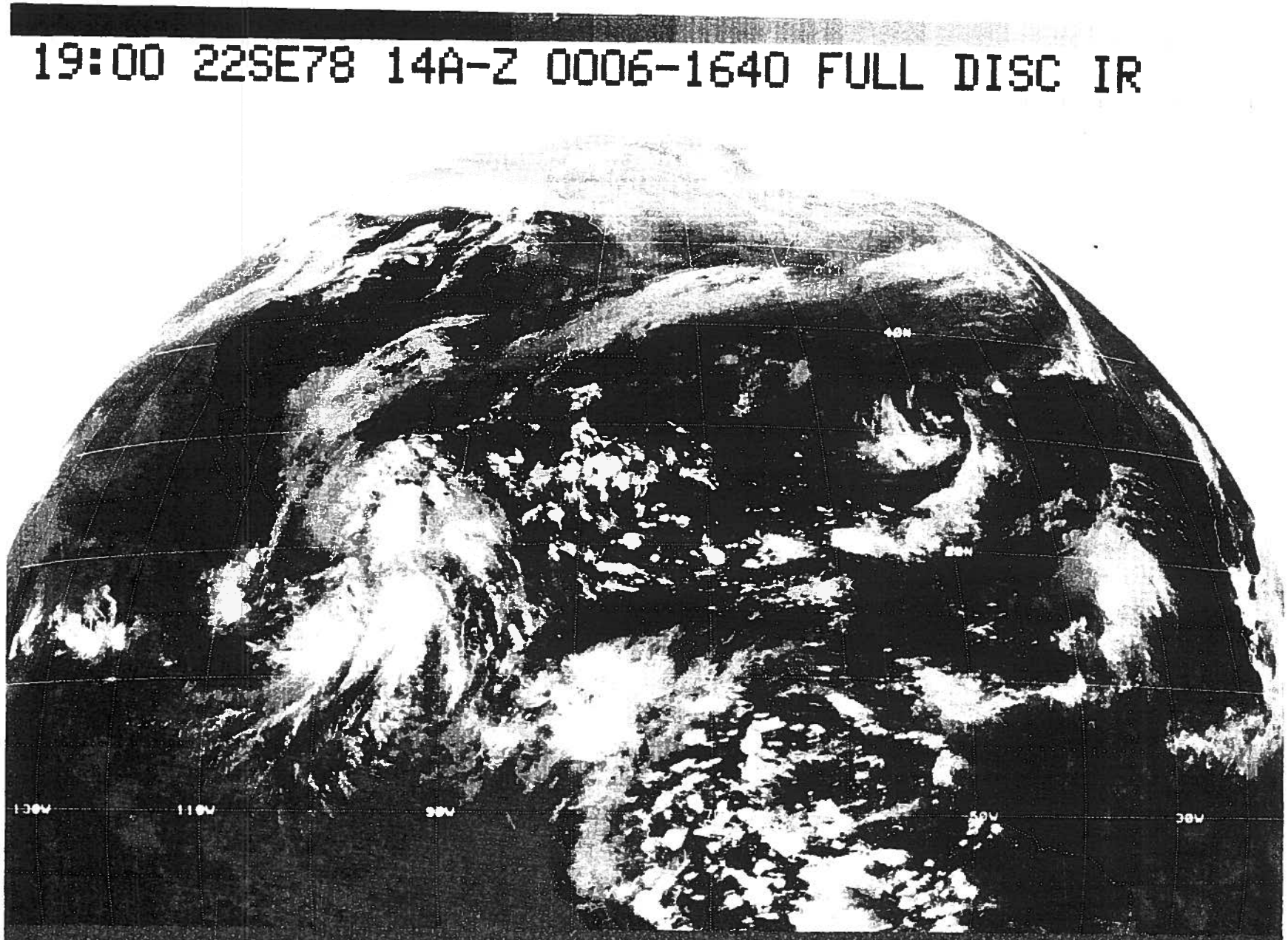

Fig. 51. Land/Ocean Cumulus Study (LOCUS) from GOES-2.

FLIGHT LOG

Date:	September 22, 1978
Flight Identification:	780922I
Aircraft:	WP-3D/N43RF
Departed:	Miami, Florida, at 22/1715Z
Arrived:	Miami, Florida, at 22/2120Z
Purpose:	LOCUS
Pattern:	Sounding over water, then flight at cloud base, under clouds being penetrated by WP-3D/N42RF

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
RFC Standard	1	22/1720	22/2117
Original	1	22/1720	22/2117
Radar	5	22/1716	22/2118
Fast	2	22/1942	22/2021

EQUIPMENT STATUS: 780922I

SYSTEM	STATUS /	UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			
	INE 2	X			
	ONE	X			
	DOPL			X	
RADAR	NOSE	X			
	LF	X			
	TAIL			X	
	DATA SYSTEM	X			
RAMS	DATA SYSTEM	X			
	TOTAL TEMP. 1	X			
	TOTAL TEMP. 2	X			
	DEW POINT	X			
	ATTACK ANGLE	X			
	SLIP ANGLE	X			
	ABS. PRESS.	X			
	DIFF. PRESS.	X			
	RADAR ALT.	X			
	J & W	X			
PMS	OAP 2DP	X			
	OAP 2DC	X			
	FSSP 100	X			
	DATA SYSTEM	X			
IPC		X			
FOIL		X			
CO_2 RADIOMETER				X	
MICROWAVE RADIOMETER				X	
SFC. RADIOMETER		X			
FORMVAR				X	
PHOTOGRAPHY	FWD	X			
	LS	X			
	RS	X			
	DWN	X			
AXBT	TUBES			X	
	RECEIVERS			X	
ODW				X	

FLIGHT LOG

Date:	September 22, 1978
Flight Identification:	780922H
Aircraft:	WP-3D/N42RF
Departed:	Miami, Florida, at 22/1735Z
Arrived:	Miami, Florida, at 22/2110Z
Purpose:	LOCUS
Pattern:	Penetration of towering cumulus clouds over water east of the south Florida peninsula from 14000 to 18000 ft

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
RFC Standard	1	22/1700	22/2100
Slow	1	22/1700	22/2100

EQUIPMENT STATUS: 780922H

SYSTEM	STATUS /	UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			
	INE 2		X		
	ONE	X			
	DOPL			X	
RADAR	NOSE	X			
	LF	X			
	TAIL			X	
	DATA SYSTEM	X			
RAMS	DATA SYSTEM	X			
	TOTAL TEMP. 1	X			
	TOTAL TEMP. 2	X			
	DEW POINT	X			
	ATTACK ANGLE	X			
	SLIP ANGLE	X			
	ABS. PRESS.	X			
	DIFF. PRESS.	X			
	RADAR ALT.	X			
	J & W	X			
PMS	OAP 2DP	X			
	OAP 2DC	X			
	FSSP 100	X			
	DATA SYSTEM	X			
IPC		X			
FOIL			X		
CO_2 RADIOMETER		X			
MICROWAVE RADIOMETER		X			
SFC. RADIOMETER		X			
FORMVAR		X			
PHOTOGRAPHY	FWD	X			
	LS	X			
	RS	X			
	DWN			X	
AXBT	TUBES			X	
	RECEIVERS			X	
ODW				X	

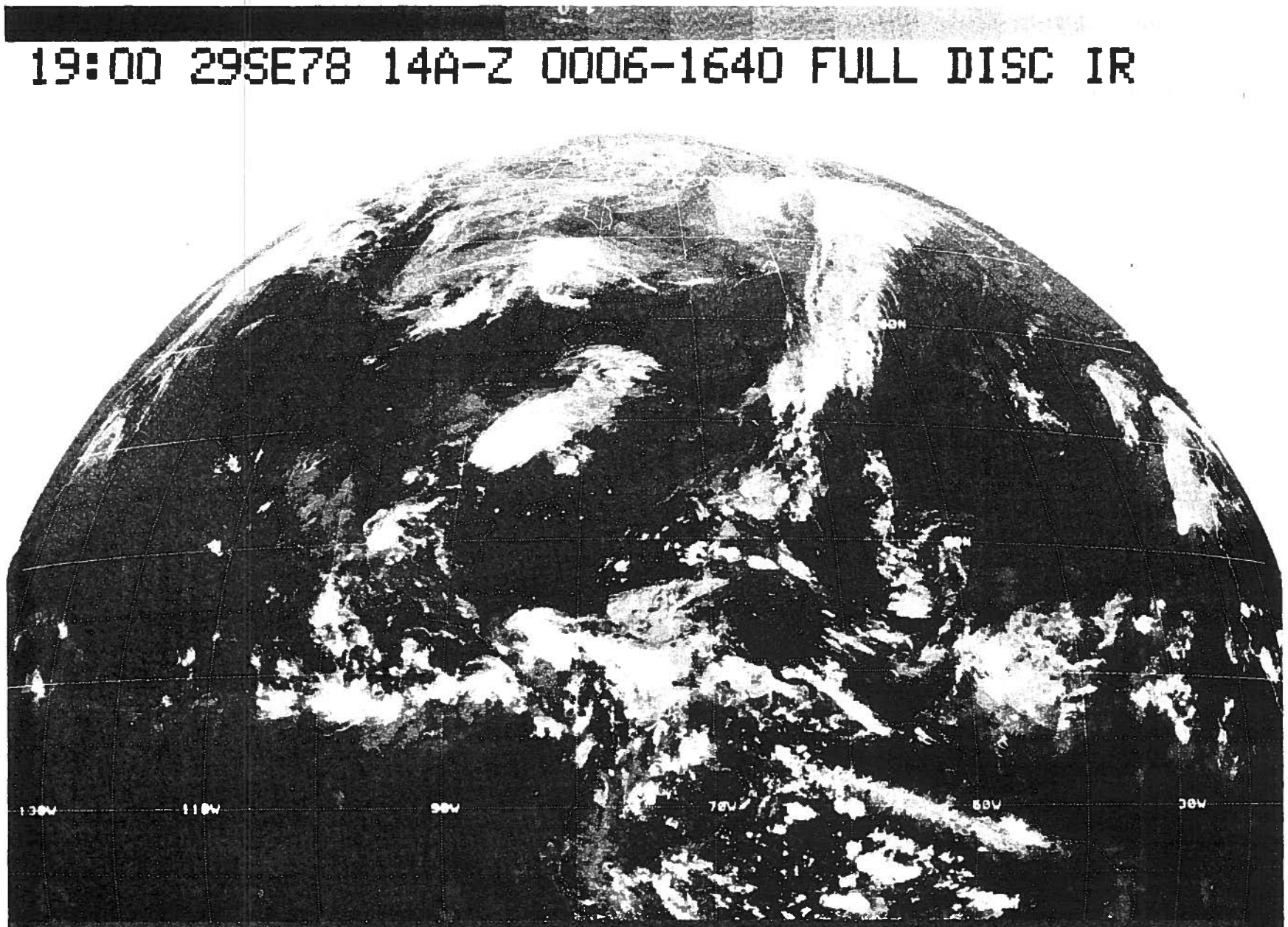

Fig. 52. Land/Ocean Cumulus Study (LOCUS) from GOES-2.

FLIGHT LOG

Date:	September 29, 1978
Flight Identification:	780929I
Aircraft:	WP-3D/N43RF
Departed:	Miami, Florida, at 29/1705Z
Arrived:	Miami, Florida, at 29/2050Z
Purpose:	LOCUS
Pattern:	Sounding over land and water; fly under clouds being penetrated by WP-3D/N42RF

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
RFC Standard	1	29/1706	29/2029
Original	1	29/1706	29/2029
Radar	3	29/1720	29/2036

EQUIPMENT STATUS: 780929I

SYSTEM	STATUS /	UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			
	INE 2	X			
	ONE	X			
	DOPL			X	
RADAR	NOSE	X			
	LF	X			
	TAIL			X	
	DATA SYSTEM	X			
RAMS	DATA SYSTEM	X			
	TOTAL TEMP. 1	X			
	TOTAL TEMP. 2	X			
	DEW POINT	X			
	ATTACK ANGLE	X			
	SLIP ANGLE	X			
	ABS. PRESS.	X			
	DIFF. PRESS.	X			
	RADAR ALT.	X			
	J & W	X			
PMS	OAP 2DP	X			
	OAP 2DC	X			
	FSSP 100	X			
	DATA SYSTEM	X			
IPC		X			
FOIL		X			
CO_2 RADIOMETER				X	
MICROWAVE RADIOMETER				X	
SFC. RADIOMETER		X			
FORMVAR		X			
PHOTOGRAPHY	FWD	X			
	LS	X			
	RS	X			
	DWN	X			
AXBT	TUBES			X	
	RECEIVERS			X	
ODW				X	

FLIGHT LOG

Date:	September 29, 1978
Flight Identification:	780929H
Aircraft:	WP-3D/N42RF
Departed:	Miami, Florida, at 29/1715Z
Arrived:	Miami, Florida, at 29/2100Z
Purpose:	LOCUS
Pattern:	Penetrated towering cumulus clouds over south Florida and adjacent Atlantic waters from 14000 to 20000 ft

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
RFC Standard	1	29/1724	29/2054
Original	1	29/1724	29/2054
Radar	2	29/1811	29/2038

EQUIPMENT STATUS: 780929H

SYSTEM	STATUS/	UP	DOWN	NOT USED
NAV	INE 1	X		
	INE 2	X		
	ONE	X		
	DOPL			X
RADAR	NOSE	X		
	LF	X		
	TAIL			X
	DATA SYSTEM	X		
RAMS	DATA SYSTEM	X		
	TOTAL TEMP. 1	X		
	TOTAL TEMP. 2	X		
	DEW POINT	X		
	ATTACK ANGLE	X		
	SLIP ANGLE	X		
	ABS. PRESS.	X		
	DIFF. PRESS.	X		
	RADAR ALT.	X		
	J & W	X		
PMS	OAP 2DP	X		
	OAP 2DC	X		
	FSSP 100	X		
	DATA SYSTEM	X		
IPC		X		
FOIL		X		
CO_2 RADIOMETER		X		
MICROWAVE RADIOMETER		X		
SFC. RADIOMETER				X
FORMVAR		X		
PHOTOGRAPHY	FWD	X		
	LS	X		
	RS	X		
	DWN			X
AXBT	TUBES			X
	RECEIVERS			X
ODW				X

8.4 1979 Data

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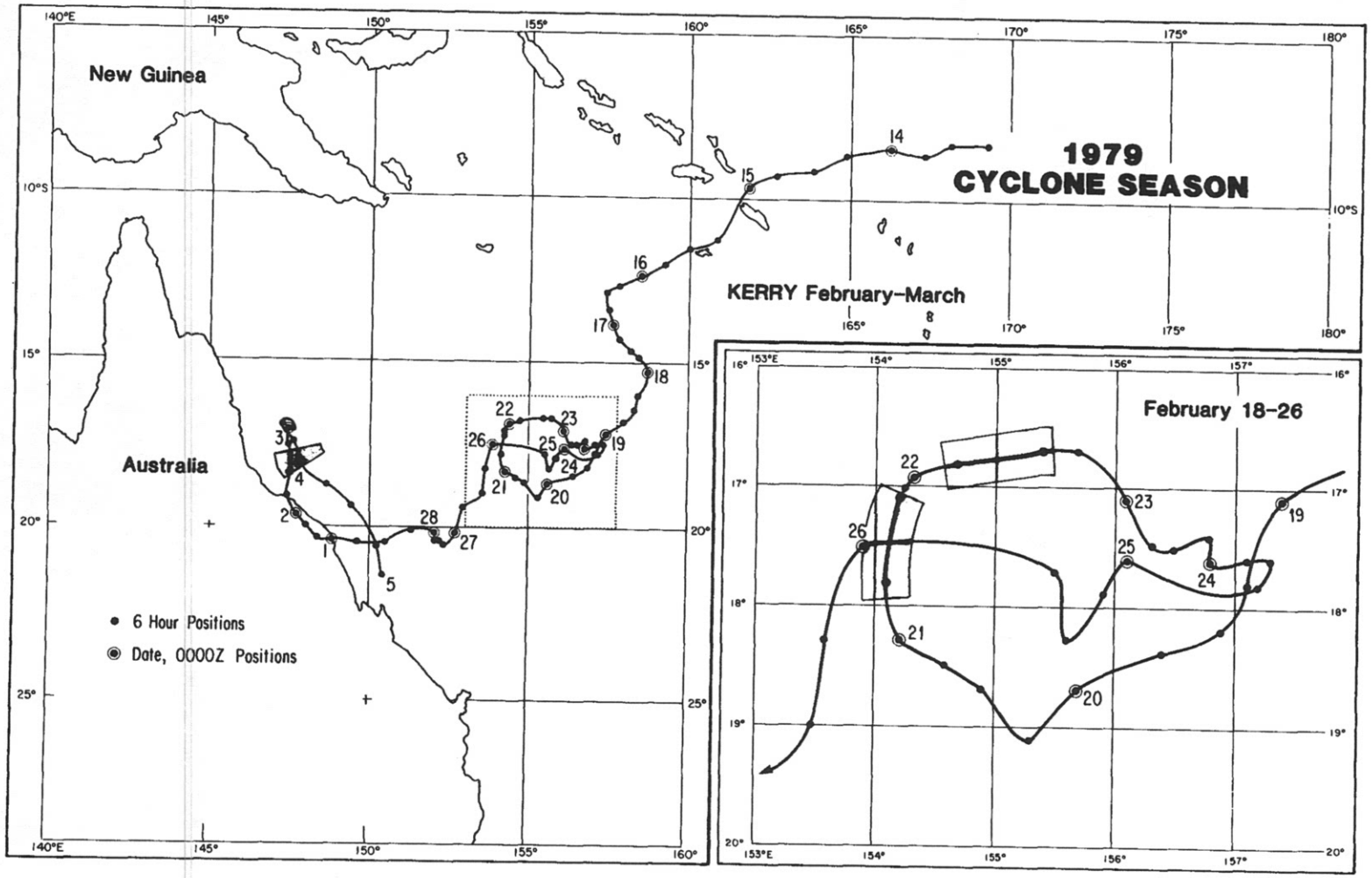

Fig. 53. Storm track and NHRL missions for KERRY.

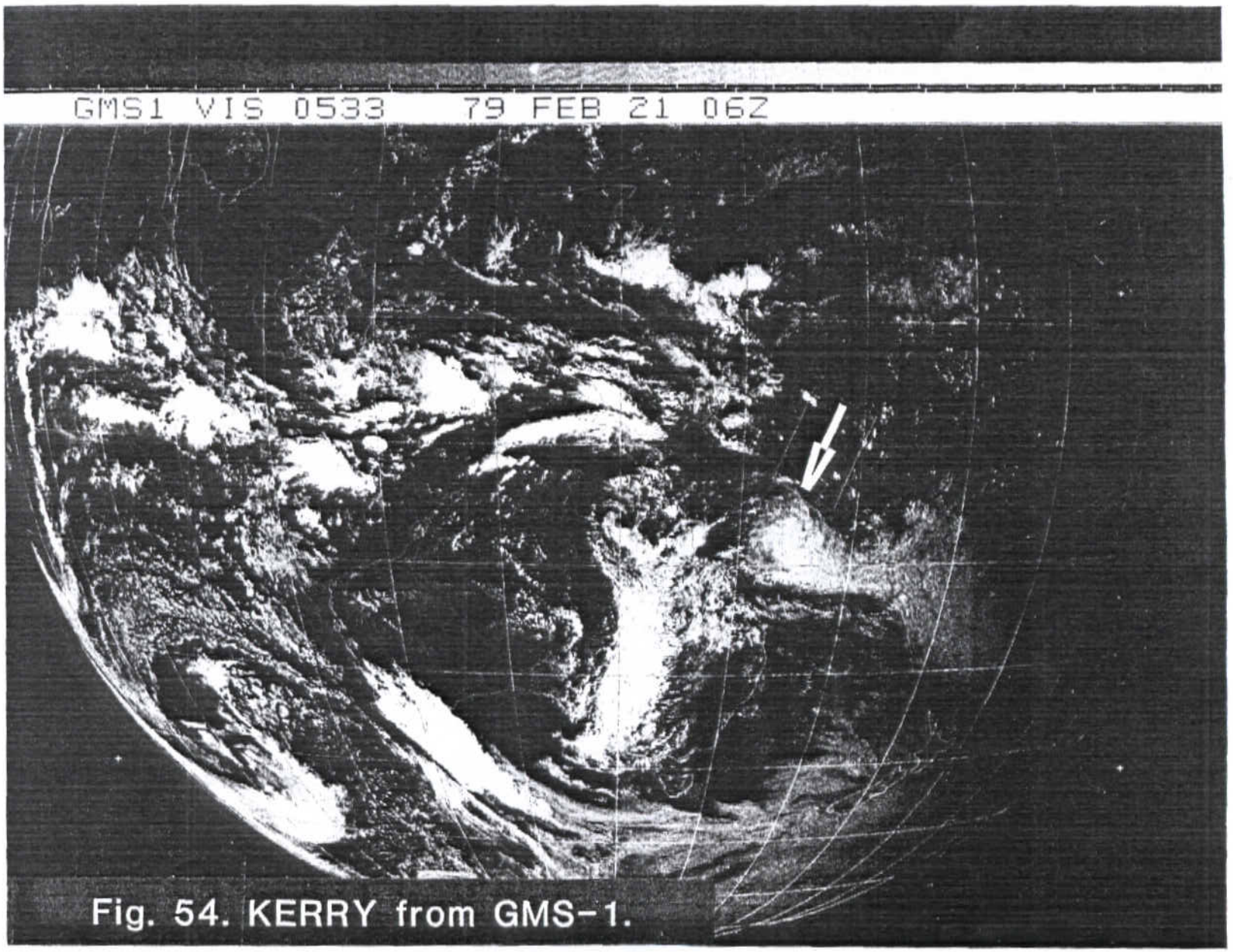

Fig. 54. KERRY from GMS-1.

FLIGHT LOG

Date:	February 21, 1979
Flight Identification:	790221H
Aircraft:	WP-3D/N42RF
Departed:	Townsville, Australia, at 21/0420Z
Arrived:	Townsville, Australia, at 21/1330Z
Purpose:	Cyclone KERRY research
Pattern:	Fig. 7 with 60 nmi legs at 1500, 18000 and 24000 ft

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
RFC Standard	2	21/0430	21/1326
Radar	6	21/0505	21/1209
Knollenberg	3	-	-

EQUIPMENT STATUS: 790221H

SYSTEM	STATUS /	UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			
	INE 2	X			
	ONE	X			
	DOPL			X	
RADAR	NOSE	X			
	LF	X			No stabilization
	TAIL			X	
	DATA SYSTEM	X			
RAMS	DATA SYSTEM	X			
	TOTAL TEMP. 1	X			
	TOTAL TEMP. 2	X			
	DEW POINT	X			
	ATTACK ANGLE	X			
	SLIP ANGLE	X			
	ABS. PRESS.	X			
	DIFF. PRESS.	X			
	RADAR ALT.	X			
	J & W	X			
PMS	OAP 2DP		X		
	OAP 2DC	X			
	FSSP 100	X			
	DATA SYSTEM	X			
IPC		X			
FOIL			X		
CO_2 RADIOMETER		X			
MICROWAVE RADIOMETER		X			
SFC. RADIOMETER		X			
FORMVAR		X			
PHOTOGRAPHY	FWD		X		
	LS	X			
	RS	X			
	DWN			X	
AXBT	TUBES			X	
	RECEIVERS			X	
ODW				X	

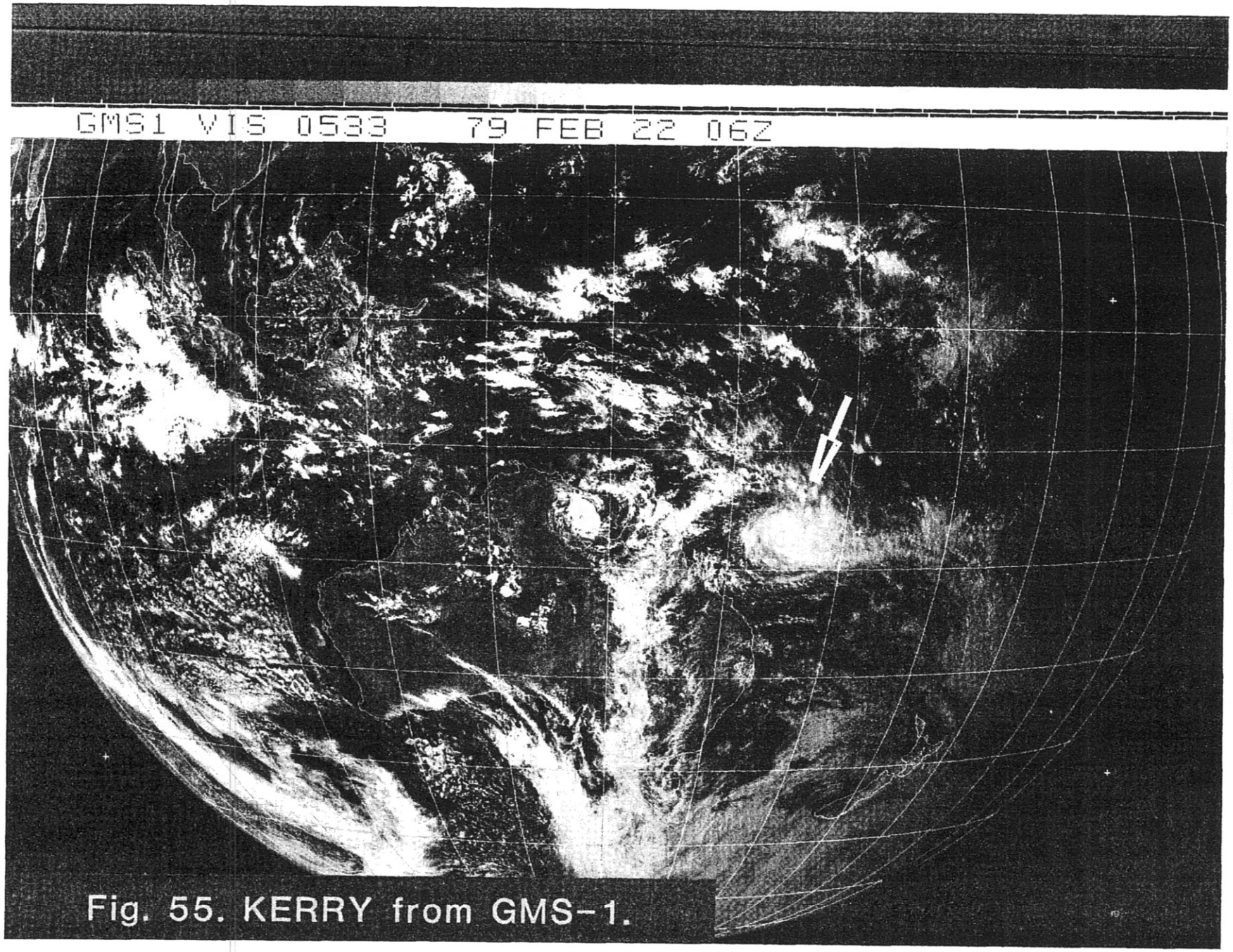

Fig. 55. KERRY from GMS-1.

FLIGHT LOG

Date:	February 22, 1979
Flight Identification:	790222H
Aircraft:	WP-3D/N42RF
Departed:	Townsville, Australia, at 22/0425Z
Arrived:	Townsville, Australia, at 22/1335Z
Purpose:	Cyclone KERRY research
Pattern:	Fig. 7 with 60 nmi legs at 1500, 18000 and 24000 ft

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
RFC Standard	2	22/0546	22/1325
Radar	8	22/0439	22/1115
Knollenberg	1	-	-

EQUIPMENT STATUS: 790222H

SYSTEM	STATUS /	UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			
	INE 2	X			
	ONE	X			
	DOPL			X	
RADAR	NOSE	X			
	LF	X			
	TAIL			X	
	DATA SYSTEM	X			
RAMS	DATA SYSTEM	X			
	TOTAL TEMP. 1	X			
	TOTAL TEMP. 2	X			
	DEW POINT	X			
	ATTACK ANGLE	X			
	SLIP ANGLE	X			
	ABS. PRESS.	X			
	DIFF. PRESS.	X			
	RADAR ALT.	X			
	J & W	X			
PMS	OAP 2DP		X		
	OAP 2DC		X		
	FSSP 100	X			
	DATA SYSTEM	X			
IPC		X			
FOIL			X		
CO_2 RADIOMETER		X			
MICROWAVE RADIOMETER		X			
SFC. RADIOMETER		X			
FORMVAR		X			
PHOTOGRAPHY	FWD		X		
	LS	X			
	RS	X			
	DWN			X	
AXBT	TUBES			X	
	RECEIVERS			X	
ODW				X	

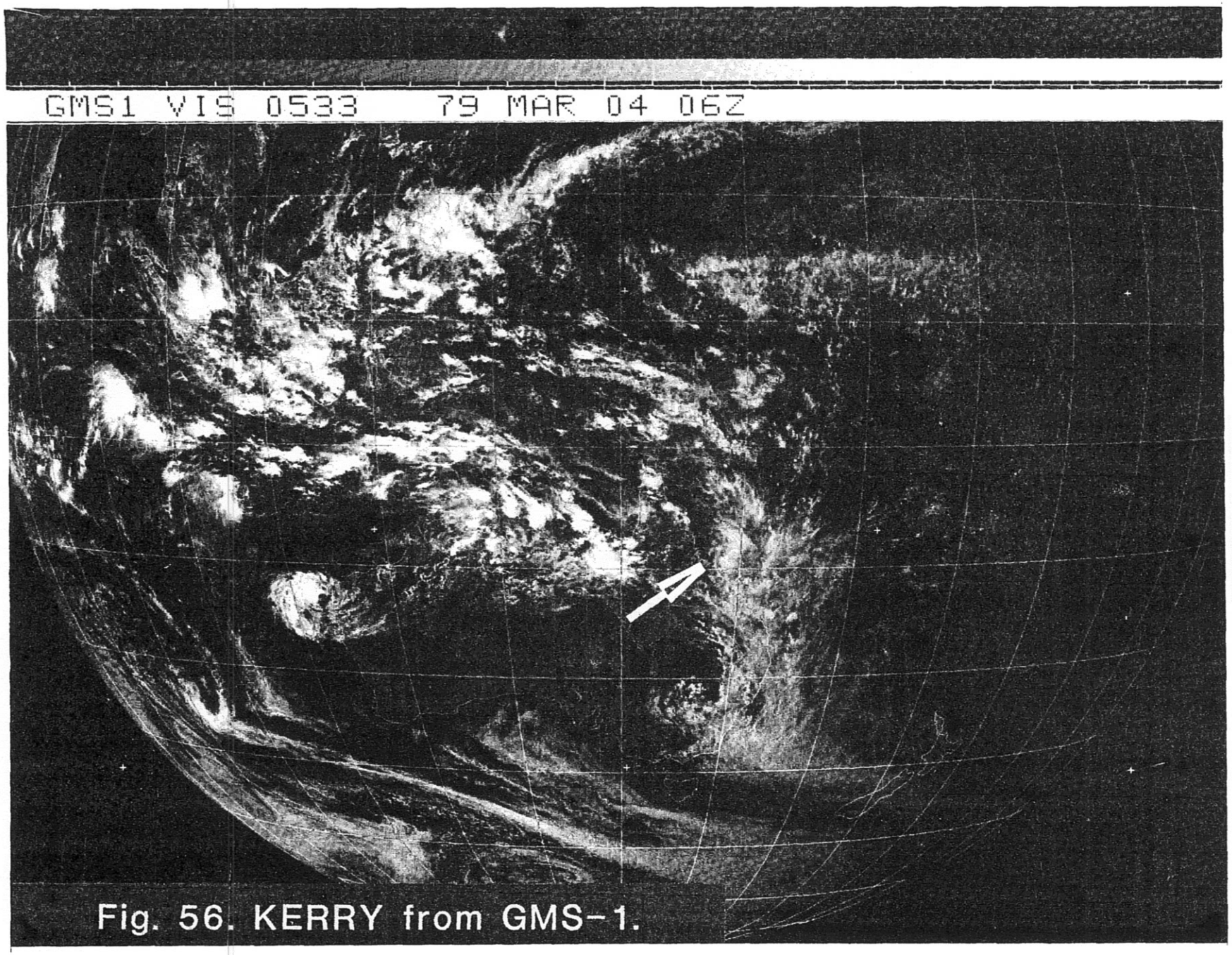

Fig. 56. KERRY from GMS-1.

FLIGHT LOG

Date:	March 3, 1979
Flight Identification:	790303H
Aircraft:	WP-3D/N42RF
Departed:	Townsville, Australia, at 03/2140Z
Arrived:	Townsville, Australia, at 04/0030Z
Purpose:	Research Tropical Cyclone KERRY
Pattern:	Fig. 7 at 1500 ft

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
RFC Standard	1	-	-
Original	1	-	-
Radar	2	-	-
Knollenberg	4	-	-

EQUIPMENT STATUS: 790303H

SYSTEM	STATUS /	UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			
	INE 2	X			
	ONE	X			
	DOPL			X	
RADAR	NOSE	X			
	LF	X			
	TAIL			X	
	DATA SYSTEM	X			
RAMS	DATA SYSTEM	X			
	TOTAL TEMP. 1	X			
	TOTAL TEMP. 2	X			
	DEW POINT	X			
	ATTACK ANGLE	X			
	SLIP ANGLE	X			
	ABS. PRESS.	X			
	DIFF. PRESS.	X			
	RADAR ALT.	X			
	J & W	X			
PMS	OAP 2DP	X			
	OAP 2DC	X			
	FSSP 100	X			
	DATA SYSTEM	X			
IPC				X	
FOIL		X			
CO_2 RADIOMETER		X			
MICROWAVE RADIOMETER		X			
SFC. RADIOMETER		X			
FORMVAR		X			
PHOTOGRAPHY	FWD	X			
	LS	X			
	RS			X	
	DWN			X	
AXBT	TUBES			X	
	RECEIVERS			X	
ODW				X	

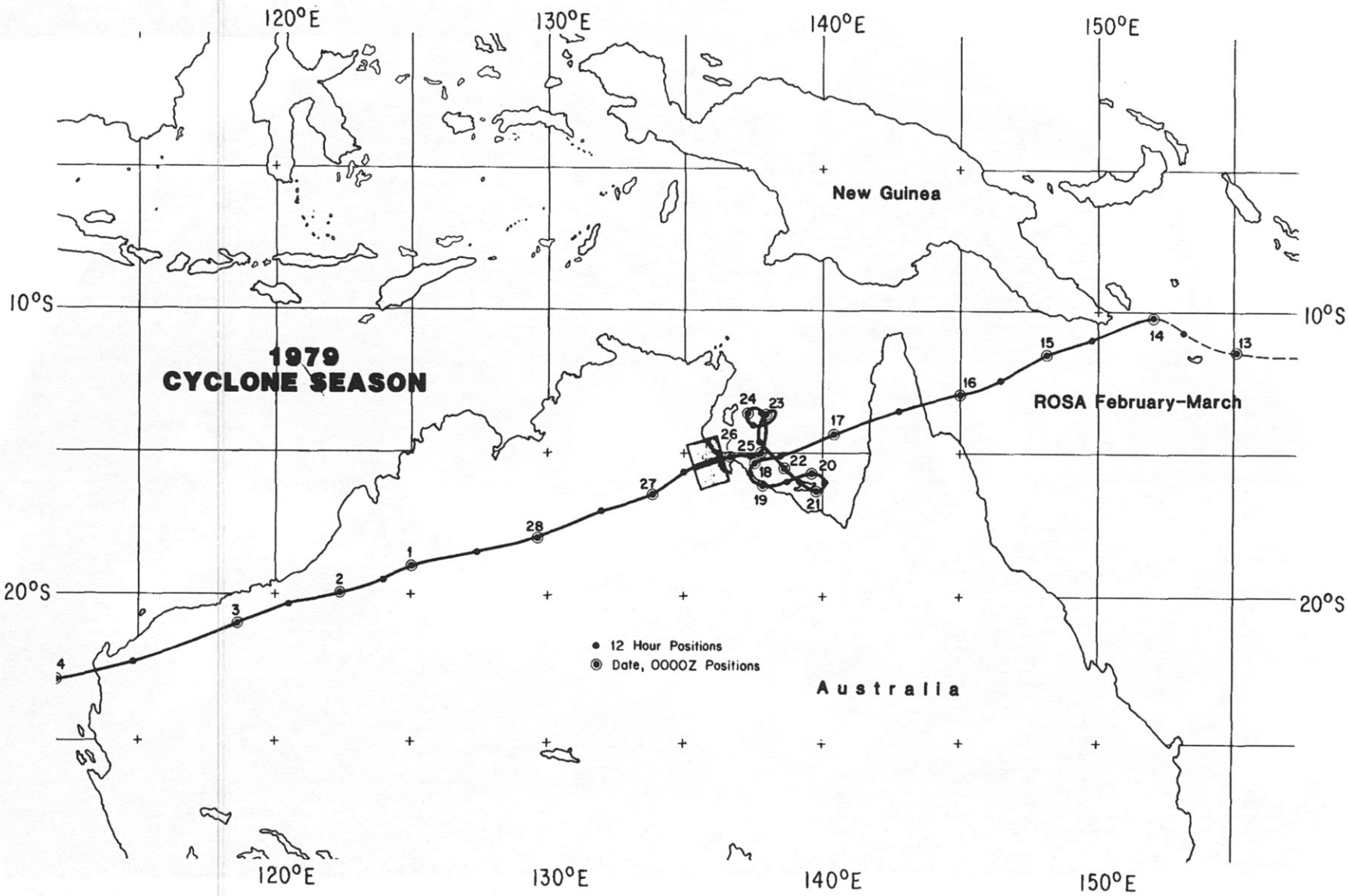

Fig. 57. Storm track and NHRL mission for ROSA.

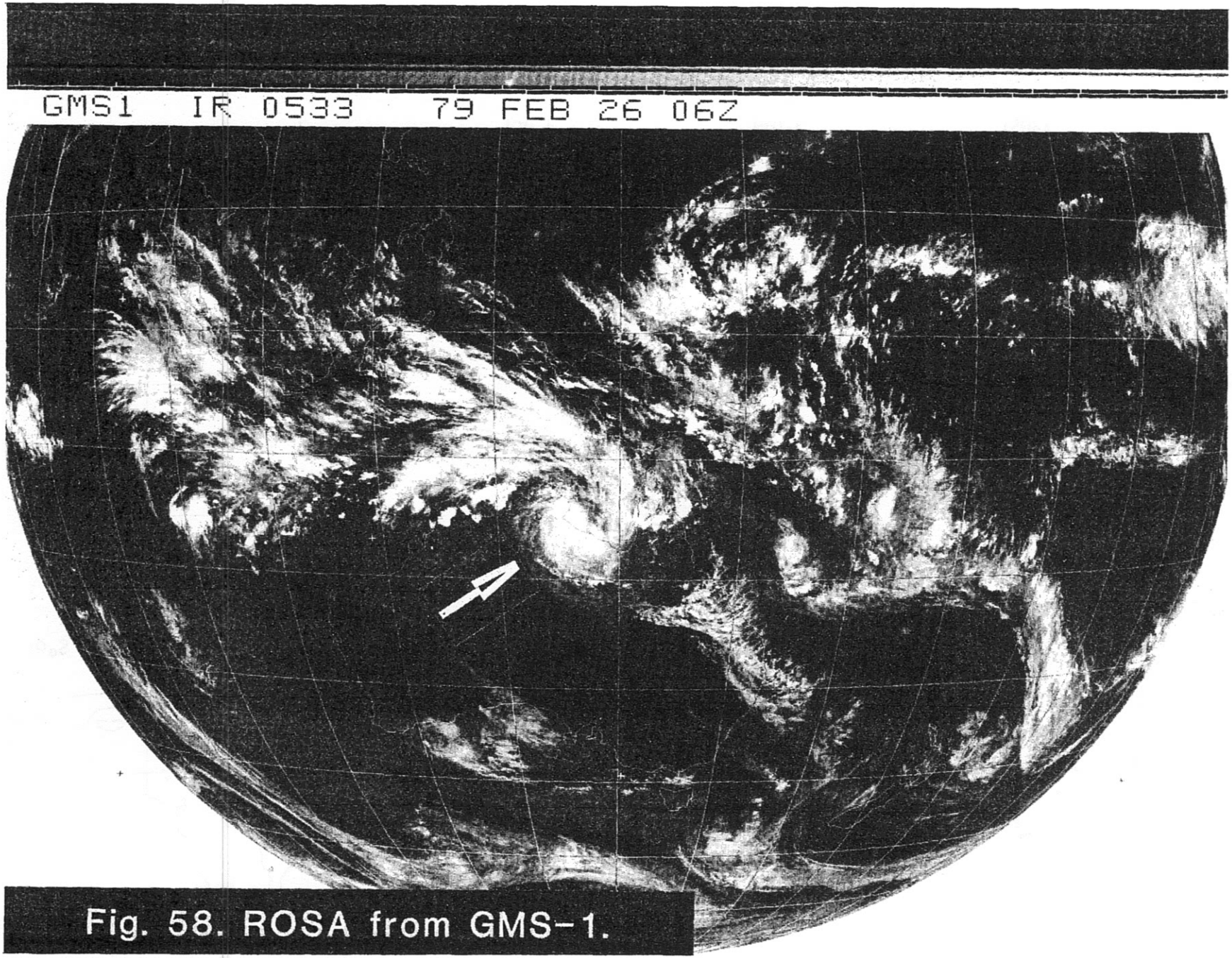

Fig. 58. ROSA from GMS-1.

FLIGHT LOG

Date:	February 26, 1979
Flight Identification:	790226H
Aircraft:	WP-3D/N42RF
Departed:	Townsville, Australia, at 26/0220Z
Arrived:	Townsville, Australia, at 26/0910Z
Purpose:	Research Cyclone RUSA
Pattern:	Fig. 6 (modified) at 1500 and 20000 ft

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
RFC Standard	2	26/0210	26/0754
Original	1	26/0210	26/0754
Radar	5	26/0221	-
Cloud Physics	1	-	-

EQUIPMENT STATUS: 790226H

SYSTEM	STATUS /	UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			
	INE 2	X			
	ONE	X			
	DOPL			X	
RADAR	NOSE	X			
	LF	X			
	TAIL			X	
	DATA SYSTEM	X			
RAMS	DATA SYSTEM	X			
	TOTAL TEMP. 1	X			
	TOTAL TEMP. 2	X			
	DEW POINT	X			
	ATTACK ANGLE	X			
	SLIP ANGLE	X			
	ABS. PRESS.	X			
	DIFF. PRESS.	X			
	RADAR ALT.	X			
	J & W	X			
PMS	OAP 2DP			X	
	OAP 2DC			X	
	FSSP 100	X			
	DATA SYSTEM	X			
IPC		X			
FOIL		X			
CO_2 RADIOMETER		X			
MICROWAVE RADIOMETER		X			
SFC. RADIOMETER			X		
FORMVAR		X			
PHOTOGRAPHY	FWD	X			
	LS	X			
	RS	X			
	DWN	X			
AXBT	TUBES	X			1 AXBT
	RECEIVERS	X			
ODW		X			6 sondes dropped

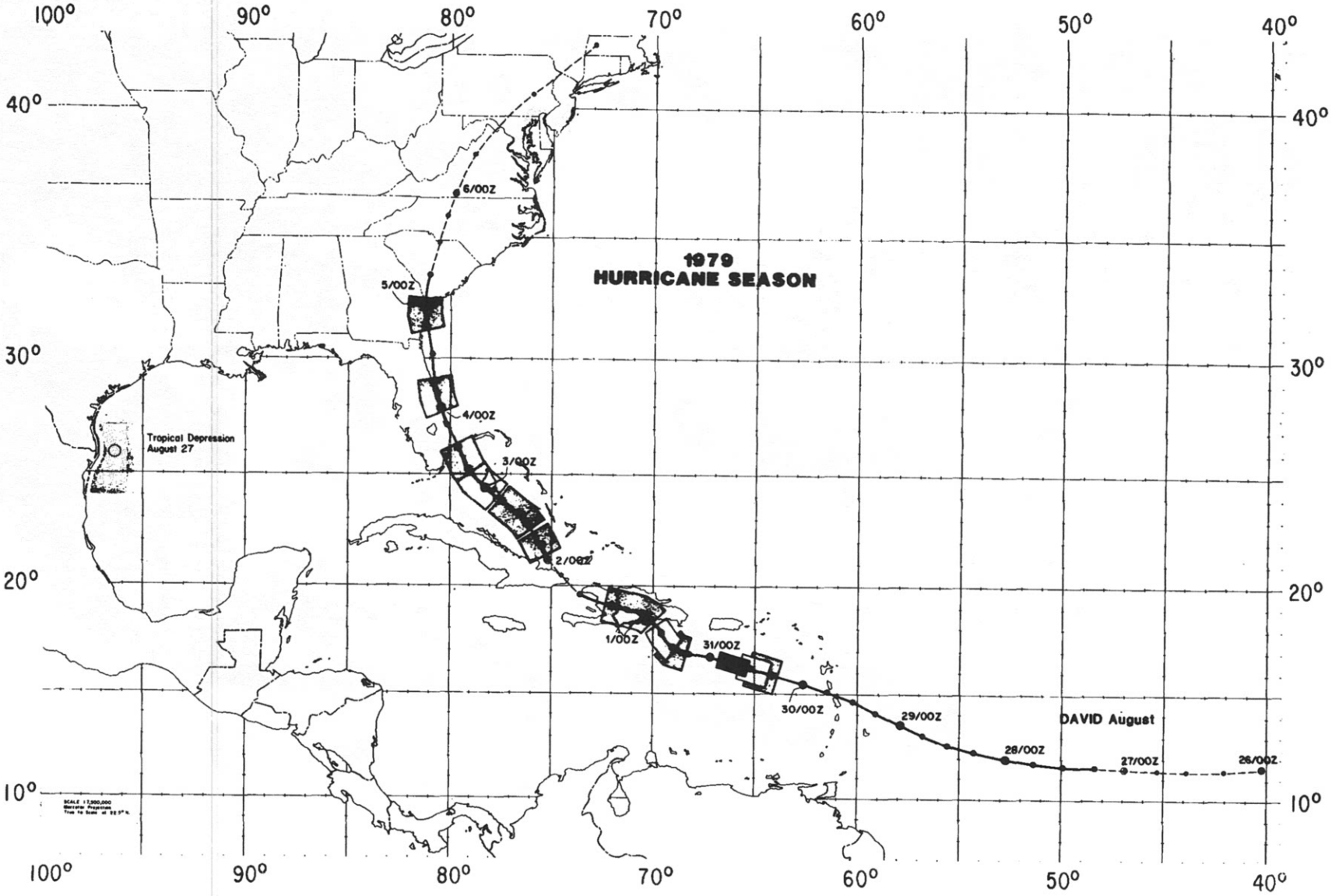

Fig. 59. Storm track and NHRL missions for DAVID; also NHRL mission for tropical depression.

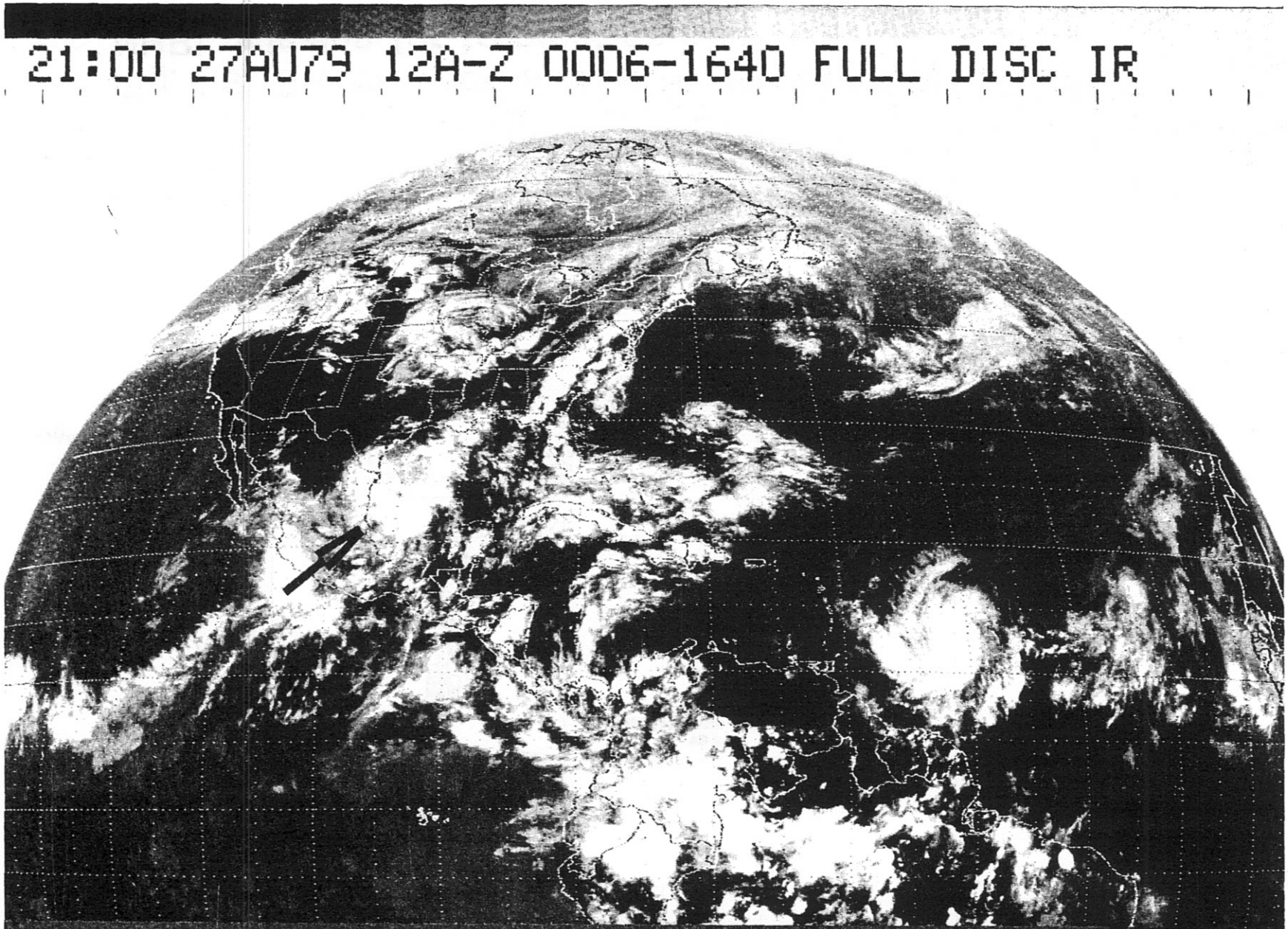

Fig. 60. Tropical depression area from SMS-2.

FLIGHT LOG

Date:	August 27, 1979
Flight Identification:	790827I
Aircraft:	WP-3D/N43RF
Departed:	Miami, Florida, at 27/1445Z
Arrived:	Miami, Florida, at 28/0110Z
Purpose:	Tropical depression reconnaissance
Pattern:	Reconnaissance at 1500 ft

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
RFC Standard	2	27/1508	28/0115
Radar Drive	8	27/1459	28/0044
Knollenberg	4	27/1810	27/2230

EQUIPMENT STATUS: 790827I

SYSTEM	STATUS /	UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			
	INE 2	X			
	ONE	X			
	DUPL			X	
RADAR	NOSE	X			
	LF	X			
	TAIL			X	
	DATA SYSTEM	X			
RAMS	DATA SYSTEM	X			RAMS dwn 1638-43Z
	TOTAL TEMP. 1	X			
	TOTAL TEMP. 2	X			
	DEW POINT	X			
	ATTACK ANGLE	X			
	SLIP ANGLE	X			
	ABS. PRESS.	X			
	DIFF. PRESS.	X			
	RADAR ALT.	X			
	J & W	X			
PMS	OAP 2DP	X			
	OAP 2DC	X			
	FSSP 100	X			
	DATA SYSTEM	X			
IPC				X	
FOIL			X		
CO_2 RADIOMETER				X	
MICROWAVE RADIOMETER				X	
SFC. RADIOMETER		X			
FORMVAR				X	
PHOTOGRAPHY	FWD	X			
	LS	X			
	RS	X			
	DWN	X			
AXBT	TUBES	X			4 dropped
	RECEIVERS	X			
ODW				X	

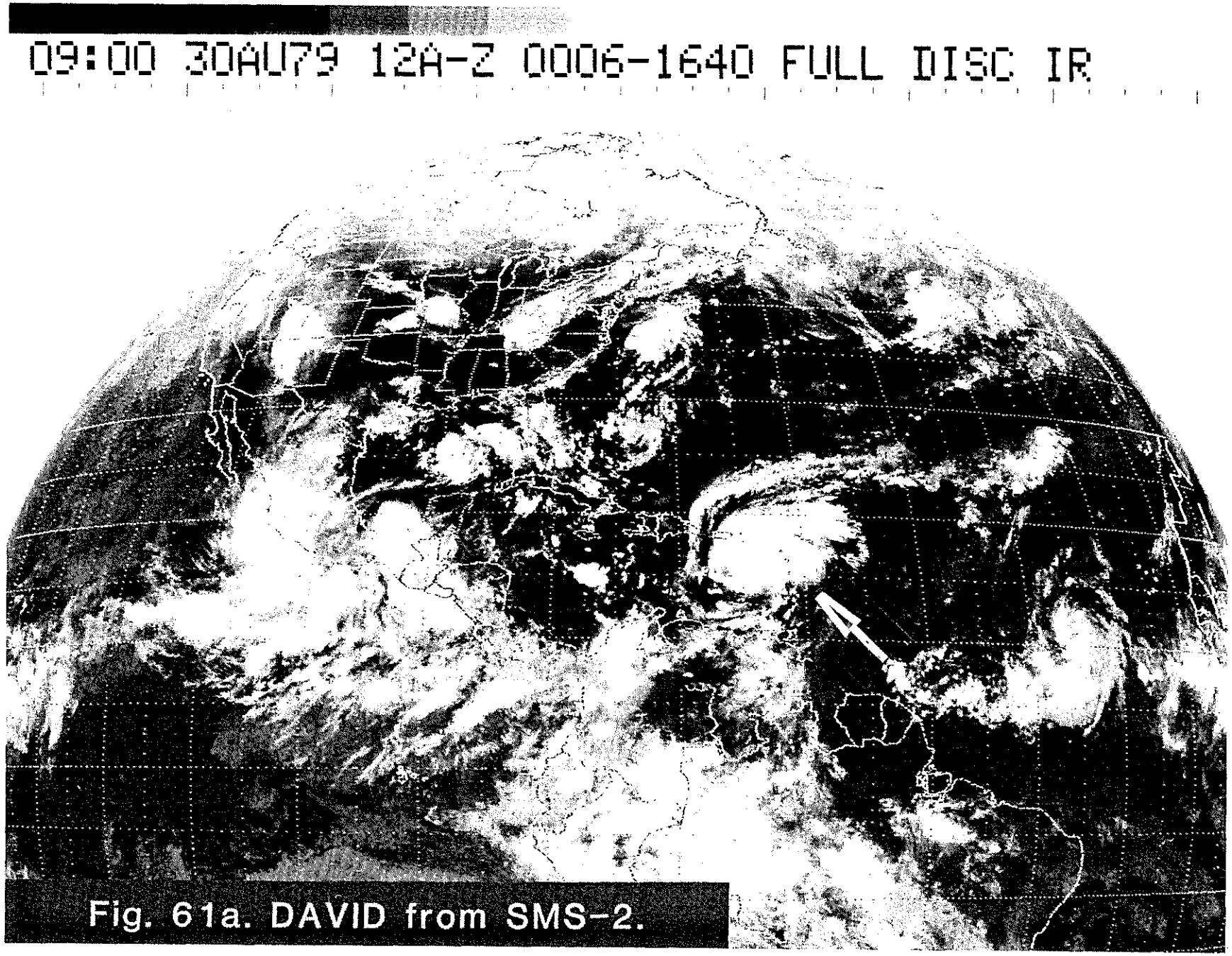

Fig. 61a. DAVID from SMS-2.

FLIGHT LOG

Date:	August 30, 1979
Flight Identification:	790830F
Aircraft:	C-130B/N6541C
Departed:	San Juan, Puerto Rico, at 30/0500Z
Arrived:	Antigua at 30/1230Z
Purpose:	Hurricane DAVID research/reconnasisance
Pattern:	Fig. 6 at 1500 and 20000 ft; operational fix 30/06Z at 5000 ft

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
RFC Standard	1	30/0520	30/1224
Original	1	-	-

EQUIPMENT STATUS: 790830F

SYSTEM	STATUS /	UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			
	INE 2	X			
	ONE	X			
	DOPL			X	
RADAR	NOSE	X			
	LF			X	
	TAIL			X	
	DATA SYSTEM		X		
AWRS	DATA SYSTEM	X			
	TOTAL TEMP. 1	X			
	TOTAL TEMP. 2			X	
	DEW POINT	X			
	ATTACK ANGLE	X			
	SLIP ANGLE	X			
	ABS. PRESS.	X			
	DIFF. PRESS.	X			
	RADAR ALT.	X			
	J & W	X			
PMS	OAP 2DP	X			
	OAP 2DC			X	
	FSSP 100			X	
	DATA SYSTEM	X			
IPC		X			
FOIL			X		
CO_2 RADIOMETER				X	
MICROWAVE RADIOMETER				X	
SFC. RADIOMETER		X			
FORMVAR				X	
PHOTOGRAPHY	FWD	X			
	LS	X			
	RS	X			
	DWN			X	
AXBT	TUBES			X	
	RECEIVERS			X	
ODW		X			

FLIGHT LOG

Date:	August 30, 1979
Flight Identification:	790830I
Aircraft:	WP-3D/N43RF
Departed:	San Juan, Puerto Rico, at 30/0700Z
Arrived:	Miami, Florida, at 30/1540Z
Purpose:	Hurricane DAVID (low-level Long-Term Monitoring)
Pattern:	Fig. 10 at 5000 ft

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
RFC Standard	2	30/0701	31/1534
Radar	7	30/0715	30/1527
Knollenberg	14	-	-

EQUIPMENT STATUS: 790830I

SYSTEM	STATUS /	UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			
	INE 2	X			
	ONE	X			
	DOPL			X	
RADAR	NOSE	X			
	LF	X			
	TAIL			X	
	DATA SYSTEM	X			
RAMS	DATA SYSTEM	X			
	TOTAL TEMP. 1	X			
	TOTAL TEMP. 2	X			
	DEW POINT	X			
	ATTACK ANGLE	X			
	SLIP ANGLE	X			
	ABS. PRESS.	X			
	DIFF. PRESS.	X			
	RADAR ALT.	X			
	J & W	X			
PMS	OAP 2DP	X			
	OAP 2DC	X			
	FSSP 100	X			
	DATA SYSTEM	X			
IPC				X	
FOIL				X	
CO_2 RADIOMETER				X	
MICROWAVE RADIOMETER				X	
SFC. RADIOMETER		X			
FORMVAR				X	
PHOTOGRAPHY	FWD	X			
	LS	X			
	RS	X			
	DWN	X			
AXBT	TUBES			X	
	RECEIVERS			X	
ODW				X	

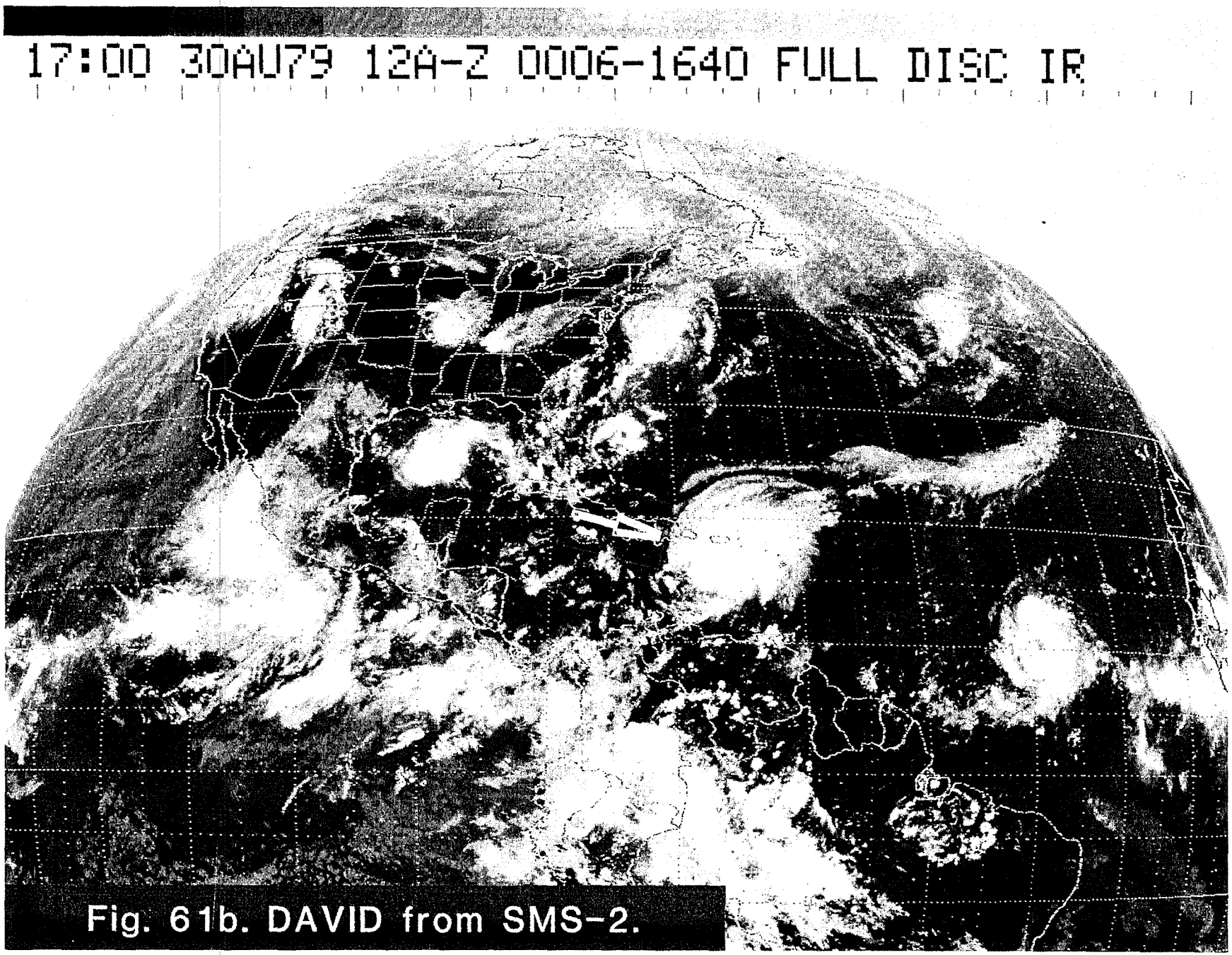

Fig. 61b. DAVID from SMS-2.

FLIGHT LOG

Date:	August 30, 1979
Flight Identification:	790830H
Aircraft:	WP-3D/N42RF
Departed:	San Juan, Puerto Rico, at 30/1230Z
Arrived:	San Juan, Puerto Rico, at 30/2140Z
Purpose:	Hurricane DAVID research/reconnaissance
Pattern:	Fig. 6 at 1500 and 5000 ft; operational fixes at 5000 ft

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
RFC Standard	2	30/1301	30/2016
Original	2	30/1240	30/2134
Knollenberg	6	30/1243	30/1700
Fast	9	30/1339	30/2134

EQUIPMENT STATUS: 790830H

SYSTEM	STATUS /	UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			
	INE 2	X			
	ONE	X			
	DOPL			X	
RADAR	NOSE	X			
	LF	X			
	TAIL			X	
	DATA SYSTEM		X		
RAMS	DATA SYSTEM	X			DWN after 30/1815Z
	TOTAL TEMP. 1	X			
	TOTAL TEMP. 2	X			
	DEW POINT	X			
	ATTACK ANGLE	X			
	SLIP ANGLE	X			
	ABS. PRESS.	X			
	DIFF. PRESS.	X			
	RADAR ALT.	X			
	J & W	X			
PMS	OAP 2DP	X			
	OAP 2DC	X			
	FSSP 100	X			
	DATA SYSTEM	X			DWN after 30/1700Z
IPC				X	
FOIL		X			
CO_2 RADIOMETER				X	
MICROWAVE RADIOMETER				X	
SFC. RADIOMETER		X			
FORMVAR		X			
PHOTOGRAPHY	FWD	X			
	LS	X			
	RS	X			
	DWN				
AXBT	TUBES			X	
	RECEIVERS			X	
ODW				X	

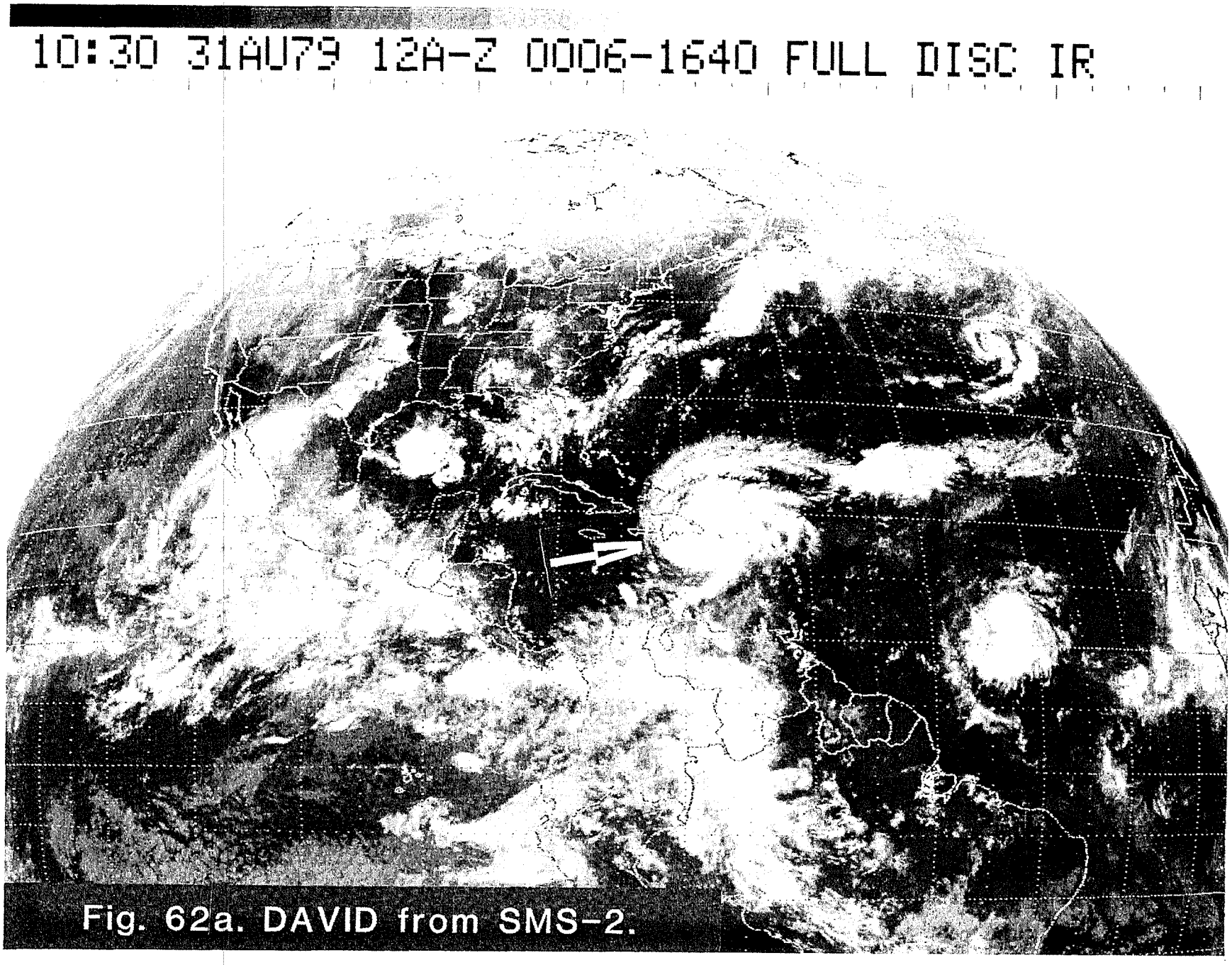

Fig. 62a. DAVID from SMS-2.

FLIGHT LOG

Date:	August 31, 1979
Flight Identification:	790831F
Aircraft:	C-130B/N6541C
Departed:	Antigua at 31/0655Z
Arrived:	Miami, Florida, at 31/1410Z
Purpose:	Hurricane DAVID research
Pattern:	Fig. 6 (modified) at 20000 ft

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
RFC Standard	1	31/0705	31/1100
Radar	1	31/0727	31/0909
Knollenberg	1	-	-

EQUIPMENT STATUS: 790831F

SYSTEM	STATUS /	UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			
	INE 2	X			
	ONE	X			
	DOPL			X	
RADAR	NOSE	X			
	LF			X	
	TAIL			X	
	DATA SYSTEM	X			DWN at 31/0909Z
AWRS	DATA SYSTEM	X			
	TOTAL TEMP. 1	X			
	TOTAL TEMP. 2			X	
	DEW POINT	X			
	ATTACK ANGLE	X			
	SLIP ANGLE	X			
	ABS. PRESS.	X			
	DIFF. PRESS.	X			
	RADAR ALT.	X			
	J & W	X			
PMS	OAP 2DP	X			
	OAP 2DC			X	
	FSSP 100			X	
	DATA SYSTEM	X			
IPC		X			
FOIL		X			
CO_2 RADIOMETER				X	
MICROWAVE RADIOMETER				X	
SFC. RADIOMETER			X		
FORMVAR				X	
PHOTOGRAPHY	FWD	X			
	LS	X			
	RS	X			
	DWN				
AXBT	TUBES			X	
	RECEIVERS			X	
ODW		X			

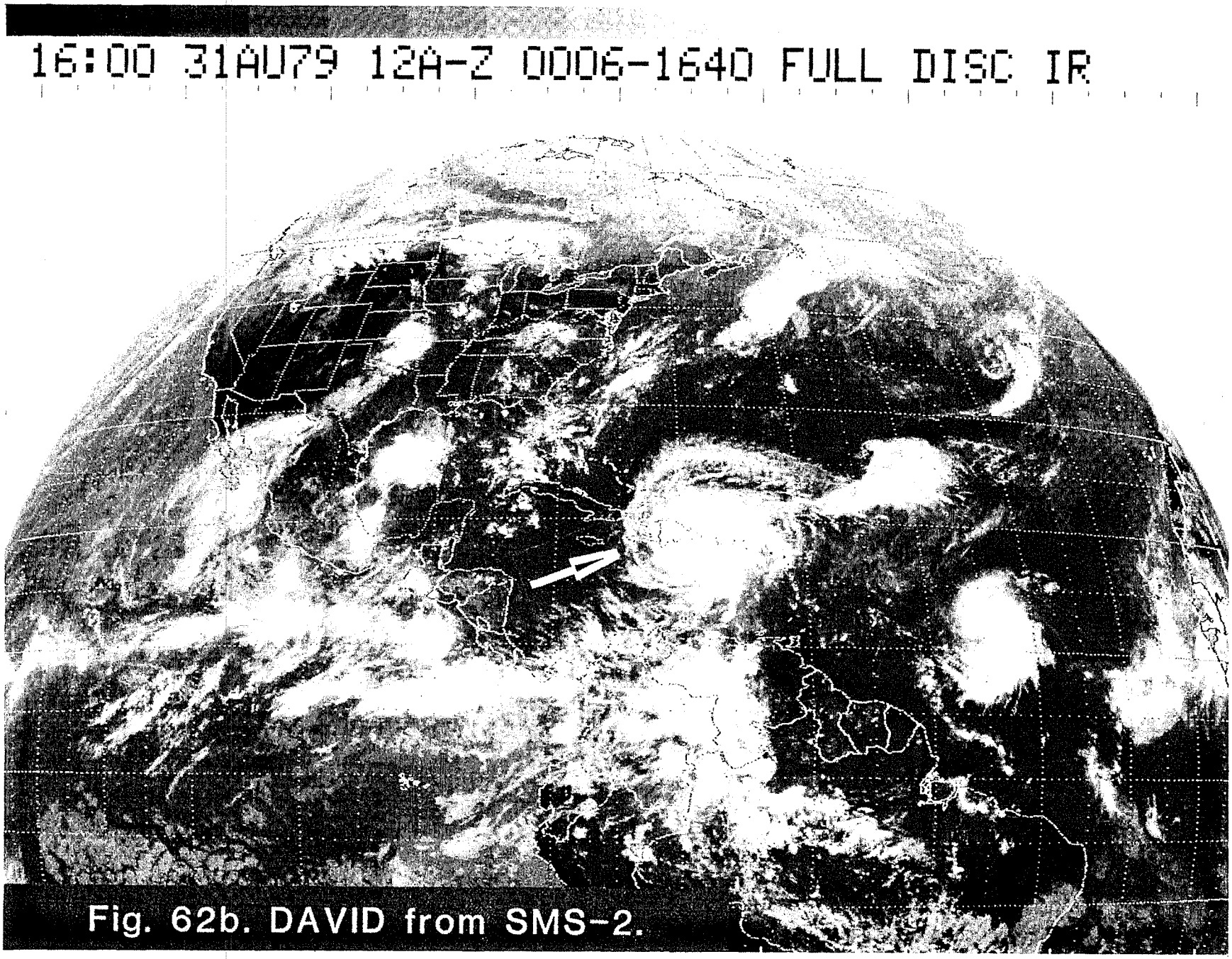

Fig. 62b. DAVID from SMS-2.

FLIGHT LOG

Date:	August 31, 1979
Flight Identification:	790831H
Aircraft:	WP-3D/N42RF
Departed:	San Juan, Puerto Rico, at 31/1055Z
Arrived:	Miami, Florida, at 31/2020Z
Purpose:	Hurricane DAVID recconnaissance/research
Pattern:	Reconnaissance; 31/12Z and 18Z operational fixes

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
RFC Standard	2	31/1121	31/2016
Radar	8	31/1132	31/1806
Knollenberg	1	31/1110	31/2017

EQUIPMENT STATUS: 790831H

SYSTEM	STATUS /	UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			
	INE 2	X			
	ONE	X			
	DOPL			X	
RADAR	NOSE	X			
	LF	X			
	TAIL	X			
	DATA SYSTEM	X			
RAMS	DATA SYSTEM	X			
	TOTAL TEMP. 1	X			
	TOTAL TEMP. 2	X			
	DEW POINT	X			
	ATTACK ANGLE	X			
	SLIP ANGLE	X			
	ABS. PRESS.	X			
	DIFF. PRESS.	X			
	RADAR ALT.	X			
	J & W	X			
PMS	OAP 2DP			X	
	OAP 2DC			X	
	FSSP 100			X	
	DATA SYSTEM			X	
IPC				X	
FOIL				X	
CO_2 RADIOMETER				X	
MICROWAVE RADIOMETER				X	
SFC. RADIOMETER		X			
FORMVAR				X	
PHOTOGRAPHY	FWD	X			
	LS	X			
	RS	X			
	DWN			X	
AXBT	TUBES			X	
	RECEIVERS			X	
ODW				X	

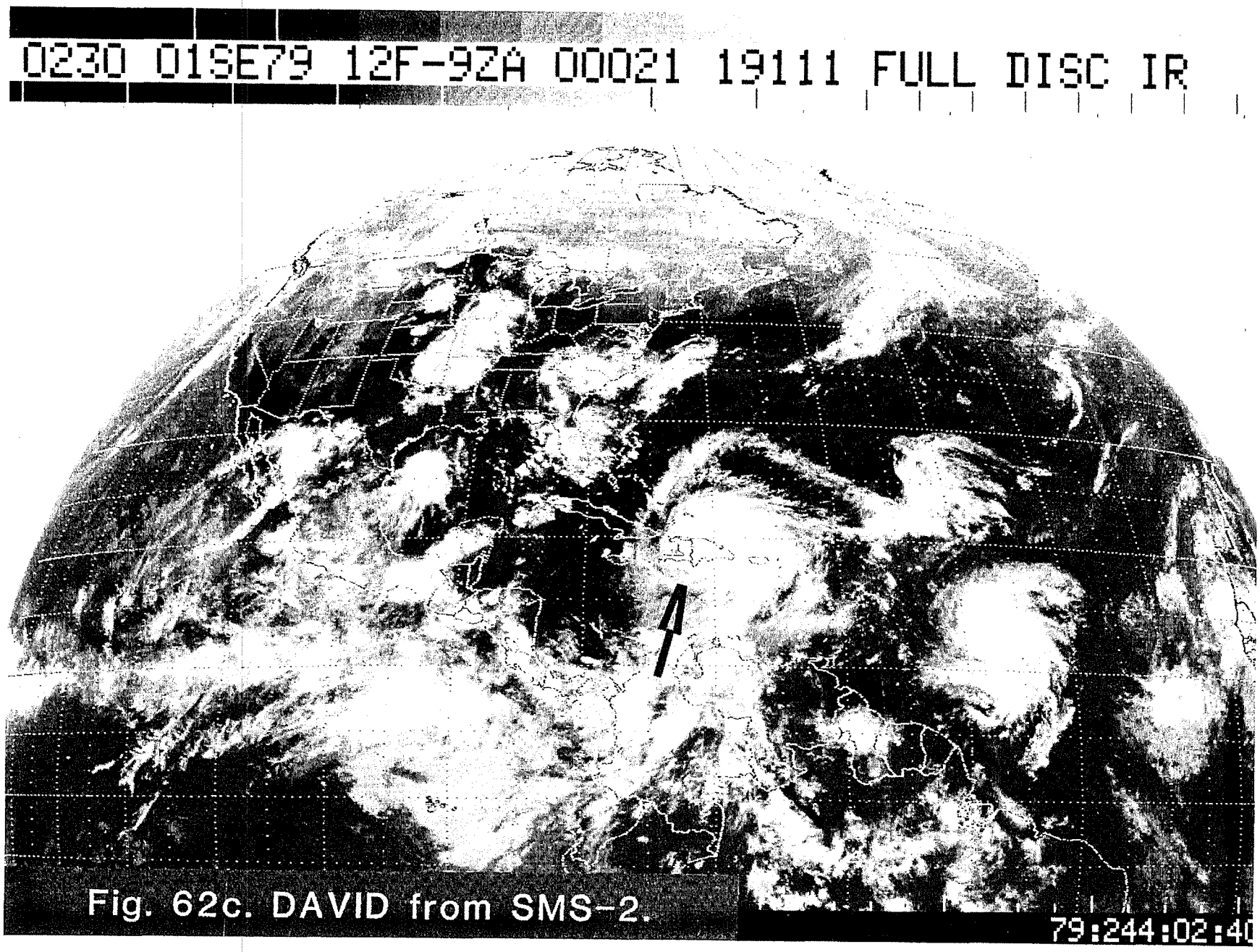

Fig. 62c. DAVID from SMS-2.

FLIGHT LOG

Date:	August 31, 1979
Flight Identification:	790831I
Aircraft:	WP-3D/N43RF
Departed:	Miami, Florida, at 31/2126Z
Arrived:	Miami, Florida, at 01/0716Z
Purpose:	Hurricane DAVID reconnaissance/research
Pattern:	Around the island of Hispaniola (DAVID's eye was over land)

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
RFC Standard	2	31/2146	01/0707
Radar	7	01/0036	01/0635
Knollenberg	14	31/2150	01/0658

EQUIPMENT STATUS: 790831I

SYSTEM	STATUS /	UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			
	INE 2	X			
	ONE	X			
	DOPL			X	
RADAR	NOSE	X			
	LF	X			
	TAIL			X	
	DATA SYSTEM	X			
RAMS	DATA SYSTEM	X			
	TOTAL TEMP. 1	X			
	TOTAL TEMP. 2	X			
	DEW POINT	X			
	ATTACK ANGLE	X			
	SLIP ANGLE	X			
	ABS. PRESS.	X			
	DIFF. PRESS.	X			
	RADAR ALT.	X			
	J & W	X			
PMS	OAP 2DP	X			
	OAP 2DC	X			
	FSSP 100	X			
	DATA SYSTEM	X			
IPC		X			
FOIL		X			
CO_2 RADIOMETER				X	
MICROWAVE RADIOMETER				X	
SFC. RADIOMETER		X			
FORMVAR				X	
PHOTOGRAPHY	FWD	X			
	LS	X			
	RS	X			
	DWN			X	
AXBT	TUBES			X	
	RECEIVERS			X	
ODW				X	

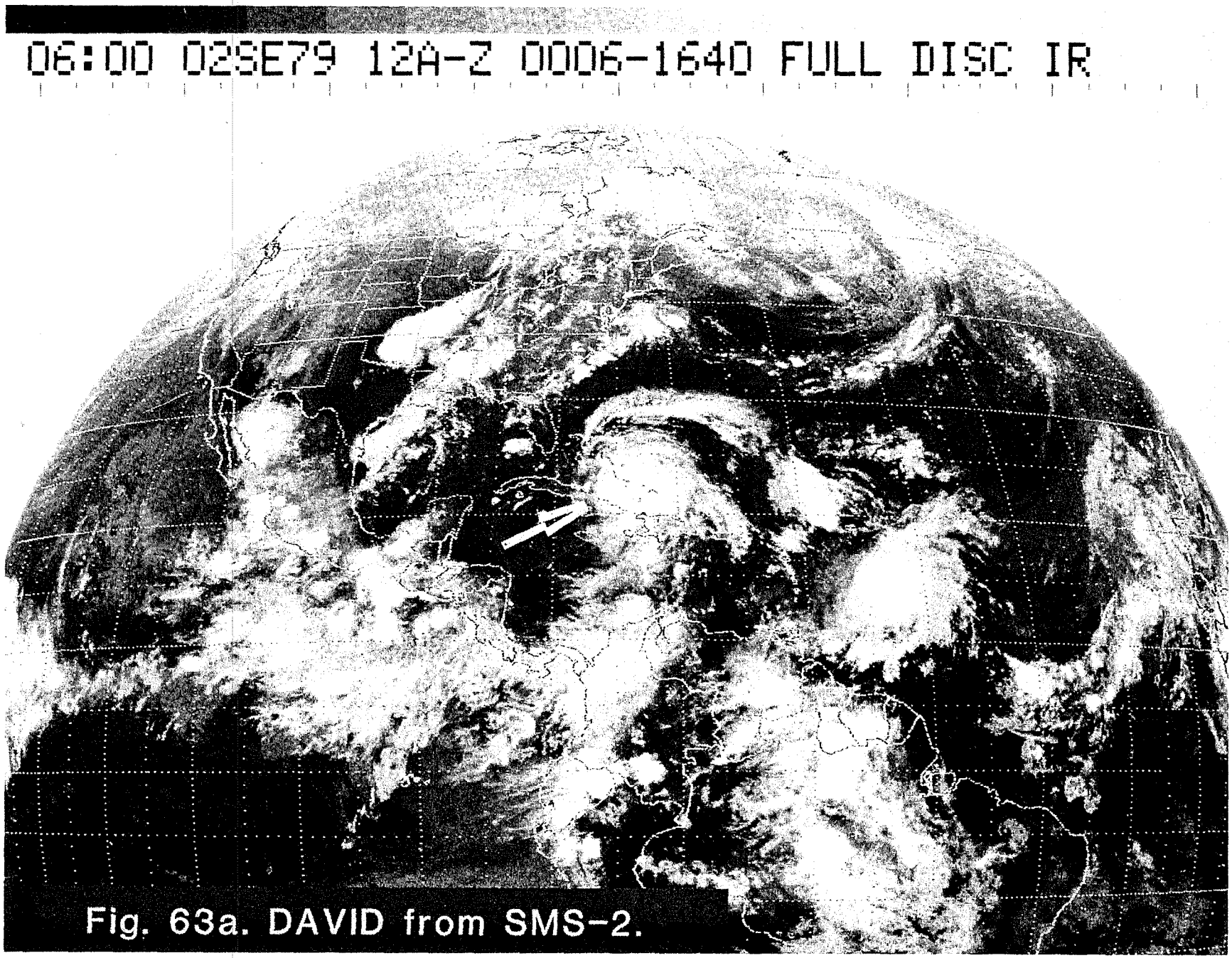

Fig. 63a. DAVID from SMS-2.

FLIGHT LOG

Date:	September 2, 1979
Flight Identification:	790902F
Aircraft:	C-130B/N6541C
Departed:	Miami, Florida, at 02/0140Z
Arrived:	Miami, Florida, at 02/0935Z
Purpose:	Hurricane DAVID research and reconnaissance
Pattern:	East-to-west racetrack; operational fixes 02/03Z, 06Z, 09Z at 5000 ft

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
RFC Standard	1	02/0145	02/0925
Radar	2	02/0151	02/0915
Knollenberg	2	02/0529	02/0844

EQUIPMENT STATUS: 790902F

SYSTEM	STATUS /	UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			
	INE 2	X			
	ONE	X			
	DOPL			X	
RADAR	NOSE	X			
	LF			X	
	TAIL			X	
	DATA SYSTEM	X			
AWRS	DATA SYSTEM	X			
	TOTAL TEMP. 1	X			
	TOTAL TEMP. 2			X	
	DEW POINT	X			
	ATTACK ANGLE	X			
	SLIP ANGLE	X			
	ABS. PRESS.	X			
	DIFF. PRESS.	X			
	RADAR ALT.	X			
	J & W	X			
PMS	OAP 2DP	X			
	OAP 2DC			X	
	FSSP 100			X	
	DATA SYSTEM	X			
IPC		X			
FOIL		X			
CO_2 RADIOMETER				X	
MICROWAVE RADIOMETER				X	
SFC. RADIOMETER		X			
FORMVAR				X	
PHOTOGRAPHY	FWD	X			
	LS	X			
	RS	X			
	DWN				
AXBT	TUBES			X	
	RECEIVERS			X	
ODW		X			

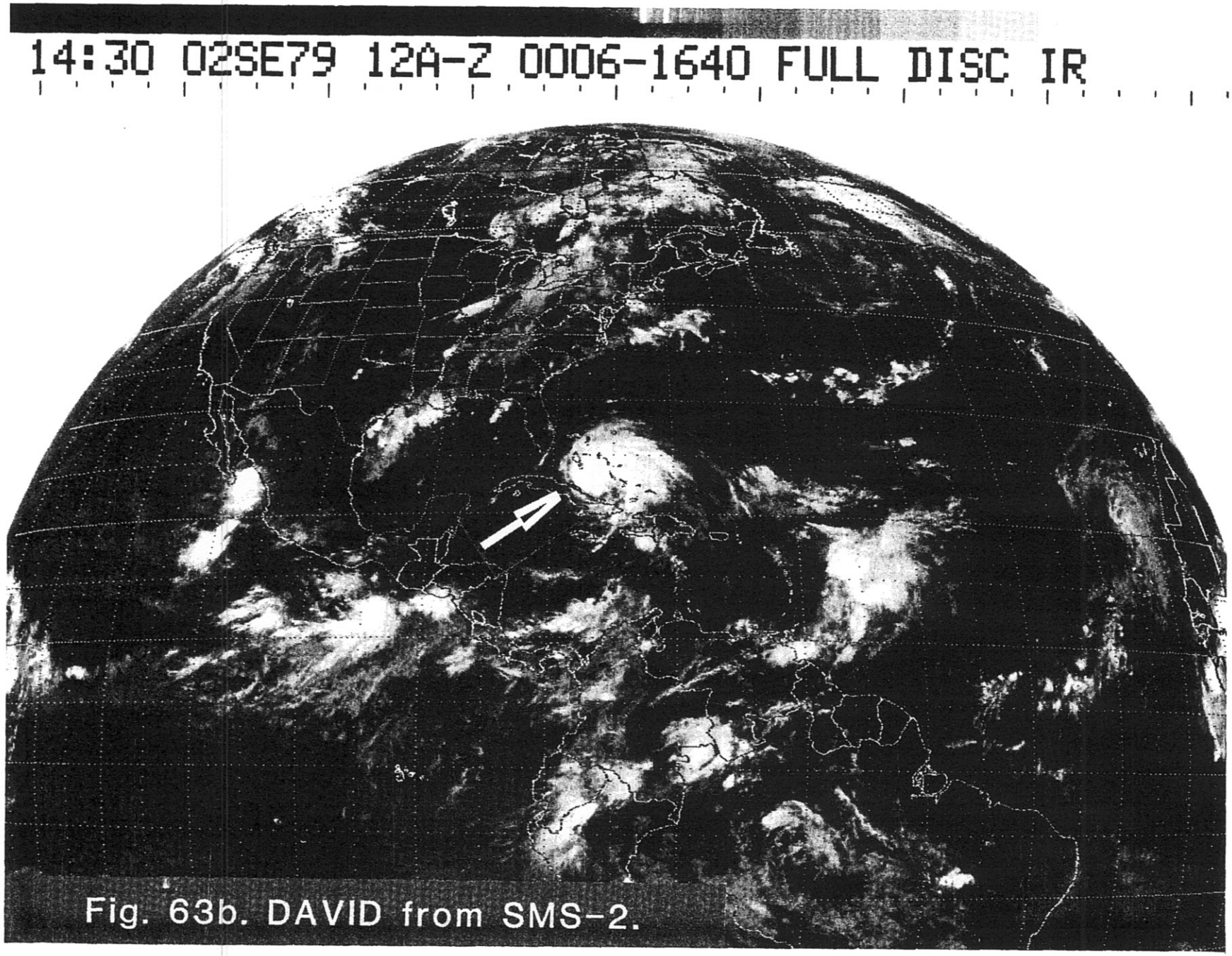

Fig. 63b. DAVID from SMS-2.

FLIGHT LOG

Date:	September 2, 1979
Flight Identification:	790902I
Aircraft:	WP-3D/N43RF
Departed:	Miami, Florida, at 02/1005Z
Arrived:	Miami, Florida, at 02/1855Z
Purpose:	Hurricane DAVID research and reconnaissance
Pattern:	Fig. 7

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
RFC Standard	2	02/1130	02/1853
Radar	8	02/1138	02/1841
Knollenberg	17	02/1018	02/1842

EQUIPMENT STATUS: 790902I

SYSTEM	STATUS /	UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			
	INE 2	X			
	ONE	X			
	DOPL			X	
RADAR	NOSE	X			
	LF	X			
	TAIL			X	
	DATA SYSTEM	X			
RAMS	DATA SYSTEM	X			
	TOTAL TEMP. 1	X			
	TOTAL TEMP. 2	X			
	DEW POINT	X			
	ATTACK ANGLE	X			
	SLIP ANGLE	X			
	ABS. PRESS.	X			
	DIFF. PRESS.	X			
	RADAR ALT.	X			
	J & W	X			
PMS	OAP 2DP	X			
	OAP 2DC	X			
	FSSP 100	X			
	DATA SYSTEM	X			
IPC				X	
FOIL		X			
CO_2 RADIOMETER		X			
MICROWAVE RADIOMETER		X			
SFC. RADIOMETER		X			
FORMVAR				X	
PHOTOGRAPHY	FWD	X			
	LS	X			
	RS	X			
	DWN	X			
AXBT	TUBES			X	
	RECEIVERS			X	
ODW				X	

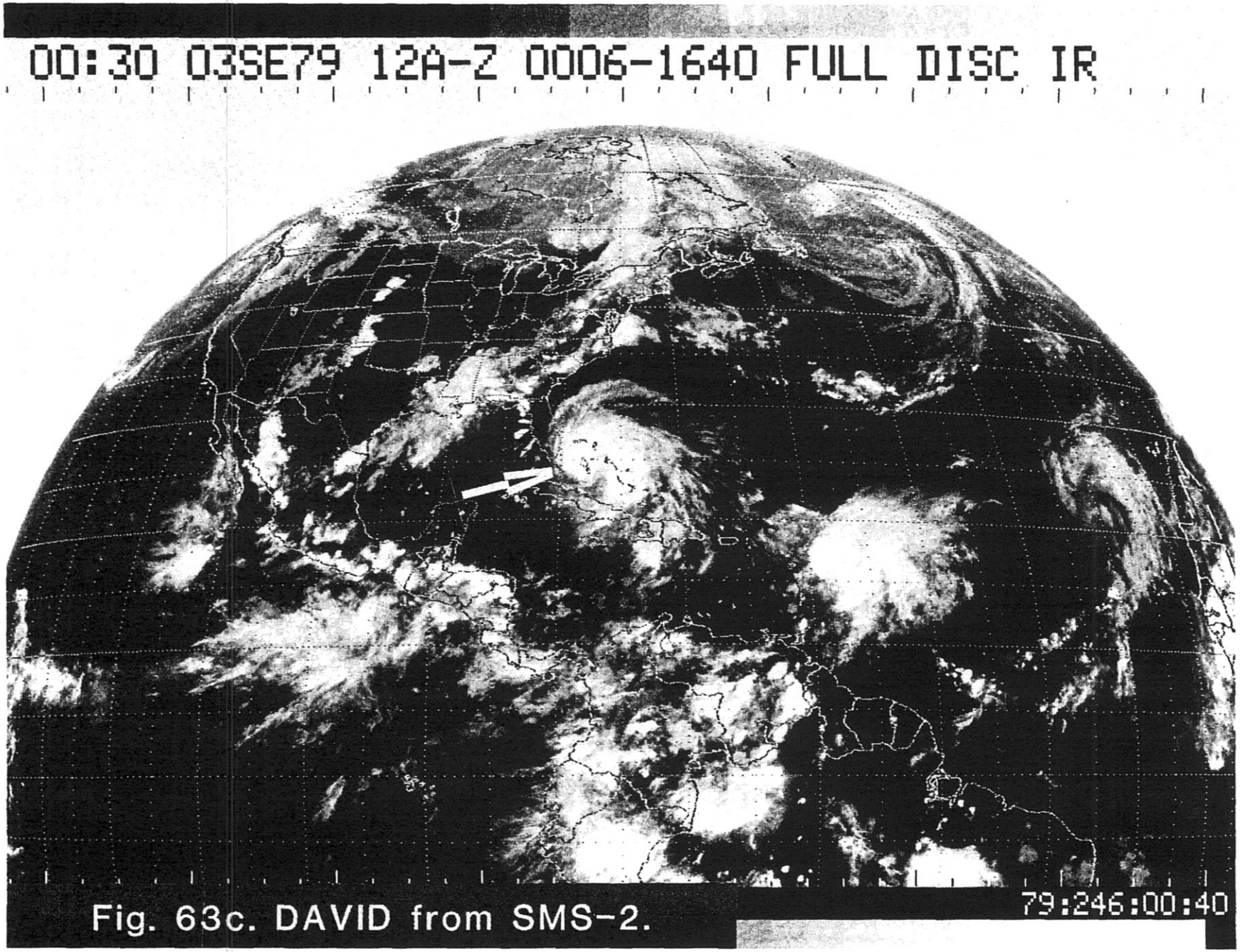

Fig. 63c. DAVID from SMS-2.

FLIGHT LOG

Date:	September 2, 1979
Flight Identification:	790902H
Aircraft:	WP-3D/N42RF
Departed:	Miami, Florida, at 02/1946Z
Arrived:	Eglin AFB, Florida, at 03/0501Z
Purpose:	Hurricane DAVID research and reconnaissance
Pattern:	Reconnaissance; operational fixes 02/21Z, 03/00Z and 03Z

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
RFC Standard	2	02/2002	03/0454
Radar	15	02/2007	03/0410
Knollenberg	11	02/2239	03/0437

EQUIPMENT STATUS: 790902H

SYSTEM	STATUS /	UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			
	INE 2	X			
	ONE	X			
	DOPL			X	
RADAR	NOSE	X			
	LF	X			
	TAIL	X			
	DATA SYSTEM	X			
RAMS	DATA SYSTEM	X			
	TOTAL TEMP. 1	X			
	TOTAL TEMP. 2	X			
	DEW POINT	X			
	ATTACK ANGLE	X			
	SLIP ANGLE	X			
	ABS. PRESS.	X			
	DIFF. PRESS.	X			
	RADAR ALT.	X			
	J & W	X			
PMS	OAP 2DP	X			
	OAP 2DC	X			
	FSSP 100	X			
	DATA SYSTEM	X			
IPC		X			
FOIL		X			
CO_2 RADIOMETER		X			
MICROWAVE RADIOMETER		X			
SFC. RADIOMETER			X		
FORMVAR		X			
PHOTOGRAPHY	FWD	X			
	LS	X			
	RS	X			
	DWN			X	
AXBT	TUBES			X	
	RECEIVERS			X	
ODW				X	

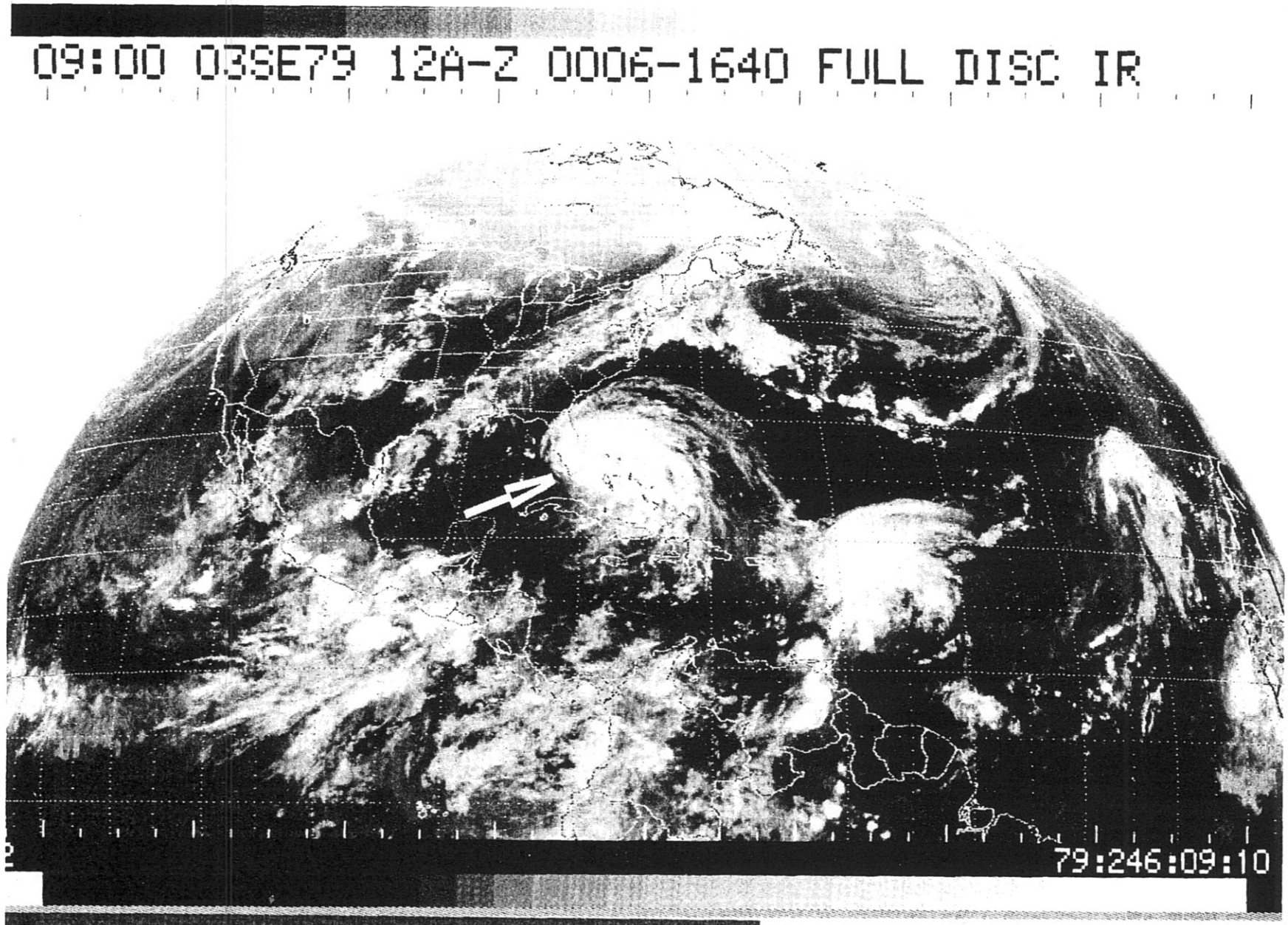

Fig. 64a. DAVID from SMS-2.

FLIGHT LOG

Date:	September 3, 1979
Flight Identification:	790903F
Aircraft:	C-130B/N6541C
Departed:	Miami, Florida, at 03/0500Z
Arrived:	Warner-Robbins AFB, Georgia, at 03/1255Z
Purpose:	Hurricane DAVID research and reconnaissance
Pattern:	Fig. 7 at 5000 ft

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
RFC Standard	1	03/0504	03/1240
Radar	2	03/0515	03/1235

EQUIPMENT STATUS: 790903F

SYSTEM	STATUS /	UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			
	INE 2	X			
	ONE	X			
	DOPL			X	
RADAR	NOSE	X			
	LF			X	
	TAIL			X	
	DATA SYSTEM	X			
AWRS	DATA SYSTEM	X			
	TOTAL TEMP. 1	X			
	TOTAL TEMP. 2			X	
	DEW POINT	X			
	ATTACK ANGLE	X			
	SLIP ANGLE	X			
	ABS. PRESS.	X			
	DIFF. PRESS.	X			
	RADAR ALT.	X			
	J & W	X			
PMS	OAP 2DP	X			
	OAP 2DC			X	
	FSSP 100			X	
	DATA SYSTEM	X			
IPC		X			
FOIL		X			
CO_2 RADIOMETER				X	
MICROWAVE RADIOMETER				X	
SFC. RADIOMETER		X			
FORMVAR				X	
PHOTOGRAPHY	FWD	X			
	LS	X			
	RS	X			
	DWN			X	
AXBT	TUBES			X	
	RECEIVERS			X	
ODW				X	

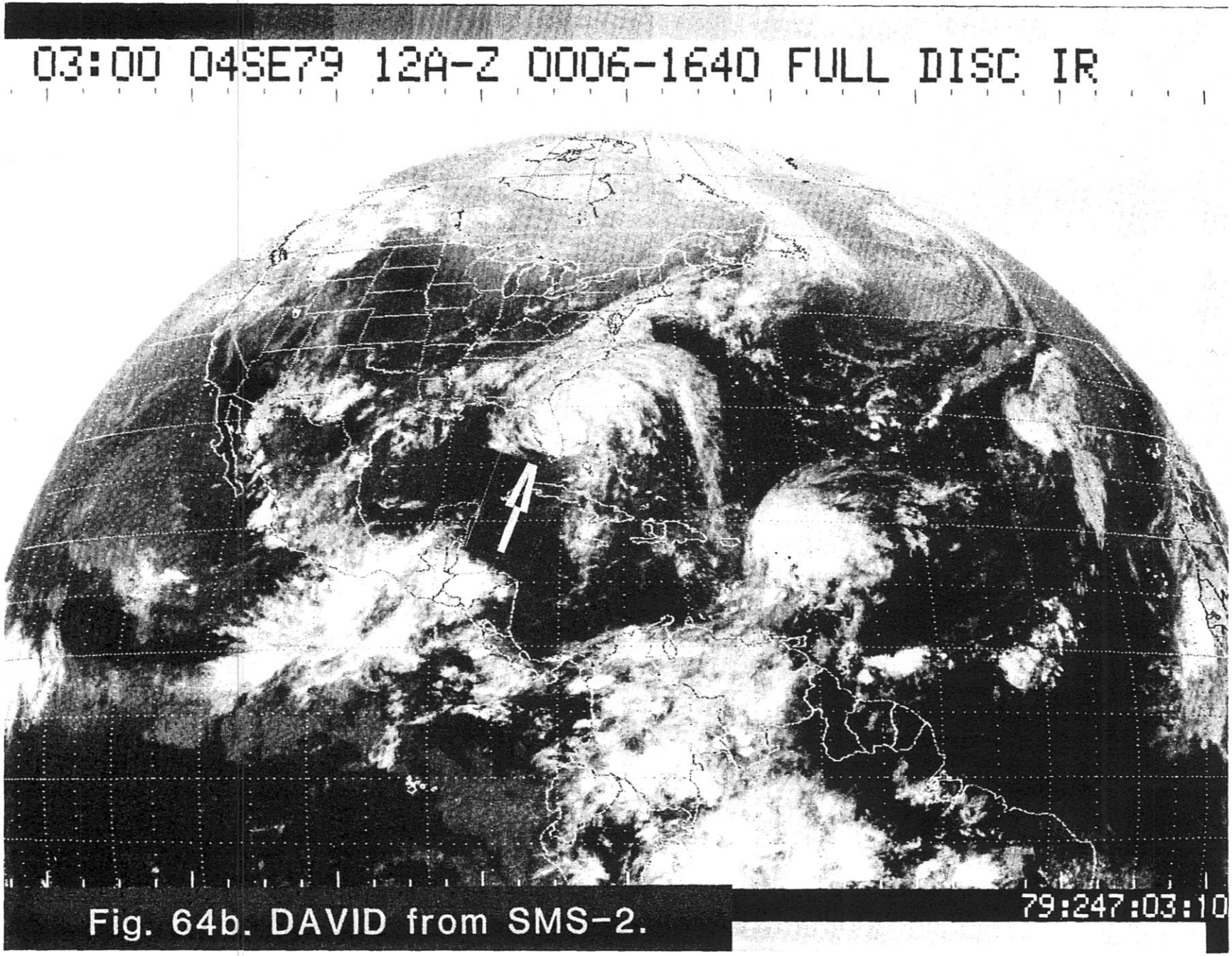

Fig. 64b. DAVID from SMS-2.

FLIGHT LOG

Date:	September 3, 1979
Flight Identification:	790903I
Aircraft:	WP-3D/N43RF
Departed:	Eglin AFB, Florida, at 03/2225Z
Arrived:	Miami, Florida, at 04/0644Z
Purpose:	Hurricane DAVID research and reconnaissance
Pattern:	Along the Florida coast, as eye was in over land; operational fixes 04/00Z, 03Z and 06Z

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
RFC Standard	2	03/2312	04/0641
Radar	8	03/2300	04/0620
Knollenberg	18	03/2322	04/0612

EQUIPMENT STATUS: 790903I

SYSTEM	STATUS /	UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			
	INE 2	X			
	ONE	X			
	DOPL			X	
RADAR	NOSE	X			
	LF	X			
	TAIL			X	
	DATA SYSTEM	X			
RAMS	DATA SYSTEM	X			
	TOTAL TEMP. 1	X			
	TOTAL TEMP. 2	X			
	DEW POINT	X			
	ATTACK ANGLE	X			
	SLIP ANGLE	X			
	ABS. PRESS.	X			
	DIFF. PRESS.	X			
	RADAR ALT.	X			
	J & W	X			
PMS	OAP 2DP	X			
	OAP 2DC	X			
	FSSP 100	X			
	DATA SYSTEM	X			
IPC				X	
FOIL		X			
CO_2 RADIOMETER		X			
MICROWAVE RADIOMETER		X			
SFC. RADIOMETER		X			
FORMVAR				X	
PHOTOGRAPHY	FWD	X			
	LS	X			
	RS	X			
	DWN	X			
AXBT	TUBES			X	
	RECEIVERS			X	
ODW				X	

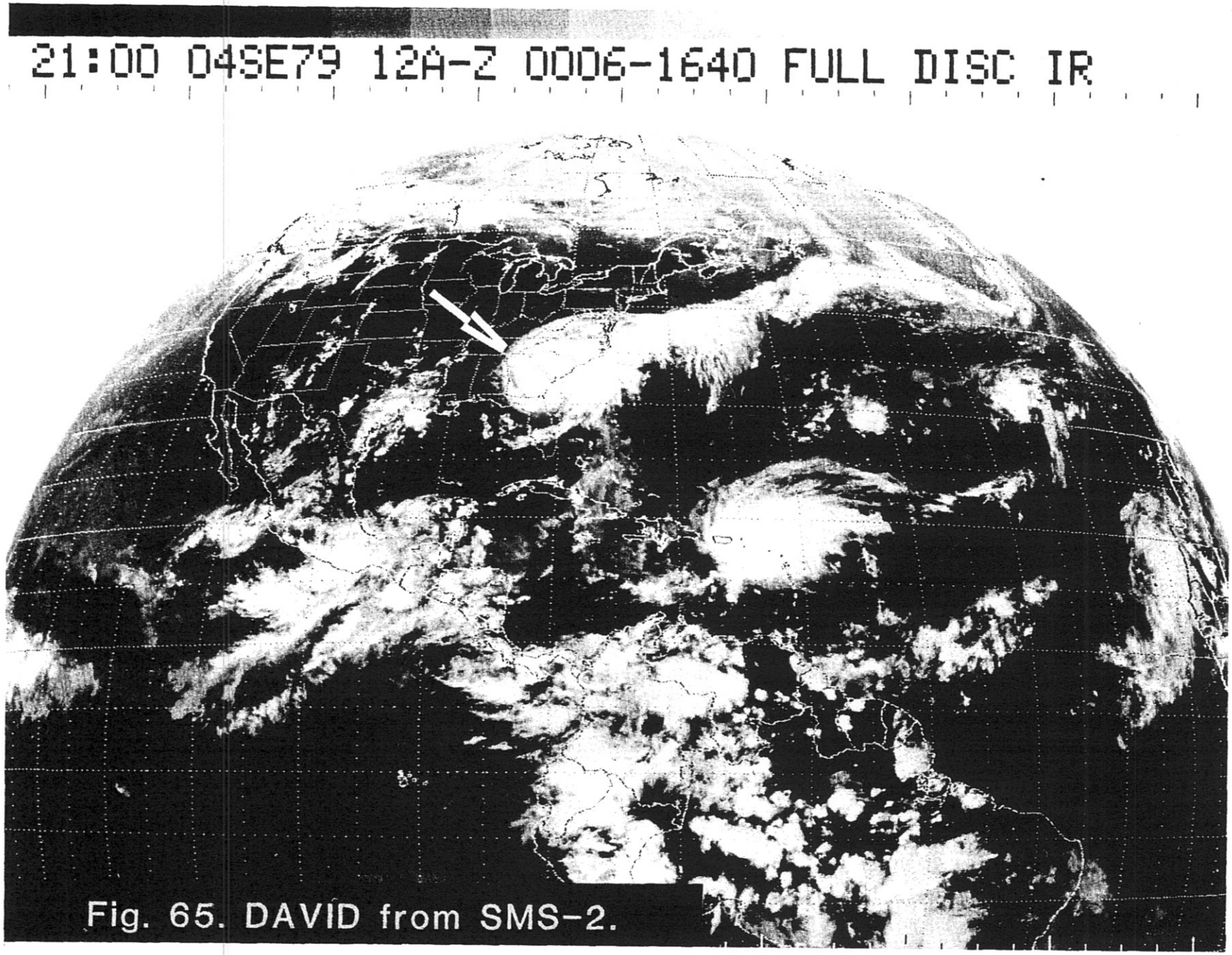

Fig. 65. DAVID from SMS-2.

FLIGHT LOG

Date:	September 4, 1979
Flight Identification:	790904H
Aircraft:	WP-3D/N42RF
Departed:	Miami, Florida, at 04/1655Z
Arrived:	Miami, Florida, at 05/0135Z
Purpose:	Hurricane DAVID research and reconnaissance
Pattern:	Fig. 7 (modified, eye was partly onshore); operational fixes 04/18Z, 21Z, and 05/00Z

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
RFC Standard	2	04/1723	05/0128
Fast	8	04/1715	05/0035
Original	1	04/1715	05/0130
Radar	11	04/1720	05/0103
Knollenberg	17	-	-

EQUIPMENT STATUS: 790904H

SYSTEM	STATUS /	UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			
	INE 2	X			
	ONE	X			
	DOPL			X	
RADAR	NOSE	X			
	LF	X			
	TAIL	X			
	DATA SYSTEM	X			
RAMS	DATA SYSTEM	X			
	TOTAL TEMP. 1	X			
	TOTAL TEMP. 2	X			
	DEW POINT	X			
	ATTACK ANGLE	X			
	SLIP ANGLE	X			
	ABS. PRESS.	X			
	DIFF. PRESS.	X			
	RADAR ALT.	X			
	J & W	X			
PMS	OAP 2DP	X			
	OAP 2DC	X			
	FSSP 100	X			
	DATA SYSTEM	X			
IPC				X	
FOIL		X			
CO_2 RADIOMETER				X	
MICROWAVE RADIOMETER				X	
SFC. RADIOMETER		X			
FORMVAR				X	
PHOTOGRAPHY	FWD	X			
	LS	X			
	RS	X			
	DWN			X	
AXBT	TUBES			X	
	RECEIVERS			X	
ODW				X	

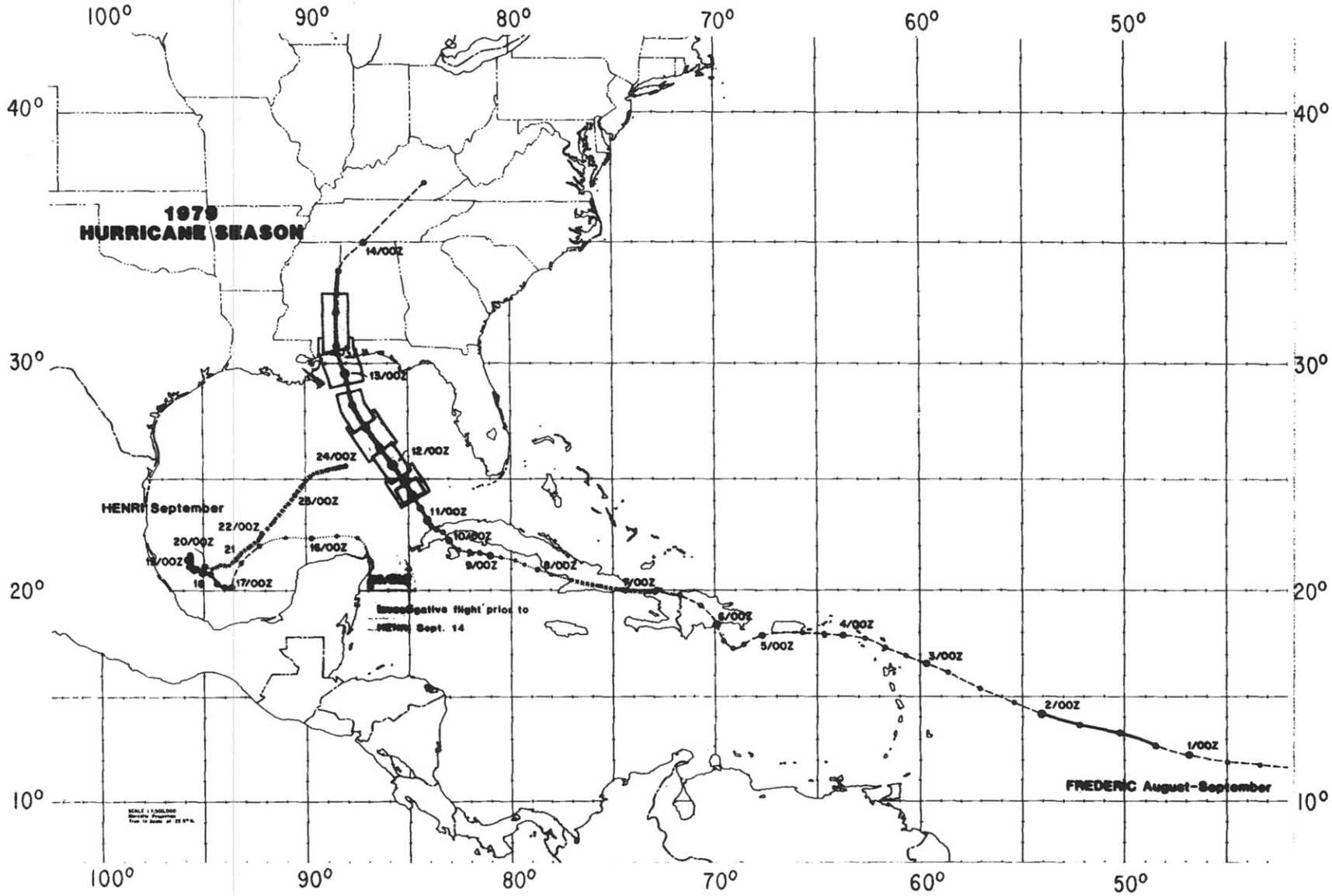

Fig. 66. Storm tracks and NHRL missions for FREDERIC, and for post-FREDERIC and pre-HENRI conditions.

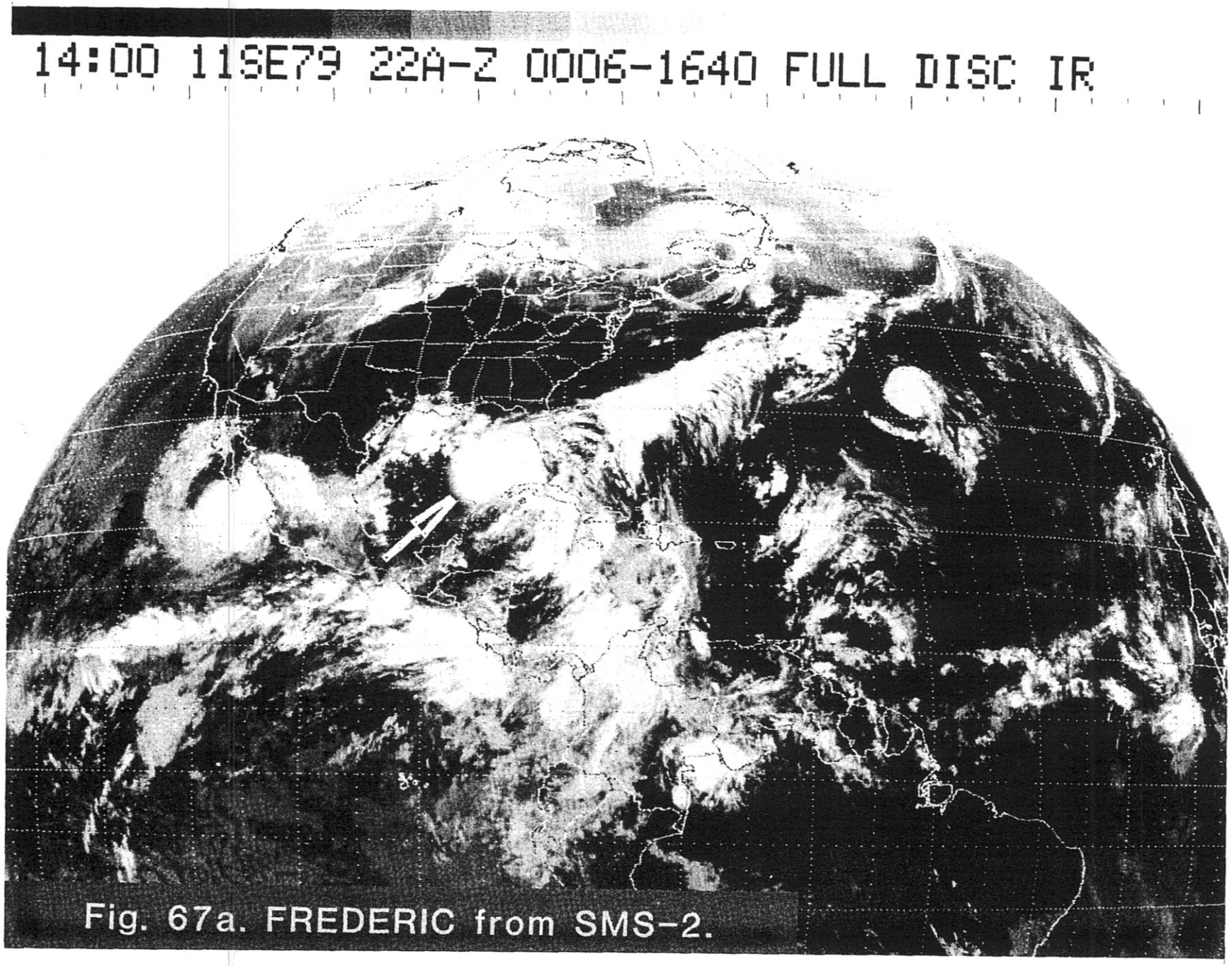

Fig. 67a. FREDERIC from SMS-2.

FLIGHT LOG

Date:	September 11, 1979
Flight Identification:	790911F
Aircraft:	C-130B/N6541C
Departed:	Miami, Florida, at 11/1045Z
Arrived:	Miami, Florida, at 11/1710Z
Purpose:	Hurricane FREDERIC research
Pattern:	Fig. 6 at 20000 ft; (mission cut short due to aircraft problem)

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
RFC Standard	1	11/1026	11/1700
Radar	2	-	-

EQUIPMENT STATUS: 790911F

SYSTEM	STATUS /	UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			
	INE 2	X			
	ONE	X			
	DOPL			X	
RADAR	NOSE	X			
	LF			X	
	TAIL			X	
	DATA SYSTEM	X			
AWRS	DATA SYSTEM	X			
	TOTAL TEMP. 1	X			
	TOTAL TEMP. 2			X	
	DEW POINT	X			
	ATTACK ANGLE	X			
	SLIP ANGLE	X			
	ABS. PRESS.	X			
	DIFF. PRESS.	X			
	RADAR ALT.	X			
	J & W	X			
PMS	OAP 2DP	X			
	OAP 2DC			X	
	FSSP 100			X	
	DATA SYSTEM	X			
IPC		X			
FOIL		X			
CO_2 RADIOMETER				X	
MICROWAVE RADIOMETER				X	
SFC. RADIOMETER		X			
FORMVAR				X	
PHOTOGRAPHY	FWD	X			
	LS	X			
	RS	X			
	DWN			X	
AXBT	TUBES			X	
	RECEIVERS			X	
ODW		X			5 sondes dropped

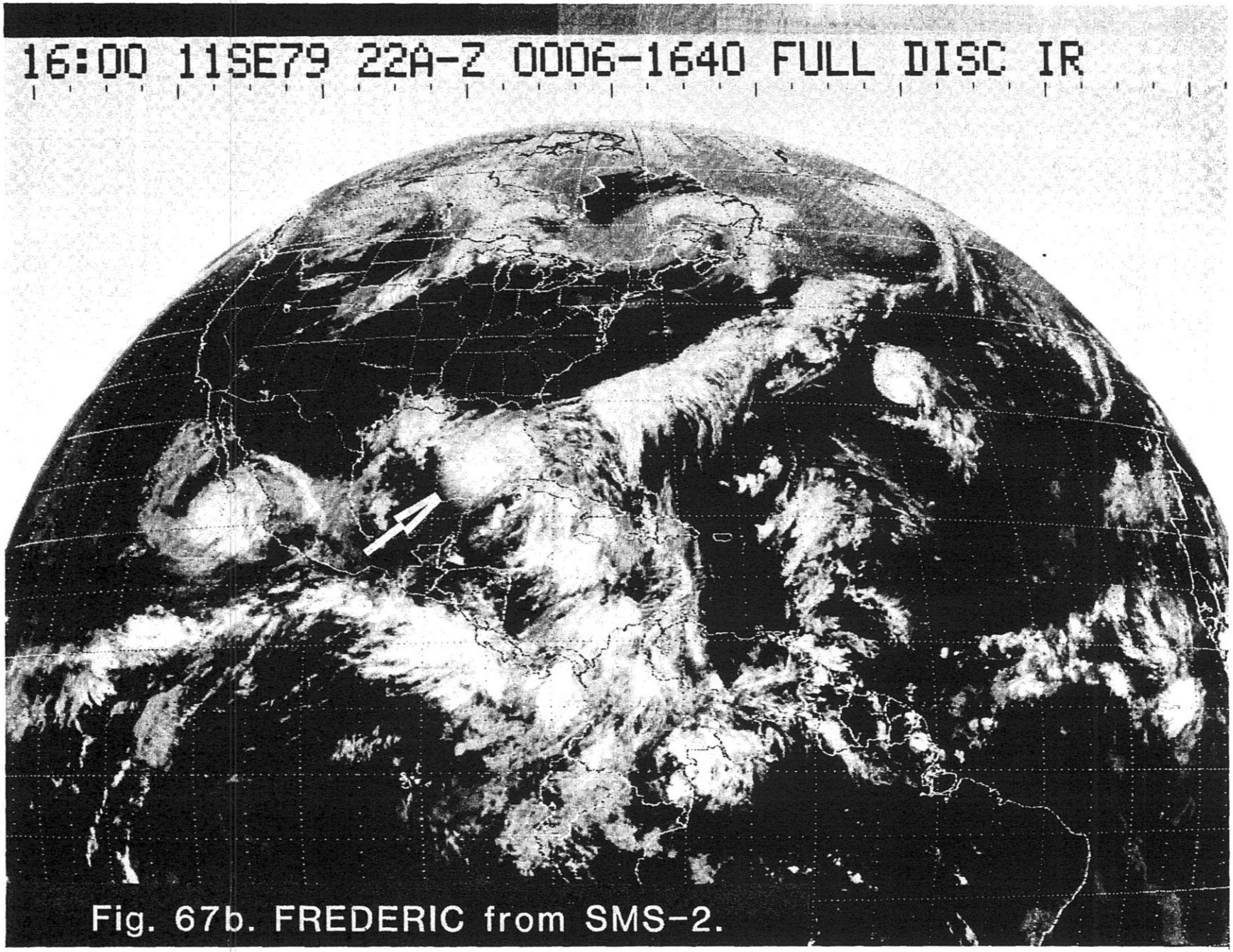

Fig. 67b. FREDERIC from SMS-2.

FLIGHT LOG

Date:	September 11, 1979
Flight Identification:	790911H
Aircraf :	WP-3D/N42RF
Departed:	Miami, Florida, at 11/1000Z
Arrived:	Miami, Florida, at 11/2115Z
Purpose:	Hurricane FREDERIC research/reconnaissance
Pattern:	Fig. 6 (modified) and circumnavigation at 1500 ft

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
RFC Standard	2	11/1014	11/2107
Fast	9	11/1049	11/1704
Radar	12	11/1029	11/1910
Knollenberg	17	-	-

EQUIPMENT STATUS: 790911H

SYSTEM	STATUS /	UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			
	INE 2	X			
	ONE	X			
	DOPL			X	
RADAR	NOSE	X			
	LF	X			
	TAIL	X			
	DATA SYSTEM	X			
RAMS	DATA SYSTEM	X			DWN 11/1200-1305Z
	TOTAL TEMP. 1	X			
	TOTAL TEMP. 2	X			
	DEW POINT	X			
	ATTACK ANGLE	X			
	SLIP ANGLE	X			
	ABS. PRESS.	X			
	DIFF. PRESS.	X			
	RADAR ALT.	X			
	J & W	X			
PMS	OAP 2DP	X			
	OAP 2DC	X			
	FSSP 100	X			
	DATA SYSTEM	X			
IPC		X			
FOIL		X			
CO_2 RADIOMETER		X			
MICROWAVE RADIOMETER		X			
SFC. RADIOMETER			X		
FORMVAR		X			
PHOTOGRAPHY	FWD	X			
	LS	X			
	RS	X			
	DWN			X	
AXBT	TUBES	X			
	RECEIVERS	X			
ODW				X	

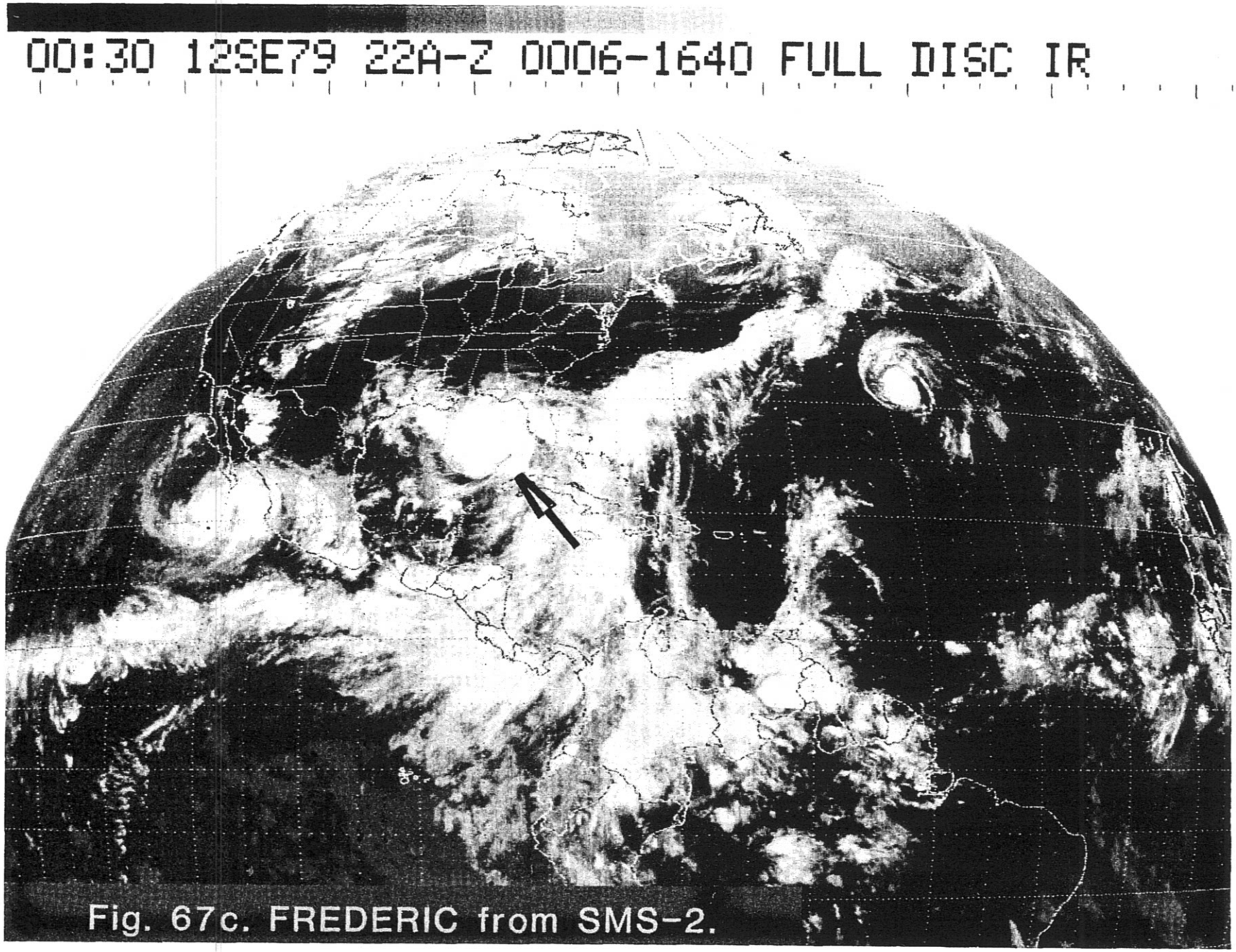

Fig. 67c. FREDERIC from SMS-2.

FLIGHT LOG

Date:	September 11, 1979
Flight Identification:	790911I
Aircraft:	WP-3D/N43RF
Departed:	Miami, Florida, at 11/1934Z
Arrived:	Miami, Florida, at 12/0520Z
Purpose:	Hurricane FREDERIC research (Long-Term Monitoring)
Pattern:	Fig. 9 (modified) at 1500 and 5000 ft; operational fix 11/21Z at 5000 ft

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
RFC Standard	2	11/1940	12/0515
Fast	8	11/2035	12/0300
Radar	9	11/2009	12/0338
Knollenberg	3	11/1940	12/0236

EQUIPMENT STATUS: 790911I

SYSTEM	STATUS /	UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			
	INE 2	X			
	ONE	X			
	DOPL			X	
RADAR	NOSE	X			
	LF	X			
	TAIL			X	
	DATA SYSTEM	X			
RAMS	DATA SYSTEM	X			
	TOTAL TEMP. 1	X			
	TOTAL TEMP. 2	X			
	DEW POINT	X			
	ATTACK ANGLE	X			
	SLIP ANGLE	X			
	ABS. PRESS.	X			
	DIFF. PRESS.	X			
	RADAR ALT.	X			
	J & W	X			
PMS	OAP 2DP	X			
	OAP 2DC	X			
	FSSP 100			X	
	DATA SYSTEM	X			
IPC				X	
FOIL		X			
CO_2 RADIOMETER		X			
MICROWAVE RADIOMETER		X			
SFC. RADIOMETER		X			
FORMVAR				X	
PHOTOGRAPHY	FWD	X			
	LS	X			
	RS	X			
	DWN			X	
AXBT	TUBES	X			31 dropped
	RECEIVERS	X			
ODW				X	

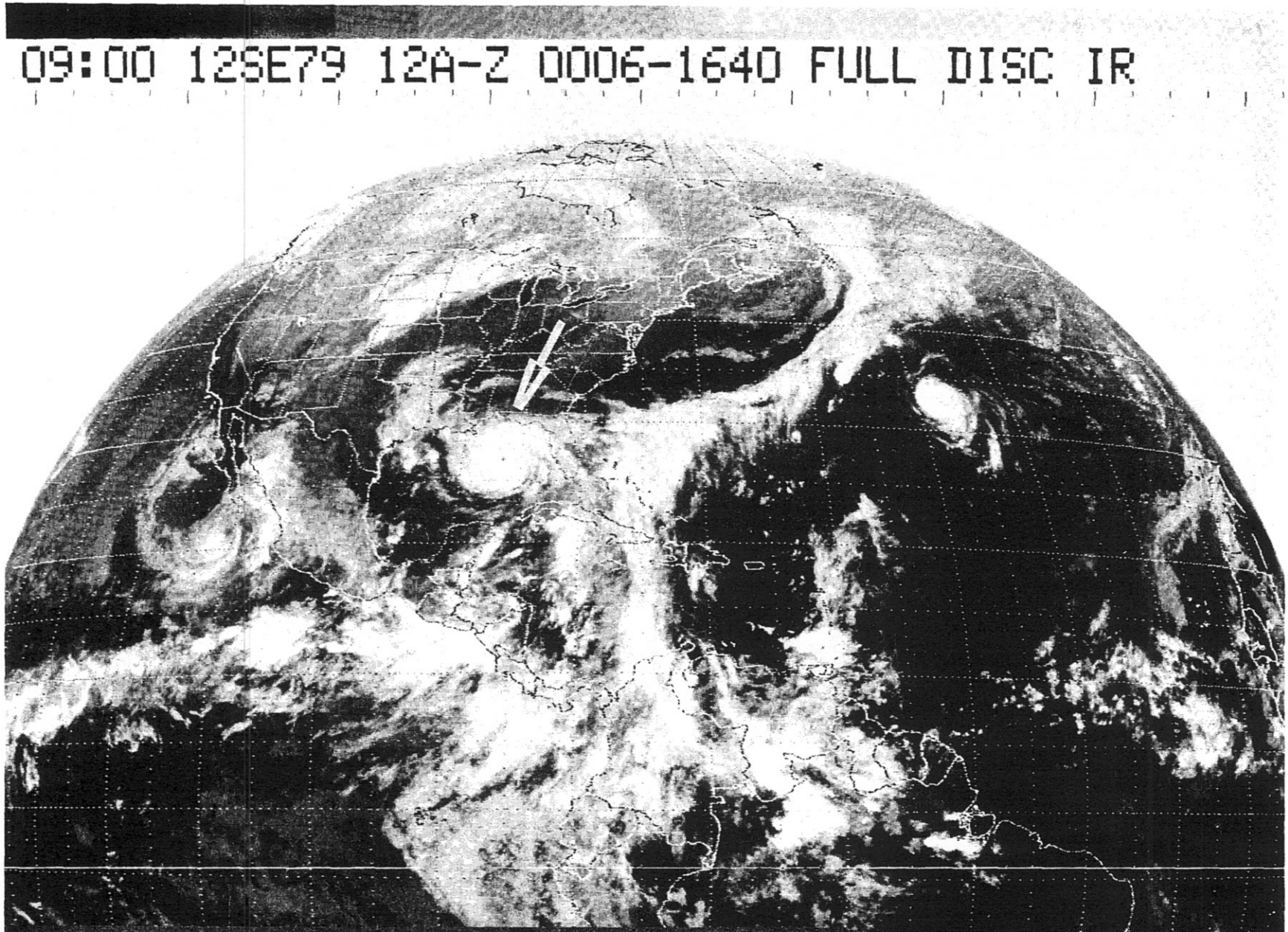

Fig. 68a. FREDERIC from SMS-2.

FLIGHT LOG

Date:	September 12, 1979
Flight Identification:	790912H1
Aircraft:	WP-3D/N42RF
Departed:	Miami, Florida, at 12/0425Z
Arrived:	Miami, Florida, at 12/1425Z
Purpose:	Hurricane FREDERIC research (Long-Term Monitoring)
Pattern:	Fig. 9 at 1500 and 5000 ft

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
RFC Standard	2	12/0439	12/1419
Radar	14	12/0510	12/1315
Knollenberg	11	12/0535	12/1305

EQUIPMENT STATUS: 790912H1

SYSTEM	STATUS /	UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			
	INE 2	X			
	ONE	X			
	DOPL	X			
RADAR	NOSE	X			
	LF	X			
	TAIL	X			
	DATA SYSTEM	X			
RAMS	DATA SYSTEM	X			
	TOTAL TEMP. 1	X			
	TOTAL TEMP. 2	X			
	DEW POINT	X			
	ATTACK ANGLE	X			
	SLIP ANGLE	X			
	ABS. PRESS.	X			
	DIFF. PRESS.	X			
	RADAR ALT.	X			
	J & W	X			
PMS	OAP 2DP	X			
	OAP 2DC	X			
	FSSP 100	X			
	DATA SYSTEM	X			
IPC		X			
FOIL		X			
CO_2 RADIOMETER		X			
MICROWAVE RADIOMETER		X			
SFC. RADIOMETER		X			
FORMVAR		X			
PHOTOGRAPHY	FWD	X			
	LS	X			
	RS	X			
	DWN			X	
AXBT	TUBES	X			
	RECEIVERS	X			
ODW				X	

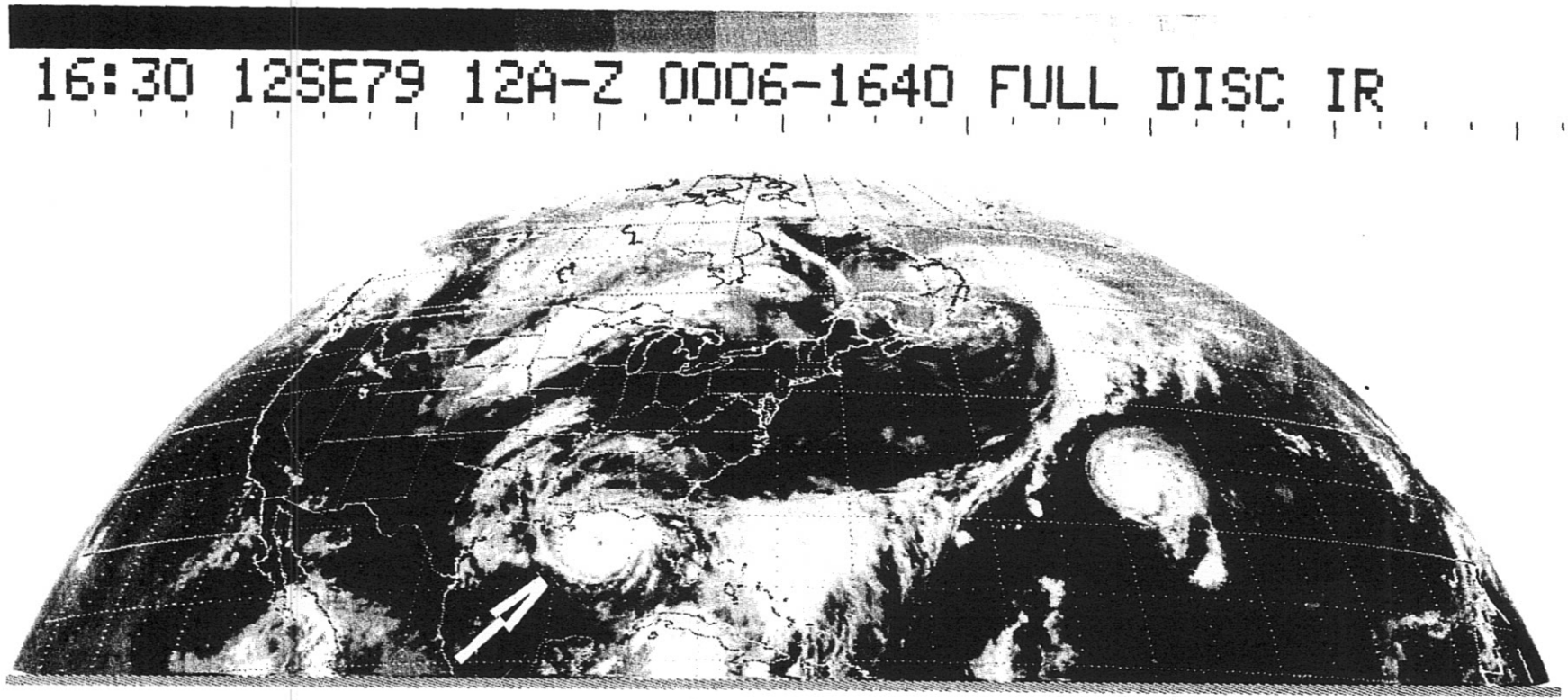

Fig. 68b. FREDERIC from SMS-2.

FLIGHT LOG

Date:	September 12, 1979
Flight Identification:	790912F
Aircraft:	C-130B/N6541C
Departed:	Miami, Florida, at 12/1235Z
Arrived:	Miami, Florida, at 12/2020Z
Purpose:	Hurricane FREDERIC research and reconnaissance
Pattern:	Fig. 7 at 5000 ft; operational fixes 12/15Z and 18Z at 5000 ft

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
RFC Standard	1	12/1248	12/1950
Radar	2	-	-

EQUIPMENT STATUS: 790912F

SYSTEM	STATUS /	UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			
	INE 2	X			
	ONE	X			
	DOPL			X	
RADAR	NOSE	X			
	LF			X	
	TAIL			X	
	DATA SYSTEM	X			
AWRS	DATA SYSTEM	X			
	TOTAL TEMP. 1	X			
	TOTAL TEMP. 2			X	
	DEW POINT	X			
	ATTACK ANGLE	X			
	SLIP ANGLE	X			
	ABS. PRESS.	X			
	DIFF. PRESS.	X			
	RADAR ALT.	X			
	J & W	X			
PMS	OAP 2DP			X	
	OAP 2DC	X			
	FSSP 100			X	
	DATA SYSTEM	X			
IPC		X			
FOIL		X			
CO_2 RADIOMETER				X	
MICROWAVE RADIOMETER				X	
SFC. RADIOMETER		X			
FORMVAR				X	
PHOTOGRAPHY	FWD	X			
	LS	X			
	RS	X			
	DWN			X	
AXBT	TUBES			X	
	RECEIVERS			X	
ODW				X	

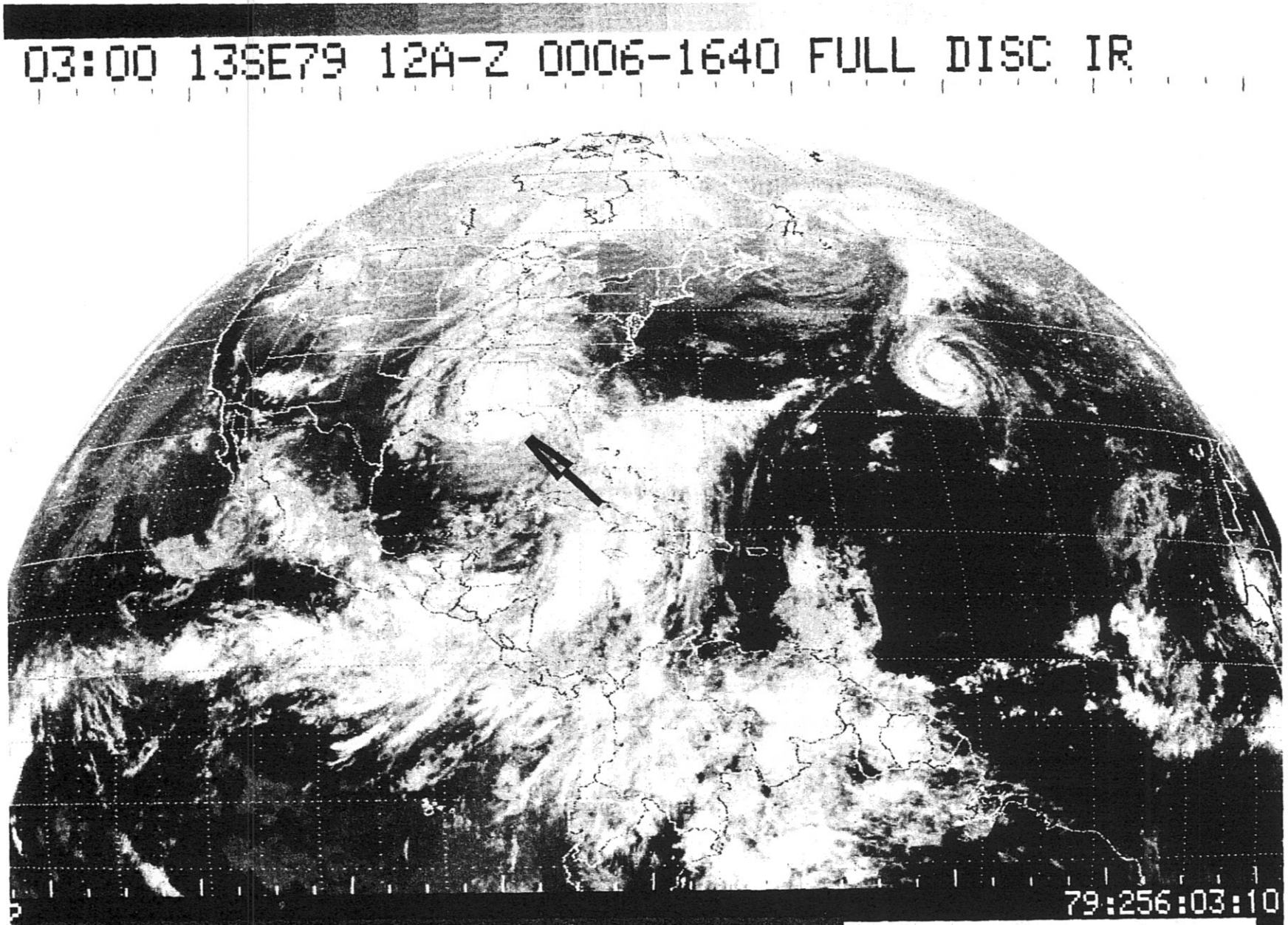

Fig. 68c. FREDERIC from SMS-2.

FLIGHT LOG

Date:	September 12, 1979
Flight Identification:	790912H2
Aircraft:	WP-3D/N42RF
Departed:	Miami, Florida, at 12/2202Z
Arrived:	Miami, Florida, at 13/0746Z
Purpose:	Hurricane FREDERIC research/reconnaissance
Pattern:	Fig. 7 (modified) at 1500 ft; operational fixes 13/00Z and 03Z at 5000 ft

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
RFC Standard	2	12/2220	13/0740
Original	4	12/2220	13/0740
Radar	11	12/2247	13/0710
Knollenberg	9	12/2221	13/0730

EQUIPMENT STATUS: 790912H2

SYSTEM	STATUS /	UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			
	INE 2	X			
	ONE	X			
	DOPL			X	
RADAR	NOSE	X			
	LF	X			
	TAIL	X			
	DATA SYSTEM	X			
RAMS	DATA SYSTEM	X			
	TOTAL TEMP. 1	X			
	TOTAL TEMP. 2	X			
	DEW POINT	X			
	ATTACK ANGLE	X			
	SLIP ANGLE	X			
	ABS. PRESS.	X			
	DIFF. PRESS.	X			
	RADAR ALT.	X			
	J & W	X			
PMS	OAP 2DP		X		
	OAP 2DC	X			
	FSSP 100			X	
	DATA SYSTEM	X			
IPC				X	
FOIL		X			
CO_2 RADIOMETER				X	
MICROWAVE RADIOMETER				X	
SFC. RADIOMETER		X			
FORMVAR				X	
PHOTOGRAPHY	FWD	X			
	LS	X			
	RS	X			
	DWN			X	
AXBT	TUBES	X			14 dropped
	RECEIVERS	X			
ODW				X	

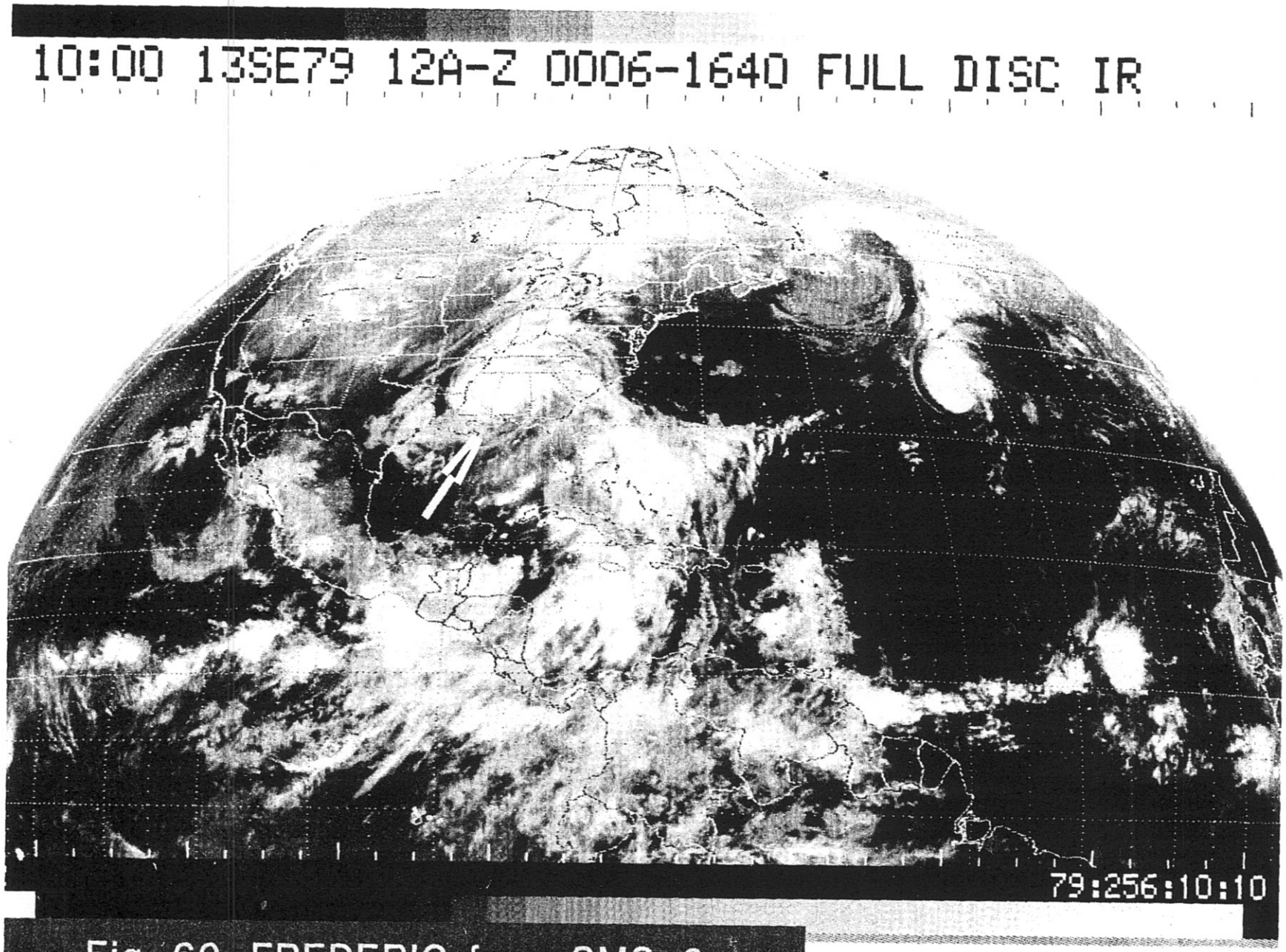

Fig. 69. FREDERIC from SMS-2.

FLIGHT LOG

Date:	September 13, 1979
Flight Identification:	790913I
Aircraft:	WP-3D/N43RF
Departed:	Miami, Florida, at 13/0455Z
Arrived:	Miami, Florida, at 13/1406Z
Purpose:	Hurricane FREDERIC research
Pattern:	AXBT drops in storm's wake at 1500 ft

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
RFC Standard	2	13/0507	13/1403
Fast	5	13/0824	-
Radar	5	13/0515	13/1330
Knollenberg	4	-	-

EQUIPMENT STATUS: 790913I

SYSTEM	STATUS /	UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			
	INE 2	X			
	ONE	X			
	DOPL			X	
RADAR	NOSE	X			
	LF	X			
	TAIL			X	
	DATA SYSTEM	X			
RAMS	DATA SYSTEM	X			
	TOTAL TEMP. 1	X			
	TOTAL TEMP. 2	X			
	DEW POINT	X			
	ATTACK ANGLE	X			
	SLIP ANGLE	X			
	ABS. PRESS.	X			
	DIFF. PRESS.	X			
	RADAR ALT.	X			
	J & W	X			
PMS	OAP 2DP	X			
	OAP 2DC	X			
	FSSP 100	X			
	DATA SYSTEM	X			
IPC				X	
FOIL				X	
CO_2 RADIOMETER				X	
MICROWAVE RADIOMETER				X	
SFC. RADIOMETER		X			
FORMVAR				X	
PHOTOGRAPHY	FWD	X			
	LS				
	RS				
	DWN	X			
AXBT	TUBES	X			
	RECEIVERS	X			
ODW				X	

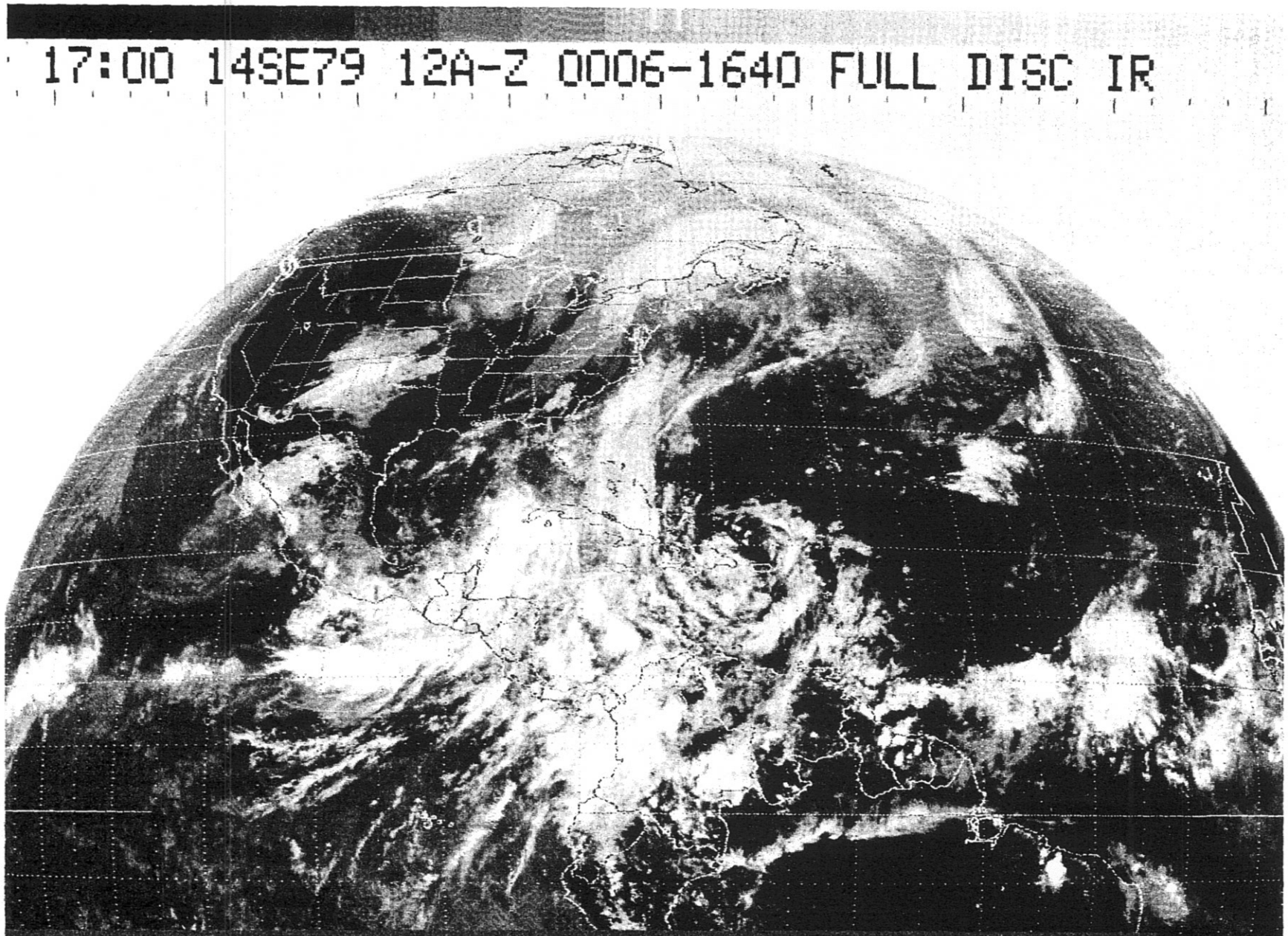

Fig. 70. Post-FREDERIC conditions from SMS-2.

FLIGHT LOG

Date:	September 14, 1979
Flight Identification:	790914I
Aircraft:	WP-3D/N43RF
Departed:	Miami, Florida, at 14/1300Z
Arrived:	Miami, Florida, at 14/2045Z
Purpose:	Storm damage assessment, and post-FREDERIC (AXBT) research
Pattern:	Along storm's path in the vicinity of the coast at 150 ft; AXBT drops in the storm's wake at 1200 ft

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
RFC Standard	1	14/1630	14/2040

EQUIPMENT STATUS: 790914I

SYSTEM		STATUS / UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			
	INE 2	X			
	ONE	X			
	DOPL			X	
RADAR	NOSE	X			
	LF	X			
	TAIL			X	
	DATA SYSTEM	X			
RAMS	DATA SYSTEM	X			
	TOTAL TEMP. 1	X			
	TOTAL TEMP. 2	X			
	DEW POINT	X			
	ATTACK ANGLE	X			
	SLIP ANGLE	X			
	ABS. PRESS.	X			
	DIFF. PRESS.	X			
	RADAR ALT.	X			
	J & W	X			
PMS	OAP 2DP			X	
	OAP 2DC			X	
	FSSP 100			X	
	DATA SYSTEM			X	
IPC				X	
FOIL				X	
CO_2 RADIOMETER				X	
MICROWAVE RADIOMETER				X	
SFC. RADIOMETER		X			
FORMVAR				X	
PHOTOGRAPHY	FWD	X			
	LS	X			
	RS	X			
	DWN	X			
AXBT	TUBES	X			
	RECEIVERS	X			
ODW				X	

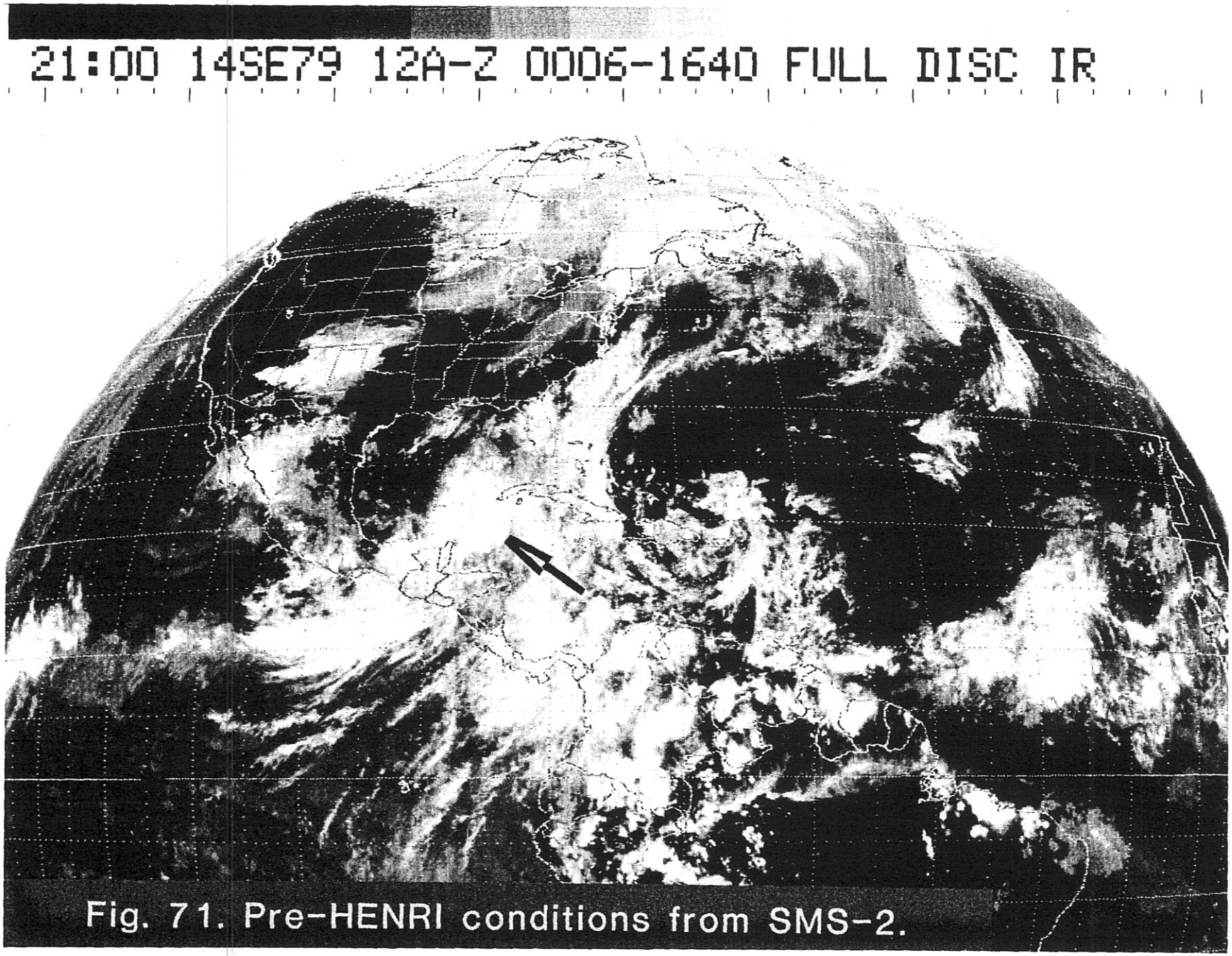

Fig. 71. Pre-HENRI conditions from SMS-2.

FLIGHT LOG

Date:	September 14, 1979
Flight Identification:	790914H
Aircraft:	WP-3D/N42RF
Departed:	Miami, Florida, at 14/1600Z
Arrived:	Miami, Florida, at 15/0150Z
Purpose:	Investigate area of disturbed tropical weather in the western Caribbean Sea (pre-HENRI)
Pattern:	Reconnaissance; weak center near 20°20'N 86°45'W at 14/2157Z

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
RFC Standard	2	14/1616	15/0148

EQUIPMENT STATUS: 790914H

SYSTEM		STATUS / UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			
	INE 2	X			
	ONE	X			
	DOPL			X	
RADAR	NOSE	X			
	LF	X			
	TAIL			X	
	DATA SYSTEM	X			No tapes made
RAMS	DATA SYSTEM	X			
	TOTAL TEMP. 1	X			
	TOTAL TEMP. 2	X			
	DEW POINT	X			
	ATTACK ANGLE	X			
	SLIP ANGLE	X			
	ABS. PRESS.	X			
	DIFF. PRESS.	X			
	RADAR ALT.	X			
	J & W	X			
PMS	OAP 2DP			X	
	OAP 2DC			X	
	FSSP 100			X	
	DATA SYSTEM			X	
IPC				X	
FOIL				X	
CO_2 RADIOMETER				X	
MICROWAVE RADIOMETER				X	
SFC. RADIOMETER		X			
FORMVAR				X	
PHOTOGRAPHY	FWD			X	
	LS			X	
	RS			X	
	DWN			X	
AXBT	TUBES			X	
	RECEIVERS			X	
ODW				X	

8.5 1980 Data

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Fig. 74a	ALLEN	300
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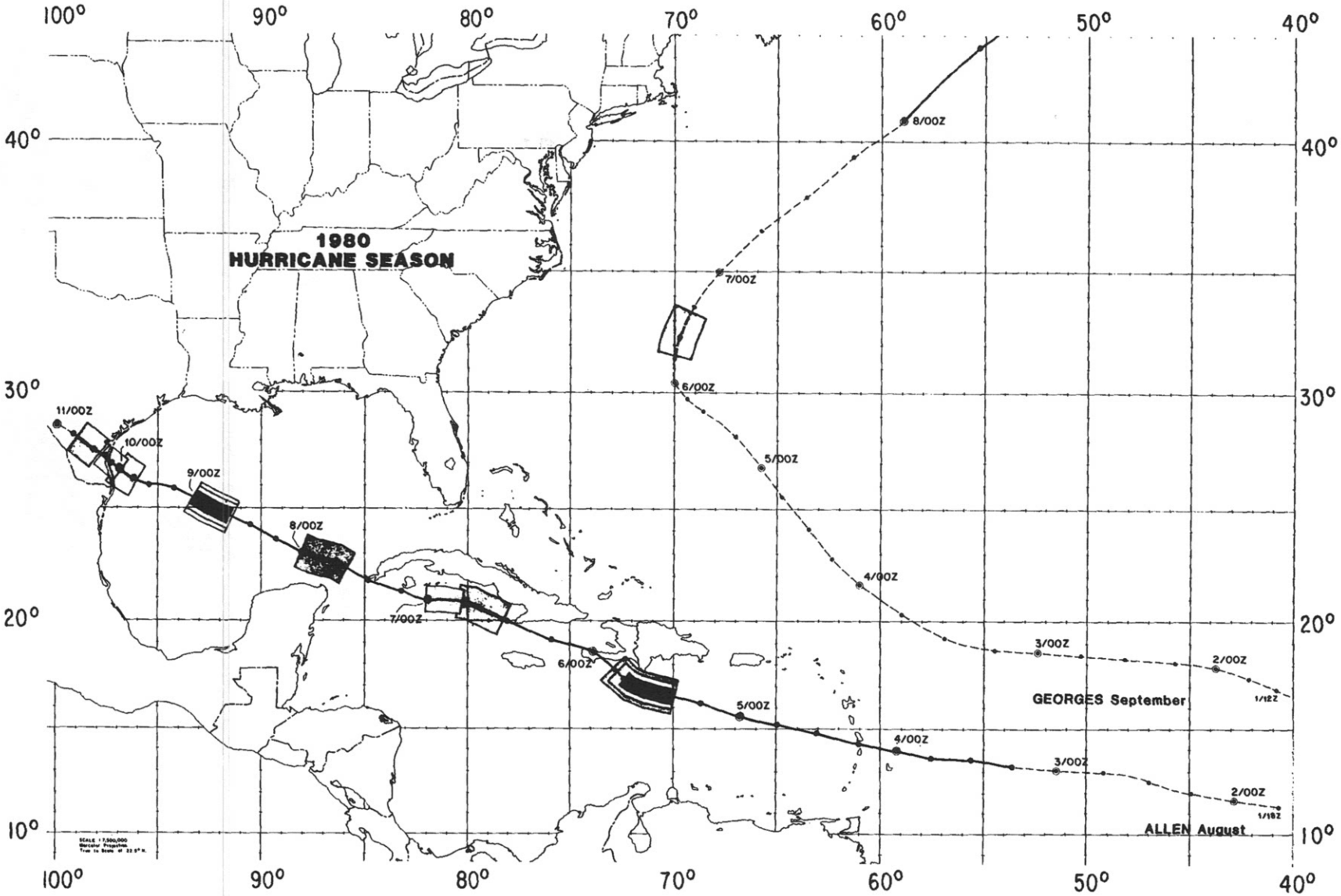

Fig. 72. Storm tracks and NHRL missions for ALLEN and for tropical depression (pre-GEORGES) conditions.

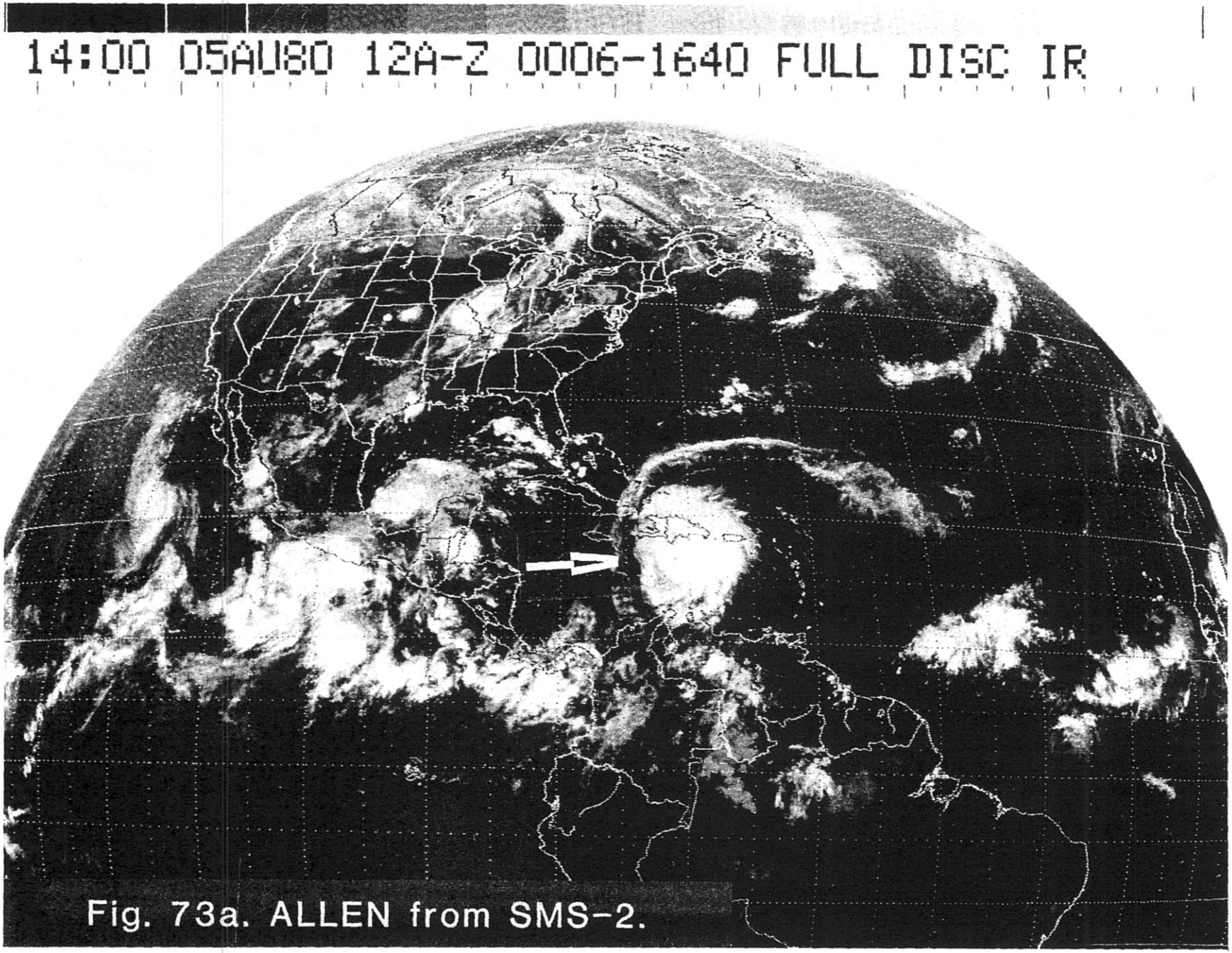

Fig. 73a. ALLEN from SMS-2.

FLIGHT LOG

Date:	August 5, 1980
Flight Identification:	800805F
Aircraft:	C-130B/N6541C
Departed:	San Juan, Puerto Rico, at 05/1012Z
Arrived:	San Juan, Puerto Rico, at 05/1752Z
Purpose:	Hurricane ALLEN Eyewall and Rainband Experiments
Pattern:	Figs. 11 and 12 at 10000 ft

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
RFC Standard	1	05/1028	05/1742
Slow	2	05/1028	05/1742
Radar	2	05/1043	05/1630

EQUIPMENT STATUS: 800805F

SYSTEM	STATUS /	UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			
	INE 2	X			
	ONE			X	
	DOPL			X	
RADAR	NOSE	X			
	LF			X	
	TAIL			X	
	DATA SYSTEM	X			
AWRS	DATA SYSTEM	X			
	TOTAL TEMP. 1	X			
	TOTAL TEMP. 2			X	
	DEW POINT	X			
	ATTACK ANGLE	X			
	SLIP ANGLE	X			
	ABS. PRESS.	X			
	DIFF. PRESS.	X			
	RADAR ALT.	X			
	J & W	X			
PMS	OAP 2DP			X	
	OAP 2DC			X	
	FSSP 100			X	
	DATA SYSTEM			X	
IPC				X	
FOIL				X	
CO_2 RADIOMETER				X	
MICROWAVE RADIOMETER				X	
SFC. RADIOMETER		X			
FORMVAR				X	
PHOTOGRAPHY	FWD	X			
	LS	X			
	RS	X			
	DWN			X	
AXBT	TUBES			X	
	RECEIVERS			X	
ODW				X	

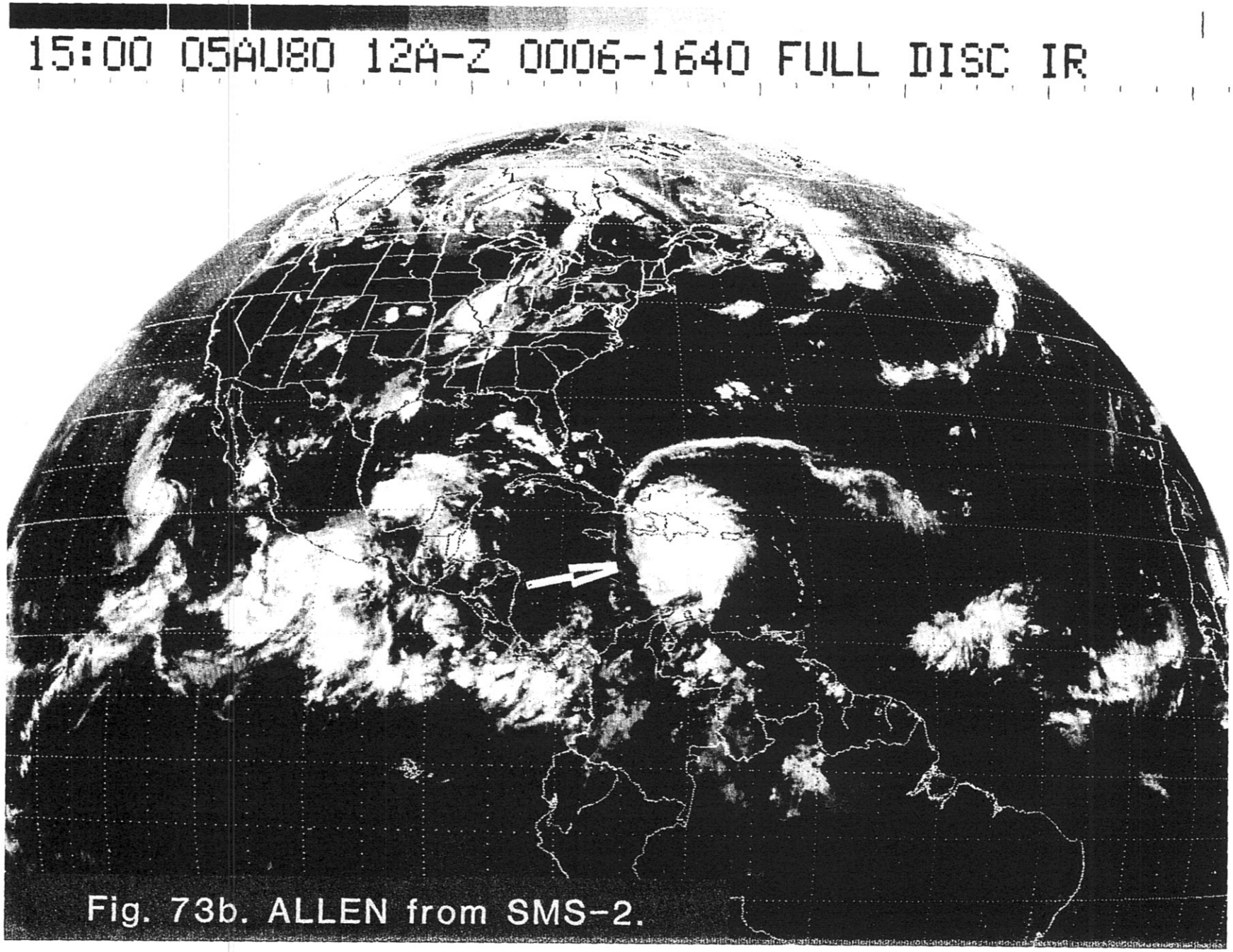

Fig. 73b. ALLEN from SMS-2.

FLIGHT LOG

Date:	August 5, 1980
Flight Identification:	800805H
Aircraft:	WP-3D/N42RF
Departed:	San Juan, Puerto Rico, at 05/1014Z
Arrived:	San Juan, Puerto Rico, at 05/2023Z
Purpose:	Eyewall and Rainband Experiments in Hurricane ALLEN
Pattern:	Fig. 11 at 15000, 18000, and 20000 ft; Fig. 12 at 15000, 10000, 5000, 1500 and 500 ft

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
RFC Standard	1	05/1021	05/1933
Slow	2	05/1021	05/2016
RFC Copy	1	05/1021	05/2016
Radar	16	05/1038	05/1925
Knollenberg	31	05/1052	05/1844

EQUIPMENT STATUS: 800805H

SYSTEM	STATUS /	UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			
	INE 2	X			
	ONE	X			
	DOPL			X	
RADAR	NOSE	X			
	LF	X			
	TAIL	X			
	DATA SYSTEM	X			VTR INOP
RAMS	DATA SYSTEM	X			
	TOTAL TEMP. 1	X			
	TOTAL TEMP. 2	X			
	DEW POINT	X			
	ATTACK ANGLE	X			
	SLIP ANGLE	X			
	ABS. PRESS.	X			
	DIFF. PRESS.	X			
	RADAR ALT.	X			
	J & W	X			
PMS	OAP 2DP	X			
	OAP 2DC	X			Occasionally iced up
	FSSP 100	X			
	DATA SYSTEM	X			
IPC				X	
FOIL		X			
CO_2 RADIOMETER		X			
MICROWAVE RADIOMETER		X			
SFC. RADIOMETER		X			
FORMVAR				X	
PHOTOGRAPHY	FWD	X			
	LS	X			
	RS	X			
AXBT	TUBES			X	
	RECEIVERS			X	
ODW		X			6 dropped, 5 good

FLIGHT LOG

Date:	August 5, 1980
Flight Identification:	800805I
Aircraft:	WP-3D/N43RF
Departed:	San Juan, Puerto Rico, at 05/1015Z
Arrived:	San Juan, Puerto Rico, at 05/1930Z
Purpose:	Hurricane ALLEN Eyewall and Rainband Experiments
Pattern:	Figs. 11 and 12 at 1500 and 5000 ft

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
RFC Standard	1	05/1015	05/1932
Slow	1	05/1015	05/1932
RFC	1	05/1015	05/1932
Radar	7	05/1052	05/1838
Radar VTR	2	05/1058	05/1801
Knollenberg	*	-	-

*No data tapes available due to tape drive malfunction.

EQUIPMENT STATUS: 800805I

SYSTEM		STATUS / UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			
	INE 2	X			
	ONE	X			
	DOPL	X			
RADAR	NOSE	X			
	LF	X			
	TAIL		X		
	DATA SYSTEM	X			
RAMS	DATA SYSTEM	X			
	TOTAL TEMP. 1	X			
	TOTAL TEMP. 2	X			
	DEW POINT	X			
	ATTACK ANGLE	X			
	SLIP ANGLE	X			
	ABS. PRESS.	X			
	DIFF. PRESS.	X			
	RADAR ALT.	X			
	J & W	X			
PMS	OAP 2DP	X			
	OAP 2DC	X			
	FSSP 100		X		
	DATA SYSTEM		X		
IPC				X	
FOIL				X	
CO_2 RADIOMETER				X	
MICROWAVE RADIOMETER				X	
SFC. RADIOMETER		X			
FORMVAR				X	
PHOTOGRAPHY	FWD	X			
	LS	X			
	RS	X			
	DWN			X	
AXBT	TUBES			X	
	RECEIVERS			X	
ODW				X	

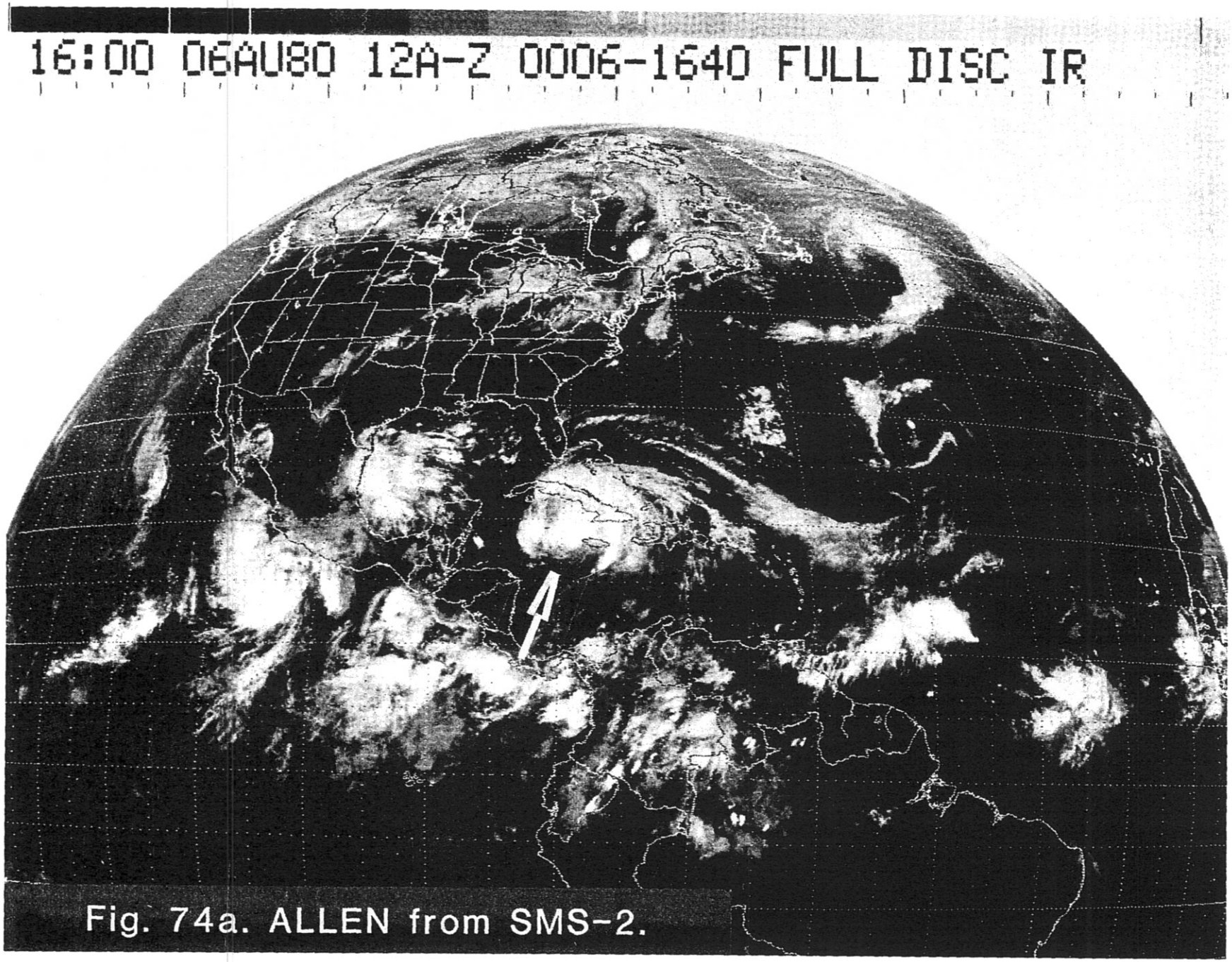

Fig. 74a. ALLEN from SMS-2.

FLIGHT LOG

Date:	August 6, 1980
Flight Identification:	800806H
Aircraft:	WP-3D/N42RF
Departed:	San Juan, Puerto Rico, at 06/1223Z
Arrived:	Miami, Florida, at 06/1913Z
Purpose:	Hurricane ALLEN
Pattern:	Fig. 7 at 1500 ft; completed last half of pattern at 10000 ft due to turbulence at lower level

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
RFC Standard	1	06/1239	06/1910
RFC Original	1	06/1239	06/1910
Slow	1	06/1239	06/1910
Fast	2	06/1507	06/1714
Radar	7	06/1311	06/1847
Knollenberg	10	06/1104	06/1438

EQUIPMENT STATUS: 800806H

SYSTEM	STATUS /	UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			
	INE 2	X			
	ONE	X			
	DOPL			X	
RADAR	NOSE	X			
	LF	X			
	TAIL	X			
	DATA SYSTEM	X			
RAMS	DATA SYSTEM	X			
	TOTAL TEMP. 1	X			
	TOTAL TEMP. 2	X			
	DEW POINT	X			
	ATTACK ANGLE	X			
	SLIP ANGLE	X			
	ABS. PRESS.	X			
	DIFF. PRESS.	X			
	RADAR ALT.	X			
	J & W	X			
PMS	OAP 2DP	X			
	OAP 2DC	X			
	FSSP 100	X			
	DATA SYSTEM	X			
IPC				X	
FOIL		X			
CO_2 RADIOMETER		X			
MICROWAVE RADIOMETER		X			
SFC. RADIOMETER		X			
FORMVAR				X	
PHOTOGRAPHY	FWD	X			
	LS	X			
	RS	X			
	DWN			X	
AXBT	TUBES			X	
	RECEIVERS			X	
ODW				X	

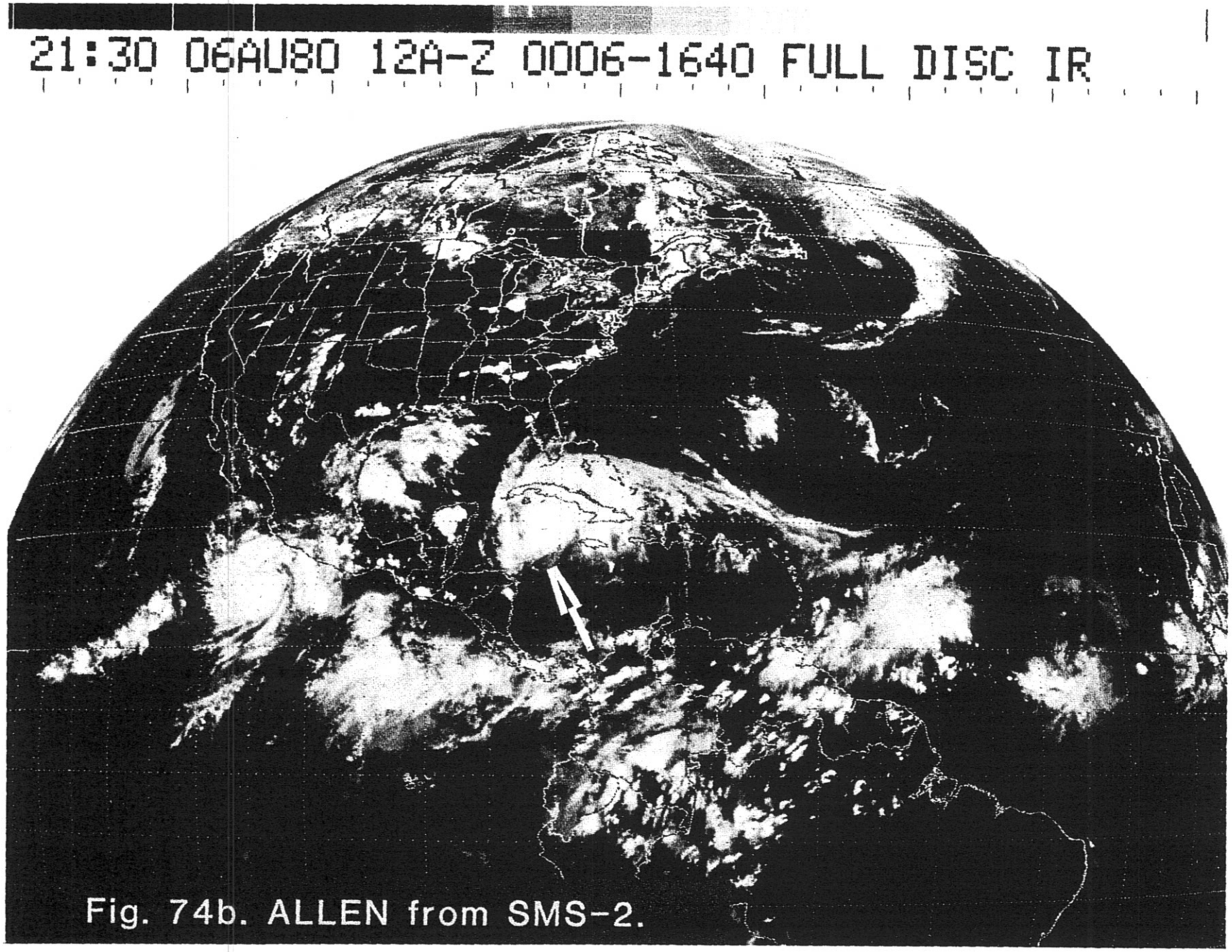

Fig. 74b. ALLEN from SMS-2.

FLIGHT LOG

Date:	August 6, 1980
Flight Identification:	800806I
Aircraft:	WP-3D/N43RF
Departed:	San Juan, Puerto Rico, at 06/1825Z
Arrived:	Miami, Florida, at 07/0031Z
Purpose:	Hurricane ALLEN research and reconnaissance
Pattern:	Fig. 11 (modified) at 5000 ft; operational fix 06/21Z at 5000 ft

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
RFC Standard	1	06/1825	07/0031
Slow	1	06/1825	07/0031
RFC Copy (9-track)	1	06/1825	07/0031
Radar	5	06/1844	07/0005

EQUIPMENT STATUS: 800806I

SYSTEM	STATUS /	UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			
	INE 2	X			
	ONE	X			
	DOPL			X	
RADAR	NOSE	X			
	LF	X			
	TAIL		X		
	DATA SYSTEM	X			
RAMS	DATA SYSTEM	X			
	TOTAL TEMP. 1	X			
	TOTAL TEMP. 2	X			
	DEW POINT	X			
	ATTACK ANGLE	X			
	SLIP ANGLE	X			
	ABS. PRESS.	X			
	DIFF. PRESS.	X			
	RADAR ALT.	X			
	J & W	X			
PMS	OAP 2DP	X			
	OAP 2DC	X			
	FSSP 100		X		
	DATA SYSTEM	X			
IPC		X			
FOIL				X	
CO_2 RADIOMETER				X	
MICROWAVE RADIOMETER				X	
SFC. RADIOMETER		X			
FORMVAR				X	
PHOTOGRAPHY	FWD	X			
	LS	X			
	RS	X			
	DWN				
AXBT	TUBES			X	
	RECEIVERS			X	
ODW				X	

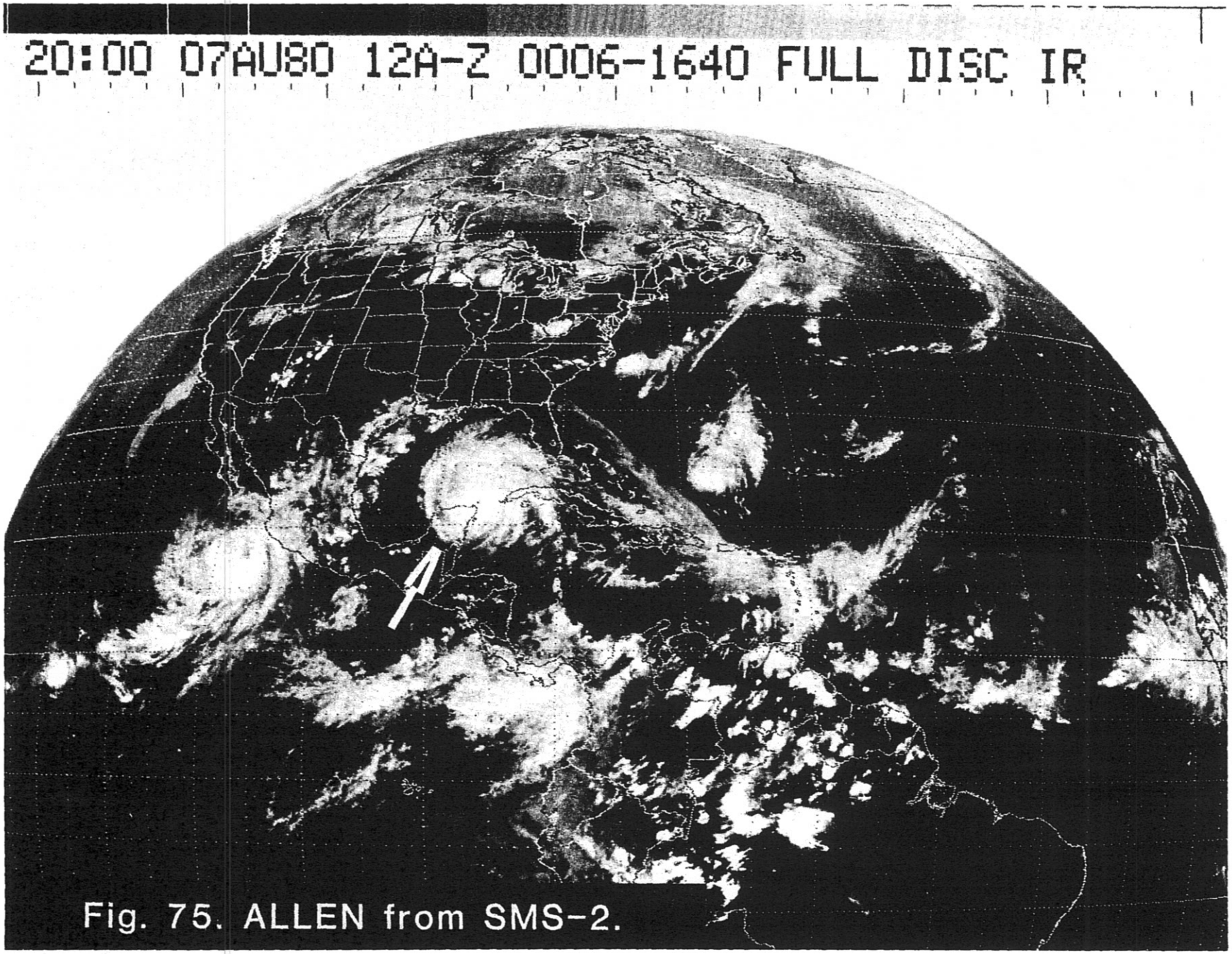

Fig. 75. ALLEN from SMS-2.

FLIGHT LOG

Date:	August 7, 1980
Flight Identification:	800807H
Aircraft:	WP-3D/N42RF
Departed:	Miami, Florida, at 07/1551Z
Arrived:	Miami, Florida, at 08/0020Z
Purpose:	Hurricane ALLEN
Pattern:	Fig. 11 (modified)

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
RFC Standard	1	07/1601	08/0017
Slow	1	07/1601	08/0017
RFC Copy (9-track)	1	07/1601	08/0017
Radar	8	07/1610	08/0003
Knollenberg	5	07/1723	07/2129

EQUIPMENT STATUS: 800807H

SYSTEM	STATUS /	UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			
	INE 2	X			
	ONE	X			
	DOPL		X		
RADAR	NOSE	X			
	LF	X			
	TAIL	X			
	DATA SYSTEM	X			
RAMS	DATA SYSTEM	X			
	TOTAL TEMP. 1	X			
	TOTAL TEMP. 2	X			
	DEW POINT	X			
	ATTACK ANGLE	X			
	SLIP ANGLE	X			
	ABS. PRESS.	X			
	DIFF. PRESS.	X			
	RADAR ALT.	X			
	J & W	X			
PMS	OAP 2DP	X			
	OAP 2DC	X			
	FSSP 100	X			
	DATA SYSTEM	X			Recorder problems
IPC				X	
FOIL		X			Foil broke
CO_2 RADIOMETER		X			
MICROWAVE RADIOMETER		X			
SFC. RADIOMETER		X			
FORMVAR				X	
PHOTOGRAPHY	FWD	X			
	LS	X			
	RS	X			
	DWN				
AXBT	TUBES			X	
	RECEIVERS			X	
ODW				X	

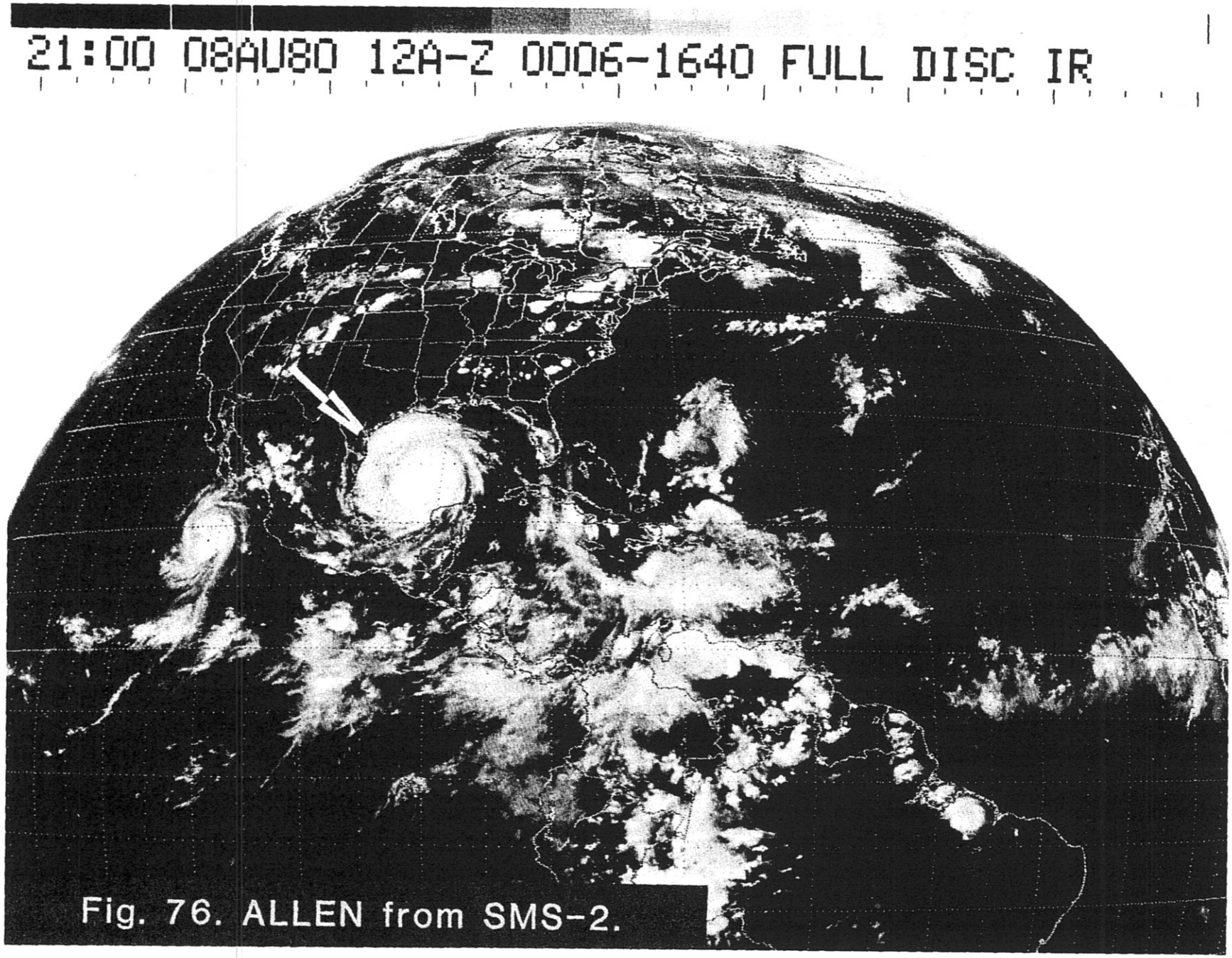

Fig. 76. ALLEN from SMS-2.

FLIGHT LOG

Date:	August 8, 1980
Flight Identification:	800808F
Aircraft:	C-130B/N6541C
Departed:	Miami, Florida, at 08/1610Z
Arrived:	New Orleans, Louisiana, at 09/0105Z
Purpose:	Hurricane ALLEN Modified Eyewall Experiment
Pattern:	Fig. 6 (modified) at 12000 ft

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
RFC Standard	1	08/1620	09/0059
Slow	2	08/1620	09/0059
Radar	3	08/1632	09/0037

EQUIPMENT STATUS: 800808F

SYSTEM	STATUS /	UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			
	INE 2	X			
	ONE	X			
	DOPL			X	
RADAR	NOSE	X			
	LF			X	
	TAIL			X	
	DATA SYSTEM	X			
AWRS	DATA SYSTEM	X			
	TOTAL TEMP. 1	X			
	TOTAL TEMP. 2				
	DEW POINT	X			
	ATTACK ANGLE	X			
	SLIP ANGLE	X			
	ABS. PRESS.	X			
	DIFF. PRESS.	X			
	RADAR ALT.	X			
	J & W	X			
PMS	OAP 2DP			X	
	OAP 2DC			X	
	FSSP 100			X	
	DATA SYSTEM			X	
IPC				X	
FOIL				X	
CO_2 RADIOMETER				X	
MICROWAVE RADIOMETER				X	
SFC. RADIOMETER		X			
FORMVAR				X	
PHOTOGRAPHY	FWD	X			
	LS	X			
	RS	X			
	DWN			X	
AXBT	TUBES			X	
	RECEIVERS			X	
ODW				X	

FLIGHT LOG

Date:	August 8, 1980
Flight Identification:	800808H
Aircraft:	WP-3D/N42RF
Departed:	Miami, Florida, at 08/1631Z
Arrived:	Miami, Florida, at 09/0106Z
Purpose:	Hurricane ALLEN Modified Eyewall Experiment
Pattern:	Fig. 6 (modified) at 18000 to 20000 ft

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
RFC Standard	1	08/1631	09/0107
Slow	2	08/1631	09/0107
Radar	8	08/1700	09/0034
Knollenberg	12	08/1909	08/2251

EQUIPMENT STATUS: 800808H

SYSTEM	STATUS /	UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			
	INE 2	X			
	ONE	X			
	DOPL			X	
RADAR	NOSE	X			
	LF	X			
	TAIL	X			
	DATA SYSTEM	X			
RAMS	DATA SYSTEM	X			
	TOTAL TEMP. 1	X			
	TOTAL TEMP. 2	X			
	DEW POINT	X			
	ATTACK ANGLE	X			
	SLIP ANGLE	X			
	ABS. PRESS.	X			
	DIFF. PRESS.	X			
	RADAR ALT.	X			
	J & W	X			
PMS	OAP 2DP	X			
	OAP 2DC	X			
	FSSP 100	X			
	DATA SYSTEM	X			
IPC				X	
FOIL		X			
CO_2 RADIOMETER		X			
MICROWAVE RADIOMETER		X			
SFC. RADIOMETER		X			
FORMVAR				X	
PHOTOGRAPHY	FWD	X			
	LS	X			
	RS	X			
	DWN				
AXBT	TUBES			X	
	RECEIVERS			X	
ODW		X			Dropped 13 sondes

FLIGHT LOG

Date:	August 8, 1980
Flight Identification:	800808I
Aircraft:	WP-3D/N43RF
Departed:	Miami, Florida, at 08/1615Z
Arrived:	New Orleans, Louisiana, at 09/0110Z
Purpose:	Hurricane ALLEN Modified Eyewall Experiment
Pattern:	Fig. 6 (modified) at 5000 ft; operational fixes 08/21Z and 09/00Z at 5000 ft

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
RFC Standard	1	08/1617	09/0110
Slow	1	08/1617	09/0110
Fast	4	08/1815	08/2356
RFC Copy (9-track)	1	08/1617	09/0110
Radar	9	08/1724	09/0042
Knollenberg	5	08/1954	08/2236
Radar Video Cassettes	2	08/1825	08/2250

EQUIPMENT STATUS: 800808I

SYSTEM	STATUS /	UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			
	INE 2	X			
	ONE	X			
	DOPL			X	
RADAR	NOSE	X			
	LF	X			
	TAIL			X	
	DATA SYSTEM	X			
RAMS	DATA SYSTEM	X			
	TOTAL TEMP. 1	X			
	TOTAL TEMP. 2	X			
	DEW POINT	X			
	ATTACK ANGLE	X			
	SLIP ANGLE	X			
	ABS. PRESS.	X			
	DIFF. PRESS.	X			
	RADAR ALT.	X			
	J & W	X			
PMS	OAP 2DP	X			
	OAP 2DC	X			
	FSSP 100	X			
	DATA SYSTEM	X			
IPC				X	
FOIL				X	
MICROWAVE RADIOMETER					
SFC. RADIOMETER		X			
FORMVAR				X	
PHOTOGRAPHY	FWD	X			
	LS	X			
	RS	X			
	DWN				
AXBT	TUBES	X			9 dropped
	RECEIVERS	X			
ODW				X	

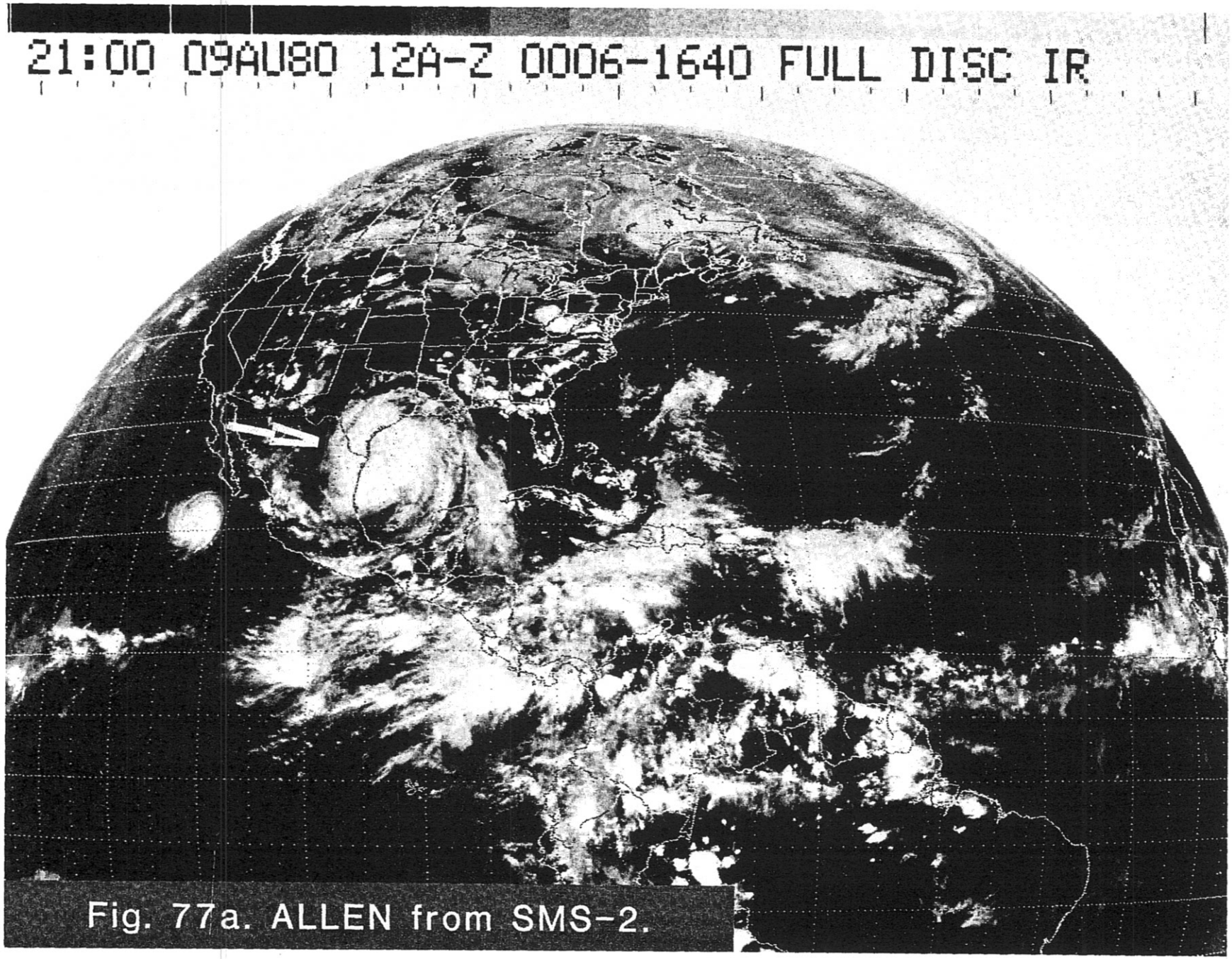

Fig. 77a. ALLEN from SMS-2.

FLIGHT LOG

Date:	August 9, 1980
Flight Identification:	800809I
Aircraft:	WP-3D/N43RF
Departed:	New Orleans, Louisiana, at 09/1620Z
Arrived:	New Orleans, Louisiana, at 10/0215Z
Purpose:	Hurricane ALLEN reconnaissance/research
Pattern:	Fig. 6 at 10000 ft; operational fixes 09/18Z, 21Z and 10/00Z

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
RFC Standard	1	09/1625	10/0210
Slow	1	09/1625	10/0210
RFC Copy (9-track)	1	09/1625	10/0210
Radar	10	09/1625	10/0145

EQUIPMENT STATUS: 800809I

SYSTEM	STATUS /	UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			
	INE 2	X			
	ONE	X			
	DOPL			X	
RADAR	NOSE	X			
	LF	X			
	TAIL			X	
	DATA SYSTEM	X			Tape Unit No. 2 out
RAMS	DATA SYSTEM	X			
	TOTAL TEMP. 1	X			
	TOTAL TEMP. 2	X			
	DEW POINT	X			
	ATTACK ANGLE	X			
	SLIP ANGLE	X			
	ABS. PRESS.	X			
	DIFF. PRESS.	X			
	RADAR ALT.	X			
	J & W	X			
PMS	OAP 2DP			X	
	OAP 2DC			X	
	FSSP 100			X	
	DATA SYSTEM			X	
IPC				X	
FOIL				X	
CO_2 RADIOMETER				X	
MICROWAVE RADIOMETER				X	
SFC. RADIOMETER		X			
FORMVAR				X	
PHOTOGRAPHY	FWD	X			
	LS	X			
	RS	X			
	DWN	X			
AXBT	TUBES			X	
	RECEIVERS			X	
ODW				X	

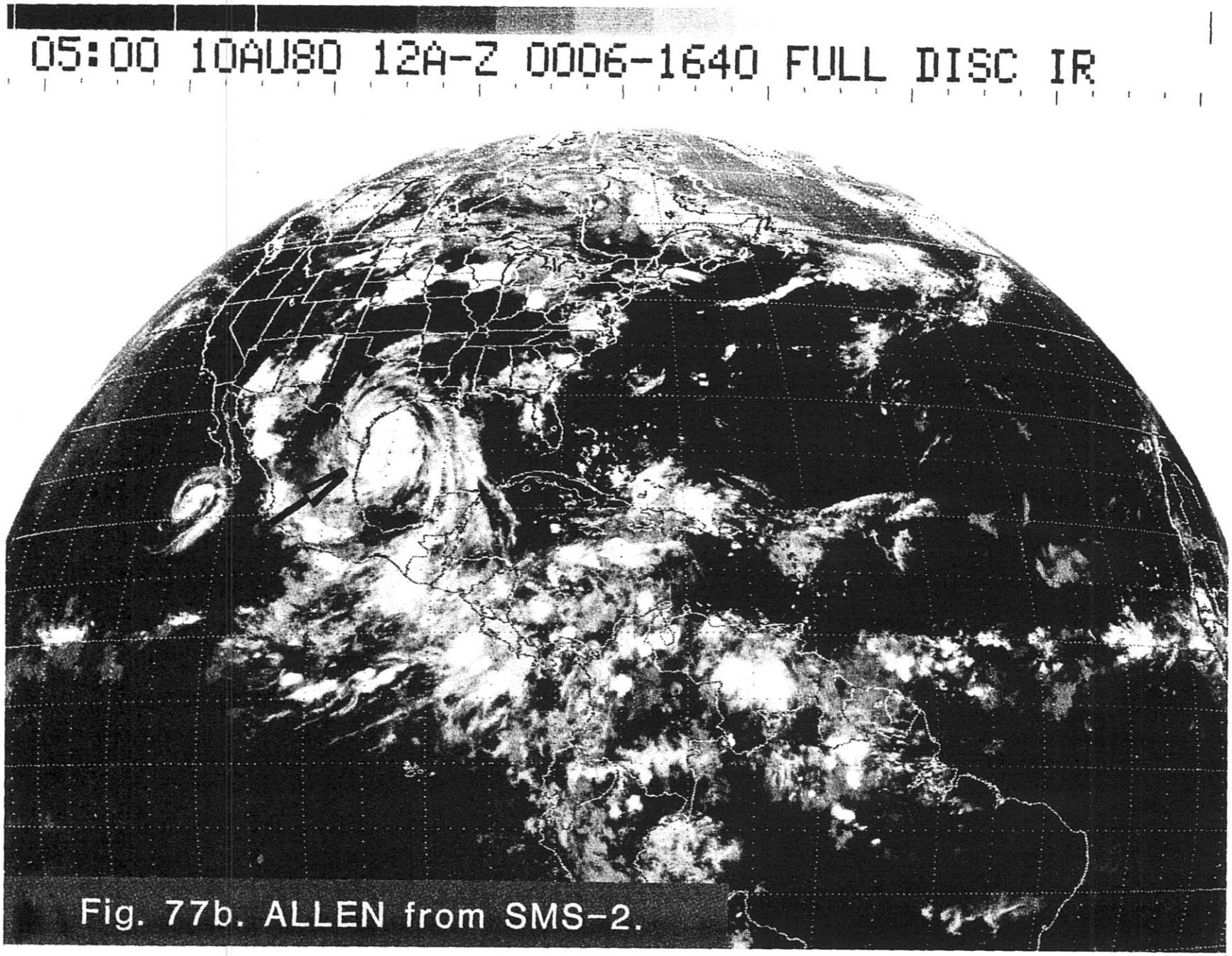

Fig. 77b. ALLEN from SMS-2.

FLIGHT LOG

Date:	August 9, 1980
Flight Identification:	800809H
Aircraft:	WP-3D/N42RF
Departed:	Miami, Florida, at 09/2324Z
Arrived:	Miami, Florida, at 10/0946Z
Purpose:	Hurricane ALLEN reconnaissance/research
Pattern:	Along coast (repeated pattern); operational fixes 10/03Z and 06Z

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
RFC Standard	1	09/2324	10/0947
Slow	1	09/2324	10/0947
RFC Copy (9-track)	1	09/2324	10/0947
Radar	8	09/2355	10/0920
Knollenberg	8	10/0225	10/0644

EQUIPMENT STATUS: 800809H

SYSTEM	STATUS /	UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			
	INE 2	X			
	ONE	X			
	DOPL			X	
RADAR	NOSE	X			
	LF	X			
	TAIL	X			
	DATA SYSTEM	X			
RAMS	DATA SYSTEM	X			
	TOTAL TEMP. 1	X			
	TOTAL TEMP. 2	X			
	DEW POINT	X			
	ATTACK ANGLE	X			
	SLIP ANGLE	X			
	ABS. PRESS.	X			
	DIFF. PRESS.	X			
	RADAR ALT.	X			
	J & W	X			
PMS	OAP 2DP	X			
	OAP 2DC	X			
	FSSP 100	X			
	DATA SYSTEM	X			
IPC				X	
FOIL			X		
CO_2 RADIOMETER		X			
MICROWAVE RADIOMETER		X			
SFC. RADIOMETER		X			
FORMVAR				X	
PHOTOGRAPHY	FWD				
	LS				
	RS				
	DWN				
	RADAR				
AXBT	TUBES			X	
	RECEIVERS			X	
ODW				X	

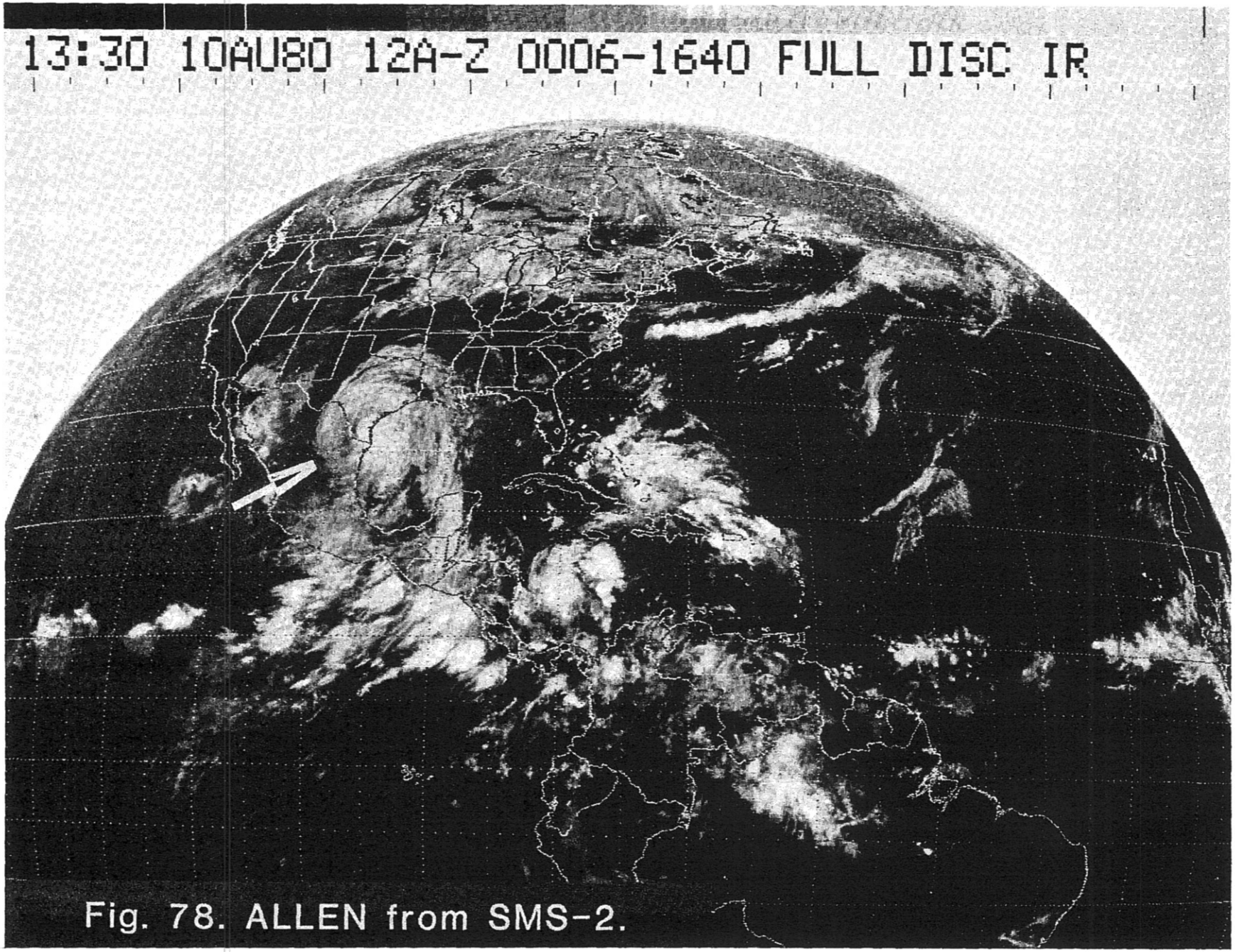

Fig. 78. ALLEN from SMS-2.

FLIGHT LOG

Date:	August 10, 1980
Flight Identification:	800810F
Aircraft:	C-130B/N6541C
Departed:	New Orleans, Louisiana, at 10/0957Z
Arrived:	Miami, Florida, at 10/1707Z
Purpose:	Hurricane ALLEN research/reconnaissance
Pattern:	Approximately 25 miles off of the Texas coast at 700- and 850-mb levels (storm inland)

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
RFC Standard	1	10/1006	10/1630
Slow	2	10/1006	10/1630
RFC Copy (9-track)	1	10/1006	10/1630
Radar	2	-	10/1623

EQUIPMENT STATUS: 800810F

SYSTEM	STATUS /	UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			
	INE 2	X			
	ONE	X			
	DOPL				
RADAR	NOSE	X			
	LF				
	TAIL				
	DATA SYSTEM	X			
AWRS	DATA SYSTEM	X			
	TOTAL TEMP. 1	X			
	TOTAL TEMP. 2			X	
	DEW POINT	X			
	ATTACK ANGLE	X			
	SLIP ANGLE	X			
	ABS. PRESS.	X			
	DIFF. PRESS.	X			
	RADAR ALT.	X			
	J & W	X			
PMS	OAP 2DP			X	
	OAP 2DC			X	
	FSSP 100			X	
	DATA SYSTEM			X	
IPC				X	
FOIL				X	
CO_2 RADIOMETER				X	
MICROWAVE RADIOMETER				X	
SFC. RADIOMETER		X			
FORMVAR				X	
PHOTOGRAPHY	FWD	X			
	LS	X			
	RS	X			
	DWN				
AXBT	TUBES			X	
	RECEIVERS			X	
ODW		X			

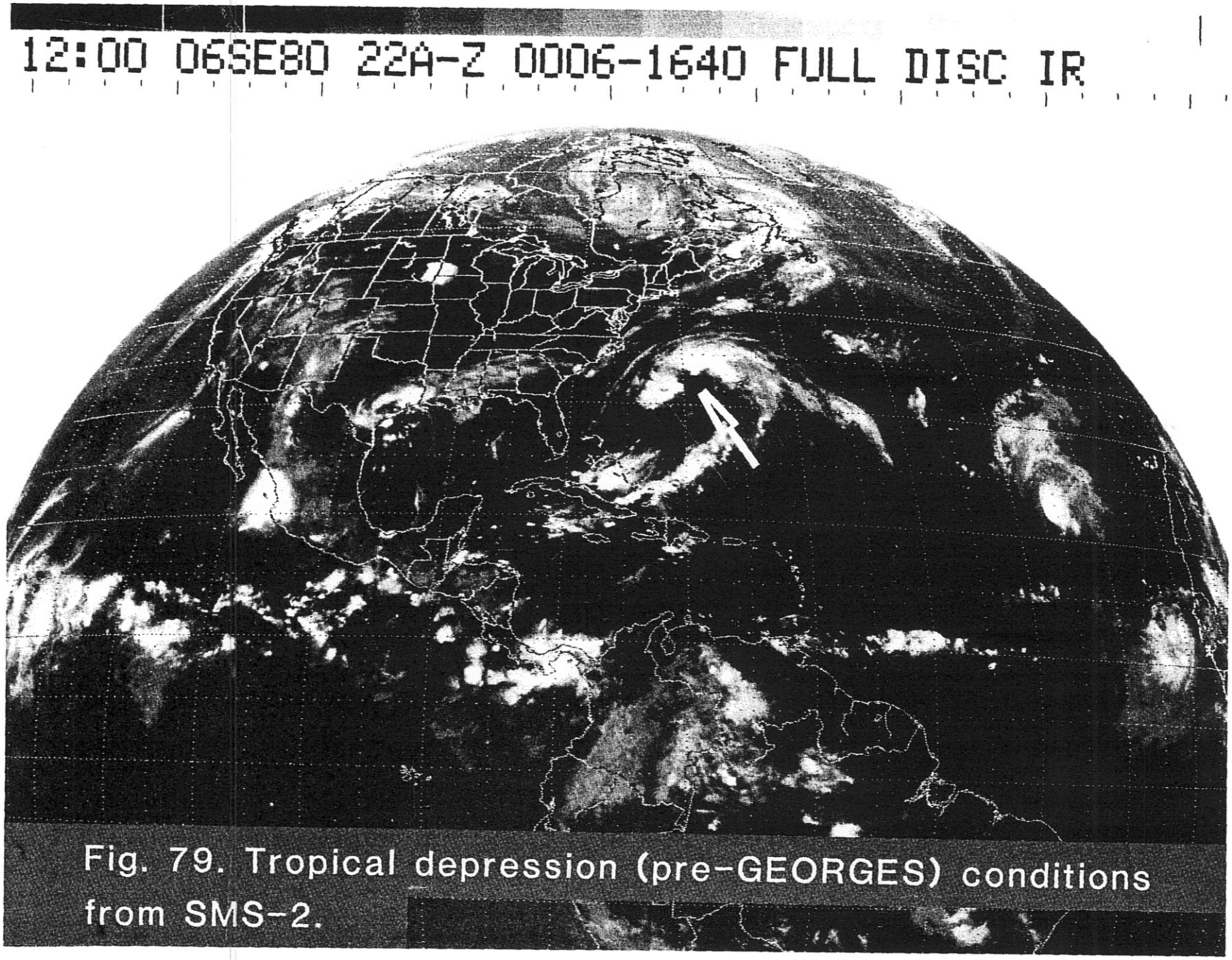

Fig. 79. Tropical depression (pre-GEORGES) conditions from SMS-2.

FLIGHT LOG

Date:	September 6, 1980
Flight Identification:	800906I
Aircraft:	WP-3D/N43RF
Departed:	Miami, Florida, at 06/0630Z
Arrived:	Miami, Florida, at 06/1710Z
Purpose:	Tropical depression reconnaissance/research
Pattern:	Reconnaissance at 1500 ft; operational fixes 06/09Z, 12Z and 15Z

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
Radar	11	06/0749	06/1440
Video Tape Cassette	4	06/0739	06/1603
Knollenberg	5	06/0820	06/1400

EQUIPMENT STATUS: 800906I

SYSTEM	STATUS /	UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			
	INE 2	X			
	ONE	X			
	DOPL			X	
RADAR	NOSE	X			
	LF	X			
	TAIL	X			
	DATA SYSTEM	X			System down at 1140Z
RAMS	DATA SYSTEM	X			
	TOTAL TEMP. 1	X			
	TOTAL TEMP. 2	X			
	DEW POINT	X			
	ATTACK ANGLE	X			
	SLIP ANGLE	X			
	ABS. PRESS.	X			
	DIFF. PRESS.	X			
	RADAR ALT.	X			
	J & W	X			
PMS	OAP 2DP	X			
	OAP 2DC	X			
	FSSP 100	X			
	DATA SYSTEM	X			System down at 1400Z
IPC				X	
FOIL				X	
CO_2 RADIOMETER				X	
MICROWAVE RADIOMETER				X	
SFC. RADIOMETER		X			
FORMVAR				X	
PHOTOGRAPHY	FWD	X			
	LS	X			
	RS	X			
	DWN				
AXBT	TUBES			X	
	RECEIVERS			X	
ODW				X	

8.6 1981 Data

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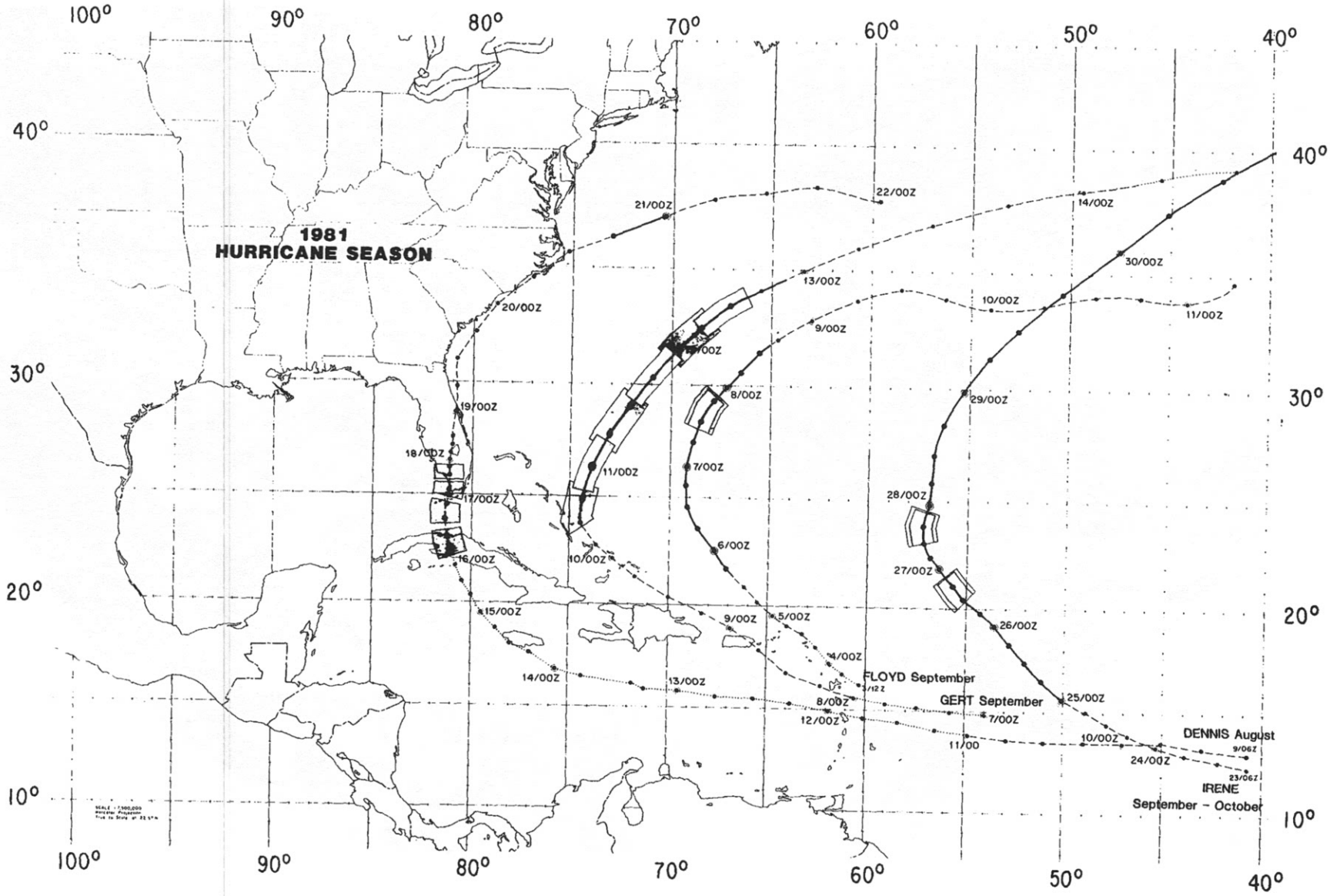

Fig. 80. Storm tracks and NHRL missions for DENNIS, FLOYD, GERT and IRENE.

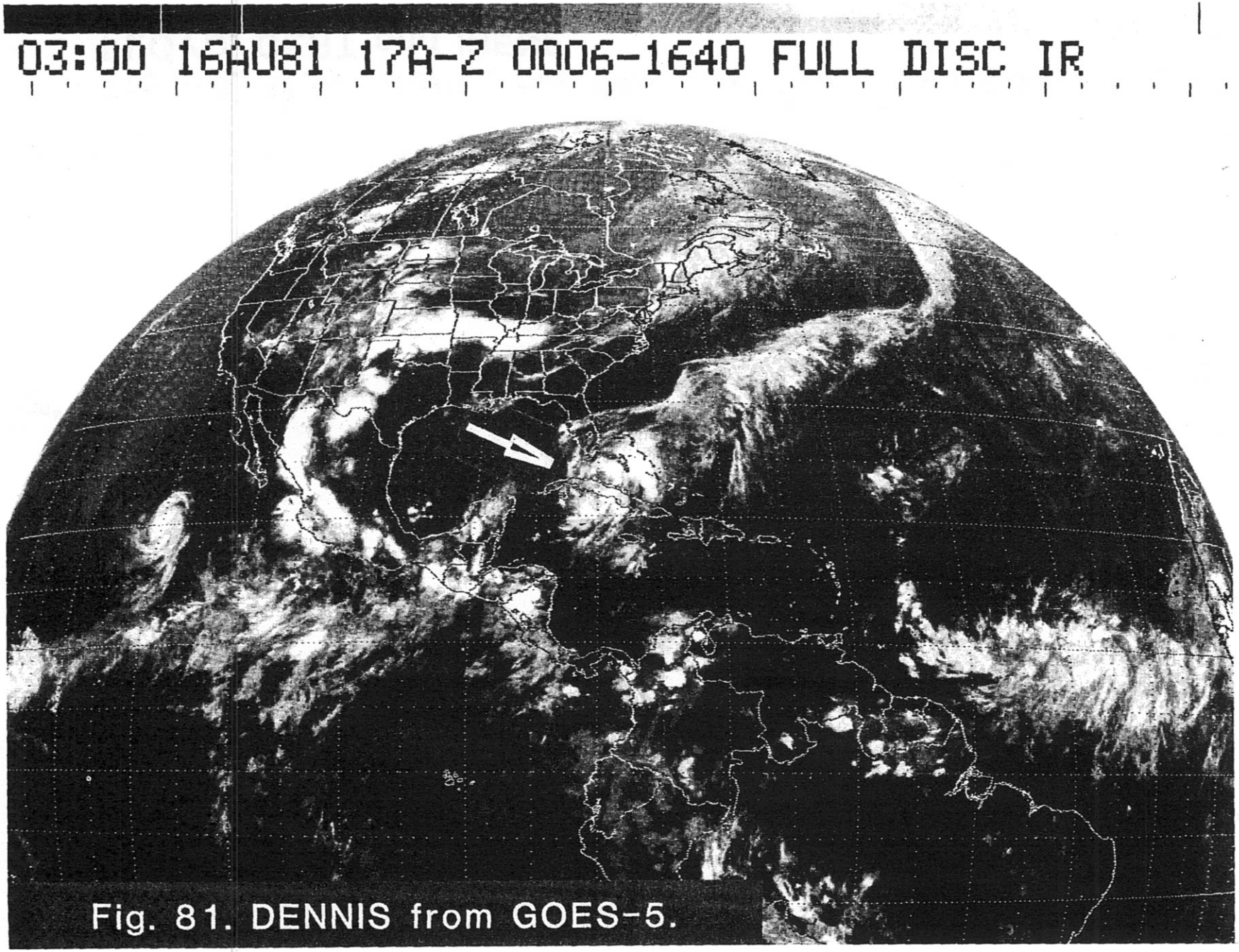

Fig. 81. DENNIS from GOES-5.

FLIGHT LOG

Date:	August 15, 1981
Flight Identification:	810815H
Aircraft:	WP-3D/N42RF
Departed:	Miami, Florida, at 15/2217Z
Arrived:	Miami, Florida, at 16/0810Z
Purpose:	Tropical Storm DENNIS research and reconnaissance (16/00Z and 16/06Z operational fix requirements)
Pattern:	Reconnaissance (racetrack); storm center in vicinity of Cuba (no overflights)

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
RFC Standard	1	15/2215	16/0810
Original	1	15/2215	16/0814
Knollenberg	5	-	-
VTR	3	15/2205	16/0801
Radar	11	15/2224	16/0740

EQUIPMENT STATUS: 810815H

SYSTEM	STATUS /	UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			
	INE 2	X			
	ONE				
	DOPL				
RADAR	NOSE	X			DVIP out at 00Z
	LF	X			
	TAIL	X			
	DATA SYSTEM	X			
RAMS	DATA SYSTEM	X			
	TOTAL TEMP. 1	X			
	TOTAL TEMP. 2	X			
	DEW POINT	X			
	ATTACK ANGLE	X			
	SLIP ANGLE	X			
	ABS. PRESS.	X			
	DIFF. PRESS.	X			
	RADAR ALT.	X			
	J & W	X			
PMS	OAP 2DP	X			
	OAP 2DC		X		Cloud probe failed
	FSSP 100	X			
	DATA SYSTEM	X			
IPC					
FOIL				X	
CO_2 RADIOMETER		X			
MICROWAVE RADIOMETER		X			
SFC. RADIOMETER		X			
FORMVAR				X	
PHOTOGRAPHY	FWD	X			
	LS	X			
	RS	X			
	DWN	X			
	RADAR	X			
AXBT	TUBES			X	
	RECEIVERS			X	
ODW				X	

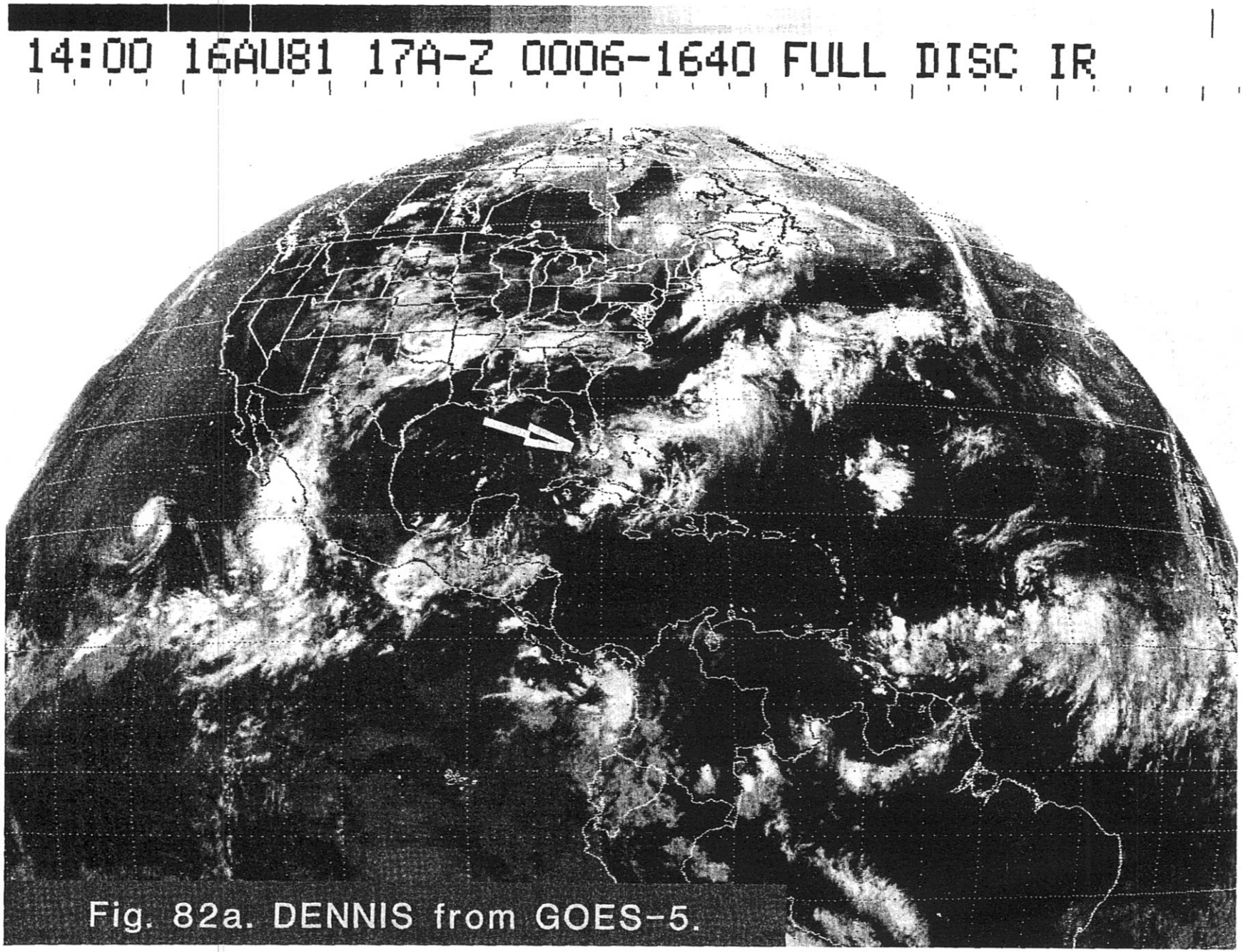

Fig. 82a. DENNIS from GOES-5.

FLIGHT LOG

Date:	August 16, 1981
Flight Identification:	810816I
Aircraft:	WP-3D/N43RF
Departed:	Miami, Florida, at 16/0956Z
Arrived:	Miami, Florida, at 16/1831Z
Purpose:	Tropical Storm DENNIS research and reconnaissance
Pattern:	Reconnaissance

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
RFC Standard	1	16/0957	16/1832
Original (Fast and Slow)	2	16/0956	16/1832
Knollenberg	3	16/1010	16/1815
Radar	7	16/1018	16/1831

EQUIPMENT STATUS: 810816I

SYSTEM	STATUS /	UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			
	INE 2	X			
	ONE				
	DOPL				
RADAR	NOSE	X			
	LF		X		
	TAIL	X			
	DATA SYSTEM	X			
RAMS	DATA SYSTEM	X			
	TOTAL TEMP. 1	X			
	TOTAL TEMP. 2	X			
	DEW POINT	X			
	ATTACK ANGLE	X			
	SLIP ANGLE	X			
	ABS. PRESS.	X			
	DIFF. PRESS.	X			
	RADAR ALT.	X			
	J & W	X			
PMS	OAP 2DP	X			
	OAP 2DC	X			
	FSSP 100		X		
	DATA SYSTEM	X			
IPC					
FOIL				X	
CO_2 RADIOMETER		X			
MICROWAVE RADIOMETER		X			
SFC. RADIOMETER		X			
FORMVAR				X	
PHOTOGRAPHY	FWD				
	LS				
	RS				
	DWN				
	RADAR				
AXBT	TUBES			X	
	RECEIVERS			X	
ODW				X	

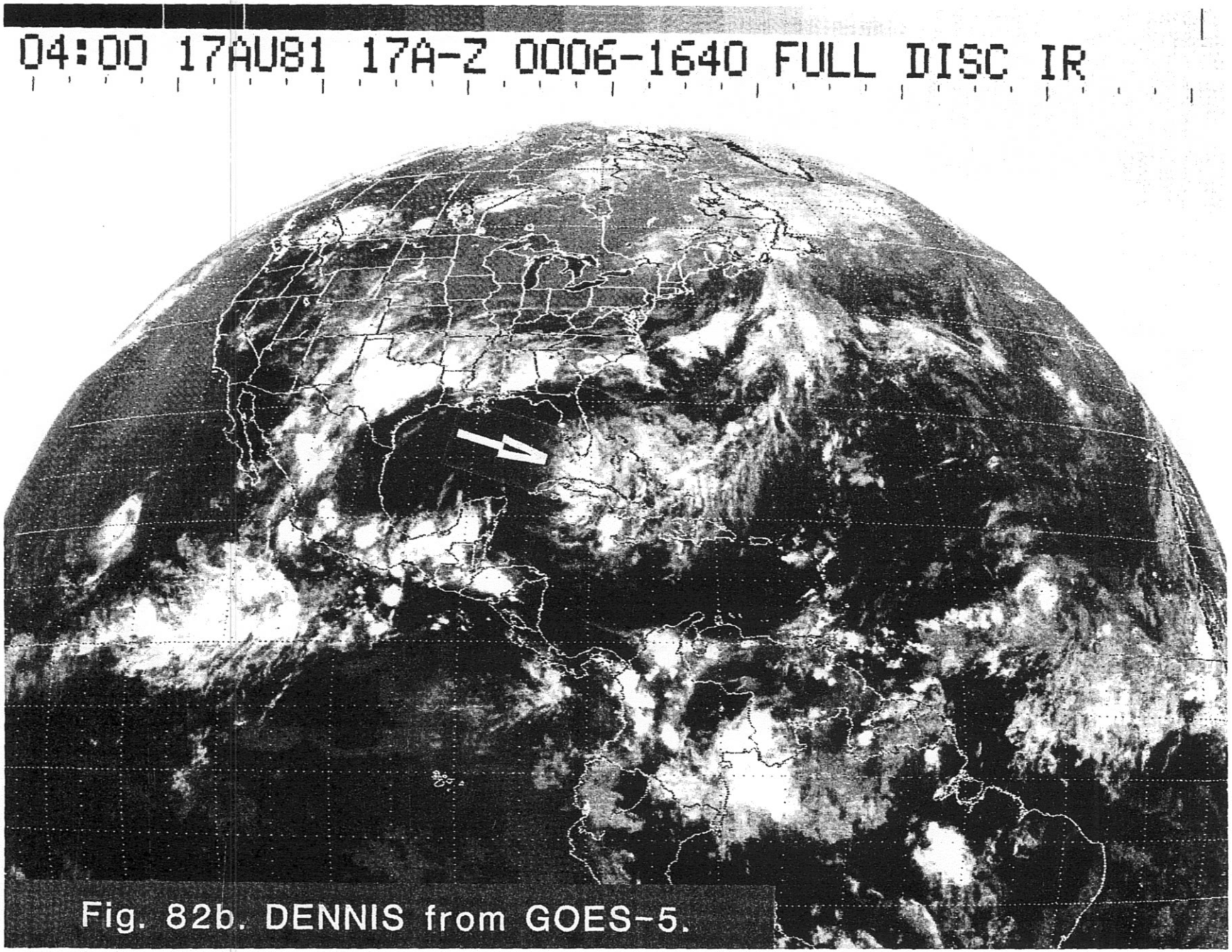

Fig. 82b. DENNIS from GOES-5.

FLIGHT LOG

Date:	August 16, 1981
Flight Identification:	810816H
Aircraft:	WP-3D/N42RF
Departed:	Miami, Florida, at 16/2304Z
Arrived:	Miami, Florida, at 17/0841Z
Purpose:	Tropical Storm DENNIS research and reconnaissance (16/00Z, 03Z, 06Z and 08Z operational fixes)
Pattern:	Reconnaissance

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
RFC Standard	1	16/2305	17/0841
Original	1	16/2304	17/0842
Knollenberg	5	16/2305	-
VTR	3	16/2259	17/0828
Radar	14	16/2311	17/0833

EQUIPMENT STATUS: 810816H

SYSTEM	STATUS /	UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			
	INE 2	X			
	ONE				
	DOPL				
RADAR	NOSE	X			DVIP failed 0340Z
	LF	X			
	TAIL	X			
	DATA SYSTEM	X			
RAMS	DATA SYSTEM	X			
	TOTAL TEMP. 1	X			
	TOTAL TEMP. 2	X			
	DEW POINT	X			
	ATTACK ANGLE	X			
	SLIP ANGLE	X			
	ABS. PRESS.	X			
	DIFF. PRESS.	X			
	RADAR ALT.	X			
	J & W	X			
PMS	OAP 2DP	X			
	OAP 2DC	X			Diode problem TU #2
	FSSP 100	X			
	DATA SYSTEM	X			
IPC					
FOIL				X	
CO_2 RADIOMETER		X			
MICROWAVE RADIOMETER		X			
SFC. RADIOMETER		X			
FORMVAR				X	
PHOTOGRAPHY	FWD				
	LS				
	RS				
	DWN				
	RADAR				
AXBT	TUBES			X	
	RECEIVERS			X	
ODW				X	

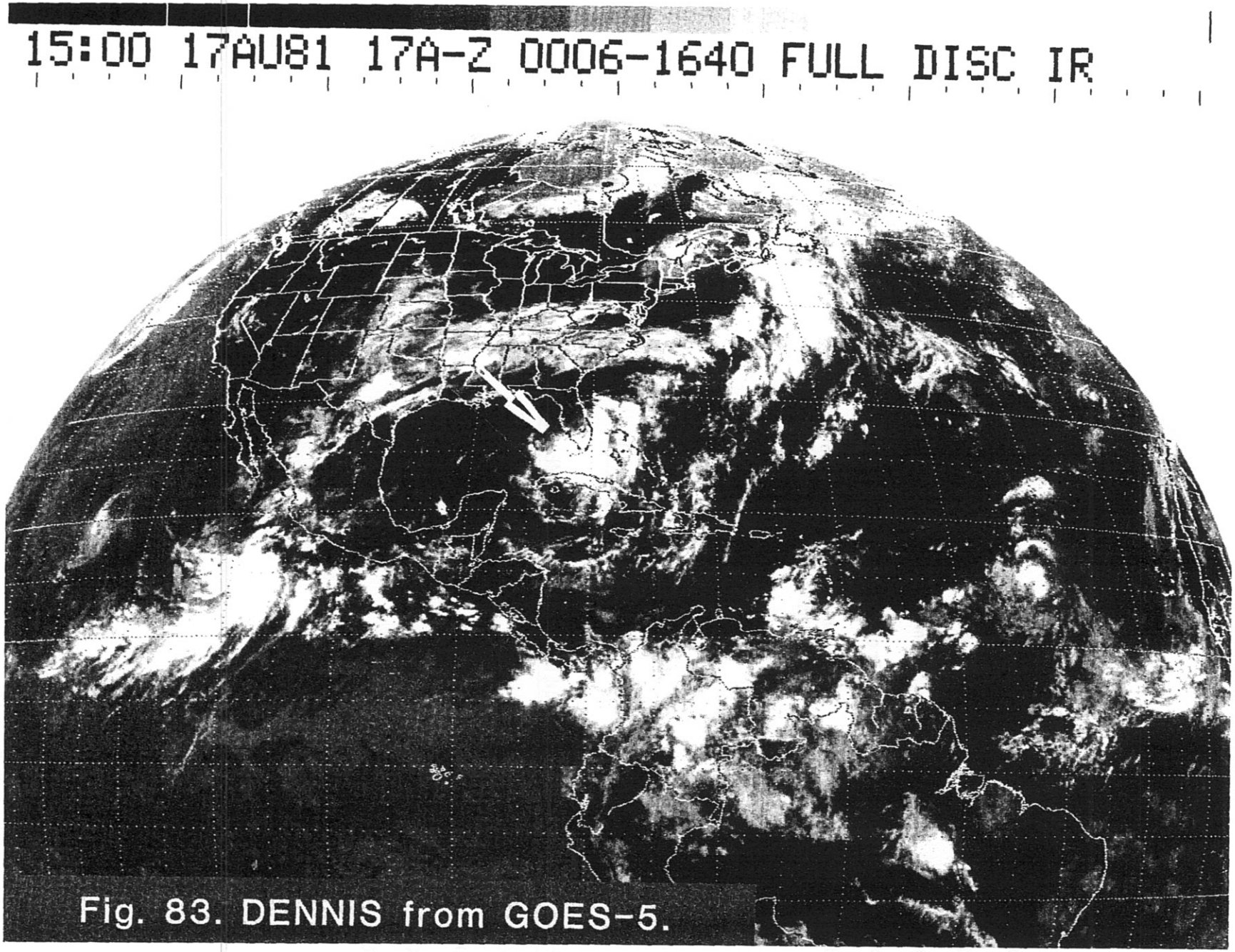

Fig. 83. DENNIS from GOES-5.

FLIGHT LOG

Date:	August 17, 1981
Flight Identification:	810817I
Aircraft:	WP-3D/N43RF
Departed:	Miami, Florida, at 17/1024Z
Arrived:	Miami, Florida, at 17/1905Z
Purpose:	Tropical Storm DENNIS reconnaissance
Pattern:	Reconnaissance at 1500 ft (Storm center over land)

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
RFC Standard	1	17/1012	17/1906
Original	1	17/1012	17/1906
Knollenberg	2	17/1035	17/1743
Radar	8	17/1035	17/1800

EQUIPMENT STATUS: 810817I

SYSTEM	STATUS /	UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			Intermittent drift
	INE 2	X			
	ONE				
	DOPL				
RADAR	NOSE		X		
	LF	X			
	TAIL		X		
	DATA SYSTEM	X			
RAMS	DATA SYSTEM	X			
	TOTAL TEMP. 1	X			
	TOTAL TEMP. 2	X			
	DEW POINT	X			
	ATTACK ANGLE	X			
	SLIP ANGLE	X			
	ABS. PRESS.	X			
	DIFF. PRESS.	X			
	RADAR ALT.	X			
	J & W	X			
PMS	OAP 2DP				
	OAP 2DC	X			
	FSSP 100		X		
	DATA SYSTEM	X			Overheated in flight
IPC					
FOIL				X	
CO_2 RADIOMETER		X			
MICROWAVE RADIOMETER		X			
SFC. RADIOMETER		X			
FORMVAR				X	
PHOTOGRAPHY	FWD				
	LS				
	RS				
	DWN				
	RADAR				
AXBT	TUBES			X	
	RECEIVERS			X	
ODW				X	

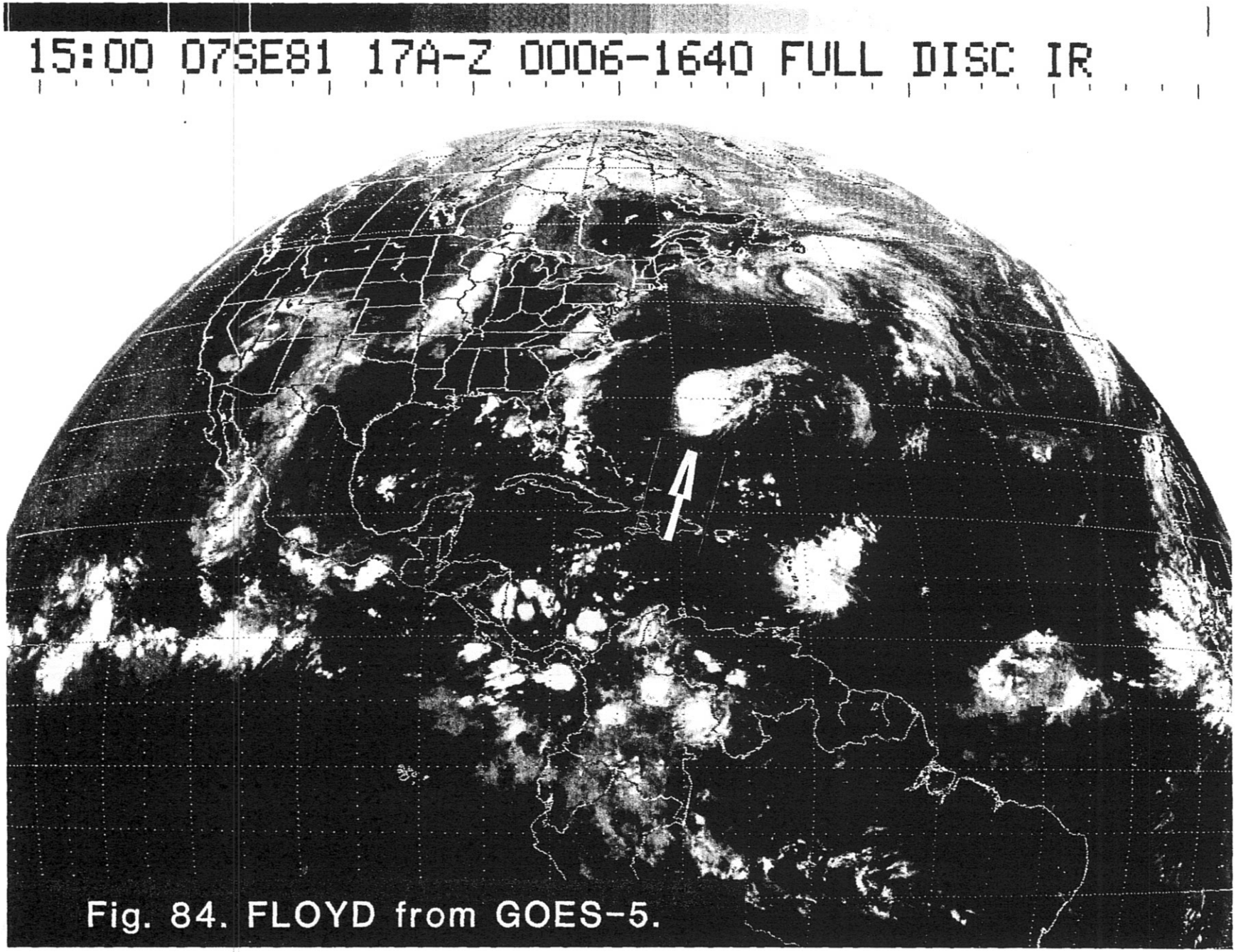

Fig. 84. FLOYD from GOES-5.

FLIGHT LOG

Date:	September 7, 1981
Flight Identification:	810907I
Aircraft:	WP-3D/N43RF
Departed:	Miami, Florida, at 07/0945Z
Arrived:	Miami, Florida, at 07/1943Z
Purpose:	FLOYD research
Pattern:	Fig. 11 at 3000 ft; racetrack at 10000, 15000 and 20000 ft

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
RFC Standard	1	07/0947	07/1943
Original	1	07/0946	07/1943
Knollenberg	25	07/1145	07/1728
VTR	2	07/1110	-
Radar	10	07/1002	07/1449

EQUIPMENT STATUS: 810907I

SYSTEM	STATUS /	UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			
	INE 2	X			
	ONE				
	DOPL				
RADAR	NOSE	X			
	LF		X		
	TAIL	X			
	DATA SYSTEM	X			
RAMS	DATA SYSTEM	X			
	TOTAL TEMP. 1	X			
	TOTAL TEMP. 2	X			
	DEW POINT	X			
	ATTACK ANGLE	X			
	SLIP ANGLE	X			
	ABS. PRESS.	X			
	DIFF. PRESS.	X			
	RADAR ALT.	X			
	J & W	X			
PMS	OAP 2DP	X			
	OAP 2DC	X			
	FSSP 100	X			
	DATA SYSTEM	X			
IPC					
FOIL				X	
CO_2 RADIOMETER		X			
MICROWAVE RADIOMETER		X			
SFC. RADIOMETER		X			
FORMVAR				X	
PHOTOGRAPHY	FWD	X			
	LS	X			
	RS	X			
	DWN	X			
	RADAR				
AXBT	TUBES			X	
	RECEIVERS			X	
ODW				X	

FLIGHT LOG

Date:	September 7, 1981
Flight Identification:	810907H
Aircraft:	WP-3D/N42RF
Departed:	Miami, Florida, at 07/0950Z
Arrived:	Miami, Florida, at 07/1949Z
Purpose:	FLOYD Rainband Experiment
Pattern:	Fig. 11 at 5000 ft; racetrack in bands north of storm center at 500, 2000, 5000 and 8000 ft

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
RFC Standard	1	07/1005	07/1949
Original	2	07/1005	07/1949
Knollenberg	16	07/1214	07/1720
VTR	2	07/1153	07/1750
Radar	11	07/1155	07/1750

EQUIPMENT STATUS: 810907H

SYSTEM	STATUS /	UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			
	INE 2	X			
	ONE				
	DOPL				
RADAR	NOSE	X			
	LF	X			
	TAIL	X			
	DATA SYSTEM	X			
RAMS	DATA SYSTEM	X			
	TOTAL TEMP. 1	X			
	TOTAL TEMP. 2	X			
	DEW POINT	X			
	ATTACK ANGLE	X			
	SLIP ANGLE	X			
	ABS. PRESS.	X			
	DIFF. PRESS.	X			
	RADAR ALT.	X			
	J & W	X			
PMS	OAP 2DP	X			Problems
	OAP 2DC	X			
	FSSP 100			X	
	DATA SYSTEM	X			
IPC					
FOIL				X	
CO_2 RADIOMETER		X			
MICROWAVE RADIOMETER		X			
SFC. RADIOMETER		X			
FORMVAR				X	
PHOTOGRAPHY	FWD	X			
	LS	X			
	RS	X			
	DWN	X			
	RADAR	X			
AXBT	TUBES			X	
	RECEIVERS			X	
ODW				X	

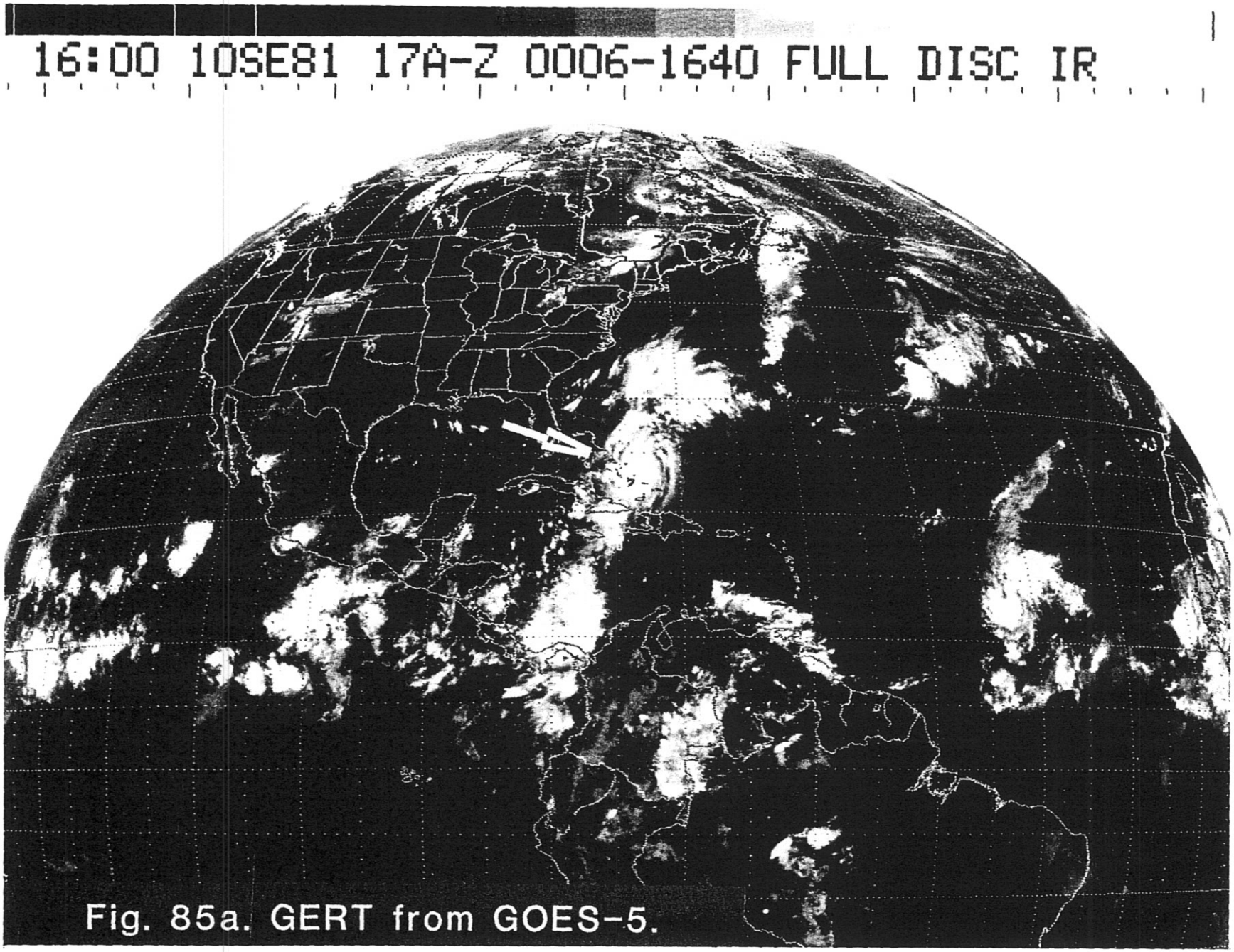

Fig. 85a. GERT from GOES-5.

FLIGHT LOG

Date:	September 10, 1981
Flight Identification:	810910H
Aircraft:	WP-3D/N42RF
Departed:	Miami, Florida, at 10/1055Z
Arrived:	Miami, Florida, at 10/2039Z
Purpose:	GERT Long-Term Monitoring Experiment; operational fixes at 10/12Z, 15Z and 18Z
Pattern:	Fig. 7 (modified) at 5000 ft

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
RFC Standard	1	10/1104	10/2038
Original	1	10/1104	10/2039
Knollenberg	14	10/1115	10/1923
VTR	2	10/1147	-
Radar	11	10/1157	10/1940

EQUIPMENT STATUS: 810910H

SYSTEM	STATUS /	UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			
	INE 2	X			
	ONE				
	DOPL				
RADAR	NOSE	X			
	LF	X			
	TAIL	X			
	DATA SYSTEM	X			
RAMS	DATA SYSTEM	X			
	TOTAL TEMP. 1	X			
	TOTAL TEMP. 2	X			
	DEW POINT	X			
	ATTACK ANGLE	X			
	SLIP ANGLE	X			
	ABS. PRESS.	X			
	DIFF. PRESS.	X			
	RADAR ALT.	X			
	J & W	X			
PMS	OAP 2DP	X			
	OAP 2DC	X			
	FSSP 100	X			
	DATA SYSTEM	X			
IPC					
FOIL				X	
CO_2 RADIOMETER		X			
MICROWAVE RADIOMETER		X			
SFC. RADIOMETER		X			
FORMVAR				X	
PHOTOGRAPHY	FWD	X			
	LS	X			
	RS	X			
	DWN	X			
	RADAR				
AXBT	TUBES			X	
	RECEIVERS			X	
ODW				X	

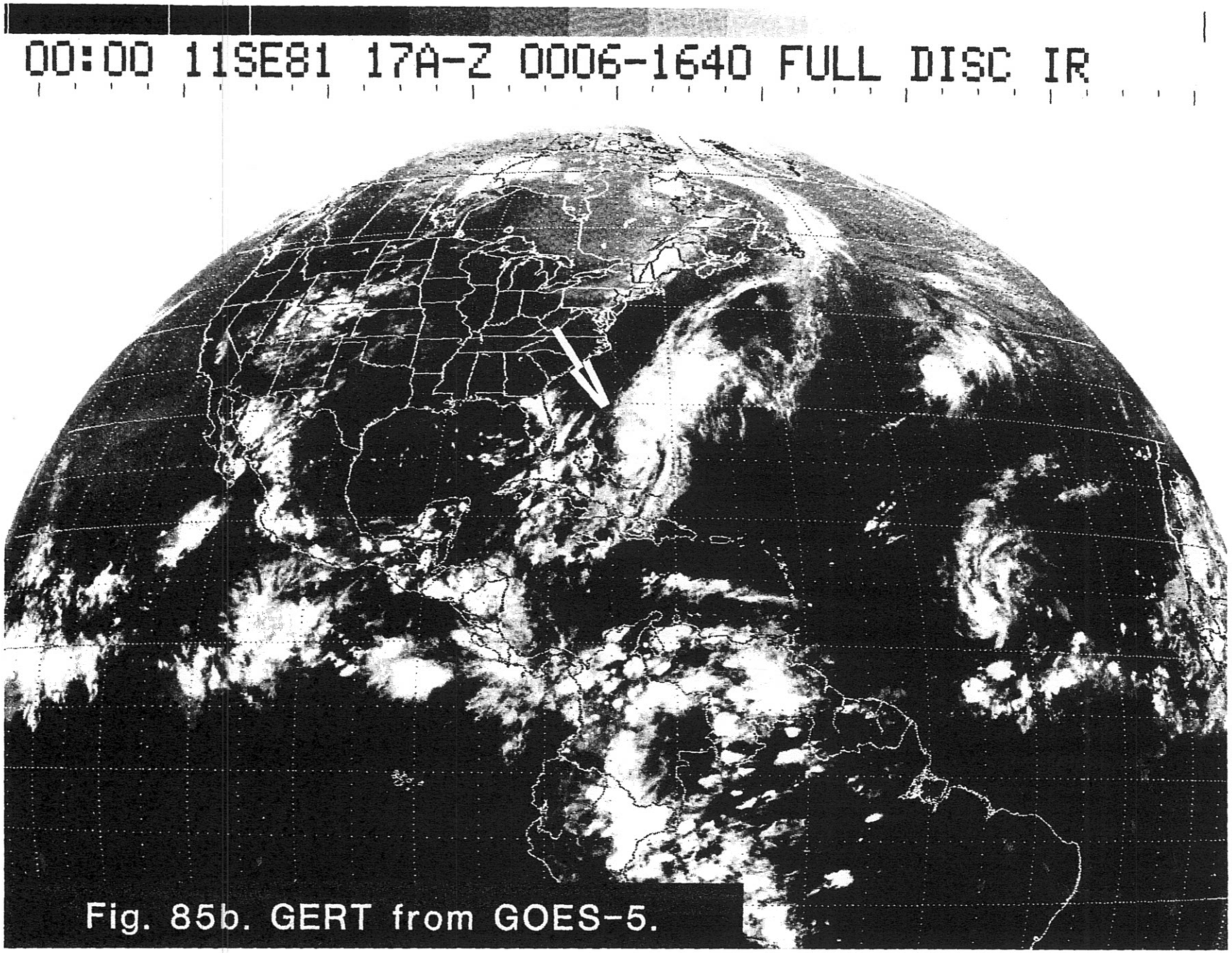

Fig. 85b. GERT from GOES-5.

FLIGHT LOG

Date:	September 10, 1981
Flight Identification:	810910I
Aircraf :	WP-3D/N43RF
Departed:	Miami, Florida, at 10/1925Z
Arrived:	Miami, Florida, at 11/0504Z
Purpose:	GERT Long-Term Monitoring Experiment
Pattern:	Fig. 7 (modified) at 5000 ft

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
RFC Standard	1	10/1926	11/0504
Original	2	10/2220	-
Knollenberg	9	10/2116	11/0337
VTR	2	10/2055	11/0451
Radar	2	10/2053	11/0427
Original (Slow)	1	10/1925	-

EQUIPMENT STATUS: 810910I

SYSTEM	STATUS /	UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			
	INE 2	X			
	ONE				
	DOPL				
RADAR	NOSE	X			
	LF		X		
	TAIL	X			
	DATA SYSTEM	X			
RAMS	DATA SYSTEM	X			
	TOTAL TEMP. 1	X			
	TOTAL TEMP. 2	X			
	DEW POINT	X			
	ATTACK ANGLE	X			
	SLIP ANGLE	X			
	ABS. PRESS.	X			
	DIFF. PRESS.	X			
	RADAR ALT.	X			
	J & W	X			
PMS	OAP 2DP	X			
	OAP 2DC	X			
	FSSP 100	X			
	DATA SYSTEM	X			
IPC			X		
FOIL				X	
CO_2 RADIOMETER		X			
MICROWAVE RADIOMETER		X			
SFC. RADIOMETER		X			
FORMVAR		X			
PHOTOGRAPHY	FWD	X			
	LS	X			
	RS	X			
	DWN	X			
	RADAR	X			
AXBT	TUBES			X	
	RECEIVERS			X	
ODW				X	

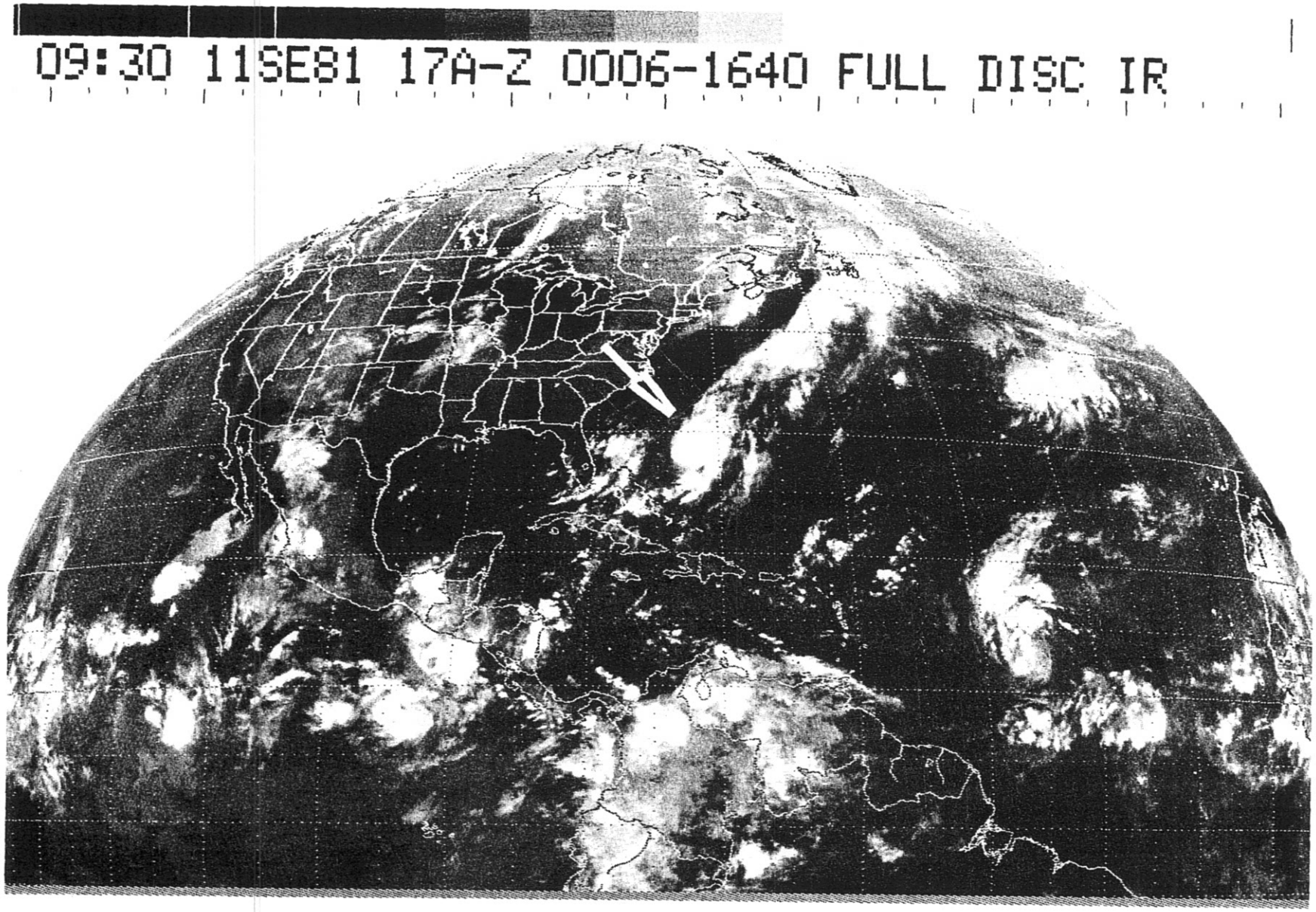

Fig. 86a. GERT from GOES-5.

FLIGHT LOG

Date:	September 11, 1981
Flight Identification:	810911H1
Aircraft:	WP-3D/N42RF
Departed:	Miami, Florida, at 11/0425Z
Arrived:	Miami, Florida, at 11/1410Z
Purpose:	GERT Long-Term Monitoring Experiment
Pattern:	Fig. 7 (modified) at 5000 ft

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
RFC Standard	1	11/0430	11/1408
Original	2	-	-
Knollenberg	5	11/0613	11/1204
VTR	2	-	-
Radar	10	11/0539	11/1258

EQUIPMENT STATUS: 810911H1

SYSTEM	STATUS /	UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			
	INE 2	X			
	ONE				
	DOPL				
RADAR	NOSE	X			
	LF	X			
	TAIL	X			
	DATA SYSTEM	X			
RAMS	DATA SYSTEM	X			
	TOTAL TEMP. 1	X			
	TOTAL TEMP. 2	X			
	DEW POINT	X			
	ATTACK ANGLE	X			
	SLIP ANGLE	X			
	ABS. PRESS.	X			
	DIFF. PRESS.	X			
	RADAR ALT.	X			
	J & W	X			
PMS	OAP 2DP		X		
	OAP 2DC		X		
	FSSP 100	X			
	DATA SYSTEM	X			
IPC			X		
FOIL			X		
CO_2 RADIOMETER		X			
MICROWAVE RADIOMETER		X			
SFC. RADIOMETER		X			
FORMVAR			X		
PHOTOGRAPHY	FWD	X			
	LS	X			
	RS	X			
	DWN	X			
	RADAR	X			
AXBT	TUBES			X	
	RECEIVERS			X	
ODW				X	

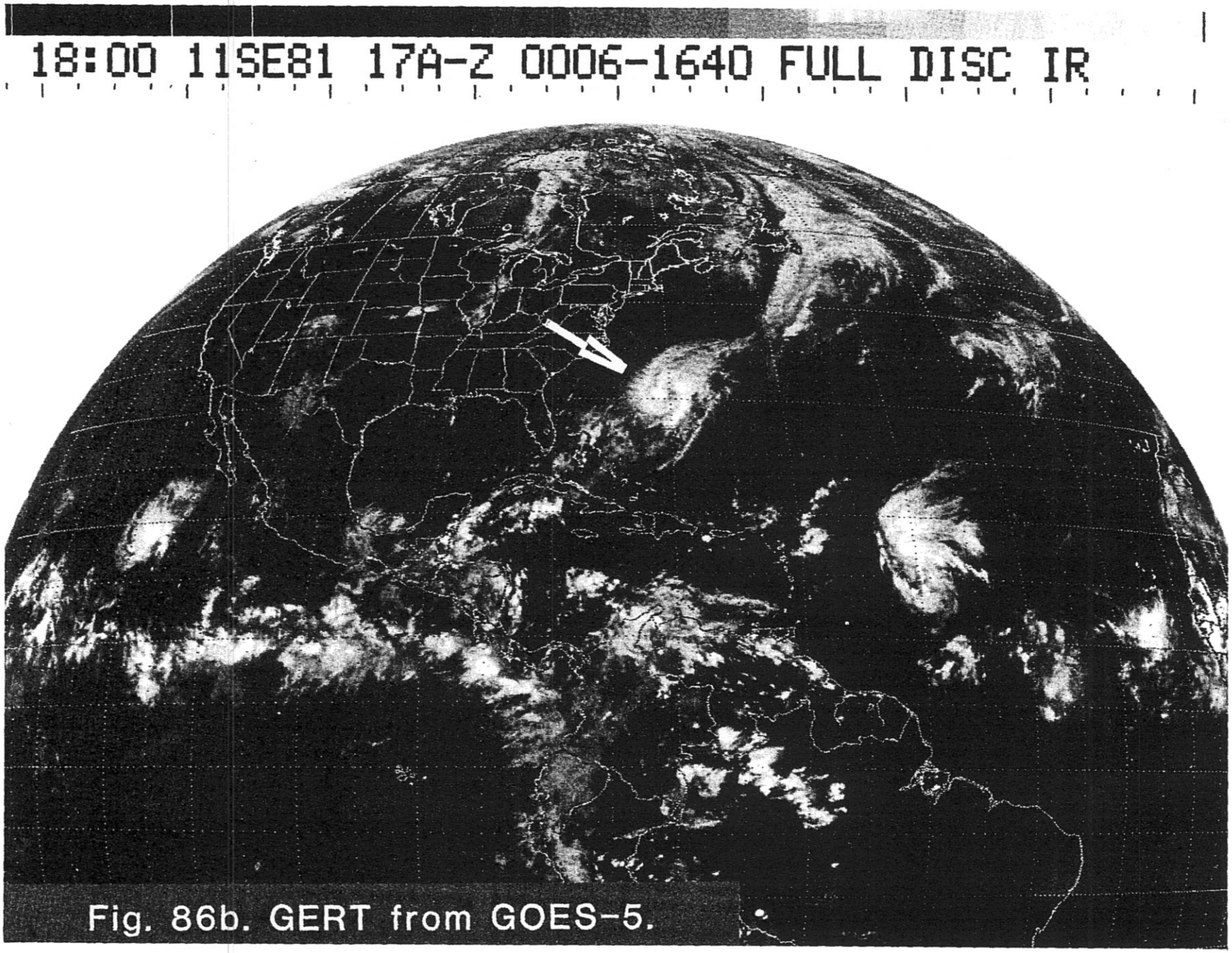

Fig. 86b. GERT from GOES-5.

FLIGHT LOG

Date:	September 11, 1981
Flight Identification:	810911I
Aircraft:	WP-3D/N43RF
Departed:	Miami, Florida, at 11/1305Z
Arrived:	Miami, Florida, at 11/2301Z
Purpose:	GERT Long-Term Monitoring Experiment
Pattern:	Fig. 7 (modified) at 5000 ft

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
RFC Standard	1	11/1313	11/2301
Original	1	11/1312	11/2302
Knollenberg	9	11/1534	11/1948
VTR	2	11/1428	11/2124
Radar	2	11/1426	11/1822

EQUIPMENT STATUS: 810911I

SYSTEM	STATUS /	UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			
	INE 2	X			
	ONE				
	DOPL				
RADAR	NOSE	X			
	LF		X		
	TAIL		X		
	DATA SYSTEM	X			
RAMS	DATA SYSTEM	X			
	TOTAL TEMP. 1	X			
	TOTAL TEMP. 2	X			
	DEW POINT	X			
	ATTACK ANGLE	X			
	SLIP ANGLE	X			
	ABS. PRESS.	X			
	DIFF. PRESS.	X			
	RADAR ALT.	X			
	J & W	X			
PMS	OAP 2DP	X			
	OAP 2DC		X		
	FSSP 100		X		
	DATA SYSTEM	X			
IPC			X		
FOIL					
CO_2 RADIOMETER					
MICROWAVE RADIOMETER					
SFC. RADIOMETER					
FORMVAR				X	
PHOTOGRAPHY	FWD	X			
	LS	X			
	RS	X			
	DWN	X			
	RADAR	X			
AXBT	TUBES			X	
	RECEIVERS			X	
ODW				X	

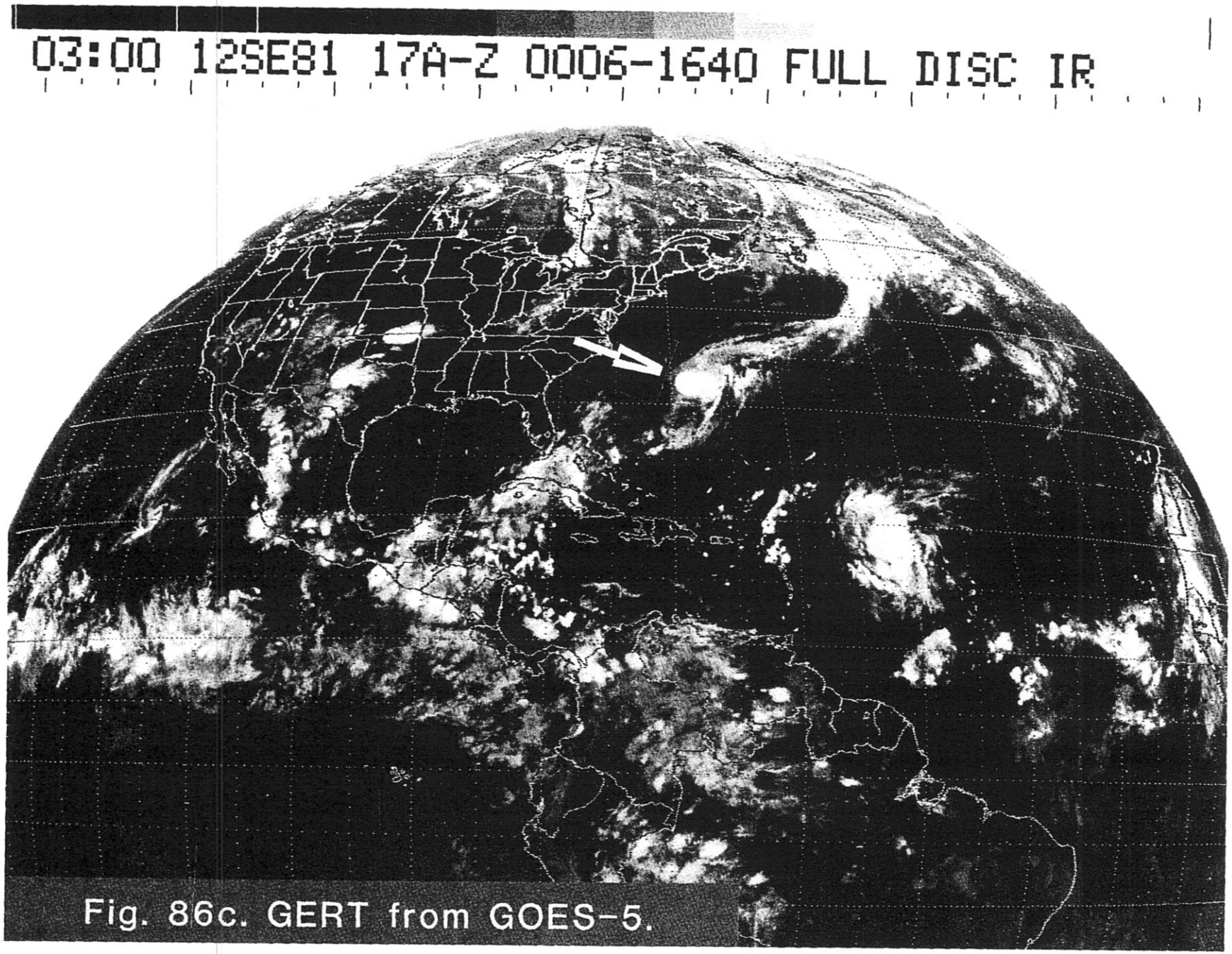

Fig. 86c. GERT from GOES-5.

FLIGHT LOG

Date:	September 11, 1981
Flight Identification:	810911H2
Aircraft:	WP-3D/N42RF
Departed:	Miami, Florida, at 11/2145Z
Arrived:	Miami, Florida, at 12/0744Z
Purpose:	GERT research
Pattern:	Fig. 7 (modified) at 5000 ft

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
RFC Standard	1	11/2145	12/0744
Original	1	11/2141	-
Knollenberg	8	11/2210	-
VTR	2	11/2341	12/0531
Radar	8	12/0053	12/0529

EQUIPMENT STATUS: 810911H2

SYSTEM		STATUS / UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			
	INE 2	X			
	ONE				
	DOPL				
RADAR	NOSE	X			
	LF	X			
	TAIL	X			
	DATA SYSTEM	X			
RAMS	DATA SYSTEM	X			
	TOTAL TEMP. 1	X			
	TOTAL TEMP. 2	X			
	DEW POINT	X			
	ATTACK ANGLE	X			
	SLIP ANGLE	X			
	ABS. PRESS.	X			
	DIFF. PRESS.	X			
	RADAR ALT.	X			
	J & W	X			
PMS	OAP 2DP	X			
	OAP 2DC	X			
	FSSP 100	X			
	DATA SYSTEM	X			
IPC		X			
FOIL				X	
CO_2 RADIOMETER		X			
MICROWAVE RADIOMETER		X			
SFC. RADIOMETER		X			
FORMVAR				X	
PHOTOGRAPHY	FWD	X			
	LS	X			
	RS	X			
	DWN	X			
	RADAR	X			
AXBT	TUBES			X	
	RECEIVERS			X	
ODW				X	

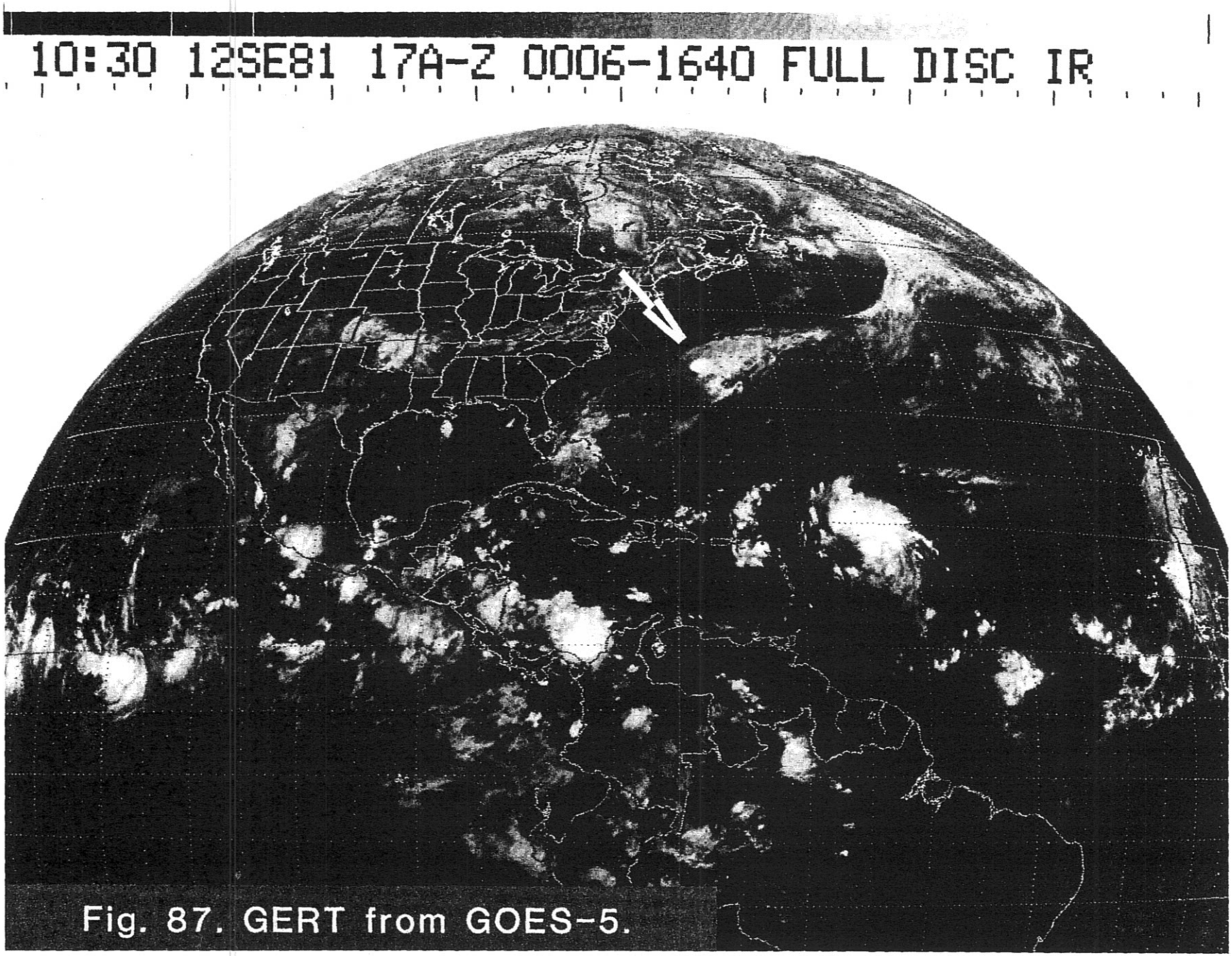

Fig. 87. GERT from GOES-5.

FLIGHT LOG

Date:	September 12, 1981
Flight Identification:	810912I
Aircraft:	WP-3D/N43RF
Departed:	Miami, Florida, at 12/0545Z
Arrived:	Miami, Florida, at 12/1512Z
Purpose:	GERT reconnaissance/research (Long-Term Monitoring)
Pattern:	Fig. 7 (modified); operational fixes 12/09Z and 12Z at 5000 ft

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
RFC Standard	1	12/0546	12/1512
Original	1	12/0445	12/1512
Knollenberg	3	12/0912	12/1218
VTR	1	12/0855	12/1214
Radar	2	12/0850	12/1212

EQUIPMENT STATUS: 810912I

SYSTEM	STATUS /	UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			
	INE 2	X			
	ONE				
	DOPL				
RADAR	NOSE	X			
	LF		X		
	TAIL		X		
	DATA SYSTEM	X			
RAMS	DATA SYSTEM	X			
	TOTAL TEMP. 1	X			
	TOTAL TEMP. 2	X			
	DEW POINT	X			
	ATTACK ANGLE	X			
	SLIP ANGLE	X			
	ABS. PRESS.	X			
	DIFF. PRESS.	X			
	RADAR ALT.	X			
	J & W	X			
PMS	OAP 2DP	X			
	OAP 2DC	X			
	FSSP 100	X			
	DATA SYSTEM	X			Tape unit #1 down
IPC		X			
FOIL				X	
CO_2 RADIOMETER		X			
MICROWAVE RADIOMETER		X			
SFC. RADIOMETER		X			
FORMVAR				X	
PHOTOGRAPHY	FWD	X			
	LS	X			
	RS	X			
	DWN	X			
	RADAR	X			
AXBT	TUBES			X	
	RECEIVERS			X	
ODW				X	

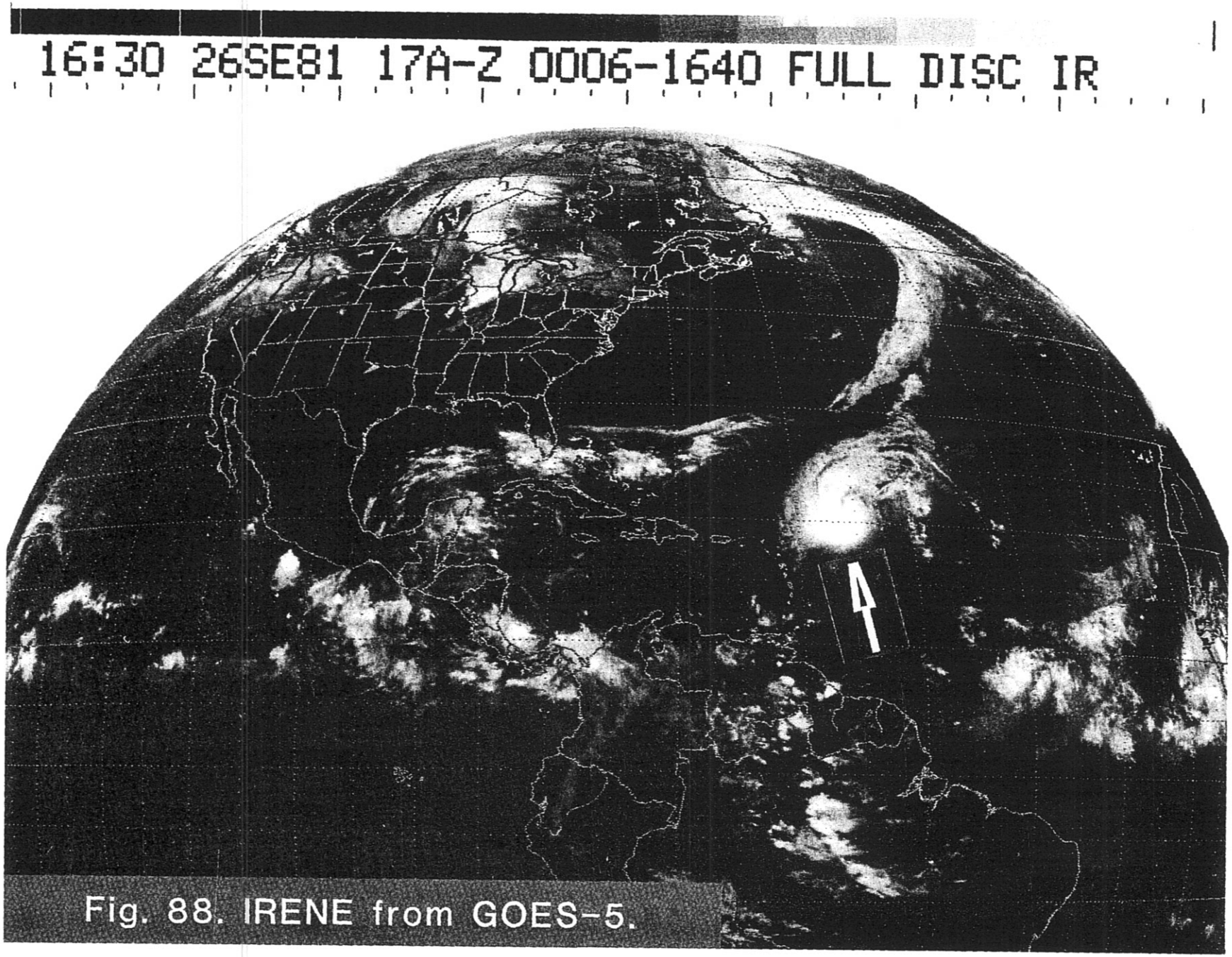

Fig. 88. IRENE from GOES-5.

FLIGHT LOG

Date:	September 26, 1981
Flight Identification:	810926I
Aircraft:	WP-3D/N43RF
Departed:	San Juan, Puerto Rico, at 26/1135Z
Arrived:	San Juan, Puerto Rico, at 26/2056Z
Purpose:	IRENE Microphysics Experiment
Pattern:	Fig. 12 (modified) at 14000, and 16000 ft

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
RFC Standard	1	26/1136	26/2056
Original	1	26/1136	26/2056
Knollenberg	35	26/1347	26/1912
VTR	2	26/1337	-
Radar	6	26/1318	26/2048

EQUIPMENT STATUS: 810926I

SYSTEM	STATUS /	UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			
	INE 2	X			
	ONE	X			
	DOPL				
RADAR	NOSE		X		
	LF	X			
	TAIL		X		
	DATA SYSTEM	X			
RAMS	DATA SYSTEM	X			
	TOTAL TEMP. 1	X			
	TOTAL TEMP. 2	X			
	DEW POINT	X			
	ATTACK ANGLE	X			
	SLIP ANGLE	X			
	ABS. PRESS.	X			
	DIFF. PRESS.	X			
	RADAR ALT.	X			
	J & W	X			
PMS	OAP 2DP	X			
	OAP 2DC	X			
	FSSP 100	X			
	DATA SYSTEM	X			
IPC		X			
FOIL				X	
CO_2 RADIOMETER				X	
MICROWAVE RADIOMETER				X	
SFC. RADIOMETER		X			
FORMVAR				X	
PHOTOGRAPHY	FWD	X			
	LS	X			
	RS	X			
	DWN	X			
	RADAR	X			
AXBT	TUBES			X	
	RECEIVERS			X	
ODW				X	

FLIGHT LOG

Date:	September 26, 1981
Flight Identification:	810926H
Aircraft:	WP-3D/N42RF
Departed:	San Juan, Puerto Rico, at 26/1135Z
Arrived:	San Juan, Puerto Rico, at 26/2119Z
Purpose:	IRENE Microphysics Experiment
Pattern:	Fig. 12 (modified) at 20000 and 23000 ft

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
RFC Standard	1	26/1135	26/2119
Original	1	26/1135	26/2119
Knollenberg	18	26/1157	26/2000
VTR	2	26/1312	26/1953
Radar	10	26/1328	26/1950

EQUIPMENT STATUS: 810926H

SYSTEM	STATUS /	UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			
	INE 2	X			
	ONE				
	DOPL				
RADAR	NOSE	X			
	LF	X			
	TAIL	X			
	DATA SYSTEM	X			
RAMS	DATA SYSTEM	X			
	TOTAL TEMP. 1	X			
	TOTAL TEMP. 2	X			
	DEW POINT	X			
	ATTACK ANGLE	X			
	SLIP ANGLE	X			
	ABS. PRESS.	X			
	DIFF. PRESS.	X			
	RADAR ALT.	X			
	J & W	X			
PMS	OAP 2DP	X			
	OAP 2DC	X			
	FSSP 100	X			
	DATA SYSTEM	X			
IPC				X	
FOIL				X	
CO_2 RADIOMETER		X			
MICROWAVE RADIOMETER		X			
SFC. RADIOMETER		X			
FORMVAR		X			
PHOTOGRAPHY	FWD	X			
	LS	X			
	RS	X			
	DWN	X			
	RADAR	X			
AXBT	TUBES			X	
	RECEIVERS			X	
ODW					

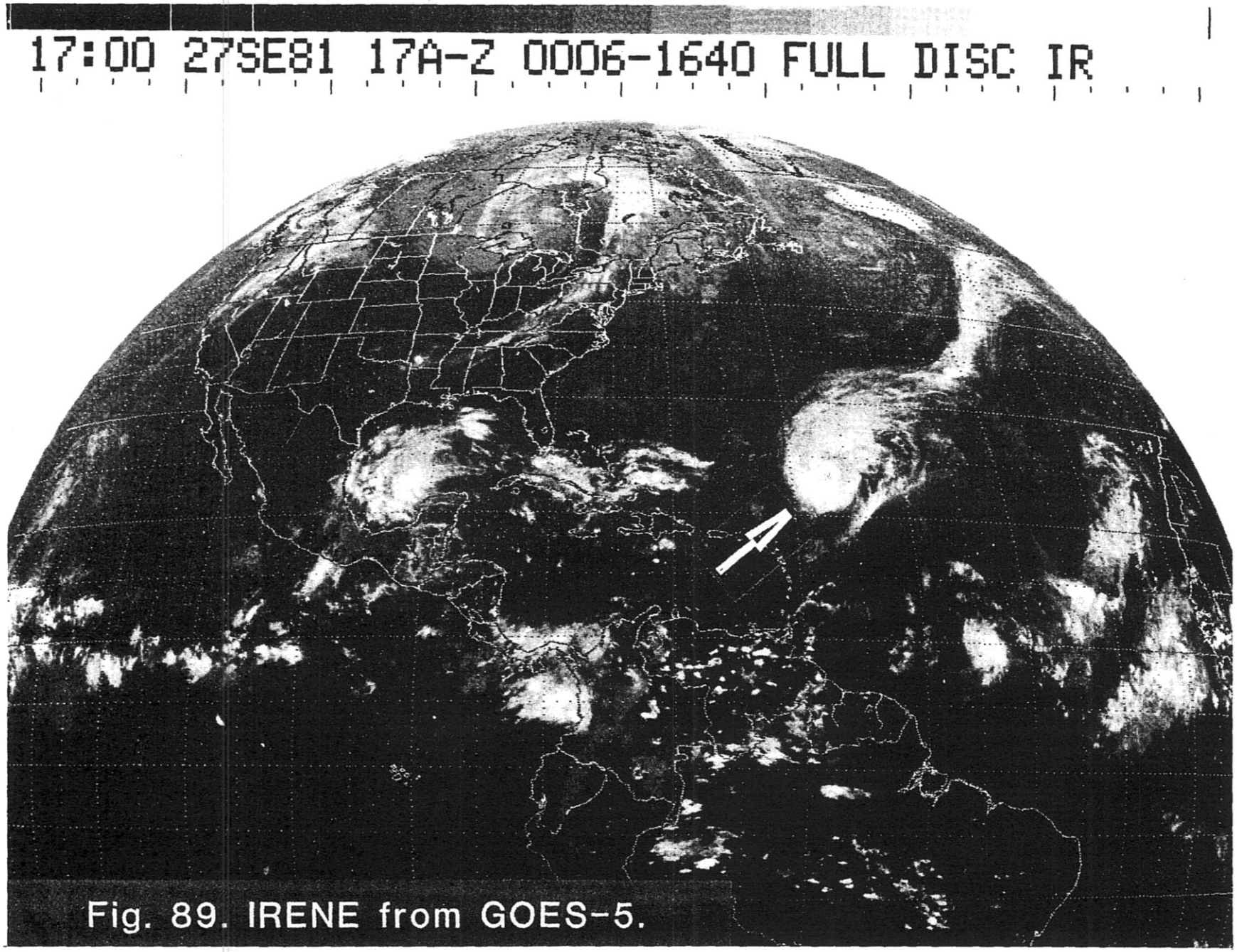

Fig. 89. IRENE from GOES-5.

FLIGHT LOG

Date:	September 27, 1981
Flight Identification:	810927I
Aircraft:	WP-3D/N42RF
Departed:	San Juan, Puerto Rico, at 27/1200Z
Arrived:	San Juan, Puerto Rico, at 27/2148Z
Purpose:	IRENE Rainband Experiment
Pattern:	Fig. 11 (modified) at 15000 ft; racetrack patterns through rain-bands at 10000, 13000, 15000 and 17000 ft

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
RFC Standard	1	27/1200	27/2148
Original	1	27/1200	27/2148
Knollenberg	23	27/1405	27/1949
VTR	2	27/1330	-
Radar	6	27/1347	27/1955

EQUIPMENT STATUS: 810927I

SYSTEM	STATUS /	UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			
	INE 2	X			
	ONE				
	DOPL				
RADAR	NOSE	X			
	LF	X			
	TAIL	X			
	DATA SYSTEM	X			
RAMS	DATA SYSTEM	X			
	TOTAL TEMP. 1	X			
	TOTAL TEMP. 2	X			
	DEW POINT	X			
	ATTACK ANGLE	X			
	SLIP ANGLE	X			
	ABS. PRESS.	X			
	DIFF. PRESS.	X			
	RADAR ALT.	X			
	J & W	X			
PMS	OAP 2DP	X			
	OAP 2DC	X			
	FSSP 100	X			
	DATA SYSTEM	X			
IPC		X			
FOIL				X	
CO_2 RADIOMETER				X	
MICROWAVE RADIOMETER				X	
SFC. RADIOMETER		X			
FORMVAR				X	
PHOTOGRAPHY	FWD	X			
	LS	X			
	RS	X			
	DWN	X			
	RADAR	X			
AXBT	TUBES			X	
	RECEIVERS			X	
ODW				X	

FLIGHT LOG

Date:	September 27, 1981
Flight Identification:	810927H
Aircraf :	WP-3D/N42RF
Departed:	San Juan, Puerto Rico, at 27/1200Z
Arrived:	San Juan, Puerto Rico, at 27/2208Z
Purpose:	IRENE Rainband Experiment
Pattern:	Fig. 11 (modified); racetrack patterns through rainbands at 500, 1500 and 5000 ft

TAPE LOG

TAPE TYPE	NUMBER	FROM [DAY/TIME (Z)]	TO [DAY/TIME (Z)]
RFC Standard	1	27/1200	27/2208
Original	1	27/1200	27/2208
Knollenberg	18	27/1359	27/1953
VTR	2	27/1351	27/2013
Radar	10	27/1354	27/2006

EQUIPMENT STATUS: 810927H

SYSTEM	STATUS /	UP	DOWN	NOT USED	REMARKS
NAV	INE 1	X			
	INE 2	X			
	ONE				
	DOPL				
RADAR	NOSE	X			
	LF	X			
	TAIL	X			
	DATA SYSTEM	X			
RAMS	DATA SYSTEM	X			
	TOTAL TEMP. 1	X			
	TOTAL TEMP. 2	X			
	DEW POINT	X			
	ATTACK ANGLE	X			
	SLIP ANGLE	X			
	ABS. PRESS.	X			
	DIFF. PRESS.	X			
	RADAR ALT.	X			
	J & W	X			
PMS	OAP 2DP	X			
	OAP 2DC	X			
	FSSP 100	X			
	DATA SYSTEM	X			
IPC				X	
FOIL				X	
CO_2 RADIOMETER		X			
MICROWAVE RADIOMETER		X			
SFC. RADIOMETER		X			
FORMVAR		X			
PHOTOGRAPHY	FWD	X			
	LS	X			
	RS	X			
	DWN	X			
	RADAR	X			
AXBT	TUBES			X	
	RECEIVERS			X	
ODW				X	

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