19950828H1_LPS

Mission Summary

950828H Iris (NOAA-42RF)
XCDX

Scientific Crew:

Lead Project Scientist	Willoughby
Radar Scientist	Gamache
Dropwindsonde Scientists	M. Black
C-SCAT, SFMR	P. Black
Observer	R. Smith (University of Munich)

Planning:

N42RF's flight on 28AUG95 was a single-plane Extended Cyclone Dynamics (XCDX) experiment in Iris as it regained hurricane intensity. Because the melting level had been so low on the previous day we operated at the 600 mb to avoid icing and charging of the aircraft. The planned flight track was six sided figure traverses of the center directed along 030°, 150°, and 270°. The forecast center point used in flight planning was 20.2° N and 62.5° W.

Operations:

We left Barbados at 1717 UT on 28AUG95 and headed northwest toward the initial point of the pattern, 17.0° N, 64.5° W, nominally 250 nmi SSW of the forecast center position. From there we tracked 30° toward the center, which we reached at 1944 UT, 20.8° N, 62.5° W. The radar showed a tight half circle of >35 dB(Z) reflectivity with a long trailing band of convective cells extending from the east side of the center toward the SSE. From the center we continued NNE to 24.2° N to 60.25° W, where turned westward to fly along the northern boundary of the CDO until we reached 24.2° N, 64.7° W. We then tracked 150°\ back toward the center, reaching it at 21.1° N, 62.4° W. The tight arc of convection present on the previous visit had dissipated by this time, but the long curving band to the southeast and south had become better organized. A dropsonde deployed in the center measured hydrostatic and splash pressures within < 1 hPa of 982 hPa. We continued along 150° to 17.5° N, 60.2° W and turned NNE to a point east of the center, 21.1 N, 58.0° W. As on the 27th, the southeast quadrant was characterized by southerly flow and abundant, but not notably vigorous, convection. The final traverse of the circulation toward 270°\ reached the center at 0109 UT, 21.4° N, 62.4° W and continued on to 24.4° W. At that point fuel expenditure dictated that we break off the pattern and head for St. Croix, where we landed at 0230 UT.

Equipment:

The aircraft, instrumentation, and dropsondes worked superbly.

Critique:

This mission was designed to augment Air Force reconnaissance with radar and flight-level data at another altitude over a larger domain. The data document Iris' recovery of hurricane strength and provide time continuity between the previous day's missions and the VME mission flown on the next day. It was somewhat disappointing that we again were unable to fly far enough to the west observe dry air outside the circulation.

Willoughby

Hurricane Research Division

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Internet:
WILLOUGHBY@OCEAN.AOML.ERL.GOV

15 September 1995

To: F. D. Marks

From: H. E. Willoughby

Subject: Flight 950828H (Iris)

Planning: N43RF's flight on 28AUG95 was a single–plane Extended Cyclone Dynamics (XCDX) experiment in Iris as it regained hurricane intensity. Because the melting level had been so low on the previous day we operated at the 600 mb to avoid icing and charging of the aircraft. The planned flight track was six sided figure traverses of the center directed along 030°, 150°, and 270°. The forecast center point used in flight planning was 20.2° N and 62.5° W.

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E.2 Lead Project Scientist (On-Board)

E.2.1 Preflight

1. Participate in general mission briefing.
2. Determine specific mission and flight requirements for assigned aircraft.
3. Determine from CARCAH or field program director whether aircraft has operational fix responsibility and discuss with AOC flight director/meteorologist and CARCAH unless briefed otherwise by field program director.
4. Contact HRD members of crew to:
   a. Assure availability for mission.
   b. Arrange ground transportation schedule when deployed.
   c. Determine equipment status.
5. Meet with AOC flight crew at least 90 minutes before takeoff, provide copies of flight requirements and provide a formal briefing for the flight director, navigator, and pilots.
6. Report status of aircraft, systems, necessary on-board supplies and crews to appropriate HRD operations center (MGOC in Miami or FGOC at remote recovery location).

E.2.2 In-Flight

1. Confirm from AOC flight director that satellite data link is operative (information).
2. Confirm camera mode of operation.
3. Confirm data recording rate.
4. Complete Form E-2.

E.2.3 Postflight

1. Debrief scientific crew.
2. Report landing time, aircraft, crew, and mission status along with supplies (tapes, etc.) remaining aboard the aircraft to the appropriate HRD operations center (MGOC or FGOC).
3. Gather completed forms for mission and turn in at the appropriate operations center. [Note: all data removed from the aircraft by HRD personnel should be cleared with the AOC flight director.]
4. Obtain a copy of the 10-s flight listing from the AOC flight director. Turn in with completed forms.
5. Determine next mission status, if any, and brief crews as necessary.
6. Notify the appropriate operations center (FGOC or MGOC) as to where you can be contacted and arrange for any further coordination required.

Form E-2
Page 1 of 5

On-Board Lead Project Scientist Check List

Date 28AUG95 Aircraft N42RF Flight ID 950828H

A. Participants

HRD		OAO	
Function	Participant	Function	Participant
Lead Proj. Sci.	WILLOUGHBY	Flight Director	PARRISH
Cloud Physics	M BLACK	Pilots	O'MARA / McKIM
Radar	GAMACHE	Navigator	STRONG
Workstation		Sys. Engr.	GOLDSTEIN / ROLLS
Photographer		Data Tech.	
~~Omegasonde~~ SEASCAT	P. BLACK	El. Tech.	
~~AXBT/AXCP~~ OBSERVER	R.K. SMITH	Other	

Take-Off	Location	Landing	Location
28/1717	BDA	29/0230	STX

B. Past and Forecast Storm Locations

Date/Time	Latitude	Longitude	MSLP	Max. Wind
28/09	19.0	62		
28/12	19.5	62.0	985	74 kt
28/18	20.3	62.2		
29/06	22.0	62.5		

C. Mission Briefing

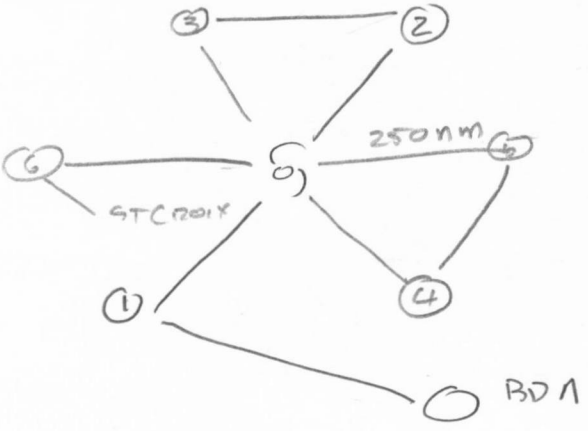
FLY 3 SIDED PATTERN CENTERED ON IRIS

D. Equipment Status

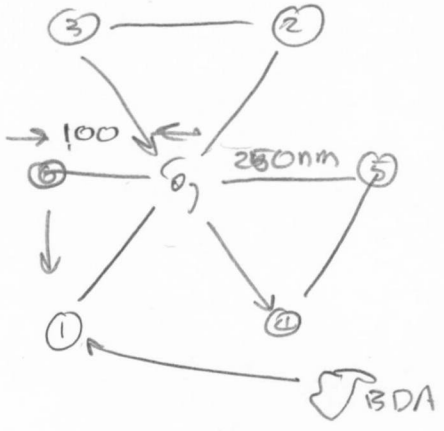
Equipment	Pre-Flight	In-Flight	Post-Flight
Aircraft	↑	↑	
Radar/LF	↑	↑	
Radar/TA (Doppler)	↑	↑	
Cloud physics	↑	↑	
Data system	↑	↑	
Omegasondes	↑	↑	
SCATTEROM. ~~AXBT/AXCP~~	↑	↑	
Workstation	NO13		
Photography	↑	↑	

REMARKS:

E. I. Proposed Flight Pattern (sketch or designate by number)



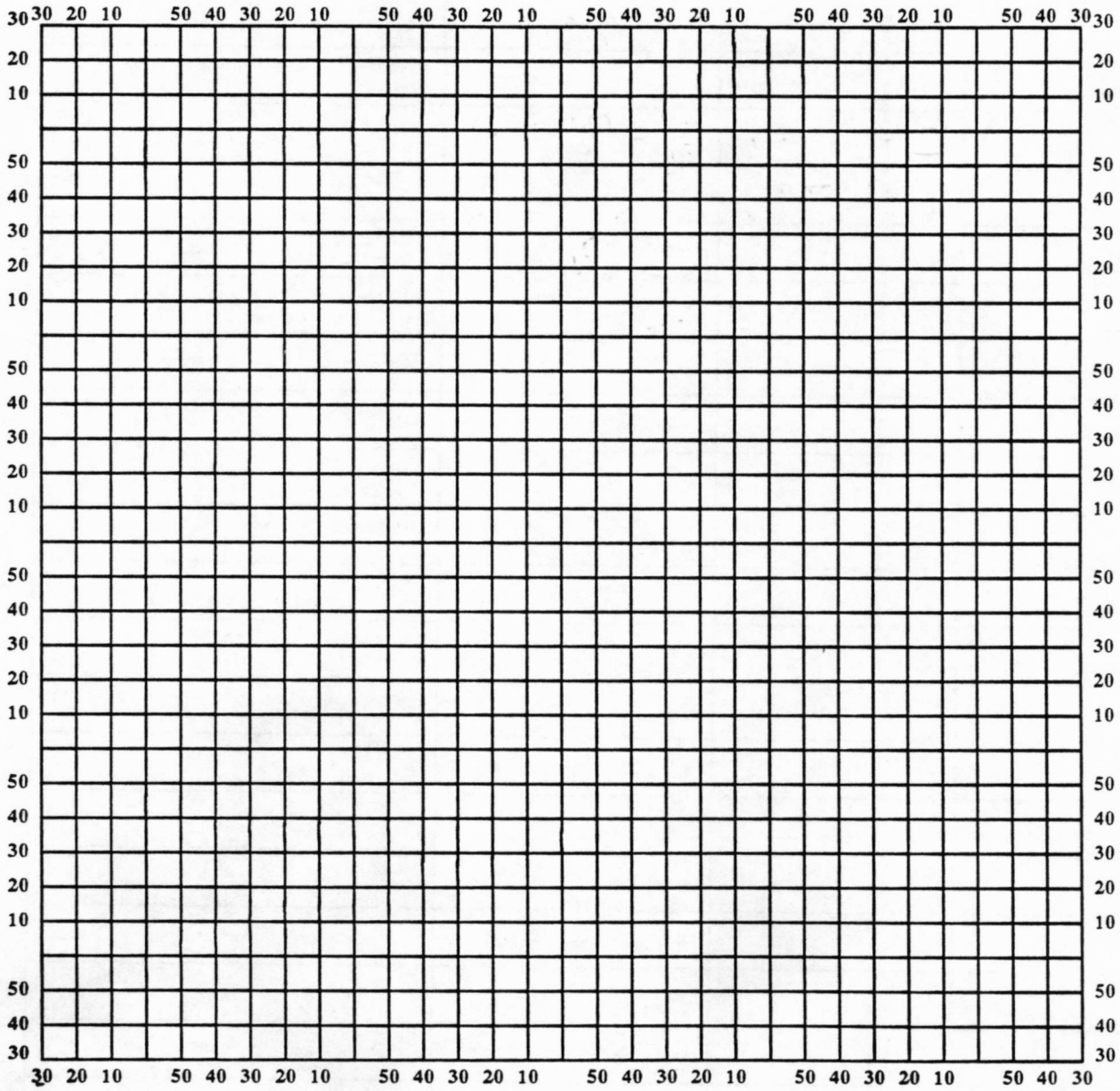
E. II. Actual Flight Pattern



Hurricane Recco Plotting Chart

True at 25° Latitude, in Degrees and Minutes

Date _____ Aircraft _____ Observer _____



Note: Label full degrees according to location of flight area.

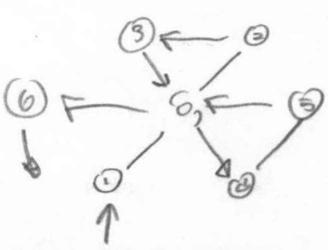
Form E-2

2119
0305
981 63/ct

Lead Project Scientist Event Log

Date 28 AUG 95 Flight 950828H LPS WILLOUGHBY

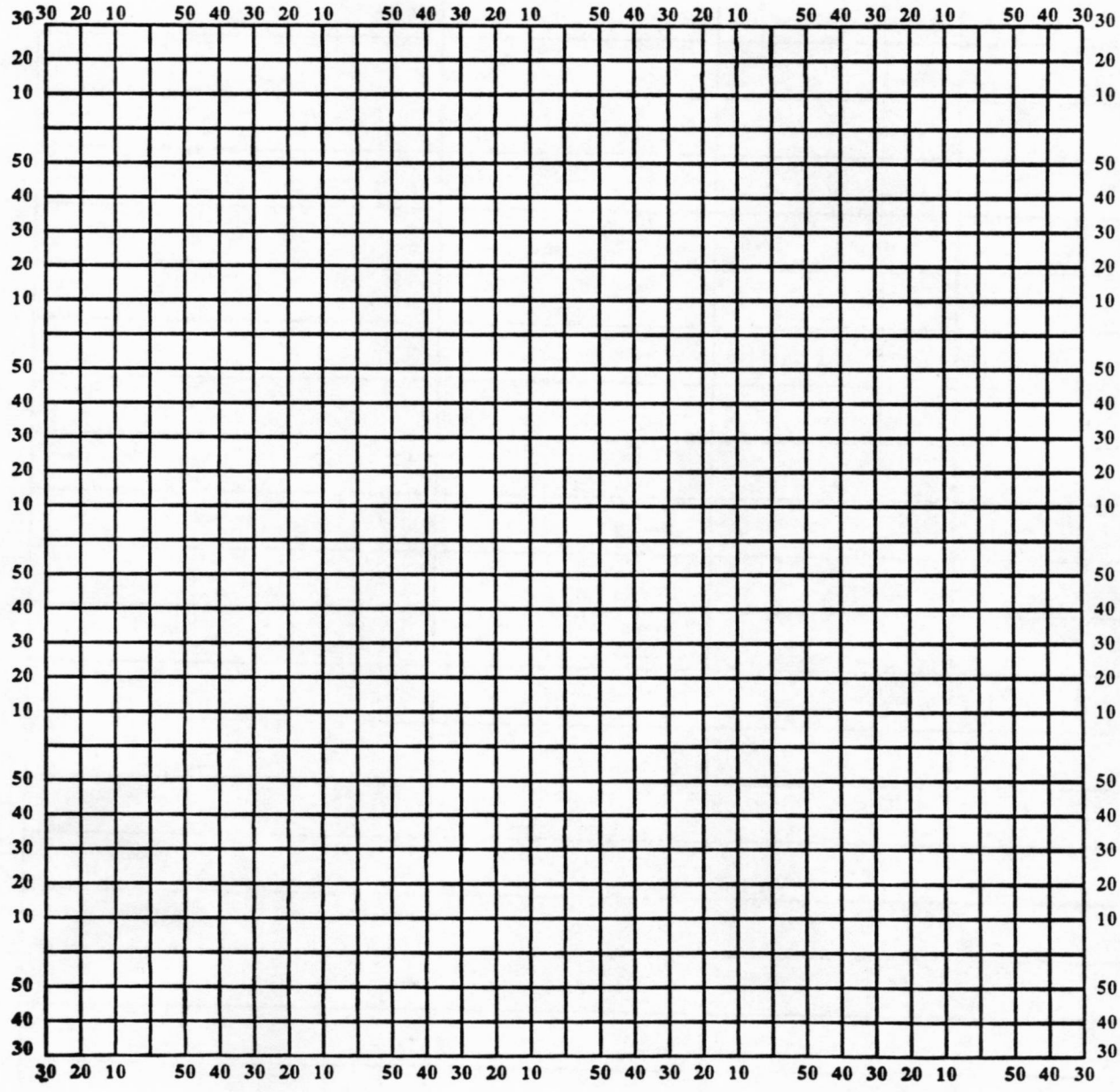
Time	Event	Position	Comments
28/1717	T/O	BDA	
18 Z			FROM TEAL 1715Z 20-19N 62-24W 984 78FL
1849	IP (1)	17°-01 64°-34	IP TRAK 030 → ⊚
1910		18-34 63-40	⊚ 150 nmi ahead on radar
1944	⊚	20 49 62 27	EYE OPEN EXCEPT W→NW TRAK 030 ⊚ →
2036	TURN W (2)	24-13 60-15	TRAK 270 → (3)
2130	(3) ⊚	24-13 64-41	TRAK 150 → ⊚
222050	⊚ DROP	21-06 62-23	TRAK 150 → (4) 982 MSLP
2319	(4)	17-30 60-13	TRAK 030 → (5)
29/0012	(5)	21-05 58-03	TRAK 270 → ⊚
29/0109	⊚	21-24 62-23	
0134	(6)	21-23 64-26	TURN S. → ST CROIX
0230			RECOVER STX



Hurricane Recco Plotting Chart

True at 25° Latitude, in Degrees and Minutes

Date _____ Aircraft _____ Observer _____

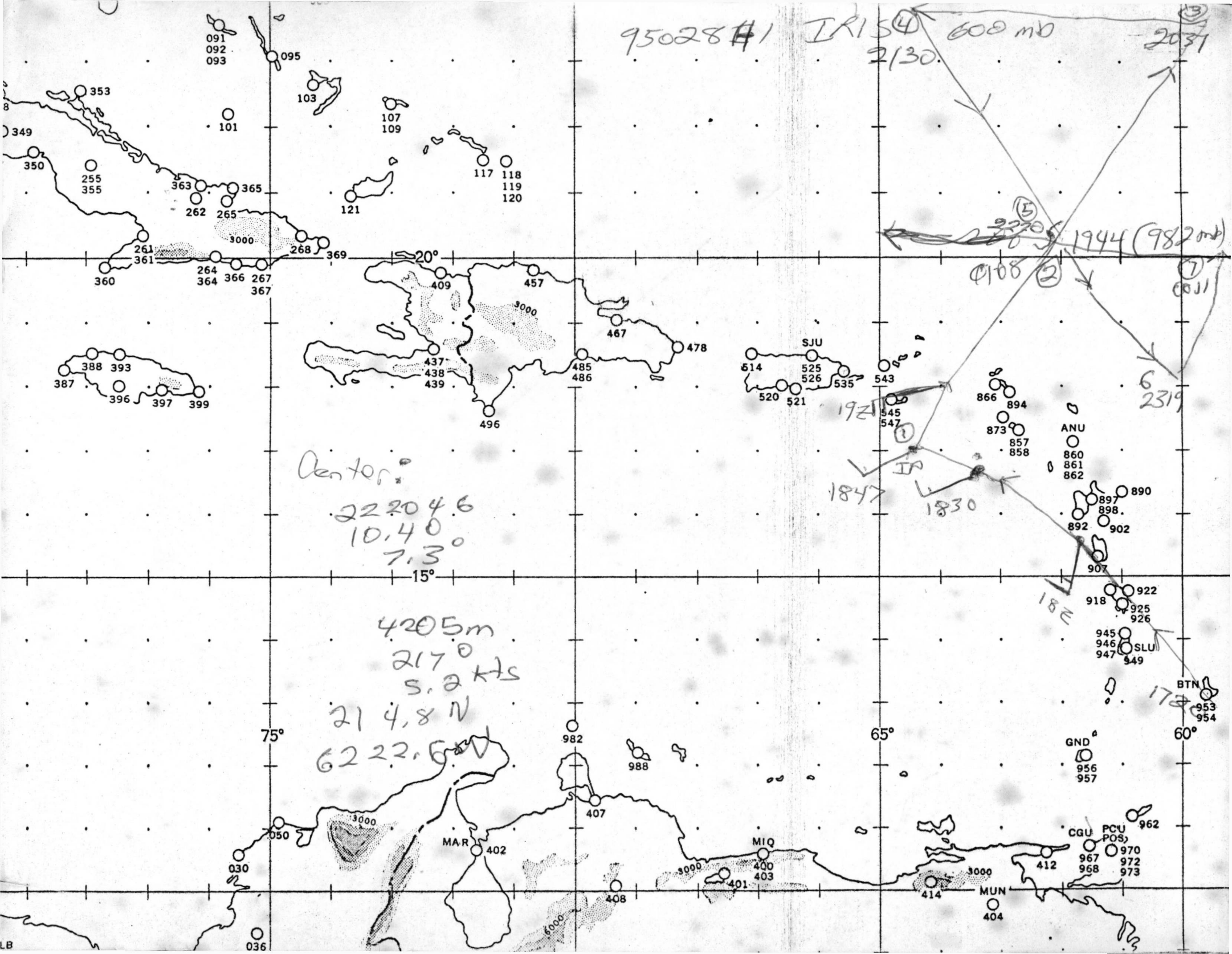


Note: Label full degrees according to location of flight area.

Lead Project Scientist Event Log

Date ______________ Flight ______________ LPS ______________

Time	Event	Position	Comments


95028 #1 IRIS
600 mb
2130
2031
1944 (982 mb)
0108
2319
1830
1847
IP
18Z
19Z
Center
10.40
7.3°
4205m
217°
5.2 kts
21 4.8 N
62 22.6 W
20°
15°
75°
65°
60°
3000
6000
SJU
ANU
SLU
BTN
GND
MAR
MIQ
MUN
CGU
PCU
POS
091 092 093
095
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400 403
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414
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967 968
970 972 973
962

C-SCAT

~~Hasselblad Camera~~ Log

Flight 950828H1 Date 8/28/95

Storm Irisf

~~Film type/ASA~~ Camera shutter speed

Pass No.	Pass start time	Pass end time	~~Exposure rate~~ Comment	Lens	Filter
1	~~1742~~ 1748	1847	Hdg NW to IP1	from	Barbados
2	~~1855~~ 1903		IP1 to S		