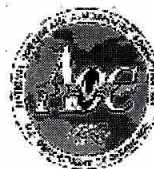




NOAA P-3 N43RF
H. RITA RAINEX MISSION



Flight ID: 050921I

Sensor or system	Number or Name
INE	2
Accelerometer	2
Temperature Probe	1
Dew Point Probe	1 (General Eastern)
Altitude (for vertical wind)	Radar Altimeter 159
Static Pressure	Rosemount Fuselage
Dynamic Pressure	Rosemount Fuselage 1281
Time Source	Micro 99
Constants File	CO3051.CON

Notes:

There were several time/data gaps during this flight generated by the aircraft data system:

150351Z – 150400Z, 151711Z – 151720Z, 152311Z – 152320Z, 155421Z – 155430Z,
155821Z – 155830Z and 160621Z – 160630Z.
Eye Pen *Eye Pen*

These data/time gaps could lead to erroneous vertical wind derivations.

The King Liquid Water Sensor was inoperative during the entire flight.

Dewpoint sensor #2, DW2, experienced some problems during the flight. During the following time frames its output was replaced by dewpoint sensor #1, DW1, output:

152405Z – 152523Z, 154421Z – 154425Z, 160240Z – 160700Z, 161320Z – 161343Z
161918Z – 161922Z, 172444Z – 172459Z, 184623Z – 184639Z, and 185016Z – 185022Z.

Also for dewpoint sensor #2 other edits to the data were made during the following time frames:

1416Z – 1418Z, 1844Z – 1846Z, 1846Z – 1848Z and 1919Z – 1921Z.

During the mission there were instances where dewpoint temperature exceeded derived ambient temperature. This occurred primarily during heavy rain events.

All other sensors worked optimally.

The selected aircraft INE positions were renavigated with respect to GPS.

SPECIAL NOTE!!! Locations 80, 81 and 82 of record five on the standard tape contain vertical ground, vertical air and vertical speeds, respectively, computed using Dave Jorgensen's vertical wind algorithm.
It is recommended that these values be used for vertical wind analysis.

Aircraft Static Pressure
Corrected Tower Pressure

Takeoff
1012.7 mb
1012.7 mb

Landing
1012.3 mb
1012.4 mb

Flight Director:

A. Barry Damiano (813) 828-3310 ext. 3073

U.S. Dept. of Commerce / NOAA / Aircraft Operations Center

AOCWF1

Flt ID: 1050921	From: KMCF	To: KMCF
Flt No: 05-062	Blk In: 2114Z	ATA: 2105Z
ETD: 1300Z	Blk Out: 1351Z	ATD: 1400Z
ETE:	Blk Time: 7:24 (7.4)	Flt Time: 7:05 (7.1)
Sponsor Org: HRD	Program: RAINEX	Purpose: RAINEX PATTERN FOR H-RITA

AOC Personnel

AC: KENNEDY	Sys Eng:
CP: CHOY	Data Sys: LYNCH
Nav: SIEGEL	Radar:
FE: FISCH / KLIPPEL	GPS/BT: TONG
FD: DAMIAN	Cld Phys:
Avionics: SANS SOUCI	MECH: PAULEY, RON

Participating Scientists / Visitors / AOC

Name (Last, First)	Activity on Aircraft	Affiliation
COGERS, R	PI ST02	HRD
BLACK, M	RADAR	↓
MURILLO, S.	HAPS	
TRIPODI, G.	C3X	
JORGENSEN, D.	RADAR	NSSL
RONAN, D.	MEDIA	WFAA DALLAS, TX
CANGIALOSI, J.	OBS	UM students
KOZICH, P.	OBS	↓

Proposed/Actual Mission Remarks (Recco, Fixes, Storm, PENET, NHOP #)

TEAL 81 ~17Z → 00Z**10 AXBTs****Pilot's Pitot Heater not operating****WX18A RITA****250/12****20 RAINEX SONDES 2km****T/O Delayed 1hr to replace****24.3 84.6 5am****14 HRD
AOC SONDES****27W 84W****1519Z,
24011'
85042'
934mb****1602
2414
8549
928mb****1917Z
2421
8611****909mb****1438Z
24019'
86020
905mb
909.1****RAINEX IP
24.4 84.6
~9am****(4)**

U.S. Dept. of Commerce / NOAA / Aircraft Operations Center

AOCWF2

Flt ID: J050921 Time Off: 1400Z Time On: 2105Z

	A/C (Take Off)	Wx Station (Take Off)	A/C (Land)	Wx Station (Land)
Pressure	<u>1012.7</u>	<u>29.92 / 1012.7</u>	<u>1012.3</u>	<u>29.91 / 1012.4</u>

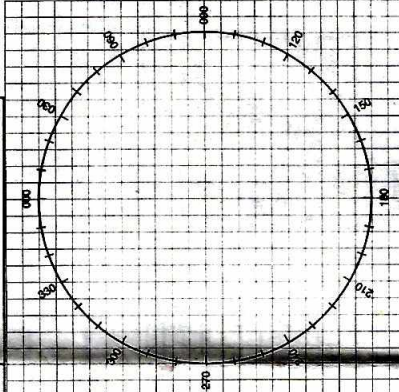
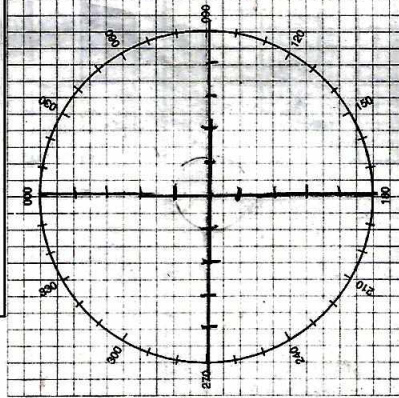
	Number	Data Disposition / Date / Quality
Flt Lvl Tapes	<u>2</u>	
Radar Tapes	<u>1</u>	
Cloud Physics Tapes		
Video Tapes	<u>4</u>	
AXBT	<u>1 9</u>	<u>1 in the tube / chute</u>
AXCP		
AXCTD		
Dropsondes	<u>35</u>	<u>28 RAINEX, 7 H/D</u> <u>↓ 1 Bad</u>

Video

	Forward	Left Side	Right Side	Down	Remarks
Time On					
Time Off					
Rate					

Remarks

PAGE 1 OF 2

[illegible]

POSITION REPORT

1. POSITION
2. TIME
3. ALTITUDE
4. NEXT POSITION
5. ETA
6. NEXT POSITION

EMERGENCY MESSAGE

TRANSMIT THE FOLLOWING MESSAGE TO ANY AGENCY ON THE AIR-GROUND FREQUENCY IN USE. IF UNABLE TO ESTABLISH COMMS, ATTEMPT CONTACT ON ANY OF THE FOLLOWING EMERGENCY FREQUENCIES:

UHF/VOICE	VHF/VOICE	MF/VOICE	HF/CW	MF/CW
243.0	121.5	2182 KHZ	8364 KHZ	500 KHZ

**MAYDAY, MAYDAY, MAYDAY
THIS IS NOAA . NOAA**

- POSITION _____ N/S _____
E/W AT _____

- HEADING TRUE/MAG

-AT_____KTS TRUE/INDICATED

- FLIGHT LEVEL OR ALTITUDE:

- WE ARE A P-3 AIRCRAFT WITH

- NATURE OF EMERGENCY

- ASSISTANCE DESIR

- PILOT INTENTIONS

[illegible]

2070 Lovey 4
7130 LANS

252

1280

1601

Teel

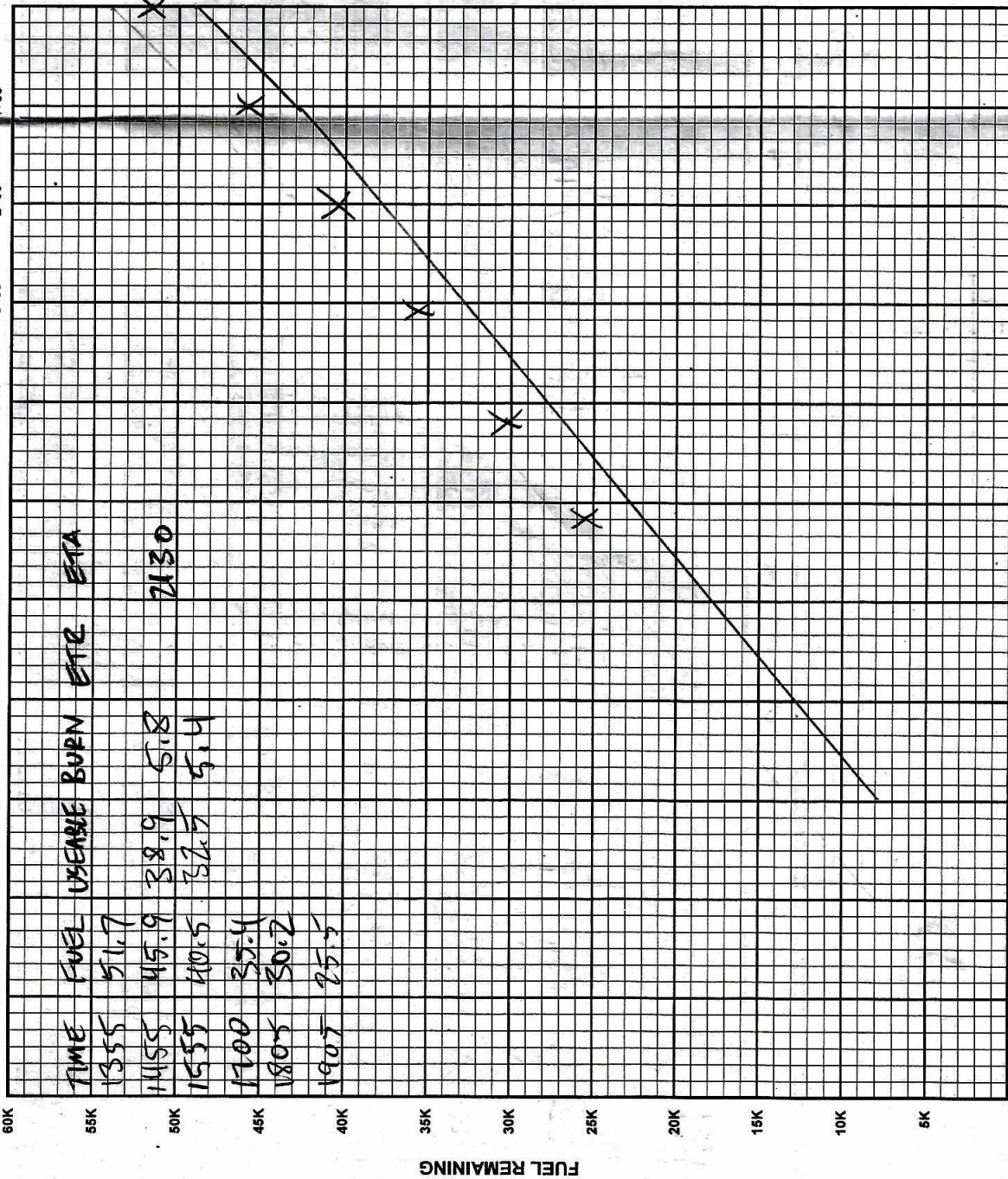
70

7ce 42

(G) = GFS (I) = NS (R) = RADIO (V) = VISUAL (C) = CELESTIAL (D) = DR

[illegible]

TIME REMAINING	6+00	5+00	4+00	3+00	2+00	1+00
1805	1700	1555	1485	1355		



ENROUTE FUEL	
ENROUTE TIME	840.0
ENROUTE FUEL (6K 5K/5K RULE)	441.0
RESERVE AT DESTINATION	8
REQUIRED RAMP	44.0
ACTUAL RAMP FUEL	51.7

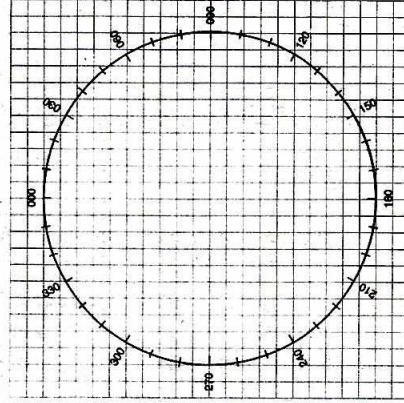
TACTICAL (OFFSTA TO DESTINATION)		4 ENG	3 ENG
DISTANCE (OFFSTA TO DEST)			
ENROUTE TIME (OFFSTA TO DEST)			
BURN RATE (LBS/HR)		4500	5500
ENROUTE FUEL REQUIRED			
RESERVE AT DESTINATION			
FUEL AT OFFSTA			

POINT OF SAFE RETURN		
	4 ENG	3 ENG
ETP DISTANCE (TO DEPARTURE)		
ENROUTE TIME (TO DEPARTURE)		
BURN RATE (LBS/HR)	4500	5500
FUEL REQUIRED		
RESERVE AT DEPARTURE		
PSR FUEL		

CEX - TRUE BEARING METHOD				CEX SIGHT			
COMPASS TYPE	INS1	INS2	WET	GMT			
MCH (READING)				GHA			
= MTH (SEXTANT)				CORR			
CE				GHA			
= VAR				LONG + W E			
DEV				EXACT LHA			
				LAT			
				BODY			
				DEC			
				HO'D			
				CORR			
				HO			
				Z			
				ZN			

CEX - ERB METHOD			
COMPASS TYPE	INS1	INS2	WET
MERB (DIAL 000)			
+ ZN			
= MTH			
MCH (READING)			

CEX - ERB METHOD				
COMPASS TYPE	INS1	INS2	WET	
MERB (DIAL 000)				
+ ZN				
= MTH				
MCH (READING)				
CE				
VAR				
= DEV				



WIND FACTOR		
WINDSPEED	HEADWIND	TAILWIND
10	1.03	.97
20	1.06	.94
30	1.10	.92
40	1.14	.89
50	1.18	.87
60	1.22	.85

DISTANCE REMAINING

ETP = .5(TOTAL DISTANCE x OUTBOUND WIND FACTOR)

PRESS ALT	200	250	300	350
10,000	1.0	1.0	.99	.99
20,000	.99	.98	.97	.97
30,000	.97	.96	.95	.94
40,000	.96	.94	.92	.90

[illegible]

Center drops East pass
H. RITA (4th)
through

Time	Pres	T Dry	RH	Speed	Dir	Alt	Type
-1.0	643.8			10.3	276.6		Uppermost Winds
-1.0	643.8	25.3	31.1				Uppermost Thermodynamic
1.2	645.6	23.7	27.4				GDL Temperature
5.2	650.4	25.5	26.0				GDL Temperature
13.7	661.0			16.4	275.0		GDL Wind Speed
15.2	662.8	26.1	27.1				GDL Temperature
35.2	684.9	24.2	40.0				GDL Temperature
37.2	686.9			11.6	282.2		GDL Wind Direction
50.9	700.0	25.2	39.8	11.6	301.0	2316.0	Standard
57.2	705.7	26.1	38.6				GDL Temperature
58.7	707.2			11.0	309.5		GDL Wind Direction
65.2	713.5			10.4	297.5		GDL Wind Speed
65.7	714.0	24.7	44.6				GDL Temperature
79.2	729.2			14.3	275.2		GDL Wind Direction
104.7	757.5			20.0	274.5		GDL Wind Speed
134.2	789.4	29.4	40.6				Inversion Top
157.7	816.6	25.4	64.9				Inversion Bottom
173.7	838.8	27.3	61.0				Inversion Top
181.5	850.0	25.1	77.8	19.4	263.3	597.3	Standard
181.5	850.0			19.4	263.3		GDL Wind Speed
181.5	850.0	25.1	77.8				Station Base Pressure
184.2	853.7	24.4	84.3				Inversion Bottom
188.9	859.4			20.5	258.3	500.0	62626 Mean BL Wind
194.7	866.3			20.1	259.6		GDL Wind Speed
203.7	876.3			17.4	261.4		GDL Wind Speed
228.2	907.5			25.5	255.7		Lowermost Winds
228.2	907.5					14.4	62626 Last Wind Altitude
228.2	907.5			16.3	271.7		62626 Deep Layer Mean Wind
228.2	907.5			23.7	256.5	89.5	62626 150m Layer Mean Wind
229.2	909.3	27.4	87.2			0.0	Surface Thermodynamic
229.2	909.3						Surface Winds
	925.0						Standard
	1000.0						Standard

[illegible]

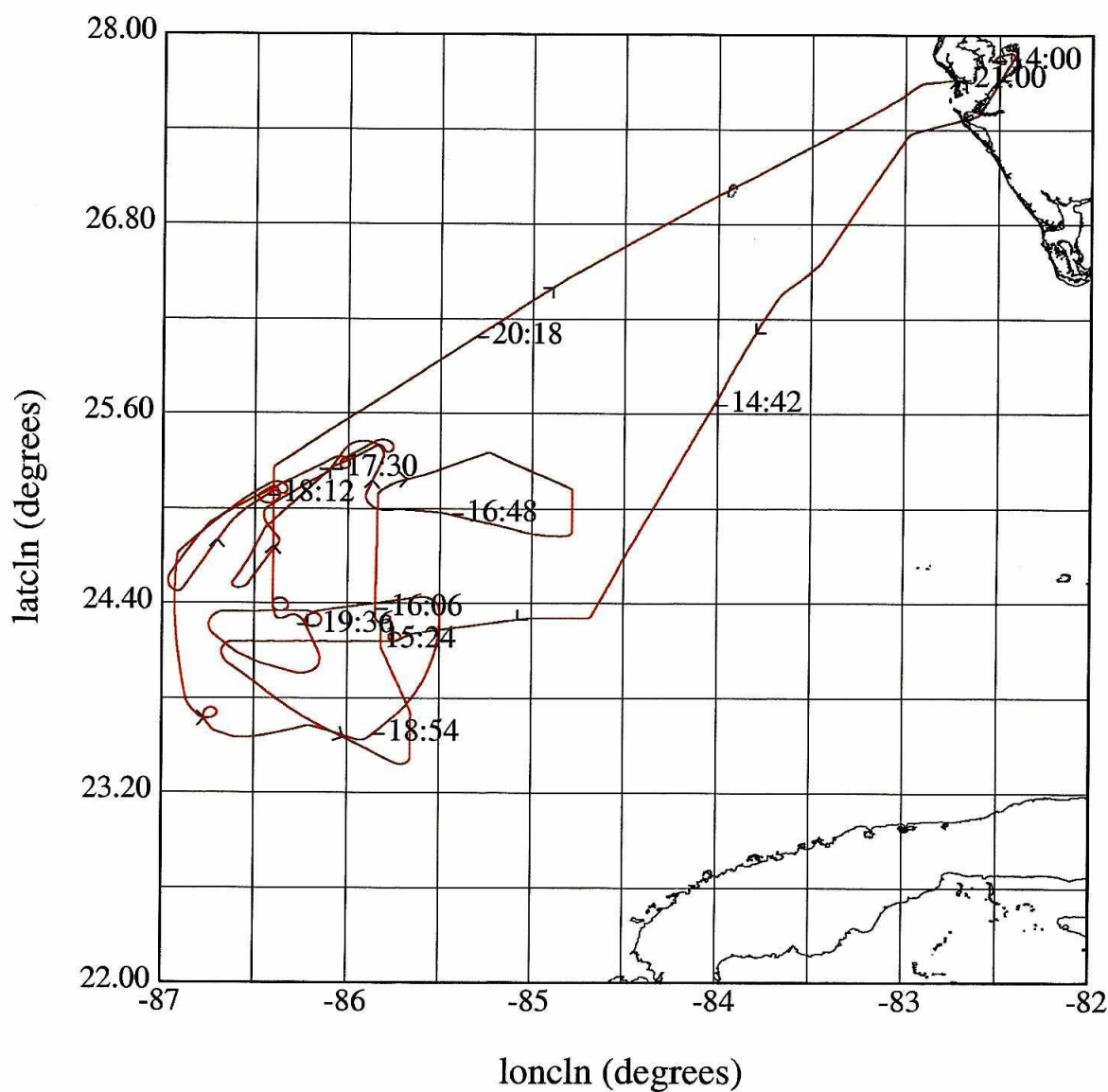
165129	24.59.76	-85.45.90	643.8	988.0	8.3	9.2	268.2	3708.0	103.8	34.2	-0.1
rx drop end leg											
171251	24.33.78	-86.30.66	643.4	981.6	9.3	6.9	209.1	3664.0	43.7	39.5	-0.3
end sw leg wnw of cntr											
171756	24.41.04	-86.31.80	643.4	984.0	9.1	5.5	24.4	3682.0	45.2	36.5	-0.1
heading ne rt side of band											
173823	25.24.60	-85.52.44	643.4	995.0	6.9	7.7	235.0	3756.0	92.7	33.4	0.3
rx drop strt leg											
174727	25. 8.40	-86.23.16	642.9	990.4	7.8	8.9	236.7	3735.0	75.2	35.6	1.7
rx bt combo mid point											
175830	24.30.00	-86.53.04	643.5	986.2	8.3	8.2	31.5	3694.0	19.5	33.3	0.2
rx drop at end of leg											
184654	23.33.66	-86.28.68	642.6	985.9	8.4	10.5	80.5	3710.0	293.4	33.4	6.0
rx drop strt leg											
185353	23.34.02	-85.52.08	643.2	987.7	7.8	7.9	46.5	3706.0	244.9	26.7	0.7
rx sonde bt s of cntr											
190107	24. 6.60	-85.31.26	643.5	983.5	8.8	7.9	9.9	3676.0	194.5	36.3	-0.1
rx drop											
190539	24.26.40	-85.36.66	643.5	981.0	9.0	7.2	259.4	3653.0	161.8	38.4	0.4
rx drop e of cntr bad											
190710	24.25.32	-85.43.44	643.4	976.2	9.3	8.6	259.8	3617.0	163.4	45.4	0.3
rx bkup e of cntr											
191130	24.22.50	-86. 1.80	640.7	940.9	8.5	9.4	260.5	3316.0	169.9	78.1	0.7
rx e eyewall											
191228	24.21.96	-86. 5.40	639.0	919.2	12.4	13.1	257.6	3181.0	173.3	53.2	2.2
rx drop inner eyewall											
191741	24.21.30	-86.14.16	644.8	906.1	25.7	-4.1	268.1	3087.0	7.9	8.3	-0.7
rx drop cntr and bt											

Due to operator error the flight director logging program quit. The following text was added from hand written notes.

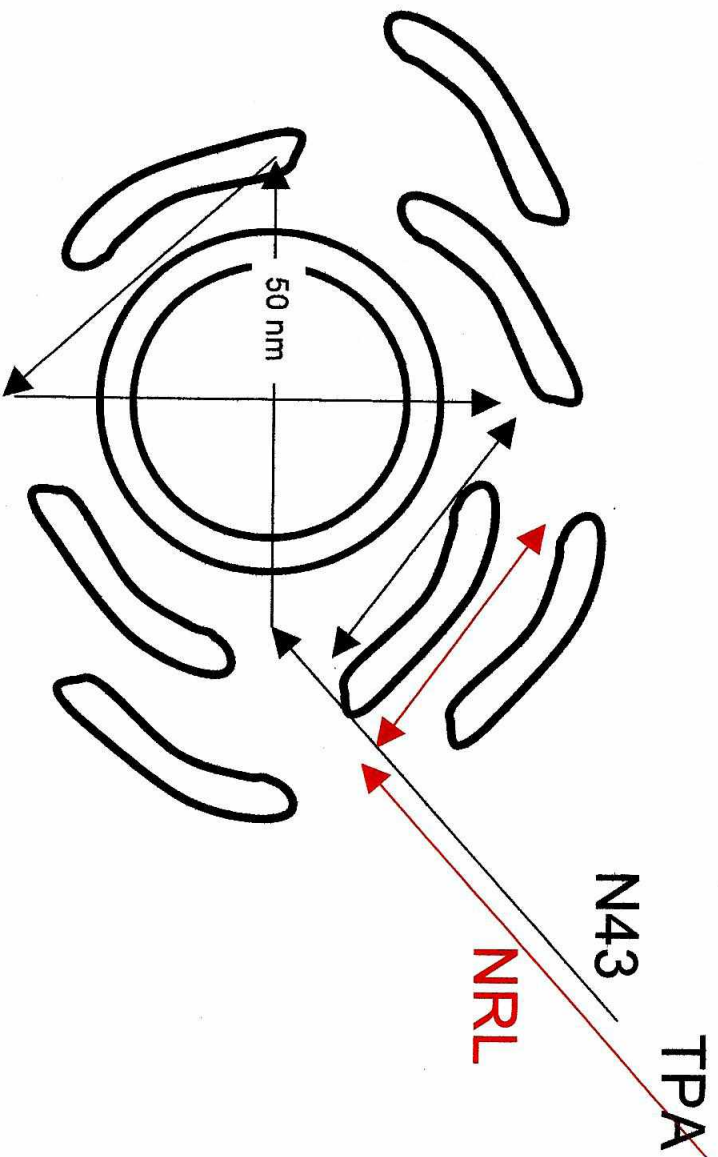
192020	rainex drop w eyewall
192056	rainex drop w eyewall
192207	AXBT (bt) drop
193538	rainex (rx) drop se eyewall
193611	rainex (rx) drop se eyewall
193800	center (cntr) rainex (rx) drop
194558	rainex (rx) drop north eyewall
194632	rainex (rx) drop north eyewall
195546	HRD drop 50 nm north of center
210500	landed

H. Rita RAINEX Pattern

09/21/2005 UTC, 14:00:00-21:00:00



	mean	sigma	min	max
latln (degrees), 1 s/sec	25.11	1.09	23.38	27.88
lonln (degrees), 1 s/sec	-85.48	1.17	-86.97	-82.42



- NOTES:
- 1) NRL may be inside or outside
 - 2) Work bands in NE, NW, SW, SE in that order
 - 3) Repeat Fig4 at end of mission
 - 4) Radial legs 50 nm from center
 - 5) Work bands close to eyewall