070926I

Lead Project Scientist

Preflight

___ 1. Participate in general mission briefing.

___ 2. Determine specific mission and flight requirements for assigned aircraft.

___ 3. Determine from field program director whether aircraft has operational fix responsibility and discuss with AOC flight director/meteorologist unless briefed otherwise by field program director.

___ 4. Contact HRD members of crew to:
   a. Assure availability for mission.
   b. Review field program safety checklist
   c. Arrange ground transportation schedule when deployed.
   d. Determine equipment status.

___ 5. Meet with AOC flight director and navigator at least 3 hours before take-off for initial briefing.

___ 5. Meet with AOC flight crew at least 2 hours before take-off for crew briefing. 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).

___ 7. Before take-off, brief the on-board GPS dropsonde operator on times and positions of drop times.

___ 7. Make sure each HRD flight crew members have life vests

___ 7. Perform a headset operation check with all HRD flight crew members. Make sure everyone can hear and speak using the headset.

___ 8. Collect "mess" fee ($2.00) from all on-board HRD flight crew members.

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 Lead Project Scientist Form.

___ 5. Check in with the flight director to make sure the mission is going as planned (i.e. turns are made when they are supposed to be made).

Post flight

___ 1. Debrief scientific crew.

___ 2. Report landing time, aircraft, crew, and mission status along with supplies (tapes, *etc.*) remaining aboard the aircraft to MGOC.

___ 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. Obtain a copy of the radar DAT tapes. Turn in with completed forms.

___ 6. Obtain a copy of the all VHS videos form aircraft cameras (3-4 approx.). Turn in with completed forms.

___ 7. Obtain a copy of CD with all flight data. Turn in with completed forms.

___ 8. Determine next mission status, if any, and brief crews as necessary.

___ 9. Notify MGOC as to where you can be contacted and arrange for any further coordination required.

___ 10. Prepare written mission summary using **Mission Summary** form (due to Field Program Director a week after the flight).

Lead Project Scientist Check List

Date 9/26/07 **Aircraft** N43RF **Flight ID** 0709261

A. Participants:

HRD		AOC	
Function	**Participant**	**Function**	**Participant**
Lead Project Scientist	Rogers	Flight Director	Almeida
Radar	Leighton	Pilots	Clay, Nelson
Workstation	Leighton	Navigator	Bishop
Cloud Physics	—	Systems Engineer	Lynch
Photographer/Observer /Guests	—	Data Technician	Peek
Dropwindsonde	Leighton	Electronics Technician	Smith
AXBT/AXCP	—	Other	

B. Take-off and Landing Locations:

Take-Off: 1915 Location: Barbados

Landing: 0427 Location: Barbados

Number of Eye Penetrations: —

C. Past and Forecast Storm Locations:

Date/Time	Latitude	Longitude	MSLP	Maximum Wind
26/15Z	11.9	42.9		60 kt
27/00Z	12.6	44.5		65 kt
27/12Z	14.0	46.8		75 kt
28/00Z	15.5	48.5		75 kt

D. Mission Briefing:

Fly butterfly pattern in T.S. Karen in support of 3-D Doppler wind mission. Karen has developed more convection near its central core this morning and is a borderline hurricane, though it is experiencing westerly shear as evident from IR imagery. Fly pattern at 10,000 ft, get fix for NHC at 00 UTC. Conduct Doppler analyses during each of 3 passes.

E. —Equipment Status (Up ↑, Down ↓, Not Available —, Not Used **O**)

Equipment	Pre-Flight	In-Flight	Post-Flight	# DATs / Cds /Expendables/ Printouts
Radar/LF	✓			
Doppler Radar/TA	✓			
Cloud Physics	—			
Data System	✓			
GPS sondes	✓			
AXBT/AXCP	—			
Workstation	✓			
Videography	✓			

REMARKS:

Lead Project Scientist Event Log

Date 9/26/07 **Flight** 070926I **LPS** Rogers

Time	Event	Position	Comments
1915	takeoff	Barbados	takeoff
1934	radar	~~200~~ nm from Barb.	change PRF to 2400
2203	pattern	near IP, W of storm	no convection here, but showers about 50-100 nm to the north, descending to 10,000 ft. at IP
220610	pattern	105 nm W of center	start FL! at IP, FL 30 kt, SF 18 kt start folder leg 1
2214	obs.	70 nm W of center	~~FL~~ 23, SF 28 kt, SF & FL beam equal for past 30 nm- FL/SF ~ 0.65-0.8 on this leg so far
2220	obs.	45 nm W of ctr.	
2226	pattern	21 nm W of ctr.	turning left 20 deg., storm looks like it's slower & farther north, track 70
2228	obs.	15 nm W of ctr.	FL 25, SF 40 kt.
2233	obs.	12.8, 44.29	SF center reached, FL center coming up, displaced to NE
223504	drop 1	12°48' 44°13'	center drop,
			max SF winds 55 kt, max. FL winds 75 kt on W side; 997 mb
2240	obs	12.72° 43.74°	FL winds now ~ 15 kt ? SF winds; peak winds at FL 60 kt, SF 45 kt; FL peak ~ 40 nm from center
2249	obs	12°41' 43°8' east side	wide good convection on good tail coverage

Lead Project Scientist Event Log

Date 9/26/07 Flight 070926 I LPS Rogers

Time	Event	Position	Comments
end RL 1 — 2300 10	pattern	122 nm E ctr.	turn to track 330, end of RL 1
230214	obs	on downwind leg	FL/SF ~ 1.4, has been on windward E side of storm
2306	obs	midway thru downwind leg on NE side	widespread strat. precip., embedded convection on this side of storm
231602	radar	on downwind leg	radars locked up, reset
begin RL 2 — 232800	pattern	125 nm NE ctr.	turn to track 200; extended leg a bit to pass near convective cell at turn point; begin radar leg 2
235126	obs	35 nm NE ctr.	widespread convection on NE side, FL ~ 60 kt, SF 50-60 kt; peak FL 70 kt, peak SF 65 kt
235555	turn	5 nm NE ctr	turn to track 270, looking for center

Lead Project Scientist Event Log

Date 9/26/07 Flight 070926I LPS Rogers

	Time	Event	Position	Comments
	000039	center, drop 2	12°55' 44°34'	FL winds ~0, sf winds still about 30 kt and; 997.8 mb SErly; sf center displaced to SW of FL center
	0008	obs		max FL 68 kt, sf 63 kt on NE side
	0014	obs	45 nm SW ctr.	FL max inward of sf max. FL max 35 kt, sf 25 on SW side; convection is highly asymmetric; nothing on SW side
end RL2	002500	turn	~100 nm SW of ctr	end radar leg 2, turn to track 90
start RL3	0049	turn	105 nm SE ctr	turn to track 330; begin radar leg 3
	0100	obs	45 nm SE ctr	no precip. here, but pronounced banding features to east about 100-150 km east of center; FL 50 kt, sf 25 kt
	0110	turn	10 nm SE ctr.	searching for FL ctr

Lead Project Scientist Event Log

Date 9/26/07 Flight 070926I LPS Rogers

Time	Event	Position	Comments
011537	center fix, drop3	13° 2′ 44° 47′	SFwind 25kt too; 997.1mb
0123	obs	50 nm NW center	Max FL winds 50kt,
			SF 62kt on NW side
013826	turn	11.7 nm NW center	at FP, turning Home
0427	land	Barbados	land in Barbados

Mission Summary

Storm name

YYMMDDA# Aircraft 43RF

Scientific Crew (43RF)

Lead Project Scientist Rogers
Radar Scientist Leighton
Cloud Physics Scientist
Dropwindsonde Scientist Leighton
Boundary-Layer Scientist
Workstation Scientist Leighton
Observers

Mission Briefing: (include sketch of proposed flight track or page #)

See previous

Mission Synopsis: (include plot of actual flight track) ~~Plan~~ Pattern was flown generally as planned. Storm showed significant asymmetries, with convection nearly completely displaced from sfc. & FL center, FL/SF winds showing variation in their ratio across the storm, & dropsondes at center showing SE winds below flight level. Had to deviate a few times to avoid convection. Storm was moving slightly slower & more to the north than expected, so had to adjust track for that too. Min SLP from 3 center drops was 997.8 mb, peak FL winds were 69kt, peak SF were 62 kt.

Evaluation: (did the experiment meet the proposed objectives?)

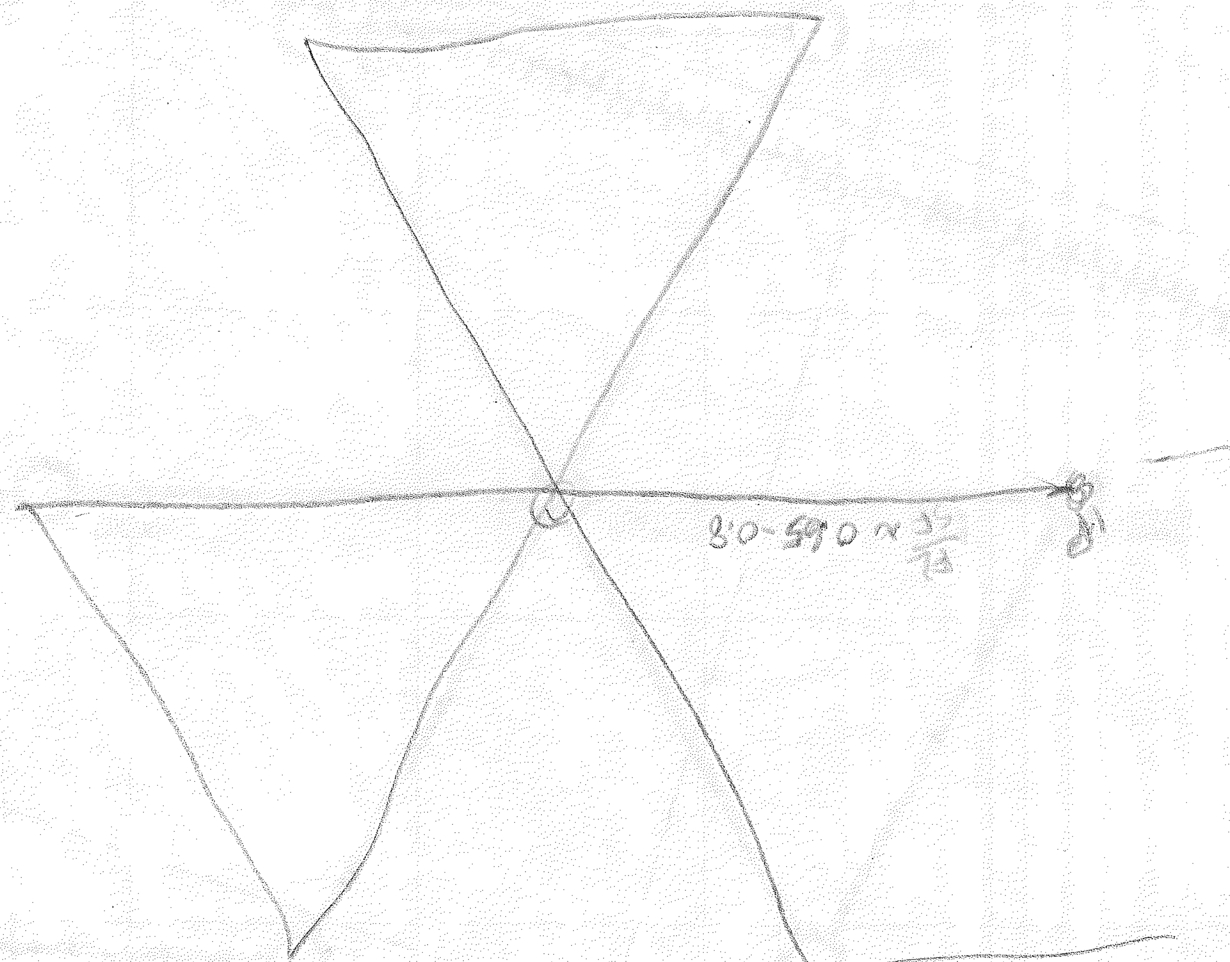
Systems was strongly sheared. There were abundant scatterers on the north & east sides, and Pepp ler analyses were able to be conducted. Coupled with Ingrid flights, these should map out a matrix of sheared vortices of varying intensity (albeit weaker than hurricanes strength). This could be of some value to EMC, and possibly to research community.

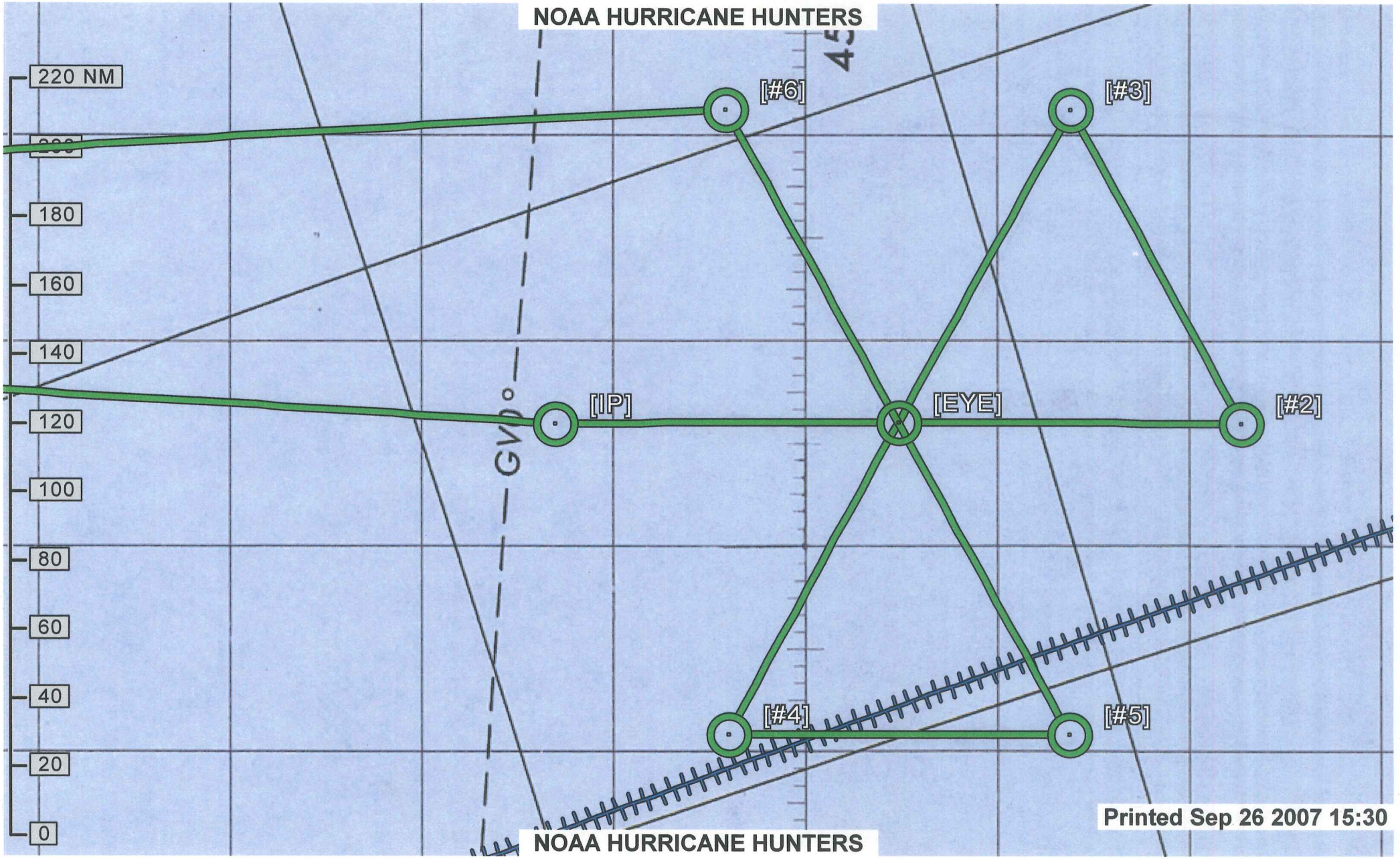
Problems:(list all problems)

no problems

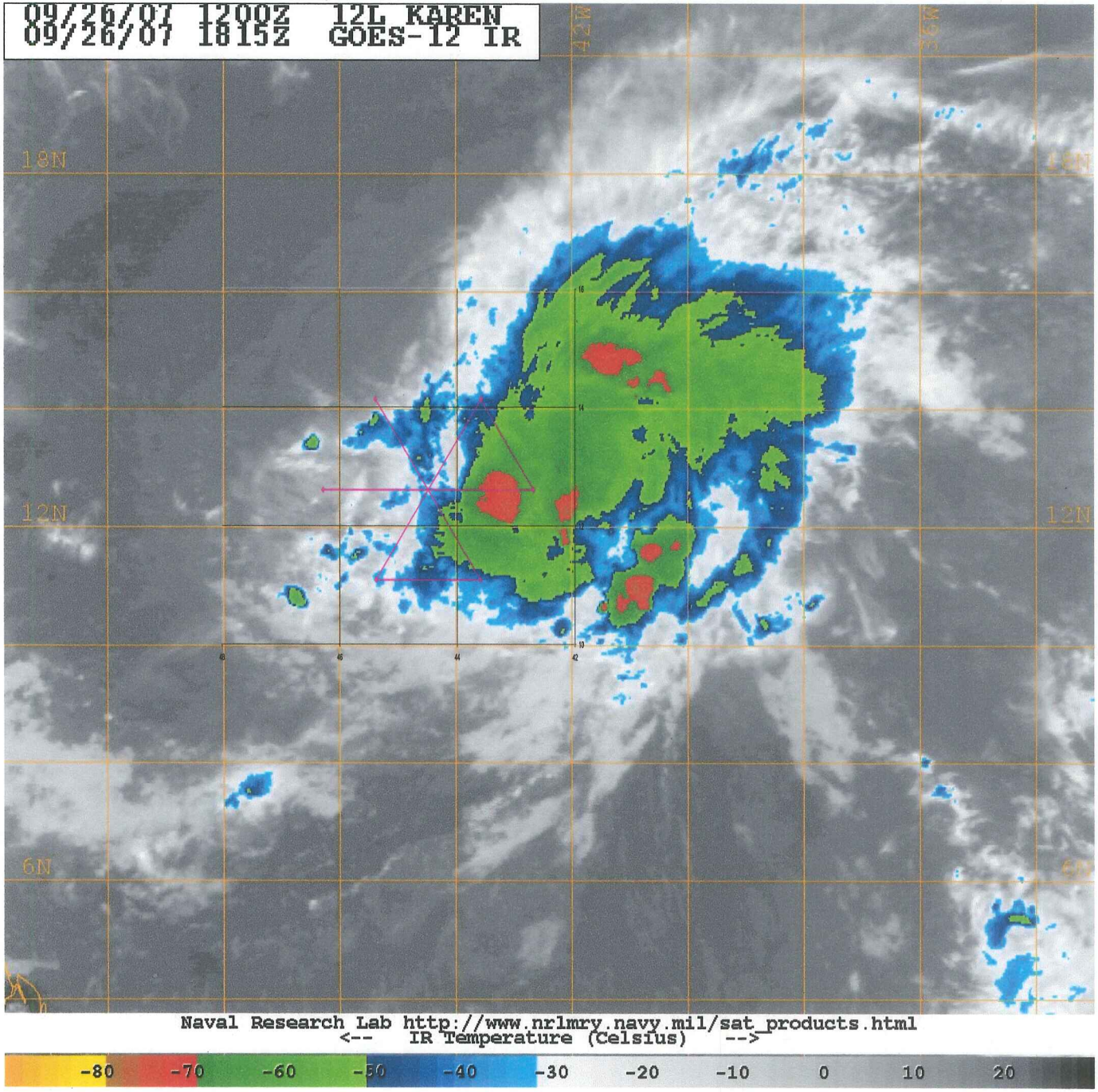
Expendables used in mission:

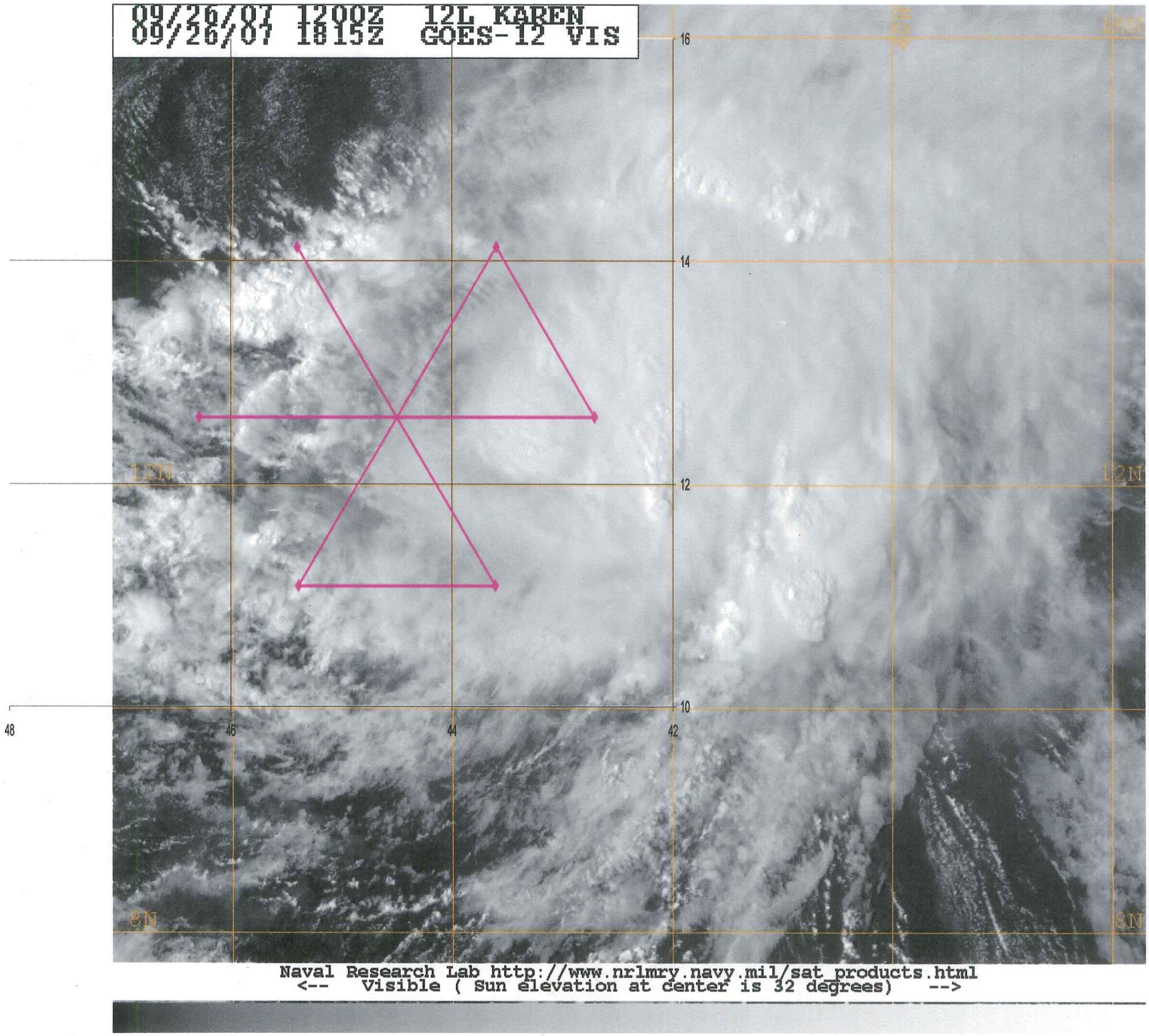
GPS sondes : 3
AXBTs : 0
Sonobuoys: 0




NOAA HURRICANE HUNTERS
220 NM
180
160
140
120
100
80
60
40
20
0
[#6]
[#3]
[IP]
[EYE]
[#2]
[#4]
[#5]
Printed Sep 26 2007 15:30
NOAA HURRICANE HUNTERS

Turn Pt	Type	Fix/Point	Latitude	Elev	Aspd	Calc Bank	Altitude	Temp	MH	TH
	DTD	Description	Longitude	MV	Bank	Time Adjust	Wind	FF	MC	TC
1	ST	**TBPB/A**	N 13 04.48	169FT		0	169M	-15C	091	076
*M		GRANTLEY ADA	W059 29.55	15.2W		0.0		0	091	076
2		TR002270105	**N 12 35.64**	unk	290T	0	15000M	-15C	106	091
*M	IP		**W046 17.38**	18.0W		0.0		0	106	091
3		none	**N 12 36.00**	unk	290T	0	5000M	+5C	108	090
*M	EYE	none	**W044 30.00**	17.9W		0.0		0	108	090
4		TR003090105	**N 12 35.64**	unk	290T	0	5000M	+5C	108	090
*M	#2		**W042 42.62**	17.8W		0.0		0	108	090
5		TR003030105	**N 14 07.24**	unk	290T	0	5000M	+5C	348	330
*M	#3		**W043 35.98**	17.5W		0.0		0	348	330
6		TR003210105	**N 11 04.57**	unk	290T	0	5000M	+5C	228	210
*M	#4		**W045 23.39**	18.2W		0.0		0	228	210
7		TR003150105	**N 11 04.57**	unk	290T	0	5000M	+5C	108	090
*M	#5		**W043 36.61**	18.2W		0.0		0	108	090
8		TR003330105	**N 14 07.24**	unk	290T	0	5000M	+5C	348	330
*M	#6		**W045 24.02**	17.7W		0.0		0	348	330
9		**TBPB/A**	N 13 04.48	169FT	290T	0	5000M	+5C	285	267
*M		GRANTLEY ADA	W059 29.55	15.2W		0.0		0	285	267


09/26/07 1200Z 12L KAREN
09/26/07 1815Z GOES-12 IR
18N
12N
6N
Naval Research Lab http://www.nrlmry.navy.mil/sat_products.html
<-- IR Temperature (Celsius) -->
-80 -70 -60 -50 -40 -30 -20 -10 0 10 20


09/26/87 1200Z 12L KAREN
09/26/87 1815Z GOES-12 VIS
16
14
12
10
16N
12N
8N
48
46
44
42
Naval Research Lab http://www.nrlmry.navy.mil/sat_products.html
<-- Visible (Sun elevation at center is 32 degrees) -->