



NOAA P-3 N42RF T.S. Ophelia

Flight ID: 050916H

Sensor or system

Number or Name

INE.....	1
Accelerometer.....	1
Temperature Probe.....	1
Dew Point Probe.....	1
Altimeter (for vertical wind).....	RA-159
Static Pressure.....	Rosemount (fuselage)
Dynamic Pressure.....	Rosemount (fuselage)
Time Source.....	Micro 99

Local Met. Data: Not copied at takeoff

Take off: 1436Z

Land: 2359Z

The RA-232 was substituted for the RA-159 during take off and landing due to spiking (T.O. 143301-152850; 235838-000200 Land).

The RA-159 had spikes that were removed and patched (224759-224803; 230129-230133).

All other instruments functioned normally during the flight.

There were data gaps noted: 143310-143320; 210738-210743; 213121-213142; 213251-213259.

There were times during heavy precipitation events (e.g. eye wall penetrations) when the dew point exceeded ambient temperature yielding a RH of greater than 100%. This is probably due to a wet bulb effect on the total temperature probe and/or the dew pointer over heating while trying to remove excess moisture. In these instances, no corrections were attempted.

SPECIAL NOTE: These data have not had Dr. Dave Jorgensen's vertical wind algorithm applied to them. Only the Aircraft Operations Center standard vertical wind algorithm has been applied. A new post-flight data processing algorithm was employed which currently lacks the Jorgensen method. The data can and will be rerun if required by the investigator.

	Take off	Land
Aircraft Static Pressure	1019.1 mb	1016.0 mb
Corrected Tower Pressure	1019.3 mb	1019.9 mb

Flight Director:

Tom Shepherd
813-828-3310 x3053

U.S. Dep't. of Commerce / NMAO / NOAA / Aircraft Operations Center

FLT ID: 050916H	From: KMCF	To: KPSM
Flt No: 05 -	In: 0006 Z	On: 2359 Z
ETD: 1400 Z	Out: 1424	Off: 1436
ETE: 9+00	Blk Time: 9+42 9.7 Hrs	Flt Time: 9+23 9.4 Hrs
Sponsoring Org: NOAA/HRD	Program: Hurro5	Purpose: T.S. OPHELIA

AOC Flight Crew

Aircraft Commander: KENNEDY, P	Data System: M ^C MILLAN, S
Co-Pilot: STRONG, T	AVAPS:
Navigator: GALLAGHER, T	System Engineer: KERR, B
Flight Eng: BAST, G. WADE, S	AA:
Flight Director: SHEPHERD, T	AA:
Avionics: OLNEY, B	Crew Chief: TORREY, R

Participating Scientists / Visitors

Name (Last, First)	Activity on Aircraft	Affiliation
ABERSON, S	PI	NOAA/HRD
VALDE, K	RADAR	
LEIGHTON, P	HAPS	

Remarks (Storm Name, Mission ID, Recco Times, Fix Times)

Storm Name: APN 159 ON ~1530

Mission ID: NOAAZ WX16A OPHELIA

Port City Air
 603-430-1111
 HAMPTON INN

AEROSONDS 0-2500
 TEAL 51 1445 T.O. 0.5 ~172 5K

(see reverse for additional remarks)

U.S. DEPT OF COMMERCE / NMAO / NOAA / AIRCRAFT OPERATIONS CENTER

FLT ID: 050916 H		TIME OFF: 1436 Z		TIME ON: 2359 Z	
A/C - Takeoff		WX Station - Takeoff		A/C - Land	
Pressure		1019.1		1016.0	
ATIS - Takeoff		30.10		30.12	
ATIS - Land					
Data Source	Number	Data Disposition / Date / Quality			
Flight Level Tapes	2	- Shepherd			
Radar Tapes	1	→ HRD			
Cloud Physics Tapes / Cds	0				
Video Tapes	0				
Dropsondes	22	Good: 20 Bad: 2 Total: 22 21 HRD 1-NHC			
AXBT	4				
AXCP					
AXCTD					
SONOBUOY					

REMARKS:

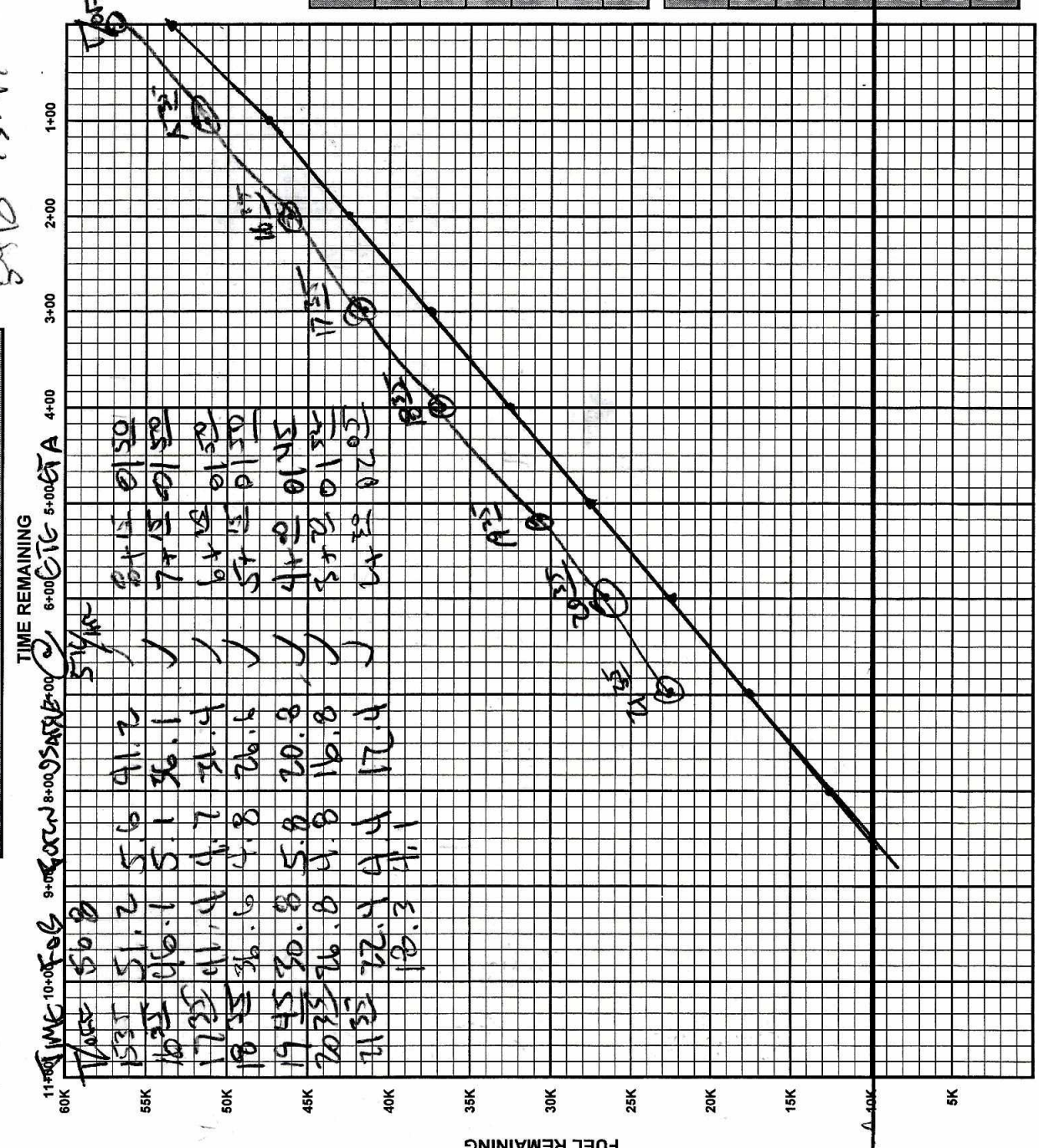
11
10
10
10
2.5

76.5
74.2

315 334 6364
6784

37.
5818 73.47

RANGE CONTROL GRAPH

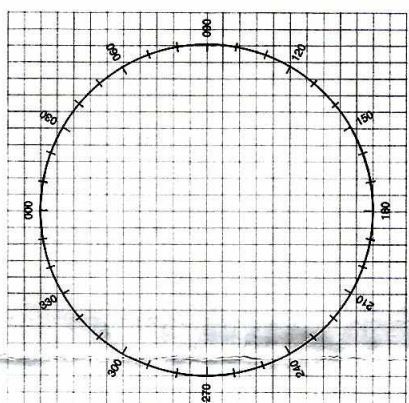


CEX - TRUE BEARING METHOD					CEX SIGHT	
COMPASS TYPE	INS1	INS2	WET		GMT	
MCH (READING)					GHA	
MTH (SEXTANT)					CORR	
CE					GHA	
-VAR					LONG W	
DEV					-E	
					EXACT LHA	
					LAT	
					BODY	
					DEC	
					HC/D	
					CORR	
					HC	
					Z	
					ZN	

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

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

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



TRUE AIRSPEED CROSS-CHECK					
TIME	IAS	PRESS ALT	"F" FACTOR	OAT	TAS

PRESS ALT					
10,000	20,000	30,000	40,000	200	250
1.0	.99	.98	.97	.96	.95
.99	.98	.97	.96	.95	.94
.97	.96	.95	.94	.93	.92
.96	.95	.94	.93	.92	.91

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)

35-55
370-55 2130 195

82 2 2 2 1 2 3 4 5 6 7 8 9 1 2 3 4 5 6 7 8 9

2-7/1/12
3600
125.92

MISSION PREFLIGHT LOG										NAVIGATOR			AIRCRAFT COMMANDER			FLIGHT DIRECTOR			SCHEDULED / ACTUAL TAKEOFF Z			DATE OF TAKEOFF	
MISSION										NAVIGATOR			AIRCRAFT COMMANDER			FLIGHT DIRECTOR			SCHEDULED / ACTUAL TAKEOFF Z			DATE OF TAKEOFF	
DESTINATION										NAVIGATOR			AIRCRAFT COMMANDER			FLIGHT DIRECTOR			SCHEDULED / ACTUAL TAKEOFF Z			DATE OF TAKEOFF	
WP										NAVIGATOR			AIRCRAFT COMMANDER			FLIGHT DIRECTOR			SCHEDULED / ACTUAL TAKEOFF Z			DATE OF TAKEOFF	
LAT / LON										NAVIGATOR			AIRCRAFT COMMANDER			FLIGHT DIRECTOR			SCHEDULED / ACTUAL TAKEOFF Z			DATE OF TAKEOFF	
RTE										NAVIGATOR			AIRCRAFT COMMANDER			FLIGHT DIRECTOR			SCHEDULED / ACTUAL TAKEOFF Z			DATE OF TAKEOFF	
MH										NAVIGATOR			AIRCRAFT COMMANDER			FLIGHT DIRECTOR			SCHEDULED / ACTUAL TAKEOFF Z			DATE OF TAKEOFF	
VAR										NAVIGATOR			AIRCRAFT COMMANDER			FLIGHT DIRECTOR			SCHEDULED / ACTUAL TAKEOFF Z			DATE OF TAKEOFF	
TH										NAVIGATOR			AIRCRAFT COMMANDER			FLIGHT DIRECTOR			SCHEDULED / ACTUAL TAKEOFF Z			DATE OF TAKEOFF	
DR										NAVIGATOR			AIRCRAFT COMMANDER			FLIGHT DIRECTOR			SCHEDULED / ACTUAL TAKEOFF Z			DATE OF TAKEOFF	
TRK										NAVIGATOR			AIRCRAFT COMMANDER			FLIGHT DIRECTOR			SCHEDULED / ACTUAL TAKEOFF Z			DATE OF TAKEOFF	
GS										NAVIGATOR			AIRCRAFT COMMANDER			FLIGHT DIRECTOR			SCHEDULED / ACTUAL TAKEOFF Z			DATE OF TAKEOFF	
WD										NAVIGATOR			AIRCRAFT COMMANDER			FLIGHT DIRECTOR			SCHEDULED / ACTUAL TAKEOFF Z			DATE OF TAKEOFF	
WS										NAVIGATOR			AIRCRAFT COMMANDER			FLIGHT DIRECTOR			SCHEDULED / ACTUAL TAKEOFF Z			DATE OF TAKEOFF	
ALT										NAVIGATOR			AIRCRAFT COMMANDER			FLIGHT DIRECTOR			SCHEDULED / ACTUAL TAKEOFF Z			DATE OF TAKEOFF	
TAS										NAVIGATOR			AIRCRAFT COMMANDER			FLIGHT DIRECTOR			SCHEDULED / ACTUAL TAKEOFF Z			DATE OF TAKEOFF	
LEG / TOT DIST										NAVIGATOR			AIRCRAFT COMMANDER			FLIGHT DIRECTOR			SCHEDULED / ACTUAL TAKEOFF Z			DATE OF TAKEOFF	
LEG / TOT TIME										NAVIGATOR			AIRCRAFT COMMANDER			FLIGHT DIRECTOR			SCHEDULED / ACTUAL TAKEOFF Z			DATE OF TAKEOFF	
PROP ETA										NAVIGATOR			AIRCRAFT COMMANDER			FLIGHT DIRECTOR			SCHEDULED / ACTUAL TAKEOFF Z			DATE OF TAKEOFF	
ETA										NAVIGATOR			AIRCRAFT COMMANDER			FLIGHT DIRECTOR			SCHEDULED / ACTUAL TAKEOFF Z			DATE OF TAKEOFF	
ATA										NAVIGATOR			AIRCRAFT COMMANDER			FLIGHT DIRECTOR			SCHEDULED / ACTUAL TAKEOFF Z			DATE OF TAKEOFF	
REMARKS										NAVIGATOR			AIRCRAFT COMMANDER			FLIGHT DIRECTOR			SCHEDULED / ACTUAL TAKEOFF Z			DATE OF TAKEOFF	

INS PERFORMANCE	
INS 1	INS 2
BEGIN ALIGN TIME	12.5 12.5
ALIGN STATUS (0-5)	0 0
END NAV TIME	00.12 00.12
START NAV TIME	14.16 14.16
DELTA T	9.5 9.5

TERMINAL ERRORS	
INS 1	INS 2
DELTA LAT	-2.8 -10.9
DELTA LON	-5.5 +11.7
RGS	3 2
RADIAL ERROR	3 11

REMARKS	
40150 0680 223	
FL215	

6572 39-40 72-50 0932 F2205 581 12.8 12.7 36.33 72.7 1849

1857/4

8076

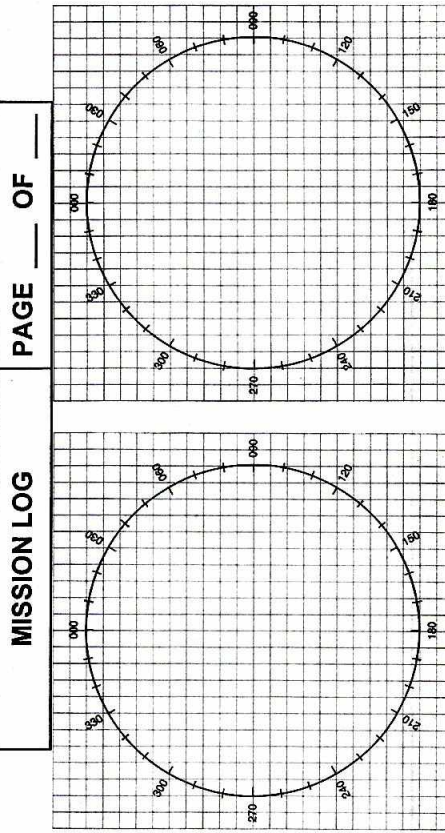
1139b

172 35-50

51-1

[illegible]

TIME	FIX TYPE	POSITION	INS 1 POSITION	K ERR	INS 2 POS
1430	GPS				
1431	TKA				
1432	GPS				
1433	TKA				
1440	A	28-14.2 082-24.6	28-14.5 082-23.2	-3 +4	28- 082-
1500	A	30-32.7 079-15.9	30-33.4 079-19.5	-1 -3.6	30- 079-
1600	A	33-15.9 074-55.8	33-16.2 074-53.0	-3 +2.8	33- 074-
1700	A	36-32.7 073-51.0	36-31.7 073-27.9	+1.0 +4.1	36- 073-
1755	C	36-24.9 073-55.14			
1900	A	38-23.2 074-15.7	38-25.2 074-18.6	-3.0 -2.9	38- 074-
2000	A	36-48.7 073-29.316	36-48.0 073-28.3	+8 +1.0	36- 073-
2045	C	36-48 073-31			
2050	C	36-33 72-13			
2100	A	36-18.3 070-54.9	36-18.3 070-53.3	-1 -1.4	36- 070-
2100	A	42-12.8 066-53.4	42-12.7 066-54.3		42- 066-
2200	A	43-01.2 070-48.7	43-07.0 070-44.2	-2.8 -5.5	43- 070-

[illegible]

POSITION REPORT

1. POSITION

2. TIME

3. ALTITUDE

4. NEXT POSITION

5. ETA

6. NEXT POSITION

WNS	ALT	TAS
4	11000	273
1	1500	266
9	1500	273
0	10000	243
5	10000	249
5	10000	252
6	FL195	283

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 _____, NOAA _____

N / S
E / W AT _____ Z

- POSITION _____
- HEADING _____
- TRUE/MAG _____
- AT _____ KTS TRUE/INDICATED
- FLIGHT/LEVEL OR ALTITUDE _____
- WE ARE A P-3 AIRCRAFT WITH _____ SOULS ON BOARD
- NATURE OF EMERGENCY _____
- ASSISTANCE DESIRED _____
- PILOT INTENTIONS _____
- WE HAVE _____
- ENDURANCE REMAINING _____

T	DIS	TIME	ETA	REMARKS
2	30	60+	14 ^h 11	
14	130	62+	16 ^h 10	
	53	11+	16 ^h 11	
	33	60+	17 ^h 41	
	21	60+	19 ^h 49	
	200	62+	21 ^h 10	
	321	62+	22 ^h 10	

66 H L 90-95

$$\frac{1}{2} \times \frac{1}{2} = \frac{1}{4}$$

30-35 73-05 70

050916H

Time	Lat	Lon	TA	TD	Trk	Hdg	RA	PS	SP	WD	WS	WZ	Comments
142412	27.51.00	-82.29.58	37.5	20.3	124.0	134.4	179.0	1018.7	1038.7	141.7	2.5	-1	Block out
143609	27.50.88	-82.31.32	28.3	17.8	40.6	40.2	179.0	1019.9	1040.6	272.2	4.3	1.4	Take off
161257	32.2.46	-76.44.52	2.4	-24.7	55.0	54.5	5000.0	563.7	1011.8	289.1	4.2	-0	Was just tasked for 18Z fix
164824	33.49.20	-74.8.88	1.8	-5.7	49.1	47.8	4977.0	563.7	1009.2	259.0	10.2	.1	APN-159 TURNED ON AT ~1530Z
165109	33.58.86	-74.0.42	.9	-2.0	314.2	311.0	4971.0	563.8	1010.1	253.4	10.7	.6	D1
170411	34.37.32	-74.48.54	3.9	-14.7	313.4	311.5	4964.0	564.0	1005.0	277.7	11.8	.1	Descend to 10K PA
171335	35.3.96	-75.14.04	11.4	3.6	44.7	39.6	3222.0	696.5	1009.9	303.0	13.4	.2	D2
171350	35.4.74	-75.13.14	11.3	3.6	44.7	39.5	3222.0	696.5	1010.0	304.5	13.7	.1	Hdg inbound
171358	35.5.10	-75.12.66	11.5	3.6	44.7	39.6	3224.0	696.5	1009.9	308.8	13.5	.3	D3 SW eyewall; D4 eye drop @ 1755Z, 993 mb
173715	36.10.74	-73.46.26	12.9	4.5	48.1	34.3	3131.0	696.1	1001.1	306.4	31.7	-6.5	D4 no launch
175732	36.32.64	-73.40.14	9.6	7.7	29.4	34.3	3151.0	694.7	1001.1	59.6	15.7	.2	D6; BT1
182315	37.45.54	-72.5.40	9.0	-16.1	44.3	53.4	3235.0	695.5	1014.2	164.5	21.0	.2	Climb to 20K
182534	37.52.74	-71.56.16	8.2	-23.2	45.4	53.8	3500.0	674.0	1013.9	163.7	19.6	.1	Now at FL185
184331	39.3.12	-70.54.72	-5.3	-28.9	32.7	35.8	6000.0	495.4	1011.3	191.3	15.0	-0	D7 - winds 28s; BT2
185029	39.33.30	-70.35.58	-5.5	-31.6	332.6	329.5	6006.0	495.1	1011.9	203.8	13.0	.4	Turn to trk 220
190826	40.53.10	-71.29.70	-6.1	-31.5	319.8	314.5	5996.0	494.9	1012.1	205.7	13.2	.6	D8; winds 22s
190935	40.52.56	-71.35.46	-6.4	-20.8	217.6	217.4	5993.0	495.2	1012.6	200.1	11.2	.2	Climb FL205
191135	40.45.84	-71.42.96	-7.2	-31.0	220.5	219.1	6077.0	489.7	1013.2	194.1	13.0	.5	D9; winds 52s
193634	39.19.80	-73.15.60	-7.3	-24.2	219.2	218.1	6630.0	455.3	1001.6	180.8	7.9	-1	Descend to 10K PA
195522	38.11.28	-74.27.18	-5.8	-16.3	220.9	221.3	6237.0	478.9	1004.1	183.0	1.9	.2	Turn to trk 120
200431	37.39.60	-75.0.42	7.8	1.6	161.5	157.7	3259.0	692.3	1012.9	31.1	10.4	-3	D10; wnds 75s
200508	37.37.80	-74.58.26	8.4	1.4	120.3	116.3	3193.0	697.5	1012.1	19.6	11.4	-3	Orbit to get Teal 51 in front of us
201050	37.25.80	-74.32.58	9.2	5.5	134.1	131.7	3202.0	696.4	1009.9	20.4	11.6	.3	D11
202022	36.43.02	-73.14.88	18.3	2.2	124.1	117.8	3073.0	701.1	991.7	333.6	30.4	-2.9	D12 "close" to center, getting hampered here
204501	36.46.08	-73.0.78	12.6	11.5	50.9	53.1	2909.0	713.9	997.2	230.4	9.3	-1.3	D13
204636	36.50.64	-72.53.76	10.5	11.0	45.3	54.5	3136.0	696.0	999.7	166.9	22.0	.8	Now FL195
212228	35.40.02	-71.51.90	-7.9	-15.9	112.6	118.0	6341.0	474.0	1010.7	251.8	18.4	.5	D14; wnds 24s
212538	35.33.66	-71.33.48	-6.4	-22.3	113.3	118.1	6343.0	474.1	1007.6	260.0	17.9	.8	D15; no launch det (finally came but intermittent
212723	35.33.78	-71.23.58	-6.5	-10.9	46.0	44.8	6346.0	474.0	1007.1	242.1	17.6	.1	
214257	36.32.82	-70.12.24	-7.2	-12.0	44.8	45.2	6349.0	474.0	1009.6	229.6	15.1	.5	
214417	36.37.80	-70.6.12	-6.5	-13.0	44.7	44.9	6350.0	474.0	1007.8	231.8	15.2	.5	D16; wnds 15s
220441	37.58.26	-68.33.78	-12.7	-17.1	42.2	45.4	7009.0	435.9	1015.2	198.0	15.6	.6	Now FL215
220608	38.4.80	-68.28.80	-12.5	-17.2	358.7	358.3	7004.0	436.2	1014.7	194.9	16.2	.5	D17; wnds
222731	39.58.62	-68.28.74	-12.4	-29.9	35.3	36.3	6991.0	436.1	1013.3	221.9	17.2	.4	Turn to trk 056
222734	39.58.86	-68.28.56	-12.4	-30.3	39.8	41.3	6990.0	436.2	1013.5	221.6	17.2	.4	D18 - wnds 21s, BT3
222758	40.0.18	-68.26.40	-12.2	-27.8	54.7	56.8	6986.0	436.4	1012.9	223.5	17.6	.2	D19; wnds 12s
223759	40.29.82	-67.29.22	-12.5	-35.1	56.4	57.2	6989.0	436.1	1013.7	237.4	15.3	.3	D20; wnds 25s
224845	41.3.36	-66.30.66	-12.2	-28.5	345.7	341.2	6986.0	436.1	1012.3	238.7	15.0	.5	Turn to trk 252
230624	42.28.86	-66.58.80	-13.4	-17.5	335.7	328.9	6961.0	436.0	1012.4	264.4	17.6	.3	D21; wnds 29s, BT4
230727	42.30.00	-67.4.14	-14.4	-19.6	252.7	255.1	6961.0	436.1	1015.8	264.9	16.7	-1	D22; wnds 21s
232728	42.5.04	-69.0.84	-3.2	-3.5	306.5	302.4	5306.0	539.8	1013.1	181.1	14.7	1.9	Trying to pick up IFR to KPSM; wx @PSM not too
232812	42.7.20	-69.4.56	-3.5	-4.2	309.0	303.9	5302.0	539.9	1013.8	194.6	15.3	.1	
good													Land
235927	43.5.16	-70.49.80	17.4	15.7	147.1	146.4	-8.0	1017.0	1016.0	357.3	5.5	-4	Block in
000533	43.4.20	-70.48.66	17.7	15.9	100.8	137.7	3.0	1016.6	1017.0	267.5	1.2	.8	

NOAA · AOC · SED N42RF AVAPS DROP LOG

Mission: OPHELIA

Flight ID: 050916H

Project: Hurricane '05

Take Off:

Landing:

Drop #	Sonde Serial #	Rcvr #	Press Offset	Launch Time	Winds Time	Operator	CODELESS = C.L. Comments	Good ?
1	011345112	1	-.3	1651	22	SCADE	C.L.	✓
2	011345122	2	-.8	1713	15			✓
3	011345117	3	-.9	1737	16		NO GPS ON CH8	✓
4	011345120	4	-.8	1755	16		NO LAUNCH RET	✓
5	011345121	1	-.6	1757	NO		BT.	✓
6	011378159	2	0	1823	24		B.T.	✓
7	012025064	3	-.7	1850	28		WINDS INTERMITTENT S-0 SATS	✓
8	011245292	4	-1.8	1909	22			✓
9	011378068	1	0	1936	52	Kerr		✓
10	012025063	2	-0.7	2005	1:15		late winds	✓
11	012025065	1	-0.6	2030	33			✓
12	011378067	2	-0.3	2045	15			✓
13	012025061	1	-0.7	2046	17			✓
14	011345113	1	-0.3	2127	24		(Intermittent winds) Late launch ret.	✓
15	011345119	1	-0.7	2143	25			✓
16	011345116	2	-1.0	2144	15			✓
17	012025066	1	-0.5	2206	22		BT	✓
18	011345115	1	-0.7	2220	21			✓
19	011378066	2	-0.3	2238	12			✓
20	012225073	3	-0.5	2248	25			✓
21	011345118	1	-0.7	2307	29		BT	✓
22	011245155	1	-0.9	2327	21		↓	

Charge HFD-21 NHC-1