

**NOAA / AOML / Hurricane Research Division
2021 Hurricane Field Program
Advancing the Prediction of Hurricanes Experiment (APHEX)**

FLIGHT LOG -- 2021081111

MISSION PLAN			
FLIGHT ID	2021081111	STORM	AL06 / FRED
MISSION ID	0306A	TAIL NUMBER	NOAA43
TASKING	EMC	PLANNED PATTERN	Butterfly
MISSION SUMMARY			
TAKEOFF [UTC]	0837	LANDING [UTC]	1557
TAKEOFF LOCATION	Aruba	LANDING LOCATION	Lakeland
FLIGHT TIME	7.3	BLOCK TIME	
TOTAL REAL-TIME RADAR ANALYSES (Transmitted)	3 (0)	TOTAL DROPSONDES (Good/Transmitted)	17 (12)
OCEAN EXPENDABLES (Type)	None	sUAS (Type)	None
APHEX EXPERIMENTS / MODULES	Early Stage Experiment: AIPEX		
HRD CREW MANIFEST			
LPS ONBOARD	Marks	LPS GROUND	Hazelton
TDR ONBOARD	Marks	TDR GROUND	Reasor
ASPEN ONBOARD	Wadler	ASPEN GROUND	None
NESDIS SCIENTISTS	Chang, Jelenak		
GUESTS (Affiliation)	Kregelka, Stokes		
AOC CREW MANIFEST			
PILOTS	Abitbol, Sateher		
NAVIGATOR	Shaw		
FLIGHT ENGINEERS	Sanchez		
FLIGHT DIRECTOR	Lundry/Hathaway		
DATA TECHNICIAN	Richards		
AVAPS	Warnecke		

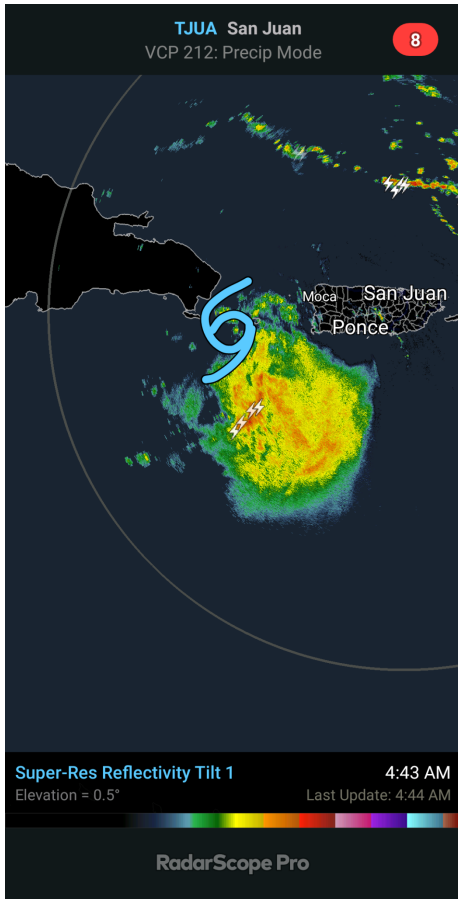
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FLIGHT LOG -- 20210811I1

PRE-FLIGHT	
Flight Plan	
Expendable Distribution	Plan is to do dropsondes at endpoints, midpoints, and centers, with a few possible extra sondes after the final leg for ONR.
Preflight Weather Briefing	
Instrument Notes	There is a concern about the TDR azimuth angle correction, so the plan is to fly in some stratiform precipitation before the pattern to assess whether this is still an issue, and if it is not transmit data to EMC.

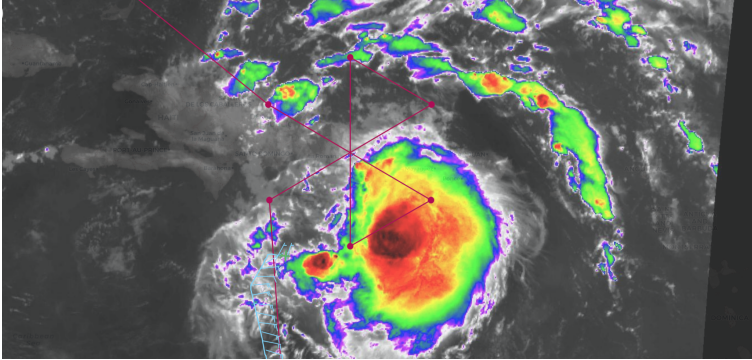
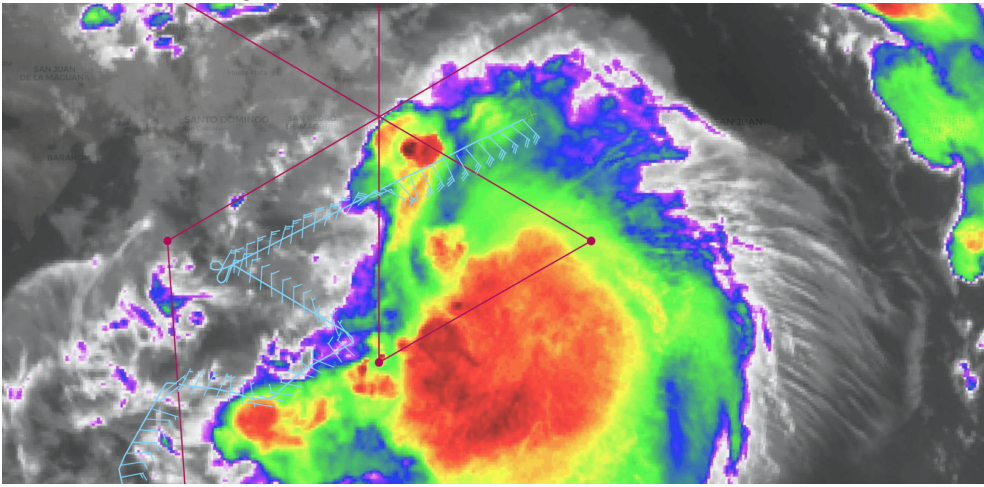
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IN-FLIGHT	
Time [UTC]	Event
0837	Takeoff from Aruba
0843	Radar from TJUA: Seems like there is N-S tilt of the vortex (most convection south of the center). 
0913	Frank Marks notes an apparent adjustment needed to the azimuth correction, based on the data being tilted in the radar display. 2.5 degrees will be tested.
0930	Turning east into some convection to look for a spot for the TDR azimuth test

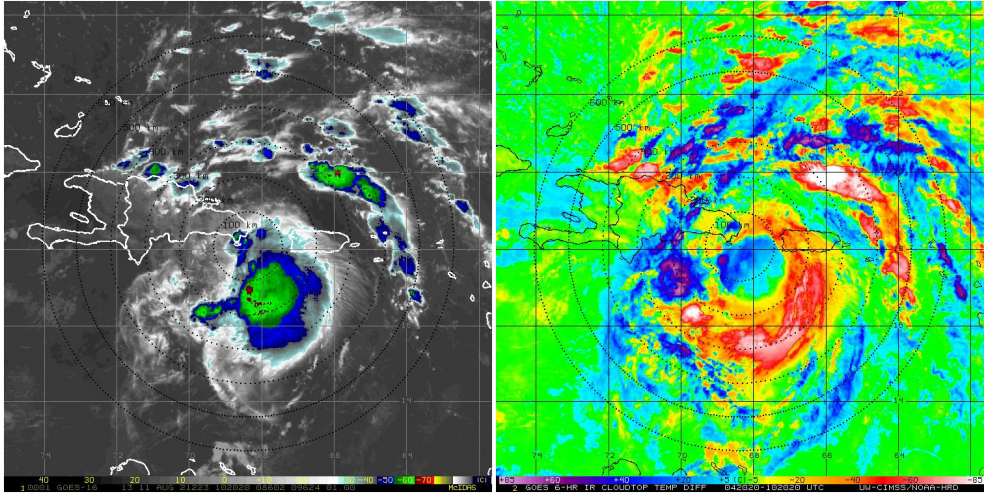
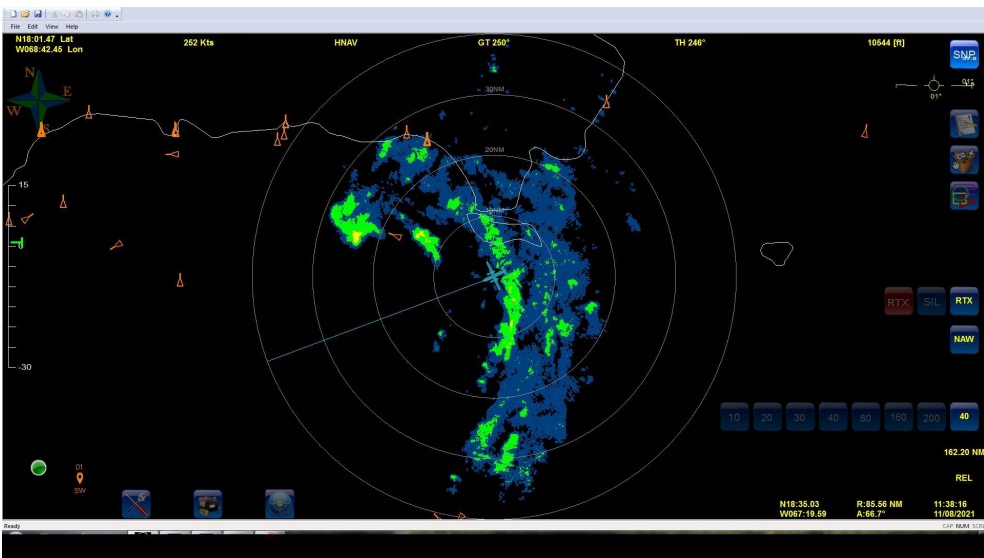
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0939	Starting leg for TDR testing
0948	Ending leg for TDR testing, heading for IP
1011	Drop #1: Endpoint SW, 17.4359, 69.9305
1025	Drop #2: Midpoint sonde SW, 17.8679, 69.0285
1030	Drop #3: Center sonde (NOT TRANSMITTED)
1042	Drop #4: Midpoint sonde NE (late launch detect)
1047	<p>Center approaching the SE coast of DR</p> 
1055	Diurnal pulse from yesterday propagating outward, new diurnal pulse beginning.

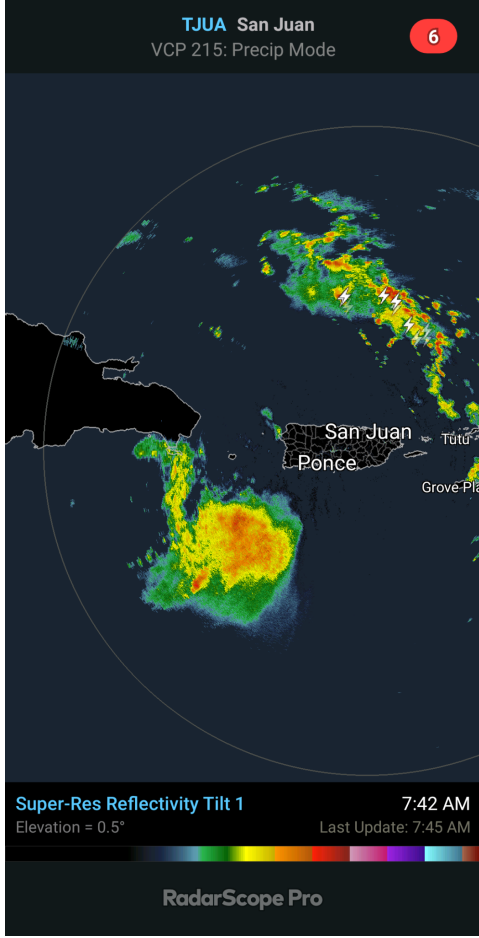
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1059	End of SW->NE leg, endpoint drop #5, 18.8844,66.8528
1115	Start N-S leg, endpoint drop #6, 19.3635,67.8063
1130	Midpoint drop #7 (18.3996,68.3799)
1136	Trying to fix the center, then turn southbound for 105 nm
1138	
1142	Center drop #8 (17.9151, 69.0219)
1146	Center still appears to be offshore

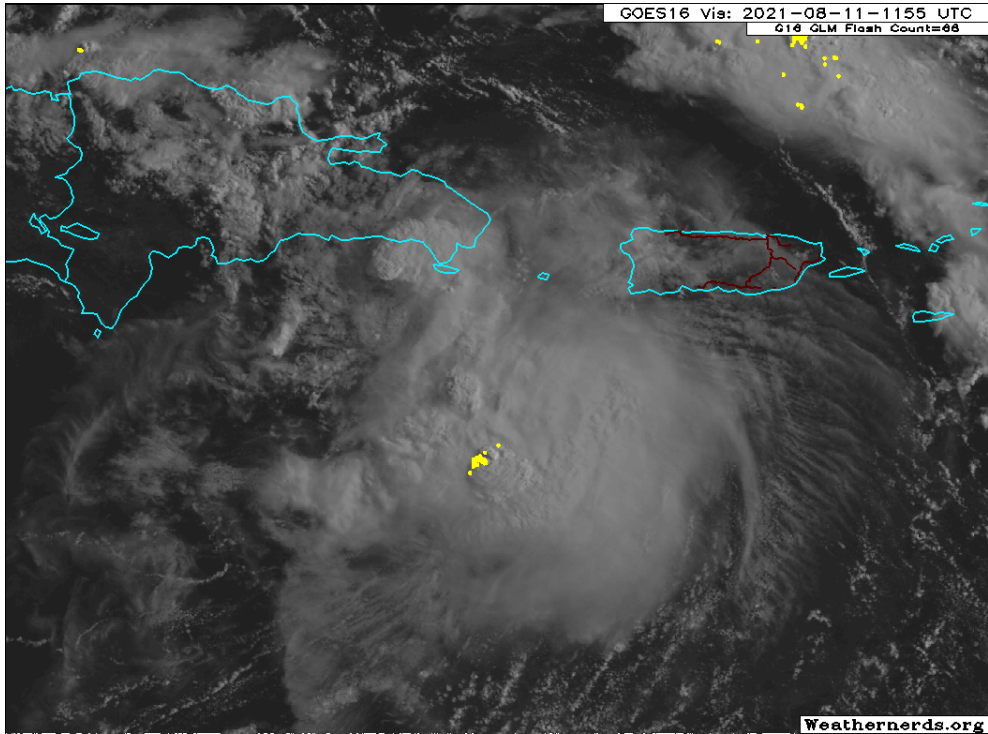
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1157	Midpoint drop #9 (16.8803,69.0620)
1204	Turn to the NE, endpoint drop 10 (16.4137,69.0632)

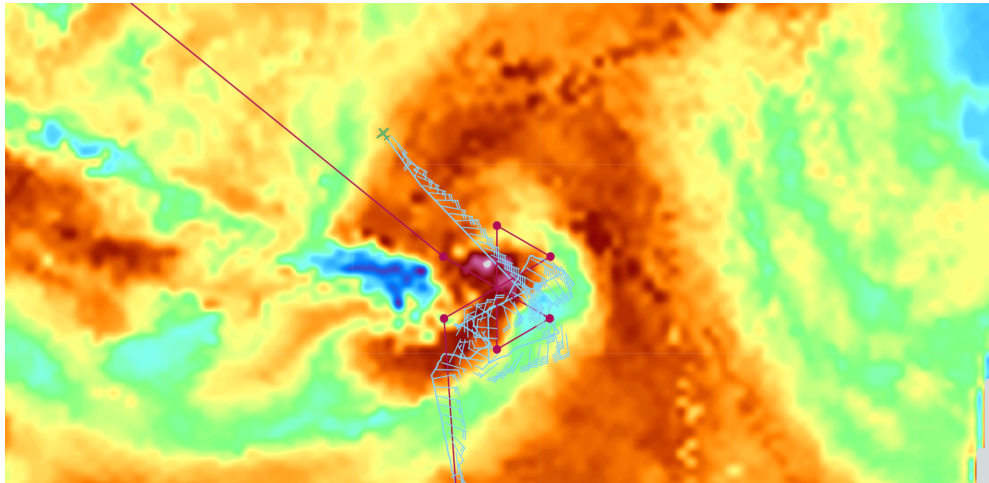
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1231	
1237	Endpoint drop 11, turning NW (17.3022,67.0008)
1250	Midpoint drop 12 (18.0026,67.6749)
1306	Midpoint drop 13 (19.0155,68.6685)
1317	Endpoint drop 14 (19.7668,69.4165)
1358	ONR Sonde 1 (drop 15) (Starting to Target this moisture gradient) from 19000'

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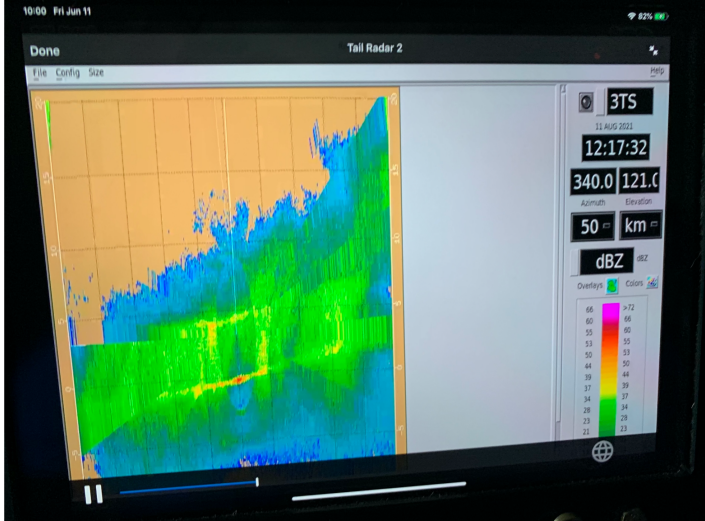
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1404	ONR Sonde 2 (Drop 16) from 19000'
1409	ONR Sonde 3 (Drop 17) from 19000'
1557	Landed in Lakeland

POST-FLIGHT	
Mission Summary	<p>Data was collected in Tropical Storm Fred as it approached the Dominican Republic. Diagnostics of an error in the azimuth angle correction prevented transmission of any TDR data, but 12 sondes were transmitted. In addition, a moisture gradient NW of the tropical storm was sampled in collaboration with ONR.</p> <p>17 sondes dropped, 12 transmitted. 14 NWS (12 transmitted), 3 ONR TCRI (not transmitted)</p>
Actual Standard Pattern Flown	Butterfly with some corrections to avoid land and fix the center
APHEX Experiments / Modules Flown	Data collection will be useful for the <i>Early Stage Experiment: AIPEX</i> and was flown in collaboration with ONR TCRI

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<p>Plain Language Summary</p>	<ol style="list-style-type: none"> 1. Data was collected in Tropical Storm Fred near Hispaniola. 2. We used this flight to diagnose some issues with the Doppler Radar
<p>Instrument Notes</p>	<p>No TDR transmitted to EMC this flight, ongoing diagnostics of the angle correction issue</p> 
<p>Final Mission Track</p>	