

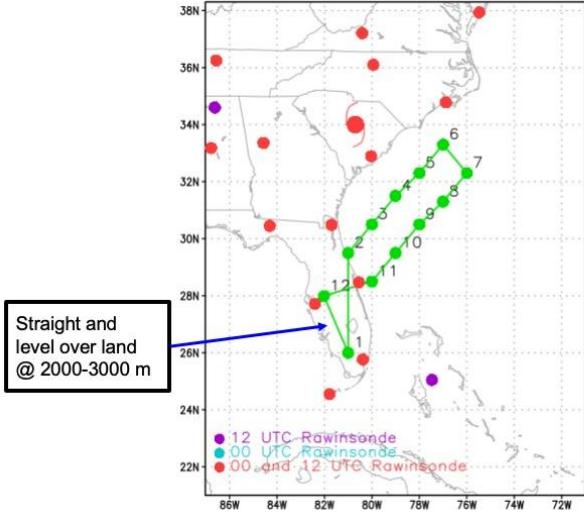
**NOAA / AOML / Hurricane Research Division
2021 Hurricane Field Program
Advancing the Prediction of Hurricanes Experiment (APHEX)**

FLIGHT LOG -- 2021070811

MISSION PLAN			
FLIGHT ID	2021070811	STORM	N/A
MISSION ID	WXWXA SITE03	TAIL NUMBER	NOAA43
TASKING	CSL	PLANNED PATTERN	Lawn mower + modules
MISSION SUMMARY			
TAKEOFF [UTC]	1220	LANDING [UTC]	2006
TAKEOFF LOCATION	Lakeland, FL	LANDING LOCATION	Lakeland, FL
FLIGHT TIME	7.8	BLOCK TIME	8.1
TOTAL REAL-TIME RADAR ANALYSES (Transmitted)	N/A	TOTAL DROPSONDES (Good/Transmitted)	7 (7/0)
OCEAN EXPENDABLES (Type)	None	sUAS (Type)	None
APHEX EXPERIMENTS / MODULES	None planned		
HRD CREW MANIFEST			
LPS ONBOARD	Zawislak	LPS GROUND	Bucci
TDR ONBOARD	N/A	TDR GROUND	N/A
ASPEN ONBOARD	N/A	ASPEN GROUND	N/A
NESDIS SCIENTISTS	N/A		
GUESTS (Affiliation)	N/A		
AOC CREW MANIFEST			
PILOTS	Abitbol, Stateler, Keith		
NAVIGATOR	B. Richards		
FLIGHT ENGINEERS	Darby		
FLIGHT DIRECTOR	Parrish, Hathaway		
DATA TECHNICIAN	Warnecke		
AVAPS	Warnecke		

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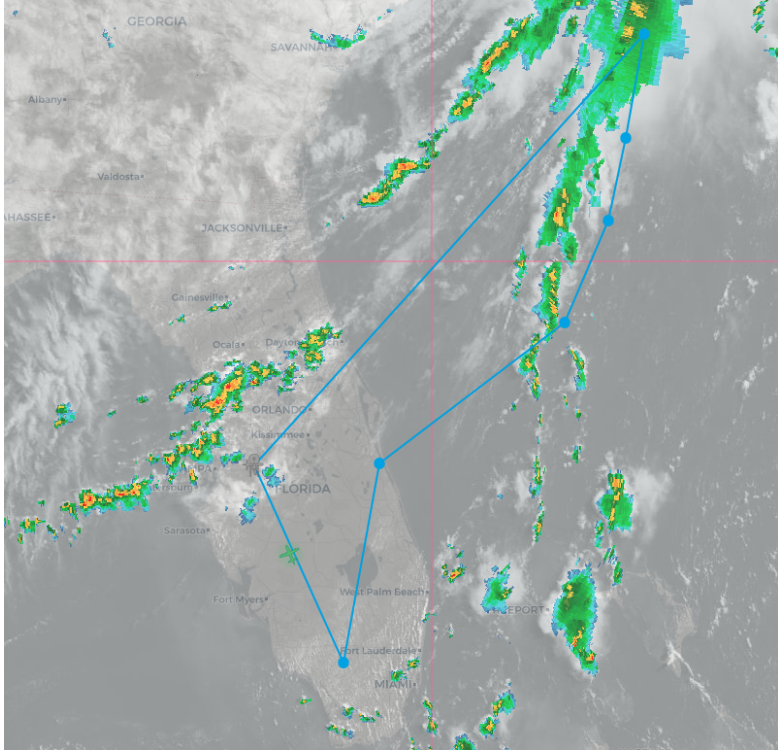
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PRE-FLIGHT	
Flight Plan	 <p style="margin-left: 20px;">Over water objectives (points 2-11):</p> <ol style="list-style-type: none"> 1. Straight and level in clear air (to surface). Race track between two points <ol style="list-style-type: none"> a. 500 m b. 1500 m c. 3000 m d. 6000 m 2. Straight and level in partially cloudy conditions @ 3000 m 3. Straight and level beneath light precipitation @ 3000 m 4. Fly through light precipitation to "wash" window and test sensitivity 5. Potential module: fly a box with dropsondes in the middle of each side
Expendable Distribution	Dropsondes releases determined in real-time
Preflight Weather Briefing	
Instrument Notes	The TDR is not yet installed.

IN-FLIGHT	
Time [UTC]	Event
1230	Begin straight and level over Everglades (~25 minutes)
1230	Flight plan changed due to restricted airspace. New points pt 1 over Melbourne at 28 80.6, then 29.4 78.5, then 30.4 78.0, then 31.2 77.8, then 32.2 77.6

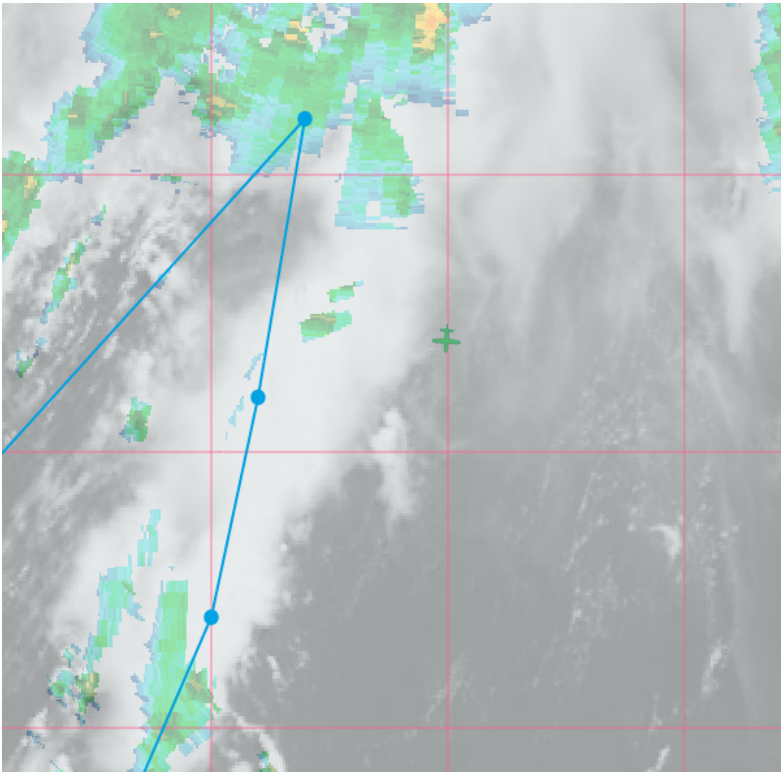
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1256	Extending time over land-- repeating track over land travelling north
1315	Repeat track additional time travelling south
1335	Repeat track travelling north (final pass) 
1346	Headed towards Melbourne
1358	Shifting point over water 1.5 degree to the east (29.4 N 77 W)
1456	Begin stepped ascent pattern at 3000 m
1503	Thickening anvil above
1513	Dropsonde splashed at 22-23 kts (white caps visible)
1520	Descending to 500 m-- skirting some of the shallow cumulus
1545	Ascending to 1500 m-- Conditions remain consistent so far

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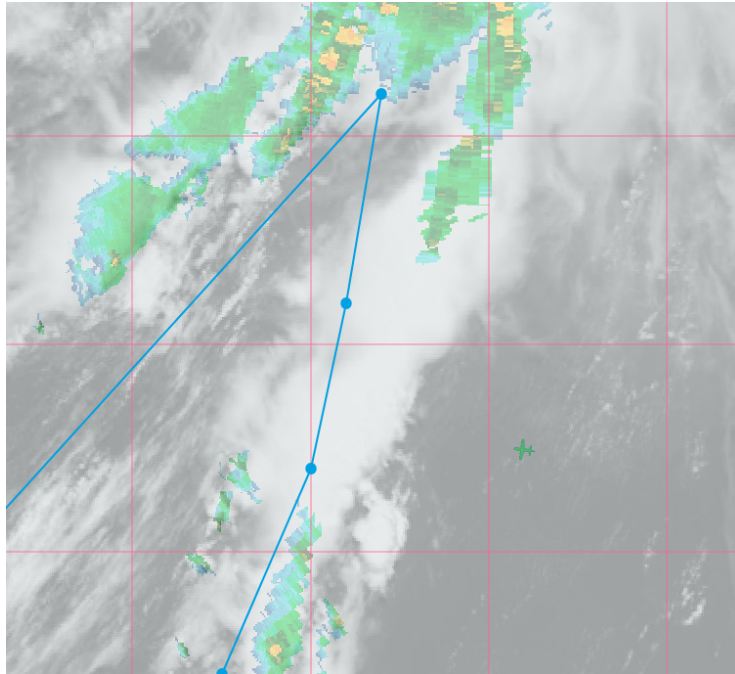
FLIGHT LOG -- 20210708I1

1603	
1611	Climbing to 20 kft
1627	Descending to 15 kft because lidar is no longer getting any profiles
1643	Sonde #2 released at 15 kft (airspeed 260 kt)

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FLIGHT LOG -- 2021070811

1649

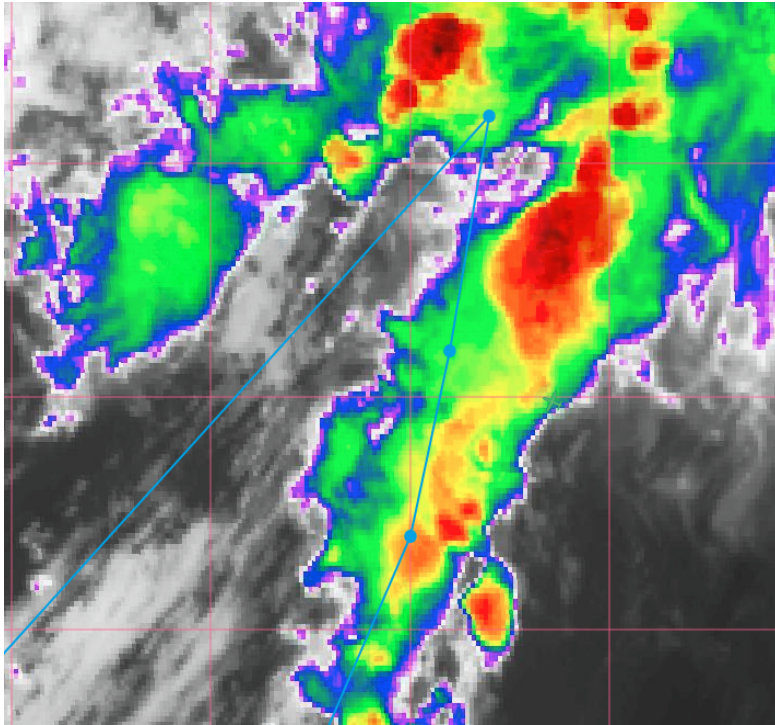


88D showing no precip immediately west of the aircraft (though seen visually from the aircraft). Turning northwest towards the precip and maintaining 15 kft.

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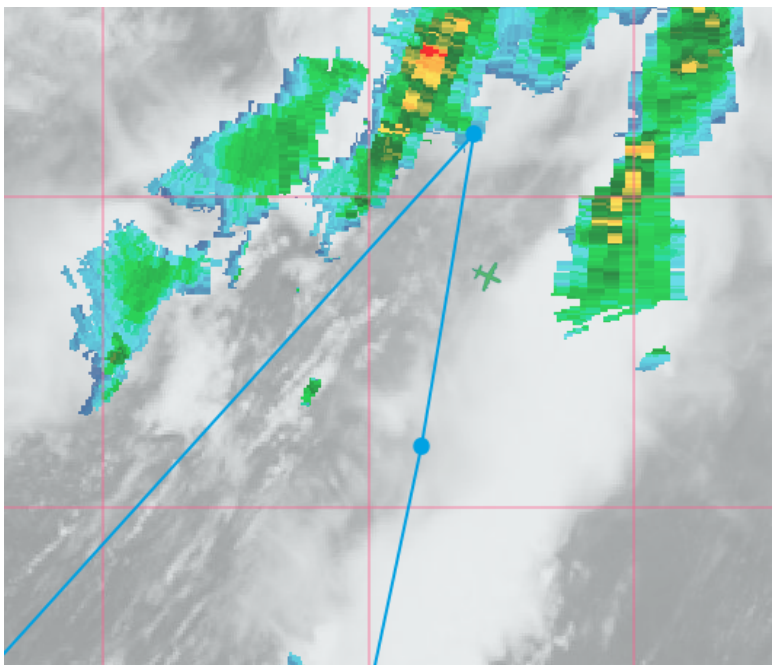
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1658



Aircraft picking through convection to reach stratiform rain on west side of band

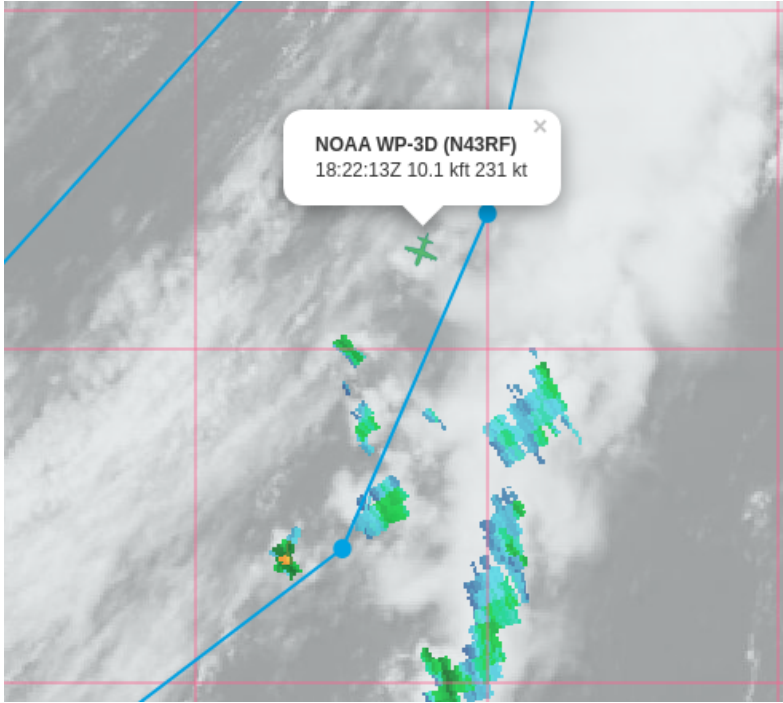
1707



Stratiform rain from above and seeing the surface with lidar. No problems picking through

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	the convective portion of the line.
1714	Dropsonde #3 released in light stratiform rain
1724	Descending to 8 kf. Struggling to get retrievals at 15 kft. In light stratiform rain
1743	Dropsonde released
1746	Descending to 6 kft
1751	Dropsonde released in light stratiform and clear to the surface
1822	 <p>Brief broken coverage/congestus beneath aircraft. Coming up on 88D indicated light precip.</p>
1827	Alan testing different lidar configurations

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POST-FLIGHT	
Mission Summary	NOAA43 flew a calibration and test flight for the NOAA CSL MD2 Doppler Wind Lidar. The mission began with a race track over the Everglades for some overland calibration. This was followed by a stepped ascent/descent in mostly clear air over the water. Altitudes tested included 1500 ft, 3000 ft, 10000 ft, 15000 ft, and 20000 ft. 15000 was added because sensitivity was poor at 20000 ft. After the clear air test, the aircraft went into some trailing convection associated with Elsa (located inland in NC) and operated in an area of stratiform rain and broken cloud coverage. Multiple altitudes were flown as dropsondes were released. All dropsondes collected good data.
Actual Standard Pattern Flown	No standard pattern flown
APHEX Experiments / Modules Flown	
Plain Language Summary	New technology, called a Doppler Wind Lidar, was tested on the P-3 and operated in multiple types of environments (over land, over water in clear air, and over water in light rain/clouds). Dropsondes were released and will be used for comparison to the winds from the Doppler Wind Lidar.
Instrument Notes	The TDR was not available for this mission. All other aircraft instruments operated nominally.

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Final Mission
Track

