

## Lead Project Scientist

Storm or Project Chris (2018) Experiment type TDR  
Flight ID 2018 07 08 H2 Mission ID NOAA2-0503A Chris

### Preflight

1. Participate in general mission briefing.
2. Determine specific mission and flight requirements for assigned aircraft from the Field Program Director.
3. 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.
4. Meet with AOC flight director and navigator at least 3 hours before take-off for initial briefing.
5. Determine from AOC flight director the mission designation and whether aircraft has operational fix responsibility
6. 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.
7. Report status of aircraft, systems, necessary on-board supplies and crews to Field Program Director.
8. Before take-off, brief the on-board GPS dropsonde operator on times and positions of drops.
9. Make sure each HRD flight crew member has a life vest.
10. Perform a headset operation check with all HRD flight crew members. Make sure everyone can hear and speak using the headset.

### 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. Request AOC flight director to leave radar in non-sector mode for initial Figure 4.
5. Once at IP, request AOC flight director adjust radar tilt to minimize sea clutter.
6. Complete Lead Project Scientist Form.
7. Check in occasionally 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. Gather completed forms for mission and turn in to data manager at HRD.
3. Obtain a copy of the Dropsonde raw and processed files from the AVAPS operator on thumb drive.
4. Obtain a copy of the radar LF files from the radar technician on thumb drive.
5. Obtain a copy of the tar'ed radar TA files from the radar scientist on thumb drive.
6. Obtain a copy of serial flight data and raw NetCDF file on thumb drive from the data technician.
7. Obtain a copy of SFMR data on thumb drive from the data technician.
8. Obtain a copy of DMT data on thumb drive from the data technician.
9. Report landing time, aircraft, crew, and mission status to the Field Program Director.
10. Determine next mission status, if any, and brief crews as necessary
11. Prepare written mission summary using **Mission Summary** form.

### Lead Project Scientist Check List

Storm or Project TS Chris (2018) Experiment name TDR

Flight ID 20180708 H2 Mission ID NOAA2 0503A Cyclone Chris

**A. Participants:**

HRD		AOC	
Function	Participant	Function	Participant
Lead Project Scientist	<u>Christopherson/Mark</u>	Flight Director	<u>Rich Henning</u>
Radar/Workstation	<u>Mark/Christopherson</u>	Pilots	<u>Kibbey, Abitbol, Didiet</u>
		Navigator	<u>Freeman</u>
Cloud Physics		Systems Engineer	<u>Heystack / Darby</u>
		Data Technician	<u>Richard / Lynch</u>
Dropwindsonde	<u>Alaka</u>	Electronics Technician	<u>Peak</u>
AXBT/AXCP		Other	
Photographer/Observer s/Guests	<u>Erin Jones</u>		

**B. Take-off and Landing Times and Locations:**

Take-Off: 23:32 UTC Location: Lake land, FL

Landing: 0454 UTC Location: Lake land, FL

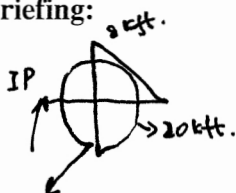
Number of Eye Penetrations: 2

**C. Past and Forecast Storm Locations:**

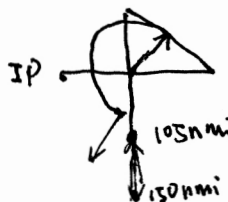
Date/Time	Latitude	Longitude	MSLP	Maximum Wind
<u>081 1500Z</u>	<u>32.9 N</u>	<u>75.0W</u>	<u>1008</u>	<u>40 kt</u>
<u>12h</u>	<u>33.0 N</u>	<u>74.8 W</u>		
<u>24h</u>	<u>32.5 N</u>	<u>74.8 W</u>		
<u>36</u>	<u>32.5 N</u>	<u>75.0 W</u>		
<u>48</u>	<u>32.5 N</u>	<u>75.0 W</u>		

**D. Mission Briefing:**

Plan A:



Plan B:



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

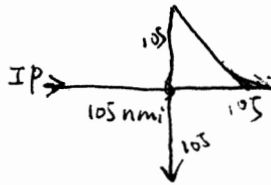
Equipment	Pre-Flight	In-Flight	Post-Flight	# DATs / CDs / Expendables / Printouts
Radar/ <del>LP</del> MMR	↑	↑		
Doppler Radar/TA	↑	↑	need to resolve on-aircraft jobfile (default incorrect)	
Cloud Physics	↑	↑		
Data System	↑	↑		
GPS sondes	↑	↑		
AXBT/AXCP				
Ozone instrument				
Workstation	↑	↑		
Cameras	↑	↑		

REMARKS: Aspen software is updated to the latest version (V33666)

TS Chris(2018) situated at 32.7N, 74.6W @ 5pm on July 8, max. wind 50 mph, movement is stationary.

Plan A: IP at west 90°, figure-4 at 8000, radar altitude, then climb up to 20,000 ft to finish a circumnav, drop sondes at <sup>every</sup> 45° azimuthal angle, finishes at around 180S, then head home

Plan B: First finish figure-4, at the end of figure-4, go further to perform gravity wave module, outward to 150 nm, then come back, pass through center, then head 45 NE to pick up the circumnav pattern, same FP then head home



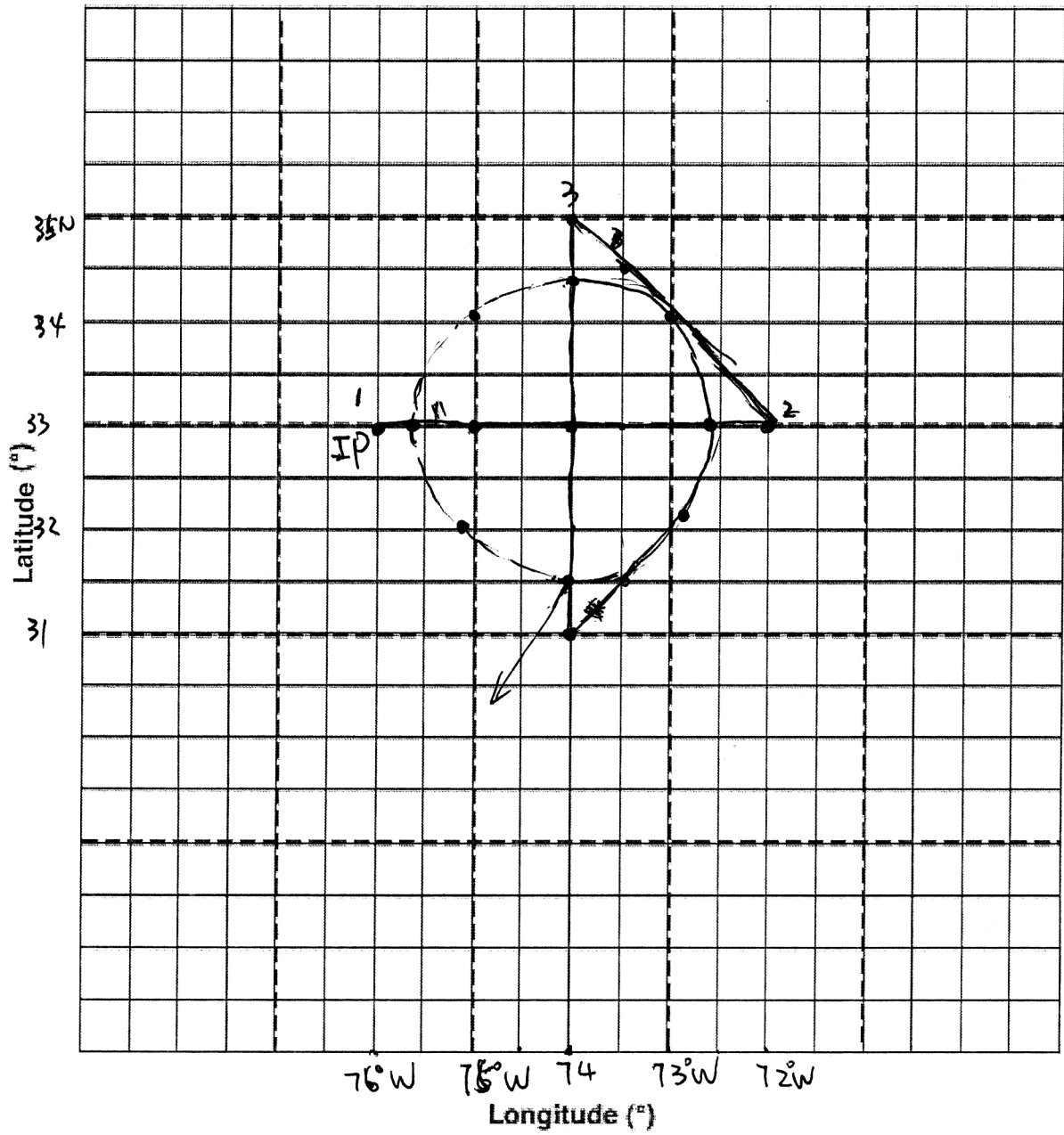
20180708M2  
Lead Project Scientist Event Log

Date 07/08/2018 Flight ID NOAA2 6503A LPS Christopher  
Chris ← mission ID

Time	Event	Position	Comments
2030 UTC	Engine 2 has deicing issue		Flight delayed
21:20 UTC	Engine fix didn't hold, trouble shooting		
23:15 UTC	There was oil leak. problems resolved, taxiing soon.		
23:32	Airborne		
00:00	SFMR & Radar starts to record data		
00:58	IP, drop a sonde, AltitudePlane: 2.2km <del>Left SFMR</del>		
01:23	40kt flight-level winds		
01:29	circle module for center hunting		
01:31	drop a sonde, center sonde (32° 29'N, 75° 30'W) storm motion: 135° 2kt		
1:50	Most of the convection moves to north <sup>east</sup> side of the storm 57kt inbound flight-level		
01:58	release a sonde, outboard end point heading downwind Point 2-3		
02:32	downwind end point sonde.		
02:42	passing a big convection band, ~70 nm north of center saw lightning W. (second leg south)		
02:53	echo top > 16 km from radar, E of center		
03:01	32° 21' 74° 23" 2kt wind. center drop.		
03:28	Last drop. beg 2 end point		
03:58	second radar analysis has to ctrl+c terminal to re-start radarsync.		

# Observer's Flight Track Worksheet

Date \_\_\_\_\_ Flight \_\_\_\_\_ Observer \_\_\_\_\_



## Mission Summary

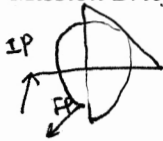
### Storm name

YYMMDDA# Aircraft 4\_RF

### Scientific Crew (4 RF)

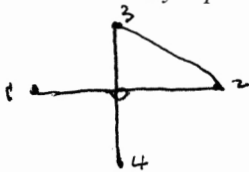
Lead Project Scientist Christophersen  
Radar Scientist Alaka Marks  
Cloud Physics Scientist \_\_\_\_\_  
Dropwindsonde Scientist Alaka  
Boundary-Layer Scientist \_\_\_\_\_  
Workstation Scientist \_\_\_\_\_  
Observers (affiliation) Erin Jones (Hollings)

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



Single figure-4, IP at 105 nmi, altitude @ ~~center~~ 8000 ft radar altitude. After single figure-4, climb up to 20,000 ft to do a circumnavigation pattern outside of the RMW. (~70-80 nmi)

Mission Synopsis. (include plot of actual flight track)



Finished single figure-4 pattern, one circle close to center at the first leg for center hunting. TS Chris moves 135° at 2kt; center appears to drift SE to the strong convection. Radar analysis indicates the system became well aligned vertically. Chris will be on a strengthening trend.

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

Overall yes. we collect a full figure-4 coverage of TDR data, drop 6 sondes (IP, center drops and end points). Circum navigation pattern was not flown due to lack of hours left for the mission.

Problems: (list all problems)

Radar default setting incorrect.

Expendables used in mission.

GPS sondes: 6

AXBTs: N/A

Sonobuoys: N/A

