

Lead Project Scientist

Storm or Project Chris (2018)

Experiment type TDR

Flight ID 2018 07 08 H2

Mission ID N0AA2 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 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	<u>Erin Jones</u>		
s/Guests			

B. Take-off and Landing Times and Locations:

Take-Off: 23:32 UTC Location: Lakeland, FL

Landing: 0454 UTC Location: Lakeland, FL

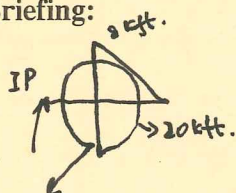
Number of Eye Penetrations: 2

C. Past and Forecast Storm Locations:

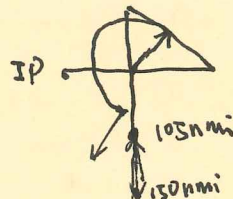
Date/Time	Latitude	Longitude	MSLP	Maximum Wind
<u>081 1500Z</u>	<u>32.9 N</u>	<u>75.0 W</u>	<u>1008</u>	<u>40 kt</u>
<u>12h</u>	<u>33.0 N</u>	<u>74.8 W</u>		
<u>24h</u>	<u>32.5 N</u>	<u>74.8 W</u>		
<u>36</u>	<u>32.5 N</u>	<u>75.0 W</u>		
<u>48</u>	<u>32.5 N</u>	<u>75.0 W</u>		

D. Mission Briefing:

Plan A:



Plan B:



Storm or Project TS Chris(2018) Experiment name TDR

Flight ID 20180708 H2 Mission ID NOAA2 0503A ~~Gyabone~~ Chris

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

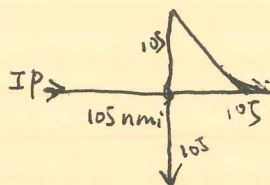
Equipment	Pre-Flight	In-Flight	Post-Flight	# DATs / CDs / Expendables / Printouts
Radar/ LF MMR	↑	↑		
Doppler Radar/TA	↑	↑	need to resolve on-aircraft jobfile (default incorrect)	
Cloud Physics	↑	↑		
Data System	↑	↑		
GPS sondes	↑	↑		
AXBT/AXCP				
Ozone instrument				
Workstation	↑	↑		
Cameras	↑	↑		

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 800, radar altitude, then climb up to 20,000 ft to finish a circumnav, drop sondes at ^{every} 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



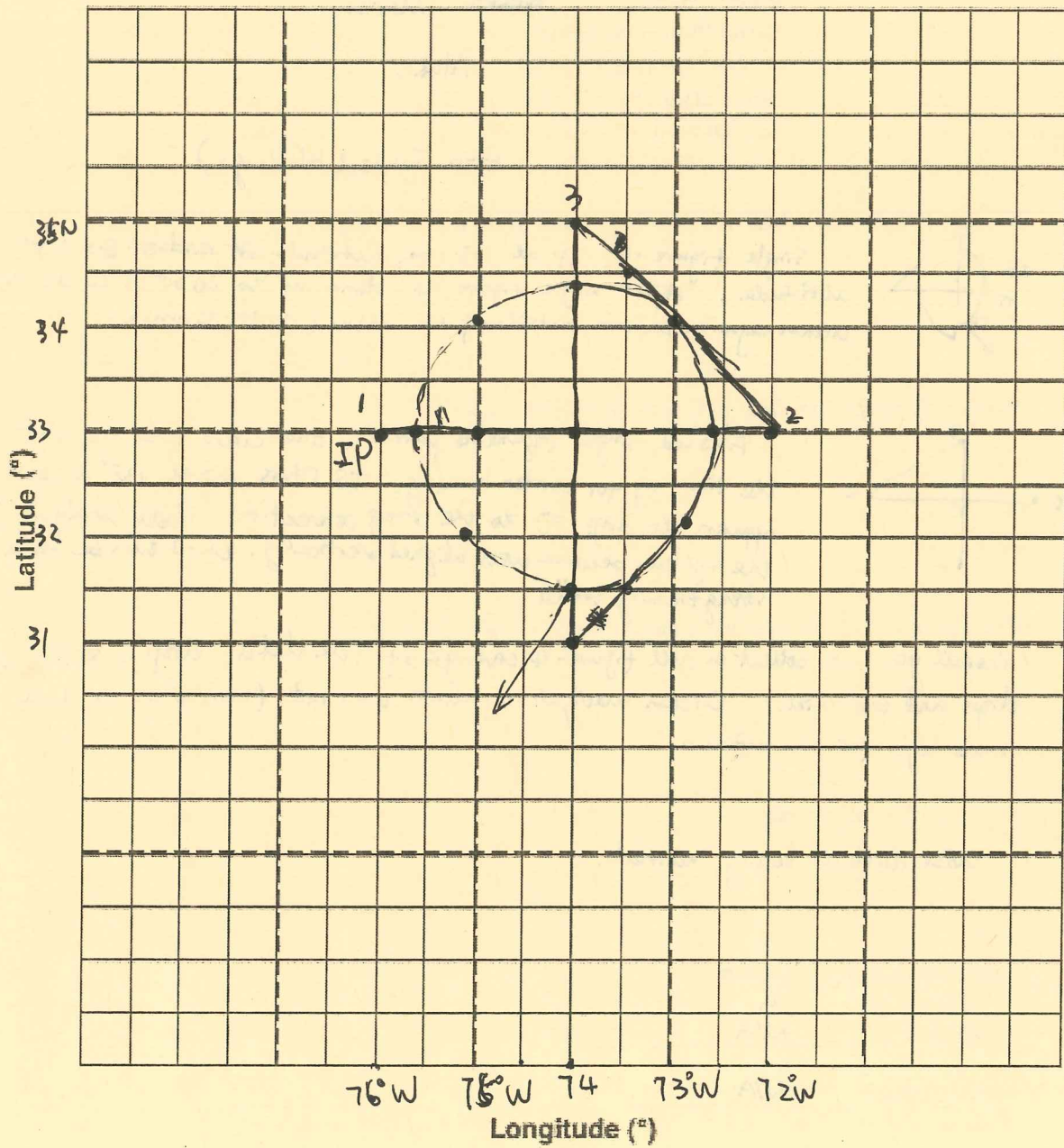
20180708H2
Lead Project Scientist Event Log

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

Time	Event	Position	Comments
2030 UTC	Engine 2 has decing issue		Flight delayed
21:20 UTC	Engine fix didn't hold, trouble shaking		
23:15 UTC	There was oil leak. Problems resolved, taxing soon.		
2332	Airborne		
00:00	SFMR & Radar starts to record data		
00:58	IP, drop a sonde, AltitudePlane: 2.2 Km		
	Left SFMR		
01:23	40kt flight-level winds		
0129	circle module for center hunting		
0131	drop a sonde, center sonde (32° 29' N, 75° 30' W)		
	storm motion: 135° 2kt		
1:50	Most of the convection moves to north ^{east} side of the storm		
	57kt inbound flight-level		
0158	release a sonde, outbound 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		
03:00	32° 21' 74° 23' 2kt wind. center drop.		
0328	Last drop. beg 2 end point		
0358	second radar analysis has to ctrl+c terminal to re-start		
	radarsync.		

Observer's Flight Track Worksheet

Date _____ Flight _____ Observer _____

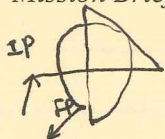


Mission Summary
Storm name
YYMMDDA# Aircraft 4_RF

Scientific Crew (4 RF)

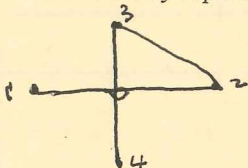
Lead Project Scientist Christopherson
Radar Scientist Alaka Marks
Cloud Physics Scientist _____
Dropwindsonde Scientist Alaka
Boundary-Layer Scientist _____
Workstation Scientist _____
Observers (affiliation) Erin Jones (Hollings)

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



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

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

Lead Project Scientist

Storm or Project TS Chris Experiment type TDR
Flight ID 20180708H2 Mission ID NOAA2 0503 A
Preflight CHRIS

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Storm or Project TS Chris Experiment name TDR

Flight ID 20180708#2 Mission ID NOAA2 0503A CHRIS

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HRD		AOC	
Function	Participant	Function	Participant
Lead Project Scientist	<u>Christophersen</u>	Flight Director	<u>Henning</u>
Radar/Workstation	<u>Munk</u>	Pilots	<u>Kibbey</u> <u>Abitball</u> <u>Didier</u>
		Navigator	<u>Freeman</u>
Cloud Physics		Systems Engineer	<u>Hays</u> <u>Boeh</u> <u>Darby</u>
		Data Technician	<u>Richards</u> <u>Lynch</u>
Dropwindsonde	<u>Alaka</u>	Electronics Technician	<u>Peale</u>
AXBT/AXCP		Other	
Photographer/Observer s/Guests	<u>Brin James (Hollings)</u>		

B. Take-off and Landing Times and Locations:

Take-Off: 2332 UTC Location: LAL

Landing: _____ UTC Location: LAL

Number of Eye Penetrations: _____

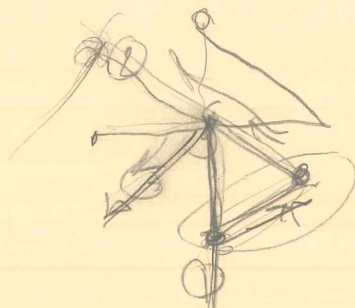
C. Past and Forecast Storm Locations:

Date/Time	Latitude	Longitude	MSLP	Maximum Wind
<u>07/08 1938Z</u>	<u>32.6</u>	<u>74.6</u>	<u>100</u>	

D. Mission Briefing:

see Figure 5 text files
Figure 4 for TDR Plus high-altitude circumnavigated at 70 nm
at 105 nm legs

160 40 min



+ to son optical gravity sensor
optical 2 roll sensor
+ 80 + 240 80 min

Storm or Project TS Chris Experiment name TDR

Flight ID 20180708H2 Mission ID NOAA2 0503A CHRIS

E. —Equipment Status (Up ↑, Down ↓, Not Available N/A, 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				
Ozone instrument				
Workstation	✓	✓		
Cameras	✓	dark		

REMARKS:

21:40 — engine 2 deice valve problem return to fix
22:00 — fixed deice valve & found oil leak
23:17 — fixed oil leak ready to go
Change plan to just do Figure 4 and scratch circumnav

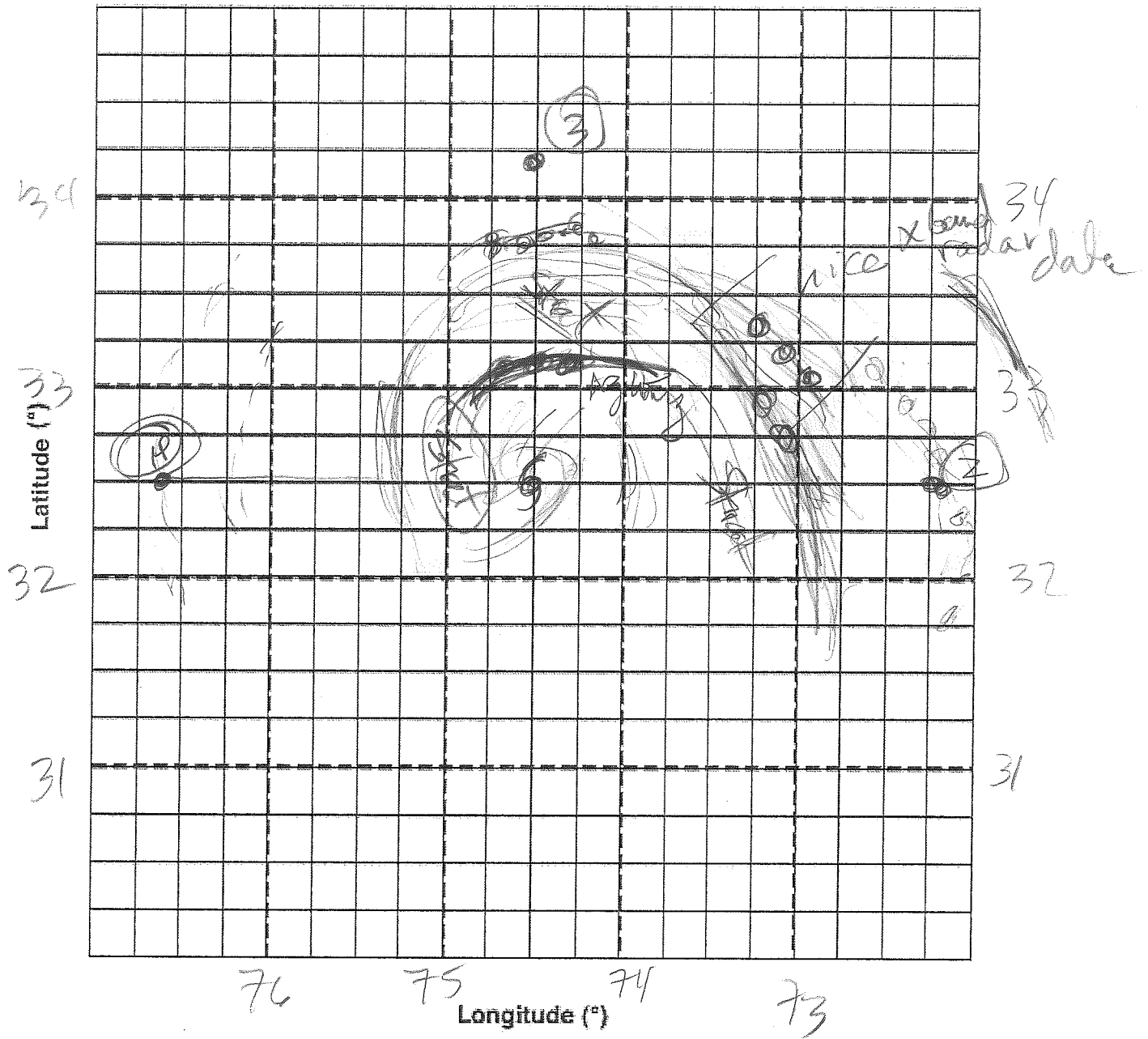
Lead Project Scientist Event Log

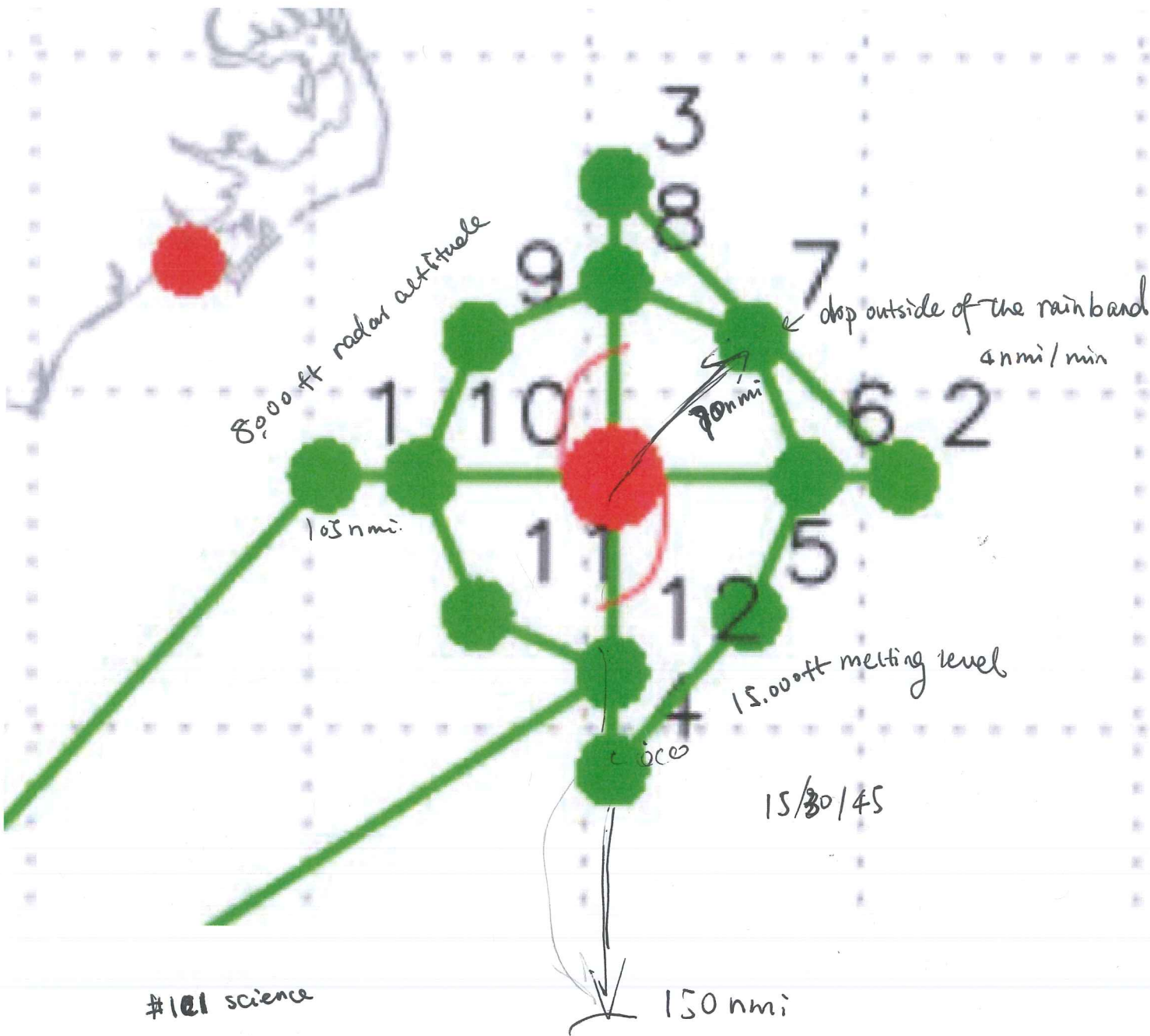
Date 7/8/18 Flight ID 20180708 HZLPS Chingbpharsen

[illegible]

Observer's Flight Track Worksheet

Date 7/8/18 Flight 20180708#2 Observer Marks





#121 science

3:30 safety brief