

Lead Project Scientist

Date 8/28/19

Flight ID 20190828H1

Storm or Project ALOS/OPIAN Experiment name EMC

Mission ID 1105A

Pre-flight

1. Participate in general mission briefing.
2. Determine specific mission and flight requirements for assigned aircraft.
3. Determine from AOC flight director/meteorologist whether aircraft has operational fix responsibility and the mission designation.
4. 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.
5. Meet with AOC flight director and navigator at least 3 hours before take-off for initial briefing.
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 drop times.
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. Complete Lead Project Scientist Form.
5. Check in 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 10-s flight listing from the AOC flight director. Turn in with completed forms.
4. Obtain a copy of the radar DAT tapes. Turn in with completed forms.
5. Obtain a copy of serial flight data on thumb drive. Turn in with completed forms.

[Note: all data removed from the aircraft by HRD personnel should be cleared with the AOC flight director.]

6. Report landing time, aircraft, crew, and mission status along with supplies (tapes, etc.) remaining aboard the aircraft to Field Program Director
7. Determine next mission status, if any, and brief crews as necessary.
8. Notify Field Program Director as to where you can be contacted and arrange for any further coordination required.
9. Prepare written mission summary using **Mission Summary** form.

Lead Project Scientist Check List

Storm or Project ALUS/DORIAN Experiment name EMC

Flight ID 20190828 H1 Mission ID 1105A

A. Participants:

Function	Participant	Function	Participant
Lead Project Scientist	ZAWISLAK	Flight Director	PARRISH / CARPENTER
Radar	ZHANG	Pilot	KAHN
Workstation		Pilot	ABITBOL / ROSSI
Cloud Physics		Navigator	URATO
Dropsonde	HAZELTON	Systems Engineer	
Dropsonde		Data Technician	MCCUMSTER / MASCARO
AXBT/AXCP	MESDIS?	Electronics Technicians	AVARS? RICHARDS
Observer/Guest	JEVENAU		
	SAPP		
Observer/Guest	LIANG	Flight Engineer	SANCHEZ / DARBY

B. Take-off and Landing Times and Locations:

Take-Off: 2005 UTC Location: BARRADOS

Landing: 0329 UTC Location: LAKELAND

Number of Eye Penetrations: _____

C. Past and Forecast Storm Locations:

Date/Time	Latitude	Longitude	MSLP	Maximum Wind
28 / 1800Z	18.3N	65.0W	997	65 kt NW AT 11 kt
28 / 2100Z	18.8N	65.5W	997	70 kt NW AT 12 kt
/				
/				
/				

D. Mission Briefing:

SIMPLE BUTTERFLY PATTERN WITH 90MIN LEGS, UPDATED IN THE MORNING TO S→N, NW→SE, NE→SW. PLANNING 10KFE UNLESS DECONFLUCTION W/ AIR FORCE REQUIRES 10KFE, IN WHICH CASE WE'RE AT 8K OR 12KFE.

NO PLAN FOR SATELLITE UNDERFLIGHT OR OCEAN WINDS.

RW SWNE IN QUADRANT

PURCH A REPO BOAT TO LAKELAND AFTER COMPLETING THE PATTERN FOR SAC MAY DROP A COUPLE SONDES NEAR NINA GLIPPS, WHICH ARE EXPECTED TO BE IN OUR PATTERN ON SWW AND WNW.

Storm or Project ALOS/DURBAN Experiment name ENC

Flight ID 2019082841

Mission ID 1105A

E. — Equipment Status (Up U, Down D, 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				

REMARKS:

Lead Project Scientist Event

Date 8/28/19

Flight ID 20190829H1 LPS ZAWISLAK

Time	Event	Position	Comments
2004Z	TLS FROM BARRANOS		THE STORM WAS UPGRADEN TO A HURRICANE AT 2PM INNER CORE BURSTING HAS BEEN IMPRESSIVE AND IT LOOKS LIKE ITS DEVELOPING AN EYE MST VERY JUMPTOUS COVERAGE BEING MORE OPEN TO THE SW. POSSIBLY RADIOL INTENSIFYING?
2040Z		ON TRANSIT TO STORM CONTINUE TO SEE BURSTS ON NORT SIDE, WHICH MUST BE DOWNSHELL ST NOT ON MAIN PRECIP	ADDING A SONDE NEAR 17.5W OF OUR TRACK SINCE WE BE NERBY ON TOP OF THE GULF WIND IS WIND THE TRACK JUST TO THE EAST OF OUR WIND. IT MAY DRIFT THERE UNSURE TURNS OUT THE GULF SE OF SURFACE PRICE, WITH DRIPS CAPABILITY IS PROBABLY CLOSE TO THE IP, SO WORKS OUT WELL
2105Z		STORM OUTING PROXIMITY TO THE NORTH, INNER CORE GETTING PRECIP; WRAPPING AROUND	STORM IS MOVING NW JUST HOPING ENOUGH TO GET FULL AREA POSITION, WE CAN HEAR OVER SURFACE RLD BUT THATS NOT PREFERRED.
2130Z	SONDE #1 IP	65.38 W / 17.25N	INBOUND ON 180 TO THE CTR RADIOL PRETTY CLEAR OUT AT THE IP ALREADY WENT THROUGH SOME OUTER BANDING.
2139Z	SONDE #2 MP 280° (MINI #1) HEADWC WHO FIRST HAD TO PULL UP SONDE 2	17°57' / 65°23'	THE MIDDLE DRAG WILL BE IN MOSTLY STRATIFORM BANDING TO THE SOUTH OF THE CENTER
2152Z	SONDE #3 CTR 1 (MINI #2)	18°52' / 65°22'	CTR #1
2158Z	SONDE #4 MAIN WIND OUT 360		MAJ WIND SONDE. NO LAUNCH DEFECT GOOD BURST ON NORTH EQUATOR
2202Z	SONDE #5 MP ON 360 (MINI #3)	19°33' / 65°23'	SS ON FIRST CENTER PASS 9
		Pretty much CLEAR BELOW AT MP. ANML ABOVE.	Pretty Big Gradients in WINDS TOO

GLIDER AT
17.5 / 65.25

CTR #1
992 mb
EXTEND PFC
ALMOST 80 FT
AT JFC
SEPAR
OUT OF RAIN

Lead Project Scientist Event

Date 8/28/19 Flight ID 20190328HJ LPS Zawislak

Time	Event	Position	Comments
2213 Z	SONDE #8 END OF 360°	20°17' / 65°28'	NOW GOING DOWNWIND TO NW POINT TO DO 300' RAN? SOME PRECIP OUT THERE MOSTLY SHALLOW CONVECTIVE
			SO THERE IS ANOTHER PERFECTLY PLUCKY SONDE ON THE NEXT PASS AT 170 SONDE TO GET NEAR ELIQUA
2233 Z	SONDE #7 11 FOR 2ND ON 360°	19°37' / 66°52'	TURNING INBOUND ON 300 NOT MUCH WX OUT THERE SAN JUAN RADAR PRESENTATION DEFINITE IMPROVING STILL THINK RI IS ONGOING
2245 Z	SONDE #8 MP ON 2ND (MIN +4) 300	19°16' / 66°10'	RAI POINT SONDE HEADING TOWARDS AIRMART BAND BUT NOT YET IN. GETTING CONVECTIVE
2254 Z	SONDE #9 RHW NW 720 CW.		
2257 Z	SONDE #10 RHW SW	18°54' / 65°24'	RHW ON OUTBOUND.
2308 Z	SONDE #11 MP ON 120° (MIN +5)	19°31' / 64°42'	MINIMUM → JUST (RHW) THROUGH A DECENT CONVECTIVE APPROACHING ANOTHER BAND THIS ONE OUTER THAT WILL BE NEAR OUR TURN POINT AND WV BK
			SHOULD BE ABLE TO SAMPLE DOWN THE RAINBAND BY STAYING OUTSIDE AND KEEPING IT OFF OUR LEFT WING.
2319 Z	SONDE #12 END ON 120°	18°11' / 64°5'	END OF 2ND PASS WILL STAY TO EAST OF BAND RIGHT ON OUTSIDE OF DOWNWIND
2342 Z	SONDE #13 TURN TO SW ON 060°	19°24' / 64°19'	BEEN PAINTING A RAINBAND OF WXTO THIS NEXT INBOUND AT TURN IN, WXTO GET PUEBLO OF STRONGER
			GOING TO NEED TO TURN HOME AT SIDING JUST CAN IT BE CLEAR OF TERRAIN
2354 Z	SONDE #14 MP ON (MIN +6) 060°	19°21' / 65°2'	MESSY, JUST GOT OUT OF THE EXTENSION OF AN OUTER BAND.
	SONDE #15 RHW 0600		RHW WHERE WE SHOULD SEE THE STRONGER WINDS
	SONDE #16 MP ON (MIN +7) 240°		NOW OUT OF PRECIP SOME PRECIP BAND ABOUT 300M WIDE

CIR +3
991 mb
75 kt SSM
SEALS TO
BE INTERESTING
BEST BANDS
AROUND CIR
GOOD COVERAGE.

RHW 2
RHW 3

BAND

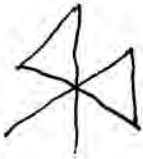
RHW 4

SO COMPLETING PATTERN
AT MP. JUST NO PRECIP ON THE
SW SIDE FURTHER OUT
THAT WE COULD GET
AND WE'LL BE CLOSE TO
THE COAST.

Mission Summary

Scientific Crew (42RF)

Lead Project Scientist ZAWISLUK
 Radar Scientist ZHANG
 Cloud Physics Scientist
 Dropwindsonde Scientist HAZELTON
 Boundary-Layer Scientist
 Workstation Scientist
 Observers (affiliation)



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

PLAN FOR BUTTERFLY 90 MIN LEGS AT LOWER COR LOWER FOR 5th DISCONNECT)
 SWAY TO NORTH, NW → SE, NE → SW
 RWL, CR, MIA, SW SONDES. TRY TO GET SONDE CLOSE TO GUIDER LOCATIONS TO
 NO UNPREDICTABLE, THOUGH 2nd IS IN CLOSE PROXIMITY IN TIME/SPACE
 SO GUIDER, OCEAN WAVE, EMC, NO FLY RESPONSIBILITY

Mission Synopsis: (include plot of actual flight track)

CTR #1 992?
 915 ON NE EYEWALL
 CTR #2
 995M
 EYEWALL BUT
 DIDN'T HIT OR
 WELL 36M
 72M ON
 SE SIDE EYEWALL

CTR #3
 991M
 AND INCH
 FROM THAT
 ONE
 PEAR STR
 MIGHT 75M
 TO NE SIDE

IT SURE LOOKS LIKE THE STORM IS RAPIDLY INTENSIFYING. EVEN BEFORE WE
 ARRIVED ON STATION, THE INNER CORE WAS PRETTY SYMMETRIC. OUTER BANDS WERE IT
 PERIMETER EYEWALL WAS DEVELOPING OUT OF STRATIFORN ON UNWEAR 2 (SOUTH SIDE)
 SO EXPECTED CONVECTIVE EQUATION. EXHIBITING PRETTY BG GRADIENTS IN WINDS IN
 EYEWALL. CENTER OF THE STORM SEEMS TO BE CONSOLIDATING. BIG OUTER BAND WE HAD
 TO GO THROUGH AND PARALLEL ON OUTSIDE. HAD TO CUT LAST OUTBOUND TO SW SHORT TO STAY
 AWAY FOR P.R. AT 8:45, DARK METEOR CLEARANCE

Evaluation: (did the experiment meet the proposed objectives?) WAS ABLE TO GET A SONDE CLOSE TO GUIDER AT 1P, IF WE CONSIDER DRIFT
 ERM

INBOUND AT 1M ON 2nd PASS TO NW IS ALMOST EXACTLY ON THE GLIDER. D
 2/2 ON COINCIDENT DRIPS.

HAD TO CUT FINAL LEG AT 1M TO AVOID GOING OVER P.R. → DOWN TO 5KFT BIC
 OF AIR FORCE, SO COULD
 MEET TERRAIN CLEARANCE
 REQUIREMENT

Problems: (list all problems)

OVERDRAIN DATA COLLECTION WENT WELL, AND
 PULLED OFF MOST OF THE PATTERN DESIRABLE PROXIMITY
 OR ISLANDS, AND ALSO FORTUNOUS LOCATIONS OF GUIDERS
 NO REAL PROBLEMS!

THE EXTENT
 OF THE PRECIP
 AND WIND FIELD
 IS VERY SMALL
 NEARLY HIGH GRADIENT

Expendables used in mission:

	Deployed	Good	Bad
GPS sondes:		16 (ALSO 7 MINI SONDES)	
AXBTS:			
Sonobuoys:			
UAVs			

DEVELOPING
 600M INNER CORE
 STRONG GRADIENT
 OVER ONLY 1P
 FEW MILES

PATTERN CAME TOGETHER BETTER THAN WE WERE HOPING
 FOR TERRAIN. GOT 2 DROPS NEAR GUIDER
 AND WIND CENTERED. GOT 600M CORE OF
 STORM IS INTENSIFYING