

## Lead Project Scientist

Date 8/17/21

Flight ID 20210817I1

Storm or Project Mission ID ALO7/GRACE

Experiment name EMC TASKING

1007A

### 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 AL07 / GRACE Experiment name EMC TASKING

Flight ID 20210817I1 Mission ID 1007A

**A. Participants:**

Function	Participant	Function	Participant
Lead Project Scientist	ZAWISLAK / ALAKA	Flight Director	CARRENTER
Radar	ZAWISLAK / ALVEY / GAMACHE	Pilot	MITCHELL / COPPARE / RANWENBERG
Workstation		Pilot	LGEMEKE S
Cloud Physics		Navigator	URATO / FREEMAN
Dropsonde	SEUDJOO	Systems Engineer	
Dropsonde		Data Technician	MASCARD
AXBT/AXCP		Electronics Technicians	ANAPS; UNDERWOOD
Observer/Guest		Flight Engineer	DOBRY / WYSINGER
Observer/Guest			

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

Take-Off: 1953 UTC Location: ARUBA

Landing: 0337 UTC Location: LAKELAND

Number of Eye Penetrations: \_\_\_\_\_

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

Date/Time	Latitude	Longitude	MSLP	Maximum Wind
18 / 0000Z	18.8	79.0		55
17 / 1800Z	18.5	77.5	1005 mb	45
/				
/				
/				

FCST

W M 13EF

**D. Mission Briefing:**

PLAN IS TO FLY AN EMC-TASKED MISSION INTO TROPICAL STORM GRACE, WHICH AT THE 18Z ADVISORY WAS 45 KT. THE INITIAL PLAN HAS BEEN MODIFIED TO BE E → W, SW → NE, N → S, SE → NW AT 8 KTS IN ORDER TO BE ABLE TO ORBIT BT COMPOS AT WESTERN HEMISPHERE SPOONS AND THE CENTER. THERE ARE NO BTD FOR THE ORB PURPOSES. THE STORM IS CURRENTLY OVER JAMAICA BUT MAY MOVE OFF COAST AS WE GET FURTHER INTO THE PATTERN.

105 MB LEGS OTHER THAN WINDS WINDS VE A GAIN IN WIND

Storm or Project \_\_\_\_\_ Experiment name

Flight ID \_\_\_\_\_ Mission ID

---

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 9/17/21

Flight ID 2021091714

LPS ZANISLAK / ALASKA

Time	Event	Position	Comments
1953Z	TAKEOFF DRIBB		
2050Z	SO THE CORE CONTINUES TO PASSIVE AREA CONVECTION WITH SOME A WIND FROM THE US TYPICALLY SOME BANDING AROUND THE CENTER MAY BE EVIDENT. IT DOESN'T LOOK LIKE JORDAN HASN'T DONE TOO MUCH TO THE CORE ORGANIZATION. OUTFLOW APPEARS TO BE WELL-DEFINED THE ONLY QUESTION WILL BE THE STRENGTH PRESENTATION IN THE MIDLEVEL SHEAR. THERE IS STILL SOME ASYMMETRY IN THE OVERALL PRESENTATION COVERAGE		
2112	BIT OF SOME CELLULAR OVERLAP CONVECTION NOW SOUTHWEST OF JAMAICA		
2133Z	NOW NEARING THE EAST COAST OF JAMAICA... PLUME OF REFLECTOR TO START ON ANALYSIS, SINCE WRITING HEIGHT 250 IN FOR THE CENTER'S ANALYSIS DOMAIN.		
2147Z	10 E NOW IN PATTERN, NORTH OF SURGE OF JAMAICA	18°46' / 77°09'	WAVE NWS
2201Z	MP E INBOUND - LIGHT STRATIFORM PRECIP		NWS
2212Z	"CTR" → BUT RESULT JUST EQUIVOCAL BLW MID PTS ONE REQUESTING ETRP SONDE BLW MP & CTR SONDES.		NWS
2214Z	BACKWA TO CTR SONDE ABOVE SO WE'LL SET UP STR PT SONDES ON 225/045 CLOUD CUT THIS LEG A BIT SHORT		NWS
2224Z	MP SONDE AIRBOUND WEST	18°45' / 79°59'	NWS ONE BT 1
2232Z	AT 90 MI E/W OUTBOUND CLEAR BELOW, ONE SCATTER CLOUD	18°45' / 80°37'	30°C HWS
	CURTAIN NEXT INBOUND TO 90 MIN.		
	HAD TO PUSH US A LITTLE TO START OUT US PERON FUE CLOUD DRIP		

10 E SONDE #1

MP E SONDE #2

"CTR" SONDE #3

BACKWA CTR SONDE #4

MP W SONDE #5

EP W SONDE #6 BT 1

Lead Project Scientist Event

Date 8/17/21

Flight ID 20210817I1 LPS ZAWAJSKIE / ALASKA

	Time	Event	Position	Comments	
IP SW SONDE #7 BTZ	2255	IP SW INBOUND ON 225° RADIAL		BT COMBO	NWS BT ONR
			17°17' / 79°58'	RELEASED BT COMBO AT IP	
		LOOKS LIKE STRATIFORM RAIN AND MODERATE CONVECTION UPHEAR... NO DEEP CONVECTION NEAR THE INNER CORE			
MP SW SONDE #9	2310	MP INBOUND SW → CLEAR BELOW. ESSENTIALLY DRIPPING IN THE MOST REGION WHERE OBSERVED ON SATELLITE			NWS
OUTPT SW SONDE #9	2317Z	QUARTER POINT DROP BLW MP AND CTR		INBOUND	ONR DROP #1
			18°14' / 78°52'		
CPO CTR. SONDE #10	2323Z	CTR CPO SONDE ON 2 <sup>ND</sup> PAIS		18°29' / 78°40'	NWS
	SONDE #11	2326Z	AIR POINT OUTBOUND NE	18°40' / 78°30'	ONR DROP #2
OUTPT SW SONDE #12	2337	NO SONDE OUTBOUND TO THE NE			NWS
OUTPT SW SONDE #13	2345	EP SONDE NE OUT	17°29' / 78°40'		NWS
OUTPT SW SONDE #14	0000Z	<del>BRANCHING STRATIFORM RAIN</del> IP NORTH SONDE			NWS
		SO THERE IS AN RMW AT 1 KM TO THE N/NE AT 75 KM BUT A DEEP RMW IS ACTUAL TO THE NW IN MIDLEVELS			
		STRATIFORM RAIN SEEMS TO BE DOMINANT			
		SEEM PRIME TO INTERRUPT STRATIFORM (JUST BEING ALL THE WAY AROUND UPHEAR)			
		INBOUND FROM THE NORTH			
MP 2 SONDE #15	0013	MP SONDE OUT NORTH INBOUND	17°13' / 78°40'		NWS
OUTPT SW SONDE #16	0019	CTR PT SONDE OF NORTH INBOUND TO CTR			ONR DROP #3
		SOME DEEP CONVECTIVE GROWTH IN THE CENTER BUT MOSTLY STRATIFORM RAIN IN CURVATURE			
CTR 3 SONDE #17	0029Z	CTR #3 SONDE - ACTUAL FLYED THE CENTER, AFTER PASSING A SIGNIFICANT CONVECTIVE CELL NORTH		18°21' / 78°42'	NWS
NO PAIR BACKUP SONDE #18	0029Z	CTR BACKUP	18°48' / 79°43'		NWS
OUTPT SW SONDE #19	0037	QUARTER POINT OUTBOUND SOUTH HAD TO WAIT TO DROP	17°44' / 79°45'		ONR DROP #4
OUTPT SW SONDE #20	0044	MIDPOINT SONDE TO SOUTH	17°15' / 79°45'		NWS
		NO LAUNCH DETECT			
MP SONDE #21	0045				NWS
		HITTING SOME TRAILING STRATIFORM BEHIND THE VICAROUS OUTER BOW WE NOW OBSERVE EARTH			
SONDE #22	0055				NWS
EP SONDE SOUTH		EXPANDED SONDE SOUTH, TURNING DOWNWARD			

IP SW  
MP SW  
OUTPT SW  
CPO CTR.  
OUTPT SW  
MP 2  
CTR 3  
NO PAIR BACKUP  
OUTPT SW

NWS  
BT ONR  
NWS  
ONR DROP #1  
NWS  
ONR DROP #2  
NWS  
NWS  
NWS  
NWS  
NWS  
ONR DROP #3  
NWS  
ONR DROP #4  
NWS  
NWS

Lead Project Scientist Event

Date 8/17/21

Flight ID 20210817Z LPS ZAWI, USK / ALBKA

Time	Event	Position	Comments
IP SE SONDE 23	0106	IP SONDE TO TRF SE INBOUND 17°51' / 79°47'	NWS
		POSSIBLY AN RI ONSET FLIGHT	
MI SE SONDE 24	0118	MI SONDE INBOUND SE	NWS
OTR SONDE 25	0123	QUADRANT SONDE SE 17°55' / 79°30'	ONR DROP 5
OTR SONDE 26	0133	CIA OTR 4 18°29' / 79°59'	NWS
		ALONG A COMPLETE RING OF REFLECTION AROUND THE CENTER. CAP'EN IT.	
OTR SONDE 27	0138	OTR PT OUTBOUND TO NW 18°42' / 79°14' →	ONR DROP 6
OTR SONDE 28	0139	BACK TO OTR PT	ONR DROP 7
OTR SONDE 29	0145	MI OUTBOUND TO TR NW 19°03' / 79°34'	NWS
		NOT MUCH PRECIP OUT TO TR NW HERE, WHICH IS USUAL → SO IT DOES NEED TO DO SOME MORE WORK TONIGHT	
		TRY ABOUT 0.5 KM, WHICH WILL REQUIRE SOME PRECIP CONVECTION.	
OTR SONDE 30	0158 Z	ENDPOINT NW INBOUND TO NW BT COMBO FOR ONR	NW ONR BT 3 29.6 °C
		SCIENCE COMPLETE	
		SO IN SUMMARY, THE STORM MOVED OFFSHORE OF JAMAICA AND WAS TRYING TO DEVELOP AN INTRA CYCLONE THAT THERE STILL SEEMS TO BE SOME CONSTRAINTS ON THE UPSTREAM (WEST) SIDE. BUT THERE WAS EVIDENCE OF CONVECTIVE GROWTH. FL WINDS ARE UP TO UPPER TROPOSPHERE FORCE, BUT NOT DOWN TO THE SURFACE MUCH MORE DATA CONNECTION AND UPSTREAM CONVECTION AND PRECIPITATION TO GET TO RI.	

3 ONR BSTs

7 ONR DRUPS

28 NWS DRUPS

23

# Observer's Flight Track Worksheet

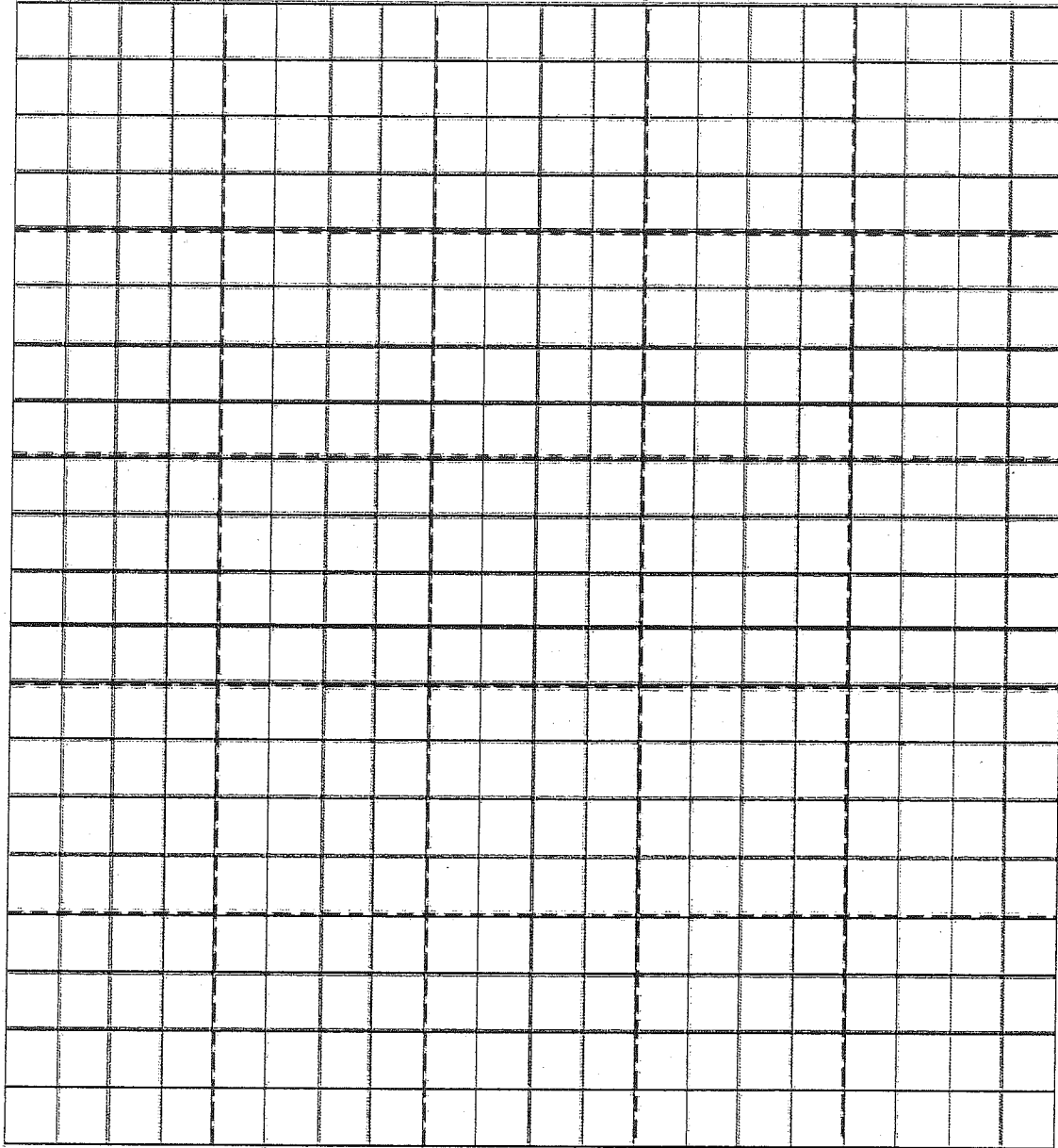
Date

Flight

Observer

*Use highlighter to draw freehand on chart*

Latitude (°)



Longitude (°)

## Mission Summary

---

Scientific Crew ( 4 RF )  
Lead Project Scientist  
Radar Scientist  
Cloud Physics Scientist  
Dropwindsonde Scientist  
Boundary-Layer Scientist  
Workstation Scientist  
Observers (affiliation)

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

*Mission Synopsis: (include plot of actual flight track)*

*Evaluation: (did the experiment meet the proposed objectives?)*

*Problems:(list all problems)*

*Expendables used in mission:*

Deployed

Good

Bad

GPS sondes :

AXBTs :

Sonobuoys:

UAVs