

Lead Project Scientist

Date 8/19/21

Flight ID 20210919H1

Storm or Project

Experiment name EMC TASK

Mission ID AC07/GRACE

1407A

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 10-3 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 TASK

Flight ID 1407A

Mission ID 20210819H1

A. Participants:

| Function | Participant | Function | Participant |
|------------------------|--------------------|-------------------------|--------------------------------------------|
| Lead Project Scientist | ZAWISIAK / HAZETON | Flight Director | CARPENTER |
| Radar | ZAWISIAK / ALVEY | Pilot | MITCHELL / COPARE / LEGIARDES / RAMMELBERG |
| Workstation | | Pilot | |
| Cloud Physics | | Navigator | FREEMAN / HOUGH |
| Dropsonde | SELLWOOD | Systems Engineer | |
| Dropsonde | | Data Technician | MASCARO |
| AXB/T/AXCP | | Electronics Technicians | |
| Observer/Guest | | | AVAPS: UNDERWOOD |
| Observer/Guest | | Flight Engineer | DARBY / WYSINGER |

B. Take-off and Landing Times and Locations:

Take-Off: 1953 UTC Location: LAKELAND

6.4 FLIGHT TIME

Landing: 0217 UTC Location: LAKELAND

Number of Eye Penetrations: 3 CAT 1

C. Past and Forecast Storm Locations:

| Date/Time | Latitude | Longitude | MSLP | Maximum Wind |
|------------|----------|-----------|--------|--------------|
| 18 / 1800Z | 19.6 N | 83.0 W | 995 | 65 kt |
| 18 / 2100Z | 19.7 N | 83.7 W | 992 | 70 kt |
| 19 / 0000Z | 19.8 N | 84.9 W | 989 mb | 70 kt |
| / | | | | |
| / | | | | |

D. Mission Briefing:

FLY AN BUTTERFLY PATTERN AT 9 KFT INTO HURRICANE GRACE.
 NW → SE, E → W, SW → NE. ENDPOINT, MIDPOINT, OR PASS? TO NWS
 THEN POSSIBLE QUADRANT OR RMW DRIPS TO OUR.
 WE'll DO AXBTs FOR OUR AT THE ENDPOINTS AT BEST AS WE CAN
 WITH THE TURBULENCE.

STORM NOT STRAIGHT AFTER INTENSIFYING OVERNIGHT. CONVECTION STILL DEVELOPING
 AROUND THE EYE WALL, BUT ALSO IN THE PERIODIC MINIMUM. STILL DEVELOPING A
 ROGGED EYE, WE THINK. IT COULD KEEP INTENSIFYING DURING THE FLIGHT

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 8/18/21

Flight ID 20210818 H1 LPS ZAWISLUK / HAZELTON

| Time | Event | Position | Comments |
|-------|------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|----------|
| 1953Z | TAKEOFF CAPELAN | | |
| 2108Z | APPROACHING THE IOP | SO THE INNER CORE DOES SEEM TO BE ENTRAINED SOME DZ AIR FROM THE ENVIRONMENT AS A | |
| | ON TOWER NOT COME INTO THE SE SIDE, SO THE INNER CORE DOESN'T LOOK AS ORGANIZED AS IT DID EARLIER. SO I DO | | |
| | SEEM LIKE SOME WESTERN OR NORTHWESTERN SURFACE IMPROVING THE ORGANIZATION | | |
| | MUO A WHOLE LOT OF NEW CONVECTION EITHER | | |
| 2127Z | 1A SONDE / BT COMBO | - SCATTERED CLOUDS BELOW. | |
| 2136Z | DROPPED SHORT ON MP | DROP TO GET IT OUT OF PRECO | |
| 2145Z | GR AT NW INBOUND | IN MOST BEFORE ME | |
| 2152Z | CPD CTR | Big eye 20-30m: | |
| | SO THE MML DEGREE ON THE 1 st INBOUND | HAD ALMOST A 4m AM | |
| | YANG LOOK TO IT.. NORTH AND SOUTHERN | BAND WRAPPING TO PRECO | |
| | AW ELEVATION. | | |
| 2201Z | GR AT SOUTHWEST OUBOUND AFTER PASSING THROUGH THE SOUTHWEST ELEVATION | | |
| 2208Z | MIDPOINT OUBOUND TO THE SE | | |
| 2223Z | EQUATOR OUBOUND SE. NO BT DUE TO TURBULENCE | | |
| | WILL HAVE THE BT TO CTR SINCE IT SEEMS CALM ENOUGH THERE | | |
| 2249Z | 1A E INBOUND TO CENTER IN STRATIFORM PRECO | | |
| | ALMOST LIKE A RAINBOW MODULE ON THE DOWNWIND | | |
| | WILL ADD A COUPLE EXTRA DROPS D/W MP AND CTR IN EQUATORIAL REGION / GR AT. | | |
| 2257Z | MIDPOINT SONDE TO EAST OUBOUND UP STRATIFORM REGION / BAND | | |
| 2307Z | QUANTUM ESTE FOR ONE BEFORE ELEVATION | | |
| 2306Z | RHW-1ST D/W IN WHAT WOULD BE THE ELEVATION | | |
| 2313Z | CPD CENTER #2 COMBO DROP IN CTR W/ BT | | |
| 2320Z | ELEVATION WEST SONDE IN EQUATOR EAST RHW | | |
| 2323Z | QUANTUM ESTE QUANTUM ESTE OUT OF QUANTUM SONDE DROPPED IN MUD | | |
| 2327Z | MIDPOINT WEST NOW GETTING OUT OF THE PRECO TO THE WEST | | |

MP NW SONDE #1
 BT #1
 MP NW SONDE #2
 SONDE #3
 NEW GREAT CTR SONDE #4
 EXTRA MLD 900m
 SONDE 990m
 1100m
 ONR DROP 2
 ONR AT OUTFE
 MP →
 OVR SE
 SONDE #5
 SONDE #6
 SONDE #7
 10 E
 SONDE #8
 MP C
 SONDE #9
 OTR PFC
 SONDE #10
 SONDE #11
 CTR #2
 SONDE #12
 BT 2
 EQUATORIAL W/ FST
 SONDE #13
 OTR W/ FST
 EQUATORIAL W/ FST
 GR AT
 MP
 W/ FST
 SONDE #14
 SONDE #15
 MP
 W/ FST
 SONDE #16
 2338Z
 EP W SIDE COMBO CLEAR BELOW
 NOW TURNING DOWNWIND FOR THE LAST PASS

NWS 1
 ONR BT #1
 300
 NWS 2
 ONR DROP #1
 NWS 3
 ONR DROP #2
 NWS 4
 NWS 5
 NWS 6
 NWS 7
 ONR #3
 ONR #4
 NWS 8
 BT 29.9°C
 #2
 ONR #5
 ONR #6
 NWS #9
 NWS #10
 BT #3

Lead Project Scientist Event

Date 9/19/21 Flight ID ZU21081841 LPS ZAWISLAK / HAZELTON

LP Combo w/B1
 W SW SOND #17
 MP SW SOND #18
 CRB PSW SOND #19
 RAW SW SOND #20
 CRB SOND #21
 RAW SOND #22
 BACKUP RAW MR SOND #23
 SOND #24
 SOND #25
 ESW RFB SOND #26

| Time | Event | Position | Comments |
|------|-------------------------------------------------------------------------------------------------------------|------------------------------|-----------------------|
| 0001 | LP INBOUND FROM THE SOUTHWEST | COMBO DRAP | (BT) NOT GETTING DATA |
| 0010 | MP INBOUND SW - BROKE DEC BELOW | | |
| | SOME MRW CONVECTION BURSTING ON THE W TO S EREWALL | | |
| | REAR MAKE TIGHTEN UP ON THE EREWALL NOW | | |
| 0018 | QUARTER POINT SOUTHWEST INBOUND | | |
| 0021 | RAW (EREWALL SOME SW EREWALL | EREWALL SONDIE | |
| 0022 | CRB'S SONDIE FOR (AND PAB) | | |
| 0026 | RAW / SONDIE NE | MRW RAW | ULD |
| 0026 | BACKUP MR RAW | | |
| 0029 | "DEPART" NE BIT SOONER | | |
| | DELTA BUMP! | | |
| 0037 | MP SONDIE OUTBOUND | NE DRAPED IN STRATIFORM RAIN | |
| | LOT OF GENERAL CONVECTION B/W CRB AND MP | | |
| 0049 | ED MR SONDIE BT COMBO → OUT OF PRECIP SHIELD | | |
| | END OF PATTERN | (BT) WAS A DUD | |
| | LOOKED LIKE THE LAST PASS HAD THE LOWEST EXTRAN MSW AT 987.6 | | |
| | SO OUR MSW LOWEST WAS LAST PASS 987.688 WHICH IS 3 MO LOWER THAN THE LAST WITH EARLIER | | |
| | BUT NO REAL INCREASE IN THE WINDS - WE WERE OR LESS VERIFIED THE 70 KTS REAL WIND NUC WAS IN THEIR ADVISORY | | |

NWS #11 BT#4
 NWS #12
 ONR DRAP 7
 ONR DRAP 8
 NWS #13
 ONR DRAP 9
 ONR DRAP 10
 ONR DRAP 11
 NWS #14
 NWS 15 ONR BT 5

So NWS: 15 SONDIES
 ONR: 11 SONDIES / 5 BT'S
 1 CR, NW, CRB W, SW, NE
 2 ↑ BAD
 1 NLD
 COUPLE W/ IFF WINDS INCLUDING OUR EREWALL W DRAP AND NLD IN MR EREWALL DRAP

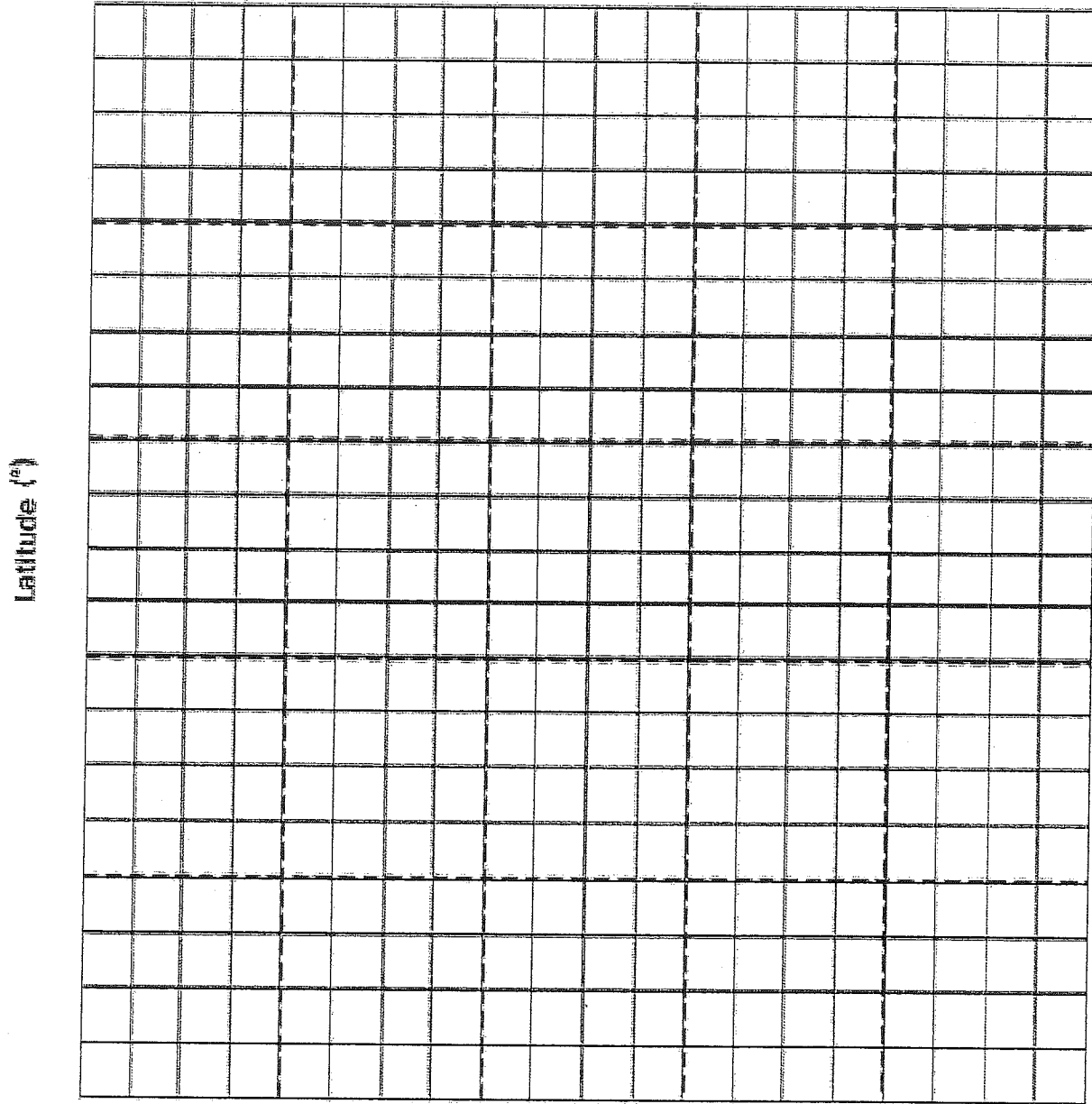
Observer's Flight Track Worksheet

Date _____

Flight _____

Observer _____

Use highlighter to draw freehand on chart



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 | | | |

Observer's Flight Track Worksheet

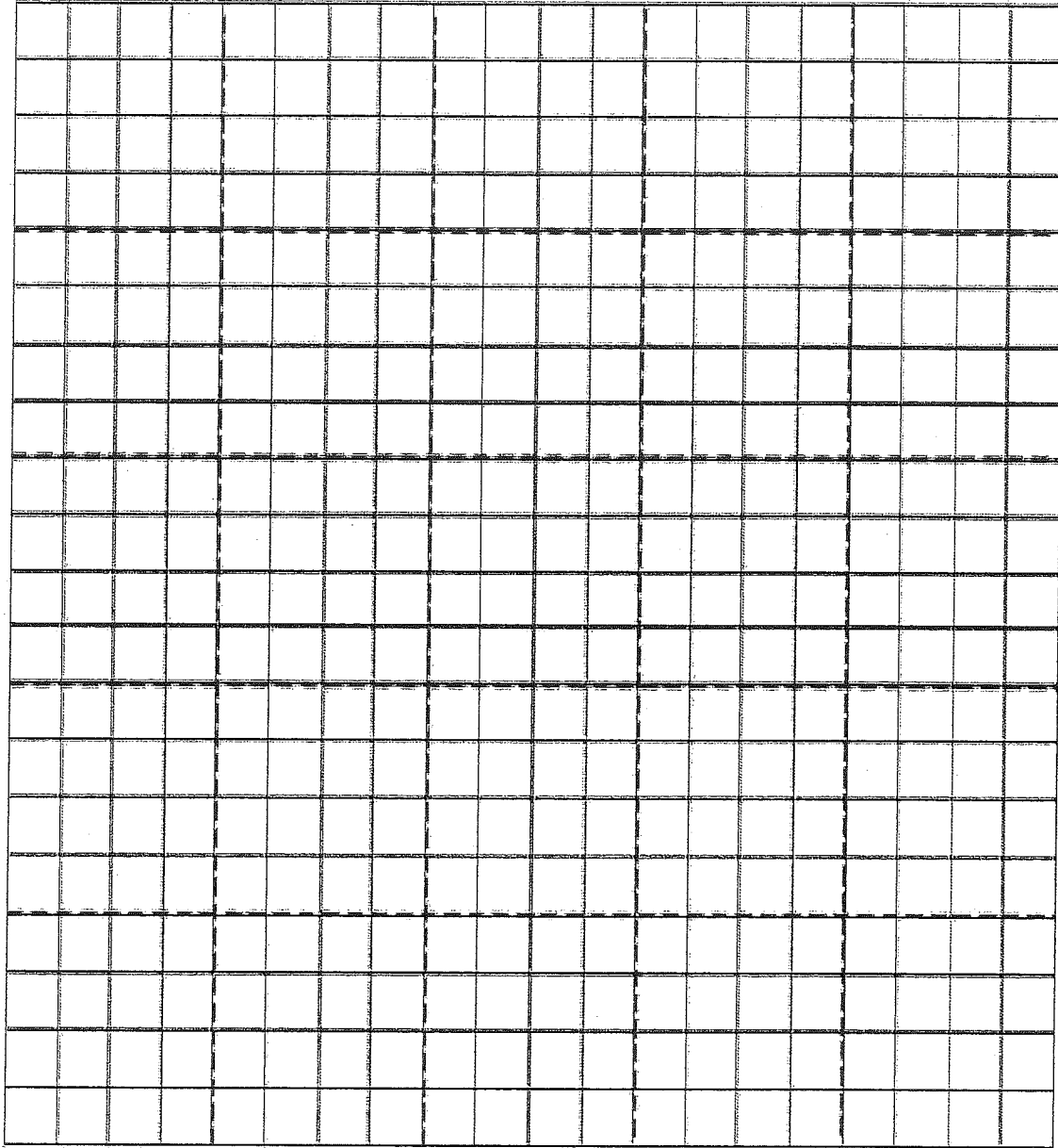
Date _____

Flight _____

Observer _____

Use highlighter to draw freehand on chart

Latitude (°)



Longitude (°)

Mission Summary

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| UAVs | | | |