

# U.S. Department of Commerce / NOAA / OMAO / Aircraft Operations Center - N42RF Manifest

| FLIGHT INFORMATION                                     |              |                |              | CREW MANIFEST |                |             | MISSION INFORMATION     |            |                   |          |           |
|--------------------------------------------------------|--------------|----------------|--------------|---------------|----------------|-------------|-------------------------|------------|-------------------|----------|-----------|
| FLT ID:                                                | 20210702H1   | FLT #:         |              | AC:           | Abitbol        | Scientists: | Pressure                |            | Dropsondes        |          |           |
| From:                                                  | TNCA         | ETD:           | 1800Z        | CP(s):        | Shaw           |             | A/C Takeoff             |            | Good              | Bad      | Sent      |
| To:                                                    | TNCA         | ETA:           | 2200Z        |               | Stateler       |             |                         |            | <b>15</b>         | <b>1</b> | <b>15</b> |
| Block Time                                             |              | Flight Time    |              | NAV:          | Urato          |             | ASOS Takeoff            |            | BTs               |          |           |
| In:                                                    | <b>20:50</b> | Land:          | <b>20:49</b> | FE(s):        | Darby          |             |                         |            | Good              | Bad      | Sent      |
| Out:                                                   | <b>14:17</b> | T/O:           | <b>14:31</b> | FD(s):        | Heystek        |             | A/C Land                |            |                   |          |           |
| Total:                                                 | <b>6.6</b>   | Total:         | <b>6.3</b>   |               | Parrish        |             |                         |            | <b>0</b>          | <b>0</b> | <b>0</b>  |
|                                                        |              |                |              |               | Hathaway       |             | ASOS Land               |            |                   |          |           |
|                                                        |              |                |              | SSA:          | Mascaro        | Visitors:   |                         |            |                   |          |           |
|                                                        |              |                |              | AVAPS         | Warnecke       |             | Storm Number ID:        |            | <b>AL052021</b>   |          |           |
| Sponsoring Org:                                        |              | AOC            |              |               |                |             | (ie: AL072012)          |            |                   |          |           |
| Program:                                               |              | PRX            |              | SEB:          |                |             | TCPOD/WSPOD Mission     |            | <b>0205A ELSA</b> |          |           |
| Purpose:                                               |              | Hurricane Elsa |              |               |                |             | (ie: NOAA2 2418A SANDY) |            |                   |          |           |
|                                                        |              |                |              | MX:           | DeTienne       |             | <b>OBSERVATIONS</b>     |            |                   |          |           |
| <b>AS REQUIRED BY ORM</b>                              |              |                | <b>Y</b>     | <b>N</b>      | <b>REMARKS</b> |             | Fix Number              | Obs Number | Fix Time          | SLP      |           |
| VOLCANIC ASH                                           |              |                |              | X             |                |             | <b>1</b>                |            |                   |          |           |
| SCIENCE MISSION WITHIN BDRY LAYER                      |              |                | X            |               |                |             | <b>2</b>                |            |                   |          |           |
| LACK OF PRECIPITATION                                  |              |                | X            |               |                |             | <b>3</b>                |            |                   |          |           |
| RELATIVE HUMIDITY ≥ 80%                                |              |                | X            |               |                |             | <b>4</b>                |            |                   |          |           |
| LARGE AIR-SEA TEMP GRADIENT                            |              |                |              | X             |                |             |                         |            |                   |          |           |
| HIGH SURFACE WINDS                                     |              |                |              | X             |                |             |                         |            |                   |          |           |
| LONG FETCH / DURATION OF SFC WND                       |              |                |              | X             |                |             |                         |            |                   |          |           |
| SEA SALT ACCRETION FORECAST                            |              |                |              | X             |                |             |                         |            |                   |          |           |
| SEA SALT ACCRETION OBSERVED                            |              |                |              | X             |                |             | <b>Pennies:</b>         | 3 Total    |                   |          |           |
| *Highlighted items must be completed before departure. |              |                |              |               |                |             |                         |            |                   |          |           |
| Remarks:                                               |              |                |              |               |                |             |                         |            |                   |          |           |
|                                                        |              |                |              |               |                |             |                         |            |                   |          |           |
|                                                        |              |                |              |               |                |             |                         |            |                   |          |           |

N42RF ERROR SUMMARY  
20210702H1

Flight ID: 20210702H1

| Sensor or System<br>-----            | Number or Name<br>----- |
|--------------------------------------|-------------------------|
| Static Pressure Probe                | PSM.2                   |
| Dynamic Pressure Probe               | PQM.2                   |
| Total Temperature Probe              | TTM.1                   |
| Dewpoint Temp. Probe                 | TDM.1                   |
| Vertical Accelerometer               | AccZfilterI-GPS.1       |
| Altimeter                            | AltGPS.3                |
| INE Selection                        | 1                       |
| Differential Attack Pressure Probe   | PDALPHA.1               |
| Differential Sideslip Pressure Probe | PDBETA.1                |
| Dynamic Attack Pressure Probe        | PQALPHA.1               |
| Dynamic Sideslip Pressure Probe      | PQBETA.1                |

Flight Directory                      acdata/2021/MET/20210702H1

| Local Met Data        | Takeoff TNCA (1431Z) | Landing TNCA (0000Z) |
|-----------------------|----------------------|----------------------|
| Dynamic Corrections   |                      | Yes                  |
| AttackAngleIntercept  |                      | 2.307                |
| AttackAngleSlope      |                      | 6.07515              |
| SlipAngleIntercept    |                      | 0.237                |
| SlipAngleSlope        |                      | 7.04607              |
| AttackAngleIntercept2 |                      | 2.06219              |
| AttackAngleSlope2     |                      | 5.99068              |
| SlipAngleIntercept2   |                      | 0.125                |
| SlipAngleSlope2       |                      | 6.9873               |

Notes:

There were no edits made in the measured parameters used to calculate meteorological and navigational parameters.

Takeoff/Landing data: Data during landing and takeoff are potentially suspect. It is recommended that ground data not be used for scientific analysis.

| Expendable Type<br>----- | # deployed<br>----- | # good<br>----- | # transmitted<br>----- |
|--------------------------|---------------------|-----------------|------------------------|
| Dropsondes               | 16                  | 15              | 15                     |
| Test sondes              | 0                   | 0               | 0                      |
| AXBTs                    | 0                   | 0               | 0                      |
| AXCPs                    | 0                   | 0               | 0                      |
| AXCTDs                   | 0                   | 0               | 0                      |
| UAS                      | 0                   | 0               | 0                      |

Flight Director: Hathaway / Parrish  
Phone #: 863-500-3911

ACAT-4 Version = 7.4

## P-3 QC Checklist

|                    |                                                     |
|--------------------|-----------------------------------------------------|
| Overall Assessment | Minor instrument issue(s) - minimal mission impact. |
|--------------------|-----------------------------------------------------|

|                     |                    |                     |               |               |
|---------------------|--------------------|---------------------|---------------|---------------|
| Flight ID:          | 20210702H1         | Pressure Comparison |               |               |
| Flight Director(s): | Hathaway / Parrish |                     | T/O           | Land          |
| Mission:            | Tasked/Operational | Aircraft            | 1013.2        | N/A           |
| UWZ.d mean:         | 0.3                | Tower               | TNCA - 1014.0 | TNCA - 1010.0 |

|                      | Raw 1Hz Mean File Parameters                                 |                                                              |                                                              |                                               | C File Parameters                                          |                                          |
|----------------------|--------------------------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------|-----------------------------------------------|------------------------------------------------------------|------------------------------------------|
| ✓ Accelerometer      | ✓ AccAXI.1<br>✓ AccAXI.2<br>✓ AccAXI-GPS.1<br>✓ AccAXI-GPS.2 | ✓ AccAYI.1<br>✓ AccAYI.2<br>✓ AccAYI-GPS.1<br>✓ AccAYI-GPS.2 | ✓ AccAZI.1<br>✓ AccAZI.2<br>✓ AccAZI-GPS.1<br>✓ AccAZI-GPS.2 | ✓ AccZfilter-GPS.1<br>✓ AccZfilter-GPS.2      | ✓ AccZref                                                  |                                          |
| ✓ Altitude           | ✓ AltGPS.1<br>✓ AltGPS.2<br>✓ AltGPS.3<br>AltGPS.4           | ✓ AltI-GPS.1<br>✓ AltI-GPS.2                                 | ✓ AltPaADDU.1<br>✓ AltBCADDU.1                               | ✓ AltRA.1<br>✓ AltRA.2                        | ✓ ALTref<br>✓ ALTPA.d<br>✓ ALTGA.d                         | ✓ AltRA1.c<br>✓ AltRA2.c                 |
| ✓ Ground Speed       | ✓ GsXI-GPS.1<br>✓ GsXI-GPS.2                                 | ✓ GsYI-GPS.1<br>✓ GsYI-GPS.2                                 | ✓ GsZI-GPS.1<br>✓ GsZI-GPS.2                                 |                                               | ✓ GSXref<br>✓ GSYref<br>✓ GSZref                           |                                          |
| ✓ Lat / Lon          | ✓ LatGPS.1<br>✓ LatGPS.2<br>✓ LatGPS.3<br>✓ LatGPS.4         | ✓ LatI-GPS.1<br>✓ LatI-GPS.2                                 | ✓ LonGPS.1<br>✓ LonGPS.2<br>✓ LonGPS.3<br>✓ LonGPS.4         | ✓ LonI-GPS.1<br>✓ LonI-GPS.2                  | ✓ LATref<br>✓ LONref                                       |                                          |
| ✓ Pressure           | ✓ PDALPHA.1<br>✓ PDALPHA.2<br>✓ PDBETA.1<br>✓ PDBETA.2       | ✓ PQALPHA.1<br>✓ PQBETA.1                                    | X PQM.1<br>✓ PQM.2<br>✓ PQM.3<br>✓ PQM.4                     | ✓ PSM.1<br>✓ PSM.2<br>✓ PTM.1                 | ✓ PDLAPHAref<br>✓ PDBETAref<br>✓ PQALPHAref<br>✓ PQBETAref | ✓ PQMref<br>✓ PQ.c<br>✓ PSMref<br>✓ PS.c |
| ✓ Air Speed          | ✓ CasADDU.1                                                  | ✓ TasADDU.1                                                  | ✓ IasADDU.1                                                  |                                               | ✓ IAS.d                                                    | ✓ TAS.d                                  |
| ✓ Pitch / Roll       | ✓ PitchI.1<br>✓ PitchI.2<br>PitchI.3                         | ✓ PitchRatel.1<br>✓ PitchRatel.2<br>PitchRatel.3             | ✓ RollI.1<br>✓ RollI.2<br>RollI.3                            | ✓ RollRatel.1<br>✓ RollRatel.2<br>RollRatel.3 | ✓ PITCHref<br>✓ ROLLref                                    |                                          |
| ✓ Temp / Dewpt       | ✓ TTM.1<br>✓ TTM.2<br>X TTM.3                                | ✓ TDM.1<br>✓ TDM.2<br>X TDM.3                                | ✓ TRadD.1<br>✓ TRadS.1<br>TRadU.1                            |                                               | ✓ TD.c<br>✓ TDMref                                         | ✓ TTMref<br>✓ TA.d                       |
| ✓ Misc. (Must check) |                                                              |                                                              |                                                              |                                               | ✓ UWZ.d<br>✓ DPJ_WSZ<br>✓ HUM                              | ✓ WS.d<br>✓ WD.d                         |

| FLID_Mission_Documents.pdf:                        |
|----------------------------------------------------|
| ✓ Error Summary                                    |
| ✓ Crew Manifest                                    |
| ✓ QC Checklist                                     |
| ✓ Dropwindsonde Log(s) - AVAPS and FD if completed |
| ✓ Flight Track                                     |
| ✓ Miscellaneous FD Notes                           |

| QC Key        |                                     |
|---------------|-------------------------------------|
| Not checked   | <input type="checkbox"/>            |
| Valid         | <input checked="" type="checkbox"/> |
| Errors (note) | X                                   |

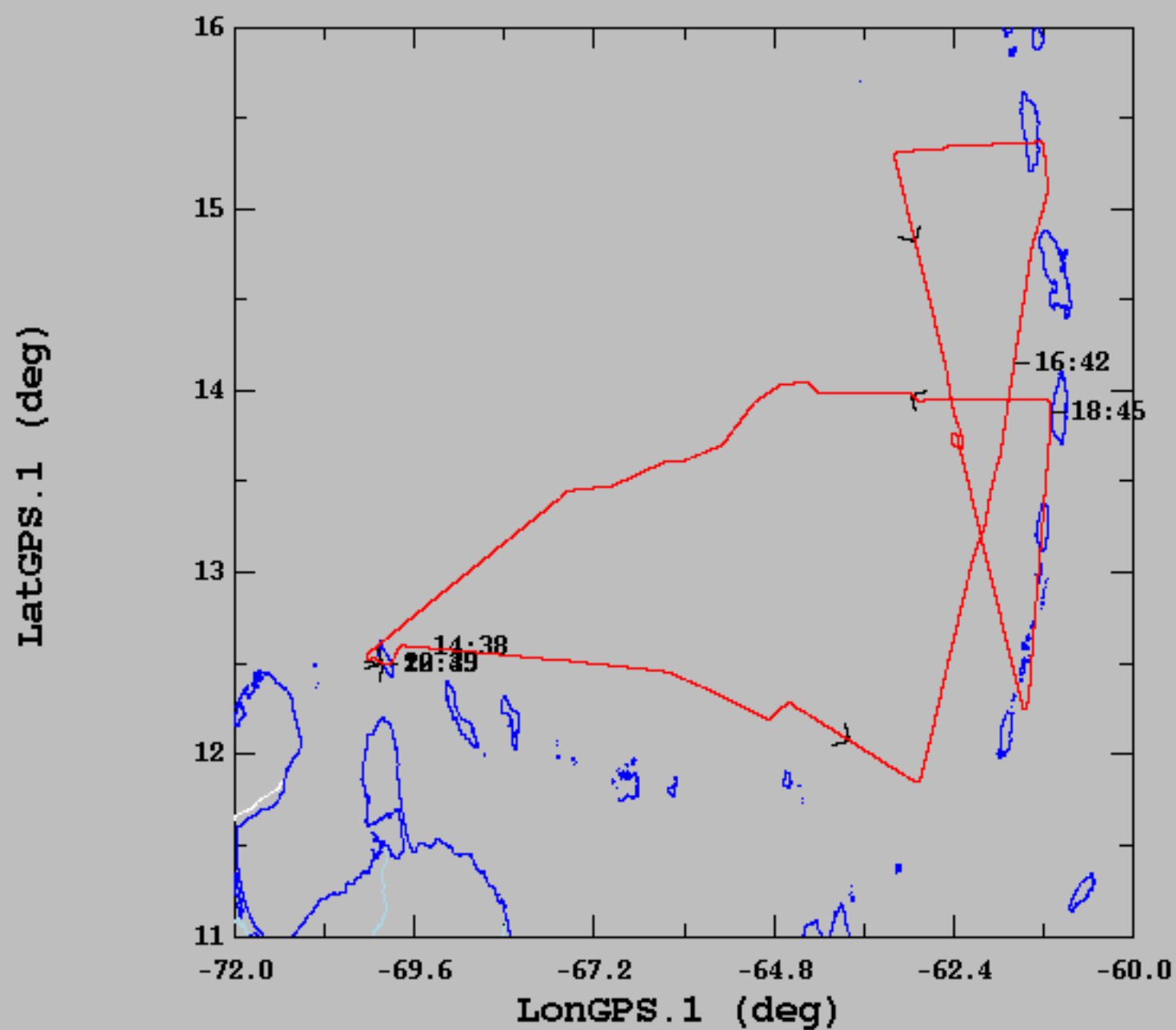
### NOTES:

- Used PQM.2 as source. PQM.1 unrepresentative through hour 3 of flight.
- TDM.1 set as reference. Spike at around hour 4.25 in TDM.1.

| AOC GPS Dropwindsonde Log                                                      |           |             |         |                                        |                         |             |                |
|--------------------------------------------------------------------------------|-----------|-------------|---------|----------------------------------------|-------------------------|-------------|----------------|
| Storm: Elsa                                                                    | Flight ID | 20210702H1  |         | Dropsonde Scientist: Sellwood / Wadler | AVAPS Operator: Warneke |             |                |
| Mission ID                                                                     | 0205A     |             |         | Take off: 1431Z Aruba                  | Landing:                |             |                |
|                                                                                |           |             |         |                                        |                         |             |                |
| Sonde #                                                                        | Ob #      | Launch Time | Channel | Lat/Lon                                | Sfc. Pressure           | Lowest Wind | Environment    |
| 1                                                                              |           | 1609        | 1       | 12.08N 62.7W                           | 1011.1                  | 210/10 10m  | IP SW          |
| removed lat/lon from 136-140 sec and 211sec due to GPS satellite drop outs     |           |             |         |                                        |                         |             |                |
| 2                                                                              | 2         | 1622        | 2       | 12.88N 62.24W                          | 1008.4                  | 345/10 10m  | Mid SSW        |
| good drop                                                                      |           |             |         |                                        |                         |             |                |
| 3                                                                              | 3         | 1633        | 3       | 13.61N 78.36W                          | 996.6                   | 065/77 12m  | Center?        |
| set end time .75 seconds early / did not mark as center drop due to high winds |           |             |         |                                        |                         |             |                |
| 4                                                                              | 4         | 1647        | 4       | 14.5N 61.45W                           | 1011.1                  | 100/40 10m  | Mid NNE        |
| good                                                                           |           |             |         |                                        |                         |             |                |
| 5                                                                              | 5         | 1659        | 5       | 15.3N 61.17W                           | Na                      | 088/10 ?    | End NE         |
| set heights missing/ ended early                                               |           |             |         |                                        |                         |             |                |
| 6                                                                              | 6         | 1721        | 6       | 15.31N 63.12W                          | 1011.8                  | 282/31 10m  | End NW         |
| good                                                                           |           |             |         |                                        |                         |             |                |
| 7                                                                              | 7         | 1734        | 7       | 14.67N 62.81W                          | 1010.6                  | 070/41 10m  | Mid NNW        |
| good - interesting high winds and dry layer near top of sounding               |           |             |         |                                        |                         |             |                |
| 8                                                                              | 9         | 1755        | 1       | 13.8N 62.4W                            | 993                     | 155/24 10m  | Center 18Z fix |
|                                                                                |           |             |         |                                        |                         |             |                |
| 9                                                                              | 10        | 1809        | 2       | 13.04N 61.92W                          | 1009.6                  | 165/29 10m  | Mid SSE        |
| set end to 272.50                                                              |           |             |         |                                        |                         |             |                |
| 10                                                                             | 11        | 1823        | 3       | 12.28N 61.47W                          | 1010.9                  | 160/21 10m  | End SE         |
| good drop                                                                      |           |             |         |                                        |                         |             |                |
| 11                                                                             | 12        | 1846        | 4       | 13.95N 61.16W                          | 1012.8                  | 140/28 10m  | End E          |
| ended at 271.50 interesting thermo structure                                   |           |             |         |                                        |                         |             |                |
| 12                                                                             | 13        | 1857        | 5       | 13.96N 61.97W                          | 1011.6                  | 141/42 117  | Mid E          |
|                                                                                |           |             |         |                                        |                         |             |                |
| 13                                                                             | 14        | 1910        | 6       | 13.98N 62.96W                          | 998.1                   | 175/46 10m  | Center         |
| good drop                                                                      |           |             |         |                                        |                         |             |                |
| 14                                                                             | 15        | 1919        | 7       | 13.99N 63.67W                          | 1005.7                  | 040/29 10m  | Mid W          |
| good drop                                                                      |           |             |         |                                        |                         |             |                |

|             |    |      |   |               |        |            |       |
|-------------|----|------|---|---------------|--------|------------|-------|
| 15          | 17 | 1932 | 6 | 14.03N 64.67W | 1009.9 | 005/15 10M | End W |
| last report |    |      |   |               |        |            |       |

07/02/2021, 12:35:07-20:49:00



|                         | mean   | sigma | min    | max    |
|-------------------------|--------|-------|--------|--------|
| LatGPS.1 (deg), 1 s/sec | 13.16  | 0.91  | 11.85  | 15.37  |
| LonGPS.1 (deg), 1 s/sec | -65.69 | 3.43  | -70.23 | -61.09 |