

N42RF ERROR SUMMARY  
20190621H1

Flight ID: 20190621H1

| 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.2                   |
| 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/2019/MET/20190621H1

| Local Met Data       | Takeoff KSLN (1352Z) | Landing KLAL (1700Z) |
|----------------------|----------------------|----------------------|
| Dynamic Corrections  |                      | Yes                  |
| AttackAngleIntercept |                      | 2.31252              |
| AttackAngleSlope     |                      | 6.06758              |
| SlipAngleIntercept   |                      | 0.4295               |
| SlipAngleSlope       |                      | 7.17033              |

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.

Reposition flight back to KLAL from KSLN at conclusion of TORUS mission flights. PDAlpha.2 inoperative. PQM.1 exhibited multiple, long-duration failures in flight. TTM.3 unavailable. TRadU.1 unavailable. During descent, between 16:53 and 16:54Z, dewpoint sensors became unrepresentative, leading to an erroneous reported supersaturation as reflected in humidity values.

| Expendable Type<br>----- | # deployed<br>----- | # good<br>----- | # transmitted<br>----- |
|--------------------------|---------------------|-----------------|------------------------|
| Drosondes                | 0                   | 0               | 0                      |
| Test sondes              | 0                   | 0               | 0                      |
| AXBTS                    | 0                   | 0               | 0                      |
| AXCPs                    | 0                   | 0               | 0                      |
| AXCTDs                   | 0                   | 0               | 0                      |
| UAS                      | 0                   | 0               | 0                      |

Flight Director: Carpenter / Holmes  
Phone #: 863-500-3901

ACAT-4 Version = 7.2.2

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

| FLIGHT INFORMATION                |            |                            |       | CREW MANIFEST |                                                        |              | MISSION INFORMATION     |                        |            |     |      |
|-----------------------------------|------------|----------------------------|-------|---------------|--------------------------------------------------------|--------------|-------------------------|------------------------|------------|-----|------|
| FLT ID:                           | 20190621H1 | FLT #:                     |       | AC:           | Mitchell                                               | Scientists:  | Pressure                |                        | Dropsondes |     |      |
| From:                             | KSLN       | ETD:                       | 14:00 | CP(s):        | Legidakes                                              |              | A/C Takeoff             | 958.9                  | Good       | Bad | Sent |
| To:                               | KLAL       | ETA:                       | 18:00 |               |                                                        |              |                         |                        |            |     |      |
| Block Time                        |            | Flight Time                |       | Nav(s):       | Freeman                                                |              | ASOS Takeoff            | SLN 1353Z<br>959.5 mb  | BTs        |     |      |
| In:                               | 17:09      | Land:                      | 17:00 | FE(s):        | Heystek                                                |              | A/C Land                | 1013.7                 | Good       | Bad | Sent |
| Out:                              | 13:47      | T/O:                       | 13:52 |               | Lalonde                                                |              |                         |                        |            |     |      |
| Total:                            | 3.37       | Total:                     | 3.13  | FD(s):        | Carpenter                                              | Visitors:    | ASOS Land               | LAL 1650Z<br>1014.7 mb | 0          | 0   | 0    |
|                                   |            |                            |       |               | Holmes                                                 |              |                         |                        |            |     |      |
| Sponsoring Org:                   |            | NSSL                       |       | SEB:          | Patel                                                  | Sloan (PM)   | Storm Number ID:        |                        | N/A        |     |      |
| Program:                          |            | PBX                        |       |               | Warnecke                                               | Klippel (MX) | (ie: AL072012)          |                        |            |     |      |
| Purpose:                          |            | End of TORUS repo. to KLAL |       | SSA:          | Mascaro                                                | Olney (MX)   | TCP0D/WSP0D Mission     |                        | N/A        |     |      |
|                                   |            |                            |       |               |                                                        |              | (ie: NOAA2 2418A SANDY) |                        |            |     |      |
|                                   |            |                            |       | AVAPS:        |                                                        |              | OBSERVATIONS            |                        |            |     |      |
| AS REQUIRED BY ORM                |            |                            | Y     | N             | REMARKS                                                |              | Fix Number              | Obs Number             | Fix Time   | SLP |      |
| VOLCANIC ASH                      |            |                            |       | X             |                                                        |              |                         |                        |            |     |      |
| SCIENCE MISSION WITHIN BDRY LAYER |            |                            |       | X             |                                                        |              |                         |                        |            |     |      |
| LACK OF PRECIPITATION             |            |                            | X     |               |                                                        |              |                         |                        |            |     |      |
| RELATIVE HUMIDITY ≥ 80%           |            |                            |       | X             |                                                        |              |                         |                        |            |     |      |
| 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             |                                                        |              |                         |                        |            |     |      |
| Gmax:                             |            |                            |       | Gmin:         | *Highlighted items must be completed before departure. |              |                         |                        |            |     |      |
| Remarks:                          |            |                            |       |               |                                                        |              |                         |                        |            |     |      |
|                                   |            |                            |       |               |                                                        |              |                         |                        |            |     |      |
|                                   |            |                            |       |               |                                                        |              |                         |                        |            |     |      |

## P-3 QC Checklist

|                    |                   |
|--------------------|-------------------|
| Flight ID:         | 20190621H1        |
| Flight Director(s) | Carpenter, Holmes |
| UWZ.d mean:        | 0.07              |

| Pressure Comparison |                    |                     |
|---------------------|--------------------|---------------------|
|                     | T/O                | Land                |
| Aircraft            | 958.9              | 1013.7              |
| Tower               | SLN 1353Z 959.5 mb | LAL 1650Z 1014.7 mb |

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

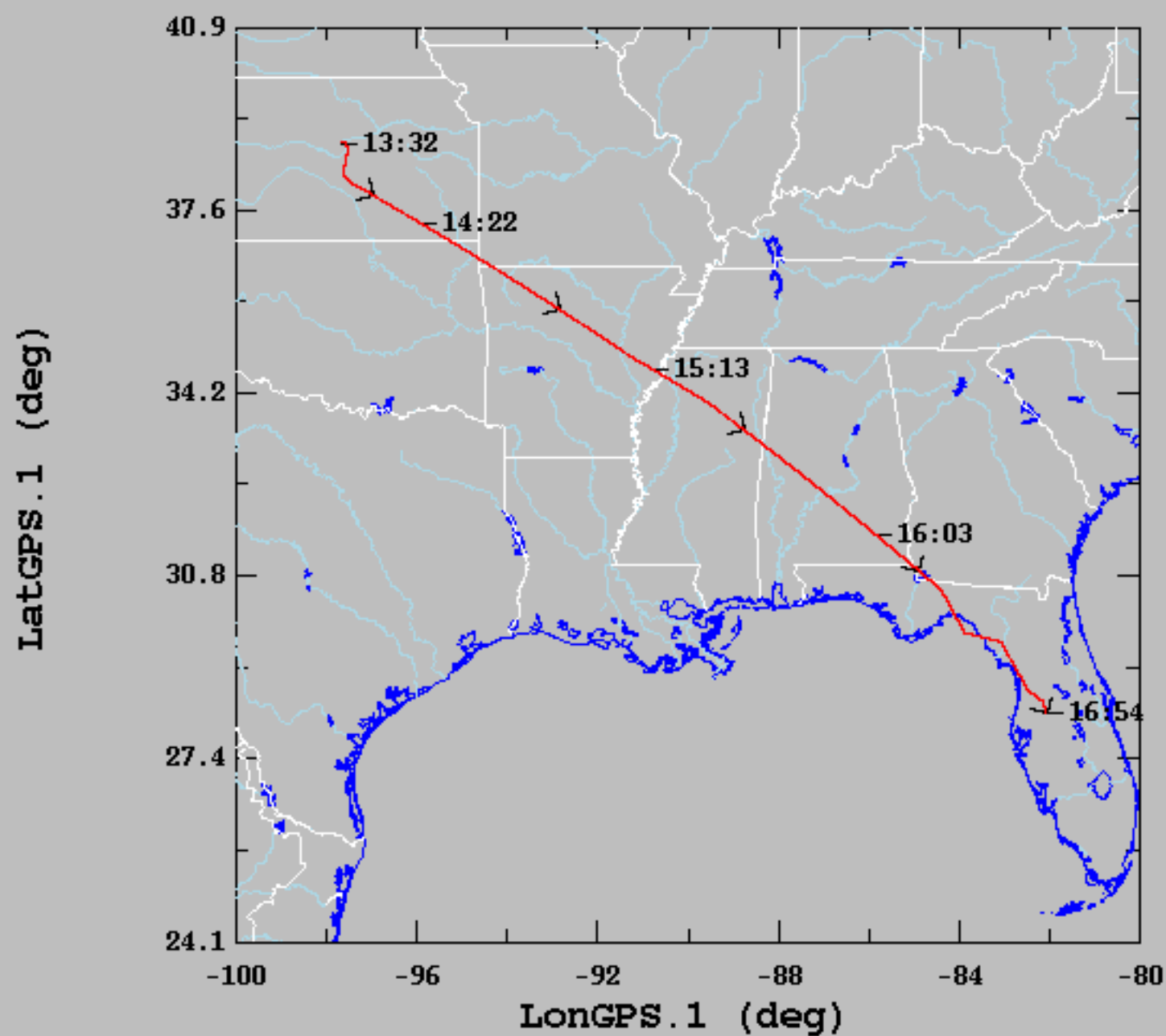
| FLID_Mission_Documents.pdf:                        |
|----------------------------------------------------|
| ✓ Error Summary                                    |
| ✓ Crew Manifest                                    |
| ✓ QC Checklist                                     |
| ✗ Dropwindsonde Log(s) -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

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

### NOTES:

PDALPHA.2 INOP.  
PQM.1 frequent, long-duration failures.  
TTM.3 unavailable.  
TRadU.1 unavailable.  
Moisture quantities unrepresentative between approximately 1653 and 1654Z.

2019-06-21, 13:32:19-16:54:09



|                         | mean   | sigma | min    | max    |
|-------------------------|--------|-------|--------|--------|
| LatGPS.1 (deg), 1 s/sec | 34.35  | 3.27  | 28.27  | 38.83  |
| LonGPS.1 (deg), 1 s/sec | -90.65 | 5.27  | -97.65 | -82.03 |