Payload 1 Daily Flight Report

Date: 2021-06-18
Flight Campaign ID: P1C2
Airport, FBO ID, City: Asheville Regional Airport (KAVL) - Fletcher, NC
Aircraft: N331AR

Domain: 07 (Appalachians & Cumberland Plateau)
Sites Flown: GRSM_P1 (Great Smoky Mountains National Park Priority 1)
Days left in Domain: 12

Report Author: Michael Wussow
Lidar Operators: Michael Wussow
Spectrometer Operators: Cameron Chapman
Pilots: Justin Eddington, Paul Nunemann
Flight Hours: 02:39
Hours until maintenance: 51.98
GPS Instruments: 05 - FBO_KAVL, AOP_GRSM

Summary
High pressure and cool temperatures created favorable conditions this morning. This enabled the crew to finally collect data at the Great Smoky Mountains site during a brief window before cumulus clouds developed. All of the airshed priority lines were collected under “green” conditions. The variable altitude flight plan was flown successfully and skillfully by the pilots. Luckily air conditions were very smooth and stable, adding to our success in trying the variable altitude method.

Concerns
- One eye safety shutoff occurred today at the very north end of line 42. No clouds were below the aircraft.
- The lidar system was manually started ~1km into the line on line 44 to avoid a cumulus cloud on the ridge line.
- Remnants of Tropical Storm 3, currently in the Gulf of Mexico are likely to bring wet weather to the area on Sunday.

Comments
- We are continuing to process data from previous flights this week as well as transferring files to Optech for input on lidar issues.
- P1C2_RAID_04 will most likely be shipped tomorrow after verification is complete.

Daily Coverage
Estimated Cloud Cover Key

<table>
<thead>
<tr>
<th></th>
<th>Green: 0-10%</th>
<th>Yellow: 11-50%</th>
<th>Red: &gt;50%</th>
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<td>D07</td>
<td>GRSM_P1</td>
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Total number of lines flown: 12
Flight Screenshots

Lidar Coverage

NIS Coverage
Hazy but clear conditions over Great Smoky Mountains National Park

Cumulative Domain Coverage

**D07|GRSM_P1 (Great Smoky Mountains National Park Priority 1)**

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- Flown: 19% (13/69)
- Green: 14% (10/69)
- Yellow: 4% (3/69)
- Red: 0% (0/69)

**D07|GRSM_P2 (Great Smoky Mountains National Park Priority 2)**

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- Flown: 0% (0/20)
- Green: 0% (0/20)
- Yellow: 0% (0/20)
- Red: 0% (0/20)
### D07 MLBS (Mountain Lake Biological Station)

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- Flown: 100% (34/34)
- Green: 100% (34/34)
- Yellow: 0% (0/34)
- Red: 0% (0/34)

### D07 N07A (D07 Nominal Runway)

- Flown: 100% (1/1)
- Green: 0% (0/1)
- Yellow: 0% (0/1)
- Red: 100% (1/1)

### D07 ORNL (Oak Ridge National Laboratory)

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- Flown: 100% (61/61)
- Green: 38% (23/61)
- Yellow: 62% (38/61)
- Red: 0% (0/61)

### Weather Forecast

**Gatlinburg, TN**

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<tbody>
<tr>
<td><strong>Sat 6/19</strong></td>
<td>**87°</td>
<td>67°F**</td>
<td>**86°</td>
<td>71°F**</td>
<td>**89°</td>
<td>67°F**</td>
</tr>
<tr>
<td><strong>Mostly Cloudy</strong></td>
<td>Light Rain</td>
<td>PM Thunderstorms</td>
<td>Showers</td>
<td>Mostly Sunny</td>
<td>Mostly Sunny</td>
<td>AM Showers</td>
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<td><strong>0 in</strong></td>
<td><strong>0.1 in</strong></td>
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<td><strong>0.48 in</strong></td>
<td><strong>0 in</strong></td>
<td><strong>0 in</strong></td>
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Flight Collection Plan for 19 June 2021

Flyority 1
Collection Area: Great Smoky Mountains National Park (GRSM) – Priority 1 Flight Box
Flight Plan Name: D07_GRSM_R1_P1_P2_v5_PRM_Var_Alt.xml
On-Station Time: 1400 – 2100 UTC / 1000 – 1700 L

Flyority 2
Collection Area: Oak Ridge National Laboratory (ORNL)
Flight Plan Name: D07 ORNL_C1_P1_v9_PRM_highPRF.xml
On-Station Time: 1400 – 2100 UTC / 1000 – 1700 L
*only if green conditions exist

Flyority 3
Collection Area: Great Smoky Mountains National Park (GRSM) – Priority 2 Flight Box
Flight Plan Name: D07 GRSM_R1_P1_P2_v5_PRM_Var_Alt.xml
On-Station Time: 1400 – 2100 UTC / 1000 – 1700 L
Crew: Cam & Mike