

GeoTASO Flights for OWLETS:

On July 7th and 8th, the LaRC UC-12B conducted 3 science flights over the Hampton Roads area with the GeoTASO instrument. GeoTASO is a UV/VIS hyperspectral mapping instrument with the capabilities of retrieving trace gas pollutants and is a testbed for TEMPO retrievals. Our flight plan was to raster over the Hampton Roads area including 9 raster lines (with a swath width of ~7km or so at an altitude of 28 kft) starting in the north near the CBBT and ending south of Richmond, and then we flew a quick overpass to the ground site near Suffolk before descending.

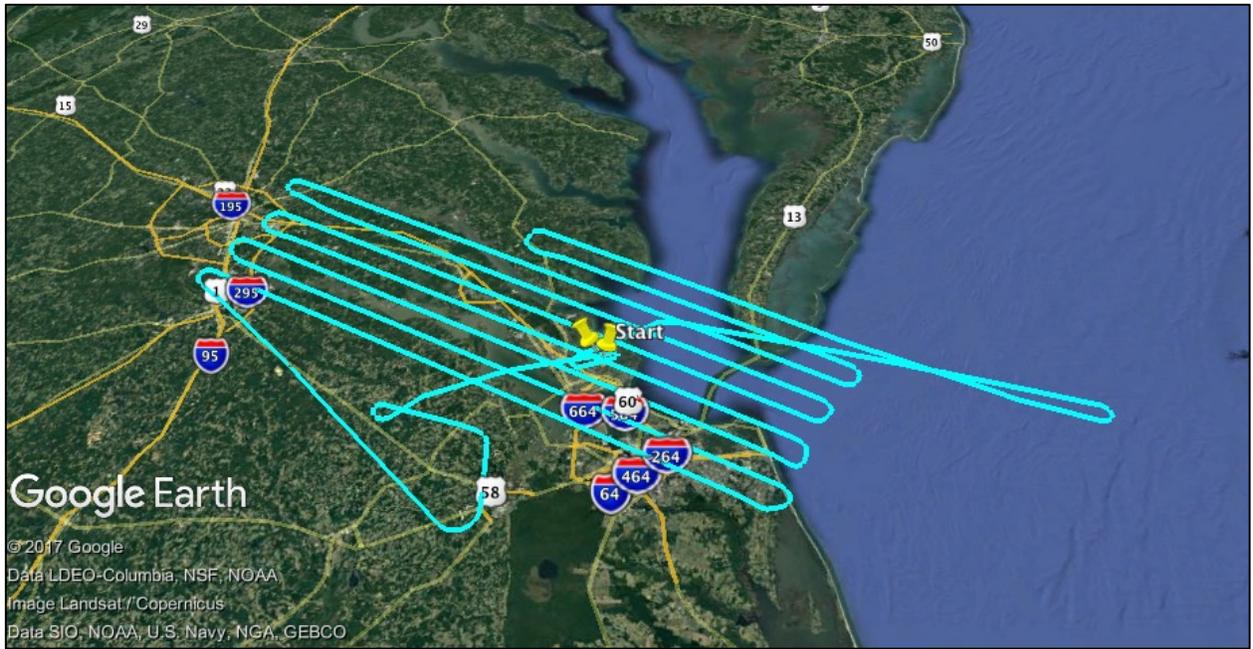
All parts of the instrument worked nominally during each flight. Zenith observations were taken over the NW side (near Richmond) as ATC allowed for 1 minute/4 mile extensions at the end of our flight plan lines during flight. The rest of the observations were nadir views.

During flights 2 and 3, there was a military exercise going on off the coast of Virginia Beach, so line 6 and 7 had to be cut a few miles short (see flight 2 and 3 tracks below to this shortened path. Line numbers start on the north side and increase as we raster south). Other than that, we hit our objectives unless there were clouds over the sites at the time of overpass.

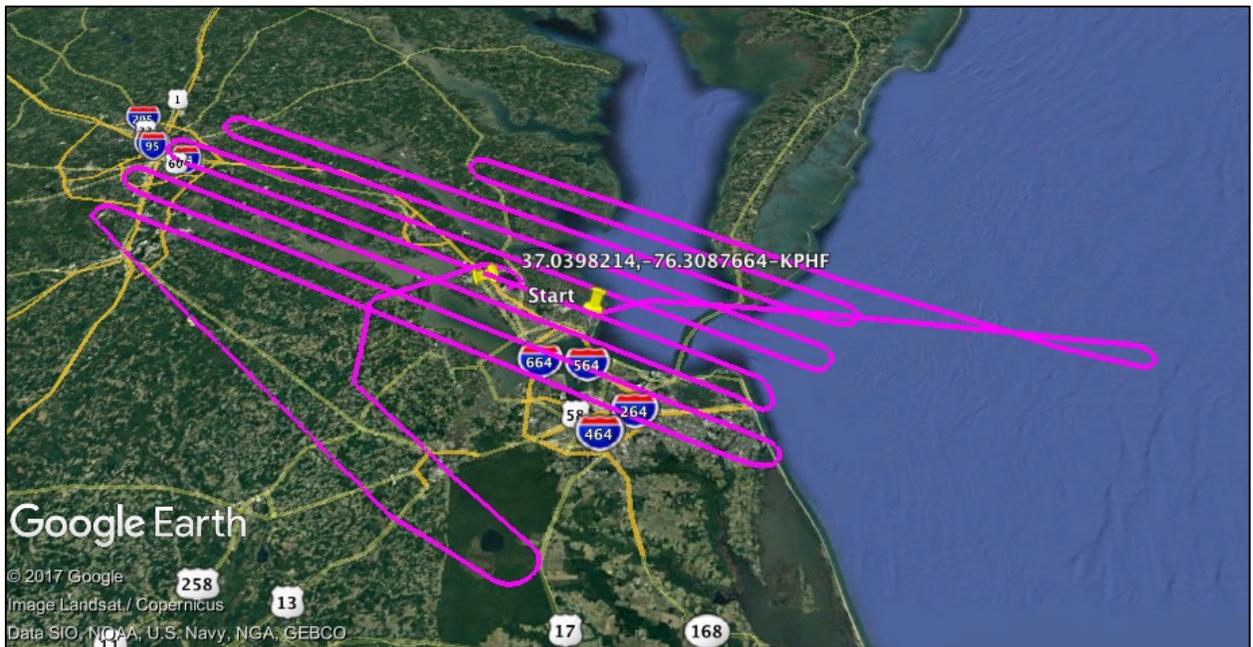
FLIGHT NUMBER	TAKE-OFF TIME (LT)	TAKE-OFF LOCATION	LANDING TIME(LT)	LANDING LOCATION
1	10:17	LaRC	14:18	LaRC
2	08:10	LaRC	12:03	PHF
3	13:00	PHF	16:57	PHF

Flight 1 started with mostly clear conditions, but increased to approximately 50% cloudy through the flight with period of completely cloudy conditions. On Saturday, cloud conditions were much more favorable for trace-gas remote sensing with only spots of cumulus periodically. There were clear views of the bridge tunnels in the Hampton Roads region for all flights.

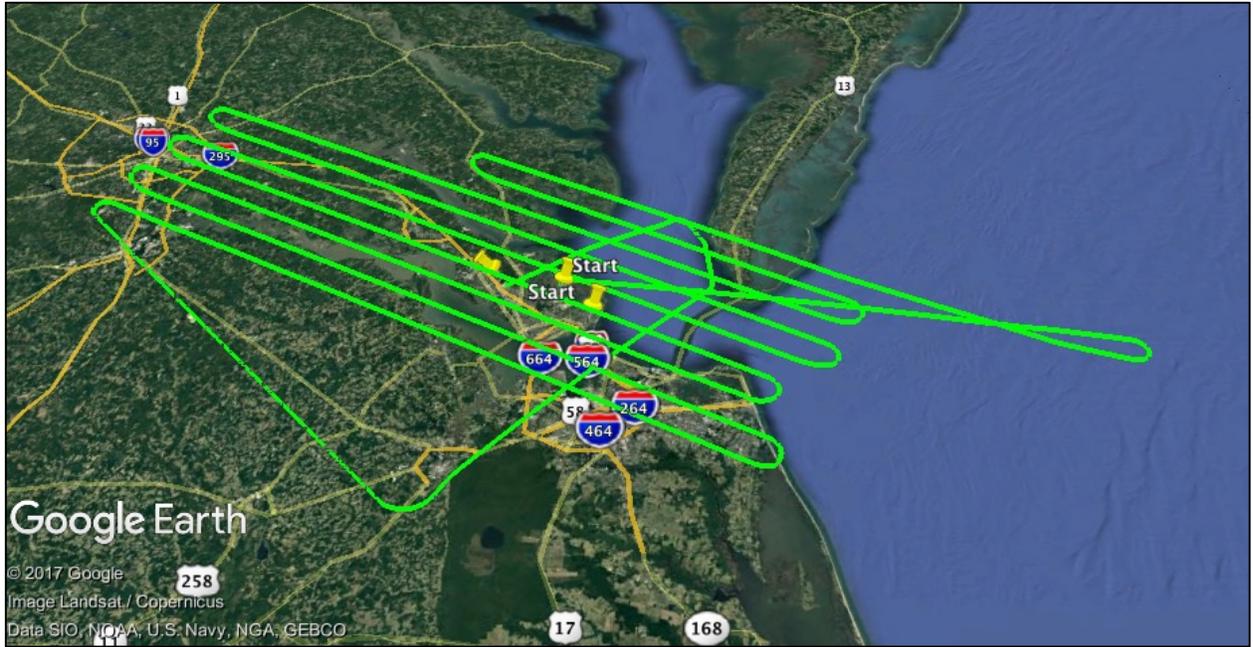
Level 1b processing and a preliminary NO₂ retrieval are still needing to be done.



Flight 1 track



Flight 2 track



Flight 3 track