

Flight Report for 3 August WB-57 Flight

Takeoff: 1220 UT
Recovery: 1645 UT

Objectives:

- Measure trace gases, water vapor, isotopes, and aerosols in the upper troposphere and lower stratosphere
- Sample aged stratospheric air
- Self-sample WB-57 plume without contrail
- Sample high altitude midlatitude cirrus if possible

Report:

Shortly after takeoff, the aircraft ascended to 41 kft and executed the MMS pitch and yaw maneuvers. Next, they climbed to 51 kft, and began a cruise climb en route to the single waypoint in Tennessee. Before reaching the far point, they began a descent, reaching 41 kft at the turnaround point, potentially sampling outflow from a mesoscale convective system. On the return to ELL, the aircraft cruised at 51 kft and then climbed to a maximum altitude above 58 kft before a spoiler-only descent. The flight should provide useful midlatitude lower stratospheric tracer measurements that will help with interpretation of the tropical tracer measurements from the Costa Rica flights.

The Hoxitope fail light came on during the descent at the northernmost point. It was recycled and cleared.

<i>Instrument</i>	<i>Status</i>
MMS	OK
NAV recorder	OK
Reveal A	OK, frequent dropouts
FCAS, NMASS	OK

<i>Instrument</i>	<i>Status</i>
SP2	OK
Ozone New (UAS)	OK
Ozone	OK
PT	OK
Frost point water vapor	<i>OK, still being tuned up</i>
JLH Water Vapor	OK
HW Harvard Water Vapor	OK
ICOS	OK
HOXItope	Low laser power
CLH Total Water	OK
CO ₂	OK
NO/NO _y	NO_y channel hard fail NO collected data
CAFS	OK
2DS,CPI, CEM (Transmissometer)	2DS, CPI OK
CAPS, CSI, CDP	OK, CDP failed
PANTHER	OK, GC working
WAS Whole Air	OK
ARGUS CO, CH ₄	OK
MTP	<i>removed: weight limit right pod</i>