

## Flight Report for 3 August WB-57 Flight

Takeoff: 1220 UT  
Recovery: 1645 UT

### Objectives:

- Sample outflow cirrus and trace gases from tropical convection
- Measure trace gases, water vapor, isotopes, and aerosols in the upper troposphere and lower stratosphere

### Report:

Shortly after takeoff, the aircraft ascended to 53 kft, and we redirected the to a pattern in outflow cirrus south of Costa Rica. A racetrack was flown with legs at 39, 37, and 35 kft, and then at 37 kft again. The 35 kft leg was done immediately after the DC-8 had flown at that level. The 39 kft leg was near cloud top, and the 35 kft leg was deep in the cloud. Next the racetrack pattern was reset to get into streaming outflow cirrus and avoid developing cells. Legs at 37 and 39 kft were flown. Lastly, the aircraft cruise climbed to maximum altitude and zoomed to over 60 kft, followed by a spoiler-only descent into SJO.

The objectives of the flight were met. Upper tropospheric outflow anvil cirrus was sampled during the majority of the flight, with relatively low altitude legs to address the issue of large-crystal shattering at instrument inlets. The flight provided a full profile from well into the stratosphere down to below the TTL south of San Jose.

Real-time information from the lidars onboard the DC-8 and ER-2 indicated cirrus up to about 15-16 km where the WB-57 was spiraling. We should get our first TTL cirrus data from the transit, in addition to the tracer profiles.

The MMS fail light went on, and it was recycled and cleared. Hoxitope and CAFS lower fail lights went on during the final descent.

Flight: 20070805 microphysics flight

Launch: 1415 UT

Recovery: 1710 UT

Pilot: Bill Rieke

Backseat: John Bain

<i>Instrument</i>	<i>Status</i>
MMS	OK
NAV recorder	<b>OK</b>
Reveal A	OK
FCAS, NMASS	OK
SP2	OK
Ozone New (UAS)	<i>not present in Costa Rica</i>
Ozone	OK
PT	OK
Frost point water vapor	<i>OK, being tuned up</i>
JLH Water Vapor	OK
HW Harvard Water Vapor	OK
ICOS	OK
HOXItope	OK
CLH Total Water	OK
CO <sub>2</sub>	OK
NO/NO <sub>y</sub>	<b>NO<sub>y</sub> channel hard fail NO not running</b>
CAFS	OK
2DS,CPI, CEM (Transmissometer)	2DS, CPI OK
CAPS, CSI, CPP	OK
PANTHER	OK
WAS Whole Air	OK
ARGUS CO, CH <sub>4</sub>	OK
<b><i>MTP</i></b>	<i>removed: weight limit right pod</i>