

**TC<sup>4</sup> DC-8 Science Flight – Cloud ITCZ Flight**  
**24 July 2007**  
**Prepared by Mark Schoeberl and Eric Jensen**

**Mission Objectives**

Sampling an ITCZ system. First a low-level run through the boundary layer around the system, then ascend through the system, going through the convective cores. Then we will probe the cirrus outflow. We plan to return across Panama looking for dust and then return to base. Flight time 6 hours.

Takeoff ~6:50 am

Boundary layer run until about 7:30 am, then ascended to 20kft. Ozone 20-25 ppb in the whole region.

Began descending for boundary layer run. When entering some cloud, the plane was struck by lightning twice in a rapidly developing system.

Descent at 1500 ft/min was not fast enough, so we did not enter the boundary layer until the end of the waypoint. Turned back did the run again.

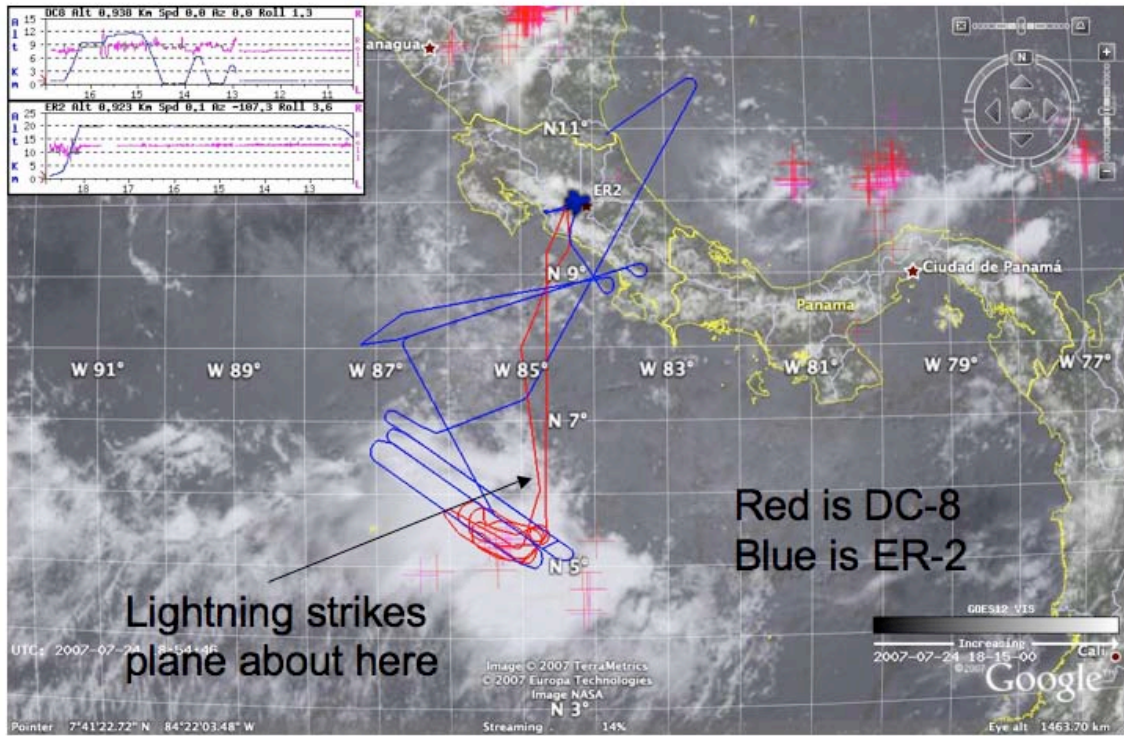
Ascended to 36 kft to probe the cirrus layer. In and out of anvils at 30 kft, then ascended to 36 kft – fairly rough – apparently we penetrated the core. Underflew the ER-2 quite a bit.

9:46 am – Mission aborted by direction from ground because of possible damage.

DC-8 is down to assess damage.

All instruments worked pretty well, although CAPS was fried by the lightening strike. Best run yet for REVEAL. Had difficulties coordinating using Xchat with multiple channels and multiple directions from ground control.

- Mark Schoeberl and Eric Jensen



Heading into cirrus on the DC-8



**Convective development off wing**