

TC4 ER-2 Science Flight: July 22, 2007

Preliminary Flight Report

Flight Scientists: P. Newman, S. Platnick

Sortie: 07-9020

Pilot: Dave Wright

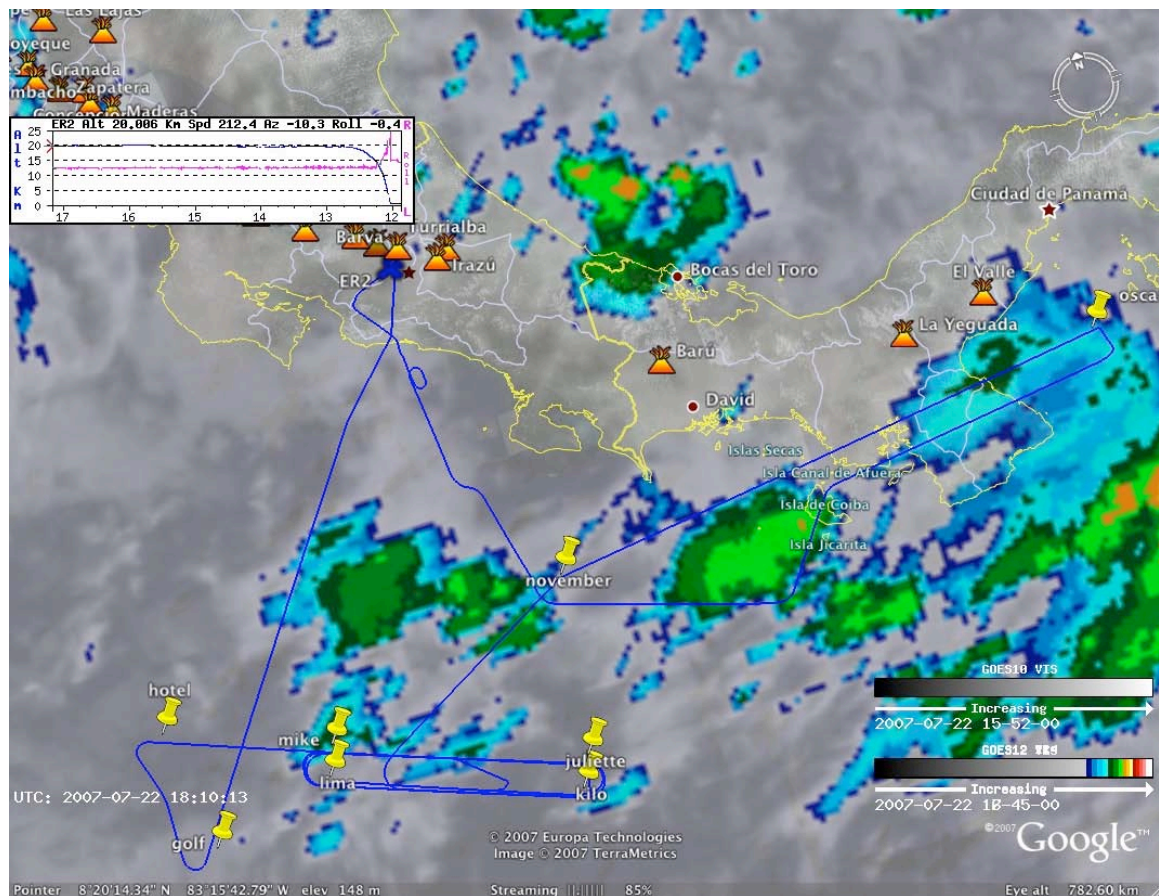
Takeoff (MROC): 1203 UTC (6:03 AM local)

Landing (MROC): 1757 UTC (11:57 PM local)

Duration: 5.9 hours

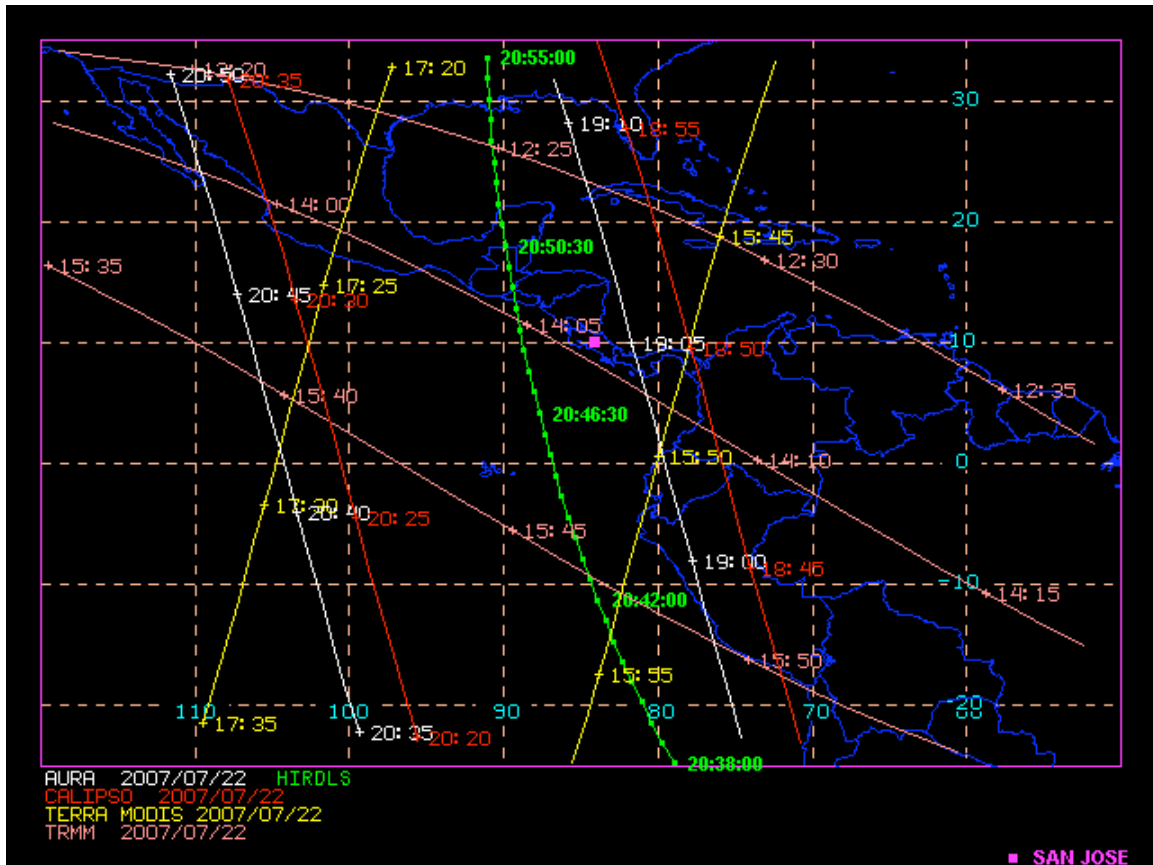
Objectives:

- To perform coordinated cloud sampling of maritime cirrus shield with DC-8 and ER-2.
- To sample boundary layer/free troposphere air feeding convection
- To sample cloud outflow



Satellite Coordination:

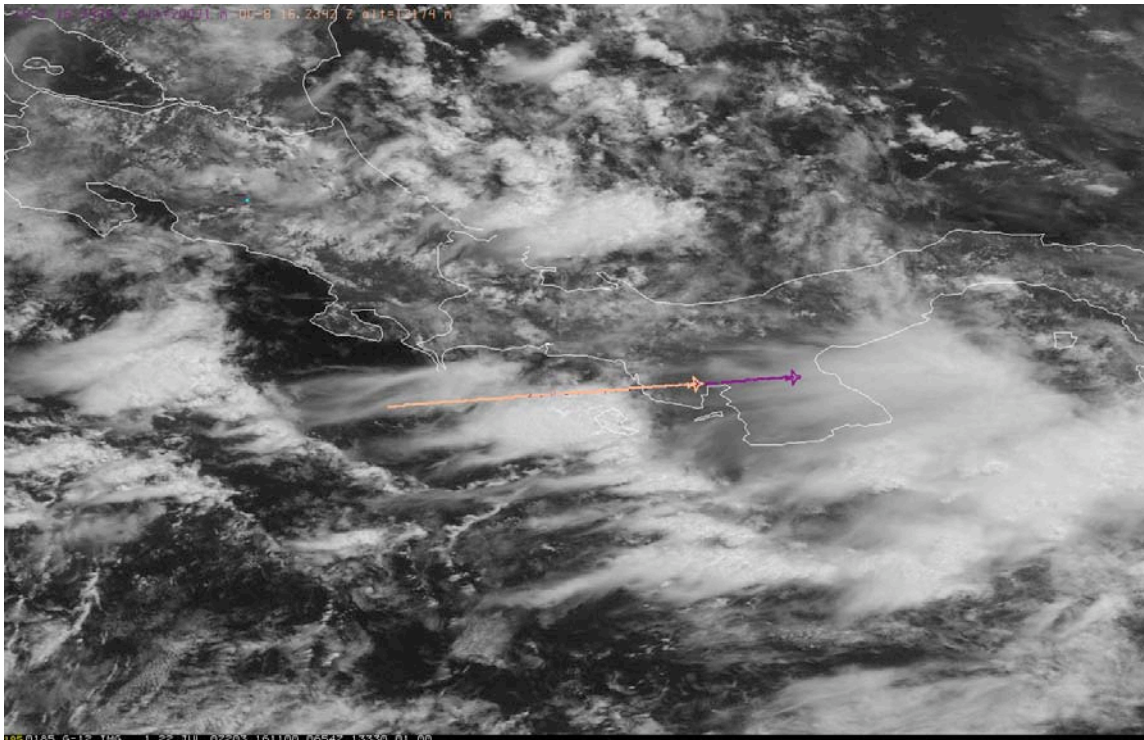
Terra overpass at 15:48 UT just to the east of the ER-2 racetrack (192° heading), with the racetrack positioned midway between the TRMM overpasses. See image below (Rabindra Palikonda, LaRC).



Flight Plan Summary (see map):

Takeoff at 1203 UT (6:03 AM local time). The ER-2 flew SW towards waypoint golf on the chart. At waypoint golf, the pilot turned north to waypoint hotel and then flew a SE track to waypoint juliet. The ER-2 then began orbiting the racetrack marked with waypoints juliet-kilo-lima-mike. This racetrack was immediately SW of convective cores. The CPL data showed cirrus at approximately 12.5 km. After one full circuit, the ER-2 turned short of waypoint juliet in order to link up with the DC-8. After 2 circuits (4 total), the ER-2 turned NE towards waypoint november and then flew down to waypoint oscar in the Panama bight. In the visible imagery (see below), the November-oscar track has streaming cirrus coming up from the direction of the Panama bight. Again, the preliminary CPL data showed that the cirrus was around 12.5-13 km. During the return track from oscar back to November, the ER-2 was redirected

SW to overfly a convective core. After hunting for this core, the ER-2 returned to MROC, and landed at 1750 UT (in the chocks at 1757 UT).



Proposed Plan:

Proposed Waypoints:

MROC	10° 00'N	84° 13'W	12:00
A	5° 45'N	87° 54'W	12:55
B	5° 53'N	85° 43'W	13:17
C	4° 35'N	84° 25'W	13:34
D	4° 54'N	84° 06'W	13:40
E	6° 12'N	85° 24'W	13:57
F	9° 30'N	80° 09'W	17:14

ER-2 Science Instrument Payload and Status:

Instrument	Status	Notes
CPL Cloud Physics Lidar	G	
CRS Cloud Radar System	G	
EDOP ER-2 Doppler Radar	G	
AMPR Advanced Microwave Precipitation Radiometer	G	
CoSSIR Compact Scanning Sub-mm wave Imaging Radiometer	NA	Balasted out
MAS MODIS Airborne Simulator	G	
S-HIS Scanning High Resolution Interferometer	G	Failed at 1334, worked fine for the rest of the flight
IR Radiometer Broadband flux radiometer (nadir & zenith)	G	
SSFR Solar Spectral Flux Radiometer (nadir & zenith)	G	
MVIS video camera	G	
MTP Microwave Temperature Profiler	G	

G = good; P = partial data collected; F = failure, no data