TC4 ER-2 Science Flight: July 22, 2007
Tentative Flight Plan

Flight Scientists: P. Newman, S. Platnick
Sortie: 07-9021
Pilot: Dave Wright

Takeoff (MROC): 1200 UTC (6:00 AM local)
Landing (MROC): 1800 UTC (12:00 PM local)

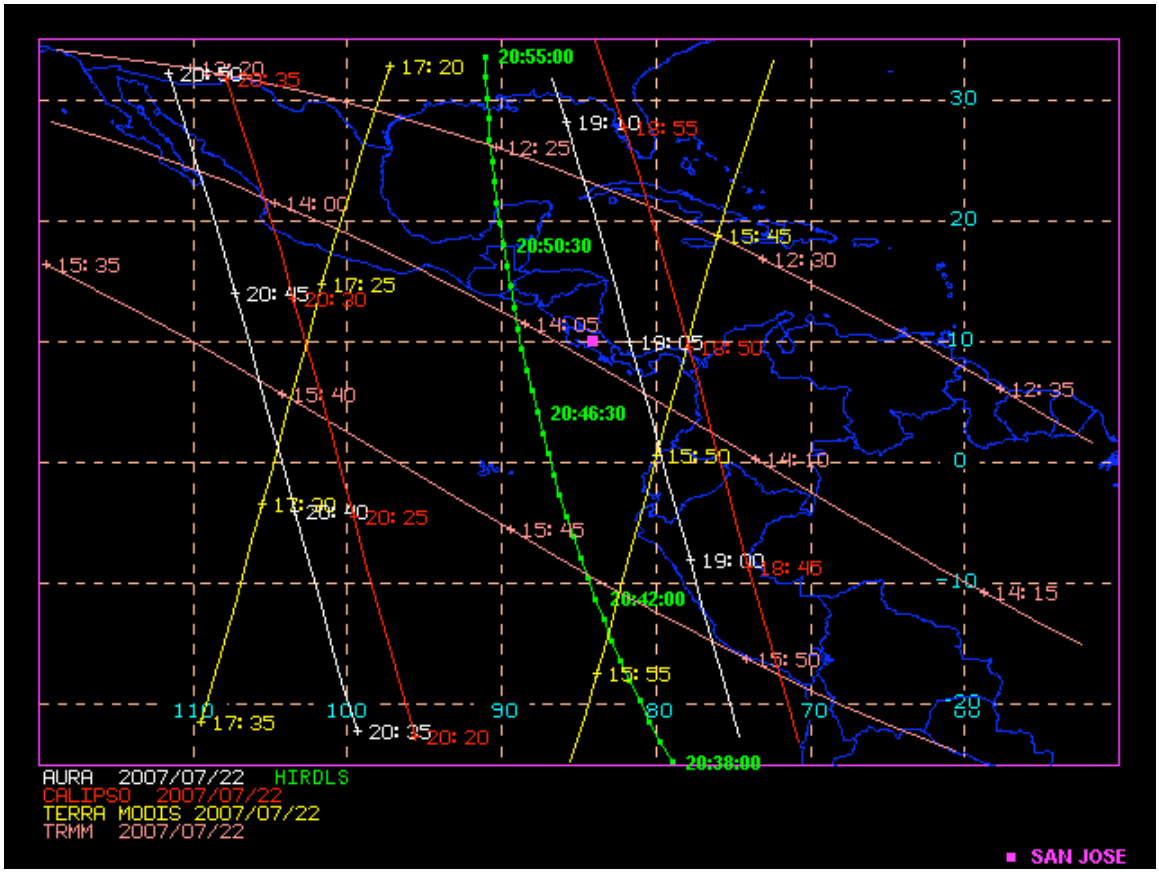
Duration: 6:00

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

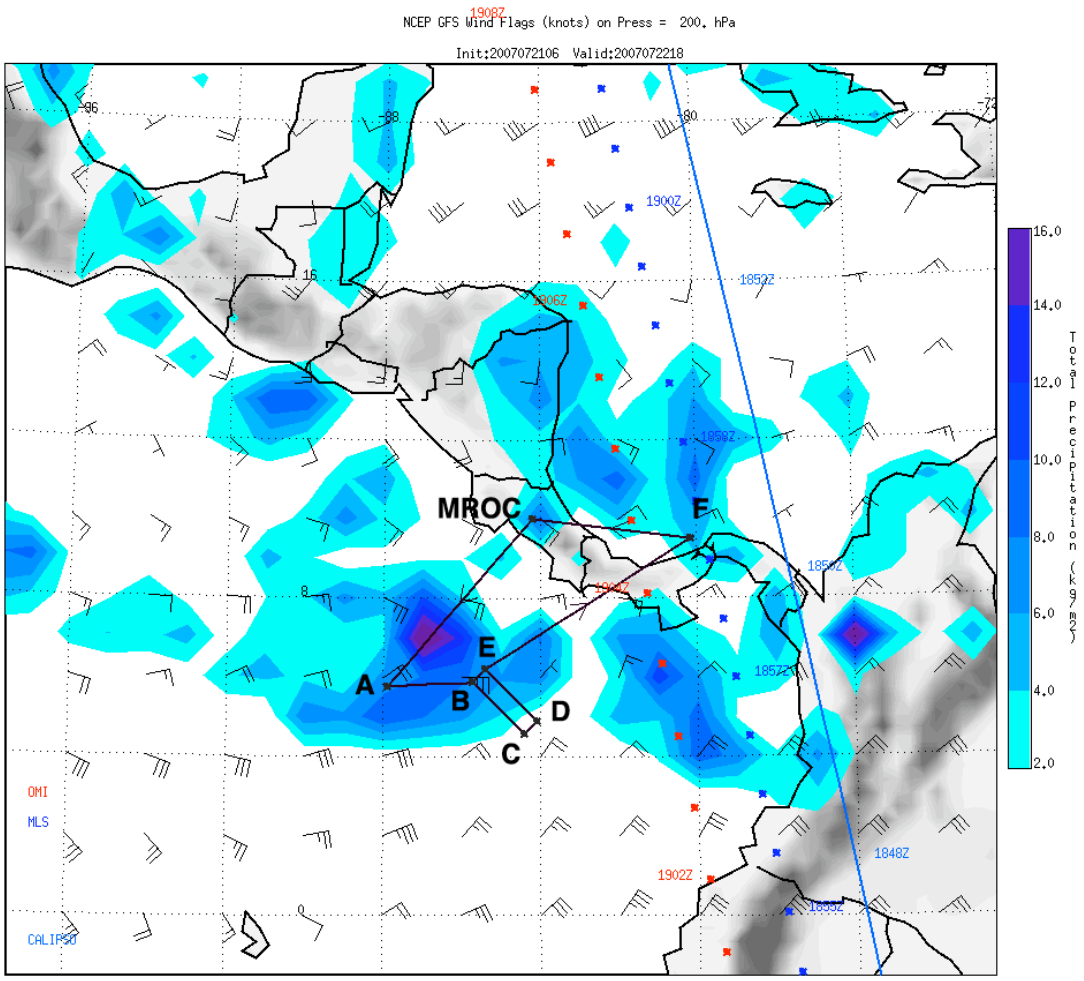
Satellite Coordination:

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



Flight Plan Summary (see map):

Takeoff at 1200 UT (6 AM local time). The ER-2 flies SW towards predicted convection. Pilot will attempt to overfly convective turrets on path to waypoint A (5˚45'N, 87˚54'W). After turret hunt, the ER-2 will turn East and rendezvous with the DC-8 at waypoint B. The ER-2 and DC-8 will fly in a counterclockwise direction around the path B-C-D-E. The ER-2 will complete 5 cycles around this racetrack sampling the convective outflow. After completing the cycles, the ER-2 will turn NE and fly towards waypoint F. Return to MROC (San Jose) at approximately 1800 UT. The plot below shows this approximate path, with the precipitation in color, and the 200 hPa wind barbs showing the expected direction of the convective outflow (plot courtesy of Eric Ray).



black line = ER-2 flight track
color image: accumulated precipitation from (1200-1800 UT)
wind barb (kts)

Expected Cloud Conditions during flight:

Convective development in region south of San Jose expected on Sunday with cirrus outflow towards the southwest. The 200 hPa (~39,000 feet) flow is a good indicator of the direction of cirrus outflow.

Proposed Plan:

Proposed Waypoints:

MROC	10o 00'N	84o 13'W	12:00

ER-2 Science Instrument Payload and Status:

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

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