

TC4 ER-2 Science Flight: July 17, 2007

Tentative Flight Plan

Flight Scientists: S. Platnick, P. Newman

Sortie: TBD

Pilot: Dave Wright

Takeoff (DFRC): 1230 UTC

Landing (SJO): 1730 UTC (11:30 AM local)

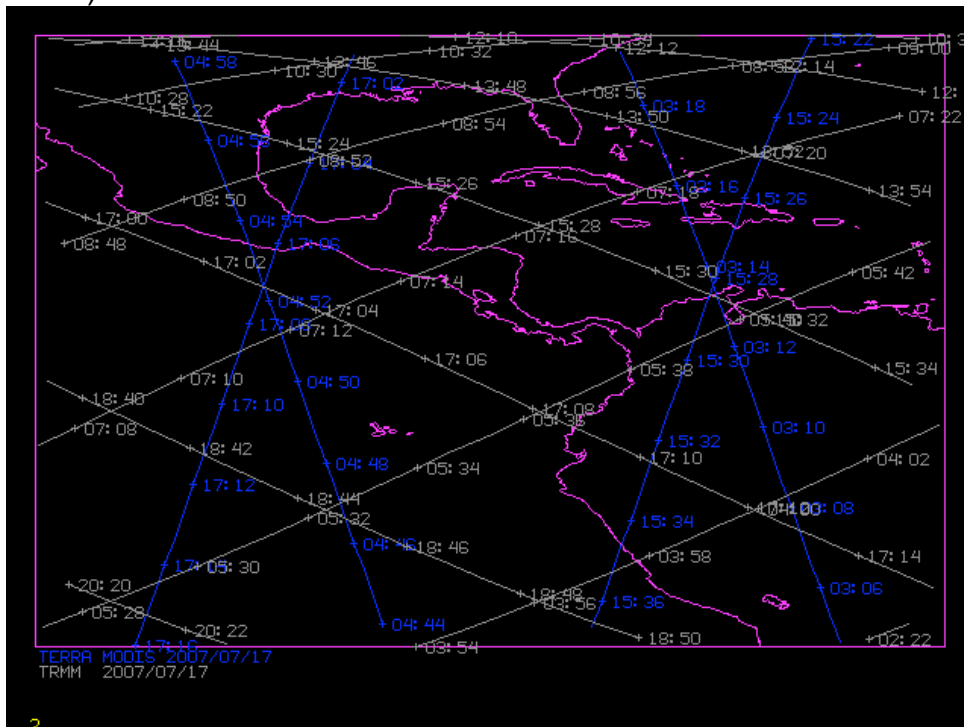
Duration: 5:00

Objectives:

1. Remote sensing of convective systems to the south of the ITCZ
2. Coordinate with DC-8 in situ and remote measurements
2. Characterize region observed by Terra and TRMM satellites.

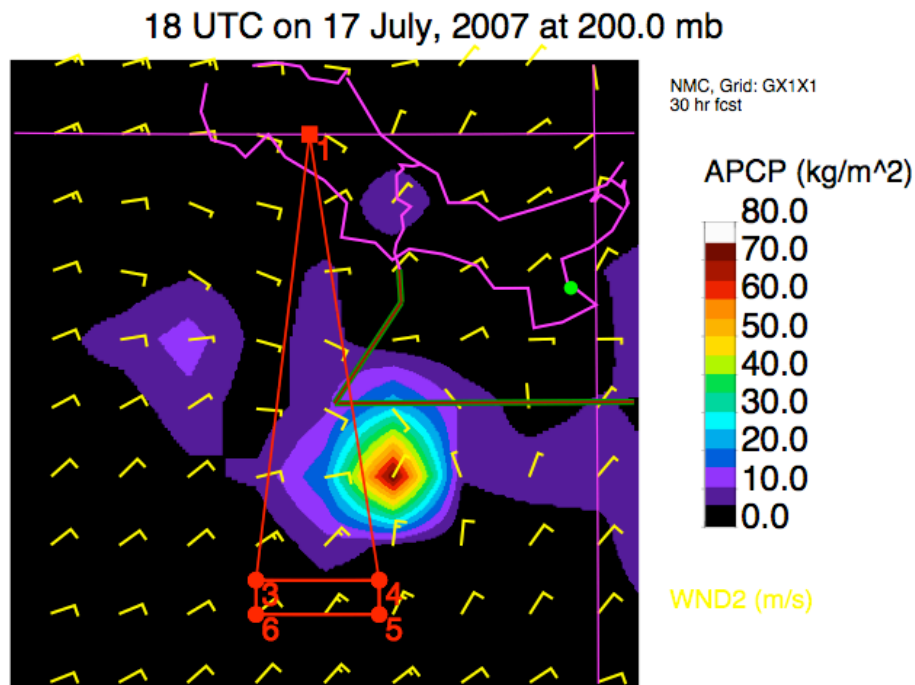
Satellite Coordination:

Terra overpass to the east of the Panama Bight at 15:30 UT, with a TRMM overpass over the flight track at ~ 17:06 UT. See image below (Louis Nguyen, LaRC).



Flight Plan Summary (see map):

Takeoff at 1230 UT. Arrival to the south of the ITCZ ~ 45 minutes after takeoff. The flight is oriented to sample the high level cirrus outflow to the south of the ITCZ. Approximately 3 hours of sampling E-W to see cirrus evolution. The ER-2 flies from SJO to point 3, takes a hard left and flies a 200 km x 50 km rectangle in the CCW direction for about 3 hours (approximately 4 cycles of the rectangle). On the final cycle, the ER-2 will possibly be directed over an active convective core. Return to SJO at approximately 1730 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.

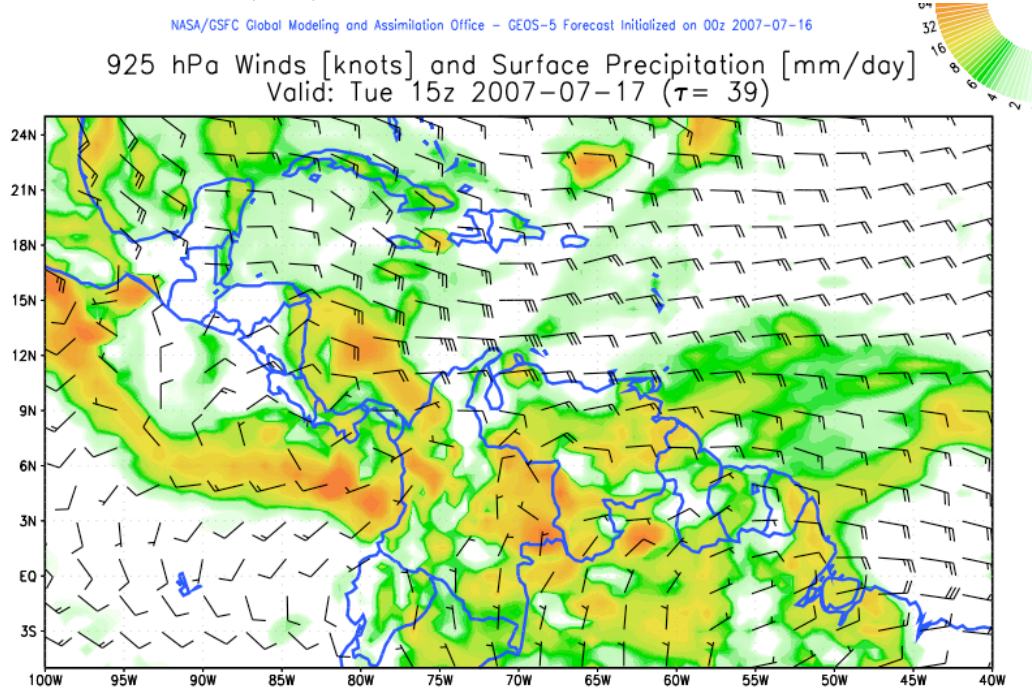


blue line = ER-2 flight track
Grey image: simulated IR brightness temperatures.
Yellow: wind barb (m/s)

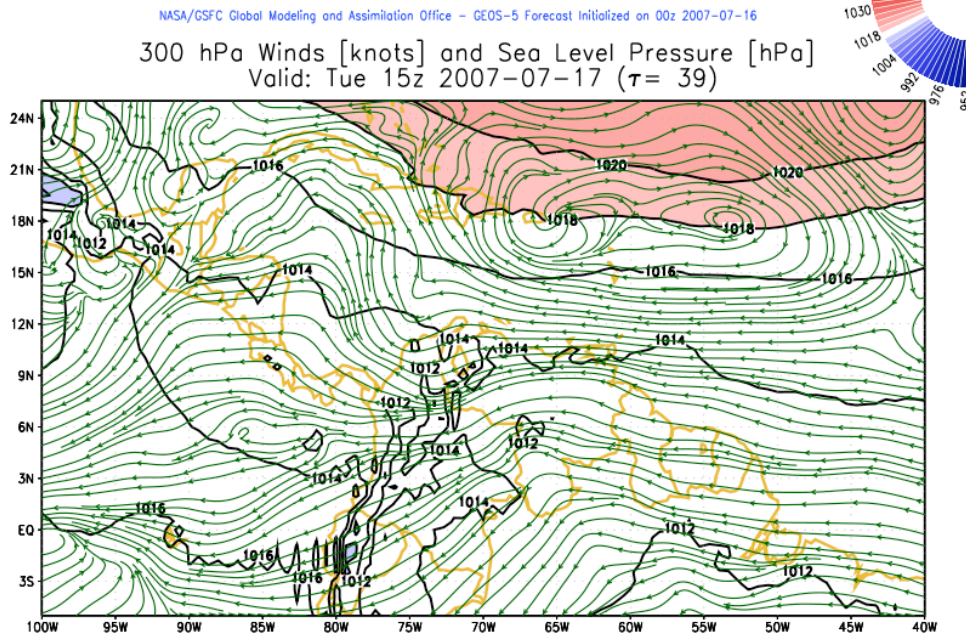
Expected Cloud Conditions during flight:

Convective development expected in PB on Tuesday with cirrus outflow to the SSW.

925 hPa winds (near surface) and surface precip from the GEOS-5 model. Valid at 9AM local time on Tues.(7/17)



The 300 hPa (~30,000 feet) flow is a good indicator of the direction of cirrus outflow. In this forecast, the flow is mainly towards the W to WSW on the western side of the PB.



Proposed Plan:

Proposed Waypoints:

TBD

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		
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