

ER-2 Flight Summary

Mission: Mission 5

Flight Scientists: S. Platnick, P. Newman

Sortie: 02-950

Date: Saturday, 13 July 2002

Pilot: K. Broda

Takeoff: 1300 EDT (1700 UTC)

Landing: 1915 EDT (2315 UTC)

Duration: 6:15

Objectives:

Thin/sub-visual cirrus expected throughout the operating region. Southwest flow at lower levels expected to initiate convection over eastern part of the peninsula by mid afternoon. NE winds aloft expected to advect anvils to southwest.

ER-2 proceeded to waypoint A1 (24° 40' N, 83° 20' W) for WB-57 wingtip flight at 50 kft, along a northwest heading. The beginning of the coordination included several circular orbits by the ER-2 as the WB-57 maneuvered into position. Aircraft were in clear air and level, straight flight for approximately 15-18 minutes of flight.

The ER-2 then went to altitude heading to waypoint A2 (26° 00' N, 83° 00' W). The ER-2 and WB-57 then began a series of east-west legs overflying both ground sites and extending out over the water (designated waypoints B (26° 04' N, 82° 19' W) and E (25° 31' N, 79° 48' W): same waypoints as flight on July 3). The aircraft attempted to stay coordinated by slight modification of leg lengths.

Redirection from NPOL placed the ER-2 off the peninsula for several legs, and eventually over cells developing in the Miami area. The expected widespread convection did not occur.

Satellite or fixed coordination:

Satellites (relative to western site):

Aqua – 1910 UTC, VZA = 48 deg.

(Terra – 1603 UTC, VZA = 20 deg: before launch of aircraft)

Western ground site:

PARSL, Everglades National Park, Gulf Coast Visitor's Center
25 50.7 N, 81 23.15 W

Eastern ground site:

Kendall-Tamiami Airport
25 39.3 N, 80 25.9 W

Multiple overpasses of western and eastern ground site during east-west legs.

Aircraft coordination:

Nominal take off times (local): WB-57 (1305), Proteus (~1230)

WB-57: Wingtip coordination at 50 kft during ER-2 ascent. In situ sampling of thin/sub-visual cirrus along ER-2 track early in flight (east-west legs). ER-2/WB-57 will attempt to stay coordinated during these legs to the extent possible. Anvil sampling later in flight limited to edges of cells that developed late in the Miami area.

Proteus: Fly along ER-2/WB-57 east-west legs. Overflight of clear sky and western site during Aqua overpass. Fly along ER-2 legs as much as possible during redirected parts of mission. *Brief: successfully stayed with ER-2 and WB-57 through most of the flight.*

Citation:

Twin Otter: Underfly ER-2 during thin cirrus and anvil legs, concentrating on the western site and gulf region.

Summary/highlights:

- Wingtip flying between WB-57 and ER-2 for cross-comparison of JLH, MMS, MTP, and RAMS instruments.

- **D**ropsondes: 4 sondes dropped

#1: 1620 UTC, 25 14 N, 81 33 W

#2: 1826 UTC, 25 N, 81 17 W

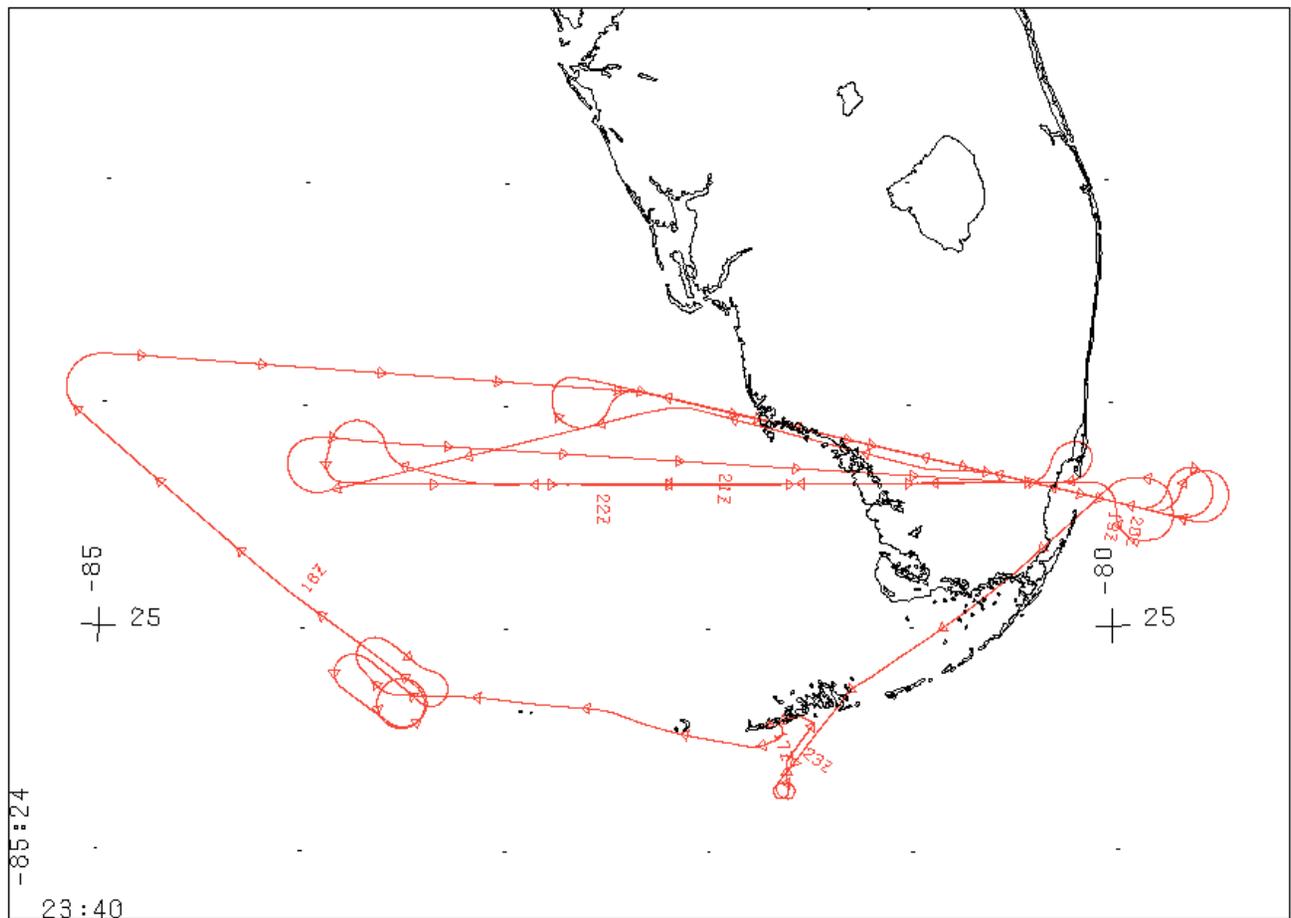
#3: 1936 UTC, 25 14 N, 81 19 W

#4: 1940 UTC, 25 N, 81 49 W

ER-2 science instrument payload and status:

Instrument	Status	Notes
CoSSIR Conical Scanning Sub-mm wave Imaging Radiometer	F	Failure at/near turn on
CPL Cloud Physics Lidar	G	
CRS Cloud Radar System	G	
EDOP ER-2 Doppler Radar	G	
JLH JPL Laser Hygrometer	P	Some problems during wingtip flying but most of 1 sec data recovered
MAS MODIS Airborne Simulator	G	
MMS Meteor. Meas. System	NA	
MTP Microwave Temperature Profiler	NA	
RAMS Radiation Meas. System	NA	
SSFR Solar Spectral Flux Radiometer	G	
Dropsonde	NA	bad elect. card found after landing, instrument pulled

**G = good; P = partial data collected; F = failure, no data; NA = status not available
at time of writing**



FLIGHT 02-950 13 JULY 2002 A/C 809 CRYSTAL / FACE
 LAMBERT CONFORMAL PROJECTION: SP1 = 23.9 SP2 = 25.9 CM = -82.3 ROTATED BY 0.0
 16:59:00 TO 23:10:00 UT SCALE 1:2.64E+06 TIME TICK EVERY 5.00 MINUTES