

**Jetstream 31 (J31) Flight Report for INTEX-B/MILAGRO
Flight VER03 flown 6 Mar 2006**

A complete version of this report is posted at
<http://www.espo.nasa.gov/intex-b/flightplanningJ31.cgi>

Overview

This was the third J31 flight out of Veracruz airport. Preflight goals focused on getting AOD profiles and transects, SSFR fluxes, CAR circles, and RSP legs in cloud-free conditions over Mexico City in the King Air lidar curtain during MISR local mode overpass.

Engine on: 1517 UT
Engine off: 1847 UT

Takeoff: 1536 UT
Land: 1840 UT

1716 UT Terra overpass

Cabin crew: Billings, Cairns, Gatebe, Pommier, Redemann (flight scientist), E. Russell

Pilot Summary

Some communication issues, met up with King Air over MEX, some RSP legs coordinated with King Air. King Air had load-shedding issue and had to cycle power on instruments(?). Flight similar to filed flight plan (expected to cover site T0). Patterns near airport, best test of ATC possible. Will be hard to predict what patterns will be possible, possibly be easier to move points outside – no guarantees.

Constant communication with King Air.

Recurring odor in J31 cockpit caused early RTB. Problem seems to be with instrument load on inverters. Easily fixed on landing by redistributing load. Request to scientists to let crew know of changes in electrical configuration. Need to send flight plan with circles to ATC, put location of site T0 on flight map.

Discussion of flight

Flight Scientist: Communication good. Patterns over Mexico City not quite as desired. Minimum altitude over MEX was 600' AGL. Pilot's estimate of possible flight duration seemed high, i.e., based on communication we would have not been able to fly 4:05 hours. (This was related to providing an extra 30 minutes of fuel reserve in case of airport landing restrictions related to visit of President.)

AATS: AATS tracked well, T-control definitely correlated with ATC radio contact. AOD was highly variable, especially over downtown Mexico City, probably no hope of retrieving meaningful extinction profile.

CAR: Instrument worked well, all channels. Got racetrack patterns instead of desired circles.

RSP: Instrument worked fine, got a little cool, switched on AC heaters, seems to be problem for inverter, will have an eye on AC heaters next time instrument gets too cold, flight tracks were great for RSP.

SSFR: Instrument worked fine, data quick-look seems fine.

POS: worked well on start. About 17:05-17:38 GPS drop-out, will check if altitude traces look OK, drop-out may be because of turbulence over MEX, need scientists to look at altitude data.

Navmet: Was turned on and off, seemed to work fine. See data in Fig. 2.

Flight Path, Timing, and Measurements (all times UT [VER local +6])

- 1538 18,000', ascend to transit to REXES. Actual arrival at REXES 1616 UT. MILAGRO 5 (King Air) est. at REXES 16:24.
- 1616 18,000', start transit to MEX and site T0.
- 1648 18,000', King Air crossing above.
- 1655 Racetrack pattern down.
- 1718 9,000' ASL (2,000' AGL), CAR racetrack. Huge variability in AOD, ride a little bumpy.
- 1729 9,000' ASL, climb to 13,000'.
- 1735 13,000' CAR racetracks, 6,000' AGL.
- 1740 King Air heads to VER, breaking off CAR pattern after 2 turns.
- 1747 19,000', ascend to transit to VER.
- 1824 19,000', pilots decide to RTB because of smell in cockpit.

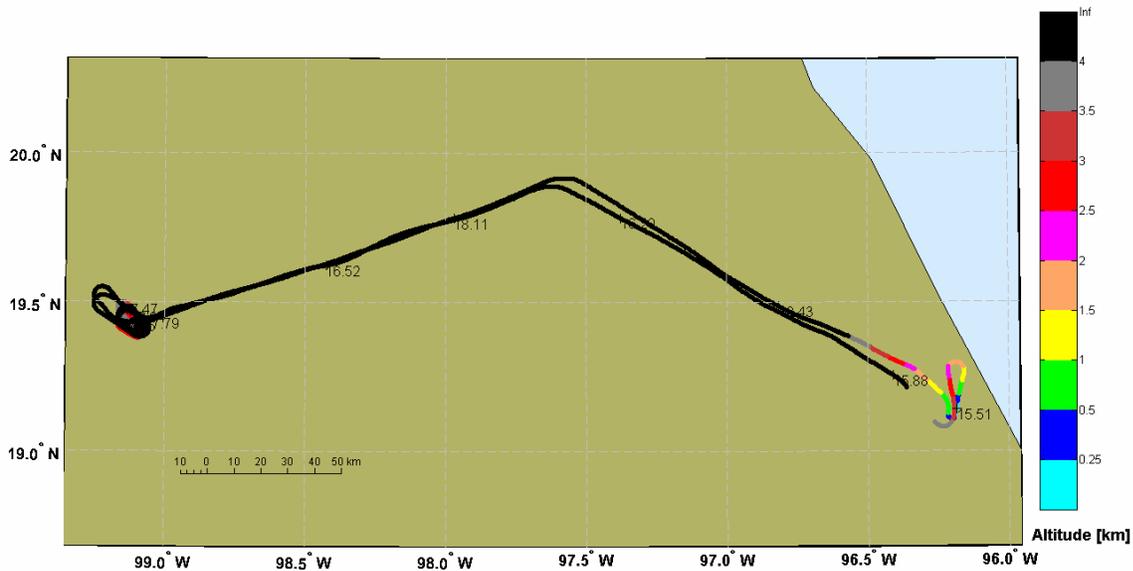


Figure 1. Actual flight track, J31 Flight VER03, 6 March 2006.

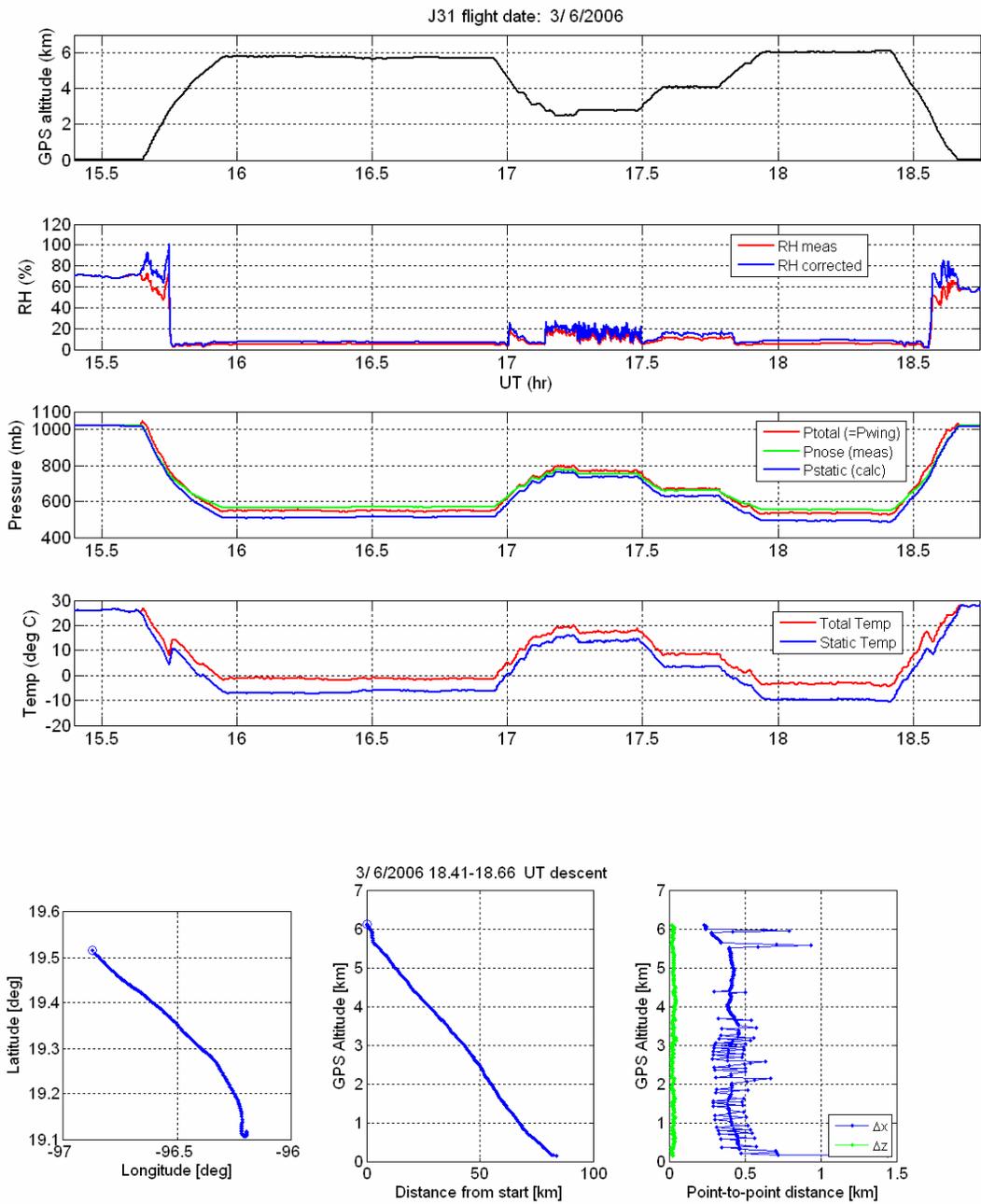


Figure 2. NavMet data, J31 Flight VER03, 6 March 2006.