March 30, 2011 – Test Flight

Takeoff: 1830 UT, Landing: 2250 UT

All but one of the instruments was flown on this test flight. The aircraft initially ascended to 45 kft, passing through a cloud layer at $\simeq$20–22 kft. The next part of the flight consisted of a series of five 100-nm legs oriented NE-SW, with altitudes decreasing from 35 to 27 kft. The tops of a band of cirrus was sampled on the final two legs. Next, the aircraft spiraled up to 57 kft, followed by a descent back to EFD. In general, the instruments performed well. Water vapor concentrations of 3–4 ppmv were sampled in the lower stratosphere.

Table 1: Instrument performance

SID3	Worked well
VIPS	Worked well
2DS	Computer problem, limited data
CDP	Worked well
HVPS	Worked well
CIN	Computer failure
NMASS	Data not recorded after $\simeq$20 min
FCAS	Worked well
PALMS	Worked well
MMS	Worked well
ALIAS	Worked well
CLH	Worked well
JLH	Worked well
ULH	Worked well
DLH	Worked well
Harvard Water Vapor	Data system failure
HHH	Data system failure
Harvard Total Water	Not flown
Harvard Halogens	Engineering data
FISH	Worked well
CIMS	Collected data, limited sensitivity
O3	Worked well
O3Lite	Worked well