DMIMS06: 20060527a
Flight 4

Flight notes: System Scientist (3rd seat)

Crew:
Pilot: Kevin Fagerstrom
Flt Scientist: Jeff Snider
System Scientist: Jeff French
4th Seat: Don Lukens

Pre-flight:
DMIMS dedicate flight, will try to target drizzle cells

Radar started with no problems on ground

Flight:
Wheels up 1908 UTC (all times hereafter are in UTC)
1917: Ferry out at 6 kft, problems with aerosol stuff,CCN keeps blowing top pad, lots of particles in both CPCs→latter seems correlated with when Don opens CCN chamber…possible valve stuck open(???); finally decide to power down/power back up CCN, seems to fix problem with CPCs, pads no longer blowing off(????)
1919: **radar file** 19-19-49 up/dual down for ferry flight
1956: **radar file** 19-56-27 up/dual down
2003: very thin stratus deck below King Air, approaching starting point, looking for drizzle cells
2009: **radar file** 20-09-29 dual down
BEGIN drizzle cell 1
2012: (??) over drizzle cell, mark as main target
2016: (??) 2nd pass over dizzle cell, looks good, make one more pass over, then begin lower alt passes
202017: 3rd pass over drizzle cell, drizzle/precip extends to surface, stratus around drizzle cell ~300 m deep
2021: **radar file** 20-21-57, up/dual down
2023: set up for pass in cloud, near top
202330: pass ~4700 ft
202730: pass ~3800 ft, reset pointer
203215: pass ~3300 ft
203615: pass ~2800 ft
203945: pass ~2300 ft
204345: pass below cloud ~1300 ft
205010: last pass below cloud, appears that cell is well into decaying stage (??)
2054: **radar file** 20-54-57, dual size/dual down, try to pass cell on edge, near top
205720: *OOPS*, switch mirror to side looking
205830: through cell ~4700 ft
2059: Dons Sardines stinking up cabin!!!!

2101: pass ~4300 ft
END drizzle cell 1

2104: begin looking for new cell
2104: **radar file** 21-04-03 dual down

BEGIN drizzle cell 2
211230: pass over broad cell ~5500 ft
2114: **radar file 21-14-17** up/dual down
211545: pass ~4700 ft
211930: pass ~4200 ft
212254: pass ~3700 ft
212545: pass ~3200 ft
212915: pass ~2700 ft
213300: pass ~2200 ft
213645: pass ~1700 ft
214015: pass below base at 900 ft
214915: 2nd pass below base, 900 ft
END drizzle cell 2

2153: head back to line will do one low-level run for CCN
2155: **radar file** 21-15-19 up/side fore
2157: 500 ft run for CCN
2202: end run, RTB at ~1000 ft

2304 wheels down

Post-flight/impressions

Problems with CCN at beginning of flight, likely this fed into problems with both CPCs, it looked like when CCN chamber was open that CPCs were sucking cabin air which may indicate stuck valve on CCN(??); not sure. No problems on ground, before flight, with leak test etc. Everything worked after shutting down CCN and starting back up.

PVM started acting up early to middle of flight. Baseline began to drift to about 0.2 g/m3 after going through water clouds. The sensitivity (scale) did not seem to be affected. Once on ground, Don let it run for several hours and baseline eventually went back to zero…water inside???