

## CUPIDO06: 20060811a

### Flight 14

Flight notes: System Scientist (3<sup>rd</sup> seat)

#### Crew:

Pilot: Tom Drew  
Flt Scientist: Rick Damiani  
System Scientist: Jeff French  
4<sup>th</sup> Seat: Jason (??; grad student fr/ UA)

#### Pre-flight:

startup was uneventful

Conditions on ground 1617Z: T29/Td21, winds calm, skies clear

Cu started growing over mountain by 8 AM local (15Z), by takeoff there was already deep convection, cb, with some lightning. Plan is to study environment around deep convection by flying boxes at several levels from BL to ~FL230. If convection collapses and restarts we will transition into a cumulus study as well.

Since we will be out of cloud for most of flight, radar overheating a bit more of a concern. Decide to try turning of tube and vxi after ground test and restart once we are setup for box pattern.

#### Flight:

Wheels up 1625 UTC (all times hereafter are in UTC)

1627: start vxi and turn on radar tube, Trad~88

1630: begin box 1000 ft AGL

**radar file 16-31-49** up looking, 500 ns

1638: Trad~91.6

1642: Trad~95.6

1645: AW SHOOOOT...forgot to start LICOR sample pump, turned on late

1648: end box, stopped radar, Trad~100.3, climb to FL070

1650: begin box 2, FL070; no radar, let cool

1703: end box, climb to FL100, note: there has been lightning reported in cell over Mt.

Lemmon and we can see it from KingAir, box is widened on northern side to stay away from precip shafts under anvil

1706: begin box 3, FL100

**radar file 17-07-04** side looking, 500 ns, 9 km range

1717: end ox, climb to FL140

**radar file 17-21-11** side looking, 500 ns, 9 km range

**radar file 17-23-38** dual side 250 ns

1724: glancing along cloud on upwind side

1725: stop radar as we move further from cloud

**radar file 17-29-39** side/dual down 500 ns

1730: through precip shaft

**radar file 17-33-52** dual side, 500 ns, try to glance upwind side of towers

1739: end box, climb to FL170

1742: start box at FL170

**radar file 17-42-36** side/dual down

**radar file 17-48-14** dual side 250 ns

**radar file 17-53-33** side 500 ns

1757: end box, climb to FL230

1808: begin box at FL230

**radar file 18-07-57** dual down, just above (and at, in some parts) stratus level, blowoff from earlier cu growth

1820 end box, RTB

1830 wheels down

#### Post-flight/impressions

Impossible to work in clouds today, too much going on, a lot of stratus between 140 and 180 all the way to 230. Main cu looked very vigorous.

No known significant problems with data system/instruments

Gerber PVM fogged on descent into airport and was fogged (??) on ground when data system was shut down. Likely a result of very rapid descent (>3000 ft/min) from high levels.