Notes for 01021 flight.  
Crew: Bush, Vali, Leon  
2145-2239  
Glaciating Ac

After a week of clear skies, there is some change taking place. By mid-morning, very shallow Ac develop, mostly to the W and SW. Slow deepening. In the morning breifing called for a 2 pm update and just before that time moved for a 3 pm takeoff. This was to be the first flight of this sequence, so not surprisingly there were small stumbles in the get-go. Also, Matt Agen from MIRSL arrived with the radiometers and Sam and he were setting things up in the hangar.

Glaciation was evident in the Ac already by 2 pm = 20Z. By the time we took off, at 2145Z there were no hard bases visible from LAR vicinity. Headed to NE, hoping to reach the boundary of the Ac patch (cf. satellite images) but at the edge of the 40 mi clearance we were still in glaciated clouds. Tried one pass just below cloud base to see if we can detect it on the WCR, but were probably too close and cloud had lots of ice falling through the base.

So, sampled a few clouds, without much direction, as there was hardly any separation between clouds. Cloud base was at about 16 kft = -10°C, tops near 20 kft and -20°C. Very little LWC, except in the tops of one cell picked out visually at 20 kft. Tried repeat samples of the same region. First return by dead reckoning, then set pointer to practice using it for a few passes.

Max ice conc. of 20-30 L⁻¹, LWC max to 0.3 g m⁻³, drop conc. to about 500 cm⁻³. Undersun frequently seen. Virga visually quite dense under some clouds.

CCN counter looked suspicious, display on the unit's front panel showed zeros. Cockpit display was not yet re-programmed with parameters for this project. Video was connected in last minutes before the flight; not sure whether it went on the VCR or not.