

Table 6: Aircraft instrumentation

Research Aircraft Program (NRC Convair-580)

Probable/tentative instruments

State parameters

Temperature	Rosemount, Reverse flow
Humidity	Chilled mirror, LICOR
Static Pressure	Rosemount 858 boom probe, static pressure ports
Radar Altitude	Bendix, laser altimeter
Position	GPS (Marconi, Northstar, Novotel), IRS
Winds / Gusts	Rosemount 858 / IRS derived

Bulk

Liquid water content	PMS King probes, Nevzorov LWC probe
Total water content	Nevzorov TWC probe, Johnson-Williams TWC meter
Total water content	DMT Counterflow Virtual Impactor (CVI)
Icing accumulation	Rosemount icing detector, Vibrometer icing detector
Aerosol spectrum	PMS PCASP-100X probe (0.1-3 microns)
Aerosol spectrum	PMS FSSP-300 probe (0.3-20 microns)
Droplet spectrum	PMS FSSP 100X probes (3-45 and 5-95 microns)
Small particles	SPEC cloud particle imaging probe (CPI) (2-2000 microns)
Cloud particles	PMS 2D-C, 2D-G probes (25-800 and 25-1600 microns)
Cloud particles	DMT CIP, SPEC 2D-S
Precipitation particles	PMS 2D-P probes (200-6400 microns)
Large particles	SPEC HVPS (400 microns-5 cm)?

Remote sensing

Aerosol profiles	Upward/downward looking 532/1064 nm lidar (dual pol)
Cloud radar	35 GHz upward/downward
Cloud radar	NAWX 94 GHz upward/downward/sidelooking (dual pol Doppler)
Weather radar	Forward pointing pilot's X-band radar
Cloud extinction	Nevzorov extinction meter
Vis solar radiation	Kipp and Zonen pyranometer upward and downward looking
IR radiation	Eppley IR radiometer upward and downward looking
Surface temperature	KT19 IR thermometer
Radiation	Exotech 100BX radiometer 4 channel Landsat simulator
Radiation	FTS looking nadir, and three mini-spectrographs