



Overview

The University of North Dakota owns and operates a Cessna Citation II twinengine fanjet aircraft for the purpose of atmospheric research. This aircraft type has a number of design and performance characteristics that make it an ideal platform for a wide range of atmospheric studies, including both high performance and the ability to be flown at the slower speeds necessary for many types of measurements.

Specifications

Payload	1528 – 2528 lbs.
Range	1200 nmi
Ceiling	43,000'
Time to Climb:	13/24 min
25,000'/35,000	
Endurance	3-5 hours
Weather	- Known icing
	- Storm penetration 45 d
Sampling Airspeeds	150 – 225 KIAS

Cabin Layout





Rack Space



Instrument Rack







http://cumulus.atmos.und.edu

University of North Dakota Citation Research Aircraft David Delene and Michael Poellot





Two wing tip pylons **5 reinforced fuselage locations** 6 ports for electric field mills Side-looking window insert Anti-iced gas sampling inlets









Total	Below 35,000': 7300W
	At or above 35,000': 5400W
AC	4 KW 110VAC 60Hz
DC	80A 28VDC Instrument anti-
	icing
	40A 28VDC Instrument power









Measurements

State Parameters Temperature **Dew Point Temperatur** Pressure Water Vapor Mixing Ra

Cloud Microphysics

Cloud Droplet Spectru Cloud Particles Particle Images Particle Images Particle Images Liquid Water Content Liquid and Total Water Supercooled LWC

Air Chemistry and Aerosols **Particle Spectrometer CN** Counter

Air Motion and Turbulence U, V, W Wind Attack and Sideslip, Airspeed

Aircraft Parameters Heading, Pitch, Roll, **Ground Speed**, **Position**, **Vertical Acceleration**



Maintenance and Support

Facility	UND Ae
	FAA Par
Capacity	>120 Air Multi-e
Mechanics	31 Full T
Operations	Two Shi







re	Rosemount Total Temperature Edgetech Cooled Mirror
	Rosemount
atio	Maycomm TDL Hygrometer

DMT CDP
PMS Optical Array 2D-C
SPEC 2DS
SPEC CPI
SPEC HVPS-3
PMS King
Nevzorov
Rosemount Icing Rate Meter

PMS Passive Cavity Spectrometer TSI Alcohol Condensing

Gust boom, INS Gust boom, Differential **Pressure Transducers**

Applanix POS-AV Strap-down Gyro and Accelerometers with integrated GPS



erospace Flight Support Services t 145 Repair Station rcraft, Single engine to engine turboprop **Fime** ifts, 7 Days/Week

