



CIRPAS

The Center for Interdisciplinary Remotely-Piloted Aircraft Studies (CIRPAS) provides Manned and Unmanned Air Vehicle flight services to the scientific and engineering communities.

**Twin Otter Now An NSF National Facility
Makes aircraft and Science Payload
available to NSF-Sponsored Researchers**



CURRENT AIRCRAFT FLEET



UV 18-A Twin Otter



Pelican (2)



Predator (3)



FACILITIES:

- **Marina Facility**

3500 ft runway - manned operations only

30,000 sq ft maintenance hangar

Instrumentation and Calibration Laboratory

Maintenance and Payload integration shops

Offices





CIRPAS FACILITIES:

- **Camp Roberts Facility**

Friendly airspace for UAV testing and training (R2503).

Military ground maneuvers (equipment, personnel)

3500 x 60 ft runway

2000 sq ft hangar

Office Space





Research Aircraft: Twin Otter



- Research Capacity: 1500 lbs
- Research Power: 5600 W at 28 VDC, 4000W 110VAC 60 hz:
- Speed: 100-140 Kts
- Practical Ceiling: 18000 ft.



Twin Otter: Facility Payload



- **Nose:**
 - Temperature
 - Dew Point
 - Pressure
 - Static
 - Dynamic
 - Sideslip
 - Attack angle
 - GPS/INS
 - IR Temperature
 - Liquid Water Content
 - Aerosol Inlet



Twin Otter: Facility Payload

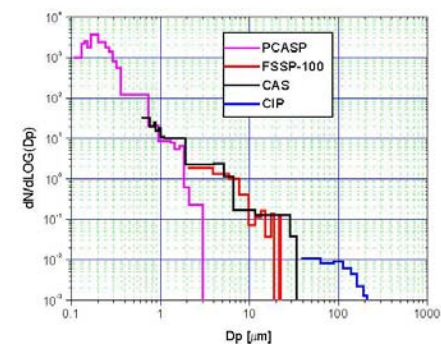
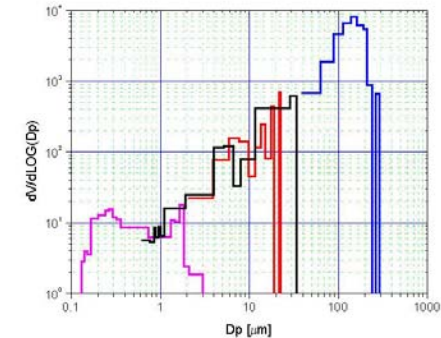
Wings: CAPS, FSSP, PCASP, CIP, PIP, APS

Hard points and pods for 'research' or 'guest' instruments



Aerosol and Cloud
Spectrometers

Light Drizzle BL





Twin Otter: Facility Payload

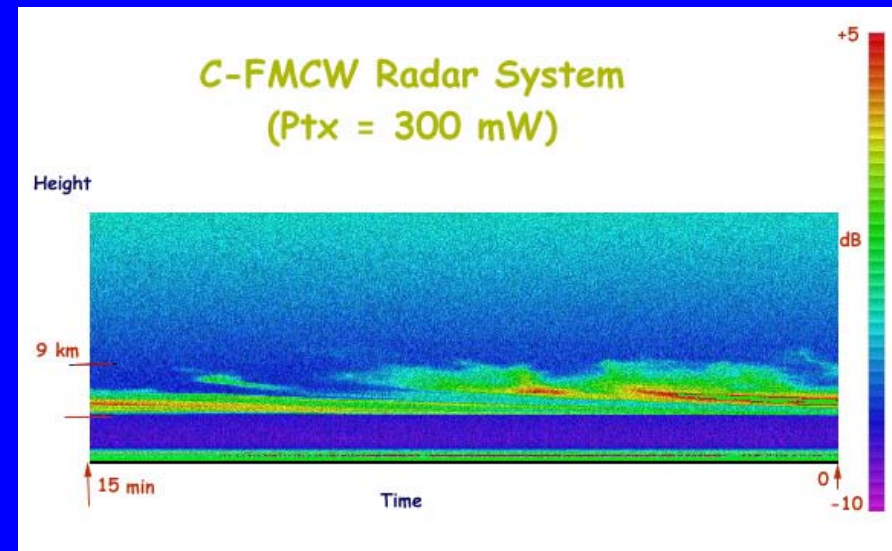
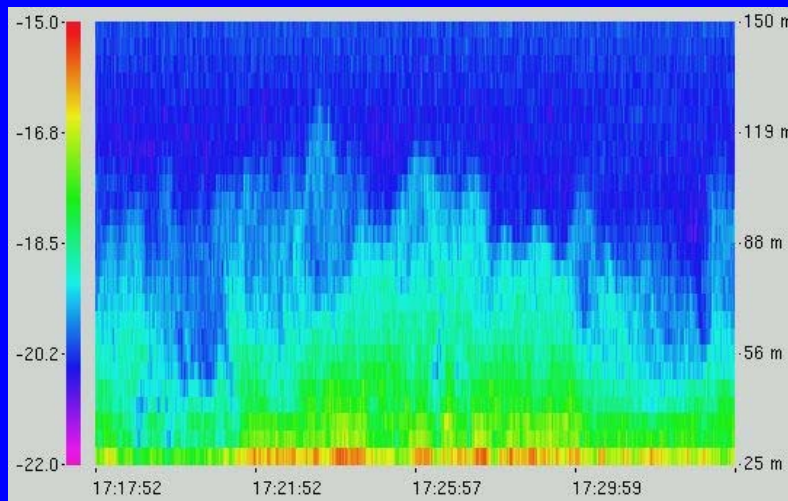
Cabin: Nephelometer, Sootphotometer, CPCs, UFCPC, Data System
Racks for 'Research' and 'Guest' Instruments.





CIRPAS SCIENTIFIC INSTRUMENTATION

95 GHz Cloud Radar





CIRPAS Research Instrument Example Wind Lidar



TODWL two axis scanner





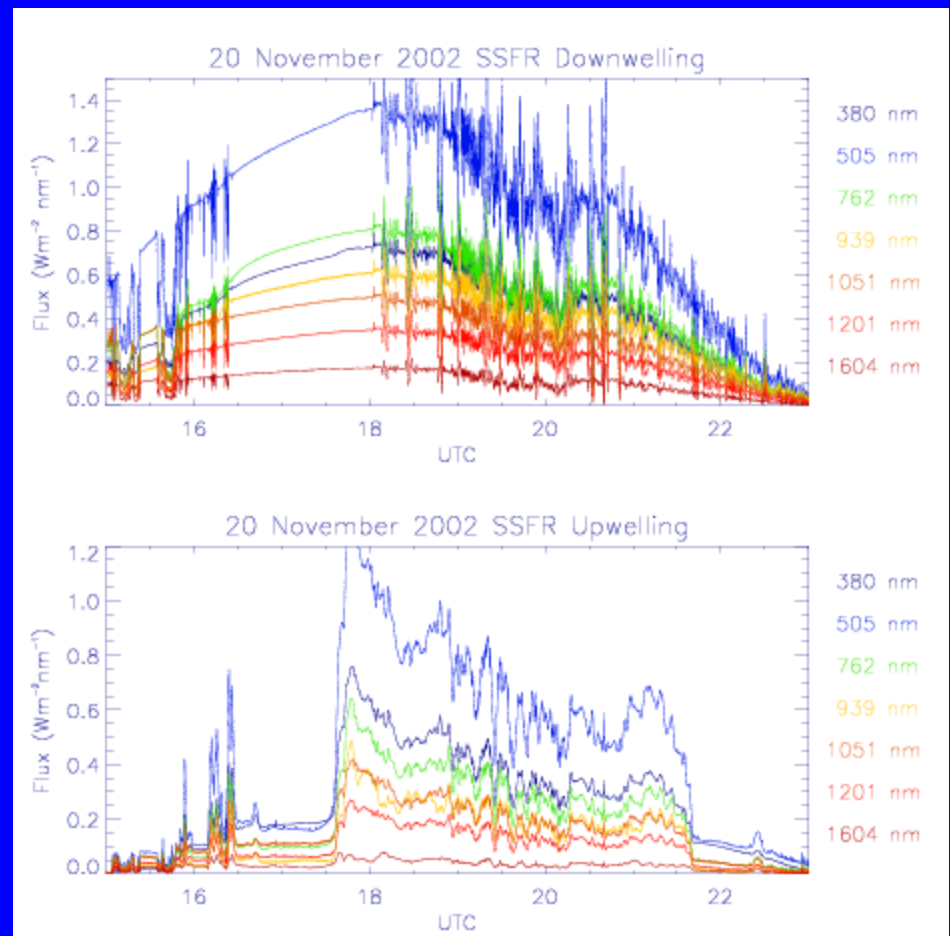
CIRPAS Research Instrument Example Smart Towed Vehicle





NEW INSTRUMENTATION

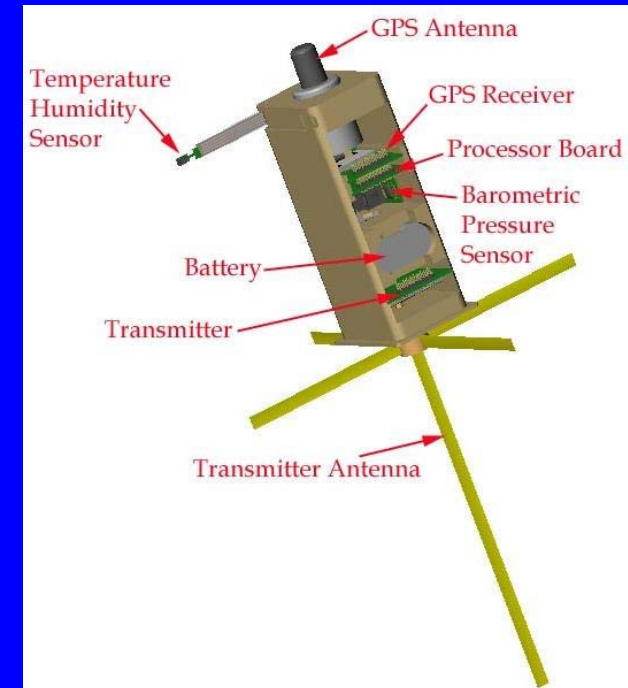
Stabilized Radiometer Platform





NEW INSTRUMENTATION

MICRO-SIZED AIR-LAUNCHED EXPENDABLE METEOROLOGICAL SENSOR & CHAFF





NEW INSTRUMENTATION

Goshawk Instrument Deployment





Storm Penetrating A-10 Mid-Size NSF National Facility



80-0247



Sentry: new CIRPAS UAV

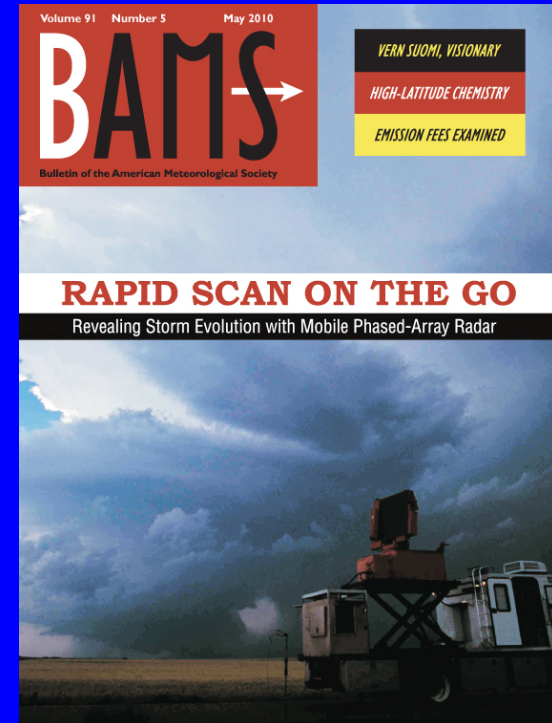




GROUND BASED ASSETS

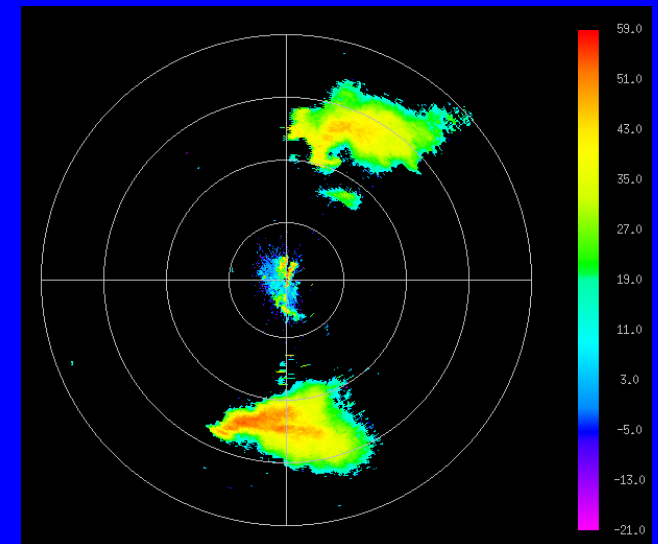


**MWR-05X Mobile Storm
Radar**





MWR-05X Mobile Storm Radar





Pelican Predator Surrogate





Pelican Predator Surrogate

Modified Cessna 337/O2

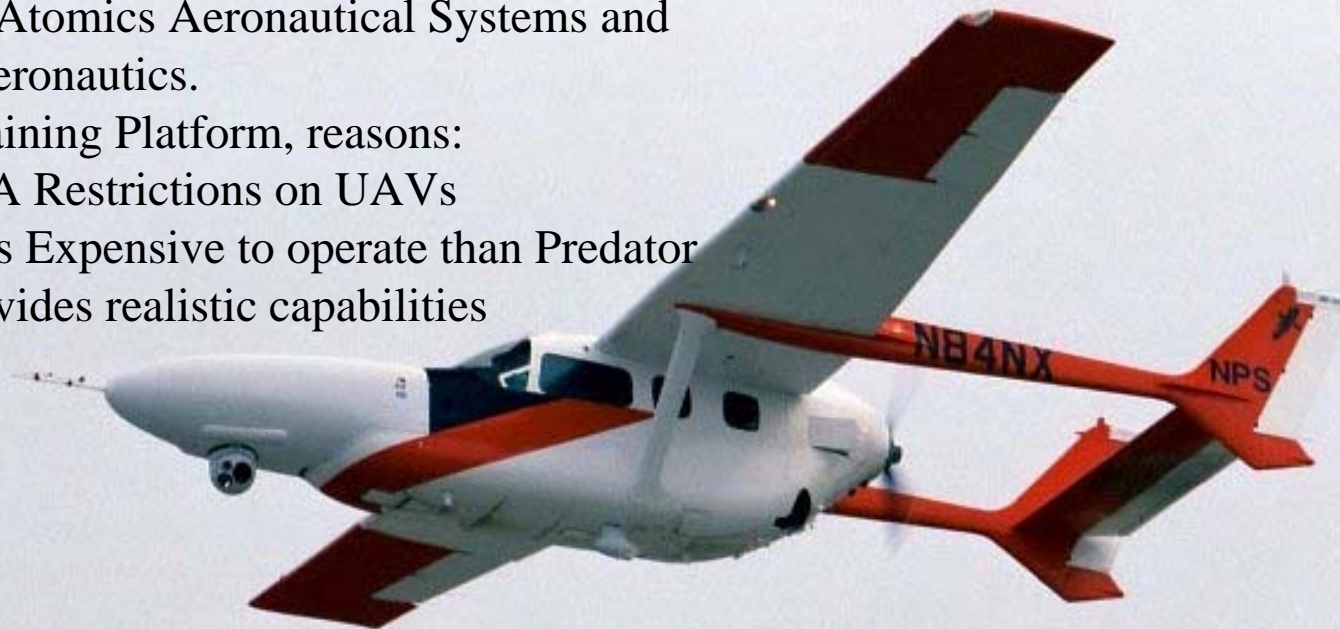
Configured as a true Predator Surrogate by
General Atomics Aeronautical Systems and
Zivko Aeronautics.

Ideal Training Platform, reasons:

- FAA Restrictions on UAVs

- Less Expensive to operate than Predator

- Provides realistic capabilities





Pelican Predator Surrogate Mobile GCS



Pelican enhances training by providing an asset not readily available to the unit.



Joint VMU Shadow – Predator
(Pelican) Operations at MAWTS WTI
2-09.