

Preliminary Squawk List for flight 1896,
Flown on Wednesday, 5 December 2001,
IMPROVE II CV-580 flight 6.

Instruments not mentioned as having a problem are believed to have worked satisfactorily.

OVERALL LOOK-WEATHER

This was a ferry flight from Eugene, Oregon to Paine Field to repair some avionics that prohibited research flying. It occurred as a deepening cloud shield overspread shallow stratocumulus clouds in advance of a new Pacific Storm that later in the evening became IMPROVE2 IOP4.

OVERALL LOOK-INSTRUMENTATION

CPI did not work.
Hot wire LWCs did not work.

1. AIRCRAFT PARAMETERS

No problems noted.

2. STATE PARAMETERS

Rosemount static temperature (tstat): Noise spikes affect data, but there were far less than on previous flights for unknown reasons. Tstat tracked the tstatr values well and were very close though a difference (Rosemount lower than the tstatr by 2 C overall on this flight). Using the correction factors developed from the rawinsonde comparison does not ameliorate this difference. An investigation of this problem is underway.

Reverse Flow Temperature: Still believed to be our most accurate temperature measurement since after KWAJEX. Impacted by a few noise spikes but they are minor on this flight.

Ophir dewpoint (dp_o): Occasional cyclic noise that changed in amplitude and period during the flight. Spurious dewpoint values were indicated at times when the actual ambient dewpoint (measured by "dp") went below about -25°C; the Ophir began to "peg" at values below -50°C. This occurred during a dry slot between cloud layers.

Cambridge chilled mirror dewpoint (dp): Amplitude and period of heating cooling cycles changed during flight from not evident to a few degrees in maximum amplitude. Otherwise, reasonable values were indicated.

Rosemount analog pressure transducer (pstat): Continues to exhibit spurious changes in pressure of up to several mb in per second. No noise spikes were evident.

3. Cloud Microstructure Probes

DMT Hot wire device: Did not work at all. Numerous noise spikes

JW Hot wire device: Did not work at all.

PMS 2-D cloud probe: Power cycled to get it to “wake up” and then it worked well for the remainder of the flight.

PMS 1-D cloud probe: Counts in clear air virtually nil, but spectra raises questions since mode is still found at the larger size channels outside of the 1st channel which also appears to have an excess. Probe should be checked and another alignment attempted since excessive counts in the 1st channel is usually characteristic of an alignment problem.

SPEC CPI: Did not work. No live video obtainable. No backgrounds obtained. Attempted to start probe as soon after takeoff as possible to avoid cold soaking and the probe was started when the ambient temperature was $>-10^{\circ}$ C. Tightening connections in the many wires in the rear of the computer possibly restored proper display of the desktop and CPI software windows right from the beginning of the flight. We are in consultation with Pat Maresly of SPEC who suggested some internal checks for loose daughter cards that are associated with the ITI graphics cards.

4. AEROSOLS

Not QC-ed.