

Squawk List for flight 1904,  
flown Friday, 21 December 2001 PST,  
(21-22 December UTC time/date)  
IMPROVE II CV-580 test/calibration flight

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

### **OVERALL LOOK-WEATHER**

Between systems flight with multilayered but shallow stratiform clouds (tops 7-8,000 feet ASL) vicinity PAE field all the way to Quillayute, WA, where the NWS rawinsonde was released. Had to find open area in low clouds west of the rawin site since unable to fly down Forks AP runway as usual since low overcast with rain down to hilltops west of AP. Hence spiral up lower portions (through about 2500 feet) was several nm miles west and southwest of the balloon launch site. Thereafter able to spiral up (behind the balloon) over and downwind of the site (spirals were constant banked climbs of 300 feet per min.) Tops of highest droplet cloud layer was about 8000 feet ASL with high cirrus broken to overcast layer. Climb continued to 18,000 with no ice crystals detected from the overlying cirrus, estimated to reside at 25,000 feet or higher.

Prior to spiral up, we made some CCN measurements in the marine boundary layer for Vidal. The CCN counter was run by Tom Wilson.

### **OVERALL LOOK-INSTRUMENTATION**

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

#### **1. AIRCRAFT PARAMETERS**

#### **2. STATE PARAMETERS**

**Cambridge chilled mirror dewpoint (dp):** Most reliable of the dewpoint measurements, though it was somewhat higher than the ambient static temperature for much of the flight when precipitation and droplet clouds were present. However, it appeared to perform well in drier conditions.

**Ophir dewpoint (dp\_o):** Higher than the ambient temperature for much of the flight. Not considered reliable in moist conditions at present. The cause is unknown at this time.

**Rosemount analog pressure transducer (pstat):** Continues to exhibit spurious changes in pressure of up to several mb in per second.

### **3. Cloud Microstructure Probes**

**DMT Hot wire device:** Did not work; no response whatever to cloud penetrations.

**JW Hot wire device:** Power was shutoff to the J-W to eradicate the noise spikes generated by the J-W system that also affected several other parameters.

**PMS 1-D cloud probe:** The data need to be examined very closely to see if they are OK. However, 1-DC concentrations were clearly well-correlated with the 2-DC concentrations (just available as of 12-26-01) giving new hope that the spectra may be OK afterall.

**SPEC CPI:** Installed, did not work.

### **4. AEROSOLS**

Not QC-ed.