Airborne Instrumentation Research Project

Flight Summary Report

Flight No. 81-051
Date 7 April 1981

FSR- 1491

NASA
National Aeronautics and Space Administration
Ames Research Center
Moffett Field, California 94035

Airborne Missions and Applications Division
FLIGHT SUMMARY REPORT

Flight No: 81-051
FSR No: 1491
Sensor Package: RC-10
Aerosol Particulate Sampler (APS)

Purpose of Flight: #0666 Support
Requestor: Lumb
#0047 Support
Requestor: Ferry

Area(s) Covered: Central California

Date: 7 April 1981
Julian Date: 097
Aircraft No: 4

SENSOR DATA

Accesion No: 02970
Sensor ID No: 033 024
Sensor Type: RC-10 APS
Focal Length: 6” 153.17mm

Film Type: Aerochrome Infrared,
50 193

Filtration: Wratten 12 + 2.2AV

Spectral Band: 510-900nm
f Stop: 5.6
Shutter Speed: 1/250
No. of Frames: 107
% Overlap: 60
Quality: Excellent

Remarks: non-imaging sensor
This flight was flown in support of Flight Requests #0666 (Lumb, NASA/ARC) and #0047 (Ferry, NASA/ARC) under the FY 1981 Airborne Instrumentation Research Program (AIRP) plan. RC-10 photographic coverage was obtained over the Sacramento Valley and central San Joaquin valley in California (see Track Map). Aerosol Particulate Sampler (APS) data was acquired, but is not shown on the track map due to the limited data collection.

Thin cirrus was encountered over the Sacramento Valley and moderate cirrus and cumulus over portions of the San Joaquin. The pilot flew the San Joaquin area in a disjointed manner in order to avoid the majority of cloud cover moving through the area. The times annotated on the film are 10 hours late due to mis-set clock. Correct times are listed in the flight line data. No camera or processing problems were noted and the quality of the data is rated excellent.

The APS has been developed and is operated by Dr. Guy Ferry of the NASA-Ames Research Center Atmospheric Experiments Branch. The sampler is a non-imaging sensor designed to gather high altitude dust particles for laboratory research.
<table>
<thead>
<tr>
<th>Check Points</th>
<th>Frame Numbers</th>
<th>Time (GMT – hr, min, sec)</th>
<th>Altitude, MSL feet/meters</th>
<th>Cloud Cover/Remarks</th>
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<tr>
<td>RC-10</td>
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<td>6849</td>
<td>19:14:08</td>
<td>65,000/19800</td>
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<tr>
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<td>A-B</td>
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<td>C-D</td>
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<td>E-F</td>
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<td>K-L</td>
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</tbody>
</table>

APS #2 exposed for one hour at altitude; IOAT -32°C

APS #1 exposed for short duration at altitude prior to descent; IOAT -33°C