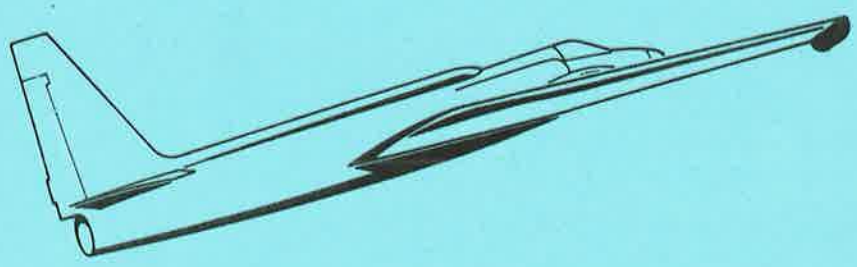
Airborne Instrumentation Research Project

Flight Summary Report

Flight No. 81-079

Date 8 June 1981

FSR- 1503



National Aeronautics and
Space Administration

Ames Research Center
Moffett Field, California 94035

Airborne Missions and Applications Division

FLIGHT SUMMARY REPORT

Flight No: 81-079

Date: 8 June 1981

FSR No: 1503

Julian Date: 159

Sensor Package: Itek Iris II
Aerosol Particulate Sampler (APS)
Knollenberg Probe (KP)

Aircraft No: 5

Purpose of Flight: #0902 Support (Weber)
#0047 Support (Ferry)
#0792 Support (Pollack)

Area(s) Covered: Southern California

SENSOR DATA

Accession No:	02983	---	---
Sensor ID No:	066	024	068
Sensor Type:	Itek Iris II	APS	KP
Focal Length:	24" 609.6mm	---	---
Film Type:	High Definition Aerial Film, 3414	---	---
Filtration:	Wratten 21	---	---
Spectral Band:	540-700nm	---	---
f Stop:	3.5	---	---
Shutter Speed:	1/230	---	---
No. of Frames:	590	---	---
% Overlap:	60	---	---
Quality:	Excellent	---	---
Remarks:	140° FOV	Non-imaging sensor	Non-imaging sensor

FLIGHT SUMMARY

81-079

This flight was flown in support of Flight Requests #0902 (Weber, USFS), #0047 (Ferry, NASA/ARC) and #0792 (Pollack, NASA/ARC) under the FY 1981 Airborne Instrumentation Research Program (AIRP). The Itek Iris II panoramic camera (140° FOV) was utilized to acquire photographic data over southern California (see Track Map). Aerosol Particulate Sampler (APS) and the Knollenberg Probe (KP) were also flown but are not depicted on the track map.

Minor fog was encountered along the coast. The rest of the area was clear. Because of high albedo, data over the Mojave Desert was slightly overexposed. Due to thermal instability, the data is defocused at the beginning of the flight and improved as the flight progressed.

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.

The Knollenberg Probe is a particle size spectrometer experiment containing three basic sybsystems; a 2-D grey spectrometer probe, an active scattering aerosol spectrometer probe, and a data acquisition and recording system.

The 2-D spectrometer is a shadow graph imaging instrument designed for sizing particles of 25-6000 micrometers at aircraft velocity. It utilizes a laser to illuminate particles whose shadows are imaged onto a photodiode array and are sized as an integral number of occulted elements. Particle image information can be collected at a rate of 128 million bits per second. Automatic data compression is accomplished by recording data only when particles are present. The active scattering aerosol spectrometer covers a size range of 0.1 to 6.1 micrometers in 16 size classes.

FLIGHT LINE DATA

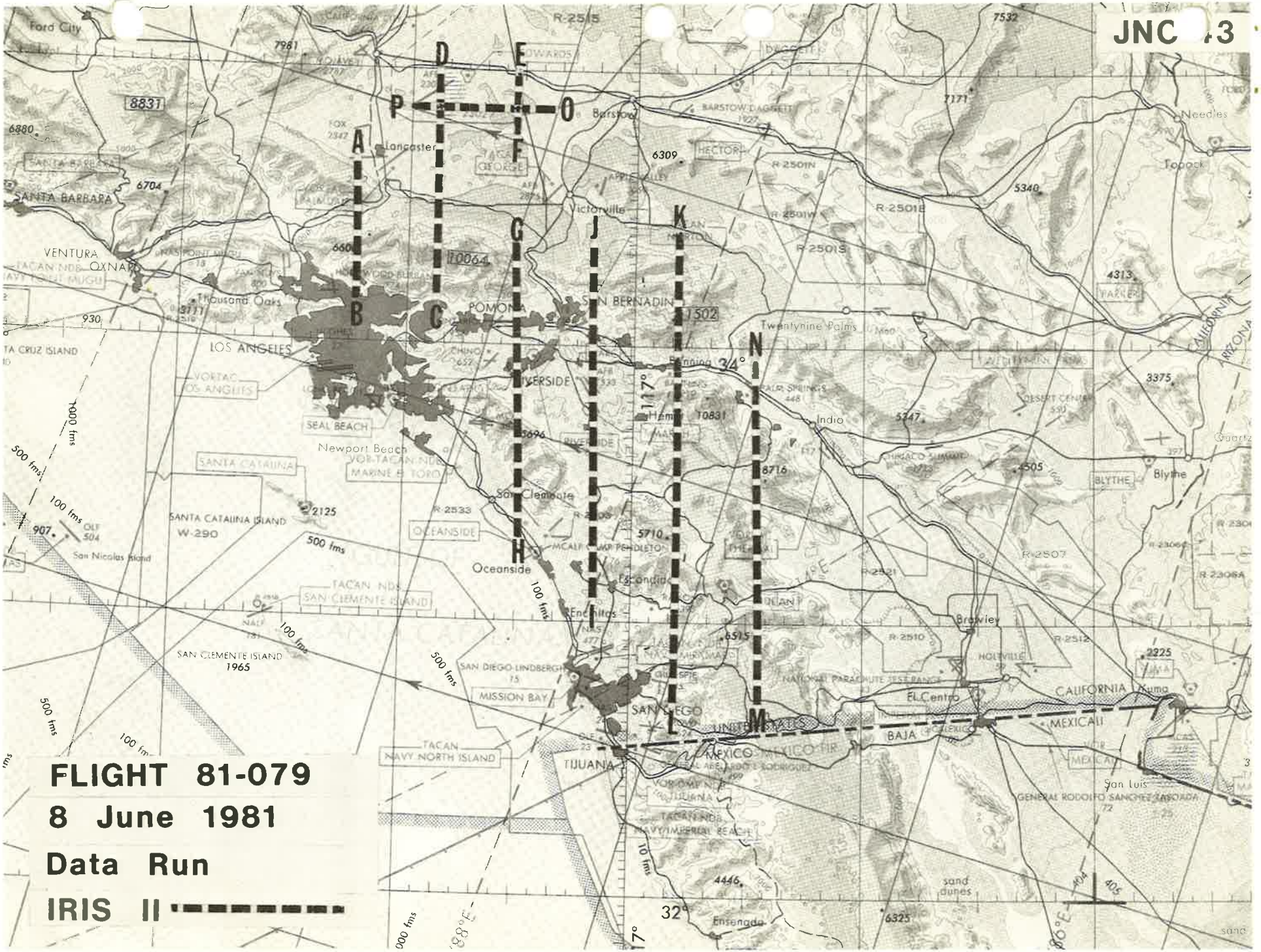
FLIGHT NO. 81-079

	Check Points	Frame Numbers	Time (GMT—hr, min, sec) START	Time (GMT—hr, min, sec) END	Altitude, MSL feet/meters	Cloud Cover/Remarks
IRIS II	A-B	0001-0043	18:50:40	18:55:23	65,000/19800	Clear
	C-D	0044-0106	19:00:05	19:07:02	"	Clear
	E-F	0107-0121	19:11:22	19:12:56	"	Clear
	G-H	0122-0205	19:16:30	19:25:46	"	Coastal fog, frs. 0178-0205
	I-J	0206-0314	19:32:13	19:44:18	"	Coastal fog, frs. 0206-0220
	K-L	0315-0446	19:48:31	20:03:13	"	Coastal fog, frs. 0412-0446
	M-N	0447-0539	20:07:13	20:17:33	"	Clear
	O-P	0540-0590	20:30:49	20:36:25	"	Clear
APS	---	---	18:09:00	18:11:00	40,000/12200	APS #3 exposed for 2 minutes
	---	---	18:32:00	18:34:00	50,000/15250	APS #2 exposed for 2 minutes
	---	---	20:54:00	20:55:00	60,000/18300	APS #1 exposed for 1 minute
KP	---	---	---	---	40,000/12200	5 minutes level run for probe
	---	---	---	---	44,000/13400	"
	---	---	---	---	46,000/14020	"
	---	---	---	---	48,000/14630	"

FLIGHT LINE DATA

FLIGHT NO. 81-079

	Check Points	Frame Numbers	Time (GMT—hr, min, sec) START	Time (GMT—hr, min, sec) END	Altitude, MSL feet/meters	Cloud Cover/Remarks
KP (Cont)	---	---	---	---	50,000/15250	5 minutes level run for probe
	---	---	---	---	52,000/15850	"
	---	---	---	---	60,000/18300	"


JNC
FLIGHT 81-079
8 June 1981
Data Run
IRIS II
A
B
C
D
E
F
G
H
J
K
L
M
N
O
P
Lancaster
Victorville
Barstow
Needles
Topock
Twentynine Palms
Indio
Blythe
Brawley
El Centro
Yuma
Mexicali
Oceanside
Escondido
San Clemente
Newport Beach
Thousand Oaks
Santa Barbara
Ventura
Oxnard
Pomona
San Bernadino
Los Angeles
Seal Beach
Santa Catalina Island
San Nicolas Island
San Clemente Island
San Diego
Mission Bay
Tijuana
Ensenada
Mexico
Baja California
sand dunes
117°
32°
R-2515
R-2501N
R-2501E
R-2501W
R-2501S
R-2533
R-2507
R-2510
R-2512
R-2306
R-2306A
TACAN NDB
NAVY NORTH ISLAND
MARINE AIR TORO
MCALF CAMP PENDLETON
W-290
500 fms
100 fms
1000 fms
10 fms