

# FLIGHT SUMMARY REPORT

**Flight #:** 92-059  
**Date:** 25 February 1992  
**Sensor Package:** Airborne Ocean Color Imager (AOCI)  
Dual Wild-Heerbrug RC-10  
**Area(s) Covered:** Los Angeles Bight, California

**Investigator(s):** Functional Check Flight

**Aircraft #:** 709

**Flight Request:** 92X003

**Julian Date:** 056

## SENSOR DATA

<b>Accession #:</b>	04380	04381	-----
<b>Sensor ID #:</b>	033	031	090
<b>Sensor Type:</b>	RC-10	RC-10	AOCI
<b>Focal Length:</b>	6" 153.17 mm	6" 153.05 mm	-----
<b>Film Type:</b>	Aerial Color SO-242	Panatomic-X Aerographic II 2412	-----
<b>Filtration:</b>	2.2 AV	Wratten 12	-----
<b>Spectral Band:</b>	400-700 nm	510-700 nm	-----
<b>f Stop:</b>	4	5.6	-----
<b>Shutter Speed:</b>	1/100	1/250	-----
<b># of Frames:</b>	30	30	-----
<b>% Overlap:</b>	60	60	-----
<b>Quality:</b>	Excellent	Excellent	Excellent
<b>Remarks:</b>			

## Airborne Science and Applications Program

The Airborne Science and Applications Program (ASAP) is supported by three ER-2 high altitude Earth Resources Survey aircraft. These aircraft are operated by the High Altitude Missions Branch at NASA-Ames Research Center, Moffett Field, California. The ER-2s are used as readily deployable high altitude sensor platforms to collect remote sensing and *in situ* data on earth resources, celestial phenomena, atmospheric dynamics, and oceanic processes. Additionally, these aircraft are used for electronic sensor research and development and satellite investigative support.

The ER-2s are flown from various deployment sites in support of scientific research sponsored by NASA and other federal, state, university, and industry investigators. Data are collected from deployment sites in Kansas, Texas, Virginia, Florida, and Alaska. Cooperative international scientific projects have deployed the aircraft to sites in Great Britain, Australia, Chile, and Norway.

Photographic and digital imaging sensors are flown aboard the ER-2s in support of research objectives defined by the sponsoring investigators. High resolution mapping cameras and digital multispectral imaging sensors are utilized in a variety of configurations in the ER-2s' four pressurized experiment compartments. The following provides a description of the digital multispectral sensor and cameras used for data collection during this flight.

### Airborne Ocean Color Imager

The Airborne Ocean Color Imager (AOCI) is a high altitude multispectral scanner designed for oceanographic remote sensing. It provides 10-bit digitization of eight bands in the visible/near-infrared region of the spectrum, plus two 8-bit bands in the near and thermal infrared. The bandwidths are as follows:

<u>Channel</u>	<u>Wavelength, <math>\mu m</math></u>
1	0.436 - 0.455
2	0.481 - 0.501
3	0.511 - 0.531
4	0.554 - 0.575
5	0.610 - 0.631
6	0.655 - 0.676
7	0.741 - 0.800
8	0.831 - 0.897
9	0.989 - 1.054
10	8.423 - 12.279

Sensor/aircraft parameters are as follows:

I FOV:	2.5 mrad
Ground Resolution:	163 feet (50 meters) at 65,000 feet
Total Scan Angle:	85°
Swath Width:	19.6 nmi (36.3 km) at 65,000 feet
Pixels/Scan Line:	716
Scan Rate:	6.25 scans/second
Ground Speed:	400 kts (206 m/second)
Digitization:	8-bit channels 9-10 10-bit channels 1-8

## Camera Systems

Various camera systems and films are used for photographic data collection. Film types include high definition color infrared, natural color, and black and white emulsions. Available photographic systems are as follows:

- Wild-Heerbrug RC-10 metric mapping camera
  - 9 x 9 inch film format
  - 6 inch focal length lens provides area coverage of 16 x 16 nautical miles from 65,000 feet
  - 12 inch focal length lens provides area coverage of 8 x 8 nautical miles from 65,000 feet
  
- Hycon HR-732 large scale mapping camera
  - 9 x 18 inch film format
  - 24 inch focal length lens provides area coverage of 4 x 8 nautical miles from 65,000 feet
  
- IRIS II Panoramic camera
  - 4.5 x 34.7 inch film format
  - 24 inch focal length lens
  - 90 degree field of view provides area coverage of 2 x 21.4 nautical miles from 65,000 feet

The U.S. Geological Survey's EROS Data Center at Sioux Falls, South Dakota serves as the archive and product distribution facility for NASA-Ames aircraft acquired photographic and digital imagery. For information regarding photography and digital data (including areas of coverage, products, and product costs) contact EROS Data Center, Customer Services, Sioux Falls, South Dakota 57198 (Telephone: (605) 594-6151).

Additional information regarding ER-2 acquired photographic and digital data is available through the Aircraft Data Facility at Ames Research Center. For specific information regarding data tape format, logical record format, scanner calibration, flight documentation, sensor parameters, and areas of coverage contact the Aircraft Data Facility, NASA-Ames Research Center, Mail Stop 240-6, Moffett Field, California 94035-1000 (Telephone: (415) 604-6252).

# AOCI SCANNER FLIGHT LINE DATA

## FLIGHT NO. 92-059

DAEDALUS FLIGHT DATA  
FLIGHT NUMBER: 92-059

Check Points	Actual Time (GMT)		Actual Scanline		Altitude feet/meter	Scan Speed (rps)	Total Good Scanlines	Total Interpolated Scanlines	Total Repeated Scanlines
	Begin	End	Begin	End					
A-B	18:47:45	18:55:20	21373	24217	65000/19812	6.25	2845	0	0
C-D	18:58:50	19:04:15	25530	27561	65000/19812	6.25	2032	0	0
E-F	19:07:35	19:13:50	28811	31154	65000/19812	6.25	2344	0	0
G-H	19:19:35	19:23:50	33311	34904	65000/19812	6.25	1594	0	0
I-J	19:27:05	19:30:10	36123	37279	65000/19812	6.25	1157	0	0
K-L	19:31:00	19:35:00	37592	39092	65000/19812	6.25	1501	0	0

**CAMERA FLIGHT LINE DATA**  
**FLIGHT NO. 92-059**

Accession # 04380

Sensor # 033

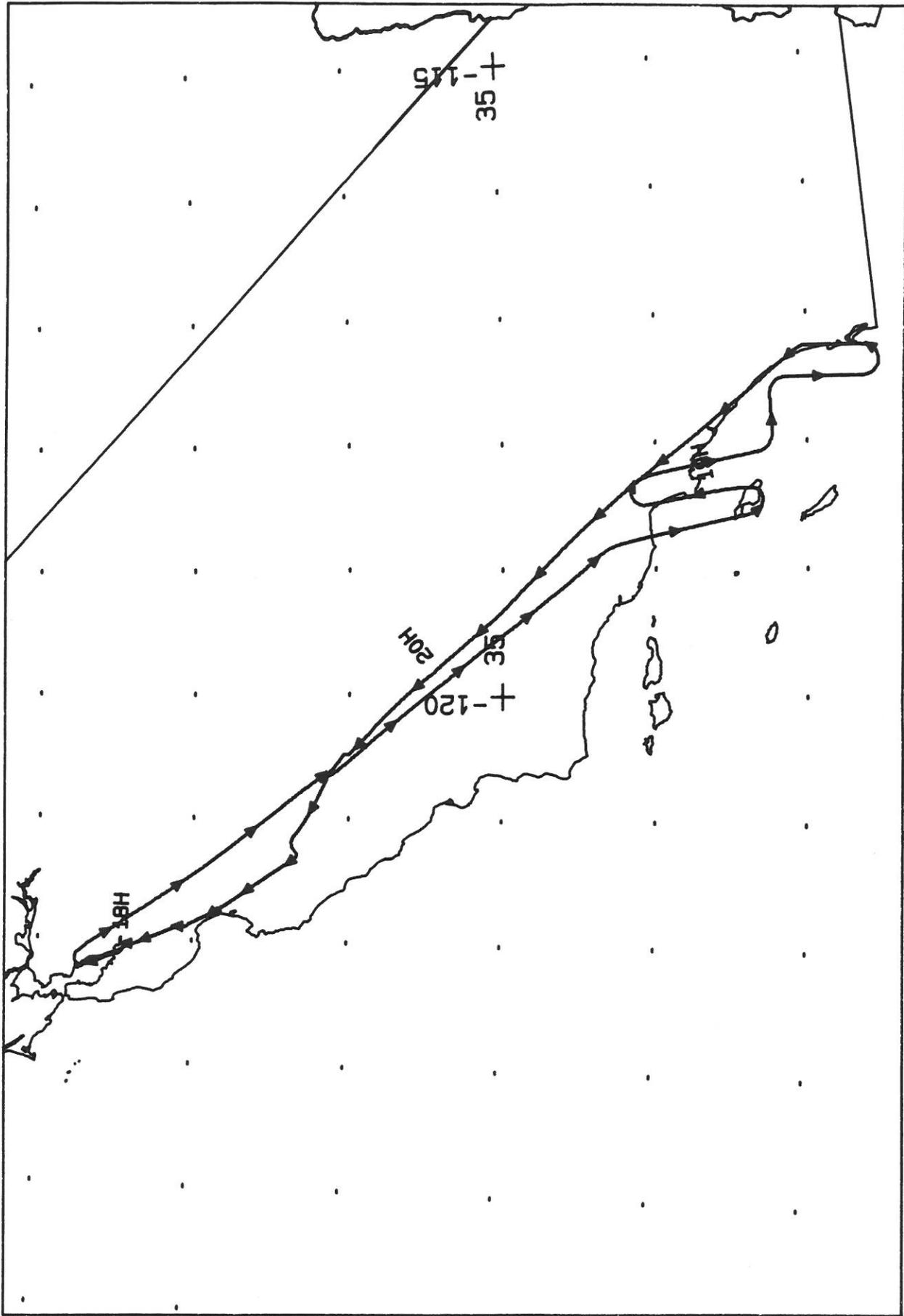
Check Points	Frame Numbers	Time (GMT-hr, min, sec)		Altitude, MSL feet/meters	Cloud Cover/Remarks
		START	END		
A - B	9805-9812	18:49:34	18:56:05	65000/19800	Clear
C - D	9813-9818	18:59:57	19:04:36	"	Clear
E - F	9819-9825	19:09:07	19:14:42	"	Clear
G - H	9826-9830	19:20:52	19:24:35	"	Clear
I - J	9831-9834	19:28:14	19:31:02	"	Clear

**CAMERA FLIGHT LINE DATA**  
**FLIGHT NO. 92-059**

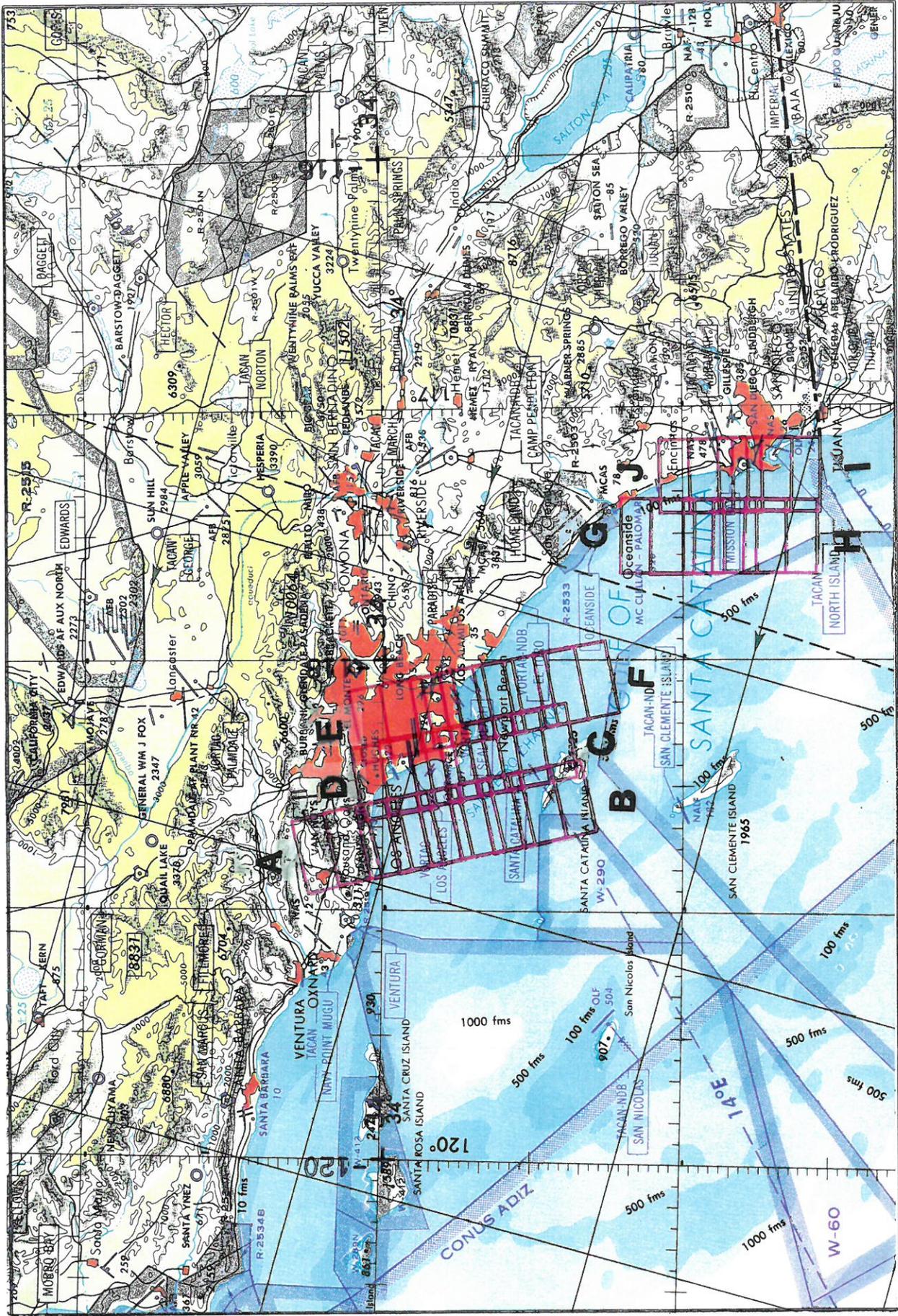
Accession # 04381

Sensor # 031

Check Points	Frame Numbers	Time (GMT-hr, min, sec)		Altitude, MSL feet/meters	Cloud Cover/Remarks
		START	END		
A - B	9616-9623	18:50:42	18:57:19	65000/19800	Clear
C - D	9624-9629	19:01:07	19:05:50	"	Clear
E - F	9630-9636	19:10:16	19:15:56	"	Clear
G - H	9637-9641	19:22:02	19:25:49	"	Clear
I - J	9642-9645	19:29:24	19:32:14	"	Clear



FLIGHT 92-059      25 February 1992      A/C 709      AOCI / Dual RC-10



FLIGHT 92-059      25 February 1992      A/C 709      Dual PG-14      ACC # 04390 (S0-242)      ACC # 04391 (2412)      JNC 43

