

# FLIGHT SUMMARY REPORT

**Flight Number:** 93-039  
**Calendar/Julian Date:** 16 December 1992 • 351  
**Sensor Package:** Modis-N Airborne Simulator (MAS)  
**Area(s) Covered:** Monterey Coast

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

**Aircraft #:** 709

## SENSOR DATA

**Accession #:** ----  
**Sensor ID #:** 108  
**Sensor Type:** MAS  
**Focal Length:** ----  
**Film Type:** ----  
**Filtration:** ----  
**Spectral Band:** ----  
**f Stop:** ----  
**Shutter Speed:** ----  
**# of Frames:** ----  
**% Overlap:** ----  
**Quality:** Good  
**Remarks:**

## 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 sensors and camera system(s) used for data collection during this flight.

### Modis-N Airborne Simulator

The Modis-N Airborne Simulator (MAS) is a modified Daedalus multispectral scanner. It records up to 12 8-bit channels, which can be selected from an array of 50 available spectral bands. The band selection is made prior to flight and the instrument is hard-wired to that configuration. Channel one can be used to store additional bits which provide 10-bit resolution for channels 9 through 12. The band configuration for this deployment is as follows:

<u>Channel</u>	<u>Band edges <math>\mu\text{m}</math></u>
1	-----
2	0.675 - 0.685
3	1.605 - 1.655
4	1.955 - 2.005
5	3.675 - 3.825
6	4.325 - 4.575
7	4.575 - 4.725
8	9.000 - 9.400
9*	9.400 - 9.800
10*	9.800 - 10.200
11*	10.700 - 11.200
12*	12.200 - 12.700

\* 10-bit resolution

#### Sensor/Aircraft Parameters:

Spectral Channels:	50
Output Channels:	7 8-bit and 4 10-bit
IFOV:	0.5 mrad
Ground Resolution:	163 feet (50 meters at 65,000 feet)
Total Scan Angle:	85.92°

<b>Pixels/Scan Line:</b>	<b>716</b>
<b>Scan Rate:</b>	<b>6.25 scans/second</b>
<b>Ground Speed:</b>	<b>400 kts (206 m/second)</b>
<b>Roll Correction:</b>	<b>Plus or minus 3.5 degrees (approx.)</b>

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).

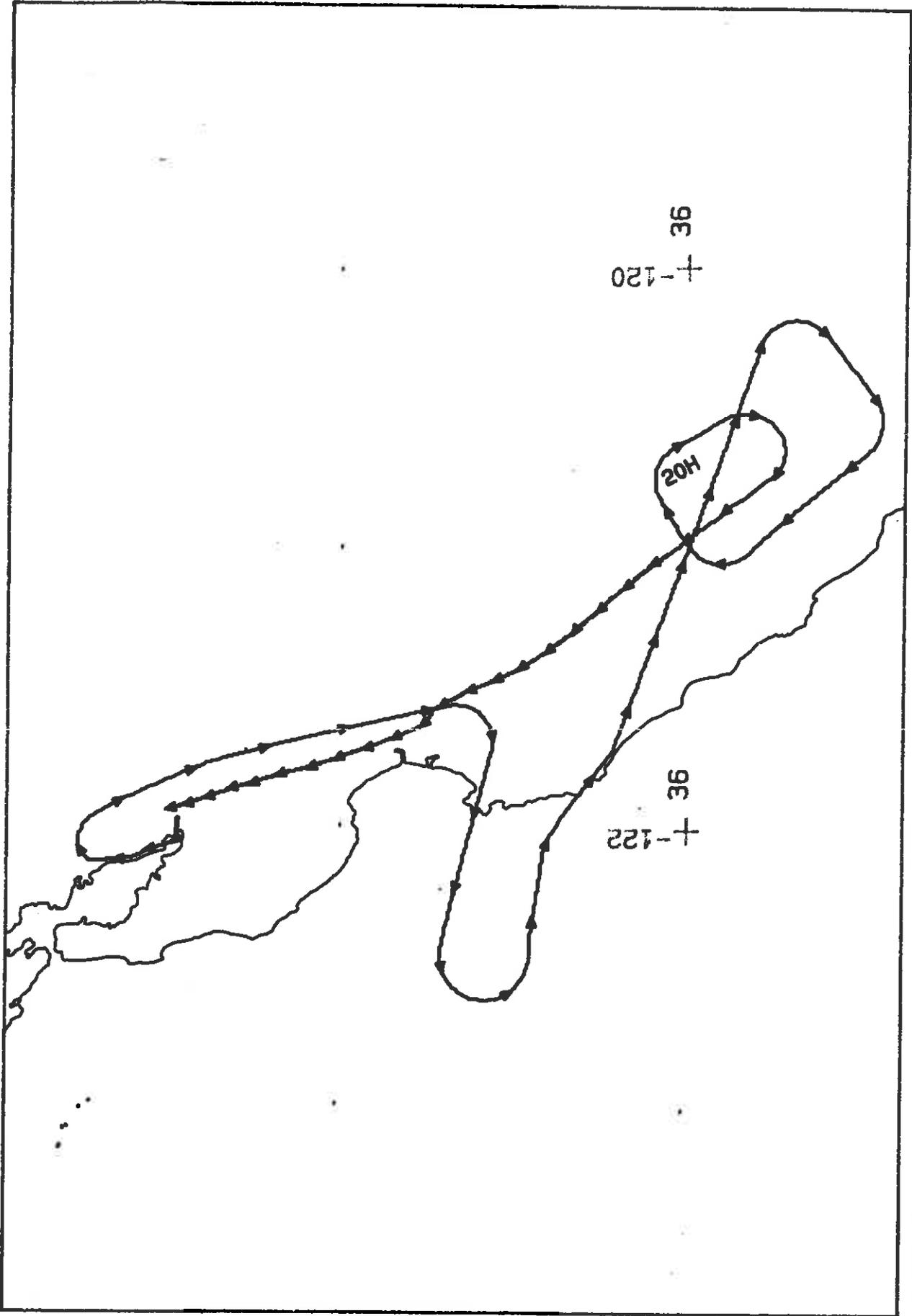
Additional information regarding ER-2 acquired photographic and digital data is available through the Aircraft Data Facility at Ames Research Center. For specific information regarding flight documentation, sensor parameters, and areas of coverage contact the Aircraft Data Facility, NASA-Ames Research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

# MAS SCANNER FLIGHT LINE DATA

## FLIGHT NO. 93-039

DIGITALS FLIGHT DATA  
 FLIGHT NUMBER: 93-039

Check Points	A c t u a l		A c t u a l		Scan Speed (pps)	Total		Total	
	t i m e b e g i n	t i m e e n d	s c a n l i n e b e g i n	s c a n l i n e e n d		G o o d S c a n l i n e s	I n t e r p o l a t e d S c a n l i n e s	R e p e a t e d S c a n l i n e s	R e p e a t e d S c a n l i n e s
A-B	19:20:41.0	19:27:38.0	11629	14224	6.20	2395	0	0	0
C-D	19:32:57.0	19:35:19.0	16264	17149	6.20	686	0	0	0
D-E	19:53:42.0	19:47:5.0	17295	21541	6.20	4249	0	0	0

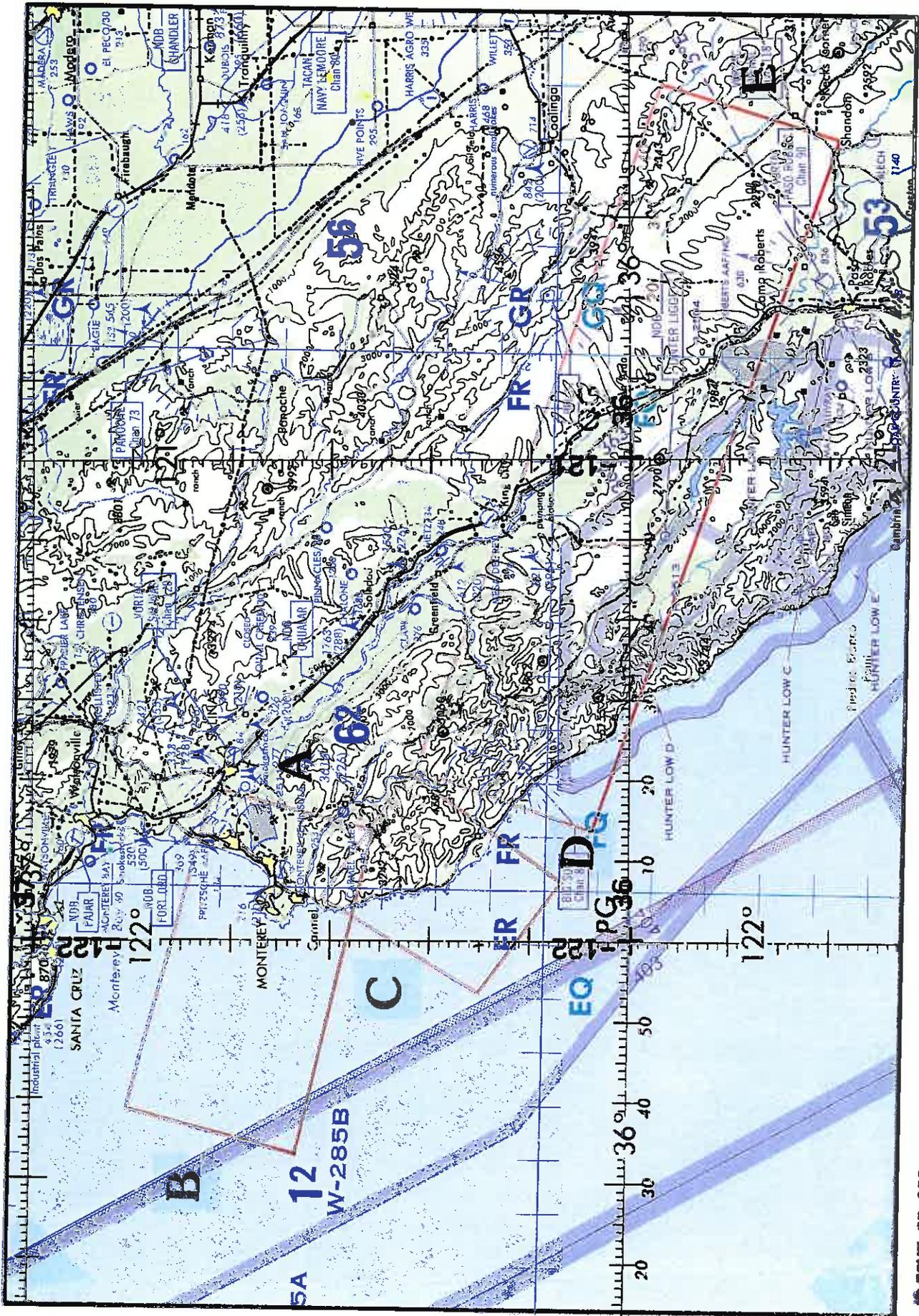


FLIGHT 93-039

16 DECEMBER 1992

A/C 709

T06A COARE / MAS



FLIGHT 89-098

16 DECEMBER 1982

A/C 709

MAS

ONC 6-18