

## FLIGHT SUMMARY REPORT

**Flight Number:** 97-131  
**Calendar/Julian Date:** 25 July 1997 • 206  
**Sensor Package:** Wild Heerbrugg RC-10  
Thematic Mapper Simulator (TMS)  
**Area(s) Covered:** Central Valley

**Investigator(s):** Posley, Farm Land Mapping Bureau

**Aircraft #:** 706

### SENSOR DATA

<b>Accession #:</b>	05223	----
<b>Sensor ID #:</b>	035	074
<b>Sensor Type:</b>	RC-10	TMS
<b>Focal Length:</b>	6" 153.46 mm	----
<b>Film Type:</b>	Aerochrome IR SO-060	----
<b>Filtration:</b>	Wratten 12 +2.2 AV	----
<b>Spectral Band:</b>	510-900 nm	----
<b>f Stop:</b>	8	----
<b>Shutter Speed:</b>	1/225	----
<b># of Frames:</b>	239	----
<b>% Overlap:</b>	60	----
<b>Quality:</b>	Good	----
<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(s) and camera(s) used for data collection during this flight.

## Thematic Mapper Simulator

The Daedalus Thematic Mapper Simulator (TMS) is a multispectral scanner flown aboard the ER-2 aircraft which simulates spatial and spectral characteristics of the seven Landsat-D Thematic Mapper bands. The specific bands are as follows:

<u>Daedalus Channel</u>	<u>TM Band</u>	<u>Wavelength, mm</u>
1	A	0.42 - 0.45
2	1	0.45 - 0.52
3	2	0.52 - 0.60
4	B	0.60 - 0.62
5	3	0.63 - 0.69
6	C	0.69 - 0.75
7	4	0.76 - 0.90
8	D	0.91 - 1.05
9	5	1.55 - 1.75
10	7	2.08 - 2.35
11	6	8.5 - 14.0 low gain
12	6	8.5 - 14.0 high gain

Sensor/aircraft parameters are as follows:

IFOV:	1.25 mrad
Ground Resolution:	81 feet (25 meters) at 65,000 feet
Total Scan Angle:	43°
Swath Width:	8.4 nmi (15.6 km) at 65,000 feet
Pixels/Scan Line:	716
Scan Rate:	12.5 scans/second
Ground Speed:	400 kts (206 m/second)

## 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-Heerbrugg 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).

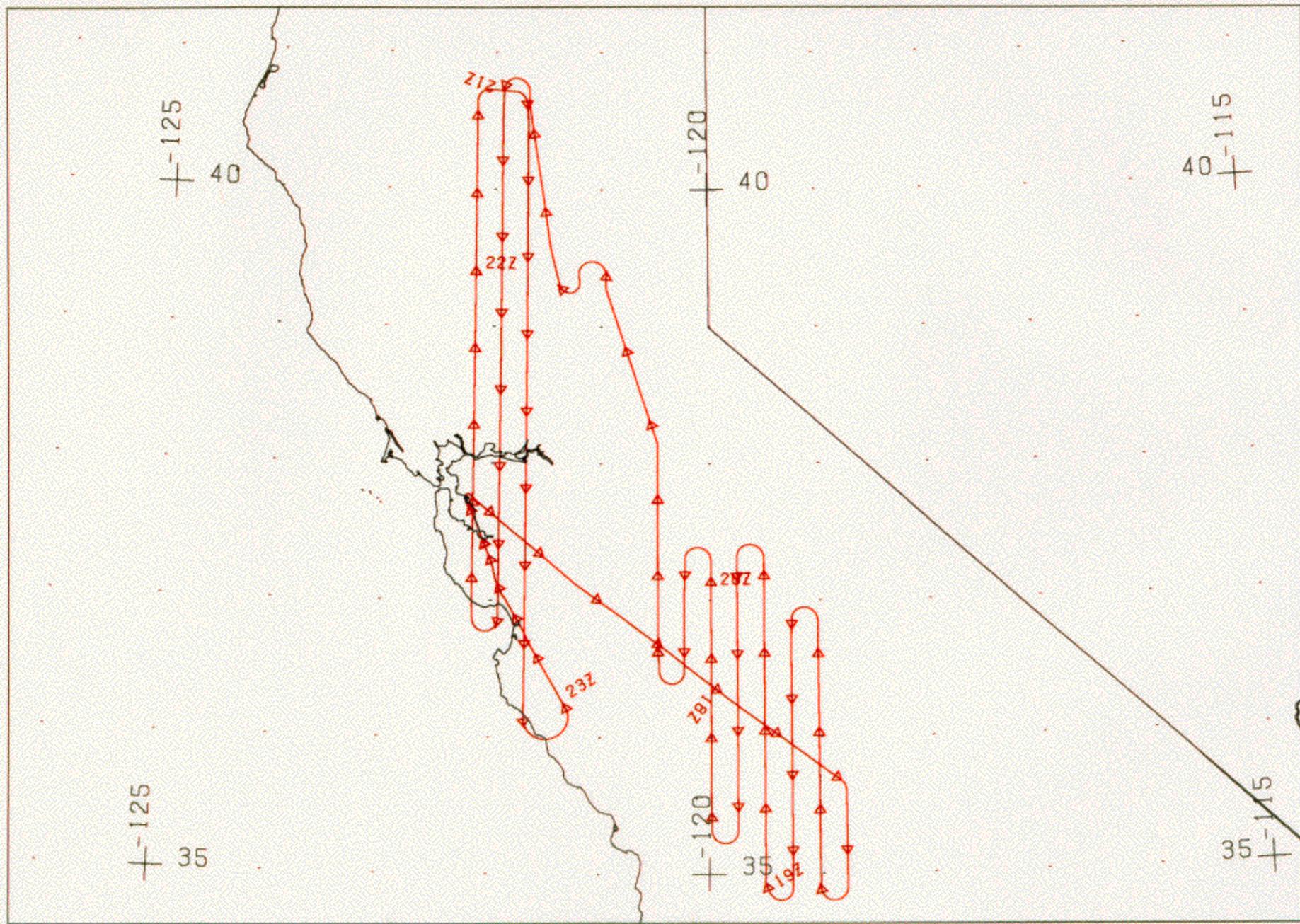
Information regarding ER-2 acquired photographic and digital data is available through the Aircraft Data Facility at Ames Research Center. For specific information regarding flight documentation, sensor parameters, and areas of coverage contact the Aircraft Data Facility, NASA-Ames Research Center, Mail Stop 240-6, Moffett Field, California 94035-1000 (Telephone: 650-604-6252).

**CAMERA FLIGHT LINE DATA**  
**FLIGHT NO. 97-131**

Accession # 05223

Sensor # 035

Check Points	Frame Numbers	Time (GMT-hr, min, sec)		Altitude, MSL feet/meters	Cloud Cover/Remarks
		START	END		
A - B	7808-7815	18:12:53	18:17:41	65075/19835	Clear
C - D	7816-7830	18:21:07	18:34:16	65193/19871	Clear
E - F	7831-7850	18:40:48	18:57:16	64980/19806	Clear
G - H	7851-7871	19:00:57	19:18:01	65357/19921	Clear
I - J	7872-7892	19:24:46	19:41:39	65200/19873	Clear
K - L	7893-7910	19:46:36	20:00:59	64900/19782	Clear
M - N	7911-7920	20:04:43	20:11:14	64950/19797	Clear
O - P	7921-7932	20:15:33	20:24:39	65075/19835	Clear
Q - R	7933-7970	21:00:59	21:34:01	65366/19924	10-40% coastal stratus (frames 7969-7970)
S - T	7971-8008	21:37:42	22:10:29	65192/19871	10-70% coastal stratus (frames 7971-7974); 10-30% cumulus (frames 8001-8003)
U - V	8009-8046	22:20:28	22:52:53	65079/19836	10-40% coastal stratus (frames 8039-8043); 10-20% coastal stratus (frames 8045-8046)

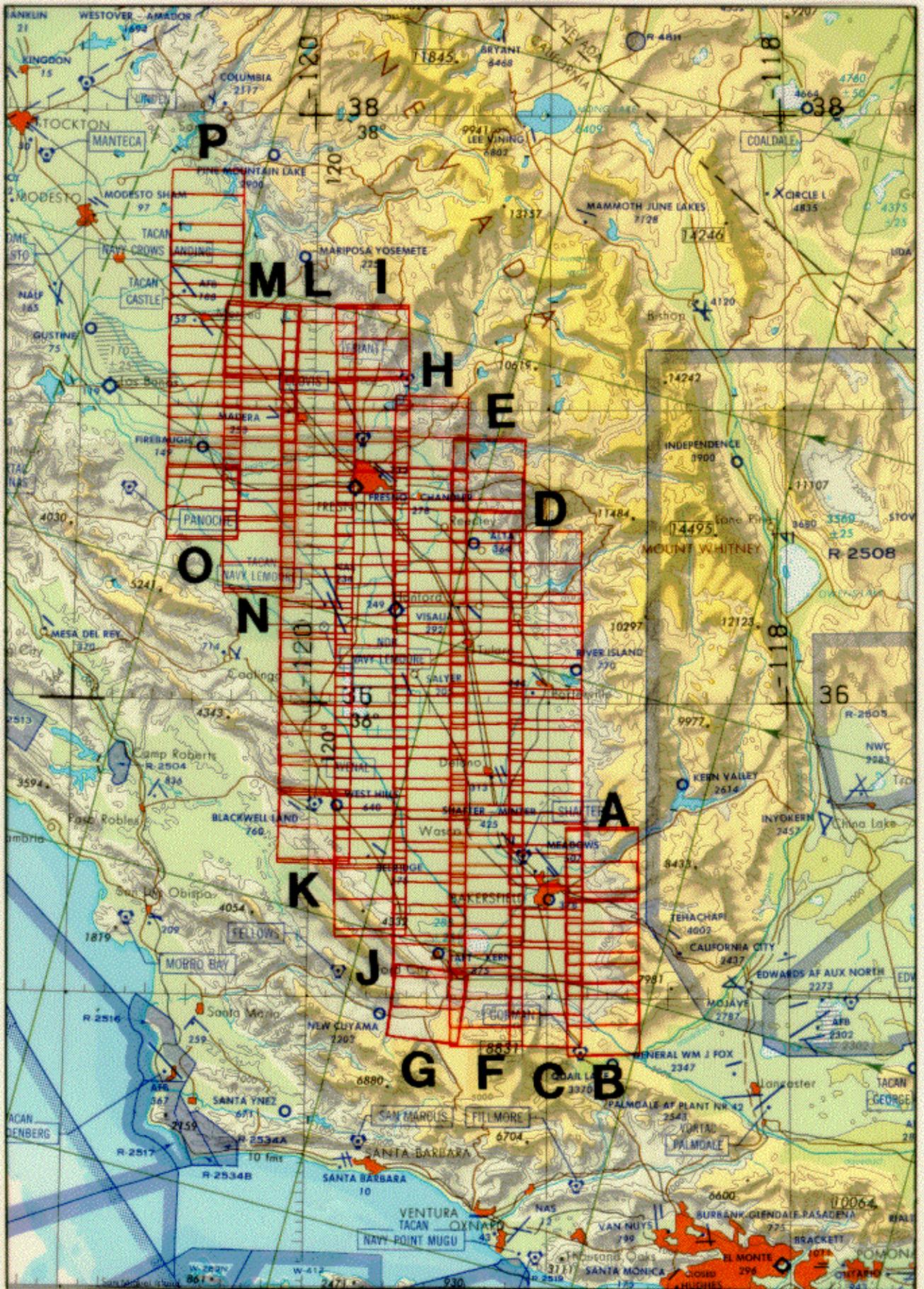


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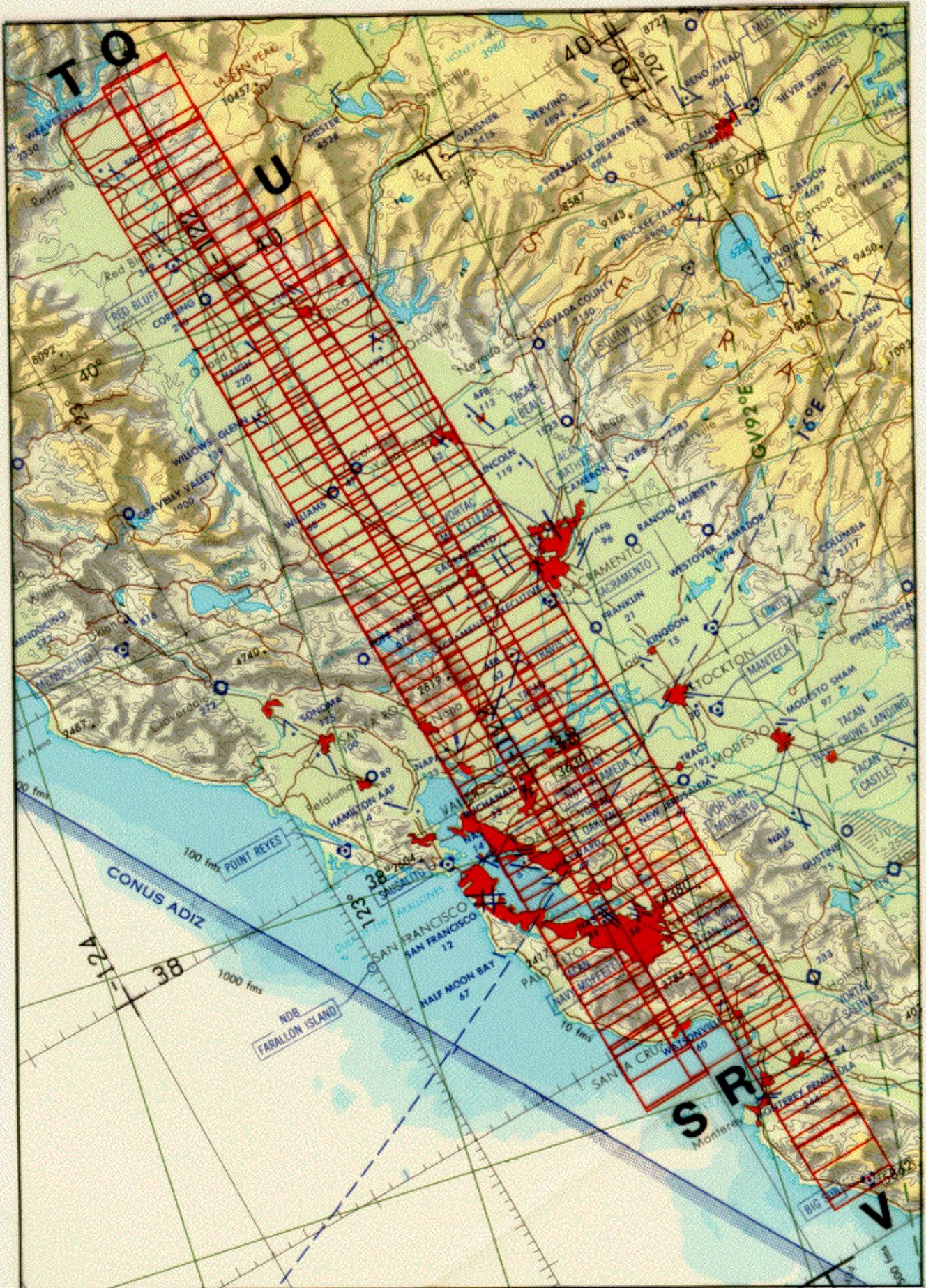
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RC-10 / TMS



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 JNC 43



JNC 43

RC-10 / TMS

R/C 706

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