FLIGHT SUMMARY REPORT

Flight Number: 98-057

Calendar/Julian Date: 15 May 1998 • 135

Sensor Package: Wild Heerbrugg RC-10
Airborne Visible and Infrared Imaging Spectrometer (AVIRIS)

Area(s) Covered: Jornada and Sevillita, NM;
McDowell Mtns., AZ

Investigator(s): Wessman, University of Colorado;
Nolen, New Mexico State University;
Ledbetter, City of Scottsdale

Aircraft #: 806

SENSOR DATA

Accession #:	05252	-----
Sensor ID #:	034	099
Sensor Type:	RC-10	AVIRIS
Focal Length:	12” 304.66 mm	-----
Film Type:	Aerochrome IR SO-134	-----
Filtration:	Wratten 12	-----
Spectral Band:	510-900 nm	-----
f Stop:	11	-----
Shutter Speed:	1/275	-----
# of Frames:	110	-----
% Overlap:	60	-----
Quality:	Good	-----
Remarks:	Subtract 1 second for correct UTC	

Airborne Science and Applications Program

The Airborne Science Branch at NASA's Dryden Flight Research Center, Edwards, California, operates two ER-2 high altitude aircraft in support of NASA earth science research. 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, Fiji, New Zealand, 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.

Airborne Visible and Infrared Imaging Spectrometer

The Airborne Visible and Infrared Imaging Spectrometer (AVIRIS) is the second in the series of imaging spectrometer instruments developed at the Jet Propulsion Laboratory (JPL) for earth remote sensing. This instrument uses scanning optics and four spectrometers to image a 614 pixel swath simultaneously in 224 contiguous spectral bands (0.4-2.4 mm).

AVIRIS parameters are as follows:

IFOV:	1 mrad
Ground Resolution:	66 feet (20 meters) at 65,000 feet
Total Scan Angle:	30°
Swath Width:	5.7 nmi (10.6 km) at 65,000 feet
Spectral Coverage:	0.41-2.45 mm
Pixels/Scan Line:	614
Number of Spectral Bands:	224
Digitization:	10-bits
Data Rate:	17 MBPS

Spectrometer	Wavelength Range	Number of Bands	Sampling Interval
1	0.41 - 0.70 mm	31	9.4 nm
2	0.68 - 1.27 mm	63	9.4 nm
3	1.25 - 1.86 mm	63	9.7 nm
4	1.84 - 2.45 mm	63	9.7 nm

All AVIRIS data is decommutated and archived at JPL and not currently available for public distribution. For further information contact Rob Green at Jet Propulsion Laboratory, 4800 Oak Grove Drive, Mail Stop 183-501, Pasadena, California 91109-8099.

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

Data Availability

The U.S. Geological Survey's EROS Data Center at Sioux Falls, South Dakota serves as the archive and product distribution facility for Airborne Science Program aircraft acquired photographic and digital imagery. The photographic archive consists of photography acquired by the program from 1971 to April 1996. 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).

As of April 1996 the EROS Data Center no longer receives an archive copy of newly acquired Airborne Science Program photography. Original photography is archived with the Airborne Sensor Facility at Ames Research Center. A user copy of the photography is provided to the principal investigators for each flight. Principal investigators are cited on the first page of their respective flight summary reports. For information regarding photography acquired from April 1996 to the present contact the Airborne Sensor Facility as follows:

Flight Documentation and Data Archive Searches

The following is the web site for flight documentation as published by the Airborne Sensor Facility at NASA Ames Research Center:

http://asapdata.arc.nasa.gov/er-2fsr.html

Additional information regarding flight documentation to include data archive searches, data availability, sensor parameters, and areas of coverage may be obtained from the following:

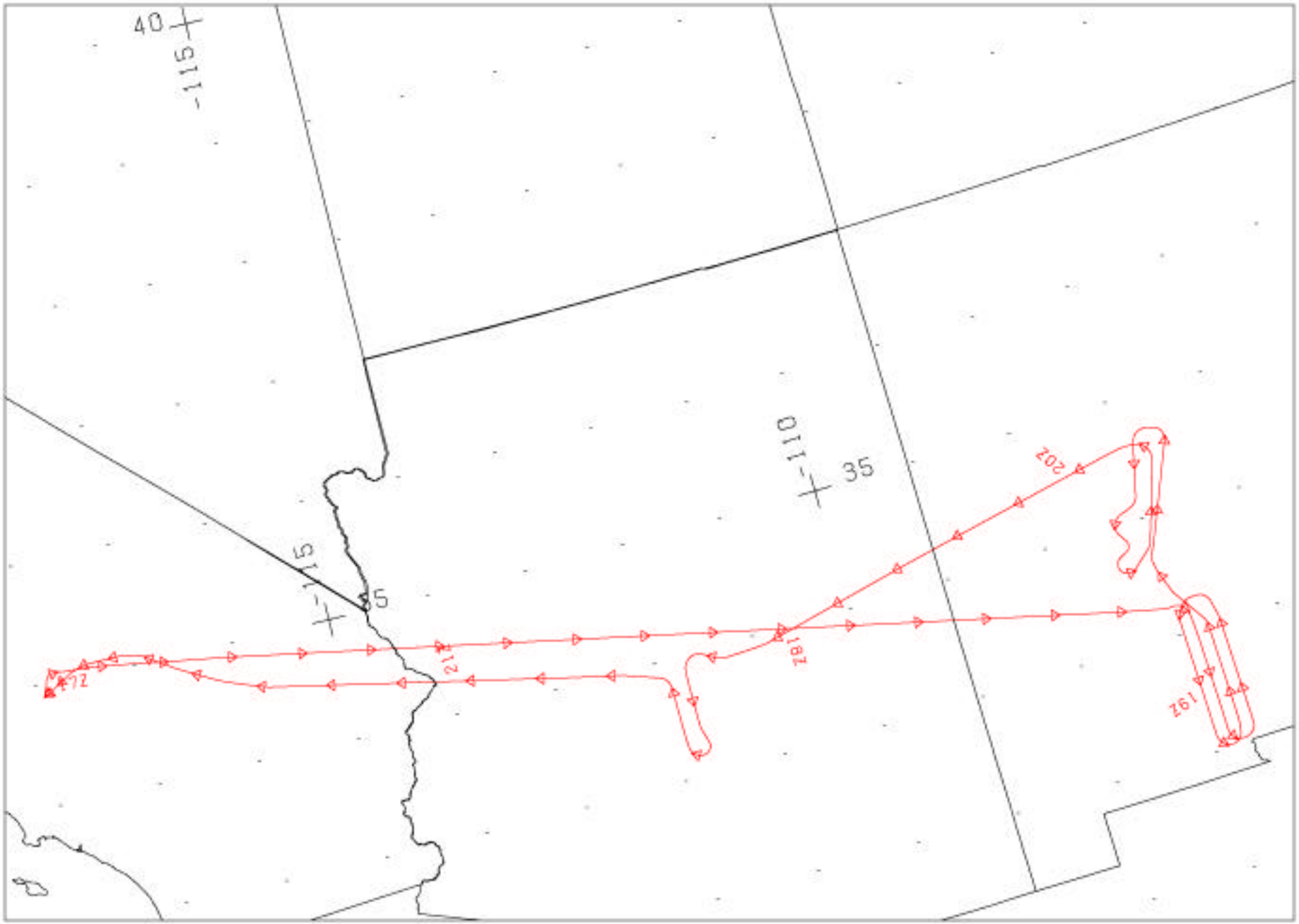
Airborne Sensor Facility
MS 240-6
NASA Ames Research Center
Moffett Field, CA 94035-1000
Telephone: (650)604-6252 (FAX 4987)

CAMERA FLIGHT LINE DATA
FLIGHT NO. 98-057

Accession # 05252

Sensor # 034

Check Points	Frame Numbers	Time (UTC-hr, min, sec)		Altitude, MSL feet/meters	Cloud Cover/Remarks
		START	END		
A - B	6464-6479	18:30:38	18:37:25	67025/20429	Clear
C - D	6480-6496	18:42:30	18:49:51	67276/20506	Clear
E - F	6497-6512	18:55:13	19:01:59	67494/20572	Clear
G - H	6513-6528	19:07:27	19:14:30	67719/20641	Clear
I - J	6529-6538	19:24:08	19:28:21	67960/20714	Clear
K - L	6539-6547	19:33:13	19:36:49	67656/20622	Clear
I - M	6548-6556	19:49:13	19:52:57	67878/20689	Clear
N - O	6557-6564	20:32:16	20:35:31	68600/20909	Clear
P - Q	6565-6573	20:40:46	20:44:30	68422/20855	Clear



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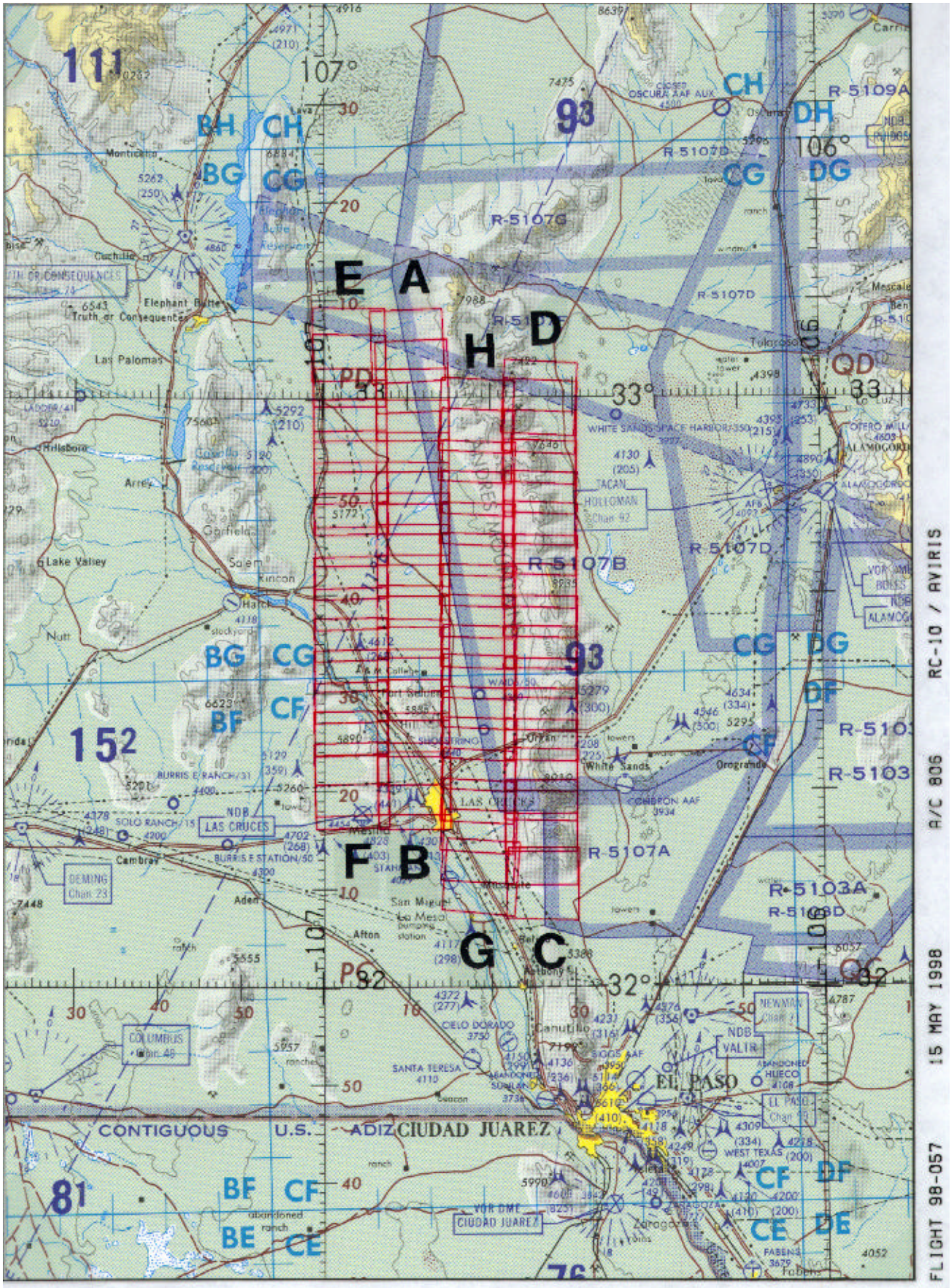

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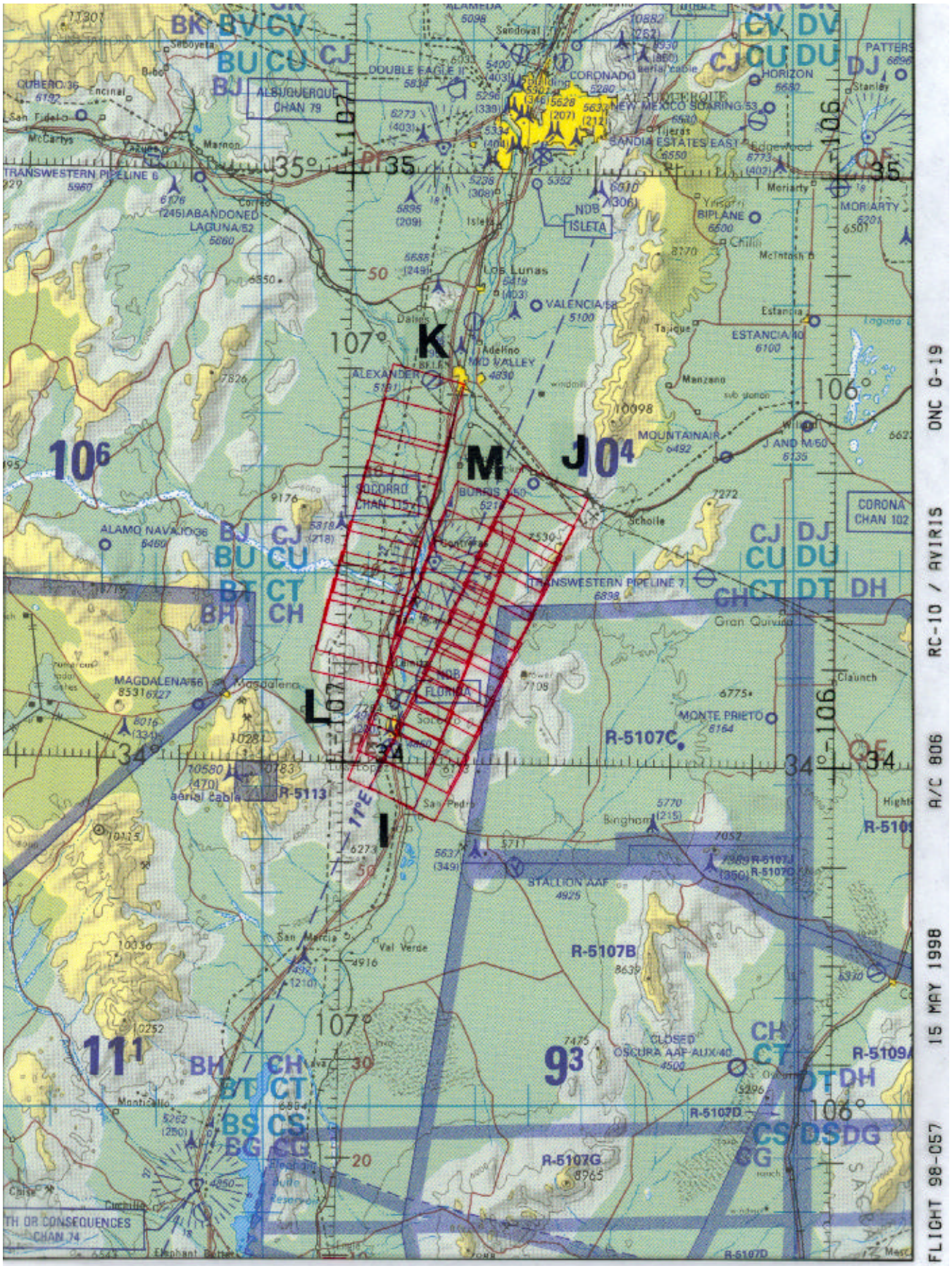
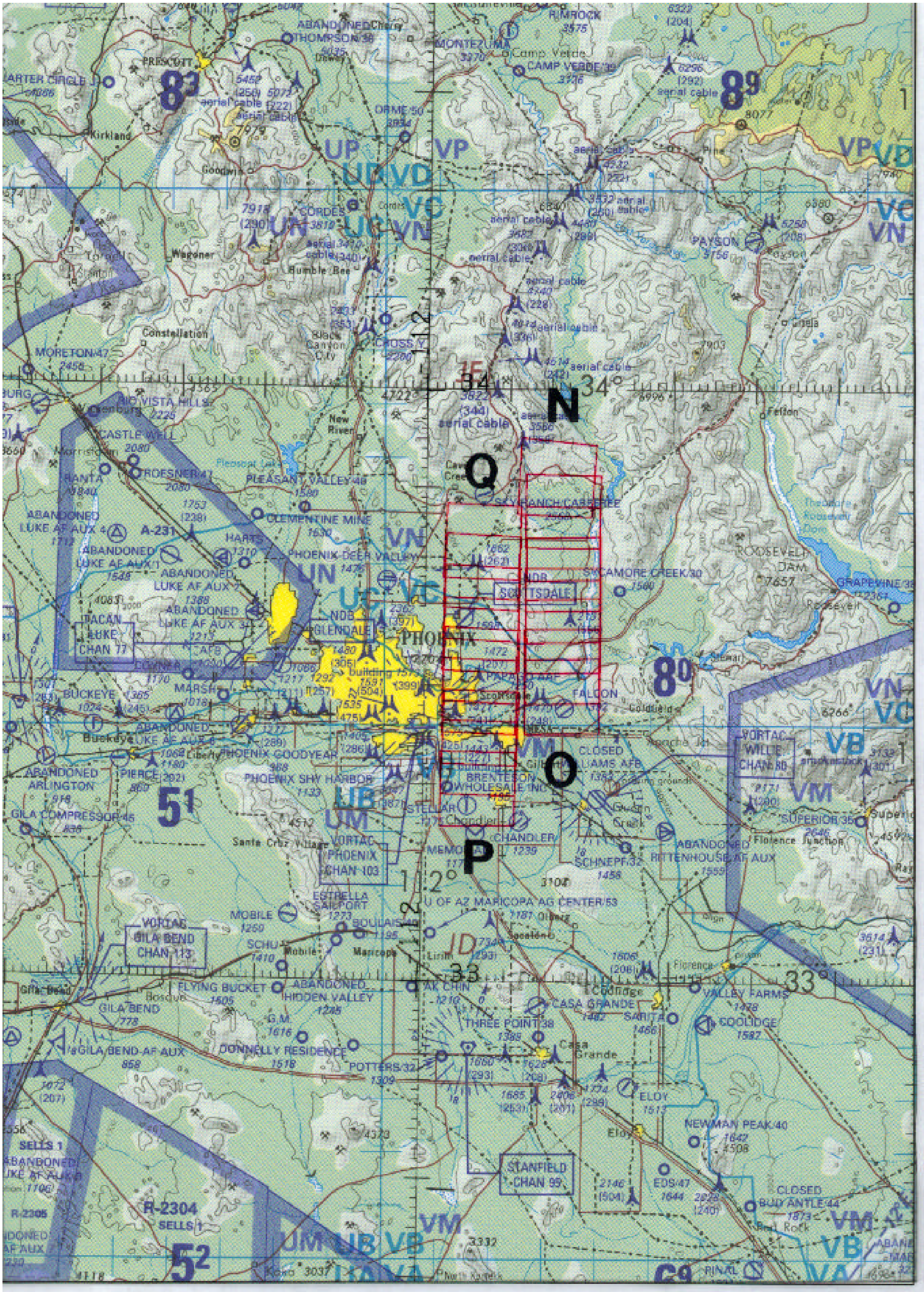

K
L
M
I
ALBUQUERQUE CHAN 79
SOCORRO CHAN 115
CORONA CHAN 102
ISLETA
VALENCIA 58
ESTANCIA 40
MOUNTAINAIR
J AND M 50
BURRIS 50
ALEXANDER
ADELINO MID VALLEY
FLORIDA
MAGDALENA 56
ALAMO NAVAJO 36
ABANDONED LAGUNA 52
DOUBLE EAGLE II
CORONADO
ALBUQUERQUE
NEW MEXICO SOARING 53
SANDIA ESTATES EAST
HORIZON
MORIARTY
BIPLANE
TRANSWESTERN PIPELINE 6
TRANSWESTERN PIPELINE 7
MONTE PRIETO
R-5107C
R-5107B
R-5107G
R-5107D
R-5113
STALLION AAF
CLOSED OSCURA AAF-AUX/40
TH OR CONSEQUENCES CHAN 74
106°
107°
34°
35°
ONC G-19
RC-10 / AVIRIS
A/C 806
15 MAY 1998
FLIGHT 98-057



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