FLIGHT SUMMARY REPORT

Flight Number: 97-103

Calendar/Julian Date: 27 May 1997 • 147

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

Area(s) Covered: New Mexico

Investigator(s): Nolen, New Mexico State University **Aircraft #:** 709

SENSOR DATA

Accession #:	05190	-----
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:	1/300	-----
# of Frames:	47	-----
% Overlap:	10	-----
Quality:	Excellent	-----

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 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^{o}
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

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).

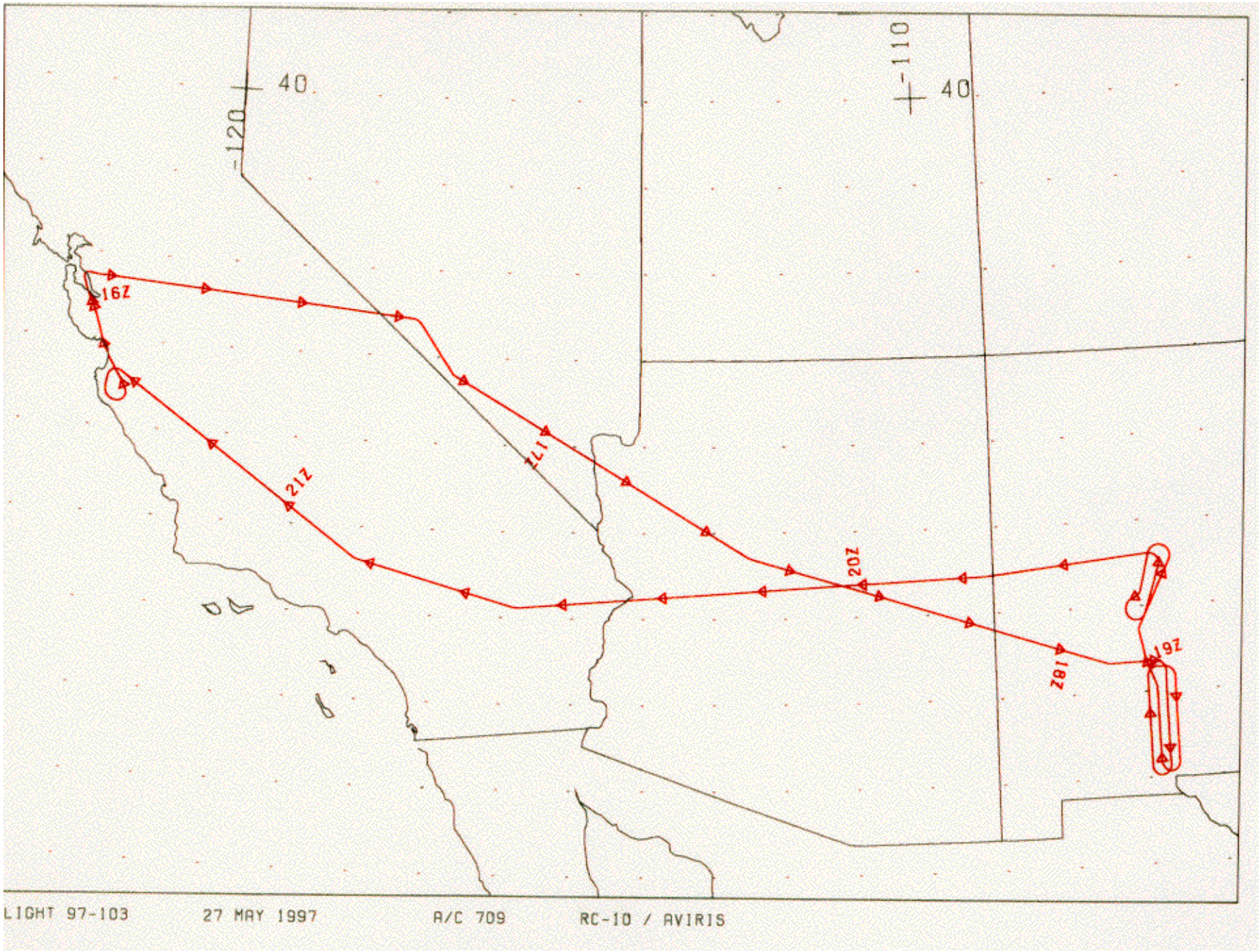
Additional information regarding ER-2 acquired photographic and digital data is available through the Aircraft Data Facility at Ames Research Center. For specific information regarding flight documentation, sensor parameters, and areas of coverage contact the Aircraft Data Facility, NASA-Ames Research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

CAMERA FLIGHT LINE DATA
FLIGHT NO. 97-103

Accession # 05190

Sensor # 034

Check Points	Frame Numbers	Time (GMT-hr, min, sec)		Altitude, MSL feet/meters	Cloud Cover/Remarks
		START	END		
A - B	4024-4031	18:13:49	18:20:21	67500/20574	Clear
C - D	4032-4040	18:26:17	18:33:47	67300/20513	Clear
E - F	4041-4048	18:39:06	18:45:40	67638/20616	Clear
G - H	4049-4056	18:51:09	18:57:43	67662/20623	Clear
I - J	4057-4061	19:07:35	19:11:19	68700/20940	Cirrus (frame 4057)
K - L	4062-4065	19:16:40	19:19:28	68150/20772	Clear
I-M	4066-4070	19:26:24	19:30:08	68260/20806	Cirrus (frame 4066-4067)


-120
40
-110
40
16Z
17Z
18Z
19Z
20Z
21Z
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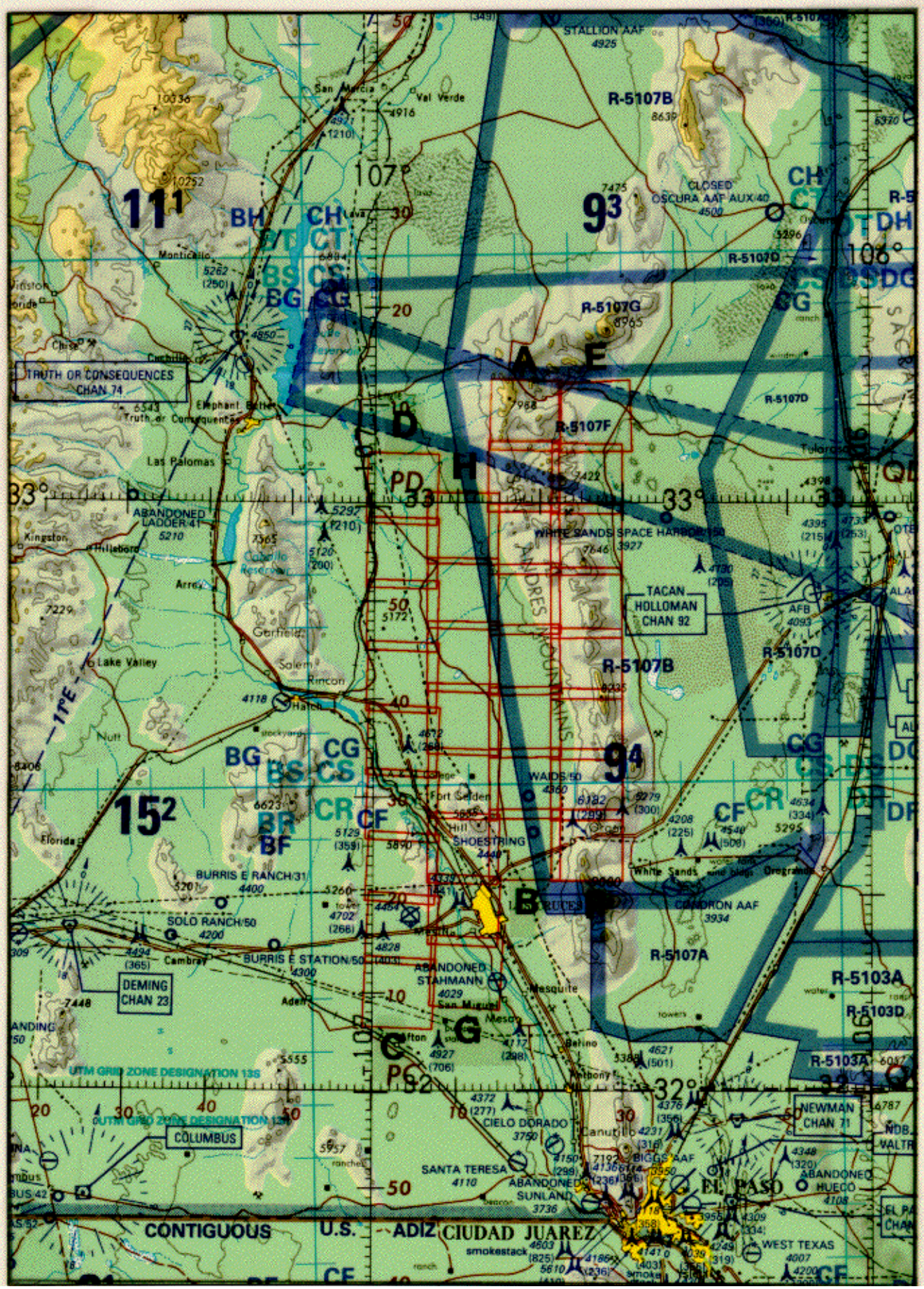

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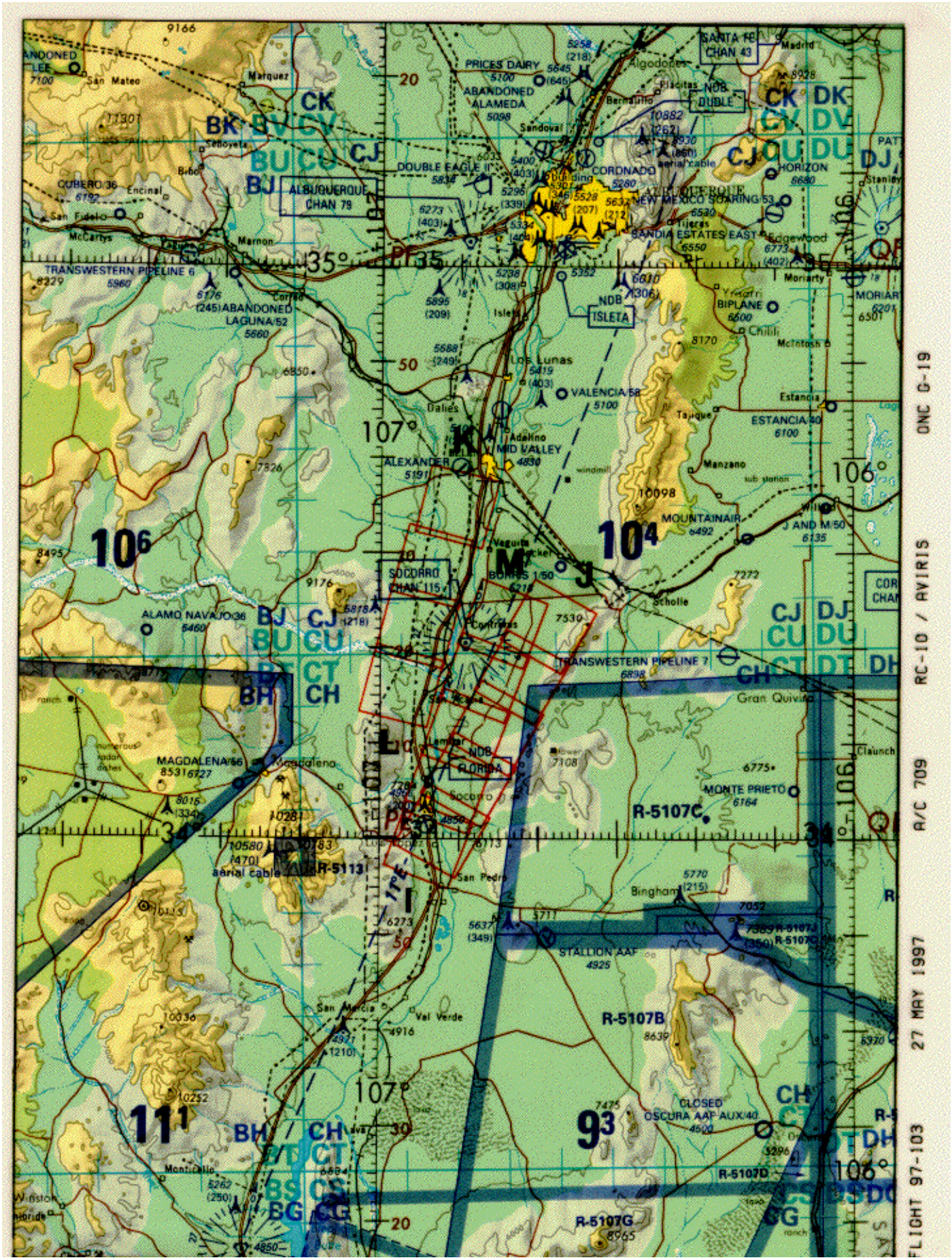
ALBUQUERQUE CHAN 79
SOCORRO CHAN 115
SANTA FE CHAN 43
ALEXANDER
MID VALLEY
BORRIS 1/50
VALENCIA 58
ABANDONED LAGUNA 52
ABANDONED ALAMEDA
PRICES DAIRY
DOUBLE EAGLE II
CORDNADO
NEW MEXICO SOARING 53
SANDIA ESTATES EAST
HORIZON
MOUNTAINAIR
ESTANCIA 30
J AND M 50
MONTE PRIETO
ALAMO NAVAJO 38
MAGDALENA 66
TRANSWESTERN PIPELINE 6
TRANSWESTERN PIPELINE 7
STALLION AAF
CLOSED OSCURA AAF AUX 40
R-5107C
R-5107B
R-5107D
R-5107G
R-5113
NDB ISLETA
NDB DUBLE
NDB FLORIDA
106
107
93
111
ONC G-19
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