FLIGHT SUMMARY REPORT

Flight Number: 98-125

Calendar/Julian Date: 03 September 1998 • 246

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

Area(s) Covered: Colorado

Investigator(s): Keller, U of Texas; Clark, USGS **Aircraft #:** 809

SENSOR DATA

Accession #:	05298	-----
Sensor ID #:	076	099
Sensor Type:	RC-10	AVIRIS
Focal Length:	12” 304.89 mm	-----
Film Type:	Aerochrome IR SO-134	-----
Filtration:	Wratten 12	-----
Spectral Band:	510-900 nm	-----
f Stop:	11	-----
Shutter Speed:	1/300	-----
# of Frames:	89	-----
% Overlap:	60	-----
Quality:	Fair	-----
Remarks:	Subtract 50 seconds 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:

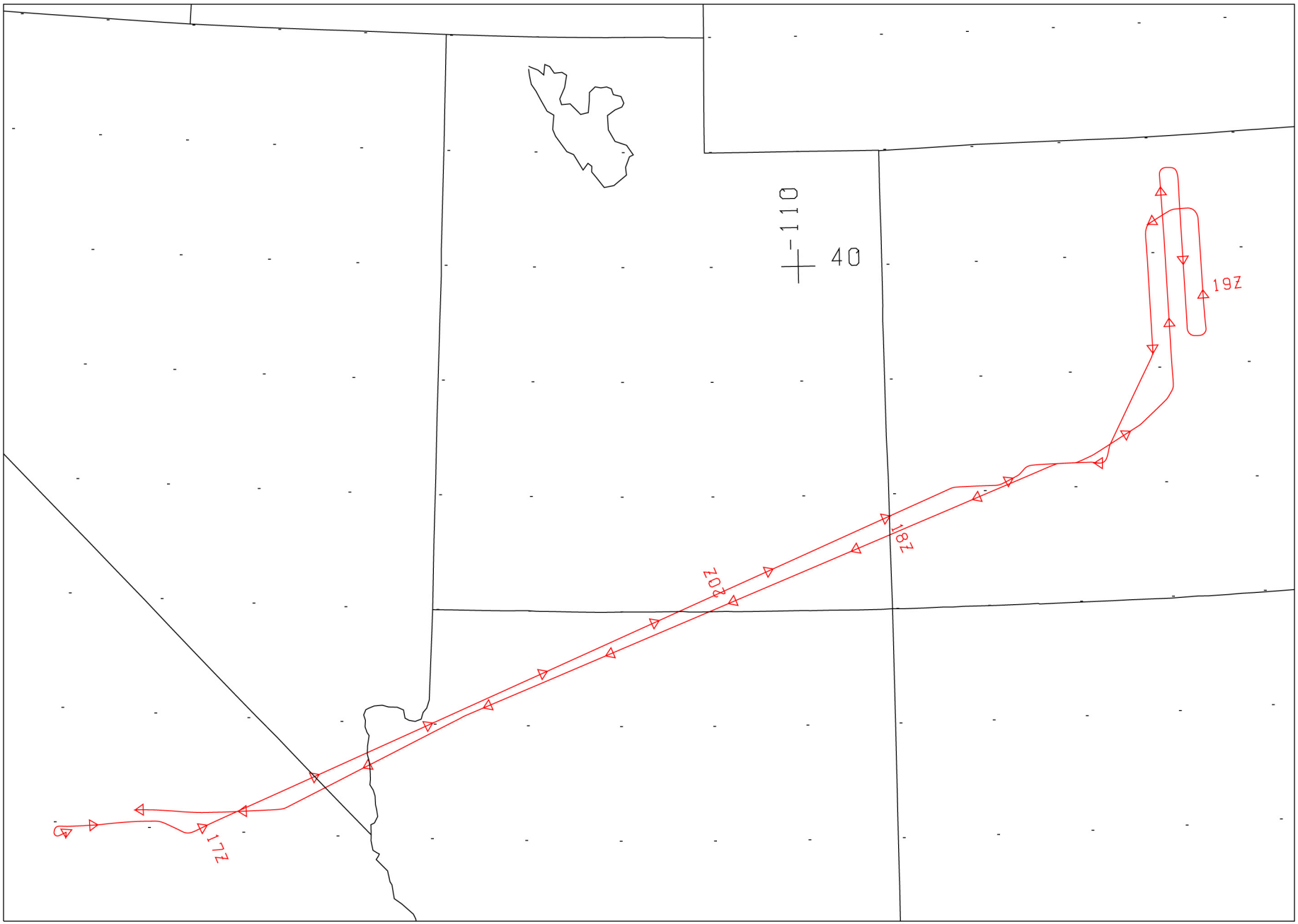
Airborne Sensor Facility
MS 240-6
NASA Ames Research Center
Moffett Field, CA 94035-1000
Telephone: (650)604-6252 (FAX 4987)

CAMERA FLIGHT LINE DATA
FLIGHT NO. 98-125

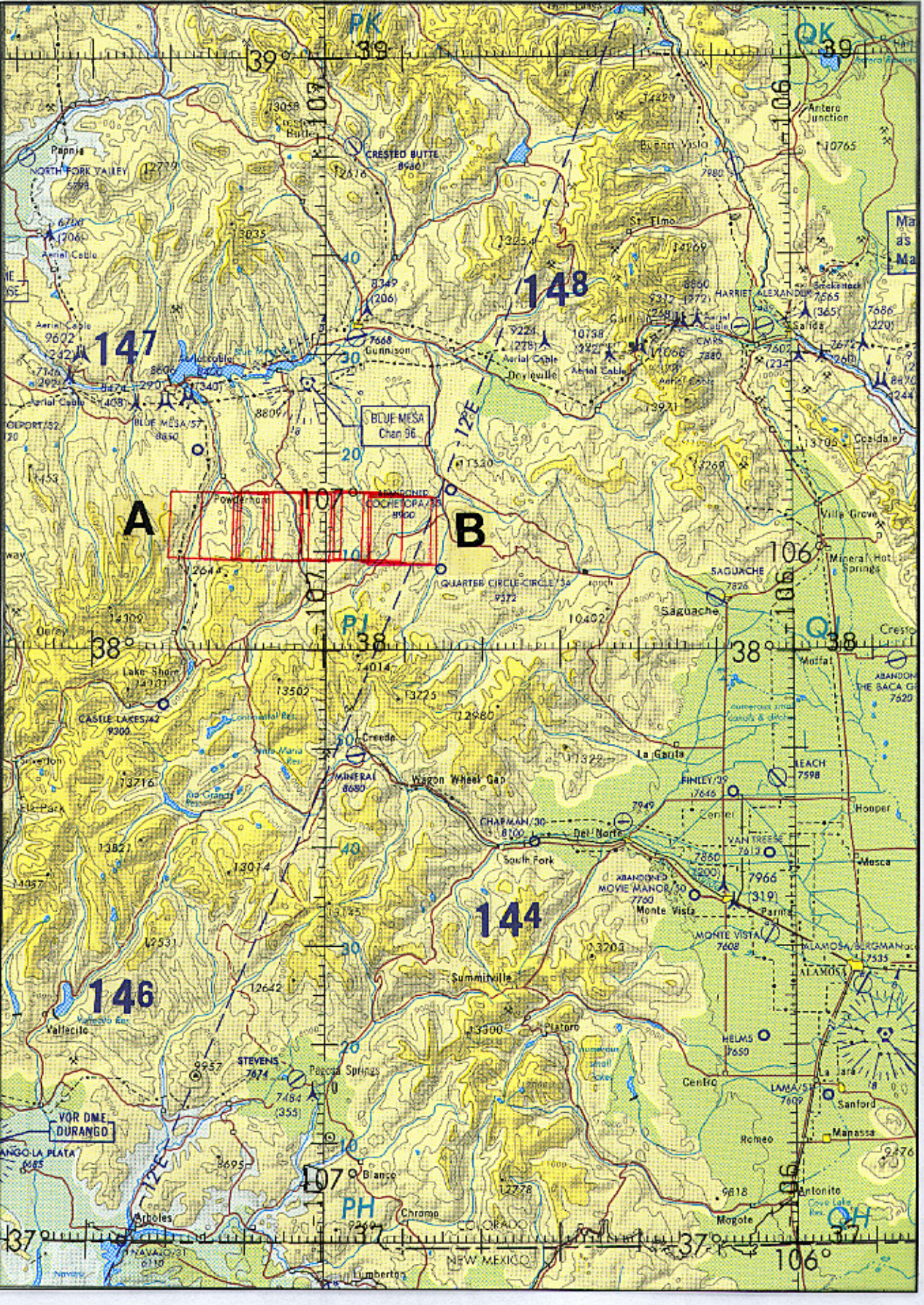
Accession # 05298

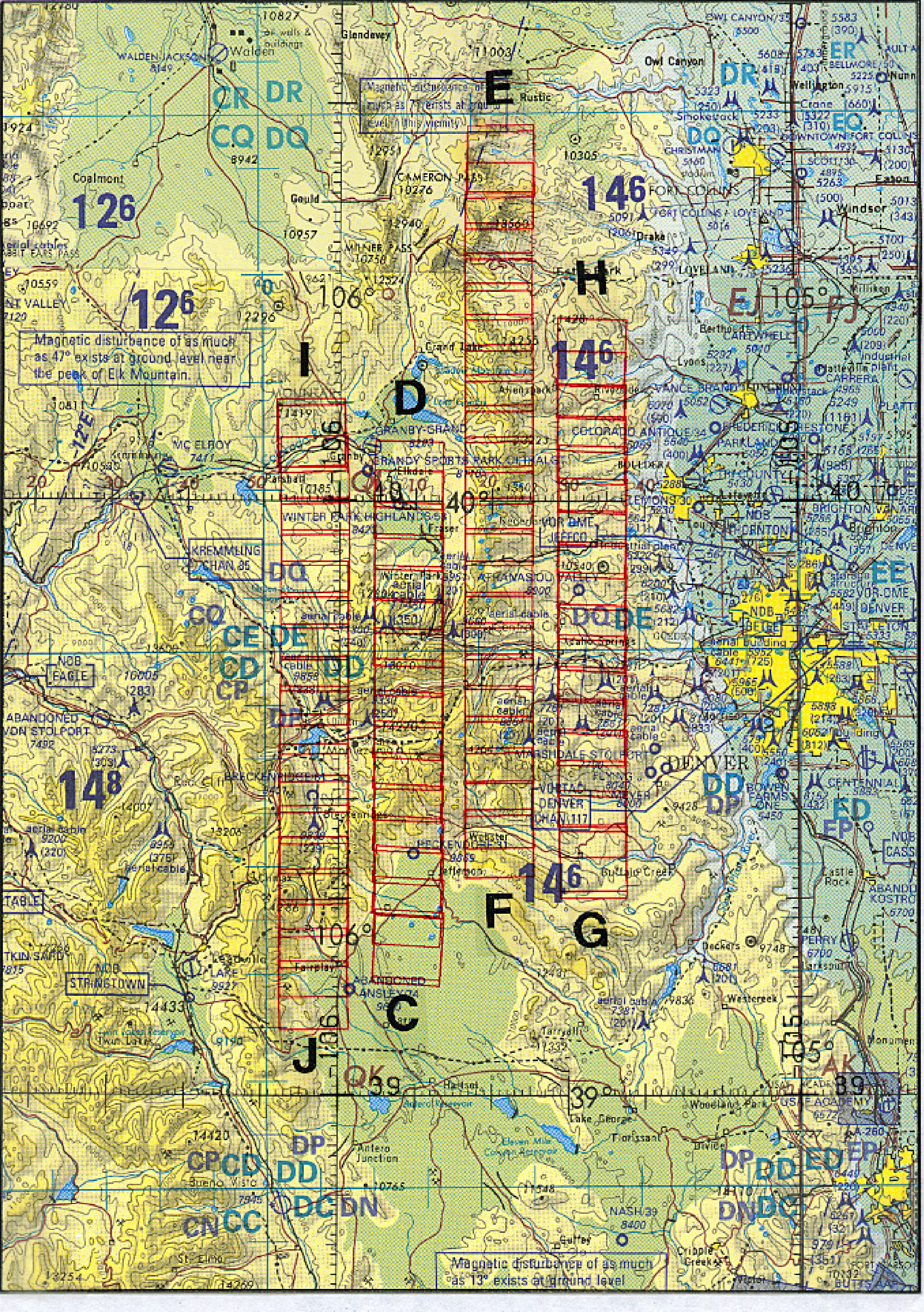
Sensor # 076

Check Points	Frame Numbers	Time (UTC-hr, min, sec)		Altitude, MSL feet/meters	Cloud Cover/Remarks
		START	END		
A - B	9399-9402	18:14:17	18:15:41	68575/20902	20-40% cumulus
C - D	9403-9419	18:29:29	18:36:30	68853/20986	Clear
E - F	9420-9443	18:44:50	18:55:05	68475/20871	Clear
G - H	9444-9461	18:58:44	19:06:13	68328/20826	Clear; emulsion damage (frames 9459-9460); static discharge (frame 9461)
I - J	9462-9481	19:12:13	19:20:36	69015/21036	Clear
B - A	9482-9487	19:31:25	19:33:20	69350/21138	30-60% cumulus



FLIGHT 98-125 3 SEPTEMBER 1998 A/C 809 RC-10 / AVIRIS


A
B
147
148
146
144
BLUE MESA
Chan 96
CRESTED BUTTE
8540
Gunnison
7668
Powderhorn
CRESCENT
COCHETOPA/35
8900
QUARTER CIRCLE CIRCLE/34
9372
Saguache
7826
Del Norte
8100
Monte Vista
7608
Alamosa
7535
Summitville
Platoro
Creede
8680
Wagon Wheel Gap
Lake Shore
14201
CASTLE LAKES/42
9300
Antero Junction
10765
Buena Vista
7980
St Elmo
Salida
7665
Villa Grove
Mineral Hot Springs
La Garita
Center
Hooper
Mosca
Sanford
Manassa
Romeo
Antonito
Cove Lake Res
Vallecito
Pecos Springs
STEVENS
7674
VOR DME
DURANGO
Arboles
Chromo
Blanco
Lumberton
COLORADO
NEW MEXICO
PK
QK
PJ
QJ
PH
QH
39°
38°
37°
106°
107°
12E
FLIGHT 98-125 3 SEPTEMBER 1998 A/C 809 RC-10 / AVIRIS ONC G-19



FLIGHT 98-125 3 SEPTEMBER 1998 A/C 809 RC-10 / AVIRIS ONC G-19