

FLIGHT SUMMARY REPORT

Flight #: 90-065
Date: 22 March 1990
Sensor Package: Wild-Heerbrug RC-10
Airborne Visible and Infrared Imaging
Spectrometer (AVIRIS)
Area(s) Covered: Colorado

Investigator(s): F.H. Goetz, University of Colorado
Flight Request: 90L217

Aircraft #: 709
Julian Date: 081

SENSOR DATA

Accession #:	04007	-----
Sensor ID #:	026	099
Sensor Type:	RC-10	AVIRIS
Focal Length:	12" 304.97 mm	-----
Film Type:	High Definition Aerochrome IR SO-131	-----
Filtration:	cc .10B	-----
Spectral Band:	510-900 nm	-----
f Stop:	4	-----
Shutter Speed:	1/150	-----
# of Frames:	57	-----
% Overlap:	60	-----
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 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 a four-line arrays of detectors to image a 614 pixel swath simultaneously in 224 contiguous spectral bands (0.4-2.4 μm).

AVIRIS parameters are as follows:

IFOV:	1 mrad
GIFOV (at 20 km):	20 m
FOV:	30°
GFOV (at 20 km):	11 km
Spectral Coverage:	0.41 - 2.45 μm
Number of Spectral Bands:	224
Digitization:	10 Bits
Data Rate:	17 MBPS

<u>Spectrometer</u>	<u>Wavelength Range</u>	<u>Number of Bands</u>	<u>Sampling Interval</u>
1	0.41 - 0.70 μm	31	9.4 nm
2	0.68 - 1.27 μm	63	9.4 nm
3	1.25 - 1.86 μm	63	9.7 nm
4	1.84 - 2.45 μm	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 Greene at Jet Propulsion Laboratory, 4800 Oak Grove Drive, Mail Stop 11-116, Pasadena, California 91109-8099.

**CAMERA FLIGHT LINE DATA
FLIGHT NO. 90-065**

Accession # 04007
Sensor # 026

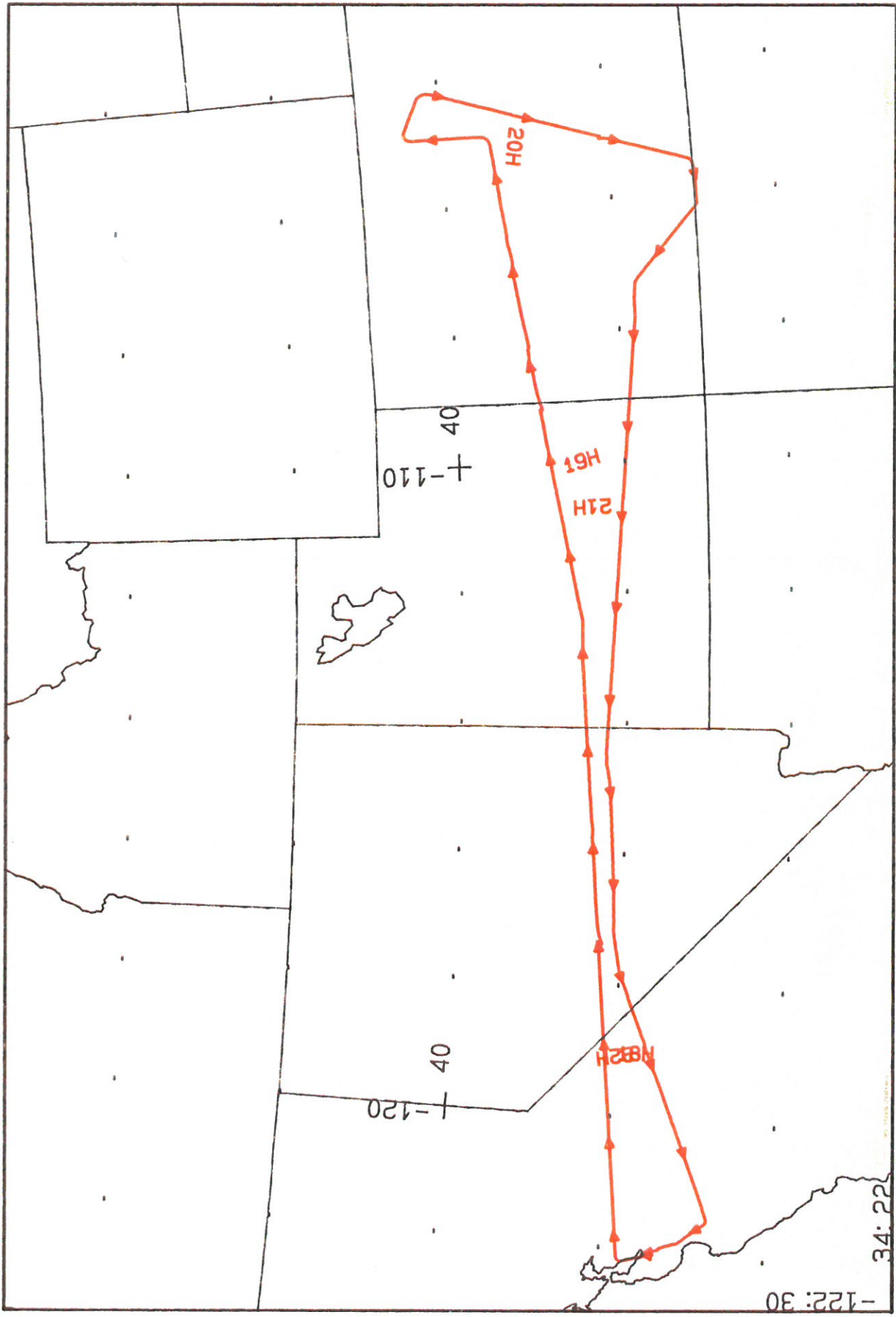
Check Points	Frame Numbers	Time (GMT-hr, min, sec)		Altitude, MSL feet/meters	Cloud Cover/Remarks
		START	END		
A - B	0481-0487	18:43:23	18:45:47	65000/19800	40-90% strato cumulus (frames 0481-0487)
C - D	0488-0503	19:38:19	19:44:31	"	Clear
E - F	0504-0512	19:47:04	19:49:54	"	Clear
G - H	0513-0521	20:22:57	20:25:47	"	Clear
I - J	0522-0523	20:40:11	20:40:16	"	10% cirrus and cumulus
K - L	0556-0569	20:55:22	21:01:20	"	10-30% cumulus (frames 0556-0560) 10-20% cumulus (frames 0565-0569)

**CAMERA FLIGHT LINE DATA
FLIGHT NO. 90-065**

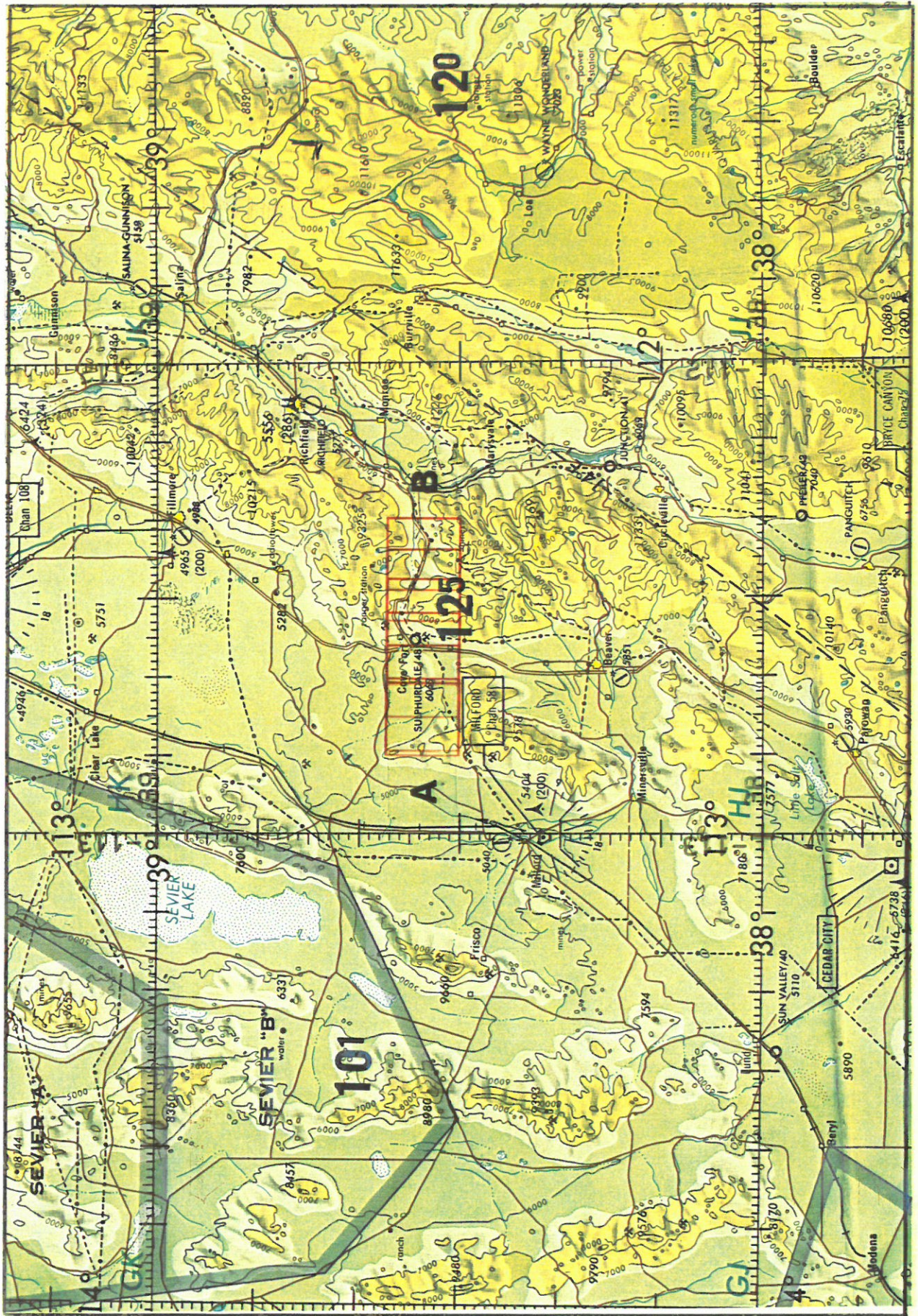
Accession # 04007

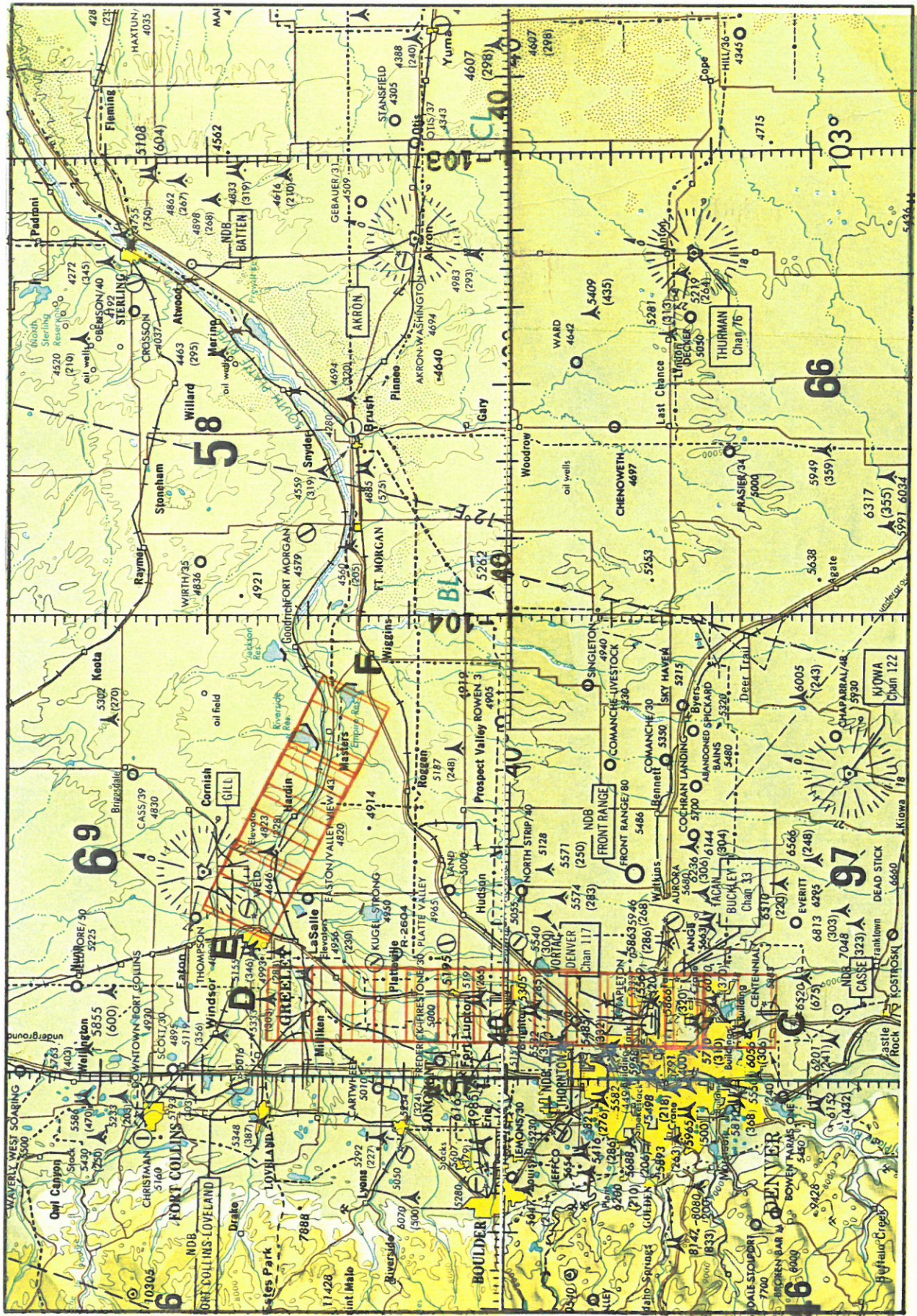
Sensor # 026

Check Points	Frame Numbers	Time (GMT-hr, min, sec)		Altitude, MSL feet/meters	Cloud Cover/Remarks
		START	END		
A - B	0481-0487	18:43:23	18:45:47	65000/19800	40-90% strato cumulus (frames 0481-0487)
C - D	0488-0503	19:38:19	19:44:31	"	Clear
E - F	0504-0512	19:47:04	19:49:54	"	Clear
G - H	0513-0521	20:22:57	20:25:47	"	Clear
I - J	0522-0523	20:40:11	20:40:16	"	10% cirrus and cumulus
K - L	0556-0569	20:55:22	21:01:20	"	10-30% cumulus (frames 0556-0560) 10-20% cumulus (frames 0565-0569)

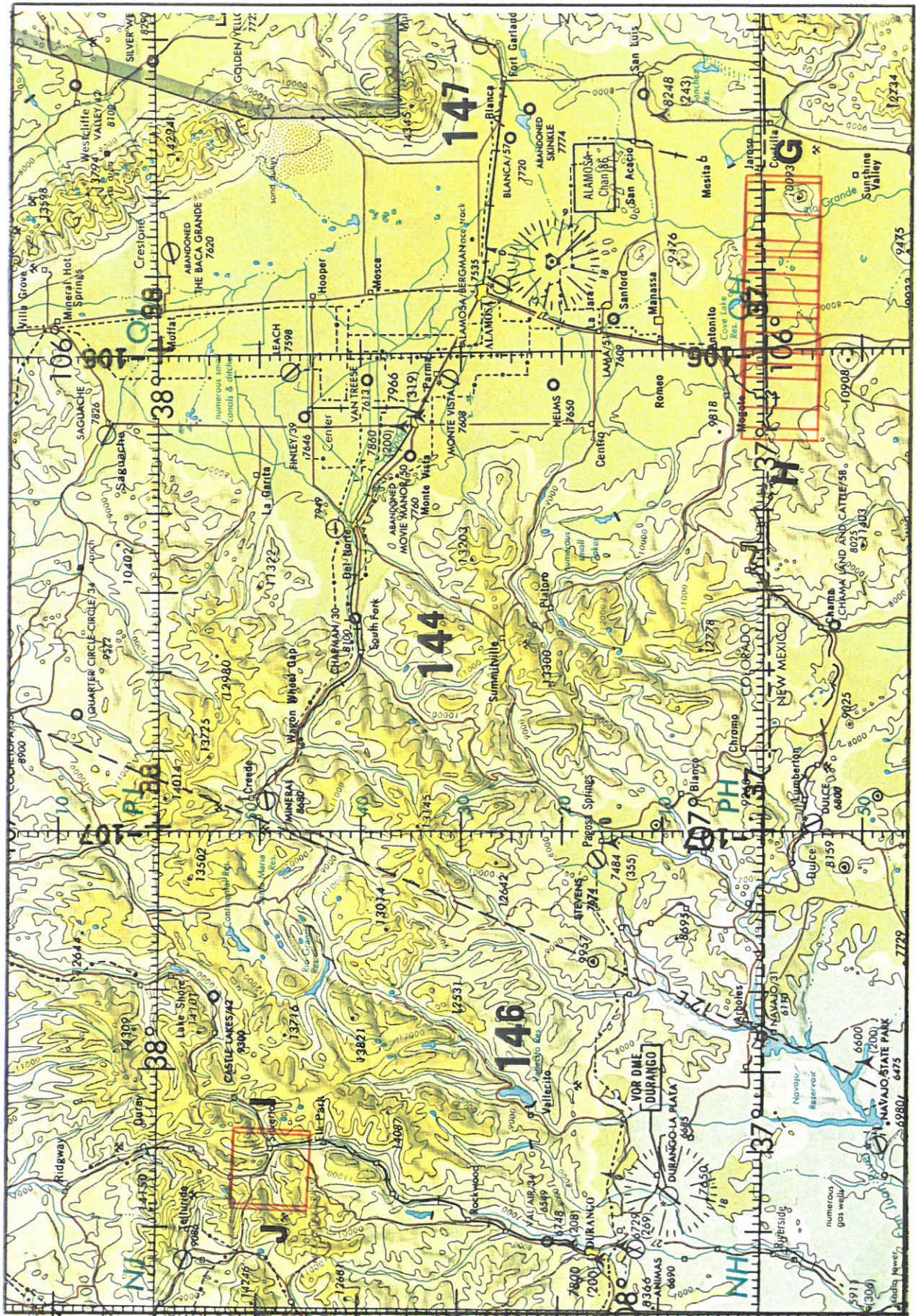


FLIGHT 90-065 22 March 1990 A/C 709 AVIRIS / RC-10
 OVERLAY FOR %CWUSA LAMBERT CONFORMAL PROJECTION: SP1 = 36.1 SP2 = 39.8 CM = -113.2 ROTATED BY 0.0
 17:31:30 TO 22:33:35 UT SCALE = 1:7.23E+06 TIME TICS EVERY 10.00 MINUTES

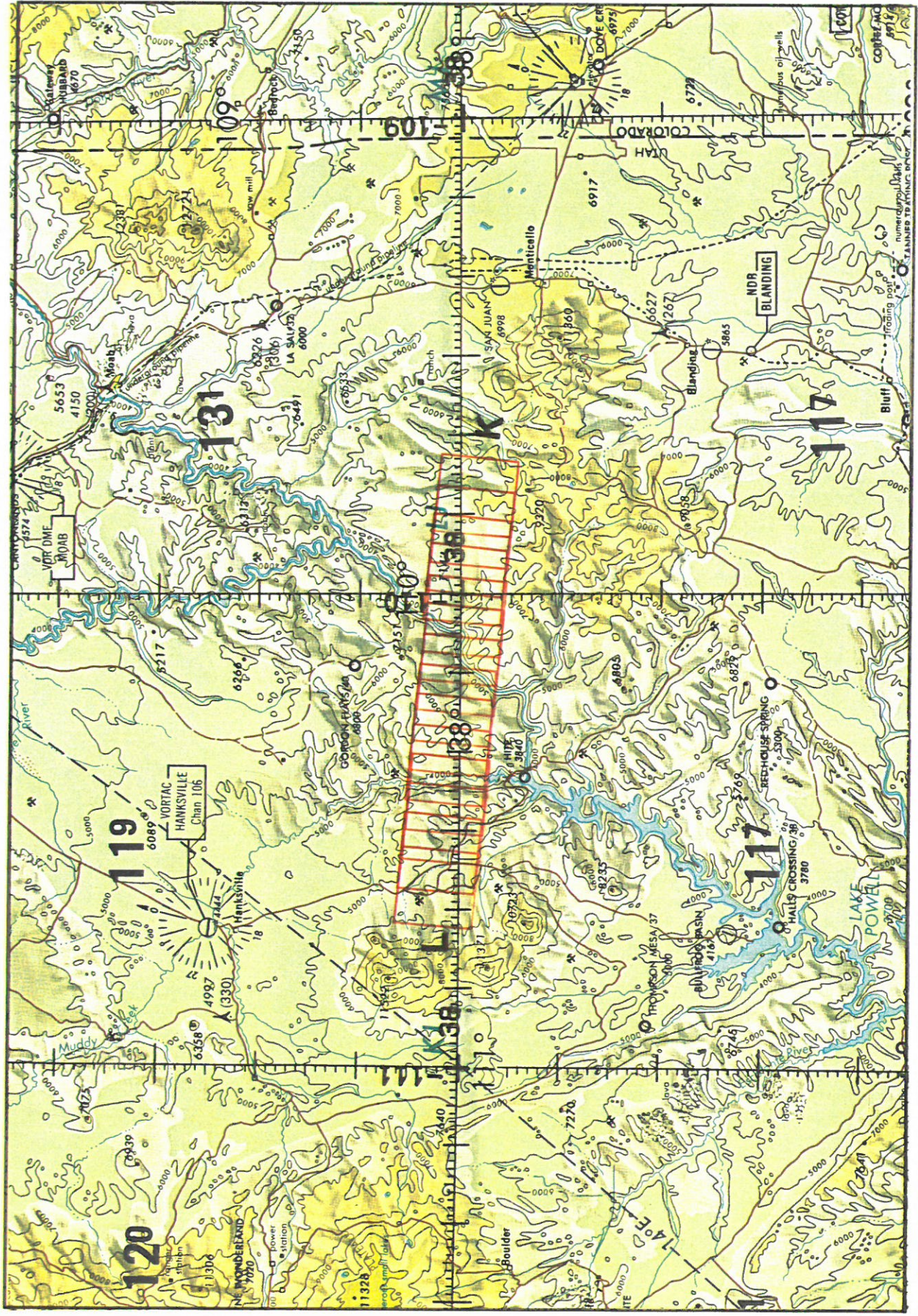




FLIGHT 90-065 22 March 1990 A/C 709 AVIRIS / FC-10 Accession # 04007 ONC 6-19 / F-17



FLIGHT 90-065 22 March 1990 A/C 709 AVIRIS / RC-10 Accession # 04007 ONC 6-19



FLIGHT 90-065 22 March 1990 A/C 709 AVIRIS / RC-10 Accession # 04007 ONC 6-19