

FLIGHT SUMMARY REPORT

Flight #: 91-033
Date: 29 November 1990
Sensor Package: Wild-Heerbrug RC-10
Thematic Mapper Simulator (TMS)
Area(s) Covered: Boulder City, Nevada/Arizona

Investigator(s): Ferry Flight to Kelly AFB, Texas
Flight Request: 91X002

Aircraft #: 708
Julian Date: 333

SENSOR DATA

Accession #:	04168	04169	-----
Sensor ID #:	034	023	101
Sensor Type:	RC-10	RC-10	TMS
Focal Length:	12" 304.66 mm	6" 153.21 mm	-----
Film Type:	High Definition Aerochrome IR SO-131	Aerial Color SO-242	-----
Filtration:	cc.10B	None	-----
Spectral Band:	510-900 nm	400-700 nm	-----
f Stop:	4	4	-----
Shutter Speed:	1/100	1/100	-----
# of Frames:	11	6	-----
% Overlap:	60	60	-----
Quality:	Excellent	Excellent	Good
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.

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, μm</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)

NOTE: Information on data tape format, logical record format, and scanner calibration data may be obtained from the NASA-Ames Aircraft Data Facility at (415) 604-6252 or FTS 464-6252.

CAMERA FLIGHT LINE DATA
FLIGHT NO. 91-033

Accession # 04168

Sensor # 034

Check Points	Frame Numbers	Time (GMT-hr, min, sec)		Altitude, MSL feet/meters	Cloud Cover/Remarks
		START	END		
A - B	1689-1699	17:01:40	17:06:20	65000/19800	Clear

CAMERA FLIGHT LINE DATA
FLIGHT NO. 91-033

Accession # 04169

Sensor # 023

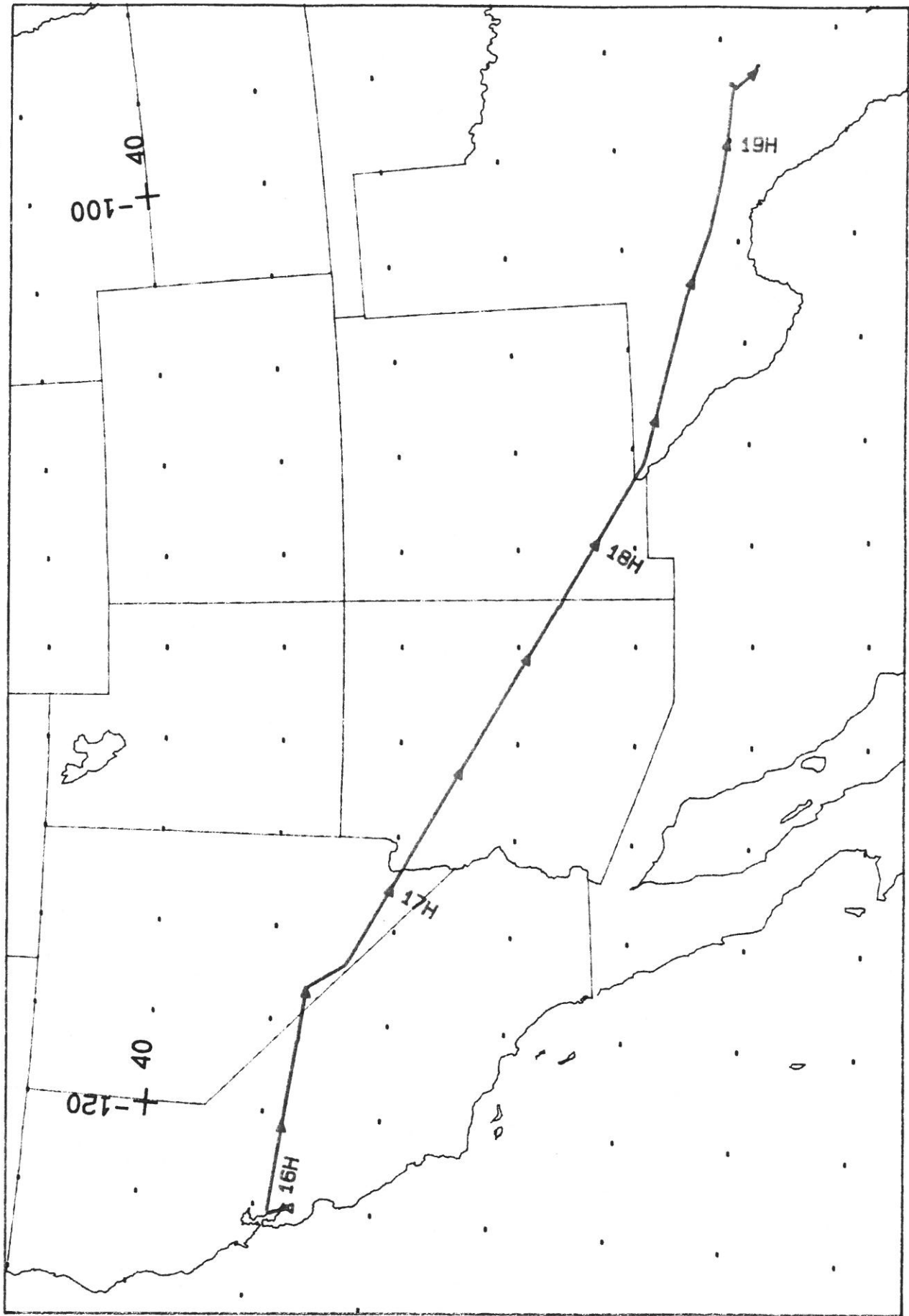
Check Points	Frame Numbers	Time (GMT-hr, min, sec)		Altitude, MSL feet/meters	Cloud Cover/Remarks
		START	END		
A - B	7975-7980	17:01:35	17:06:14	65000/19800	Clear

SCANNER FLIGHT LINE DATA

FLIGHT NO. 91-033

DAEDALUS FLIGHT DATA
FLIGHT NUMBER: 91-033

Check Points	A c t u a l t i m e b e g i n e n d	A c t u a l s c a n l i n e b e g i n e n d	A l t i t u d e f e e t / m e t e r	S c a n S p e e d (r p s)	t o t a l G o o d s c a n l i n e s	t o t a l I n t e r p o l a t e d s c a n l i n e s	t o t a l R e p e a t e d s c a n l i n e s
A-B	17:05:14.0 17:15:59.0	45709 52389	65000/19812	12.50	6572	18	91



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29 November 1990

A/C 708

Ferry to Kelly AFB, TX

