FLIGHT SUMMARY REPORT

Flight #: 92-119

Date: 14 July 1992

Sensor Package: Thematic Mapper Simulator (TMS)
HR-732

Area(s) Covered: Chesapeake Bay, Virginia; Maryland

Investigator(s): Handley, USFWS

Flight Request: 2RZ2037

Aircraft #: 708

Julian Date: 196

SENSOR DATA

Accession #:	-----	04428
Sensor ID #:	074	019
Sensor Type:	TMS	HR-732
Focal Length:	-----	24" 609.6 mm
Film Type:	-----	High Definition Aerochrome IR SO-131
Filtration:	-----	cc.30B
Spectral Band:	-----	510-900 nm
f Stop:	-----	8
Shutter Speed:	-----	1/75
# of Frames:	-----	107
% Overlap:	-----	60
Quality:	Good	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 and camera system(s) 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:

Daedalus Channel	TM Band	Wavelength, μm
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)

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 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-Heerbrug 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: (415) 604-6252).

CAMERA FLIGHT LINE DATA
FLIGHT NO. 92-119

Accession # 04428

Sensor # 019

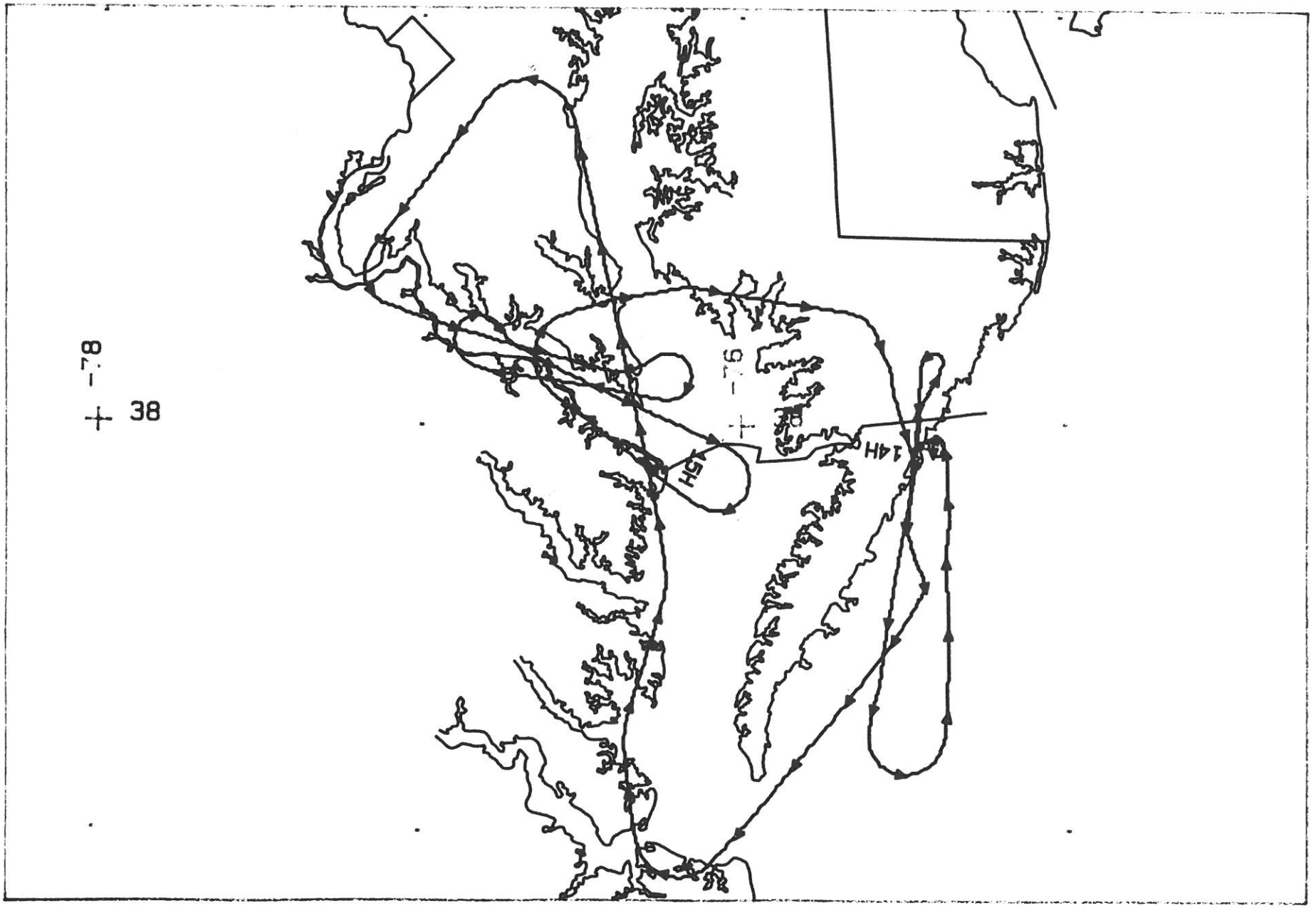
Check Points	Frame Numbers	Time (GMT-hr, min, sec)		Altitude, MSL feet/meters	Cloud Cover/Remarks
		START	END		
____	0001	14:14:43	_____	56600/17250	Clear; clearing frame over Lynnhaven Roads, Virginia
A - B	0002-0035	14:26:10	14:33:34	65000/19800	Clear
C - D	0036-0055	14:42:18	14:46:34	"	Clear
D - E	0056-0063	14:52:06	14:53:42	"	Clear
F - D	0064-0075	14:57:17	14:59:43	"	Clear
G - H	0076-0091	15:04:59	15:08:25	"	Clear
I - J	0092-0102	15:20:08	15:21:19	"	Clear
K	0103-0107	15:39:10	15:39:28	7500/2290	Clear; low pass over Chinquoteague, Virginia

TMS SCANNER FLIGHT LINE DATA

FLIGHT NO. 92-119

DAEDALUS FLIGHT DATA
FLIGHT NUMBER: 92-119

Check Points	Actual time (GMT) begin	Actual time (GMT) end	Actual scanline begin	Actual scanline end	Altitude feet/meter	Scan Speed (rps)	total Good scanlines	total Interpolated scanlines	total Repeated scanlines
A-B	14:24:16.Ø	14:32:17.Ø	28578	34589	65ØØØ/19812	12.5Ø	6ØØ1	Ø	11
C-D	14:4Ø:41.Ø	14:45:14.Ø	4Ø892	443Ø2	65ØØØ/19812	12.5Ø	34Ø1	Ø	1Ø
D-E	14:49: 6.Ø	14:52:19.Ø	4721Ø	4962Ø	65ØØØ/19812	12.5Ø	24Ø1	Ø	1Ø
F-D	14:55:55.Ø	14:58:51.Ø	5232Ø	5452Ø	65ØØØ/19812	12.5Ø	22Ø1	Ø	Ø
G-H	15:Ø3:47.Ø	15:Ø7: Ø.Ø	5822Ø	6Ø63Ø	65ØØØ/19812	12.5Ø	24Ø1	Ø	1Ø



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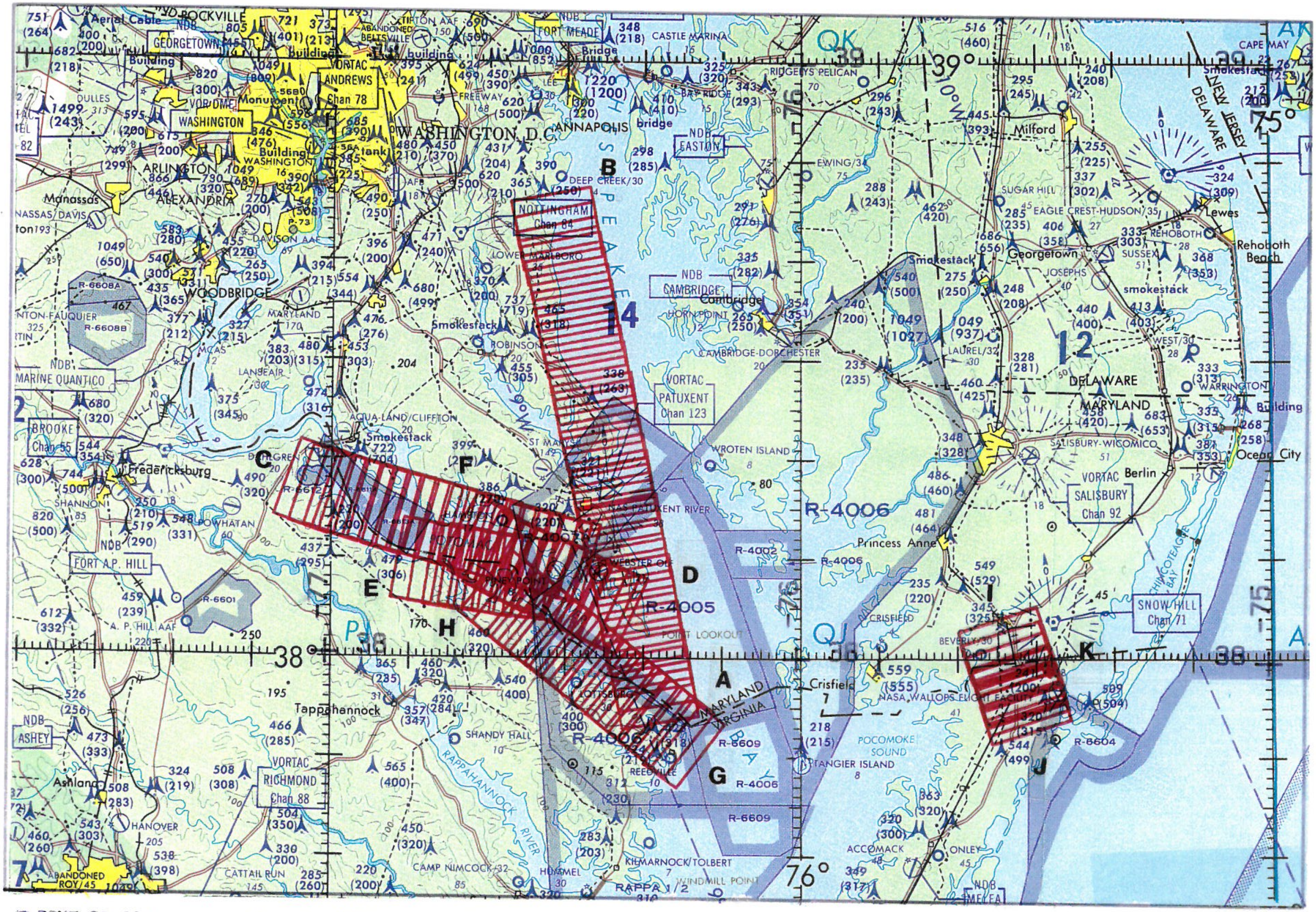

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