

FLIGHT SUMMARY REPORT

Flight #: 91-038
Date: 8 December 1990
Sensor Package: Wild-Heerbrug RC-10
Thematic Mapper Simulator (TMS)
Area(s) Covered: Mississippi Delta/Louisiana

Investigator(s): Dunbar, USAE

Aircraft #: 708

Flight Request: 91R260

Julian Date: 342

SENSOR DATA

Accession #:	04174	-----
Sensor ID #:	034	101
Sensor Type:	RC-10	TMS
Focal Length:	12" 304.66 mm	-----
Film Type:	High Definition Aerochrome IR SO-131	-----
Filtration:	cc.10B	-----
Spectral Band:	510-900 nm	-----
f Stop:	4	-----
Shutter Speed:	1/100	-----
# of Frames:	438	-----
% Overlap:	60	-----
Quality:	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. 91-038**

Accession # 04174

Sensor # 034

Check Points	Frame Numbers	Time (GMT-hr, min, sec)		Altitude, MSL feet/meters	Cloud Cover/Remarks
		START	END		
A - B	1883-1925	16:05:11	16:24:37	65000/19800	Clear
C - D	1926-1967	16:28:07	16:46:51	"	Clear
E - F	1968-1988	16:51:01	17:00:21	"	Clear
G - H	1989-1998	17:04:12	17:08:05	"	Clear
I - J	1999-2005	17:12:16	17:14:41	"	Clear
K - L	2006-2016	17:25:41	17:30:15	"	Clear
M - N	2017-2038	17:33:49	17:43:37	"	Clear
O - P	2039-2083	17:50:07	18:09:10	"	Clear
Q - R	2084-2160	18:15:10	18:49:22	"	Very thin smoke (frames 2100-2101, 2111-2112)
S - T	2161-2233	18:53:10	19:25:34	"	Clear

**CAMERA FLIGHT LINE DATA
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Accession # 04174

Sensor # 034

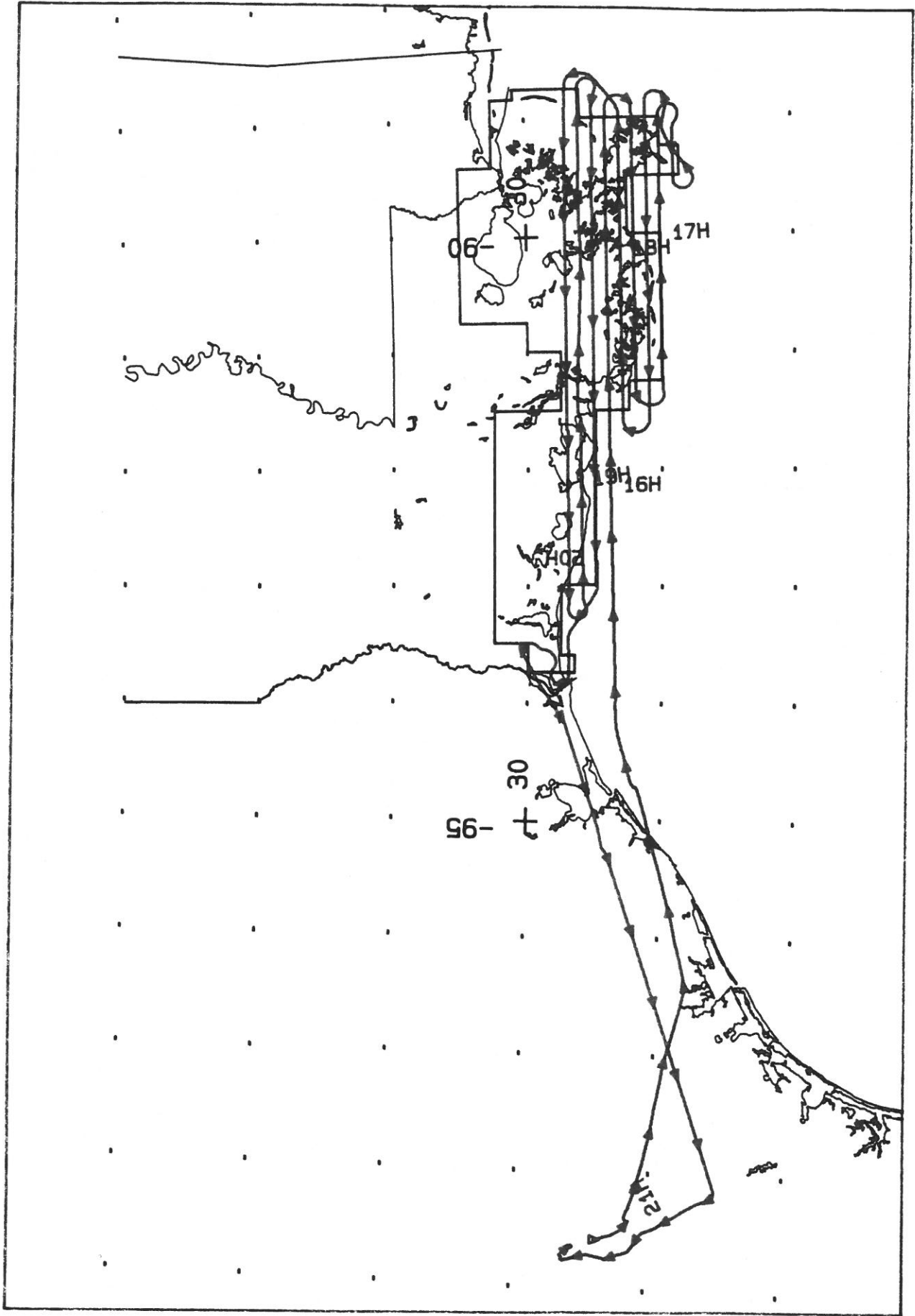
Check Points	Frame Numbers	Time (GMT-hr, min, sec)		Altitude, MSL feet/meters	Cloud Cover/Remarks
		START	END		
U - V	2234-2304	19:30:15	20:01:45	65000/19800	Thin to moderate smoke plume (frames 2294-2296)
W - X	2305-2309	20:07:10	20:08:47	"	Clear
Y - Z	2310-2320	20:16:01	20:20:41	"	Clear

SCANNER FLIGHT LINE DATA

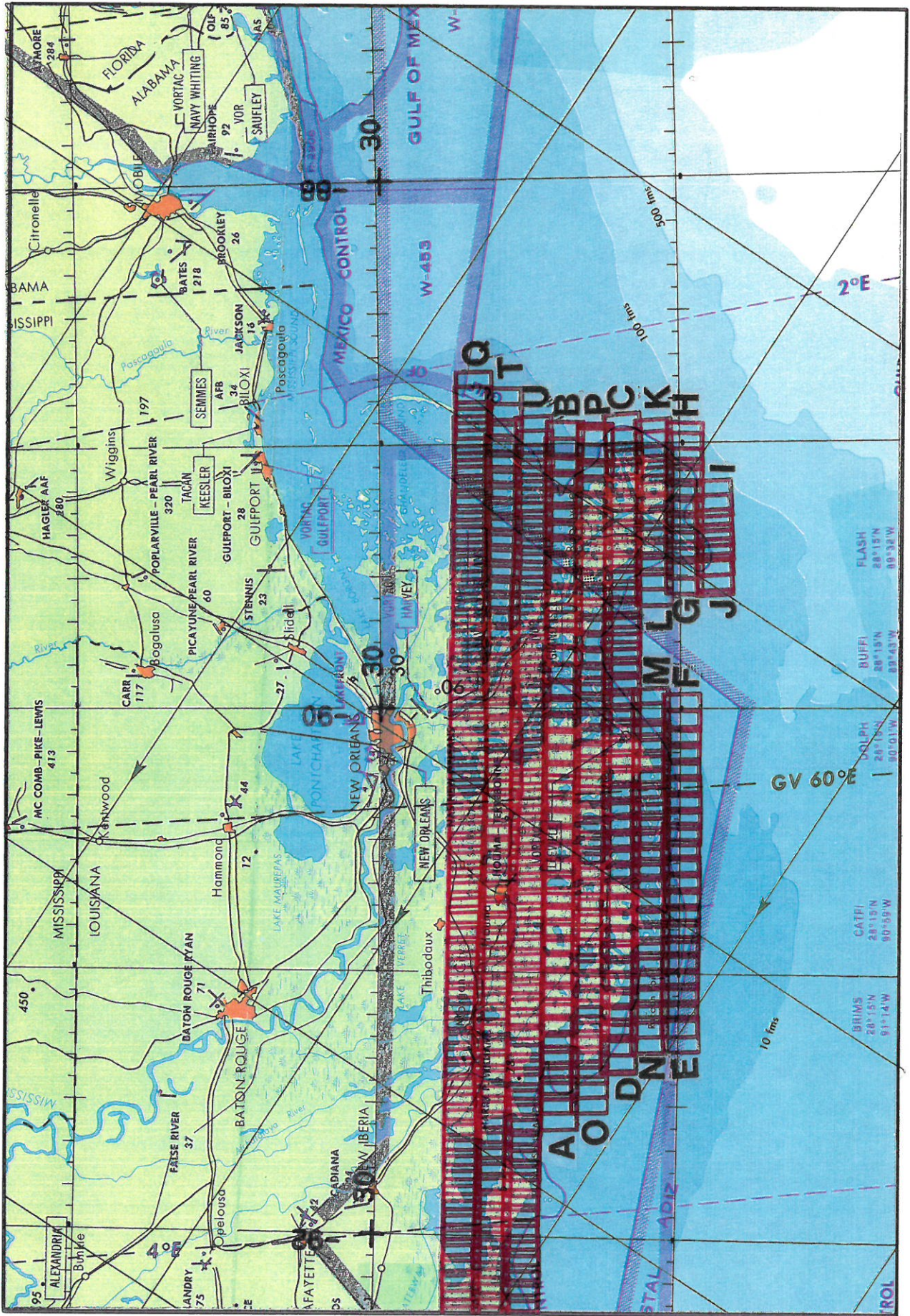
FLIGHT NO. 91-038

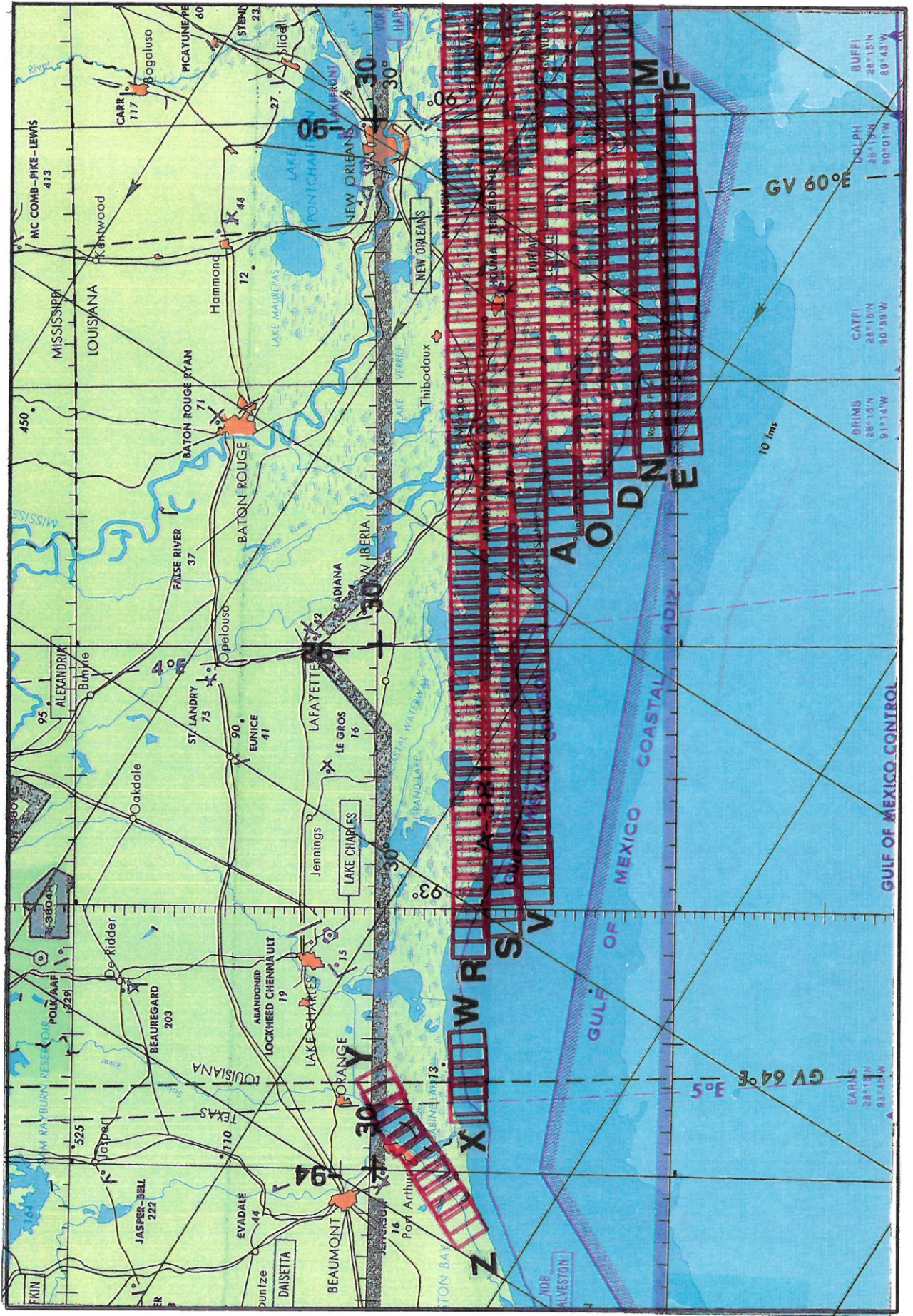
DAEDALUS FLIGHT DATA
FLIGHT NUMBER: 91-038

Check Points	A c t u a l t i m e (GMT) b e d i n e n d	A c t u a l s c a n l i n e b e d 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 (rps)	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 q u e s t e d s c a n l i n e s
A-B	16:05: 6.0 16:24:36.0	44239 56352	65000/19812	12.50	12097	0	17
C-D	16:28:10.0 16:47: 1.0	58570 70283	65000/19812	12.50	11698	0	16
E-F	16:50:54.0 17:00:29.0	72700 78657	65000/19812	12.50	5956	0	2
G-H	17:04: 3.0 17:08: 5.0	90875 83382	65000/19812	12.50	2509	0	0
I-J	17:12: 8.0 17:14:49.0	85710 87574	65000/19812	12.50	1663	0	2
K-L	17:25:21.0 17:30: 7.0	94121 97085	65000/19812	12.50	2962	0	3
M-N	17:33:46.0 17:43:45.0	99360 105574	65000/19812	12.50	6215	0	0
O-P	17:49:53.0 18:09:13.0	109384 121412	65000/19812	12.50	12018	0	11
Q-R	18:14:54.0 18:49:49.0	124942 146664	65000/19812	12.50	21709	0	14
S-T	18:52:59.0 19:26:20.0	148634 167383	65000/19812	12.50	20744	0	6
U-V	19:30: 8.0 20:02:20.0	171744 191777	65000/19812	12.50	20024	0	10
W-X	20:07: 8.0 20:09:51.0	174760 195832	65000/19812	12.50	1073	0	0
Y-Z	20:15:50.0 20:20: 5.0	200179 202817	65000/19812	12.50	2637	0	2



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