FLIGHT SUMMARY REPORT

Flight Number: 95-054

Calendar/Julian Date: 01 February 1995 • 032

Sensor Package: Wild Heerbrugg RC-10
Hycon HR-732
Modis Airborne Simulator (MAS)
Aerosol Particulate Sampler (APS)

Area(s) Covered: Louisiana

Investigator(s): Cunningham, Army Corps of Engineers; State of Louisiana **Aircraft #:** 706

SENSOR DATA

Accession #:	04870	04871	-----	-----
Sensor ID #:	034	039	108	024
Sensor Type:	RC-10	HR-732	MAS	APS
Focal Length:	12" 304.66 mm	24" 609 mm	-----	-----
Film Type:	Aerochrome IR SO-060	Aerochrome IR SO-060	-----	-----
Filtration:	Wratten 12	Wratten 12	-----	-----
Spectral Band:	510-900 nm	510-900 nm	-----	-----
f Stop:	8	11	-----	-----
Shutter Speed:	1/240	1/250	-----	-----
# of Frames:	369	84	-----	-----
% Overlap:	60	60	-----	-----
Quality:	Excellent	Good	-----	-----

Remarks:

Modis Airborne Simulator

The Modis Airborne Simulator (MAS) is a modified Daedalus multispectral scanner configured to replicate the capabilities of the Moderate-Resolution Imaging Spectrometer (MODIS), an instrument to be orbited on an EOS platform. MODIS is designed for the measurement of biological and physical processes and atmospheric temperature sounding. The Modis Airborne Simulator records fifty 12-bit channels of multispectral data and is configured as follows:

Spectral Channel	Band center (μm)	Bandwidth (μm)	Spectral Range
1	0.549	0.044	0.527-0.571
2	0.658	0.053	0.631-0.684
3	0.704	0.042	0.683-0.725
4	0.745	0.041	0.725-0.766
5	0.786	0.041	0.765-0.807
6	0.827	0.042	0.806-0.848
7	0.869	0.042	0.848-0.891
8	0.909	0.033	0.893-0.926
9	0.947	0.046	0.924-0.970
10	1.608	0.053	1.582-1.635
11	1.670	0.052	1.644-1.695
12	1.723	0.05	1.698-1.748
13	1.775	0.05	1.750-1.800
14	1.825	0.046	1.802-1.849
15	1.88	0.045	1.856-1.901
16	1.93	0.45	1.909-1.954
17	1.98	0.048	1.955-2.003
18	2.03	0.048	2.005-2.053
19	2.08	0.047	2.056-2.103
20	2.128	0.047	2.105-2.152
21	2.177	0.047	2.154-2.201
22	2.227	0.047	2.203-2.250
23	2.276	0.047	2.253-2.300
24	2.326	0.047	2.303-2.350
25	2.375	0.047	2.351-2.398

Spectral Channel	Band center (μm)	Bandwidth (μm)	Spectral Range
26	2.958	0.136	2.889-3.026
27	3.119	0.123	3.058-3.181
28	3.265	0.146	3.192-3.338
29	3.437	0.142	3.366-3.509
30	3.565	0.144	3.493-3.637
31	3.747	0.138	3.668-3.816
32	3.893	0.156	3.815-3.971
33	4.064	0.143	3.992-4.135
34	4.156	0.065	4.124-4.189
35	4.389	0.113	4.332-4.446
36	4.514	0.140	4.444-4.584
37	4.647	0.144	4.575-4.720
38	4.823	0.179	4.734-4.913
39	4.992	0.145	4.919-5.064
40	5.139	0.122	5.078-5.120
41	5.275	0.124	5.214-5.337
42	8.557	0.396	8.359-8.755
43	9.711	0.509	9.457-9.966
44	10.473	0.441	10.252-10.693
45	10.976	0.439	10.757-11.196
46	11.929	0.421	11.719-12.140
47	12.822	0.376	12.634-13.010
48	13.190	0.447	12.966-13.413
49	13.661	0.587	13.368-13.954
50	14.155	0.395	13.957-14.352

Sensor/Aircraft Parameters:

Spectral Bands:	50 (digitized to 16-bit resolution)
IFOV:	2.5 mrad
Ground Resolution:	163 feet (50 meter at 65,000 feet)
Swath Width:	22.9 mi/19.9 nmi (36 km)
Total Scan Angle:	85.92°
Pixels/Scan Line:	716
Scan Rate:	6.25 scans/second
Ground Speed:	400 kts (206 m/second)
Roll Correction:	Plus or minus 3.5 degrees (approx.)

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(s) and camera(s) used for data collection during this flight.

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

Aerosol Particulate Sampler

The Aerosol Particulate Sampler (APS) has been developed and is operated by Dr. Guy Ferry of the NASA-Ames Research Experiments Branch. The sampler is a non-imaging sensor designed to gather high altitude dust particles for laboratory research.

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. 95-054

Accession # 04870

Sensor # 034

Check Points	Frame Numbers	Time (GMT-hr, min, sec)		Altitude, MSL feet/meters	Cloud Cover/Remarks
		START	END		
A - B	2077-2113	16:41:43	16:58:44	64673/19712	Very minor cumulus (frames 2103-2104)
C - D	2114-2154	17:03:40	17:22:35	65066/19832	Smoke obstruction (frames 2141-2144)
E - F	2155-2195	17:27:12	17:46:08	65163/19862	Clear
G - H	2196-2244	17:52:11	18:14:49	65092/19840	Very minor smoke (frames 2258-2261)
I - J	2245-2293	18:20:44	18:43:39	65110/19846	Clear
K - L	2294-2339	18:48:12	19:09:32	65193/19871	Minor-10% cumulus (frames 2299-2300 and 2303-2310); smoke obstruction (frames 2335-2337)
M - N	2340-2380	19:13:14	19:32:09	66022/20124	Minor-10% scattered cumulus (frames 2366-2380)
O - P	2381-2419	19:36:18	19:54:15	65367/19924	Minor-20% scattered cumulus (frames 2381-2398); moderate smoke obstruction (frames 2406-2411)

CAMERA FLIGHT LINE DATA
FLIGHT NO. 95-054

Accession # 04870

Sensor # 034

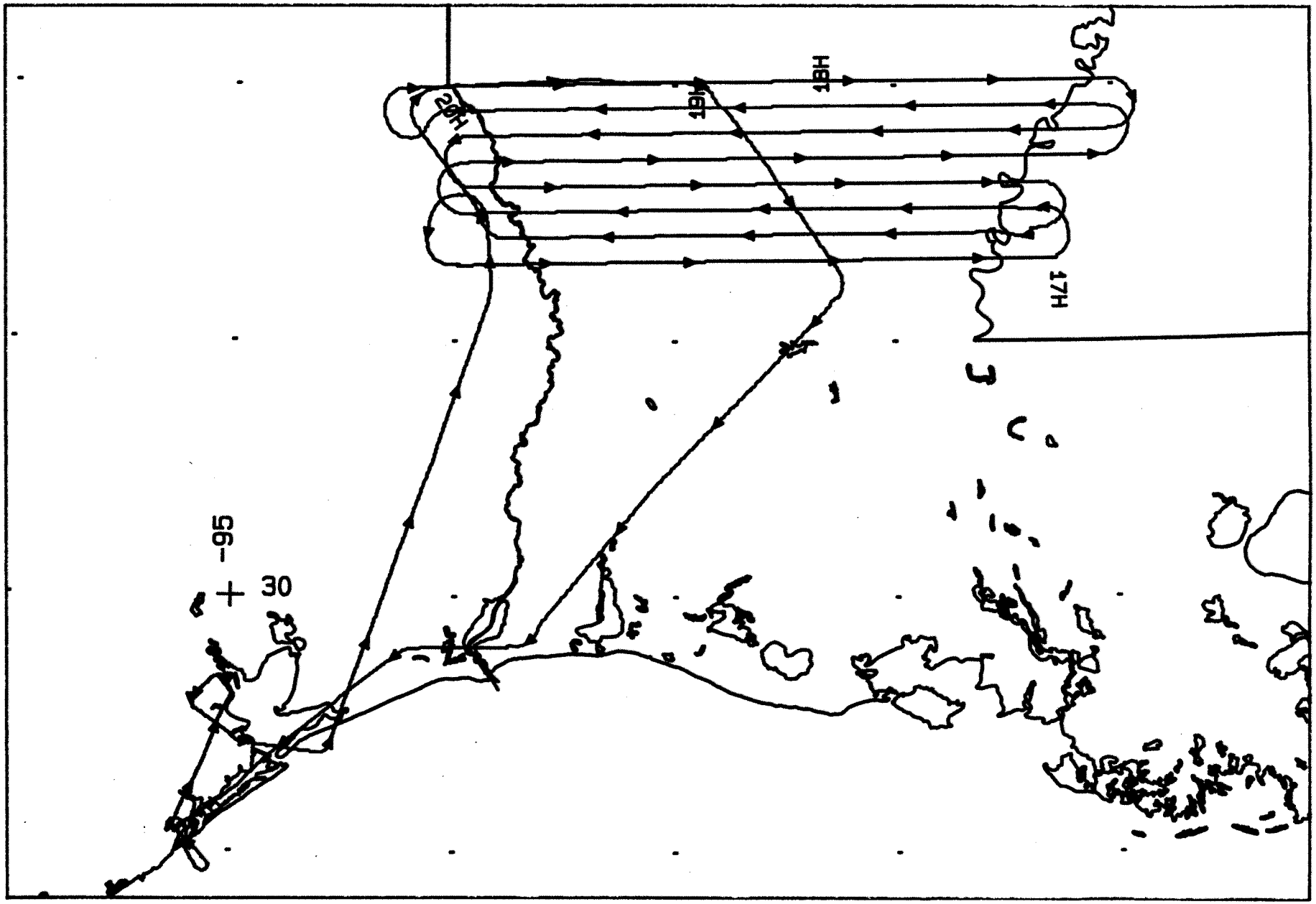
Check Points	Frame Numbers	Time (GMT-hr, min, sec) START	Time (GMT-hr, min, sec) END	Altitude, MSL feet/meters	Cloud Cover/Remarks
I - Q	2420-2437	20:02:04	20:09:52	65222/19880	Very minor smoke (frames 2435-2437)
R - S	2438-2445	20:37:03	20:40:02	65688/20022	Very minor cumulus (frames 2438-2439); minor-20% scattered cumulus (frames 2442-2445)
	APS ON/OFF TIME 16:33:00/20:44:00				

CAMERA FLIGHT LINE DATA
FLIGHT NO. 95-054

Accession # 04871

Sensor # 039

Check Points	Frame Numbers	Time (GMT-hr, min, sec) START	Time (GMT-hr, min, sec) END	Altitude, MSL feet/meters	Cloud Cover/Remarks
A - B	0001-0070	16:41:09	16:57:57	64711/19724	Minor cumulus (frames 0052-0053); light strike (frame 0001)
R - S	0071-0084	20:36:27	20:39:32	65700/20025	10-20% scattered cumulus (frames 0080-0084); light strike (frame 0071)
	INTERMITTENT PRESSURE MARKS/STATIC DISCHARGE THROUGHOUT DATA				



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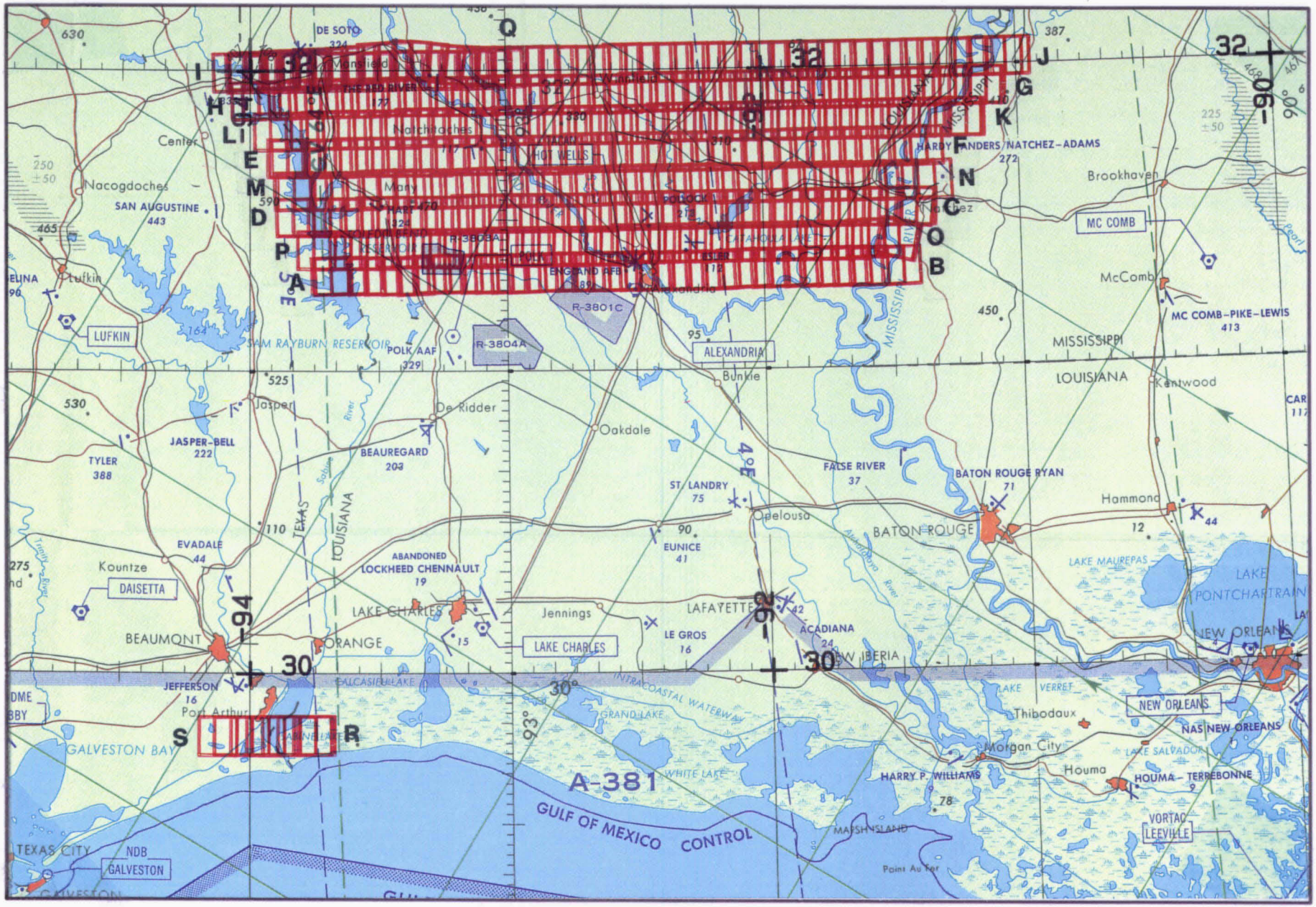

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