

FLIGHT SUMMARY REPORT

Flight Number: 93-025
Calendar/Julian Date: 29 November 1992 • 334
Sensor Package: Wild-Heerbrug RC-10
Hycon HR-732
Large Area Collectors (LACs)
Area(s) Covered: Texas

Investigator(s): Hagenbuck, USFWS;
Zolensky, NASA-JSC

Aircraft #: 708

SENSOR DATA

Accession #:	04515	04530	-----
Sensor ID #:	026	038	100
Sensor Type:	RC-10	HR-732	LACs
Focal Length:	12" 304.97 mm	24" 609.6 mm	-----
Film Type:	High Definition Aerochrome IR SO-131	High Definition Aerochrome IR SO-131	-----
Filtration:	cc.10B	cc.10B	-----
Spectral Band:	510-900 nm	510-900 nm	-----
f Stop:	4	8	-----
Shutter Speed:	1/125	1/75	-----
# of Frames:	308	7	-----
% Overlap:	60	60	-----
Quality:	Excellent	Good	-----
Remarks:	13.8 sec. offset between camera and navigation data	28.1 sec offset between camera and navigation data	

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

Large Area Collectors

The Large Area Collectors (LACs) are flown on NASA high altitude ER-2s in support of the NASA-Johnson Space Center Cosmic Dust Program. The LACs are used to collect comparatively unaltered cosmic dust from the stratosphere at ER-2 flight altitudes of 65,000 feet or higher. Sufficient quantities of extraterrestrial materials are collected to allow chemical and mineralogical compositions of individual particles to be determined. Study of these materials whose sources may be comets, asteroid collisions, planetary impacts, and meteorite ablation provide valuable information about the origin and history of the solar system.

Additional information regarding the Large Area Collectors may be obtained from Michael E. Zolensky, NASA-Johnson Space Center, SN2, Houston, Texas 77058 (Telephone (713) 483-5128).

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. 93-025**

Accession # 04515

Sensor # 026

Check Points	Frame Numbers	Time (GMT-hr, min, sec)		Altitude, MSL feet/meters	Cloud Cover/Remarks
		START	END		
A - B	5282-5316	16:34:44	16:50:20	65000/19800	10-20% cumulus (frames 5304-5310); 10-30% cumulus (frames 5312-5316)
C - D	5317-5355	16:54:24	17:11:52	"	10-20% cumulus (frames 5317-5327)
E - F	5356-5398	17:18:34	17:38:19	"	Minor-10% cumulus (frames 5356-5361); 10-30% cumulus (frames 5395-5398)
G - H	5399-5425	17:47:20	17:59:31	"	10-50% cumulus (frames 5399-5403)
I - J	5426-5461	18:06:19	18:22:42	"	Minor cumulus (frames 5448-5449); 10-90% cumulus (frames 5453-5461)
K - L	5462-5507	18:29:13	18:50:17	"	10-50% cumulus (frames 5462-5473); minor cumulus (frames 5502-5503)

**CAMERA FLIGHT LINE DATA
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Accession # 04515

Sensor # 026

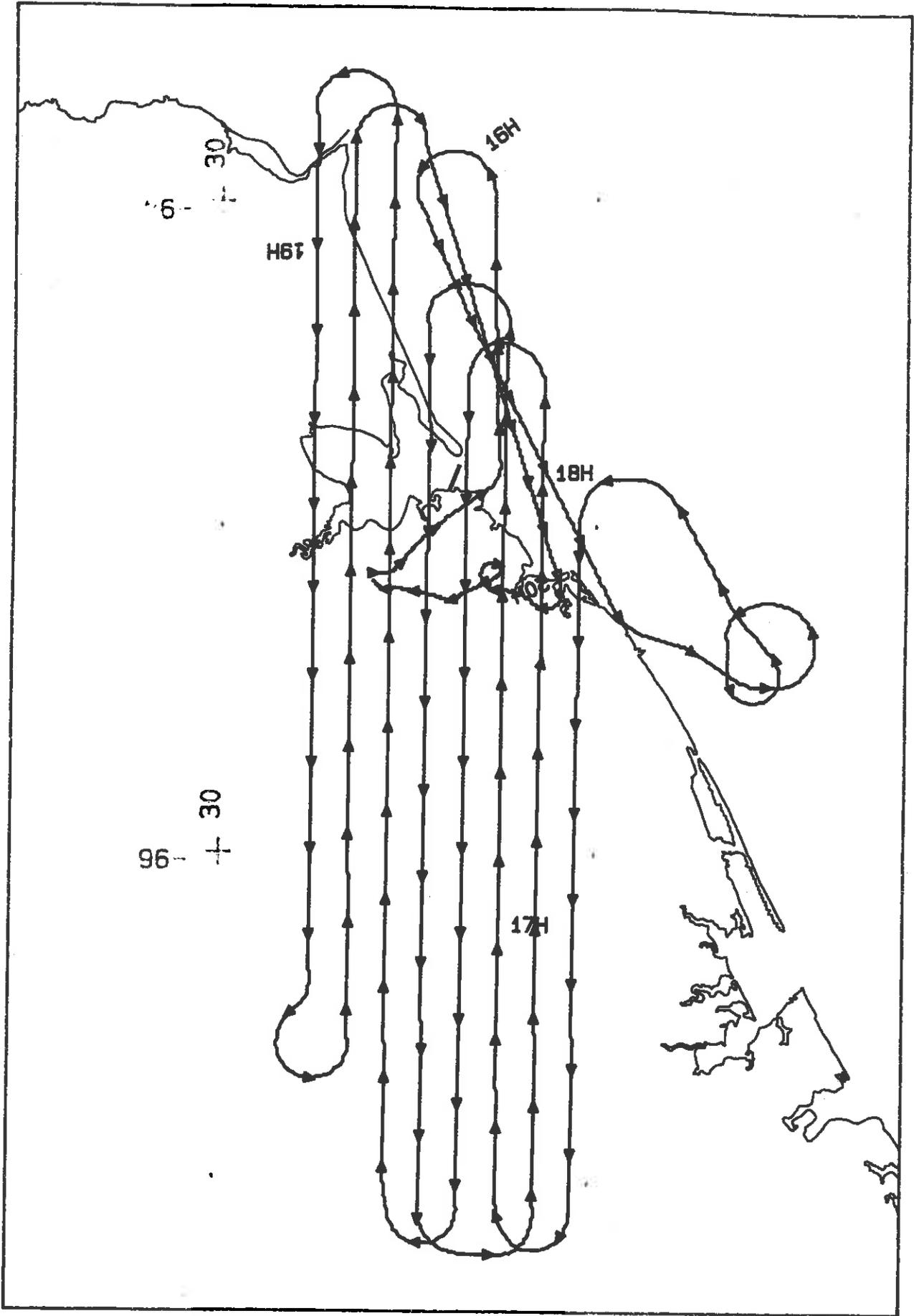
Check Points	Frame Numbers	Time (GMT-hr, min, sec)		Altitude, MSL feet/meters	Cloud Cover/Remarks
		START	END		
M - N	5508-5548	18:57:47	19:16:29	65000/19800	10-40% scattered cumulus (frames 5508-5519); 10-20% cirro-cumulus (frames 5529-5531 and 5538-5543); 10-30% cumulus (frames 5547-5548)
O - P	5549-5589	19:25:23	19:43:45	"	10-60% cumulus (frames 5549-5563); 10% cumulus (frames 5580-5583 and 5586-5589)

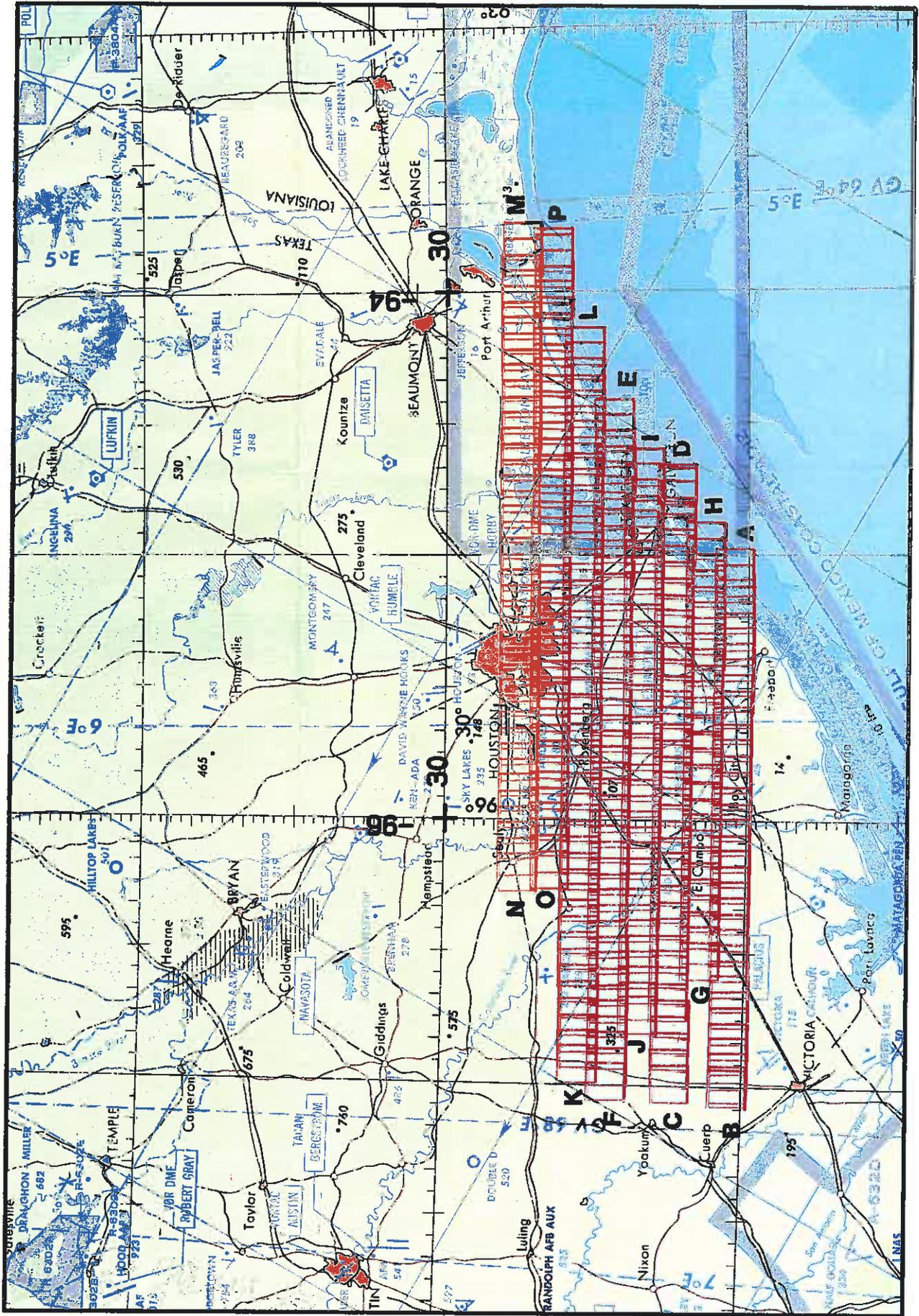
**CAMERA FLIGHT LINE DATA
FLIGHT NO. 93-025**

Accession # 04530

Sensor # 038

Check Points	Frame Numbers	Time (GMT-hr, min, sec)		Altitude, MSL feet/meters	Cloud Cover/Remarks
		START	END		
A	0001-0007	16:34:02	16:35:23	65000/19800	Clear; light struck (frame 0007)





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