

FLIGHT SUMMARY REPORT

Flight #: 91-052
Date: 11 January 1991
Sensor Package: Wild-Heerbrug RC-10
 Dual Hycon HR-732
 Airborne Ocean Color Imager (AOCI)
Area(s) Covered: Puerto Rico/Virgin Islands

Investigator(s): Johnston, USFWS **Aircraft #:** 708
Flight Request: 91R297 **Julian Date:** 011

SENSOR DATA

Accession #:	04177	04178	04179	-----
Sensor ID #:	076	018	019	090
Sensor Type:	RC-10	HR-732	HR-732	AOCI
Focal Length:	12" 304.89 mm	24" 609.6 mm	24" 609.6 mm	-----
Film Type:	Aerial Color SO-242	Aerial Color SO-242	High Definition Aerochrome IR SO-131	-----
Filtration:	None	None	cc.20B	-----
Spectral Band:	400-700 nm	400-700 nm	510-900 nm	-----
f Stop:	4	8	8	-----
Shutter Speed:	1/200	1/75	1/75	-----
# of Frames:	186	323	332	-----
% Overlap:	60	60	60	-----
Quality:	Excellent	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.

Airborne Ocean Color Imager

The Airborne Ocean Color Imager (AOCI) is a high altitude multispectral scanner designed for oceanographic remote sensing. It provides 10-bit digitization of eight bands in the visible/near-infrared region of the spectrum, plus two 8-bit bands in the near and thermal infrared. The bandwidths are as follows:

<u>Channel</u>	<u>Wavelength, μm</u>
1	0.436 - 0.455
2	0.481 - 0.501
3	0.511 - 0.531
4	0.554 - 0.575
5	0.610 - 0.631
6	0.655 - 0.676
7	0.741 - 0.800
8	0.831 - 0.897
9	0.989 - 1.054
10	8.423 - 12.279

Sensor/aircraft parameters are as follows:

IFOV:	2.5 mrad
Ground Resolution:	163 feet (50 meters) at 65,000 feet
Total Scan Angle:	85°
Swath Width:	19.6 nmi (36.3 km) at 65,000 feet
Pixels/Scan Line:	716
Scan Rate:	6.25 scans/second
Ground Speed:	400 kts (206 m/second)
Digitization:	8-bit channels 9-10 10-bit channels 1-8

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. 91-052

Accession # 04177

Sensor # 076

Check Points	Frame Numbers	Time (GMT-hr, min, sec)		Altitude, MSL feet/meters	Cloud Cover/Remarks
		START	END		
A - B	2957-2963	14:29:26	14:32:20	65000/19800	10-30% scattered cumulus
C - D	2964-2975	14:35:54	14:40:48	"	10-30% scattered cumulus
E - F	2976-2996	14:45:30	14:54:15	"	10-30% scattered cumulus (frames 2976-2984); minor smoke obstruction (frames 2986-2987)
G - H	2997-3012	14:58:35	15:04:50	"	10% cumulus (frames 3008-3009)
I - J	3013-3026	15:12:39	15:18:23	"	10-30% scattered cumulus (frames 3021-3026)
K - L	3027-3040	15:23:03	15:28:45	"	10-30% scattered cumulus (frames 3027-3030)
M - N	3041-3055	15:34:24	15:40:32	"	10-20% scattered cumulus (frames 3053-3055)

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Check Points	Frame Numbers	Time (GMT-hr, min, sec)		Altitude, MSL feet/meters	Cloud Cover/Remarks
		START	END		
O - P	3056-3069	15:43:42	15:49:22	65000/19800	10-30% scattered cumulus (frames 3056-3062)
Q - R	3070-3105	15:53:00	16:08:40	"	10-30% scattered cumulus (frames 3074-3089); 10-20% scattered cumulus (frames 3093-3105)
S - T	3106-3112	16:13:51	16:16:14	"	10-30% scattered cumulus
T - G	3113-3142	16:17:47	16:30:44	"	10-30% scattered cumulus (frames 3113-3133); 10% cumulus (frame 3138)

**CAMERA FLIGHT LINE DATA
FLIGHT NO. 91-052**

Accession # 04178

Sensor # 018

Check Points	Frame Numbers	Time (GMT-hr, min, sec)		Altitude, MSL feet/meters	Cloud Cover/Remarks
		START	END		
A - B	0001-0012	14:29:04	14:31:47	65000/19800	10-30% scattered cumulus
C - D	0013-0034	14:35:39	14:40:48	"	10-30% scattered cumulus
E - F	0035-0071	14:45:13	14:53:53	"	10-30% scattered cumulus (frames 0035-0048); minor smoke obstruction (frames 0053-0056)
G - H	0072-0097	14:58:16	15:04:20	"	10% scattered cumulus (frames 0094-0095)
I - J	0098-0123	15:12:23	15:18:23	"	10-30% scattered cumulus (frames 0113-0123)
K - L	0124-0148	15:22:47	15:28:17	"	10-20% scattered cumulus (frames 0124-0127)
M - N	0149-0174	15:34:08	15:40:06	"	10-20% scattered cumulus (frames 0171-0174)

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Sensor # 018

Check Points	Frame Numbers	Time (GMT-hr, min, sec)		Altitude, MSL feet/meters	Cloud Cover/Remarks
		START	END		
O - P	0175-0200	15:43:26	15:49:24	65000/19800	10-30% scattered cumulus (frames 0175-0186)
Q - R	0201-0266	15:52:44	16:08:13	"	10-30% scattered cumulus (frames 0207-0238);10-20% scattered cumulus (frames 0242-0266)
S - T	0267-0277	16:13:35	16:15:57	"	10-30% scattered cumulus
T - U	0278-0323	16:17:31	16:28:12	"	10-40% scattered cumulus (frames 0278-0312);10% cumulus (frames 0320-0322)

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Accession # 04179

Sensor # 019

Check Points	Frame Numbers	Time (GMT-hr, min, sec)		Altitude, MSL feet/meters	Cloud Cover/Remarks
		START	END		
A - B	0002-0012	14:29:37	14:32:09	65000/19800	10-20% scattered cumulus
C - D	0013-0034	14:35:57	14:41:06	"	10-30% scattered cumulus; light struck (frame 0013)
E - F	0035-0071	14:45:31	14:54:11	"	10-38% scattered cumulus (frames 0035-0048); minor smoke obstruction (frames 0053-0056); light struck (frame 0035)
G - H	0072-0097	14:58:34	15:04:38	"	10% scattered cumulus (frames 0094-0095); light struck (frame 0072)
I - J	0098-0123	15:12:41	15:18:43	"	10-30% scattered cumulus (frames 0113-0123); light struck (frame 0098)
K - L	0124-0148	15:23:05	15:28:36	"	10-20% scattered cumulus (frames 0124-0127); light struck (frame 0124)
M - N	0149-0174	15:34:26	15:40:25	"	10-20% scattered cumulus (frames 0171-0174); light struck (frame 0149)

CAMERA FLIGHT LINE DATA
FLIGHT NO. 91-052

Accession # 04179

Sensor # 019

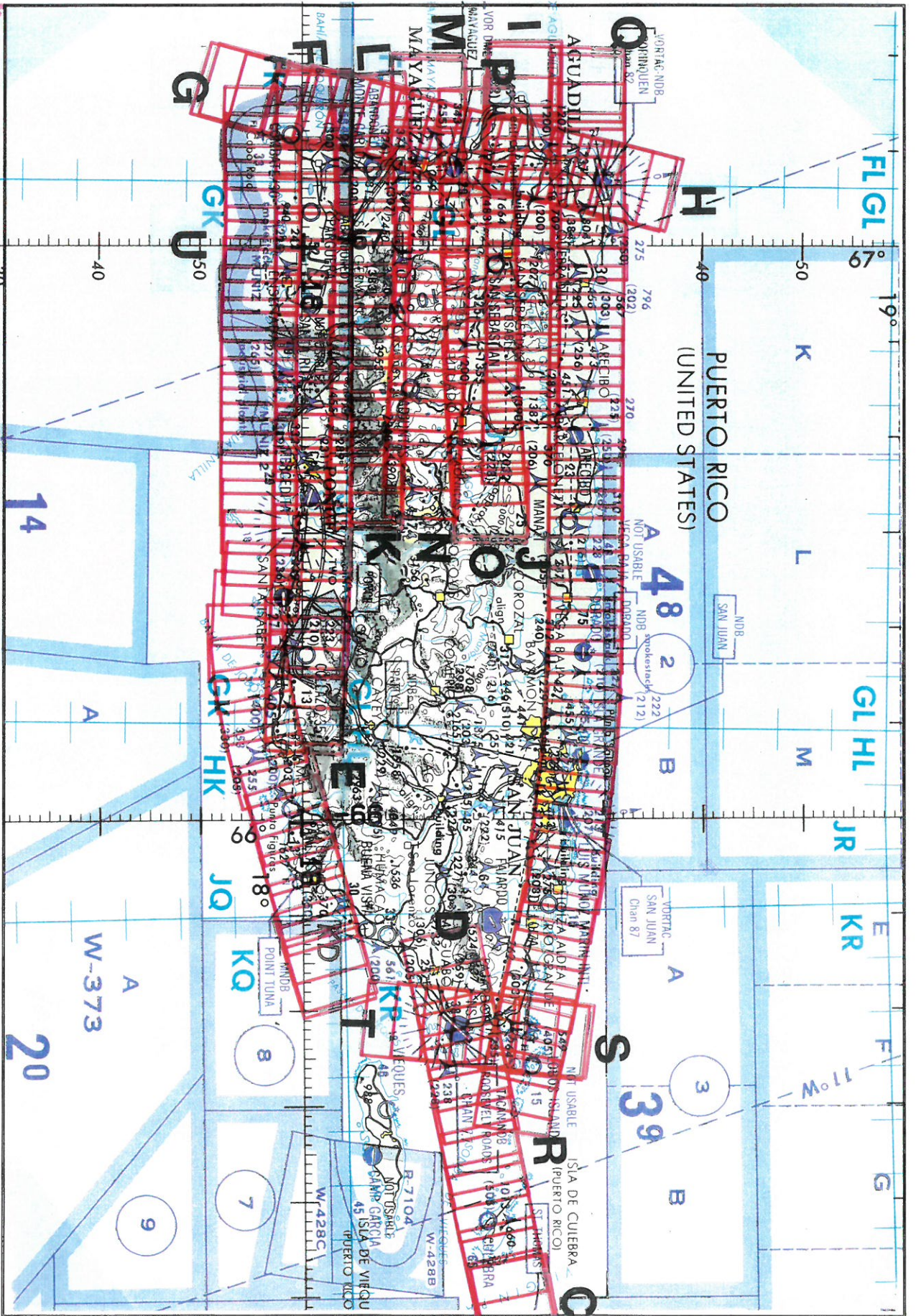
Check Points	Frame Numbers	Time (GMT-hr, min, sec)		Altitude, MSL feet/meters	Cloud Cover/Remarks
		START	END		
O - P	0175-0200	15:43:44	15:49:42	65000/19800	10-30% scattered cumulus (frames 0175-0187); light struck (frame 0175)
Q - R	0201-0266	15:53:02	16:08:32	"	10-30% scattered cumulus (frames 0207-0238); 10-20% scattered cumulus (frames 0242-0266); light struck (frame 0201)
S - T	0267-0333	16:13:53	16:16:16	"	10-30% scattered cumulus; light struck (frame 0267)
T - G	0278-0333	16:17:49	16:30:53	"	10-40% scattered cumulus (frames 0278-0312); 10% cumulus (frames 0320-0322); light struck (frame 0278); processing residue (frame 0332); significant emulsion abrasions (frame 0333)

SCANNER FLIGHT LINE DATA

FLIGHT NO. 91-052

DAEDALUS FLIGHT DATA
FLIGHT NUMBER: 91-052

Check Points	A c t u a l t i m e b e g i n	A c t u a l s c a n l i n e b e g i n	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	14:29: 2.0 14:32: 1.0	13518 14642	65000/19812	6.25	1120	0	5
C - D	14:35:37.0 14:40:57.0	15991 17990	65000/19812	6.25	2000	0	0
G - H	14:58:15.0 15:04:34.0	24476 26843	65000/19812	6.25	2368	0	0
Q - R	15:52:47.0 16:08:24.0	44924 50781	65000/19812	6.25	5849	0	9
T - U	16:17:34.0 16:27:58.0	656 4558	65000/19812	6.25	3901	0	2



FLIGHT 91-082

11 January 1991

A/C 708

RC-10 / Dual HR-732 / AOCI

Accession # 04177

ONC J-27

