FLIGHT SUMMARY REPORT

Flight #: 90-118

Date: 27 July 1990

Sensor Package: Wild-Heerbrug RC-10
Thematic Mapper Simulator (TMS)

Area(s) Covered: Southern California
Channel Islands

Investigator(s): Yoha, Dept. of Conservation

Aircraft #: 706

Flight Request: 90R255

Julian Date: 208

SENSOR DATA

Accession #:	04079	-----
Sensor ID #:	076	101
Sensor Type:	RC-10	TMS
Focal Length:	12" 304.89 mm	-----
Film Type:	High Definition Aerochrome IR SO-131	-----
Filtration:	cc.10B	-----
Spectral Band:	510-900 nm	-----
f Stop:	4	-----
Shutter Speed:	1/150	-----
# of Frames:	229	-----
% 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 high altitude 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:	1.3 mrad
Ground Resolution:	91 feet (28 meters at 70,000 feet)
Total Scan Angle:	43^{o}
Swath Width:	9.0 nmi (16.6 km at 70,000 feet)
Pixels/Scan Line:	716 (750 following rectification)
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. 90-118

Accession # 04079

Sensor # 076

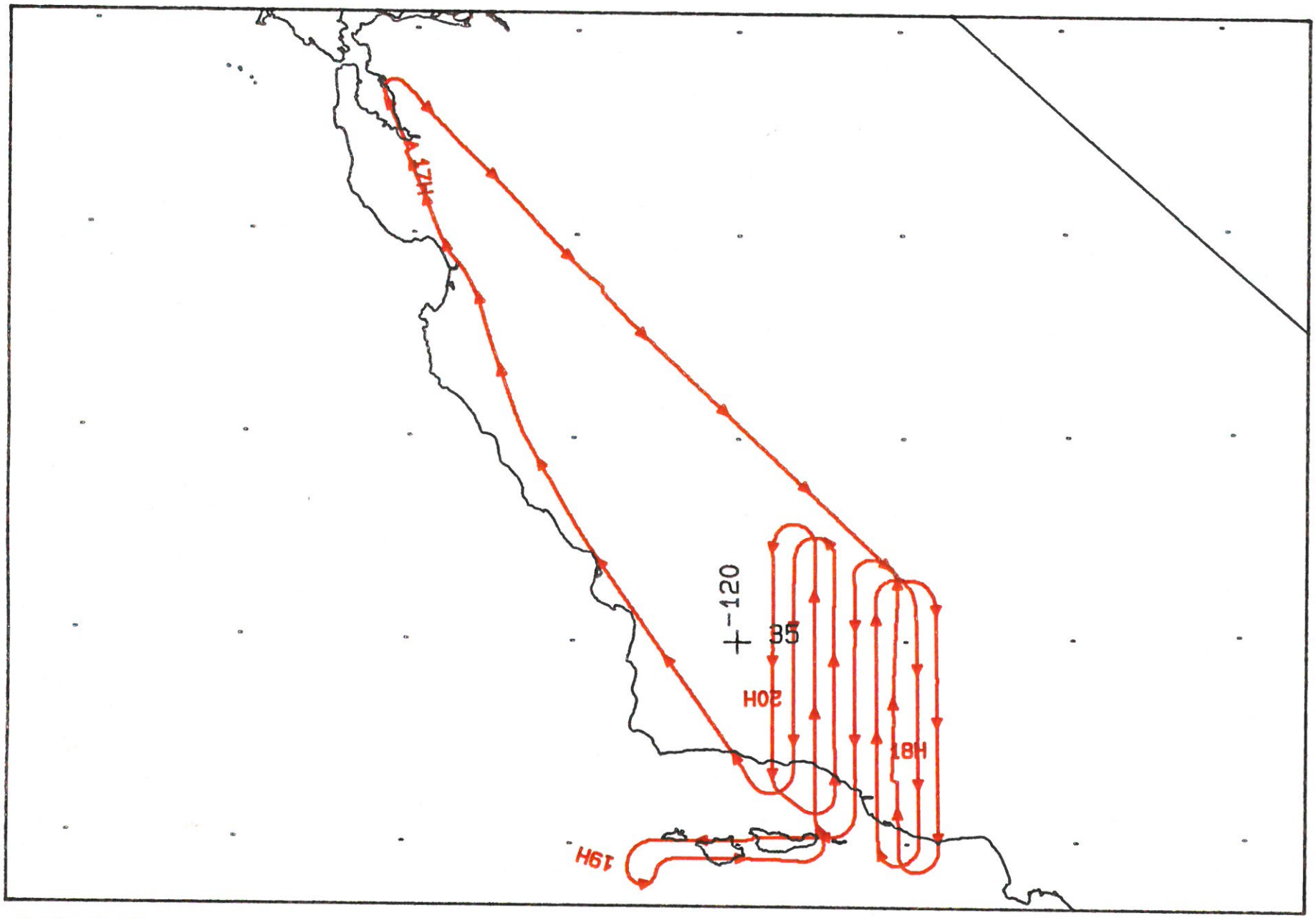
Check Points	Frame Numbers	Time (GMT-hr, min, sec)		Altitude, MSL feet/meters	Cloud Cover/Remarks
		START	END		
A - B	3194-3215	17:43:38	17:53:13	65000/19800	Clear
C - D	3216-3237	17:56:57	18:06:31	"	Minor strato cumulus (frame 3216)
E - F	3238-3260	18:11:36	18:21:35	"	Clear
G - H	3261-3283	18:25:22	18:35:20	"	10% strato cumulus (frames 3261-3262)
I - J	3284-3307	18:39:29	18:49:25	"	10% strato cumulus (frames 3303-3305); Minor strato cumulus (frame 3307)
K - L	3308-3323	18:51:42	18:58:20	"	Minor-10% strato cumulus (frames 3308-3309); 10-70% strato cumulus (frames 3318-3323)
M - N	3324-3336	19:04:13	19:09:26	"	10-20% strato cumulus (frames 3324-3327)
O - P	3337-3357	19:14:01	19:22:58	"	10-30% strato cumulus (frames 3333-3336)
Q - R	3358-3379	19:27:09	19:36:34	"	Clear
S - T	3380-3400	19:41:47	19:50:42	"	Clear
U - V	3401-3422	19:54:36	20:03:32	"	Clear

SCANNER FLIGHT LINE DATA

FLIGHT NO. 90-118

DAEDALUS FLIGHT DATA
FLIGHT NUMBER: 90-118

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	17:43:36.0	17:53:13.0	31885	37803	65000/19812	12.50	5910	0	9
C-D	17:56:55.0	18:06:36.0	40077	46043	65000/19812	12.50	5959	0	8
E-F	18:11:34.0	18:21:27.0	49096	55184	65000/19812	12.50	6068	0	21
G-H	18:25:20.0	18:35:13.0	57572	63665	65000/19812	12.50	6088	0	6
I-J	18:39:27.0	18:49:13.0	66270	72296	65000/19812	12.50	6015	0	12
K-L	18:51:40.0	18:58:11.0	73799	77824	65000/19812	12.50	4020	0	6
M-N	19:04:11.0	19:09:25.0	81519	84747	65000/19812	12.50	3222	0	7
O-P	19:13:59.0	19:22:57.0	87560	93098	65000/19812	12.50	5528	0	11
Q-R	19:27: 6.0	19:36:40.0	95657	101557	65000/19812	12.50	5889	0	12
S-T	19:41:44.0	19:50:43.0	104685	110226	65000/19812	12.50	5534	0	8
U-V	19:54:34.0	20:03:19.0	112595	117997	65000/19812	12.50	5368	0	35



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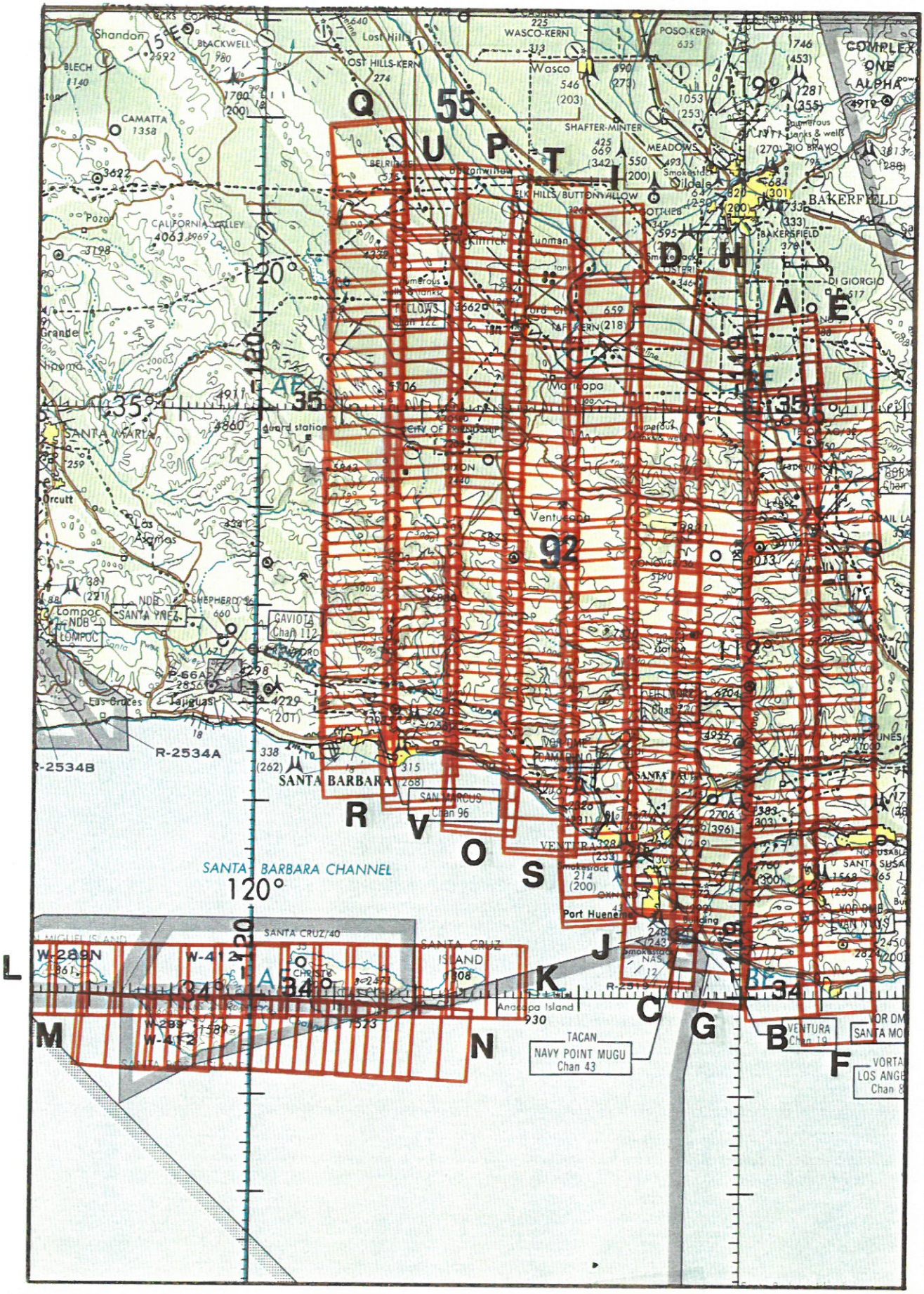

ONC G-18

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