FLIGHT SUMMARY REPORT

Flight Number: 98-007-02

Calendar/Julian Date: 27 July 1998 • 208

Sensor Package: Dual Wild Heerbrugg RC-30

Area(s) Covered: Tongass National Forest

Investigator(s): Ishikawa, USDA Forest Service

Aircraft #: 799
Department of Energy
Cessna Citation

SENSOR DATA

Accession #:	05278	05279
Sensor ID #:	016	017
Sensor Type:	RC-30	RC-30
Focal Length:	6” 152.83 mm	6” 152.75 mm
Film Type:	Panatomic X Aerographic II, 2412	Aerochrome IR SO-060
Filtration:	Wratten 12 + 2.2 AV	Wratten 12 + 2.2 AV
Spectral Band:	510-700 nm	510-900 nm
f Stop:	4	4
Film Speed:	64	80
# of Frames:	276	276
% Overlap:	60	60
Quality:	Excellent	Excellent
Remarks:	Subtract 21 seconds for correct UTC	

Airborne Science Program

The Airborne Science Program is supported by two ER-2 high altitude Earth Resources Survey aircraft. These aircraft are operated at NASA's Dryden Flight Research Center, Edwards, 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 Australia, Brazil, Chile, Great Britain, New Zealand 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 cameras used for data collection during this flight.

U.S. Forest Service Remote Sensing Applications Center

Photographic data was collected on this flight through a cooperative effort involving NASA-Ames Research Center, the U.S. Forest Service Remote Sensing Applications Center in Salt Lake City, Utah and the Department of Energy Remote Sensing Laboratory in Las Vegas, Nevada. The data were acquired by a Department of Energy Cessna Citation based in Las Vegas and deployed to Juneau, Alaska for purposes of acquiring color infrared and black and white mapping camera photography over the Tongass National Forest. Original photography from this flight will be archived at the Forest Service Remote Sensing Applications Center in Salt Lake City. Additional information regarding these data may be obtained from the Remote Sensing Applications Center, 2222 West 2300 South, Salt Lake City, UT 84119 (Telephone: 801-975 3663)

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/RC30 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

Data Availability

The U.S. Geological Survey's EROS Data Center at Sioux Falls, South Dakota serves as the archive and product distribution facility for Airborne Science Program aircraft acquired photographic and digital imagery. The photographic archive consists of photography acquired by the program from 1971 to April 1996. 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).

As of April 1996 the EROS Data Center no longer receives an archive copy of newly acquired Airborne Science Program photography. Original photography is archived with the Airborne Sensor Facility at Ames Research Center, with the exception of Forest Service photography which as stated above is archived at the Remote Sensing Applications Center in Salt Lake City. A user copy of the photography is provided to the principal investigators for each flight. Principal investigators are cited on the first page of their respective flight summary reports. For information regarding photography acquired from April 1996 to the present contact the Airborne Sensor Facility as follows:

Flight Documentation and Data Archive Searches

The following is the web site for flight documentation published by the Airborne Sensor Facility at NASA Ames Research Center:

http://asapdata.arc.nasa.gov/er-2fsr.html

Additional information regarding flight documentation to include data archive searches, data availability, sensor parameters, and areas of coverage may be obtained from the following:

Airborne Sensor Facility
MS 240-6
NASA Ames Research Center
Moffett Field, CA 94035-1000
Telephone: (650)604-6252 (FAX 4987)
Website: http://asapdata.arc.nasa.gov

CAMERA FLIGHT LINE DATA
FLIGHT NO. 98-007-02

Accession # 05278

Sensor # 016

Site #	Frame #	Time (GMT-hr, min, sec) START	Time (GMT-hr, min, sec) END	Altitude, MGL feet/meters	Cloud Cover/Remarks
A - B	0001-0058	19:09:28	19:52:03	34303/10456	10% cumulus (frames 0001, 005-0010, 0053-0058); minor cumulus (frames 0024-0027)
C D	0059-0127	19:57:04	20:40:19	34274/10447	10% cumulus (frames 0060-0063, 0104-0106, 0111-0117); minor cumulus (frame 0109)
E - F	0128-0163	20:44:52	21:06:36	34133/10404	10% cumulus (frames 0145-0152); minor cumulus (frames 0157-0159)
G - H	0164-0194	21:11:22	21:29:48	34232/10434	Minor cumulus (frames 0167-0169); 10% cumulus (frames 0173-0176, 0180-0181)
I - J	0195-0241	21:35:21	22:03:21	34383/10480	Minor cumulus (frames 0211-0212); 10% cumulus (frames 0216-0218)
K - L	0242-0248	22:13:29	22:16:58	34343/10468	Clear
M - N	0249-0254	22:21:07	22:24:27	34400/10485	Clear
O - P	0255-0258	22:29:45	22:30:32	34400/10485	Clear

CAMERA FLIGHT LINE DATA
FLIGHT NO. 98-007-02

Accession # 05278

Sensor # 016

Site #	Frame #	Time (GMT-hr, min, sec) START	Time (GMT-hr, min, sec) END	Altitude, MGL feet/meters	Cloud Cover/Remarks
Q - R	0259-0262	22:35:04	22:37:08	34300/10455	Clear
R - S	0263-0276	22:46:56	22:54:22	34300/10455	Minor cumulus (frames 0274-0275)

CAMERA FLIGHT LINE DATA
FLIGHT NO. 98-007-02

Accession # 05279

Sensor # 017

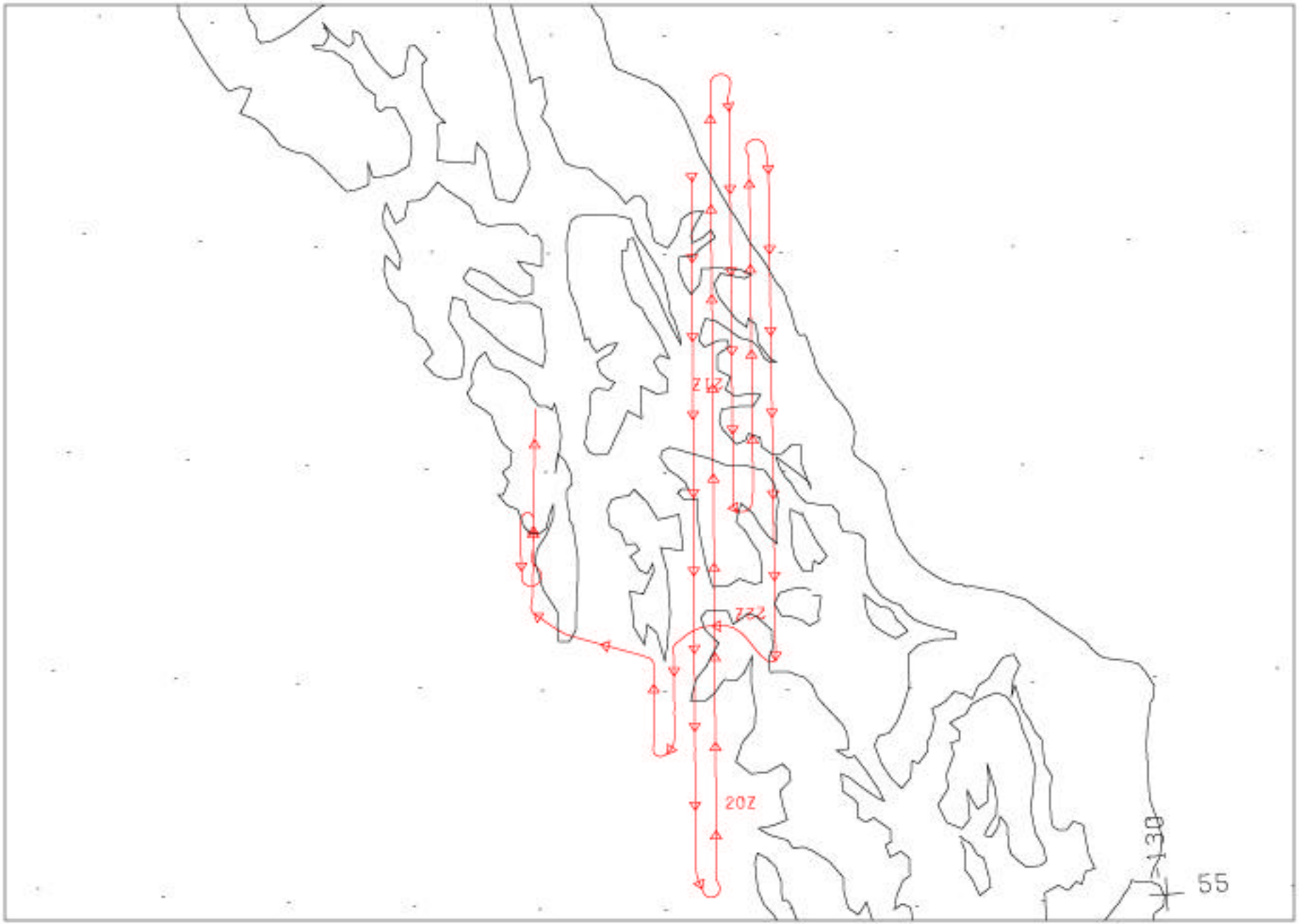
Check Points	Frame Numbers	Time (GMT-hr, min, sec) START	Time (GMT-hr, min, sec) END	Altitude, MGL feet/meters	Cloud Cover/Remarks
A- B	0001-0058	19:09:07	19:51:42	34303/10456	10% cumulus (frames 0001, 0005-0010, 0053-0058); minor cumulus (frames 0024-0027)
C - D	0059-0127	19:56:43	20:39:58	34274/10447	10% cumulus (frames 0060-0063, 0104-0106, 0111-0117); minor cumulus (frame 0109); processor scratches (frames 0116-0118)
E - F	0128-0163	20:44:31	21:06:15	34133/10404	10% cumulus (frames 0145-0152); minor cumulus (frames 0157-0159)
G - H	0164-0194	21:11:01	21:29:27	34232/10434	Minor cumulus (frames 0167-0169); 10% cumulus (frames 0173-0176, 0180-0181; processor scratches (frames 0182-0194)
I - J	0195-0241	21:35:00	22:03:00	34383/10480	Minor cumulus (frames 0211-0212); 10% cumulus (frames 0216-0218); processor scratches throughout
K - L	0242-0248	22:13:08	22:16:37	34343/10468	Clear; processor scratches throughout

CAMERA FLIGHT LINE DATA
FLIGHT NO. 98-007-02

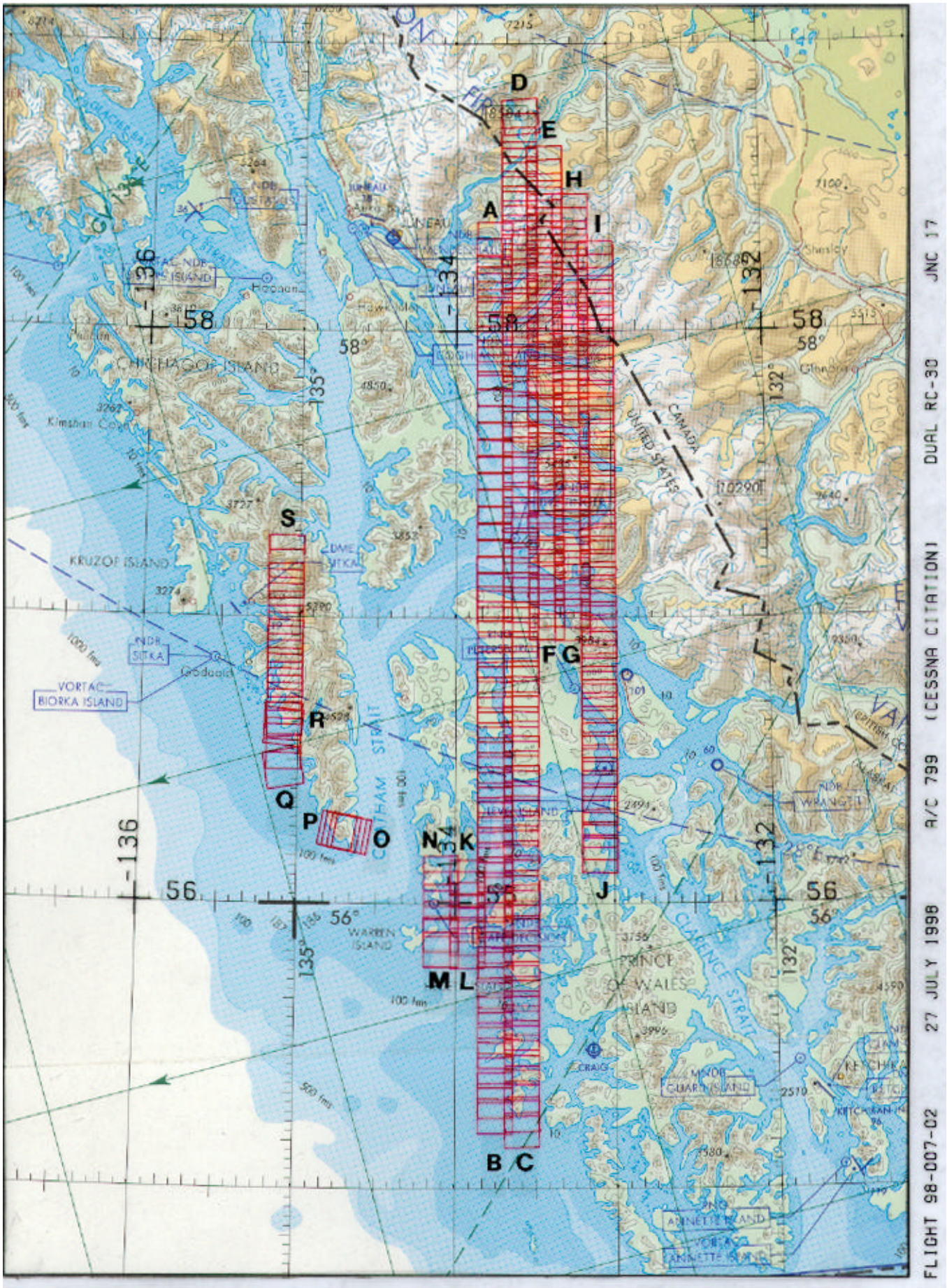
Accession # 05279

Sensor # 017

Check Points	Frame Numbers	Time (GMT-hr, min, sec) START	Time (GMT-hr, min, sec) END	Altitude, MGL feet/meters	Cloud Cover/Remarks
M - N	0249-0254	22:20:46	22:24:06	34400/10485	Clear; processor scratches throughout
O - P	0255-0258	22:29:24	22:30:11	34400/10485	Clear
Q- R	0259-0262	22:34:43	22:36:47	34300/10455	Clear
R - S	0263-0276	22:46:35	22:54:01	34300/10455	Minor cumulus (frames (0274-0275); emulsion abrasion (frames 0267-0271)



FLIGHT 98-007-02 27 JULY 1998 A/C 799 (DOE CESSNA CITATION) DUAL RC-30



FLIGHT 98-007-02 27 JULY 1998 A/C 799 (CESSNA CITATION) DUAL RC-30 JNC 17