

# FLIGHT SUMMARY REPORT

**Flight #:** 91-170  
**Date:** 16 September 1991  
**Sensor Package:** Wild-Heerbrug RC-10  
Hycon HR-732  
**Area(s) Covered:** Eastern Oregon

**Investigator(s):** Ishikawa, USDA

**Aircraft #:** 706

**Flight Request:** 91R104

**Julian Date:** 259

## SENSOR DATA

<b>Accession #:</b>	04303	04304	04305
<b>Sensor ID #:</b>	034	039	038
<b>Sensor Type:</b>	RC-10	HR-732	HR-732
<b>Focal Length:</b>	12" 304.66 mm	24" 609.6 mm	24" 609.6 mm
<b>Film Type:</b>	High Definition Aerochrome IR SO-131	High Definition Aerochrome IR SO-131	High Definition Aerochrome IR SO-131
<b>Filtration:</b>	cc.10B	cc.10B	cc.10B
<b>Spectral Band:</b>	510-900 nm	510-900 nm	510-900 nm
<b>f Stop:</b>	4	8	8
<b>Shutter Speed:</b>	1/125	1/75	1/75
<b># of Frames:</b>	367	504	188
<b>% Overlap:</b>	60	60	60
<b>Quality:</b>	Excellent	Excellent	Excellent
<b>Remarks:</b>			

## 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 descriptions of the camera systems flown onboard the ER-2s.

### 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. 91-170**

Accession # 04303

Sensor # 034

Check Points	Frame Numbers	Time (GMT-hr, min, sec)		Altitude, MSL feet/meters	Cloud Cover/Remarks
		START	END		
A - B	4251-4267	18:04:10	18:11:51	65000/19800	Clear
C - D	4268-4280	18:15:20	18:20:56	"	Clear
E - F	4281-4289	18:26:20	18:30:04	"	Clear
G - H	4290-4303	18:35:20	18:40:53	"	Clear
I - J	4304-4324	18:45:20	18:54:41	"	Clear
K - L	4325-4354	18:58:30	19:12:02	"	Clear
M - N	4355-4389	19:16:59	19:32:52	"	Clear
O - P	4390-4419	19:37:30	19:51:03	"	Clear
Q - R	4420-4450	19:54:30	20:08:30	"	Clear
S - T	4451-4484	20:13:07	20:28:09	"	Clear

**CAMERA FLIGHT LINE DATA**  
**FLIGHT NO. 91-170**

Accession # 04303

Sensor # 034

Check Points	Frame Numbers	Time (GMT-hr, min, sec)		Altitude, MSL feet/meters	Cloud Cover/Remarks
		START	END		
U - V	4485-4516	20:33:25	20:47:54	65000/19800	Clear
W - X	4517-4519	20:52:20	20:53:16	"	Clear
W - Y	4520-4552	21:01:09	21:16:05	"	Clear
Z - 1	4553-4587	21:20:59	21:36:52	"	Clear
2 - 3	4588-4617	24:40:22	21:53:54	"	Clear

**CAMERA FLIGHT LINE DATA**  
**FLIGHT NO. 91-170**

Accession # 04304

Sensor # 039

Check Points	Frame Numbers	Time (GMT-hr, min, sec)		Altitude, MSL feet/meters	Cloud Cover/Remarks
		START	END		
A - B	0001-0031	18:03:44	18:11:02	65000/19800	Clear
C - D	0032-0055	18:14:29	18:20:05	"	Clear
E - F	0056-0073	18:25:38	18:29:45	"	Clear
G - H	0074-0098	18:34:22	18:40:11	"	Clear
I - J	0099-0138	18:44:35	18:54:03	"	Clear
K - L	0139-0196	18:57:35	19:11:26	"	Clear
M - N	0197-0263	19:16:09	19:32:10	"	Clear
O - P	0264-0319	19:36:44	19:50:04	"	Clear
Q - R	0320-0377	19:53:39	20:07:28	"	Clear
S - T	0378-0441	20:12:21	20:27:38	"	Clear

**CAMERA FLIGHT LINE DATA  
FLIGHT NO. 91-170**

Accession # 04304

Sensor # 039

Check Points	Frame Numbers	Time (GMT-hr, min, sec)		Altitude, MSL feet/meters	Cloud Cover/Remarks
		START	END		
U - V	0442-0502	20:32:37	20:47:12	65000/19800	Clear
W - X	0503-0504	20:51:21	20:51:35	"	Clear

**CAMERA FLIGHT LINE DATA**  
**FLIGHT NO. 91-170**

Accession # 04305

Sensor # 038

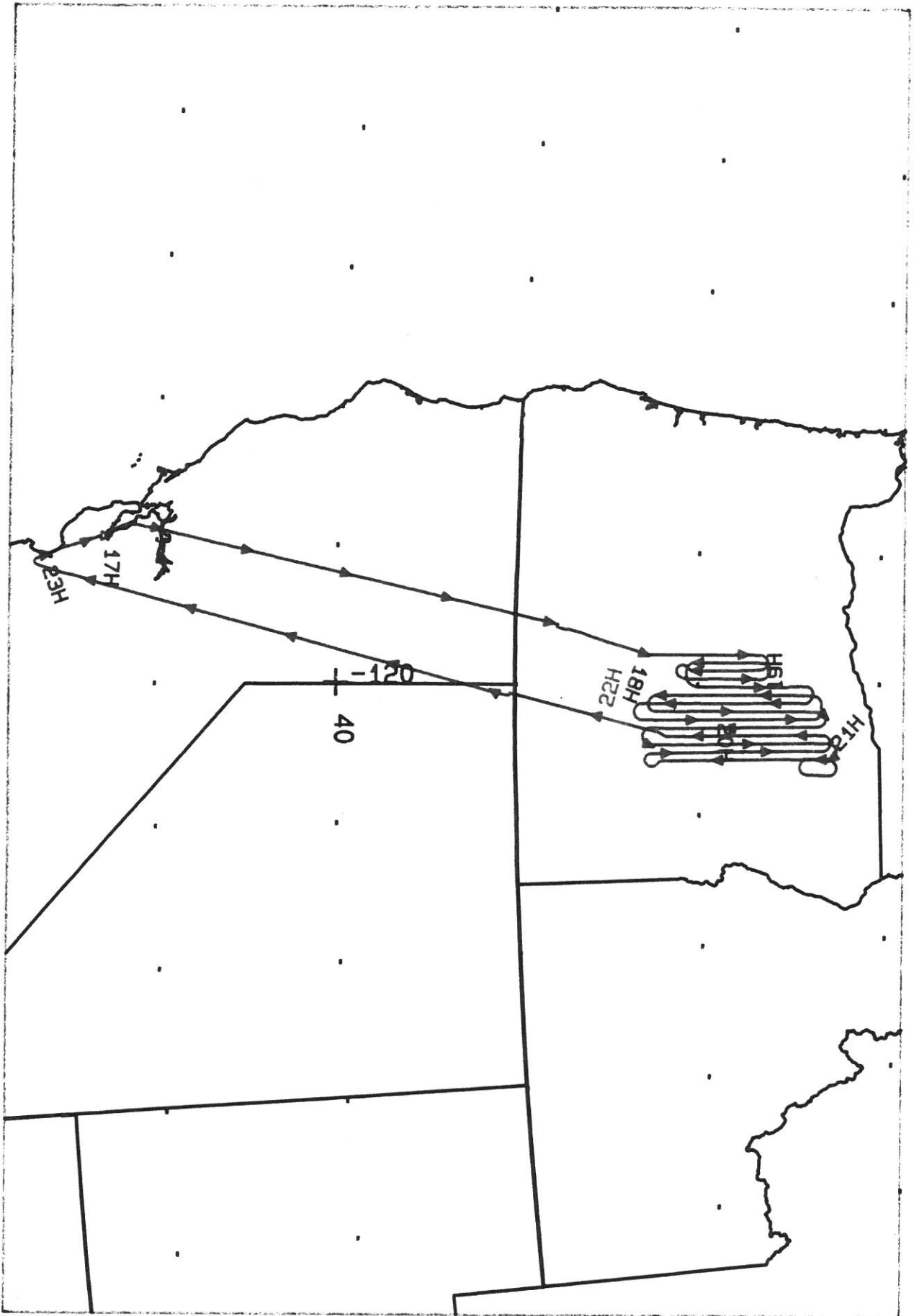
Check Points	Frame Numbers	Time (GMT-hr, min, sec)		Altitude, MSL feet/meters	Cloud Cover/Remarks
		START	END		
W - Y	0001-0064	20:59:44	21:14:59	65000/19800	Clear
Z - 1	0065-0130	21:19:31	21:35:16	"	Clear
2 - 3	0131-0188	21:38:56	21:52:45	"	Clear

FLIGHT 91-170

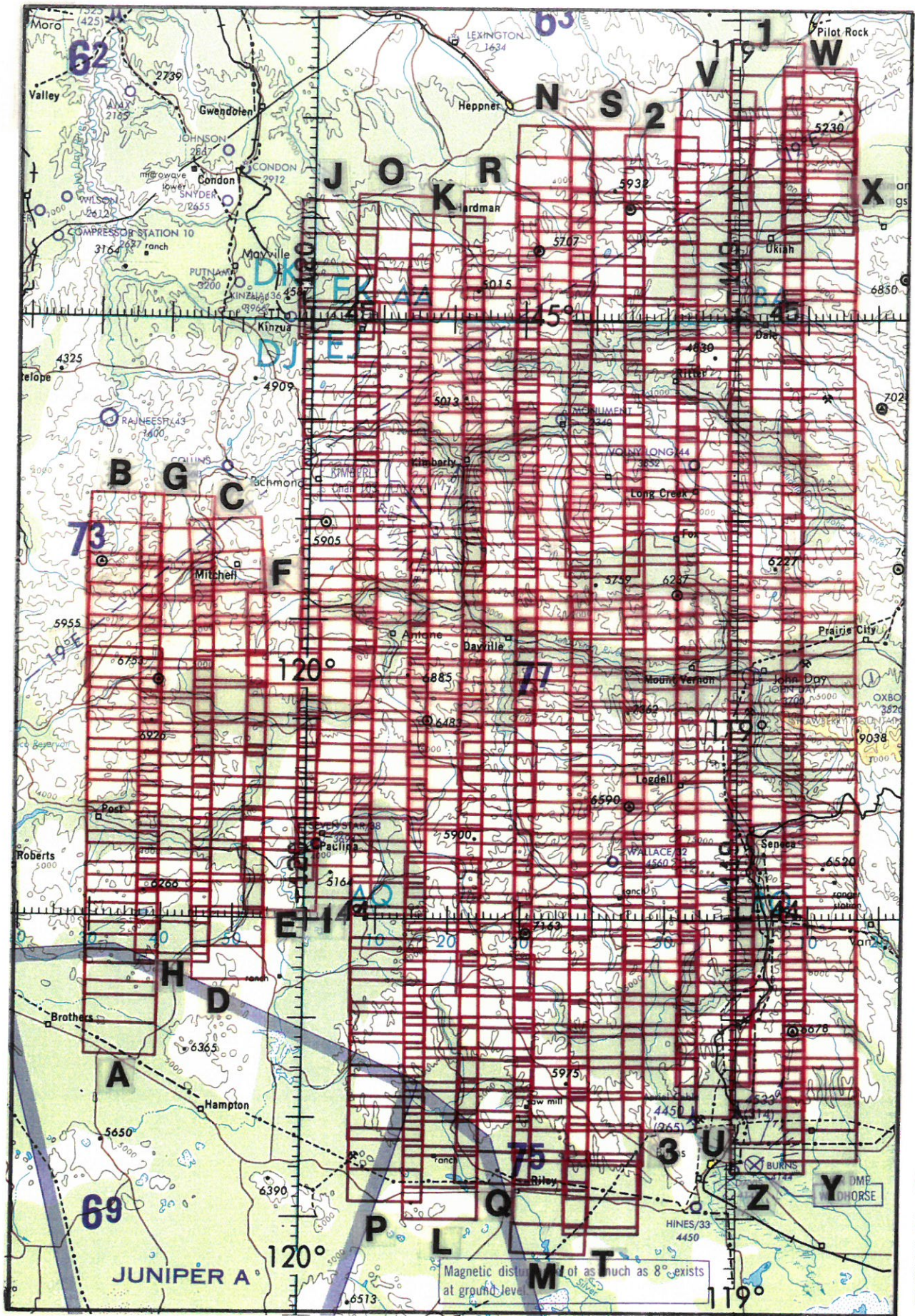
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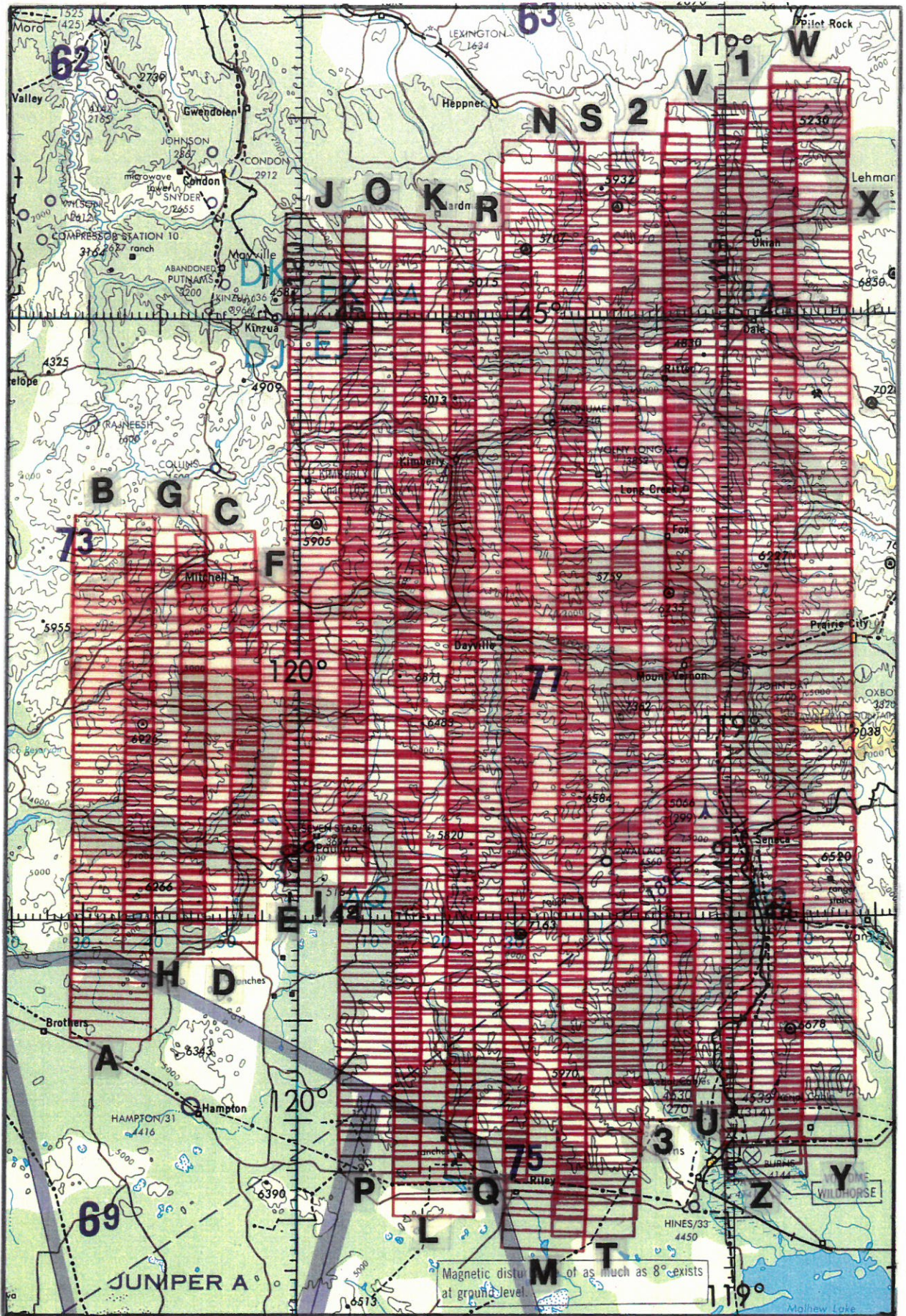
Dual HR-732 / RC-10







FLIGHT 91-170  
 16 September 1991  
 A/C 706  
 RC-10 / 90-131  
 Accession # 04303  
 ONC F-16



FLIGHT 91-170 16 September 1991 A/C 706 Dual HW-792 / SO-131 Accession # 04304 & 04305 ONC F-16