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TECHNICAL PUBLICATION

January 1964

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PHOTOGRAPHIC EVALUATION REPORT

MISSION 1001-1

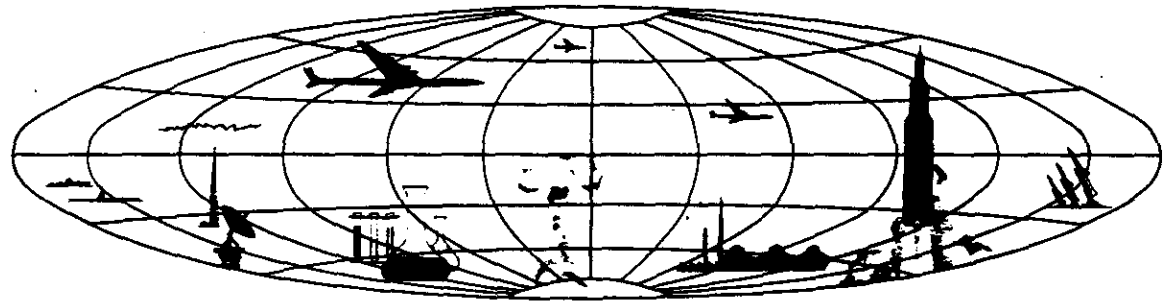
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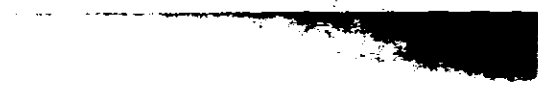
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PART I. MASTER PANORAMIC CAMERA

Mission No: 1001-1 (J-1)
Camera No: 114
Slit Width: 0.200"
Film Type: 7J23-7800 (4404)

Filter, Panoramic: Wratten 21
Aperture, Panoramic: f/3.5
Filters, Horizon: Wratten 25
Evaluated By:

1. Shutter Operation (Horizon Cameras): The port horizon camera shutter failed to close throughout the majority of exposures in passes A34-D64. A single malfunction on pass D24, frame 24, is the first and only shutter failure noted prior to pass A34. Study of the sequence of malfunctions indicates the following failure pattern: the shutter remained open for one or two exposures following the initial exposure of the pass, then resumed normal operation for the next few exposures, after which it malfunctioned again and remained open the remainder of the pass. Departures from this sequence occurred occasionally in the first few passes affected, but the basic malfunction pattern is as described. The open-shutter condition prevailed in approximately 75% of the total exposures contained on passes A34-D64.
2. Horizon Camera Exposure:
 - a. Supply (Port): The exposure is adequate for the descending passes but is insufficient to compensate for the low sun angle that prevails in the ascending passes (f/6.8, 1/100 second).
 - b. Take-Up (Starboard): The exposure is adequate for the majority of all passes (f/6.8, 1/100 second).
3. Camera Number: The background is slightly flared but the number is readable.
4. Date Block: The data block functioned throughout the mission but the lamp images are grossly overexposed and occasionally appear

- elliptical in shape. Single data blocks are recorded at the termination of all passes and at the camera-off positions within passes, but two end-of-pass markers are consistently present at pass ends and camera-off positions.
5. Film Metering: The film metering is normal throughout the mission.
 6. Film Tracking: The film tracking is normal throughout the mission.
 7. Frequency Markers: The marks fail to appear on pass D22, frames 56-248.
 8. Fiducials:
 - a. Panoramic Camera: The fiducials are well defined.
 - b. Horizon Cameras: The fiducials are well defined, with little or no flare present.
 9. Light Leaks: Light leaks and/or excessive fog appear on the titled edges of the last frames on most passes and at the camera-off positions within passes. Approximately 75% of the panoramic photography in passes A34-D64 is severely degraded by the excess light from the open port horizon camera shutter wiping across the panoramic formats.
 10. Static Electricity: Dendritic static discharges and small bar-shaped static patterns are present on the titled edge on pass A44, frames 1-10. Corona static discharges are noted on pass D64, frames 4, 5, 35, 37.
 11. Pinholes: Pinholes are present intermittently throughout the film. Examples: pass



A01, frames 2, 4-6, 10, 13, 28, 30, 55, 72, 73; pass D09, frames 1, 4, 5, 10, 12, 18, 20, 26, 29, 30, 34; pass A34, frames 2, 3, 5, 6, 20, 21, 42, 44.

12. Abrasions and Scratches: Abrasions and scratches are present intermittently throughout the film in the panoramic formats. Examples: pass A01, frames 2, 5, 8, 10, 15, 31, 32, 72; pass D17, frames 23-25, 54, 61; pass A34, frames 1, 6, 7, 24-26, 42, 44. Multiple, fine base scratches are present from head to tail on a number of passes. Examples: passes D08, D38, A44, A46, A48, A49.

13. Tearing: None. Manufacturer's splices are present on pass A01, frame 64; pass A34, frame 1.

14. Water Marks: None.

15. Pressure Streaks: None.

16. Processing Streaks: Processing streaks are present throughout passes D39, D40, A44.

17. Blistering and Crimping: None.

18. Contrast: 0% low, 95% medium, 5% high.

19. Apparent Resolution: Fair only. Only the best is comparable to Mission 9047.

20. Apparent Graininess: Fine.

21. Photo Quality:

- a. Panoramic Camera: Fair only. Assignment of a higher rating is precluded by the presence of a pronounced out-of-focus area located at the supply ends of all frames. This area is roughly semicircular in outline with its base adjacent to the untitled edge and is approximately 5.0" in width across its base. The semicircle extends approximately 1.25" into the format. In addition, all photography immediately adjacent to the untitled edge appears soft.
- b. Horizon Cameras: The photographic

quality of both horizon cameras is good, excluding the port images degraded by shutter malfunction. The starboard imagery rated slightly better than the port.

22. Camera Operation:

- a. Panoramic Camera: Fair only, due to the out-of-focus areas noted in Item 21 (a).
- b. Horizon Cameras: Starboard good, port poor (refer to Item 1).

23. Suitability for PI: Fair through pass A33, poor thereafter (refer to Item 9).

Remarks

1. Plus-density bands, parallel with the line of flight, are noted in areas of overwater photography.
2. Emulsion lifts are present throughout the film. Examples: pass D17, frames 1, 6-8, 15, 22; pass D24, frames 1, 4, 5, 8, 14; pass A34, frames 1, 5-7, 22-25, 42, 44.
3. Image acuity appears inferior to that obtained from the slave panoramic camera.
4. Film transport indications are usually present on the first and last frames of each pass. Since measurement of film transport no longer serves a useful purpose, no such data are included in this report. Similarly, comments on film metering (refer to Item 5 above) do not include measurement data as the film metering appears normal.
5. The following overlap data pertaining to Camera Number 114 were determined from the fifth and last frames of each pass where such computations were not precluded by cloud cover, low sun angle, or lack of imagery. Where overlap computations were not possible, the omissions are denoted by "NM" for "Not Measurable."



Pass	Overlap (Percent)		Pass	Overlap (Percent)	
	Beginning	End		Beginning	End
A01	9	NM	D37	8	NM
D01	NM	6	D38	8	NM
D03	NM	4	D39	9	NM
D05	0	4	D40	NM	NM
D07	1	5	A41	7	7
D08	7	9	A44	9	NM
D09	9	13	A46	1	4
A11	NM	NM	A48	9	9
A16	6	12	D49	NM	NM
D17	8	10	A50	NM	NM
D21	8	8	A51	8	NM
D22	1	1	D52	8	8
D24	NM	11	D54	12	NM
A25	9	7	D55	8	NM
A33	9	7	A56	NM	NM
A34	9	11	D56	NM	NM
D36	6	11	D64	NM	NM

6. Density readings were taken on each pass using the Macbeth QuantaLog Densitometer, Model EP 1000, with an ET 20 attachment and

0.5 mm aperture. Terrain and limiting density readings for D-Max, D-Min, and Gross Fog values are correlated in the following data table.

Reading	Pass	Frame	Terrain		Limiting		Gross Fog		
			D-Min	D-Max	D-Min	D-Max	Title	Center	Non-Title
1	A01	1	0.80	1.06	0.80	2.60	0.26	0.26	0.26
2	A01	51	NR	NR	1.01	2.17	0.26	0.26	0.26
3	D01	36	1.12	2.14	0.62	2.17	0.29	0.30	0.29
4	D03	39	1.07	1.32	1.07	2.20	0.23	0.25	0.25
5	D03	87	0.90	1.07	0.90	2.00	0.24	0.25	0.25
6	D05	6	0.79	1.00	0.70	2.11	0.29	0.30	0.29
7	D05	88	0.52	1.20	0.50	2.12	0.25	0.26	0.25
8	D07	36	0.87	1.29	0.87	2.09	0.27	0.27	0.27
9	D08	87	1.16	1.56	1.16	2.06	0.25	0.26	0.25
10	D09	24	1.11	1.38	1.11	2.27	0.24	0.26	0.25
11	D09	100	0.83	1.80	0.83	1.80	0.24	0.26	0.26
12	A11	4	NR	NR	0.82	1.79	0.25	0.27	0.26
13	A16	9	0.62	0.87	0.62	2.00	0.24	0.25	0.24
14	D17	53	1.26	1.50	1.26	2.13	0.30	0.25	0.24
15	D21	11	0.69	1.63	0.53	2.20	0.25	0.27	0.26
16	D22	65	1.10	1.36	1.10	2.26	0.25	0.25	0.25
17	D22	139	0.54	2.10	0.54	2.12	0.25	0.26	0.24
18	D22	219	0.50	1.44	0.50	2.30	0.24	0.24	0.24
19	D22	234	0.61	1.59	0.61	2.16	0.23	0.24	0.23
20	D24	61	0.88	1.45	0.66	2.08	0.30	0.25	0.24
21	A25	10	0.46	1.13	0.36	2.00	0.22	0.24	0.23
22	A33	26	0.43	0.83	0.42	1.82	0.22	0.23	0.23
23	A33	52	0.56	1.26	0.52	2.14	0.22	0.22	0.22
24	A34	43	0.66	1.11	0.58	2.10	0.28	0.30	0.30
25	D36	18	1.00	1.39	0.92	2.20	0.25	0.26	0.26
26	D37	6	0.61	0.92	0.54	2.11	0.26	0.27	0.27
27	D36	10	0.69	1.20	0.66	2.22	0.25	0.25	0.25
28	D39	8	0.48	1.50	0.46	1.50	0.24	0.25	0.24
29	D40	137	0.75	1.49	0.75	2.13	0.25	NR	0.25
30	A41	7	NR	NR	0.33	1.80	0.25	0.26	0.27

Reading	Pass	Frame	Terrain		Limiting		Gross Fog		
			D-Min	D-Max	D-Min	D-Max	Title	Center	Non-Title
21	A44	4	0.51	1.91	0.51	1.91	0.22	0.25	0.25
22	A44	5	0.51	1.91	0.51	1.91	0.22	0.25	0.25
23	A48	19	0.50	0.50	0.50	1.01	0.22	0.24	0.25
24	D49	23	NR	NR	NR	2.21	0.22	0.22	0.24
25	A50	80	NR	NR	0.50	1.00	0.22	NR	0.22
36	A51	17	0.85	1.46	0.85	1.98	0.22	0.25	0.25
37	D52	5	0.72	1.14	0.57	2.10	0.26	0.26	0.27
38	D54	15	1.13	1.45	1.13	2.06	0.24	0.24	0.25
39	D54	80	NR	NR	NR	2.20	0.24	NR	0.25
40	D55	5	0.96	1.21	0.82	2.26	0.24	0.25	0.26
41	A56	8	NR	NR	0.50	1.00	0.22	0.22	0.22
42	D56	6	1.10	1.30	1.10	2.30	0.22	0.25	0.24
43	D56	65	NR	NR	NR	2.13	0.22	NR	0.22
44	D64	70	NR	NR	NR	2.24	0.22	NR	0.25

NOTE: NR denotes no reading made.

Terrain		Limiting	
D-Max Range	0.71-2.10	D-Max Range	1.50-2.30
D-Min Range	0.43-1.28	D-Min Range	0.24-1.28
Average D-Max	1.32	Average D-Max	2.05
Average D-Min	0.77	Average D-Min	0.70
Gross Fog Range		0.22-0.36	
Average Gross Fog		0.25	

PART II. SLAVE PANORAMIC CAMERA

Mission No: 1001-1 (J-1)
Camera No: 115
Slit Width: 0.200"
Film Type: 7J23-7800 (4404)

Filter, Panoramic: Wratten 21
Aperture, Panoramic: f/3.5
Filters, Horizon: Wratten 25
Evaluated By: [REDACTED]

- Shutter Operation (Horizon Cameras): The port and starboard horizon camera shutters functioned throughout the mission.
- Horizon Camera Exposure:
 - Take-Up (Port): The majority of the frames appear to be overexposed on the descending passes and underexposed on the ascending passes (f/6.8, 1/100 second).
 - Supply (Starboard): The exposure appears to be excessive in the majority of descending and ascending passes (f/6.8, 1/100 second).
- Camera Number: The background is flared but the number is readable.
- Data Block: The lamp images are grossly overexposed and the bits in the top row are partially displaced off the edge of the film. Time words are missing in a total of 33 frames. Time word shifts occur in 94 frames. These are one-bit left shifts except in pass D22, frames 108, 143, 157, 171, 178, 185 where four-bit left shifts occur. In pass D21, frame 12 and pass D38, frame 39 all bits are exposed simultaneously. Tabulation of mission and shifted time words follows:



TABULATION OF DATA BLOCK ANOMALIES

Pass	Missing Time Words (Frame No)	Time Word Shifts (Frame No)
D01		35
A03		47
D03		1, 15
D05		6
D06		4, 73, 94, 122, 150
D07		7, 51, 84, 93
D08	6	
D09		75, 89, 103, 117
D17	53, 60	54, 61
D21	83	5, 34
D22	45, 52, 242, 249, 257, 264	53, 80, 108, 143, 157, 171, 176, 185, 243, 250, 256, 263
D23	5, 12, 33	4, 11, 18, 25, 32, 39, 60
D24	36	14, 21, 26, 35, 56, 77
A33		60, 67
D36	16	17
D37	41, 56	42, 55
D38	5, 11	12
D39	49, 119	7, 50, 63, 77, 96, 105
D40	41, 56, 131	42, 55, 96, 117, 124
D49		52, 59
A50		71, 76
D52		13, 20
D54	9, 15, 50, 65	8, 16, 51, 64, 92, 99
D55	15, 29	8, 16, 30, 43, 57, 71, 92, 115
D56	54, 67, 151	11, 25, 53, 60, 66, 102, 116, 123, 137, 144

Single data blocks are recorded at the termination of all passes and at the camera-off positions within passes, but two end-of-pass markers are consistently present at pass ends and camera-off positions.

5. Film Metering: The film metering is normal throughout the mission.
6. Film Tracking: The film tracking is normal throughout the mission.
7. Frequency Markers: The marks are flared with reflected images recorded inside the edges of the panoramic formats.
8. Fiducials:
 - a. Panoramic Camera: The fiducials are ragged.
 - b. Horizon Cameras: The fiducials are well defined with little or no flare present.

9. Light Leaks: Light leaks are noted on the titled edges of the first frames in most passes. Equipment images appear on the third from last frames of most passes and before camera-off positions within passes. Other light leaks appear at random throughout the film but are few in number and of minor nature.

10. Static Electricity: Corona static discharges are present on passes A34-D64. The initial discharge usually occurs in frame 3 and seldom affects more than four or five frames before dissipating. There are static traces in the horizon formats of pass D38, frames 43-45. Dendritic static is noted in pass D64, frame 37.

11. Pinholes: Pinholes are present intermittently throughout the film. Examples: pass D03, frames 1, 2, 4, 11, 26, 48, 57, 64-68, 70, 75, 76-113; pass D17, frames 17-19; pass D24, frames 1, 2, 23.

12. Abrasions and Scratches: Multiple, fine base scratches appear intermittently in most passes. Pass D03 contains severe, continuous scratches on frames 1-75, and intermittent scratches thereafter to frame 113. Pass D08, frame 75, contains severe, multiple base scratches, pressure rubs, and cinch marks. Emulsion scratches are intermittent and few.

13. Tearing: None.

14. Water Marks: None

15. Pressure Streaks: Small base rubs are present intermittently throughout the film.

16. Processing Streaks: Processing streaks are present from head to tail on pass D54.

17. Blistering and Crimping: None noted.

18. Contrast: 4% low, 91% medium, 5% high.

19. Apparent Resolution: Good, comparable to Mission 9047.

20. Apparent Graininess: Fine.





21. Photo Quality:

a. Panoramic Camera: The photographic quality ranges from fair to good, depending on sun angle and the degree of degradation by atmospheric haze.

b. Horizon Cameras: The port images are consistently poor. The starboard images are rated good.

22. Camera Operation:

a. Panoramic Camera: Good, exclusive of the corona static reported in Item 10.

b. Horizon Cameras: Fair only, due to the consistent out-of-focus quality of the port horizon photography.

23. Suitability for PI: Good where not degraded by corona static, low sun angle, or cloud cover.

Remarks

1. A row of desensitized spots 3.10" apart and roughly parallel to the titled edge are present on pass A01, frames 9-29.

2. The titling is smeared and titling material transfer occurs on pass A16, frames 25-36.

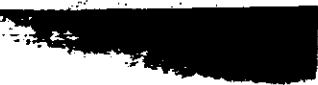
3. Plus-density bands parallel with the line of flight are noted in areas of overwater photography.

4. Image acuity appears superior to that obtained from the master panoramic camera.

5. Film transport indications are usually present on the first and last frames of each pass. Measurement of film transport and film metering have been eliminated (refer to Master Panoramic Camera, Remarks, Item 4).

6. The following overlap data pertaining to Camera Number 115 were determined from the fifth and last frames of each pass where such computations were not precluded by cloud cover, low sun angle, or lack of terrestrial imagery. Where overlap computations were not possible, the omissions are denoted by "NM" for "Not Measurable".

Pass	Overlap (Percent)		Pass	Overlap (Percent)	
	Beginning	End		Beginning	End
A01	0	NM	D37	4	7
D01	NM	0	D38	6	6
D03	NM	2	D39	4	9
D05	1	6	D40	3	8
D07	0	2	A41	NM	NM
D06	7	9	A44	NM	7
D09	1	6	A46	1	7
A11	NM	NM	A46	2	6
A16	6	6	D49	NM	NM
D17	NM	6	A50	NM	NM
D21	1	4	A51	NM	NM
D22	6	9	D52	6	6
D24	NM	11	D54	4	8
A25	6	6	D55	NM	NM
A33	7	9	A56	NM	NM
A34	4	6	D56	5	8
D36	5	6	D64	NM	NM



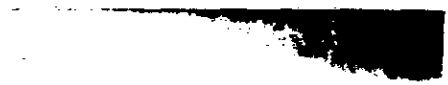


7. Density readings were taken on each pass using the Macbeth QuantaLog Densitometer, Model EP 1000, with an ET 20 attachment and an 0.5 mm aperture. Terrain and limiting density readings for D-Max, D-Min, and Gross Fog values are correlated in the following data table.

Reading	Pass	Frame	Terrain		Limiting		Gross Fog		
			D-Min	D-Max	D-Min	D-Max	Title	Center	Non-Title
1	A01	6	0.61	0.89	0.61	2.08	0.24	0.25	0.24
2	D01	41	0.95	1.99	0.53	2.14	0.24	0.25	0.24
3	D03	28	0.94	1.59	0.94	2.14	0.23	0.25	0.24
4	D03	92	0.90	1.38	0.59	2.16	0.23	0.24	0.24
5	D05	84	0.58	1.50	0.58	1.98	0.22	0.24	0.25
6	D07	42	0.76	1.21	0.78	2.09	0.24	0.25	0.25
7	D07	61	0.61	1.53	0.81	2.06	0.24	0.24	0.24
8	D06	77	0.73	1.16	0.73	2.14	0.24	0.25	0.24
9	D09	26	0.62	1.26	0.82	2.16	0.26	0.27	0.26
10	D09	73	0.66	1.90	0.66	1.90	0.24	0.26	0.24
11	A11	5	NR	NR	0.26	1.07	0.25	0.27	0.26
12	A16	5	0.52	1.86	0.52	2.02	0.27	0.26	0.25
13	D17	51	0.70	1.44	0.70	2.00	0.23	0.26	0.25
14	D21	7	0.47	1.04	0.37	2.12	0.22	0.26	0.26
15	D22	16	0.65	1.37	0.65	1.86	0.22	0.25	0.26
16	D22	65	0.60	1.43	0.60	2.15	0.23	0.26	0.24
17	D22	135	0.52	1.65	0.50	2.10	0.22	0.24	0.26
18	D22	215	0.56	1.60	0.53	2.13	0.22	0.25	0.26
19	D24	76	0.61	1.32	0.66	2.06	0.24	0.25	0.23
20	A25	6	0.40	0.50	0.32	0.63	0.22	0.24	0.25
21	A33	50	0.53	1.31	0.53	1.88	0.21	0.23	0.23
22	A34	39	0.61	0.98	0.47	1.50	0.21	0.26	0.27
23	D36	23	0.69	1.21	0.69	2.01	0.21	0.23	0.24
24	D37	46	0.57	1.38	0.51	2.02	0.24	0.26	0.24
25	D38	39	0.70	1.27	0.70	2.16	0.22	0.23	0.23
26	D39	26	0.56	1.39	0.56	1.94	0.23	0.25	0.24
27	D39	69	0.68	1.79	0.66	1.99	0.24	0.26	0.25
28	D40	56	0.61	1.56	0.61	2.04	0.24	0.25	0.24
29	D40	66	0.62	1.66	0.62	2.15	0.23	0.26	0.24
30	A41	8	NR	NR	0.26	1.18	0.21	0.24	0.22
31	A44	12	0.51	2.13	0.37	2.13	0.23	0.23	0.21
32	A46	6	0.30	0.64	0.30	1.98	0.24	0.23	0.22
33	A48	32	0.43	0.66	0.43	1.95	0.24	0.26	0.24
34	D49	99	0.60	1.17	0.80	2.06	0.19	0.22	0.20
35	A50	76	0.52	0.83	0.52	1.81	0.21	0.22	0.23
36	A51	16	0.80	0.96	0.80	2.15	0.20	0.22	0.21
37	D52	10	0.50	1.06	0.50	2.06	0.20	0.22	0.23
38	D54	43	0.91	1.77	0.91	2.11	0.20	0.21	0.22
39	D54	89	0.61	1.76	0.61	2.01	0.21	0.21	0.21
40	D55	115	1.56	1.74	0.64	2.11	0.20	0.22	0.23
41	A56	10	NR	NR	0.23	0.56	0.21	0.24	0.22
42	D56	60	0.53	1.73	0.53	2.02	0.19	0.22	0.22
43	D56	153	0.42	1.77	0.42	1.93	0.19	0.20	0.21
44	D64	35	NR	NR	0.56	2.08	0.20	0.21	0.23

NOTE: NR denotes no reading made.

Terrain		Limiting	
D-Max Range	0.50-2.13	D-Max Range	0.56-2.18
D-Min Range	0.30-1.56	D-Min Range	0.23-0.94
Average D-Max	1.37	Average D-Max	1.89
Average D-Min	0.67	Average D-Min	0.56
Gross Fog Range		0.19-0.26	
Average Gross Fog		0.23	



PART III. STELLAR CAMERA

Mission No: 1001-1 (J-1)
Camera No: 14
Camera Setting: f/1.9, 2 seconds

Filter: None
Film Type: SO 102
Evaluated By: [REDACTED]

1. Shutter Operation: The shutter functioned normally throughout the mission.
2. Exposure: The exposure is adequate to produce stellar imagery.
3. Film Correlation Fiducial Mark: The mark is operational throughout the mission.
4. Camera Number: The number is well defined and properly registered.
5. Reseau Calibration Points: The lamps are operational throughout the mission but slightly flared.
6. Reseau: The grid is visible in areas of sufficient density to support detectable grid images.
7. Film Metering: Metering is normal throughout the mission.
8. Film Tracking: Film tracking is normal throughout the mission.
9. Light Leaks: A light beam, striking diagonally across the titled edge, appears six times throughout the film and degrades a total of 23 exposures. Frames affected are 92-95, 137-140, 204-207, 276-281, 321-324, 387, 389. An obstruction, roughly J-shaped, protects the stellar imagery and is present in the approximate center of the light beam. It extends the length of the light beam and curves off near the untitled edge. Similar but smaller-scale patterns are observed intermittently throughout.
10. Static Electricity: Static discharges are few and randomly located.
11. Abrasions and Scratches: Few noted.
12. Pinholes: Few noted.
13. Water Marks: None noted.
14. Processing Streaks: None noted.
15. Pressure Streaks: None noted.
16. Tearing: None.
17. Blistering and Crimping: None.
18. Foreign Matter: None noted.
19. Contrast: The contrast is adequate to establish the presence of stellar images.
20. Apparent Graininess: Medium.
21. Photo Quality: From fair to good. The quality is reduced by the consistent presence of flare within the format and the light leaks noted in Item 9 of this section.
22. Camera Operation: Camera performance was normal throughout the mission except for the light leaks noted.

Remarks

1. There are 401 exposures in the stellar take.
2. Flared and vignetted areas affect 20% of each exposure.
3. Narrow, sharply-defined streaks appear in a number of stellar formats. These are tentatively identified as chrySTALLIZED fuel discharges formed when fuel is valved off. Examples: frames 6-9.
4. A minus-density streak of undetermined origin is observed in most of the exposures roughly parallel to the film edges and passing through the formats on the titled edge of the film.
5. Density readings were taken at the beginning and ending of each pass using the Macbeth QuantaLog Densitometer, Model EP 1000, with an ET 20 attachment and an 0.5 mm aperture.



Reading	Pass	Frame	Beginning of Pass		End of Pass		Gross Fog
			D-Min	D-Max	D-Min	D-Max	Center
1	A01	1	0.17	0.44			0.16
2	A01	11					0.16
3	D01	12	0.21	1.24	0.19	1.07	0.16
4	D01	17			0.19	0.85	0.16
5	A02	18	0.19	0.52			0.19
6	A02	21			0.16	0.62	0.17
7	A03	22	0.20	0.62			0.19
8	A03	30			0.27	1.14	0.25
9	D03	46	0.27	1.36			0.25
10	D03	46			0.22	1.07	0.16
11	D05	47	0.22	1.15			0.17
12	D05	60			0.21	0.70	0.17
13	D06	61	0.23	1.04			0.17
14	D06	82			0.28	0.82	0.22
15	D07	83	0.26	1.16			0.20
16	D07	100			0.29	0.96	0.22
17	D08	101	0.27	0.84			0.24
18	D08	113			0.20	1.04	0.20
19	D09	114	0.29	1.19			0.20
20	D09	130			0.33	0.64	0.26
21	A11	131	0.31	0.31			0.29
22	A16	132	0.32	0.65			0.30
23	A16	136			0.40	0.86	0.31
24	D17	137	0.46	NR			0.37
25	D17	145			0.27	1.30	0.22
26	D21	146	0.26	0.94			0.20
27	D21	153			0.25	1.32	0.17
28	D22	154	0.27	1.24			0.19
29	D22	190			0.23	1.19	0.21
30	D23	191	0.27	0.88			0.21
31	D23	199			0.21	0.99	0.20
32	D24	200	0.26	1.21			0.21
33	D24	210			0.35	0.99	0.29
34	A25	211	0.29	0.29			0.27
35	A25	212			0.27	0.27	0.27
36	A33	213	0.31	0.53			0.28
37	A33	220			0.33	0.95	0.31
38	A34	221	0.37	0.95			0.31
39	A34	226			0.25	0.61	0.22
40	D36	229	0.32	1.43			0.22
41	D36	234			0.28	0.90	0.22
42	D37	235	0.25	1.16			0.19
43	D37	242			0.28	1.22	0.21
44	D36	243	0.27	1.33			0.22
45	D36	249			0.27	1.23	0.20
46	D39	250	0.26	0.76			0.21
47	D39	266			0.25	0.91	0.20
48	D40	267	0.26	1.21			0.22
49	D40	266			0.26	1.12	0.21
50	A41	267	0.20	0.20			0.20
51	A41	266			0.22	0.24	0.22
52	A44	269	0.22	0.66			0.22
53	A44	293			0.22	1.43	0.20
54	A46	299	0.20	0.30			0.20
55	A46	296			0.22	0.37	0.21
56	A46	297	NR	NR			NR
57	A46	303			0.21	0.55	0.21
58	D49	304	0.26	1.56			0.20
59	D49	312			0.29	1.10	0.25
60	A50	313	0.25	0.25			0.25



Reading	Pass	Frame	Beginning of Pass		End of Pass		Gross Fog
			D-Min	D-Max	D-Min	D-Max	Center
61	A50	394			NR	NR	NR
62	A51	395	0.28	1.11	0.22	1.08	0.22
63	A51	399					0.20
64	D52	380	0.26	1.04			0.20
65	D52	387			0.49	1.76	0.21
66	D54	386	0.30	1.27			0.22
67	D54	352			0.39	1.73	0.20
68	D55	353	0.29	0.91			0.23
69	D55				NR	NR	NR
70	A56		NR	NR			NR
71	A56	370			0.19	0.19	0.19
72	D56	371	0.30	1.24			0.20
73	D56	395			0.43	1.63	0.19
74	D64	396	0.29	1.36			0.20
75	D64	401			0.25	0.91	0.20

NOTE: NR denotes no reading made.

Gross Fog Range 0.16
Average Gross Fog 0.22-0.37

PART IV. INDEX CAMERA

Mission No: 1001-1 (J-1)
Camera No: D16
Camera Setting: f/4.5, 1/500 second

Filter: Wratten 21
Film Type: SO 130
Evaluated By: [REDACTED]

- Shutter Operation: The shutter mechanism malfunctioned intermittently allowing the shutter to remain open and degrade 216 frames of the total 401 exposures. In addition, 16 frames contain "smeared" photography and 4 frames contain evidence of double exposures. Portions of frames adjacent to the frames affected by the malfunction are also degraded. A detailed examination of the film reveals no definable failure sequence. When the malfunction occurred, the shutter remained open through from one to four frames, totally obliterating the imagery, then resumed normal operations for only a few frames before failing again. This malfunction indicates that the shutter rewind mechanism did not receive or failed to respond to its action pulses.
- Exposure: The exposure appears adequate in those frames not affected by the shutter problems.
- Camera Number: The number is properly registered in the number chamber and is well defined in all frames not affected by the shutter malfunction.
- Film Metering: Metering is normal throughout the mission and averages 0.13".
- Film Tracking: Film tracking is normal throughout the mission.
- Reseau: The grid is well defined in those frames not affected by the shutter problem.
- Light Leaks: Edge-to-edge bar-shaped light leaks, approximately 0.5" wide, occur



intermittently through the film. The light leak fogs the film along the untitled edge. Frequency of occurrence cannot be accurately determined because of the degradation caused by shutter malfunction.

8. Static Electricity: Edge static discharges are noted at infrequent intervals.

9. Pinholes: Few noted.

10. Abrasions and Scratches: Few noted.

11. Tearing: None.

12. Water Marks: None noted.

13. Pressure Streaks: None noted.

14. Processing Streaks: None noted.

15. Blistering and Crimping: None.

16. Contrast: Contrast ranges from low to medium in those frames not affected by shutter malfunction.

17. Apparent Resolution: Good.

18. Apparent Graininess: Medium.

19. Photo Quality: Good where not degraded by shutter malfunction.

20. Camera Operation: Poor, due to erratic shutter performance which precludes assignment of a more favorable rating.

21. Suitability for PI: Good for the scale achieved except in those exposures affected by the shutter malfunction.

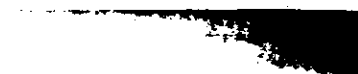
Remarks

1. The total number of exposures is 401.

2. Approximately 65% of the take is totally or partially affected by the shutter mechanism failure. This estimate includes partial degradation of frames adjacent to those frames totally degraded.

3. Density readings were taken on each pass using the Macbeth QuantaLog Densitometer, Model EP 1000, with an ET 20 attachment and an 0.5 mm aperture. Wherever possible, two representative frames within each pass were selected for evaluation.

Reading	Pass	Frame	Terrain		Limiting		Gross Fog		
			D-Min	D-Max	D-Min	D-Max	Title	Center	Non-Title
1	A01	1	NR	NR	0.15	1.16	0.09	0.09	0.09
2	A01	11	NR	NR	0.57	1.52	0.09	0.09	0.09
3	D01	12	NR	NR	0.80	1.70	0.09	0.09	0.09
4	D01	17	NR	NR	0.32	1.58	0.09	0.09	0.09
5	A02	16	NR	NR	0.33	1.03	0.09	0.09	0.09
6	A02	21	NR	NR	0.40	1.64	0.09	0.09	0.09
7	A03	22	NR	NR	0.42	1.20	0.09	0.09	0.09
8	A03	25	NR	NR	0.31	1.22	0.09	0.10	0.11
9	D03	34	NR	NR	0.59	1.42	0.09	0.10	0.16
10	D03	43	NR	NR	0.67	1.85	0.14	0.11	0.14
11	D05	47	0.54	0.72	0.42	2.10	0.12	NR	0.09
12	D05	51	0.63	0.71	0.63	1.82	0.10	0.09	0.10
13	D06	66	0.66	1.00	0.50	1.92	0.09	0.10	0.11
14	D06	61	0.46	0.46	0.35	1.98	0.10	NR	0.10
15	D07	94	0.63	1.32	0.50	1.82	0.10	0.10	0.09
16	D07	95	0.78	0.67	0.56	1.66	0.10	0.10	0.09
17	D06	107	0.66	0.66	0.68	1.84	0.12	NR	0.12
18	D06	142	0.64	0.64	0.64	1.52	0.14	0.12	0.11
19	D09	115	0.75	0.75	0.65	1.82	0.09	0.30	0.09
20	D09	127	0.50	1.23	0.50	1.23	0.12	0.15	0.09
21	A11	131	NR	NR	NR	NR	0.10	0.10	0.10
22	A16	135	NR	NR	0.32	1.81	0.11	NR	0.11
23	D17	139	NR	NR	NR	NR	0.13	0.14	0.13
24	D21	146	0.62	1.07	0.56	1.49	0.14	NR	0.19
25	D21	152	0.47	0.79	0.47	2.25	0.13	NR	0.10
26	D22	162	0.62	0.65	0.62	2.06	0.12	0.09	0.09



Reading	Pass	Frame	Terrain		Limiting		Gross Fog		
			D-Min	D-Max	D-Min	D-Max	Title	Center	Non-Title
27	D22	183	0.31	1.15	0.31	2.01	0.11	NR	0.09
28	D23	192	0.31	0.49	0.31	1.35	0.12	NR	0.09
29	D23	196	0.26	0.90	0.26	1.51	0.11	0.10	0.08
30	D24	205	0.32	1.04	0.32	1.61	0.12	0.12	0.11
31	D24	209	0.31	1.17	0.77	1.91	0.13	0.18	0.13
32	A25	NR	NR	NR	NR	NR	NR	NR	NR
33	A25	NR	NR	NR	NR	NR	NR	NR	NR
34	A33	216	0.41	0.66	0.41	1.25	0.11	NR	0.11
35	A33	NR	NR	NR	NR	NR	NR	NR	NR
36	A34	222	0.47	0.57	0.42	1.44	0.11	0.11	0.11
37	A34	227	NR	NR	1.29	2.16	0.11	0.09	0.09
38	D36	231	0.51	0.55	0.51	2.05	0.12	NR	0.09
39	D36	NR	NR	NR	NR	NR	NR	NR	NR
40	D37	235	0.39	0.70	0.39	1.89	0.12	0.10	0.09
41	D37	240	0.29	0.84	0.29	1.77	0.11	0.08	0.08
42	D36	244	NR	NR	0.55	1.96	0.13	0.09	0.06
43	D36	249	0.57	0.79	0.57	2.01	0.11	0.08	0.06
44	D39	253	0.52	0.83	0.52	1.62	0.09	0.07	0.07
45	D39	262	0.82	1.23	0.60	1.47	0.09	NR	0.07
46	D40	271	0.54	1.20	0.54	1.70	0.10	0.06	0.07
47	D40	NR	NR	NR	NR	NR	NR	NR	NR
48	A41	279	0.61	0.93	0.54	1.89	0.11	0.06	0.08
49	A41	NR	NR	NR	NR	NR	NR	NR	NR
50	A44	292	0.37	1.11	0.30	1.15	0.11	0.08	0.08
51	A44	293	0.50	0.78	0.33	1.37	0.09	0.07	0.07
52	A46	296	0.24	0.79	0.24	1.37	0.10	0.09	0.07
53	A46	NR	NR	NR	NR	NR	NR	NR	NR
54	A46	297	NR	NR	0.15	0.89	0.11	0.09	0.11
55	A46	302	NR	NR	0.26	0.99	0.11	0.08	0.09
56	D49	307	0.54	0.76	0.54	1.71	0.11	NR	0.11
57	D49	312	NR	NR	0.32	1.89	0.09	0.08	0.08
58	A50	323	NR	NR	0.33	1.11	0.11	0.09	0.09
59	A50	NR	NR	NR	NR	NR	NR	NR	NR
60	A51	NR	NR	NR	NR	NR	NR	NR	NR
61	A51	NR	NR	NR	NR	NR	NR	NR	NR
62	D52	333	0.65	0.65	0.65	1.71	0.10	0.08	0.09
63	D52	335	0.57	0.57	0.57	2.02	0.22	0.15	0.08
64	D54	336	0.60	0.60	0.70	1.98	0.10	0.08	0.08
65	D54	350	1.07	1.53	0.69	1.84	0.09	0.07	0.07
66	D55	354	0.67	1.03	0.53	1.45	0.08	0.06	0.06
67	D55	No correlation due to missing frames							
68	A56	No correlation due to missing frames							
69	A56	No correlation due to missing frames							
70	D56	375	0.85	0.85	0.55	1.84	0.08	0.07	0.07
71	D56	391	0.52	0.99	0.52	2.10	0.10	0.08	0.08
72	D64	396	NR	NR	0.41	1.83	0.10	0.08	0.08
73	D64	NR	NR	NR	NR	NR	NR	NR	NR

NOTE: NR denotes no reading made.

Terrain
D-Max Range 0.45-1.32
D-Min Range 0.24-1.07
Average D-Max 0.67
Average D-Min 0.57

Gross Fog Range 0.06-0.30
Average Gross Fog 0.10
Title 0.10
Center 0.10
Non-Title 0.9

Limiting
D-Max Range 0.89-2.25
D-Min Range 0.15-1.29
Average D-Max 1.64
Average D-Min 0.49

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CORONA

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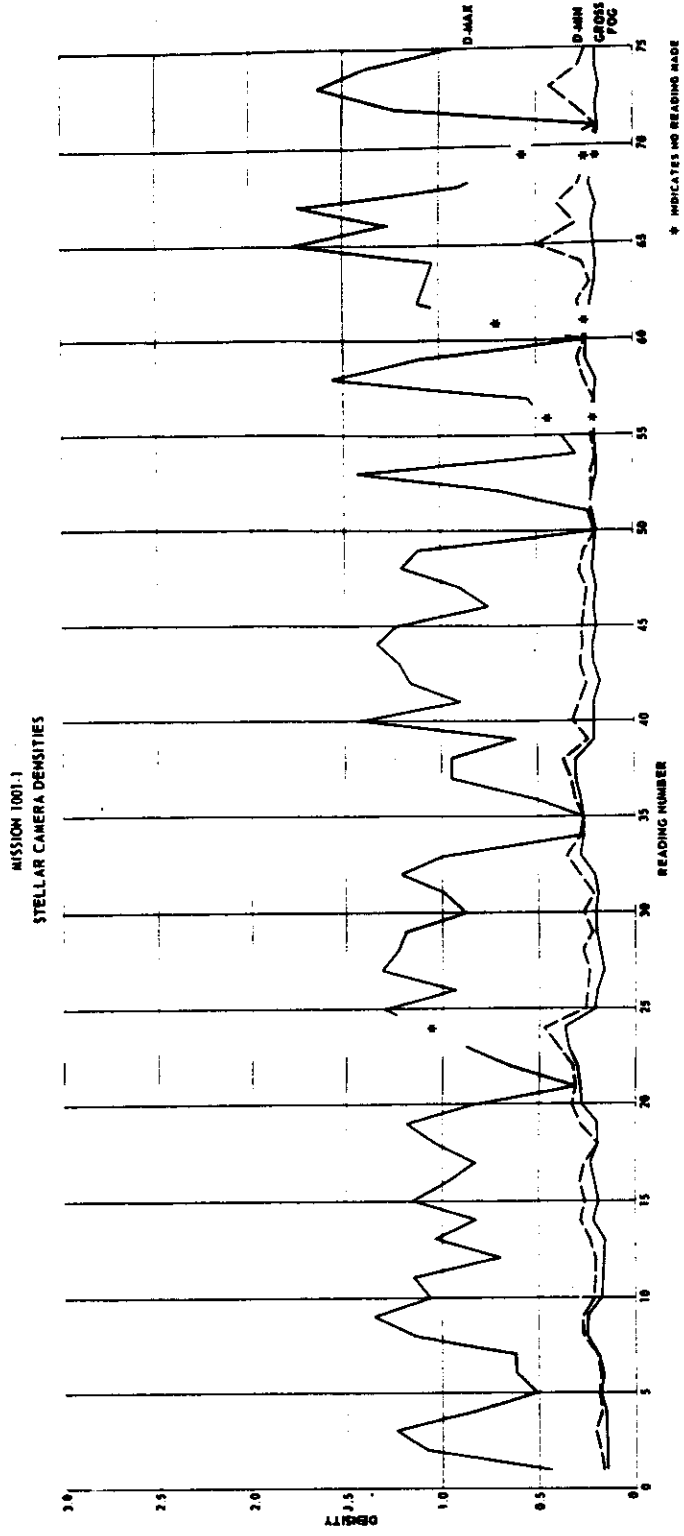
PART V. VEHICLE ATTITUDE

Pass	Pitch Range	Pitch Variation	Roll Range	Roll Variation	No of Frames
A01	-16° 52' -16° 15'	00° 37'	-01° 28' 00° 12'	01° 35'	72
D01	-16 17 -16 01	00 16	-01 16 00 00	01 16	41
A02	-16 52 -16 35	00 17	-01 11 -00 22	00 49	29
A08	-17 15 -16 12	01 08	-02 31 -00 26	02 05	60
D03	-16 24 -16 06	00 18	-00 21 00 29	00 50	113
D05	-16 26 -15 57	00 29	-00 19 00 11	00 30	101
D06	-14 40 -13 58	00 42	-00 35 00 11	00 46	152
D07	-14 12 -13 45	00 27	-00 29 -00 02	00 27	122
D08	-15 50 -16 03	00 13	-00 27 -00 11	00 16	93
D09	-13 56 -13 31	00 27	-00 28 -00 06	00 22	117
A16	-15 38 -15 16	00 22	00 18 -00 44	01 02	27
D17	-14 08 -13 49	00 19	00 15 -01 08	01 23	61
D21	-13 53 -13 46	00 07	00 04 -00 18	00 22	50
D22	-15 12 -13 46	01 26	00 47 -01 13	02 00	265
D23	-13 57 -13 48	00 09	00 40 -00 57	01 27	60
D24	-13 48 -13 25	00 23	-00 30 -00 09	00 21	80
A33	-17 17 -15 40	01 37	00 23 -00 30	00 53	69
A34	-14 00 -13 46	00 12	-00 49 -00 06	00 43	44
D36	-13 52 -13 31	00 21	00 01 -00 03	00 04	37
D37	-14 20 -13 59	00 21	00 06 -00 20	00 26	58
D38	-13 50 -13 44	00 06	-00 23 -00 20	00 09	45
D39	-14 01 -13 33	00 28	00 36 -00 29	01 05	120
D40	-14 11 -13 28	00 43	-00 38 -00 05	00 23	139
A44	-15 14 -14 46	00 28	-00 22 -00 09	00 13	24
D49	-13 53 -13 48	00 05	00 41 -00 26	01 07	54
A51	-16 01 -15 56	00 05	00 26 -00 18	00 44	32
D52	-14 08 -13 43	00 25	00 01 -00 34	00 35	53
D54	-14 07 -13 39	00 26	-00 27 00 14	00 41	104
D55	-14 06 -13 29	00 37	-00 49 -00 01	00 48	116
D56	-14 30 -13 36	00 52	00 30 -00 38	01 08	171
D64	-13 58 -13 41	00 17	00 30 00 02	00 28	27

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CORONA

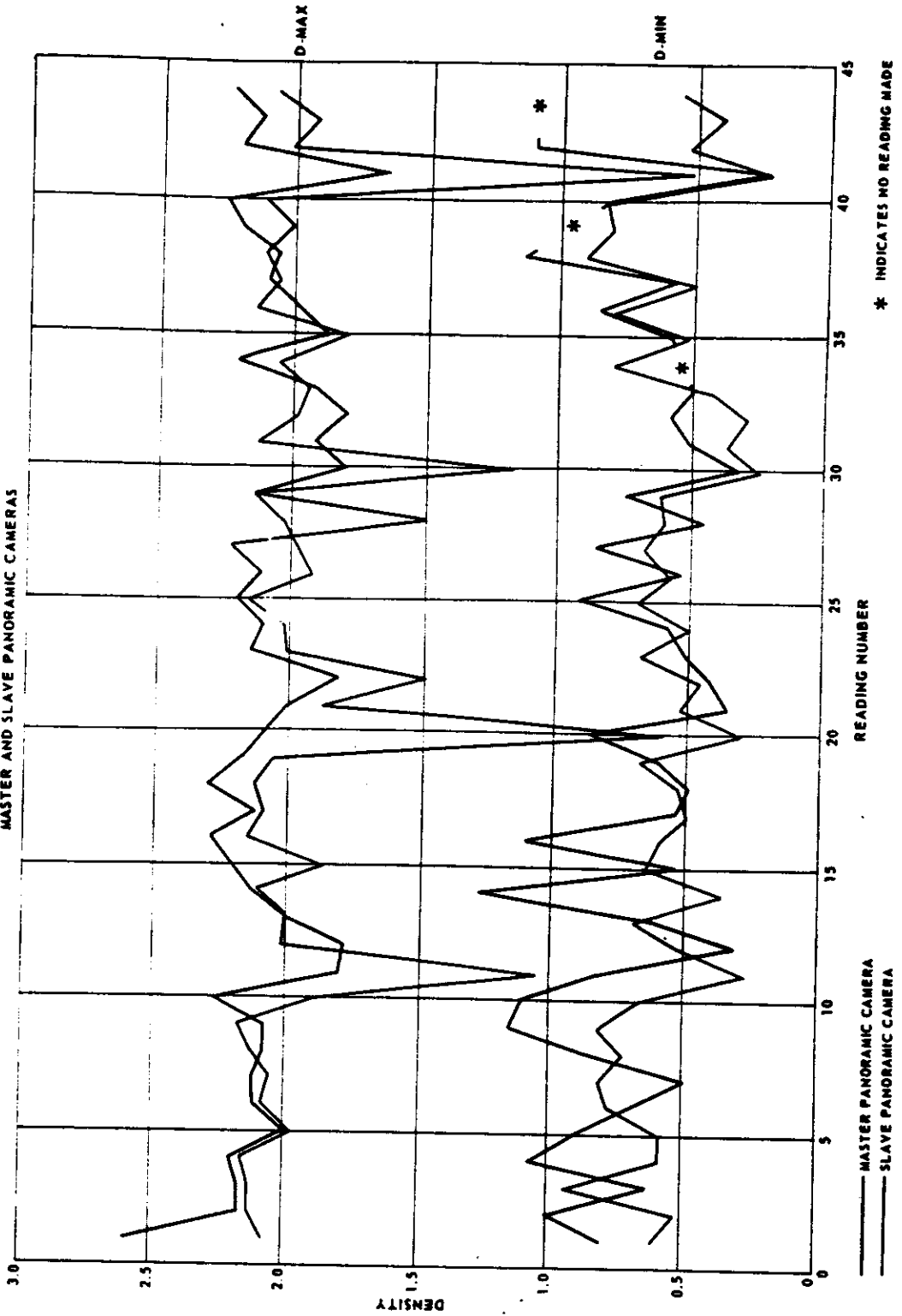
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MISSION 1001-1
LIMITING DENSITIES
MASTER AND SLAVE PANORAMIC CAMERAS



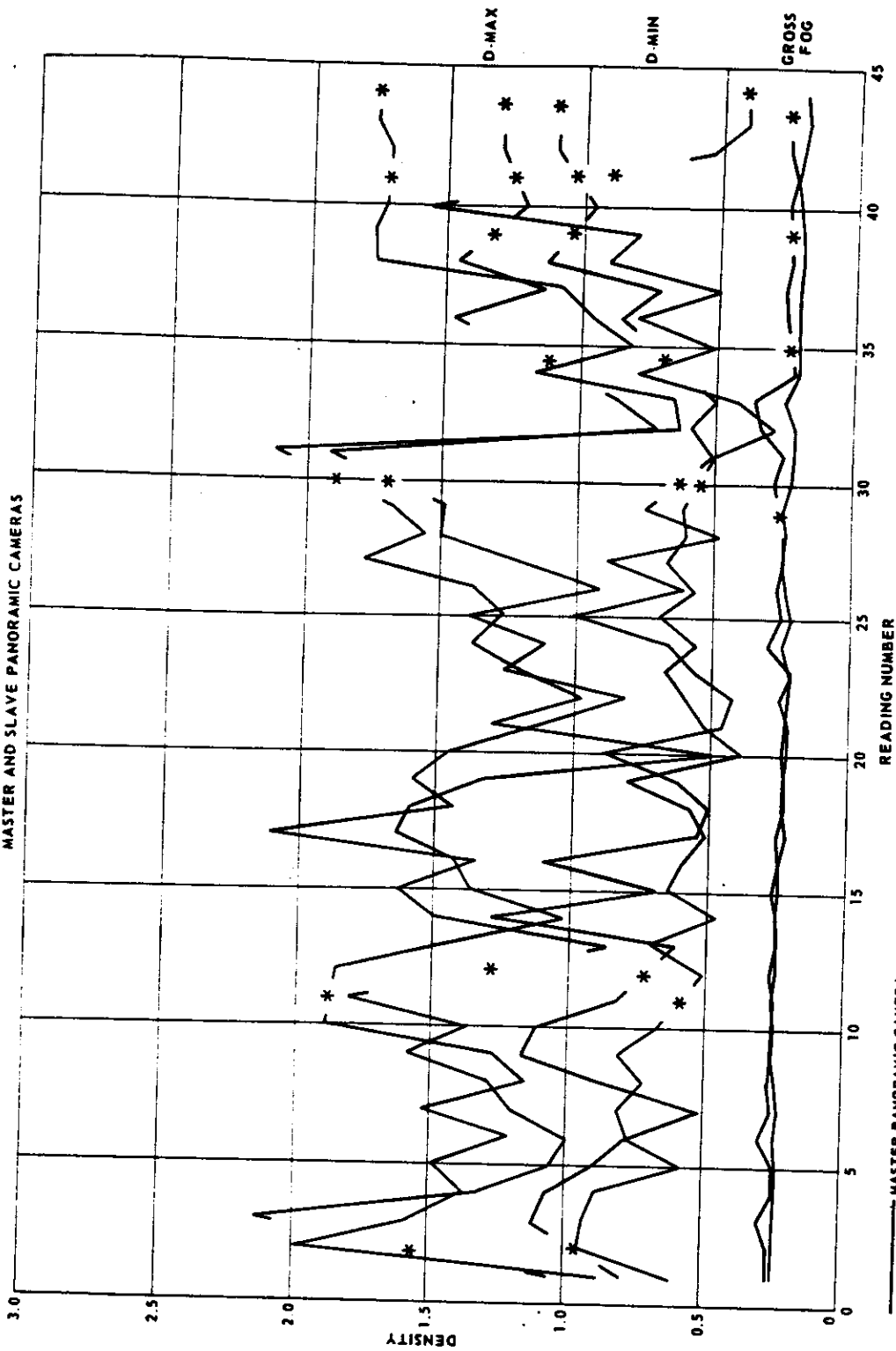
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— MASTER PANORAMIC CAMERA
- - - SLAVE PANORAMIC CAMERA

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MISSION 1001-1
TERRAIN DENSITIES
MASTER AND SLAVE PANORAMIC CAMERAS



--- MASTER PANORAMIC CAMERA
--- SLAVE PANORAMIC CAMERA
* * * INDICATES NO READING MADE
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