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31 October 1962

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PHOTOGRAPHIC EVALUATION REPORT

Mission 9043
18, 19 September 1962 Z

FE No. 36-62

~~HANDLE VIA [redacted] CONTROL SYSTEM ONLY~~

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31 October 1962

PART I - FORWARD CAMERA

Mission No: 9043
Camera No: 94
Slit Width: 0.200"
Film Type: 7J-23-7800 (SO 132)

Filter, Main: Wratten 21
Aperture, Main: f/3.5
Filter, Horizon: Wratten 25
Evaluated By: [redacted]

1. Shutter Operation (Horizon Cameras): Operational throughout.

2. Horizon Camera Exposure:
   a. Supply (Port): Appears underexposed and slightly out-of-focus throughout. (f/6.8 with a 1/200 second average speed).
   b. Take-Up (Starboard): Overexposed and out-of-focus throughout (f/6.8 with a 1/200 second average speed).

3. Camera Number: Operational, except where a second or third binary is exposed at the camera-off position. The number "bloomed" but is legible.

4. Binary Operation: The binary readout functions throughout the mission except in pass D02, frame 15 where the entire block is unregistered. Occasional "blooming" of the lights is present and light number 17 is too dim to be read on some passes. Double binaries are recorded at 40 percent of the camera-off positions. The remainder are single binaries.

5. Film Metering:
   a. Supply (Port) Horizon Camera: Metering averages 0.17" with a range of 0.16" - 0.19".
   b. Take-Up (Starboard) Horizon Camera: Metering averages 0.23" with a range of 0.22" - 0.24".

6. Film Tracking: Normal throughout.

7. Timing Pulses: The timing pulses are superimposed on the terrain format edge but are definable. The pulses terminate 0.50" from supply on each frame (end-of-pass frames excepted) and the first three pulses from take-up are accompanied by reflected images directly parallel to, and aligned with, the true pulses. These reflected images are recorded outside of the terrain format area. The timing pulses terminate from 2.5" to 4.0" from supply on the end-of-pass frames.

8. Fiducials:
   a. Main Camera: The fiducials are well defined.
   b. Horizon Cameras: The fiducials are well defined with no flare present.

9. Light Leaks: A possible light leak is indicated by density gradient (edge fogging) present on the trailing edge of the film, commencing with pass D07 and continuing throughout the remainder of the photography. Light leaks are recorded in pass A14, frame 1, 10 inches from take-up on the leading edge, and in the metering space between frames 2-3; pass D14, frame 70; pass M17, in the metering space between frames 26-27. An equipment image shadow appears in pass A16, frame 42.

10. Static Electricity: Static traces are found intermittently within the format area and in the trailing edge. Examples: pass A03, frames 4, 6; pass D06, frames 39, 41, 96, 118, 119, 176 and in the trailing edge of frames 81, 131, 227, 249, 254, 291; pass D08, frames 86, 111, 112, 115, 121, 128, 130, 132, 150, 152, 165 and the trailing edge of frame 76; pass A14, frames 3, 6, 9, 23, 25, 29, 35, 40; pass D14, frames 30, 62, 63, 67 to 70; pass A15, frames 9, 25; pass A16, frames 3, 8, 10, 12, 15, 17, 42. The presence of possible

corona static is indicated by fog patches on the leading edge, spaced approximately 6.3" apart. This spacing is characteristic of the corona associated fog patterns noted in previous missions. Examples: pass D07, frames 3-11; pass D08, frames 3-14; pass D09, frames 1-35 (the fog patches, frames 20-35, appear on alternate frames only, until dissipated); pass A14, frames 4-40; pass D14, frames 1-5; pass A15, frames 9-35; pass D15, frames 1-17; pass A16, frames 3-10; pass M17, throughout.

11. Pinholes: Intermittent and few.

12. Abrasions and Scratches: Abrasions are few and intermittent throughout. Multiple base scratches are present continuously throughout passes D09 and A14, apparently due to post-processing handling. Minor scratches within the format area are intermittent and few.

13. Tearing: None. A manufacturer's splice is present in pass D09, frame 56. Clear splices are present in pass D04, between frames 9 and 10; pass D06, between frames 160 and 161; pass D08, between frames 134 and 135.

14. Water Marks: None noted.

15. Pressure Streaks: Intermittent base rubs are noted throughout the film and are present in every pass.

16. Processing Streaks: None positively defined.

17. Blistering and Crimping: Blisters are intermittent and few. Examples: pass A03, frame 11; pass D04, frames 35 and 65; pass D06, frame 297. Crimping is noted in pass D07, frames 153, 154, 158, 159, 160; pass D08, frames 80, 81; pass D14, frame 27; pass M17, frames 26, 27.

18. Contrast: Low 60%, medium 40%, high 0%.

19. Apparent Resolution: Image quality is good as determined from those areas not degraded by fogging and/or low sun angle, or obscured by cloud cover.

20. Apparent Granularity: Fine.

21. Photo Quality:
    a. Main Camera: Quality ranges from poor to fair, due to degradation by uniform and/or intermittent fogging, and low sun angle.
    b. Horizon Cameras: The port horizon camera produced a fair image when present (there is no imagery throughout the ascending passes) although slightly underexposed and out-of-focus. The starboard horizon camera imagery is rated "poor," due to consistent overexposure and out-of-focus condition. The quality is further degraded by sun flare throughout the ascending passes.

22. Camera Operation:
    a. Main Camera: A rating of "fair" is assigned, due to the presence of fogging and static effects. Approximately 50% of the photography is thereby degraded.
    b. Horizon Cameras: No malfunctions noted but both port and starboard horizon cameras are out-of-focus, with this condition being more severe in the starboard camera.

23. Suitability for PI: Due to degradation by uniform fogging, static associated fogging, cloud cover, and low sun angle, a rating of not more than "fair" is assigned.

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Remarks:

1. The density gradient, previously noted in the comments on light leaks, is plainly evident on the original negative and varies from approximately 0.22 to 0.33. The possibility that this condition may have been induced by exposure to radiation can not be ruled out.

2. Handling marks, including crimps, are found intermittently throughout the mission. The majority of these marks are attributed to post-processing film handling. Foreign matter is found in pass D04, frames 1, 62; pass D06, frames 8, 136, 164, 170 and 236; pass D14, frames 1, 18, 27, 48 and 49.

3. Uniform fogging, probably derived from exposure of the film to radiation, is present intermittently. Examples: pass D03, frames 81-83; pass M04, throughout; pass D05, frames 1-150, 171-173.

4. Examples of lifted emulsion are found in pass A03, frames 11, 12, 19, 34, 35; pass D04, frames 52, 65, 76, 124; pass D06, frames 131, 179, 210, 313; pass D08, frame 71. Emulsion skiving occurs in pass D06, frame 205 and pass D08, frame 64. Opaque transfer is present in the titling of pass D08, frames 120, 121, 125, 131, 132, 134 and 137; pass D14, frames 27, 31, 32, 36, 44, 48, 52-54, 59, 61, 64, 67; pass D15, frames 4, 5, 7, 9, 13-15.

5. No desensitized streaks or spots are noted.

6. A minus density pattern, roughly rectangular and measuring 0.40" x 0.15", appears inside a minus density "smear" about 2" long. Examples: pass D05, frames 4 and 5, located just off format center and directly below the leading edge. In the same pass, this pattern is also found in the metering spaces between frames 8-9, 17-18, 22-23, 31-32, 43-44. Minus density smears (without the rectangular pattern) appear in pass D05 at the take-up end of frame 57, center of frames 60 and 62, supply ends of frames 58 and 65, and in the metering spaces between frames 77-78. Vertical, edge-to-edge minus density smears are found within the formats of frames 172 and 173 (Pass D05).

7. The absence of port horizon camera imagery and the sun-flared starboard horizon camera imagery present in all ascending passes are probably due to low sun angle and vehicle attitude. These conditions may also be responsible for the partial loss of imagery within the terrain formats of pass A16, frames 1-20.

8. The following descriptions of overlap and film transport for Camera Number 94 were determined from the fifth and last frames of each pass, where possible. Cloud cover, low sun angle with resultant loss of imagery, or excessive fogging have precluded determination of these values in some passes.

	Overlap (Percent)		Film Transport (From Take-Up Side in Inches)	
Pass	Beginning	End	First Frame	Last Frame
A01	NM	NM	5.75	NM
A02	0	0	11.0	NM
D02	10	18	NM	NM
A03	8	23	*NM	*NM
D03	NM	NM	NM	NM
M04	15	15	14.0	NM
D04	5	5	*NM	*NM

Note: NM denotes "Not Measurable."
* Indicates probability of film transport being zero (inches).

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Pass	Overlap Beginning	End	Film Transport First Frame	Last Frame
D05	3	10	NM	17.0
D06	25	5	14.5	20.7
D07	8	0	*NM	*NM
D08	0	4	18.1	*NM
D09	0	0	*NM	18.0
A14	NM	NM	15.5	NM
D14	4	10	*NM	*NM
A15	30	30	NM	12.7
D15	2	10	*NM	18.9
A16	NM	0	17.0	NM
M17	22	NM	NM	NM

Note: NM denotes "Not Measurable."
* Indicates probability of film transport being zero (inches).

9. Density readings were taken on every pass using the MacBeth Quantalog Densitometer, Model EP 1000 with an EP 20 attachment and a 0.5 mm aperture. Terrain and Limiting density value readings for D Max and D Min as well as Gross Fog are correlated below.

Reading	Pass	Frame	Terrain D Min	Terrain D Max	Limiting D Min	Limiting D Max	Gross Fog Leading	Gross Fog Trailing	Gross Fog Center
1	A01	4	0.30	1.07	0.30	1.52	0.26	0.27	0.25
2	A02	23	0.55	1.16	0.37	2.06	0.26	0.28	0.26
3	D02	10	0.63	2.01	0.63	2.10	0.27	0.25	0.26
4	A03	21	0.49	1.62	0.49	1.72	0.27	0.26	0.26
5	D03	56	0.72	2.17	0.56	2.17	0.27	0.30	0.26
6	M04	40	0.58	1.89	0.58	2.01	0.21	0.21	0.20
7	D04	5	0.71	1.69	0.71	1.93	0.21	0.20	0.21
8		87	0.55	1.22	0.31	2.00	0.14	0.17	0.14
9	D05	17	0.58	1.56	0.58	1.56	0.62	0.72	0.75
10		102	0.42	1.21	0.42	1.69	0.26	0.36	0.32
11		159	0.38	1.16	0.38	2.06	0.22	0.31	0.25
12	D06	14	0.56	1.49	0.56	1.68	0.19	0.28	0.20
13		87	0.51	1.21	0.51	2.01	0.48	0.61	0.41
14		153	0.41	1.86	0.41	2.08	0.34	0.49	0.30
15		276	0.54	1.25	0.54	2.15	0.34	0.56	0.27
16	D07	15	0.84	1.93	0.84	2.05	0.28	0.46	0.24
17		74	0.66	1.40	0.58	2.09	0.28	0.46	0.23
18		159	0.92	1.62	0.92	2.03	0.28	0.53	0.23
19	D08	22	0.62	1.30	0.45	1.93	0.27	0.42	0.22
20	D09	1	0.74	1.59	0.74	2.20	0.26	0.47	0.21
21		82	0.64	1.45	0.58	1.95	0.29	0.46	0.27
22	A14	1	0.49	1.34	0.49	1.48	0.32	0.47	0.30
23	D14	64	0.66	1.14	0.66	2.00	0.31	0.48	0.29
24	A15	28	0.69	1.11	0.69	1.72	0.33	0.45	0.27
25	D15	10	0.81	1.69	0.81	2.19	0.35	0.53	0.28
26	A16	35	0.62	1.82	0.43	1.82	0.34	0.60	0.26
27	M17	6	0.63	1.69	0.63	1.95	0.33	0.51	0.28

	Terrain	Limiting
Average D Max	1.50	1.93
Average D Min	0.60	0.56
Range D Max	2.17 - 1.07	2.20 - 1.48
Range D Min	0.92 - 0.30	0.92 - 0.30
Overall Range	2.17 - 0.30	2.20 - 0.30

Average Gross Fog (center reading) 0.27
Range Gross Fog (center reading) 0.75 - 0.14

PART II - AFT CAMERA

Mission No: 9043
Camera No: 95
Slit Width: 0.200"
Film Type: 7J-23-7800 (SO 132)

Filter, Main: Wratten 21
Aperture, Main: f/3.5
Filter, Horizon: Wratten 25
Evaluated By: [redacted]

1. Shutter Operation (Horizon Cameras): Operational throughout.

2. Horizon Camera Exposure:
   a. Take-Up (Port): Appears underexposed and slightly out-of-focus throughout. (f/6.8 with a 1/200 second average exposure).
   b. Supply (Starboard): Overexposed and out-of-focus throughout. (f/6.8 with a 1/200 second second average exposure).

3. Camera Number: Operational, except where a second or third binary is exposed at the camera-off position. The number is overexposed and multiple images are present throughout the mission.

4. Binary Operation: The binary readout functions throughout the mission. Occasional "blooming" of the lights occurs. Double binaries are recorded at 55 percent of the camera-off positions. A triple binary is recorded at end-of-pass, A01. Two of these binaries are severely "bloomed" and superimposed upon each other.

5. Film Metering:
   a. Take-Up (Port) Horizon Camera: Metering averages 0.24" with a range of 0.22" - 0.28".
   b. Supply (Starboard) Horizon Camera: Metering averages 0.24" with a range of 0.23" - 0.28".

6. Film Tracking: Normal throughout.

7. Timing Pulses: The timing pulses are clear and well defined on all passes. Pulses on the end-of-pass frames terminate 2.0" to 4.0" from the supply ends.

8. Fiducials:
   a. Main Camera: The fiducials are well defined.
   b. Horizon Cameras: The fiducials are well defined with no flare present.

9. Light Leaks: A possible light leak is indicated by density gradient (edge fogging) present on the leading edge of the film, commencing with the last one-third of pass D05 (frames 104-172) and continuing throughout the remainder of the photography. Possible equipment image shadows appear in pass D04, frame 122; pass D05, frame 172; pass D09, frames 91, 92; pass D14, frame 70; pass D15, frame 42. Light leaks are present in pass A01, a diagonal pattern in the metering space between frames 21-22; pass D02, frame 30; pass A03, frames 34 and 35; pass D05, a diagonal pattern across the take-up end of the format in frame 171; pass D07, the diagonal appears in a similar position in frame 175; pass D09, frame 93, a diagonal pattern near take-up; pass A14, same pattern in the metering space between frames 38-39; pass A15, frames 33 and 34; pass D15, frame 16; pass M17, frame 25, a diagonal pattern across the leading edge.

10. Static Electricity: Static traces are found intermittently within the formats. Examples: pass A01, scattered throughout; pass A02, scattered throughout; pass A03, frame 1; pass D06, frames 1, 2, 8, 118, 186, 240; pass D07, frames 21, 22, 48, 61, 62-64, 66, 79, 92, 141; pass D09, scattered throughout; pass A15, frames 7, 10, 11, 14, 18, 23, 28, 30, 35; pass A16, scattered throughout; pass M17, frames 11-19, 23, 24. Similar traces are also located intermittently in the film edges throughout the photography. The presence of possible

corona static is indicated by fog patches in the formats and/or edges, spaced approximately 6.3" apart. This spacing is characteristic of the corona-associated fog patterns noted in previous missions. Examples: pass A02, frames 3-8; pass D02, frames 2, 3, 5; pass A03, frames 3-15; pass M04, possible corona on frame 3, but difficult to detect because of dense uniform fogging; pass D04, frames 4-10; pass D06, frames 3 and 4 (both edges): pass D07, frames 3-7 (trailing edge); pass D08, trailing edge, frames 3-7; pass A14, trailing edge, frames 3-15; pass D14, frame 3 (trailing edge): pass A15, trailing edge, 3-15; pass D15, trailing edge, frames 3-6; pass A16, trailing edge, frames 3-10; pass M17, on the trailing edge from frame 3, gradually dissipating towards end-of-pass.

11. Pinholes: Intermittent and few.

12. Abrasions and Scratches: Intermittent and few, except for severe scratches and abraded emulsion in pass D07, frame 65.

13. Tearing: None. A manufacturer's splice is present in pass D04, frame 47. Clear splices are present in pass D04, between frames 49-50; pass D06, between frames 209-210.

14. Water Marks: None noted, but there is chemical staining in pass D07, frame 22.

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

16. Processing Streaks: None positively defined.

17. Blistering and Crimping: A blister is present in pass D04, frame 72. Severe crimping is evident in pass M17, frame 25.

18. Contrast: Low 60%, medium 40%, high 0%.

19. Apparent Resolution: Image quality is good, as determined from those areas not degraded by fogging and/or low sun angle, or obscured by cloud cover.

20. Apparent Granularity: Fine.

21. Photo Quality:
    a. Main Camera: Quality ranges from poor to fair, due to degradation by uniform and/or intermittent fogging, and low sun angle. In addition, there is a loss of imagery within the terrain formats of passes M04, D04, D05, D06, D07, D08, D09, A14, D14, A15, A16, and M17, with pass D06 being the most severely affected. This loss of imagery ranges from partial to near-total and affects the formats in the direction of the supply ends. The total number of frames affected is such that a complete listing is impractical for inclusion in this report. In lieu of this, the following measurements are presented as being representative of the extent of image loss throughout. Figures indicate the distance from absolute loss of image to the supply edges of the formats.

Pass	Frame	Inches	Pass	Frame	Inches	Pass	Frame	Inches	Pass	Frame	Inche
M04	39	11.5	M04	48	13.5	D05	104	9.0	D05	116	9.5
M04	40	7.5	M04	49	13.5	D05	105	3.0	D05	117	17.0
M04	41	12.0	M04	50	7.0	D05	106	8.0	D05	119	13.0
M04	42	6.5	M04	51	5.0	D05	107	9.0	D05	120	18.0
M04	45	9.5	M04	52	6.5	D05	108	15.0	D05	121	9.5
M04	46	8.5	M04	56	9.5	D05	109	10.0	D05	122	12.0
M04	47	12.0				D05	113	12.0			

It should be noted that even the format edges were indefinable. Hence, all edge measurements are based on termination of the timing pulses. Refer to "Remarks" for additional comments.

b. Horizon Camera: The port horizon camera produced a fair image although slightly underexposed and out-of-focus. There is no port imagery on ascending passes. The starboard horizon camera imagery is rated "poor" due to consistent overexposure and out-of-focus condition. Starboard imagery is sun-flared in some ascending passes.

22. Camera Operation:

a. Main Camera: A rating of "poor" is assigned, due to the presence of fogging and static effects, and image loss within the formats. Approximately 80% of the photography is degraded by these conditions. In addition, possible capping shutter malfunctions occur in passes D03, M04, D04, D05, D06, D07, D08, D09, A14, D14, A15, D15, A16, affecting portions of the terrain formats as well as the horizon camera formats. 8.7" segments of one frame, the horizon frame, and usually 8.7" of the next frame are fogged when this malfunction occurs.

b. Horizon Cameras: No malfunctions noted but both port and starboard horizon cameras are out-of-focus, with this condition being more severe in the starboard camera.

23. Suitability for PI: Due to image loss and degradation of existent imagery, a rating of "poor" is assigned.

Remarks:

1. The density gradient, previously noted in the comments on light leaks, is plainly evident on the original negative and varies from approximately 0.22 to 0.33. The possibility that this condition may have been induced by exposure to radiation can not be ruled out.

2. Handling marks, including crimps are found intermittently throughout the film. The majority of these may be attributed to post-processing film handling. Foreign matter is found in pass D02, frame 25; pass A03, frame 1; pass D03, frame 59; pass D06, frames 241, 242, 312; pass D08, frames 13, 50.

3. Uniform fogging, probably derived from exposure of the film to radiation, is present intermittently. Examples: pass D03, frames 79-82; pass M04, frames 1-35; pass D05, frames 1-4, and intermittent thereafter; pass D06, frames 1-15.

4. Lifted emulsions are noted in pass D02, frames 2, 3, 7, 15, 27, 31; pass A03, frames 4, 10, 31, 32; pass D04, frames 23, 76, 82, 107; pass D06, frame 312; pass D08, frames 1, 46, 77, 108; pass D14, frames 1, 13; pass D15, frames 7, 17.

5. Desensitized spots are present in pass M04, frame 7; pass D07, frame 108; pass D09, frames 8, 11.

6. A minus density streak is present throughout the film, located approximately 0.5" from the trailing edge. Minus density smears are present intermittently in the metering spaces of the first part of pass D05 (frames 1-28) and appear again, intermittently, in the metering spaces and terrain formats of frames 37-100. As associated minus density rectangular pattern (about 0.40" x 0.15") appears inside the smears in the metering space between frames 30-31, pass D05, as well as a plus density area, extending 8.75" from the supply ends of frames 32-36. Minus density smears continue to appear intermittently inside the format areas of frames 105-153 of pass D05.

7. Approximately 500 frames are affected by partial or near total loss of imagery within the format areas. Individual measurement of the scope of image loss within each frame so affected does not reveal any discernible sequence or pattern. Minimum loss noted is 1.0" and the maximum is 26.0." Average loss is approximately 18.0". It should also be noted that there is, in most cases, a more or less gradual transition from visible imagery to image loss. No abrupt line of demarkation exists between the two areas. A positive statement as to the cause of this condition can not be made at the present time.

8. The following descriptions of overlap and film transport for Camera Number 95 were determined from the fifth and last frames of each pass, where possible. Cloud cover, low sun angle with resultant loss of imagery, or excessive fogging have precluded determination of these values in some passes.

	Overlap (Percent)		Film Transport (From Take-Up Side in Inches)	
Pass	Beginning	End	First Frame	Last Frame
A01	22	35	NM	19.0
A02	30	35	NM	NM
D02	10	18	0.0	13.0
A03	4	18	*NM	*NM
D03	5	NM	NM	17.0
M04	4	18	20.0	NM
D04	5	5	12.0	9.0
D05	15	0	13.0	16.5
D06	20	NM	11.0	17.5
D07	8	0	NM	*NM
D08	4	0	12.0	15.0
D09	NM	0	0.0	15.25
A14	NM	NM	NM	NM
D14	5	10	8.5	17.5
A15	25	23	8.5	9.0
D15	2	10	0.0	17.0
A16	NM	22	NM	NM
M17	NM	NM	NM	NM

Note: NM denotes "Not Measurable."
* Indicates probability of film transport being zero (inches).

9. Density readings were taken on every pass using the MacBeth Quantalog Densitometer, Model EP 1000, with an EP 20 attachment and a 0.5 mm aperture. Limiting density value readings for D Max and D Min as well as Gross Fog are correlated below.

			Terrain		Limiting		Gross Fog		
Reading	Pass	Frame	D Min	D Max	D Min	D Max	Leading	Trailing	Center
1	A01	14	0.38	1.01	0.38	1.22	0.25	0.27	0.26
2	A02	31	0.53	1.08	0.37	1.99	0.26	0.27	0.27
3	D02	19	0.69	1.97	0.69	2.09	0.24	0.26	0.26
4	A03	26	0.65	1.83	0.65	1.83	0.27	0.27	0.27
5	D03	61	0.76	2.16	0.68	2.16	0.27	0.27	0.27
6	M04	46	0.33	1.88	0.33	2.00	0.27	0.27	0.30
7	D04	4	0.68	1.80	0.47	1.80	0.21	0.20	0.20
8		91	0.35	0.97	0.23	1.91	0.12	0.10	0.10

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Reading	Pass	Frame	Terrain D Min	Terrain D Max	Limiting D Min	Limiting D Max	Leading	Gross Fog Trailing	Center
9	D05	22	0.55	1.59	0.55	1.59	0.53	0.47	0.52
10		77	0.75	1.28	0.75	1.84	0.36	0.20	0.20
11		163	0.44	1.20	0.31	1.96	0.42	0.18	0.22
12	D06	21	0.40	1.41	0.40	1.66	0.50	0.17	0.17
13		93	0.60	1.26	0.60	2.09	0.70	0.31	0.29
14		159	0.42	1.95	0.42	2.02	0.63	0.30	0.29
15		281	0.57	1.38	0.57	2.18	0.92	0.28	0.25
16	D07	22	0.73	1.96	0.73	2.02	0.63	0.26	0.23
17		80	0.44	1.01	0.44	2.01	0.68	0.26	0.22
18		164	0.98	1.63	0.88	1.96	0.87	0.27	0.23
19	D08	29	0.56	1.30	0.40	1.78	1.00	0.28	0.23
20	D09	6	0.54	1.54	0.54	2.30	0.89	0.27	0.23
21		87	0.58	1.60	0.58	1.90	0.91	0.27	0.23
22	A14	6	0.34	1.57	0.34	1.57	0.81	0.28	0.26
23	D14	70	0.69	1.22	0.69	2.14	1.00	0.29	0.26
24	A15	35	0.68	1.18	0.68	1.97	0.95	0.26	0.22
25	D15	17	0.84	1.69	0.84	2.16	0.78	0.27	0.25
26	A16	43	0.55	1.87	0.55	1.87	0.82	0.27	0.23
27	M17	13	0.53	1.60	0.53	1.84	0.84	0.28	0.24

	Terrain	Limiting
Average D Max	1.50	1.94
Average D Min	0.56	0.47
Range D Max	2.16 - 1.01	2.30 - 1.22
Range D Min	0.98 - 0.33	0.88 - 0.23
Overall Range	2.16 - 0.33	2.30 - 0.23

Average Gross Fog 0.37
Range Gross Fog 1.00 - 0.11

PART III - FRAMING CAMERA

Mission No: 9043
Camera No: 102
Camera Setting: f/6.3, 1/250 second

Filter: Wratten 21
Film Type: 7J-30 (SO 130)
Evaluated By: [redacted]

1. Shutter Operation: Operational for 126 frames, thereafter a possible shutter malfunction occurred and no imagery was recorded. Shutter remained closed on frames 34, 35 and 55.

2. Exposure: Good when not degraded by uniform fog.

3. Camera No: Clearly registered on all frames except on frames where the uniform fog has obliterated all imagery.

4. Film Metering: Ranges from 0.28" to 0.18". Metering malfunction occurs between frame 2 and 3. Metering space measures 5" or approximately 2 frames.

5. Film Tracking: Normal.

6. Reseau Grid: Clearly registered and well defined except where uniform fog has obliterated all imagery.

7. Light Leak: Thin diagonal light leak is recorded on frame 7.

8. Static Electricity: Dendritic static occurs near center of format on frame 2.

9. Pinholes: Numerous, due to damage occurring during processing.

10. Abrasions and Scratches: Numerous, due to damage occurring during processing.

11. Tearing: None.

12. Water Marks: None.

13. Pressure Streaks: None.

14. Processing Streaks: None.

15. Blistering and Crimping: Abrasions and scratches are present on all frames occurring during processing.

16. Contrast: Low, due to uniform fogging and low sun angle.

17. Apparent Resolution: Fair, due to low contrast and granularity.

18. Apparent Granularity: Slightly grainy.

19. Photo Quality: A rating of poor is given, due to severe scratches and abrasions which occured during processing and uniform fog which affects approximately 85 percent of the film.

20. Camera Operation: Fair. Degraded by shutter malfunction after frame 126.

21. PI Suitability: Poor, due to uniform fogging and granularity.

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Remarks:

1. Nearly all frames are affected by creases, scratches, abrasions, lifted emulsion and emulsion digs which occurred at the processing site.

2. Uniform fogging, possibly due to exposure of the film to radiation occurs on frames 21-31 then at 6" intervals to frame 46 and very intense through frame 126.

3. Overlap was normal for all frames, 55-65%.

4. Titling information extends into the format area on frames 13 and 14 and portions of frame number on frames 21-56 are missing, due to mistracking when titling.

5. Density readings were taken on selected frames using the MacBeth Quantalog Densitometer Model EP 1000, with an EP 20 attachment and a 0.5 mm aperture. Terrain and Limiting density values for D Max and D Min as well as Gross Fog are given below.

			Terrain		Limiting			Gross Fog	
Reading	Pass	Frame	D Min	D Max	D Min	D Max	Leading	Center	Trailing
1	A01	1	Fog	Fog	0.88	1.39	0.38	0.40	0.98
2		2	0.84	1.12	0.84	1.90	0.68	0.79	1.17
3		3	0.83	1.11	0.83	2.19	0.58	0.68	1.01
4	A02	4	0.40	0.92	0.40	1.81	0.37	0.41	0.76
5		5	Fog	Fog	0.58	1.68	0.78	0.87	1.04
6		6	Fog	Fog	0.49	2.08	0.70	0.58	0.78
7		7	Fog	Fog	0.49	2.23	0.42	0.46	0.71
8		8	Fog	Fog	0.62	2.11	0.88	1.01	1.12
9		9	0.82	1.74	0.80	2.37	0.61	0.64	0.86
10	D02	10	Fog	Fog	1.42	3.00	0.79	0.76	0.99
11		11	Fog	Fog	1.64	3.06	0.87	0.92	1.06
12		12	Fog	Fog	1.51	2.66	0.50	0.49	0.55
13		13	0.68	1.94	0.68	3.08	0.82	0.89	0.92
14		14	1.28	1.66	1.28	2.81	0.48	0.52	0.52
15	A03	15	1.36	2.04	1.36	2.18	0.38	0.39	0.47
16		16	0.84	2.16	0.84	2.16	0.81	0.94	0.86
17		17	1.28	2.68	1.28	2.68	0.38	0.43	0.41
18		18	1.40	2.58	1.40	2.58	0.89	0.87	0.83
19		19	Fog	Fog	1.23	2.54	0.78	0.85	0.75
20	D03	20	Fog	Fog	1.58	2.99	0.30	0.31	0.37
21		21	Fog	Fog	1.53	2.89	1.23	1.29	1.22
22		22	Fog	Fog	1.84	2.86	1.11	1.08	1.14
23		23	Fog	Fog	Fog	3.18	1.64	1.66	1.67
24		24	Fog	Fog	Fog	3.32	1.69	1.72	1.76
25		25	Fog	Fog	Fog	3.28	2.08	2.26	2.34
26		28	Fog	Fog	Fog	3.36	2.18	2.51	2.52
27		30	Fog	Fog	Fog	2.94	0.88	0.80	0.84
28		31	Fog	Fog	1.36	2.72	0.99	1.02	0.72
29	M04	37	Fog	Fog	2.01	3.01	0.58	0.56	0.52
30		38	Fog	Fog	2.28	2.86	1.62	2.28	2.12
31	D05	68	Fog	Fog	Fog	Fog	2.86	2.86	2.86
32	D06	123	Fog	Fog	Fog	Fog	2.06	2.08	2.02

	Terrain	Limiting
Average D Max	1.80	2.60
Average D Min	0.97	1.17
Range D Max	2.68-0.92	3.36-1.39
Range D Min	1.40-0.40	2.28-0.40
Overall Range	2.68-0.40	3.00-0.46

Note: Gross fog readings are excessive due to radiation exposure.

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PART IV - VEHICLE ATTITUDE DATA

Pass	Pitch Variation		Pitch Range	Roll Variation		Roll Range	No. of Frames	Remarks
A01	14° 20'	14° 12'	0° 08'	-4° 00'	-3° 07'	0° 53'	22	
A02	14 29	13 52	0 37	-2 52	-1 17	1 35	45	
D02	13 57	13 16	0 41	-0 46	0 36	1 22	31	
A03	13 55	11 43	2 12	-2 44	-0 55	1 49	36	
D03	13 46	13 15	0 31	-1 11	0 34	1 45	83	
M04	13 11	11 48	1 23	-3 58	-0 39	3 19	57	
D04	14 15	13 05	1 10	-1 05	0 26	1 31	80	Split pass
	14 22	13 15	1 07	-0 47	0 54	1 41	44	
D05	13 58	12 44	1 14	-2 30	-1 47	0 43	28	Split pass
	14 00	13 12	0 48	-1 24	0 55	2 19	145	
D06	13 37	12 39	0 58	-0 35	-1 52	1 17	38	Split pass
	14 07	12 56	1 11	-0 45	0 41	1 26	150	
	13 51	12 59	0 52	-2 34	-0 17	2 17	56	
	13 59	13 14	0 45	-0 54	0 12	1 06	69	
D07	14 02	13 00	1 02	-1 05	0 55	2 00	177	
D08	13 56	13 15	0 41	-1 09	0 41	1 50	165	
A09E	13 54	13 21	0 33	2 35	1 54	0 41	8	
D09	13 52	13 19	0 33	-1 00	0 36	1 36	95	
A14	13 50	13 21	0 29	-3 27	-1 09	2 18	40	
D14	13 34	13 32	0 02	-0 49	-0 36	0 13	72	
A15	15 37	13 48	1 49	-3 44	-1 46	1 58	35	
D15	13 36	13 19	0 17	-0 39	-0 17	0 22	17	
A16	15 07	13 11	1 56	-3 53	-1 51	2 02	45	
M17	14 02	12 29	1 33	-1 56	-0 25	1 31	27	

[redacted]

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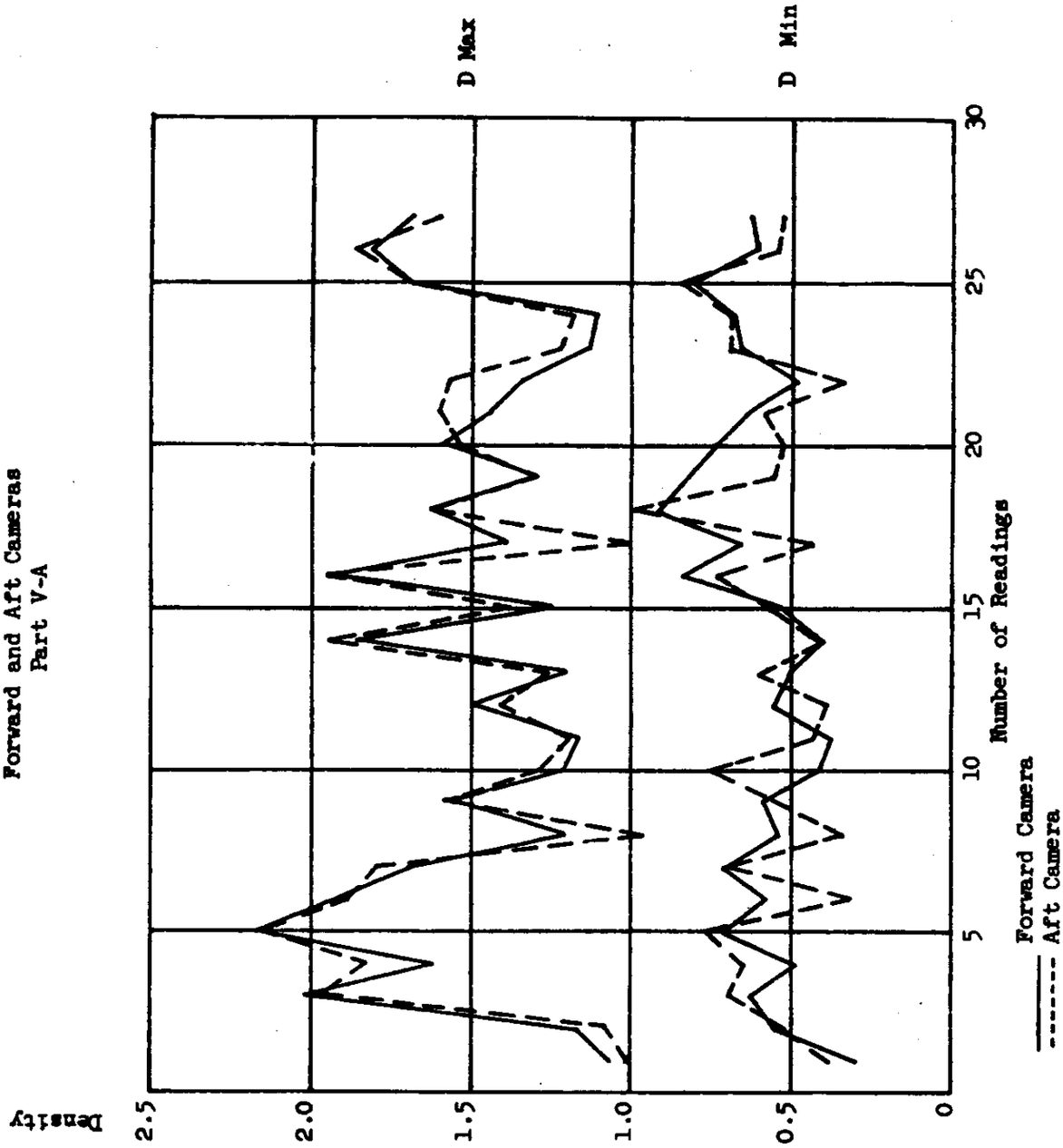
Mission 9043 Terrain Density
Forward and Aft Cameras
Part V-A



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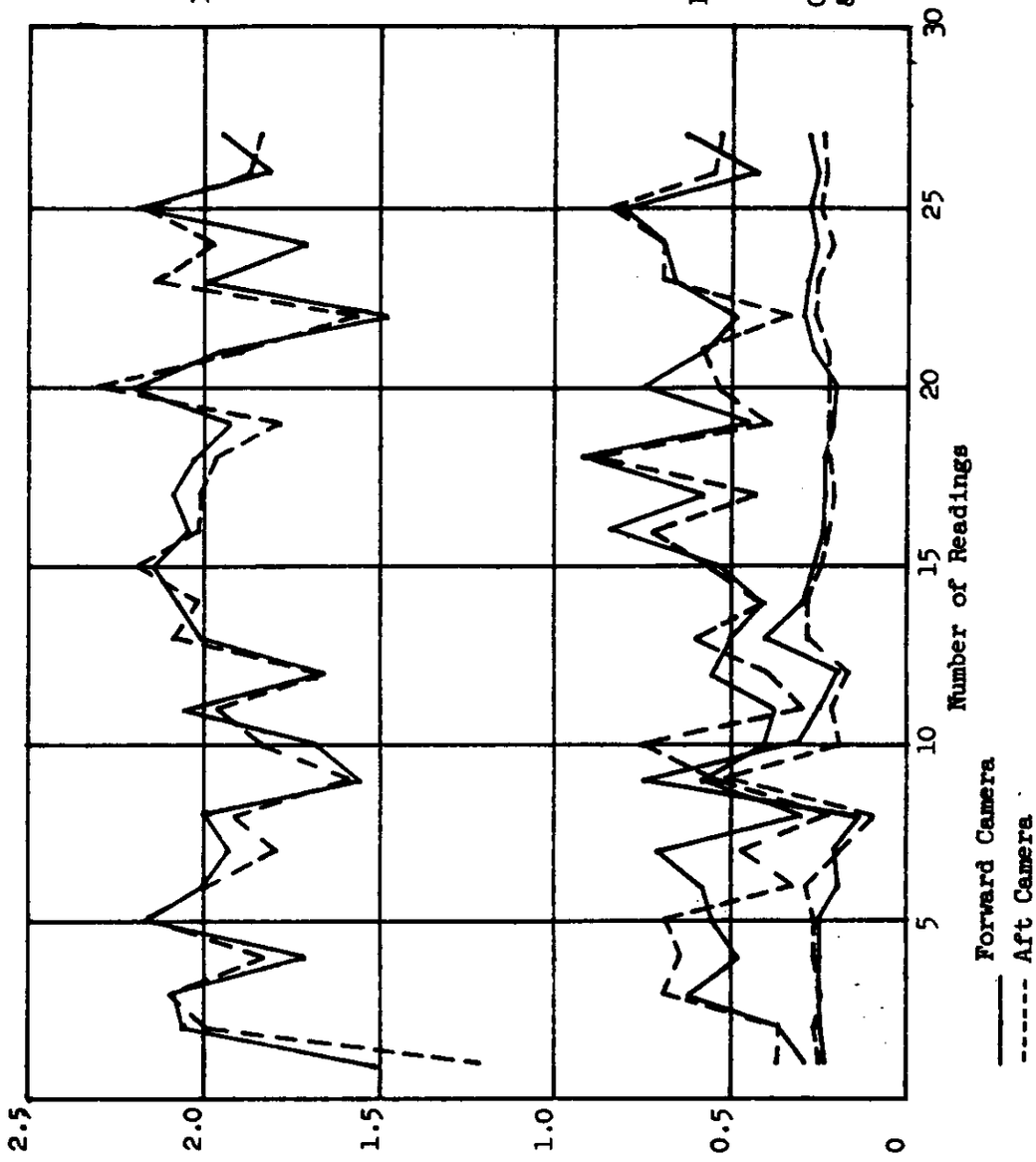
Mission 9043 Limiting Density
Forward and Aft Cameras
Part V-B



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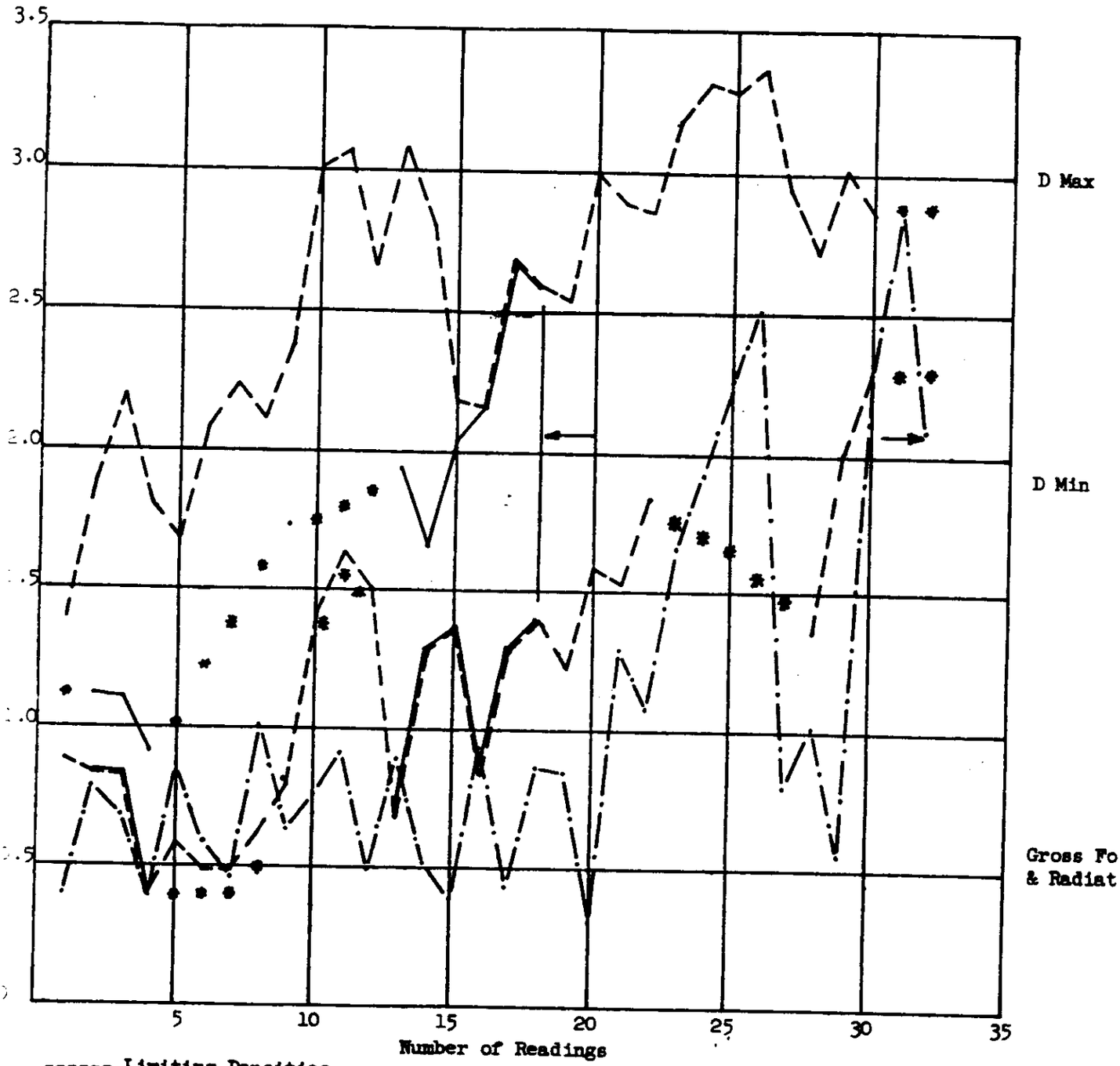
[redacted]

Mission 9043
Framing Camera
Part V-C



------ Limiting Densities
_____ Terrain Densities
-.-.-.- Gross Fog

* Indicates No Readings Made

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