TECHNICAL EVALUATION REPORT

ON ORIGINAL NEGATIVES

FROM

MISSION 1017-1 AND 1017-2

30 APRIL 1965

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This report consists of 220 pages.

Notice of Missing Page(s)

Pages 29 and 30 of the original document were missing.

Pages ii, iv, vi, xii, xiv, 2, 68, 78, 80, 3-2, 6-2, 6-4, 6-8, 6-10, 6-12, 6-18, 6-20, 6-24, 6-26, 6-30, 6-32, 6-34, 6-38, 6-40, 6-44, 6-46, 6-50, 6-52, 6-54, 6-56, 6-58, 6-60, 6-62, 6-64, 6-66, 6-68, 6-70, and 6-72 of the original document were blank and unnumbered.

FOREWORD

THIS REPORT PREPARED FOR AND BY DIRECTION OF

THE UNDER SECRETARY OF THE AIR FORCE

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ABSTRACT

Reconnaissance Satellite Mission 1017 was launched on 25 February 1965 from Point Arguello, Vandenberg AFB, California. The first segment, Mission 1017-1, was recovered on 2 March 1965. The System was reactivated for another five days, and the second segment, Mission 1017-2, was recovered on 6 March 1965. Photographic imagery was obtained from 69 of 145 passes.

The original negatives from the two Panoramic Cameras totaled approximately 30,944 feet of 70mm film, excluding the pre-flight portion. A photographic analysis was performed on this film and the results are presented in the following report.

The evaluation by the SPPL Team includes inspecting the film for physical degradations, measuring density and Visual-Reciprocal Edge Spread (V-RES) values, and analyzing imagery by edge scan techniques. In the accomplishment of edge scan analysis, a 1μ x 80μ slit was used on a Mann-Data Micro-Analyzer. An additional analysis by edge scan techniques was performed by the Scientist/Consultant Team using a 1μ x 80μ slit on the Eastman Kodak Model 5 Microdensitometer.

Under the Controlled Range Network (CORN) Program, four resolution displays were activated. Photographic coverage was received on all displays which were located as follows: A mobile and a fixed target at Wright-Patterson AFB, Ohio; a mobile 200' Controlled Scene Brightness edge, and a fixed target at Fort Huachuca, Arizona. A fixed high contrast bar target (Type "C") at Edwards AFB, California, was also covered although it was not activated for this Mission. The ground resolution read from the bar targets ranged from approximately 10 to 12 feet. Analysis of the 200' Controlled Scene Brightness Target by edge scan techniques resulted in the following average values: 71 for MTF/AIM; 86 for 50% Spread, and 77 for M-RES. Included in this report is a tabulation of weather data recorded at the Wright-Patterson AFB, Ohio, and Fort Huachuca, Arizona, CORN displays. The data was obtained from an instrumented weather balloon which is designed to record temperature, humidity, wind, dew point, and pressure data.

A Wratten 25 Filter experiment similar to that accomplished on Missions 1007 and 1014-1016 was also conducted on this Mission. This experiment was based on the utilization of a Wratten 25 Filter on the Forward Camera. The Wratten 25 (red) Filter was used primarily to compensate for the "facing-illumination" condition encountered during the winter months. The Wratten 21 Filter was still retained on the Aft Camera.

An analysis by edge scan techniques produced the following results when converted to ground resolution: 17.4' for MTF/AIM, 15.2' for 50% Spread, and 17.2' for M-RES on the Forward Camera; 14.9' for MTF/AIM, 13.1' for 50% Spread, and 14.9' for M-RES on the Aft Camera.

The V-RES values range from 45 to 118 with an average of 73. This V-RES average value represents a ground resolution of 14.3 feet.

Physical degradations are minor. Density averages are similar to Mission 1016 and higher than Missions 1014 and 1015. Both over and underexposure were noted on Mission 1017. Overall processing of this Mission is considered very good.

The overall image quality of Mission 1017 is higher than Mission 1016 and lower than Missions 1014 and 1015.

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SECTION I

INTRODUCTION

A technical photographic analysis was performed on the original negatives from Reconnaissance Satellite Mission 1017. The results of this photographic evaluation are presented in the following report.

The "J" Modification of the CORONA Camera System used for this Mission was designed to obtain stereo coverage from the two Panoramic Cameras. This System incorporates two separate film recoveries, with one supply source for each Panoramic Camera. The vehicle for Mission 1017 was launched from Point Arguello, Vandenberg AFB, California, on 25 February 1965. The first film recovery, designated Mission 1017-1, was accomplished in flight after 81 orbits. The second segment, Mission 1017-2, was recovered in flight after 56 orbits.

Section II, para A., "Known Information," outlines specific Mission data, a brief description of the CORONA Camera System, resolution capabilities, and subject environmental information (sun angle and latitude). Paragraph B., "Information Derived from Analysis," includes data derived from the film inspection, processing, laboratory evaluations, image analysis, Wratten 25 Filter experiment, film format characteristics, and all information pertaining to the Controlled Range Network (CORN) Operations for this Mission.

There were no additional or revised procedures, methods, or equipment used in the evaluation of Mission 1017; hence Section III refers to the descriptions outlined in the corresponding section of SPPL Technical Report No. 101-1-42 (Mission 1016).

Section IV presents observations and summaries of data resulting from the mission analysis and concludes with a brief description of the more important photographic physical characteristics.

Section V lists all referenced messages and documents.

Section VI, the Appendix, includes tabulations of density and edge analysis data, photographic enlargements (10X and 40X) with the respective Micro-Analyzer traces, CORN weather data, and a processing profile for all frames.

Sections II, III, and IV are supplemented with graphs, tables, and illustrations which further clarify the Mission evaluation.

SECTION II

TECHNICAL DATA AND RESULTS

This section presents information obtained from associated mission documents concerning the camera system and data derived from the photographic physical characteristics evaluation of the original negatives from Mission 1017-1 and 1017-2.

A. Known Information

1. Mission Data

a. Mission Number and Dates of Photography:[1]

1017-1: 25 February 1965 (2146Z) - 2 March 1965 (2350Z)

1017-2: 2 March 1965 - 6 March 1965 (2343Z)

b. Ephemeris: "Performance Estimate" data was available.[2]

c. Mission Product: Listed by Mission, Camera Positions, Passes, Rolls, and Frames (Table 1, Appendix 1, pages 1-1 and 1-2).

d. Footage Received:

1017-1: 16,466 feet (approximate), including 919 feet of pre-flight.

1017-2: 15,397 feet (approximate). See Illustration 1, page 21.

2. Camera System

a. Camera

(1) The "J" Modification of the CORONA Camera System used for this Mission included ten cameras: two Panoramic Cameras (Fwd and Aft), four Horizon Cameras (a pair mounted to each Panoramic Camera), two Stellar and two Index Cameras (one Stellar/Index for each film recovery). The System incorporates two separate film recoveries with one supply spool for each Panoramic Camera. The first film load was recovered in flight after five days of operation. This package recovery is designated Mission 1017-1. Reactivated on 2 March 1965, the System operated for another five days before in-flight recovery of the remaining film load which was designated Mission 1017-2. The CORONA Camera System is designed to obtain stereo coverage from the two Main Panoramic Cameras. The Horizon and Stellar/Index Cameras obtain vehicle attitude and positional data. For specific information on this Camera System, see Table 2, Appendix 2, pages 2-1 and 2-2.

(2) A Wratten 25 Filter was used on the Forward Camera and a Wratten 21 Filter on the Aft Camera of this Mission. Normally in this System the Wratten 21 Filter is used for both Cameras.

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[1] Messages: 25 February 1965, 2 and 6 March 1965.

[2] Messages: 3 March 1965 (1017-1) and 7 March 1965 (1017-2).

The Wratten 25 is a red filter used primarily to reduce glare and haze. The exposure setting for the Forward Camera on Mission 1017 was adjusted to compensate for this filter by increasing the exposure time and the slit width.

b. Film[3]

Types of film used on Mission 1017-1 and 1017-2 are listed in Table 3, Appendix 3, page 3-1.

c. Resolution Capabilities[4]

Prior to launch, photographic resolution testing is conducted on all lenses except the Stellar lens. The two Panoramic Cameras are tested dynamically in flight configuration while the remaining lenses are statically bench-tested as components. The high contrast photographic resolution test results are indicated in the following table:

TABLE 4 - Camera Resolution Capabilities

	Panoramic		Horizon Fwd		Horizon Aft		Index		Stellar	
	Fwd	Aft	Take-up	Supply	Take-up	Supply	-1	-2	-1	-2
Film	4404	4404	4404	4404	4404	4404	4400	4400	4401	4401
Camera Resolution	171 l/mm (Avg)	182 l/mm (Avg)	79 l/mm (Avg)	112 l/mm (Avg)	88 l/mm (Avg)	104 l/mm (Avg)	70 l/mm (Avg)	71.7 l/mm (Avg)	n/a	n/a

3. Description of Subject Environment

a. Sun Angle

Sun angles of the frames evaluated from Mission 1017 range from 0° to 79° and are correlated with the density readings in Table 6, Appendix 5, pages 5-1 through 5-10, and Illustration 14, pages 50 and 51. Sun angles are correlated with V-RES values in Illustration 21, pages 62 and 63.

b. Geographic Latitude

Geographic latitude of the frames evaluated from Mission 1017 range from 9° S to 74° N and are correlated with the density readings in Table 6, Appendix 5, pages 5-1 through 5-10, and Illustration 15, pages 52 and 53. Latitude is correlated with V-RES values in Illustration 22, pages 64 and 65.

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[3] Manual of Physical Properties of Kodak Aerial and Special Sensitized Materials, Eastman Kodak Co., Rochester, New York.

[4] Message: 26 February 1965.

B. Information Derived from Analysis

1. Physical Degradations

a. Mission 1017-1: One hundred and twenty-five rolls of original negative film comprising the total product of the Panoramic and Horizon Cameras, excluding the pre-flight portion, were examined for physical degradations.

(1) Imaged

(a) Forward Panoramic Camera

1 Equipment shadow graphs were noted on the following Passes: D02, Frames 001, 003, and 006; D10, Frame 075; D16, Frame 016; D20, Frame 058; D21, Frame 102; D22, Frame 117; D25, Frames 107 and 110; D30, Frame 024; D35, Frame 001; D36, Frame 067; D39, Frame 101; D41, Frame 058; D52, Frames 001 and 135; D55, Frame 092; D62, Frame 024; D68, Frames 084, 086, and 087; D72, Frame 129; and D78, Frame 024.

2 A fogged area, approximately 6" long, and located near the data block is visible extending the entire width at the tail of the sixth frame from the last frame on all passes except D04, A09E, A25E, and D81.

3 Dendritic fogging was observed along the titled and/or non-titled edge of the following Passes: D21, Frames 001-038; D54, Frames 005, 015, 022, 029, 030, 033, 034, and 037; D55, Frames 006-078; D56, Frames 009, 010, 019-022, 024-027, 035, 037, and 052; and D70, Frames 010-048.

4 Several, parallel, minus-density streaks, varying in length, were noted intermittently throughout Passes D02, D06, D22, and D35, and on Frames 001-003 of Pass D52.

5 A fogged area, 1/4" wide, occurs along the titled edge approximately 3" from the head of the second to last frame on the following Passes: D10, D16, D22, D25, D30, D39, D41, D48, D52, D55, D56, D63, and D78.

6 A diagonal, fine-lined, plus-density streak appears on Frames 014, 017, 023, 026, 067, and 086 of Pass D54, and Frames 072-078 of Pass D81.

(b) Aft Panoramic Camera

1 Equipment shadow graphs were noted on the third from the last frame on all passes except D01, D04, D06-D08, A09E, D20, D22, A25E, D33, D35, D52, D54, D67; the second frame of Passes D41, D48, D50, D67, D78; and the last frame of Passes D02, D09, D32, D33, D48, D67, D68, and D78.

2 A fogged area, approximately 3" long, and located near the data block is visible extending the entire width at the head of the seventh from the last frame on all passes except A09E, A25E, and D81.

3 Dendritic fogging was observed along the titled and/or non-titled edge on the following Passes: D22, Frames 029-052; D55, Frames 014-017 and 029-046; D68, Frames 042-045, 047-056, and 058; and randomly throughout Passes D52 and D70.

4 Parallel, minus-density streaks, varying in length, were noted on the following Passes: D04, Frame 005; D21, Frames 001, 002, 014 and 015; D56, Frame 074; D68, Frames 058-072, and 084; D70, Frames 001 and 002; and intermittently throughout Passes D05 and D06.

5 A 1" band of fog is visible extending across the entire width of the image format at the center of the first frame on all passes except D01, D04, A09E, D09, A25E, D35, D36, D52, and D68.

6 A fogged area, varying in width, was observed extending from format edge to format edge approximately 8 1/2" from the head of the second to last frame on all passes except D01, D04, D07, D08, A09E, D20, D22, D25, D33, D35, D36, D50, D54, D67, and D81.

7 Crescent-shaped, minus-density spots appear randomly throughout Passes D01 and D02.

8 Two,continuous, parallel, minus-density streaks were noted extending the entire length of Frames 028-030, 033, and 034 of Pass D02; Frame 002, Pass D04; and Frames 008 and 009 of Pass D08.

9 A diagonal, fine-lined, plus-density streak appears on Frames 050, 054, and 056 of Pass D81.

(2) Superficial

(a) Forward Panoramic Camera

1 Several, fine-lined, short, parallel, emulsion scratches were noted along each format edge throughout this segment of the Mission.

2 Several, faint, emulsion scratches are visible on Frame 001-023 and 035-053 of Pass D09.

3 A processing comet is visible on the following Passes: D07, Frame 087; D30, Frame 023; and D32, Frame 014.

4 A pre-processing splice was observed on the following Passes: D02, Frame 026; D52, Frame 130; and D81, Frame 040.

5 Approximately 85% of the last Frame (078), Pass D81, is missing.

6 Foreign matter and several minor abrasions, scratches, and pinholes were noted throughout this Mission.

(b) Aft Panoramic Camera

1 Several, fine-lined, short, parallel, emulsion scratches were noted along each format edge throughout Passes D04-D07, D09, D16, D20, D25, D52, D67, D68, D70, D72 and D78.

2 A 1 1/2" emulsion scratch is visible 6 1/2" from the head and 7/8" from the titled edge of Frame 118, Pass D72.

3 Several, small, emulsion scratches were found intermittently throughout Pass D39.

4 A pre-processing splice was observed on Frame 009, Pass D22; Frame 091, Pass D52; and Frame 028, Pass D81.

5 A processing comet is visible on Frame 036, Pass D06; Frame 005, Pass D41; and Frames 028 and 030, Pass D67.

6 Foreign matter and several minor abrasions, scratches, and pinholes were noted throughout this Mission.

(c) Forward Horizon Camera

Film transport fogging completely obliterated Frames 120 and 121 of Pass D05.

(d) Aft Horizon Camera

The Horizon Camera format image, adjacent to the tail of each frame, is very faint and sometimes non-existent beginning after the second frame and continuing through the end of Passes D01 and D02.

b. Mission 1017-2: One hundred and sixteen rolls of original negative film comprising the total product of the Panoramic and Horizon Cameras, excluding the pre-flight portion, were examined for physical degradations.

(1) Imaged

(a) Forward Panoramic Camera

1 Equipment shadow graphs were noted on the first frame of the following Passes: D101, A104E, D116, D130, and D131; and the last frame of Passes: D83-D87, A88E, D93, D97-D99, D101, D102, D104, D111, D118, D120, D127, and D132.

2 Dendritic fogging was observed along the non-titled edge extending into the format area from 1/8" to 1/2" on the following Frames: 014, 016-019, 022, 031, 032, 056, and 071, Pass D84; 009-011, 019, 028-032, 039-048, 066, and 072-079, Pass D85; and 018, 020, 022, 032, 034, and 079 of Pass D86.

3 A small area of fog was noted extending across the entire image format width at the tail of the next to last frame on Passes D84, D86, A88E, D93, D95, D101, D104, D111, D120, D132, and on Frames 024, 056, and 058 of Pass D137.

4 A diagonal, fine-lined, plus-density streak, extending from format edge to format edge, appears across the center of Frames 031 and 056-061 of Pass D137.

(b) Aft Panoramic Camera

1 Equipment shadow graphs were noted on the third from the last frame on all passes except D81, D84, D85, D99, D102, A104E, D117, A120E, D130, D133, D135, D137, and on the last frame of Passes D134-D136.

2 A 1" band of fog is visible extending across the entire width of the image format at the center of the first frame on Passes D84-D87, A88E, D95, D101-D103, D111, D117, D127, D133, and D137.

3 Intermittent fogging, extending the entire width of the image format area and varying in length, was observed throughout Passes D133-D137.

4 A few short minus-density streaks appear intermittently throughout Passes D131 and D133.

5 Dendritic fogging was observed along the titled or non-titled edge extending into the format area from 1/8" to 1/2" on the following Frames: 021-029, 042-047, 051-053, Pass D83; 011-018, 027-052, Pass D84; 027, 028, 030, 032, 040, 048-050, 053, 062-069, Pass D85; 007, 009, 011, 015, 017, 018, 020, 021, 023, 025, 065, Pass D86; and 082, 084, and 088 of Pass D134.

6 A small, fogged area, approximately 1/2" in circumference, was found 1/2" from the non-titled edge at the tail of Frame 014 on Pass D103.

(2) Superficial

(a) Forward Panoramic Camera

1 Several, fine-lined, short, parallel, emulsion scratches are visible along each format edge throughout Passes D82-D84, D86, D87, D100, D101, D103, A104E, D116, D118, D120, and D131.

2 Several, fine-lined, short, parallel, emulsion scratches were noted near the tail of all frames on Passes D83, D86, D101, and D103.

3 Two, parallel, chatter-like, emulsion scratches, approximately 1/2" long, were noted on Frames 001 and 002 of Pass D84.

4 Several, parallel, emulsion scratches, approximately 3" long, were observed on all frames of Pass D100.

5 Several, continuous, parallel, fine-lined, emulsion scratches were noted extending through the format area on all frames of Pass D132.

6 The titling edge is "ragged" between the data block and the head of each frame throughout this segment of the Mission.

7 A pre-processing splice was observed on Frame 046, Pass D101, and between Frames 045 and 046, Pass D135. A post-processing splice was found on Frame 021, Pass D101.

8 A processing comet is visible on Frame 144, Pass D100, and Frame 073, Pass D118.

9 Foreign matter and several minor abrasions, scratches, and pinholes were noted throughout this Mission.

(b) Aft Panoramic Camera

1 Several, fine-lined, short, parallel, emulsion scratches are visible along each format edge throughout Passes D85-D87, D100, D102, D104, D111, D117, D120, D130-D132, and D134-D136.

2 Several, fine-lined, short, parallel, emulsion scratches were noted near the tail of all frames on Passes D134 and D136.

3 The titling edge is "ragged" between the data block and the head of each frame throughout this segment of the Mission.

4 A pre-processing splice was observed on Frame 024, Pass D101, and Frame 046, Pass D135.

5 Foreign matter and several minor abrasions, scratches, and pinholes were noted throughout this Mission.

2. Film Processing Data

In order to control density, 62 development level changes were made on the Forward and 47 on the Aft Camera for Mission 1017-1; 51 changes were made on the Forward and 46 on the Aft Camera for Mission 1017-2. The following table shows the percentage of the original negatives processed at the three levels of development:

Mission	Development Level	Forward Camera	Aft Camera
1017-1	Primary	13%	24%
	Intermediate	63%	58%
	Full	24%	18%
1017-2	Primary	5%	18%
	Intermediate	63%	62%
	Full	32%	20%

A complete listing of the development level for each frame is shown in Table 5, Appendix 4, pages 4-1 through 4-8. The standard processing curves for the three development levels are shown in Illustration 2, page 22. The control curves for the head and tail of each mission and camera position are shown in Illustration 3, pages 23 through 26.

3. Laboratory Evaluations

a. Sensitometric

Two unexposed 70mm strips of Type 4404 Film from Mission 1017 (one from each

Panoramic Camera) were received for evaluation. These two unexposed strips, along with a sample of the SPPL Control Stock for comparison, were exposed on the Eastman Kodak Intensity Scale Sensitometer, Type 1 B, Model IV. These three strips were processed in D-19 Developer. The sensitometric measurements are graphically presented in Illustrations 4 and 5, pages 27 through 29.

b. Chemical

A sample of the original negative film was tested for archival quality resulting in 0.0025 (± 0.001) milligrams per square inch of residual thiosulfate. Archival tests should be made within 24 hours after processing, and a test sample should be chosen from an image area. Although these two conditions were not met, the resultant test values were sufficiently low to indicate with reasonable confidence that the processed film is of archival quality.

4. Image Analysis

Image analysis consists of densitometry, analysis by edge scan techniques, analysis of Controlled Range Network (CORN) targets, Visual Reciprocal Edge Spread (V-RES), and image motion evaluations from the original negatives.

a. Densitometry

Specific information as to the number of values included in the density data summaries can be found by referring to the frequency distribution graphs, Illustrations 10 through 13, pages 46 through 49.

(1) Image Minimum Density Values (Dmin)

Image Dmin values for all negatives examined on Mission 1017 range from 0.20 to 1.65 with a 0.23 standard deviation (σ) and an overall average of 0.63. The average, range, and standard deviation data as computed for each Mission by camera position are as follows:

Mission	Camera Position	Range From	Range To	Average	Standard Deviation (σ)
1017-1	Fwd	0.20	1.65	0.66	0.24
	Aft	0.20	1.62	0.64	0.24
1017-2	Fwd	0.22	1.22	0.58	0.21
	Aft	0.20	1.54	0.64	0.23

The range and average of Dmin by mission, camera position, and pass are shown in Illustration 6, pages 30 through 33. The distribution of Dmin values is shown by mission and camera position in Illustration 10, page 46.

(2) Image Maximum Density Values (Dmax)

Image Dmax values for all negatives examined on Mission 1017 range from 0.30 to 2.30 with a 0.33 standard deviation (σ) and an overall average of 1.71. The average, range, and standard

deviation data as computed for each Mission by camera position are as follows:

Mission	Camera Position	Range From	Range To	Average	Standard Deviation (σ)
1017-1	Fwd	0.46	2.23	1.74	0.31
	Aft	0.60	2.29	1.75	0.28
1017-2	Fwd	0.37	2.30	1.70	0.35
	Aft	0.30	2.30	1.62	0.35

The range and average of Dmax by mission, camera position, and pass are shown in Illustration 7, pages 34 through 37. The distribution of Dmax values is shown by mission and camera position in Illustration 11, page 47.

(3) Image Average Density Values ($\bar{D}$)

Image $\bar{D}$ values for all negatives examined on Mission 1017 range from 0.25 to 1.87 with a 0.22 standard deviation (σ) and an overall average of 1.17. The average, range, and standard deviation data as computed for each Mission by camera position are as follows:

Mission	Camera Position	Range From	Range To	Average	Standard Deviation (σ)
1017-1	Fwd	0.43	1.83	1.20	0.21
	Aft	0.43	1.87	1.20	0.20
1017-2	Fwd	0.31	1.67	1.14	0.22
	Aft	0.25	1.82	1.13	0.23

The range and average of $\bar{D}$ by mission, camera position, and pass are shown in Illustration 8, pages 38 through 41. The distribution of $\bar{D}$ values is shown by mission and camera position in Illustration 12, page 48.

(4) Image Density Difference Values (ΔD)

Image ΔD values for all negatives examined on Mission 1017 range from 0.05 to 2.03 with a 0.37 standard deviation (σ) and an overall average of 1.08. The average, range, and standard deviation data as computed for each Mission by camera position are as follows:

Mission	Camera Position	Range From	Range To	Average	Standard Deviation (σ)
1017-1	Fwd	0.06	2.00	1.09	0.36
	Aft	0.21	2.03	1.12	0.34
1017-2	Fwd	0.11	1.88	1.12	0.38
	Aft	0.05	1.82	0.98	0.37

The range and average of ΔD by mission, camera position, and pass are shown in Illustration 9, pages 42 through 45. The distribution of ΔD values is shown by mission and camera position in Illustration 13, page 49.

(5) Gross Fog Values (Base plus Fog)

Gross Fog values for all negatives examined on Mission 1017 range from 0.07 to 0.21 with a 0.03 standard deviation (σ) and an overall average of 0.13. The average, range, and standard deviation data as computed for each Mission by camera position are as follows:

Mission	Camera Position	Range From	Range To	Average	Standard Deviation (σ)
1017-1	Fwd	0.10	0.21	0.14	0.03
	Aft	0.09	0.21	0.12	0.02
1017-2	Fwd	0.07	0.20	0.13	0.03
	Aft	0.08	0.19	0.12	0.02

(6) Cloud Maximum Density Values (Dmax Clouds)

The Dmax Cloud values for all negatives examined on Mission 1017 range from 0.38 to 2.37 with a 0.30 standard deviation (σ) and an overall average of 1.90. The average, range, and standard deviation data as computed for each Mission by camera position are as follows:

Mission	Camera Position	Range From	Range To	Average	Standard Deviation (σ)
1017-1	Fwd	0.60	2.32	1.93	0.27
	Aft	1.18	2.36	1.89	0.27
1017-2	Fwd	0.86	2.37	1.93	0.28
	Aft	0.38	2.34	1.85	0.34

(7) Density Tables

A complete listing of density values is presented in Table 6, Appendix 5, pages 5-1 through 5-10.

(8) Dmin and Dmax Averages Versus Sun Angle and Latitude

The average Dmin and Dmax values are plotted against each degree of sun angle and latitude in Illustrations 14 and 15, pages 50 through 53.

b. Analysis by Edge Scan Techniques

Analysis by edge scan techniques produced values for the Modulation Transfer Function (MTF), Spread Function Width at 50% Amplitude (50% Spread), and Machine-Read Reciprocal Edge Spread

(M-RES). This analysis is performed by two teams: the SPPL Technical Evaluation Team (SPPL Team), and a group of scientists and consultants from Industry (S/C Team).

(1) SPPL Team

(a) The computations, comparisons, and analyses of edge scan data are completely mechanical. The IBM 1710 Computer method for smoothing edge analysis curves is described in Section III. Although no "hand-smoothing" of the edge traces is accomplished, some visual smoothing of MTF curves is necessary for determining the MTF/AIM intersection. Edge scan data is reduced by an IBM computer programmed to perform these tasks. This function is also described in Section III.

(b) One hundred and nineteen traces were accomplished from Mission 1017, using a 1μ x 80μ slit, with a Mann-Data Micro-Analyzer.

(c) A complete tabulation of data from the various methods of edge analyses is listed in Table 7, Appendix 7, pages 7-1 through 7-4.

1 The MTF curves are plotted against the Aerial Image Modulation (AIM) curve (low contrast 2:1) for Type 4404 Film. The intersection of the MTF and AIM curves is the MTF/AIM value recorded in cycles/mm. Approximately 26% of these values could be determined only after smoothing the MTF curves.

2 The 50% Spread value extracted from the exposure curve is recorded in microns and also as the reciprocal of this measurement.

3 The M-RES value computed from the edge slope of the exposure curve is recorded as a reciprocal edge spread measurement.

4 Table 7, Edge Scan Data, includes MTF/AIM, 50% Spread, M-RES, Visual-Reciprocal Edge Spread (V-RES), Dmin and Dmax values, location of subject on the frame, subject type, and the orientation of each scene edge traced. For comparison purposes, the MTF/AIM, 50% Spread (reciprocal of width), M-RES, and V-RES values are equivalent measures of image quality.

(d) The average MTF curve with a $\pm 1\sigma$ of all edges for Mission 1017 is shown in Illustration 16, page 54. The frequency distribution bar graphs of MTF/AIM, 50% Spread, M-RES, and V-RES are portrayed in Illustration 17, page 55. A summary of the SPPL edge analysis data is presented in Table 8, page 18.

(2) Scientist and Consultant Team

(a) An Eastman Kodak Model 5 Microdensitometer with a 1μ x 80μ slit was utilized to trace 87 edges similar to those selected and measured by the SPPL Team. This team used only two methods (MTF/AIM and 50% Spread) in accomplishing their edge analysis. The MTF/AIM intersection values are listed as lines/mm, and the 50% Spread values are recorded in microns. The complete report of the Scientist/Consultant Team analysis is included as Appendix 8, pages 8-1 through 8-20.

(b) To facilitate a comparison of similar values from both teams, the reciprocal of the 50% Spread values (width in microns) is computed by SPPL and the resultant average of these values recorded in the summary tables. A summary of data from the Scientist/Consultant Team for Mission 1017 is presented in Table 9, page 19.

c. Controlled Range Network (CORN) Operations

(1) Six CORN resolution displays (four mobile and two fixed) were scheduled for Mission 1017. Of these six displays only two mobile and two fixed were activated. They consist of and are located as follows:

(a) A mobile medium contrast "T" Bar Target and a fixed high contrast Bar Target at Wright-Patterson AFB, Ohio, on 27 February 1965.

(b) A mobile 200' Controlled Scene Brightness Target and fixed low and high contrast Bar Targets at Fort Huachuca, Arizona, on 1 March 1965. A medium contrast "T" Bar was also scheduled as part of this mobile target; however, it was not displayed.

(2) All CORN Operations for Mission 1017-2 were cancelled because the recovery was made one day earlier than scheduled.

(3) The Wright-Patterson displays were covered on Pass D30, Frames 009 (Fwd) and 015 (Aft). The Fort Huachuca mobile display was covered on Pass D63, Frames 008 (Fwd) and 014 (Aft) with the fixed display being covered on Pass D63, Frames 009 (Fwd) and 015 (Aft).

(4) Although not activated for this Mission, a fixed high contrast Bar Target located at Edwards AFB, California, was covered on Pass D95, Frame 020 (Fwd) of Mission 1017-2.

(5) The Controlled Scene Brightness Target (200' edge) at Fort Huachuca, Arizona, was traced with a 1μ x 80μ slit on a Mann-Data Micro-Analyzer. The traces were then evaluated by edge scan techniques. The results of this analysis are portrayed in Table 10, page 20.

(6) The resolutions of the mobile and fixed Bar Targets were determined by three observers, and their findings are recorded in Table 11, page 20.

(7) The mobile and fixed Bar Targets were traced with a 1.58μ spot size on a Mann-Data Micro-Analyzer for density analysis. These traces are included in Appendix 6, pages 6-1 through 6-48.

(8) The 200' Controlled Scene Brightness Target displayed at Fort Huachuca, Arizona, was approximately 80% displayed.

(9) An instrumented weather balloon, designed to measure temperature, humidity, wind, and pressure up to an approximate altitude of 75,000 feet, was launched by the Air Weather Service over the Wright-Patterson AFB display at 1800Z on 27 February 1965 and over the Fort Huachuca display at 2000Z on 1 March 1965. Included in Appendix 6, pages 6-16 and 6-29 is the weather data obtained from these operations. The pressure is recorded in millibars (standard sea level pressure is 1013.2 mbs), and

altitude recordings are in feet. The temperature and dew point are recorded in degrees centigrade. The winds are expressed in direction (0° - 360°) and speed (knots). The dew point is frequently missing due to a lack of instrument response at low temperatures.

(10) Photographic enlargements (10X and 40X) of the CORN displays covered, in addition to Micro-Analyzer traces and other significant data pertaining to the photographing and processing of the CORN targets, are presented in Appendix 6, pages 6-1 through 6-48.

d. Blackbird Mission

No Blackbird Missions were scheduled.

e. Visual Reciprocal Edge Spread (V-RES)

(1) V-RES data consists of 1,017 measurements. The values range from 45 to 118 with an average of 73. V-RES measurements are recorded in Table 12, Appendix 9, pages 9-1 through 9-6. The range, average, and number of measurements by mission and camera position are listed below:

Mission	Camera Position	Range	Average	No. of Measurements
1017-1	Fwd	45 - 104	69	260
	Aft	49 - 111	74	267
1017-2	Fwd	49 - 118	73	248
	Aft	51 - 118	77	242

(2) The frequency distribution of V-RES values is presented in Illustration 18, page 56. Average V-RES values for each pass were computed and are portrayed in Illustration 19, pages 57 to 60. Illustration 20, page 61, shows the average V-RES for the five areas of the frame.

(3) Average V-RES values are plotted against each degree of sun angle and latitude in Illustrations 21 and 22, pages 62 through 65.

(4) Two measurements were made for each subject selected: one "With the line-of-flight (W)" and the other "Across the line-of-flight (A)." These values are recorded by mission, camera position, and frame in Table 12, Appendix 9, pages 9-1 through 9-6.

f. Image Motion

Comparison of V-RES values recorded under "W" and "A" in Table 12, Appendix 9, pages 9-1 through 9-6, will give an indication of image motion as explained in Section III.

g. Wratten 25 Filter Experiment on CORONA Missions

(1) Mission 1017 is the fifth in a series of missions which are experimenting in the use of a Wratten 25 Filter to compensate for the "facing-illumination" condition existing during the winter months.

(2) The illumination of subjects photographed by CORONA missions varies significantly from winter to summer. The satellite vehicle normally travels in a polar orbit. One end of each panoramic frame from both the Forward and Aft Cameras virtually faces the sub-solar point during the summer months while, during the winter months, only the Forward Camera frames face the sub-solar point (Illustration 23, page 66). When a lens faces the source of illumination, it is extremely difficult to obtain a good exposure. Due to this situation, the Forward Camera photography has been generally inferior to Aft Camera imagery during winter months. Previous missions of this series, with the exception of 1007 and 1014-1016, have used a Wratten 21 Filter on both Panoramic Cameras. In an attempt to improve the quality of imagery, a series of experiments were initiated in which a Wratten 25 (red) Filter was used on the Forward Camera. The Wratten 21 (orange) Filter was retained on the Aft Camera. A summary of pertinent data resulting from the analysis of this Mission is presented in Table 13 below:

TABLE 13 - SUMMARY DATA FOR FILTER EXPERIMENT (MISSION 1017)

Mission & Date	Camera Position	Filter	Exposure Slit Width	Exposure Time (sec)	Sun Angles	Latitudes	Density				*Processing			Image Quality			
							Dmin Average	Dmax Average	$\bar{D}$ Average	ΔD Average	P	I	F	MTF/AIM	50% Spread	M-RES	V-RES
1017-1 & -2 25 February through 6 March 1965	Fwd	Wratten 25	0.250"	1/250 (sec)	1° - 78°	8°S - 74°N	0.62	1.72	1.17	1.10	9	63	28	60	69	61	78
	Aft	Wratten 21	0.175"	1/357 (sec)	0° - 78°	9°S - 74°N	0.64	1.69	1.16	1.05	21	60	19	70	80	70	80

*Percentage of Primary, Intermediate, and Full Processing.

h. Subjective Evaluation of Imagery Using "Graded Estimated Measuring Samples"(GEMS)

A subjective method for photographic evaluation utilizing "Graded Estimated Measuring Samples" (GEMS) was recommended by the Drell-Chapman Committee. A brief description of this technique was introduced in Section II, para 4. g. of SPPL Technical Report No. [redacted] (Mission 1006). An analysis of each mission in this series will be accomplished by the National Team responsible for the evaluation using GEMS. The GEMS data, when available, will be incorporated into the technical evaluation report series in order to permit a correlation with an objective method of image analysis by edge scan techniques.

5. Analysis of Film Format Characteristics

a. Titling

(1) Mission 1017-1, Forward Camera: A double image of titling appears on Pass A09E, Frames 007 and 009-011, and Pass D52, Frame 130.

(2) Mission 1017-2, Aft Camera: Smeared titling occurs on Pass D133, Frame 015.

b. Data Block

(1) Mission 1017-1, Forward Camera: The data block is incorrectly positioned in

the margin area with approximately 1/16 of an inch missing on all frames throughout this segment of the Mission.

(2) Mission 1017-2, Forward Camera: The data block is "bloomed" on all frames throughout this segment of the Mission.

c. Frequency Marks

Frequency marks are distinct throughout this Mission.

d. Fiducial Marks

Mission 1017-1, Forward Camera: The first fiducial mark on Passes D67 and D78 is double-exposed with the reproduction approximately 2 1/2" from the original position.

e. Frame Size

Every tenth frame was measured on Mission 1017-1, Pass D68, starting with Frame 005 and ending with Frame 065 of the Forward Camera position. Frames vary in half-length from 14.949" to 14.963". Area one varies in width from 2.196" to 2.205"; area three varies in width from 2.193" to 2.201"; and area five varies in width from 2.199" to 2.208". On Mission 1017-2, Pass D117, every tenth frame from 005 through 065 of the Aft Camera was measured resulting in a half-length variation from 14.905" to 14.913". Area one varies in width from 2.158" to 2.171"; area three varies in width from 2.150" to 2.165"; and area five varies in width from 2.151" to 2.166".

f. Overlap

Average overlap for Mission 1017 is 6.5% for 406 measurements. The average overlap and number of measurements by mission and camera position are listed below:

Mission	Camera Position	Average Overlap	No. of Measurements
1017-1	Fwd	7.1%	105
	Aft	6.8%	109
1017-2	Fwd	6.9%	92
	Aft	5.0%	100

TABLE 8 - Summary of Edge Scan Analysis
(SPPL Team)

Mission 1017-1 No. of Edges 61

Method of Analysis		Arithmetic Mean		Standard Deviation		Coefficient of Dispersion	
		Fwd	Aft	Fwd	Aft	Fwd	Aft
Spread Function Width at 50% Amplitude	Width in Microns	17.0	13.2	5.3	3.3	31%	25%
	Reciprocal of Width	64	80	17.2	19.9	27%	25%
Machine-Read RES		59	71	14.0	15.6	24%	22%
MTF/AIM		57	70	12.6	17.4	22%	25%
Visual RES		72	75	8.5	10.0	12%	13%

Mission 1017-2 No. of Edges 58

Method of Analysis		Arithmetic Mean		Standard Deviation		Coefficient of Dispersion	
		Fwd	Aft	Fwd	Aft	Fwd	Aft
Spread Function Width at 50% Amplitude	Width in Microns	14.5	13.5	4.2	3.6	29%	26%
	Reciprocal of Width	74	79	20.4	19.9	28%	25%
Machine-Read RES		63	69	19.2	16.2	31%	23%
MTF/AIM		65	69	16.8	16.5	26%	24%
Visual RES		85	85	8.6	15.0	10%	18%

Mission 1017-1 and 1017-2 combined No. of Edges - 119

Method of Analysis		Arithmetic Mean		Standard Deviation		Coefficient of Dispersion	
		Fwd	Aft	Fwd	Aft	Fwd	Aft
Spread Function Width at 50% Amplitude	Width in Microns	15.8	13.3	4.9	3.4	31%	25%
	Reciprocal of Width	69	80	19.4	19.7	28%	25%
Machine-Read RES		61	70	16.7	15.7	28%	22%
MTF/AIM		60	70	15.2	16.8	25%	24%
Visual RES		78	80	10.9	13.5	14%	17%

TABLE 9 - Summary of Edge Scan Analysis
(S/C Team)

Mission 1017-1 No. of Edges - 42

Method of Analysis		Arithmetic Mean		Standard Deviation		Coefficient of Dispersion	
		Fwd	Aft	Fwd	Aft	Fwd	Aft
Spread Function Width at 50% Amplitude	Width in Microns	11.9	8.7	3.9	2.3	33%	26%
	Reciprocal of Width	93	121	32.0	27.4	34%	23%
MTF/AIM		78	94	18.5	16.1	24%	17%

Mission 1017-2 No. of Edges - 45

Method of Analysis		Arithmetic Mean		Standard Deviation		Coefficient of Dispersion	
		Fwd	Aft	Fwd	Aft	Fwd	Aft
Spread Function Width at 50% Amplitude	Width in Microns	12.0	10.6	4.1	2.7	34%	25%
	Reciprocal of Width	93	100	31.0	24.4	33%	25%
MTF/AIM		80	86	17.7	17.9	22%	21%

Mission 1017-1 and 1017-2 combined No. of Edges - 87

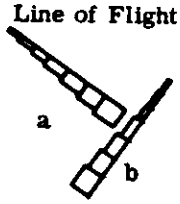
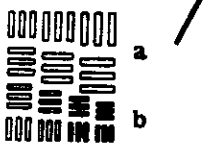
Method of Analysis		Arithmetic Mean		Standard Deviation		Coefficient of Dispersion	
		Fwd	Aft	Fwd	Aft	Fwd	Aft
Spread Function Width at 50% Amplitude	Width in Microns	11.9	9.6	4.0	2.6	33%	27%
	Reciprocal of Width	93	111	31.1	27.9	33%	25%
MTF/AIM		79	90	17.8	17.3	23%	19%

TABLE 10 - Image Analysis of Controlled Scene Brightness Targets

Mission 1017

Pass	Frames	Analysis Techniques	Value / Ground Resol. Trace No. 1	Value / Ground Resol. Trace No. 2	Target Orientation	Target Type and Location
D63	008 (Fwd)	MTF/AIM	65/16.1'	62/16.9'	Line of Flight  CE-2 CE-1	Fort Huachuca Arizona 200' Controlled Scene Brightness Target
		50% Spread	76/13.8'	93/11.3'		
		M-RES	73/14.3'	79/13.3'		
D63	014 (Aft)	MTF/AIM	89/11.8'	68/15.4'		
		50% Spread	102/10.1'	74/13.8'		
		M-RES	84/12.4'	73/14.3'		

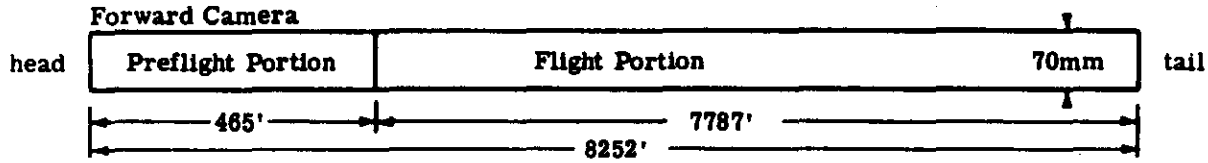
TABLE 11 - CORN TARGET EVALUATION

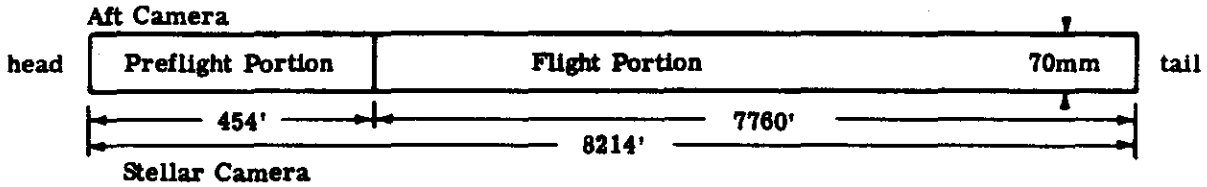
Pass	Frame	Subject and Location	Target Orientation	OBSERVER No. 1 BAR GROUPS READ/GROUND RESOLUTION A	No. 1 B	No. 2 A	No. 2 B	No. 3 A	No. 3 B
D30	009 (Fwd)	Med. Contrast "T" Bar Wright-Patterson AFB, Ohio (Mobile)	Line of Flight  a b	2 / 12'	2 / 12'	2 / 12'	2 / 12'	2 / 12'	2 / 12'
	015 (Aft)			2 / 12'	2 / 12'	2 / 12'	2 / 12'	2 / 12'	2 / 12'
	009 (Fwd)	High Contrast Bar Target Wright-Patterson AFB, Ohio (Fixed)	Line of Flight  a b	2 / 10'1"	2 / 10'1"	1 / 11'4"	1 / 11'4"	2 / 10'1"	2 / 10'1"
	015 (Aft)			1 / 11'4"	1 / 11'4"	1 / 11'4"	1 / 11'4"	1 / 11'4"	1 / 11'4"
D63	009 (Fwd)	High and Low Contrast Bar Target Fort Huachuca Arizona (Fixed)	Line of Flight  a b	7 / 10'	7 / 10'	7 / 10'	7 / 10'	6 / 11'2"	6 / 11'2"
	015 (Aft)			6 / 11'2"	6 / 11'2"	6 / 11'2"	7 / 10'	6 / 11'2"	7 / 10'
D95	020 (Fwd)	High Contrast Bar Target Edwards AFB Calif. (Fixed)	Line of Flight  a b	The resolution of this photograph exceeds that of the Bar Target. The smallest bar represents a ground resolution of 12'9".					

SPPL TECHNICAL REPORT NO [redacted]

ORIGINAL NEGATIVE FOOTAGE DIAGRAM

Mission 1017-1





Stellar Camera
4401, 35mm x 66'
Index Camera
4400, 70mm x 94'

Mission 1017-2

Stellar Camera
4401, 35mm x 5'
Index Camera
4400, 70mm x 6'

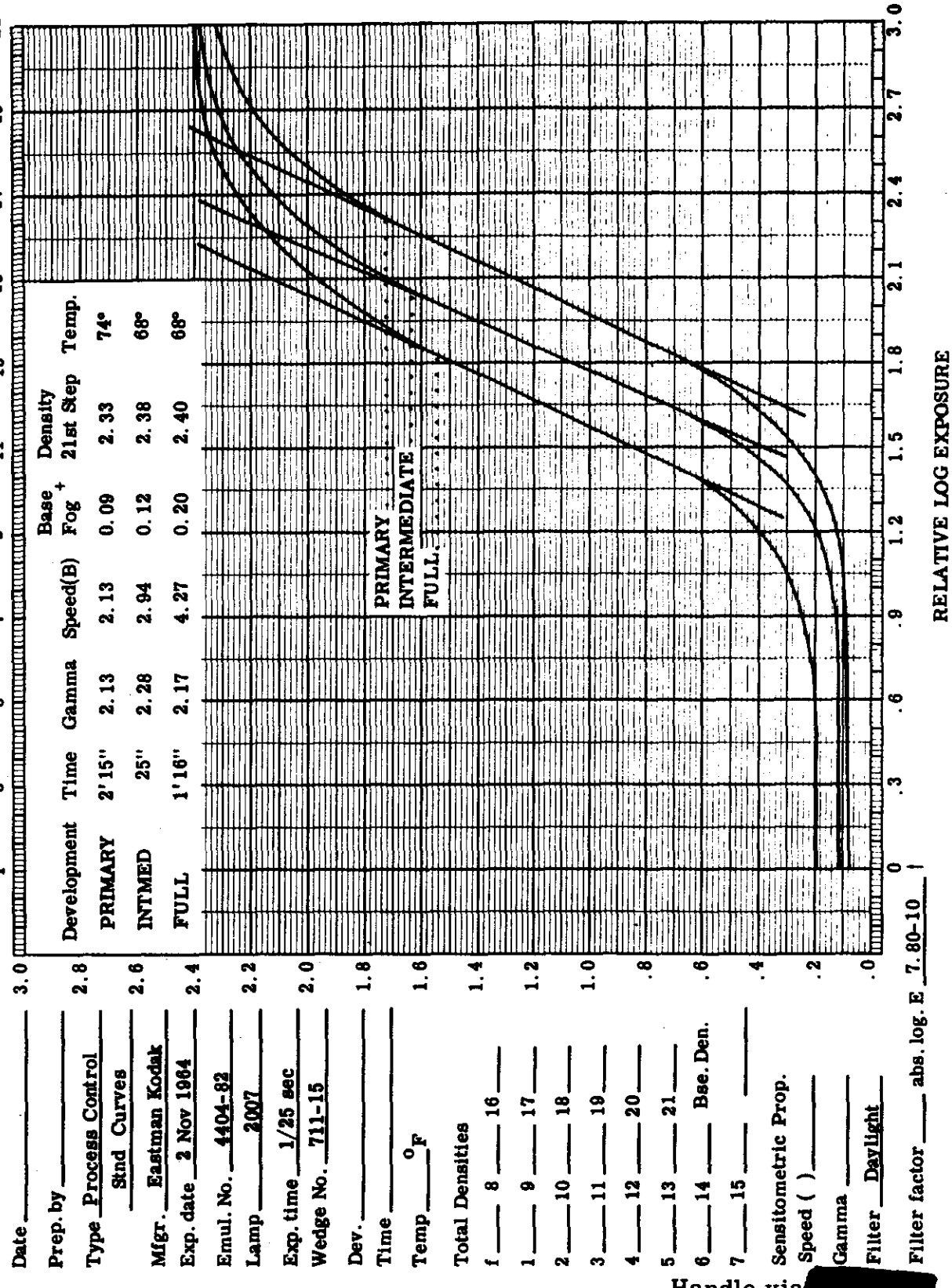


ILLUSTRATION 2

SPPL TECHNICAL REPORT NO [redacted]

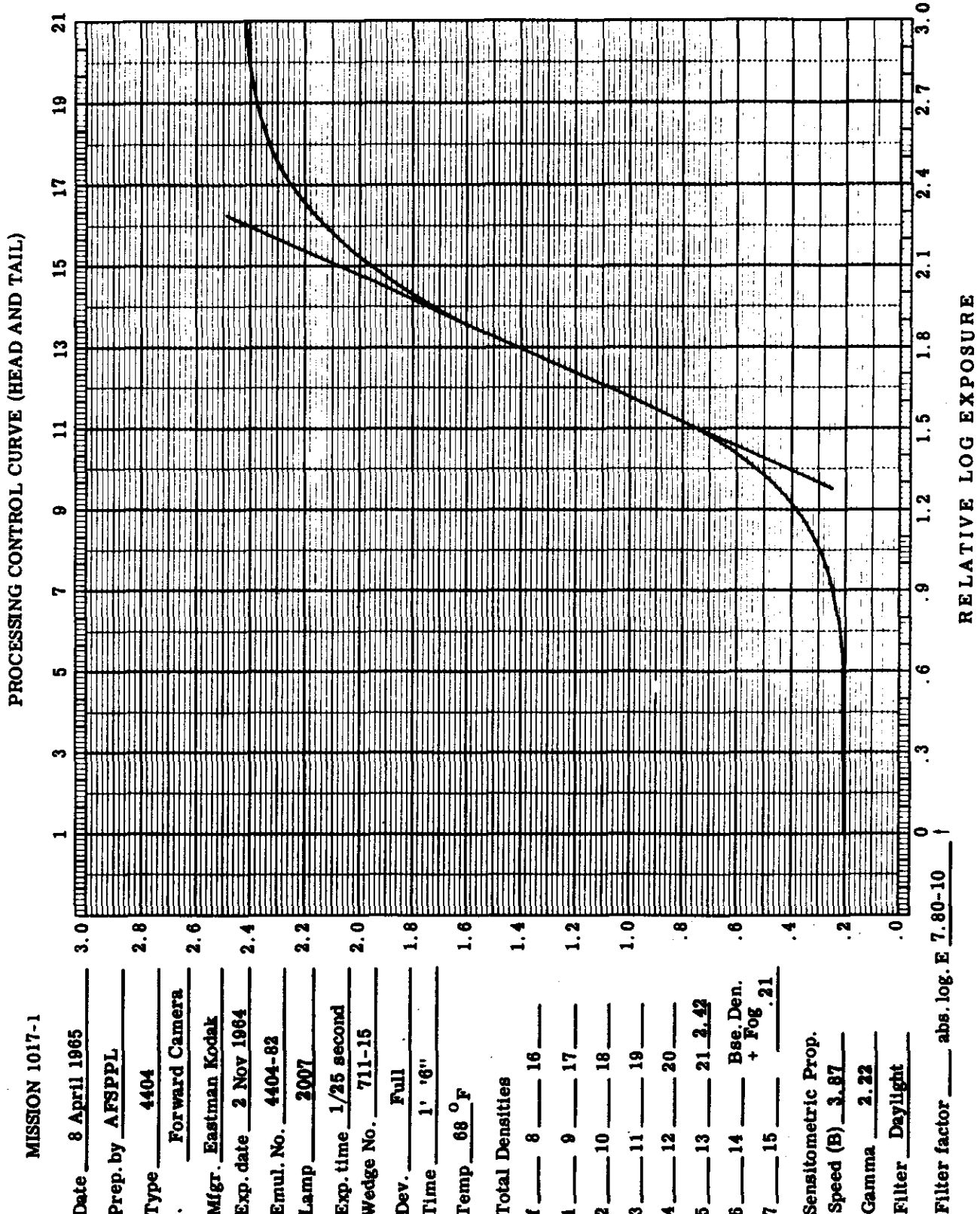
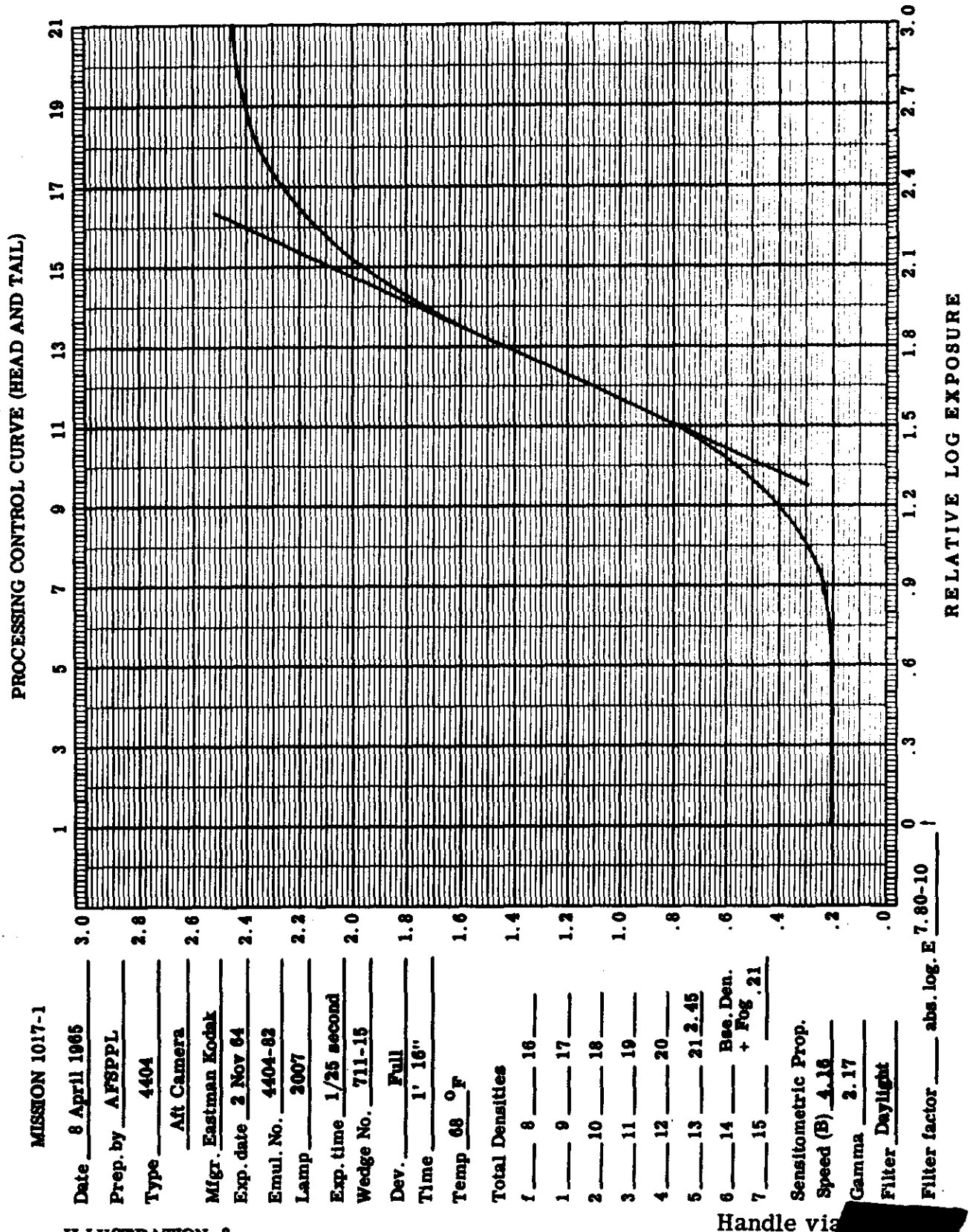


ILLUSTRATION 3



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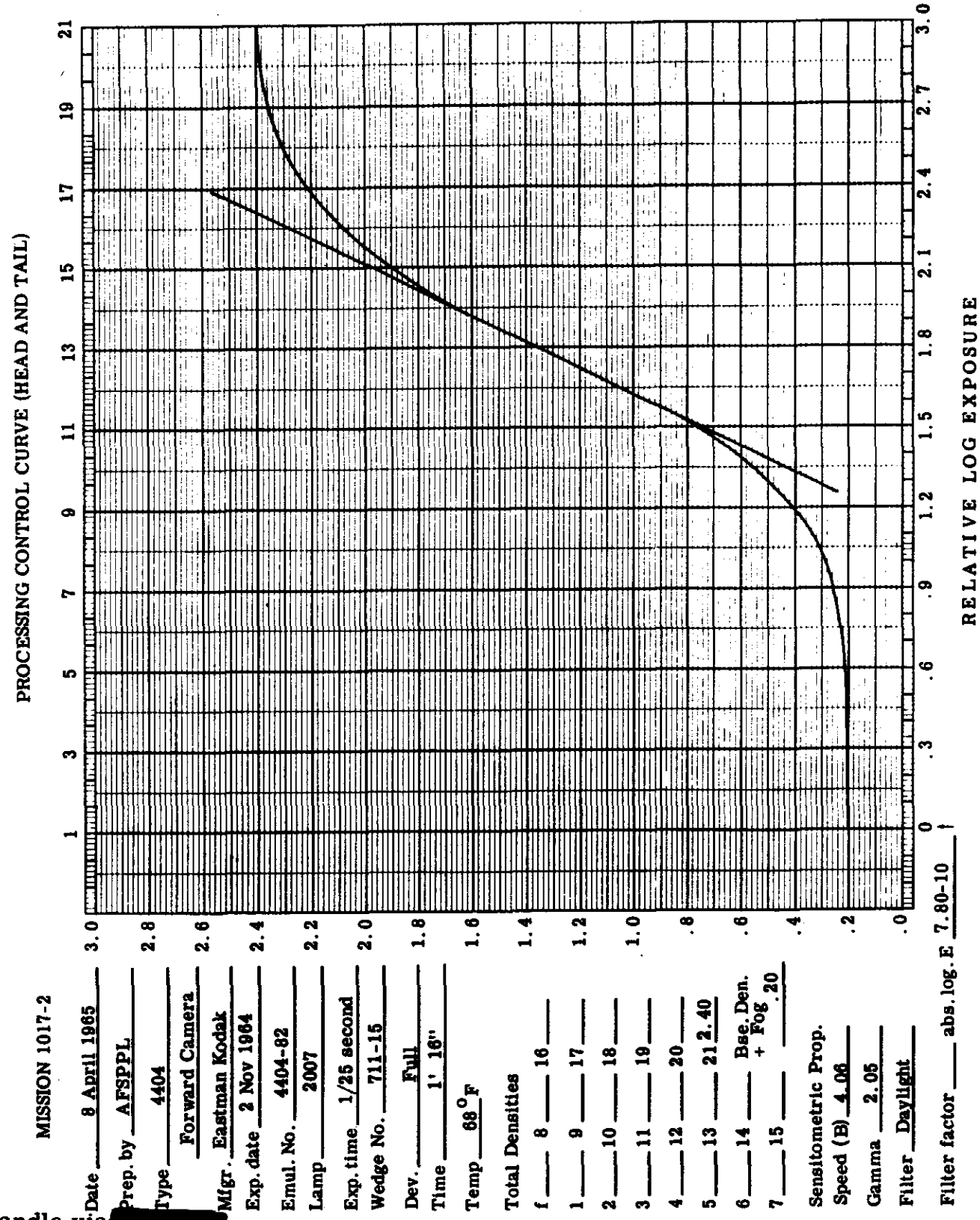
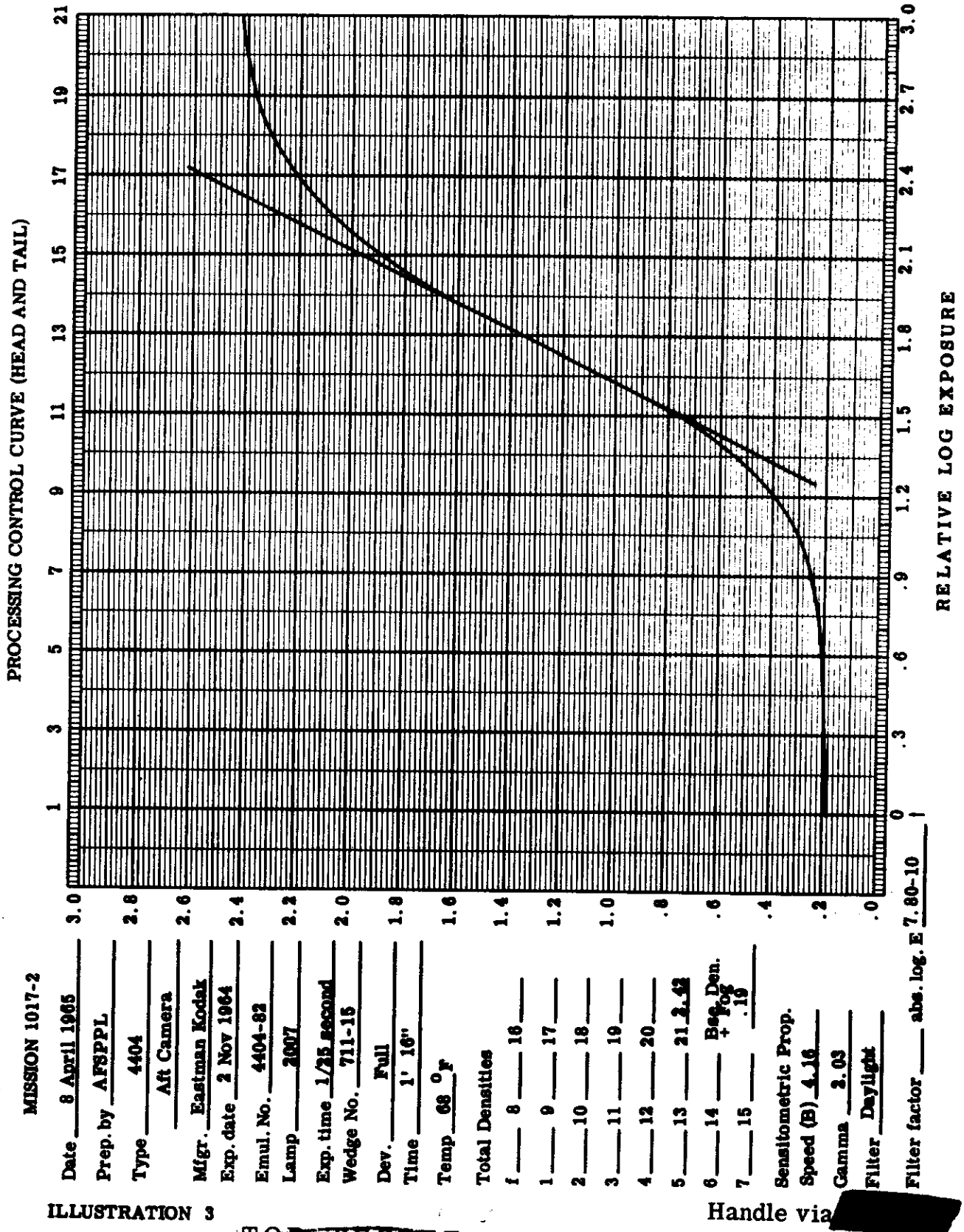


ILLUSTRATION 3



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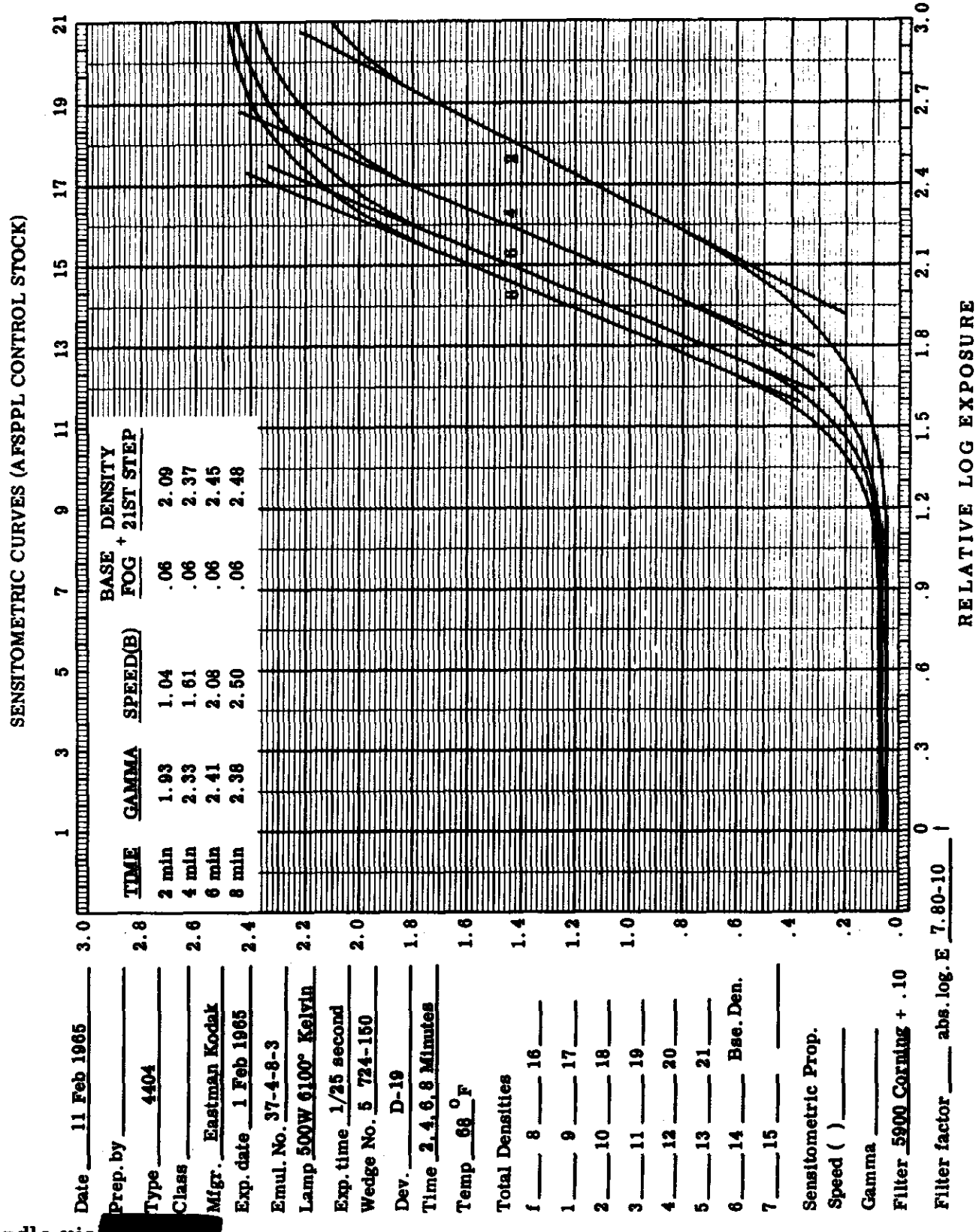


ILLUSTRATION 4

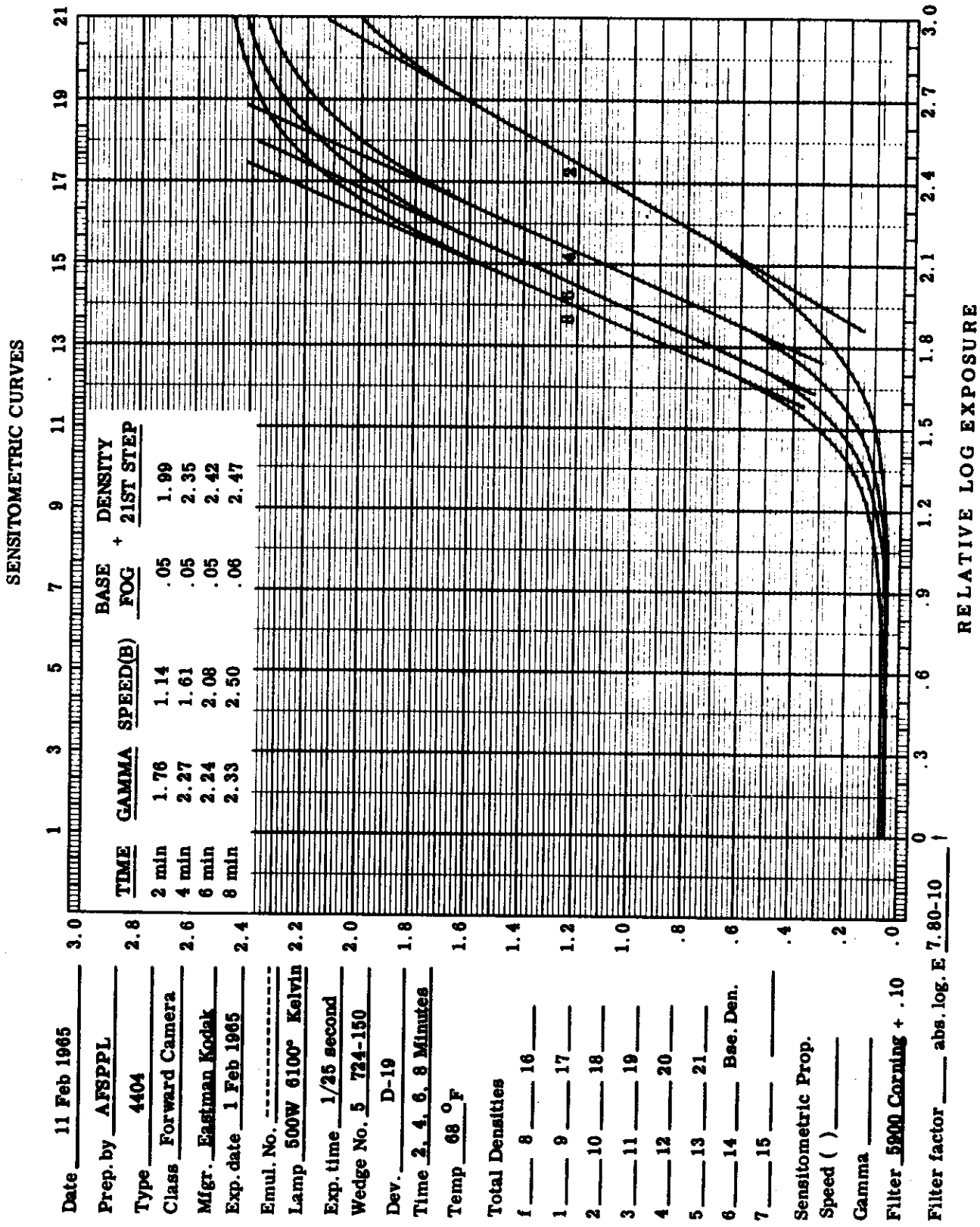
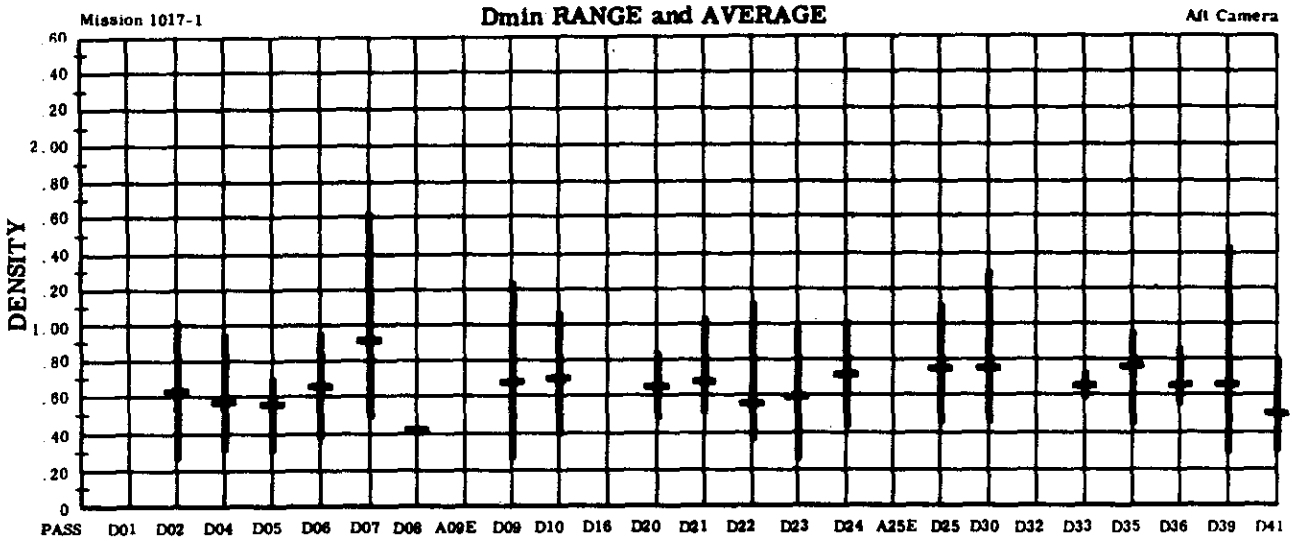
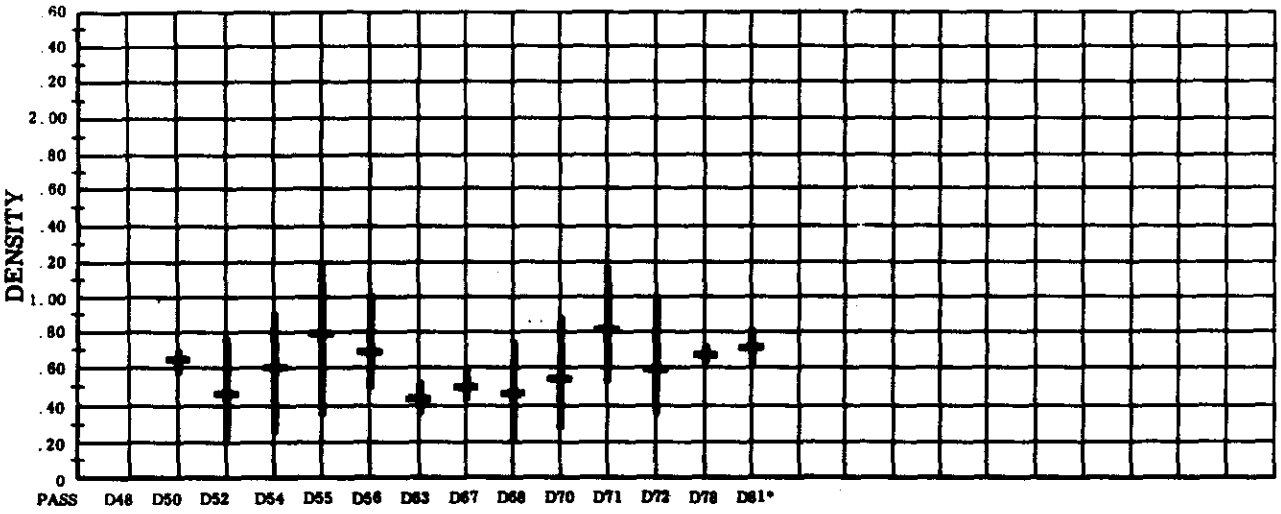


ILLUSTRATION 5

DIFFUSE DENSITY

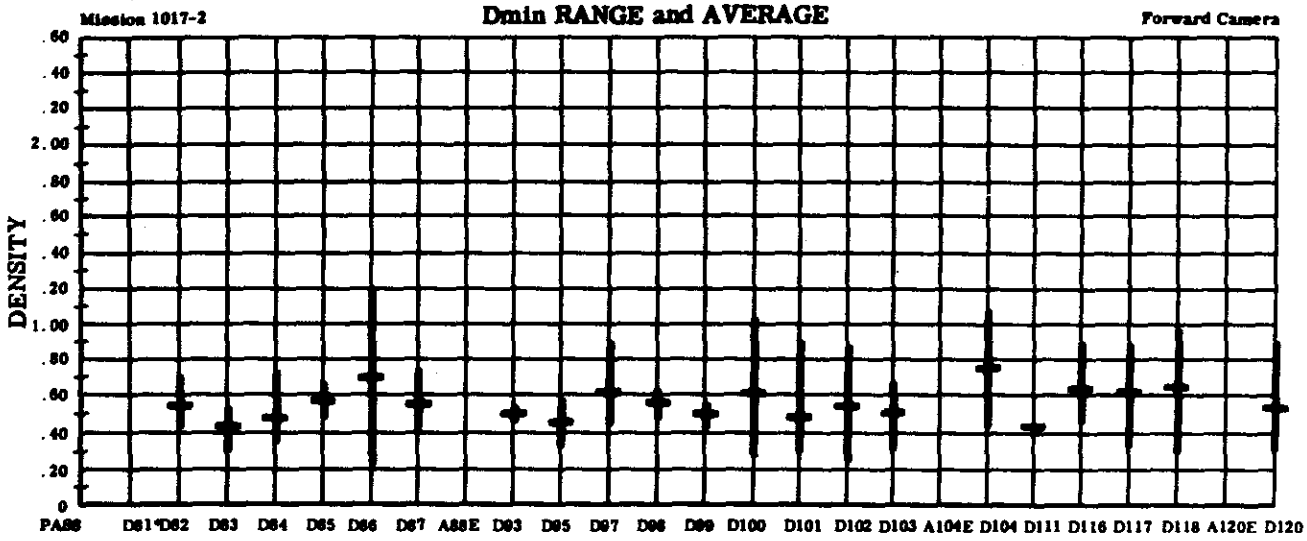
Dmin RANGE and AVERAGE

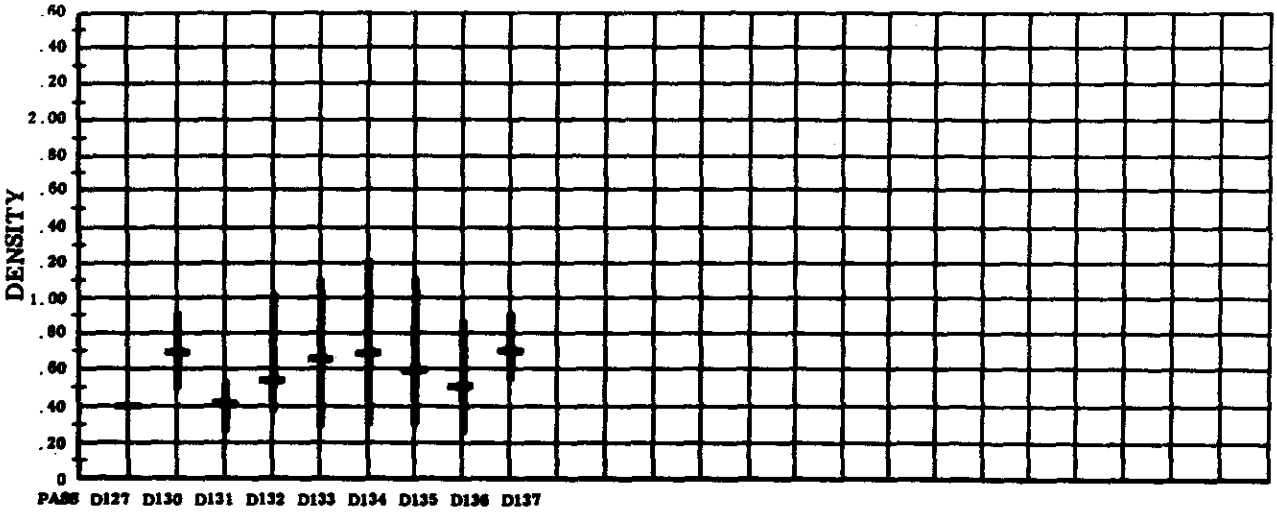




* Mission 1017-1 and 1017-2 were divided within Pass D81: Frames 001-078 (Fwd), 001-075 (Aft) as part of Mission 1017-1; and Frames 079-083 (Fwd), 076-082 (Aft) recovered with Mission 1017-2.

DIFFUSE DENSITY
Dmin RANGE and AVERAGE

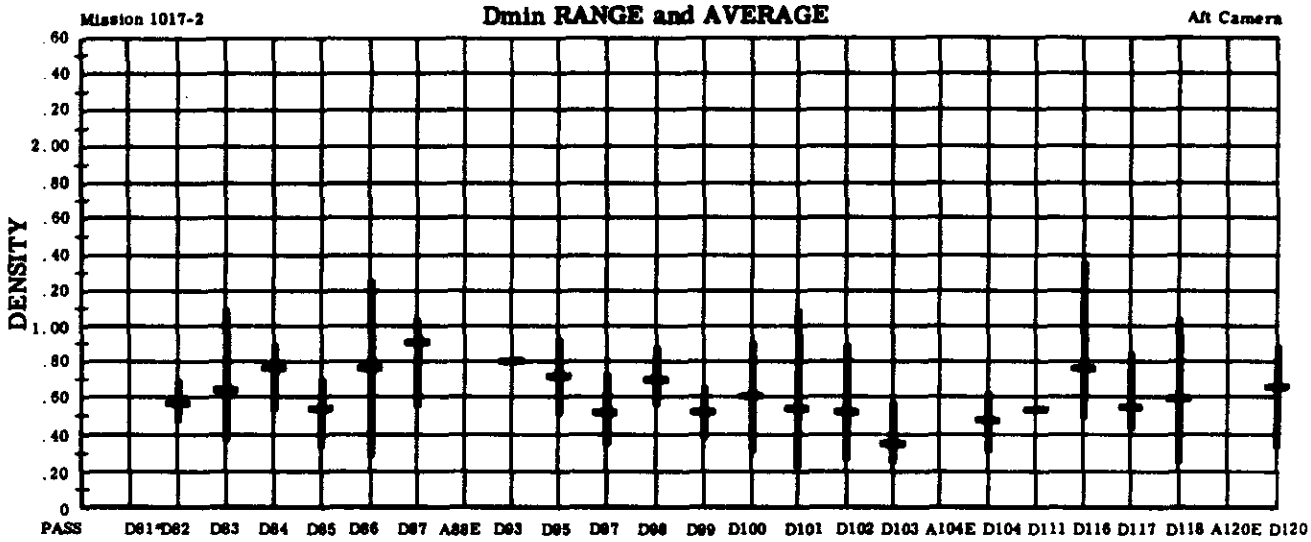


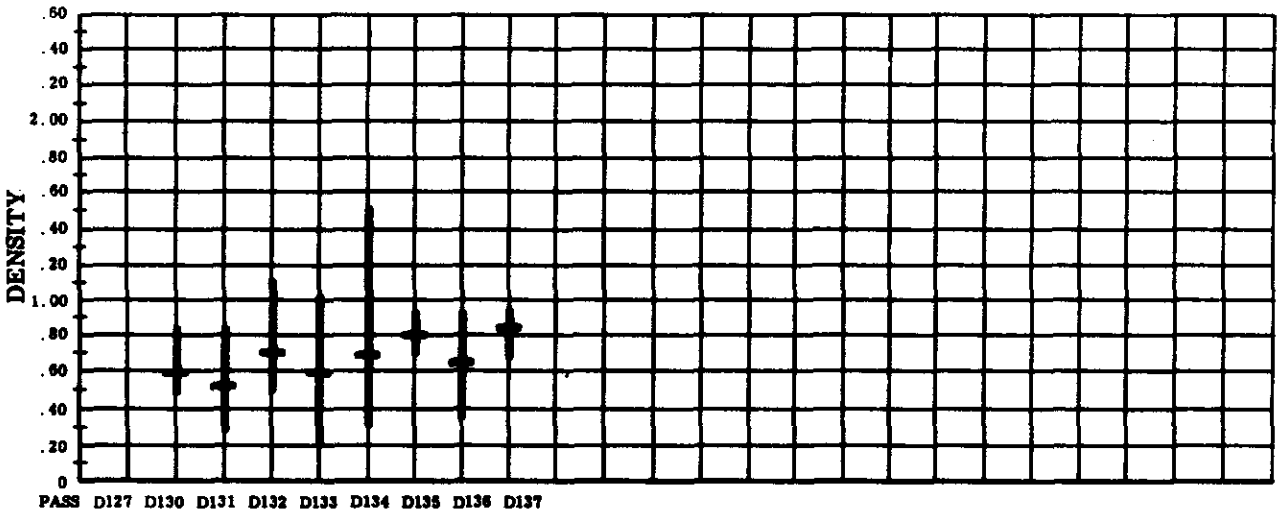


*Mission 1017-1 and 1017-2 were divided within Pass D81: Frames 001-078 (Fwd), 001-075 (Aft) as part of Mission 1017-1; and Frames 079-083 (Fwd), 076-082 (Aft) recovered with Mission 1017-2.

DIFFUSE DENSITY

Dmin RANGE and AVERAGE

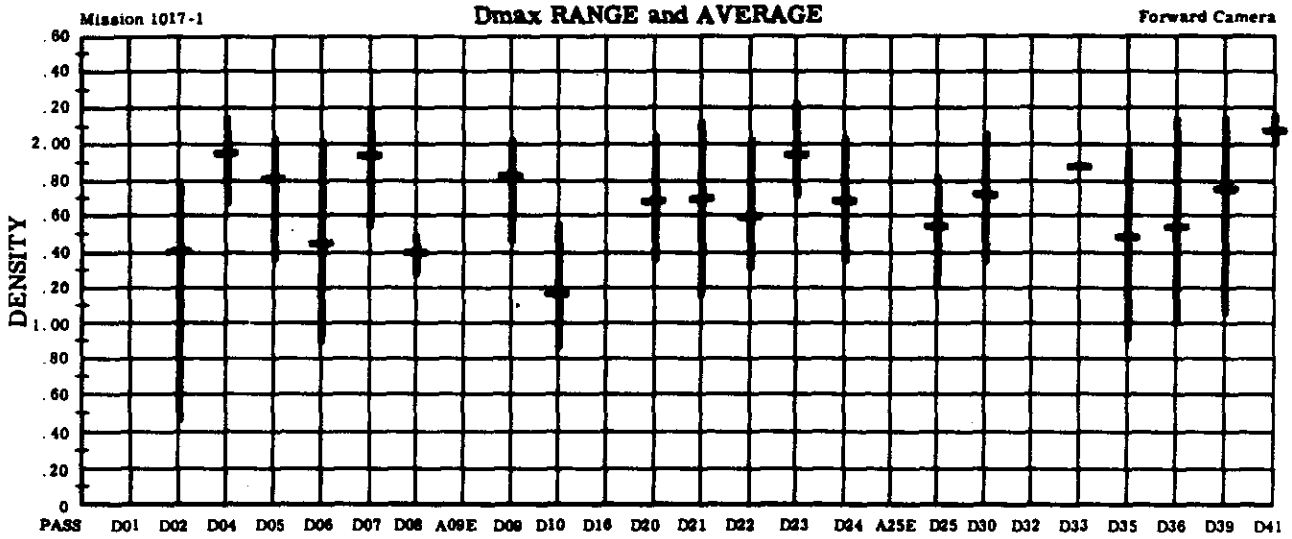


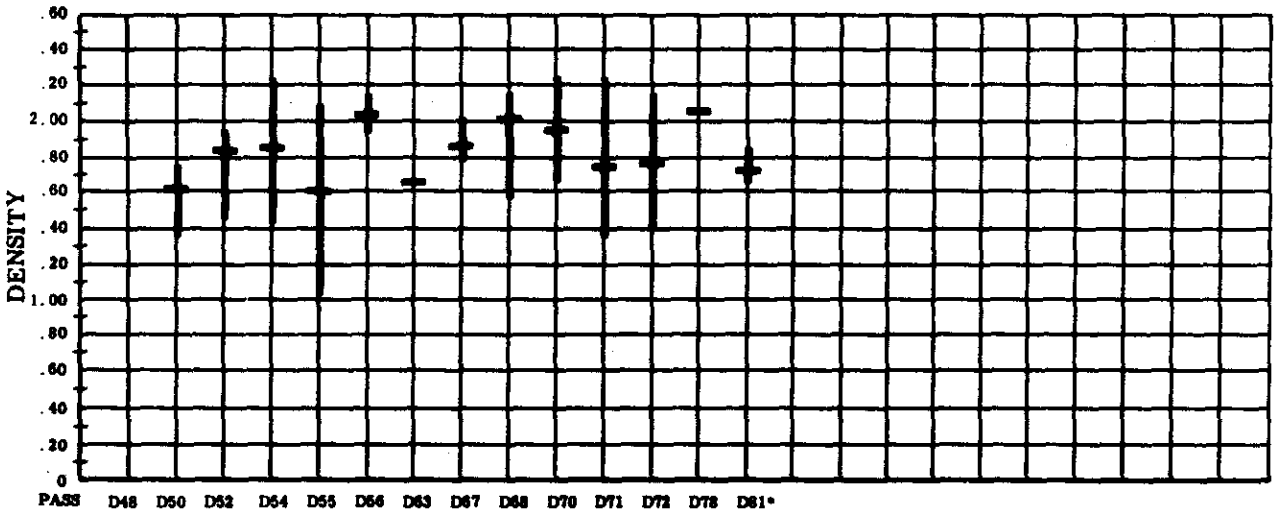


* Mission 1017-1 and 1017-2 were divided within Pass D81: Frames 001-078 (Fwd), 001-075 (Aft) as part of Mission 1017-1; and Frames 079-083 (Fwd), 076-082 (Aft) recovered with Mission 1017-2.

DIFFUSE DENSITY

Dmax RANGE and AVERAGE



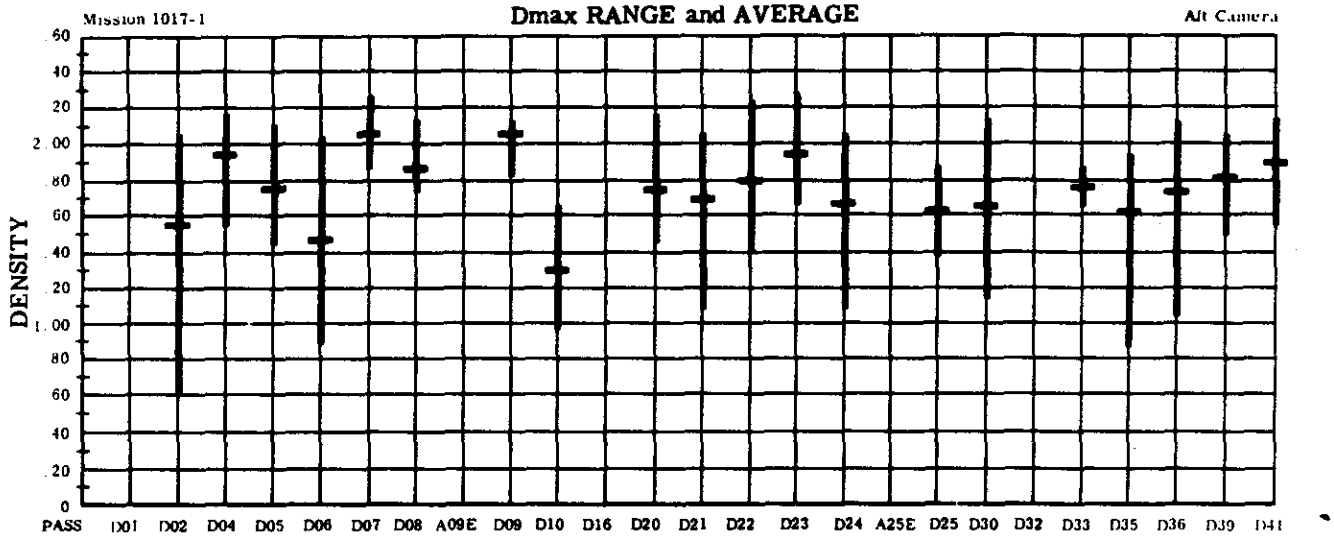


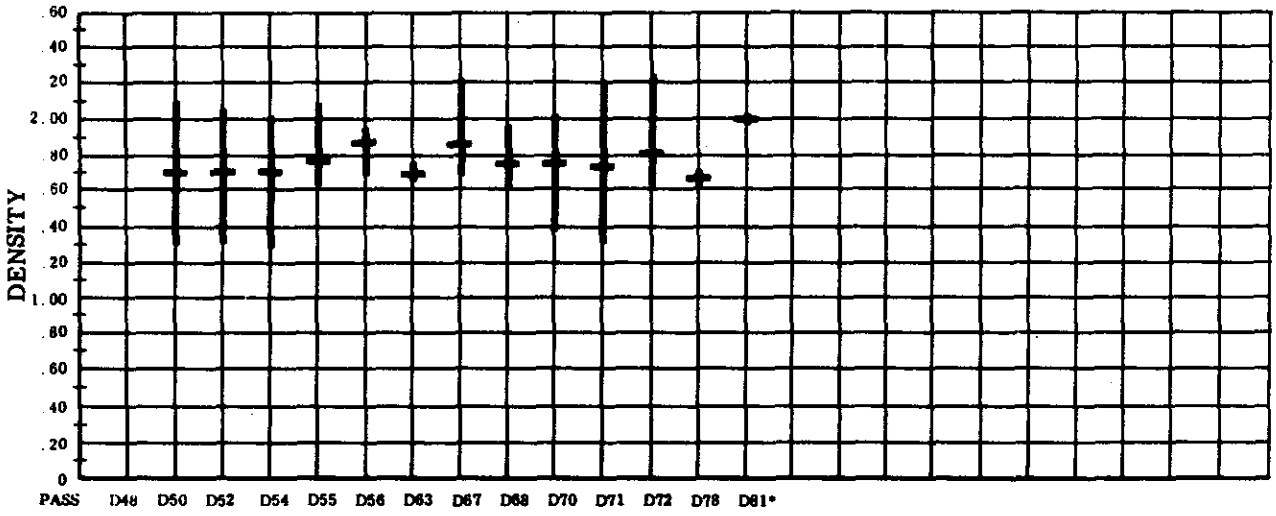
*Mission 1017-1 and 1017-2 were divided within Pass D81: Frames 001-078 (Fwd), 001-075 (Aft) as part of Mission 1017-1; and Frames 079-083 (Fwd), 076-082 (Aft) recovered with Mission 1017-2.

ILLUSTRATION 7

DIFFUSE DENSITY

Dmax RANGE and AVERAGE

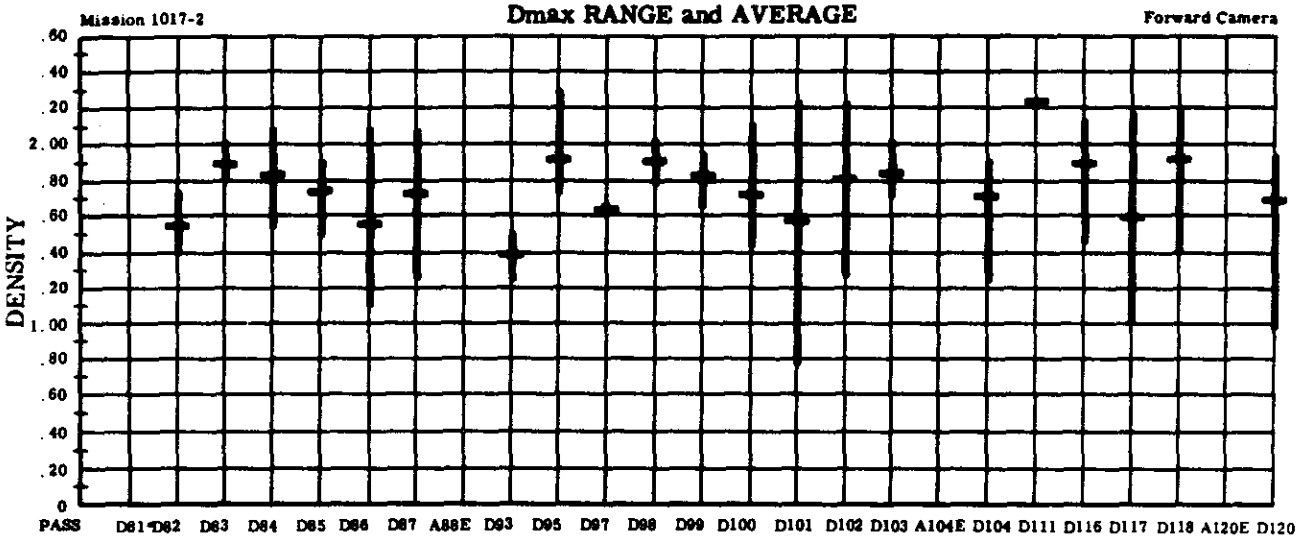


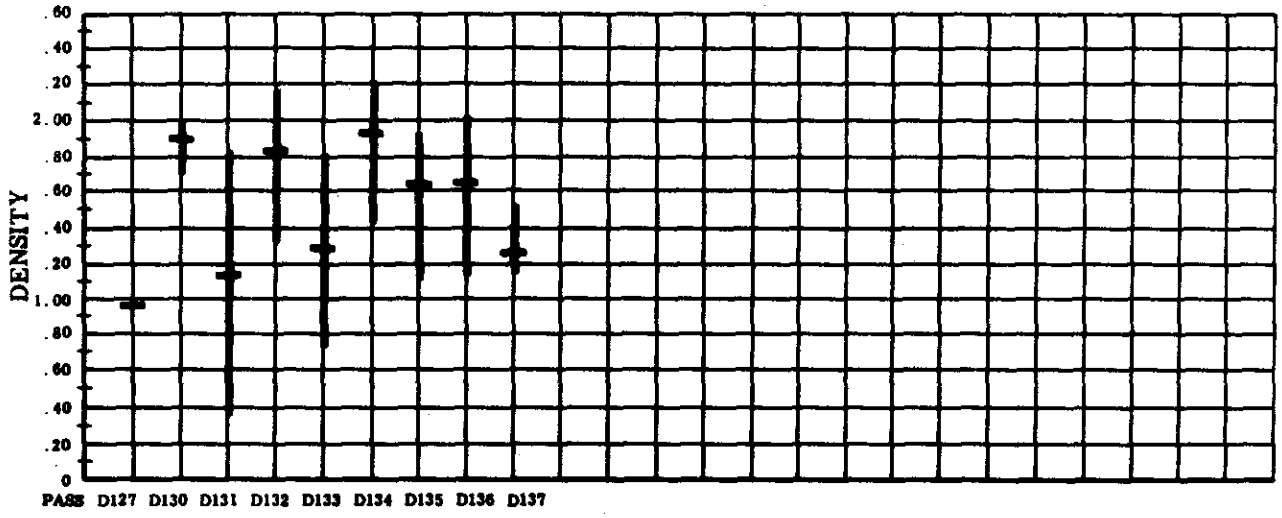


*Mission 1017-1 and 1017-2 were divided within Pass D81: Frames 001-078 (Fwd), 001-075 (Aft) as part of Mission 1017-1; and Frames 079-083 (Fwd), 076-082 (Aft) recovered with Mission 1017-2.

DIFFUSE DENSITY

Dmax RANGE and AVERAGE



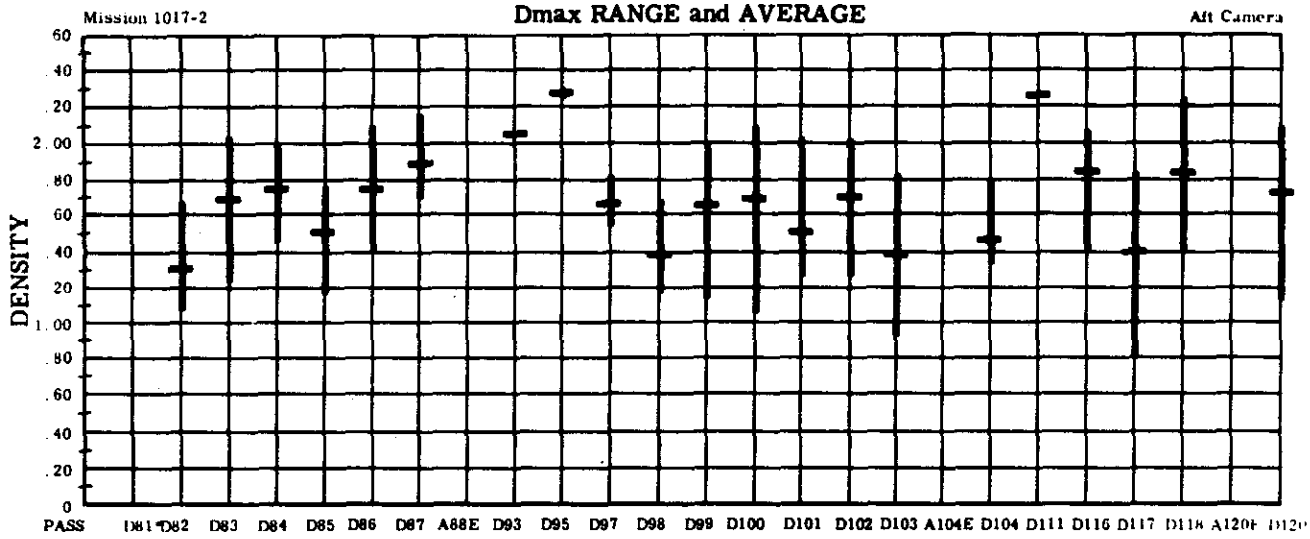


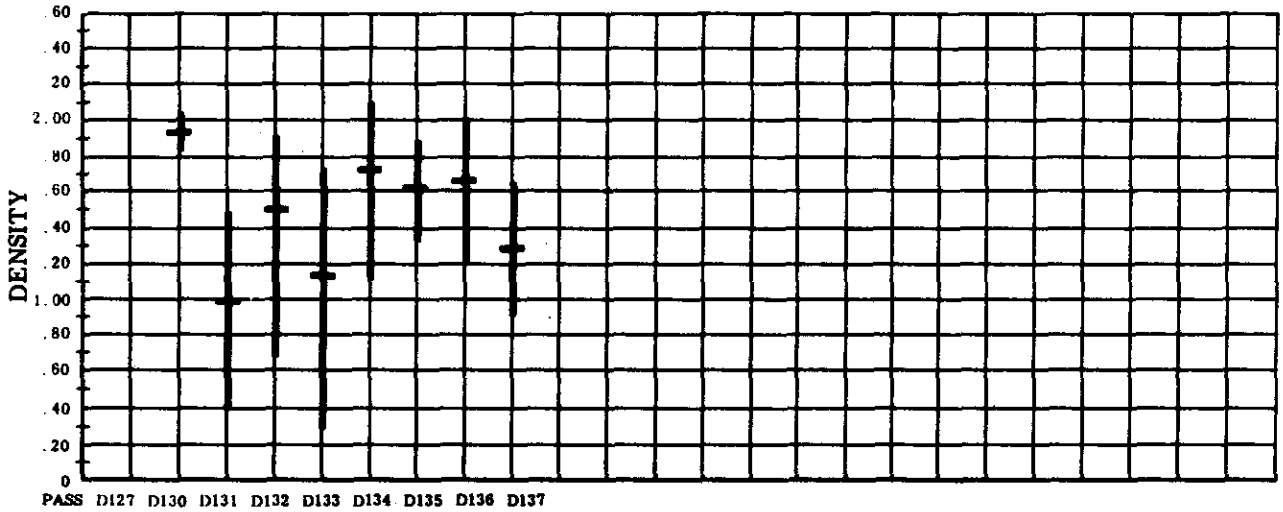
* Mission 1017-1 and 1017-2 were divided within Pass D81: Frames 001-078 (Fwd), 001-075 (Aft) as part of Mission 1017-1; and Frames 079-083 (Fwd), 076-082 (Aft) recovered with Mission 1017-2.

ILLUSTRATION 7

DIFFUSE DENSITY

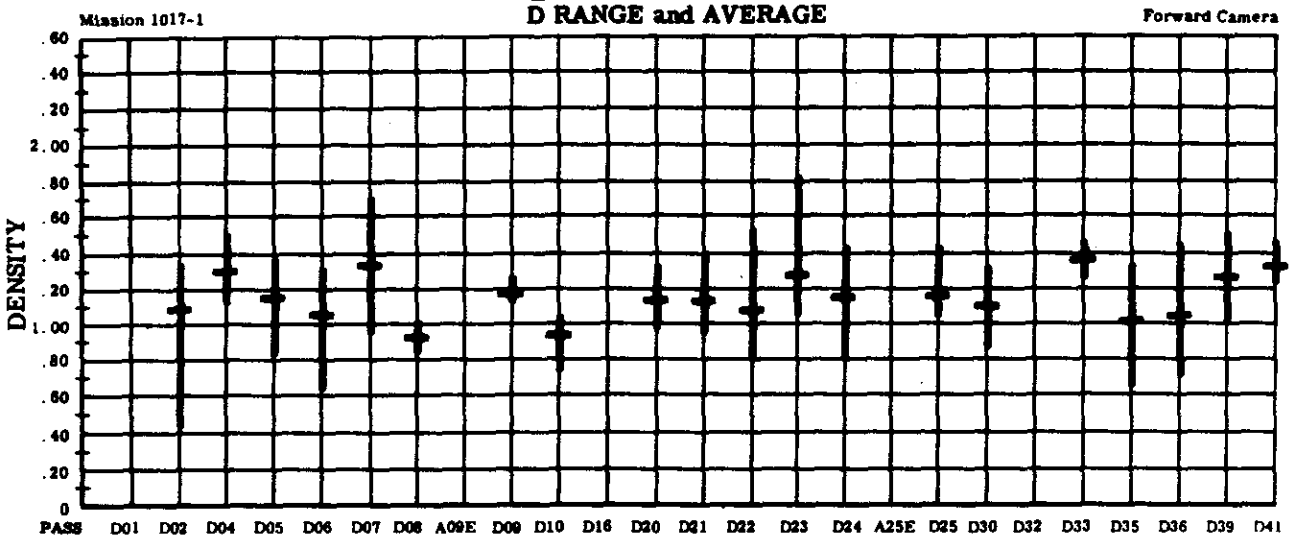
Dmax RANGE and AVERAGE

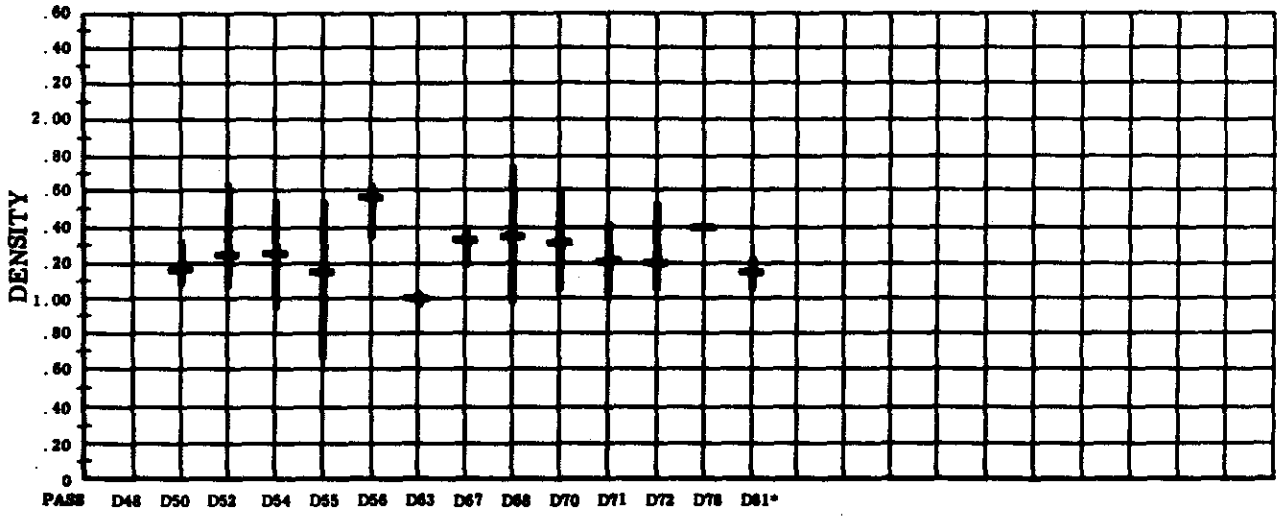




* Mission 1017-1 and 1017-2 were divided within Pass D81: Frames 001-078 (Fwd), 001-075 (Aft) as part of Mission 1017-1; and Frames 079-083 (Fwd), 076-082 (Aft) recovered with Mission 1017-2.

DIFFUSE DENSITY
$\bar{D}$ RANGE and AVERAGE

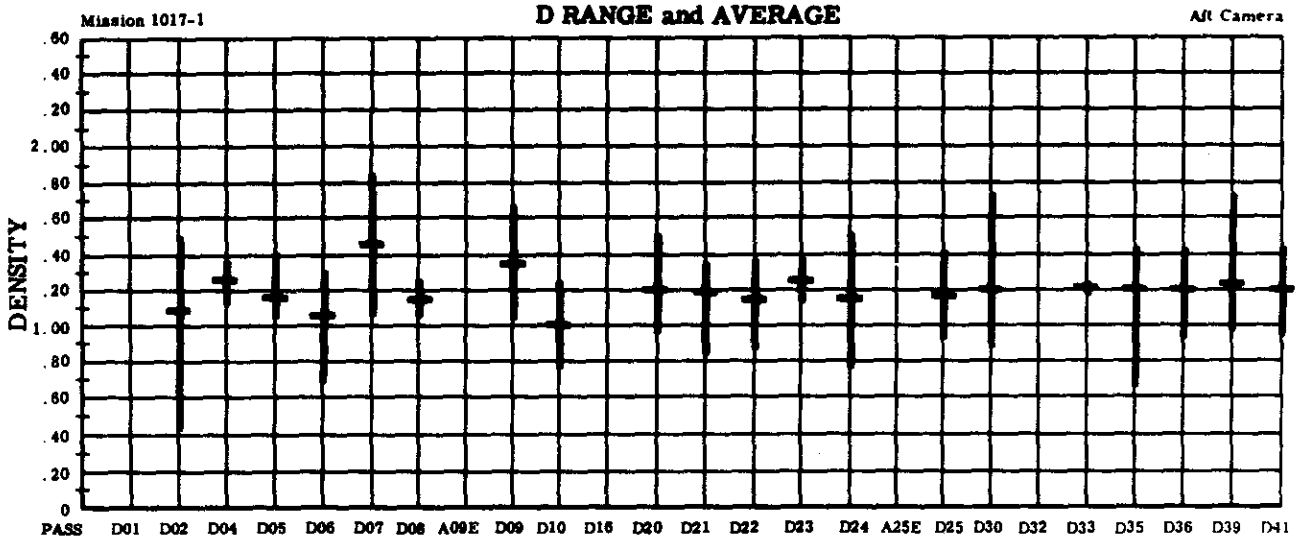


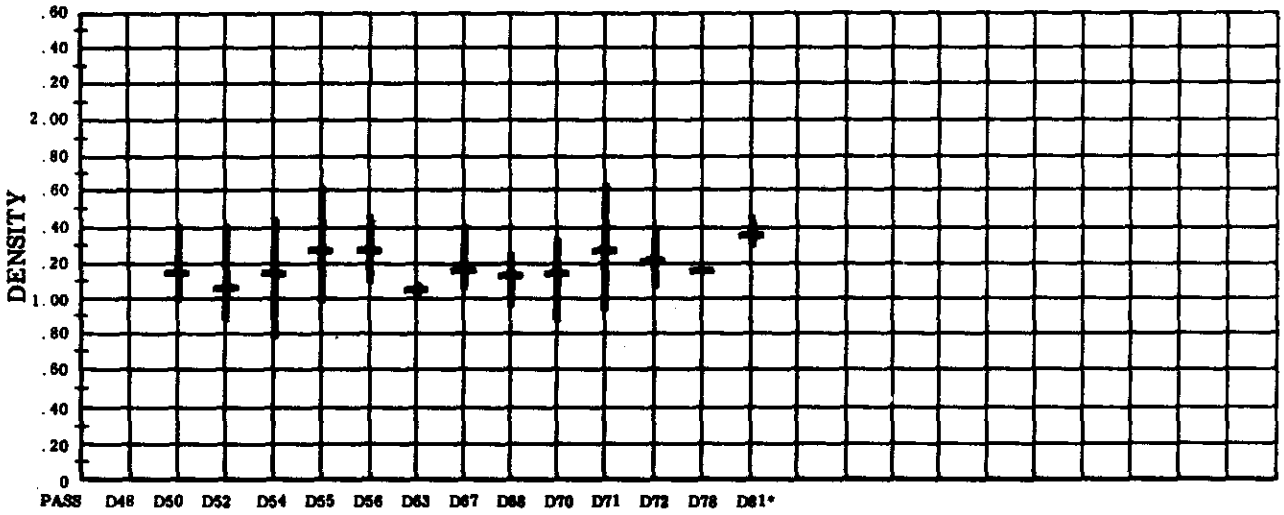


*Mission 1017-1 and 1017-2 were divided within Pass D81: Frames 001-078 (Fwd), 001-075 (Aft) as part of Mission 1017-1; and Frames 079-083 (Fwd), 076-082 (Aft) recovered with Mission 1017-2.

ILLUSTRATION 8

DIFFUSE DENSITY
$\bar{D}$ RANGE and AVERAGE

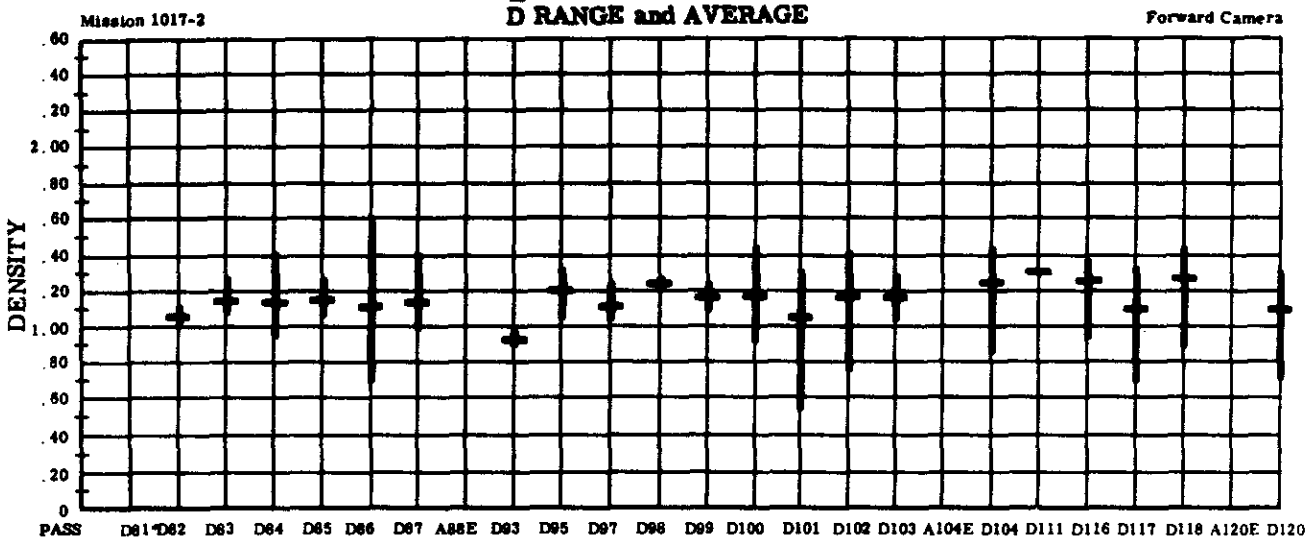


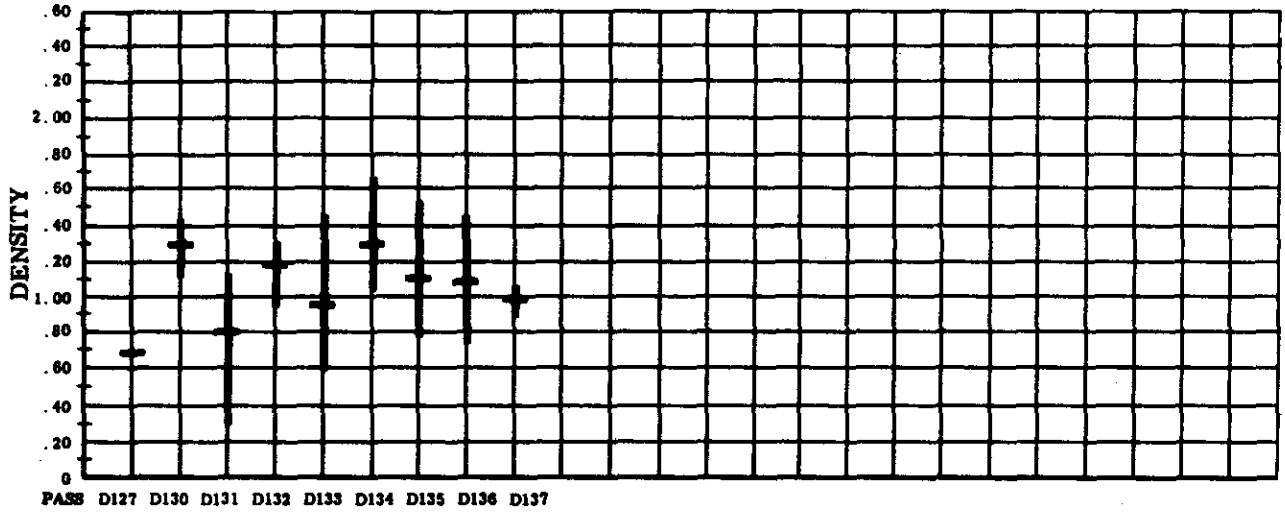


* Mission 1017-1 and 1017-2 were divided within Pass D81: Frames 001-078 (Fwd), 001-075 (Aft) as part of Mission 1017-1; and Frames 079-083 (Fwd), 076-082 (Aft) recovered with Mission 1017-2.

DIFFUSE DENSITY

$\bar{D}$ RANGE and AVERAGE





* Mission 1017-1 and 1017-2 were divided within Pass D81: Frames 001-078 (Fwd), 001-075 (Aft) as part of Mission 1017-1; and Frames 079-083 (Fwd), 076-082 (Aft) recovered with Mission 1017-2.

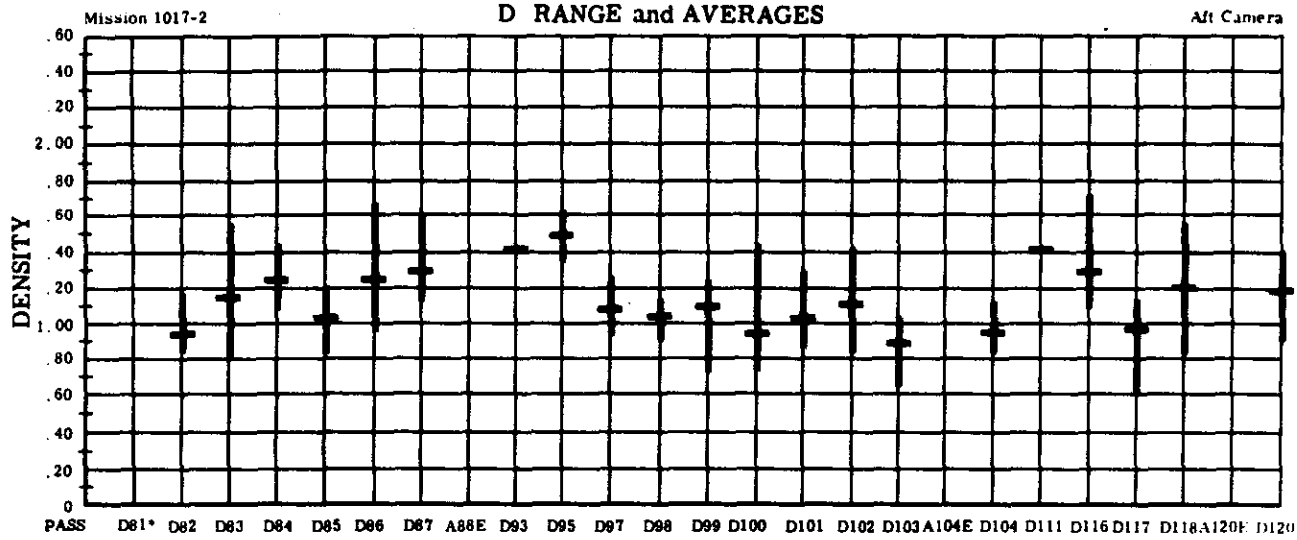
ILLUSTRATION 8

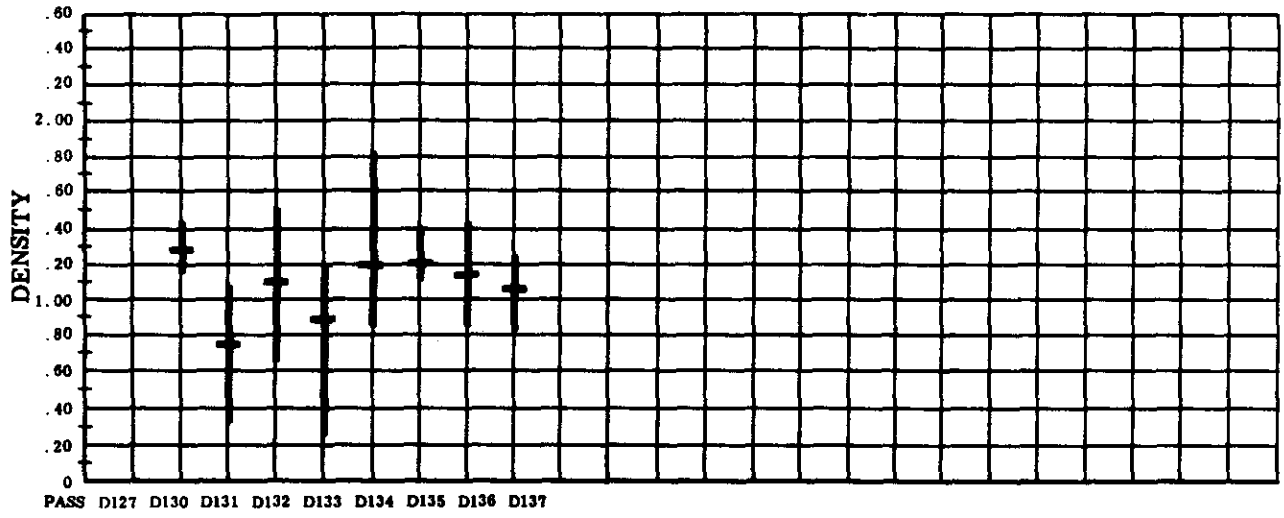
[redacted]

SPPL TECHNICAL REPORT NO. [redacted]

DIFFUSE DENSITY

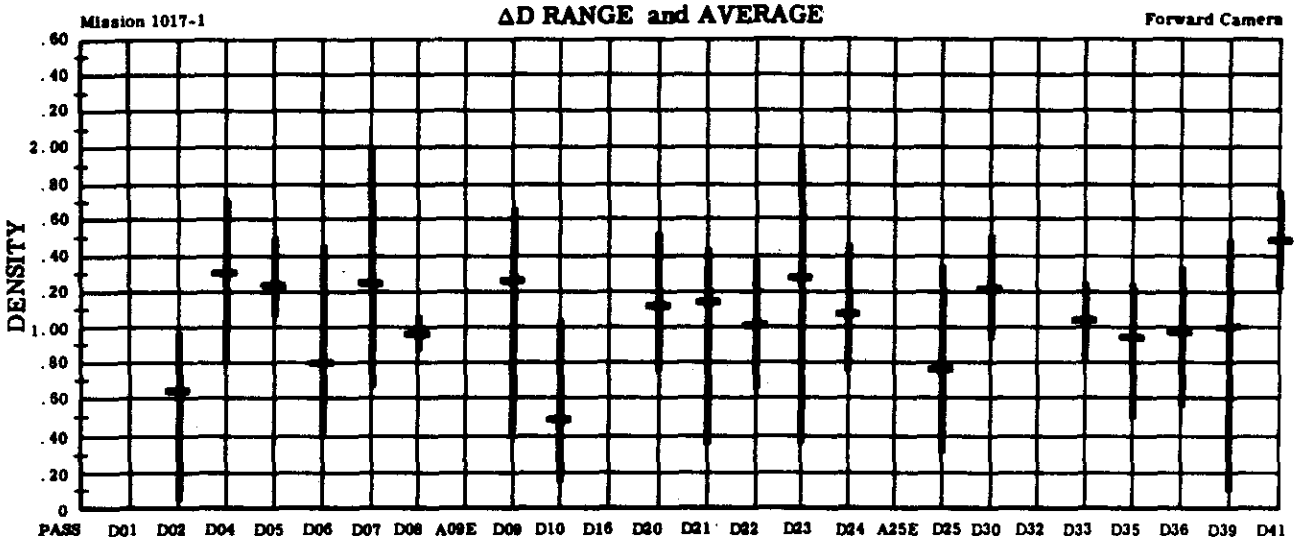
$\bar{D}$ RANGE and AVERAGES

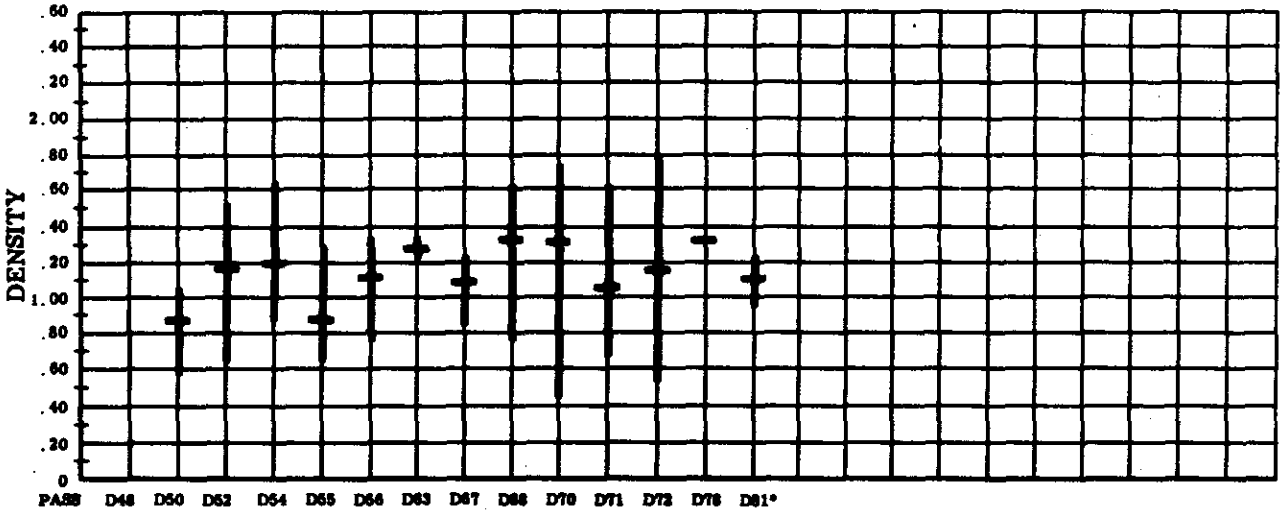




* Mission 1017-1 and 1017-2 were divided within Pass D81: Frames 001-078 (Fwd), 001-075 (Aft) as part of Mission 1017-1; and Frames 079-083 (Fwd), 076-082 (Aft) recovered with Mission 1017-2.

DIFFUSE DENSITY
ΔD RANGE and AVERAGE





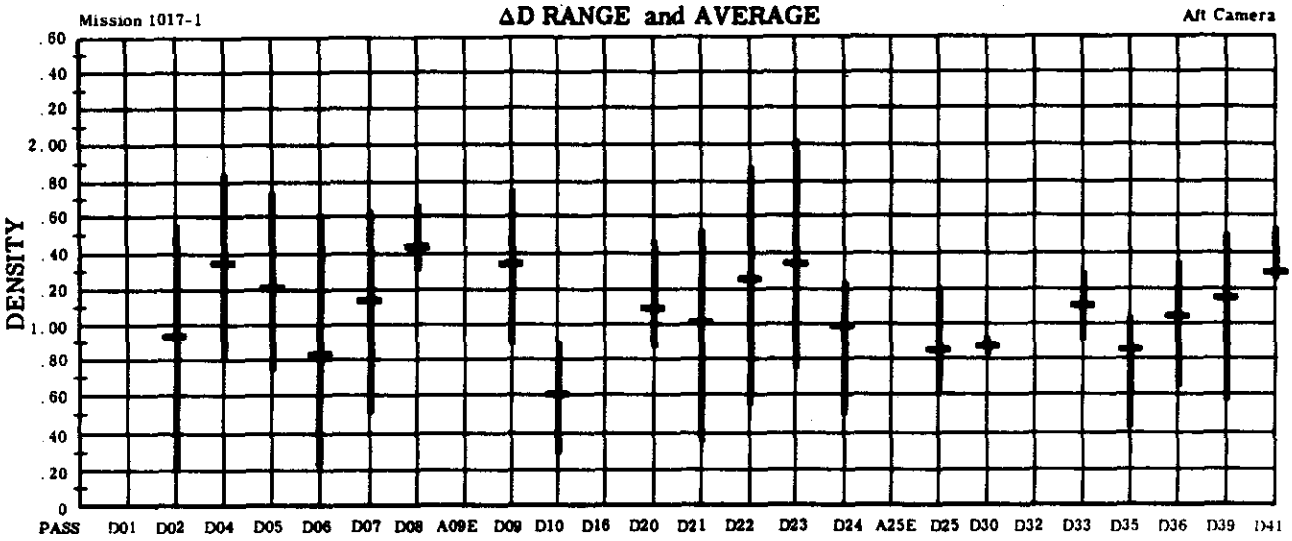
*Mission 1017-1 and 1017-2 were divided within Pass D81: Frames 001-078 (Fwd), 001-075 (Aft) as part of Mission 1017-1; and Frames 079-083 (Fwd), 076-082 (Aft) recovered with Mission 1017-2.

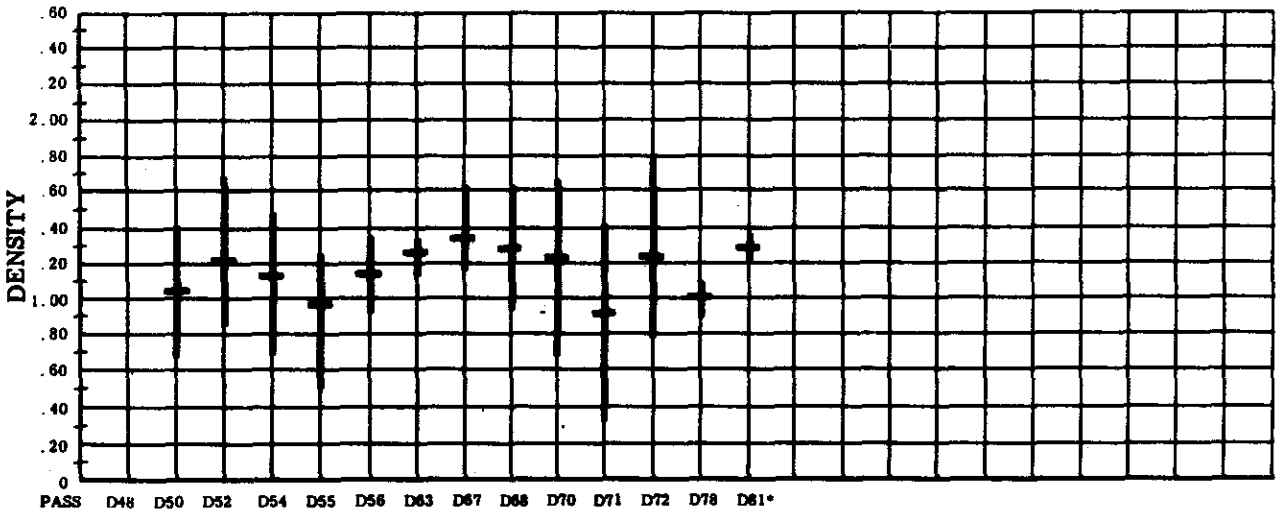
ILLUSTRATION 9

DIFFUSE DENSITY

ΔD RANGE and AVERAGE

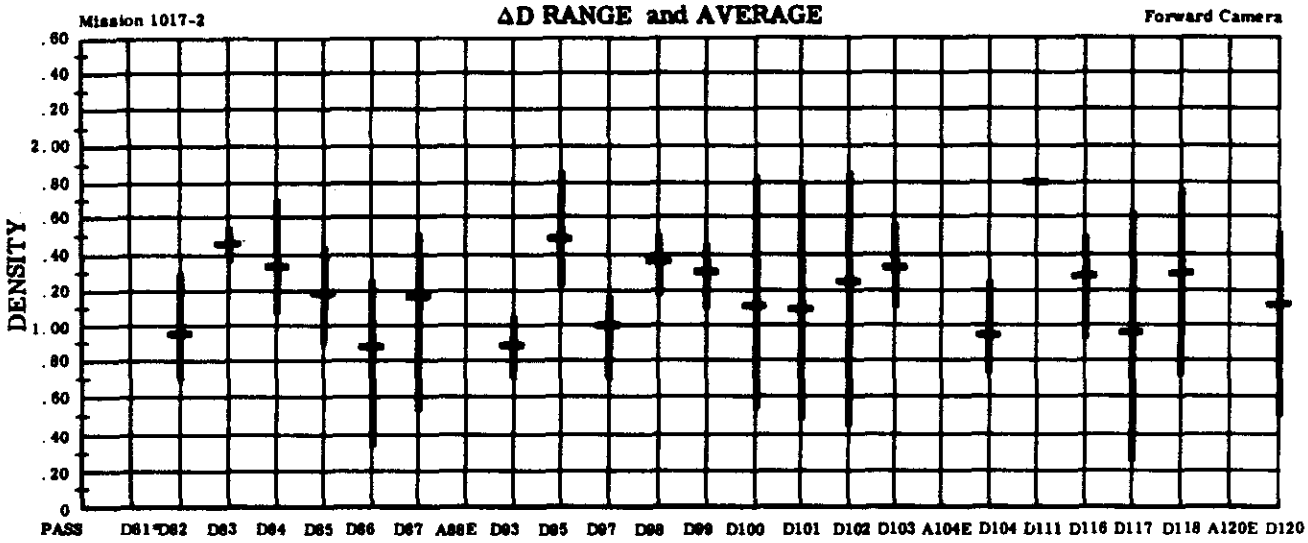
Mission 1017-1 Aft Camera

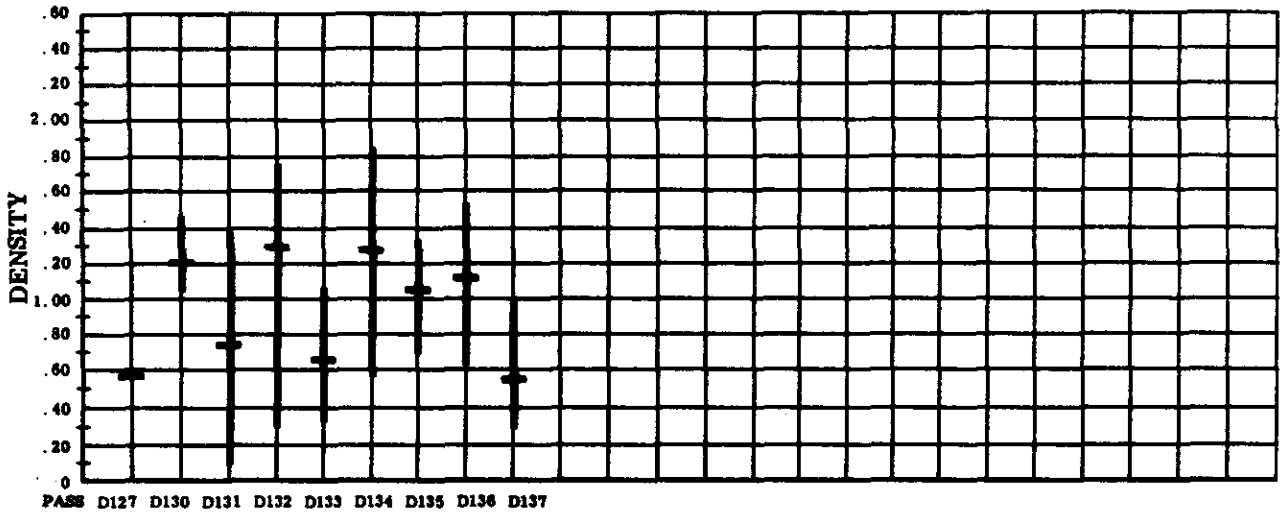




* Mission 1017-1 and 1017-2 were divided within Pass D81: Frames 001-078 (Fwd), 001-075 (Aft) as part of Mission 1017-1; and Frames 079-083 (Fwd), 076-082 (Aft) recovered with Mission 1017-2.

DIFFUSE DENSITY
ΔD RANGE and AVERAGE



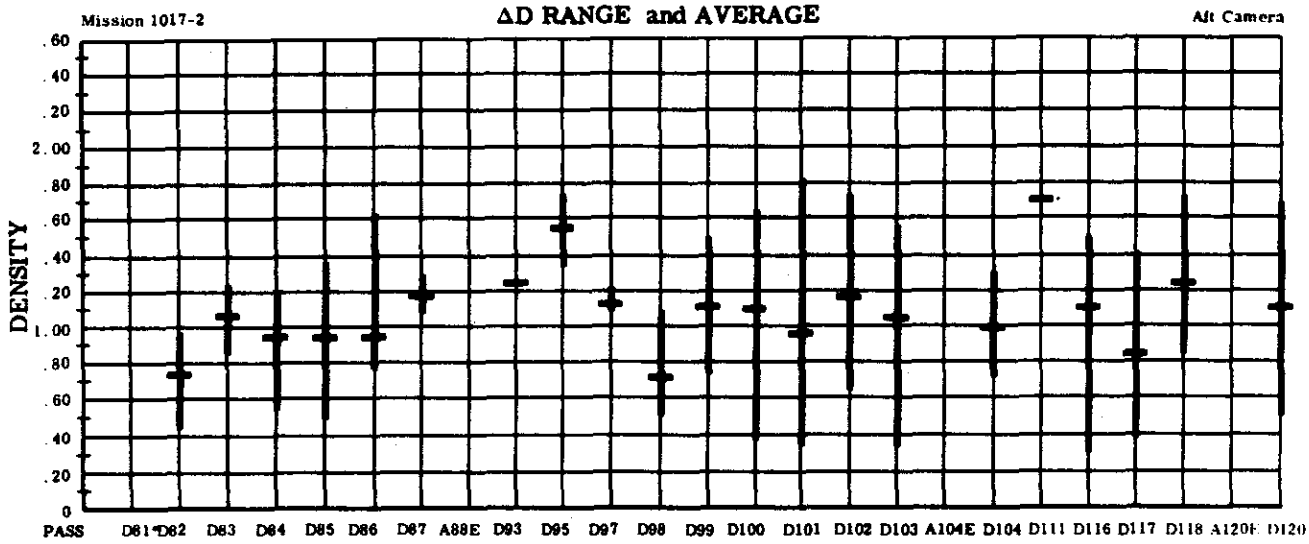


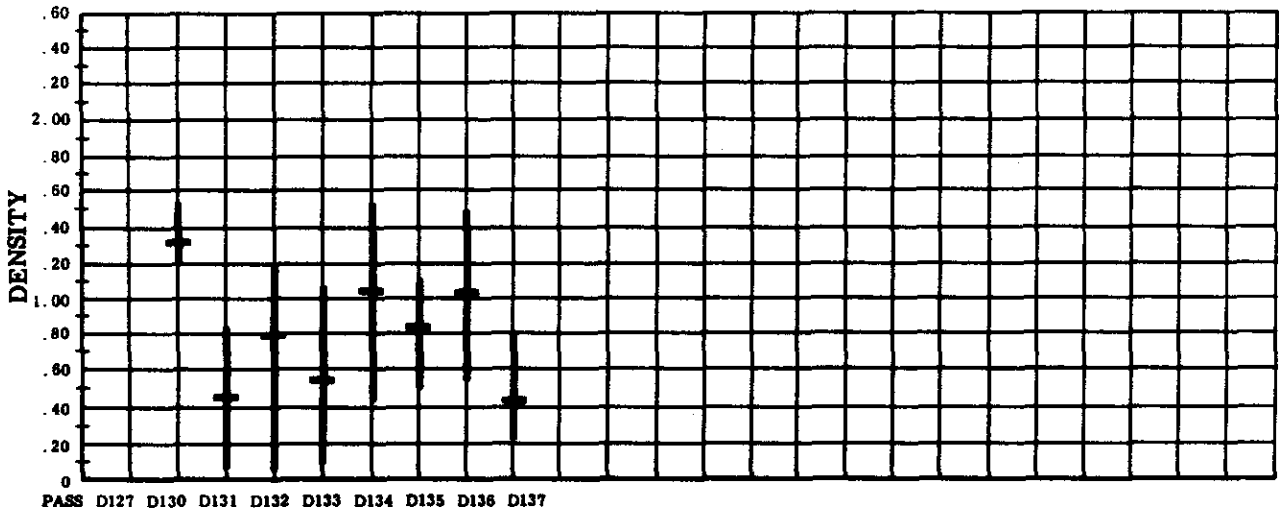
* Mission 1017-1 and 1017-2 were divided within Pass D81: Frames 001-078 (Fwd), 001-075 (Aft) as part of Mission 1017-1; and Frames 079-083 (Fwd), 076-082 (Aft) recovered with Mission 1017-2.

ILLUSTRATION 9

SPPL TECHNICAL REPORT NO [redacted]

DIFFUSE DENSITY
ΔD RANGE and AVERAGE





*Mission 1017-1 and 1017-2 were divided within Pass D81: Frames 001-078 (Fwd), 001-075 (Aft) as part of Mission 1017-1; and Frames 079-083 (Fwd), 076-082 (Aft) recovered with Mission 1017-2.

FREQUENCY DISTRIBUTION
Dmin

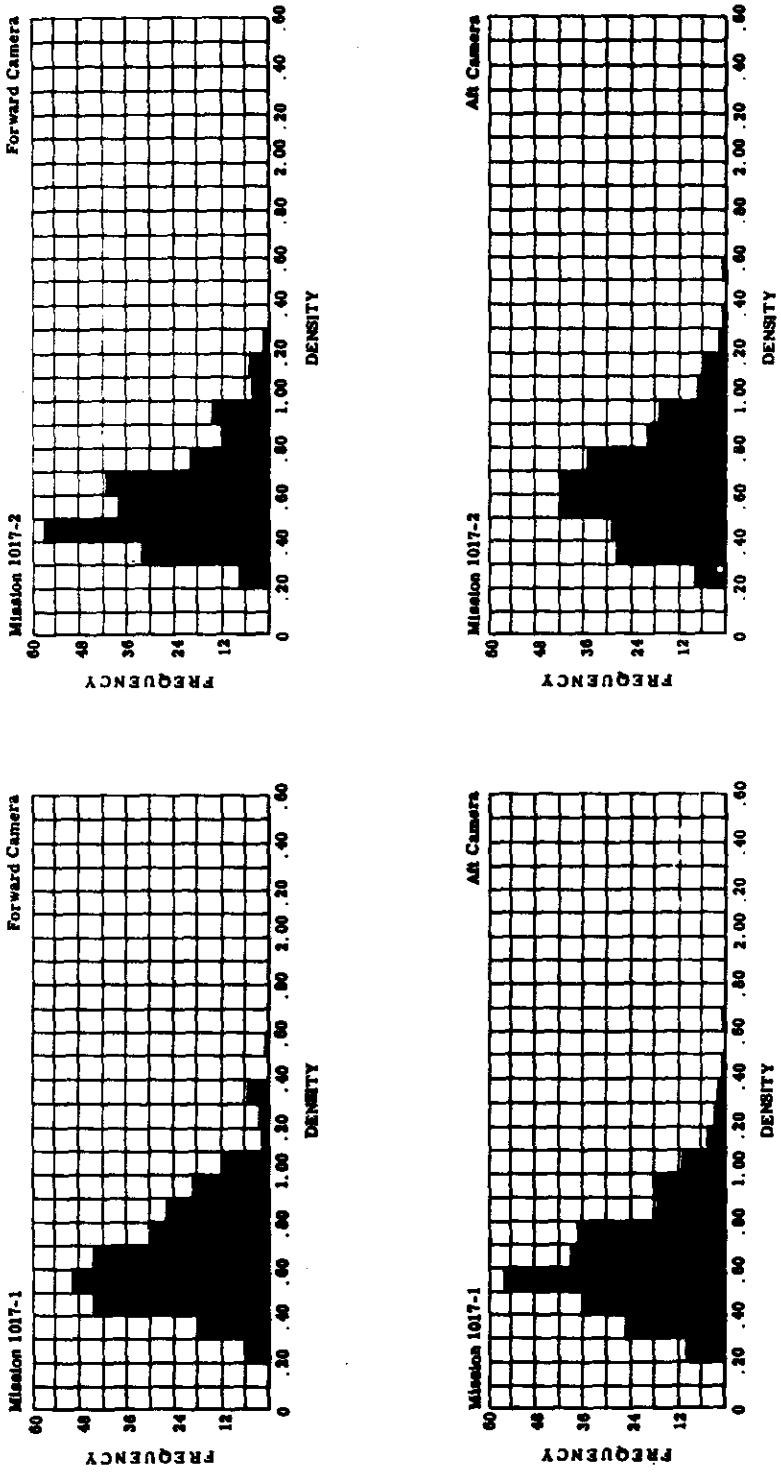
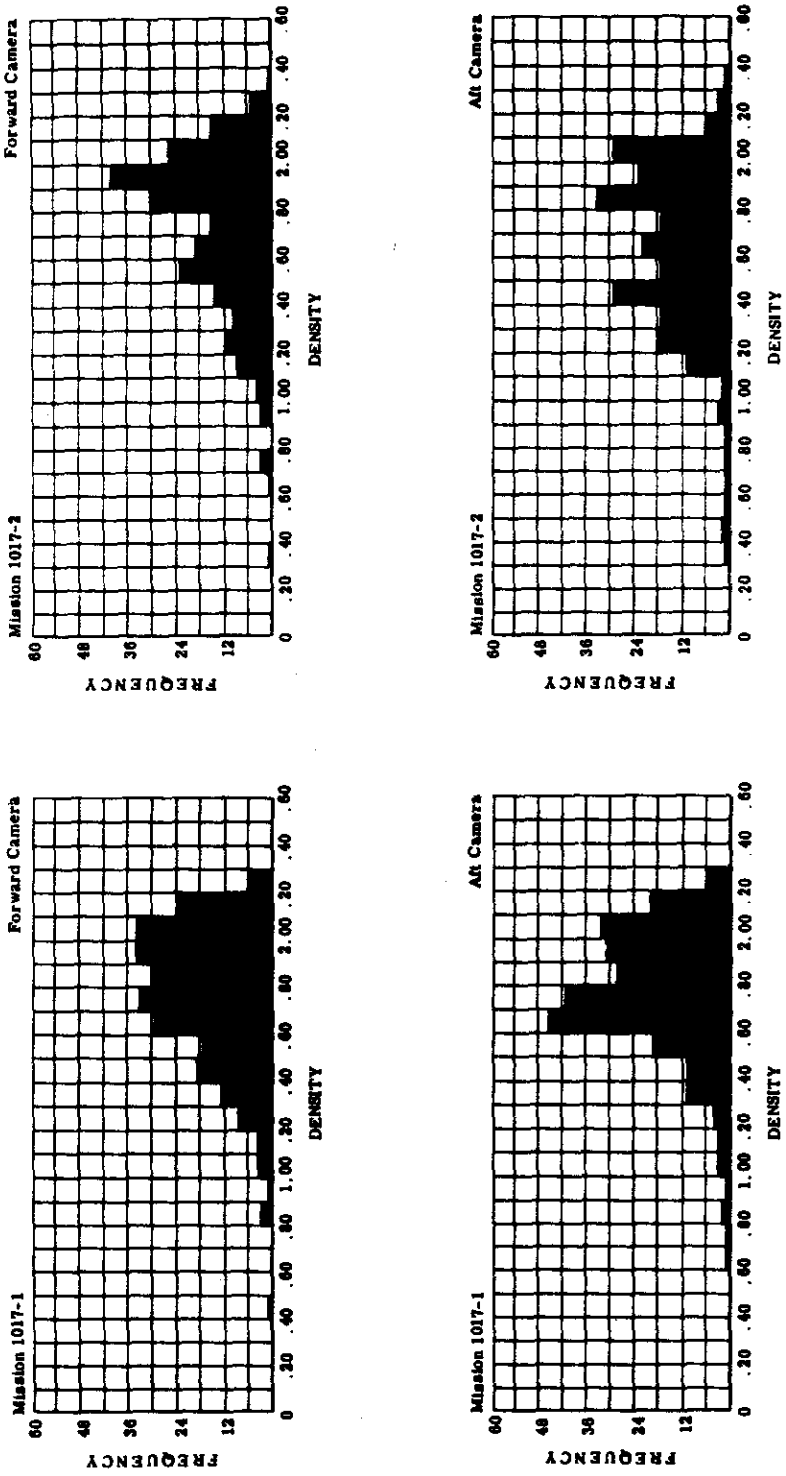


ILLUSTRATION 10

FREQUENCY DISTRIBUTION
Dmax



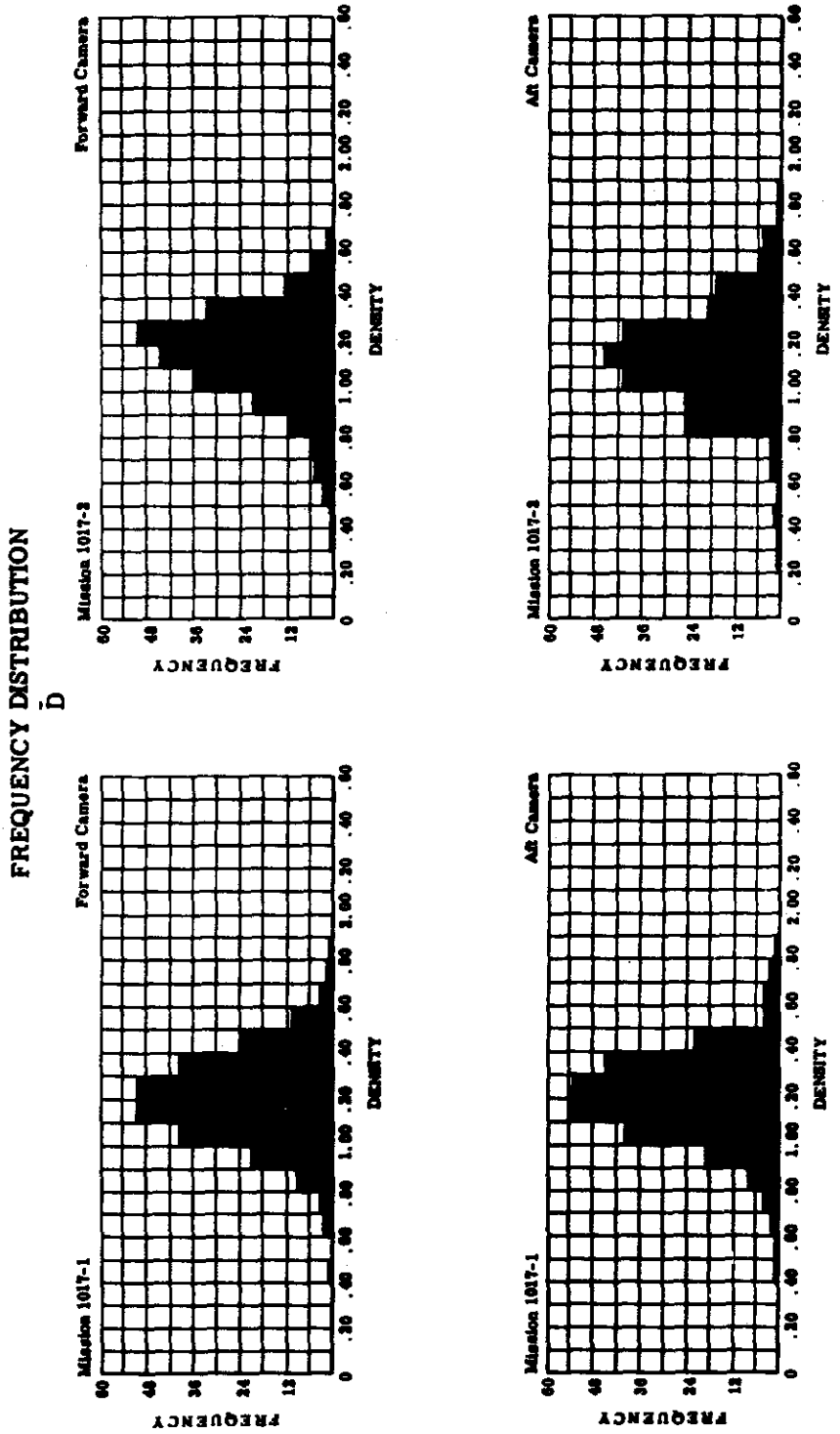
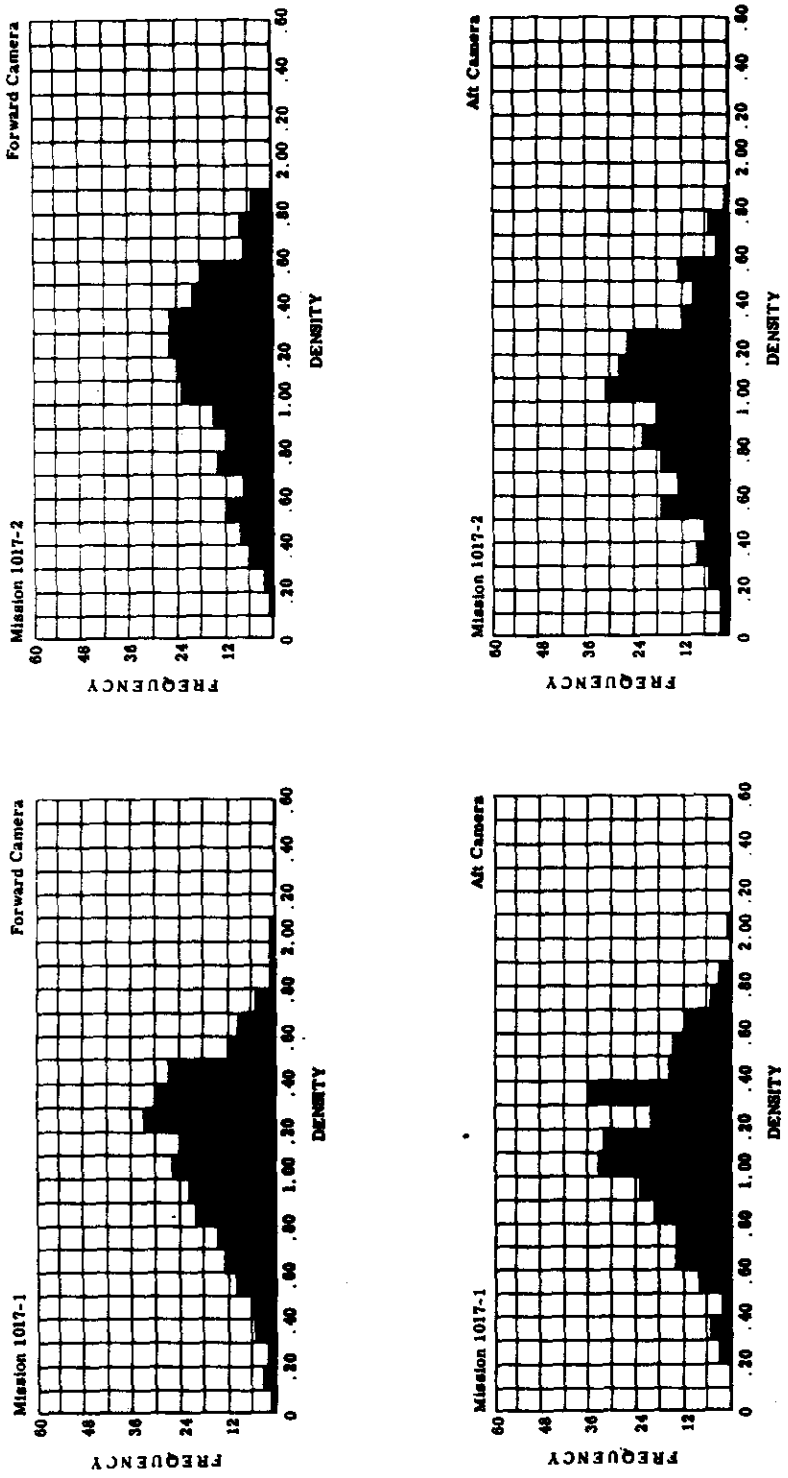
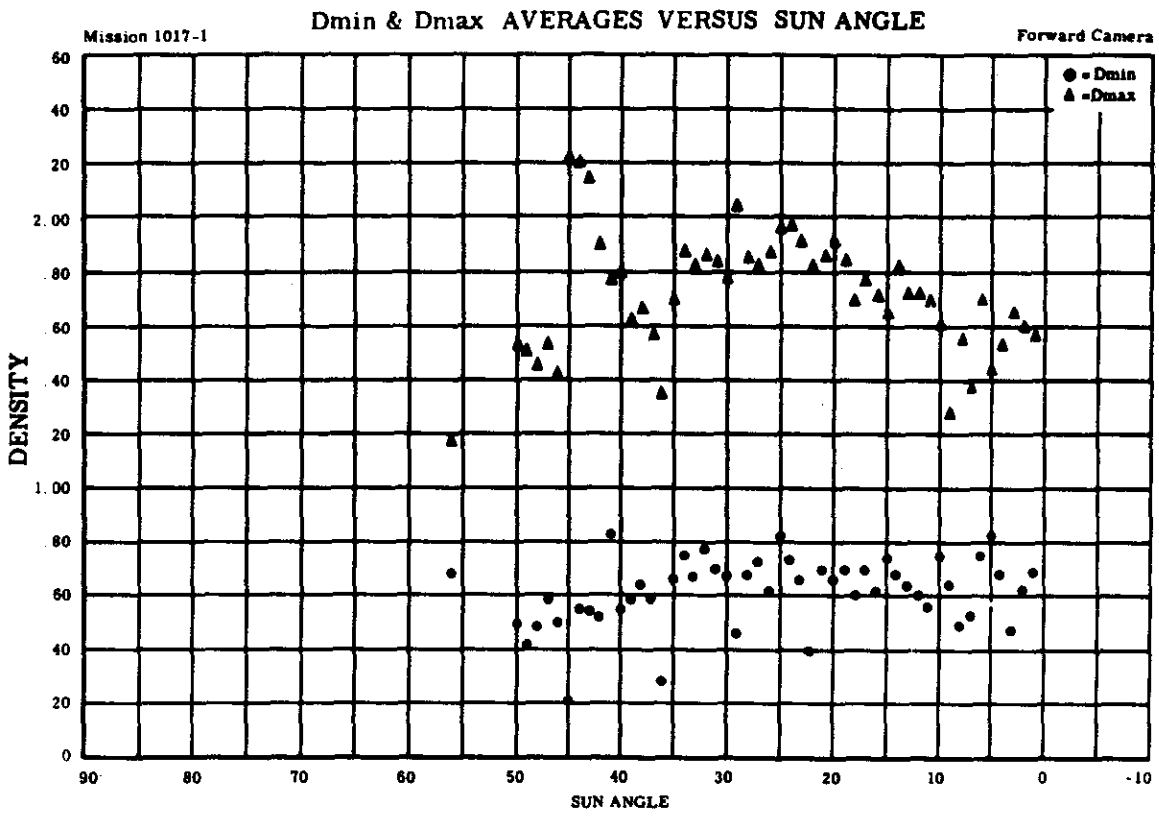


ILLUSTRATION 12

FREQUENCY DISTRIBUTION

ΔD





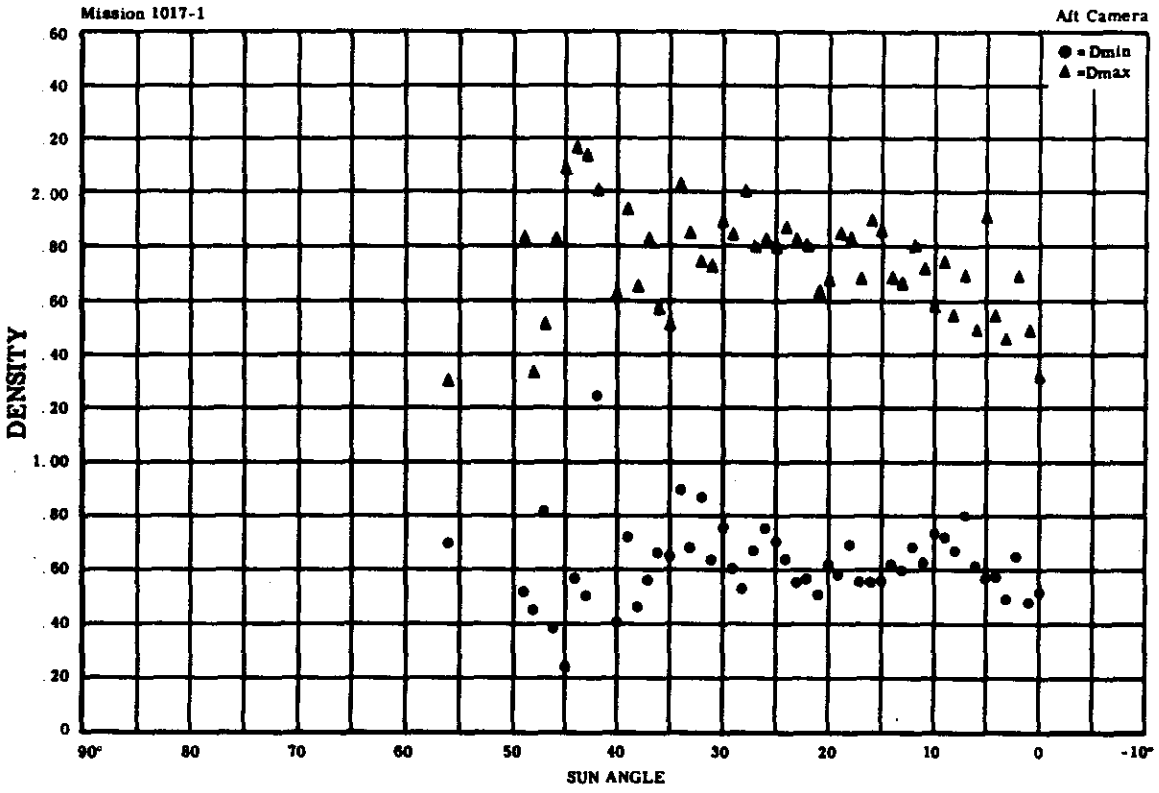
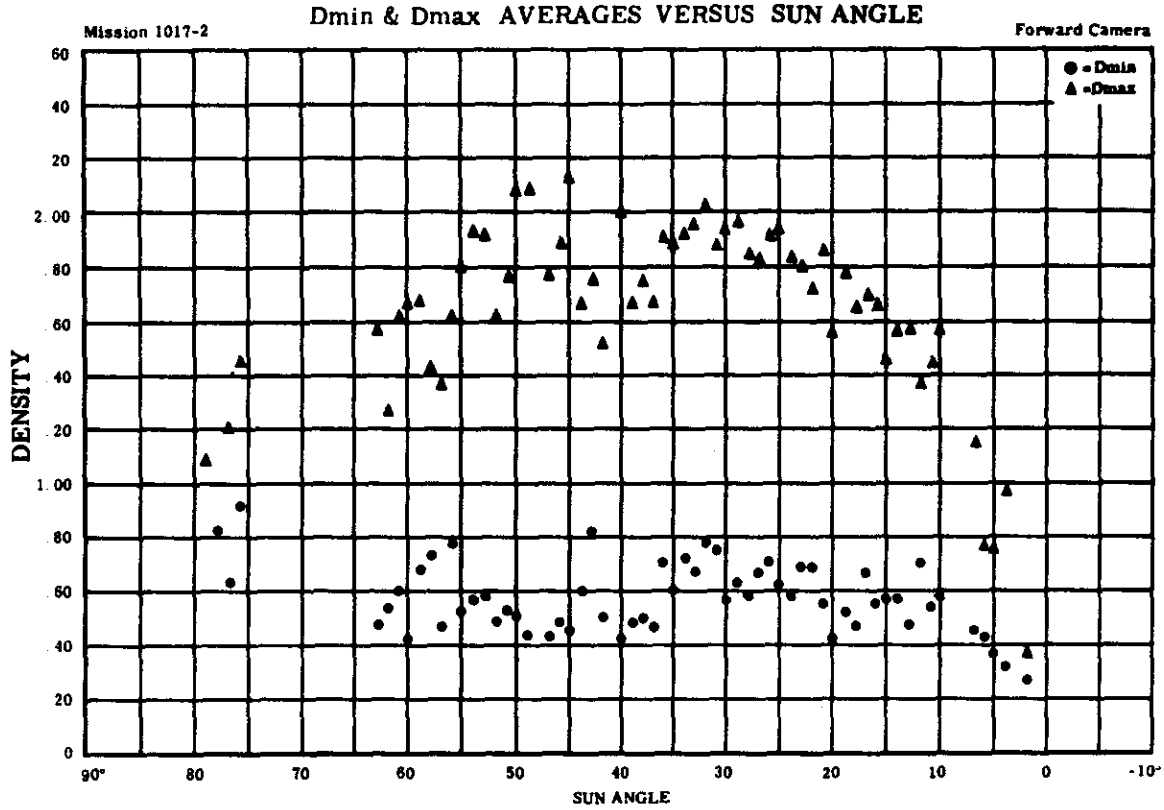
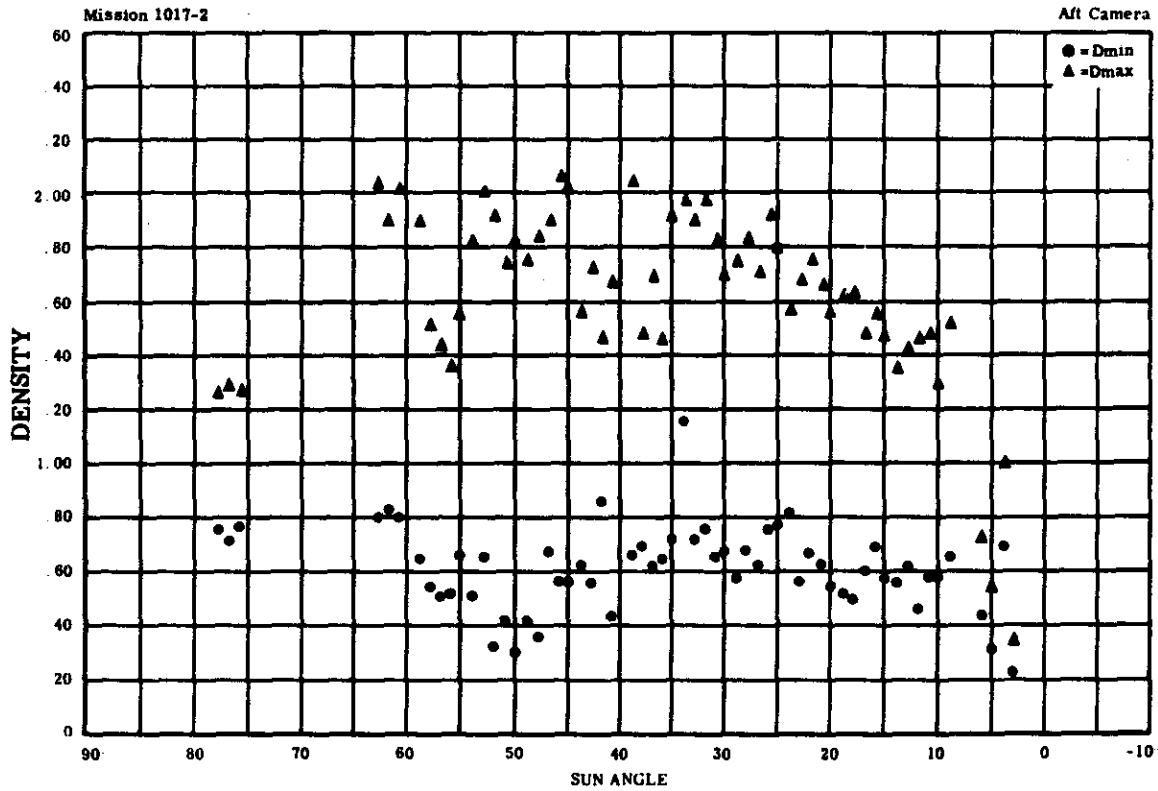
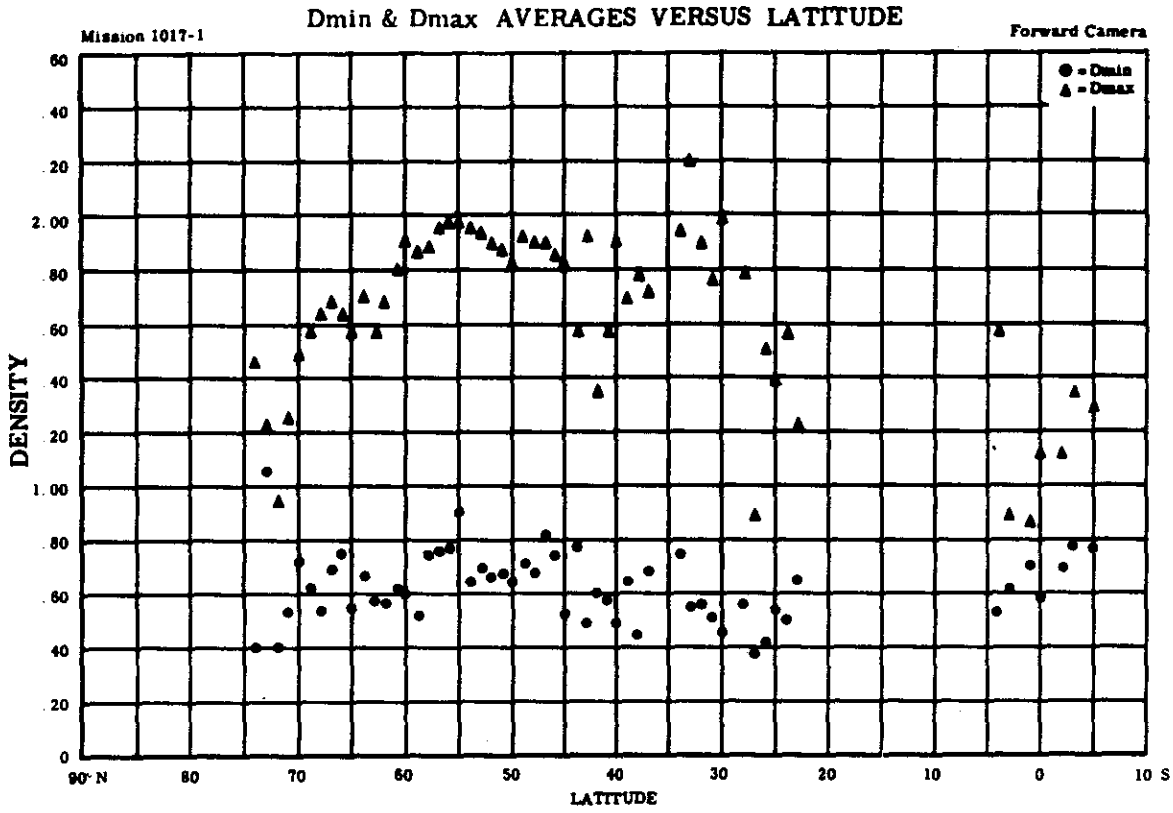


ILLUSTRATION 14

Dmin & Dmax AVERAGES VERSUS SUN ANGLE







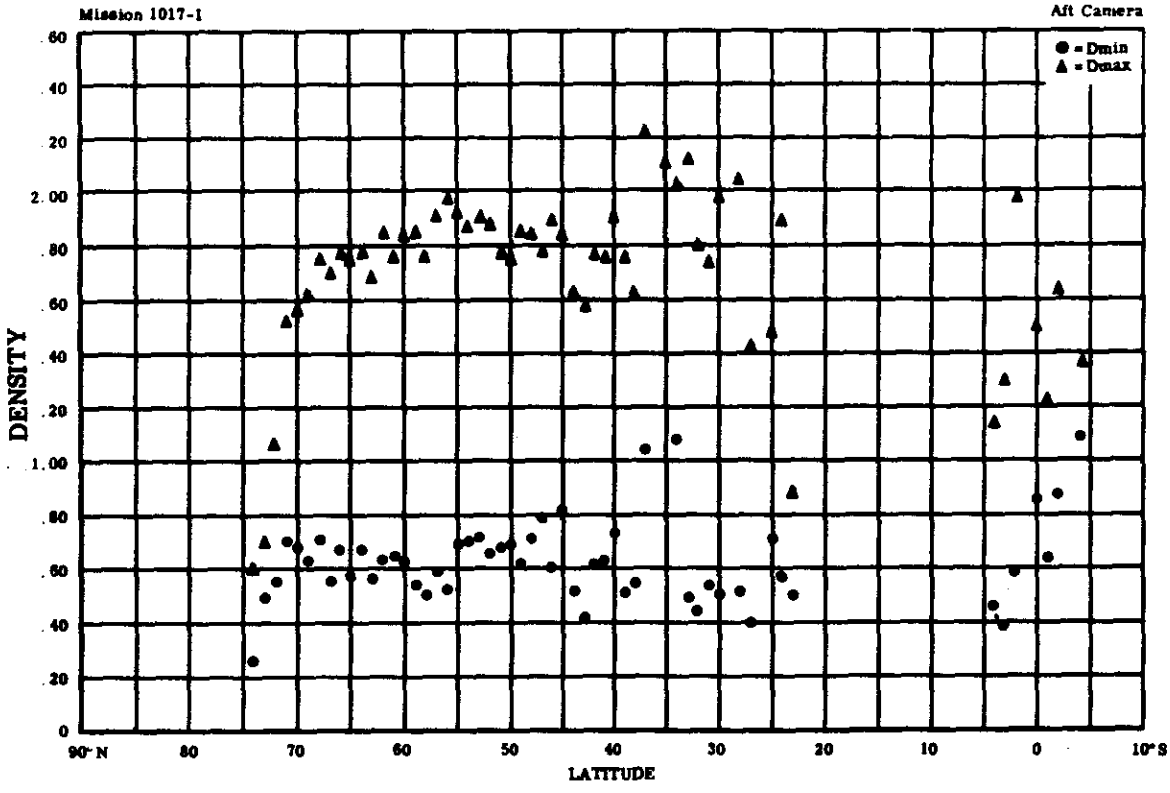
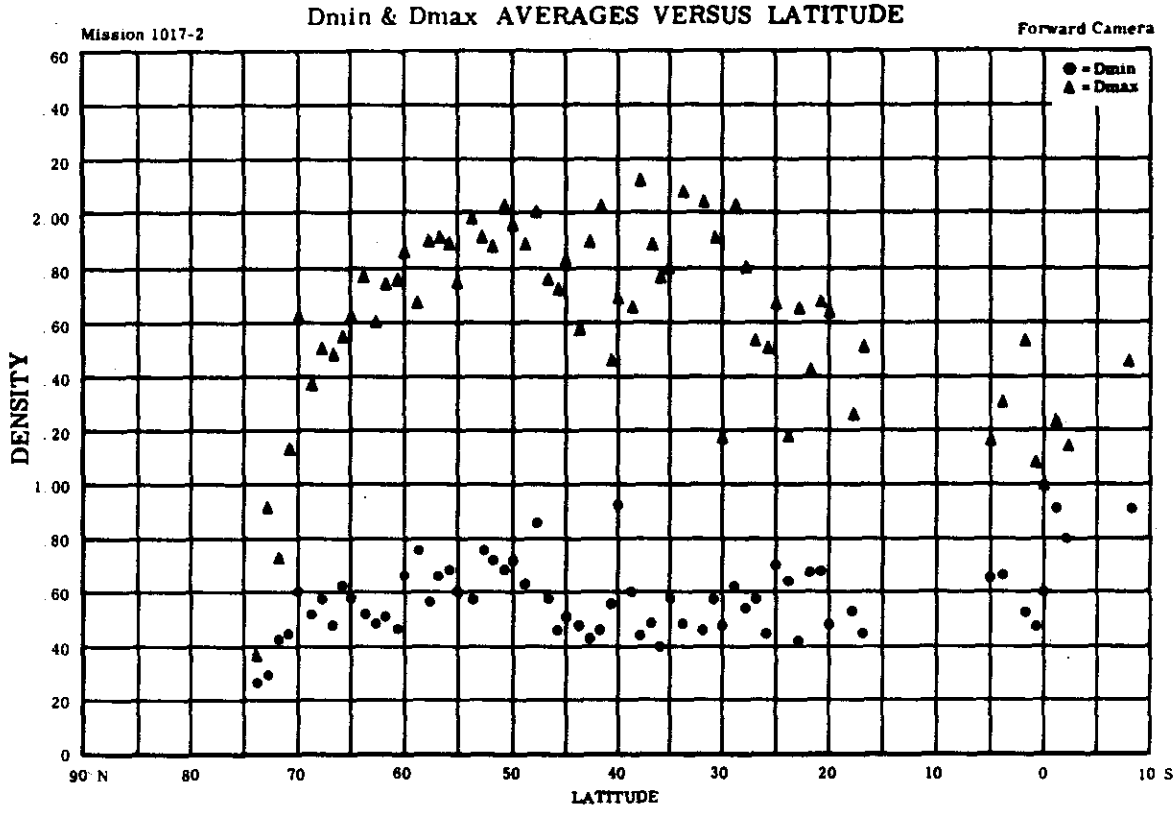
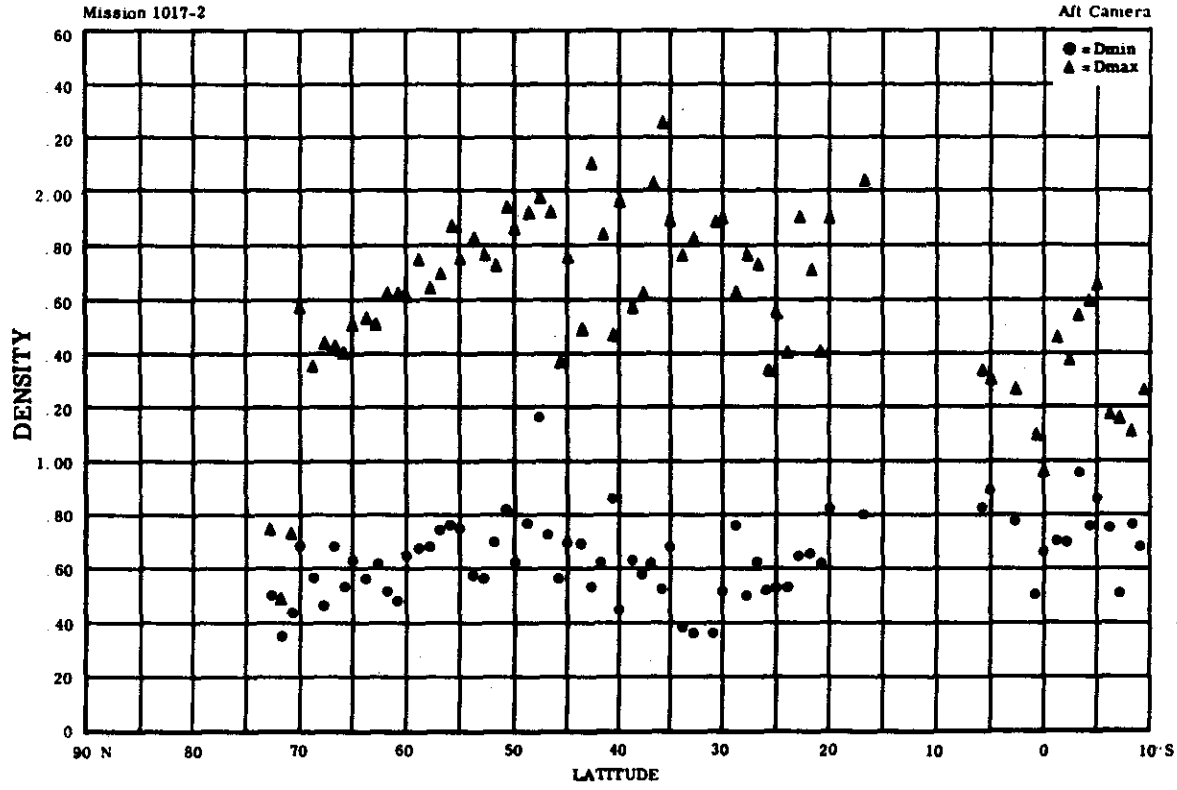


ILLUSTRATION 15

Dmin & Dmax AVERAGES VERSUS LATITUDE





AVERAGE MTF CURVE

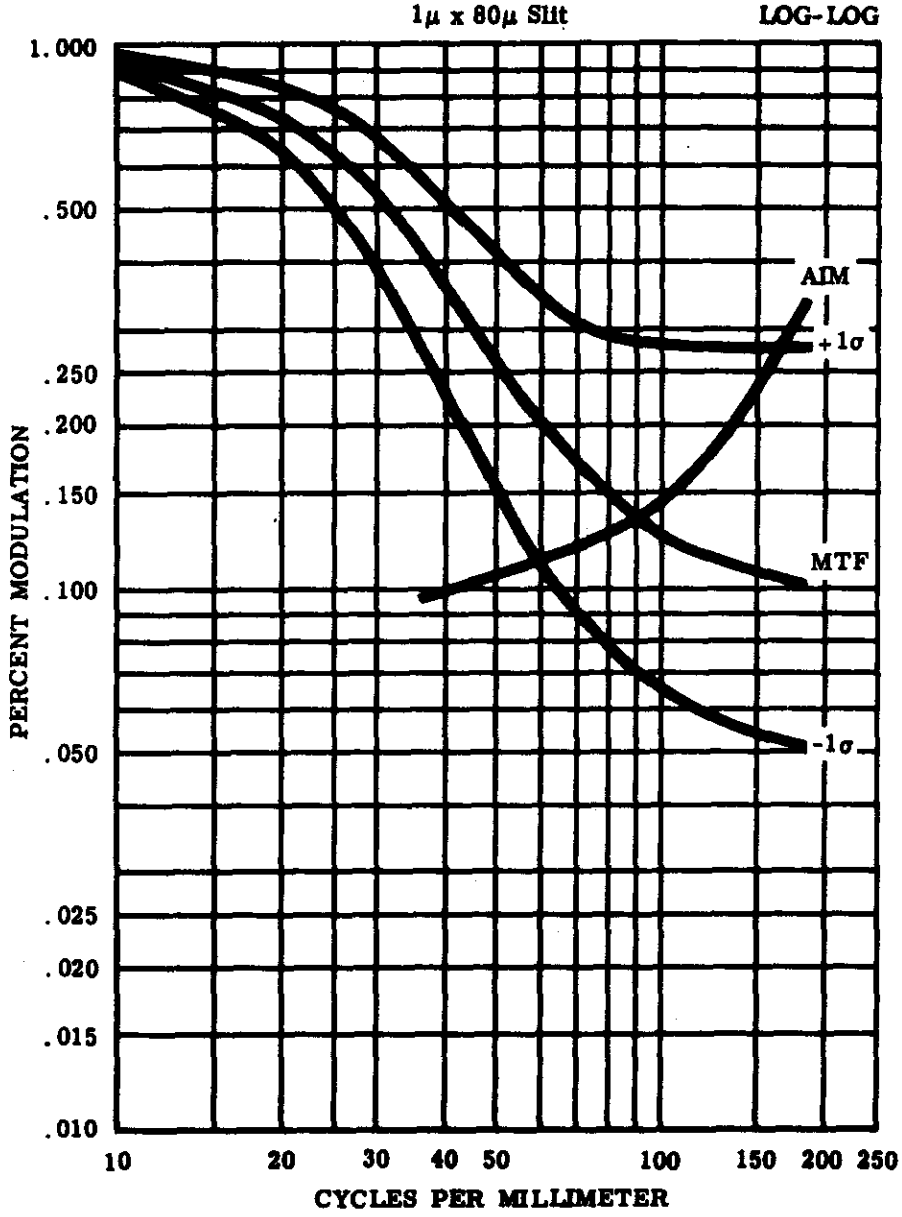


ILLUSTRATION 16

FREQUENCY DISTRIBUTION

IMAGE ANALYSIS TECHNIQUES - MISSION 1017-1 and 1017-2

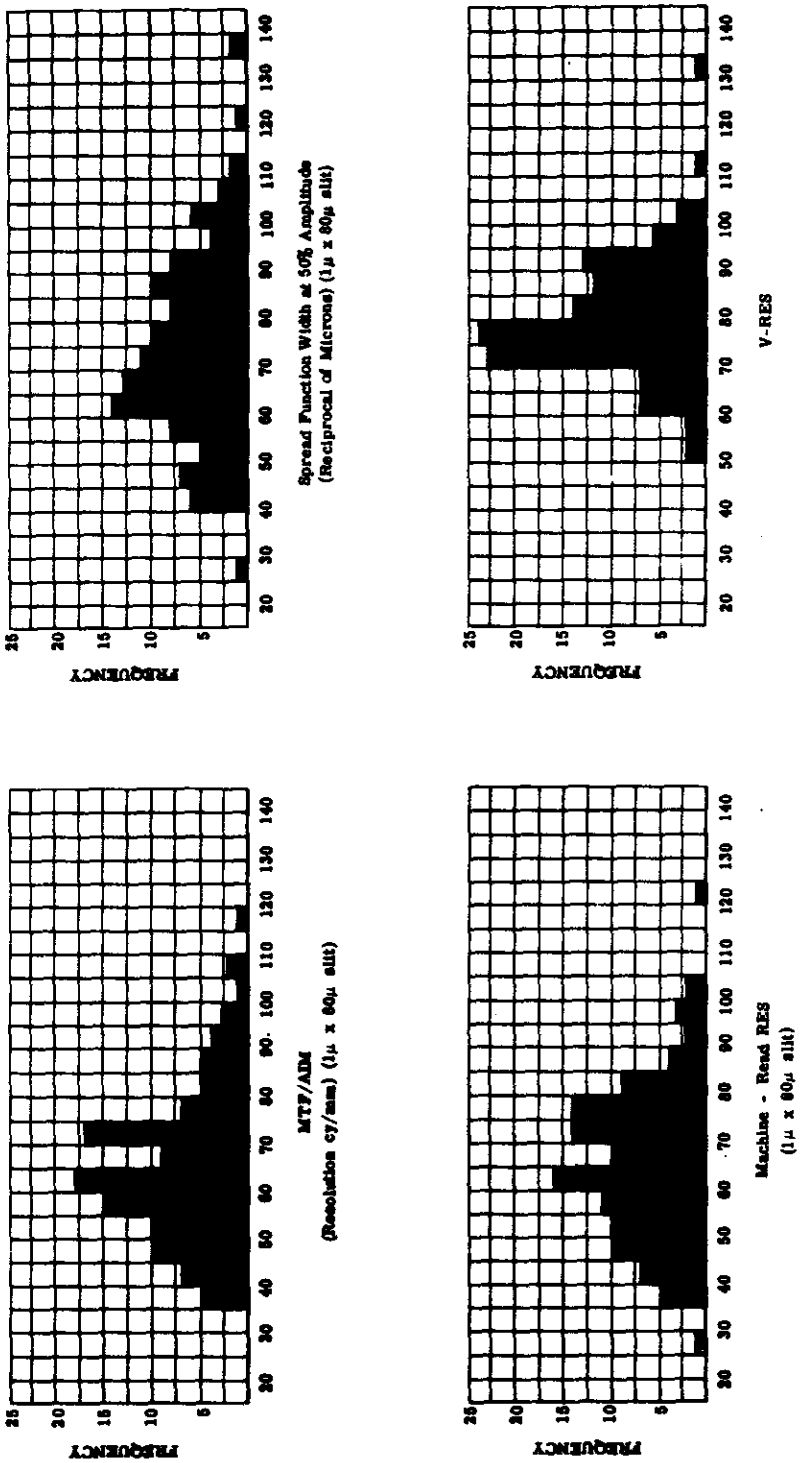


ILLUSTRATION 17

FREQUENCY DISTRIBUTION
VISUAL RECIPROCAL EDGE SPREAD (V-RES)

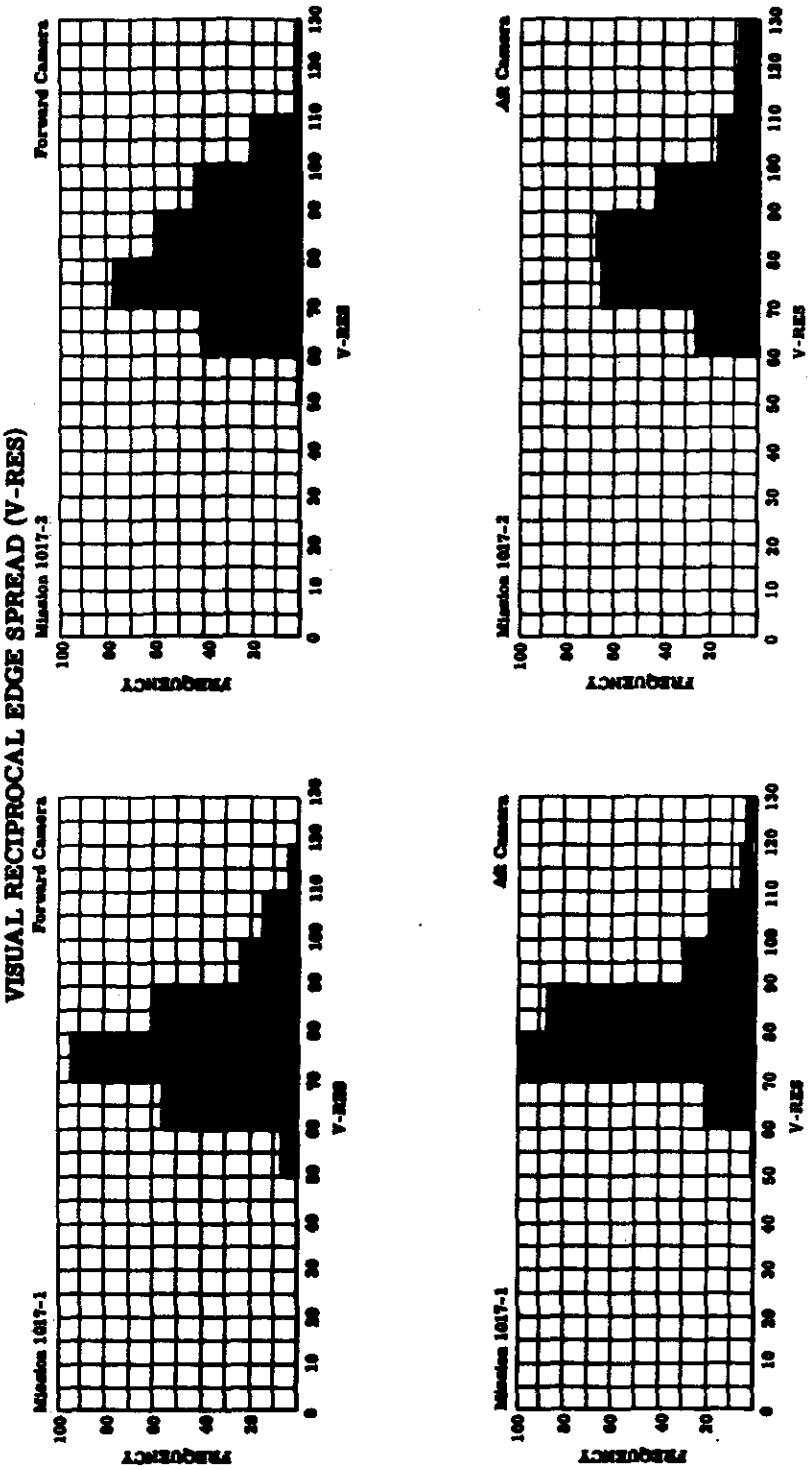
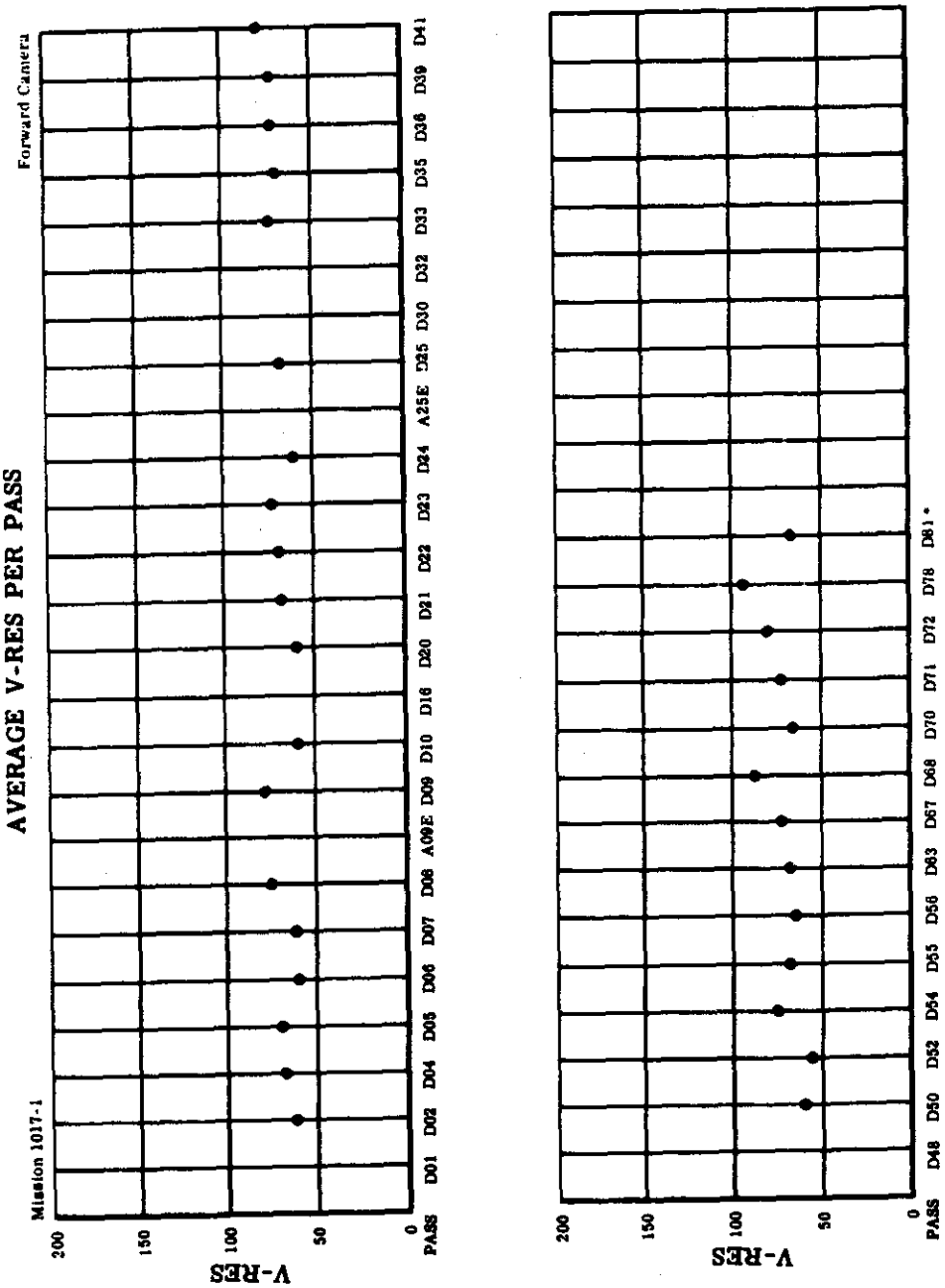
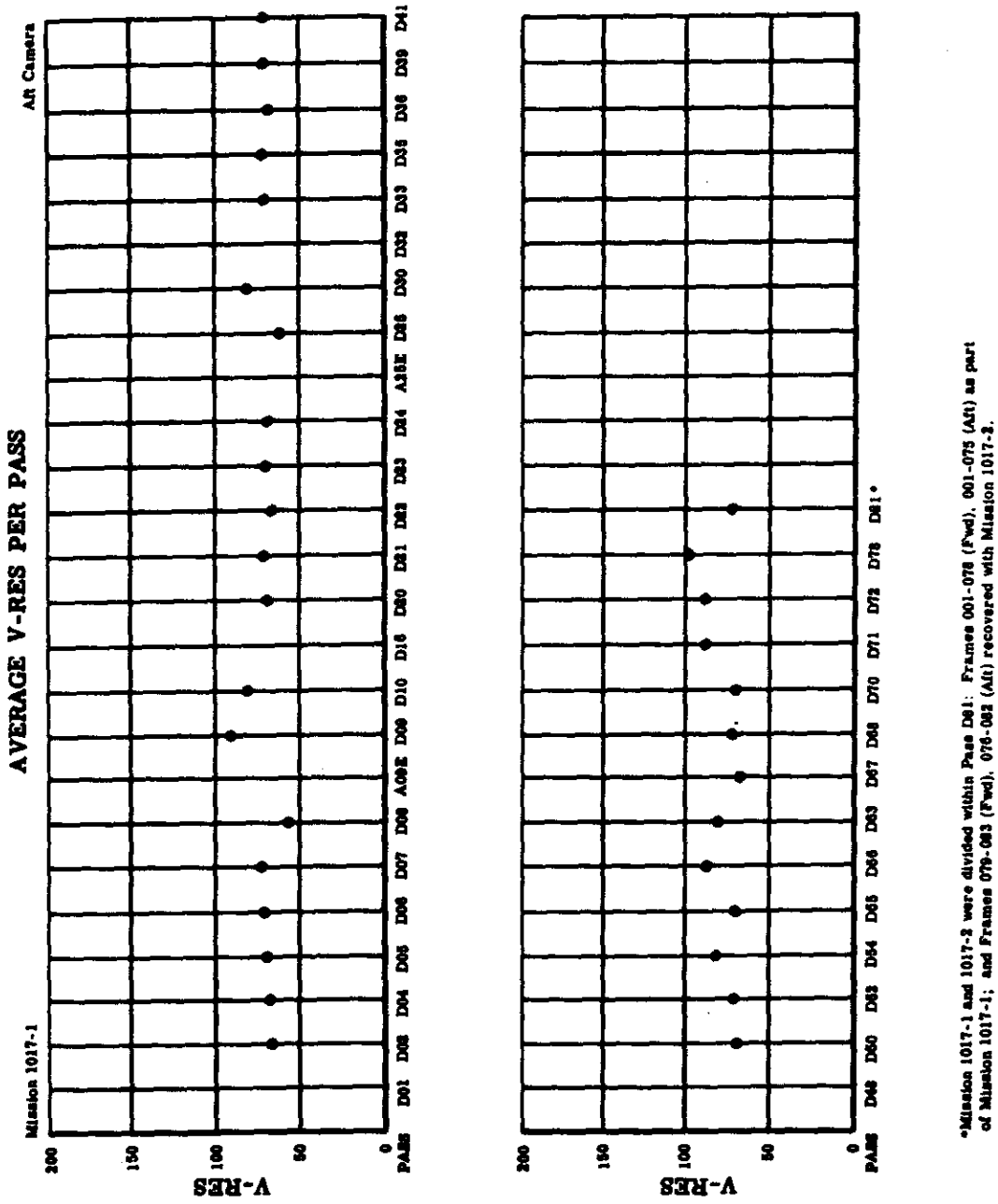


ILLUSTRATION 18



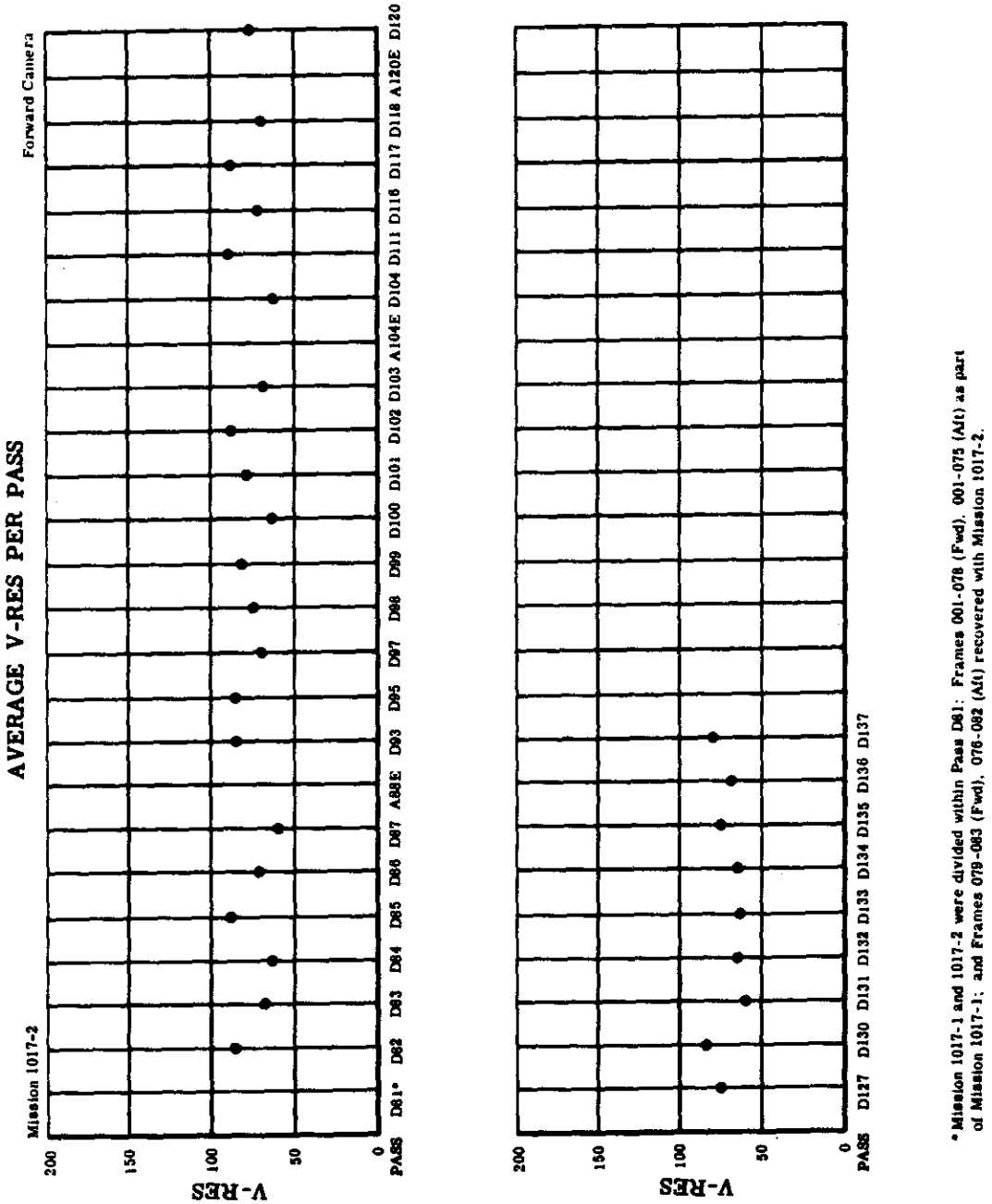
* Mission 1017-1 and 1017-2 were divided within Pass D81: Frames 001-078 (Fwd), 001-075 (Aft) as part of Mission 1017-1; and Frames 079-083 (Fwd), 076-062 (Aft) recovered with Mission 1017-2.

ILLUSTRATION 19



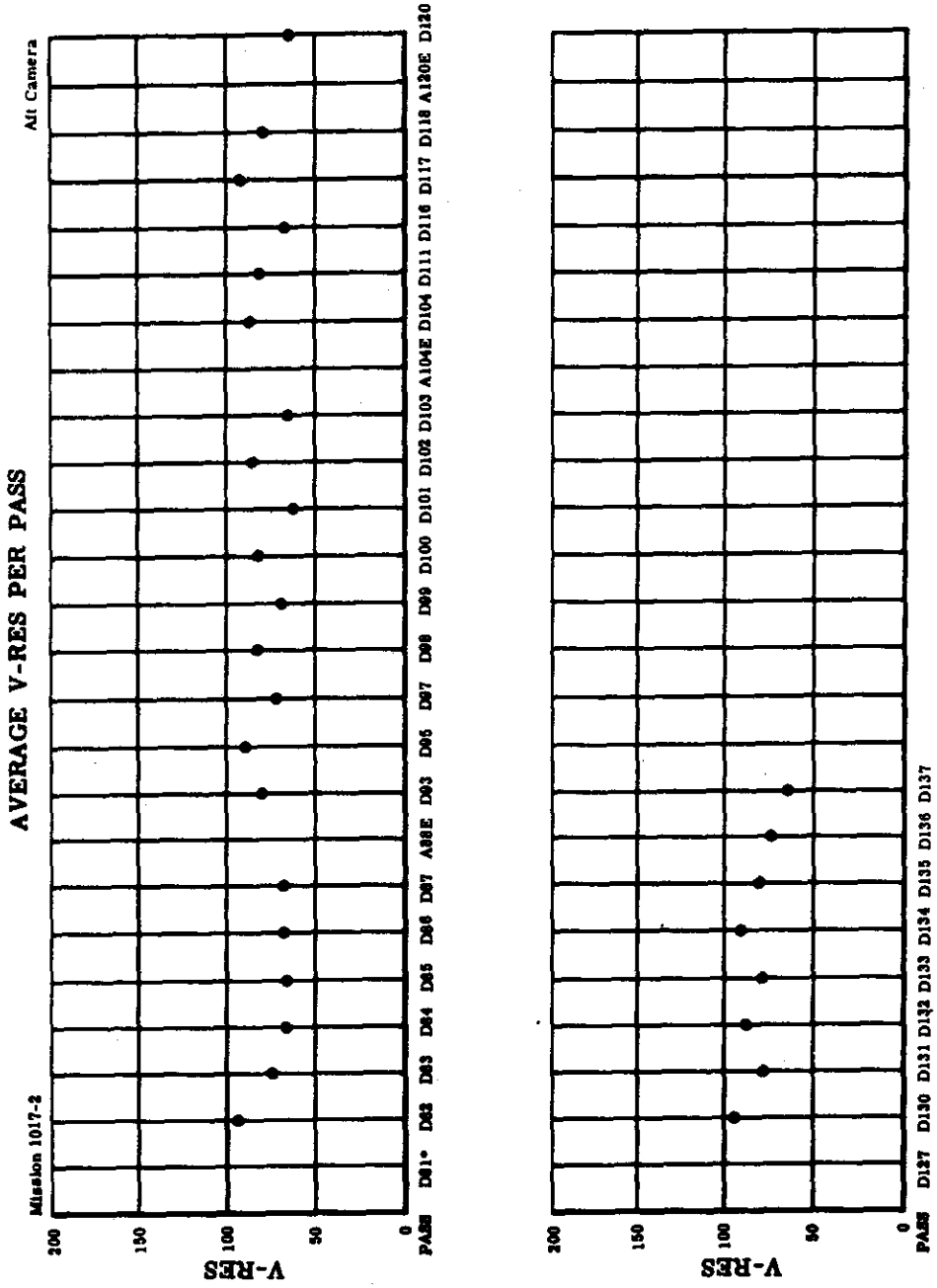
*Mission 1017-1 and 1017-2 were divided within Pass D81: Frames 001-078 (Fwd), 001-075 (Aft) as part of Mission 1017-1; and Frames 079-083 (Fwd), 076-082 (Aft) recovered with Mission 1017-2.

ILLUSTRATION 19



* Mission 1017-1 and 1017-2 were divided within Pass D81: Frames 001-078 (Fwd), 001-075 (Aft) as part of Mission 1017-1; and Frames 079-083 (Fwd), 076-082 (Aft) recovered with Mission 1017-2.

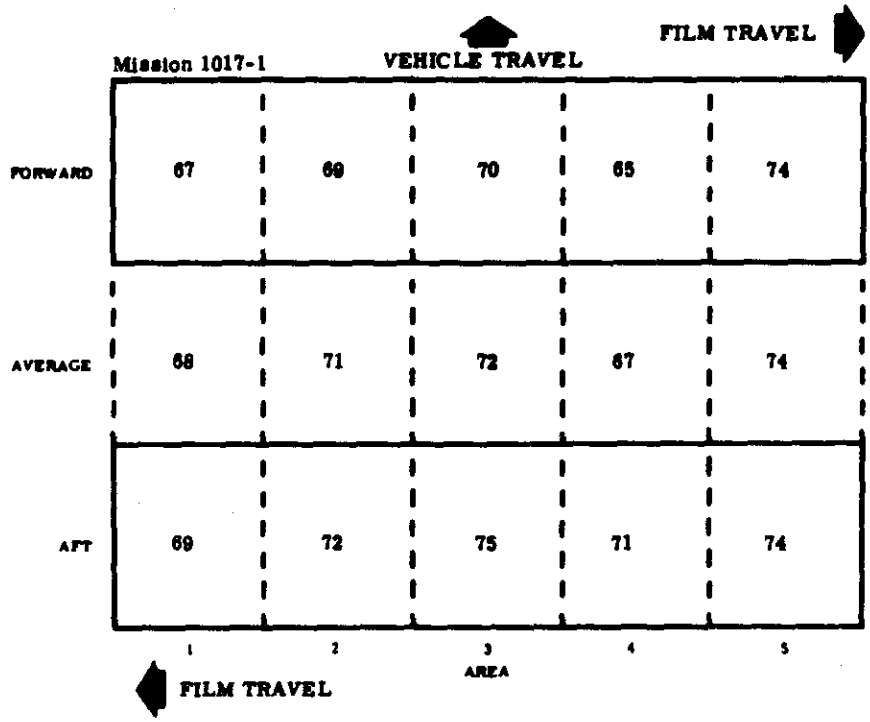
ILLUSTRATION 19

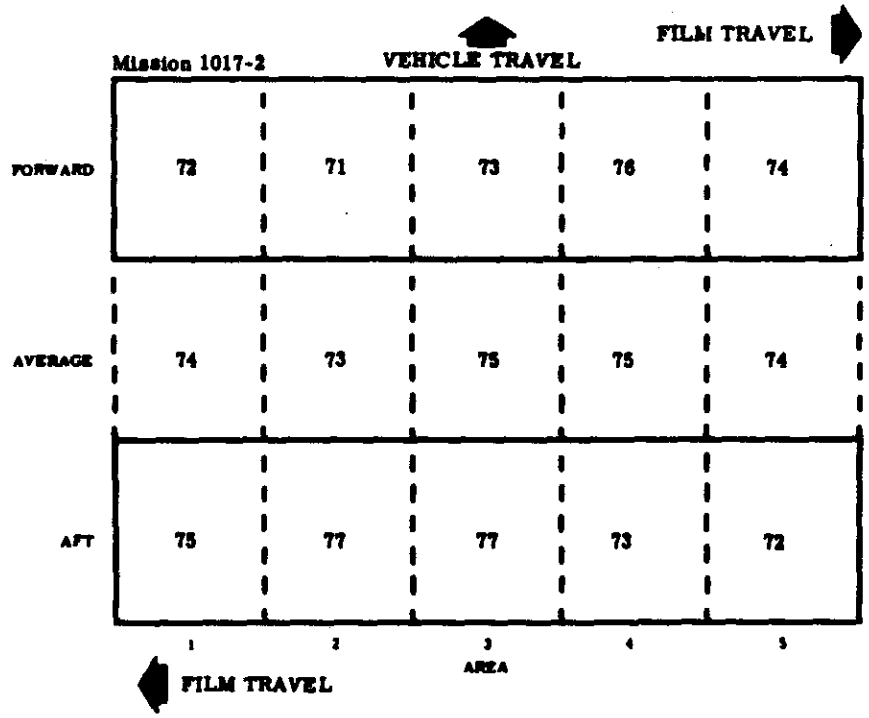


* Mission 1017-1 and 1017-2 were divided within Pass D81: Frames 001-078 (Fwd), 001-075 (Aft) as part of Mission 1017-1; and Frames 079-083 (Fwd), 076-082 (Aft) recovered with Mission 1017-2

ILLUSTRATION 19

AVERAGE V-RES ACROSS FRAME





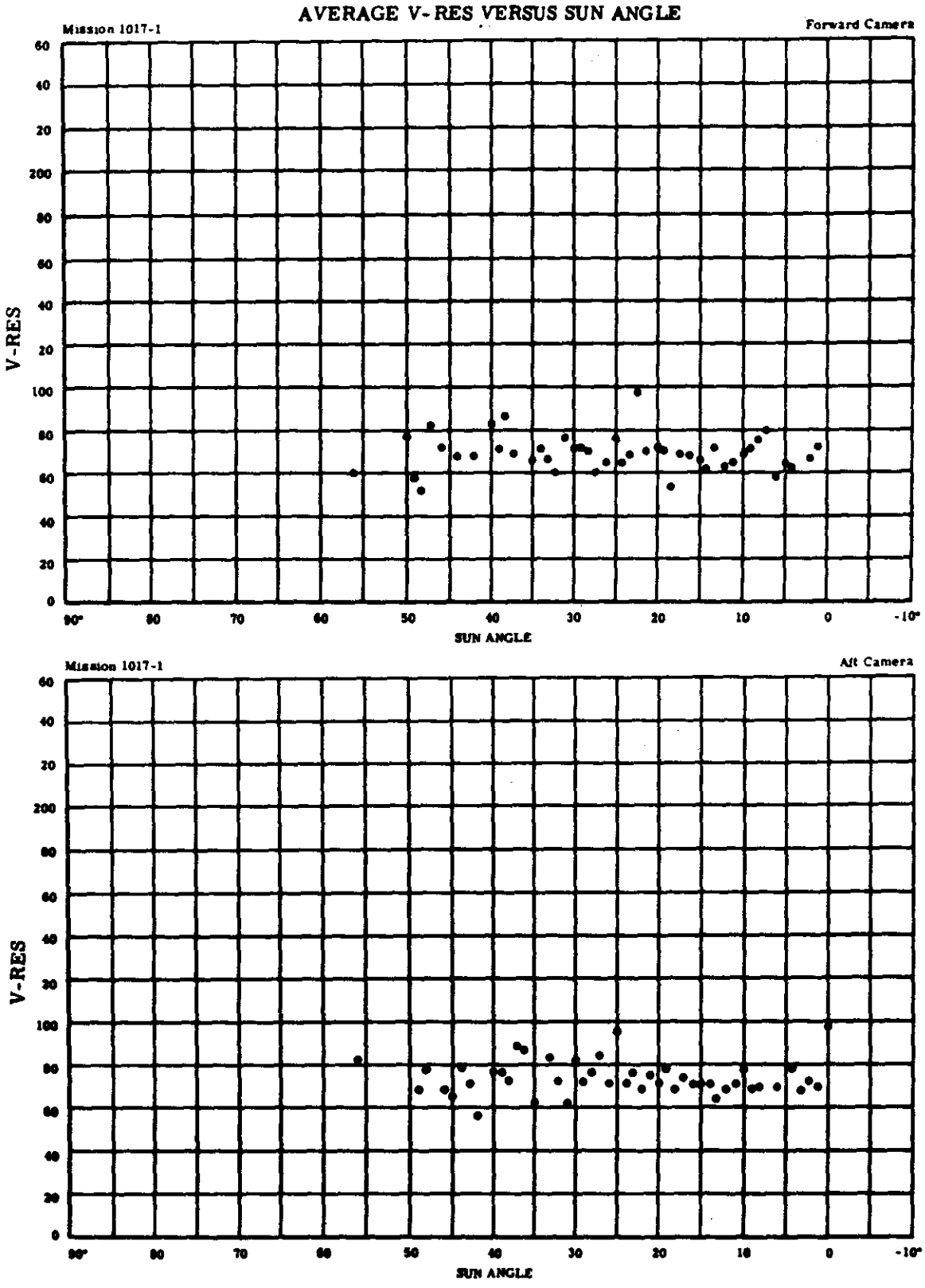
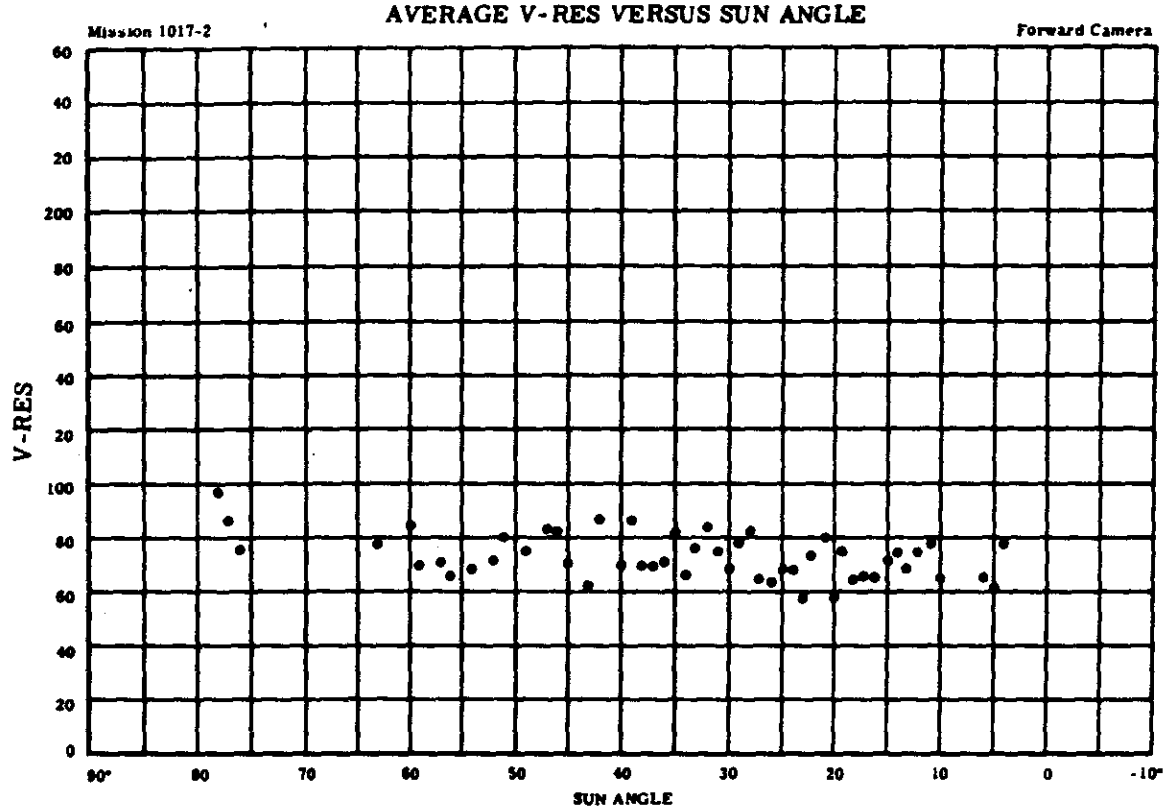
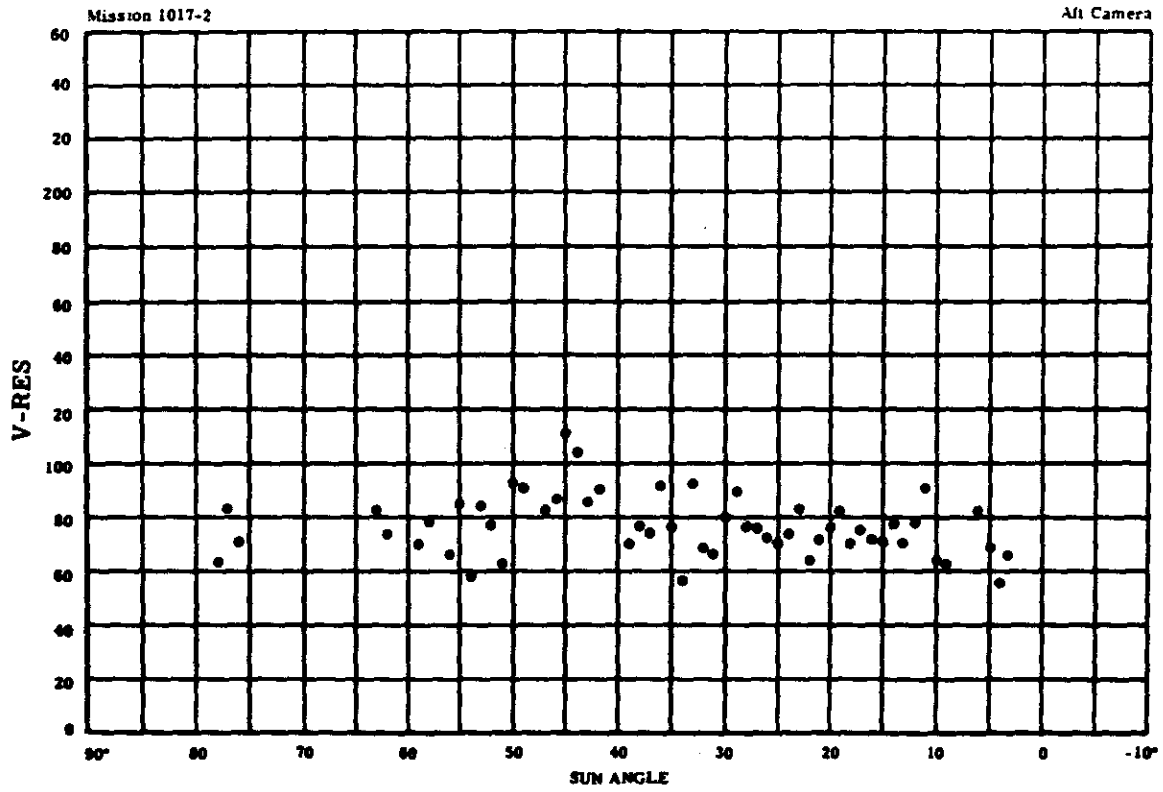


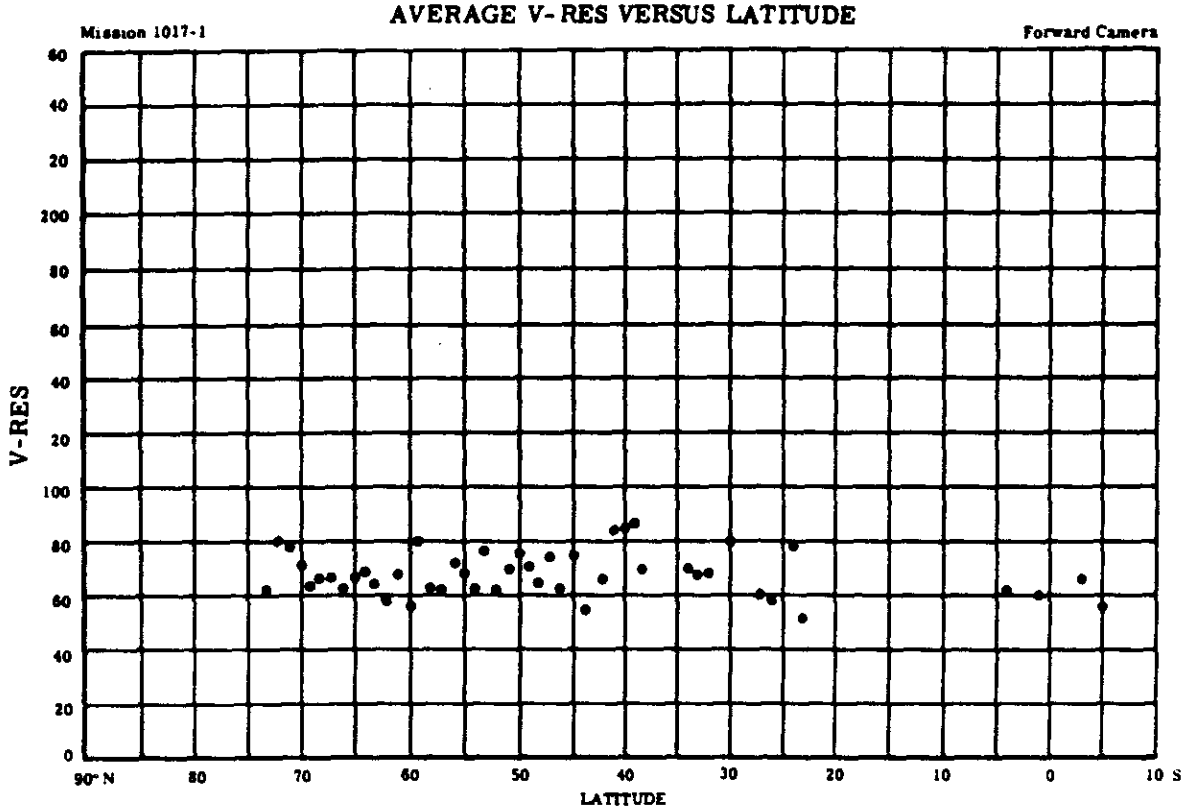
ILLUSTRATION 21

AVERAGE V-RES VERSUS SUN ANGLE





AVERAGE V-RES VERSUS LATITUDE



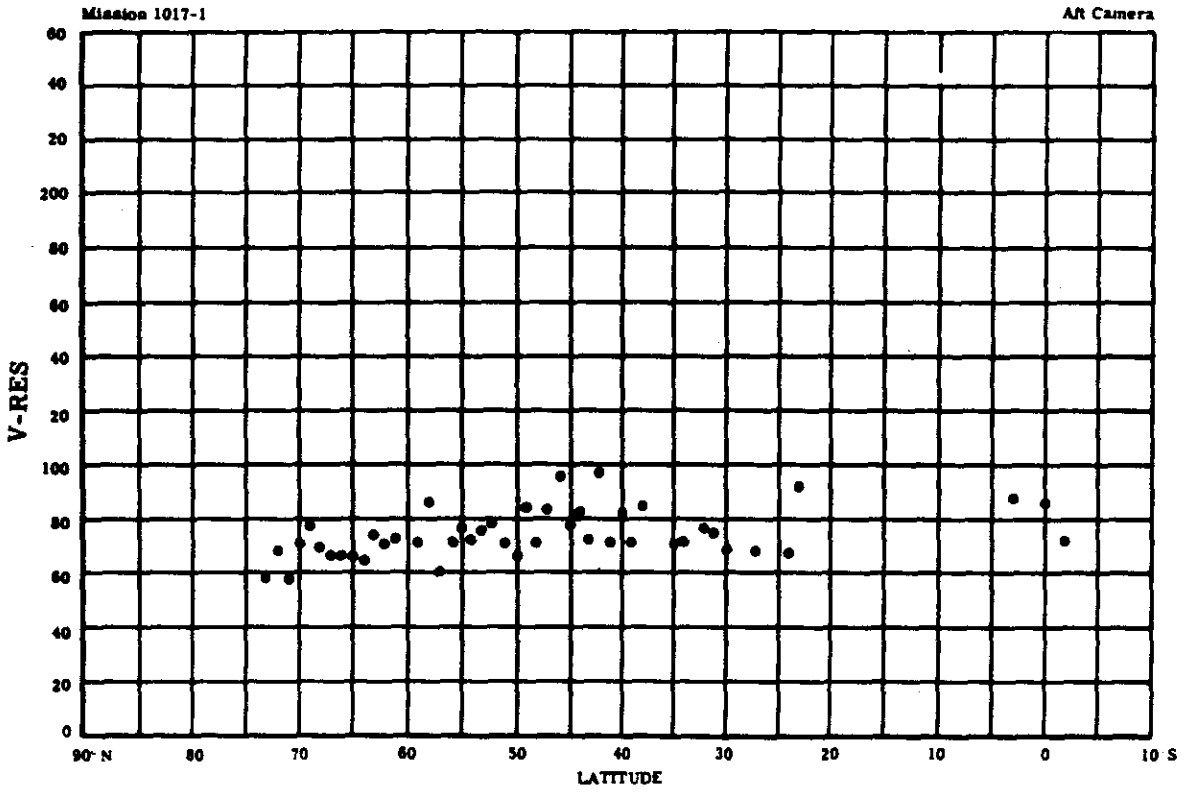
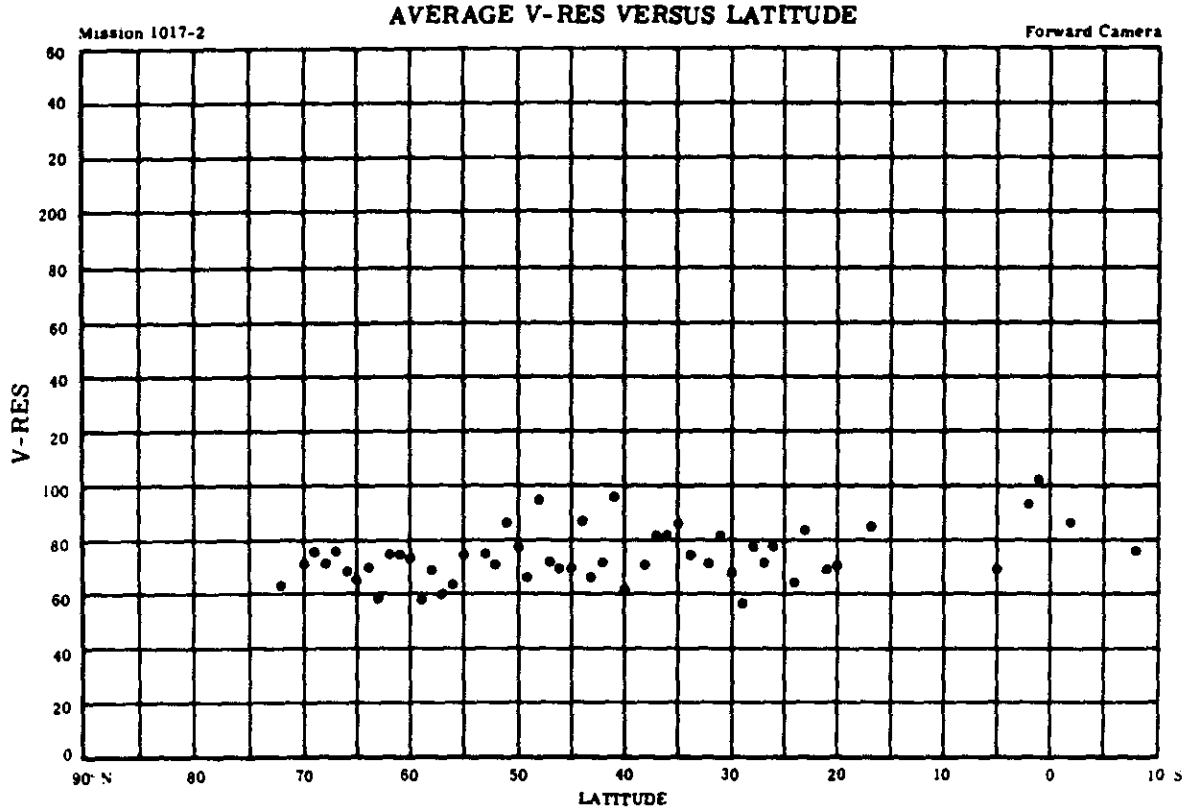
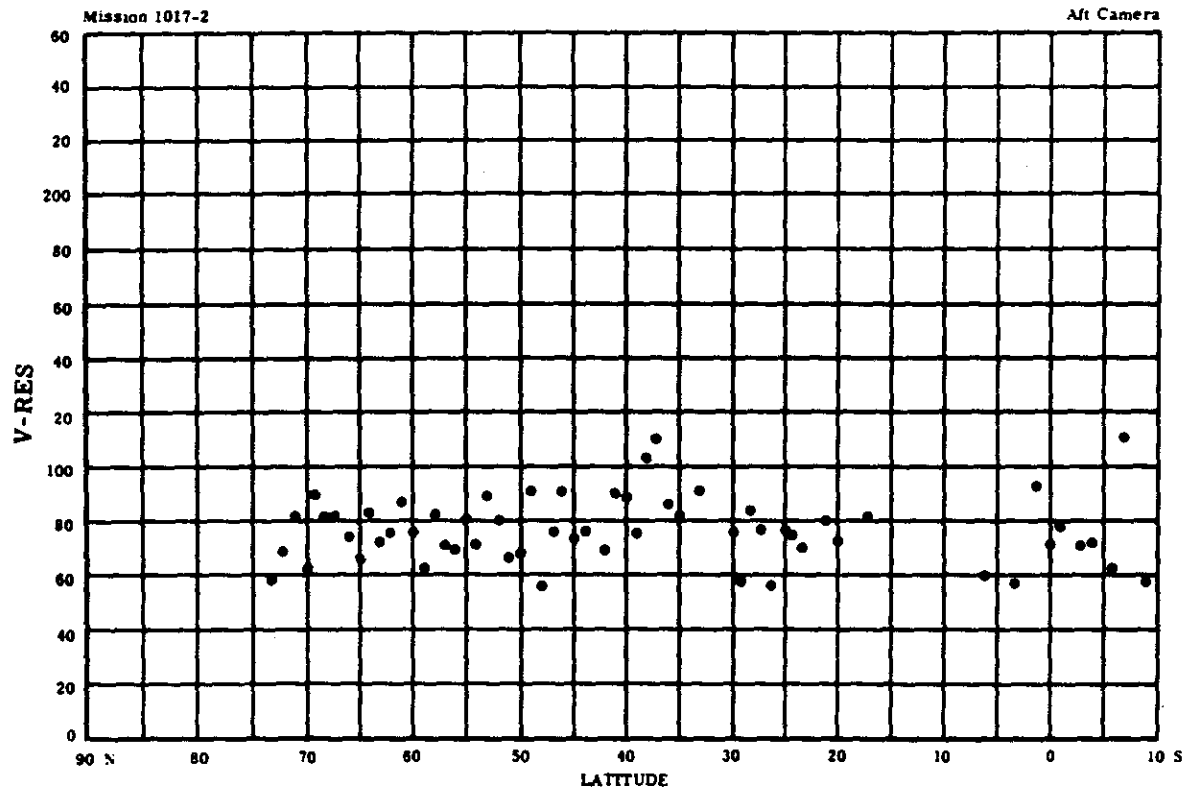


ILLUSTRATION 22

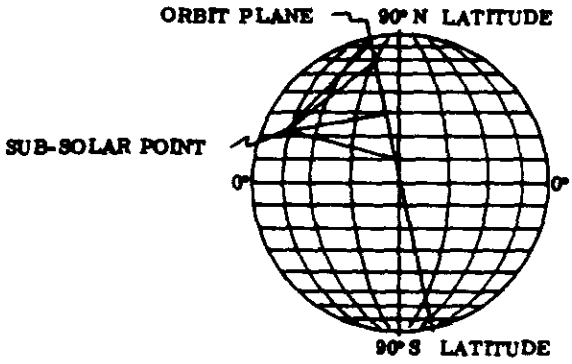
AVERAGE V-RES VERSUS LATITUDE





RELATIONSHIP OF SUB-SOLAR POINT TO VEHICLE TRAVEL

TYPICAL SUMMER ILLUMINATION
2400Z (1700 PDT) LAUNCH



TYPICAL WINTER ILLUMINATION
2100Z (1300 PST) LAUNCH

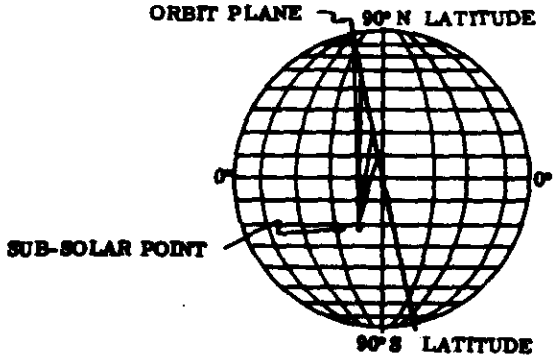


ILLUSTRATION 23

SECTION III

METHODS AND EQUIPMENT USED IN THE ANALYSIS

This section presents a description of the test procedures, methods, and equipment used in conducting the mission photographic analysis which produced the data recorded in Section II, Paragraph B.

A series of photographic missions obtaining products from the same camera system and under generally similar conditions are evaluated with identical equipment and techniques, where possible, in order that valid comparisons of individual missions can be accomplished. The report of the first mission evaluated in the series contains a complete detailed description of the evaluation techniques and equipment used. However, as refinements occur in photographic evaluation techniques, mensuration equipment, and methods of handling data, corresponding revisions are recorded in the appropriate paragraphs of this section. There were no revisions or changes in test procedures and equipment during the evaluation of Mission 1017. Refer to Section III of SPPL Technical Report No. [redacted] (Mission 1016) for a complete description of methods and equipment utilized in the analysis.

SECTION IV

OBSERVATIONS AND SUMMARY

Reconnaissance Satellite Mission 1017 obtained photographic coverage on 69 passes while orbiting from 25 February to 6 March 1965. An evaluation was performed on 30,944 feet of 70mm film from the two Panoramic Cameras. Approximately 5,450 measurements were accomplished during the photographic analysis. This evaluation consisted of inspecting, measuring and computing data on density, Visual Reciprocal Edge Spread (V-RES), Analysis by Edge Scan Techniques, Controlled Range Network (CORN) Operations, and film degradations. The observations and summaries presented in this section are based on a study of the data reported in Section II and a comparison with previous missions of this series.

Mission 1017 is the fifth CORONA mission experimenting in the use of a Wratten 25 Filter to compensate for the "facing-illumination" condition that exists during winter months. A special summation of data extracted and computed from these five missions is presented in paragraph F. of this section.

A. Density Analysis

1. A summary of measured and computed densitometric values for Mission 1017-1 and 1017-2 is presented below by mission and camera position:

		Range		Average	
		1017-1	1017-2	1017-1	1017-2
Dmin	Fwd	0.20 - 1.65	0.22 - 1.22	0.66	0.58
	Aft	0.20 - 1.62	0.20 - 1.54	0.64	0.64
Dmax	Fwd	0.46 - 2.23	0.37 - 2.30	1.74	1.70
	Aft	0.60 - 2.29	0.30 - 2.30	1.75	1.62
$\overline{D}$	Fwd	0.43 - 1.83	0.31 - 1.67	1.20	1.14
	Aft	0.43 - 1.87	0.25 - 1.82	1.20	1.13
ΔD	Fwd	0.06 - 2.00	0.11 - 1.88	1.09	1.12
	Aft	0.21 - 2.03	0.05 - 1.82	1.12	0.98
Gross Fog	Fwd	0.10 - 0.21	0.07 - 0.20	0.14	0.13
	Aft	0.09 - 0.21	0.08 - 0.19	0.12	0.12
Dmax Clouds	Fwd	0.60 - 2.32	0.86 - 2.37	1.93	1.93
	Aft	1.18 - 2.36	0.38 - 2.34	1.89	1.85

2. The overall mission range, average, and standard deviation (σ) for Mission 1017 are presented below:

	Range	Average	Standard Deviation (σ)
Dmin	0.20 - 1.65	0.63	0.23
Dmax	0.30 - 2.30	1.71	0.33
$\bar{D}$	0.25 - 1.87	1.17	0.22
ΔD	0.05 - 2.03	1.08	0.37
Gross Fog	0.07 - 0.21	0.13	0.03
Dmax Clouds	0.38 - 2.37	1.90	0.30

3. The average Dmin, Dmax, $\bar{D}$, and ΔD values from the Forward and Aft Panoramic Cameras on Mission 1017-1 are very similar. The average Dmin value on the Forward Panoramic Camera of Mission 1017-2 is lower than that of the Aft Panoramic Camera. The average Dmax value is higher on the Forward than on the Aft Panoramic Camera; the $\bar{D}$ and ΔD average values from both cameras are similar.

4. A comparison of average densitometric values from the Forward and Aft Panoramic Camera of Missions 1014 - 1017 is presented as follows:

a. Forward Panoramic Camera (Wratten 25 Filter)

(1) The average Dmin, Dmax, $\bar{D}$, and ΔD values for Mission 1017 are significantly higher than Missions 1014 - 1016 with the exception of the average ΔD value for Mission 1016 which is similar.

(2) The range of Dmin, Dmax, $\bar{D}$, and ΔD values for Mission 1017 is similar to Missions 1014 - 1016 with two exceptions: the range of Dmin and $\bar{D}$ values for Mission 1017 is greater than on Mission 1014.

b. Aft Panoramic Camera (Wratten 21 Filter)

(1) The average Dmin and ΔD values for Mission 1017 are similar to Missions 1014 and 1015 and higher than Mission 1016.

(2) The average Dmax and $\bar{D}$ values for Mission 1017 are similar to Mission 1014 and higher than Missions 1015 and 1016.

(3) The range of Dmin and $\bar{D}$ values for Mission 1017 is similar to Missions 1014 and 1016 and greater than Mission 1015.

(4) The range of Dmax and ΔD values for Mission 1017 is similar to Missions 1014 - 1016.

5. A comparison of the overall densitometric average values between Mission 1017 and Missions 1010 through 1016 is described on the following page:

a. The average Dmin value for Mission 1017 is similar to Missions 1010 - 1016 with the exception of Mission 1014 which is lower.

b. The average Dmax, $\bar{D}$, and ΔD values for Mission 1017 are similar to Mission 1016 and higher than Missions 1010 - 1015.

B. Film Processing

1. Multiple film processing levels were used on Mission 1017-1 and 1017-2 to control density. An attempt is made to maintain all Dmin values between 0.40 and 0.90 and all Dmax values below 2.10. The table below shows the percentage of the original negatives processed at the three levels of development.

Mission	Development Level	Forward Camera	Aft Camera
1017-1	Primary	13%	24%
	Intermediate	63%	58%
	Full	24%	18%
1017-2	Primary	5%	18%
	Intermediate	63%	62%
	Full	32%	20%

2. A detailed study of the density data on Mission 1017 shows that 14% of the Dmin readings are below the 0.40 limit, and 14% of the readings are above the 0.90 limit. Nine percent of the Dmax readings are above the 2.10 limit. Overall processing for Mission 1017 is very good.

C. Analysis by Edge Scan Techniques

The analysis of microdensitometric traces of scene edges from Mission 1017-1 and 1017-2 was accomplished by two teams: the SPPL Technical Evaluation Team and a group of scientists and consultants from Industry. The average values of the Modulation Transfer Function/Aerial Image Modulation (MTF/AIM) and the Reciprocal of the Spread Function Width at 50% Amplitude (50% Spread) for the four most recent one thousand series missions are tabulated below. All values were obtained from subjects traced with a $1\mu \times 80\mu$ slit.

		MTF/AIM		50% Spread (Reciprocal)	
Mission		SPPL Team	S/C Team	SPPL Team	S/C Team
1014	Fwd	76	73	80	93
	Aft	83	87	90	115

Mission		MTF/AIM		50% Spread (Reciprocal)	
		SPPL Team	S/C Team	SPPL Team	S/C Team
1015	Fwd	73	80	80	114
	Aft	73	93	85	122
1016	Fwd	56	87	69	107
	Aft	58	93	72	112
1017	Fwd	60	79	69	93
	Aft	70	90	80	111

1. SPPL Team

a. The SPPL Team used three methods of analysis: MTF/AIM, 50% Spread, and Machine-Read Reciprocal Edge Spread (M-RES). The edge traces were accomplished utilizing a Mann-Data Micro-Analyzer. The average MTF/AIM, 50% Spread and M-RES values are 60, 69, and 61 for the Forward Camera and 70, 80, and 70 for the Aft Camera, respectively.

b. The average values from all three methods of analysis show the Aft Camera to have higher image quality than film obtained from the Forward Camera.

c. The average MTF/AIM, 50% Spread and M-RES values for Mission 1017 are lower than Missions 1010 - 1015 and higher than Mission 1016 with the following exceptions: the average M-RES values from Missions 1011, 1013, and 1017 are similar.

d. Using a mean Photo Scale Reciprocal (PSR) of 320,000, the approximate ground resolution of the following average values for Mission 1017 are: 17.4' for MTF/AIM, 15.2' for 50% Spread, and 17.2' for M-RES on the Forward Camera; and 14.9' for MTF/AIM, 13.1' for 50% Spread, and 14.9' for M-RES on the Aft Camera.

2. Scientist and Consultant Team

a. This group used two methods of analysis: MTF/AIM and 50% Spread. Scene edges were traced with the Eastman Kodak Model 5 Microdensitometer. The average MTF/AIM and 50% Spread values are 79 and 90 for the Forward Camera and 93 and 111 for the Aft Camera, respectively.

b. The average MTF/AIM and 50% Spread values show the image quality for the Aft Camera product to be higher than that of the Forward Camera.

c. The average MTF/AIM value for Mission 1017 is lower than Missions 1015 and 1016; higher than Missions 1011 and 1014; and similar to Missions 1010, 1012, and 1013.

d. The average 50% Spread value for Mission 1017 is lower than Missions 1010, 1012, 1013, 1015 and 1016 and similar to Missions 1011 and 1014.

e. Conversion of the average MTF/AIM and 50% Spread values to approximate ground resolution using a mean PSR of 320,000 produced the following results: 13.2' for MTF/AIM and 11.2' for 50% Spread on the Forward Camera; and 11.6' for MTF/AIM and 9.4' for 50% Spread on the Aft Camera.

D. Visual Reciprocal Edge Spread (V-RES)

1. V-RES data consists of 1,017 measurements. Values range from 45 to 118 with an average of 73. The range and average of V-RES values by mission and camera position are listed below:

Mission	Camera Position	Range	Average
1017-1	Fwd	45 - 104	69
	Aft	49 - 111	74
1017-2	Fwd	49 - 118	73
	Aft	51 - 118	77

2. The average V-RES value for Mission 1017 is similar to the past four missions in this series.

3. When computing ground resolution with a mean Photo Scale of 1:320,000, the V-RES values range from 23.3 to 8.8 feet, with an overall average of 14.3 feet.

E. Controlled Range Network (CORN) Operations

1. Mission 1017-1 covered: (a) the Wright-Patterson AFB, Ohio, display on Pass D30, Frames 009 (Fwd) and 015 (Aft), which consisted of a Medium Contrast "T" Bar Target (mobile) and a High Contrast Bar Target (fixed); (b) the Fort Huachuca, Arizona display on Pass D63, Frames 008 and 009 (Fwd), and 014 and 015 (Aft), which consisted of a 200' Controlled Scene Brightness Target (mobile), and a Low and High Contrast Bar Target (fixed).

2. Although the target was not activated, Mission 1017-2 covered an Edwards AFB, California, fixed display on Pass D95, Frame 020 (Fwd). This display consists of a High Contrast Bar Target - Type "C".

3. The 200' edge Controlled Scene Brightness Target was traced on a Mann-Data Micro-Analyzer. The traces were then evaluated by edge scan techniques. The following table is a summary of the three methods of analysis accomplished on this display:

Pass	Camera Position	Frame	Trace Number	MTF/AIM	50% Spread	M-RES
D63	Fwd	008	1	65	76	73
			2	62	93	79
	Aft	014	1	89	102	84
			2	68	74	73

Conversion of these values to approximate ground resolution using a mean Photo Scale of 1:320,000 resulted in a range from 11.3 to 16.9 feet for Frame 008 (Fwd), and 10.1 to 15.4 feet for Frame 014 (Aft).

4. The resolution readings made from the Bar Target displays (mobile and fixed) are listed below:

Display	Type	Pass	Frame	Average Ground Resolution
Wright-Patterson AFB	Mobile "T" Bar	D30	009 (Fwd)	12'
			015 (Aft)	12'
Wright-Patterson AFB	Fixed Bar Target	D30	009 (Fwd)	10.5'
			015 (Aft)	11.3'
Fort Huachuca	Fixed Bar Target	D63	009 (Fwd)	10.4'
			015 (Aft)	10.7'
Edwards AFB	Fixed Bar Target	D95	020 (Fwd)	The resolution of the image exceeds that of the target.

F. Wratten 25 Filter Experiment on CORONA Missions

In an attempt to improve the quality of imagery, which has been degraded by the "facing-illumination" condition during winter months, a series of experiments were initiated in which a Wratten 25 (red) Filter was used on the Forward Camera. The Wratten 21 (orange) Filter was retained on the Aft Camera. A summary of pertinent data resulting from the analysis of these missions is presented in Table 14, page 76.

G. Physical Degradations

1. Imaged

a. Equipment shadow graphs were noted within the first three and/or last three frames of most passes.

b. Dendritic fogging was observed along the titled and/or non-titled edge of the majority of passes.

c. Fog of varying patterns, density and locations was visible intermittently on most passes.

2. Superficial

a. Several, fine-lined, short, parallel, emulsion scratches were noted along each format edge on most passes.

b. The titling edge is "ragged" between the data block and the head of the frame throughout Mission 1017-2.

c. Foreign matter and several minor abrasions, scratches and pinholes were noted throughout this Mission.

H. Summary

1. Very little difference was noted when comparing the average density values from the two Panoramic Cameras. Mission 1017-1 has slightly higher density values than Mission 1017-2. The most apparent trend noted when comparing Mission 1017 (Forward and Aft) to other missions, utilizing the two filter system (1007 and 1014-1016), is the gradual increase in average density values of the Forward Camera to a point where they are now similar to the values of the Aft Camera.

2. Mission 1017 received less processing at the Full level of development than all missions with the exception of 1004. Both over and underprocessing were noted although overall density values are similar to or higher than the last three missions of this series. Mission 1017 processing is considered very good.

3. All techniques of analyzing image quality as measured by the SPPL and Scientist/Consultant Teams show the Aft Camera to be higher in quality than the Forward Camera. The SPPL analysis shows Mission 1017 to be higher in image quality than Mission 1016, but lower than 1015, while the Scientist/Consultant Team indicates that the quality is lower than both Missions 1015 and 1016.

4. Physical degradations are considered minor.

TABLE 14 - SPECIAL MISSION DATA SUMMARY

Mission & Date	Camera Position	Filter	Exposure Slit Width	Exposure Time (avg)	Sun Angles	Latitudes	Density			*Processing			** Image Quality			
							Dmin Average	Dmax Average	D Average	ΔD Average	P	I	F	MTF/AIM	50% Spread	M-RES	V-RES
1007-1 & -2 19 - 20 Jun 1964	Fwd	Wratten 25	0.250"	1/225 (sec)	33° - 56°	16° N - 76° N	0.51	1.44	0.98	0.93	2	24	74	66	66	57	80
	Aft	Wratten 21	0.200"	1/270 (sec)	33° - 56°	16° N - 76° N	0.59	1.51	1.05	0.92	14	42	44	70	71	61	84
1014-1 & -2 18 - 27 Nov 1964	Fwd	Wratten 25	0.250"	1/245 (sec)	0° - 77°	8° S - 65° N	0.38	1.35	0.86	0.94	1	32	67	76	80	66	76
	Aft	Wratten 21	0.175"	1/350 (sec)	0° - 77°	8° S - 65° N	0.47	1.37	0.92	0.85	0	9	91	83	90	76	76
1015-1 & -2 19 - 30 Dec 1964	Fwd	Wratten 25	0.250"	1/238 (sec)	1° - 76°	13° S - 61° N	0.51	1.38	0.84	0.84	1	8	93	73	80	71	77
	Aft	Wratten 21	0.175"	1/339 (sec)	1° - 76°	13° S - 61° N	0.59	1.42	1.00	0.83	0	7	93	73	86	69	76
1016-1 & -2 18 - 28 Jan 1965	Fwd	Wratten 25	0.250"	1/238 (sec)	1° - 83°	13° S - 63° N	0.50	1.54	1.02	1.05	5	36	63.5	58	68	56	75
	Aft	Wratten 21	0.175"	1/339 (sec)	1° - 82°	12° S - 63° N	0.60	1.61	1.11	1.01	5	26.5	73	59	73	60	76
1017-1 & -2 25 Feb through 6 Mar 1965	Fwd	Wratten 25	0.250"	1/250 (sec)	1° - 78°	8° S - 74° N	0.52	1.72	1.17	1.10	9	63	28	60	69	61	78
	Aft	Wratten 21	0.175"	1/357 (sec)	0° - 78°	9° S - 74° N	0.64	1.69	1.16	1.05		60	19	70	80	70	80

* Percentage of Primary, Intermediate, and Full Processing.
** Mission 1007 traced with a 1μ x 350μ slit. Missions 1014 - 1017 traced with a 1μ x 80μ slit.

SECTION V

REFERENCES

1. Messages: 25 February 1965; 2 and 6 March 1965.

2. Messages: 3 and 7 March 1965.

3. Eastman Kodak Company, Rochester, New York, Manual of Physical Properties of Kodak Aerial and Special Sensitized Materials.

4. Message: 26 February 1965.

SECTION VI

APPENDIX

TABLE 1 - MISSION DATA*

Mission 1017-1

Forward Camera						Aft Camera					
Pass	Roll	Frames	Pass	Roll	Frames	Pass	Roll	Frames	Pass	Roll	Frames
D01	1 of 1	001-009	D33	1 of 1	001-021	D01	1 of 1	001-009	D33	1 of 1	001-021
D02	1 of 3 2 of 3	001-015 016-087	D35	1 of 1	001-040	D02	1 of 3 2 of 3 3 of 3	001-025 026-062 063-088	D35	1 of 1	001-047
D04	1 of 3 2 of 3	001-066 067-090	D36	1 of 1	001-057	D04	1 of 2 2 of 2	001-075 076-081	D36	1 of 1	001-059
D05	1 of 3 2 of 3 3 of 3	001-077 078-106 107-130	D39	1 of 2 2 of 2	001-077 078-101	D05	1 of 2 2 of 2	001-078 079-132	D39	1 of 2 2 of 2	001-077 078-101
D06	1 of 2 2 of 2	001-075 076-147	D41	1 of 1	001-056	D06	1 of 2 2 of 2	001-074 075-149	D41	1 of 2 2 of 2	001-022 023-058
D07	1 of 2 2 of 2	001-076 076-099	D46	1 of 1	001-018	D07	1 of 2 2 of 2	001-066 060-087	D46	1 of 1	001-017
D08	1 of 1	001-032	D50	1 of 1	001-053	D08	1 of 1	001-031	D50	1 of 1	001-052
A08E	1 of 1	001-011	D53	1 of 2 2 of 2	001-057 058-135	A08E	1 of 1	001-011	D52	1 of 2 2 of 2	001-075 076-135
D09	1 of 1	001-053	D54	1 of 3 2 of 3 3 of 3	001-075 076-150 151-188	D09	1 of 1	001-054	D54	1 of 3 2 of 3 3 of 3	001-065 066-129 130-187
D10	1 of 1	001-078	D56	1 of 1	001-077	D10	1 of 1	001-078	D55	1 of 2 2 of 2	001-030 031-062
D18	1 of 1	001-018	D63	1 of 1	001-054	D18	1 of 1	001-018	D64	1 of 1	001-077
D20	1 of 1	001-060	D67	1 of 1	001-030	D20	1 of 1	001-057	D63	1 of 1	001-054
D21	1 of 2 2 of 2	001-072 073-105	D69	1 of 2 2 of 2	001-047 048-087	D21	1 of 2 2 of 2	001-073 074-102	D67	1 of 1	001-031
D22	1 of 2 2 of 2	001-066 067-117	D70	1 of 2 2 of 2	001-076 077-152	D22	1 of 2 2 of 2	001-066 067-117	D66	1 of 2 2 of 2	001-075 076-087
D23	1 of 2 2 of 2	001-076 076-118	D71	1 of 2 2 of 2	001-077 078-144	D23	1 of 2 2 of 2	001-070 071-111	D70	1 of 2 2 of 2	001-075 076-153
D24	1 of 3 2 of 3 3 of 3	001-066 066-130 131-135	D72	1 of 2 2 of 2	001-075 076-128	D24	1 of 3 2 of 3 3 of 3	001-055 056-113 114-136	D71	1 of 2 2 of 2	001-075 076-143
A25E	1 of 1	001-012	D78	1 of 1	001-054	A25E	1 of 1	001-013	D72	1 of 2 2 of 2	001-064 065-130
D25	1 of 3 2 of 3	001-076 077-110	D81 **	1 of 3 2 of 3 3 of 3 ***	001-026 027-070 070-083	D25	1 of 2 2 of 2	001-076 077-110	D78	1 of 1	001-053
D30	1 of 1	001-054				D30	1 of 1	001-023	D81**	1 of 3 2 of 3 3 of 3 ***	001-026 027-075 076-083
D32	1 of 1	001-018				D32	1 of 1	001-018			
Forward Totals:		37 Passes		63 Rolls	2943 Frames	All Totals:		37 Passes		63 Rolls	2943 Frames
						Mission 1017-1 Totals		37 Passes		125 Rolls	5886 Frames

* Under Camera Position, "Fwd" denotes the forward-pointing camera and "Aft" denotes the aft-pointing camera. Under Pass, the letter "A" denotes ascending (south to north) vehicle travel, and the letter "D" denotes descending (north to south) vehicle travel. Numbered passes may include both ascending and descending coverage. The letter "E" denotes an engineering pass.

** There are two Passes D81 on Mission 1017

*** Recovered with Mission 1017-2 film load

TABLE 1 - MISSION DATA (Cont'd)

Mission 1017-2

Forward Camera

Pass	Roll	Frames	Pass	Roll	Frames
D01**	1 of 1	001-004	D111	1 of 1	001-017
D02	1 of 1	001-030	D116	1 of 2	001-055
				2 of 2	056-101
D03	1 of 1	001-002			
			D117	1 of 2	001-071
D04	1 of 1	001-070		2 of 2	072-136
D05	1 of 3	001-075	D118	1 of 3	001-075
	2 of 3	076-004		2 of 3	076-141
				3 of 3	142-164
D06	1 of 3	001-075			
	2 of 3	076-150	A120E	1 of 1	001-013
	3 of 3	151-207			
			D120	1 of 2	001-075
D07	1 of 2	001-047		2 of 2	076-134
	2 of 2	048-105			
			D127	1 of 1	001-010
A88E	1 of 1	001-013			
			D130	1 of 1	001-002
D08	1 of 1	001-004			
			D131	1 of 2	001-030
D09	1 of 1	001-025		2 of 2	040-080
D07	1 of 1	001-001	D132	1 of 2	001-057
				2 of 2	058-121
D08	1 of 1	001-030			
			D133	1 of 3	001-023
D09	1 of 1	001-040		2 of 3	024-080
				3 of 3	080-140
D100	1 of 3	001-075			
	2 of 3	076-150	D134	1 of 2	001-070
				2 of 2	070-135
D101	1 of 3	001-020			
	2 of 3	021-080	D135	1 of 2	001-077
	3 of 3	080-100		2 of 2	078-116
D102	1 of 3	001-080	D136	1 of 2	001-070
	2 of 3	080-115		2 of 2	077-132
	3 of 3	116-170			
			D137	1 of 1	001-001
D103	1 of 2	001-040			
	2 of 2	040-121			
A104E	1 of 1	001-013			
D104	1 of 2	001-030			
	2 of 2	031-063			
Forward Totals:		32 Passes	57 Rolls		2000 Frames

**There are two Passes D01 on Mission 1017.

Mission 1017-2

Aft Camera

Pass	Roll	Frames	Pass	Roll	Frames
D01**	1 of 1	001-004	D104	1 of 1	001-001
D02	1 of 1	001-030	D111	1 of 1	001-016
D03	1 of 1	001-002	D116	1 of 2	001-075
				2 of 2	076-099
D04	1 of 2	001-044			
	2 of 2	045-075	D117	1 of 2	001-075
				2 of 2	076-130
D05	1 of 2	001-080			
	2 of 2	080-083	D118	1 of 3	001-075
				2 of 3	076-150
D06	1 of 3	001-075		3 of 3	151-163
	2 of 3	076-150			
	3 of 3	151-206	A120E	1 of 1	001-012
D07	1 of 2	001-045	D120	1 of 2	001-075
	2 of 2	046-106		2 of 2	076-131
A88E	1 of 1	001-012	D127	1 of 1	001-010
D08	1 of 1	001-003	D130	1 of 1	001-002
D09	1 of 1	001-024	D131	1 of 2	001-039
				2 of 2	040-065
D07	1 of 1	001-031			
			D132	1 of 2	001-075
D08	1 of 1	001-030		2 of 2	076-127
D09	1 of 1	001-041	D133	1 of 3	001-023
				2 of 3	024-080
D100	1 of 3	001-075		3 of 3	080-145
	2 of 3	076-148			
			D134	1 of 2	001-075
D101	1 of 4	001-020		2 of 2	076-140
	2 of 4	021-080			
	3 of 4	080-120	D135	1 of 2	001-075
	4 of 4	121-164		2 of 2	076-113
D102	1 of 3	001-075	D136	1 of 2	001-075
	2 of 3	076-150		2 of 2	076-130
	3 of 3	151-170			
			D137	1 of 2	001-075
D103	1 of 2	001-072		2 of 2	076-107
	2 of 2	073-119			
A104E	1 of 1	001-012			
Aft Totals		32 Passes	56 Rolls		2001 Frames
Mission 1017-2 Totals		32 Passes	116 Rolls		3010 Frames
Mission Totals		89 Passes	241 Rolls		11,600 Frames

TABLE 2 - CAMERA DATA *

Mission 1017

Camera	Type	Lens	Focal Length	Scan Angle	Shutter Type	Shutter Speed
Forward	Panoramic	Petzval f/3.5	(24" aprx) 609.63 mm operational focal length	70°	Focal plane-Interchangeable Slit widths	1/250 sec (Avg)
Aft	Panoramic	Petzval f/3.5	(24" aprx) 609.58 mm operational focal length	70°	Focal plane-Interchangeable Slit widths	1/357 sec (Avg)
Forward Take-up Horizon	Frame	f/8.0	55.13 mm operational focal length	n/a	Between the Lens	1/100 sec
Forward Supply Horizon	Frame	f/6.8	55.22 mm operational focal length	n/a	Between the Lens	1/100 sec
Aft Take-up Horizon	Frame	f/6.8	54.60 mm operational focal length	n/a	Between the Lens	1/100 sec
Aft Supply Horizon	Frame	f/8.0	54.11 mm operational focal length	n/a	Between the Lens	1/100 sec
Index - 1	Frame	f/4.5	38.19 mm	n/a	Between the Lens	1/500 sec
Index - 2	Frame	f/4.5	38.06 mm	n/a		1/500 sec
Stellar - 1	Frame	f/1.8	unk	n/a	Between the Lens	2 sec
Stellar - 2	Frame	f/1.8	unk	n/a		2 sec

* Message: 26 February 1965

TABLE 2 - CAMERA DATA (Cont'd)

Mission 1017

Camera	Exposure		Data Block	Titles
	Aperture	Slit Width		
Forward Panoramic	f/3.5	.350"	Timing marks at 200 cps intervals. Binary time block. Fiducial marks. Pass completion mark. Camera number.	Put on after processing includes: Operation, pass number, frame number, camera designator, mission number, launch date, and classification.
Aft Panoramic	f/3.5	.175"	Timing marks at 200 cps intervals. Binary time block. Fiducial marks. Pass completion mark. Camera number.	Put on after processing includes: Operation, pass number, frame number, camera designator, mission number, launch date, and classification.
Forward Take-up Horizon	f/8.0	n/a	n/a	n/a
Forward Supply Horizon	f/8.0	n/a	n/a	n/a
Aft Take-up Horizon	f/8.0	n/a	n/a	n/a
Aft Supply Horizon	f/8.0	n/a	n/a	n/a
Index - 1	f/4.5	n/a	None	Put on after processing includes: Frame number, mission number, date, and classification.
Index - 2	f/4.5	n/a	None	
Stellar - 1	f/2.8	n/a	None	Put on after processing includes: Frame number, mission number, date, and classification.
Stellar - 2	f/2.8	n.a	None	

Mission 1017

Camera	Exposure		Data Block	Titles
	Aperture	Slit Width		
Forward Panoramic	f/3.5	.350"	Timing marks at 200 cps intervals. Binary time block. Fiducial marks. Pass completion mark. Camera number.	Put on after processing includes: Operation, pass number, frame number, camera designator, mission number, launch date, and classification.
Aft Panoramic	f/3.5	.175"	Timing marks at 200 cps intervals. Binary time block. Fiducial marks. Pass completion mark. Camera number.	Put on after processing includes: Operation, pass number, frame number, camera designator, mission number, launch date, and classification.
Forward Take-up Horizon	f/8.0	n/a	n/a	n/a
Forward Supply Horizon	f/8.0	n/a	n/a	n/a
Aft Take-up Horizon	f/8.0	n/a	n/a	n/a
Aft Supply Horizon	f/8.0	n/a	n/a	n/a
Index - 1	f/4.5	n/a	None	Put on after processing includes: Frame number, mission number, date, and classification.
Index - 2	f/4.5	n/a	None	
Stellar - 1	f/2.8	n/a	None	Put on after processing includes: Frame number, mission number, date, and classification.
Stellar - 2	f/2.8	n.a	None	

TABLE 3 - Film Data

Mission 1017

Camera	Film Type	Type of Base	Nominal Base Thickness	Aprx. Exp. Index Daylight	Typical Gel Layer Thickness		Resolution
					Emulsion	Gel Backing	
Panoramic & Horizon	(4404) Estar Thin Base	Estar Polyestar	2.5 mils	1.6	0.24 mils	0.27 mils (Dyed)	200 l/mm at T.O.C. 1.6:1 (D-19) 475 l/mm at T.O.C. 1000:1 (D-19)
Stellar	(4401) Estar Thin Base	Estar Polyestar	2.5 mils	64	0.31 mils	0.24 mils (Dyed)	40 l/mm at T.O.C. 1.6:1 (D-19) 105 l/mm at T.O.C. 1000:1 (D-19)
Index	(4400) Estar Thin Base	Estar Polyestar	2.5 mils	20	0.21 mils	0.18 mils (Dyed)	65 l/mm at T.O.C. 1.6:1 (D-19) 175 l/mm at T.O.C. 1000:1 (D-19)

TABLE 5 - FRAME PROCESSING PROFILE

Mission 1017-1 Forward Camera

Pass	Part	Aprx Frame to Aprx Frame	Processing Level
D01	1	Head to tail	Full
D02	1	Head to tail	Full
	2	Head to tail	Intmed
D04	1	Head to 037	Full
		038 to 050	Intmed
		051 to tail	Full
	2	Head to tail	Full
D05	1	Head to 006	Full
		007 to 061	Intmed
		062 to tail	Full
	2, 3	Head to tail	Intmed
D06	1, 2	Head to tail	Intmed
D07	1	Head to 038	Intmed
		039 to 051	Primary
		052 to tail	Intmed
	2	Head to tail	Intmed
D08	1	Head to tail	Intmed
A09E	1	Head to tail	Intmed
D09	1	Head to 014	Intmed
		015 to 034	Primary
		035 to tail	Full
D10	1	Head to tail	Full
D16	1	Head to tail	Intmed
D20	1	Head to tail	Intmed
D21	1	Head to tail	Intmed
	2	Head to 087	Intmed
		088 to tail	Full
D22	1	Head to 037	Intmed
		038 to tail	Full
	2	Head to 082	Intmed
		083 to tail	Full
D23	1	Head to 016	Intmed
		017 to 033	Primary
		034 to 043	Intmed
		044 to 066	Primary
		067 to tail	Intmed
	2	Head to tail	Intmed
D24	1	Head to tail	Intmed
	2	Head to 983	Intmed
		084 to 117	Primary
		118 to tail	Intmed
	3	Head to tail	Intmed
A25E	1	Head to tail	Intmed
D25	1	Head to 003	Intmed
		004 to 065	Primary
		066 to tail	Full
	2	Head to 088	Full
		089 to tail	Intmed
D30	1	Head to 015	Intmed
		016 to tail	Full
D32	1	Head to tail	Full
D33	1	Head to 007	Full
		008 to tail	Intmed
D35	1	Head to tail	Intmed
D36	1	Head to tail	Intmed
D39	1	Head to 005	Intmed
		006 to 019	Full
		020 to 042	Intmed
		043 to tail	Primary
	2	Head to 095	Intmed
		096 to tail	Primary
D41	1	Head to 005	Primary
		006 to tail	Intmed

TABLE 5 - FRAME PROCESSING PROFILE (Cont'd)

Mission 1017-1

Forward Camera

Pass	Part	Aprx Frame to Aprx Frame	Processing Level
D48	1	Head to 008	Intmed
		009 to tail	Full
D50	1	Head to 007	Full
		008 to tail	Intmed
D52	1	Head to 014	Intmed
		015 to 029	Full
		030 to tail	Intmed
	2	Head to tail	Intmed
D54	1, 2, 3,	Head to tail	Intmed
D55	1	Head to 032	Full
		033 to tail	Primary
	2	Head to 079	Primary
		080 to tail	Intmed
D56	1	Head to 033	Full
		034 to tail	Intmed
D63	1	Head to 016	Intmed
		017 to tail	Full
D67	1	Head to tail	Full
D68	1	Head to 012	Intmed
		013 to 027	Primary
		028 to 036	Intmed
		037 to tail	Full
D68	2	Head to 052	Full
		053 to 079	Intmed
		080 to tail	Full
D70	1	Head to 008	Full
		009 to 042	Intmed
		043 to 066	Full
		067 to tail	Intmed
	2	Head to tail	Intmed
D71	1	Head to 036	Intmed
		037 to tail	Primary
	2	Head to tail	Intmed
D72	1	Head to 029	Intmed
		030 to tail	Primary
	2	Head to 096	Primary
		097 to tail	Intmed
D78	1	Head to 016	Intmed
		017 to tail	Primary
D81	1	Head to 007	Intmed
		008 to tail	Full
	2	Head to tail	Full
	3	Head to tail	Intmed

TABLE 5 - FRAME PROCESSING PROFILE (Cont'd)

Mission 1017-1 Aft Camera

Pass	Part	Apprx Frame to Apprx Frame	Processing Level
D01	1	Head to tail	Full
D02	1	Head to 018	Full
		019 to tail	Intmed
	2,3	Head to tail	Intmed
D04	1	Head to 054	Full
		055 to tail	Intmed
	2	Head to tail	Intmed
D05	1,2	Head to tail	Intmed
D06	1,2	Head to tail	Intmed
D07	1,2	Head to tail	Intmed
D08	1	Head to tail	Intmed
A09E	1	Head to tail	Intmed
D09	1	Head to tail	Intmed
D10	1	Head to 030	Intmed
		031 to tail	Full
D16	1	Head to tail	Intmed
D20	1	Head to tail	Intmed
D21	1	Head to 037	Full
		038 to tail	Intmed
	2	Head to tail	Intmed
D22	1	Head to 025	Intmed
		026 to tail	Full
	2	Head to 076	Intmed
		077 to tail	Full
D23	1	Head to 017	Intmed
		018 to tail	Primary
	2	Head to 096	Primary
		097 to tail	Intmed
D24	1	Head to tail	Intmed
	2	Head to 086	Intmed
		087 to tail	Primary
	3	Head to tail	Primary
A25E	1	Head to tail	Intmed
D25	1	Head to 062	Primary
		063 to tail	Intmed
	2	Head to tail	Intmed
D30	1	Head to tail	Intmed
D32	1	Head to tail	Intmed
D33	1	Head to tail	Intmed
D35	1	Head to 008	Intmed
		009 to tail	Full
D36	1	Head to 053	Full
		054 to tail	Intmed
D39	1	Head to 073	Intmed
		074 to tail	Primary
	2	Head to tail	Primary
D41	1	Head to tail	Primary
	2	Head to 033	Primary
		034 to tail	Intmed
D48	1	Head to 012	Intmed
		013 to tail	Full
D50	1	Head to tail	Intmed
D52	1	Head to 056	Intmed
		057 to tail	Primary
	2	Head to 117	Primary
		118 to tail	Intmed
D54	1	Head to tail	Intmed
	2	Head to 094	Intmed
		095 to 105	Primary
		106 to tail	Intmed
	3	Head to tail	Primary
D55	1	Head to tail	Full
	2	Head to 034	Full
		035 to tail	Primary

TABLE 5 - FRAME PROCESSING PROFILE (Cont'd)

Mission 1017-1

Aft Camera

Pass	Part	Aprx Frame to Aprx Frame	Processing Level
D56	1	Head to 062	Intmed
		063 to tail	Primary
D63	1	Head to 003	Primary
		004 to tail	Intmed
D67	1	Head to tail	Intmed
D68	1	Head to 009	Intmed
		010 to 040	Primary
		041 to 052	Intmed
		053 to tail	Primary
	2	Head to 079	Primary
		080 to tail	Intmed
D70	1	Head to 072	Intmed
		073 to tail	Primary
	2	Head to tail	Primary
D71	1	Head to 004	Primary
		005 to 033	Intmed
		034 to tail	Primary
	2	Head to 079	Primary
		080 to tail	Intmed
D72	1	Head to tail	Intmed
	2	Head to 104	Primary
		105 to tail	Intmed
D78	1	Head to tail	Primary
D81	1	Head to 015	Primary
		016 to tail	Full
	2	Head to tail	Full
	3	Head to tail	Intmed

TABLE 5 - FRAME PROCESSING PROFILE (Cont'd)

Mission 1017-2 — Forward Camera

Pass	Part	Aprx Frame to Aprx Frame	Processing Level
D81	1	Head to tail	Intmed
D82	1	Head to tail	Intmed
D83	1	Head to tail	Intmed
D84	1	Head to tail	Intmed
D85	1	Head to 025	Intmed
		026 to 054	Full
		055 to tail	Intmed
	2	Head to tail	Intmed
D86	1, 2	Head to tail	Intmed
	3	Head to 158	Intmed
		159 to 168	Primary
		169 to 184	Intmed
		185 to tail	Full
D87	1	Head to tail	Full
	2	Head to 064	Full
		065 to 080	Intmed
		081 to tail	Primary
A88E	1	Head to tail	Full
D93	1	Head to tail	Full
D95	1	Head to 013	Full
		014 to tail	Intmed
D97	1	Head to 008	Intmed
		009 to 014	Primary
		015 to tail	Intmed
D98	1	Head to tail	Intmed
D99	1	Head to tail	Intmed
D100	1	Head to 010	Intmed
		011 to 027	Full
		028 to tail	Intmed
	2	Head to 129	Intmed
		130 to tail	Full
D101	1	Head to 010	Full
		011 to tail	Intmed
	2	Head to 047	Intmed
		048 to tail	Full
D101	3	Head to tail	Full
D102	1	Head to tail	Intmed
	2	Head to 087	Intmed
		088 to tail	Primary
	3	Head to tail	Intmed
D103	1, 2	Head to tail	Full
A104E	1	Head to tail	Full
D104	1	Head to tail	Full
	2	Head to 045	Intmed
		046 to tail	Full
D111	1	Head to tail	Full
D116	1	Head to tail	Intmed
	2	Head to 066	Intmed
		067 to 093	Full
		094 to tail	Intmed
D117	1	Head to 014	Intmed
		015 to 040	Full
		041 to tail	Intmed
	2	Head to 089	Intmed
		090 to tail	Full
D118	1	Head to 018	Primary
		019 to 060	Intmed
		061 to tail	Primary
	2, 3	Head to tail	Intmed
A120E	1	Head to tail	Intmed
D120	1	Head to 023	Intmed
		024 to 070	Full
		071 to tail	Intmed
	2	Head to tail	Intmed
D127	1	Head to tail	Intmed
D130	1	Head to 012	Full
		013 to 056	Intmed
		057 to tail	Full
D131	1	Head to tail	Full

TABLE 5 - FRAME PROCESSING PROFILE (Cont'd)

Mission 1017-2 Forward Camera

Pass	Part	Aprx Frame to Aprx Frame	Processing Level
D131	2	Head to tail	Intmed
D132	1	Head to tail	Intmed
	2	Head to 092	Intmed
		093 to tail	Full
D133	1	Head to tail	Full
	2	Head to 039	Full
		040 to tail	Intmed
	3	Head to tail	Intmed
D134	1	Head to 063	Intmed
		064 to tail	Full
	2	Head to 099	Full
		100 to tail	Intmed
D135	1	Head to tail	Intmed
	2	Head to 086	Primary
		087 to tail	Intmed
D136	1	Head to 016	Intmed
		017 to 038	Full
		039 to 062	Intmed
		063 to tail	Primary
	2	Head to 095	Primary
		096 to 114	Intmed
		115 to tail	Full
D137	1	Head to tail	Full

TABLE 5 - FRAME PROCESSING PROFILE (Cont'd)

Mission 1017-2 Aft Camera

Pass	Part	Aprx Frame to Aprx Frame	Processing Level
D81 **	1	Head to tail	Intmed
D82	1	Head to tail	Intmed
D83	1	Head to tail	Intmed
D84	1	Head to tail	Intmed
	2	Head to tail	Intmed
D85	1	Head to 045	Intmed
		046 to 051	Full
		052 to tail	Full
	2	Head to tail	Full
D86	1	Head to tail	Full
	2	Head to 090	Full
		091 to 144	Intmed
		145 to tail	Primary
	3	Head to 193	Primary
		194 to tail	Intmed
D87	1	Head to tail	Full
	2	Head to 076	Full
		077 to tail	Primary
A88E	1	Head to tail	Primary
D93	1	Head to tail	Full
D95	1	Head to tail	Intmed
D97	1	Head to tail	Primary
D98	1	Head to tail	Primary
D99	1	Head to 018	Primary
		019 to tail	Intmed
D100	1	Head to tail	Intmed
	2	Head to tail	Intmed
D101	1	Head to 011	Intmed
		012 to tail	Full
	2	Head to 030	Full
		031 to tail	Intmed
	3	Head to tail	Intmed
D101	4	Head to 131	Intmed
		132 to tail	Primary
D102	1	Head to 047	Intmed
		048 to tail	Intmed
	2	Head to 097	Primary
		098 to tail	Intmed
	3	Head to tail	Primary
D103	1	Head to 020	Primary
		021 to tail	Intmed
	2	Head to tail	Intmed
A104E	1	Head to tail	Intmed
D104	1	Head to 051	Intmed
		052 to tail	Full
D111	1	Head to tail	Full
D116	1	Head to 010	Full
		011 to tail	Intmed
	2	Head to tail	Intmed
D117	1	Head to tail	Intmed
	2	Head to tail	Intmed
D118	1	Head to 060	Intmed
		061 to tail	Primary
	2	Head to tail	Primary
	3	Head to tail	Intmed
A120E	1	Head to tail	Full
D120	1	Head to 030	Full
		031 to 041	Intmed
		042 to 052	Full
		053 to tail	Primary
	2	Head to 083	Primary
		084 to tail	Intmed
D127	1	Head to tail	Primary
D130	1	Head to 006	Primary
		007 to tail	Intmed

TABLE 5 - FRAME PROCESSING PROFILE (Cont'd)

Mission 1017-2

Aft Camera

Pass	Part	Aprx Frame to Aprx Frame	Processing Level
D131	1	Head to 008	Intmed
		009 to tail	Full
	2	Head to 052	Full
		053 to tail	Intmed
D132	1	Head to 047	Intmed
		048 to tail	Primary
	2	Head to tail	Intmed
D133	1	Head to tail	Full
	2	Head to 040	Full
		041 to tail	Intmed
	3	Head to 105	Intmed
		106 to tail	Primary
D134	1	Head to 008	Primary
		009 to tail	Intmed
	2	Head to tail	Primary
D135	1	Head to tail	Intmed
	2	Head to tail	Intmed
D136	1	Head to 008	Intmed
		009 to tail	Full
	2	Head to 100	Full
		101 to 107	Intmed
		108 to 112	Primary
		113 to tail	Full
D137	1	Head to tail	Full
	2	Head to tail	Intmed

TABLE 6 - DIFFUSE DENSITY READINGS

MISSION 1017-1

PASS	FRAME	5	D/MIN	D/MAX	D̄	ΔD	BASE FOG	D/MAX CLOUDS	LATITUDE (DEG.)	SUN ANGLE
0	1						.17	2.02	51N	28
0	5	5	.40	.46	.43	.06	.19	.60	74N	4
0	10	10	1.08	1.23	1.14	.17	.18	1.12	73N	5
0	15	15	.48	1.42	1.10	.25	.13		70N	10
0	20	20	.59	1.30	.95	.93	.13		69N	11
0	25	25	.74	1.60	1.06	.91	.13		67N	13
0	30	30	.82	1.68	1.17	.86	.13		66N	14
0	35	35	.90	1.60	1.31	.74	.13	1.80	64N	16
0	40	40			1.35	.90	.13	1.76	63N	17
0	45	45	.76	1.82	1.29	1.06	.18		68N	12
0	50	50	.84	1.84	1.26	1.00	.18		67N	13
0	55	55	.78	1.88	1.36	1.22	.18		66N	14
0	60	60	.90	2.12	1.51	1.32	.18		64N	16
0	65	65	.90	2.17	1.31	1.32	.12		63N	17
0	70	70	.82	2.10	1.25	1.70	.18	2.10	51N	29
0	75	75	.90	2.15	1.28	1.73	.18	2.10	50N	30
0	80	80	.90	2.08	1.37	1.44	.19	2.11	48N	31
0	85									
0	90	5	.40	.46	.43	.06	.18	.60	74N	4
0	95	10	1.08	1.23	1.14	.17	.18	1.12	73N	5
0	100	15	.48	1.42	1.10	.25	.13		70N	10
0	105	20	.59	1.30	.95	.93	.13		69N	11
0	110	25	.74	1.60	1.06	.91	.13		67N	13
0	115	30	.82	1.68	1.17	.86	.13		66N	14
0	120	35	.90	1.60	1.31	.74	.13	1.80	64N	16
0	125	40			1.35	.90	.13	1.76	63N	17
0	130	45	.76	1.82	1.29	1.06	.18		68N	12
0	135	50	.84	1.84	1.26	1.00	.18		67N	13
0	140	55	.78	1.88	1.36	1.22	.18		66N	14
0	145	60	.90	2.12	1.51	1.32	.18		64N	16
0	150	65	.90	2.17	1.31	1.32	.12		63N	17
0	155	70	.82	2.10	1.25	1.70	.18	2.10	51N	29
0	160	75	.90	2.15	1.28	1.73	.18	2.10	50N	30
0	165	80	.90	2.08	1.37	1.44	.19	2.11	48N	31
0	170									
0	175	5	.40	.46	.43	.06	.18	.60	74N	4
0	180	10	1.08	1.23	1.14	.17	.18	1.12	73N	5
0	185	15	.48	1.42	1.10	.25	.13		70N	10
0	190	20	.59	1.30	.95	.93	.13		69N	11
0	195	25	.74	1.60	1.06	.91	.13		67N	13
0	200	30	.82	1.68	1.17	.86	.13		66N	14
0	205	35	.90	1.60	1.31	.74	.13	1.80	64N	16
0	210	40			1.35	.90	.13	1.76	63N	17
0	215	45	.76	1.82	1.29	1.06	.18		68N	12
0	220	50	.84	1.84	1.26	1.00	.18		67N	13
0	225	55	.78	1.88	1.36	1.22	.18		66N	14
0	230	60	.90	2.12	1.51	1.32	.18		64N	16
0	235	65	.90	2.17	1.31	1.32	.12		63N	17
0	240	70	.82	2.10	1.25	1.70	.18	2.10	51N	29
0	245	75	.90	2.15	1.28	1.73	.18	2.10	50N	30
0	250	80	.90	2.08	1.37	1.44	.19	2.11	48N	31
0	255									
0	260	5	.40	.46	.43	.06	.18	.60	74N	4
0	265	10	1.08	1.23	1.14	.17	.18	1.12	73N	5
0	270	15	.48	1.42	1.10	.25	.13		70N	10
0	275	20	.59	1.30	.95	.93	.13		69N	11
0	280	25	.74	1.60	1.06	.91	.13		67N	13
0	285	30	.82	1.68	1.17	.86	.13		66N	14
0	290	35	.90	1.60	1.31	.74	.13	1.80	64N	16
0	295	40			1.35	.90	.13	1.76	63N	17
0	300	45	.76	1.82	1.29	1.06	.18		68N	12
0	305	50	.84	1.84	1.26	1.00	.18		67N	13
0	310	55	.78	1.88	1.36	1.22	.18		66N	14
0	315	60	.90	2.12	1.51	1.32	.18		64N	16
0	320	65	.90	2.17	1.31	1.32	.12		63N	17
0	325	70	.82	2.10	1.25	1.70	.18	2.10	51N	29
0	330	75	.90	2.15	1.28	1.73	.18	2.10	50N	30
0	335	80	.90	2.08	1.37	1.44	.19	2.11	48N	31
0	340									
0	345	5	.40	.46	.43	.06	.18	.60	74N	4
0	350	10	1.08	1.23	1.14	.17	.18	1.12	73N	5
0	355	15	.48	1.42	1.10	.25	.13		70N	10
0	360	20	.59	1.30	.95	.93	.13		69N	11
0	365	25	.74	1.60	1.06	.91	.13		67N	13
0	370	30	.82	1.68	1.17	.86	.13		66N	14
0	375	35	.90	1.60	1.31	.74	.13	1.80	64N	16
0	380	40			1.35	.90	.13	1.76	63N	17
0	385	45	.76	1.82	1.29	1.06	.18		68N	12
0	390	50	.84	1.84	1.26	1.00	.18		67N	13
0	395	55	.78	1.88	1.36	1.22	.18		66N	14
0	400	60	.90	2.12	1.51	1.32	.18		64N	16
0	405	65	.90	2.17	1.31	1.32	.12		63N	17
0	410	70	.82	2.10	1.25	1.70	.18	2.10	51N	29
0	415	75	.90	2.15	1.28	1.73	.18	2.10	50N	30
0	420	80	.90	2.08	1.37	1.44	.19	2.11	48N	31
0	425									
0	430	5	.40	.46	.43	.06	.18	.60	74N	4
0	435	10	1.08	1.23	1.14	.17	.18	1.12	73N	5
0	440	15	.48	1.42	1.10	.25	.13		70N	10
0	445	20	.59	1.30	.95	.93	.13		69N	11
0	450	25	.74	1.60	1.06	.91	.13		67N	13
0	455	30	.82	1.68	1.17	.86	.13		66N	14
0	460	35	.90	1.60	1.31	.74	.13	1.80	64N	16
0	465	40			1.35	.90	.13	1.76	63N	17
0	470	45	.76	1.82	1.29	1.06	.18		68N	12
0	475	50	.84	1.84	1.26	1.00	.18		67N	13
0	480	55	.78	1.88	1.36	1.22	.18		66N	14
0	485	60	.90	2.12	1.51	1.32	.18		64N	16
0	490	65	.90	2.17	1.31	1.32	.12		63N	17
0	495	70	.82	2.10	1.25	1.70	.18	2.10	51N	29
0	500	75	.90	2.15	1.28	1.73	.18	2.10	50N	30
0	505	80	.90	2.08	1.37	1.44	.19	2.11	48N	31
0	510									
0	515	5	.40	.46	.43	.06	.18	.60	74N	4
0	520	10	1.08	1.23	1.14	.17	.18	1.12	73N	5
0	525	15	.48	1.42	1.10	.25	.13		70N	10
0	530	20	.59	1.30	.95	.93	.13		69N	11
0	535	25	.74	1.60	1.06	.91	.13		67N	13
0	540	30	.82	1.68	1.17	.86	.13		66N	14
0	545	35	.90	1.60	1.31	.74	.13	1.80	64N	16
0	550	40			1.35	.90	.13	1.76	63N	17
0	555	45	.76	1.82	1.29	1.06	.18		68N	12
0	560	50	.84	1.84	1.26	1.00	.18		67N	13
0	565	55	.78	1.88	1.36	1.22	.18		66N	14
0	570	60	.90	2.12	1.51	1.32	.18		64N	16
0	575	65	.90	2.17	1.31	1.32	.12		63N	17
0	580	70	.82	2.10	1.25	1.70	.18	2.10	51N	29
0	585	75	.90	2.15	1.28	1.73	.18	2.10	50N	30
0	590	80	.90	2.08	1.37	1.44	.19	2.11	48N	31
0	595									
0	600	5	.40	.46	.43	.06	.18	.60	74N	4
0	605	10	1.08	1.23	1.14	.17	.18	1.12	73N	5
0	610	15	.48	1.42	1.10	.25	.13		70N	10
0	615	20	.59	1.30	.95	.93	.13		69N	11
0	620	25	.74	1.60	1.06	.91	.13		67N	13
0	625	30	.82	1.68	1.17	.86	.13		66N	14
0	630	35	.90	1.60	1.31	.74	.13	1.80	64N	16
0	635	40			1.35	.90	.13	1.76	63N	17
0	640	45	.76	1.82	1.29	1.06	.18		68N	12
0	645	50	.84	1.84	1.26	1.00	.18		67N	13
0	650	55	.78	1.88	1.36	1.22	.18		66N	14
0	655	60	.90	2.12	1.51	1.32	.18		64N	16
0	660	65	.90	2.17	1.31	1.32	.12		63N	17
0	665	70	.82	2.10	1.25	1.70	.18	2.10	51N	29
0	670	75	.90	2.15	1.28	1.73	.18	2.10	50N	30
0	675	80	.90	2.08	1.37	1.44	.19	2.11	48N	31
0	680									
0	685	5	.40	.46	.43	.06	.18	.60	74N	4
0	690	10	1.08	1.23	1.14	.17	.18	1.12	73N	5
0	695	15	.48	1.42	1.10	.25	.13		70N	10
0	700	20	.59	1.30	.95	.93	.13		69N	11
0	705	25	.74	1.60	1.06	.91	.13		67N	13
0	710	30	.82	1.68	1.17	.86	.13		66N	14
0	715	35	.90	1.60	1.31	.74	.13	1.80	64N	16
0	720	40			1.35	.90	.13	1.76	63N	17
0	725	45	.76	1.82	1.29	1.06	.18		68N	12
0	730	50	.84	1.84	1.26	1.00	.18		67N	13
0	735	55	.78	1.88	1.36	1.22	.18		66N	14
0	740	60	.90	2.12	1.51	1.32	.18		64N	16
0	745	65	.90	2.17	1.31	1.32	.12		63N	17
0	750	70	.82	2.10	1.25	1.70	.18	2.10	51N	29
0	755	75	.90	2.15	1.28	1.73	.18	2.10	50N	30
0	760	80	.90	2.08	1.37	1.44	.19	2.11	48N	31
0	765									
0	770	5	.40	.46	.43	.06	.18	.60	74N	4
0	775	10	1.08	1.23	1.14	.17	.18	1.12	73N	5
0	780	15	.48	1.42	1.10	.25	.13		70N	10
0	785	20	.59	1.30	.95	.93	.13		69N	11
0	790	25	.74	1.60	1.06	.91	.13		67N	13
0	795	30	.82	1.68	1.17	.86	.13		66N	14
0	800	35	.90	1.60	1.31	.74	.13	1.80	64N	16
0	805	40			1.35	.90	.13	1.76	63N	17
0	810	45	.76	1.82	1.29	1.06	.18		68N	12
0	815	50	.84	1.84	1.26	1.00	.18		67N	13
0	820	55	.78	1.88	1.36	1.22	.18		66N	14
0	825	60	.90	2.12	1.51	1.32	.18		64N	16
0	830	65	.90	2.17	1.31	1.32	.12		63N	17
0	835	70	.82	2.10	1.25	1.70	.18	2.10	51N	29
0	840	75	.90	2.15	1.28	1.73	.18	2.10	50N	30
0	845	80	.90	2.08	1.37	1.44	.19	2.11	48N	31
0	850									
0	855	5	.40	.46	.43	.06	.18	.60	74N	4
0	860	10	1.08	1.23	1.14	.17	.18	1.12	73N	5
0	865	15	.48	1.42	1.10	.25	.13		70N	10
0	870	20	.59	1.30	.95	.93	.13		69N	11
0	875	25	.74	1.60	1.06	.91	.13		67N	13
0	880	30	.82	1.68	1.17	.86	.13		66N	14
0	885	35	.90	1.60	1.31	.74	.13	1.80	64N	16
0	890	40			1.35	.90	.13	1.76	63N	17
0	895	45	.76	1.82	1.29	1.06	.18		68N	12
0	900	50	.84	1.84	1.26	1.00	.18		67N	13
0	905	55	.78	1.88	1.36	1.22	.18		66N	14
0	910	60	.90	2.12	1.51	1.32	.18		64N	16
0	915	65	.90	2.17	1.31	1.32	.12		63N	17
0	920	70	.82	2.10	1.25	1.70	.18	2.10	51N	29
0	925	75	.90	2.15	1.28	1.73	.18	2.10	50N	30
0	930	80	.90	2.08	1.37	1.44	.19	2.11	48N	31
0	935									
0	940	5	.40	.46	.43	.06	.18	.60	74N	4
0	945	10	1.08	1.23	1.14	.17	.18	1.12	73N	5
0	950	15	.48	1.42	1.10	.25	.13		70N	10
0	955	20	.59	1.30	.95	.93	.13		69N	11
0	960	25	.74	1.60	1.06	.91	.13		67N	13
0	965	30	.82	1.68	1.17	.86	.13		66N	14
0	970	35	.90	1.60	1.31	.74	.13	1.80	64N	16
0	975	40			1.35	.90	.13	1.76	63N	17
0	980	45	.76	1.82	1.29	1.06	.18		68N	12
0	985	50	.84	1.84	1.26	1.00	.18		67N	13
0	990	55	.78	1.88	1.36	1.22	.18		66N	14
0	995	60	.90	2.12	1.51	1.32	.18		64N	16
0	1000	65	.90	2.17	1.31	1.32	.12		63N	17
0	1005	70	.82	2.10	1.25	1.70	.18	2.10	51N	29
0	1010	75	.90	2.15	1.28	1.73	.18	2.10	50N	30
0	1015	80	.90	2.08	1.37	1.44	.19	2.11	48N	31
0	1020									
0	1025	5	.40	.46	.43	.06	.18	.60	74N	4
0	1030	10	1.08	1.23	1.14	.17	.18	1.12	73N	5
0	1035	15	.48	1.42	1.10	.25	.13		70N	10
0	1040	20	.59	1.30	.95	.93	.13		69N	11
0	1045	25	.74	1.60	1.06	.91	.13		67N	13
0	1050	30	.82	1.68	1.17	.86	.13		66N	14
0	1055	35	.90	1.60	1.31	.74	.13	1.80	64N	16
0	1060	40			1.35	.90	.13	1.76	63N	17
0	1065	45	.76	1.82	1.29	1.06	.18		68N	12
0	1070	50	.84	1.84	1.26	1.00	.18		67N	13
0	1075	55	.78	1.88	1.36	1.22	.18		66N	14
0	1080	60	.90	2.12	1.51	1.32	.18		64N	16
0	1085	65	.90	2.17	1.31	1.32	.12		63N	17
0	1090	70	.82	2.10	1.25	1.70	.18	2.10	51N	29
0	1095	75	.90	2.15	1.28	1.73	.18	2.10	50N	30
0	1100	80	.90	2.08	1.37	1.44	.19	2.11	48N	31
0	1105									
0	1110	5	.40	.46	.43	.06	.18	.60	74N	4
0	1115	10	1.08	1.23	1.14	.17	.18	1.12	73N	5
0	1120	15	.48	1.42	1.10	.25	.13		70N	10
0	1125	20	.59	1.30	.95	.93	.13		69N	11
0	1130	25	.74	1.60	1.06	.91	.13		67N	13
0	1135	30	.82	1.68	1.17	.86	.13		66N	14
0	1140	35	.90	1.60	1.31	.74	.13	1.80	64N	16
0	1145	40			1.35	.90	.13	1.76	63N	17
0	1150	45	.76	1.82	1.29	1.06	.18		68N	12
0	1155	50	.84	1.84	1.26	1.00	.18		67N	13
0	1160	55	.78	1.88	1.36	1.22	.18		66N	14
0	1165	60	.90	2.12	1.51	1.32	.18		64N	16
0	1170	65	.90	2.17	1.31	1.32	.12		63N	17
0	1175	70	.82	2.10	1.25	1.70	.18	2.10	51N	29
0	1180	75	.90	2.15	1.28	1.73	.18	2.10	50N	30
0	1185	80	.90	2.08	1.37	1.44	.19	2.11	48N	31
0	1190									
0	1195	5	.40	.46	.43	.06	.18	.60	74N	4
0	1200	10	1.08	1.23	1.14	.17	.18	1.12	73N	5
0	1205	15	.48	1.42	1.10	.25	.13		70N	10
0	1210	20	.59	1.30	.95	.93	.13		69N	11
0	1215	25	.74	1.60	1.06	.91	.13		67N	13
0	1220	30	.82	1.68	1.17	.86	.13		66N	14
0	1225	35	.90	1.60	1.31	.74	.13	1.80	64N	16
0	1230	40			1.35	.90	.13	1.76	63N	17
0	1235	45	.76	1.82	1.29	1.06	.18		68N	12
0	1240	50	.84	1.84	1.26	1.00	.18		67N	13
0	1245	55	.78	1.88	1.36	1.22	.18		66N	14
0	1250	60	.90	2.12	1.51	1.32	.18		64N	16
0	1255	65	.90	2.17	1.31	1.32	.12		63N	17
0	1260	70	.82	2.10	1.25	1.70	.18	2.10	51N	29
0	1265	75	.90	2.15	1.28	1.73	.18	2.10	50N	30
0	1270	80	.90	2.08	1.37	1.44	.19	2.11	48N	31
0	1275									
0	1280	5	.40	.46	.43	.06	.18	.60	74N	4
0	1285	10	1.08	1.23	1.14	.17	.18	1.12	73N	5
0	1290	15	.48	1.42	1.10	.25	.13		70N	10
0	1295	20	.59	1.30	.95	.93	.13		69N	11
0	1300	25	.74	1.60	1.06	.91	.13		67N	13
0	1305	30	.82	1.68	1.17	.86	.13		66N	14
0	1310	35	.90	1.60	1.31	.74	.13	1.80	64N	16
0	1315	40			1.35	.90	.13	1.76	63N	17
0	1320	45	.76	1.82	1.29	1.06	.18		68N	12
0	1325	50	.84	1.84	1.26	1.00	.18		67N	13
0	1330	55	.78	1.88	1.36	1.22	.18		66N	14
0	1335	60	.90	2.12	1.51	1.32	.18		64N	16
0	1340	65	.90	2.17	1.31	1.32	.12		63N	17
0	1345	70	.82	2.10	1.25	1.70	.18	2.10	51N	29
0	1350	75	.90	2.15	1.28	1.73	.18	2.10	50N	30
0	1355	80	.90	2.08	1.37	1.44	.19	2.11	48N	31
0	1360									
0	1365	5	.40	.46	.43	.06	.18	.60	74N	4
0	1370	10	1.08	1.23	1.14	.17	.18	1.12	73N	5
0	1375	15	.48	1.42	1.10	.25	.13		70N	10
0	1380	20	.59	1.30	.95	.93	.13		69N	11
0	1385	25	.74	1.60	1.06	.91	.13		67N	13
0	1390	30	.82	1.68	1.17	.86	.13		66N	14
0	1395	35	.90	1.60	1.31	.74	.13	1.80	64N	16
0	1400	40			1.35	.90	.13	1.76	63N	17
0	1405	45	.76	1.82	1.29	1.06	.18		68N	12
0	1410	50	.84	1.84	1.26	1.00	.18		67N	13
0	1415	55	.78	1.88	1.36	1.22	.18		66N	14
0	1420	60	.90	2.12	1.51	1.32	.18		64N	16
0	1425	65	.90	2.17	1.31	1.32	.12		63N	17
0	1430	70	.82	2.10	1.25	1.70	.18	2.10	51N	29
0	1435	75	.90	2.15	1.28	1.73	.18	2.10	50N	30
0	1440	80	.90	2.08	1.37	1.44	.19	2.11	48N	31

TABLE 6 - DIFFUSE DENSITY READINGS (Cont'd)

MISSION 1017-1

FORWARD CAMERA

PASS	FRAME	D/MIN	D/MAX	D̄	ΔD	BASE FOG	D/MAX CLOUDS	LATITUDE (DEG)	SUN ANGLE
D 24	35	.52	1.42	.97	.90	.12		63N	18
D 24	45	.44	1.80	1.12	1.36	.12		62N	19
D 24	60	.78	1.98	1.38	1.20	.12		55N	25
D 24	70	.82	2.00	1.41	1.18	.12	1.96	54N	27
D 24	80	.86	2.05	1.45	1.19	.12		52N	28
D 24	90	.80	1.72	1.26	.92	.11		50N	30
D 24	100	.96	1.72	1.34	.76	.11		48N	31
D 24	108	.74	1.75	1.24	1.01	.11		47N	32
D 24	118	.28	1.35	.81	1.07	.12	1.82	44N	36
D 24	120	.60	1.35	.97	.75	.12	1.85	42N	37
A 25E	5					.11		40N	-41
D 25	5	.86	1.22	1.04	.36	.11	1.60	51N	30
D 25	9	.88	1.69	1.28	.81	.11	1.86	51N	30
D 25	19	1.13	1.74	1.43	.61	.11	1.64	49N	31
D 25	29	.49	1.70	1.09	1.21	.11	1.71	48N	33
D 25	39	.85	1.53	1.19	.68	.11	1.71	46N	34
D 25	49	.90	1.21	1.05	.31	.11	1.74	44N	35
D 25	59					.12	2.10	43N	37
D 25	69	.79	1.40	1.09	.61	.19	1.99	41N	38
D 25	83	.90	1.46	1.18	.56	.19	2.17	31N	46
D 25	93	.56	1.76	1.16	1.20	.15	2.13	30N	47
D 25	103	.49	1.84	1.16	1.35	.13		28N	48
D 30	5	.56	2.08	1.32	1.52	.14		40N	39
D 30	15	.42	1.35	.88	.93	.16		39N	40
D 32	5					.18	2.08	37N	42
D 32	11					.18	2.16	36N	42
D 33	5	1.08	1.89	1.48	.81	.18		70N	10
D 33	15	.64	1.90	1.27	1.26	.13		68N	12
D 35	5	.40	.90	.65	.50	.13		72N	7
D 35	15	.40	1.45	.92	1.05	.13		71N	8
D 35	25	.67	1.45	1.06	.78	.13		69N	10
D 35	35	.46	1.68	1.07	1.22	.13		68N	12
D 35	43	.72	1.98	1.35	1.26	.13		67N	13
D 36	5	.43	1.00	.71	.57	.12		72N	7
D 36	15	.45	1.20	.82	.75	.12		71N	9
D 36	25	.58	1.60	1.09	1.02	.12		69N	10
D 36	33	.48	1.40	.94	.92	.13		68N	12
D 36	45	.57	1.87	1.22	1.30	.13		59N	23
D 36	55	.80	2.15	1.47	1.35	.13		57N	24
D 39	5	.47	1.85	1.16	1.38	.17	1.90	59N	23
D 39	15	.68	2.00	1.34	1.32	.21		58N	24
D 39	25	.62	2.01	1.31	1.39	.15		56N	25
D 39	35	.80	2.00	1.40	1.20	.14	1.65	55N	27
D 39	45					.13	1.81	53N	28
D 39	55	.61	1.72	1.16	1.11	.11	1.49	51N	30
D 39	65	1.32	1.72	1.52	.40	.11		50N	31
D 39	73	1.20	1.74	1.47	.54	.11		49N	32
D 39	83	.95	1.05	1.00	.10	.13	2.05	41N	39
D 39	93	.67	2.17	1.42	1.50	.14	2.14	39N	40
D 39	97	.52	1.63	1.07	1.11	.14	1.98	39N	40
D 41	5					.11	2.04	55N	27
D 41	15	.56	2.00	1.28	1.44	.12	2.10	53N	28
D 41	27	.43	2.06	1.24	1.63	.13	2.00	49N	32
D 41	37	.68	2.07	1.37	1.39	.11	2.14	48N	33
D 41	47	.89	2.10	1.49	1.21	.13	2.11	46N	34
D 41	54	.40	2.18	1.29	1.78	.12	2.08	45N	35

PASS	FRAME	D/MIN	D/MAX	D̄	ΔD	BASE FOG	D/MAX CLOUDS	LATITUDE (DEG)	SUN ANGLE
D 48	5					.17	2.07	37N	43
D 48	12					.21	2.12	36N	44
D 50	5	.90	1.76	1.33	.86	.20		70N	1
D 50	15	.80	1.38	1.09	.58	.13		69N	2
D 50	25	.59	1.66	1.12	1.07	.13		67N	4
D 50	35	.70	1.53	1.11	.83	.13		66N	5
D 50	45	.66	1.72	1.19	1.06	.13		64N	7
D 52	5	.71	1.45	1.08	.74	.13		70N	1
D 52	15	.70	1.59	1.14	.89	.17		69N	2
D 52	25	.83	1.86	1.34	1.03	.20		67N	4
D 52	42	.56	1.84	1.20	1.28	.13		59N	13
D 52	52	.69	1.90	1.29	1.21	.13		58N	14
D 52	62	.70	1.90	1.30	1.20	.13		56N	16
D 52	72	.40	1.90	1.15	1.50	.13		51N	21
D 52	82	.45	1.78	1.11	1.33	.13	1.88	50N	22
D 52	92	1.33	1.96	1.64	.63	.13		48N	24
D 52	102	.54	1.94	1.24	1.40	.13		47N	25
D 52	112	.46	1.89	1.17	1.43	.13	1.80	45N	26
D 52	122	.37	1.90	1.13	1.53	.13	1.87	43N	28
D 52	130					.13	2.06	42N	29
D 54	5	.46	1.42	.94	.96	.14	1.70	69N	2
D 54	15	.44	1.50	.97	1.06	.14	2.02	68N	3
D 54	25	.71	1.58	1.14	.87	.13		66N	5
D 54	35	.60	1.71	1.15	1.11	.13		65N	7
D 54	45	.76	1.80	1.28	1.04	.12		63N	9
D 54	55	.72	1.82	1.27	1.10	.14		62N	10
D 54	70	.56	2.02	1.29	1.46	.13		56N	17
D 54	80	.62	2.00	1.31	1.38	.14		54N	18
D 54	90	.62	2.08	1.35	1.46	.14		53N	19
D 54	100	.53	2.16	1.34	1.63	.13		51N	20
D 54	110	.50	1.94	1.22	1.44	.14		41N	30
D 54	120	.60	1.64	1.12	1.04	.14	2.06	40N	31
D 54	135	.59	1.79	1.19	1.20	.14	2.20	34N	37
D 54	145	.98	1.90	1.44	.92	.14	2.22	32N	38
D 54	155	.84	2.15	1.49	1.31	.13	2.25	30N	39
D 54	163	.88	2.23	1.55	1.35	.14	2.30	28N	40
D 55	5	.62	1.44	1.03	.82	.20	1.92	70N	1
D 55	10	.51	1.78	1.14	1.27	.20	1.92	69N	2
D 55	20	.50	1.80	1.15	1.30	.20	1.92	68N	3
D 55	35	1.00	2.10	1.55	1.10	.15	2.13	54N	18
D 55	45	.86	1.60	1.23	.74	.11		57N	20
D 55	55	.92	1.68	1.30	.76	.11		51N	21
D 55	70	1.05	1.73	1.39	.68	.11		47N	26
D 55	80	.33	1.01	.67	.68	.11	1.84	45N	27
D 55	85	.62	1.26	.94	.64	.13	2.04	44N	28
D 56	5	.72	2.04	1.38	1.32	.20		61N	11
D 56	15	.83	2.03	1.43	1.20	.18	1.88	60N	12
D 56	25	1.05	2.06	1.55	1.01	.18	2.06	58N	14
D 56	35	.96	1.94	1.45	.98	.14	2.04	57N	15
D 56	45	.84	1.96	1.40	1.12	.12	1.95	55N	17
D 56	55	1.24	2.00	1.62	.76	.12	1.96	53N	19
D 56	65	.67	2.00	1.33	1.33	.12	2.00	52N	20
D 56	72	1.06	2.16	1.61	1.10	.12	2.16	51N	21
D 63	5	.30	1.64	.97	1.34	.12		32N	40
D 63	15	.42	1.64	1.03	1.22	.15		31N	41
D 67	5	.59	1.79	1.19	1.20	.20		70N	1
D 67	15	.77	2.01	1.39	1.24	.19		69N	2
D 67	25	.98	1.82	1.40	.84	.20		67N	4

TABLE 6 - DIFFUSE DENSITY READINGS (Cont'd)

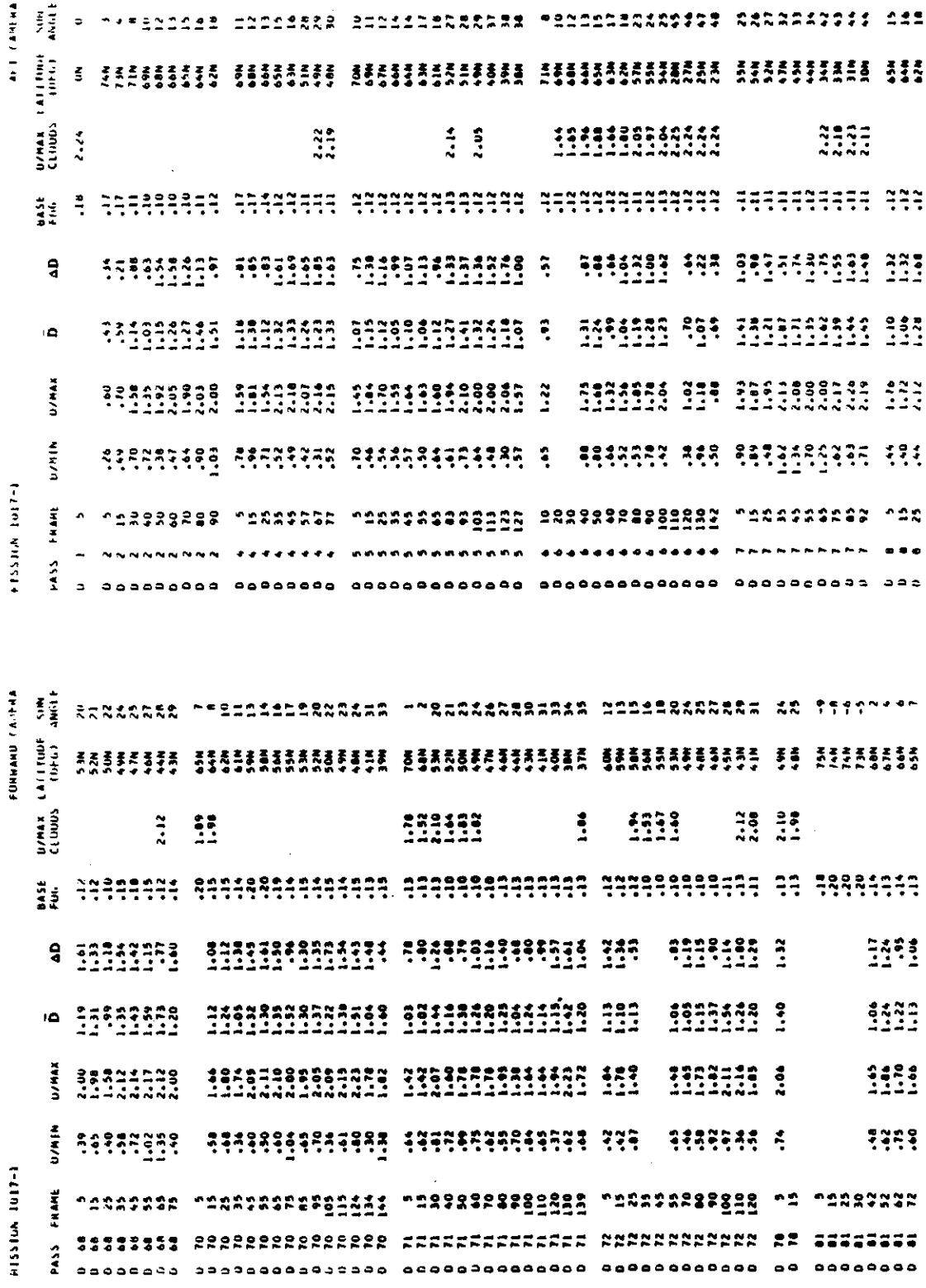


TABLE 6 - DIFFUSE DENSITY READINGS (Cont'd)

MISSION 1017-1 | AFT CAMERA

PASS		FRAME	D/MIN	D/MAX	$\bar{D}$	ΔD	BASE FOG	D/MAX CLOUDS	LATITUDE (DEG)	SUN ANGLE
A	9E	5					.11		38N	40
D	9	5	.73	2.08	1.40	1.35	.12	2.15	51N	28
D	9	15	.87	2.12	1.49	1.25	.12	2.13	50N	29
D	9	25	1.24	2.12	1.68	.88	.12	2.13	48N	30
D	9	35	.32	2.10	1.21	1.78	.12	2.06	46N	31
D	9	45	.26	1.83	1.04	1.57	.12	2.08	45N	33
D	10	5	.46	1.14	.80	.68	.12	2.18	4N	56
D	10	15	.39	1.30	.84	.91	.12	2.24	3N	56
D	10	25	.59	.98	.78	.39	.15	2.34	2N	56
D	10	35	.86	1.50	1.18	.64	.18	2.36	0N	56
D	10	45	.64	1.22	.93	.58	.18	2.34	1S	56
D	10	55	.88	1.64	1.26	.76	.18	2.36	2S	56
D	10	65	1.08	1.36	1.22	.28	.18	2.36	4S	56
D	16	10					.13	2.20	37N	40
D	20	5	.48	1.46	.97	.98	.12		67N	13
D	20	15	.65	1.52	1.08	.87	.12		66N	14
D	20	25	.72	1.60	1.16	.88	.12		64N	16
D	20	35	.57	2.04	1.30	1.47	.12		51N	29
D	20	45	.85	2.17	1.51	1.32	.12	2.20	49N	30
D	21	5	.60	1.08	.84	.48	.18	1.32	72N	6
D	21	15					.17	1.65	71N	8
D	21	25	1.03	1.40	1.21	.37	.16	1.64	70N	10
D	21	35	.90	1.80	1.35	.90	.17	1.82	68N	11
D	21	45	.58	1.65	1.11	1.07	.18	1.68	63N	17
D	21	55	.63	1.62	1.12	.99	.11	1.45	61N	19
D	21	65	.56	1.68	1.12	1.12	.10	1.43	59N	21
D	21	80	.79	1.96	1.37	1.17	.11		52N	28
D	21	90	.50	2.03	1.26	1.53	.10		50N	29
D	21	97	.56	2.06	1.31	1.50	.11		49N	30
D	22	5	.37	1.40	.88	1.03	.12		70N	9
D	22	15	.35	1.58	.96	1.23	.12		69N	11
D	22	23	1.12	1.67	1.39	.55	.13		68N	12
D	22	33	.70	2.00	1.35	1.30	.17	2.04	57N	23
D	22	43	.62	1.96	1.29	1.34	.17		55N	24
D	22	62	.67	1.84	1.25	1.17	.13		41N	37
D	22	74	.40	1.70	1.05	1.30	.13		39N	38
D	22	84	.37	2.24	1.30	1.87	.18	2.32	28N	46
D	22	94	.43	1.80	1.11	1.37	.18	2.35	27N	48
D	22	104	.48	1.78	1.13	1.30	.18	2.29	25N	49
D	22	112	.57	1.89	1.23	1.32	.17	2.32	24N	49
D	23	5					.12	1.92	57N	22
D	23	15					.12	2.00	56N	24
D	23	25	.90	1.65	1.27	.75	.10		54N	26
D	23	35	.57	1.70	1.13	1.13	.10		52N	27
D	23	47	.99	1.74	1.36	.75	.10		48N	32
D	23	57	.98	1.80	1.39	.82	.09		46N	33
D	23	76	.40	2.11	1.25	1.71	.10	2.12	35N	43
D	23	86	.38	2.08	1.23	1.70	.10		33N	44
D	23	96	.25	2.09	1.17	1.84	.10		32N	45
D	23	106	.26	2.29	1.27	2.03	.12		30N	46
D	24	5	.54	1.78	1.16	1.24	.12		68N	12
D	24	15	.50	1.51	1.00	1.01	.12	1.60	67N	13
D	24	25	.50	1.60	1.05	1.10	.12	1.66	65N	15
D	24	35	.50	1.58	1.04	1.08	.12	1.68	63N	17
D	24	45	.46	1.68	1.07	1.22	.12		62N	18
D	24	60	.75	1.88	1.31	1.13	.12	1.88	55N	25
D	24	70	.86	1.92	1.39	1.06	.12		54N	26
D	24	80	.96	2.05	1.50	1.09	.12		52N	27
D	24	90	1.02	2.02	1.52	1.00	.12		51N	28
D	24	100	.92	1.66	1.29	.74	.10		49N	30
D	24	119	.58	1.08	.83	.50	.10	1.76	44N	35
D	24	129	.42	1.14	.78	.72	.09	1.43	42N	36
A	25E	5					.12		38N	-42
D	25	5	.76	1.46	1.11	.70	.09	1.76	51N	29
D	25	15	.98	1.70	1.34	.72	.09	1.85	50N	30
D	25	27	.78	1.68	1.23	.90	.10	1.75	48N	31
D	25	37	.45	1.39	.92	.94	.10	1.79	47N	33
D	25	47	1.12	1.73	1.42	.61	.09	1.82	45N	34
D	25	57	.80	1.40	1.10	.60	.09	1.90	43N	35
D	25	67					.11	2.17	41N	37
D	25	82					.12	2.20	32N	45
D	25	92	.58	1.74	1.16	1.16	.14	2.18	30N	46
D	25	102	.66	1.87	1.26	1.21	.13	2.13	28N	47
D	30	5	1.32	2.14	1.73	.82	.12		40N	39
D	30	15	.52	1.46	.99	.94	.11	1.53	38N	40
D	30	18	.45	1.33	.89	.88	.11		38N	40
D	32	5					.12	1.82	38N	41
D	32	11					.12	2.01	37N	41
D	33	5	.74	1.65	1.19	.91	.13		70N	9
D	33	16	.58	1.88	1.23	1.30	.14		69N	11
D	35	5	.45	.87	.66	.42	.15		72N	6
D	35	15	.73	1.66	1.19	.93	.21		71N	7
D	35	25	.90	1.94	1.42	1.04	.20	1.43	70N	9
D	35	35	.85	1.73	1.29	.88	.20		69N	11
D	35	42	.96	1.92	1.44	.96	.18		68N	12
D	36	5	.61	1.24	.92	.63	.18		72N	6
D	36	15	.73	1.69	1.21	.96	.18		71N	8
D	36	25	.88	1.89	1.38	1.01	.18		70N	9
D	36	34	.62	1.59	1.10	.97	.13		69N	11
D	36	45	.55	1.70	1.12	1.15	.12		59N	22
D	36	55	.60	1.92	1.26	1.32	.12		57N	23
D	36	63	.75	2.12	1.43	1.37	.12		56N	24
D	39	5	.44	1.92	1.18	1.48	.11	1.90	59N	22
D	39	15	.35	1.78	1.06	1.43	.10	1.50	58N	23
D	39	25	.40	1.87	1.13	1.47	.11		56N	24
D	39	35	.78	1.94	1.36	1.16	.11		55N	26
D	39	45	1.45	2.02	1.73	.57	.11	2.04	53N	27
D	39	55	.68	1.50	1.09	.82	.09	1.70	51N	29
D	39	65	.65	1.68	1.16	1.03	.10	1.73	50N	30
D	39	72	.98	1.67	1.32	.69	.10		49N	31
D	39	82	.56	2.06	1.31	1.50	.10	1.70	41N	39
D	39	92	.30	1.67	.98	1.37	.09	1.18	40N	40
D	39	96	.44	1.85	1.14	1.41	.09	1.40	39N	40
D	41	5					.09	1.80	55N	26
D	41	13	.30	1.56	.93	1.26	.09	1.85	54N	27
D	41	28	.38	1.75	1.06	1.37	.09	1.82	49N	32
D	41	38	.45	2.00	1.22	1.55	.11	2.07	47N	33
D	41	48	.80	2.13	1.46	1.33	.11	2.11	46N	34
D	41	56	.60	2.08	1.34	1.48	.13	2.00	45N	35
D	48	10					.18	2.16	36N	43
D	50	5	.65	1.33	.99	.68	.12		70N	1

TABLE 6 - DIFFUSE DENSITY READINGS (Cont'd)

MISSION 1017-1 AFT CAMERA

PASS		FRAME	D/MIN	D/MAX	$\bar{D}$	ΔD	BASE FOG	D/MAX CLOUDS	LATITUDE (DEG)	SUN ANGLE
D	50	15	.63	1.72	1.17	1.09	.12		69N	2
D	50	25	.72	1.41	1.06	.69	.12		67N	3
D	50	35	.58	1.92	1.25	1.34	.12		66N	5
D	50	47	.70	2.12	1.41	1.42	.12		64N	6
D	52	5	.58	1.58	1.08	1.00	.12	1.30	70N	1
D	52	15	.56	1.60	1.08	1.04	.12	1.42	69N	2
D	52	25	.42	1.34	.88	.92	.13		68N	3
D	52	32	.50	1.60	1.05	1.10	.12		67N	4
D	52	42	.55	1.68	1.11	1.13	.12		64N	13
D	52	52	.60	1.82	1.21	1.22	.13		61N	14
D	52	61	.76	2.06	1.41	1.30	.11		59N	15
D	52	71	.37	1.68	1.02	1.31	.11		51N	20
D	52	81	.26	1.60	.93	1.34	.10		50N	21
D	52	91	.23	1.65	.94	1.42	.10		48N	23
D	52	101	.78	1.64	1.21	.86	.10		47N	24
D	52	111	.48	1.73	1.10	1.25	.10	1.34	46N	25
D	52	121	.25	1.77	1.01	1.52	.10	1.70	44N	27
D	52	130	.36	2.05	1.20	1.69	.12	1.74	43N	28
D	54	5	.27	1.29	.78	1.02	.13	1.32	69N	1
D	54	15	.38	1.49	.93	1.11	.12	1.51	68N	2
D	54	25	.75	1.92	1.33	1.17	.13	1.64	66N	4
D	54	35	.57	1.66	1.11	1.09	.13		65N	6
D	54	45	.66	1.72	1.19	1.06	.12		63N	8
D	54	55	.79	1.82	1.30	1.03	.12		61N	9
D	54	70	.42	1.92	1.17	1.50	.12	1.80	56N	16
D	54	80	.66	2.00	1.33	1.34	.13		55N	17
D	54	90	.54	1.98	1.26	1.44	.13		53N	19
D	54	100	.66	2.00	1.33	1.34	.12		52N	20
D	54	110	.46	1.40	.93	.94	.12	1.70	42N	30
D	54	120	.85	1.82	1.33	.97	.13	1.92	40N	31
D	54	135	.92	2.02	1.47	1.10	.14	1.97	34N	36
D	54	145	.56	1.64	1.10	1.08	.10	1.97	32N	37
D	54	155	.64	1.32	.98	.68	.10	1.95	31N	38
D	54	162	.55	1.93	1.24	1.38	.11	1.96	30N	39
D	55	5					.14	1.78	70N	1
D	55	15	1.20	1.71	1.45	.51	.18	2.00	69N	2
D	55	25	.52	1.76	1.14	1.24	.18	1.95	67N	3
D	55	35	1.11	2.12	1.61	1.01	.15	2.06	54N	18
D	55	45	.58	1.82	1.20	1.24	.10		53N	19
D	55	55	.66	1.69	1.17	1.03	.10		51N	21
D	55	70	1.05	1.82	1.43	.77	.10		47N	25
D	55	80	.86	1.70	1.28	.84	.10		45N	26
D	55	87	.36	1.62	.99	1.26	.10	1.70	44N	27
D	56	5	.52	1.90	1.21	1.38	.13		61N	10
D	56	15	.59	1.82	1.20	1.23	.13		60N	11
D	56	25	.62	1.76	1.19	1.14	.13	1.62	58N	13
D	56	35	.80	1.88	1.34	1.08	.14	1.78	57N	14
D	56	45	.70	1.95	1.32	1.25	.14	1.96	55N	16
D	56	55	.88	1.96	1.42	1.08	.13	2.04	53N	18
D	56	65	1.02	1.94	1.48	.92	.13		52N	19
D	56	72	.50	1.68	1.09	1.18	.13	1.80	51N	20
D	63	5	.52	1.65	1.08	1.13	.13		32N	39
D	63	15	.36	1.65	1.00	1.29	.13		31N	40
D	63	19	.40	1.77	1.08	1.37	.13		30N	40
D	67	5	.42	1.70	1.06	1.28	.12		70N	1
D	67	15	.50	1.68	1.09	1.18	.12		69N	2
D	67	25	.60	2.22	1.41	1.62	.12		67N	3
D	68	5	.46	1.98	1.22	1.52	.12		53N	19
D	68	15	.55	1.66	1.10	1.11	.10		52N	20
D	68	25	.60	1.60	1.10	1.00	.10		50N	21
D	68	35	.38	1.71	1.04	1.33	.10		49N	23
D	68	45	.36	1.98	1.17	1.62	.12		47N	24
D	68	55	.56	1.96	1.26	1.40	.12		46N	26
D	68	65	.76	1.71	1.23	.95	.10		49N	27
D	68	75	.41	1.61	1.01	1.20	.10	1.62	43N	28
D	68	82	.20	1.70	.95	1.50	.10		43N	29
D	70	5	.54	1.55	1.04	1.01	.12	1.60	65N	6
D	70	15	.90	1.74	1.32	.84	.12	1.88	64N	7
D	70	25	.74	1.85	1.29	1.11	.12	1.80	62N	9
D	70	35	.75	1.89	1.32	1.14	.12		61N	10
D	70	45	.41	1.87	1.14	1.46	.12		59N	12
D	70	55	.35	1.90	1.12	1.55	.12		57N	15
D	70	65	.36	1.92	1.14	1.56	.12		55N	16
D	70	75	.55	1.96	1.25	1.41	.12		54N	17
D	70	85	.56	1.60	1.08	1.04	.10		53N	18
D	70	95	.33	1.68	1.00	1.35	.10		52N	19
D	70	105	.55	1.62	1.08	1.07	.10		51N	20
D	70	115	.32	1.99	1.15	1.67	.10		49N	22
D	70	124	.60	2.03	1.31	1.43	.10		48N	23
D	70	135	.28	1.47	.87	1.19	.10		41N	31
D	70	147	.72	1.39	1.05	.67	.10		39N	32
D	71	5	.53	1.32	.92	.79	.12	1.64	70N	0
D	71	15	.55	1.58	1.06	1.03	.13	1.86	69N	1
D	71	30	.62	1.98	1.30	1.36	.14	2.08	53N	19
D	71	40	1.18	1.55	1.36	.37	.10	1.72	51N	20
D	71	50	1.00	1.62	1.31	.62	.11	1.79	50N	22
D	71	60	.90	1.74	1.32	.84	.10	1.80	48N	23
D	71	70	.94	1.78	1.36	.84	.10	1.82	47N	25
D	71	80	.52	1.70	1.11	1.18	.10		45N	26
D	71	90	.75	1.70	1.22	.95	.12		44N	27
D	71	100	1.04	1.55	1.29	.51	.13		42N	29
D	71	110	1.04	1.74	1.39	.70	.13		41N	30
D	71	120	.70	1.82	1.26	1.12	.13		39N	32
D	71	130	.66	2.08	1.37	1.42	.13		38N	33
D	71	138	1.04	2.22	1.63	1.18	.13	1.66	37N	34
D	72	5	.60	1.74	1.17	1.14	.12	1.74	61N	11
D	72	15	.65	1.85	1.25	1.20	.12		60N	12
D	72	25	.54	1.74	1.14	1.20	.12		58N	14
D	72	35					.12	1.88	57N	15
D	72	45					.12	2.00	55N	17
D	72	55					.12	2.02	53N	19
D	72	70	.70	1.70	1.20	1.06	.10		49N	23
D	72	80	.50	1.62	1.06	1.12	.10		48N	24
D	72	90	.48	1.64	1.06	1.16	.10		46N	25
D	72	100	1.00	1.78	1.39	.78	.10		45N	27
D	72	110	.34	2.13	1.23	1.79	.11	1.90	43N	28
D	72	120	.56	2.24	1.40	1.68	.12	2.10	42N	30
D	78	6	.62	1.72	1.17	1.10	.10		49N	23
D	78	16	.72	1.62	1.17	.90	.10	1.62	47N	25
D	81	5					.10		75N	-10
D	81	15					.13		74N	-9
D	81	25					.18		74N	-7
D	81	30					.18		73N	-6
D	81	45	.72	2.02	1.37	1.30	.13		68N	2
D	81	55	.61	1.98	1.29	1.37	.12		67N	4
D	81	65	.80	2.02	1.41	1.22	.12		66N	6

TABLE 6 - DIFFUSE DENSITY READINGS (Cont'd)

MISSION 1017-2

PASS	FRAME	D/MIN	D/MAX	$\bar{D}$	ΔD	BASE FOG	D/MAX CLOUDS	LATITUDE (DEG)	SUN ANGLE
D 82	5	.60	1.62	1.11	1.02	.10		68N	12
D 82	15	.56	1.44	1.00	.88	.10		67N	13
D 82	25	.70	1.40	1.05	.70	.10	1.53	66N	15
D 82	34	.42	1.73	1.07	1.31	.10		65N	16
D 83	5	.37	1.92	1.14	1.55	.13		68N	13
D 83	15	.42	1.80	1.11	1.38	.13		67N	14
D 83	25	.57	2.01	1.29	1.44	.13		65N	16
D 83	33	.46	1.90	1.18	1.44	.13		64N	17
D 83	43	.31	1.85	1.08	1.54	.13	2.09	47N	36
D 83	53					.13	2.18	46N	37
D 84	5	.57	1.64	1.10	1.07	.12		65N	16
D 84	15	.54	1.75	1.14	1.21	.12		64N	18
D 84	25	.38	1.66	1.02	1.28	.12		62N	19
D 84	35	.35	1.55	.95	1.20	.12	1.64	61N	21
D 84	50	.74	2.08	1.41	1.34	.12	1.96	45N	38
D 84	60	.36	2.08	1.22	1.72	.12	2.12	44N	39
D 84	70	.38	2.10	1.24	1.72	.12	2.19	42N	40
D 85	5					.12	1.62	67N	14
D 85	15					.12	1.67	66N	15
D 85	18	.56	1.68	1.12	1.12	.12	1.92	65N	16
D 85	28	.68	1.84	1.22	1.24	.19		64N	18
D 85	38	.47	1.91	1.19	1.44	.19		62N	19
D 85	48	.66	1.93	1.29	1.27	.19	1.99	61N	21
D 85	65	.61	1.52	1.06	.91	.13	2.24	31N	51
D 85	75					.12	2.21	30N	52
D 86	5	.30	1.09	.69	.79	.11	1.44	69N	11
D 86	15	.80	1.21	1.00	.41	.11	1.52	68N	12
D 86	25	.32	1.24	.78	.92	.11	1.65	66N	14
D 86	35	.55	1.42	.98	.87	.11		65N	16
D 86	45	.22	1.47	.84	1.25	.11		63N	18
D 86	49	.32	1.51	.91	1.19	.11		63N	18
D 86	60	1.20	1.57	1.38	.37	.11	1.85	56N	26
D 86	70	.59	1.86	1.22	1.27	.11	1.82	55N	27
D 86	80	1.14	1.97	1.55	.83	.11		53N	29
D 86	90	.90	2.04	1.47	1.14	.11		52N	31
D 86	100	1.01	2.04	1.52	1.03	.11		50N	32
D 86	110	1.12	2.06	1.59	.94	.11		48N	34
D 86	120	.90	2.11	1.50	1.21	.11		47N	35
D 86	132					.09	1.84	31N	51
D 86	142	.48	1.19	.83	.71	.09	1.44	30N	52
D 86	152	.64	1.41	1.02	.77	.11	2.20	28N	53
D 86	162	.58	1.54	1.06	.96	.18	2.34	27N	54
D 86	172	.64	1.65	1.14	1.01	.19	2.28	26N	55
D 86	182	.65	1.19	.92	.54	.19	2.20	24N	57
D 86	192	.77	1.20	.98	.43	.19	2.29	22N	58
D 86	202	.69	1.69	1.19	1.00	.18	2.00	21N	59
D 87	5	.57	1.55	1.06	.98	.17	1.82	70N	10
D 87	15	.72	1.26	.99	.54	.17	1.86	69N	11
D 87	29	.42	1.80	1.11	1.38	.17		65N	16
D 87	39	.44	1.64	1.04	1.20	.16	1.85	63N	18
D 87	52	.71	2.03	1.37	1.32	.16	1.88	59N	23
D 87	62	.74	2.08	1.41	1.34	.18		58N	24
D 87	72	.43	1.95	1.19	1.52	.11		56N	26
D 87	90					.08	1.83	49N	34
D 87	100					.08	1.83	47N	35
A 88E	5					.13		40N	-47
D 93	5	.54	1.26	.90	.72	.17	1.90	18N	62
D 93	11	.46	1.52	.99	1.06	.17	2.30	17N	63

FORWARD CAMERA

PASS	FRAME	D/MIN	D/MAX	$\bar{D}$	ΔD	BASE FOG	D/MAX CLOUDS	LATITUDE (DEG)	SUN ANGLE
D 95	5	.43	2.30	1.36	1.87	.17		37N	46
D 95	15	.36	1.74	1.05	1.38	.16		36N	47
D 95	20	.58	1.80	1.19	1.22	.11		35N	47
D 97	5	.90	1.62	1.26	.72	.11		65N	17
D 97	15	.54	1.64	1.09	1.10	.08		64N	18
D 97	25	.44	1.62	1.03	1.18	.10		62N	20
D 98	5	.48	1.93	1.20	1.45	.12	1.87	61N	21
D 98	15	.62	1.79	1.20	1.17	.12	1.93	60N	22
D 98	25	.52	2.04	1.28	1.52	.10	1.91	58N	24
D 99	5	.55	1.66	1.10	1.11	.12		65N	16
D 99	15	.48	1.84	1.16	1.36	.11		64N	17
D 99	25	.56	1.97	1.26	1.41	.12		62N	19
D 99	35	.44	1.90	1.17	1.46	.11		61N	21
D 100	5	.45	1.58	1.01	1.13	.13		69N	11
D 100	15	.68	1.53	1.10	.85	.20		68N	12
D 100	25	.80	1.58	1.19	.78	.18	1.62	66N	14
D 100	35	.90	1.65	1.17	.59	.13		65N	16
D 100	45	.88	1.58	1.23	.70	.12		63N	17
D 100	55	.44	1.50	.97	1.06	.12		62N	19
D 100	63	.39	1.68	.93	1.09	.12		61N	20
D 100	73	.56	2.14	1.35	1.58	.11	1.65	58N	25
D 100	83	.47	2.11	1.29	1.64	.11	2.20	56N	26
D 100	93	1.06	1.84	1.45	.78	.13		54N	28
D 100	103	.53	1.85	1.19	1.32	.12	1.87	52N	30
D 100	113	.51	1.90	1.20	1.39	.12	1.92	39N	44
D 100	125	.28	2.12	1.20	1.84	.12		38N	45
D 100	135	.32	2.06	1.19	1.74	.13		37N	46
D 100	145	.95	1.50	1.22	.55	.16	2.30	37N	46
D 101	5	.33	.92	.62	.59	.18	.86	47N	4
D 101	15	.30	.78	.54	.48	.18	1.49	73N	5
D 101	25	.92	1.48	1.20	.56	.16		70N	11
D 101	35	.72	1.35	1.03	.63	.12	1.32	68N	12
D 101	45	.41	1.36	.88	.95	.12		67N	14
D 101	55	.35	1.32	.83	.97	.12		65N	16
D 101	65	.60	1.81	1.20	1.21	.19		64N	17
D 101	75	.46	1.78	1.12	1.32	.18	1.80	62N	19
D 101	85	.44	1.85	1.14	1.41	.18		61N	21
D 101	95	.44	2.08	1.26	1.64	.18		58N	25
D 101	105	.37	2.07	1.22	1.70	.18		56N	27
D 101	115	.44	2.24	1.34	1.80	.18		54N	28
D 101	126					.18	2.30	23N	59
D 101	140					.18	2.33	20N	61
D 101	150					.18	2.28	19N	63
D 101	160					.18	2.28	17N	64
D 102	5	.26	1.27	.76	1.01	.09	1.24	68N	13
D 102	15	.47	1.43	.95	.96	.10	1.64	67N	14
D 102	25	.82	1.27	1.04	.45	.08	1.60	65N	16
D 102	33	.64	1.46	1.03	.79	.09	1.53	64N	17
D 102	45	.74	1.87	1.30	1.13	.10		56N	27
D 102	55	.38	1.88	1.13	1.50	.10		55N	28
D 102	65	.71	1.92	1.31	1.21	.10		53N	30
D 102	75	.78	1.96	1.37	1.18	.10		51N	32
D 102	85	.87	1.97	1.42	1.10	.08		50N	33
D 102	95	.52	1.71	1.11	1.19	.07		48N	35
D 102	105	.46	1.80	1.13	1.34	.07	1.72	47N	36
D 102	124	.44	2.09	1.26	1.65	.10	2.18	34N	49
D 102	134	.47	2.08	1.27	1.61	.10	2.11	32N	50
D 102	144	.50	2.02	1.26	1.52	.10	2.22	31N	52
D 102	154	.49	2.16	1.32	1.67	.10	2.12	29N	53

TABLE 6 - DIFFUSE DENSITY READINGS (Cont'd)

MISSION 1017-2

FORWARD CAMERA

PASS	FRAME	D/MIN	D/MAX	$\bar{D}$	ΔD	BASE FOG	D/MAX CLOUDS	LATITUDE (DEG)	SUN ANGLE
D 102	164	.36	2.24	1.30	1.88	.14	2.09	28N	54
D 103	5	.33	1.91	1.12	1.58	.18	1.81	70N	10
D 103	15	.32	1.81	1.06	1.49	.18	1.87	69N	11
D 103	25	.61	2.01	1.31	1.40	.18		68N	13
D 103	35	.68	1.85	1.26	1.17	.18	1.86	66N	14
D 103	45	.62	1.74	1.18	1.12	.17	1.60	65N	16
D 103	55					.17	1.88	63N	18
D 103	65					.17	2.12	62N	19
D 103	75					.17	2.10	60N	21
D 103	85					.17	2.05	59N	22
D 103	95					.16	2.14	58N	24
D 103	105					.16	2.12	56N	26
D 103	115					.18	2.12	55N	27
A 104E	5					.17		40N	-49
D 104	5	.90	1.94	1.42	1.04	.18		60N	22
D 104	15	1.08	1.82	1.45	.74	.16	2.02	59N	23
D 104	25	.95	1.86	1.40	.91	.12	1.84	57N	25
D 104	35	.52	1.78	1.15	1.26	.18	2.29	47N	36
D 104	45	.44	1.25	.84	.81	.18	2.24	45N	38
D 104	55					.18	1.85	43N	40
D 111	10	.42	2.22	1.32	1.80	.18	2.22	36N	47
D 116	5	.92	1.86	1.39	.94	.11	1.82	58N	25
D 116	15	.62	2.00	1.31	1.38	.12		57N	26
D 116	25	.46	1.46	.96	1.00	.10	1.82	55N	27
D 116	35	.50	1.95	1.22	1.45	.12		51N	31
D 116	45	.67	1.98	1.32	1.31	.10		50N	33
D 116	60	.58	1.95	1.26	1.37	.19	1.90	39N	44
D 116	70	.63	2.15	1.39	1.52	.17	1.94	38N	45
D 116	85					.16	2.27	6S	77
D 116	95					.14	2.25	7S	76
D 117	5	.44	1.79	1.11	1.35	.12		58N	25
D 117	15	.62	1.87	1.24	1.25	.18		57N	26
D 117	25	.65	1.90	1.27	1.25	.18	2.05	55N	28
D 117	34	.53	2.18	1.35	1.65	.20	2.13	54N	29
D 117	45	.57	1.92	1.24	1.35	.12		42N	42
D 117	55	.68	1.80	1.24	1.12	.12		41N	43
D 117	65	.60	1.50	1.05	.90	.11	2.15	39N	44
D 117	78	.36	1.00	.68	.64	.12	2.32	1N	77
D 117	88	.60	1.00	.80	.40	.19	2.28	0N	77
D 117	98	.83	1.08	.95	.25	.18	2.32	2S	78
D 117	108					.18	2.37	3S	78
D 117	120	.92	1.45	1.18	.53	.18	2.36	8S	76
D 117	130					.18	2.37	9S	75
D 118	5	.74	1.81	1.27	1.07	.10	1.97	56N	27
D 118	15	.34	1.40	.87	1.06	.08		55N	28
D 118	25	.46	1.87	1.16	1.41	.10		53N	30
D 118	35	.82	1.97	1.39	1.15	.10		52N	31
D 118	45	.54	1.96	1.25	1.42	.10		50N	33
D 118	55	.85	2.06	1.45	1.21	.09		49N	34
D 118	65	.98	1.71	1.34	.73	.07		47N	36
D 118	75	.77	2.02	1.39	1.25	.10		46N	37
D 118	85	.64	1.98	1.31	1.34	.09	1.94	44N	39
D 118	103	.54	2.10	1.32	1.56	.10	2.14	34N	50
D 118	113	.46	2.03	1.24	1.57	.10	1.78	32N	51
D 118	123	.64	2.19	1.41	1.55	.11		31N	53
D 118	133	.42	2.20	1.31	1.78	.10		29N	54
D 118	143					.09	2.14	6P	74
D 118	153					.09	2.22	4N	75

PASS	FRAME	D/MIN	D/MAX	$\bar{D}$	ΔD	BASE FOG	D/MAX CLOUDS	LATITUDE (DEG)	SUN ANGLE
D 118	159					.17	2.26	3N	76
A 120E	5					.11		40N	-50
D 120	5	.63	1.90	1.26	1.27	.11	1.95	50N	33
D 120	15	.67	1.97	1.32	1.30	.16	2.02	49N	34
D 120	25	.34	1.82	1.08	1.48	.17	2.06	47N	36
D 120	35	.34	1.35	.84	1.01	.16		46N	37
D 120	45	.48	.97	.72	.49	.16	1.58	44N	39
D 120	55					.16	2.16	43N	40
D 120	67	.92	1.76	1.34	.84	.10		29N	54
D 120	77	.42	1.95	1.18	1.53	.10		28N	55
D 120	87	.45	1.80	1.12	1.35	.10		26N	57
D 120	97	.72	1.68	1.20	.96	.10		25N	58
D 120	107	.42	1.67	1.04	1.25	.10		23N	60
D 120	117	.60	1.62	1.11	1.02	.10	1.86	22N	61
D 120	127	.49	1.65	1.07	1.16	.10		20N	63
D 127	5					.10	2.17	37N	46
D 127	14	.40	.98	.69	.58	.12	2.17	36N	47
D 130	5	.60	1.69	1.14	1.09	.19		67N	13
D 130	15	.79	1.89	1.34	1.10	.17		66N	14
D 130	25	.50	1.97	1.23	1.47	.12		64N	16
D 130	35	.58	1.95	1.26	1.37	.12		63N	18
D 130	45	.78	2.00	1.39	1.22	.12		62N	19
D 130	55	.94	1.98	1.46	1.04	.13		60N	21
D 131	5	.26	.37	.31	.11	.18		74N	2
D 131	15	.32	.62	.47	.30	.18		73N	4
D 131	25	.45	.72	.58	.27	.17		72N	5
D 131	35	.45	1.14	.79	.69	.17		71N	7
D 131	45	.43	1.22	.82	.79	.12		67N	13
D 131	55	.55	1.65	1.10	1.10	.12		66N	14
D 131	65	.46	1.85	1.15	1.39	.12		64N	16
D 131	75	.39	1.50	.94	1.11	.12		63N	18
D 131	80	.48	1.54	1.01	1.06	.12		62N	19
D 132	5	.42	1.50	.96	1.08	.12		66N	15
D 132	15	.51	1.60	1.05	1.09	.12	1.64	65N	16
D 132	25	.62	1.58	1.10	.96	.12	1.71	63N	18
D 132	35	.58	1.90	1.24	1.32	.12	1.68	62N	19
D 132	45					.12	1.64	61N	20
D 132	55	1.02	1.34	1.18	.32	.12	1.98	59N	22
D 132	68	.48	1.99	1.23	1.51	.12		52N	31
D 132	78	.57	2.02	1.29	1.45	.12		51N	32
D 132	88	.39	2.00	1.19	1.61	.12		49N	34
D 132	98	.69	2.03	1.36	1.34	.12		48N	35
D 132	108	.43	2.18	1.30	1.75	.16		46N	37
D 132	118	.38	2.16	1.27	1.78	.17		45N	38
D 132	176	.44	1.90	1.17	1.46	.17		43N	40
D 133	5	.28	1.36	.82	1.08	.15		73N	4
D 133	15	.42	.76	.59	.34	.14	1.04	72N	6
D 133	30	.84	1.22	1.03	.38	.10	1.24	69N	10
D 133	40	.70	1.14	.92	.44	.10	1.42	68N	12
D 133	50	.77	1.34	1.05	.57	.10	1.40	66N	14
D 133	62					.10	1.87	58N	24
D 133	72					.10	1.88	57N	25
D 133	82					.10	1.88	57N	25
D 133	85	1.12	1.81	1.46	.69	.10	1.88	55N	27
D 133	100					.08	2.16	29N	55
D 133	110	.78	1.62	1.20	.84	.08	2.20	28N	56
D 133	120	.28	1.10	.69	.82	.08	2.18	26N	57
D 133	130					.09	2.16	25N	59

TABLE 6 - DIFFUSE DENSITY READINGS (Cont'd)

MISSION 1017-2 — FORWARD CAMERA

PASS	FRAME	D/MIN	D/MAX	$\bar{D}$	ΔD	BASE FOG	D/MAX CLOUDS	LATITUDE (DEG)	SUN ANGLE
D 133	140					.09	2.17	23N	60
D 134	5					.11	1.76	64N	17
D 134	15					.11	1.83	63N	19
D 134	35	.46	1.78	1.12	1.32	.11	1.96	58N	24
D 134	45	.46	1.98	1.22	1.52	.11		57N	25
D 134	55	.62	1.90	1.26	1.28	.11		55N	27
D 134	65	.32	1.78	1.05	1.46	.16		54N	29
D 134	75	.58	2.13	1.35	1.55	.17		52N	30
D 134	85	.88	2.16	1.52	1.28	.18		51N	32
D 134	95	1.11	2.21	1.66	1.10	.14		48N	36
D 134	97	1.22	2.13	1.67	.91	.12		47N	36
D 134	107	.50	1.96	1.23	1.46	.13		46N	38
D 134	122	.94	1.70	1.32	.76	.11	1.60	40N	43
D 134	132	.85	1.43	1.14	.58	.13	1.92	39N	44
D 134	142	.44	2.00	1.22	1.56	.12	1.46	37N	46
D 134	150	.42	2.18	1.30	1.76	.12	2.08	36N	47
D 135	5					.10	1.70	60N	22
D 135	15					.11	1.73	59N	23
D 135	22	.60	1.45	1.02	.85	.11	1.75	58N	24
D 135	32	.69	1.88	1.24	1.11	.12	1.90	56N	26
D 135	42	.62	1.75	1.18	1.13	.12	2.00	55N	28
D 135	52	.55	1.90	1.22	1.35	.12	1.93	54N	29
D 135	62	1.12	1.96	1.54	.84	.11	2.00	52N	31
D 135	72					.11	2.08	51N	32
D 135	87	.44	1.12	.78	.68	.10	1.65	41N	42
D 135	97	.44	1.55	1.00	1.09	.11	2.00	39N	44
D 135	107	.31	1.57	.94	1.26	.11	1.64	37N	46
D 136	5	.25	1.80	1.02	1.55	.12	1.43	60N	22
D 136	15	.28	1.56	.92	1.28	.15	1.60	59N	23
D 136	25	.50	1.90	1.20	1.40	.14	1.94	58N	25
D 136	35	.88	2.04	1.46	1.16	.15	2.04	56N	26
D 136	45	.67	1.92	1.29	1.25	.09	1.90	55N	28
D 136	55					.09	1.92	53N	29
D 136	65	.70	1.32	1.01	.62	.07	1.40	52N	31
D 136	75	.68	1.94	1.31	1.26	.10	1.76	50N	32
D 136	85	.62	1.52	1.07	.90	.11	1.94	49N	34
D 136	95	.32	1.74	1.03	1.42	.14	1.96	47N	35
D 136	105	.32	1.14	.73	.82	.14	1.74	46N	37
D 136	115	.44	1.30	.88	.84	.14	2.18	44N	38
D 136	125					.14	1.80	43N	40
D 137	5	.44	1.16	.91	.50	.17	2.23	5N	77
D 137	15	.67	1.32	.99	.65	.17	2.22	4N	77
D 137	25	.54	1.54	1.04	1.00	.17	1.94	2N	77
D 137	35	.61	1.16	.88	.55	.17	2.09	1N	77
D 137	45	.92	1.24	1.08	.32	.17	2.32	1S	77
D 137	53	.77	1.20	.98	.43	.17	2.34	2S	77

MISSION 1017-2 — AFT CAMERA

PASS	FRAME	D/MIN	D/MAX	$\bar{D}$	ΔD	BASE FOG	D/MAX CLOUDS	LATITUDE (DEG)	SUN ANGLE
D 82	5	.48	1.30	.89	.82	.12		69N	11
D 82	15	.52	1.23	.87	.71	.12		68N	12
D 82	25	.62	1.08	.85	.46	.12		66N	14
D 82	34	.70	1.68	1.19	.98	.12		65N	15
D 83	5	.38	1.24	.81	.86	.12		68N	12
D 83	15	.58	1.78	1.18	1.20	.12		67N	13
D 83	25	.54	1.60	1.07	1.06	.12		65N	15
D 83	33	.44	1.77	1.20	1.13	.12		64N	16
D 83	45	.58	1.82	1.20	1.24	.12	2.09	47N	35
D 83	55	1.10	2.04	1.57	.94	.12	2.04	45N	36
D 84	5	.90	1.46	1.18	.56	.12	1.66	65N	16
D 84	15	.82	1.50	1.16	.68	.12	1.65	64N	17
D 84	25	.60	1.60	1.10	1.00	.12		62N	19
D 84	35	.54	1.68	1.11	1.14	.12		60N	21
D 84	50	.90	2.00	1.45	1.10	.12	1.86	45N	37
D 84	60	.90	1.98	1.44	1.08	.12	2.10	44N	38
D 84	70	.80	2.00	1.40	1.20	.12	2.10	42N	39
D 85	5	.68	1.18	.93	.50	.12	1.26	67N	13
D 85	15	.70	1.50	1.10	.80	.12	1.62	66N	14
D 85	25	.46	1.22	.84	.76	.12	1.78	64N	16
D 85	35	.40	1.78	1.09	1.38	.12		63N	18
D 85	45	.36	1.68	1.02	1.32	.16	1.68	61N	20
D 85	55	.68	1.72	1.20	1.04	.18	1.84	59N	21
D 85	65					.18	2.22	32N	50
D 85	75					.18	2.24	30N	51
D 86	5	.58	1.42	1.00	.84	.16	1.74	69N	10
D 86	15	.54	1.58	1.06	1.04	.16	1.70	68N	11
D 86	25	.90	1.72	1.31	.82	.16	1.82	66N	13
D 86	35	1.04	1.90	1.47	.86	.16	2.04	65N	15
D 86	45	.72	1.80	1.26	1.08	.16		63N	17
D 86	58	1.24	2.02	1.63	.78	.16	2.00	56N	26
D 86	68	1.26	2.10	1.68	.84	.16	2.08	55N	27
D 86	75	.62	1.78	1.20	1.16	.12	1.82	54N	28
D 86	85	1.04	1.98	1.51	.94	.12		52N	29
D 86	95	.90	1.96	1.43	1.06	.12		51N	31
D 86	105	1.02	2.02	1.52	1.00	.12		49N	32
D 86	115	1.18	2.10	1.64	.92	.12		48N	34
D 86	131					.10	1.92	31N	50
D 86	141	.51	1.50	1.00	.99	.10	1.94	30N	51
D 86	151	.28	1.90	1.09	1.62	.10	1.80	28N	52
D 86	161	.63	1.74	1.18	1.11	.11	1.98	27N	53
D 86	171	.58	1.50	1.04	.92	.12	2.18	25N	55
D 86	181	.54	1.40	.97	.86	.12	2.12	24N	56
D 86	191	.52	1.44	.98	.92	.10	2.24	22N	57
D 86	200	.61	1.40	1.00	.79	.13	2.18	21N	58
D 87	5	.62	1.70	1.16	1.08	.17	1.68	70N	9
D 87	15	.68	1.86	1.27	1.18	.16	1.90	69N	11
D 87	29	.56	1.85	1.20	1.29	.17	1.90	65N	15
D 87	39	.57	1.76	1.16	1.19	.16		63N	17
D 87	50	.70	1.82	1.26	1.12	.17	1.70	59N	22
D 87	60	.78	2.05	1.41	1.27	.17	1.74	58N	23
D 87	70	1.04	2.17	1.60	1.13	.17		56N	25
D 87	87	.79	1.97	1.38	1.18	.12	2.10	49N	33
D 87	101					.10	1.83	47N	34
A 88E	5					.10		38N	-69
D 93	5					.15	1.70	19N	62
D 93	15	.80	2.04	1.42	1.24	.18	2.22	17N	63

TABLE 6 - DIFFUSE DENSITY READINGS (Cont'd)

MISSION 1017-2

PASS	FRAME	D/MIN	D/MAX	$\bar{D}$	ΔD	BASE FOG	D/MAX CLOUDS	LATITUDE (DEG)	SUN ANGLE
D 95	5	.94	2.30	1.62	1.36	.18		37N	45
D 95	15	.50	2.25	1.37	1.75	.12		36N	46
D 97	5	.73	1.82	1.27	1.09	.12		65N	16
D 97	15	.48	1.56	1.02	1.08	.10		64N	17
D 97	25	.35	1.56	.95	1.21	.10	1.04	62N	19
D 98	5	.60	1.68	1.14	1.08	.09	1.08	61N	20
D 98	15	.66	1.18	.92	.52	.10	1.36	60N	21
D 98	25	.56	1.30	.93	.74	.10	1.44	58N	23
D 98	34	.88	1.42	1.15	.54	.10	1.48	57N	24
D 99	5	.38	1.14	.76	.76	.10		65N	15
D 99	15	.60	1.80	1.20	1.20	.12	1.88	64N	16
D 99	25	.50	2.00	1.25	1.50	.12		62N	18
D 99	36	.64	1.68	1.16	1.04	.12		61N	20
D 100	5	.38	1.40	.89	1.02	.12	1.63	69N	10
D 100	15	.44	1.56	1.00	1.12	.12		68N	11
D 100	25	.32	1.16	.74	.84	.12		66N	13
D 100	35	.68	1.06	.87	.38	.12		65N	15
D 100	45	.92	1.40	1.16	.48	.12		63N	16
D 100	55	.64	1.48	1.06	.84	.12		62N	18
D 100	73	.86	2.05	1.45	1.19	.12		58N	24
D 100	83	.80	2.00	1.40	1.20	.12		56N	26
D 100	93	.88	1.86	1.37	.98	.12	1.92	54N	28
D 100	103	.68	1.84	1.26	1.16	.12		52N	30
D 100	113	.54	1.82	1.18	1.28	.13		39N	43
D 100	123	.46	2.09	1.27	1.63	.12		38N	44
D 100	133	.40	2.04	1.22	1.64	.12		37N	45
D 100	143	.48	2.00	1.24	1.52	.12	2.08	37N	45
D 101	5					.10	.38	74N	3
D 101	15	1.03	1.57	1.30	.54	.18	.76	73N	4
D 101	25	1.10	1.45	1.27	.35	.14		70N	10
D 101	35	.76	1.26	1.01	.50	.12	1.35	68N	11
D 101	45	.64	1.32	.98	.68	.12	1.39	67N	13
D 101	55	.50	1.30	.90	.80	.12		65N	15
D 101	65	.40	1.36	.88	.96	.12		64N	17
D 101	75	.34	1.45	.89	1.11	.12	1.56	62N	18
D 101	85	.32	1.40	.86	1.08	.12		61N	20
D 101	95	.38	1.78	1.08	1.40	.12		57N	25
D 101	105	.32	1.85	1.08	1.53	.12		56N	26
D 101	115	.22	2.04	1.13	1.82	.12		54N	27
D 101	125					.12	2.27	23N	58
D 101	135					.10	2.12	21N	60
D 101	145					.10	2.10	19N	61
D 101	155					.12	2.24	18N	63
D 102	5	.26	1.44	.85	1.18	.12	1.60	68N	12
D 102	15	.60	1.36	.98	.76	.12	1.28	67N	13
D 102	25	.64	1.28	.96	.64	.12	1.52	65N	15
D 102	34	.70	1.46	1.08	.76	.12	1.44	64N	16
D 102	44	.44	1.96	1.20	1.52	.12		56N	26
D 102	54	.35	1.32	.83	.97	.10		55N	27
D 102	64	.41	1.82	1.11	1.41	.12		53N	29
D 102	74	.92	1.94	1.43	1.02	.12		52N	30
D 102	84	.68	2.02	1.35	1.34	.12		50N	32
D 102	94	.66	1.68	1.17	1.02	.12		49N	33
D 102	104	.70	1.80	1.25	1.10	.10		47N	35
D 102	114	.86	1.70	1.28	.84	.10		46N	36
D 102	124	.36	1.84	1.10	1.48	.10	1.78	34N	48
D 102	134	.42	1.85	1.13	1.43	.10	1.64	33N	49
D 102	144	.40	1.68	1.04	1.28	.10	1.84	31N	51
D 102	154	.38	1.95	1.16	1.57	.10	1.93	30N	52

AFT CAMERA

PASS	FRAME	D/MIN	D/MAX	$\bar{D}$	ΔD	BASE FOG	D/MAX CLOUDS	LATITUDE (DEG)	SUN ANGLE
D 102	164	.28	2.02	1.15	1.74	.10	1.86	28N	54
D 103	5	.32	1.60	.96	1.28	.12	1.54	70N	9
D 103	15	.30	.96	.63	.66	.12	1.72	69N	10
D 103	25	.26	1.84	1.05	1.58	.12	1.10	68N	12
D 103	35	.30	1.50	.90	1.20	.12		66N	13
D 103	45	.34	1.54	.94	1.20	.12		65N	15
D 103	55	.58	.94	.76	.36	.12	1.40	63N	17
D 103	65					.12	1.63	62N	18
D 103	75					.12	1.72	60N	20
D 103	85					.12	1.96	59N	22
D 103	95					.12	1.90	57N	23
D 103	105					.12	1.92	56N	25
D 103	114					.12	2.04	55N	26
A 104E	5					.14		38N	-50
D 104	5	.48	1.80	1.14	1.32	.12		60N	21
D 104	15	.62	1.46	1.04	.84	.12	1.88	59N	22
D 104	25	.62	1.34	.98	.72	.12	1.98	57N	24
D 104	35	.34	1.34	.84	1.00	.12	2.22	46N	36
D 104	45	.33	1.40	.86	1.07	.12	2.10	45N	37
D 104	55					.18	2.14	43N	39
D 111	9	.56	2.26	1.41	1.70	.10	2.24	36N	46
D 116	5	1.10	1.40	1.25	.30	.18	1.98	58N	24
D 116	15	1.38	2.08	1.73	.70	.14	2.00	57N	25
D 116	25	.74	2.00	1.37	1.26	.12	1.90	55N	26
D 116	35	.56	1.96	1.26	1.40	.12		51N	31
D 116	45	.68	2.08	1.38	1.40	.12		50N	32
D 116	59	.50	2.00	1.25	1.50	.12	1.92	40N	43
D 116	69	.48	1.74	1.11	1.26	.12		38N	45
D 116	84	.76	1.60	1.18	.84	.12	2.26	4S	78
D 116	94					.12	2.28	5S	77
D 117	5	.50	1.38	.94	.88	.12		58N	24
D 117	15	.53	1.64	1.08	1.11	.12	1.52	57N	25
D 117	25	.52	1.65	1.08	1.13	.12	1.66	55N	27
D 117	32	.42	1.84	1.13	1.42	.12	1.74	54N	28
D 117	42	.44	1.68	1.06	1.24	.12	2.04	42N	41
D 117	52	.86	1.46	1.16	.60	.12		41N	42
D 117	62	.44	1.42	.93	.98	.12	2.08	39N	43
D 117	74	.52	1.10	.81	.58	.12	2.14	1N	76
D 117	84	.42	.80	.61	.38	.12	2.10	0N	77
D 117	94	.70	1.46	1.08	.76	.12	2.20	1S	77
D 117	104	.70	1.38	1.04	.68	.12	2.22	2S	78
D 117	115	.51	1.16	.83	.65	.12	2.14	7S	77
D 117	125	.84	1.32	1.08	.48	.12	2.16	8S	76
D 118	5	.75	1.90	1.32	1.15	.12	1.94	56N	26
D 118	15	.58	1.42	1.00	.84	.10		55N	27
D 118	25	.24	1.40	.82	1.16	.10		53N	29
D 118	35	.66	2.00	1.33	1.34	.12		52N	30
D 118	45	.54	2.05	1.29	1.51	.12		50N	32
D 118	55	1.06	2.10	1.58	1.04	.12		49N	33
D 118	65	.72	1.82	1.27	1.10	.10		47N	35
D 118	75	.72	1.66	1.19	.94	.10		46N	36
D 118	85	.74	1.65	1.19	.91	.10		44N	38
D 118	100	.42	1.68	1.05	1.26	.10	1.82	34N	49
D 118	110	.30	1.82	1.06	1.52	.10	1.92	33N	50
D 118	120	.34	2.08	1.21	1.74	.12	2.12	31N	51
D 118	130	.70	2.26	1.48	1.56	.12	1.92	30N	53
D 118	145					.18	2.24	6N	74
D 118	155					.18	2.30	4N	75

TABLE 6 - DIFFUSE DENSITY READINGS (Cont'd)

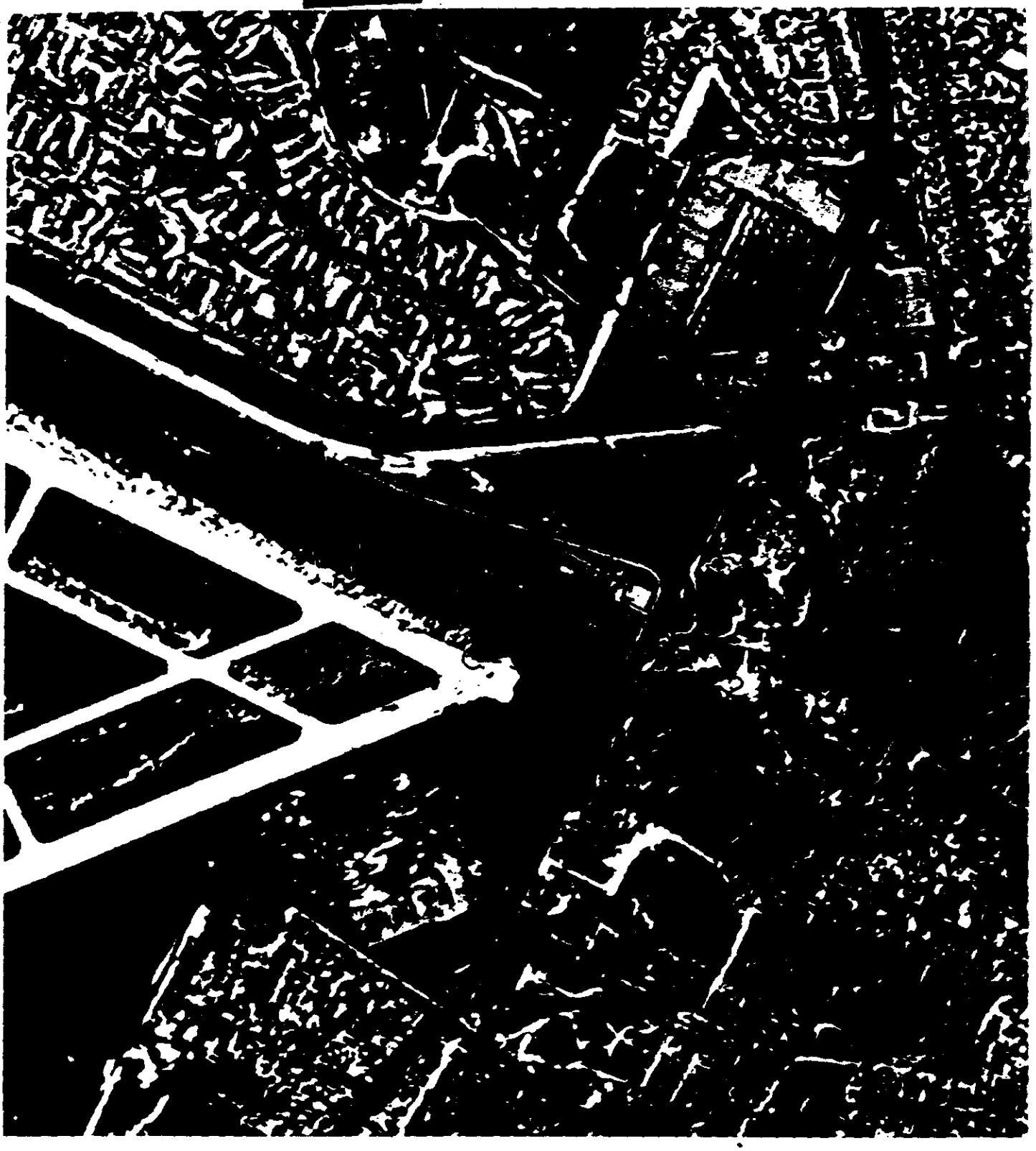
MISSION 1017-2

AFT CAMERA

PASS	FRAME	D/MIN	D/MAX	$\bar{D}$	ΔD	BASE FOG	D/MAX CLOUDS	LATITUDE (DEG)	SUN ANGLE
A 120E	6					.16		38N	-51
D 120	5	.90	1.82	1.36	.92	.14	2.02	50N	32
D 120	15	.46	1.94	1.20	1.48	.12	1.90	49N	33
D 120	25	.34	2.05	1.19	1.71	.14	2.12	47N	35
D 120	35	.45	1.60	1.02	1.15	.18	2.06	46N	36
D 120	45	.66	1.16	.91	.50	.18	2.28	44N	38
D 120	54	.54	2.10	1.32	1.56	.16	2.10	43N	39
D 120	64	.76	1.62	1.19	.86	.12		29N	54
D 120	74	.78	1.44	1.11	.66	.10		28N	55
D 120	84	.48	1.40	.94	.92	.10		26N	56
D 120	94	.70	1.74	1.22	1.04	.12		25N	58
D 120	104	.65	1.90	1.27	1.25	.12		23N	59
D 120	114	.80	2.00	1.40	1.20	.12		22N	61
D 120	124	.82	1.90	1.36	1.08	.12		20N	62
D 127	8					.08	1.62	37N	46
D 130	5	.57	1.83	1.20	1.26	.12		67N	12
D 130	15	.48	1.86	1.17	1.38	.12		66N	14
D 130	25	.55	1.84	1.19	1.29	.12		64N	15
D 130	35	.65	2.04	1.34	1.39	.12		63N	17
D 130	45	.50	2.04	1.27	1.54	.12		62N	19
D 130	55	.84	2.05	1.44	1.21	.12		60N	21
D 131	5					.18		74N	1
D 131	15	.28	.40	.34	.12	.18		73N	3
D 131	25	.38	.44	.41	.06	.18		72N	4
D 131	35	.44	.74	.59	.30	.18		71N	6
D 131	45	.85	1.20	1.02	.35	.17	1.42	67N	12
D 131	55	.58	1.20	.89	.62	.12	1.14	66N	14
D 131	65	.52	1.28	.90	.76	.12	1.46	64N	15
D 131	75	.60	1.22	.91	.62	.12		63N	17
D 131	80	.66	1.50	1.08	.84	.12		62N	18
D 132	5	.48	1.24	.86	.76	.11	1.10	66N	14
D 132	15	.58	1.50	1.04	.92	.12	1.44	65N	15
D 132	25	.58	1.18	.88	.60	.12	1.42	63N	17
D 132	35	.64	1.28	.96	.64	.12	1.50	62N	19
D 132	45	.84	1.40	1.12	.56	.12	1.64	60N	20
D 132	55					.11	1.52	59N	22
D 132	67	.60	1.80	1.20	1.20	.12		52N	30
D 132	77	.88	1.94	1.41	1.06	.12		51N	31
D 132	87	.76	1.90	1.33	1.14	.12		49N	33
D 132	97	1.14	1.86	1.50	.72	.12		48N	34
D 132	107	.62	.67	.64	.05	.12		46N	36
D 132	117	.70	1.84	1.27	1.14	.13		45N	37
D 133	5	.28	.30	.25	.10	.18		73N	3
D 133	15	.32	.55	.43	.23	.18	.72	72N	5
D 133	30	1.04	1.26	1.15	.22	.18		69N	9
D 133	40	.66	1.42	1.04	.76	.13	1.62	68N	11
D 133	50	.92	1.30	1.11	.38	.13	1.74	67N	13
D 133	62					.12	1.90	58N	23
D 133	72					.12	1.74	57N	24
D 133	82					.12	1.92	55N	26
D 133	89					.12	2.00	54N	27
D 133	100					.10	1.88	29N	54
D 133	108	.66	1.74	1.20	1.08	.10	1.95	28N	55
D 133	118	.58	1.28	.93	.70	.10	1.90	26N	56
D 133	128	.36	1.42	.89	1.06	.12	2.22	25N	58
D 133	138					.10	2.18	23N	59
D 134	5					.11	1.12	64N	16
D 134	15					.12	1.76	61N	18
D 134	33	.38	1.74	1.06	1.36	.12	2.02	58N	23
D 134	43	.60	1.74	1.17	1.14	.12	1.82	57N	25
D 134	53	1.14	1.94	1.54	.80	.12		55N	26
D 134	63	.76	1.84	1.30	1.08	.13		53N	28
D 134	73	.32	1.32	.82	1.00	.12		52N	30
D 134	82	.52	1.84	1.18	1.32	.13		50N	31
D 134	92	1.54	2.10	1.82	.56	.12		47N	35
D 134	102	.51	1.58	1.04	1.07	.11		45N	37
D 134	117	.40	1.94	1.17	1.54	.11		40N	43
D 134	127	.69	1.12	.90	.43	.11	1.62	38N	44
D 134	137	.66	1.70	1.18	1.04	.11	1.28	37N	46
D 134	145	.68	1.90	1.29	1.22	.12	1.78	35N	47
D 135	5	.84	1.34	1.09	.50	.13	1.52	60N	21
D 135	15					.12	1.92	59N	22
D 135	25					.12	1.90	57N	24
D 135	35	.68	1.68	1.18	1.00	.12	1.82	56N	26
D 135	45	.78	1.62	1.20	.84	.12	1.94	54N	27
D 135	55	.70	1.82	1.26	1.12	.13		53N	29
D 135	65	.92	1.90	1.41	.98	.12	1.88	51N	30
D 135	75					.11	1.98	50N	32
D 135	87					.10	2.10	48N	42
D 135	92	.96	1.54	1.25	.58	.12	2.04	39N	43
D 135	102	.74	1.50	1.12	.76	.12	2.00	38N	44
D 136	5	.37	1.86	1.11	1.49	.17		60N	21
D 136	15	.72	2.02	1.37	1.30	.19	1.70	59N	22
D 136	25	.92	1.94	1.43	1.02	.19	1.94	57N	24
D 136	35	.85	1.40	1.12	.55	.18	1.98	56N	25
D 136	45	.70	1.92	1.31	1.22	.13		55N	27
D 136	55	.75	1.92	1.33	1.17	.13	1.94	53N	28
D 136	65	.72	1.28	1.00	.56	.10	1.48	52N	30
D 136	75	.44	1.40	.92	.96	.10	1.48	50N	31
D 136	85	.70	1.84	1.27	1.14	.12	1.74	49N	33
D 136	95	.53	1.88	1.20	1.35	.15	2.06	47N	35
D 136	105	.46	1.26	.86	.80	.19	1.98	46N	36
D 136	115	.52	1.20	.86	.68	.19	2.12	44N	38
D 136	125					.18	1.98	43N	39
D 137	5	.84	1.34	1.09	.50	.18	2.10	6N	76
D 137	15	.90	1.30	1.10	.40	.18	2.04	5N	76
D 137	25	.78	1.26	1.02	.48	.18	2.14	3N	76
D 137	35					.18	2.12	2N	77
D 137	45	.90	1.14	1.02	.24	.18	2.30	0N	77
D 137	55					.18	2.30	1S	77
D 137	65	.96	1.55	1.25	.59	.18	2.25	3S	77
D 137	75	.86	1.46	1.26	.80	.18	2.34	5S	77
D 137	85	.95	1.18	1.06	.23	.14	2.28	6S	78
D 137	95	.70	.92	.81	.22	.12	2.27	8S	78
D 137	102	.68	1.26	.97	.58	.12	2.28	9S	78

MISSION 1017-1 PASS D30 FRAME 009 FWD
10 DIA ENLG D 1.24 SUN ANGLE 39° LAT 40°
GROUND RESOLUTION W 8'10" A 8'10"

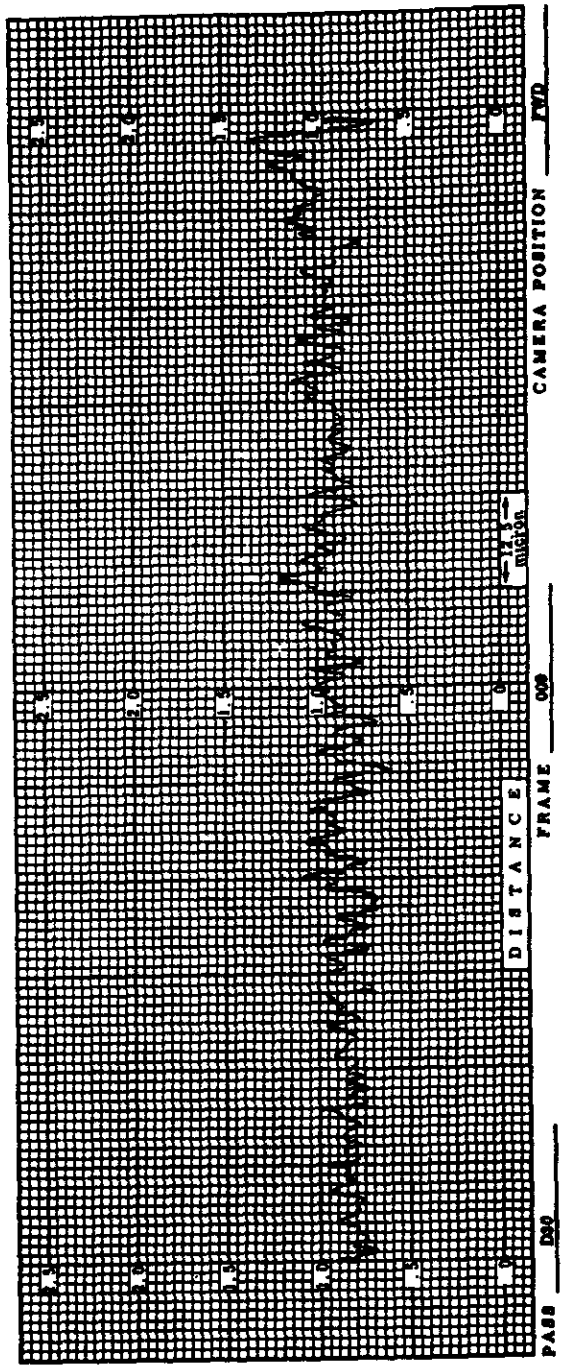
APPENDIX 6



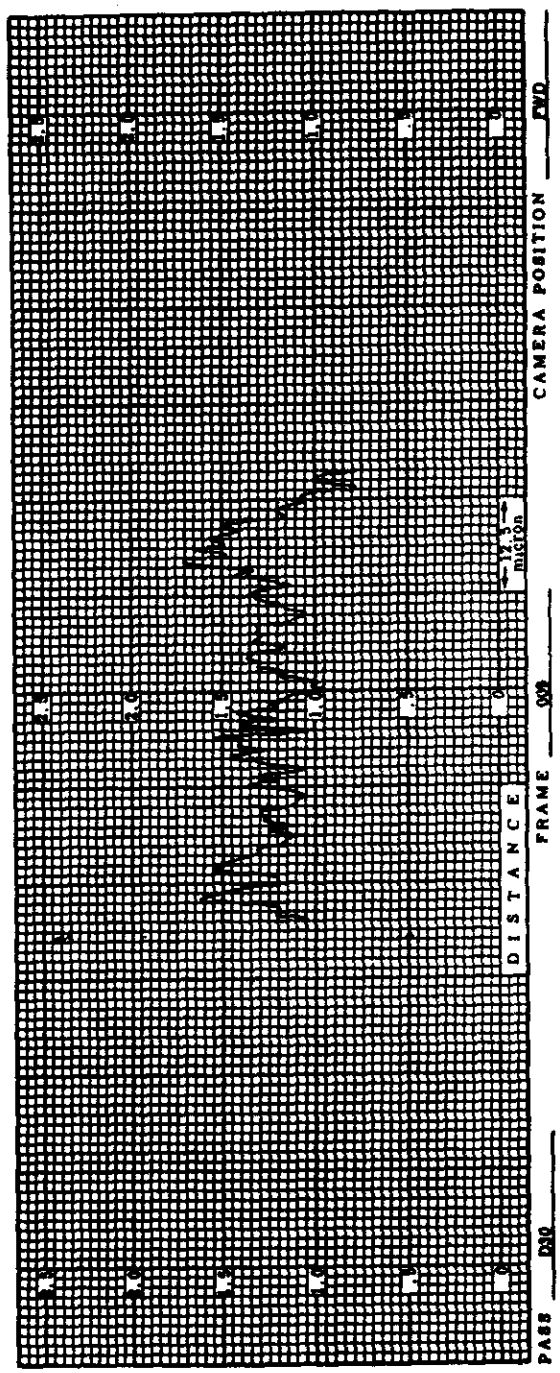
MISSION 1017-1 PASS D30 FRAME 009 FWD
40 DIA ENLG D 1.24 SUN ANGLE 39° LAT 40°
GROUND RESOLUTION W 8'10" A 8'10"

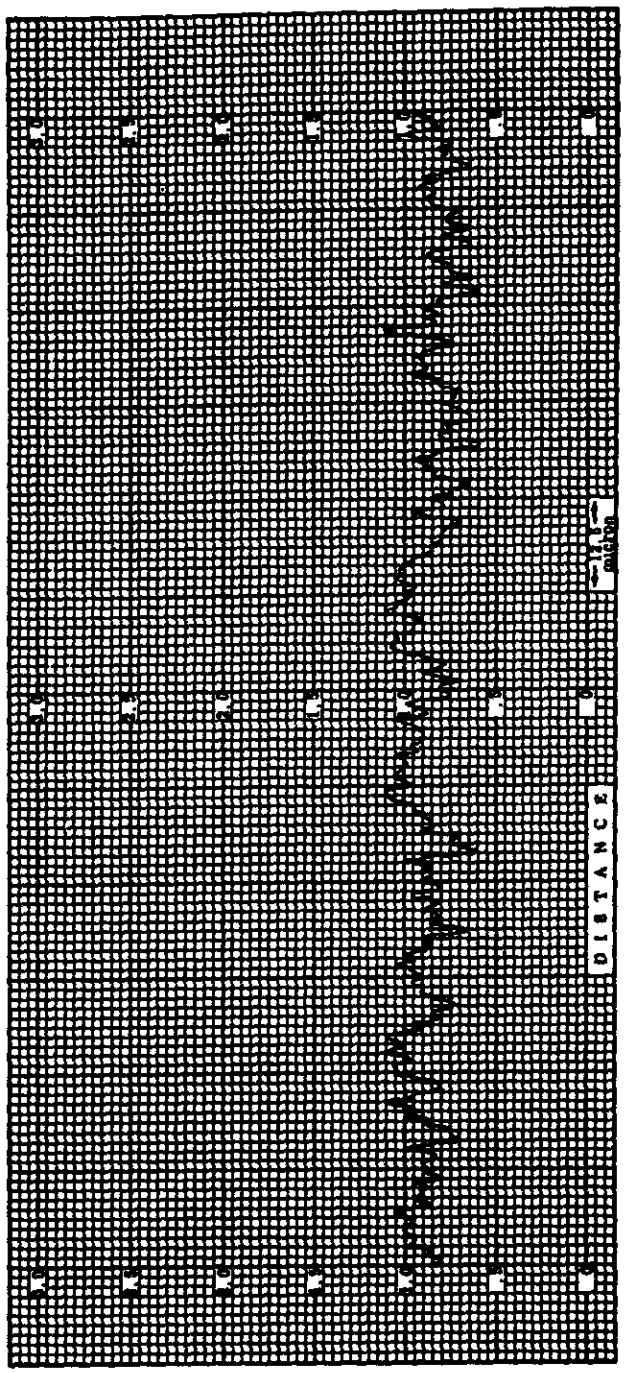
MANN-DATA MICRO-ANALYZER TRACE

(TRACE NO. C-1)



(TRACE NO. C-2)




MANN-DATA MICRO-ANALYZER TRACE
(TRACE NO. C-3)
DISTANCE
CAMERA POSITION FWD
SPOT SIZE 1.5Mm
FRAME 000
CHART SPEED 2"/min
PASS 280
MA SCAN SPEED 0.05mm/min

CORN DESCRIPTION

MISSION: 1017-1 PASS: D30 FRAME: 009 CAMERA POSITION: FORWARD

LOCATION: Wright-Patterson AFB, Ohio DATE: 27 February 1965

TYPE OF DISPLAY: 1. Medium Contrast "T" Bar Target (mobile)
2. High Contrast Bar Target (fixed)

RESOLUTION: 1. 1.2'
2. 10.5'

REMARKS:

CAMERA DATA

ALTITUDE: 620,000' (aprx) FOCAL LENGTH: 609.63mm FILTER: Wratten 25

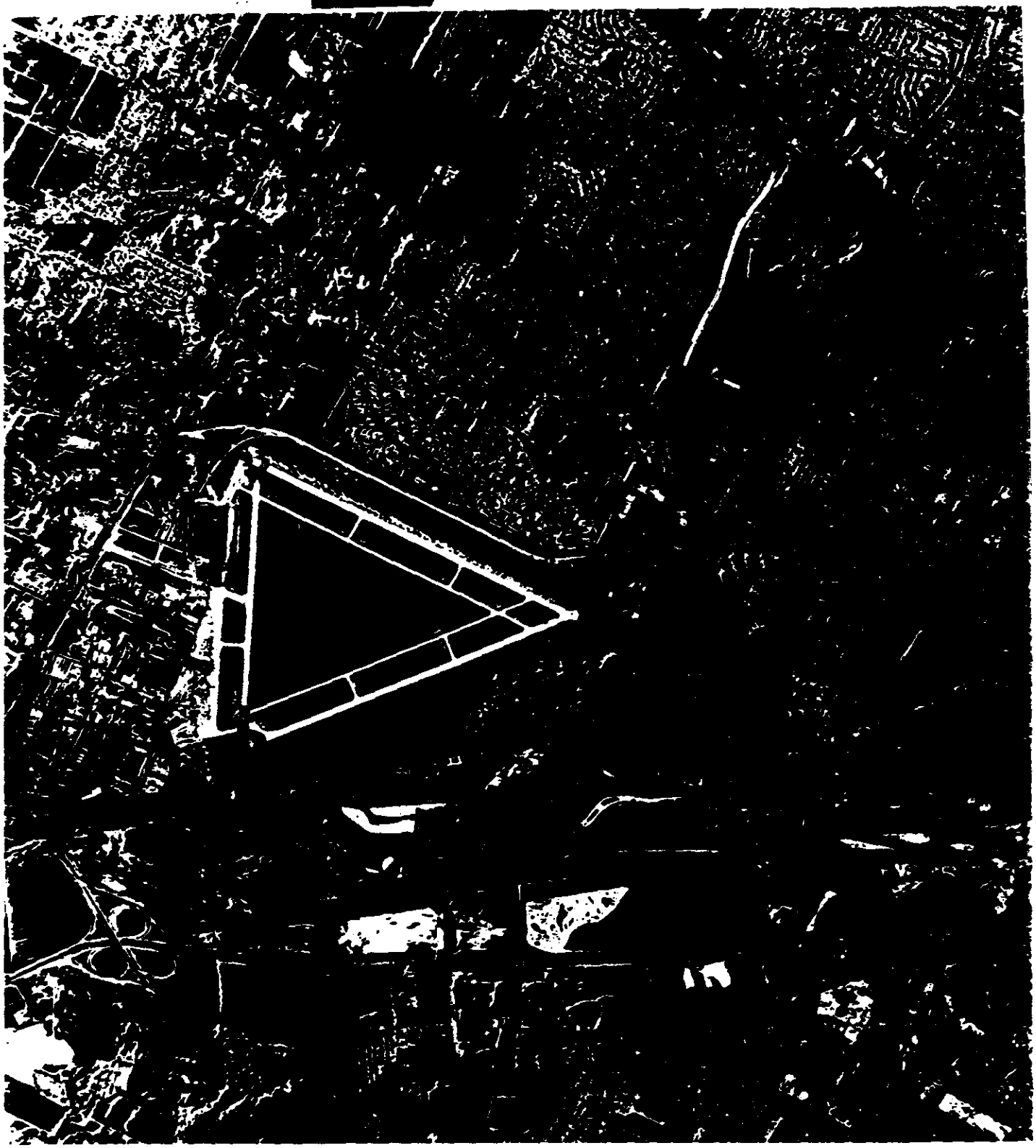
SLIT WIDTH: 0.250" EXPOSURE TIME: 1/250 sec LENS: Petzval f/3.5

TIME OF EXPOSURE: 1812Z (aprx) FILM TYPE: 4404 EMULSION NO. 4404-82

SUN ANGLE: 39°

PROCESSING DATA

DEVELOPMENT LEVEL: Intermediate BASE PLUS FOG: 0.14 ΔD LOG E: 0.40



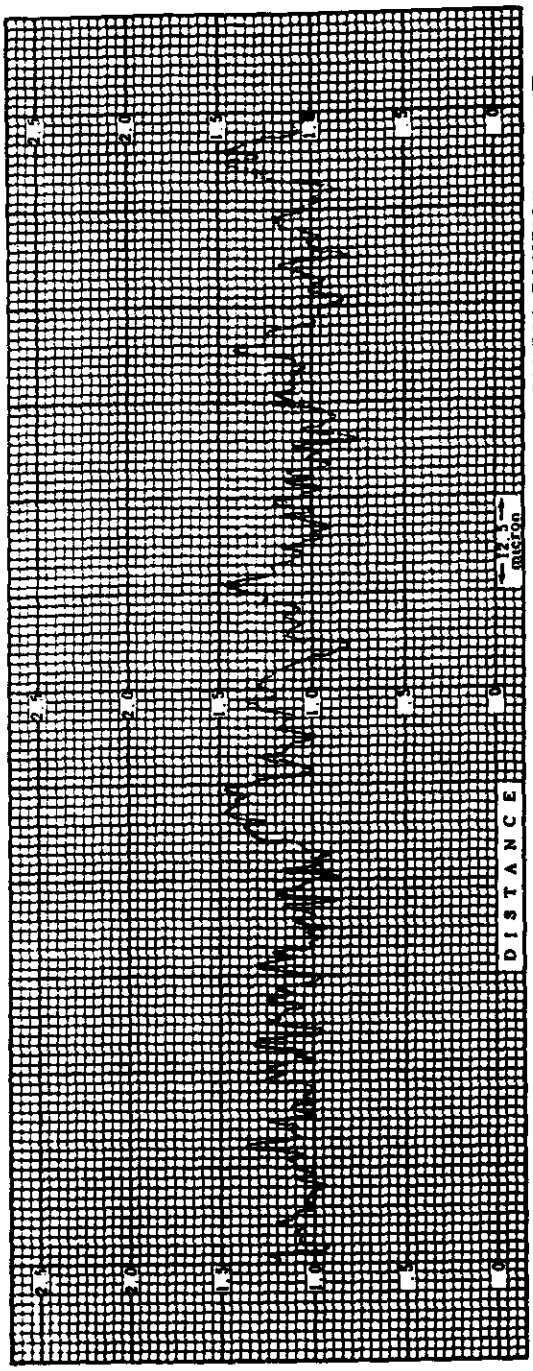
MISSION 1017-1 PASS D30 FRAME 015 AFT
10 DIA ENLG D 1.54 SUN ANGLE 40° LAT 38°
GROUND RESOLUTION W 8'10" A 8'10"

SPPL TECHNICAL REPORT NO. [redacted]

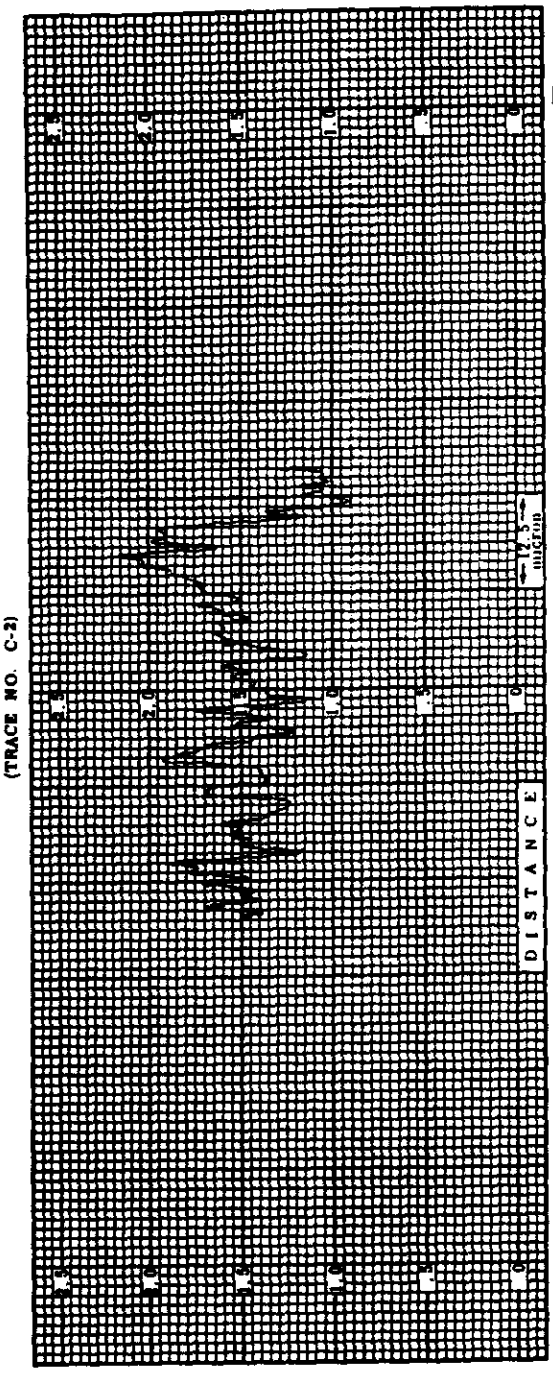
MISSION 1017-1 PASS D30 FRAME 015 AFT
40 DIA ENLG D 1.54 SUN ANGLE 40° LAT 38°
GROUND RESOLUTION W 8'10" A 8'10"

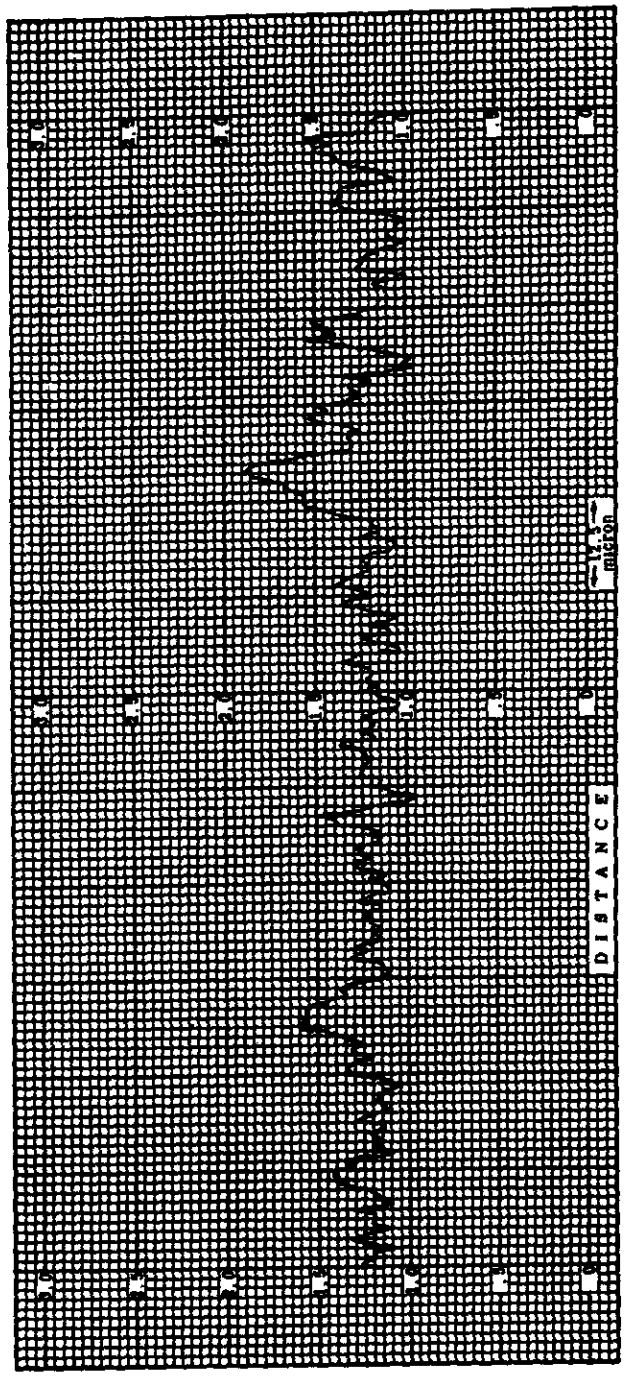
MANN-DATA MICRO-ANALYZER TRACE

(TRACE NO. C-1)



(TRACE NO. C-2)




MANN-DATA MICRO-ANALYZER TRACE
(TRACE NO. C-3)
DISTANCE
~17.5 micron
FRAME 015
CHART SPEED 2"/min
CAMERA POSITION APT
SPOT SIZE 1.5u
PASS 020
MA SCAN SPEED 0.05mm/min

CORN DESCRIPTION

MISSION: 1017-1 PASS: D30 FRAME: 015 CAMERA POSITION: AFT

LOCATION: Wright Patterson AFB, Ohio DATE: 27 February 1963

TYPE OF DISPLAY: 1. Medium Contrast "T" Bar Target (mobile)
2. High Contrast Bar Target (fixed)

RESOLUTION: 1. 12'
2. 11.3'

REMARKS:

CAMERA DATA

ALTITUDE: 620,000' (aprx) FOCAL LENGTH: 609.58mm FILTER: Wratten 21

SLIT WIDTH: 0.175" EXPOSURE TIME: 1/357 sec LENS: Petzval f/3.5

TIME OF EXPOSURE: 1812Z (aprx) FILM TYPE: 4404 EMULSION NO. 4404-82

SUN ANGLE: 40°

PROCESSING DATA

DEVELOPMENT LEVEL: Intermediate BASE PLUS FOG: 0.11 ΔD LOG E: 0.74

CORN WEATHER DATA

Location: Dayton, Ohio Time: 1900Z Date: 27 February 1965

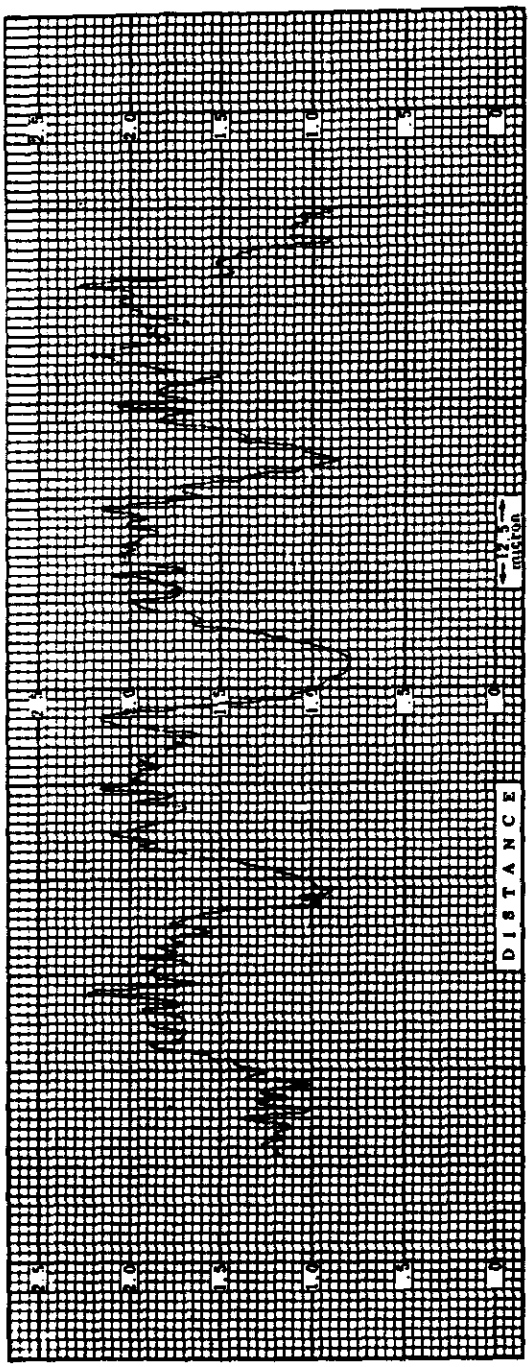
PRESSURE (millibars)	ALTITUDE (feet)	TEMPERATURE (C°)	DEW POINT (C°)	RELATIVE HUMIDITY (%)	WIND Direction (0° - 360°)	WIND Speed (knots)
976		4.8	-2.5	60		
942		1.5	-6.2	56		
922		1.8	-3.2	70		
894		8.8	-11.2	22		
850	4,678	7.3	-10.8	28	280	33
837		6.5	-10.2	30		
780		1.5	-11.2	39		
700	9,840	-2.2	-10.5	36	290	39
691		-2.4	M	22		
662		-5.3	M	39		
624		-7.0	-22.1	29		
600		-9.1		32		
511		-16.0	-26.2	49		
500	18,238	-19.3	-27.8	48	300	49
400	22,049	-31.4	-43.6	30	310	57
372		-35	M	MB		
324		-45	MB	"		
300	29,258	-49.5	"	"	310	47
250	33,957	-50.0	"	"	310	52
200	38,484	-64.8	"	"	290	56
186		-66.8	"	"		
170		-57.5	"	"		
153		-58.9	"	"		
150	44,334	-58.4	"	"	280	40
137		-55.8	"	"		
128		-57.5	"	"		
122		-56.4	"	"		
108		-59.0	"	"		
100	52,723	-58.2	"	"	290	33
87		-57.0	"	"		
57		-59.6	"	"		
50	67,027	-55.9	"	"		
40		-58.7	"	M		
33		-55.1	"	"		
30		-56.9	"	"		
28		-56.0	"	"		
23	82,020	-55.1	"	"		

MISSION 1017-1 PASS D63 FRAME 009 FWD
10 DIA ENLG D 1.44 SUN ANGLE 40° LAT 32°
GROUND RESOLUTION W 9'10" A 9'10"

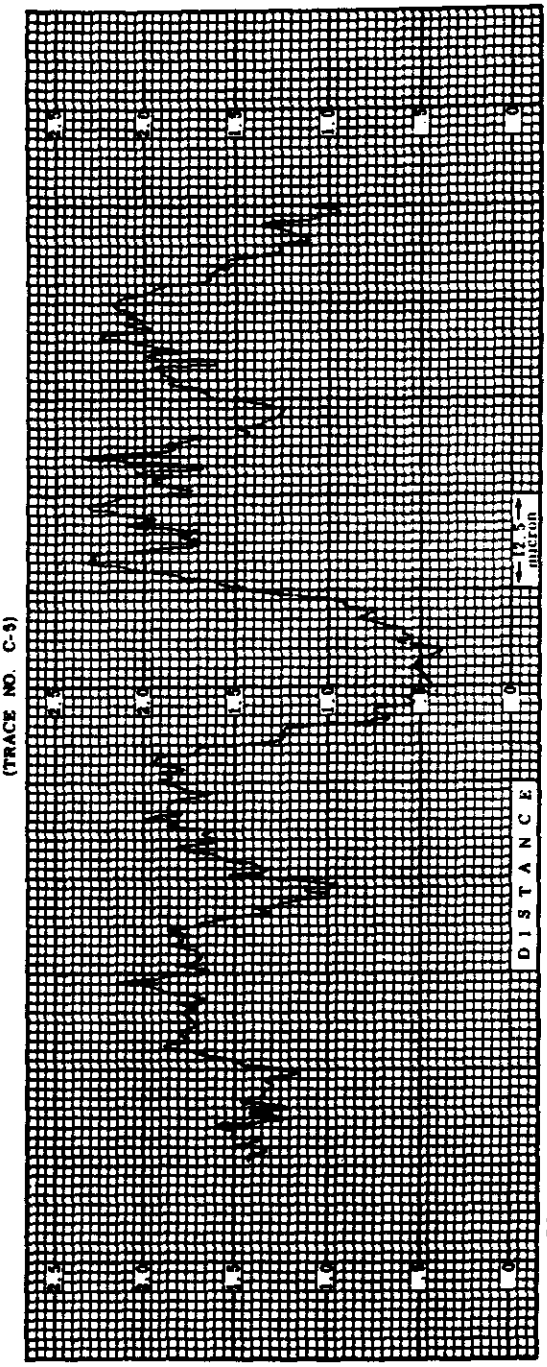
MISSION 1017-1 PASS D63 FRAME 009 FWD
40 DIA ENLG D 1.44 SUN ANGLE 40° LAT 32°
GROUND RESOLUTION W 9'10" A 9'10"

MANN-DATA MICRO-ANALYZER TRACE

(TRACE NO. C-4)



(TRACE NO. C-5)



CORN DESCRIPTION

MISSION: 1017-1 PASS: D63 FRAME: 009 CAMERA POSITION: FORWARD

LOCATION: Fort Huachuca, Arizona DATE: 1 March 1965

TYPE OF DISPLAY: 1. High and Low Contrast Bar Target (fixed) RESOLUTION: 1. 10.5'

REMARKS:

CAMERA DATA

ALTITUDE: 596,000' (aprx)	FOCAL LENGTH: 609.63mm	FILTER: Wratten 25
SLIT WIDTH: 0.250"	EXPOSURE TIME: 1/250 sec	LENS: Petzval f/3.5
TIME OF EXPOSURE: 1800Z (aprx)	FILM TYPE: 4404	EMULSION NO. 4404-82
SUN ANGLE: 40°		

PROCESSING DATA

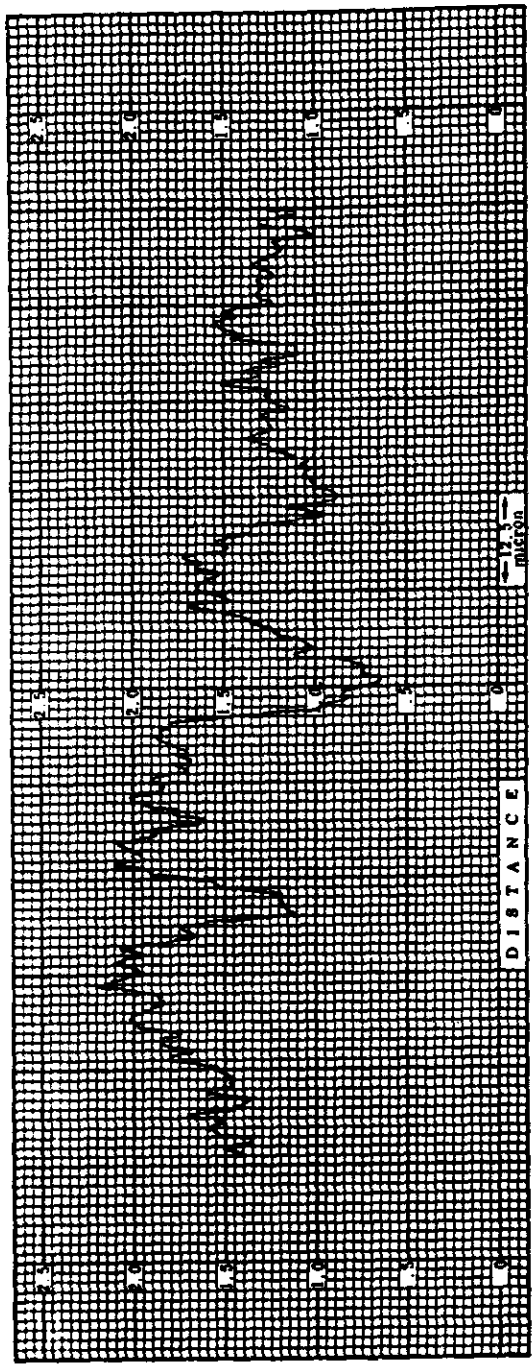
DEVELOPMENT LEVEL: Intermediate BASE PLUS FOG: 0.12 ΔD LOG E: 0.86

MISSION 1017-1 PASS D63 FRAME 015 AFT
10 DIA ENLG D̄ 1.33 SUN ANGLE 40° LAT 31°
GROUND RESOLUTION W 11'2" A 11'2"

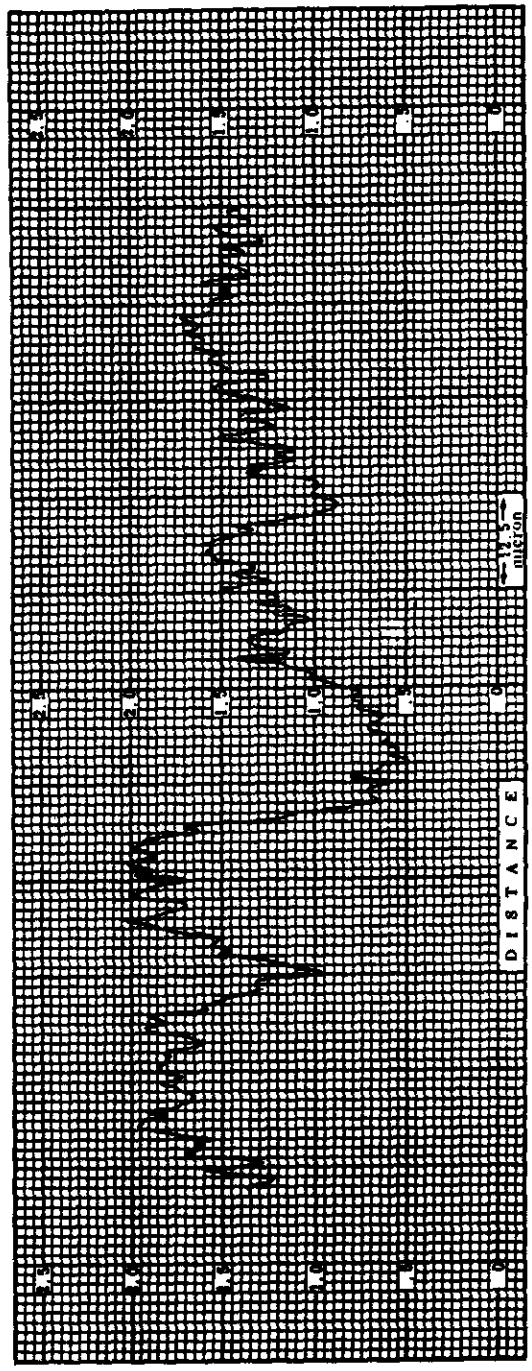
MISSION 1017-1 PASS D63 FRAME 015 AFT
40 DIA ENLG D 1.33 SUN ANGLE 40° LAT 31°
GROUND RESOLUTION W 11'2" A 11'2"

MANN-DATA MICRO-ANALYZER TRACE

(TRACE NO. C-4)



(TRACE NO. C-5)



CORN DESCRIPTION

MISSION: 1017-1 PASS: D63 FRAME: 015 CAMERA POSITION: AFT

LOCATION: Fort Huachuca, Arizona DATE: 1 March 1965

TYPE OF DISPLAY: 1. High and Low Contrast Bar Target (fixed) RESOLUTION: 1. 10.7'

REMARKS:

CAMERA DATA

ALTITUDE: 596,000' (aprx)	FOCAL LENGTH: 609.58mm	FILTER: Wratten 21
SLIT WIDTH: 0.175"	EXPOSURE TIME: 1/357 sec	LENS: Petzval f/3.5
TIME OF EXPOSURE: 1800Z (aprx)	FILM TYPE: 4404	EMULSION NO. 4404-82
SUN ANGLE: 40°		

PROCESSING DATA

DEVELOPMENT LEVEL: Intermediate BASE PLUS FOG: 0.13 ΔD LOG E: 0.76

CORN WEATHER DATA

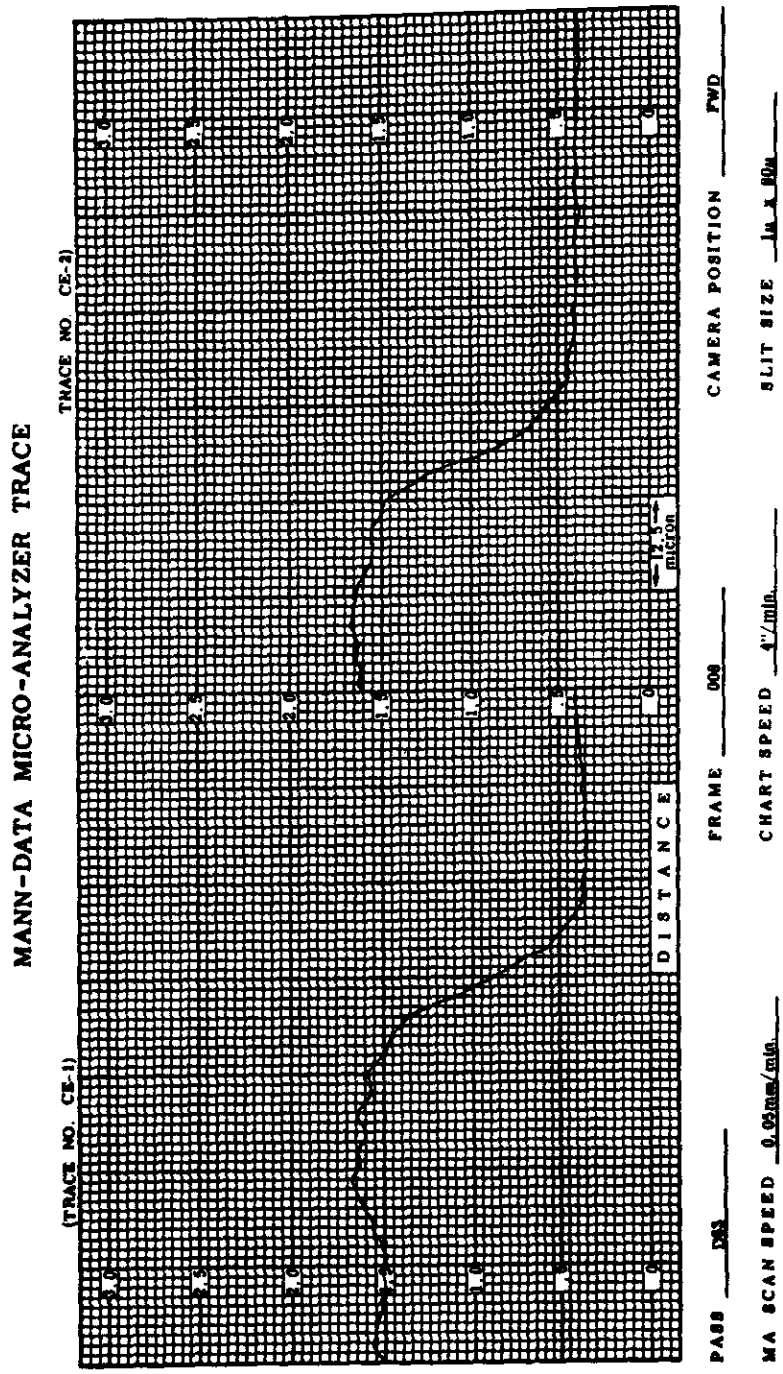
Location: Fort Huachuca, Arizona Time: 2000Z 1 March 1965

PRESSURE (millibars)	ALTITUDE (feet)	TEMPERATURE (C°)	DEW POINT (C°)	RELATIVE HUMIDITY (%)	WIND	
					Direction (0° - 360°)	Speed (knots)
850	4,889	15.1	-11.0	16	M	M
849		14.8	-11.3	15		
834		12.0	-18.7	10		
788		7.4	-23.0	10		
730		1.7	-22.2	10		
700	9,902	-.9	-25.8	15	250	25
660		-4.1	-30.1	12		
614		-9.4	-32.0	11		
600		-10.3	-31.9	14		
571		-12.6	-33.8	15		
562		-12.9	-34.7	15		
500	18,895	-18.8	-40.2	14	290	29
484		-19.7	-42.6	11		
446		-24.2	-45.6	11		
400	22,057	-30.9	-49.8	12	280	45
350		-38.6	-55.1	12		
307		-46.4	MB	16		
300	30,184	-47.5	"	M	290	62
250	34,068	-56.2	"	"	290	68
224		-61.6	"	"		
210		-57.1	"	"		
203		-57.5	"	"		
200	38,681	-56.6	"	"	290	62
196		-55.5	"	"		
182		-54.4	"	"		
153		-57.5	"	"		
150	44,685	-56.6	"	"	290	56
148		-56.1	"	"		
143		-57.7	"	"		
135		-55.5	"	"		
117		-57.1	"	"		
100	53,084	-61.8	"	"	290	35
92		-58.3	"	"		
74		-57.8	"	"		
70	58,537	-59.7	"	"	280	12
67		-61.1	"	"		
59		-57.5	"	"		
55		-59.2	"	"		
50	67,389	-55.9	"	"	000	00
46		-58.3	"	"		
31		-53.8	"	"		
30	79,813	-53.6	"	"	280	12
25		-53.0	"	"		
23		-49.1	"	"		
20	88,452	-48.7	"	"	270	25
17		-48.2	"	"		
13	97,802	-45.5	"	"	Extrapolated	

SPPL TECHNICAL REPORT NO. [redacted]

MISSION 1017-1 PASS D63 FRAME 008 FWD
10 DIA ENLG D .94
SUN ANGLE 40° LATITUDE 32°

MISSION 1017-1 PASS D63 FRAME 008 FWD
40 DIA ENLG $\bar{D}$ .94
SUN ANGLE 40° LATITUDE 32°


MANN-DATA MICRO-ANALYZER TRACE
TRACE NO. CE-2)
(TRACE NO. CE-1)
DISTANCE
12.5 micron
5.0
2.5
2.0
1.5
1.2
1.0
.8
.6
PASS 283
FRAME 009
CAMERA POSITION FWD
CHART SPEED 4"/min.
SLIT SIZE 1M x 80M
MA SCAN SPEED 0.02mm/min.

CORN DESCRIPTION

MISSION: 1017-1 PASS: D63 FRAME: 008 CAMERA POSITION: FORWARD

LOCATION: Fort Huachuca, Arizona DATE: 1 March 1965

TYPE OF DISPLAY: 1. 200' Controlled Scene Brightness Tgt (mobile) RESOLUTION: 1. 16.4'

REMARKS:

CAMERA DATA

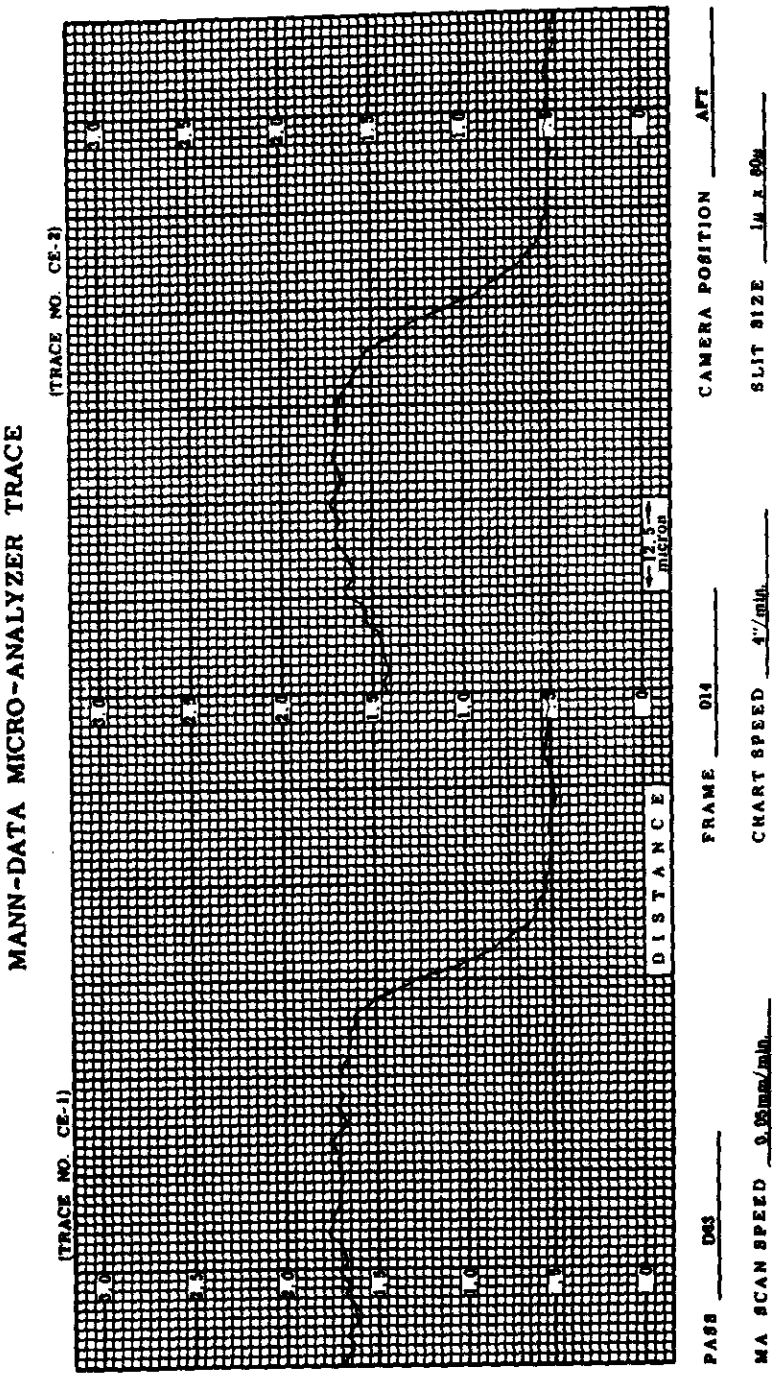
ALTITUDE: 596,000' (aprx)	FOCAL LENGTH: 609.63mm	FILTER: Wratten 25
SLIT WIDTH: 0.250"	EXPOSURE TIME: 1/250 sec	LENS: Petzval f/3.5
TIME OF EXPOSURE: 1800Z (aprx)	FILM TYPE: 4404	EMULSION NO. 4404-82
SUN ANGLE: 40°		

PROCESSING DATA

DEVELOPMENT LEVEL: Intermediate BASE PLUS FOG: 0.12 ΔD LOG E: 0.64

MISSION 1017-1 PASS D63 FRAME 014 AFT
10 DIA ENLG $\bar{D}$ 1.07
SUN ANGLE 40° LATITUDE 31°

MISSION 1017-1 PASS D63 FRAME 014 AFT
40 DIA ENLG D 1.07
SUN ANGLE 40° LATITUDE 31°


MANN-DATA MICRO-ANALYZER TRACE
(TRACE NO. CE-2)
(TRACE NO. CE-1)
DISTANCE
1/2.5 micron
CAMERA POSITION AFT
SLIT SIZE 1M x 80M
FRAME 014
CHART SPEED 4"/min
PASS 063
MA SCAN SPEED 0.05mm/min

CORN DESCRIPTION

MISSION: 1017-1 PASS: D63 FRAME: 014 CAMERA POSITION: AFT

LOCATION: Fort Huachuca, Arizona DATE: 1 March 1965

TYPE OF DISPLAY: 1. 200' Controlled Scenen Brightness Tgt (mobile) RESOLUTION: 1. 13. 2'

REMARKS:

CAMERA DATA

ALTITUDE: 596, 000' (aprx)	FOCAL LENGTH: 609. 58mm	FILTER: Wratten 21
SLIT WIDTH: 0. 175"	EXPOSURE TIME: 1/357 sec	LENS: Petzval f/3. 5
TIME OF EXPOSURE: 1800Z (aprx)	FILM TYPE: 4404	EMULSION NO. 4404-82
SUN ANGLE: 40°		

PROCESSING DATA

DEVELOPMENT LEVEL: Intermediate BASE PLUS FOG: 0. 13 ΔD LOG E: 0. 54

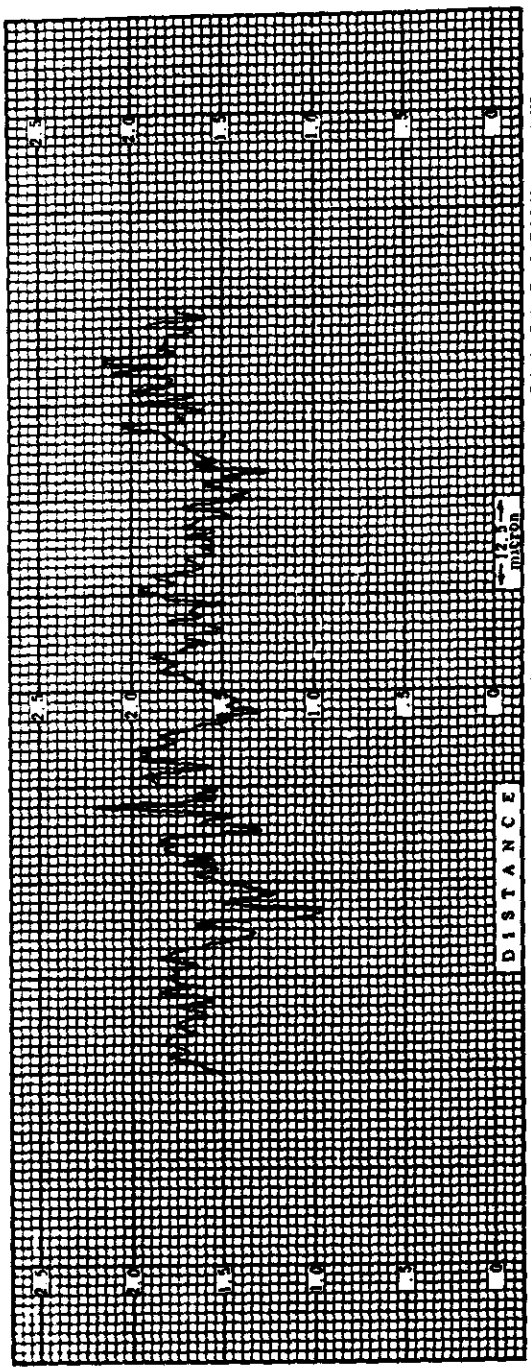
MISSION1017-2 PASS D95 FRAME 020 FWD
10 DIA ENLG D 1.68 SUN ANGLE 47° LAT 35°
GROUND RESOLUTION W 12'8" A 12'8"

SPPL TECHNICAL REPORT NO. [redacted]

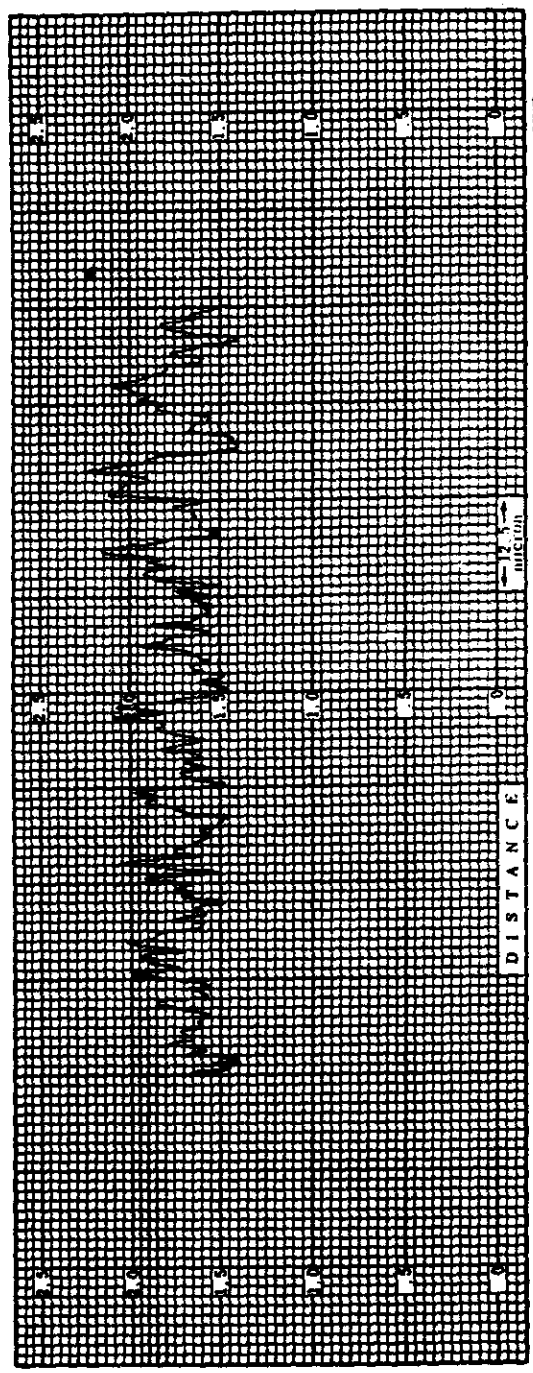
MISSION 1017-2 PASS D95 FRAME 020 FWD
40 DIA ENLG D 1.68 SUN ANGLE 47° LAT 35°
GROUND RESOLUTION W 12'8" A 12'8"

MANN-DATA MICRO-ANALYZER TRACE

(TRACE NO C-6)



(TRACE NO. C-7)



CORN DESCRIPTION

MISSION: 1017-2 PASS: D05 FRAME: 020 CAMERA POSITION: FORWARD

LOCATION: Edwards AFB, California DATE: 3 March 1965

TYPE OF DISPLAY: 1. High Contrast Bar Target Type "C" (fixed) RESOLUTION: 1. Less than 12'

REMARKS:

CAMERA DATA

ALTITUDE: 598,000' FOCAL LENGTH: 609.63mm FILTER: Wratten 25

SLIT WIDTH: 0.250" EXPOSURE TIME: 1/250 sec LENS: Petzval f/3.5

TIME OF EXPOSURE: 1725Z (aprx) FILM TYPE: 4404 EMULSION NO. 4404-82

SUN ANGLE: 47°

PROCESSING DATA

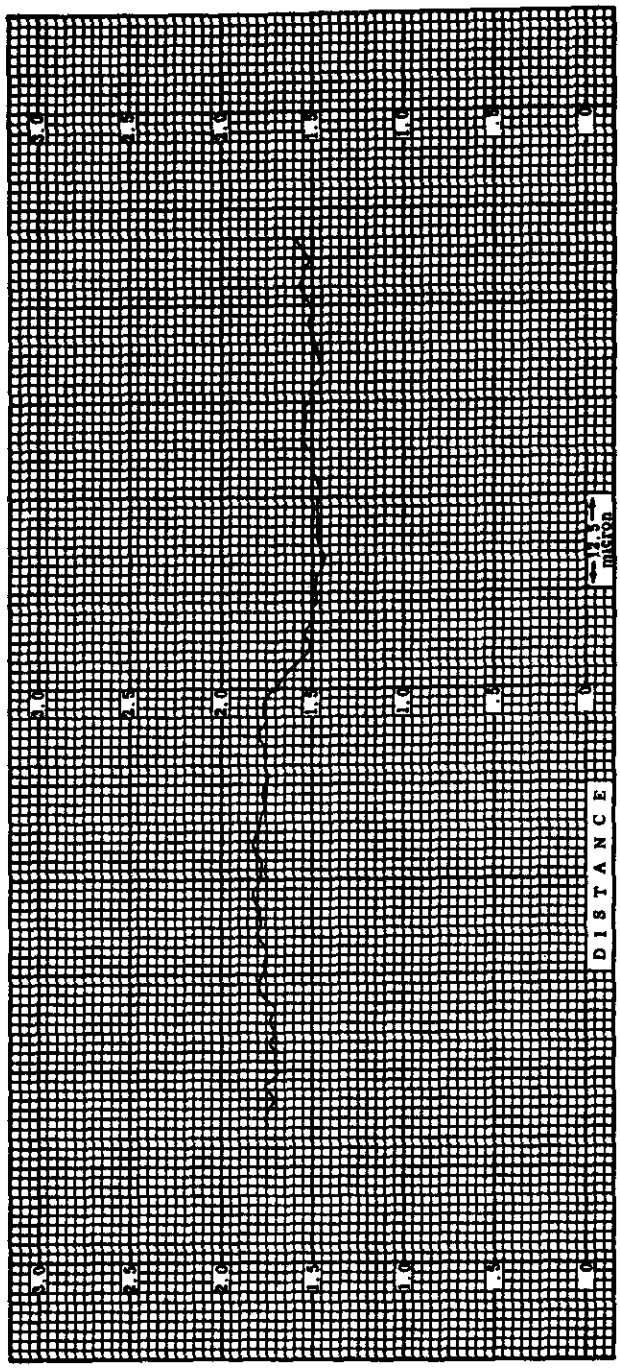
DEVELOPMENT LEVEL: Intermediate BASE PLUS FOG: 0.11 ΔD LOG E: 0.71

MISSION 1017-2 PASS D95 FRAME 018 FWD
10 DIA ENLG $\bar{D}$ 1.61 V-RES 099
SUN ANGLE 47° LATITUDE 35°

MISSION 1017-2 PASS D95 FRAME 018 FWD
40 DIA ENLG $\bar{D}$ 1.61 V-RES 099
SUN ANGLE 47° LATITUDE 35°

MANN-DATA MICRO-ANALYZER TRACE

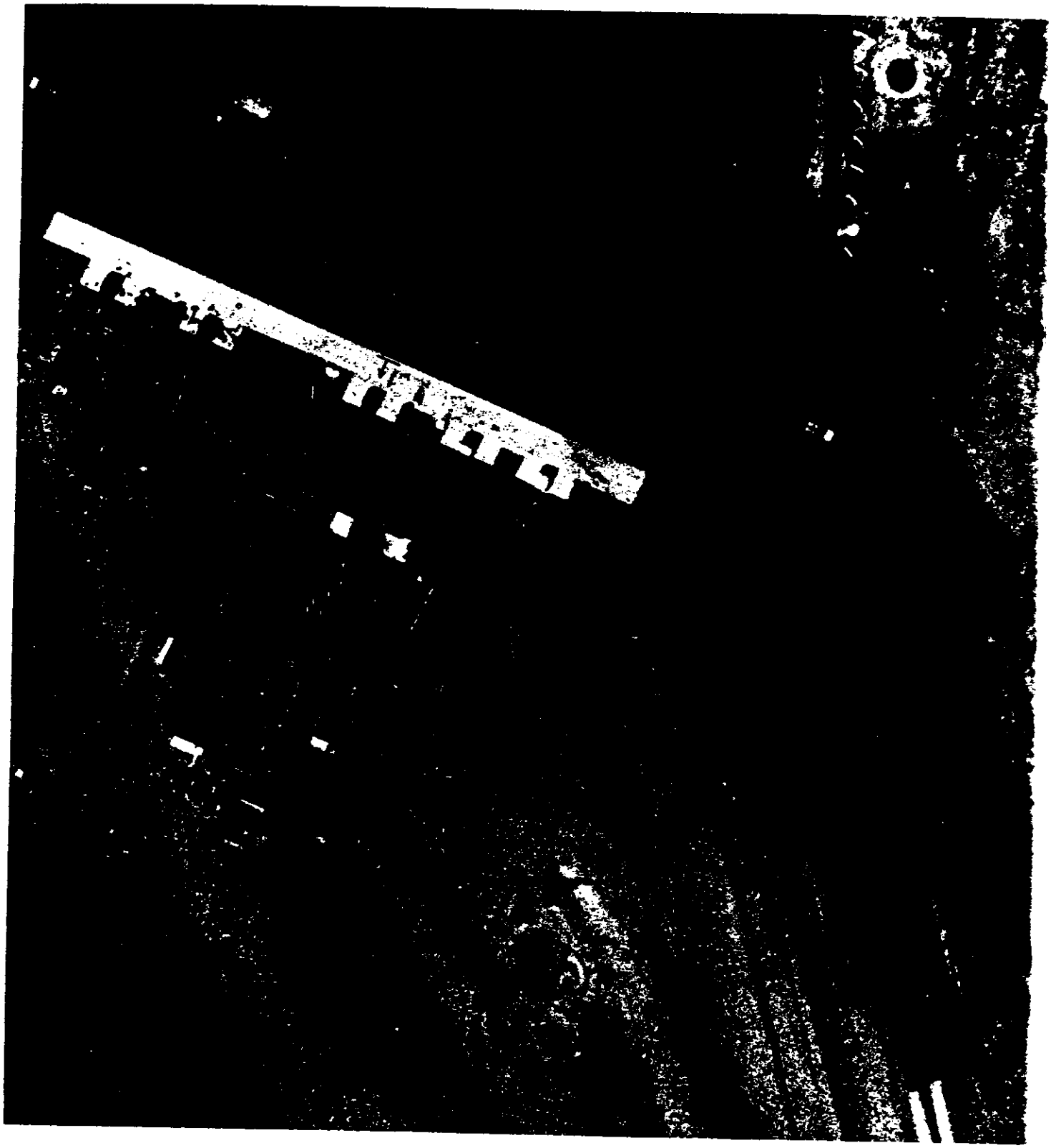
(TRACE NO. 35)



PASS D95 FRAME 018 CAMERA POSITION FWD

MA SCAN SPEED 0.05mm/min CHART SPEED 4"/min SLIT SIZE 1u x 80u

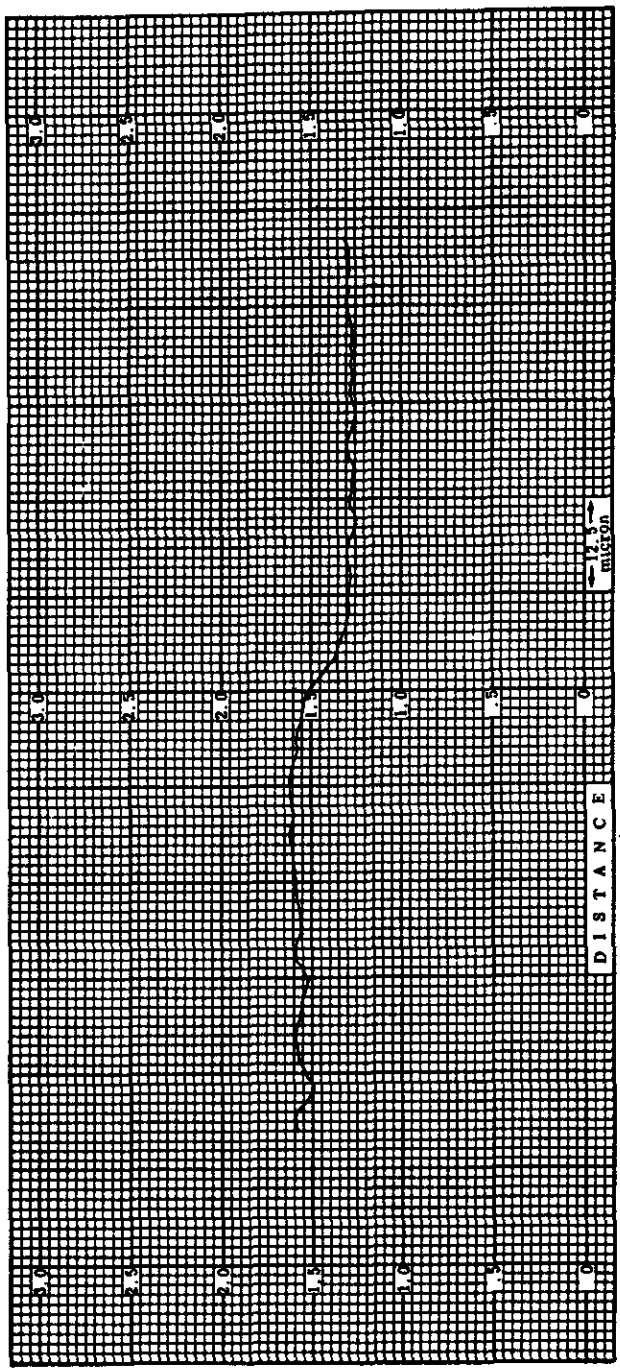
MISSION 1017-2 PASS D95 FRAME 024 AFT
10 DIA ENLG D 1.42 V-RES 111
SUN ANGLE 47° LATITUDE 34°



MISSION 1017-2 PASS D95 FRAME 024 AFT
40 DIA ENLG $\bar{D}$ 1.42 V-RES 111
SUN ANGLE 47° LATITUDE 34°

MANN-DATA MICRO-ANALYZER TRACE

(TRACE NO. 35)



PASS D95 FRAME 024 CAMERA POSITION AFT

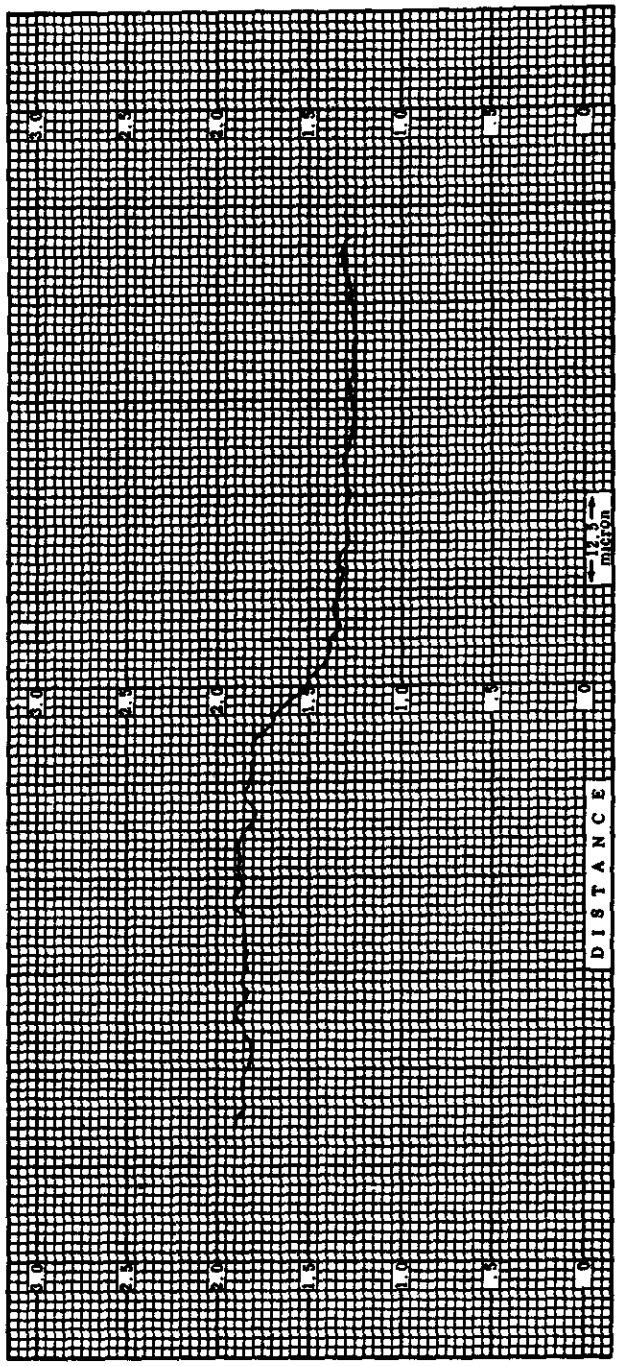
MA SCAN SPEED 0.08mm/min. CHART SPEED 4"/min. SLIT SIZE 1μ x 80μ

SPPL TECHNICAL REPORT NO [redacted]

MISSION 1017-2 PASS D95 FRAME 015 FWD
10 DIA ENLG $\bar{D}$ 1.57 V-RES 078
SUN ANGLE 47° LATITUDE 36°

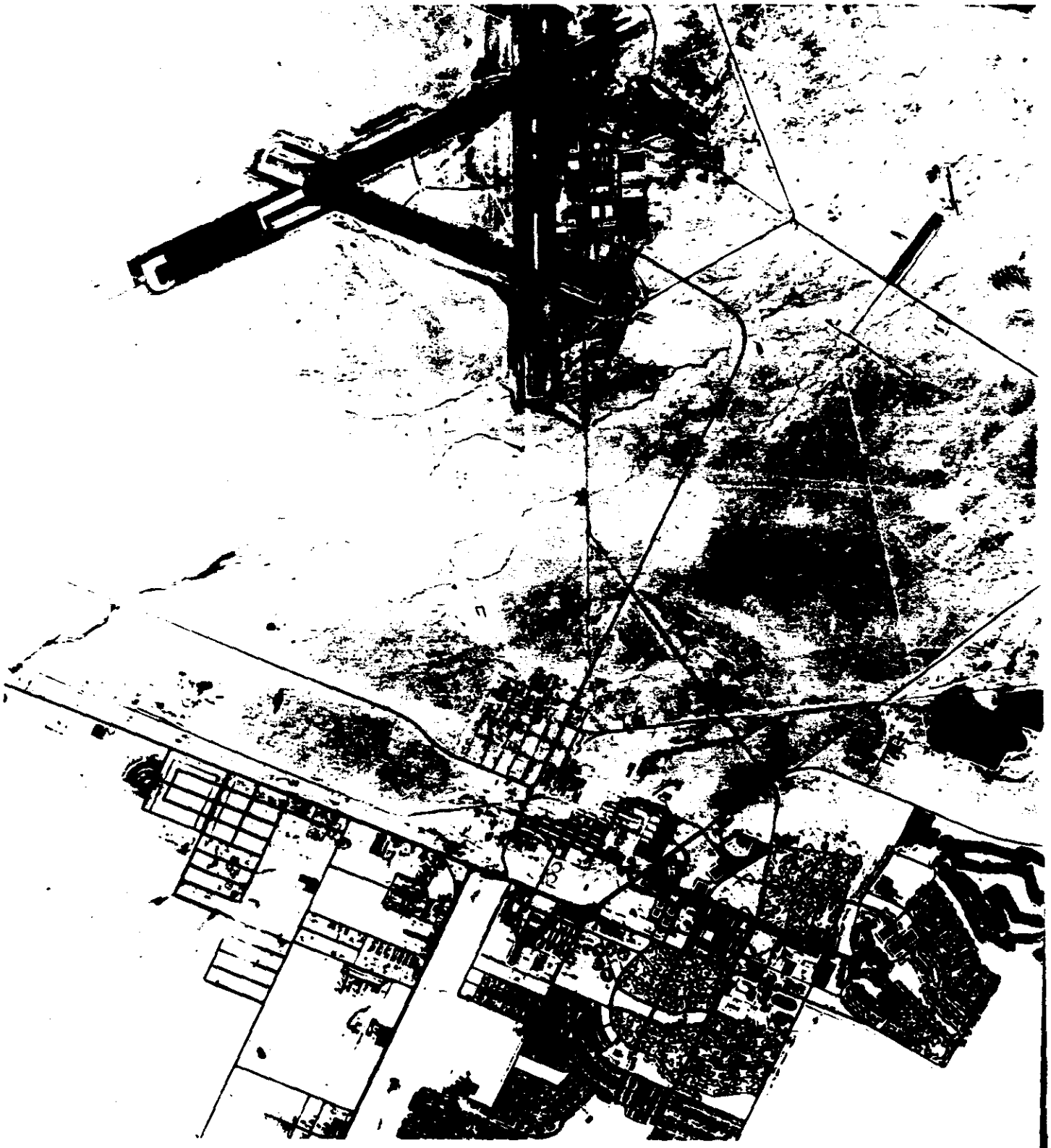
MISSION 1017-2 PASS D95 FRAME 015 FWD
40 DIA ENLG D 1.57 V-RES 078
SUN ANGLE 47° LATITUDE 36°

MANN-DATA MICRO-ANALYZER TRACE
(TRACE NO. 32)

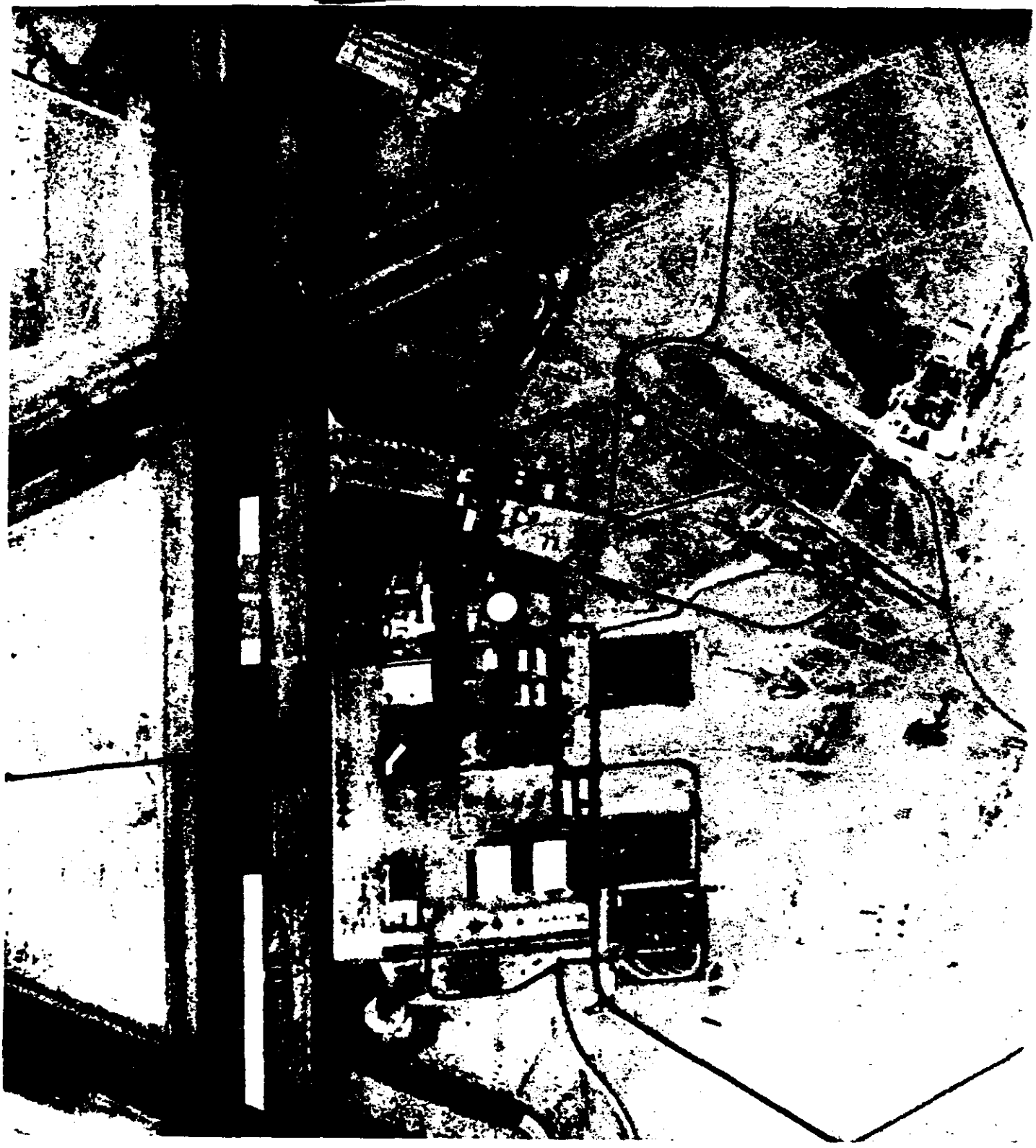


PASS 005 FRAME 015 CAMERA POSITION FWD

MA SCAN SPEED 0.05mm/min. CHART SPEED 4"/min. SLIT SIZE 1μ x 80μ



MISSION 1017-2 PASS D95 FRAME 021 AFT
10 DIA ENLG D̄ 1.27 V-RES 067
SUN ANGLE 47° LATITUDE 35°

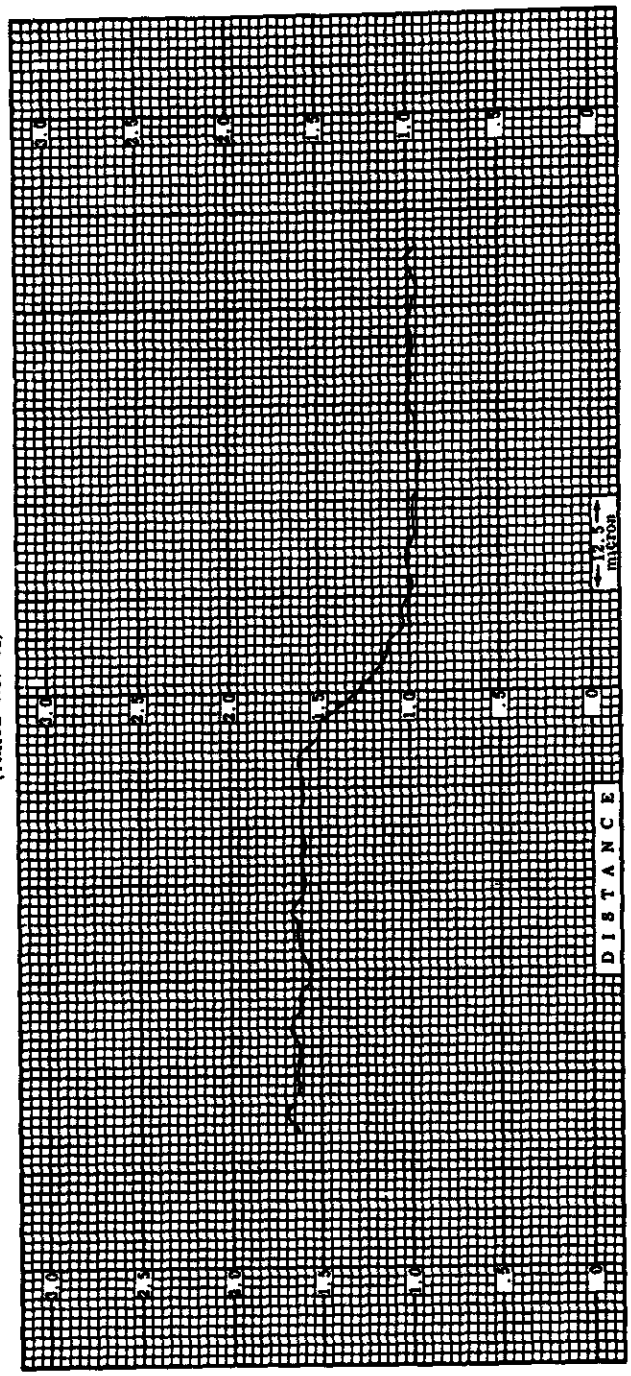


MISSION 1017-2 PASS D95 FRAME 021 AFT
40 DIA ENLG D 1.27 V-RES 067
SUN ANGLE 47° LATITUDE 35°

SPPL TECHNICAL REPORT NO. [redacted]

MANN-DATA MICRO-ANALYZER TRACE

(TRACE NO. 32)



CAMERA POSITION AFT

SLIT SIZE 14 x 80μ

FRAME 021

CHART SPEED 4"/min

PASS 095

MA SCAN SPEED 0.05mm/min

MISSION 1017-1

TABLE 7 - EDGE SCAN DATA

Forward Camera

Mission Data			MTF ADM	Spread Function Width at 50% Amplitude		Machine RES	V-RES	Density		Subject	Grid		Orientation
Trace Nr.	Pass Nr.	Frame Nr.		Microns	Reciprocal			Dmin	Dmax		X	Y	
1	D09	037	50	19.4	51	47	82	0.54	1.44	Runway	27.5	14.5	126°
2	D09	037	63	11.7	85	73	72	0.56	1.24	Ramp	27.2	14.0	23°
3	D64	078	49	16.5	60	64	78	0.46	1.30	Building	46.9	12.1	168°
4	D54	078	64	14.5	69	65	75	0.57	1.37	Building	46.6	12.8	48°
5	D56	034	72	9.5	105	97	73	1.40	1.84	Building	41.6	11.5	22°
6	D56	034	65	13.4	74	52	63	1.59	1.91	Ramp	40.7	11.4	112°
7	D30	011	64	16.2	62	53	70	0.37	1.66	Building	68.2	12.8	74°
8	D30	011	39	24.2	41	41	67	0.54	1.49	Runway	68.3	12.6	157°
9	D30	008	60	11.4	88	76	75	0.35	1.38	Building	41.2	12.8	161°
10	D30	009	64	13.3	75	73	80	0.49	1.35	Runway	40.5	12.0	167°
11	D30	010	50	18.3	55	53	67	0.60	1.43	Building	70.4	12.1	106°
12	D30	010	56	16.2	62	55	72	0.53	1.58	Ramp	70.3	12.8	120°
13	D30	018	41	22.6	44	43	65	0.91	2.00	Runway	13.3	10.3	61°
14	D30	018	44	19.2	53	43	72	1.07	1.59	Runway	12.4	10.4	150°
15	D63	011	60	13.5	80	63	54	1.00	1.55	Ramp	54.3	12.3	94°
16	D63	011	48	20.0	50	45	72	0.44	1.10	Runway	54.2	12.7	21°
17	D68	018	36	19.3	53	54	75	1.01	1.39	Runway	52.4	10.8	89°
18	D68	018	50	17.6	57	60	67	0.98	1.34	Runway	52.4	10.5	89°
19	D71	007	55	15.7	64	60	72	0.55	1.26	Ramp	17.8	10.5	5°
20	D71	007	58	16.5	65	58	67	0.71	1.24	Runway	17.7	10.6	6°
21	D71	010	53	16.1	60	63	61	0.73	1.07	Runway	20.8	11.8	139°
22	D71	010	57	15.3	65	68	63	0.87	1.27	Runway	20.5	11.5	139°
23	D71	127	73	12.9	78	75	82	0.57	1.38	Dam	52.8	14.7	104°
24	D71	127	60	13.3	75	69	82	1.05	1.37	Dam	52.5	13.5	104°
25	D71	137	40	23.5	42	58	63	1.06	1.38	Ramp	68.6	12.4	134°
26	D71	137	59	16.7	57	57	63	1.07	1.44	Runway	68.3	11.8	135°
27	D72	084	79	12.6	80	70	70	0.90	1.65	Ramp	11.6	12.9	20°
28	D72	084	41	23.1	43	41	78	0.91	1.70	Runway	12.0	12.7	20°
29	D72	095	52	17.7	56	47	78	0.96	1.73	Runway	9.7	13.1	22°
30	D72	095	58	20.8	48	40	72	0.96	1.84	Runway	9.5	13.2	22°
*CE-1	D63	008	65	13.1	76	73	-	0.85	1.65	CORN	35.9	9.6	124°
*CE-2	D63	008	62	10.7	93	79	-	0.91	1.64	CORN	35.9	9.6	34°
AVERAGE			57	17.0	64	59	72	0.79	1.15				

* Photographic Enlargements (10X and 40X) and Micro-Analyzer traces are included in Appendix 6, pages 6-31 through 6-35.

TABLE 7 - EDGE SCAN DATA (Cont'd)

MISSION 1017-1 Aft Camera

Vission Data			MTF/ADM	Spread Function Width at 50% Amplitude		Machine RES	V-RES	Density		Subject	Grid		Orientation
Trace Nr.	Pass Nr.	Frame Nr.		Microns	Reciprocal			Dmin	Dmax		X	Y	
1	D59	043	61	17.0	59	53	70	0.35	1.16	Runway	62.5	12.3	133°
2	D59	043	62	11.8	85	70	72	0.31	0.98	Ramp	62.7	12.7	24°
3	D64	064	63	10.4	96	72	82	0.66	1.41	Building	43.1	12.8	170°
4	D64	064	60	13.2	75	66	75	0.65	1.44	Building	43.3	12.1	44°
5	D66	040	73	11.5	87	66	85	1.34	1.80	Building	46.7	13.4	24°
6	D66	040	54	9.7	103	76	70	1.54	1.97	Ramp	49.6	13.5	114°
7	D30	017	70	11.2	89	77	72	0.47	1.68	Building	21.9	11.7	64°
8	D30	017	72	10.8	93	78	78	0.93	1.66	Runway	21.7	11.8	156°
9	D30	017	86	8.9	112	88	78	0.43	1.36	Building	48.5	11.3	162°
10	D30	015	106	9.6	104	95	94	0.66	1.53	Runway	49.2	12.1	163°
11	D30	016	90	11.0	91	83	75	0.87	1.74	Building	19.5	12.3	97°
12	D30	016	92	10.5	95	82	75	0.81	1.78	Ramp	19.8	11.5	91°
15	D63	017	117	7.6	132	111	57	1.40	1.73	Ramp	35.1	11.5	109°
16	D63	017	72	12.3	81	80	67	0.65	1.45	Runway	34.7	11.4	21°
17	D68	026	58	15.8	63	70	75	1.01	1.47	Runway	37.5	9.4	86°
18	D68	026	47	18.1	55	58	72	1.05	1.38	Runway	37.6	9.8	85°
19	D71	013	43	20.5	49	55	75	0.45	1.30	Ramp	74.4	12.7	6°
20	D71	013	62	16.1	62	61	83	0.66	1.13	Runway	74.6	12.7	6°
21	D71	016	65	14.6	68	63	53	0.75	1.06	Runway	68.7	11.2	144°
22	D71	016	60	13.6	74	65	57	0.83	1.21	Runway	69.8	11.7	144°
23	D71	133	57	16.3	61	60	90	0.86	1.54	Dam	52.8	14.7	100°
24	D71	133	55	13.1	76	70	94	1.30	1.90	Dam	52.6	13.5	100°
25	D71	143	56	16.4	61	60	75	1.37	1.66	Ramp	21.6	14.5	126°
27	D73	090	84	10.9	91	84	73	0.90	1.58	Ramp	78.9	12.2	21°
28	D73	090	66	14.2	71	54	75	0.93	1.56	Runway	78.7	12.3	23°
29	D73	101	46	19.1	52	43	82	0.95	1.74	Runway	81.5	13.2	26°
30	D73	101	71	15.4	65	47	82	1.06	1.70	Runway	81.6	12.3	26°
*CE-1	D63	014	89	9.6	108	84	-	0.99	1.64	CORN	53.2	13.8	126°
*CE-2	D63	014	66	13.5	74	73	-	1.00	1.66	CORN	53.2	13.8	36°
AVERAGE			70	13.2	80	71	75	0.87	1.51				

* Photographic Enlargements (10X and 40X) and Micro-Analyser traces are included in Appendix 6, pages 6-37 through 6-41.

TABLE 7 - EDGE SCAN DATA (Cont'd)

MISSION 1017-2 Forward Camera

Vission Data			MTF/ADM	Spread Function Width at 50% Amplitude		Machine RES	V-RES	Density		Subject	Grid		Orientation
Trace Nr.	Pass Nr.	Frame Nr.		Microns	Reciprocal			Dmin	Dmax		X	Y	
31	D95	015	65	11.0	91	73	85	0.74	1.83	Reservoir	29.5	12.1	22°
*32	D95	015	83	11.4	88	67	78	1.28	1.81	Ramp	28.4	13.4	20°
33	D95	015	62	13.1	77	66	75	0.60	1.44	Building	75.0	11.4	168°
34	D95	015	70	11.3	88	76	82	1.03	1.69	Ramp	74.8	11.2	169°
*35	D95	015	53	7.7	130	124	99	1.43	1.77	Ramp	79.8	12.4	22°
36	D103	015	84	10.8	93	76	94	0.71	1.55	Building	64.1	12.7	162°
37	D104	039	56	16.9	59	46	85	0.73	1.44	Ramp	32.7	10.8	164°
38	D104	039	56	15.7	64	51	70	0.73	1.43	Runway	33.1	10.6	164°
39	D104	040	95	10.8	93	58	99	0.74	1.33	Ramp	26.8	9.6	78°
40	D104	040	60	15.5	65	63	94	0.69	1.50	Runway	26.4	9.5	173°
41	D104	042	64	11.0	91	79	72	0.85	1.54	Ramp	21.8	14.5	35°
42	D104	043	55	14.8	68	60	85	0.86	1.58	Runway	21.5	14.4	130°
43	D104	044	70	12.3	81	81	80	1.08	1.53	Ramp	73.8	13.4	41°
44	D111	008	78	12.6	79	66	78	0.67	1.38	Building	56.8	12.8	20°
45	D111	010	75	13.1	77	69	82	0.60	1.24	Building	46.3	9.8	177°
46	D116	063	48	17.6	57	43	104	0.98	1.84	Ramp	46.6	10.7	95°
47	D116	064	84	9.6	104	78	94	1.04	1.65	Runway	32.2	10.4	115°
48	D120	025	49	21.6	46	39	85	0.51	1.15	Runway	46.9	12.4	66°
49	D120	028	106	9.7	104	90	84	0.86	1.68	Building	28.0	14.0	13°
50	D120	028	74	14.0	71	59	85	0.54	1.34	Runway	27.3	13.4	122°
51	D120	028	56	16.6	60	47	82	0.49	1.50	Runway	12.5	13.8	109°
52	D120	030	57	16.7	60	45	90	0.50	1.37	Runway	50.9	13.4	170°
53	D120	044	38	24.4	41	26	78	1.04	1.63	Runway	71.8	13.2	127°
54	D120	118	61	16.5	60	54	85	0.92	1.65	Building	12.7	13.8	135°
55	D120	118	73	12.2	82	61	78	1.47	1.86	Ramp	88.3	13.9	73°
56	D120	130	48	14.3	70	49	78	1.44	1.84	Ramp	51.3	11.5	2°
57	D138	004	71	12.8	78	57	94	0.52	1.24	Building	30.6	13.3	178°
58	D138	104	57	23.7	42	39	85	0.68	1.63	Runway	64.7	11.1	108°
59	D138	108	49	21.4	47	46	85	0.47	1.36	Runway	57.8	10.6	102°
60	D138	107	50	17.1	59	60	72	0.76	1.43	Runway	78.6	13.2	102°
AVERAGE			65	14.5	74	63	85	0.83	1.53				

* Photographic Enlargements (10X and 40X) and Micro-Analyser traces are included in Appendix 6, pages 6-49 through 6-65.

TABLE 7 - EDGE SCAN DATA (Cont'd)

MISSION 1017-2 Aft Camera

Mission Data			MTF/ADM	Spread Function Width at 50% Amplitude		Machine RES	V-RES	Density		Subject	Grid		Orientation
Trace Nr.	Pass Nr.	Frame Nr.		Microns	Reciprocal			Dmin	Dmax		X	Y	
31	D95	081	84	11.3	88	84	85	0.71	1.74	Reservoir	60.6	10.7	22°
*32	D95	081	88	12.0	83	78	67	0.86	1.63	Ramp	60.5	9.4	21°
*35	D95	084	73	8.2	109	89	111	1.29	1.62	Ramp	14.0	10.3	24°
36	D103	084	75	11.6	86	79	82	0.47	1.09	Building	27.5	10.2	150°
37	D104	045	47	15.1	66	55	82	0.45	1.09	Ramp	41.4	12.8	164°
38	D104	045	49	22.3	45	47	72	0.47	1.24	Runway	41.6	12.9	164°
39	D104	046	65	14.3	70	68	82	0.47	0.90	Ramp	35.1	14.2	87°
40	D104	046	50	16.7	60	61	95	0.44	1.17	Runway	34.5	14.2	173°
41	D104	047	56	13.3	81	73	75	0.55	1.16	Ramp	30.1	13.9	41°
42	D104	047	64	14.3	70	64	75	0.58	1.35	Runway	30.0	13.0	130°
43	D104	050	61	12.3	83	74	85	1.16	1.57	Ramp	32.3	10.7	38°
44	D111	014	72	14.6	68	60	75	1.10	1.81	Building	33.7	10.3	20°
45	D111	016	88	10.4	96	98	95	1.17	1.74	Building	43.7	12.7	177°
46	D118	067	67	13.7	73	73	84	0.76	1.28	Ramp	44.3	11.8	95°
47	D118	068	78	9.5	106	90	90	0.81	1.54	Runway	38.8	12.7	118°
48	D120	031	47	20.2	49	36	63	0.57	1.49	Runway	43.4	10.5	88°
49	D120	033	44	21.0	48	38	73	0.60	1.76	Building	62.8	13.7	14°
50	D120	033	88	14.9	67	57	85	0.84	1.60	Runway	63.5	14.4	130°
51	D120	034	70	15.1	66	61	63	0.75	1.73	Runway	76.1	10.2	123°
52	D120	036	78	10.3	98	73	98	0.70	1.67	Runway	31.5	10.4	168°
53	D120	050	53	15.5	65	57	70	1.08	1.83	Runway	18.9	10.2	115°
54	D120	121	69	18.1	56	58	72	1.04	1.78	Building	12.4	14.1	136°
55	D120	121	75	8.8	114	73	72	1.53	1.85	Ramp			89°
56	D120	124	56	13.6	73	75	104	1.66	2.06	Ramp	38.8	14.6	1°
57	D136	090	87	8.2	122	100	125	0.54	1.33	Building	51.4	14.3	176°
58	D136	110	74	14.0	71	64	82	0.91	1.77	Runway	26.3	11.0	113°
59	D136	108	75	11.5	87	82	90	0.68	1.46	Runway	33.8	11.5	96°
60	D136	112	100	9.9	101	88	104	0.89	1.84	Runway	16.5	13.7	88°
AVERAGE			69	13.5	79	69	85	0.83	1.63				

* Photographic Enlargements (10X and 40X) and Micro-Analyzer traces are included in Appendix 6, pages 6-55 through 6-71.

[redacted]

SPPL TECHNICAL REPORT NO. [redacted]

Analysis of Photographic Image to Evaluate System Performance

Mission 1017

22 March 1965

[redacted]

[redacted]

SPPL TECHNICAL REPORT NO. [redacted]

22 March 1965

TITLE:

Summary of Microdensitometer Derived Image Quality Data Collected from Mission 1017

SECTION I: INTRODUCTION

Microdensitometer tracing of scene edges has been used as an objective technique for evaluating photographic system performance. In this report, the evaluation data is presented as spread function width in microns and resolving power in lines per millimeter. A statistical summary of the edge data for this mission is presented in Section II, giving the arithmetic mean, standard deviation, coefficient of dispersion, and number of edges. Section IIA is included to show a statistical breakdown of the forward and aft camera quality.

Section III is a summary of all C/M/J Missions that have been recomputed with the new SWRDR computer program. Image Quality Ranking of all C/M/J Missions is listed in Section IIIA. Frequency plots of the spread function and resolving power data are presented as Section IV, to show the distribution of values. A tabulation of the location, description, and image quality data for each edge is presented as Section V.

Appendix A is included to show the edge orientation reference system and edge location grid. In use, the film is placed on an illuminator with the titling correct reading (i.e. emulsion down) with the camera take-up end at the right and the supply at the left. The orientation of an edge is described as 000 for longitudinal and 090 for transverse edges; the numbering system runs in a clockwise direction. The coordinate locator grid consists of centimeter squares numbered such that the center of the frame is given as X46.0, Y12.0. X numbers increase toward the take-up and Y numbers increase toward the title.

The image quality data was obtained from sharp scene edges in the original negative by scanning with a Kodak Model 5 microdensitometer. A 1 x 80 micron slit was used. The data reduction consisted of the following steps:

(a) hand smoothing of the microdensitometer strip chart recording,

(b) key punching of chart (density) values at sample distance increments of 0.420 microns,

(c) I.B.M. 7044 computer conversion of chart values to relative exposure values, and

(d) computer conversion of exposure data to line spread function and modulation transfer function by numerical methods.

The edge resolving power was predicted graphically as the intersection of the MTF curve and the aerial image modulation curve for 4404 film at a test object contrast of 2:1. The spread function width was calculated from the first differences of relative exposure as the width at which the gradient became 50% of the maximum gradient.

Each edge was traced three to five times on the microdensitometer. The computed spread function widths and resolutions of the individual tracings and the averaged values for each edge are presented in Section V.

Analysis of Photographic Image to Evaluate System Performance

SECTION II SUMMARY SHEET

Mission 1017-1

Resolution in lines/mm based on the aerial image modulation - 4404 curve from edge trace data reduced by computer techniques.

Arithmetic Mean	86.6 l/mm
Standard Deviation	18.8 l/mm
Coefficient of Dispersion	22%
Number of Edges	42
M.I.P. Frame	112 l/mm

Spread function width at 50% amplitude in microns from edge trace data reduced by computer techniques.

Arithmetic Mean	10.2 μ
Standard Deviation	3.5 μ
Coefficient of Dispersion	34%
Number of Edges	42
M.I.P. Frame	7.6 μ

Analysis of Photographic Image to Evaluate System Performance

SECTION IIA SUMMARY SHEET

Mission 1017-1

Resolution in lines/mm based on the aerial image modulation - 4404 curve from edge trace data reduced by computer techniques.

	FWD Camera	AFT Camera
Arithmetic Mean	78.3 l/mm	94.0 l/mm
Standard Deviation	18.4 l/mm	16.1 l/mm
Coefficient of Dispersion	24%	17%
Number of Edges	20	22

Spread function width at 50% amplitude in microns from edge trace data reduced by computer techniques.

	FWD Camera	AFT Camera
Arithmetic Mean	11.9 μ	8.7 μ
Standard Deviation	3.9 μ	2.3 μ
Coefficient of Dispersion	33%	26%
Number of Edges	20	22

Analysis of Photographic Image to Evaluate System Performance

SECTION III - MISSION 1017-1

Summary of all C/M/J Missions Traced and Computed With the New SWRDR Computer Program

Mission Number	Number of Edges	Spread Function Width at 50% Amplitude in Microns, Computer Calculations			Resolution in lines/mm from A. I. M. 4404 Curve, Computer Calculations		
		Arithmetic Mean	Standard Deviation	Coefficient of Dispersion	Arithmetic Mean	Standard Deviation	Coefficient of Dispersion
1007-2*	106	12.2	3.9	32%	71.0	18.0	25%
1008-1*	103	10.6	3.2	30%	83.0	21.1	25%
1008-2*	123	10.2	3.9	38%	84.3	21.0	25%
1009-1	80	11.7	4.2	36%	75.3	19.9	26%
1009-2	110	13.0	5.0	39%	74.1	21.7	29%
1010-1	119	9.8	3.3	33%	89.4	22.7	25%
1010-2	110	9.8	3.2	32%	84.3	21.4	25%
1011-1	115	10.9	3.8	35%	80.5	21.6	27%
1012-1	94	10.1	3.7	36%	86.1	20.4	24%
1012-2	100	10.2	3.1	31%	84.0	21.4	26%
1013-1	49	10.8	4.1	38%	83.3	27.3	33%
1014-1	92	10.8	4.5	41%	83.0	24.7	30%
1014-2	90	11.7	3.9	34%	74.2	20.1	27%
1015-1	35**	8.8	2.3	26%	93.1	16.5	18%
1015-2	40**	9.2	2.3	25%	89.7	17.8	20%
1016-1	31**	9.7	2.3	24%	88.0	18.6	21%
1016-2	33**	9.8	3.2	32%	91.5	16.1	18%
1017-1	42**	10.2	3.5	34%	86.6	18.8	22%

*A 1 x 320 micron slit was used

**Each edge was traced three or more times on the microdensitometer

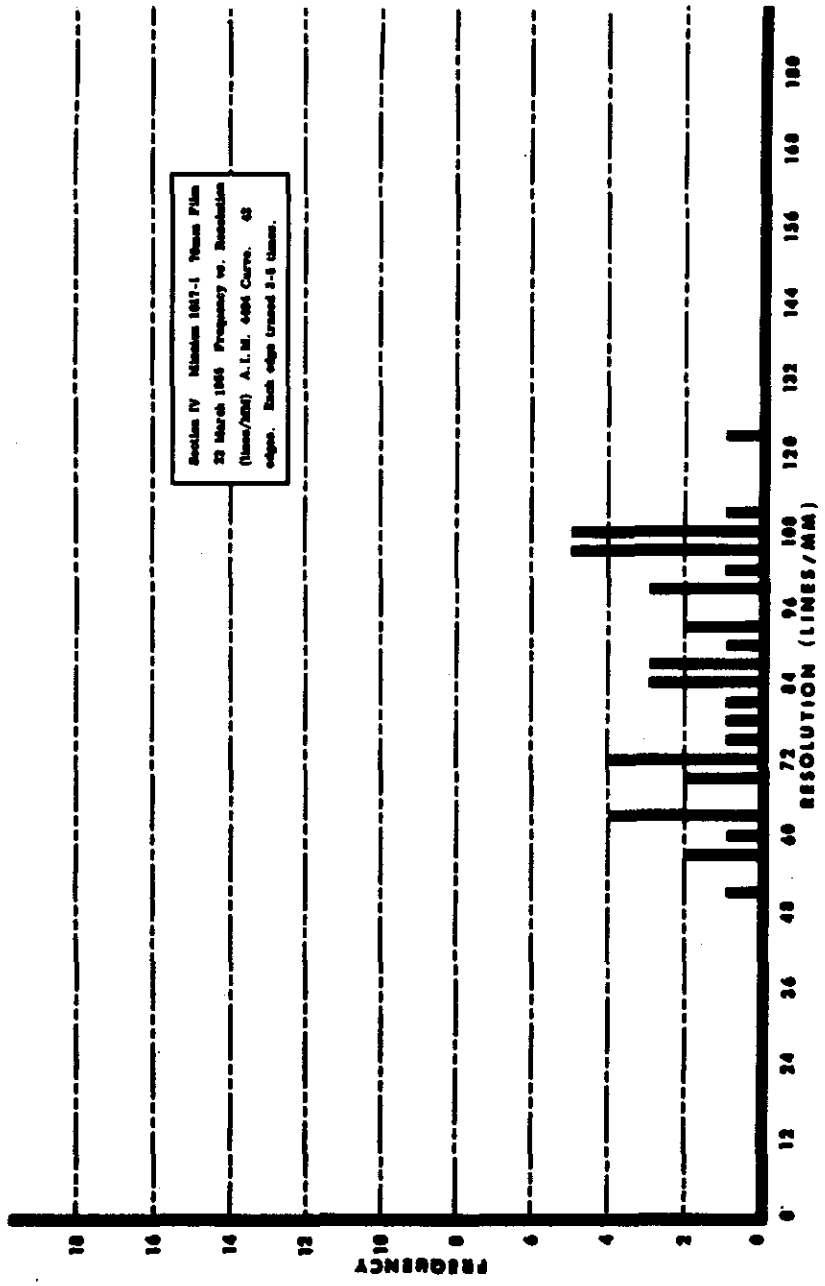
Analysis of Photographic Image to Evaluate System Performance

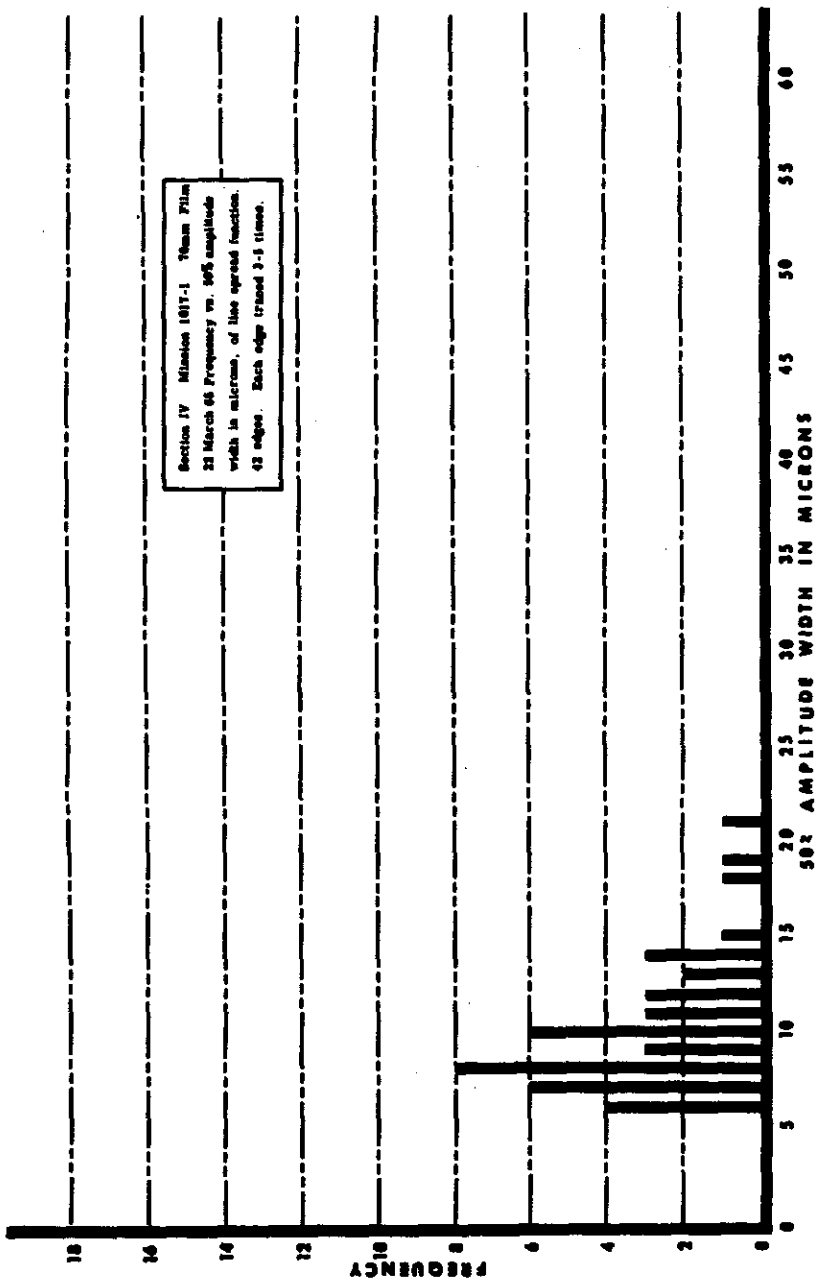
SECTION IIIA - MISSION 1017-1

Image Quality Ranking of C/M/J Missions

Mission Number	Average Resolution in lines/mm for A.I.M. 4404 Curve
1015-1	93.1 l/mm
1016-2	91.5 l/mm
1015-2	89.7 l/mm
1010-1	89.4 l/mm
1016-1	88.0 l/mm
1017-1	86.6 l/mm
1012-1	86.1 l/mm
1008-2	84.3 l/mm
1010-2	84.3 l/mm
1012-2	84.0 l/mm
1013-1	83.3 l/mm
1008-1	83.0 l/mm
1014-1	83.0 l/mm
1011-1	80.5 l/mm
1009-1	75.3 l/mm
1014-2	74.2 l/mm
1009-2	74.1 l/mm
1007-2	71.0 l/mm

NOTE: Since this is a research and development effort, modifications and improvements are continually being made in the methods of collecting edge data and in the computer data reduction. The quality rating of current missions may have a slightly different basis than earlier missions, which could affect the quality ranking.


RESOLUTION (LINES/MM)
FREQUENCY


Section IV Mission 1017-1 70mm Film
22 March 66 Frequency vs. 50% amplitude
width in microns, of line spread function.
42 edges. Each edge traced 3-5 times.
50% AMPLITUDE WIDTH IN MICRONS
FREQUENCY

Analysis of Photographic Image to Evaluate System Performance

Mission 1017-1
Section V
Forward Camera

Pass	Frame	Location	Orientation	Subject	50% Amplitude Spread Function Width (Microns)	A.I.M. Resolution	Pass	Frame	Location	Orientation	Subject	50% Amplitude Spread Function Width (Microns)	A.I.M. Resolution
D-07	015	X40.8 Y12.8	020	Buildings	11.3	73	D-39	019	X28.4 Y14.8	178	Buildings	17.6	64
D-07	016	X33.6 Y11.8	030	Buildings	13.7	59	D-39	028	X19.2 Y11.3	100	Buildings	18.7	64
D-09	021	X43.4 Y11.5	035	Buildings	13.4	68	D-39	087	X66.3 Y12.1	150	Buildings	20.6	51
D-25	074	X48.3 Y09.3	075	Buildings	7.1	109	D-41	010	X48.3 Y12.7	105	Dock	10.9	78
D-30*	009	X31.5 Y11.7	100	Buildings	7.6	112	D-41	011	X49.1 Y13.7	005	Buildings	11.5	72
D-30	010	X28.8 Y11.3	020	Buildings	9.5	88	D-63	011	X54.1 Y12.0	010	Buildings	6.2	105
D-30	011	X58.0 Y12.8	060	Buildings	10.1	88	D-63	013	X28.3 Y13.8	160	Buildings	6.7	105
D-30	012	X25.2 Y13.2	060	Buildings	12.5	88	D-71	121	X58.5 Y13.3	015	Dam	14.0	58
D-30	015	X37.8 Y13.7	040	Buildings	14.3	58	D-71	127	X52.8 Y14.0	100	Dam	12.2	68
D-30	017	X57.6 Y10.6	005	Buildings	8.4	85							
D-30	020	X60.0 Y11.3	015	Buildings	11.8	73							

50% Amplitude Spread Function Width (Microns)	A.I.M. Resolution
12.3	76
12.2	69
9.5	75
12.6	56
14.6	56
13.8	63
17.7	53
13.6	64
8.9	88
8.0	103
7.0	105
6.2	110
8.3	107
6.2	124
8.3	106
9.6	86
9.7	90
9.1	89
9.9	82
10.8	83
9.6	89
17.5	91
9.0	82
10.9	81
13.4	58
15.9	58
14.1	59
9.8	80
7.4	78
8.2	96
10.0	87
13.7	65
11.7	67

50% Amplitude Spread Function Width (Microns)	A.I.M. Resolution
16.0	57
20.7	65
16.0	71
20.7	56
18.1	79
17.4	58
20.3	58
19.5	53
22.1	43
9.7	85
13.3	68
9.6	81
12.3	60
11.4	70
10.7	86
6.1	106
6.4	108
6.0	100
7.5	89
5.8	123
6.7	104
16.3	51
13.7	66
11.8	56
11.4	71
9.0	85
10.1	67

*M.I.P. Frame

Analysis of Photographic Image to Evaluate System Performance

Mission 1017-1
Section V

Aft Camera

Pass	Frame	Location	Orientation	Subject	50% Amplitude Spread Function Width (Microns)		A.I.M. Resolution		Pass	Frame	Location	Orientation	Subject	50% Amplitude Spread Function Width (Microns)		A.I.M. Resolution	
D-07	021	X50.6 Y13.5	030	Buildings	10.5	8.7 11.5 11.2	71	88 70 56	D-39	025	X61.7 Y10.5	090	Buildings	5.6	5.0 6.7 5.1	123	124 111 133
D-07	022	X35.3 Y10.2	030	Buildings	7.1	9.3 4.9	106	82 130	D-39	025	X62.4 Y10.4	180	Buildings	6.3	6.0 6.5	109	108 110
D-09	032	X49.9 Y12.2	100	Buildings	16.1	22.0 12.4 12.7	63	48 78 62	D-41	016	X40.9 Y12.0	100	Dock	8.2	10.8 6.1 7.6	93	72 112 95
D-25	090	X56.7 Y12.3	100	Dock	7.4	5.9 7.7 8.5	100	127 104 70	D-41	017	X41.1 Y11.5	010	Buildings	8.3	8.2 10.5 6.2	99	99 74 123
D-30	015	X40.5 Y10.4	045	Buildings	6.7	6.7 6.9 6.5	109	99 115 114	D-63	008	X70.5 Y11.9	020	Buildings	7.4	6.6 8.1 7.6	108	116 99 109
D-30	016	X60.5 Y13.2	025	Buildings	9.0	12.7 7.1 7.1	107	92 102 127	D-63	014	X53.2 Y14.2	45	Test Object	10.2	11.9 8.7 10.1	74	77 73 73
D-30	016	X22.4 Y12.1	025	Buildings	7.7	7.4 7.5 8.2	101	106 96 100	D-63	014	X53.2 Y14.2	135	Test Object	7.9	6.8 8.5 8.5	105	101 101 113
D-30	017	X22.1 Y11.6	075	Buildings	10.4	10.9 11.3 9.1	80	83 73 83	D-63	015	X56.2 Y11.3	085	Buildings	7.9	7.3 7.5 8.9	95	105 94 81
D-30	018	X64.8 Y12.8	025	Buildings	9.8	10.5 9.1 9.8	83	73 85 91	D-63	018	X35.3 Y10.8	165	Buildings	8.6	10.4 6.7	85	70 100
D-30	023	X31.8 Y14.2	180	Buildings	6.3	5.2 7.0 6.6	105	109 104 102	D-71	127	X31.5 Y13.6	015	Dam	10.2	7.9 13.1 9.5	100	119 81 100
D-30	023	X31.8 Y14.2	180	Buildings	8.4	8.8 6.6 9.9	91	83 111 79	D-71	133	X37.2 Y12.5	095	Dam	13.2	13.8 15.2 10.5	63	59 59 72

Analysis of Photographic Image to Evaluate System Performance

SECTION II SUMMARY SHEET

Mission 1017-2

Resolution in lines/mm based on the aerial image modulation - 4404 curve from edge trace data reduced by computer techniques.

Arithmetic Mean	82.2 l/mm
Standard Deviation	17.8 l/mm
Coefficient of Dispersion	22%
Number of Edges	45
M.I.P. Pass	75 l/mm

Spread function width at 50% amplitude in microns from edge trace data reduced by computer techniques.

Arithmetic Mean	11.4 μ
Standard Deviation	3.6 μ
Coefficient of Dispersion	31%
Number of Edges	45
M.I.P. Pass	10.0 μ

Analysis of Photographic Image to Evaluate System Performance

SECTION IIA SUMMARY SHEET

Mission 1017-2

Resolution in lines/mm based on the aerial image modulation - 4404 curve from edge trace data reduced by computer techniques.

	FWD Camera	AFT Camera
Arithmetic Mean	79.9 l/mm	85.4 l/mm
Standard Deviation	17.4 l/mm	18.4 l/mm
Coefficient of Dispersion	22%	22%
Number of Edges	26	19

Spread function width at 50% amplitude in microns from edge trace data reduced by computer techniques.

	FWD Camera	AFT Camera
Arithmetic Mean	11.9 μ	10.7 μ
Standard Deviation	4.1 μ	2.7 μ
Coefficient of Dispersion	34%	25%
Number of Edges	26	19

Analysis of Photographic Image to Evaluate System Performance

SECTION III - MISSION 1017-2

Summary of all C/M/J Missions Traced and Computed
With the New SWRDR Computer Program

Mission Number	Number of Edges	Spread Function Width at 50% Amplitude in Microns, Computer Calculations			Resolution in lines/mm from A.I.M. 4404 Curve, Computer Calculations		
		Arithmetic Mean	Standard Deviation	Coefficient of Dispersion	Arithmetic Mean	Standard Deviation	Coefficient of Dispersion
1007-2*	106	12.2	3.9	32%	71.0	18.0	25%
1008-1*	103	10.6	3.2	30%	83.0	21.1	25%
1008-2*	123	10.2	3.9	38%	84.3	21.0	25%
1009-1	80	11.7	4.2	36%	75.3	19.9	26%
1009-2	110	13.0	5.0	39%	74.1	21.7	29%
1010-1	119	9.8	3.3	33%	89.4	22.7	25%
1010-2	110	9.8	3.2	32%	84.3	21.4	25%
1011-1	115	10.9	3.8	35%	80.5	21.6	27%
1012-1	94	10.1	3.7	36%	86.1	20.4	24%
1012-2	100	10.2	3.1	31%	84.0	21.4	26%
1013-1	49	10.8	4.1	38%	83.3	27.3	33%
1014-1	92	10.8	4.5	41%	83.0	24.7	30%
1014-2	90	11.7	3.9	34%	74.2	20.1	27%
1015-1	35**	8.8	2.3	26%	93.1	16.5	18%
1015-2	40**	9.2	2.3	25%	89.7	17.8	20%
1016-1	31**	9.7	2.3	24%	88.0	18.6	21%
1016-2	33**	9.8	3.2	32%	91.5	16.1	18%
1017-1	42**	10.2	3.5	34%	86.6	18.8	22%
1017-2	45**	11.4	3.6	31%	82.2	17.8	22%

*A 1 x 320 micron slit was used

**Each edge was traced three or more times on the microdensitometer

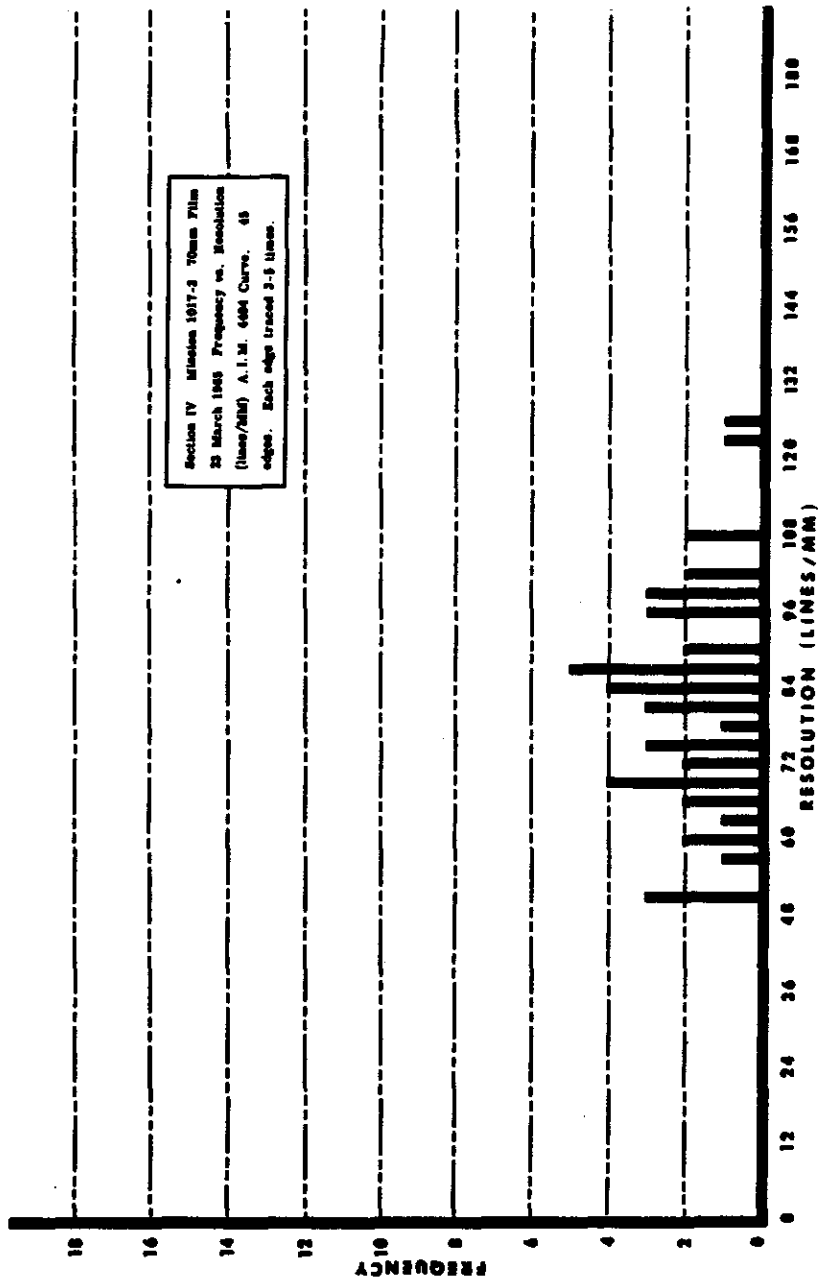
Analysis of Photographic Image to Evaluate System Performance

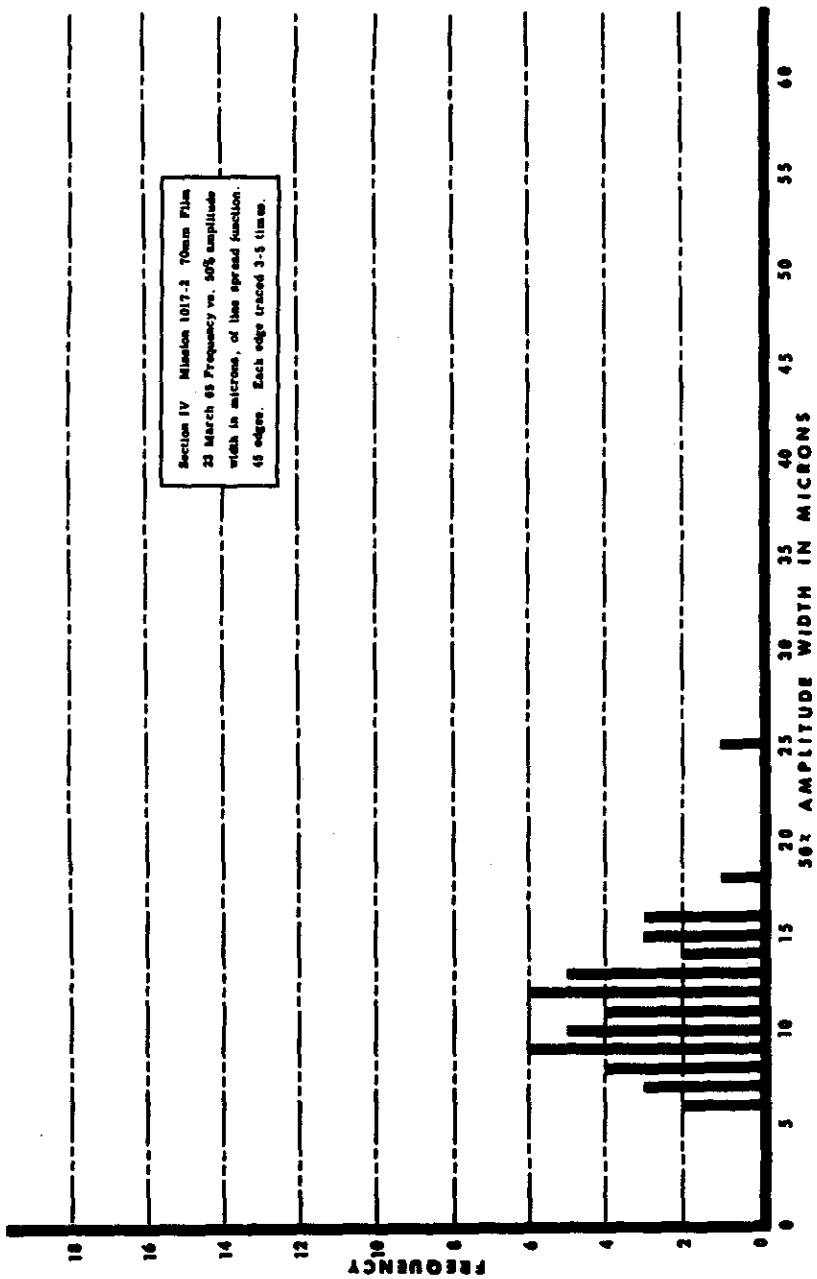
SECTION IIIA - MISSION 1017-2

Image Quality Ranking of C/M/J Missions

Mission Number	Average Resolution in lines/mm for A.I.M. 4404 Curve
1015-1	93.1 l/mm
1016-2	91.5 l/mm
1015-2	89.7 l/mm
1010-1	89.4 l/mm
1016-1	88.0 l/mm
1017-1	86.6 l/mm
1012-1	86.1 l/mm
1008-2	84.3 l/mm
1010-2	84.3 l/mm
1012-2	84.0 l/mm
1013-1	83.3 l/mm
1008-1	83.0 l/mm
1014-1	83.0 l/mm
1017-2	82.2 l/mm
1011-1	80.5 l/mm
1009-1	75.3 l/mm
1014-2	74.2 l/mm
1009-2	74.1 l/mm
1007-2	71.0 l/mm

NOTE: Since this is a research and development effort, modifications and improvements are continually being made in the methods of collecting edge data and in the computer data reduction. The quality rating of current missions may have a slightly different basis than earlier missions, which could affect the quality ranking.


Section IV Mission 1017-2 70mm Film
23 March 1965 Frequency vs. Resolution
(lines/MM) A.I.M. 4694 Curve. 45
edges. Each edge traced 3-5 times.
RESOLUTION (LINES/MM)
FREQUENCY


Section IV Mission 1017-2 70mm Film
25 March 65 Frequency vs. 50% Amplitude
width in microns, of line spread function.
45 edge. Each edge traced 3-5 times.
FREQUENCY
50% AMPLITUDE WIDTH IN MICRONS

Mission 1017-2
Section V

Forward Camera

Pass	Frame	Location	Orientation	Subject	50% Amplitude Spread Function Width (Microns)		A.I.M. Resolution		Pass	Frame	Location	Orientation	Subject	50% Amplitude Spread Function Width (Microns)		A.I.M. Resolution	
D-95	015	X28.7 Y12.1	075	Buildings	7.4	7.4 8.2 6.5	103	89 98 123	D-111	010	X58.6 Y13.3	075	Buildings	6.2	5.7 6.2 6.8	127	140 131 111
D-95	015	X28.7 Y12.1	075	Buildings	8.7	7.1 9.5 9.4	98	115 89 90	D-111	010	X58.6 Y13.3	075	Buildings	8.5	9.5 8.0 8.1	86	90 86 83
D-95	019	X17.3 Y11.8	075	Buildings	6.7	7.9 4.8 7.4	97	91 123 76	D-111	015	X60.4 Y11.5	100	Buildings	25.1	22.1 21.3 31.9	60	66 61 53
D-95	020	X19.3 Y11.8	005	Tri-Density Target	8.2	8.2	84	84	D-116	064	X46.5 Y09.8	075	Buildings	10.1	12.2 11.6 6.5	87	66 80 114
D-95	021	X40.7 Y10.6	090	Buildings	14.8	16.1 15.4 12.8	80	89 57 93	D-116	065	X47.3 Y14.8	035	Bridge	12.6	13.8 13.6 10.6	80	75 69 95
D-95	022	X26.3 Y10.3	015	Buildings	11.0	10.6 14.2 8.1	61	60 63 61	D-116	076	X59.5 Y13.4	175	Buildings	13.3	20.5 11.0 8.5	88	60 79 125
D-100	137	X23.7 Y10.7	146	Dock	17.7	19.8 14.9 18.3	67	84 69 48	D-120	026	X36.1 Y10.6	020	Buildings	11.8	14.6 11.1 9.8	72	61 80 76
D-102	072	X39.2 Y12.4	025	Buildings	13.2	18.5 10.2 10.8	58	44 58 72	D-120	026	X36.1 Y10.6	020	Buildings	12.8	6.6 15.5 16.2	62	80 50 56
D-104	041	X24.5 Y13.2	055	Buildings	15.2	15.9 14.9 14.9	70	57 75 77	D-120	029	X22.2 Y11.1	180	Buildings	13.7	19.2 9.5 12.4	76	80 79 70
D-111	006	X47.5 Y10.2	010	Buildings	9.8	8.9 10.7 9.9	83	95 75 78	D-120	029	X22.2 Y11.1	180	Buildings	13.4	12.7 15.3 12.2	65	68 59 69
D-111	006	X47.5 Y10.2	010	Buildings	6.9	9.4 5.5 5.7	109	94 115 118	D-120	031	X23.7 Y14.4	090	Buildings	10.9	14.5 7.6 10.7	73	52 108 60
D-111	007	X54.8 Y09.8	140	Buildings	11.8	11.9 9.3 14.3	85	61 106 88	D-134	102	X20.7 Y12.8	110	Buildings	14.0	15.7 11.4 14.9	52	47 55 55
D-111	008	X54.6 Y10.6	115	Buildings	15.8	16.9 16.3 14.2	68	76 53 74									

Analysis of Photographic Image to Evaluate System Performance

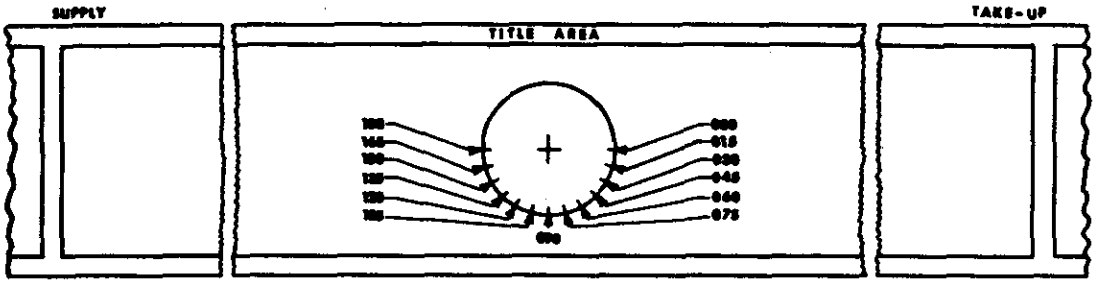
Mission 1017-2
Section V
Aft Camera

Pass	Frame	Location	Orientation	Subject	50% Amplitude Spread Function Width (Microns)	A.I.M. Resolution
D-95	021	X61.3 Y10.8	085	Buildings	9.1	99
D-95	021	X61.4 Y09.7	090	Buildings	11.6	88
D-95	021	X61.6 Y09.7	090	Buildings	11.5	79
D-102	078	X31.4 Y11.1	015	Buildings	11.6	75
D-104	036	X77.8 Y10.7	075	Buildings	15.8	51
D-104	047	X56.4 Y10.7	075	Buildings	10.3	97
D-111	007	X56.9 Y14.2	075	Buildings	8.7	89
D-111	009	X48.5 Y13.2	010	Buildings	16.2	50
D-111	012	X42.3 Y12.7	010	Buildings	12.2	70
D-111	013	X36.8 Y14.7	165	Buildings	8.1	99
D-111	014	X36.8 Y10.8	115	Buildings	7.9	101
D-116	069	X44.6 Y14.2	080	Buildings	9.4	86

Pass	Frame	Location	Orientation	Subject	50% Amplitude Spread Function Width (Microns)	A.I.M. Resolution
D-116	073	X48.5 Y09.5	070	Buildings	10.8	80
D-120	032	X54.5 Y12.4	045	Buildings	8.1	123
D-120	032	X54.5 Y12.4	045	Buildings	6.2	107
D-120	035	X66.6 Y12.2	180	Buildings	9.8	85
D-120	036	X34.8 Y12.0	060	Buildings	14.9	90
D-134	105	X70.1 Y10.7	110	Buildings	11.9	68
D-136*	108	X36.2 Y12.9	010	Buildings	10.0	75
D-136	109	X36.2 Y12.9	010	Buildings	8.6	97

APPENDIX "A"

Reference System For Orientation Of C/M/J Mission Edges
original negative — emulsion down



Coordinate Locator Grid For C/M/J Mission Edges
original negative — emulsion down

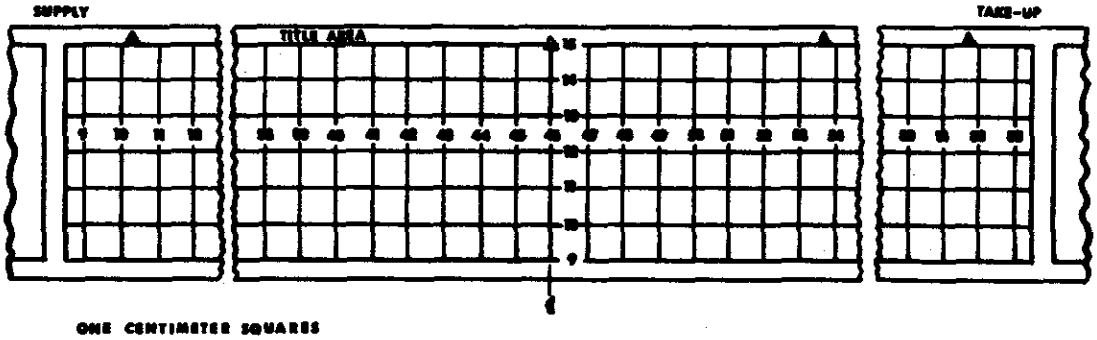


TABLE 12 - V-RES VALUES PER PASS AND FRAME

MISSION 1017-1

PASS	FRAME	FRAME DIVISION 1 W	1 A	2 W	2 A	3 W	3 A	4 W	4 A	5 W	5 A
0 2	15			59	63						
0 2	40					59	67				
0 2	60					57	63				
0 2	80					59	59				
0 4	5			78	70						
0 4	25					57	63				
0 4	45					70	65				
0 4	65					70	67				
0 5	5										
0 5	25					63	67				
0 5	45					67	59				
0 5	65					82	75				
0 5	85					72	70				
0 5	113					52	59				
0 6	35	67	61			85	85				
0 6	55			59	63						
0 6	78	51	57								
0 6	98							65	70		
0 6	118	63	57								
0 6	138			47	54						
0 7	5					67	63				
0 7	24					45	49				
0 7	44					67	59				
0 7	68					70	67				
0 8	5					78	82				
0 8	25					78	67				
0 9	5					67	75				
0 9	25					67	59				
0 10	5							59	63		
0 10	25										
0 10	55			65	54						
0 10	71							67			
0 10	91	59	54								
0 20	15					63	67				
0 20	36			63	67						
0 20	53			52	47						
0 21	15										
0 21	34							51	63		
0 21	54										
0 21	77	75	70								
0 21	97										
0 22	5					55	65				
0 22	23										
0 22	45			78	85						
0 22	72									67	80

PASS	FRAME	FRAME DIVISION 1 W	1 A	2 W	2 A	3 W	3 A	4 W	4 A	5 W	5 A
0 22	95										
0 22	111										
0 23	25										
0 23	47										
0 23	66										
0 23	106										
0 24	5										
0 24	25										
0 24	45										
0 24	70										
0 24	90										
0 24	108										
0 24	128										
0 25	9										
0 25	29										
0 25	49										
0 25	69	90	85								
0 25	93										
0 30	15										
0 33	15										
0 35	15										
0 35	35										
0 36	5										
0 36	25										
0 36	45										
0 39	5										
0 39	25										
0 39	55										
0 39	73										
0 39	93										
0 41	15										
0 41	37										
0 41	54										
0 50	15										
0 50	35										
0 52	5										
0 52	25										
0 52	52										
0 52	72										
0 52	92										
0 52	112										

FORWARD CAMERA

PASS	FRAME	FRAME DIVISION 1 W	1 A	2 W	2 A	3 W	3 A	4 W	4 A	5 W	5 A
0 22	95					55	63				
0 22	111					72	85				
0 23	25					67	63				
0 23	47					78	70				
0 23	66					75	75				
0 23	86					70	65				
0 23	106					82	90				
0 24	5					70	67				
0 24	25					52	57				
0 24	45					54	61				
0 24	70					55	65				
0 24	90					67	67				
0 24	108					52	59				
0 24	128							63	70		
0 25	9					72	72				
0 25	29					67	52				
0 25	49					51	45				
0 25	69										
0 25	93					78	85				
0 30	15					99	104				
0 33	15					78	72				
0 35	15					94	78				
0 35	35					55	52				
0 36	5					78	82				
0 36	25					67	72				
0 36	45					72	65				
0 39	5					85	72				
0 39	25					78	75				
0 39	55							65	70		
0 39	73							57	63		
0 39	93					78	85				
0 41	15					78	75				
0 41	37					72	85				
0 41	54					85	82				
0 50	15					52	59				
0 50	35					59	70				
0 52	5										
0 52	25					47	52			61	54
0 52	52							65	59		
0 52	72										
0 52	92					63	61				
0 52	112					47	52				
						54	57				

TABLE 12 - V-RES VALUES PER PASS AND FRAME (Cont'd)

MISSION 1017-1 — FORWARD CAMERA

PASS	FRAME	FRAME DIVISION 1 W	1 A	2 W	2 A	3 W	3 A	4 W	4 A	5 W	5 A
D 54	5							78	67		
D 54	25					67	63				
D 54	45					65	72				
D 54	70					67	72				
D 54	90					94	104				
D 54	110					85	85				
D 54	135					75	67				
D 54	155			65	78						
D 55	10	63	61								
D 55	35					52	57				
D 55	55					78	85				
D 55	80					72	67				
D 56	15					55	59				
D 56	35					72	63				
D 56	55							55	63		
D 56	72			63	72						
D 63	5					72	65				
D 67	5			70	72						
D 67	25			78	72						
D 68	5					94	94				
D 68	25					94	104				
D 68	45					99	94				
D 68	65					59	63				
D 70	15					61	67				
D 70	35					70	65				
D 70	55			63	65						
D 70	75					75	78				
D 70	95					61	65				
D 70	115					59	52				
D 70	134					82	75				
D 71	5			85	94						
D 71	30	72	67								
D 71	50					78	67				
D 71	70					72	75				
D 71	90					55	57				
D 71	110					94	85				
D 71	130					67	72				
D 72	15					104					
D 72	55					59	72				
D 72	80							78	78		
D 72	100					85	94				
D 72	120					67	94				
D 78	5			94	94						
D 81	42	72	78								
D 81	62					55	63				

MISSION 1017-1 — AFT CAMERA

PASS	FRAME	FRAME DIVISION 1 W	1 A	2 W	2 A	3 W	3 A	4 W	4 A	5 W	5 A
D 2	15			59							
D 2	40	94	82								
D 2	60					55	63				
D 2	80					67	59				
D 4	5					67	67				
D 4	25					55	59				
D 4	45					67	67				
D 4	67					94	78				
D 5	5					75	70				
D 5	25					65	59				
D 5	45					67	61				
D 5	65					63	67				
D 5	93					75	72				
D 5	113					85	90				
D 5	127									75	75
D 6	10					63	55				
D 6	40	55	63								
D 6	60			72	78						
D 6	80	59	61								
D 6	100					94	99				
D 6	120	67	78								
D 6	142					94	90				
D 7	5					78	70				
D 7	25					94	94				
D 7	45					63	67				
D 7	65									55	59
D 7	85					75	82				
D 8	15					55	61				
D 9	5					72	72				
D 9	25						94				
D 9	45					111	111				
D 10	15					94	82				
D 10	35					94	78				
D 10	55	78	67								
D 20	15					59					
D 20	35					72	78				
D 21	25							70	78		
D 21	45						72				
D 21	65			72	82						
D 21	90					59	67				
D 22	5					72	67				
D 22	23					63	59				
D 22	43					70	63				
D 22	74					75	72				

TABLE 12 - V-RES VALUES PER PASS AND FRAME (Cont'd)

MISSION 1017-1

PASS	FRAME	FRAME DIVISION 1 W	1 A	2 W	2 A	3 W	3 A	4 W	4 A	5 W	5 A
D 22	94					65	65				
D 22	112					75	63				
D 23	25					67	63				
D 23	47					78	78				
D 23	76					75	67				
D 23	96					67	63				
D 24	5					75	72				
D 24	25					70	65				
D 24	45					78	70				
D 24	70					72	72				
D 24	90					63	57				
D 24	119					72	63				
D 25	5					61	65				
D 25	27					63	59				
D 25	57					61	49				
D 25	92					67	59				
D 30	5									72	70
D 30	18			90	82						
D 33	5		67	72							
D 35	5					67	72				
D 35	25			70	65						
D 35	42					78	72				
D 36	5							65	70		
D 36	25			70	67						
D 36	45			67	63						
D 36	63					67	70				
D 39	5							67	75		
D 39	25			72	78						
D 39	45									65	70
D 39	65		67	67							
D 39	82			67	72						
D 39	96			75	67						
D 41	13					78	82				
D 41	38					70	61				
D 41	54					63	63				
D 50	25			65	70						
D 50	47			75	72						
D 52	5					63	59				
D 52	25					72	65				
D 52	42					70	63				
D 52	61					75	72				
D 52	81					72	63				
D 52	101					85	85				

AFT CAMERA

PASS	FRAME	FRAME DIVISION 1 W	1 A	2 W	2 A	3 W	3 A	4 W	4 A	5 W	5 A
D 52	121					78	72				
D 54	5					85	82				
D 54	25					85	90				
D 54	45					85	75				
D 54	70					67	75				
D 54	90					85	82				
D 54	110					94	99				
D 54	135					94	78				
D 54	155					70	72				
D 56	5					72	85				
D 56	25					90	104				
D 56	45					99	104				
D 56	65					72	78				
D 63	5			90	85						
D 63	19			72	78						
D 67	5					63	67				
D 67	25					75	65				
D 68	15					63	72				
D 68	35					72	65				
D 68	55					72	65				
D 68	75					70	78				
D 70	5			63	67						
D 70	25					72	65				
D 70	45					70	78				
D 70	65							65	70		
D 70	85							72	78		
D 70	105			72	78						
D 70	124			67	65						
D 70	147									72	65
D 71	5									104	94
D 71	30					72	85				
D 71	50			72	70						
D 71	70					94	104				
D 71	90					104	104				
D 71	110					78	67				
D 71	130					94	90				
D 72	5					72	78				
D 72	25					90	78				
D 72	70					78	90				
D 72	90					111	111				
D 72	110					78	94				
D 78	6					94	104				
D 81	45			76	67						
D 81	63					70	78				

TABLE 12 - V-RES VALUES PER PASS AND FRAME (Cont'd)

MISSION 1017-2

PASS	FRAME	FRAME DIVISION 1 W	1 A	2 W	2 A	3 W	3 A	4 W	4 A	5 W	5 A
0 82	5					78	85				
0 82	25					85	94				
0 83	5					70	63				
0 83	25					63	63				
0 83	45					78	70				
0 84	5					63	61				
0 84	25					59	55				
0 84	50					72	65				
0 84	70					72	72				
0 85	10					78	85				
0 85	30					99	85				
0 85	65						84				
0 86	5			85	75						
0 86	25		70								
0 86	45		67								
0 86	68			72	72						
0 86	88					75	82				
0 86	108					85	78				
0 86	120					67	70				
0 86	142		70	75	70						
0 86	162		65								
0 86	182							63	67	72	67
0 86	202										
0 87	5					61	57				
0 87	29					67	59				
0 87	52					61	55				
0 87	72					63	55				
0 93	11							85	85		
0 95	5					82	90				
0 95	20					94	78				
0 97	15					67	72				
0 98	5					70	72			75	85
0 98	25										
0 99	15					78	67				
0 99	35					99	85				
0100	5					75	70				
0100	25			63	59						
0100	45					55	51				
0100	63					61	57				
0100	83					69	55				
0100	103					75	67				
0100	125					70	61				

FORWARD CAMERA

PASS	FRAME	FRAME DIVISION 1 W	1 A	2 W	2 A	3 W	3 A	4 W	4 A	5 W	5 A
D101	5					85	82				
D101	25					84	90				
D101	45					63	67				
D101	65					72	82				
D101	105					78					
D102	15		85	78							
D102	33				72	85					
D102	55						118	111			
D102	75						94	78			
D102	95						90	99			
D102	124						78	72			
D102	144						78	72			
D102	164						85	94			
D103	5						72	72			
D103	25						78	67			
D103	45						63	59			
D104	5						61	57			
D104	25						63	57			
D104	45						69	72			
D111	10						94	82			
D116	5						67	59			
D116	25						72	70			
D116	45						75	75			
D116	70						82	70			
D117	5						85	94			
D117	25		85	99							
D117	45						78	70			
D117	78						104	99			
D117	98				94	99					
D117	120						72	82			
D118	5						59	54			
D118	25						70	72			
D118	45						85	82			
D118	65						55	59			
D118	113								90	90	
D118	133						59	59	75	70	
D120	5						72	75			
D120	25						90	78			
D120	45									85	82
D120	67				55	55					
D120	87						85	72			
D120	107						82	85			
D120	127						67	75			

TABLE 12 - V-RES VALUES PER PASS AND FRAME (Cont'd)

MISSION 1017-2 — FORWARD CAMERA

PASS	FRAME	FRAME DIVISION 1 W	1 A	2 W	2 A	3 W	3 A	4 W	4 A	5 W	5 A
D127	14									78	72
D130	5					72	82				
D130	25					90	78				
D130	45					94	85				
D131	25			63	59						
D131	45					61	55				
D131	65					57	49				
D131	80					63	57				
D132	5					59	54				
D132	25	55	55								
D132	68					78	70				
D132	88					72	63				
D132	108					67	70				
D132	126					72	63				
D133	15					67	67				
D133	40							63	72		
D133	85			59	67						
D133	110	67	67								
D134	35					59	55				
D134	55					67	59				
D134	75					67	55				
D134	97					67	75				
D134	122							59	63		
D134	142					90	99				
D135	22					67	70				
D135	42					63	55				
D135	62					94	99				
D135	87							104	90		
D135	107					65	67				
D136	5					94	82				
D136	25							67	61		
D136	45					63	59				
D136	65									57	52
D136	85									67	61
D136	105					72	70				
D137	5					72	67				
D137	25									94	94
D137	53					78	78				

MISSION 1017-2 — AFT CAMERA

PASS	FRAME	FRAME DIVISION 1 W	1 A	2 W	2 A	3 W	3 A	4 W	4 A	5 W	5 A
D 82	5					104	118				
D 82	25					85	72				
D 83	5					85	78				
D 83	25					70	72				
D 83	45					72	78				
D 84	5									63	67
D 84	25					65	65				
D 84	50							78	70		
D 84	70							67	72		
D 85	15					67	82				
D 85	35					67	63				
D 85	55					63	59				
D 86	5					67	61				
D 86	25	61	57								
D 86	45					78	72				
D 86	75					70	67				
D 86	95					78	65				
D 86	115					59	55				
D 86	141	67	59								
D 86	161					78	75				
D 86	181					75	75				
D 86	200					82	78				
D 87	5					67	65				
D 87	29			70	65						
D 87	50			67	75						
D 87	70					75	67				
D 93	15					85	78				
D 95	15					85	94				
D 97	15					72	70				
D 98	5					78	94				
D 98	25					78	85				
D 99	5					78	72				
D 99	25					67	65				
D100	15					94	94				
D100	35					55	59				
D100	55					85	75				
D100	83					72	85				
D100	103					59	59				
D100	123					104	104				
D100	143			118	104						
D101	15					57	52				
D101	35					72	72				

TABLE 12 - V-RES VALUES PER PASS AND FRAME (Cont'd)

MISSION 1017-2 AFT CAMERA

PASS	FRAME	FRAME DIVISION 1 M	1 A	2 M	2 A	3 M	3 A	4 M	4 A	5 M	5 A
D101	55					70	63				
D101	75					67	65				
D101	95							65	61		
D101	115					63	65				
D102	15					85	78				
D102	34	85	72								
D102	54					99	94				
D102	74					104	99				
D102	94					72	82				
D102	114					78	78				
D102	134					85	94				
D102	154					75	78				
D103	5					61	57				
D103	25					75	70				
D103	45					67	63				
D104	15					59	54				
D104	35	118	118								
D111	9					78	85				
D116	15	57	51								
D116	35					63	57				
D116	59					82	75				
D116	84					75	70				
D117	15					85	104				
D117	32					78	90				
D117	52					94	85				
D117	74					94	94				
D117	94					72	85				
D117	115					118	104				
D118	5					63	72				
D118	25					85	85				
D118	45					72	85				
D118	65					65	75				
D118	85					67	78				
D118	110					94	90				
D118	130					99	85				
D120	5					59	54				
D120	25					67	59				
D120	45									82	75
D120	64			61	57						
D120	84					59	54				
D120	104					72	67				
D120	124					75	72				
D130	5					94	72				
D130	25					85	111				
D130	45					90	104				

MISSION 1017-2 AFT CAMERA

PASS	FRAME	FRAME DIVISION 1 M	1 A	2 M	2 A	3 M	3 A	4 M	4 A	5 M	5 A
D131	15					67					
D131	35					72	90				
D131	55					85	78				
D131	75					75	72				
D132	5					72	85				
D132	25					85					
D132	45	67	70								
D132	67					72	78				
D132	87					118	118				
D132	107					99	94				
D133	15					70	67				
D133	40					90	78				
D133	108	78	90								
D133	128	72	82								
D134	33					82	82				
D134	53					85	78				
D134	73					104	94				
D134	92							104	90		
D134	117					82	118				
D134	145					85	78				
D135	35					63	67				
D135	55					85	99				
D135	92	72	82								
D136	5					85	82				
D136	25							78	70		
D136	45					70	61				
D136	65							65	61		
D136	85					78	78				
D136	105					75	70				
D137	5					61	59				
D137	25					63	54				
D137	45					75	70				
D137	65	72	70								
D137	85					63	59				
D137	102					61	54				