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CORONA J

PERFORMANCE EVALUATION REPORT

MISSION 1027-1

FTV 1621 JX-27

29 AUGUST 1966

APPROVED: [redacted] Manager
Advanced Projects

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Program [redacted]

~~TOP SECRET~~ [redacted]

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~~TOP SECRET~~ [redacted]

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21 September 1966

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THRU: [redacted]

FROM: [redacted]

SUBJECT: MISSION 1027-1 FINAL REPORT

Enclosed is the Final Performance Evaluation Report for Mission 1027-1.

[redacted], Manager
Advanced Projects

IF ENCLOSURES ARE WITHDRAWN OR NOT ATTACHED THE CLASSIFICATION OF THIS DOCUMENT WILL BE CHANGED TO UNCLASSIFIED

~~TOP SECRET~~ [redacted]

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FOREWARD

This report details the performance of the payload system during the operational phase of the Program [redacted] Flight Test Vehicle 1621.

Lockheed Missiles and Space Company has the responsibility for evaluating payload performance under the level of effort and "J" System contracts.

This document is the final payload test and performance evaluation report for Missions 1027-1 which was launched on 9 December 1965.

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[redacted]

INTRODUCTION

This report presents the final performance evaluation of Mission 1017-1 of the Corona Program. The purpose of this report is to define the performance characteristics of the JX-27 payload system and to identify the source of in-flight anomalies.

The performance evaluation was jointly conducted by representatives of Lockheed Missiles and Space Company (LMSC) and ITEK at the facilities of NPIC and AFSPPF. The off-line evaluation using Corona engineering photography acquired over the United States was performed at the individual contractors plants.

The quantitative data used for this report is obtained from government organizations. The diffuse density data, and MTF/AIM resolution are produced by AFSPPF. The vehicle attitude error values, frame correlation times are made at NPIC who also supply the Processing Summary and MTF/AIM resolution reports published by [redacted]

Computer programs developed by A/P are utilized to calculate and plot the frequency distribution of the various contributors to image smear to permit analysis and correlation of the conditions of photography to the information content and quality of the acquired pictures. Computer analysis of the exposure, processing and illumination data provides the necessary data to analyze the exposure criteria selected for the mission.

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SCHEMATIC INBOARD PROFILE - CORONA J SYSTEM

MISSION 1027

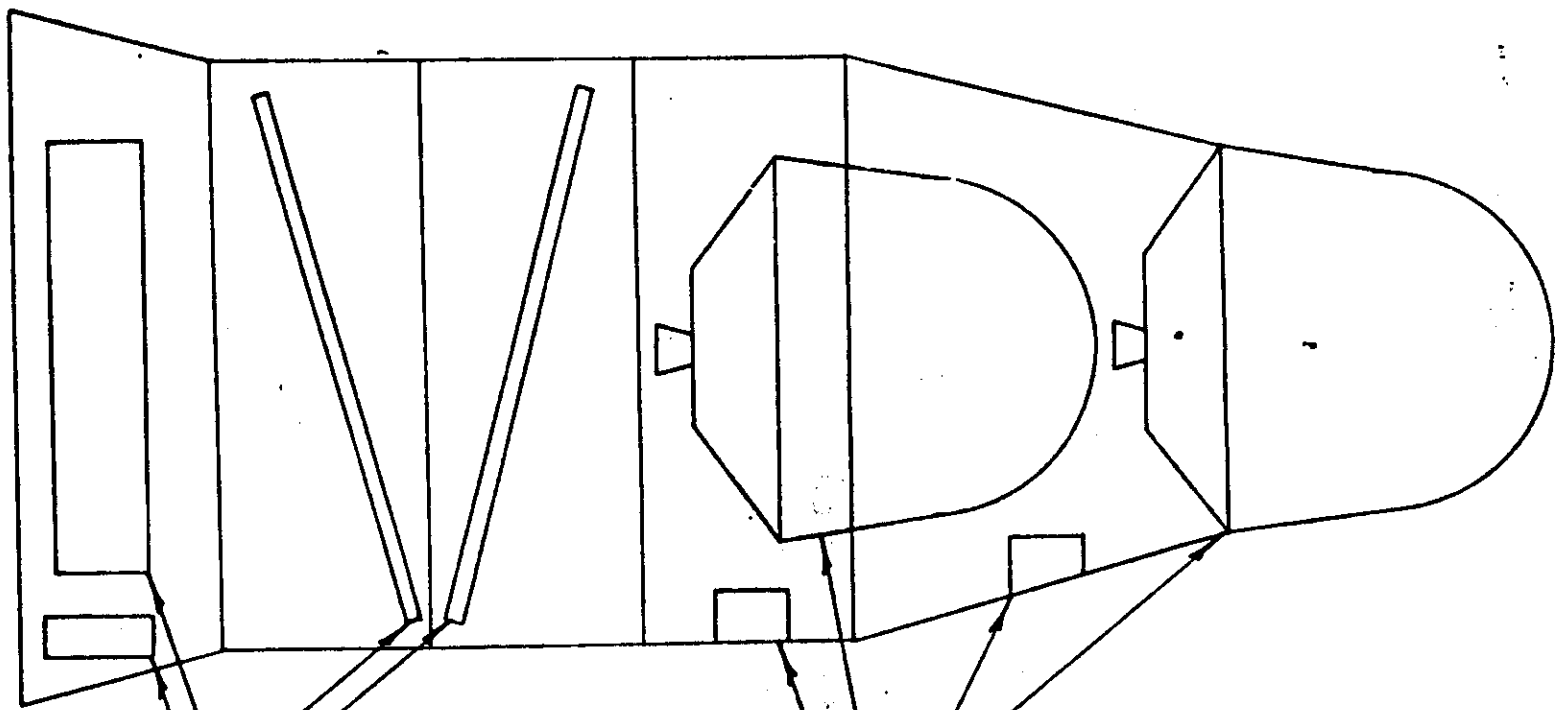


FIGURE 1-1

SRV #1 contained 73% of payload capacity. SRV #2 had no payload.

C. PANORAMIC CAMERAS

The Master and Slave panoramic cameras operated throughout the A mission with no significant problems and produced good photographic quality. The cloud cover observed in the photography averaged 45% for the flight.

D. STELLAR-INDEX CAMERAS

Stellar-Index camera #D-71 used during Mission 1027-1 provided good star and terrain imagery.

E. OTHER SUBSYSTEMS

The clock, instrumentation, command, thermal control and PMU subsystems performed satisfactorily. After the Agena yaw around maneuver, the guidance pneumatics failed to switch to low gain resulting in the control gas depletion by orbit 9.

SECTION 2

PRE-FLIGHT SYSTEMS TEST

A. ENVIRONMENTAL TESTING

1. Test Objective

As a standard procedure, the J payload systems are subjected to thermal/altitude environmental testing which simulates orbital environment. One of the purposes of this test is to demonstrate the system susceptability to corona discharge. Such discharge fogs the film thus degrading the operational photography.

2. Test Summary

The JX-27 system was altitude tested for six days in the HIVOS chamber from 20 - 26 May 1965. During this period, internal camera pressures ranged from 1.4 to 60 microns. The latter value was representative of the internal pressure during operation of the PMU. The simulated "A" mission consisted of 2500 cycles and 2800 cycles during the "B" mission. The test film used in this test was not pre-dried.

In completion of the HIVOS test, it was found that there was oil contamination on internal lens surfaces of the Slave camera #163, as well as small regions on the supply cassette. The pan instrument assemblies were returned to Boston for cleaning. It has been determined that these operations do not result in any requirement for further altitude testing. Subsequent inspection of the lenses showed them to be acceptable for flight.

Instrument #164 exhibited some start-up corona with a density of 0.25. This is within acceptable system standards. Instrument #163 was free of corona marking.

The Stellar-Index camera D-71 provided good lamp and reseau imagery. Both cameras were free of corona marking.

The Stellar-Index camera D-68 requires a higher intensity on #1 and #2 stellar fiducials. All other lamps and reseau imagery was acceptable. Fourteen frames of stellar photography had corona markings of 0.33 density, which is not disqualifying. The index unit had no corona marks.

3. Panoramic Camera Performance

The cycle rates for the panoramic cameras exceeded the specification limits for ramp repeatability. The ramp repeatability should be 1% or less, and both the master and slave instruments exceeded this at random times up the ramp. This lack of repeatability was not limited to a certain ramp, but all the ramps used during the HIVOS test exhibited this repeatability problem. Table 2-1 shows the cycle rate measurements taken during the test.

These instruments also showed greater deviations in repeatability during acceptance testing than many other systems, although there were no violations of the specification limits per se.

The lack of cycle rate repeatability was the major problem with the panoramic cameras. The occurrence of a fail-safe was an isolated instance, and did not happen again. The slave instrument has less internal friction than the master instrument, and coasts further than the master instrument after the instruments off command. The slave instrument's shuttle also cycles from the 99 to the 101 side faster than the master instrument's shuttle. There was an extremely long coast to the shutdown on a mono slave operation during orbit 12 in the "A" mode. This caused the lens cell to coast almost into the photographic scan portion of the cycle.

There were other instances in which the slave 99% and 101% clutch deviated more than 1 from an established average. In the "A" mode the master and slave 101% and 99% clutches averaged 7/7 and 6/5 respectively. In the "B" mode the respective averages were 7/7 and 6/6.

The "A" cut and wrap sequence and the "B" recovery sequence proceeded correctly and all T/M points made a proper switchover. The vehicle deactivate sequence had six cycles instead of five, and the slave instrument did not make a good lens stow.

4. Stellar-Index Performance

The "A" and "B" Stellar-Index cameras performed satisfactorily.

5. Clock Performance

The clock (534) did not function properly during the test, and was removed after the test.

Clock (532) was introduced into the JX-27 system as the replacement for 534.

6. Instrumentation

Ground loops were a consistent problem with the instrumentation. This was a problem that is indigenous to the HIVOS chamber. Previous tests run on other systems also produced severe ground loops.

There were problems with the status channel point 13-13. This was the point for the Phillips Gauge. The charge time constant, determined by the Phillips Guage T/M electrical circuitry, causes this point to appear open when the adjacent point 13-12 has a voltage higher than the T/M output of the Phillips Gauge. Moving this T/M point to a position with a cal zero before it should alleviate this problem.

The correlation between the film footage pots and the cycle counter for the master and slave instruments was reasonable.

7. Pressure Make-Up

The pressure make-up system performed satisfactorily. All gas on operations achieved pressures of approximately 60 microns. The average gas consumption for the "A" mode was 5.2 psi per minute of camera operation.

8. Temperature Summary

The payload system showed no adverse effects from the exposure to the different temperatures. All the commutated temperature points appeared to follow the variations in chamber temperature. The average instrument temperatures during the HIVOS test were:

Orbit 2 "A" Mode		Orbit 16 "A" Mode	
#1	81	#1	91
#2	78	#2	89

Orbit 1 "B" Mode		Orbit 13 "B" Mode	
#1	94	#1	70
#2	91	#2	64

The above temperature averages are not corrected for self-heating.

B. RESOLUTION TEST

The dynamic resolution test of the JX-27 payload system was performed at the A/P facility on 16 June 1965. Each panoramic camera photographed high and low contrast resolution targets. The resulting through focus resolution data is shown in Figure 2-1 for the Master camera and in Figure 2-2 for the Slave camera.

C. LIGHT LEAK TEST

The examination of the film threaded in the JX-27 system during the light leak test determined that minor film fogging was present. The light tight integrity of the system was considered acceptable for flight.

D. FLIGHT LOADING AND CERTIFICATION

Pan instrument payload exhibits from the flight readiness test were processed and examined on 1 December 1965. The exhibits showed the instruments to be acceptable for flight loading.

Final assembly of the system was accomplished on 5 December. Payload tracking was normal throughout the system.

JX-27 HIVOS TEST RAMPS

REV/MODE		RAMP		T.U.R.	INST 164 ACT.	INST 164 NOM.	INST 164 DEV.	INST 163 ACT.	INST 163 NOM.	INST 163 DEV.	164/163 DIFF.
8	A	4	1	1015	2.670	2.717	1.75	2.693	2.707	0.50	0.86
8	B	4	1	1015	2.718	2.717	-0.02	2.743	2.707	-1.34	0.92
2	A	4	1	2025	2.170	2.163	-0.34	2.175	2.166	-0.41	0.23
2	B	4	1	2130	2.148	2.166	0.82	2.180	2.168	-0.55	1.49
13	A	4	1	2630	2.303	2.356	2.27	2.335	2.354	0.82	1.39
13	B	4	1	2630	2.348	2.356	0.36	2.378	2.354	-1.00	1.28
9	A	4	1	3210	3.373	3.479	3.05	3.355	3.434	2.30	-0.53
9	B	4	1	3210	3.453	3.479	0.75	3.455	3.434	-0.61	0.06
2	A	5	8	730	2.880	2.859	0.67	2.875	2.882	0.25	-0.17
2	B	5	8	730	2.873	2.859	0.91	2.893	2.882	-0.37	0.70
6	A	5	8	1090	2.658	2.696	1.40	2.695	2.686	-0.35	1.39
6	B	5	8	1090	2.678	2.696	0.66	2.713	2.686	-1.02	1.31
6	A	5	8	1445	2.455	2.497	1.69	2.500	2.492	-0.30	1.83
3	A	5	8	1550	2.445	2.455	0.41	2.458	2.451	-0.28	0.53
2	B	5	8	1550	2.415	2.455	1.64	2.460	2.451	-0.36	1.86
15	A	5	8	1930	2.343	2.387	1.86	2.373	2.385	0.49	1.28
15	A	5	8	3120	2.830	2.859	2.39	2.855	2.882	0.95	0.88
10	A	7	7	315	3.508	3.581	2.05	3.498	3.530	0.91	-0.29
1	B	7	7	390	3.440	3.539	2.79	3.448	3.490	1.21	0.23
6	B	7	7	1180	2.850	2.873	0.79	2.883	2.857	-0.92	1.16
7	A	7	7	1590	2.518	2.562	1.73	2.573	2.556	-0.66	2.18
11	B	7	7	1910	2.463	2.481	0.74	2.503	2.477	-1.05	1.62

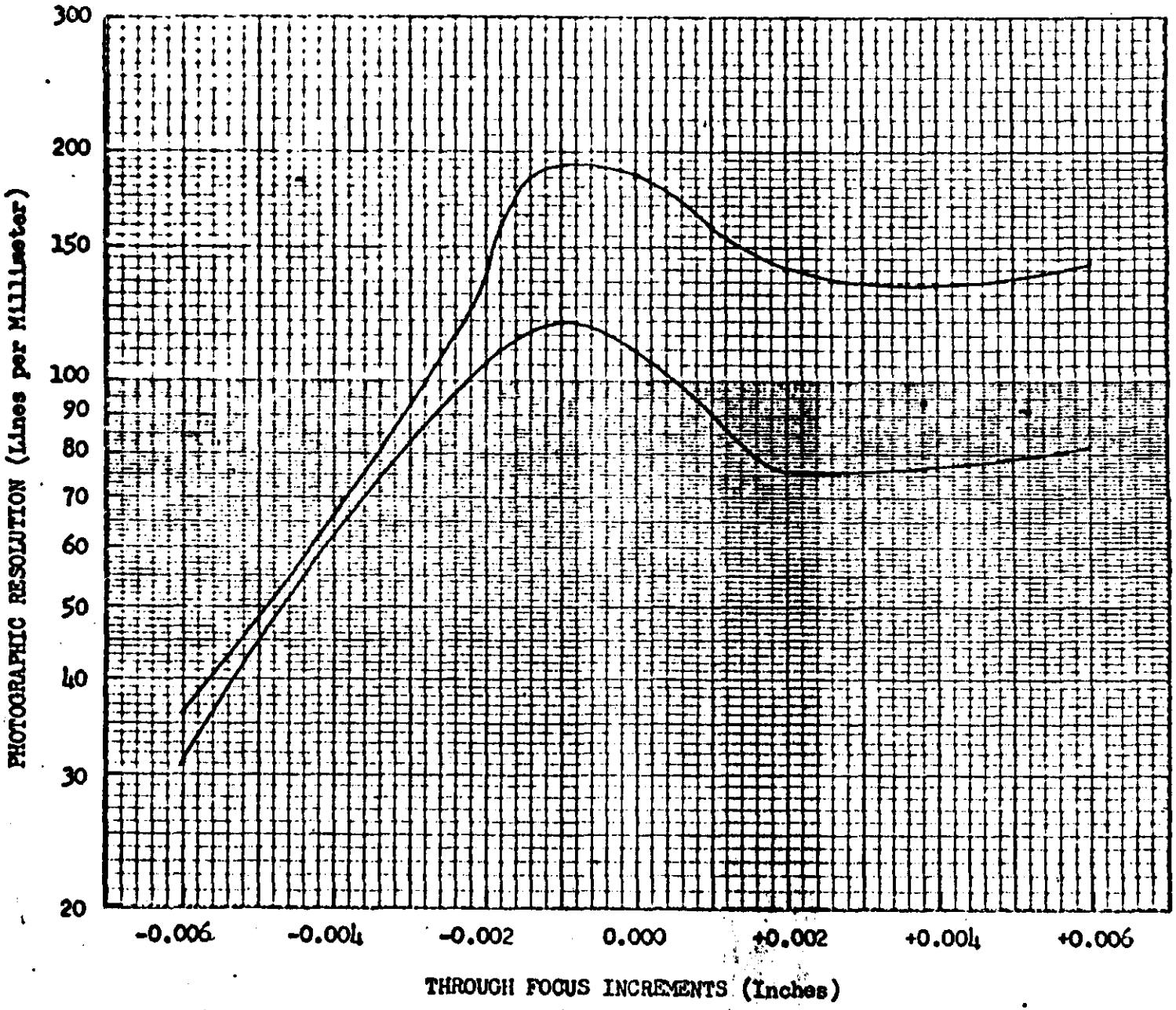
TABLE 2-1

REV/MODE		RAMP		T.U.R.	INST 164 ACT.	NOM.	DEV.	INST 163 ACT.	NOM.	DEV.	164/163 DIFF.
1	B	7	7	2215	2.503	2.542	1.54	2.548	2.536	-0.46	1.80
4	A	7	7	2280	2.538	2.572	1.34	2.563	2.566	0.11	0.99
3	B	7	7	2280	2.538	2.572	1.34	2.573	2.566	-0.28	1.38
11	B	7	7	2280	2.570	2.572	0.09	2.593	2.566	-1.06	0.89
16	A	8	2	0	5.513	5.758	4.25	5.370	5.490	2.18	-2.59
16	A	8	2	0	5.533	5.758	3.90	5.398	5.490	1.67	-2.44
5	A	8	2	340	5.090	5.265	3.33	4.975	5.060	1.68	-2.26
4	B	8	2	340	5.108	5.265	2.99	5.048	5.060	0.24	-1.17
11	B	8	2	1155	2.978	2.979	0.04	3.000	2.959	-1.39	0.74
16	A	8	2	2620	2.735	2.806	2.53	2.748	2.792	1.59	0.48
9	B	11	1	865	4.603	4.646	0.92	4.550	4.508	-0.92	-1.15
9	A	11	1	890	4.415	4.524	2.41	4.345	4.399	1.22	-1.59
5	B	11	1	1460	2.630	2.643	0.49	2.673	2.634	-1.47	1.63
9	A	11	1	1880	2.228	2.272	1.92	2.255	2.271	0.70	1.21
13	A	11	1	1975	2.238	2.272	1.51	2.263	2.272	0.38	1.12
6	B	11	1	2040	2.2[illegible]SC		0.72	2.300	2.289	-0.50	1.19
9	B	11	1	2965	4.513	4.548	0.77	4.433	4.420	-0.29	-1.77
14	A	11	1	3085	4.958	5.184	4.36	4.863	4.988	2.52	-1.92

DEV. AND DIFF. ARE IN PERCENT
THE (-) SIGN INDICATES THAT THE INST IS SLOWER THAN PREDICTED OR THAT INST 1 IS SLOWER THAN INST 2

TABLE 2-1

PRE-FLIGHT DYNAMIC RESOLUTION



Camera No: 164

Payload No: JX-27

Resolution (l/mm)

High Contrast: 192

Low Contrast: 119

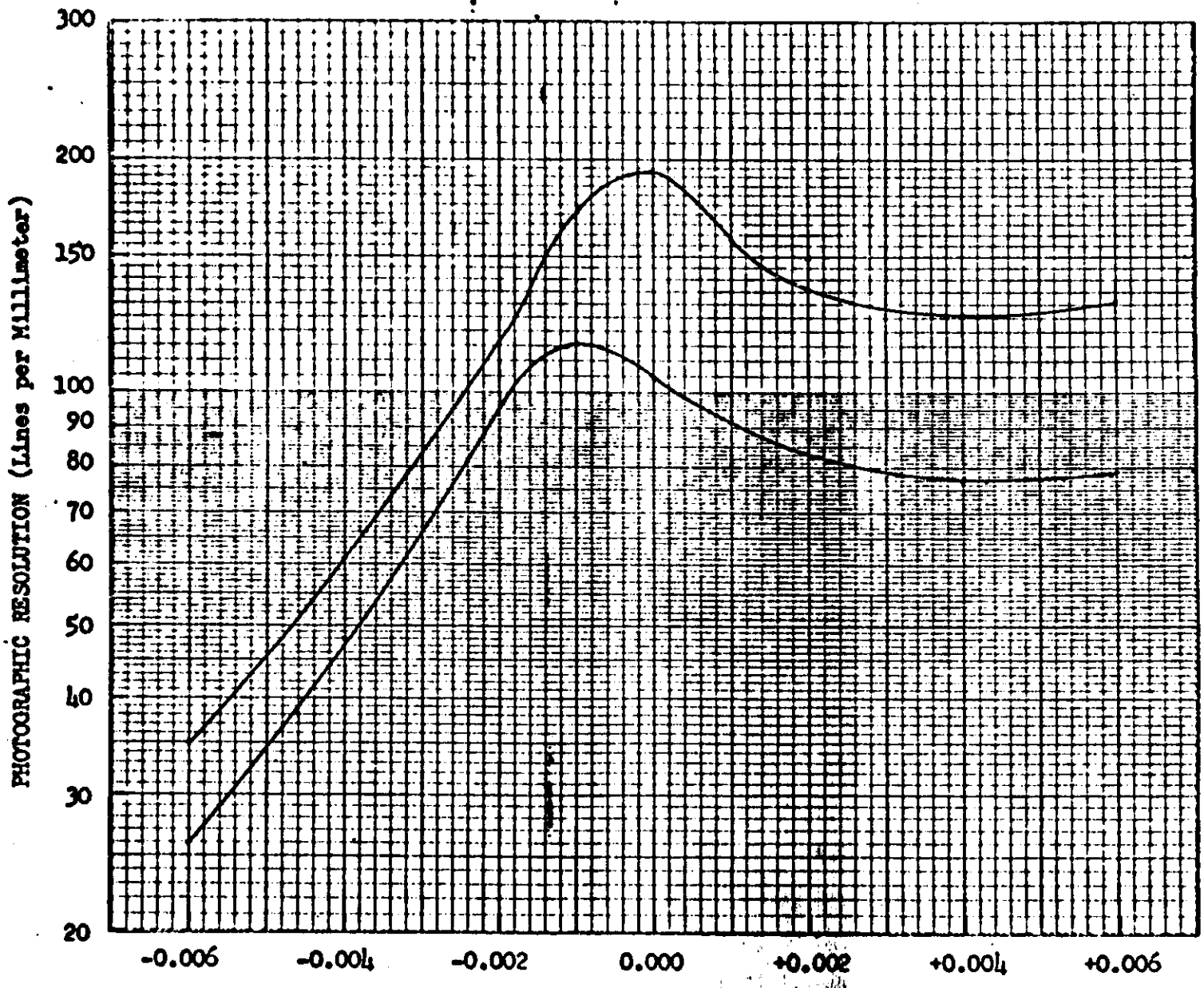
Film Type: 3404

Test Date: 6/17/65

FIGURE 2-1

[redacted]

PRE-FLIGHT DYNAMIC RESOLUTION



Camera No: 163

Payload No: JX-27

Resolution (l/mm)

High Contrast: 192

Low Contrast: 116

Film Type: 3404

Test Date: 6/17/65

FIGURE 2-2

[redacted]

[redacted]

SECTION 3

FLIGHT OPERATIONS

A. SUMMARY

All launch, ascent and injection events occurred as programmed. Both Thor and Agena propulsion and guidance was normal and resulted in the desired orbit. After the Agena yaw around maneuver, the guidance pneumatics failed to switch to low gain. This condition resulted in gas supply depletion by orbit 9 and loss of stability by orbit 15.

Loss of vehicle stability necessitated first mission recovery on orbit 17 and second recovery on orbit 33. Both recoveries were executed using the lifeboat system and aircraft pickup.

With the loss of stability imminent, the payload system was operated at maximum comsumption rate and approximately 73% of nominal mission consumption was achieved by orbit 16. All payload systems operated normal throughout both missions, however, the camera subsystem was not operated in the second mission to minimize vehicle perturbations.

B. PANORAMIC CAMERA PERFORMANCE

The camera system dynamics were observed during [redacted] acquisitions on orbit 9 and 16. Film transport and metering was normal on both units and cycle rate data indicated both units were running approximately 0.5% slower than pre-flight calibrations.

1. Panoramic Film Consumption

These data are based on cycle counter readings and a nominal film supply.

	Predicted	Actual	
		Master	Slave
Pre-Launch - Frames	100	103	106
-1 Mission - Frames	3000	2174	2119
-2 Mission - Frames	2940	0	0
Total Frames	6040	2277	2225

C. FMC MATCH

The achieved orbit was near nominal. The pre-flight V/H ramp settings were used until orbit 7 when a slight change was made to improve the FMC match in the target area.

The FMC match throughout the -1 mission was estimated to be within 1 to 2% of the desired.

D. STELLAR-INDEX CAMERA PERFORMANCE

The -1 Stellar-Index camera operated normally during the mission. Film depletion was not attained due to short mission (one day). The -2 Stellar-Index was not operated.

E. INSTRUMENTATION AND COMMAND SYSTEM

1. Instrumentation

The instrumentation system performed satisfactorily throughout the missions. JX-27 payload was equipped with the older temperature monitoring system and required self-heating corrections to the indicated temperatures. These corrections averaged 7 to 10 deg. F.

A ± 25 G vibration pickup was installed on the forward pyro electrical box to monitor ascent levels. This special monitor performed satisfactorily except that the 25 G calibration range was exceeded during booster lift-off.

2. Command System

Normal payload response was obtained from all stored and real time commands.

F. CLOCK PERFORMANCE

The payload clock performance was satisfactory and good correlation between clock time and [redacted] system time was obtained.

G. INTERNAL SYSTEM PRESSURE

The pressure make-up system performance was satisfactory and the consumption was 5.0 PSIA per minute of camera operation. This consumption rate was the lowest to date and is attributed to the type of camera operation in the emergency program. The emergency program normally consists of fewer number of operations per orbit, but the operations are longer in time. This type of operation reduces the gas loss that occurs at each shutdown and produces the lowest overall consumption rate.

H. THERMAL ENVIRONMENT

The temperature data obtained from [redacted] acquisitions showed the average panoramic camera temperature was varying between 74 and 86 degs. F. All temperatures appeared normal and generally agreed with predictions.

I. ASCENT VIBRATION

The vibration pickup was installed on the pyro junction box cover in the recovery barrel. The ascent phase showed high activity at two basic frequencies of 190 and 1000 cps. This activity occurred at launch ignition and in the transonic region and the duration was approximately 5 seconds in each case. Short duration high level activity was noted at door ejection.

SECTION 4

MISSION 1027-1 RECOVERY SYSTEM

SRV #648 was received at A/P on 9 October 1963. The receiving inspection weight was 150.9 pounds. After modifications and the incorporation of outstanding Engineering Orders, the SRV was delivered to Systems Test for incorporation into the JX-27 system.

The Recovery System was shipped to VAFB on 25 October 1965.

Recovery was enabled in the lifeboat mode on pass 16 [redacted] and executed on pass 17 on December 10, 1965. All events monitored occurred within their prescribed tolerances. Lifeboat gas pressure indicated an adequate supply for a second lifeboat recovery attempt.

Predicted Impact	22° 00'N, 152° 01'W
Actual Impact	22° 22'N, 151° 50'W

Recovery sequence of events with their associated times are listed in Table 4-1.

The condition of the air recovered capsule was normal.

MISSION 1027-1

RECOVERY SEQUENCE OF EVENTS

Event	Delta Time (Seconds) Actual	Nominal Events + T
*Arm	77.34	77.0 ± 1.0
(1)*Transfer	2.51	2.5 ± 0.25
Electrical Disconnect	1.11	0.900 + 0.430 − 0.400
Separation	---	---
**Spin	3.44	2.4 ± 0.30
Retro	7.58	7.55 ± 0.45
Despin	10.69	10.75 ± 0.59
T/C Separation	1.50	1.5 ± 0.15
***"G" Switch Open	N/A	
Parachute Cover Off	N/A	34.0 ± 1.5
Drogue Chute Deployed	N/A	0.63 ± 0.08
Main Chute Bag Separate	N/A	10.25 ± 1.5
Main Chute Deployed	N/A	0.52 ± 0.13
Main Chute Disreefed	N/A	4.5 ± 0.80

* From Separation

** From Electrical Disconnect

*** From Retro

(1) Normal Time using Lifeboat Capabilities

TABLE 4-1

MISSION 1027-2 RECOVERY SYSTEM

SRV #655 was received at A/P on 30 December 1963. The receiving inspection weight was 151.9 pounds. After modifications per outstanding Engineering Orders the SRV was installed in the JX-27 system.

The Recovery System was shipped to VAFB on 25 October 1965.

Recovery was enabled and executed in the lifeboat mode on pass 33. The capsule was air recovered on 11 December 1965. All events monitored occurred within the prescribed tolerances. See Table 5-1.

Predicted Impact	24° 00'N, 147° 03'W
Actual Impact	23° 31'N, 146° 30'W

The condition of the recovered capsulewas normal.

RECOVERY SEQUENCE OF EVENTS

Event	Delta Time (Seconds) Actual	Nominal Events + T
*Arm	77.40	77.0 ± 1.0
(1)*Transfer	2.50	2.5 ± 0.25
Electrical Disconnect	0.99	+0.900 + 0.430 − 0.400
Separation	---	---
**Spin	3.40	+3.4 ± 0.30
Retro	7.56	+7.55 ± 0.45
Despin	10.77	+10.75 ± 0.59
T/C Separation	1.50	+1.5 ± 0.15
***"G" Switch Open	N/A	
Parachute Cover Off	N/A	+34.0 ± 1.5
Drogue Chute Deployed	N/A	0.63 ± 0.08
Drogue Chute Release	N/A	+10.25 ± 1.5
Main Chute Deployed	N/A	+0.52 ± 0.13
Main Chute Disreefed	N/A	4.50 ± 0.80

* From Separation

** From Electrical Disconnect

*** From Retro

(1) Normal Time using Lifeboat Capabilities

TABLE 5-1

[redacted]

SECTION 6

MASTER PANORAMIC CAMERA

A. COMPONENT ASSIGNMENT

Component	Serial Number
Main Camera	164
Main Camera Lens	1382435
Supply Horizon Camera	184-G8
Supply Horizon Camera Lens	813510
Take-up Horizon Camera	177-G9
Take-up Horizon Camera Lens	812271
Supply Cassette	SC-29

B. CAMERA DATA AND FLIGHT SETTINGS

Main Camera:

Lens	24" f/3.5
Slit Width	0.250"
Filter Type	Wratten 25
Film Type	Eastman Type 3404

Supply (Port Horizon Camera:

Lens	55 mm f/6.8
Aperture Setting	f/6.8
Exposure Time	1/100 second
Filter Type	Wratten 25

[redacted]

Take-up (Starboard) Horizon Camera:

Lens	55 mm f/6.8
Aperture Setting	f/8.0
Exposure Time	1/100 second
Filter Type	Wratten 25

C. POST FLIGHT PERFORMANCE EVALUATION

The image quality of the photography produced was good and probably comparable with Mission 1025. However, because of control problems, a maximum amount of coverage was ordered for the one day of operation with the result that there was only a small amount of coverage suitable for quality evaluation. The system experienced high attitude rates because of a control gas valve failure, but the pan camera imagery showed no detectable degradation. No coverage of ground target displays was obtained so that there is no basis for objective quality measurements.

D. ANOMALIES

Density of the slave output H.O. fiducial at the data block edge varied in intensity throughout the mission. Dirt (film support or emulsion) intermittently obstructs light. Dirt from rail scratches is an instrument characteristic, but experience has shown it to be a minor hazard.

All but one of the light leaks are traced to two sources: (1) felt seals at the instrument drums, and (2) laminated strips at the rear of the instrument drums. A third fog source is indicated but the location is not known.

[redacted]

SECTION 7

SLAVE PANORAMIC CAMERA

A. COMPONENT ASSIGNMENT

Component	Serial Number
Main Camera	163
Main Camera Lens	1392435
Supply Horizon Camera	180-G10
Supply Horizon Camera Lens	814015
Take-up Horizon Camera	182-G9
Take-up Horizon Camera Lens	812306
Supply Cassette	SC-29

B. CAMERA DATA AND FLIGHT SETTINGS

Main Camera:

Lens	24" f/3.5
Slit Width	0.175"
Filter Type	Wratten 21
Film Type	Eastman Type 3404

Supply (Starboard) Horizon Camera:

Lens	55 mm f/6.8
Aperture Setting	f/8.0
Exposure Time	1/100 second
Filter Type	Wratten 25

Take-up (Port) Horizon Camera:

Lens	55 mm f/6.8
Aperture Setting	f/6.8
Exposure Time	1/100 second
Filter Type	Wratten 25

[redacted]

SECTION 8

PANORAMIC CAMERA EXPOSURE

The camera settings for the Master instrument was 0.250 inch slit with a Wratten 25 filter. The Slave instrument contained a 0.175 inch slit and a Wratten 21 filter. These conditions place the nominal exposure for film type 3404 between the full and intermediate processing levels.

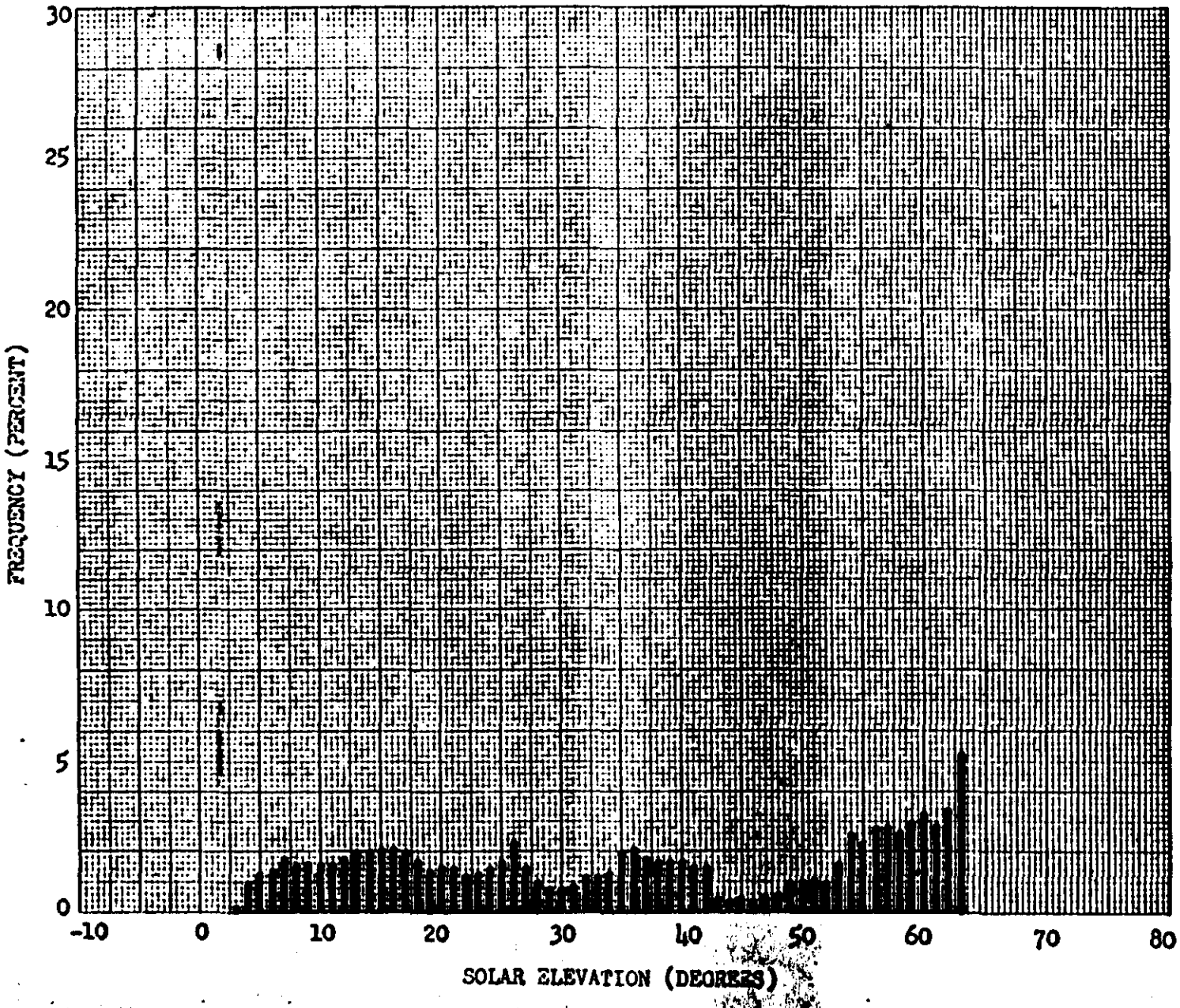
The frequency distributions of the solar elevations and solar azimuths encountered during the photographic operations are shown in Figures 8-1 and 8-2.

The nominal exposure times are shown as a function of latitude for pass D-8, in Figures 8-3 and 8-4. The predicted level of processing for the original negative is based on the in-flight performance estimate and is tabulated below with the processing levels reported by [redacted]

Mission	Camera		Primary	Intermediate	Full
1027-1	FWD	Predicted	0	0	100
		Reported	0	0.2	99.8
1027-1	AFT	Predicted	0	0	100
		Reported	0	21	79

[redacted]

SOLAR ELEVATION FREQUENCY DISTRIBUTION



Mission No: 1027-1

Payload No: JX-27

Camera No: 164

Launch Date: 12/9/65

Launch Time: 2110 Z

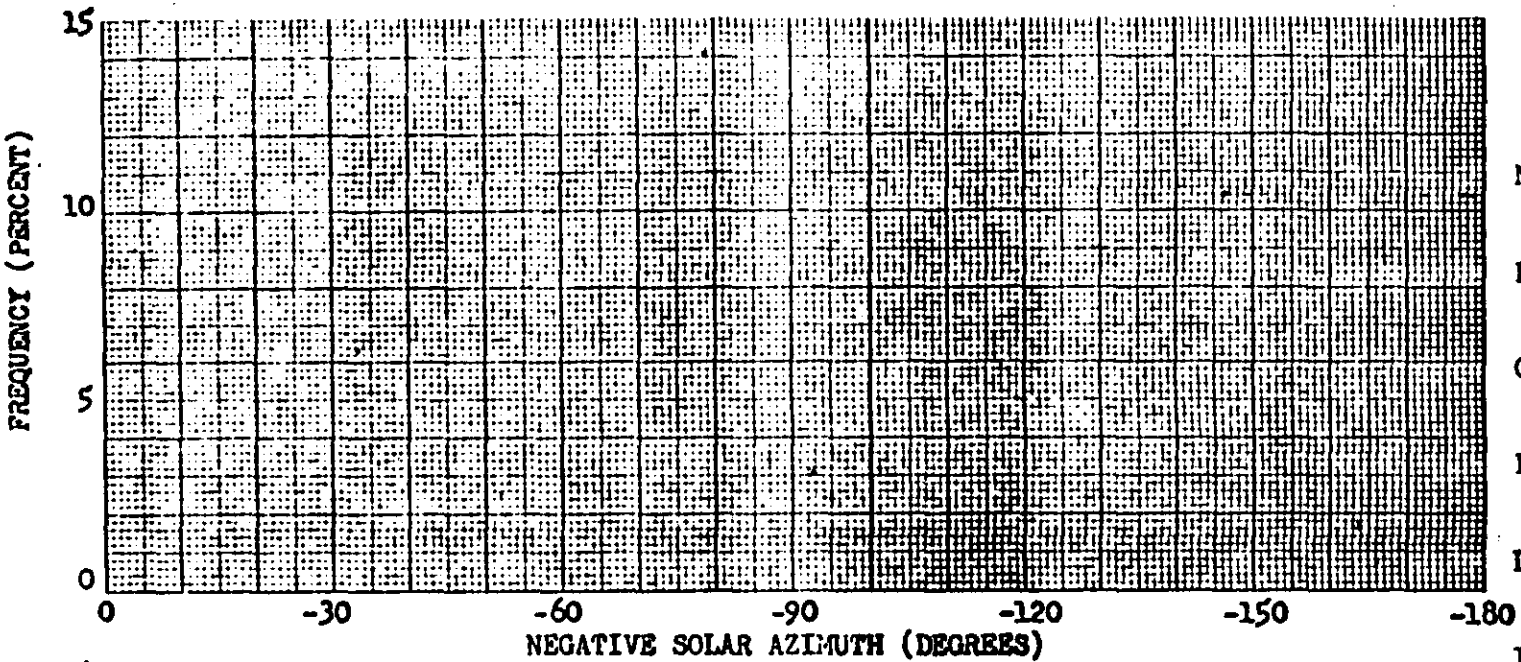
Inclination: 80°

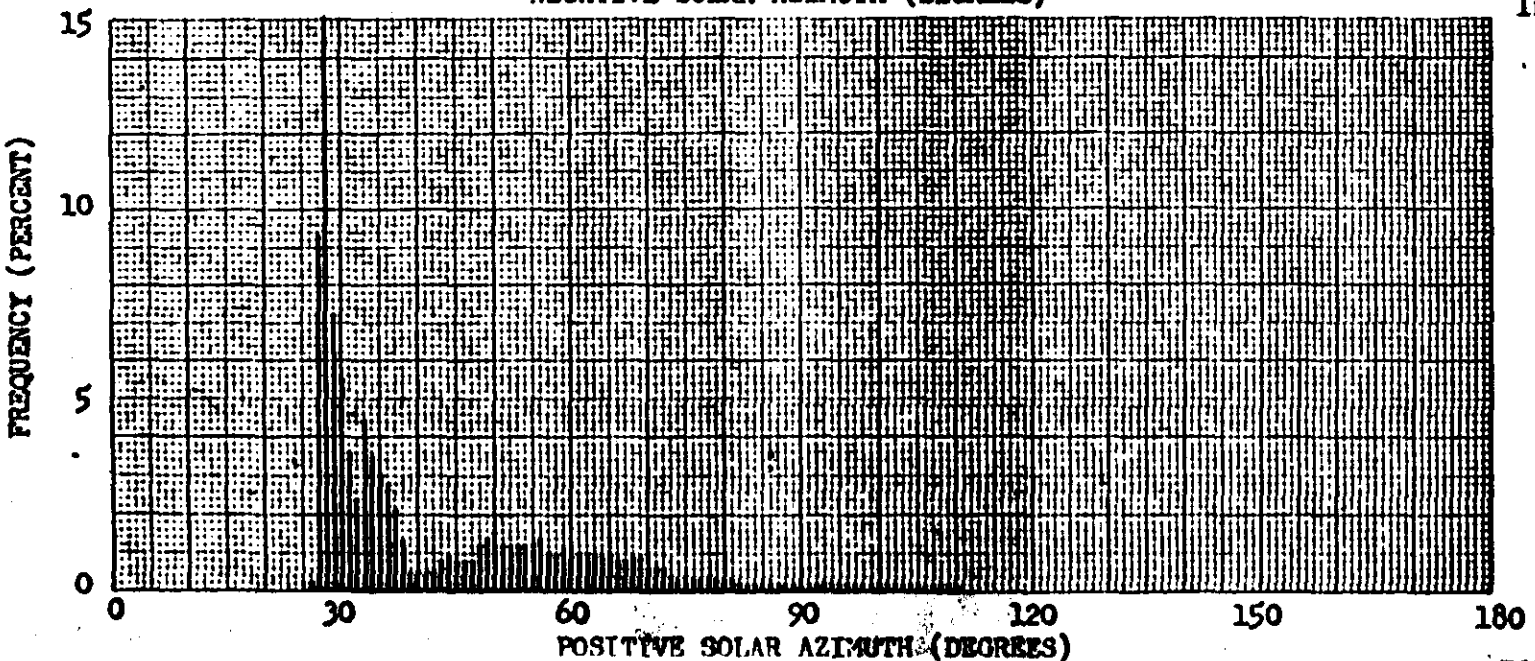
Figure 8-1

[redacted]

[redacted]

SOLAR AZIMUTH FREQUENCY DISTRIBUTION





Mission No: 1027-1

Payload No: JX-27

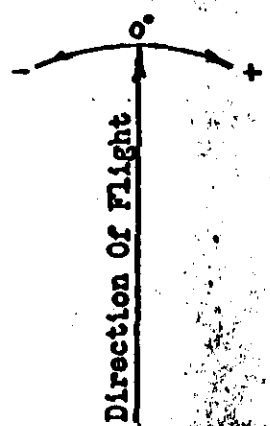
Camera No: 164

Launch Date: 12/9/65

Launch Time: 2110 Z

Inclination: 80°

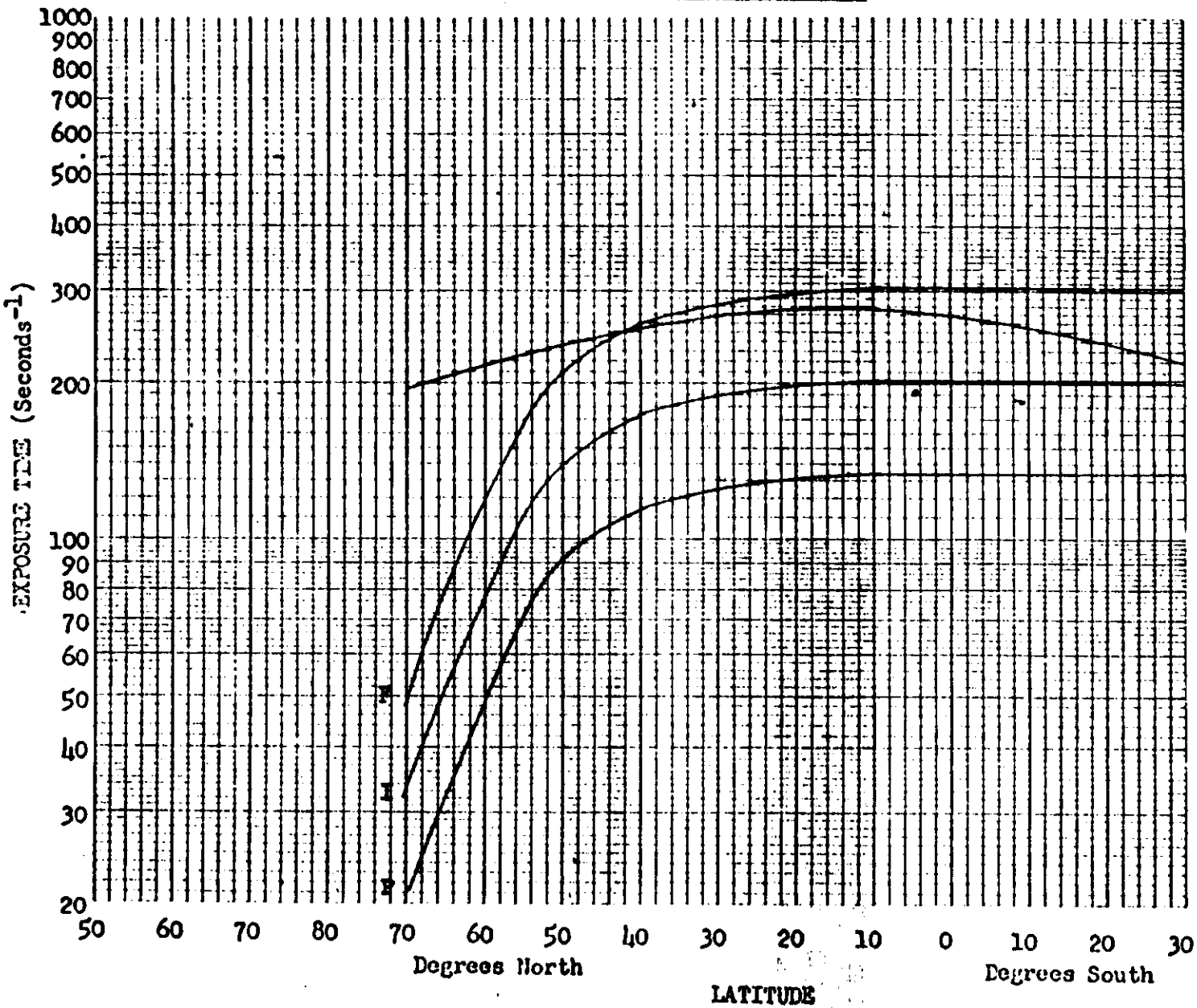
SIGN NOTATION



[redacted]

[redacted]

EXPOSURE POINTS



Mission No: 1027

Payload No: JX-27

Camera No: 164

Pass No: 8

Launch Date: 12/9/65

Launch Time: 2110 Z

Slit Width: .250

Filter Type: Wratten 25

Film Type: 3404

Figure 8-4

[redacted]

[redacted]

EXPOSURE POINTS

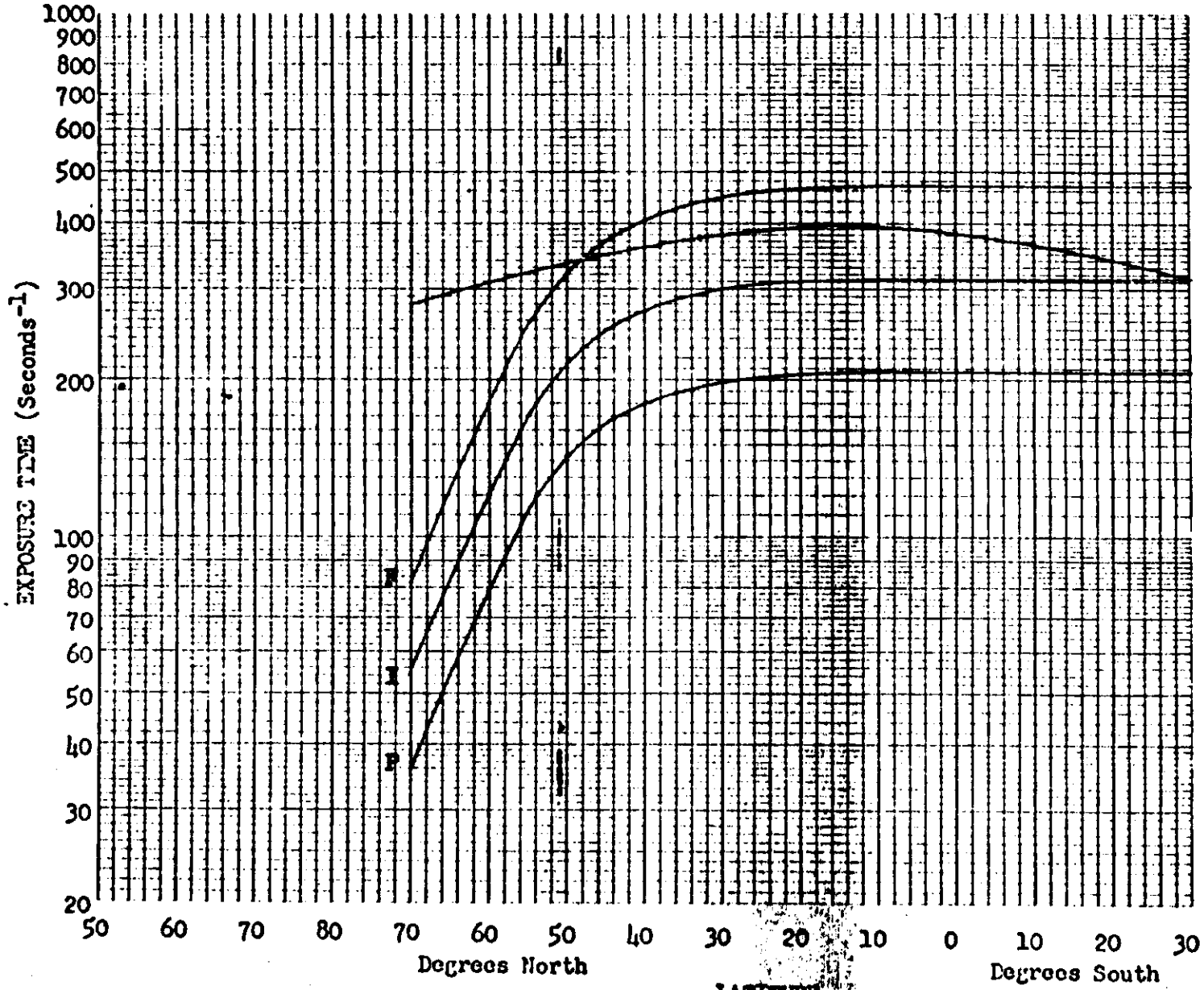


Figure 8-8

Mission No: 1027

Payload No: JX-27

Camera No: 163

Pass No: 8

Launch Date: 12/9/65

Launch Time: 2110 Z

Slit Width: .175

Filter Type: Wratten 21

Film Type: 3404

[redacted]

SECTION 9

DIFFUSE DENSITY MEASUREMENTS

The diffuse density measurements made by AFSPPF were computer sorted at A/P to permit analysis of the density ranges encountered at the three processing levels. A study of sorting techniques showed that no absolute method was available to separate the density values as the accuracy of the Processing History published by [redacted] appears rather low and processing transition phases are not accounted for. The sorting technique selected uses the base plus fog density values where measurements up to 0.09 density are considered as having received Primary processing, 0.10 to 0.17 as Intermediate and above 0.17 density as Full. The percentage of original negative that was processed at each level, based on the computer sort, is tabulated below with the predicted and reported processing percentages.

Mission	Camera		Primary	Intermediate	Full
1027-1	FWD	Predicted	0	0	100
		Reported	0	0.2	99.8
		Computed	0	3	97
1027-1	AFT	Predicted	0	0	100
		Reported	0	21	79
		Computed	0	20	80

The tabulations of density frequency distributions for Missions 1027-1 are included in Appendix A, Table A-1 and A-2. The graphical presentation of the density distribution are computer plotted in Appendix A, Figures A-1 through A-18.

A summary of the processing and exposure analysis is shown in Table 9-1. The terrain D-Min criteria (range) for proper exposure and processing is 0.40 to 0.90 density units.

~~TOP SECRET~~ [redacted]

MISSION 1027-1 INSTR - FRWD 05/06/66 PROCESSING AND EXPOSURE ANALYSIS

PROCESS LEVEL	SAMPLE SIZE	UNDER EXPOSED	UNDER PROCESSED	CORRECT EXP+PROC	OVER PROCESSED	OVER EXPOSED
PRIMARY	0	0 PC	0 PC	0 PC	0 PC	0 PC
INTERMEDIATE	5	0 PC	60 PC	40 PC	0 PC	0 PC
FULL	153	37 PC	0 PC	58 PC	5 PC	0 PC
ALL LEVELS	158	36 PC	2 PC	58 PC	4 PC	0 PC

PROCESS LEVEL	BASE + FOG	UNDER EXPOSED	UNDER PROCESSED	CORRECT EXP+PROC	OVER PROCESSED	OVER EXPOSED
PRIMARY	0.01-0.09	0.01-0.13	0.14-0.39	0.40-0.90	---------	0.91 AND UP
INTERMED	0.10-0.17	0.01-0.20	0.21-0.39	0.40-0.90	0.91-1.34	1.35 AND UP
FULL	0.18 AND UP	0.01-0.39	---------	0.40-0.90	0.91-1.69	1.70 AND UP

MISSION 1027-1 INSTR - AFT 05/06/66 PROCESSING AND EXPOSURE ANALYSIS

PROCESS LEVEL	SAMPLE SIZE	UNDER EXPOSED	UNDER PROCESSED	CORRECT EXP+PROC	OVER PROCESSED	OVER EXPOSED
PRIMARY	0	0 PC	0 PC	0 PC	0 PC	0 PC
INTERMEDIATE	30	0 PC	13 PC	77 PC	10 PC	0 PC
FULL	123	15 PC	0 PC	79 PC	6 PC	0 PC
ALL LEVELS	153	12 PC	3 PC	76 PC	7 PC	0 PC

PROCESS LEVEL	BASE + FOG	UNDER EXPOSED	UNDER PROCESSED	CORRECT EXP+PROC	OVER PROCESSED	OVER EXPOSED
PRIMARY	0.01-0.09	0.01-0.13	0.14-0.39	0.40-0.90	---------	0.91 AND UP
INTERMED	0.10-0.17	0.01-0.20	0.21-0.39	0.40-0.90	0.91-1.34	1.35 AND UP
FULL	0.18 AND UP	0.01-0.39	---------	0.40-0.90	0.91-1.69	1.70 AND UP

~~TOP SECRET~~ [redacted]

Table 9-1

[redacted]

SECTION 10

PERFORMANCE MEASUREMENTS

The photography acquired during Mission 1027-1 received an MIP rating of 85. Pass 6D frame 127 FWD was selected as the MIP frame. A summary is tabulated below of the MTF/AIM resolution values measured by AFSPPF and [redacted] The microdensitometer slit used by both organizations was 1 x 80 microns.

Mission	Camera	AFSPPF	[redacted]
1027-1	FWD	69	80
1027-1	AFT	79	92

[redacted]

SECTION 11

OBSERVED DATA

Photography produced from 3 engineering operations over United States territory was 98% clouds, water, or snow. The remaining 2% over Cape Kennedy was heavy haze, therefore, evaluation of the system performance capability was not possible for Mission 1027.

[redacted]

SECTION 12

MISSION 1027-1 STELLAR-INDEX CAMERA

A. COMPONENT ASSIGNMENT

Component	Serial Number
Camera	71
Index Reseau	87
Stellar Reseau	87

B. CAMERA DATA AND FLIGHT SETTINGS

Stellar Camera:

Lens	85 mm f/1.8
Exposure Time	2 seconds
Filter Type	None
Film Type	Eastman Type 3401

Index Camera:

Lens	38 mm f/4.5
Exposure Time	1/500 second
Filter Type	Wratten 21
Film Type	Eastman Type 3400

C. POST FLIGHT EVALUATION

Stellar Camera

The photographic quality of the record was good. Intermittent edge static was present throughout the mission. There were 284 frames of stellar images.

Index Camera

The terrain imagery quality was good. There were no malfunctions.

SECTION 13

MISSION 1027-2 STELLAR-INDEX CAMERA

A. COMPONENT ASSIGNMENT

Component	Serial Number
Camera	D-68
Index Reseau	74
Stellar Reseau	83

B. CAMERA DATA AND FLIGHT SETTINGS

Stellar Camera:	
Lens	85 mm f/1.8
Exposure Time	2 seconds
Filter Type	None
Film Type	Eastman Type 3401
Index Camera:	
Lens	38 mm f/4.5
Exposure Time	1/500 second
Filter Type	Wratten 21
Film Type	Eastman Type 3400

C. POST FLIGHT EVALUATION

No photography.

SECTION 14

VEHICLE ATTITUDE

The vehicle attitude errors for Mission 1027-1 was derived from the reduction of the Stellar camera photography. This attitude data is supplied to A/P by NPIC.

The attitude errors for each frame and the attitude control rates are calculated at the A/P computer facility. The computer also plots the frequency distribution of the rates and errors. Figures 14-1 through 14-6 show these distributions for Mission 1027-1.

The summary table below lists the maximum attitude errors and rates that were experienced during 90% of the FWD photographic operations, excluding the first six frames of each operation, and the total range of the errors and rates.

Value	Mission 1027-1	
	90%	Range
Pitch Error (°)	0.51	-0.30 to + 1.40
Roll Error (°)	0.37	-0.01 to + 0.57
Yaw Error (°)	0.74	-.06 to + 0.88
Pitch Rate (°/hr)	47.15	-85 to + 100
Roll Rate (°/hr)	25.51	-54 to + 64
Yaw Rate (°/hr)	26.35	-48 to + 48

The vehicle pitch rate is higher than normal and is attributable to the attitude control gas problem.

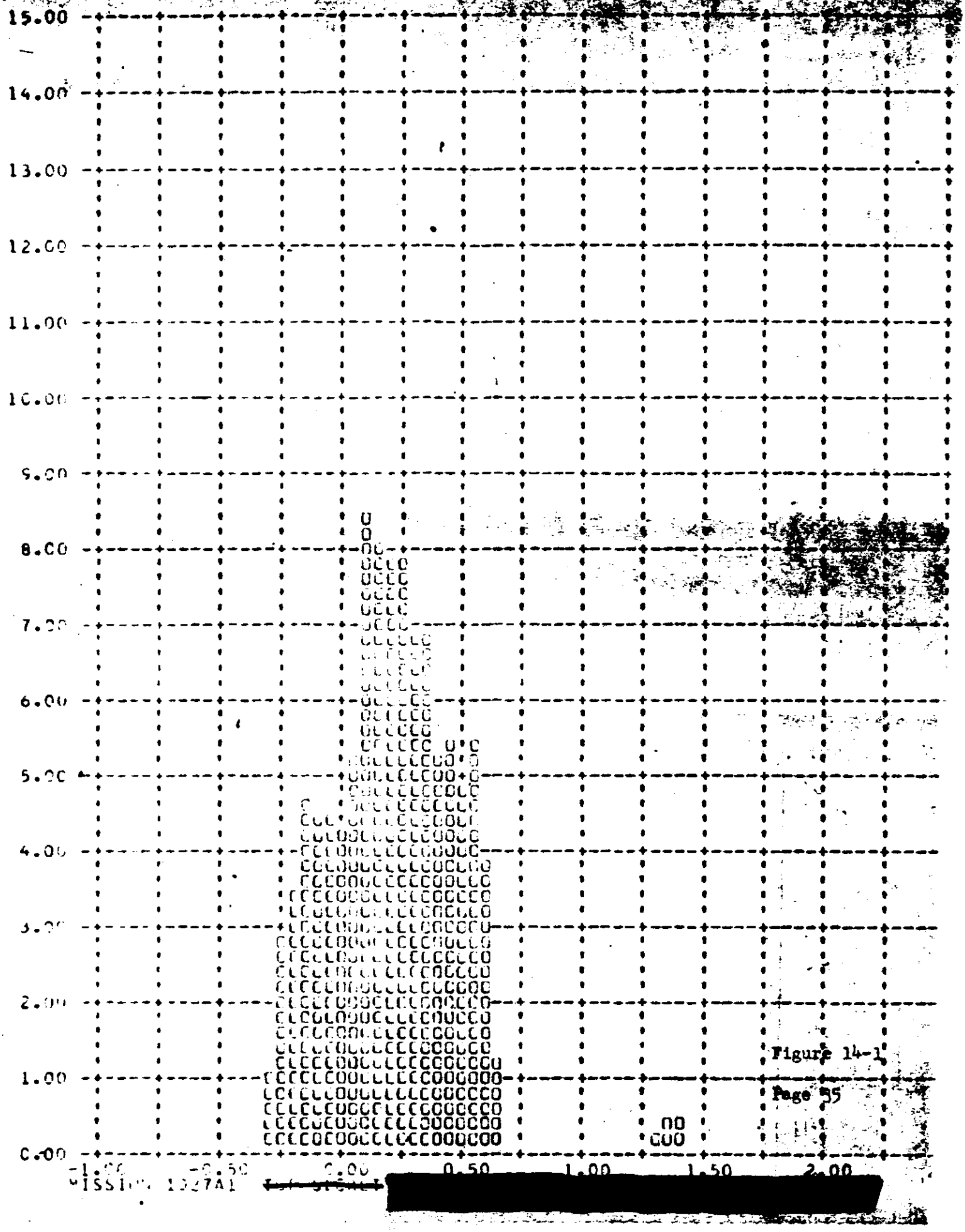

Y PITCH ANGLE ERROR -- DEGREES (X) VERSUS FREQUENCY - PERCENT (Y)
15.00
14.00
13.00
12.00
11.00
10.00
9.00
8.00
7.00
6.00
5.00
4.00
3.00
2.00
1.00
0.00
-1.00
-0.50
0.00
0.50
1.00
1.50
2.00
MISSION 1327A1

Figure 14-1

JX27 A-BUCKET FORWAD INSTRUME FRAMES 1-6 OF EACH OP OMITTED 90 PERCENT = 0.3

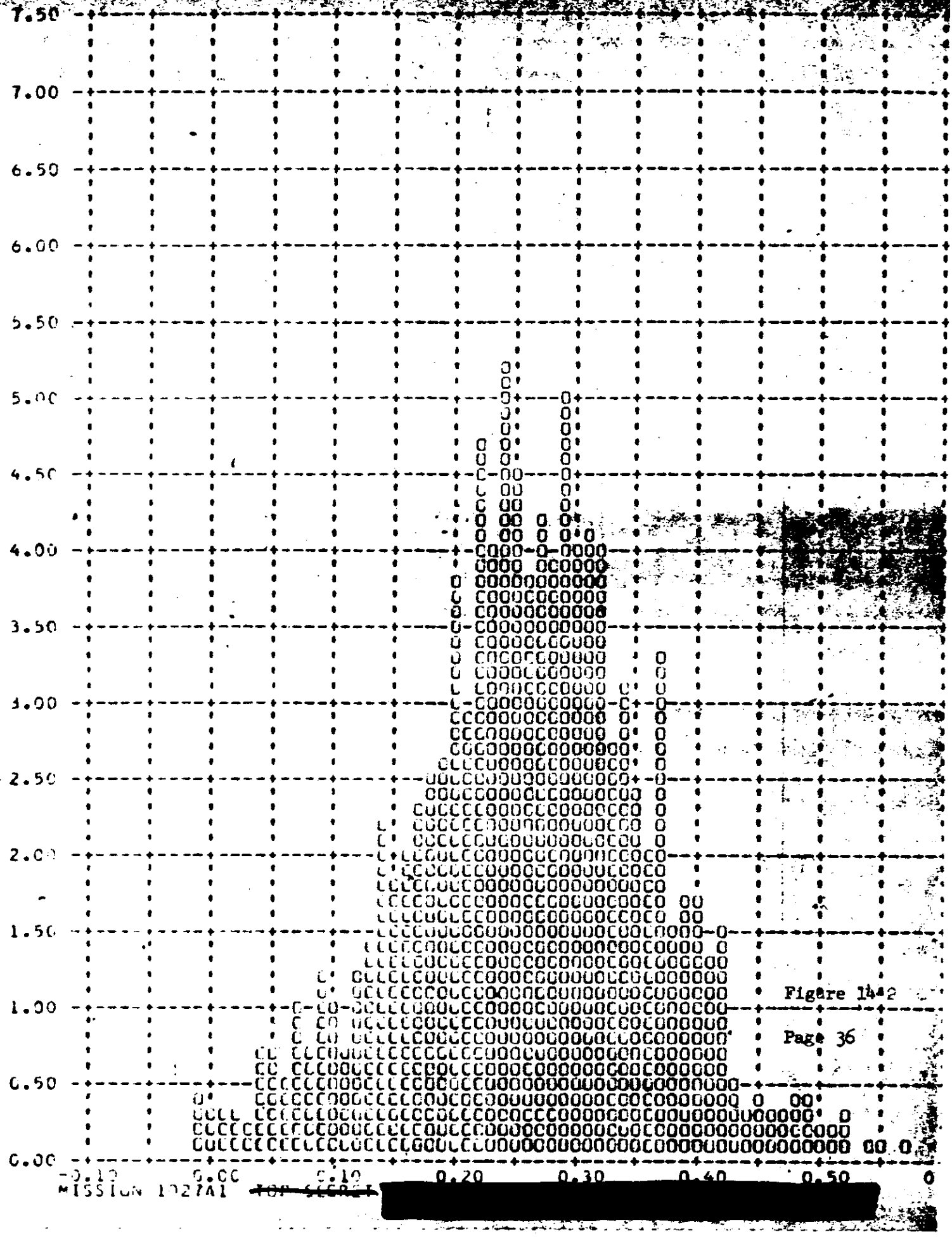


Figure 1442

MISSION 1027A1 [redacted]

JX27 - A-BUCKET FORWAD INSTRUME FRAMES 1-6 OF EACH OP OMITTED 90 PERCENT = 0.

Y YAW ANGLE ERROR - DEGREES (X) VERSUS FREQUENCY - PERCENT (Y)

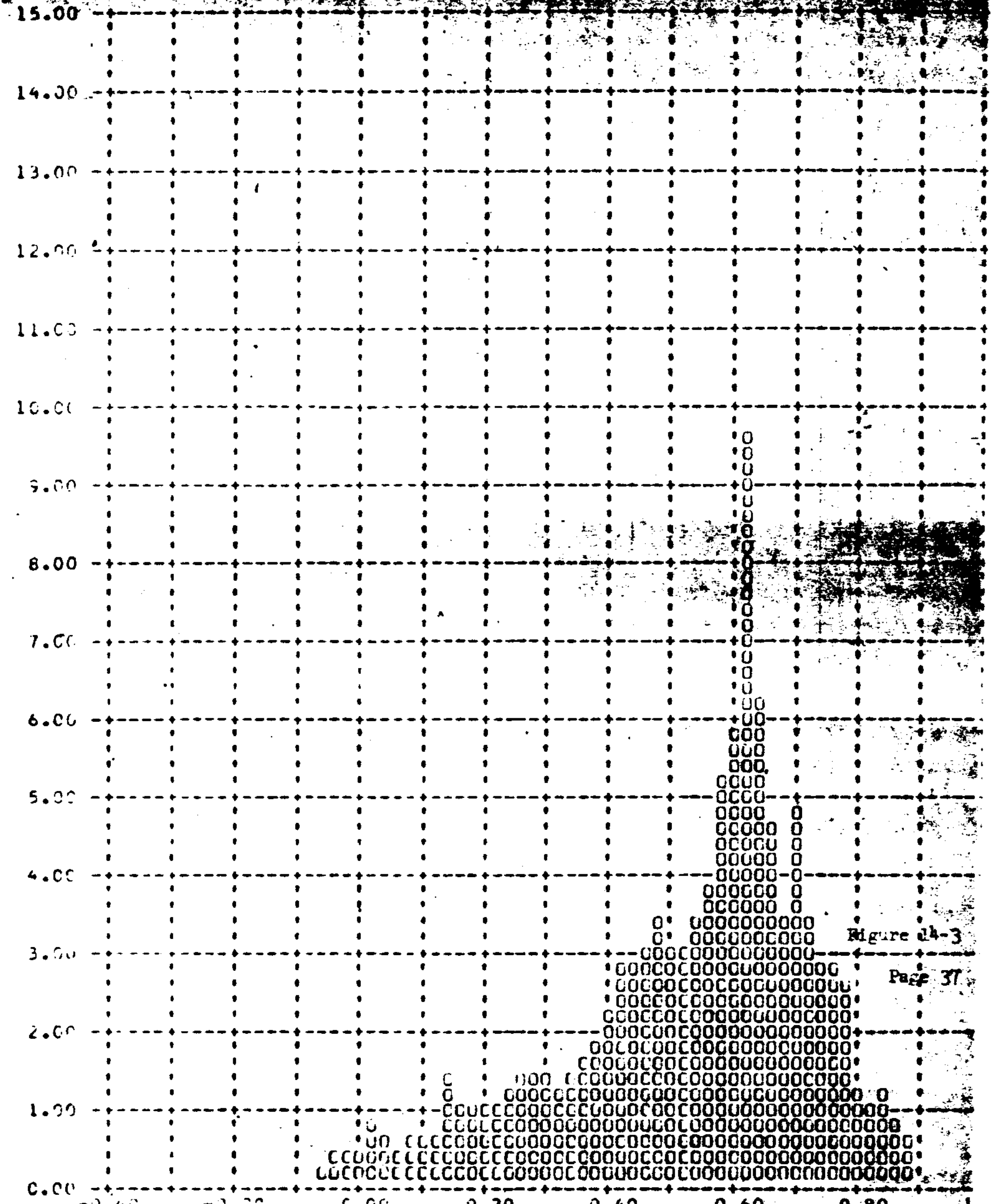


Figure 14-3

MISSION 1027A1 ~~TOP SECRET~~ [redacted]

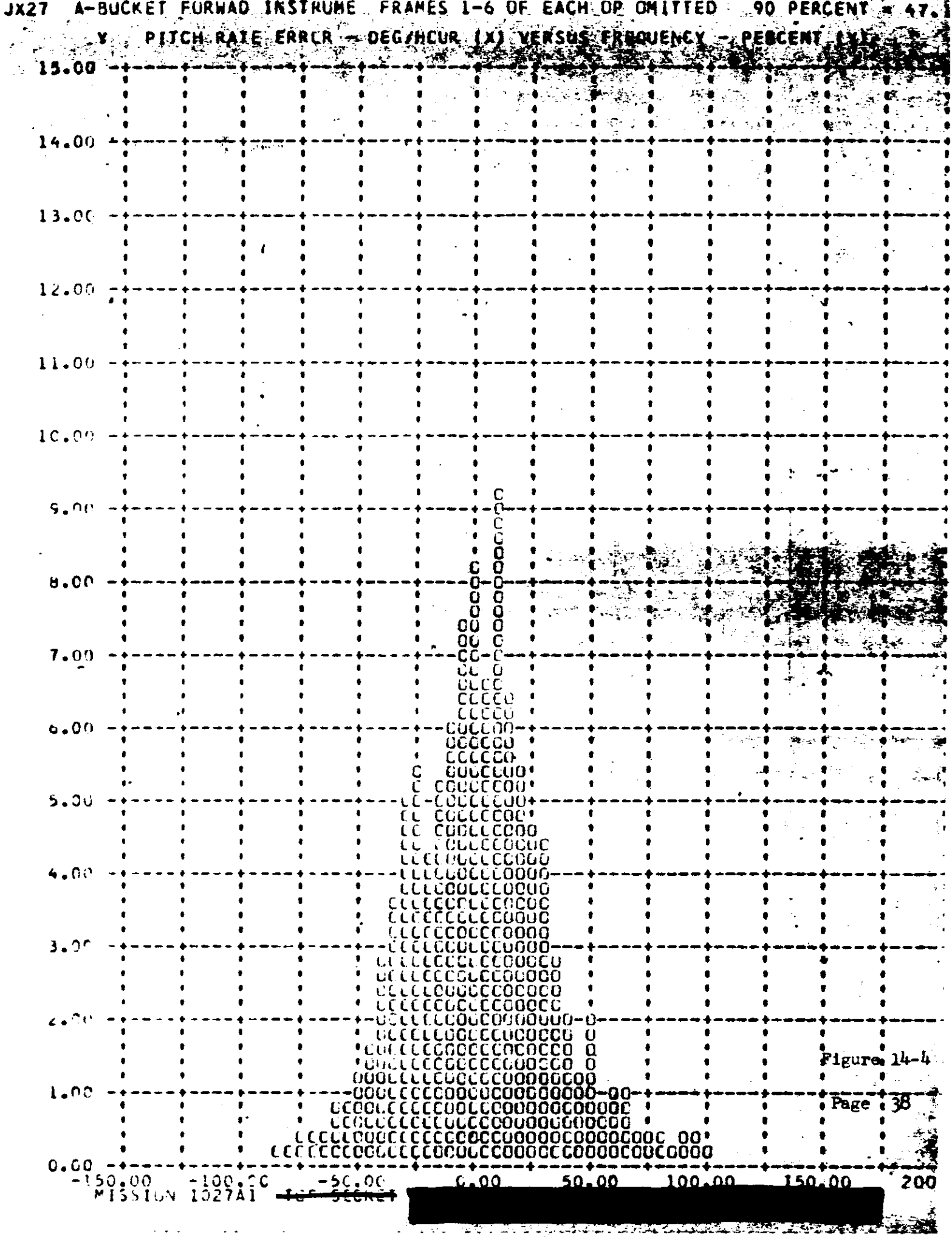
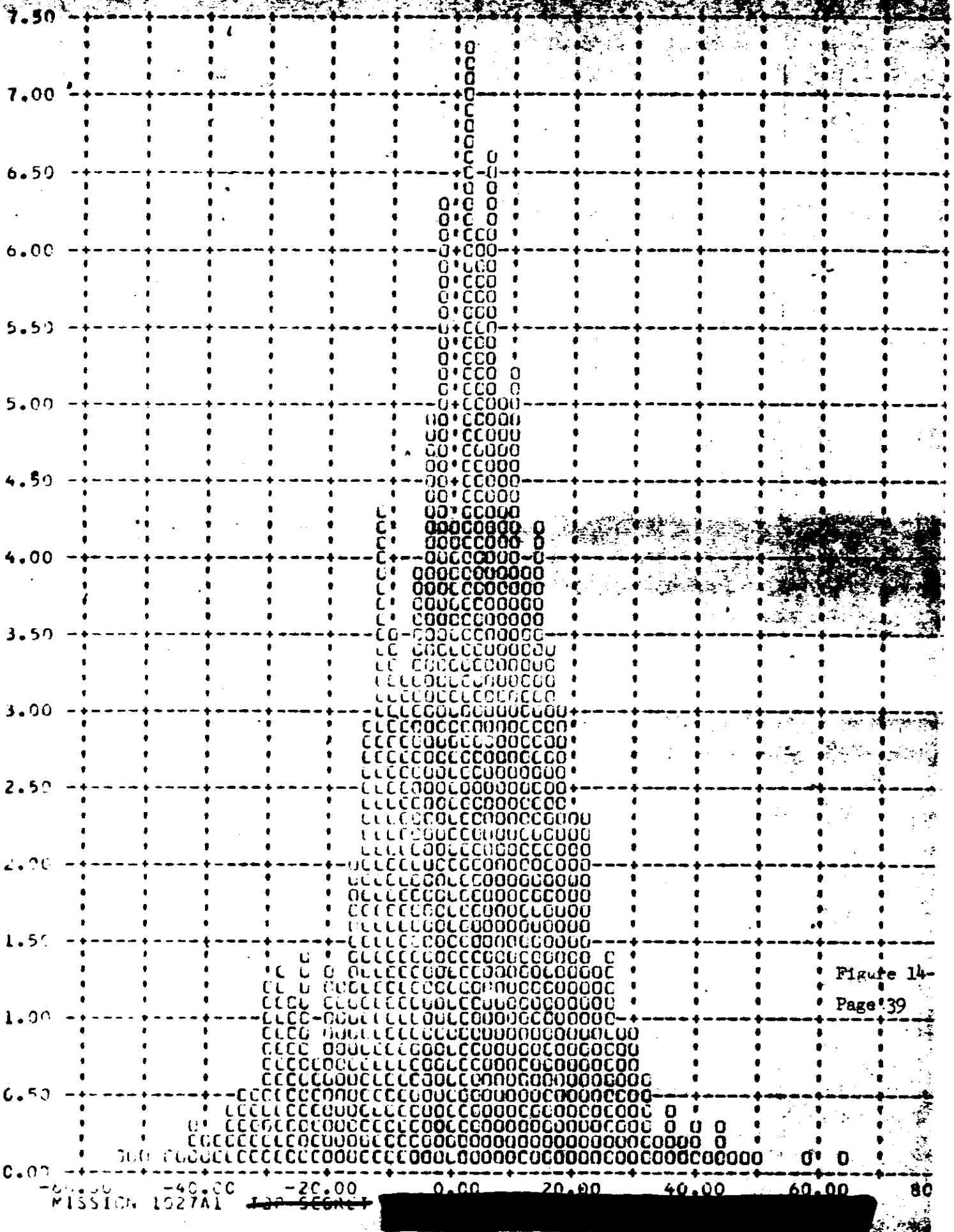

JX27 A-BUCKET FORWAD INSTRUME FRAMES 1-6 OF EACH OP OMITTED 90 PERCENT = 47.
Y PITCH RATE ERROR - DEG/HOUR (X) VERSUS FREQUENCY - PERCENT (Y)
15.00
14.00
13.00
12.00
11.00
10.00
9.00
8.00
7.00
6.00
5.00
4.00
3.00
2.00
1.00
0.00
-150.00
-100.00
-50.00
0.00
50.00
100.00
150.00
200
MISSION 1027A1
[redacted]

Figure 14-4


Y ROLL RATE ERROR - DEG/HOUR (X) VERSUS FREQUENCY - PERCENT (Y)
7.50
7.00
6.50
6.00
5.50
5.00
4.50
4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
-60.00
-40.00
-20.00
0.00
20.00
40.00
60.00
80

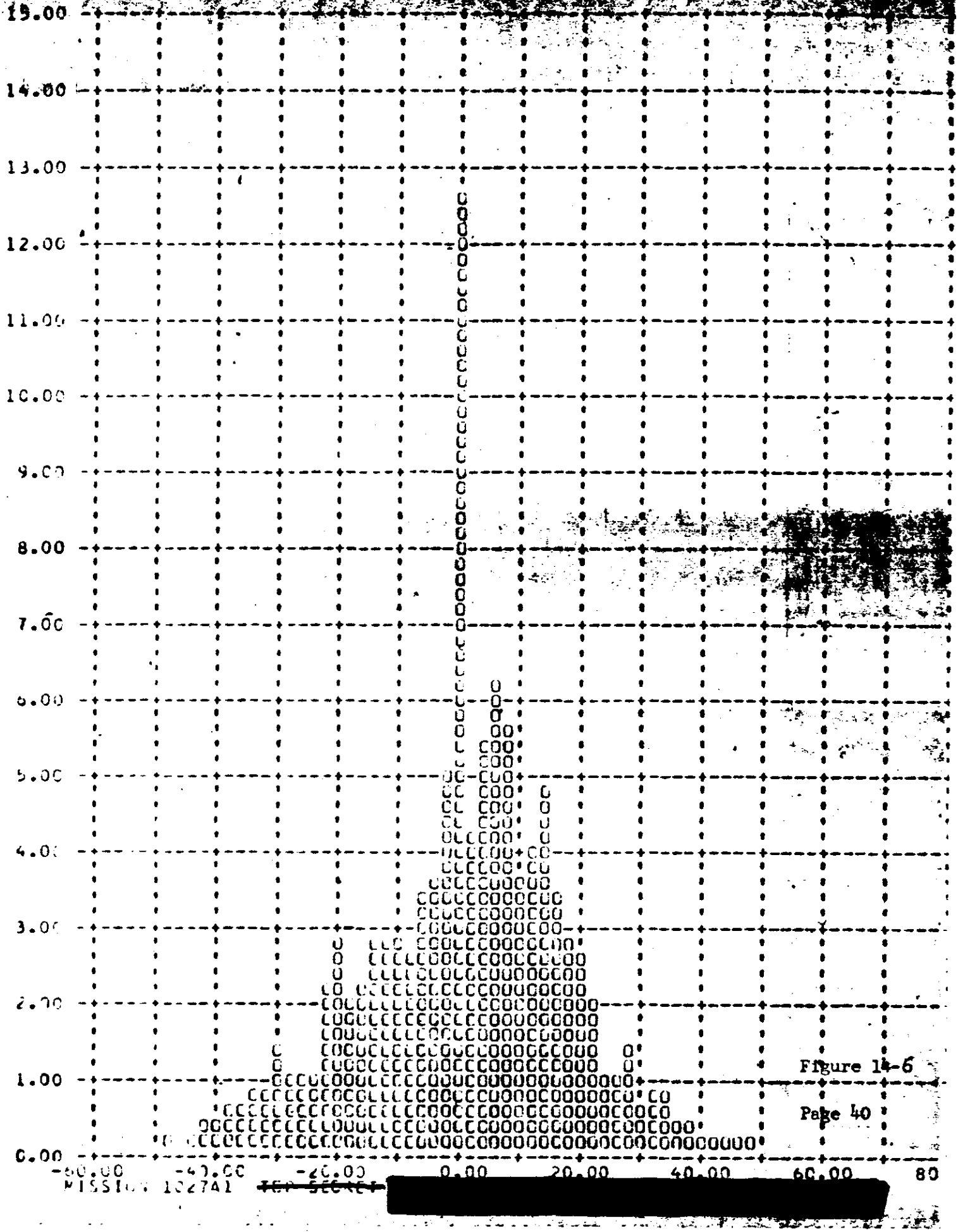

Y YAW RATE ERRCR - DEG/HOUR (X) VERSUS FREQUENCY - PERCENT (X)
15.00
14.00
13.00
12.00
11.00
10.00
9.00
8.00
7.00
6.00
5.00
4.00
3.00
2.00
1.00
0.00
-60.00
-40.00
-20.00
0.00
20.00
40.00
60.00
80

Figure 14-6

SECTION 15

IMAGE SMEAR ANALYSIS

The frame correlation tape supplied to A/P by NPIC contains the binary time word of each frame of photography. A computer program has been assembled at A/P which calculates the exposure time of each frame and compares the camera cycle rate with the ephemeris to calculate the V/h mismatch. This data is combined with the vehicle attitude error and rate values of each frame and the crab error caused by earth rotation at the latitude of each frame. The program outputs the total along track and cross track IMC error and the limit of ground resolution that can be acquired by a camera regardless of focal length and system capabilities.

The computer rejects the first six frames of all operations as the large V/h error induced by camera start-up is not representative of the overall system operations. The frequency distribution of the V/h errors and resolution limits are computer plotted and are shown in Figures 15-1 through 15-6.

The summary table 15-1 presents the maximum V/h ratio errors and resolution limits that existed during 90% of the photographic operations and the total range of values during all operations that were computed.

The along track resolution was degraded by the high pitch rates caused by the control gas failure.

MISSION 1027-1

V/H RATIO AND RESOLUTION LIMITS

Value	Units	Camera	90%	Range
V/H Ratio Error	%	FWD	4.73	-6.5 to +6.5
		AFT	3.83	-8.0 to +5.0
Along Track Resolution Limit	Feet	FWD	10.45	0.5 to 14.5
		AFT	6.02	0.2 to 8.8
Cross Track Resolution Limit	Feet	FWD	7.21	1.4 to 8.4
		AFT	5.15	1.0 to 6.2

TABLE 15-1

JX27 4-BUCKET FORMAT INSTRUME FRAMES 2-6 OF EACH OF UNTITLED 30 PERCENT -

Y- V/H RATIO ERROR - PERCENT (X) VERSUS FREQUENCY - PERCENT (Y)

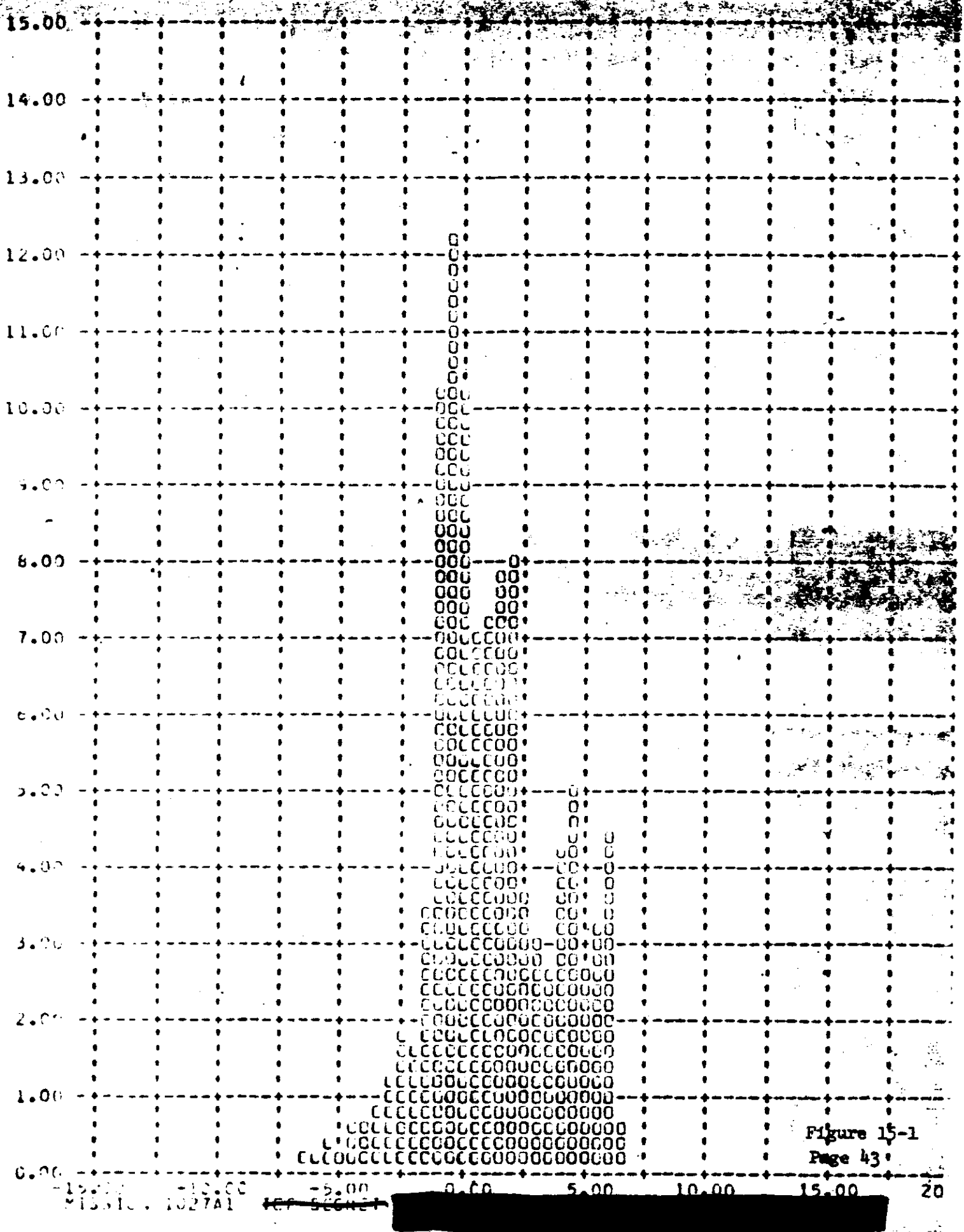


Figure 15-1
Page 43

[redacted]

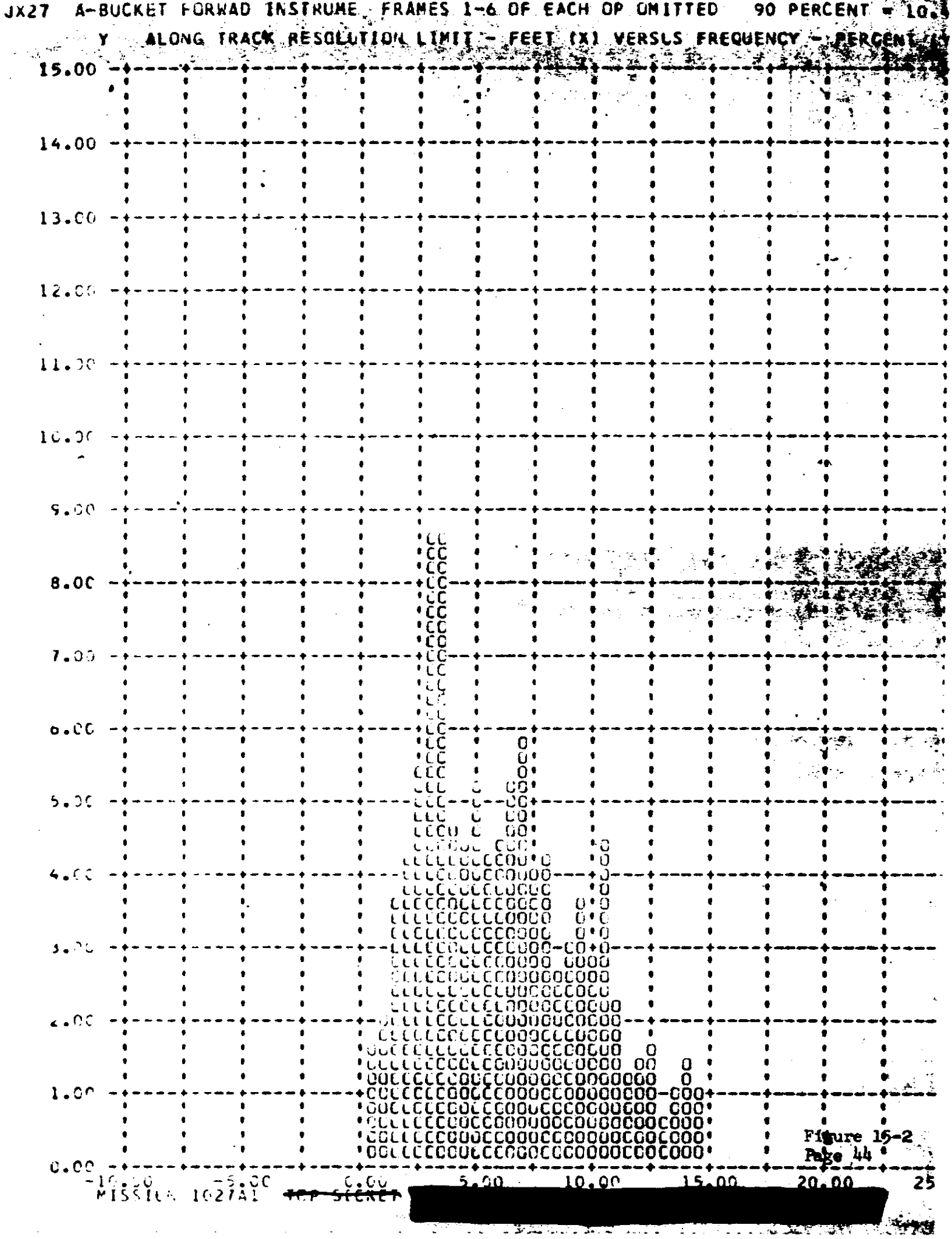


Figure 15-2
Page 44

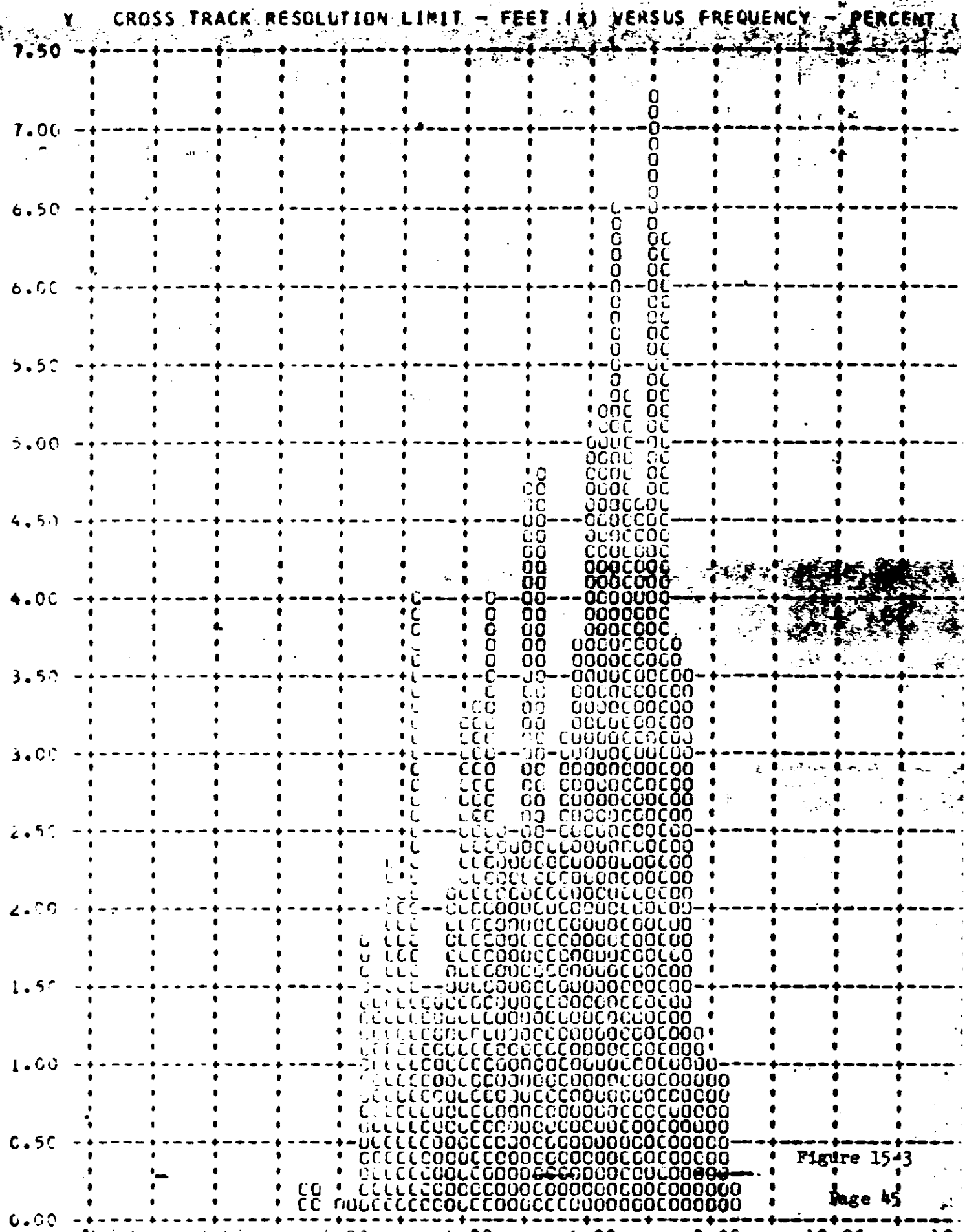


Figure 15-3

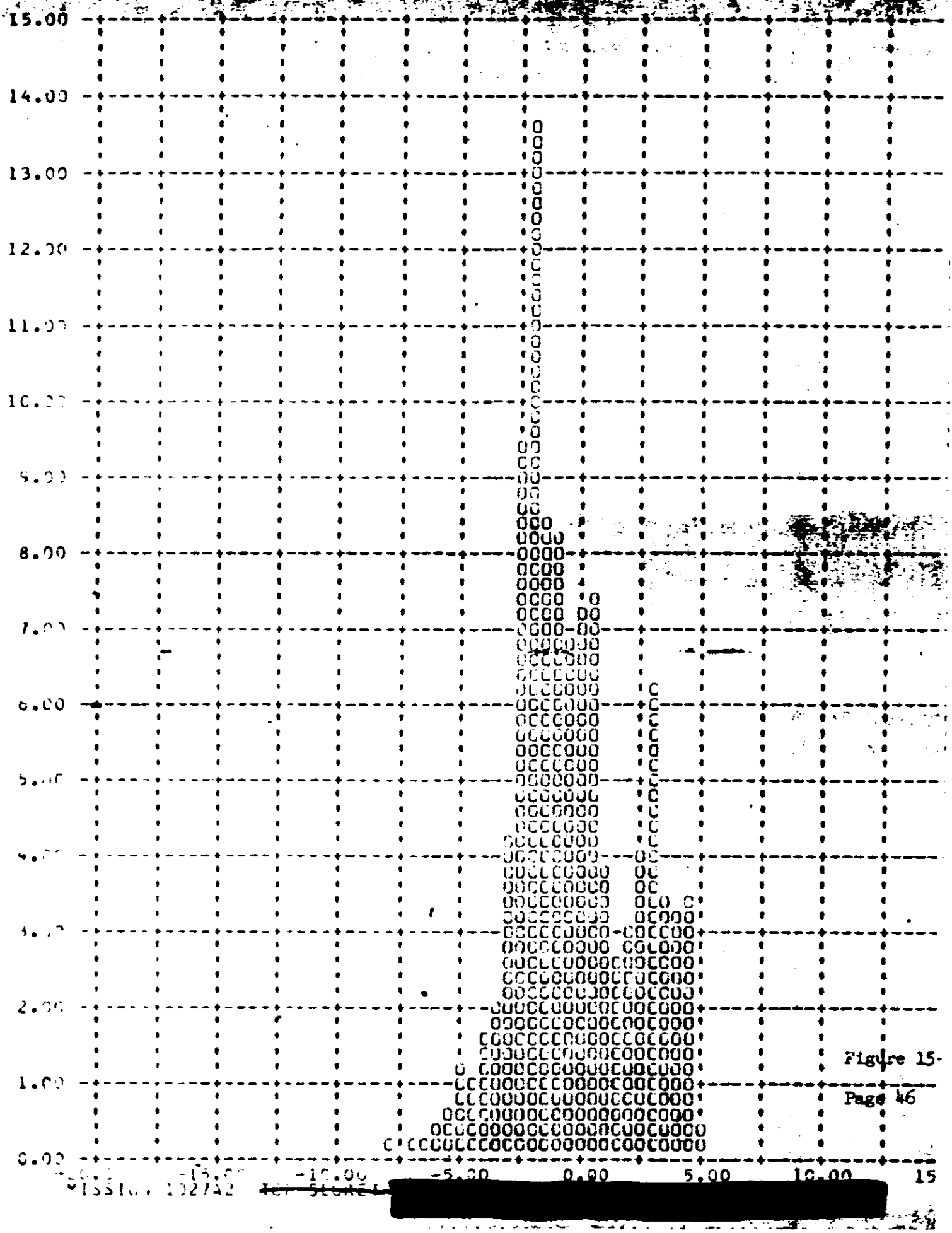

Y V/H RATIO ERROR - PERCENT (X) VERSUS FREQUENCY - PERCENT (Y)
15.00
14.00
13.00
12.00
11.00
10.00
9.00
8.00
7.00
6.00
5.00
4.00
3.00
2.00
1.00
0.00
-15.00
-10.00
-5.00
0.00
5.00
10.00
15

Figure 15

Y ALONG TRACK RESOLUTION LIMIT - FEET (X) VERSUS FREQUENCY - PERCENT

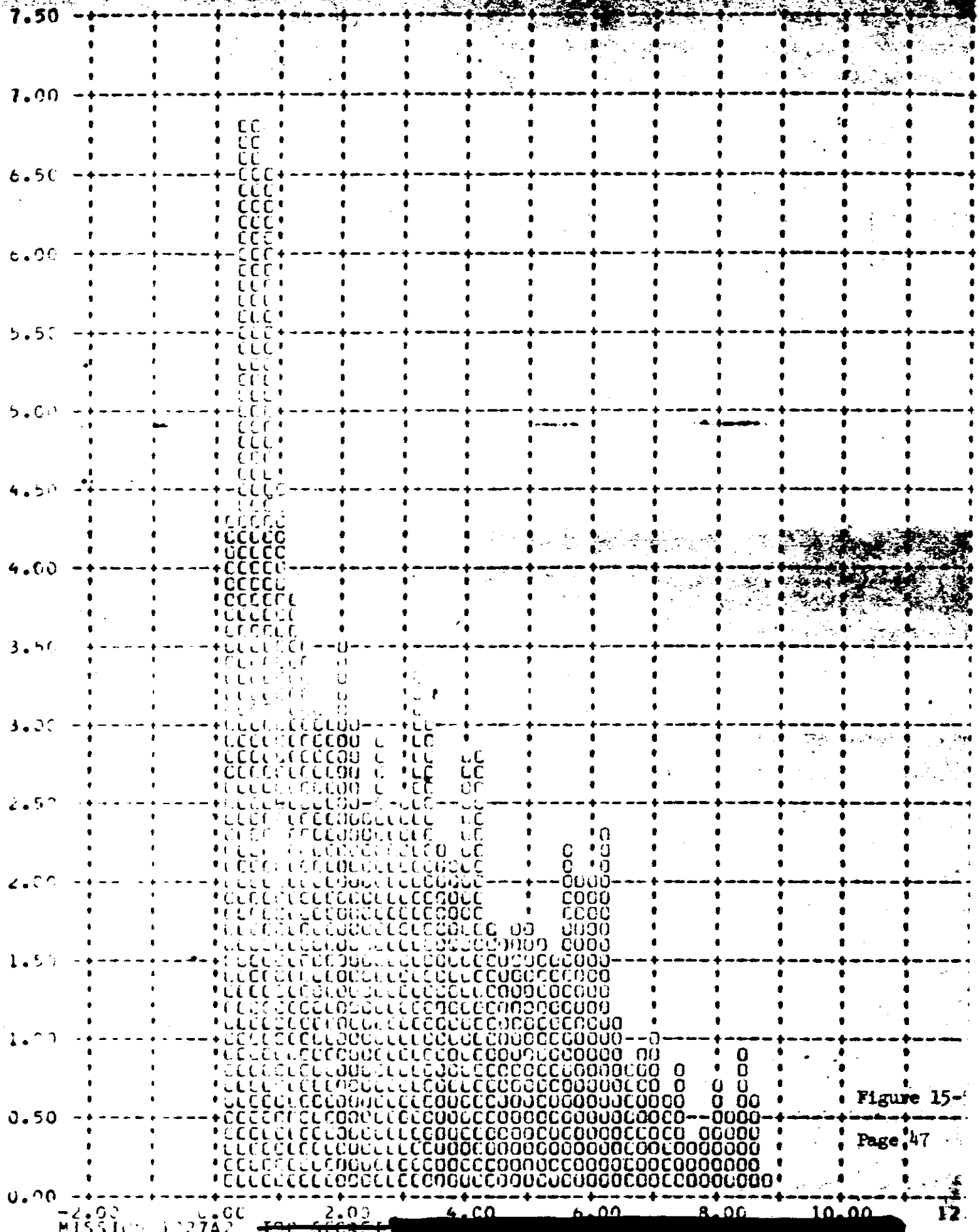


Figure 15-

JX27 A-BUCKET AFT INSTRUMENT FRAMES 1-6 OF EACH OP OMITTED 90 PERCENT = 5.

Y = CROSS TRACK RESOLUTION LIMIT - FEET (X) VERSUS FREQUENCY - PERCENT (

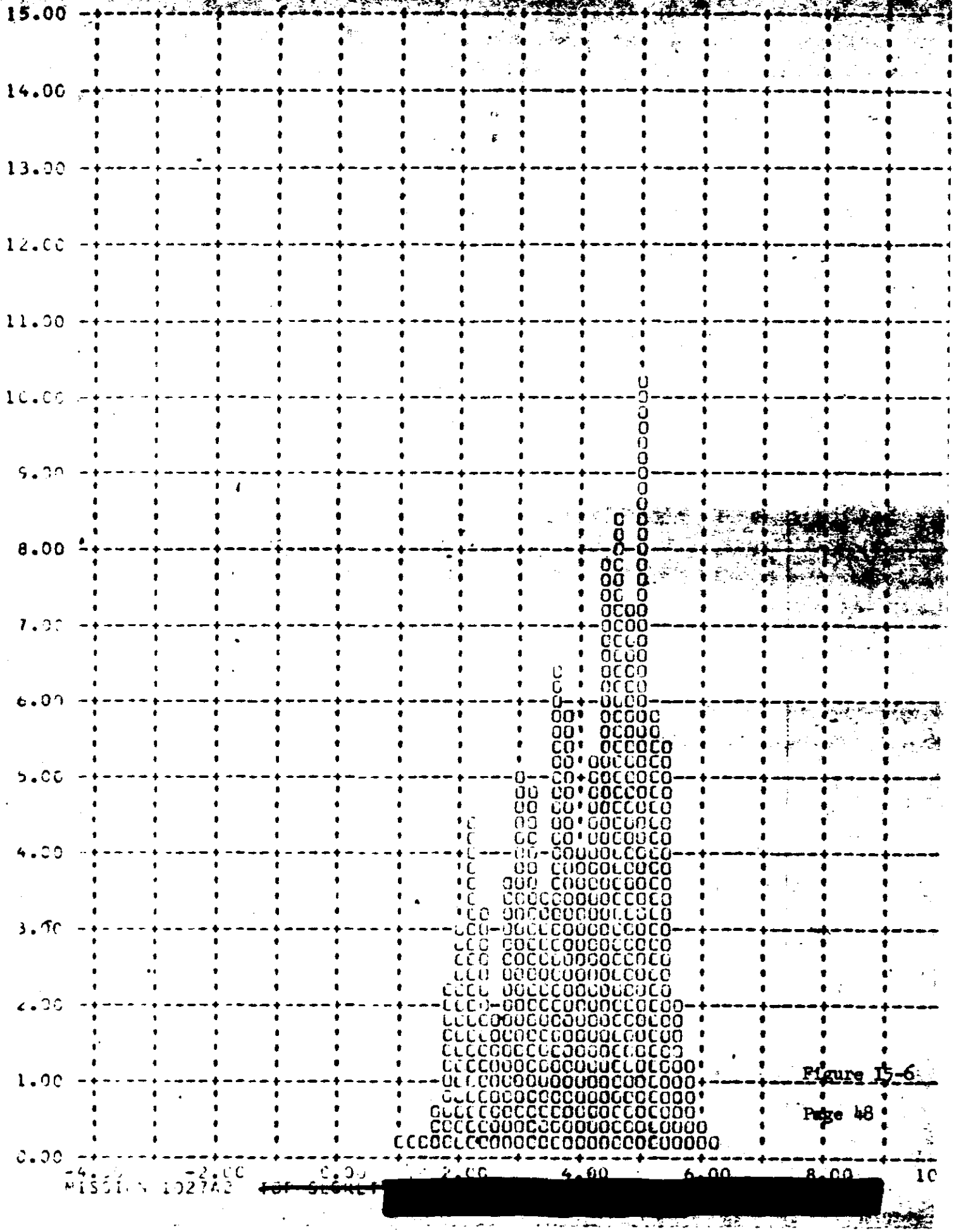


Figure 15-6

MISSION 10278

[redacted]

SECTION 16

RADIATION DOSAGE

Each recovery system flown on a Corona mission contains a sealed packet of Eastman Type 3401 and Royal X Pan emulsions to determine the total radiation received at the take-up cassette. Both film types have been irradiated by LMSC at various levels and the base plus fog densities recorded after controlled processing.

Following recovery the film dosimeter packets are removed at A/P and processed with a pre-flight sample of the same film type and sensitometric control film. The resulting base plus fog density measurement of the dosimeter strips is used to ascertain the total radiation level. The table below presents the base plus fog readings for the dosimeter strips and the radiation level equivalents.

	Mission 1027-1		Mission 1027-2	
Emulsion	B + F Density	Radiation	B + F Density	Radiation
Type 3401	0.14	0.3 R	0.16	0.5 R
Royal X Pan	0.18	0.2 R	0.22	0.4 R

The mean total radiation seen by the take-up cassettes during both missions was approximately 0.4 roetgens. This level is below the level that will degrade the panoramic photography.

SECTION 17

SYSTEM RELIABILITY

Reliability calculations for the payload are based on a sample beginning with M-7. Hence both the major part of the Mural Program and the "J" Program are covered in the calculation. For certain auxiliaries, i.e., the stellar-index camera and the horizon cameras, the sample size is changed to recognize incorporation of modified equipment or new designs where reliability was one of the principal reasons for the modification. However, for primary mission function, the sample size is consistent with reliability reporting for the vehicle.

The reliability estimates of this section deal exclusively with the payload. Failures to achieve orbit or vehicle induced failures are thereby excluded. Recoveries before a complete mission has been completed are considered as full missions providing that early termination was caused by reasons not connected with payload operation. Film quality is not considered in the reliability estimate calculation. Hence, only electrical and mechanical functioning are considered.

The reliability estimate is also divided into primary and secondary functions. The primary functions are operation of the panoramic cameras, main camera door operation, operation of the payload clock, and recovery operations. The secondary mission functions are horizon camera operation excluding catastrophic open shutter failure mode, auxiliary data recording, and stellar-index camera operation. A summary of estimated reliability is shown in Table 17-1.

Panoramic Camera Reliability

Sample size - 128 opportunities to operate
One failure
Assume - 3000 cycles per camera per mission
Estimated Reliability = 98.7% at 50% confidence level

Main Camera Door Reliability

Sample size - 90 opportunities to operate
Estimated Reliability = 99.2% at 50% confidence level

Payload Command and Control

Sample size - 6744 hours operation in sample
Two failures
Estimated Reliability = 96.3% at 50% confidence level

Payload Clock Reliability

Sample size - 6744 hours operation in sample
No failures
Estimated Reliability = 99.0% at 50% confidence level

Estimated Reliability of Payload Functioning on orbit = 96.5%
50% confidence level

Recovery System Reliability

55 opportunities to recover
1 failure - improper separation due to water seal - cutter failure
Estimated Reliability = 97.0% at 50% confidence level

Stellar-index Camera Reliability

Sample begins with J5
Sample size = 15,165 cycles
Three failures
Estimated Reliability = 90.0% at 50% confidence level

Horizon Camera Reliability

Sample begins with J5 - 64,500 cycles
Estimated Reliability of Single Camera =98.4% at 50% confidence level
Estimated Reliability of Four Horizon Cameras at a Parallel
Redundant System = 99.9% at 50% confidence level

[redacted]

ESTIMATED RELIABILITY - SUMMARY

(AT 50% CONFIDENCE LEVEL)

MISSION NUMBER	PRIMARY FUNCTIONS						SECONDARY FUNCTIONS	
	PANORAMIC CAMERA	PANORAMIC CAMERA DOORS	COMMAND & CONTROL SYSTEM	PAYLOAD CLOCK	ON - ORBIT FUNCTIONS	RECOVERY SYSTEM	STELLAR - INDEX CAMERAS	HORIZON CAMERAS
	SAMPLE / FAILURES / RELIABILITY	SAMPLE / FAILURES / RELIABILITY	SAMPLE / FAILURES / RELIABILITY	SAMPLE / FAILURES / RELIABILITY	* RELIABILITY	SAMPLE / FAILURES / RELIABILITY	SAMPLE / FAILURES / RELIABILITY	SAMPLE / FAILURES / RELIABILITY
9038 To 1008	60 SPACECRAFT / 1 / 97.3	52 DOORS / 0 / 98.6	3124 HOURS / 0 / 98.0	3124 HOURS / 0 / 98.0	96.1	16 CAPSULES / 1 / 90.7	3400 CYCLES / 3 / 83.1	12,000 CYCLES / 0 / 91.7
1009	64 / 1 / 97.4	54 / 0 / 98.7	3216 / 0 / 98.0	3216 / 0 / 98.0	96.2	20 / 1 / 91.5	4250 / 3 / 69.3	15,000 / 0 / 98.4
1010	68 / 1 / 97.6	56 / 0 / 98.8	3432 / 0 / 98.1	3432 / 0 / 98.1	96.4	22 / 1 / 92.5	5100 / 3 / 73.7	18,000 / 0 / 98.4
1011	72 / 1 / 97.7	58 / 0 / 98.9	3600 / 0 / 98.1	3600 / 0 / 98.1	96.8	24 / 1 / 93.0	5525 / 0** / 94.7	21,000 / 0 / 98.2
1012	76 / 1 / 97.8	60 / 0 / 98.9	3720 / 0 / 98.2	3720 / 0 / 98.2	96.9	26 / 1 / 93.5	5525 / 0 / 94.7	24,000 / 0 / 98.8
1013	78 / 1 / 97.8	62 / 0 / 99.0	3840 / 1 / 98.9	3840 / 0 / 98.3	96.0	28 / 1 / 94.0	5950 / 0 / 95.1	25,500 / 0 / 98.0
1014	82 / 1 / 97.9	64 / 0 / 99.0	4056 / 1 / 98.1	4056 / 0 / 98.3	96.1	30 / 1 / 94.4	6375 / 1 / 89.6	28,500 / 0 / 98.4
1015	86 / 1 / 98.0	66 / 0 / 99.0	4320 / 1 / 98.3	4320 / 0 / 98.4	96.1	32 / 1 / 94.8	7225 / 1 / 90.4	31,500 / 0 / 98.7
1016	90 / 1 / 98.1	68 / 0 / 99.0	4560 / 1 / 98.5	4560 / 0 / 98.5	96.4	34 / 1 / 95.2	7650 / 1 / 91.0	34,500 / 0 / 97.0
1017	94 / 0* / 99.3	70 / 0 / 99.0	4760 / 1 / 98.7	4760 / 0 / 98.6	97.6	36 / 1 / 95.4	8925 / 1 / 92.3	37,500 / 0 / 97.3
1018	98 / 1 / 98.3	72 / 0 / 99.1	4920 / 1 / 98.8	4920 / 0 / 98.7	96.7	38 / 1 / 95.6	8960 / 1 / 92.3	40,500 / 0 / 97.5
1019	102 / 1 / 98.4	74 / 0 / 99.1	5136 / 1 / 98.9	5136 / 0 / 98.7	96.8	39 / 1 / 95.8	8075** / 1 / 91.5	43,500 / 0 / 97.6

* DESIGN FIX NEGATES PREVIOUS FAILURE CONSIDERATIONS

** ONE SAMPLE OUT OF SEQUENCE

[redacted]

[redacted]

ESTIMATED RELIABILITY SUMMARY

(AT 50% CONFIDENCE LEVEL)

MISSION NUMBER	PRIMARY FUNCTIONS						SECONDARY FUNCTIONS	
	PANORAMIC CAMERA	PANORAMIC CAMERA DOORS	COMMAND & CONTROL SYSTEM	PAYLOAD CLOCK	ON-ORBIT FUNCTIONS	RECOVERY SYSTEM	STELLAR-INDEX CAMERAS	HORIZON CAMERAS
	SAMPLE / FAILURES / RELIABILITY	SAMPLE / FAILURES / RELIABILITY	SAMPLE / FAILURES / RELIABILITY	SAMPLE / FAILURES / RELIABILITY	RELIABILITY	SAMPLE / FAILURES / RELIABILITY	SAMPLE / FAILURES / RELIABILITY	SAMPLE / FAILURES / RELIABILITY
1020	100 / 1 / 98.5	78 / 0 / 99.1	5844 / 1 / 97.1	5844 / 0 / 98.9	96.9	43 / 1 / 96.1	10,680 / 2 / 89.9	48,000 / 0 / 97.9
1021	104 / 1 / 98.6	78 / 0 / 99.1	5376 / 1 / 97.0	5376 / 0 / 98.8	96.9	41 / 1 / 96.0	9830 / 2 / 89.1	46,500 / 0 / 97.8
1022	112 / 1 / 98.5	80 / 0 / 99.2	5784 / 1 / 97.3	5784 / 0 / 98.9	96.9	45 / 1 / 96.3	11,550 / 2 / 90.7	51,000 / 0 / 98.0
1023	114 / 1 / 98.6	82 / 0 / 99.2	6000 / 2 / 95.8	6000 / 0 / 98.9	96.2	47 / 1 / 96.5	12,190 / 2 / 91.1	54,000 / 0 / 98.1
1024	118 / 1 / 98.6	84 / 0 / 99.2	6240 / 2 / 96.0	6240 / 0 / 98.9	96.3	49 / 1 / 96.6	13,040 / 2 / 91.6	57,000 / 0 / 98.2
1025	122 / 1 / 98.6	86 / 0 / 99.2	6480 / 2 / 96.1	6480 / 0 / 99.0	96.4	51 / 1 / 96.7	13,890 / 2 / 92.1	60,000 / 0 / 98.3
1026	126 / 1 / 98.7	88 / 0 / 99.2	6720 / 2 / 96.3	6720 / 0 / 99.0	96.5	53 / 1 / 96.8	14,740 / 2 / 92.6	63,000 / 0 / 98.4
1027	128 / 1 / 98.7	90 / 0 / 99.2	6744 / 2 / 96.3	6744 / 0 / 99.0	96.5	55 / 1 / 97.0	15,168 / 3 / 90.0	64,800 / 0 / 98.5

[redacted]

SECTION 18

SUMMARY DATA

The comparison of the operating parameters and the performance achieved by previous missions has been difficult due to the large volume of data that results from each mission. Some of the pertinent characteristics from prior missions have been summarized in Tables 18-1 through 18-3.

The summary data was started with Mission 1004 as the J-05 camera system was the first to incorporate the major modifications of the titanium drum and scan arm, four roller scan head and Corona J capabilities. Only those missions that culminated in the recovery of some photography have been listed, therefore Missions 1003 and 1005 are deleted.

[redacted]

MISSION SUMMARY

MISSION NUMBER	PAYLOAD NUMBER	VEHICLE NUMBER	LAUNCH DATE	LAUNCH TIME	ORBIT INCLINATION (°)	PERIGEE ALTITUDE (NM)	PERIGEE LOCATION (°N)	RECOVERY PASS	MASTER CAMERA CAMERA NUMBER	MASTER CAMERA SLIT (")	MASTER CAMERA FILTER TYPE	SLAVE CAMERA CAMERA NUMBER	SLAVE CAMERA SLIT (")	SLAVE CAMERA FILTER TYPE	STELLAR-INDEX CAMERA NUMBER
1004	J-05	1174	2/15/64	2138 Z	74.9	99.9	29.0	49 / 112	124	0.250	W-21	125	0.250	W-21	D29/29/29 / D42/42/37
1006	J-09	1176	6/4/64	2259 Z	79.9	84.0	63.2	65 / 128	148	0.200	W-21	149	0.200	W-21	D45/47/45 / D49/53/42
1007	J-07	1609	6/19/64	2318 Z	85.0	99.2	41.5	65 / 128	144	0.250	W-25	145	0.200	W-21	D43/43/45 / D54/56/61
1008	J-10	1177	7/10/64	2314 Z	85.0	99.4	40.8	49 / 112	150	0.200	W-21	151	0.200	W-21	D48/45/48 / D33/28/33
1009	J-12	1605	8/5/64	2316 Z	80.1	99.6	39.5	49 / 128	154	0.200	W-21	155	0.200	W-21	D56/54/56 / D38/38/34
1010	J-11	1178	9/14/64	2254 Z	84.9	97.4	42.5	65 / 144	152	0.175	W-21	153	0.175	W-21	D41/41/41 / D44/46/44
1011	J-3X	1170	10/5/64	2150 Z	79.9	99.3	20.9	65 / —	160	0.175	W-21	161	0.175	W-21	D30/30/30 / D57/57/57
1012	J-13	1179	10/17/64	2202 Z	75.0	96.2	32.4	49 / 81	156	0.200	W-21	157	0.200	W-21	D51/51/47 / D46/52/53
1013	J-15	1173	11/2/64	2130 Z	80.0	100.0	25.0	65 / 81	158	0.225	W-21	159	0.225	W-21	D52/49/55 / D47/48/54
1014	J-16	1180	11/18/64	2036 Z	70.0	103.2	65.6	81 / 145	162	0.250	W-25	139	0.175	W-21	D53/59/49 / D50/44/46
1015	J-17	1607	12/19/64	2110 Z	74.9	96.7	21.5	81 / 175	138	0.250	W-25	141	0.175	W-21	D61/61/61 / D58/58/58
1016	J-18	1608	1/15/65	2101 Z	74.9	99.4	30.2	81 / 159	132	0.250	W-25	133	0.175	W-21	D55/55/50 / D59/60/59
1017	J-14	1611	2/25/65	2144 Z	75.0	97.2	25.9	81 / 145	140	0.250	W-25	165	0.175	W-21	D21/21/21 / D60/61/1
1018	J-19	1612	3/25/65	2111 Z	96.0	100.2	40.3	66 / 99	122	0.250	W-25	123	0.175	W-21	D20/20/20 / D22/22/22
1019	J-04	1614	4/29/65	2144 Z	85.0	99.1	27.1	80 / —	118	0.250	W-25	119	0.175	W-21	D39/39/38 / D19/18/19
1020	J-20	1613	6/9/65	2158 Z	75.1	97.1	40.8	97 / 113	136	0.250	W-25	137	0.175	W-21	D67/65/60 / D62/66/65
1021	J-21	1615	5/18/65	1803 Z	75.0	109.2	24.3	81 / 161	166	0.175	W-21	167	0.250	W-25	D63/69/69 / D25/27/25
1022	J-22	1617	7/19/65	2201 Z	85.0	99.7	30.3	65 / 144	168	0.250	W-25	169	0.175	W-21	D65/77/70 / D24/24/24
1023	J-23	1618	8/17/65	2100 Z	70.0	97.8	29.0	81 / 144	170	0.225	W-25	171	0.150	W-21	D17/19/82 / D66/75/72
1024	J-24	1619	9/22/65	2131 Z	80.0	95.9	18.4	81 / 161	172	0.225	W-25	173	0.150	W-21	D69/72/84 / D64/62/68
1025	JX-28	1616	10/5/65	1746 Z	75.0	112.9	44.3	81 / 161	142	0.175	W-21	127	0.175	W-21	D73/78/68 / D70/66/81
1026	J-25	1620	10/28/65	2117 Z	75.0	93.0	17.0	81 / 160	174	0.225	W-25	175	0.150	W-21	D75/92/93 / D72/69/65
1027	JX-27	1621	12/9/65	2110 Z	80.0	97.4	17.3	17 / 33	164	0.250	W-25	163	0.175	W-21	D71/67/67 / D68/74/63

DOD SECRET [redacted]

PERFORMANCE SUMMARY

~~TOP SECRET~~ [redacted]

MISSION NUMBER	CAMERA	SERIAL NUMBER	M I P VALUE	VISUAL RES	AFSPPL MTF/AIM				[redacted]			90% ATTITUDE ERROR (°)			90% ATTITUDE RATES (°/HR)			90% V/H ERROR (%)	90% RESOLUTION LIMIT (FEET)	
					SLIT (μ)	AVERAGE	SLIT (μ)	AVERAGE	SLIT (μ)	AVERAGE ALL	AVERAGE HIGH	PITCH	ROLL	YAW	PITCH	ROLL	YAW		ALONG TRACK	CROSS TRACK
1004-1	FWD	124	85	78	350	97	43	109	320	113	127	0.45	0 42	1 08	30 0	25 0	21 0	5 1	7.7	6.1
	AFT			86		80		96		117	124									
1004-2	FWD	125	85	76		88		113		82	90	0.74	0 50	0 91	44 0	30 0	29 0	4 9	6 8	6.5
	AFT			73		83		106		89	95									
1006-1	FWD	148	90	78	350	65	43	88	320	84	97	0 41	0 42	1 14	26 8	28 5	27 8	15 4	13.8	6.7
	AFT			74		71		90		87	92									
1006-2	FWD	149	90	85		64		81		84	90	0 49	0 40	1 08	31 1	27 9	30 0	11 6	10.4	7.0
	AFT			83		72		90		87	94									
1007-1	FWD	144	85	80	350	60	43	87	320	82	91	0.68	0 46	1.43	37 6	23.9	29 9	3 6	3 1	9.4
	AFT			86		63		85		97	110							4 6	2 1	7.6
1007-2	FWD	145	85	79		72		81		68	74	0 64	0 47	——	43 0	25 8	——	3 2	2.4	——
	AFT			81		77		92		74	81							4 2	1 8	——
1008-1	FWD	150	85	80	350	80	43	95	320	81	89	0 59	0 39	0 94	43 8	23 9	29 6	2 9	4.9	5.9
	AFT			76		73		89		86	95									
1008-2	FWD	151	85	82		84		96		83	92	0 63	0 36	0 71	42 9	24 0	32 5	2 8	4 2	5 4
	AFT			79		91		83		85	91									
1009-1	FWD	154	85	92	350	80	—	——	80	75	88	0.65	0.65	0.71	29 2	22.7	27 8	3 3	5 3	5.8
	AFT			89		85				75	83									
1009-2	FWD	155	85	94		85				76	84	0 48	0 65	0 59	33 6	23 9	27 2	2 6	4.9	5.9
	AFT			87		87				78	79									
1010-1	FWD	152	85	90	350	90	80	88	80	87	96	0 93	0 30	0.87	39 1	23 6	30 8	4 5	2.3	4.4
	AFT			88		86		80		92	103									
1010-2	FWD	153	85	92		81		82		82	93	0 89	0 70	1.21	46 4	23 6	30.7	4 6	7.6	3 8
	AFT			90		82		85		87	98									
1011-1	FWD	160	90	84	350	76	80	96	80	78	87	0.77	0.39	0.97	43.1	28.9	31 1	2.3	5.3	5.6
	AFT	161		84		77		86		83	93									
1012-1	FWD	156	85	92	—	—	80	91	80	84	96	0.85	0.51	——	47.1	33.2	——	1 5	4.8	——
	AFT			91				87		89	100									
1012-2	FWD	157	85	91				89		84	91	0.97	0.77	0.81	46.2	30.7	20.4	5 9	3.3	5.9
	AFT			89				96		85	98									
1013-1	FWD	158	85	89	—	—	80	94	80	85	98	0.64	0.32	1.34	36.9	29.0	32.3	3 7	7.8	8.2
	AFT	159		77				97		81	103	0.64	0.32	1.34	36.9	29.0	32.3	4 5	5.8	8.2
1014-1	FWD	162	80	87	—	—	80	78	80	74	88	0.68	0.41	1.46	35.0	36.1	38.5	2 2	6.2	8.8
	AFT			83				80		95	107	0.68	0.41	1.44	34.8	36 0	38.3	3 3	2.8	8.3
1014-2	FWD	139	80	83				78		70	77	1.08	0.55	——	38.4	36.4	——	1 4	6.4	——
	AFT			86				84		80	88	1.08	0.59	——	38.1	36.0	——	3 2	2.2	——
1015-1	FWD	138	85	87	—	—	80	78	80	90		0.68	0.38	0.53	47.0	29.4	38.2	5 0	5.8	7.8
	AFT			87				75		97	—	0.64	0.39	0.53	46.9	29.2	38.2	6 3	3.4	5.8
1015-2	FWD	141	85	83				72		89		0.80	0.61	0.64	39.1	27.1	36.2	3 2	6.8	7.5
	AFT			82				72		90		0.80	0.61	0.64	39.1	27.0	36.3	3 3	4.6	9.3
1016-1	FWD	132	85	85	—	—	80	86	80	81		0.72	0.83	2.01	48.9	30.2	40.4	2 0	5.6	10.5
	AFT			83				81		94	—	0.72	0.83	2.01	48.4	30.1	40.4	2 8	3.4	7.4
1016-2	FWD	133	85	90				86		92		0.85	0.93	2.19	42.2	27.2	39.9	1 5	4.9	8.0
	AFT			91				86		91		0.85	0.93	2.19	42.2	27.3	39.9	2 3	3.3	7.1
1017-1	FWD	140	85	72	—	—	80	87	80	78	[redacted]	[redacted]	0.76	2.50	38.5	32.2	38.4	3 3	9.8	11.6
	AFT			75				70		94	101	0.49	0.76	2.49	35.3	32.0	38.5	4 3	8.3	8.1
1017-2	FWD	165	85	88				68		80	94	0.69	0.45	——	36.5	34.0	——	1 8	6.2	——
	AFT			85				89		88	101	[redacted]	0.45	——	36.3	33.8	——	2 3	5.3	——
1018-1	FWD	122	85	79	—	—	80	70	80	82	[redacted]	[redacted]	0.48	——	47.4	36.7	——	3 4	5.6	——
	AFT			77				74		96	[redacted]	[redacted]	0.47	——	46.2	36.2	——	3 2	3.7	——
1018-2	FWD	123	85	84				76		77	[redacted]	[redacted]	0.63	——	34.7	30.7	——	3 1	5.6	——
	AFT			86				71		91	[redacted]	[redacted]	0.63	——	34.8	30.7	——	2 8	4.1	——

Table [redacted]

~~TOP SECRET~~ [redacted]

PERFORMANCE SUMMARY

[redacted]

MISSION NUMBER	CAMERA	SERIAL NUMBER	M I P VALUE	VISUAL RES	AFSPPF MTF/AIM SLIT (μ)	AFSPPF MTF/AIM AVERAGE	SLIT (μ)	AVERAGE	SLIT (μ)	AVERAGE ALL	AVERAGE HIGH	90% ATTITUDE ERROR (°) PITCH	ROLL	YAW	90% ATTITUDE RATES (°/HR) PITCH	ROLL	YAW	90% V/H ERROR (%)	90% RESOLUTION LIMIT (FEET) ALONG TRACK	CROSS TRACK
1019-1	FWD	118 / 119	85	81	—	—	80	76	80	88	104	0 43	0 36	0 97	31 6	34 7	33 0	3 3	9.3	9.1
	AFT			99				83		87	101	0.44	0 37	0.96	31.6	34.9	33 1	3 8	5.0	6.5
1020-1	FWD	136 / 137	80	88	—	—	80	69	80	78	90	0.46	0 35	0 78	37.4	31 8	26 7	5 4	5.8	8.4
	AFT			89				82		94	105	0.46	0 35	0 78	37 4	31 8	26 7	5 3	4.2	5.9
1020-2	FWD		—	—				—		—	—	0.41	0 17	1 06	42.6	23 8	42 5	3 5	6.4	7.6
	AFT			—				—		—	—	0.41	0 17	1 06	42 6	23 8	42 5	3 4	4.5	2.6
1021-1	FWD	166 / 167	85	88	—	—	80	77	80	86	99	0.55	0 37	0 81	34 9	32 6	26 2	2 7	8.6	8.0
	AFT			90				90		98	109	0 55	0 38	0 81	34 8	33 0	26 3	5 4	8.6	8.8
1021-2	FWD		85	85				74		88	112	0.59	0 65	—	44 7	50 6	—	3 1	9.2	—
	AFT			74				62		—	—	—	—	—	—	—	—	—	—	—
1022-1	FWD	168 / 169	85	88	—	—	80	66	80	78	91	0.47	0 51	0 89	28 3	27 1	23 8	3 5	9.8	8.6
	AFT			91				83		101	111	0.47	0 51	0 90	27 9	26 6	23 8	3 0	8.2	6.1
1022-2	FWD		85	90				68		74	84	0 40	0 51	0 90	29 4	27 3	31 0	2 6	8.0	8.4
	AFT			92				92		99	110	0.40	0 51	0 90	29.4	27 3	31 1	1 8	4.9	8.9
1023-1	FWD	170 / 171	85		—	—	80	84	80	97	110	0.49	0 33	0 50	33 0	28 7	23 5	3 4	4.0	8.4
	AFT							87		83	101	0.49	0 33	0.50	32 9	28 7	23 5	3 5	2.7	4.3
1023-2	FWD		85					71		76	87	0.42	0 36	0 53	29 7	21 0	28 6	2 4	3.9	6.3
	AFT							89		68	76	0.43	0 37	0 53	29 6	21 3	28 6	2 5	2.7	4.2
1024-1	FWD	172 / 173	85		—	—	80	79	80	90	102	0.42	0 28	0.62	32 2	24 9	30 5	2 6	5.9	6.8
	AFT							95		94	108	0.42	0 25	0.62	32 2	24 9	30 4	2 1	3.8	4.5
1024-2	FWD		85					86		89	101	0.36	0 31	0.93	30 4	24 5	36 4	5 5	4.7	5.4
	AFT							95		100	114	0.36	0 31	0 93	30 6	23 6	36 4	5 1	3.3	3.6
1025-1	FWD	142 / 127	85		—	—	80	87	80	80	97	0.50	0 41	0 85	28 1	28 7	25 9	2 0	3.9	6.7
	AFT							97		101	114	0.51	0 42	0 85	28 6	29 7	25.7	3 2	2.8	6.8
1025-2	FWD		85					85		96	107	0.52	0 44	0 82	28 0	26 1	29.0	1 7	4.7	6.9
	AFT							91		89	103	0.52	0 44	0 82	28.1	26.0	29 0	1 8	6.7	6.9
1026-1	FWD	174 / 175	85		—	—	80	76	80	80	92	0.65	0 24	0 70	37 9	33 2	28 5	6 1	13.5	6.2
	AFT							88		98	113	0.65	0 24	0 70	37 9	33.2	28.5	6 1	9.1	4.1
1026-2	FWD		85					85		92	104	0.55	0 56	0 87	41 1	46 5	30 8	6 1	5.5	6.7
	AFT							93		90	103	0.59	0 65	0.88	43 3	50 0	27 7	6 7	3.3	4.5
1027-1	FWD	164 / 183	85	—	—	—	80	69	80	80	—	0.51	0 37	0 74	47 2	25 5	26 4	4 7	10.8	7.2
	AFT							79		92		0.51	0 37	0.74	47 3	25 2	26 2	3 8	8 0	8.2

Table 28a2

[redacted]

EXPOSURE - PROCESSING SUMMARY [redacted]

[redacted]

MISSION NUMBER	CAMERA	SOLAR ELEVATION RANGE (°)		SOLAR AZIMUTH RANGE (°)		PREDICTED PROCESSING (%)			REPORTED PROCESSING (%)			COMPUTED PROCESSING (%)			TERRAIN D-MIN RANGE				TERRAIN D-MAX RANGE				CLOUD D-MAX RANGE				UNDER EXPOSED (%)	UNDER PROCESSED (%)	NOMINAL EXP & PRO (%)	OVER PROCESSED (%)	OVER EXPOSED (%)	CLOUD COVER (%)
		LOW	HIGH	LOW	HIGH	P	I	F	P	I	F	P	I	F	LOW	HIGH	MEAN	MEDIAN	LOW	HIGH	MEAN	MEDIAN	LOW	HIGH	MEAN	MEDIAN						
1004-1	FWD	-3	61	25	124	5	76	19	4	79	17	0	79	21	0 26	1 89	0 83	0 78	0 43	2 43	1 97	2 02	1 00	2 43	2 04	2 08	0	4	60	31	5	35
	AFT	-3	61	25	124	5	74	21	4	79	17	0	80	20	0 22	1 56	0 76	0 70	0 93	2 45	1 92	1 94	1 08	2 43	1 98	2 03	1	4	67	26	3	35
1004-2	FWD	-4	68	10	131	7	76	17	37	50	13	4	83	13	0 29	1 80	0 83	0 78	0 36	2 30	1 84	1 90	0 41	2 37	1 87	1 93	0	4	59	27	9	35
	AFT	-4	68	10	131	7	76	17	37	50	13	4	77	19	0 29	1 91	0 81	0 73	0 36	2 39	1 89	1 99	0 43	2 46	1 89	1 98	0	4	67	20	9	35
1006-1	FWD	38	56	52	140	1	99	0	1	51	48	0	51	49	0 23	1 81	0 71	0 68	0 80	2 31	1 58	1 52	1 31	2 40	2 20	2 24	0	5	72	21	1	60
	AFT	38	56	52	140	1	99	0	0	23	77	0	24	76	0 36	1 66	0 87	0 84	0 96	2 35	1 72	1 72	1 14	2 40	2 24	2 28	0	1	58	40	1	60
1006-2	FWD	32	64	36	147	2	98	0	30	41	29	11	59	30	0 21	1 14	0 53	0 50	0 56	2 28	1 49	1 50	1 30	2 33	2 11	2 16	2	21	72	4	0	45
	AFT	32	64	36	147	2	98	0	35	40	25	21	54	25	0 26	1 34	0 62	0 58	0 65	2 19	1 48	1 47	1 56	2 50	2 12	2 16	0	11	77	9	3	45
1007-1	FWD	12	49	50	105	0	5	95	1	20	79	0	25	75	0 26	1 22	0 52	0 47	0 52	2 20	1 44	1 40	1 22	1 36	2 17	2 21	20	8	67	5	0	60
	AFT	11	49	48	102	0	100	0	10	42	48	6	77	17	0 26	1 76	0 58	0 55	0 78	2 31	1 52	1 52	1 54	2 39	2 20	2 24	1	13	80	5	1	60
1007-2	FWD	32	57	43	112	0	25	75	3	28	69	0	26	74	0 26	1 23	0 51	0 48	0 70	2 32	1 44	1 40	0 90	2 37	2 15	2 20	18	9	71	2	0	65
	AFT	31	57	38	111	0	100	0	19	41	40	3	88	9	0 24	1 56	0 60	0 56	0 44	2 27	1 50	1 52	0 84	2 41	2 17	2 25	1	16	74	9	1	65
1008-1	FWD	30	51	50	102	0	100	0	4	32	64	1	35	64	0 32	1 48	0 66	0 62	0 78	2 24	1 55	1 54	1 46	2 35	2 21	2 24	2	2	86	8	1	45
	AFT	30	51	50	102	0	100	0	4	27	69	0	34	66	0 32	1 57	0 71	0 69	0 81	2 21	1 57	1 58	1 08	2 37	2 21	2 24	1	1	84	13	0	45
1008-2	FWD	29	56	42	105	0	100	0	3	31	66	0	27	73	0 14	1 81	0 76	0 72	0 57	2 10	1 54	1 55	1 09	2 40	2 20	2 25	2	1	73	23	1	65
	AFT	29	56	42	105	0	100	0	3	30	67	0	29	71	0 32	1 84	0 77	0 76	0 73	2 10	1 55	1 55	1 10	2 35	2 18	2 22	1	3	69	27	0	65
1009-1	FWD	12	49	42	132	0	100	0	1	26	73	0	34	66	0 32	1 40	0 65	0 62	0 85	2 41	1 53	1 52	0 83	2 51	2 30	2 36	5	4	77	14	0	50
	AFT	12	49	42	132	0	100	0	0	40	60	0	45	55	0 28	1 42	0 70	0 64	0 92	2 28	1 58	1 55	0 83	2 51	2 32	2 36	1	5	73	20	0	50
1009-2	FWD	23	58	35	138	2	98	0	3	21	76	0	40	60	0 29	1 55	0 69	0 64	0 73	2 37	1 53	1 53	1 06	2 45	2 25	2 30	4	4	74	17	0	55
	AFT	23	58	35	138	2	98	0	4	47	49	0	56	44	0 26	1 47	0 69	0 64	0 44	2 42	1 61	1 60	1 61	2 50	2 31	2 34	1	4	77	18	0	55
1010-1	FWD	18	47	45	83	0	21	79	0	13	87	0	9	91	0 28	1 14	0 52	0 47	0 43	2 32	1 38	1 32	1 11	2 42	2 16	2 20	18	3	75	4	0	48
	AFT	18	47	45	83	0	21	79	0	19	81	0	16	84	0 27	1 25	0 57	0 52	0 78	2 42	1 45	1 41	0 96	2 46	2 20	2 26	9	4	81	6	0	48
1010-2	FWD	15	52	38	76	0	50	50	0	16	84	0	13	87	0 26	1 51	0 55	0 50	0 52	2 36	1 41	1 38	1 00	2 44	2 14	2 20	22	4	67	6	0	45
	AFT	15	52	38	76	0	50	50	0	23	77	0	25	75	0 20	1 48	0 59	0 56	0 30	2 40	1 47	1 45	1 29	2 48	2 18	2 22	13	3	76	8	0	45
1011-1	FWD	2	55	33	66	0	64	36	2	23	75	2	23	75	0 18	0 99	0 50	0 46	0 56	2 36	1 48	1 43	0 78	2 40	2 07	2 18	17	11	70	2	0	40
	AFT	2	55	33	66	0	67	33	3	47	50	0	37	63	0 24	1 48	0 60	0 56	0 50	2 35	1 57	1 55	0 74	2 37	2 11	2 18	3	7	81	8	0	40
1012-1	FWD	0	45	38	71	0	64	36	7	56	37	0	65	35	0 25	1 30	0 59	0 53	0 54	2 39	1 40	1 42	0 90	2 39	1 93	2 00	6	17	68	10	0	60
	AFT	0	45	38	71	0	64	36	0	33	67	0	49	51	0 26	1 40	0 61	0 58	0 47	2 27	1 44	1 40	0 72	2 32	1 89	1 96	5	10	74	11	0	60
1012-2	FWD	0	57	34	106	0	77	23	6	44	50	0	49	51	0 30	1 20	0 58	0 55	0 73	2 32	1 49	1 42	0 67	2 34	1 91	2 00	4	9	80	7	0	40
	AFT	0	57	34	106	0	77	23	3	15	82	0	10	90	0 30	1 27	0 68	0 62	0 48	2 33	1 55	1 58	0 70	2 38	1 96	2 02	4	0	72	23	0	40
1013-1	FWD	0	56	28	83	0	64	36	0	42	58	0	55	45	0 20	1 66	0 56	0 36	0 52	2 29	1 56	1 59	1 21	2 41	2 03	2 10	7	13	76	4	0	47
	AFT	0	56	28	82	0	64	36	2	7	91	0	33	67	0 28	1 56	0 66	0 48	0 64	2 28	1 59	1 63	1 10	2 36	1 97	2 03	5	5	74	16	0	47
1014-1	FWD	0	59	15	71	0	21	79	1	38	61	0	63	37	0 17	0 99	0 40	0 36	0 26	2 36	1 40	1 42	1 01	2 38	1 94	2 05	27	33	39	1	0	40
	AFT	0	59	14	69	0	31	69	0	13	87	0	36	64	0 18	1 26	0 51	0 48	0 25	2 38	1 42	1 49	0 42	2 43	1 91	2 00	19	12	64	5	0	40
1014-2	FWD	0	77	0	36	0	21	79	0	26	74	0	61	39	0 17	1 06	0 36	0 31	0 23	2 32	1 30	1 36	0 42	2 36	1 72	1 80	31	40	27	2	0	40
	AFT	0	76	0	34	0	29	71	0	5	95	0	68	32	0 18	1 49	0 44	0 40	0 27	2 28	1 34	1 45	0 26	2 44	1 71	1 84	19	29	50	2	0	40
1015-1	FWD	5	68	19	68	0	8	92	2	2	96	0	2	98	0 25	1 70	0 54	0 47	0 54	2 28	1 44	1 46	0 46	2 41	1 86	1 90	28	0	65	7	0	45
	AFT	4	68	18	67	0	30	70	0	5	95	0	4	96	0 29	1 20	0 60	0 56	0 48	2 28	1 49	1 50	0 80	2 36	1 86	1 95	14	0	77	8	0	45
1015-2	FWD	0	80	-2	71	0	10	90	0	11	89	0	11	89	0 22	1 10	0 50	0 46	0 34	2 07	1 29	1 30	0 28	2 34	1 69	1 78	28	4	65	3	0	40
	AFT	0	79	-2	71	0	21	79	0	9	91	0	9	91	0 26	1 21	0 59	0 52	0 36	2 22	1 37	1 38	0 38	2 40	1 74	1 80	17	1	70	12	0	40
1016-1	FWD	5	69	13	76	0	7	93	1	41	58	0	59	41	0 13	1 55	0 51	0 45	0 70	2 43	1 67	1 68	0 85	2 44	1 91	1 90	19	17	56	8	1	48
	AFT	4	69	12	76	0	27	73	0	26	74	0	42	58	0 22	1 65	0 64	0 58	0 62	2 34	1 69	1 72	0 98	2 46	1 90	1 92	11	9	62	17	1	48
1016-2	FWD	1	84	-4	76	0	8	92	0	31	69	0	48	52	0 18	1 56	0 48	0 44	0 29	2 35	1 45	1 44	0 34	2 50	1 76	1 82	22	18	56	3	0	40
	AFT	0	84	-4	76	0	19	81	1	27	72	0	40	60	0 20	1 88	0 55	0 49	0 28	2 32	1 52	1 60	0 30	2 49	1 75	1 82	23	5	65	6	1	40
1017-1	FWD	-11	50	21	99	0	0	100	13	63	24	0	82	18	0 20	1 65	0 66	0 61	0 46	2 23	1 74	1 78	0 60	2 32	1 93	2 00	1	8	77	13	1	28
	AFT	-1	57	19	98	0	17	83	24	58	18	4	90	6	0 20	1 62	0 64	0 60	0 60	2 29	1 75	1 75	1 18	2 36	1 89	1 90	1	13	74	11	2	25
1017-2	FWD	1	78	9	139	0	0	100	5	62	33	7	77	16	0 22	1 22	0 58	0 55	0 37	2 30	1 70	1 80	0 86	2 37	1 93	1 94	3	14	74	9	0	30
	AFT	1	79	7	138	0	7	93	18	62	20	0	89	11	0 20	1 54	0 64	0 62	0 30	2 30	1 62	1 68	0 36	2 34	1 85	1 92	2	13	74	10	1	30
1018-1	FWD	6	77	13	134	0	0	100	9	63	28	1	83	16	0 19	1 46	0 56	0 52	0 64	2 22	1 66	1 73	1 00	2 32	1 96	1 99	2	19	71	7	0	35
	AFT	6	78	10	125	0	22	78	9	53	38	5	72	23	0 18	1 36	0 62	0 58	0 68	2 30	1 68	1 80	1 03	2 28	1 95	2 00	1	12	77	9	2	35
1018-2	FWD	8	77	14	134	0	0	100	18	74	8	17	79	4	0 16	1 78	0 57	0 49	0 90	2 24	1 50	1 54	0 90	2 26	1 85	1 91	1	31	56	9	4	48
	AFT	8	77	10	132	0	15	85	1	50	49	0	74	26	0 22	1 50	0 81	0 79	0 94	2 28	1 70	1 74	1 09	2 35	1 98	2 04	0	5	58	35	2	45

Table 18-3

[redacted]

EXPOSURE - PROCESSING SUMMARY

[redacted]

MISSION NUMBER	CAMERA	SOLAR ELEVATION RANGE (°)		SOLAR AZIMUTH RANGE (°)		PREDICTED PROCESSING (%)			REPORTED PROCESSING (%)			COMPUTED PROCESSING (%)			TERRAIN D-MIN RANGE				TERRAIN D-MAX RANGE				CLOUD D-MAX RANGE				UNDER EXPOSED (%)	UNDER PROCESSED (%)	NOMINAL EXP & PRO (%)	OVER PROCESSED (%)	OVER EXPOSED (%)	CL CO
		LOW	HIGH	LOW	HIGH	P	T	F	P	T	F	P	T	F	LOW	HIGH	MEAN	MEDIAN	LOW	HIGH	MEAN	MEDIAN	LOW	HIGH	MEAN	MEDIAN						
1019-1	FWD	24	70	24	152	0	21	79	22	32	46	4	56	40	0 26	1 92	0.71	0 61	0.60	2 15	1 45	1 50	0 84	2 26	1 94	2 00	4	7	64	17	7	
	AFT	23	70	21	152	0	92	8	26	55	19	3	87	10	0 13	1 70	0 66	0.60	0.39	2.26	1 46	1 45	0 80	2 30	1 98	2 02	1	13	70	14	3	
1020-1	FWD	30	75	19	156	0	19	81	13	48	39	1	58	41	0 23	1 30	0 55	0.52	0.80	2.28	1 57	1 54	1 40	2 38	2 10	2.16	1	18	78	4	0	
	AFT	29	75	17	156	0	64	36	15	56	29	0	74	26	0 23	1 20	0 55	0.54	0.70	2.20	1 47	1 46	1 22	2 29	2 04	2 10	0	18	76	5	0	
1020-2	FWD	47	69	18	35	INSUFFICIENT DATA																										
	AFT	46	68	17	33																											
1021-1	FWD	15	66	-148	-23	0	68	32	14	39	47	1	52	47	0 25	1 90	0 64	0.58	0.74	2.18	1 50	1 50	0 97	2 36	1.92	2.00	5	9	72	11	3	
	AFT	14	66	-147	-25	0	99	1	15	38	47	0	57	43	0 17	1 70	0 65	0.57	0.54	2.24	1 45	1 42	0 85	2 30	1 90	2.00	5	5	75	12	3	
1021-2	FWD	13	52	-133	-41	0	29	71	13	41	46	0	57	43	0 18	1 52	0.54	0 50	0.60	2.36	1 36	1 54	1 05	2.23	1 82	1 85	14	13	66	6	0	
	AFT	13	52	-133	-41	0	100	0	53	25	22	0	50	50	0 33	1 38	0 76	0.76	0.70	2 30	1 52	1 50	1 30	2.36	1 94	1 94	6	0	71	21	1	
1022-1	FWD	28	67	30	150	0	36	64	8	36	56	0	42	58	0 18	1 49	0 45	0.40	0.54	2.42	1 57	1 60	1 32	2 55	2 24	2 29	30	19	47	3	0	
	AFT	27	67	26	150	0	89	11	7	42	51	0	53	47	0 24	1 48	0 57	0 50	0.52	2 30	1 63	1 68	1 30	2 47	2 21	2 25	4	15	71	9	1	
1022-2	FWD	29	74	21	152	0	8	92	1	37	62	0	43	57	0 20	0 99	0 39	0.35	0 62	2.65	1 45	1 45	1 16	2 45	2 23	2 28	55	28	35	1	0	
	AFT	28	74	19	152	0	100	0	10	44	46	0	53	47	0 21	1 40	0 48	0.44	0.50	2 32	1 51	1 52	1 45	2.49	2 25	2 28	10	25	61	4	0	
1023-1	FWD	22	82	4	164	0	5	95	19	54	27	0	72	28	0 15	1 26	0 39	0.35	0.43	2 41	1 22	1 22	0 87	2 41	2 06	2 11	20	44	34	2	0	
	AFT	20	81	8	163	0	11	89	0	39	61	0	42	58	0 20	1 40	0 53	0.48	0.41	2.21	1 31	1 37	0 94	2 45	2 15	2 20	13	14	65	7	0	
1023-2	FWD	29	81	-13	177	0	7	93	0	19	81	0	18	82	0 22	1 38	0 48	0.42	0.41	2.03	1 18	1 22	0 90	2 41	2.03	2.11	35	2	60	2	1	
	AFT	28	80	-13	178	0	3	97	0	34	66	0	28	72	0 22	1.60	0 52	0.48	0.44	2.31	1.24	1.24	1 08	2 46	2 10	2.17	13	10	73	4	0	
1024-1	FWD	10	61	24	137	0	0	100	0	57	43	0	72	28	0 17	1.74	0 35	0.32	0.40	2.25	1.22	1.15	0 58	2 34	1.97	2.03	27	49	23	0	0	
	AFT	9	61	21	136	0	0	100	0	28	72	0	82	18	0 20	1 22	0 40	0.37	0.48	2.32	1 30	1.24	0 94	2.40	1.97	2.06	13	46	39	2	0	
1024-2	FWD	9	79	11	151	0	0	100	12	19	69	0	25	75	0 24	1 17	0 46	0 42	0.35	2.40	1.30	1.27	1.01	2.45	1 91	1.99	36	3	58	2	0	
	AFT	8	79	9	151	0	0	100	1	22	77	0	66	34	0 20	1 39	0 47	0.40	0.29	2.26	1 31	1.32	0.90	2 40	1.89	1.95	20	25	50	5	0	
1025-1	FWD	1	70	-123	-18	0	68	32	10	41	49	0	56	44	0 18	1 42	0 43	0.37	0.29	2.36	1 37	1 39	0 42	2 35	1 81	1 92	33	25	38	4	1	
	AFT	0	70	-121	-19	0	72	28	8	49	43	0	61	39	0 18	1 69	0 49	0.42	0.26	2.26	1 33	1 38	0 23	2 32	1 75	1.90	25	20	47	7	1	
1025-2	FWD	0	56	-124	-31	0	71	29	3	42	55	0	56	44	0 16	1 22	0 45	0 39	0.26	2.24	1 32	1 33	0 63	2 29	1 78	1.89	29	21	45	4	0	
	AFT	0	56	-122	-33	0	73	27	3	45	52	0	51	49	0 21	1 32	0 53	0.48	0 39	2.16	1 31	1 35	0 48	2 23	1 71	1 79	19	12	61	8	0	
1026-1	FWD	0	57	23	135	0	4	96	0	21	79	0	24	76	0 20	1 26	0 38	0.33	0 31	2.27	1 22	1 22	0 40	2 28	1 77	1 87	57	13	28	2	0	
	AFT	0	57	21	135	0	5	95	0	4	96	0	38	62	0 20	1 16	0 39	0.34	0.24	2.36	1 29	1 30	0 37	2 40	1 78	1 86	39	27	33	1	0	
1026-2	FWD	1	72	8	84	0	0	100	1	5	94	0	5	95	0 19	1 32	0 36	0 30	0 23	2.17	1 05	1 02	0 48	2 24	1 83	1 70	78	2	19	1	0	
	AFT	0	57	13	78	0	0	100	2	5	93	0	15	85	0 21	1 35	0 39	0.32	0.27	2.20	1 08	1 03	0 30	2 26	1 61	1 70	60	12	25	3	0	
1027-1	FWD	3	63	26	110	0	0	100	0	0	100	0	3	97	0 26	1 54	0 52	0.46	0.50	2.38	1 45	1 52	0 71	2 39	2 03	2.10	36	2	58	4	0	
	AFT	2	63	26	108	0	0	100	0	21	79	0	20	80	0 26	1 34	0 58	0.53	0.34	2.30	1 46	1 46	0.40	2 40	1 96	2.06	12	3	78	7	0	

[redacted]

SECTION A

APPENDIX

MISSION • 1027-1 • INSTRUMENT • FRWD 05/06/66 DENSITY FREQ DISTR

DENSITY VALUE	PRIMARY MIN	PRIMARY MAX	PRIMARY LIM	INTERMEDIATE MIN	INTERMEDIATE MAX	INTERMEDIATE LIM	FULL MIN	FULL MAX	FULL LIM	ALL LEVELS MIN	ALL LEVELS MAX	ALL LEVELS LIM
0.01	0	0	0	0	0	0	0	0	0	0	0	0
0.02	0	0	0	0	0	0	0	0	0	0	0	0
0.03	0	0	0	0	0	0	0	0	0	0	0	0
0.04	0	0	0	0	0	0	0	0	0	0	0	0
0.05	0	0	0	0	0	0	0	0	0	0	0	0
0.06	0	0	0	0	0	0	0	0	0	0	0	0
0.07	0	0	0	0	0	0	0	0	0	0	0	0
0.08	0	0	0	0	0	0	0	0	0	0	0	0
0.09	0	0	0	0	0	0	0	0	0	0	0	0
0.10	0	0	0	0	0	0	0	0	0	0	0	0
0.11	0	0	0	0	0	0	0	0	0	0	0	0
0.12	0	0	0	0	0	0	0	0	0	0	0	0
0.13	0	0	0	0	0	0	0	0	0	0	0	0
0.14	0	0	0	0	0	0	0	0	0	0	0	0
0.15	0	0	0	0	0	0	0	0	0	0	0	0
0.16	0	0	0	0	0	0	0	0	0	0	0	0
0.17	0	0	0	0	0	0	0	0	0	0	0	0
0.18	0	0	0	0	0	0	0	0	0	0	0	0
0.19	0	0	0	0	0	0	0	0	0	0	0	0
0.20	0	0	0	0	0	0	0	0	0	0	0	0
0.21	0	0	0	0	0	0	0	0	0	0	0	0
0.22	0	0	0	0	0	0	0	0	0	0	0	0
0.23	0	0	0	0	0	0	0	0	0	0	0	0
0.24	0	0	0	0	0	0	0	0	0	0	0	0
0.25	0	0	0	0	0	0	0	0	0	0	0	0
0.26	0	0	0	0	0	0	4	0	0	4	0	0
0.27	0	0	0	1	0	0	1	0	0	1	0	0
0.28	0	0	0	1	0	0	9	0	0	10	0	0
0.29	0	0	0	2	0	0	5	0	0	7	0	0
0.30	0	0	0	2	0	0	5	0	0	7	0	0
0.31	0	0	0	0	0	0	5	0	0	5	0	0
0.32	0	0	0	0	0	0	1	0	0	1	0	0
0.33	0	0	0	0	0	0	3	0	0	3	0	0
0.34	0	0	0	0	0	0	3	0	0	3	0	0
0.35	0	0	0	0	0	0	6	0	0	6	0	0
0.36	0	0	0	0	0	0	7	0	0	7	0	0
0.37	0	0	0	0	0	0	8	0	0	8	0	0
0.38	0	0	0	0	0	0	1	0	0	1	0	0
0.39	0	0	0	0	0	0	4	0	0	4	0	0
0.40	0	0	0	0	0	0	1	0	0	1	0	0
0.41	0	0	0	0	0	0	6	0	0	6	0	0
0.42	0	0	0	0	0	0	3	0	0	3	0	0
0.43	0	0	0	0	0	0	1	0	0	1	0	0
0.44	0	0	0	1	0	0	1	0	0	2	0	0
0.45	0	0	0	0	0	0	6	0	0	6	0	0
0.46	0	0	0	0	0	0	1	0	0	1	0	0
0.47	0	0	0	0	0	0	4	0	0	4	0	0
0.48	0	0	0	0	0	0	1	0	0	1	0	0
0.49	0	0	0	0	0	0	4	0	0	4	0	0
0.50	0	0	0	0	0	0	1	0	0	1	0	0
SUBTOTAL	0	0	0	5	0	0	88	1	0	93	1	0

[redacted]

Table A-1

[redacted]

MISSION • 1027-1 • INSTRUMENT • FRWD 05/06/66 DENSITY FREQ DISTR

DENSITY VALUE	PRIMARY MIN	PRIMARY MAX	PRIMARY LIM	INTERMEDIATE MIN	INTERMEDIATE MAX	INTERMEDIATE LIM	FULL MIN	FULL MAX	FULL LIM	ALL LEVELS MIN	ALL LEVELS MAX	ALL LEVELS LIM
0.51	0	0	0	0	0	0	0	0	0	0	0	0
0.52	0	0	0	0	0	0	2	0	0	2	0	0
0.53	0	0	0	0	1	0	3	1	0	3	2	0
0.54	0	0	0	0	0	0	3	1	0	3	1	0
0.55	0	0	0	0	0	0	1	0	0	1	0	0
0.56	0	0	0	0	0	0	2	0	0	2	0	0
0.57	0	0	0	0	0	0	1	0	0	1	0	0
0.58	0	0	0	0	0	0	2	1	0	2	1	0
0.59	0	0	0	0	0	0	1	0	0	1	0	0
0.60	0	0	0	0	0	0	3	0	0	3	0	0
0.61	0	0	0	0	0	0	0	0	0	0	0	0
0.62	0	0	0	0	0	0	2	0	0	2	0	0
0.63	0	0	0	0	0	0	1	0	0	1	0	0
0.64	0	0	0	0	0	0	4	0	0	4	0	0
0.65	0	0	0	0	0	0	0	0	0	0	0	0
0.66	0	0	0	0	0	0	4	0	0	4	0	0
0.67	0	0	0	0	0	0	2	0	0	2	0	0
0.68	0	0	0	0	0	0	1	0	0	1	0	0
0.69	0	0	0	0	0	0	0	0	0	0	0	0
0.70	0	0	0	0	0	0	4	0	0	4	0	0
0.71	0	0	0	0	0	0	0	1	0	0	1	0
0.72	0	0	0	0	0	0	3	0	0	3	0	0
0.73	0	0	0	0	0	0	0	1	0	0	1	0
0.74	0	0	0	0	0	0	0	2	0	0	2	0
0.75	0	0	0	0	0	0	0	0	0	0	0	0
0.76	0	0	0	0	0	0	1	0	0	1	0	0
0.77	0	0	0	0	0	0	0	1	0	0	1	0
0.78	0	0	0	0	0	0	4	0	0	4	0	0
0.79	0	0	0	0	0	0	2	1	0	2	1	0
0.80	0	0	0	0	0	0	3	0	0	3	0	0
0.81	0	0	0	0	0	0	0	1	0	0	1	0
0.82	0	0	0	0	0	0	3	0	0	3	0	0
0.83	0	0	0	0	0	0	0	1	0	0	1	0
0.84	0	0	0	0	0	0	1	0	0	1	0	0
0.85	0	0	0	0	0	0	1	2	0	1	2	0
0.86	0	0	0	0	0	0	1	0	0	1	0	0
0.87	0	0	0	0	0	0	0	0	0	0	0	0
0.88	0	0	0	0	0	0	1	0	0	1	0	0
0.89	0	0	0	0	0	0	0	0	0	0	0	0
0.90	0	0	0	0	0	0	2	2	0	2	2	0
0.91	0	0	0	0	0	0	0	1	0	0	1	0
0.92	0	0	0	0	0	0	0	2	0	0	2	0
0.93	0	0	0	0	0	0	1	0	0	1	0	0
0.94	0	0	0	0	0	0	1	2	0	1	2	0
0.95	0	0	0	0	0	0	1	0	0	1	0	0
0.96	0	0	0	0	0	0	0	1	0	0	1	0
0.97	0	0	0	0	0	0	0	0	0	0	0	0
0.98	0	0	0	0	0	0	0	1	0	0	1	0
0.99	0	0	0	0	0	0	0	0	0	0	0	0
1.00	0	0	0	0	0	0	0	4	1	0	4	1
SUBTOTAL	0	0	0	0	2	0	60	28	2	60	30	2

[redacted]

Table A-1

~~TOP SECRET~~ [redacted]

MISSION • 1027-1 • INSTRUMENT • FRWD 05/06/66 DENSITY FREQ DIST

DENSITY VALUE	PRIMARY MIN	PRIMARY MAX	PRIMARY LIM	INTERMEDIATE MIN	INTERMEDIATE MAX	INTERMEDIATE LIM	FULL MIN	FULL MAX	FULL LIM	ALL LEVELS MIN	ALL LEVELS MAX	ALL LEVELS LIM
1.01	0	0	0	0	0	0	0	0	0	0	0	0
1.02	0	0	0	0	0	0	2	1	0	2	1	0
1.03	0	0	0	0	0	0	0	1	0	0	1	0
1.04	0	0	0	0	0	0	0	1	0	0	1	0
1.05	0	0	0	0	0	0	0	3	0	0	3	0
1.06	0	0	0	0	0	0	0	1	0	0	1	0
1.07	0	0	0	0	0	0	0	1	0	0	1	0
1.08	0	0	0	0	0	0	0	1	0	0	1	0
1.09	0	0	0	0	0	0	0	1	0	0	1	0
1.10	0	0	0	0	0	0	0	2	0	0	2	0
1.11	0	0	0	0	0	0	0	2	0	0	2	0
1.12	0	0	0	0	0	0	1	0	0	1	0	0
1.13	0	0	0	0	0	0	0	0	0	0	0	0
1.14	0	0	0	0	0	0	0	2	0	0	2	0
1.15	0	0	0	0	0	0	0	0	0	0	0	0
1.16	0	0	0	0	0	0	0	1	0	0	1	0
1.17	0	0	0	0	0	0	0	2	0	0	2	0
1.18	0	0	0	0	0	0	1	0	0	1	0	0
1.19	0	0	0	0	0	0	0	1	0	0	1	0
1.20	0	0	0	0	0	0	0	0	0	0	0	0
1.21	0	0	0	0	0	0	0	2	0	0	2	0
1.22	0	0	0	0	0	0	0	0	0	0	0	0
1.23	0	0	0	0	0	0	0	1	0	0	1	0
1.24	0	0	0	0	0	0	0	0	0	0	0	0
1.25	0	0	0	0	0	0	0	1	0	0	1	0
1.26	0	0	0	0	0	0	0	0	0	0	0	0
1.27	0	0	0	0	0	0	0	1	0	0	1	0
1.28	0	0	0	0	0	0	0	0	0	0	0	0
1.29	0	0	0	0	0	0	0	1	0	0	1	0
1.30	0	0	0	0	0	0	0	0	0	0	0	0
1.31	0	0	0	0	0	0	0	1	0	0	1	0
1.32	0	0	0	0	0	0	0	0	0	0	0	0
1.33	0	0	0	0	0	0	0	1	0	0	1	0
1.34	0	0	0	0	0	0	0	0	0	0	0	0
1.35	0	0	0	0	0	0	0	1	0	0	1	0
1.36	0	0	0	0	0	0	0	0	0	0	0	0
1.37	0	0	0	0	0	0	0	1	0	0	1	0
1.38	0	0	0	0	0	0	0	0	0	0	0	0
1.39	0	0	0	0	0	0	0	1	0	0	1	0
1.40	0	0	0	0	0	0	0	0	0	0	0	0
1.41	0	0	0	0	0	0	0	1	0	0	1	0
1.42	0	0	0	0	0	0	0	0	0	0	0	0
1.43	0	0	0	0	0	0	0	2	0	0	2	0
1.44	0	0	0	0	0	0	0	1	0	0	1	0
1.45	0	0	0	0	0	0	0	2	0	0	2	0
1.46	0	0	0	0	0	0	0	0	0	0	0	0
1.47	0	0	0	0	0	0	0	1	0	0	1	0
1.48	0	0	0	0	0	0	0	0	0	0	0	0
1.49	0	0	0	0	0	0	0	3	0	0	3	0
1.50	0	0	0	0	0	0	0	2	0	0	2	0
SUBTOTAL	0	0	0	1	0	0	4	46	7	4	47	7

~~TOP SECRET~~ [redacted]

Table A-1

~~TOP SECRET~~ [redacted]

MISSION • 1027-1 • INSTRUMENT • FRWD 05/06/66 DENSITY FREQ DISTR

DENSITY VALUE	PRIMARY MIN	PRIMARY MAX	PRIMARY LIM	INTERMEDIATE MIN	INTERMEDIATE MAX	INTERMEDIATE LIM	FULL MIN	FULL MAX	FULL LIM	ALL LEVELS MIN	ALL LEVELS MAX	ALL LEVELS LIM
1.51	0	0	0	0	0	0	0	1	1	0	1	1
1.52	0	0	0	0	1	0	0	6	1	0	7	1
1.53	0	0	0	0	0	0	0	0	1	0	0	1
1.54	0	0	0	0	0	0	0	1	0	0	1	0
1.55	0	0	0	0	0	0	0	1	0	0	1	0
1.56	0	0	0	0	0	0	0	2	0	0	2	0
1.57	0	0	0	0	0	0	0	3	0	0	3	0
1.58	0	0	0	0	0	0	0	0	0	0	0	0
1.59	0	0	0	0	0	0	0	1	0	0	1	0
1.60	0	0	0	0	0	0	0	2	0	0	2	0
1.61	0	0	0	0	0	0	0	3	0	0	3	0
1.62	0	0	0	0	0	0	0	0	0	0	0	0
1.63	0	0	0	0	0	0	0	1	0	0	1	0
1.64	0	0	0	0	0	0	0	2	0	0	2	0
1.65	0	0	0	0	0	0	0	3	0	0	3	0
1.66	0	0	0	0	0	0	0	5	0	0	5	0
1.67	0	0	0	0	0	0	0	1	0	0	1	0
1.68	0	0	0	0	0	0	0	2	0	0	2	0
1.69	0	0	0	0	0	0	0	3	0	0	3	0
1.70	0	0	0	0	0	0	0	0	0	0	0	0
1.71	0	0	0	0	0	0	0	1	0	0	1	0
1.72	0	0	0	0	0	0	0	2	0	0	2	0
1.73	0	0	0	0	0	0	0	3	0	0	3	0
1.74	0	0	0	0	0	0	0	0	0	0	0	0
1.75	0	0	0	0	0	0	0	1	0	0	1	0
1.76	0	0	0	0	0	0	0	2	0	0	2	0
1.77	0	0	0	0	0	0	0	3	0	0	3	0
1.78	0	0	0	0	0	0	0	0	0	0	0	0
1.79	0	0	0	0	0	0	0	1	0	0	1	0
1.80	0	0	0	0	0	0	0	2	0	0	2	0
1.81	0	0	0	0	0	0	0	3	0	0	3	0
1.82	0	0	0	0	0	0	0	0	0	0	0	0
1.83	0	0	0	0	0	0	0	1	0	0	1	0
1.84	0	0	0	0	0	0	0	2	0	0	2	0
1.85	0	0	0	0	0	0	0	3	0	0	3	0
1.86	0	0	0	0	0	0	0	0	0	0	0	0
1.87	0	0	0	0	0	0	0	1	0	0	1	0
1.88	0	0	0	0	0	0	0	2	0	0	2	0
1.89	0	0	0	0	0	0	0	3	0	0	3	0
1.90	0	0	0	0	1	0	0	4	0	0	5	0
1.91	0	0	0	0	0	0	0	2	0	0	2	0
1.92	0	0	0	0	0	0	0	3	0	0	3	0
1.93	0	0	0	0	0	0	0	1	0	0	1	0
1.94	0	0	0	0	0	0	0	2	0	0	2	0
1.95	0	0	0	0	0	0	0	1	0	0	1	0
1.96	0	0	0	0	0	0	0	0	0	0	0	0
1.97	0	0	0	0	0	0	0	1	0	0	1	0
1.98	0	0	0	0	0	0	0	0	0	0	0	0
1.99	0	0	0	0	0	0	0	1	0	0	1	0
2.00	0	0	0	0	0	0	0	0	1	0	0	1
SUBTOTAL	0	0	0	0	2	0	0	4	1	0	5	1
							1	61	44	1	63	48

~~TOP SECRET~~ [redacted]

Table A-1

~~TOP SECRET~~ [redacted]

MISSION • 1027-1 • INSTRUMENT • FWD 05/06/66 DENSITY FREQ DISTR

DENSITY VALUE	PRIMARY MIN	PRIMARY MAX	PRIMARY LIM	INTERMEDIATE MIN	INTERMEDIATE MAX	INTERMEDIATE LIM	FULL MIN	FULL MAX	FULL LIM	ALL LEVELS MIN	ALL LEVELS MAX	ALL LEVELS LIM
2.01	0	0	0	0	0	0	0	0	0	0	0	0
2.02	0	0	0	0	0	0	0	0	4	0	0	4
2.03	0	0	0	0	0	0	0	0	3	0	0	3
2.04	0	0	0	0	0	0	0	0	3	0	0	3
2.05	0	0	0	0	0	0	0	0	2	0	0	2
2.06	0	0	0	0	0	0	0	0	1	0	0	1
2.07	0	0	0	0	0	0	0	0	0	0	0	0
2.08	0	0	0	0	0	0	0	0	5	0	0	5
2.09	0	0	0	0	0	0	0	0	2	0	0	2
2.10	0	0	0	0	0	0	0	0	5	0	0	5
2.11	0	0	0	0	0	0	0	0	1	0	0	1
2.12	0	0	0	0	0	0	0	0	0	0	0	0
2.13	0	0	0	0	0	0	0	0	1	0	0	1
2.14	0	0	0	0	0	0	0	0	1	0	0	1
2.15	0	0	0	0	0	0	0	0	0	0	0	0
2.16	0	0	0	0	0	0	0	0	2	0	0	2
2.17	0	0	0	0	0	0	0	0	1	0	0	1
2.18	0	0	0	0	0	0	0	0	1	0	0	1
2.19	0	0	0	0	0	0	0	0	0	0	0	0
2.20	0	0	0	0	0	0	0	0	6	0	0	6
2.21	0	0	0	0	0	0	0	0	0	0	0	0
2.22	0	0	0	0	0	0	0	0	2	0	0	2
2.23	0	0	0	0	0	0	0	0	1	0	0	1
2.24	0	0	0	0	0	0	0	0	5	0	0	5
2.25	0	0	0	0	0	0	0	0	4	0	0	4
2.26	0	0	0	0	0	0	0	0	2	0	0	2
2.27	0	0	0	0	0	0	0	0	0	0	0	0
2.28	0	0	0	0	0	0	0	0	6	0	0	6
2.29	0	0	0	0	0	0	0	0	2	0	0	2
2.30	0	0	0	0	0	0	0	0	7	0	0	7
2.31	0	0	0	0	0	0	0	0	1	0	0	1
2.32	0	0	0	0	0	0	0	0	8	0	0	8
2.33	0	0	0	0	0	0	0	0	0	0	0	0
2.34	0	0	0	0	0	0	0	0	3	0	0	3
2.35	0	0	0	0	0	0	0	0	3	0	0	3
2.36	0	0	0	0	0	0	0	0	5	0	0	5
2.37	0	0	0	0	0	0	0	0	3	0	0	3
2.38	0	0	0	0	0	0	0	0	1	0	0	1
2.39	0	0	0	0	0	0	0	0	4	0	0	4
2.40	0	0	0	0	0	0	0	0	0	0	0	0
2.41	0	0	0	0	0	0	0	0	0	0	0	0
2.42	0	0	0	0	0	0	0	0	0	0	0	0
2.43	0	0	0	0	0	0	0	0	0	0	0	0
2.44	0	0	0	0	0	0	0	0	0	0	0	0
2.45	0	0	0	0	0	0	0	0	0	0	0	0
2.46	0	0	0	0	0	0	0	0	0	0	0	0
2.47	0	0	0	0	0	0	0	0	0	0	0	0
2.48	0	0	0	0	0	0	0	0	0	0	0	0
2.49	0	0	0	0	0	0	0	0	0	0	0	0
2.50	0	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	0	0	0	0	0	0	0	17	98	0	17	98

~~TOP SECRET~~ [redacted]

Table A-1

~~TOP SECRET~~ [redacted]

MISSION • 1027-1 • INSTRUMENT • FRWD 05/06/66 DENSITY FREQ DISTR

DENSITY VALUE	PRIMARY MIN	PRIMARY MAX	PRIMARY LIM	INTERMEDIATE MIN	INTERMEDIATE MAX	INTERMEDIATE LIM	FULL MIN	FULL MAX	FULL LIM	ALL LEVELS MIN	ALL LEVELS MAX	ALL LEVELS LIM
2.51	0	0	0	0	0	0	0	0	0	0	0	0
2.52	0	0	0	0	0	0	0	0	0	0	0	0
2.53	0	0	0	0	0	0	0	0	0	0	0	0
2.54	0	0	0	0	0	0	0	0	0	0	0	0
2.55	0	0	0	0	0	0	0	0	0	0	0	0
2.56	0	0	0	0	0	0	0	0	0	0	0	0
2.57	0	0	0	0	0	0	0	0	0	0	0	0
2.58	0	0	0	0	0	0	0	0	0	0	0	0
2.59	0	0	0	0	0	0	0	0	0	0	0	0
2.60	0	0	0	0	0	0	0	0	0	0	0	0
2.61	0	0	0	0	0	0	0	0	0	0	0	0
2.62	0	0	0	0	0	0	0	0	0	0	0	0
2.63	0	0	0	0	0	0	0	0	0	0	0	0
2.64	0	0	0	0	0	0	0	0	0	0	0	0
2.65	0	0	0	0	0	0	0	0	0	0	0	0
2.66	0	0	0	0	0	0	0	0	0	0	0	0
2.67	0	0	0	0	0	0	0	0	0	0	0	0
2.68	0	0	0	0	0	0	0	0	0	0	0	0
2.69	0	0	0	0	0	0	0	0	0	0	0	0
2.70	0	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	0	5	5	4	153	153	151	158	158	155

MISSION 1027-1 INSTR - FRWD 05/06/66 PROCESSING AND EXPOSURE ANALYS

PROCESS LEVEL	SAMPLE SIZE	UNDER EXPOSED	UNDER PROCESSED	CORRECT EXP+PROC	OVER PROCESSED	OVER EXPOSED
PRIMARY	0	0 PC	0 PC	0 PC	0 PC	[redacted]
INTERMEDIATE	5	0 PC	60 PC	40 PC	0 PC	[redacted]
FULL	153	37 PC	0 PC	58 PC	5 PC	[redacted]
ALL LEVELS	158	36 PC	2 PC	58 PC	4 PC	[redacted]

PROCESS LEVEL	BASE + FOG	UNDER EXPOSED	UNDER PROCESSED	CORRECT EXP+PROC	OVER PROCESSED	OVER EXPOSED
PRIMARY	0.01-0.09	0.01-0.13	0.14-0.39	0.40-0.90	---------	0.91 AND U
INTERMED	0.10-0.17	0.01-0.29	0.21-0.39	0.40-0.90	0.91-1.34	1.35 AND U
FULL	0.18 AND UP	0.01-0.39	---------	0.40-0.90	0.91-1.69	1.70 AND U

MISSION 1027-1 INSTR - AFT 05/06/66 PROCESSING AND EXPOSURE ANALYS

PROCESS LEVEL	SAMPLE SIZE	UNDER EXPOSED	UNDER PROCESSED	CORRECT EXP+PROC	OVER PROCESSED	OVER EXPOSED
PRIMARY	0	0 PC	0 PC	0 PC	0 PC	0 PC
INTERMEDIATE	5	0 PC	13 PC	77 PC	10 PC	0 PC
FULL	153	15 PC	0 PC	79 PC	6 PC	0 PC
ALL LEVELS	158	12 PC	3 PC	78 PC	7 PC	0 PC

PROCESS LEVEL	BASE + FOG	UNDER EXPOSED	UNDER PROCESSED	CORRECT EXP+PROC	OVER PROCESSED	OVER EXPOSED
PRIMARY	0.01-0.09	0.01-0.13	0.14-0.39	0.40-0.90	---------	0.91 AND U
INTERMED	0.10-0.17	0.01-0.29	0.21-0.39	0.40-0.90	0.91-1.34	1.35 AND U
FULL	0.18 AND UP	0.01-0.39	---------	0.40-0.90	0.91-1.69	1.70 AND U

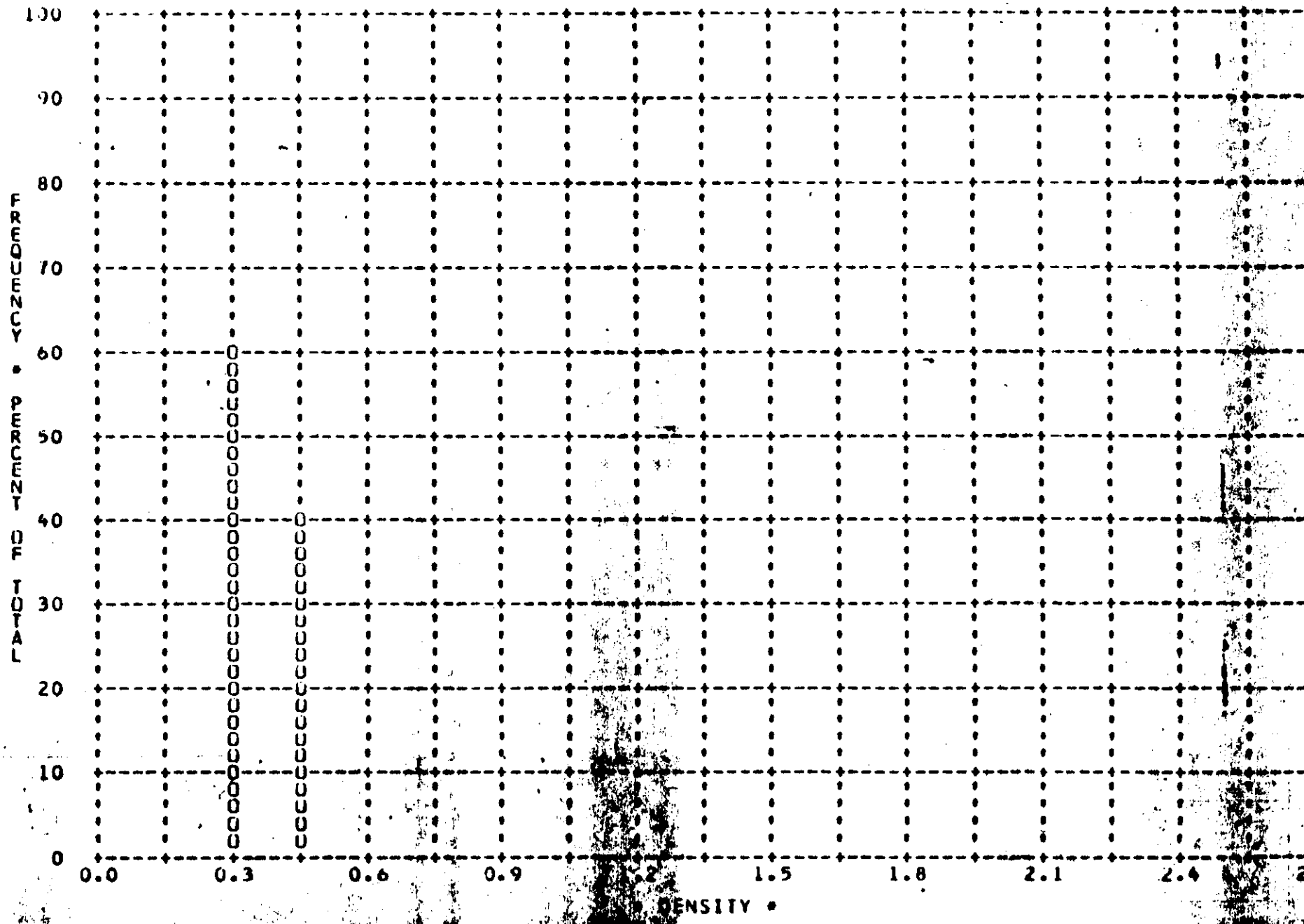
~~TOP SECRET~~ [redacted]

Table A-1

~~TOP SECRET~~ [redacted]

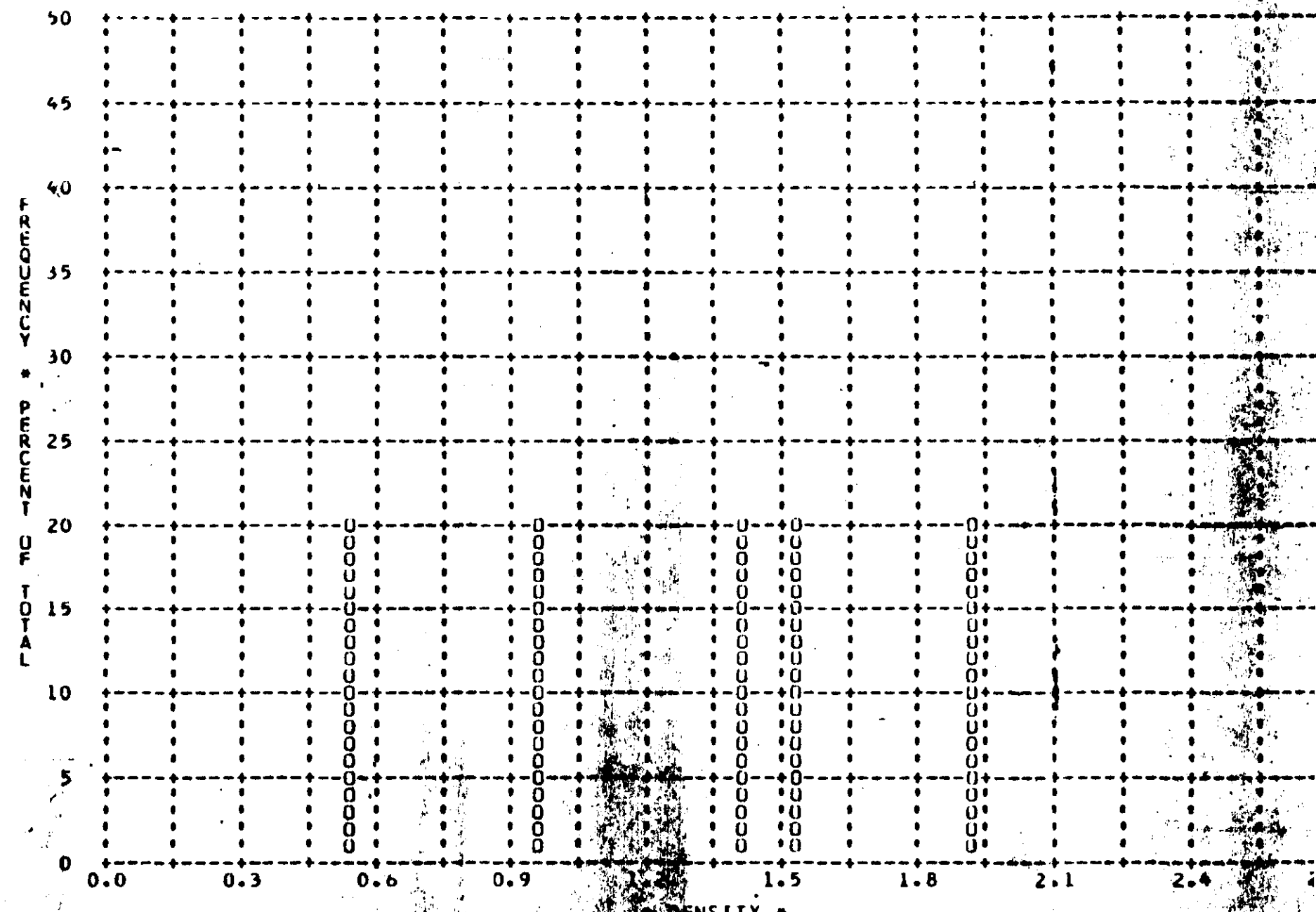
MISSION • 1027-1 • MSTR • FRWD • 05/06/66 PLOT OF D MIN • TERRAIN • PROCESSING • INTERMEDIATE

ARITH MEAN • 0.35 • MEDIAN • 0.30 • STD DEV • 0.08 • RANGE • 0.28 TO 0.45 WITH 5 SAMPLES



MISSION • 1027-1 • INSTR • FRWD • 05/06/66 PLOT OF D MAX • TERRAIN • PROCESSING • INTERMEDIATE

ARITH MEAN • 1.26 • MEDIAN • 1.40 • STD DEV • 0.53 • RANGE • 0.53 TO 1.90 WITH 5 SAMPLES



[redacted]

Figure A-2

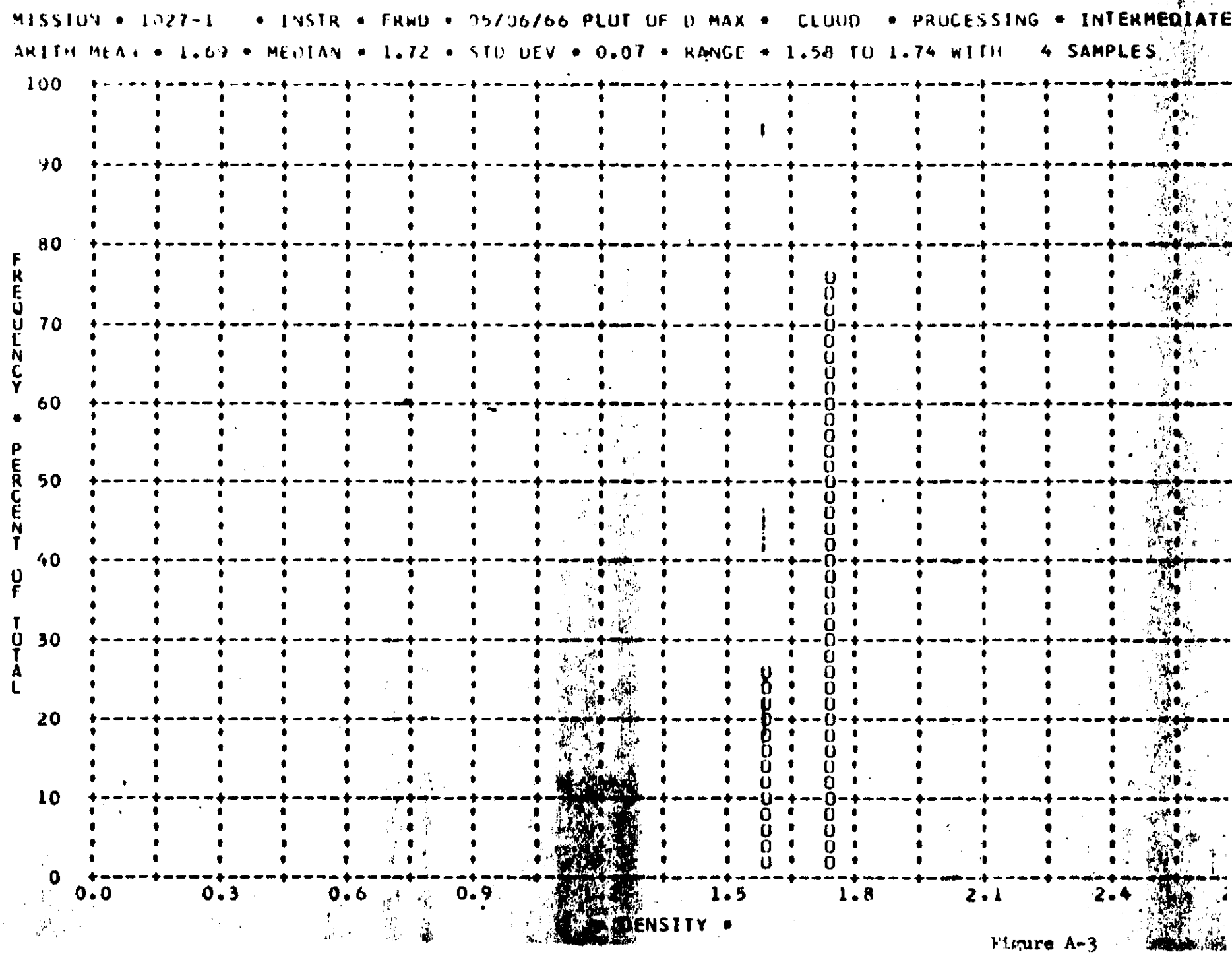
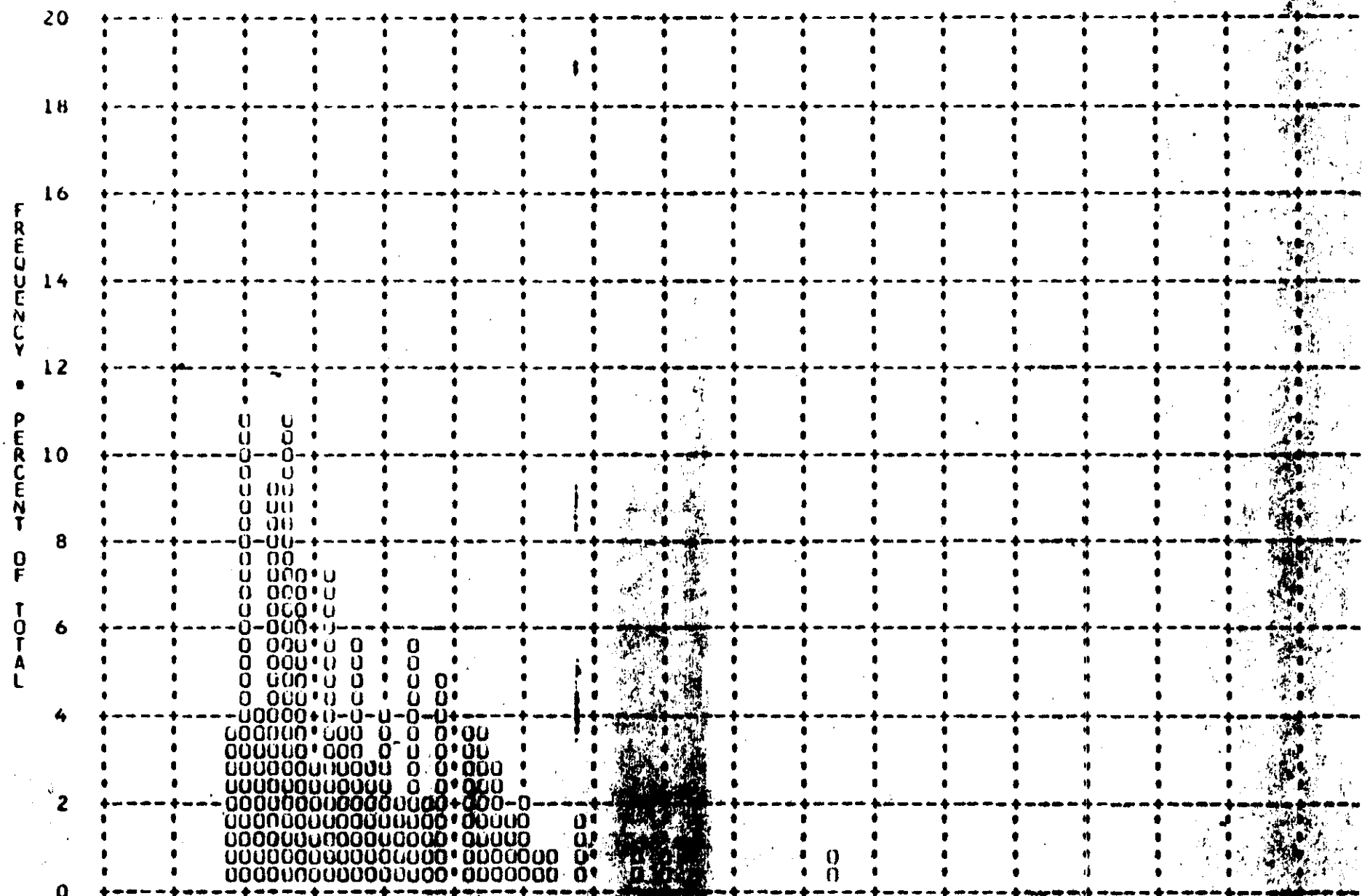

MISSION • 1027-1 • INSTR • FRWD • 05/06/66 PLOT OF D MAX • CLOUD • PROCESSING • INTERMEDIATE
ARITH MEA • 1.69 • MEDIAN • 1.72 • STD DEV • 0.07 • RANGE • 1.58 TO 1.74 WITH 4 SAMPLES
FREQUENCY • PERCENT OF TOTAL
100
90
80
70
60
50
40
30
20
10
0
0.0
0.3
0.6
0.9
1.5
1.8
2.1
2.4
DENSITY •

Figure A-3

MISSION • 1027-1 • E-STR • FRWD • 05/06/66 PLOT OF D MIN • TERRAIN • PROCESSING • FULL

ARITH MEAN • 0.52 • MEDIAN • 0.46 • STD DEV • 0.22 • RANGE • 0.26 TO 1.54 WITH 153 SAMPLES



[redacted]

MISSION • 1027-1 • INSTR • FRWD • 05/06/66 PLOT OF D MAX • TERRAIN • PROCESSING • FULL

ARITH MEAN • 1.46 • MEDIAN • 1.52 • STD DEV • 0.44 • RANGE • 0.50 TO 2.38 WITH 153 SAMPLES

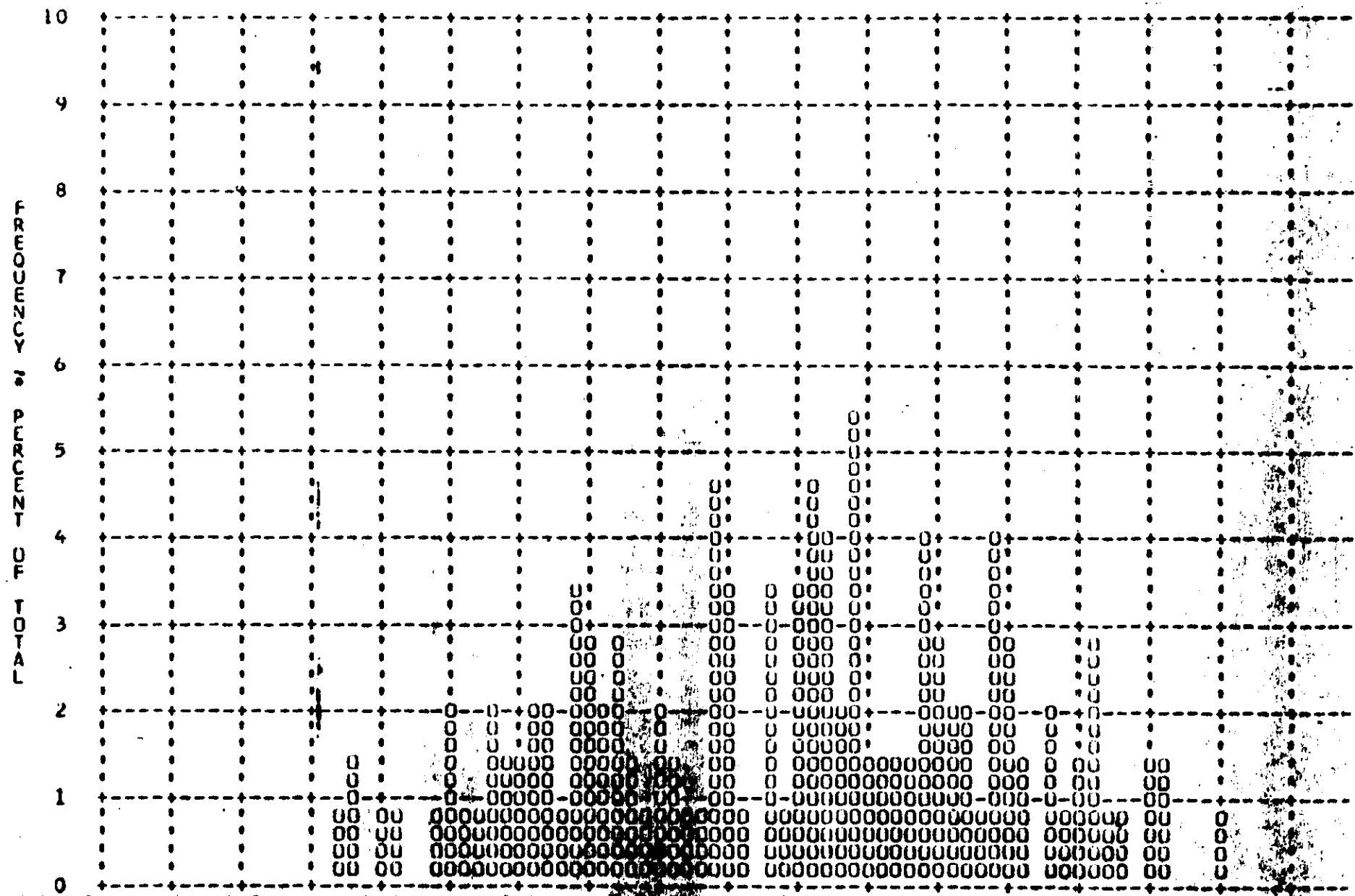
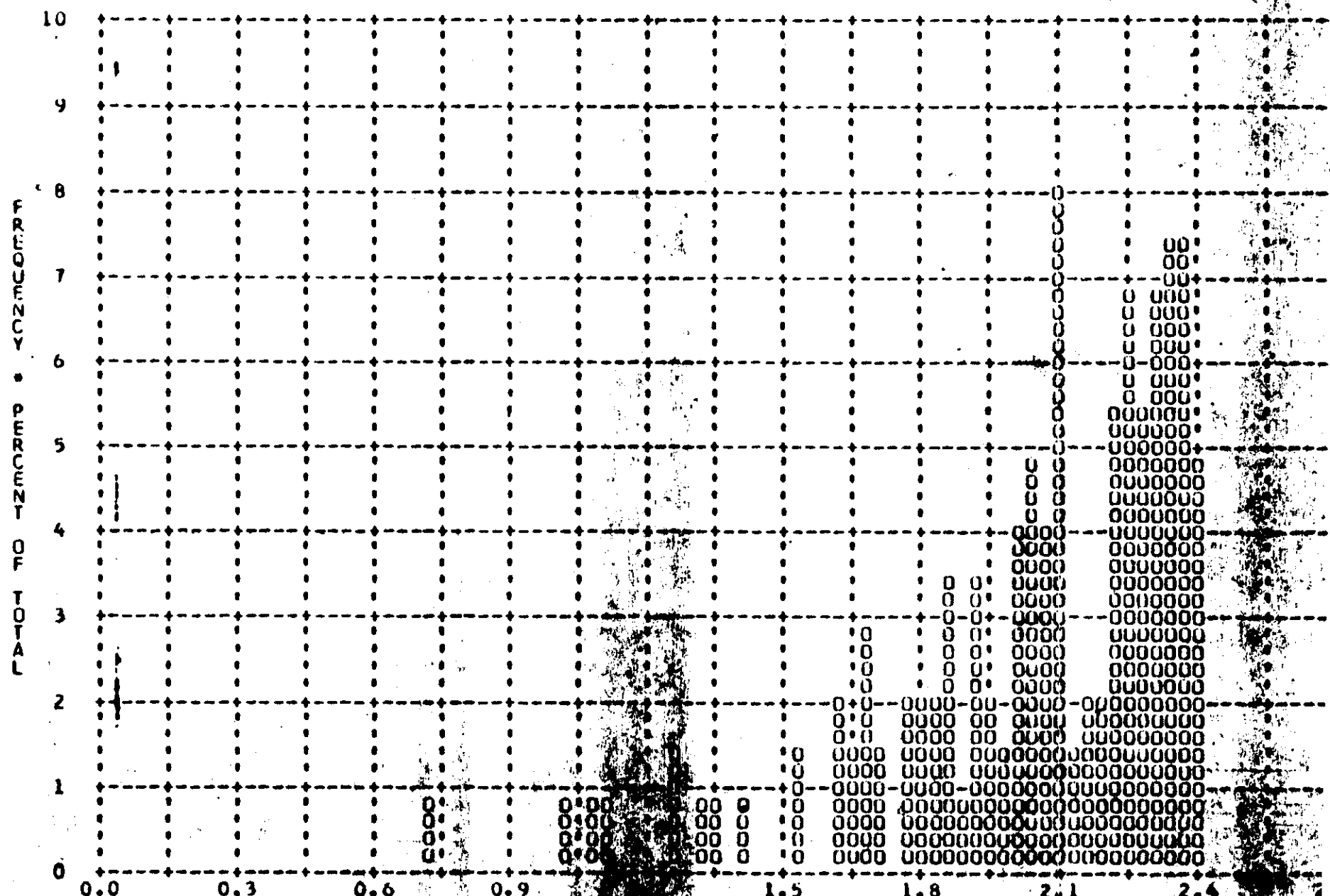


Figure A-5

~~TOP SECRET~~ [redacted]

MISSION • 1027-1 • INSTR • FRWD • 05/06/66 PLOT OF D MAX • CLOUD • PROCESSING • FULL

ARITH MEAN •.2.04 • MEDIAN • 2.10 • STD DEV • 0.32 • RANGE • 0.71 TO 2.39 WITH 151 SAMPLES



[redacted]

Figure A-6

MISSION • 1027-1 • INSTR • FRWD • 05/06/66 PLOT OF D MIN • TERRAIN • PROCESSING • ALL LEVELS

AKITH MEAN • 0.52 • MEDIAN • 0.46 • STD DEV • 0.22 • RANGE • 0.26 TO 1.54 WITH 158 SAMPLES

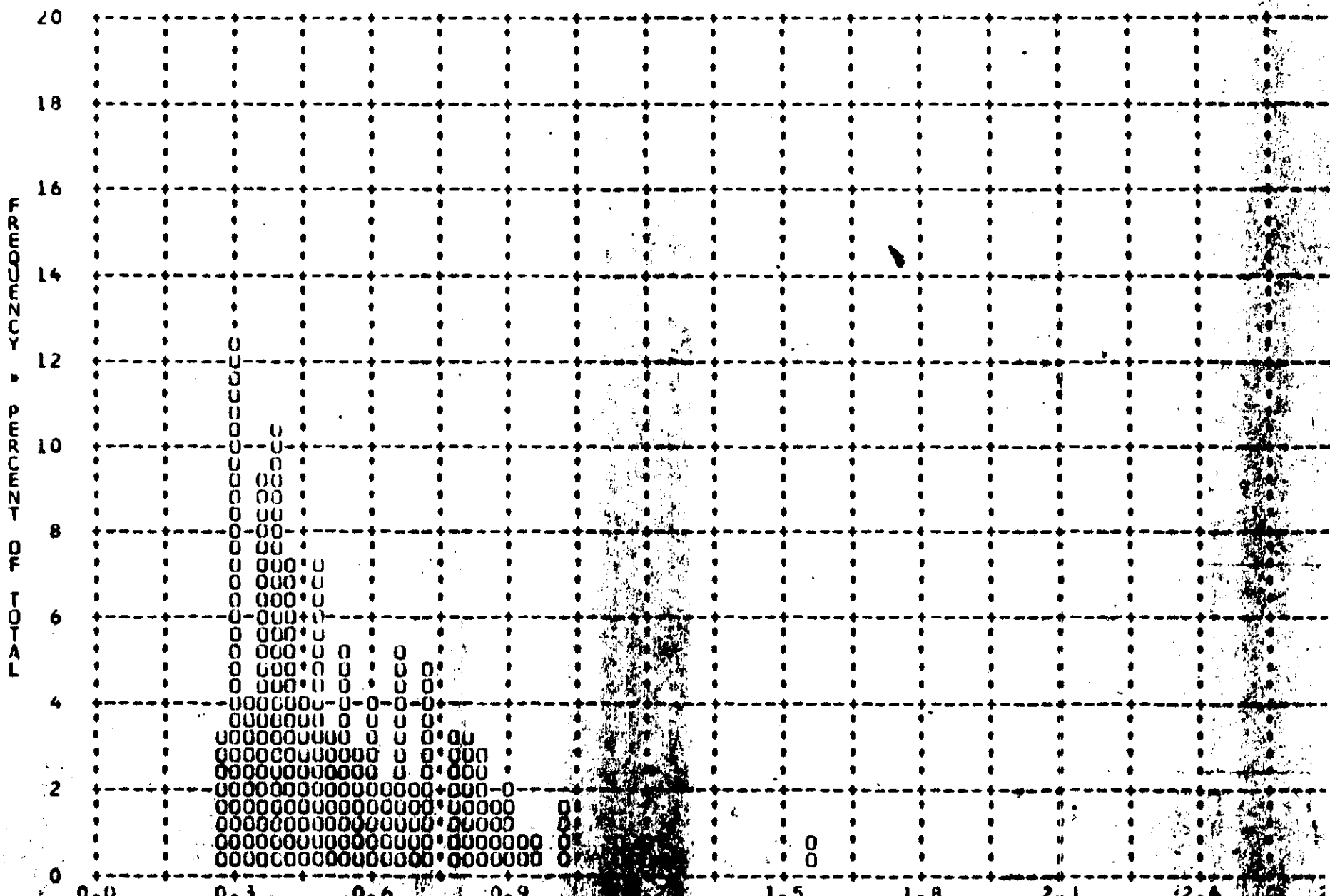


Figure A-7

MISSION • 1027-1 • INSTR • FRWD • 05/06/66 PLOT OF D MAX • TERRAIN • PROCESSING • ALL LEVELS

ARITH MEAN • 1.45 • MEDIAN • 1.52 • STD DEV • 0.44 • RANGE • 0.50 TO 2.38 WITH 158 SAMPLES

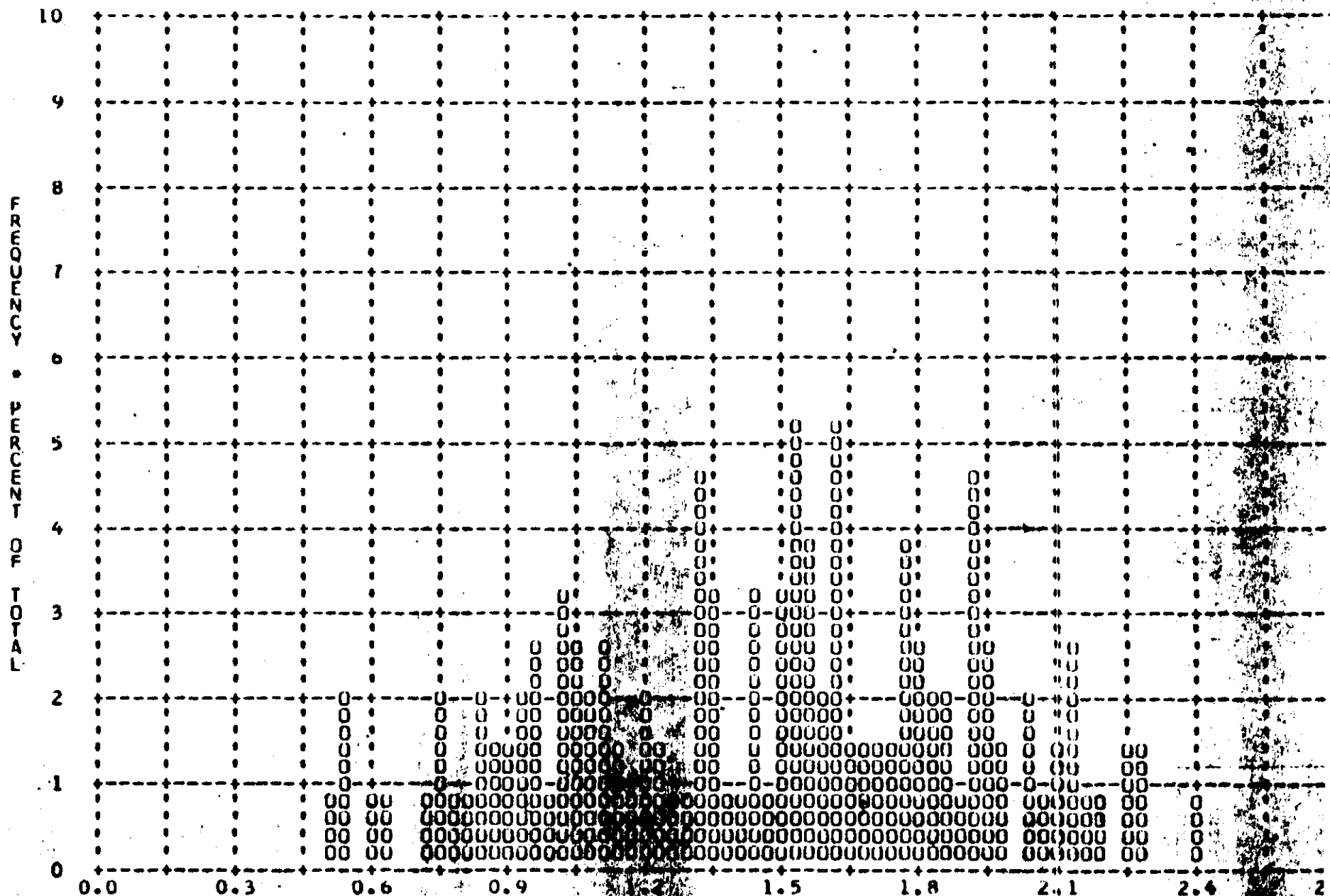


Figure A-8

MISSION • 1027-1 • INSTR • FRWD • 05/06/66 PLOT OF U MAX • CLOUD • PROCESSING • ALL LEVELS

ARITH MEAN • 2.03 • MEDIAN • 2.10 • STD DEV • 0.32 • RANGE • 0.71 TO 2.39 WITH 155 SAMPLES

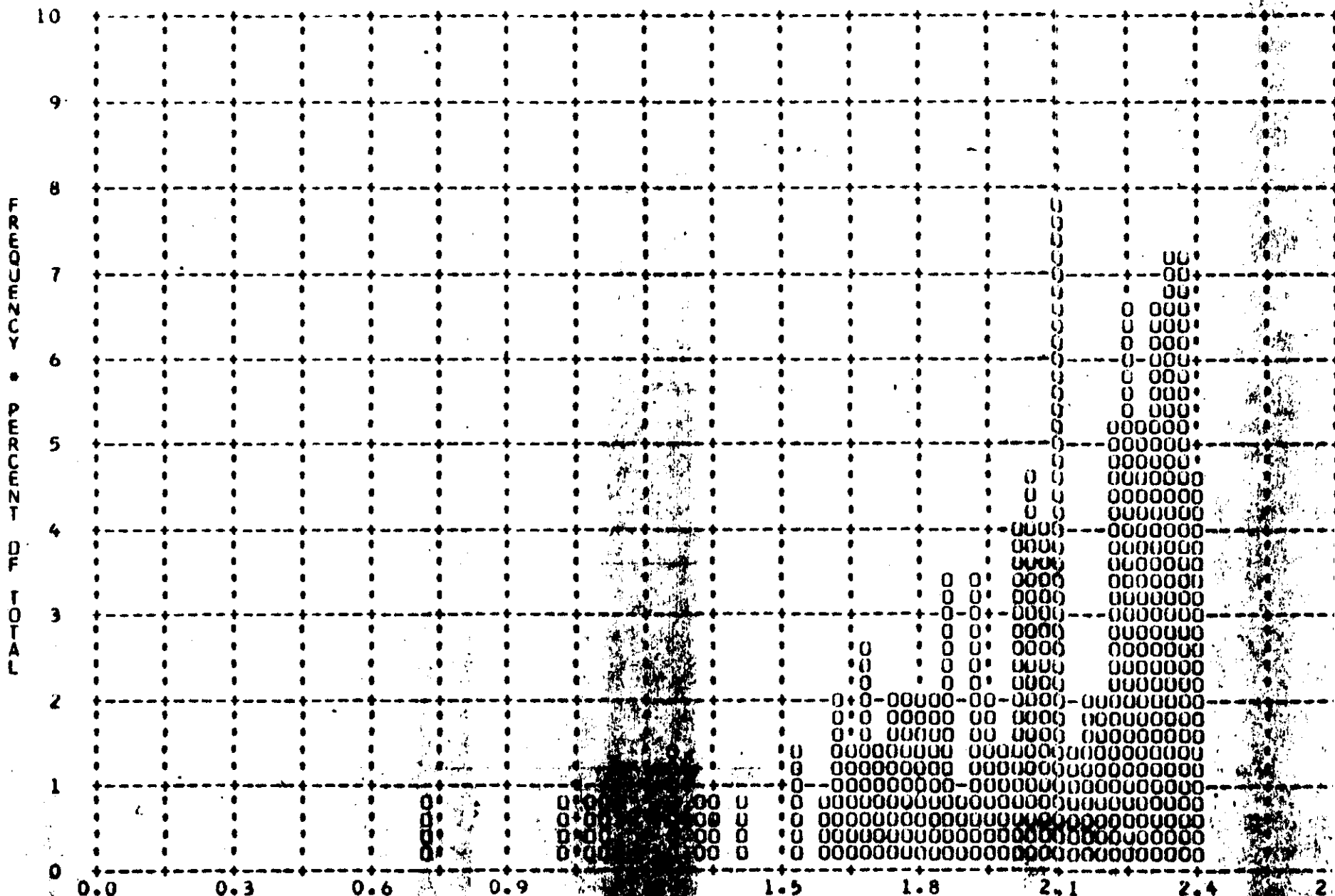


Figure A-9

DENSITY VALUE	PRIMARY MIN	PRIMARY MAX	PRIMARY LIN	INTERMEDIATE MIN	INTERMEDIATE MAX	INTERMEDIATE LIN	FULL MIN	FULL MAX	FULL LIN	ALL LEVELS MIN	ALL LEVELS MAX	ALL LEVELS LIN
0	0	0	0	0	0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0
25	0	0	0	0	0	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0	0	0	0	0	0
27	0	0	0	0	0	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0	0	0	0	0	0
29	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0
31	0	0	0	0	0	0	0	0	0	0	0	0
32	0	0	0	0	0	0	0	0	0	0	0	0
33	0	0	0	0	0	0	0	0	0	0	0	0
34	0	0	0	0	0	0	0	0	0	0	0	0
35	0	0	0	0	0	0	0	0	0	0	0	0
36	0	0	0	0	0	0	0	0	0	0	0	0
37	0	0	0	0	0	0	0	0	0	0	0	0
38	0	0	0	0	0	0	0	0	0	0	0	0
39	0	0	0	0	0	0	0	0	0	0	0	0
40	0	0	0	0	0	0	0	0	0	0	0	0
41	0	0	0	0	0	0	0	0	0	0	0	0
42	0	0	0	0	0	0	0	0	0	0	0	0
43	0	0	0	0	0	0	0	0	0	0	0	0
44	0	0	0	0	0	0	0	0	0	0	0	0
45	0	0	0	0	0	0	0	0	0	0	0	0
46	0	0	0	0	0	0	0	0	0	0	0	0
47	0	0	0	0	0	0	0	0	0	0	0	0
48	0	0	0	0	0	0	0	0	0	0	0	0
49	0	0	0	0	0	0	0	0	0	0	0	0
50	0	0	0	0	0	0	0	0	0	0	0	0
51	0	0	0	0	0	0	0	0	0	0	0	0
52	0	0	0	0	0	0	0	0	0	0	0	0
53	0	0	0	0	0	0	0	0	0	0	0	0
54	0	0	0	0	0	0	0	0	0	0	0	0
55	0	0	0	0	0	0	0	0	0	0	0	0
56	0	0	0	0	0	0	0	0	0	0	0	0
57	0	0	0	0	0	0	0	0	0	0	0	0
58	0	0	0	0	0	0	0	0	0	0	0	0
59	0	0	0	0	0	0	0	0	0	0	0	0
60	0	0	0	0	0	0	0	0	0	0	0	0
61	0	0	0	0	0	0	0	0	0	0	0	0
62	0	0	0	0	0	0	0	0	0	0	0	0
63	0	0	0	0	0	0	0	0	0	0	0	0
64	0	0	0	0	0	0	0	0	0	0	0	0
65	0	0	0	0	0	0	0	0	0	0	0	0
66	0	0	0	0	0	0	0	0	0	0	0	0
67	0	0	0	0	0	0	0	0	0	0	0	0
68	0	0	0	0	0	0	0	0	0	0	0	0
69	0	0	0	0	0	0	0	0	0	0	0	0
70	0	0	0	0	0	0	0	0	0	0	0	0
71	0	0	0	0	0	0	0	0	0	0	0	0
72	0	0	0	0	0	0	0	0	0	0	0	0
73	0	0	0	0	0	0	0	0	0	0	0	0
74	0	0	0	0	0	0	0	0	0	0	0	0
75	0	0	0	0	0	0	0	0	0	0	0	0
76	0	0	0	0	0	0	0	0	0	0	0	0
77	0	0	0	0	0	0	0	0	0	0	0	0
78	0	0	0	0	0	0	0	0	0	0	0	0
79	0	0	0	0	0	0	0	0	0	0	0	0
80	0	0	0	0	0	0	0	0	0	0	0	0
81	0	0	0	0	0	0	0	0	0	0	0	0
82	0	0	0	0	0	0	0	0	0	0	0	0
83	0	0	0	0	0	0	0	0	0	0	0	0
84	0	0	0	0	0	0	0	0	0	0	0	0
85	0	0	0	0	0	0	0	0	0	0	0	0
86	0	0	0	0	0	0	0	0	0	0	0	0
87	0	0	0	0	0	0	0	0	0	0	0	0
88	0	0	0	0	0	0	0	0	0	0	0	0
89	0	0	0	0	0	0	0	0	0	0	0	0
90	0	0	0	0	0	0	0	0	0	0	0	0
91	0	0	0	0	0	0	0	0	0	0	0	0
92	0	0	0	0	0	0	0	0	0	0	0	0
93	0	0	0	0	0	0	0	0	0	0	0	0
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96	0	0	0	0	0	0	0	0	0	0	0	0
97	0	0	0	0	0	0	0	0	0	0	0	0
98	0	0	0	0	0	0	0	0	0	0	0	0
99	0	0	0	0	0	0	0	0	0	0	0	0
100	0	0	0	0	0	0	0	0	0	0	0	0
101	0	0	0	0	0	0	0	0	0	0	0	0
102	0	0	0	0	0	0	0	0	0	0	0	0
103	0	0	0	0	0	0	0	0	0	0	0	0
104	0	0	0	0	0	0	0	0	0	0	0	0
105	0	0	0	0	0	0	0	0	0	0	0	0
106	0	0	0	0	0	0	0	0	0	0	0	0
107	0	0	0	0	0	0	0	0	0	0	0	0
108	0	0	0	0	0	0	0	0	0	0	0	0
109	0	0	0	0	0	0	0	0	0	0	0	0
110	0	0	0	0	0	0	0	0	0	0	0	0
111	0	0	0	0	0	0	0	0	0	0	0	0
112	0	0	0	0	0	0	0	0	0	0	0	0
113	0	0	0	0	0	0	0	0	0	0	0	0
114	0	0	0	0	0	0	0	0	0	0	0	0
115	0	0	0	0	0	0	0	0	0	0	0	0
116	0	0	0	0	0	0	0	0	0	0	0	0
117	0	0	0	0	0	0	0	0	0	0	0	0
118	0	0	0	0	0	0	0	0	0	0	0	0
119	0	0	0	0	0	0	0	0	0	0	0	0
120	0	0	0	0	0	0	0	0	0	0	0	0
121	0	0	0	0	0	0	0	0	0	0	0	0
122	0	0	0	0	0	0	0	0	0	0	0	0
123	0	0	0	0	0	0	0	0	0	0	0	0
124	0	0	0	0	0	0	0	0	0	0	0	0
125	0	0	0	0	0	0	0	0	0	0	0	0
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127	0	0	0	0	0	0	0	0	0	0	0	0
128	0	0	0	0	0	0	0	0	0	0	0	0
129	0	0	0	0	0	0	0	0	0	0	0	0
130	0	0	0	0	0	0	0	0	0	0	0	0
131	0	0	0	0	0	0	0	0	0	0	0	0
132	0	0	0	0	0	0	0	0	0	0	0	0
133	0	0	0	0	0	0	0	0	0	0	0	0
134	0	0	0	0	0	0	0	0	0	0	0	0
135	0	0	0	0	0	0	0	0	0	0	0	0
136	0	0	0	0	0	0	0	0	0	0	0	0
137	0	0	0	0	0	0	0	0	0	0	0	0
138	0	0	0	0	0	0	0	0	0	0	0	0
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141	0	0	0	0	0	0	0	0	0	0	0	0
142	0	0	0	0	0	0	0	0	0	0	0	0
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163	0	0	0	0	0	0	0	0	0	0	0	0
164	0	0	0	0	0	0	0	0	0	0	0	0
165	0	0	0	0	0	0	0	0	0	0	0	0
166	0	0	0	0	0	0	0	0	0	0	0	0
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170	0	0	0	0	0	0	0	0	0	0	0	0
171	0	0	0	0	0	0	0	0	0	0	0	0
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174	0	0	0	0	0	0	0	0	0	0	0	0
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188	0	0	0	0	0	0	0	0	0	0	0	0
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191	0	0	0	0	0	0	0	0	0	0	0	0
192	0	0	0	0	0	0	0	0	0	0	0	0
193	0	0	0	0	0	0	0	0	0	0	0	0
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202	0	0	0	0	0	0	0	0	0	0	0	0
203	0	0	0	0	0	0	0	0	0	0	0	0
204	0	0	0	0	0	0	0	0	0	0	0	0
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216	0	0	0	0	0	0	0	0	0	0	0	0
217	0	0	0	0	0	0	0	0	0	0	0	0
218	0	0	0	0	0	0	0	0	0	0	0	0
219	0	0	0	0	0	0	0	0	0	0	0	0
220	0	0	0	0	0	0	0	0	0	0	0	0
221	0	0	0	0	0	0	0	0	0	0	0	0
222	0	0	0	0	0	0	0	0	0	0	0	0
223	0	0	0	0	0	0	0	0	0	0	0	0
224	0	0	0	0	0	0	0	0	0	0	0	0
225	0	0	0	0	0	0	0	0	0	0	0	0
226	0	0	0	0	0	0	0	0	0	0	0	0
227	0	0	0	0	0	0	0	0	0	0	0	0
228	0	0	0	0	0	0	0	0	0	0	0	0
229	0	0	0	0	0	0	0	0	0	0	0	0
230	0	0	0	0	0	0	0	0	0	0	0	0
231	0	0	0	0	0	0	0	0	0	0	0	0
232	0	0	0	0	0	0	0	0	0	0	0	0
233	0	0	0	0	0	0	0	0	0	0	0	0
234	0	0	0	0	0	0	0	0	0	0	0	0
235	0	0	0	0	0	0	0	0	0	0	0	0
236	0	0	0	0	0	0	0	0	0	0	0	0
237	0	0	0	0	0	0	0	0	0	0	0	0
238	0	0	0	0	0	0	0	0	0	0	0	0
239	0	0	0	0	0	0	0	0	0	0	0	0
240	0	0	0	0	0	0	0	0	0	0	0	0
241	0	0	0	0	0	0	0	0	0	0	0	0
242	0	0	0	0	0	0	0	0	0	0	0	0
243	0	0	0	0	0	0	0	0	0	0	0	0
244	0	0	0	0	0	0	0	0	0	0	0	0
245	0	0	0	0	0	0	0	0	0	0	0	0
246	0	0	0	0	0	0	0	0	0	0	0	0
247	0	0	0	0	0	0	0	0	0	0	0	0
248	0	0	0	0	0	0	0	0	0	0	0	0
249	0	0	0	0	0	0	0	0	0	0	0	0
250	0	0	0	0	0	0	0	0	0	0	0	0
251	0	0	0	0	0	0	0	0	0	0	0	0
252	0	0	0	0	0	0	0	0	0	0	0	0
253	0	0	0	0	0	0	0	0	0	0	0	0
254	0	0	0	0	0	0	0	0	0	0	0	0
255	0	0	0	0	0	0	0	0	0	0	0	0

Table A-2

MISSION • 1027-1 • INSTRUMENT • AFT 05/06/66 DENSITY FREQ DISTR

[redacted]

DENSITY VALUE	PRIMARY MIN	PRIMARY MAX	PRIMARY LIM	INTERMEDIATE MIN	INTERMEDIATE MAX	INTERMEDIATE LIM	FULL MIN	FULL MAX	FULL LIM	ALL LEVELS MIN	ALL LEVELS MAX	ALL LEVELS LIM
0.51	0	0	0	0	0	0	5	0	0	5	0	0
0.52	0	0	0	2	0	0	3	2	0	5	2	0
0.53	0	0	0	1	0	0	4	0	0	5	0	0
0.54	0	0	0	1	0	0	4	1	0	5	1	0
0.55	0	0	0	1	0	0	2	0	0	3	0	0
0.56	0	0	0	2	0	0	4	0	0	6	0	0
0.57	0	0	0	1	0	0	1	0	0	2	0	0
0.58	0	0	0	0	0	0	0	0	0	0	0	0
0.59	0	0	0	0	0	0	1	0	0	1	0	0
0.60	0	0	0	2	0	0	3	1	0	5	1	0
0.61	0	0	0	0	0	0	1	0	0	1	0	0
0.62	0	0	0	0	0	0	3	0	0	3	0	0
0.63	0	0	0	0	0	0	1	0	0	1	0	0
0.64	0	0	0	0	0	0	3	0	0	3	0	0
0.65	0	0	0	1	0	0	1	0	0	2	0	0
0.66	0	0	0	1	0	0	3	0	0	4	0	0
0.67	0	0	0	0	0	0	2	0	0	2	0	0
0.68	0	0	0	0	0	0	3	0	0	3	0	0
0.69	0	0	0	0	0	0	0	0	0	0	0	0
0.70	0	0	0	0	0	0	0	0	0	0	0	0
0.71	0	0	0	0	0	0	4	0	0	4	0	0
0.72	0	0	0	0	0	0	3	0	1	3	0	1
0.73	0	0	0	0	0	0	3	0	0	3	0	0
0.74	0	0	0	0	0	0	2	0	0	2	0	0
0.75	0	0	0	0	0	0	2	1	1	2	1	1
0.76	0	0	0	0	0	0	0	0	0	0	0	0
0.77	0	0	0	0	0	0	1	0	0	1	0	0
0.78	0	0	0	0	0	0	1	0	0	1	0	0
0.79	0	0	0	1	0	0	0	0	0	1	0	0
0.80	0	0	0	0	0	0	0	1	0	0	1	0
0.81	0	0	0	1	0	0	0	1	0	1	1	0
0.82	0	0	0	1	0	0	1	1	0	2	1	0
0.83	0	0	0	0	0	0	0	0	0	0	0	0
0.84	0	0	0	0	0	0	2	0	0	2	[illegible]	[illegible]
0.85	0	0	0	0	0	0	1	0	0	1	[illegible]	[illegible]
0.86	0	0	0	0	1	0	0	1	1	0	[illegible]	[illegible]
0.87	0	0	0	0	0	0	0	1	0	0	[illegible]	[illegible]
0.88	0	0	0	1	0	0	0	0	0	1	0	0
0.89	0	0	0	0	0	0	1	0	0	1	0	0
0.90	0	0	0	0	1	0	0	0	0	0	1	0
0.91	0	0	0	0	0	0	0	0	0	0	0	0
0.92	0	0	0	0	0	0	1	0	0	1	0	0
0.93	0	0	0	0	0	0	0	0	0	0	0	0
0.94	0	0	0	0	0	0	1	0	0	1	0	0
0.95	0	0	0	0	0	0	0	0	0	0	0	0
0.96	0	0	0	0	0	0	0	0	0	0	0	0
0.97	0	0	0	0	0	0	0	1	0	0	1	0
0.98	0	0	0	0	0	0	0	1	0	0	1	0
0.99	0	0	0	0	0	0	0	1	0	0	1	0
1.00	0	0	0	0	1	0	0	1	0	0	2	0
SUM	0	0	0	[illegible]	[illegible]	0	67	14	3	83	17	3

Table A-2

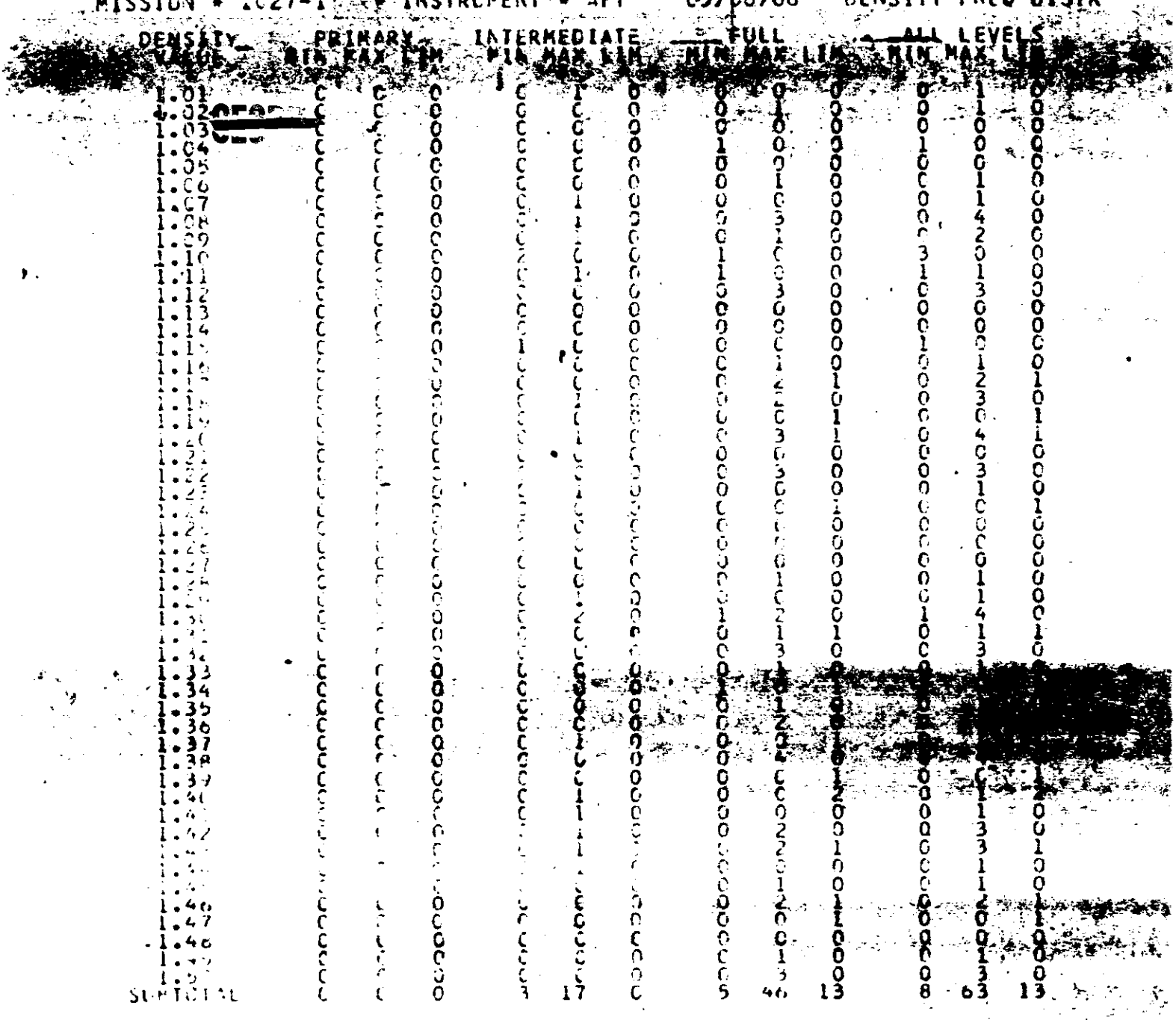

Table A-2

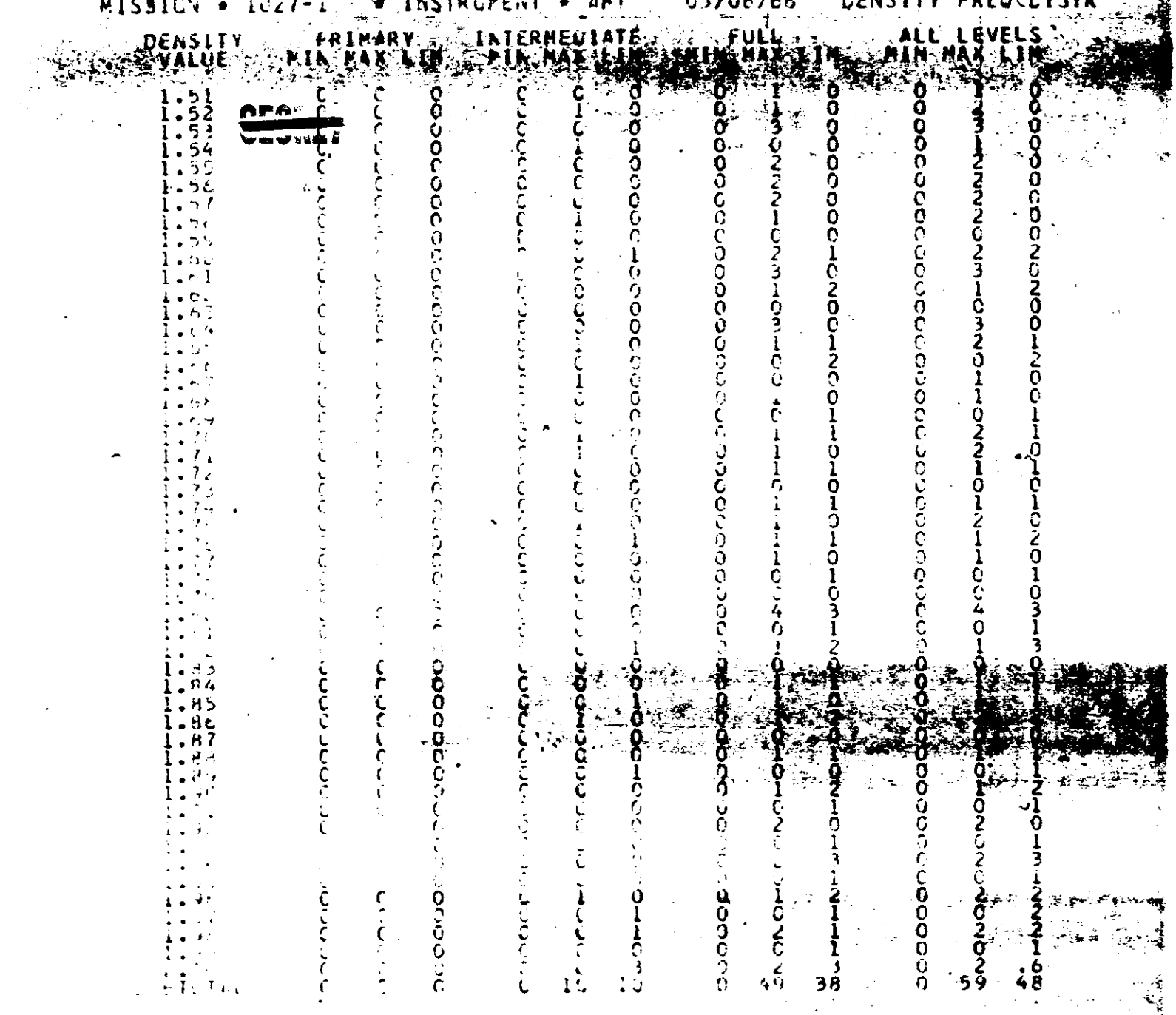

Table A-2

DENSITY VALUE	PRIMARY MIN	PRIMARY MAX	PRIMARY LIM	INTERMEDIATE MIN	INTERMEDIATE MAX	INTERMEDIATE LIM	FULL MIN	FULL MAX	FULL LIM	ALL LEVELS MIN	ALL LEVELS MAX	ALL LEVELS LIM
2.01	0	0	0	0	0	0	0	1	0	0	1	0
2.02	0	0	0	0	0	0	0	1	2	0	1	2
2.03	0	0	0	0	0	0	0	0	1	0	0	1
2.04	0	0	0	0	0	0	0	0	2	0	0	2
2.05	0	0	0	0	0	0	0	1	0	0	1	0
2.06	0	0	0	0	0	3	0	0	2	0	0	5
2.07	0	0	0	0	0	0	0	0	2	0	0	2
2.08	0	0	0	0	0	1	0	1	2	0	1	3
2.09	0	0	0	0	0	0	0	0	0	0	0	0
2.10	0	0	0	0	0	0	0	1	6	0	1	6
2.11	0	0	0	0	0	0	0	1	1	0	1	1
2.12	0	0	0	0	0	1	0	0	3	0	0	4
2.13	0	0	0	0	0	1	0	1	1	0	1	2
2.14	0	0	0	0	0	2	0	0	1	0	0	3
2.15	0	0	0	0	0	0	0	0	1	0	0	1
2.16	0	0	0	0	0	0	0	0	2	0	0	2
2.17	0	0	0	0	0	0	0	1	0	0	1	0
2.18	0	0	0	0	0	1	0	0	2	0	0	3
2.19	0	0	0	0	0	1	0	0	0	0	0	1
2.20	0	0	0	0	0	3	0	2	5	0	2	8
2.21	0	0	0	0	0	0	0	0	0	0	0	0
2.22	0	0	0	0	0	0	0	1	2	0	1	2
2.23	0	0	0	0	0	1	0	0	1	0	0	2
2.24	0	0	0	0	0	0	0	0	2	0	0	2
2.25	0	0	0	0	0	1	0	0	2	0	0	3
2.26	0	0	0	0	0	1	0	0	2	0	0	3
2.27	0	0	0	0	0	0	0	0	0	0	0	0
2.28	0	0	0	0	0	1	0	1	3	0	1	4
2.29	0	0	0	0	0	0	0	0	1	0	0	1
2.30	0	0	0	0	0	2	0	1	2	0	1	4
2.31	0	0	0	0	0	0	0	0	0	0	0	0
2.32	0	0	0	0	0	0	0	0	4	0	0	4
2.33	0	0	0	0	0	1	0	0	0	0	0	1
2.34	0	0	0	0	0	0	0	0	1	0	0	1
2.35	0	0	0	0	0	1	0	0	3	0	0	[illegible]
2.36	0	0	0	0	0	0	0	0	0	0	0	[illegible]
2.37	0	0	0	0	0	0	0	0	2	0	0	[illegible]
2.38	0	0	0	0	0	0	0	0	1	0	0	1
2.39	0	0	0	0	0	0	0	0	0	0	0	0
2.40	0	0	0	0	0	0	0	0	1	0	0	1
2.41	0	0	0	0	0	0	0	0	0	0	0	0
2.42	0	0	0	0	0	0	0	0	0	0	0	0
2.43	0	0	0	0	0	0	0	0	0	0	0	0
2.44	0	0	0	0	0	0	0	0	0	0	0	0
2.45	0	0	0	0	0	0	0	0	0	0	0	0
2.46	0	0	0	0	0	0	0	0	0	0	0	0
2.47	0	0	0	0	0	0	0	0	0	0	0	0
2.48	0	0	0	0	0	0	0	0	0	0	0	0
2.49	0	0	0	0	0	0	0	0	0	0	0	0
2.50	0	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	0	0	0	0	0	21	0	13	60	0	13	81

Table A-2

MISSION • 1027-1 • INSTRUMENT • AFT 05/06/66 DENSITY FREQ DISTR

DENSITY VALUE	PRIMARY MIN	PRIMARY MAX	PRIMARY LIM	INTERMEDIATE MIN	INTERMEDIATE MAX	INTERMEDIATE LIM	FULL MIN	FULL MAX	FULL LIM	ALL LEVELS MIN	ALL LEVELS MAX	ALL LEVELS LIM
2.51	0	0	0	0	0	0	0	0	0	0	0	0
2.52	0	0	0	0	0	0	0	0	0	0	0	0
2.53	0	0	0	0	0	0	0	0	0	0	0	0
2.54	0	0	0	0	0	0	0	0	0	0	0	0
2.55	0	0	0	0	0	0	0	0	0	0	0	0
2.56	0	0	0	0	0	0	0	0	0	0	0	0
2.57	0	0	0	0	0	0	0	0	0	0	0	0
2.58	0	0	0	0	0	0	0	0	0	0	0	0
2.59	0	[illegible]	0	0	0	0	0	0	0	0	0	0
2.60	0	[illegible]	0	0	0	0	0	0	0	0	0	0
2.61	0	0	0	0	0	0	0	0	0	0	0	0
2.62	0	0	0	0	0	0	0	0	0	0	0	0
2.63	0	0	0	0	0	0	0	0	0	0	0	0
2.64	0	0	0	0	0	0	0	0	0	0	0	0
[illegible]	0	[illegible]	0	0	0	0	0	0	0	0	0	0
[illegible]	0	[illegible]	0	0	0	0	0	0	0	0	0	0
[illegible]	0	[illegible]	0	0	0	0	0	0	0	0	0	0
[illegible]	0	[illegible]	0	0	0	0	0	0	0	0	0	0
[illegible]	0	0	0	0	0	0	0	0	0	0	0	0
2.70	0	[illegible]	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	0	[illegible]	0	0	0	0	0	0	0	0	0	0
TOTAL	[illegible]	[illegible]	[illegible]	[illegible]	30	31	123	123	115	153	153	146

MISSION 1027-1 INSTR - AFT 05/06/66 PROCESSING AND EXPOSURE ANALYS

PROCESS LEVEL	SAMPLE SIZE	UNDER EXPOSED	UNDER PROCESSED	CORRECT EXP+PROC	OVER PROCESSED	OVER EXPOSED
PRIMARY	[illegible]	0 PC	0 PC	0 PC	0 PC	0 PC
INTERMEDIATE	30	0 PC	13 PC	77 PC	10 PC	[illegible]
FULL	123	15 PC	0 PC	79 PC	[illegible]	[illegible]
ALL LEVELS	153	12 PC	3 PC	78 PC	[illegible]	[illegible]

PROCESS LEVEL	BASE + FOG	UNDER EXPOSED	UNDER PROCESSED	CORRECT EXP+PROC	OVER PROCESSED	OVER EXPOSED
PRIMARY	0.01-0.09	0.01-0.13	0.14-0.39	0.40-0.90	--------	0.91 AND [illegible]
INTERMED	[illegible]	0.01-0.20	0.21-0.39	0.40-0.90	0.91-1.34	1.35 AND [illegible]
FULL	[illegible] AND [illegible]	0.01-0.39	---------	0.40-0.90	0.91-1.69	1.70 AND [illegible]

Table A-2

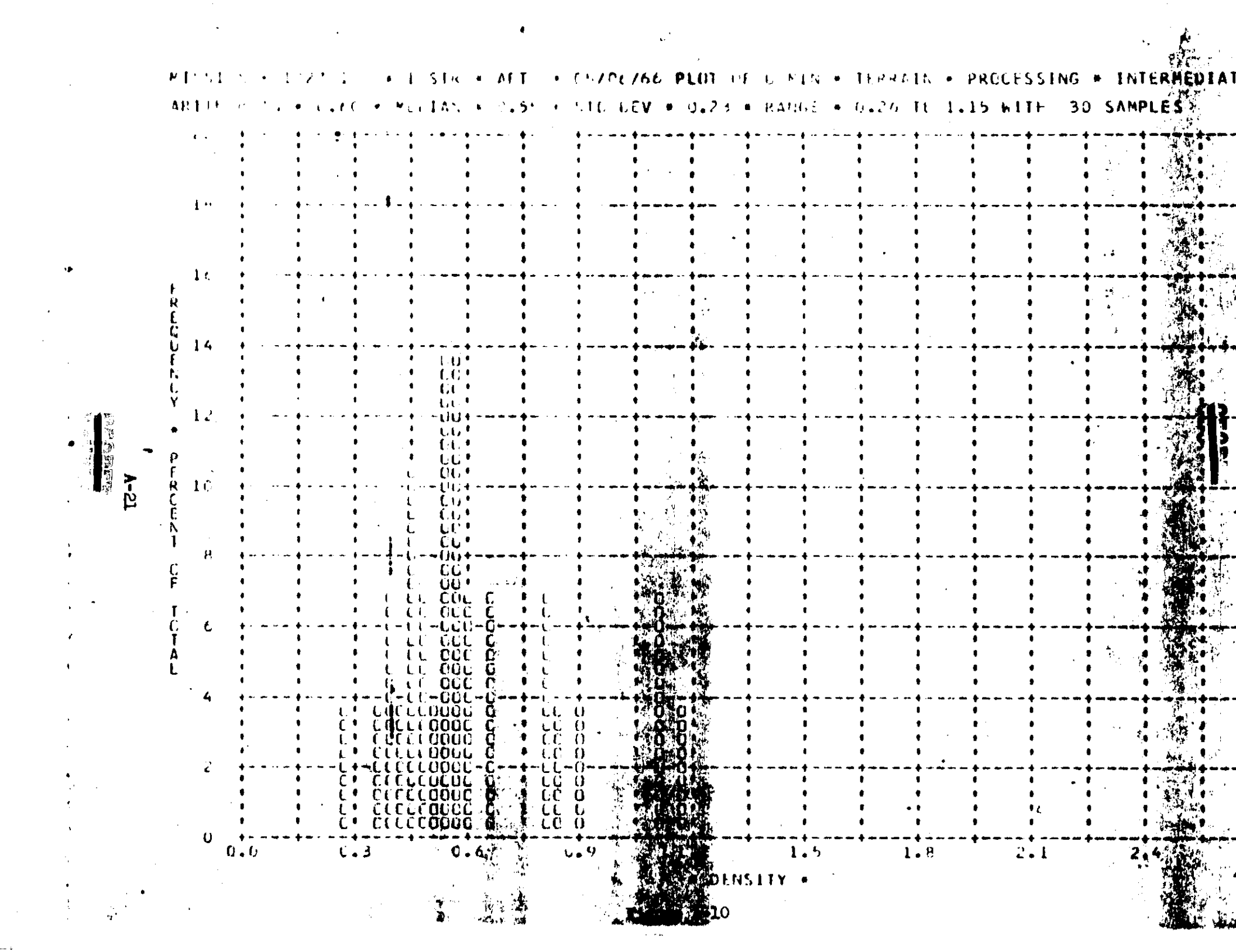
PLOT OF D MIN
TERRAIN
PROCESSING
INTERMEDIAT
MEDIAN
STD DEV
0.24
RANGE
0.26 TO 1.15 WITH 30 SAMPLES
FREQUENCY • PERCENT OF TOTAL
0.0
0.3
0.6
0.9
1.5
1.8
2.1
2.4
DENSITY
10

Figure A-11

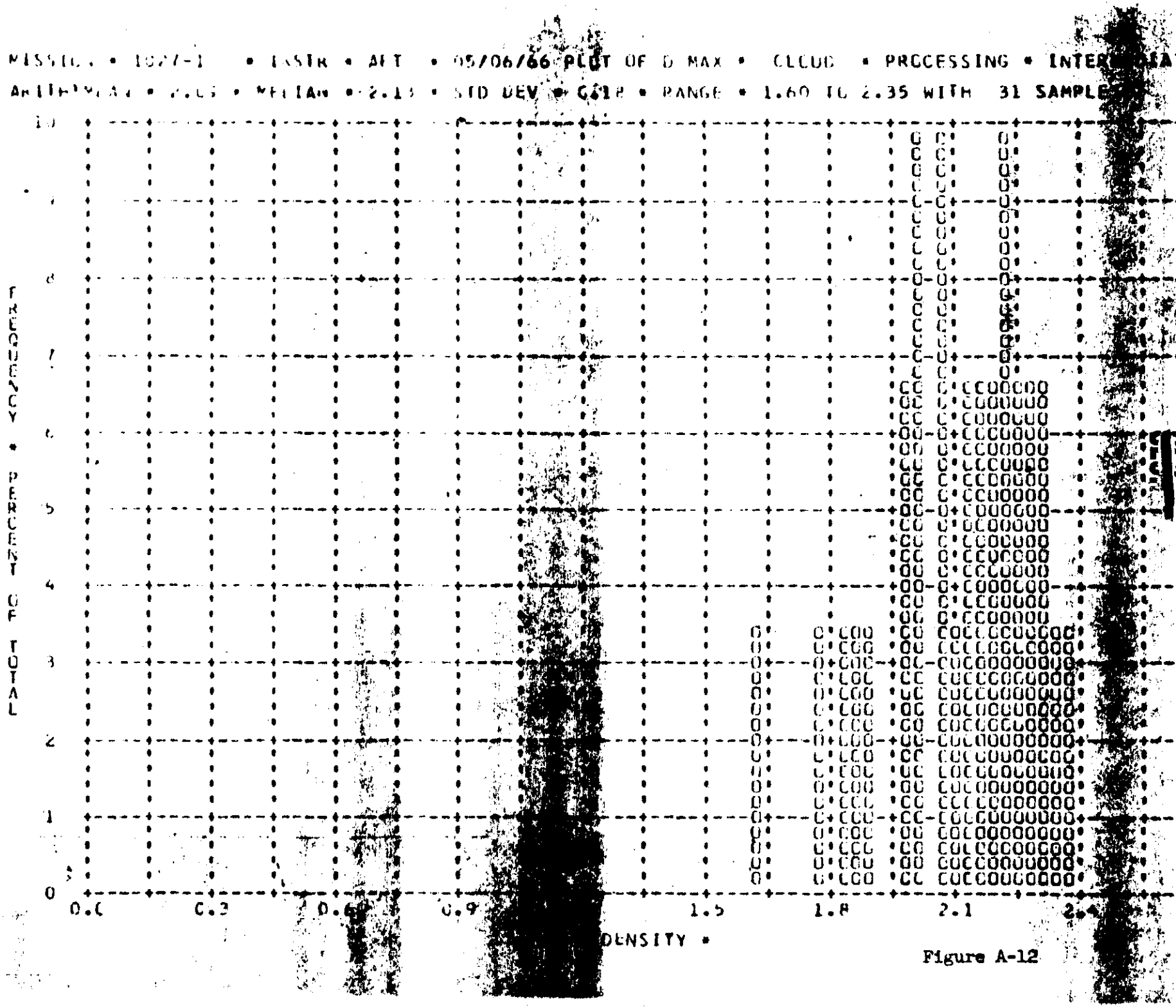
MISSILE • 1077-1 • EASTR • AFT • 05/06/66 PLOT OF D MAX • CLOUD • PROCESSING • INTER
ARITHMETIC • MEAN • 2.13 • MEDIAN • 2.13 • STD DEV • 0.12 • RANGE • 1.60 TO 2.35 WITH 31 SAMPLE
FREQUENCY • PERCENT OF TOTAL
0
1
2
3
4
5
6
7
8
9
10
0.0
0.3
0.6
0.9
1.5
1.8
2.1
2.4
DENSITY •

Figure A-12

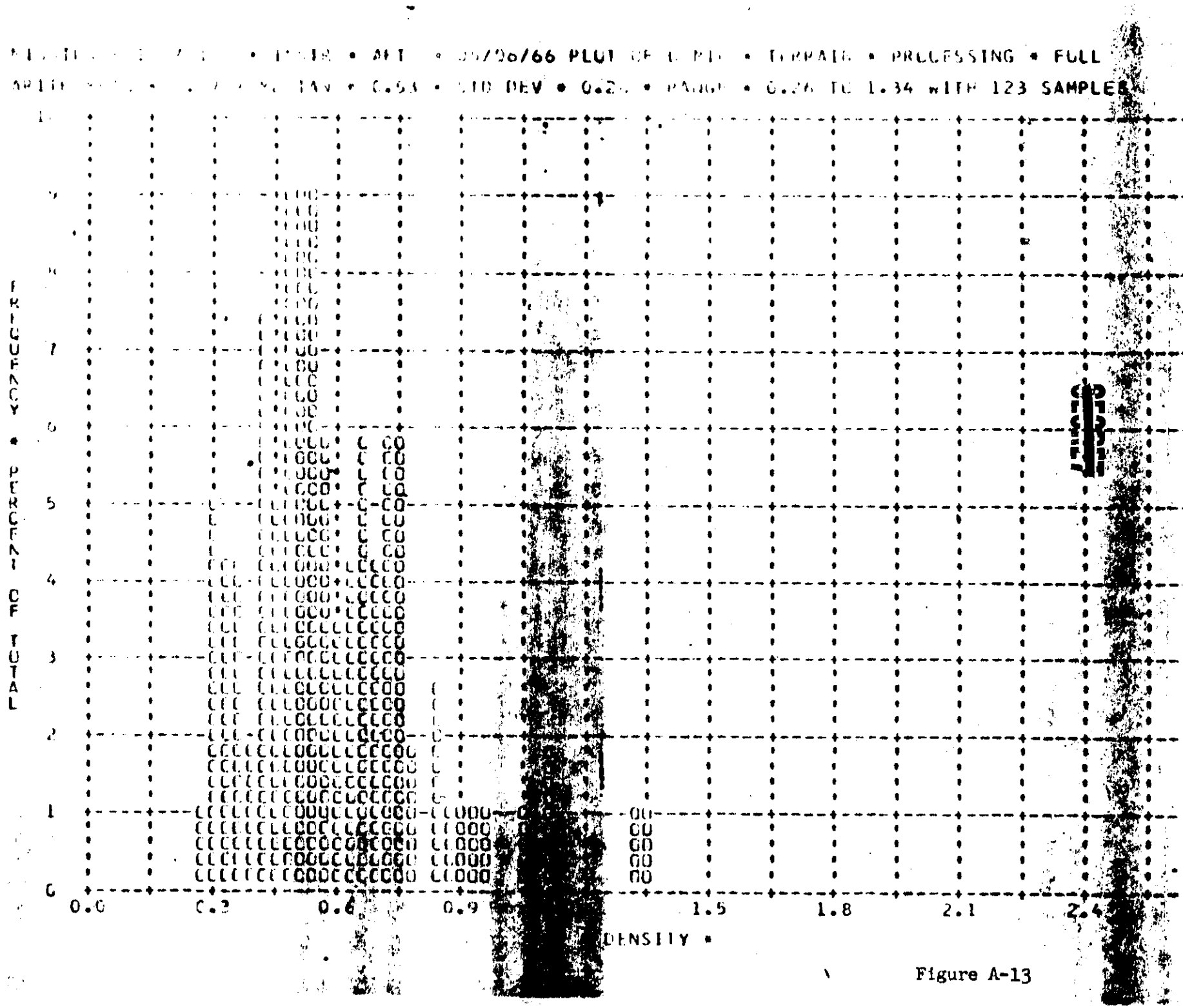
FREQUENCY • PERCENT OF TOTAL
0
1
2
3
4
5
6
7
0.0
0.3
0.6
0.9
1.5
1.8
2.1
2.4
DENSITY •

Figure A-13

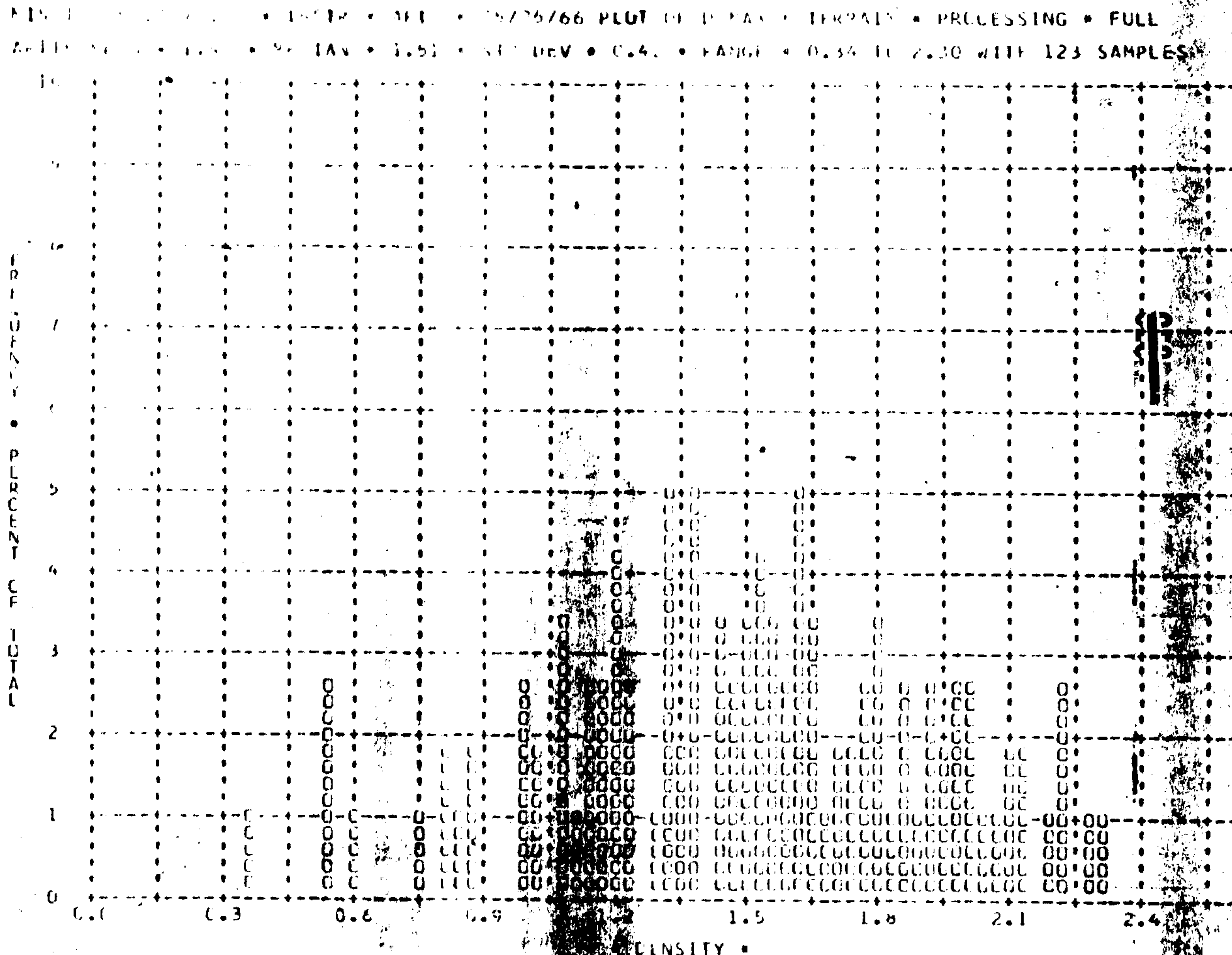
PROCESSING • FULL
123 SAMPLES
PERCENT OF TOTAL
0
1
2
3
4
5
0.6
1.5
1.8
2.1
2.4

Figure A-14

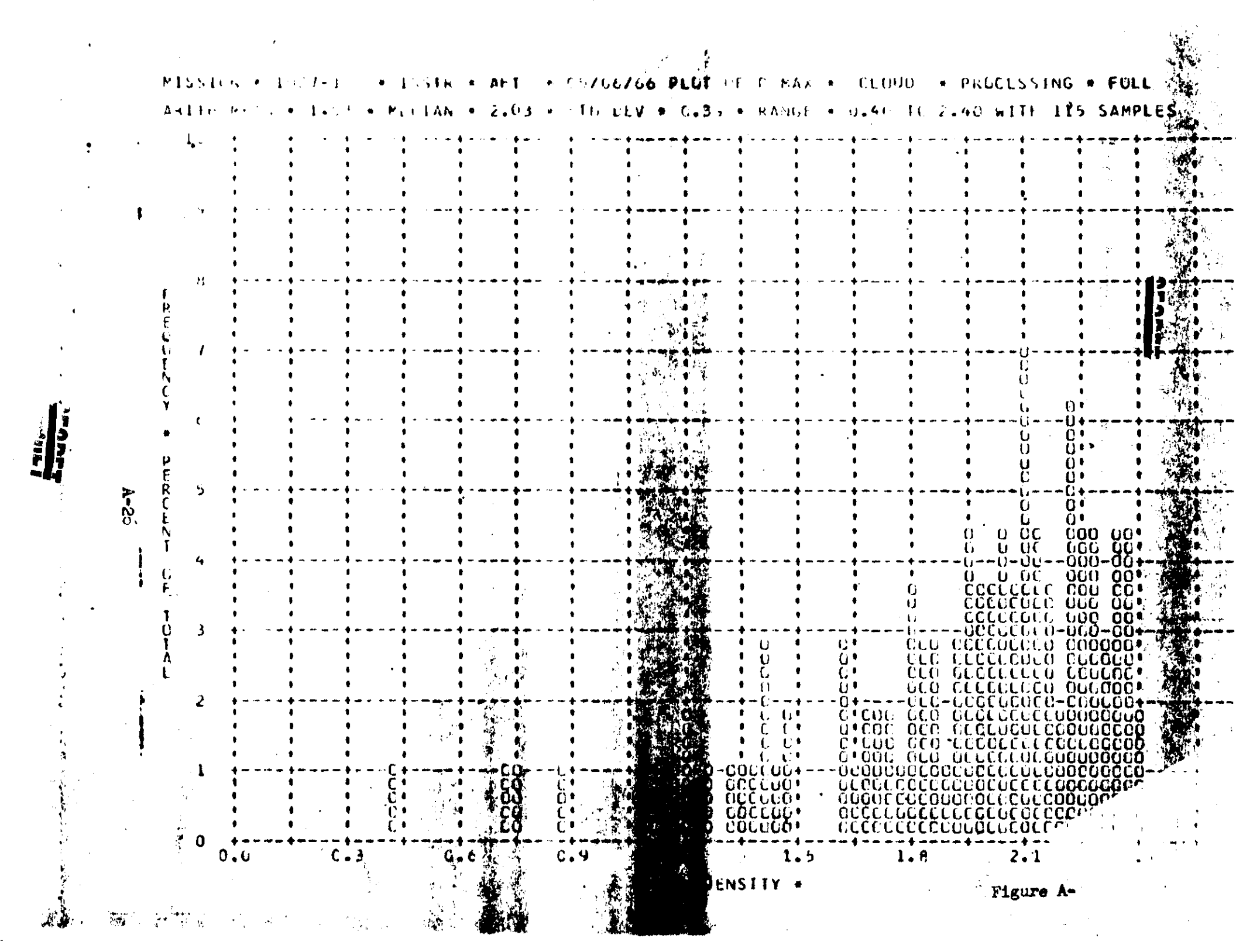
MISSION • [illegible] • INSTR • APT • 09/06/66 PLOT OF D MAX • CLOUD • PROCESSING • FULL
ARITH MEAN • 1.[illegible] • MEDIAN • 2.03 • STD DEV • 0.3[illegible] • RANGE • 0.40 TO 2.40 WITH 115 SAMPLES
FREQUENCY • PERCENT OF TOTAL
0
1
2
3
4
5
6
7
8
0.0
0.3
0.6
0.9
1.5
1.8
2.1
ENSITY •

Figure A-

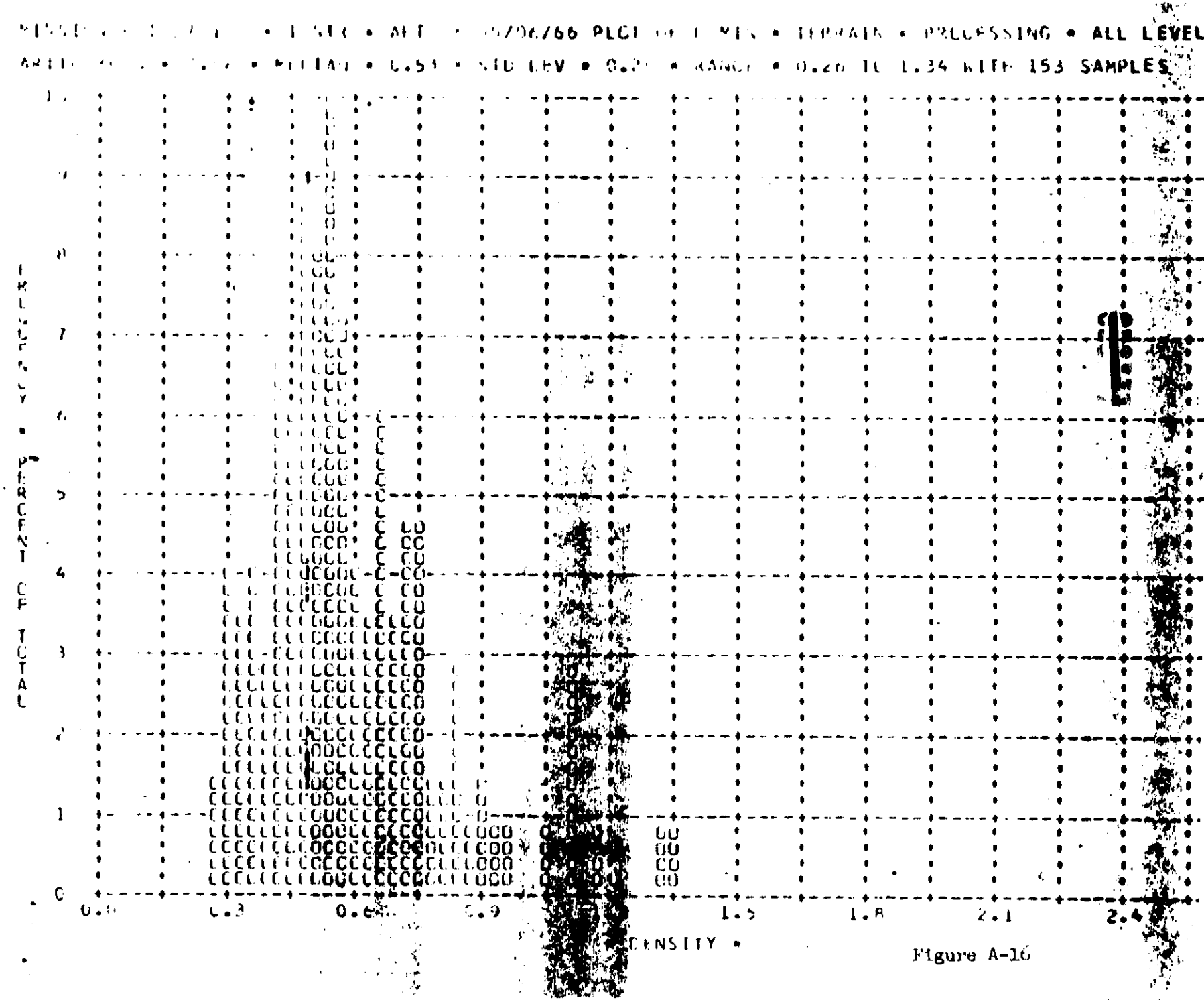

Figure A-16

Figure A-17

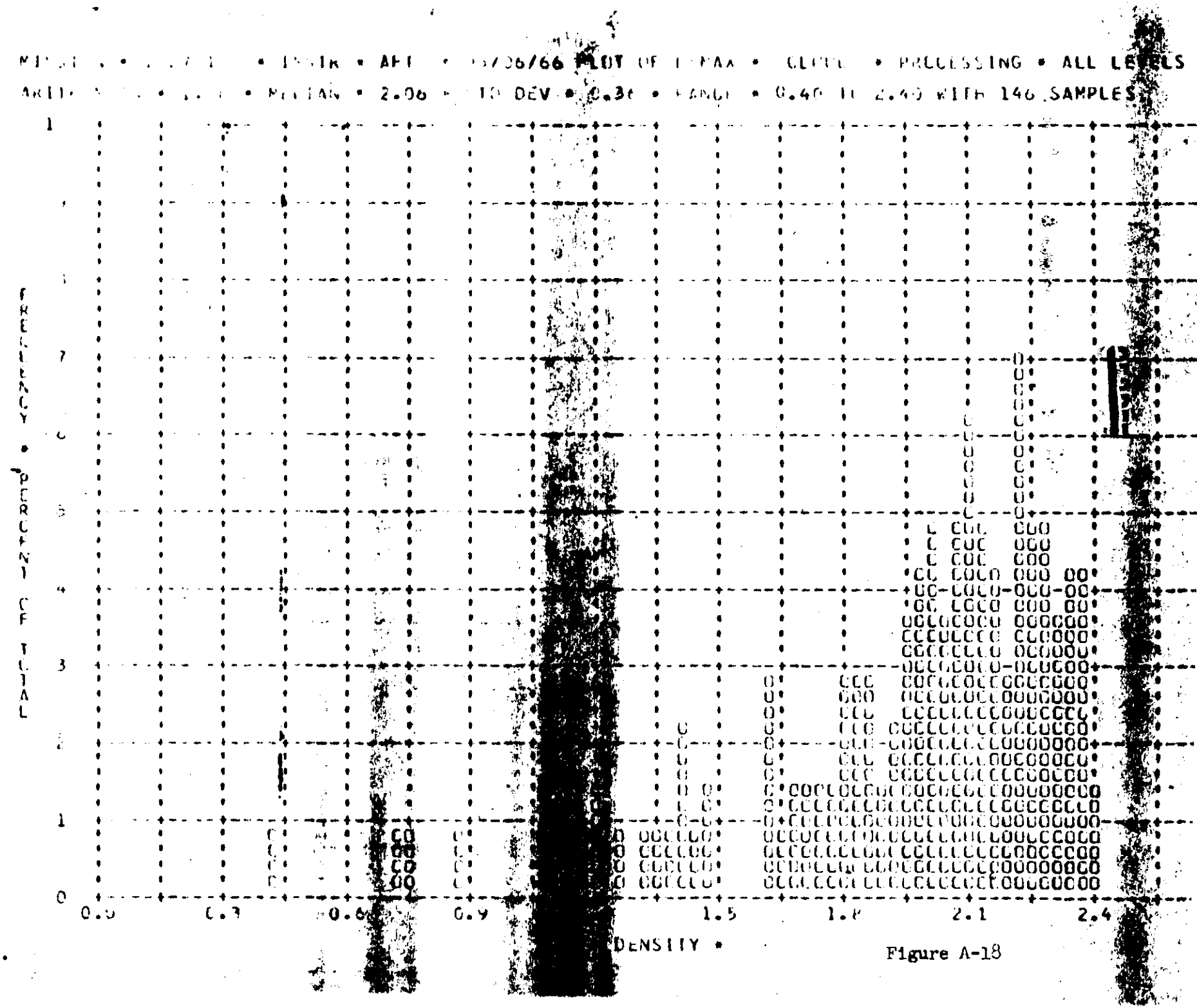
• PROCESSING • ALL LEVELS
• RANGE • 0.40 TO 2.40 WITH 146 SAMPLES
FREQUENCY • PERCENT OF TOTAL
0.0
0.3
0.6
0.9
1.5
1.8
2.1
2.4
DENSITY •

Figure A-18

Distribution:

Copy No. To

[redacted]