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2 May 1966

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SUBJECT: MISSION 1022-1 AND 1022-2 FINAL REPORT

Enclosed is the Final Performance Evaluation Report for Mission 1022-1 and 1022-2.

[redacted]
Manager
Advanced Projects

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CORONA J

PERFORMANCE EVALUATION REPORT

MISSION 1022-1 and 1022-2

FTV 1617; J-22

30 March 1966

Approved: [redacted]
Manager
Advanced Projects

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Mgr.

FOREWORD

This report details the performance of the payload system during the operational phase of the Program [redacted] Flight Test Vehicle 1617.

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

This document is the final payload test and performance evaluation report for Missions 1022-1 and 1022-2 which was launched on 19 July 1965.

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INTRODUCTION

This report presents the final performance evaluation of Missions 1022-1 and 1022-2 of the Corona Program. The purpose of this report is to define the performance characteristics of the J-22 payload system, to identify the source of in-flight anomalies and recommend the appropriate corrective action.

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, visual RES values 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.

SECTION 1

SYSTEM PERFORMANCE

A. MISSION OBJECTIVES

The payload section of Mission 1022, placed into orbit by Flight Test Vehicle #1617 and LV-2A booster #446, consisted of two panoramic cameras, two Stellar-Index cameras, two Mark 5A recovery capsules and a space structure to enclose the cameras and provide mounting surfaces for all equipments. Figure 1-1 presents an inboard profile of the J-22 payload system. This Corona "J" system is designed to acquire search and reconnaissance photography of selected areas of the earth from orbital altitudes. The planned mission was a five day photographic period followed by a four day photographic period possibly separated by a four day deactivate period.

B. MISSION DESCRIPTION

The payload was launched from Vandenberg Air Force Base (VAFB) at 2201:13 Z (3:01:13 PDT) on 19 July 1965. Ascent and injection were normal and the achieved orbit within nominal tolerances. Tracking and command support was effected by the Air Force Satellite Control Facility consisting of tracking and command stations at [redacted] under central control of the Satellite Test Center at Sunnyvale, California. Mission 1022-1 consisted of four days operation and was completed by air recovery on 23 July 1965. Mission 1022-2 followed immediately with no deactivate period and consisted of five days operation and was completed by air recovery on 28 July 1965.

The comparison of the planned and actual orbit parameters is tabulated as follows:

ORBITAL PARAMETERS

Parameter	Predicted	Orbit 1 Actuals
Period (Min.)	91.060	91.045
Perigee (N.M.)	99.98	99.12
Apogee (N.M.)	255.24	254.24
Inclination (Deg.)	85.00	85.05
Perigee Latitude (Deg. N.)	21.72	22.52
Eccentricity	0.0214	0.02144

SCHEMATIC INBOARD PROFILE - CORONA J SYSTEM

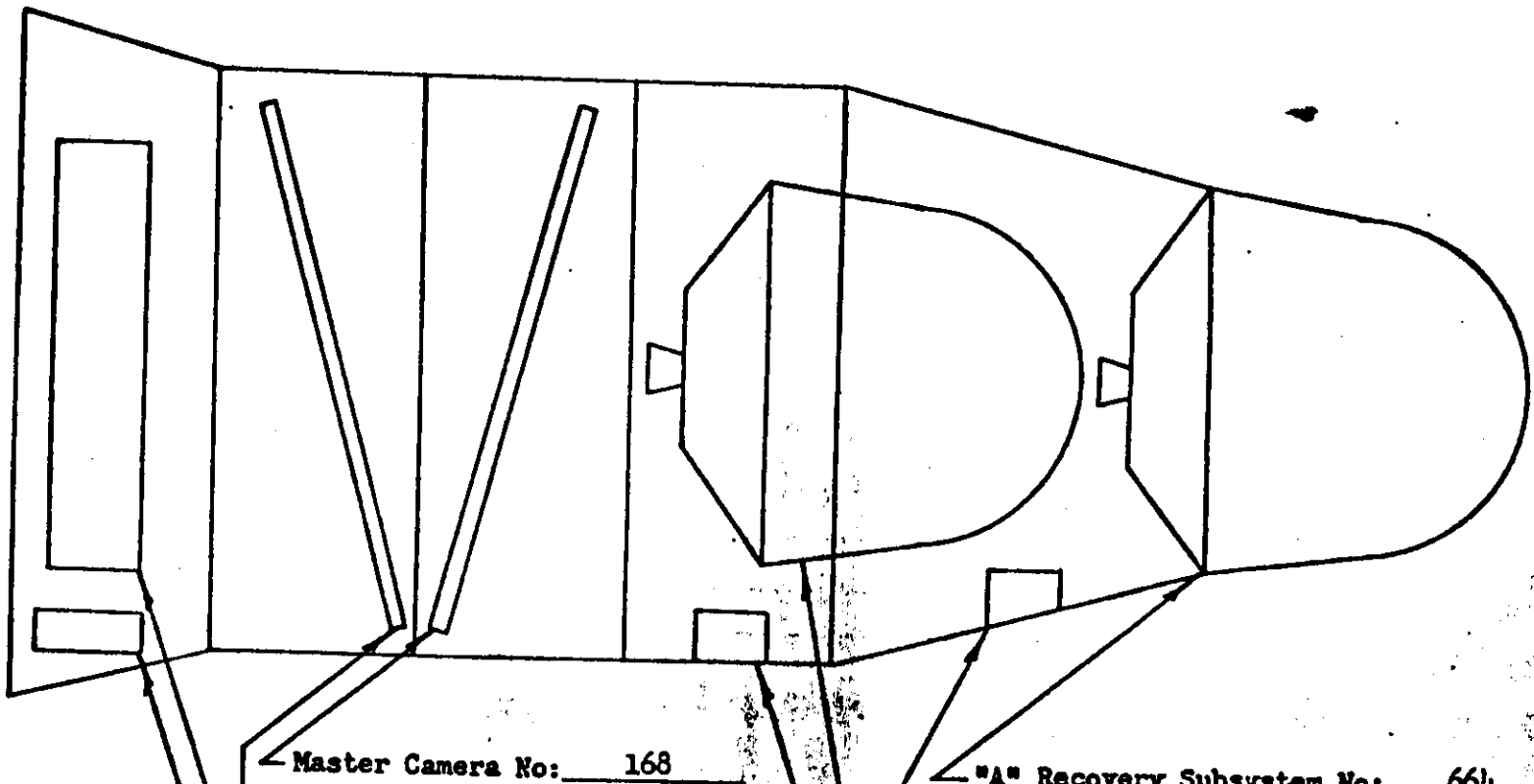


FIGURE [illegible]

The vehicle was launched with a V/h ramp, amplitude and start position set up of 8, 3, 6 (RTC 6, 8 and 10 respectively). This setup maintained FMC match at less than 3.5% error. The variation was approximately 0% to 3.5% slow. The ramp level was increased from level 8 to 7 on orbit 21 which resulted in estimated FMC errors of less than ± 2% through the remainder of the flight.

C. PANORAMIC CAMERAS

The Master and Slave panoramic cameras operated throughout both missions with no significant problems and Mission 1022-1 produced good photographic coverage. The cloud cover and atmospheric haze observed in the photography was nominal.

On three engineering passes, a "stereo-suppress" mode of operation was exercised for evaluation purposes. This mode of operation provides sequential starting and stopping of the panoramic cameras to eliminate the mono strips at each end of a stereo operation. Particular attention was directed to system performance on these operations. Specific observations and conclusions are reported in a subsequent section on vehicle attitude.

D. STELLAR-INDEX CAMERAS

The Mission 1022-1 Stellar-Index camera operated properly throughout the mission and produced very high quality photography. The Mission 1022-2 Stellar-Index camera operated properly during the mission except that the center format switch failed to function for 10 cycles during pass D-75.

E. OTHER SUB-SYSTEMS

The clock, pressure make-up, and thermal control sub-systems performed satisfactorily through both missions. The telemetry and command sub-systems performed satisfactorily with the exception that the slave instrument cycle counter randomly missed counts. At one point the counter indicated a gain of approximately 90 counts, but by the next acquisition this error had disappeared.

F. CONCLUSIONS

Missions 1022-1 and 1022-2 achieved the objective of acquiring high quality search and reconnaissance photography from orbital altitudes.

G. SYSTEM IMPROVEMENT STUDIES

The evaluation and analysis of the system performance has resulted in suggesting the following studies:

1. Forebody light leaks should be eliminated either by use of improved paint or a light deflecting chute.

2. Pan instrument light leaks should be determined to be acceptable or corrected. If the correction cannot be made at the pan instrument, partial correction might be made through use of baffles or chutes in exposed areas.

3. The reliability of the new type center of format switch should be reviewed to determine whether the intermittent failures encountered on the slave instrument indicate a need for corrective action.

4. The defects that occur near the ends of the stellar and index films (as well as insufficient supply) should be reviewed for possible corrective action. Possible corrective actions may be limited by cost or reliability considerations with respect to the secondary significance of the subsystem functions.

5. Continue mono overlap reduction experiments to obtain further evidence of vehicle dynamics, gas consumption and overlap.

SECTION 2

PRE-FLIGHT SYSTEMS TESTS

A. ENVIRONMENTAL TESTING

1. Test Objective

As a standard procedure, the J payload systems are subject 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 J-22 payload system was in the TASC chamber at LMSC, Sunnyvale for environmental test during March 20 through 23, 1965. The test consisted of 1 day operation in the "A" mode; 1 day of soak, and 1 day of operation in the "B" mode. The system during the test was complete with all flight subsystems included.

Results of the operation were generally satisfactory. Cycle rate predictability for the panoramic cameras was within + 1.5% during the "A" mode, but averaged 2% fast during the "B" mode. The higher rates were attributed to the increased environmental temperatures during that portion of the test.

Clock performance was satisfactory. The error observed after 1 day each of "A" and "B" mode operation was -0.001 second and -0.002 second respectively.

Both "A" and "B" recovery sequences indicated satisfactory performance. The instruments stowed properly during the "A" recovery cut and wrap operation. All subsystems responded as expected after a programmed 70°F deactivate soak.

3. Panoramic Camera Performance

Satisfactory instrument operation was observed throughout the

test as indicated by the monitoring of such functions as payload transport and clamping, 99/101 clutch operation, lens rotation, and center of format. Instrument operation at start and shut-down was normal, with the exception of an unexplained random current drain at instrument "ON" command.

Evaluation of the test film showed that the tested payload was free of any noticeable corona marking. The J-22 system was recommended for flight.

4. Stellar-Index Camera Performance

Both "A" and "B" mission stellar/index operations were normal, with an average stellar/index ratio of 7 to 3. On several occasions during the "A" mission and on orbit #2 of the "B" mission, the index metering monitor indicated that the index idler contact was chattering. The chattering occurred between platen "down" and platen "up" commands.

5. Instrumentation Performance

During orbit #11 of the "B" mode brush 14 and 27 functions did not respond correctly while operating at a reduced voltage. Problems encountered were V/h delay switch not homing with a Br. 14, and RTC 12 not stepping with a Br. 14; and the V/h delay switch "over-stepping" with a Br. 27 command. Camera cycle rate deviations are shown in Table 2-2.

6. Temperature Environment

The TASC Chamber thermal environment was programmed to simulate the on-orbital temperature environment of the J-22 payload system in flight. Average instrument temperatures during various times throughout the test are tabulated below. There were no evidences of self-heating of the temp sensors from tests conducted during the "A" and "B" soak periods. It is interesting to note that the clock has some inherent heating characteristics while first "Warming Up".

After chamber pump-down it was noticed that thermocouple #20 had completely come off the surface at station zero. Thermocouple #22, it was concluded, had a loose connection to vehicle surface

J-22 168/169 ENVIRONMENTAL TEST CYCLE RATES 03-20-65

REV/MODE		RAMP		T.U.R.	INST 168 ACT.	NUM.	DEV.	INST 169 ACT.	NUM.	DEV.	168/169 DIFF.
1	A	7	7	385	3.509	3.516	0.31	3.510	3.520	0.28	0.14
2	A	4	1	2125	2.172	2.166	-0.27	2.162	2.167	0.25	-0.46
3	A	5	8	1550	2.437	2.446	0.37	2.437	2.456	0.77	-0.
4	A	7	7	2275	2.566	2.572	0.22	2.570	2.581	0.41	0.16
4	A	8	2	260	5.350	5.312	-0.72	5.350	5.319	-0.59	-0.
6	A	11	1	2040	2.283	2.291	0.36	2.290	2.302	0.54	0.31
7	A	7	7	1175	2.900	2.879	-0.71	2.890	2.886	-0.13	-0.34
8	A	7	7	2525	2.760	2.746	-0.49	2.740	2.754	0.51	-0.72
9	A	4	1	3206	3.460	3.458	-0.07	3.460	3.462	0.05	-0.
10	A	11	1	1870	2.270	2.272	0.09	2.272	2.283	0.50	0.09
11	A	7	7	1900	2.496	2.479	-0.70	2.500	2.488	-0.47	0.16
13	A	11	1	1975	2.283	2.273	-0.44	2.287	2.284	-0.12	0.18
14	A	11	1	2385	3.990	3.986	-0.10	4.005	3.990	-0.40	0.38
15	A	5	8	1925	2.393	2.377	-0.69	2.400	2.387	-0.54	0.29
16	A	8	2	2550	2.687	2.670	-0.65	2.683	2.678	-0.19	-0.15
1	B	7	7	390	3.540	3.513	-0.77	3.535	3.517	-0.51	-0.14
2	B	4	1	2131	2.175	2.166	-0.39	2.155	2.168	0.59	-0.92
2	B	5	8	830	2.820	2.837	0.60	2.820	2.844	0.85	-0.
3	B	5	8	1650	2.397	2.414	0.69	2.397	2.424	1.11	-0.
4	B	7	7	2281	2.550	2.575	0.96	2.560	2.584	0.92	0.39
4	B	8	2	341	5.070	5.125	1.07	5.080	5.131	0.99	0.20
6	B	11	1	2041	2.240	2.292	2.25	2.250	2.303	2.29	0.45

TABLE 2-2

REV/MODE		RAMP		F.U.R.	INST 168 ACT.	INST 168 NOM.	INST 168 DEV.	INST 169 ACT.	INST 169 NOM.	INST 169 DEV.	168/169 DIFF.
6	B	5	8	1091	2.640	2.698	2.14	2.660	2.706	1.69	0.76
6	B	5	8	1446	2.440	2.489	1.98	2.450	2.499	1.95	0.41
7	B	7	7	1281	2.730	2.777	1.68	2.750	2.784	1.22	0.73
7	B	7	7	1692	2.480	2.517	1.47	2.490	2.526	1.43	0.40
8	B	7	7	2631	2.770	2.845	2.64	2.790	2.852	2.18	0.72
8	B	4	1	1017	2.660	2.705	1.67	2.680	2.713	1.22	0.75
9	B	4	1	3211	3.390	3.468	2.26	3.400	3.473	2.09	0.29
10	B	11	1	2965	4.500	4.524	0.53	4.520	4.527	0.17	0.44
11	B	7	7	1900	2.500	2.479	-0.86	2.517	2.488	-1.15	0.68

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 2-2
(Cont'd)

which caused intermittent readings. A heat lamp was too close to thermocouple #24 (S/I #1) causing the 144°F temperature. Internal S/I temperature monitors did not substantiate the external recorded temperatures.

TABLE 2-1

Self-Heating Test

	T=0	T=1200	T=5400	Ø15A	Deactive	Ø1B	Ø9B
Inst. #1	75	76	76	65	67	74	93
Inst. #2	78	78	78	64	65	71	92
Supply Spools	82	83	82	57	58	66	83
Clock	72	76	82	63	68	70	85

The noticeable increase in temperature recorded during the "B" mode is due to a beta angle of 53° versus a beta angle of 0° during the "A" mode.

7. Pressure Environment

The J-22 environmental test was conducted with a flight pressure make-up system. Analysis of the pressure make-up system data and correlation with corona performance of the system will be covered in a separate report.

However, preliminary data indicates that the PMU system functioned satisfactorily throughout the test, and that tested payload was corona free. An orbit versus pressure (microns of H_g) is shown as Figure 2-1.

B. RESOLUTION TEST

The dynamic resolution test of the J-22 payload system was performed at the A/P facility on 2 April 1965. Each panoramic camera photographed high and low contrast resolution targets. The resulting through focus resolution data is shown in Figure 2-2 for the Master camera and in Figure 2-3 for the Slave camera.

J-22 TASC TEST PRESSURES

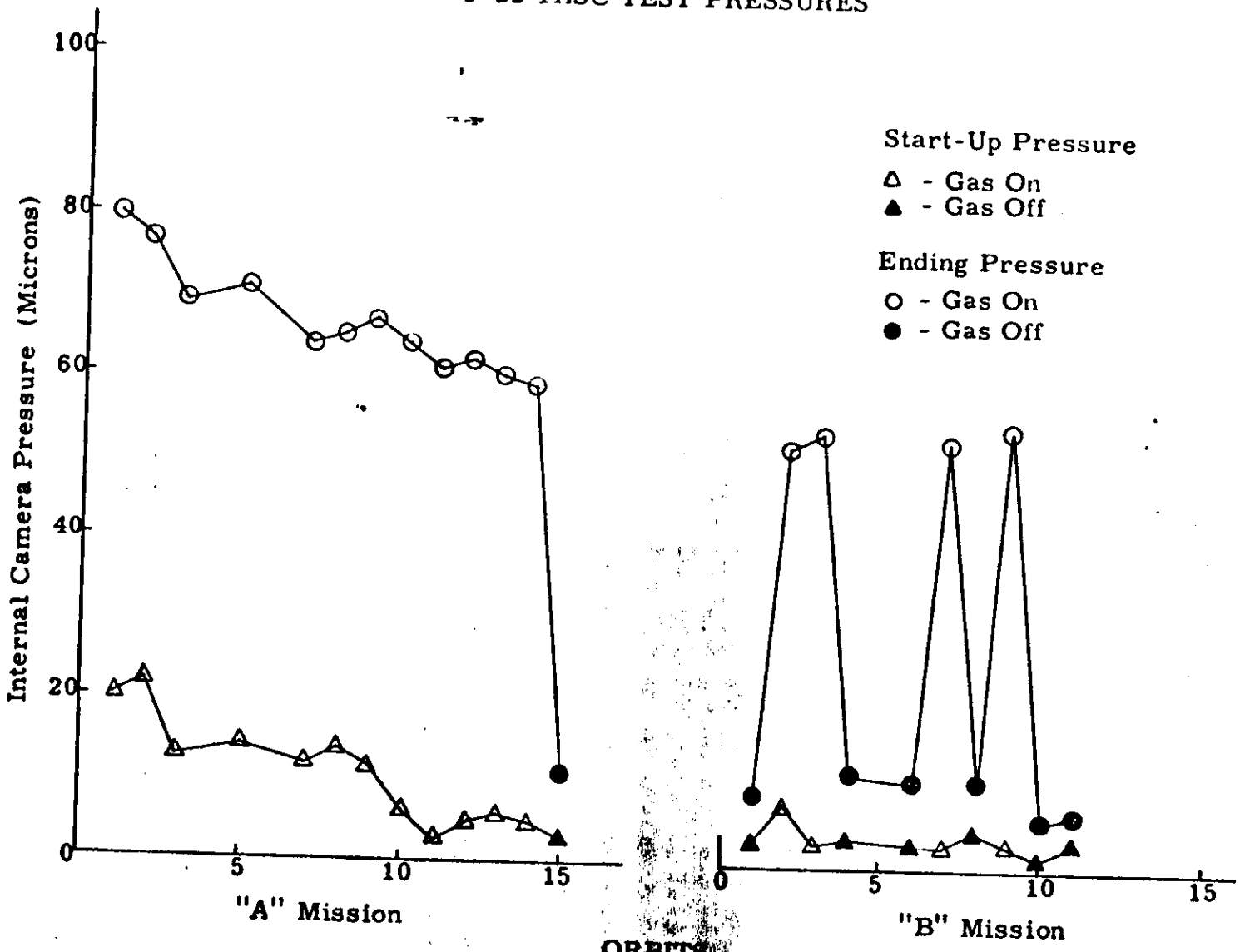
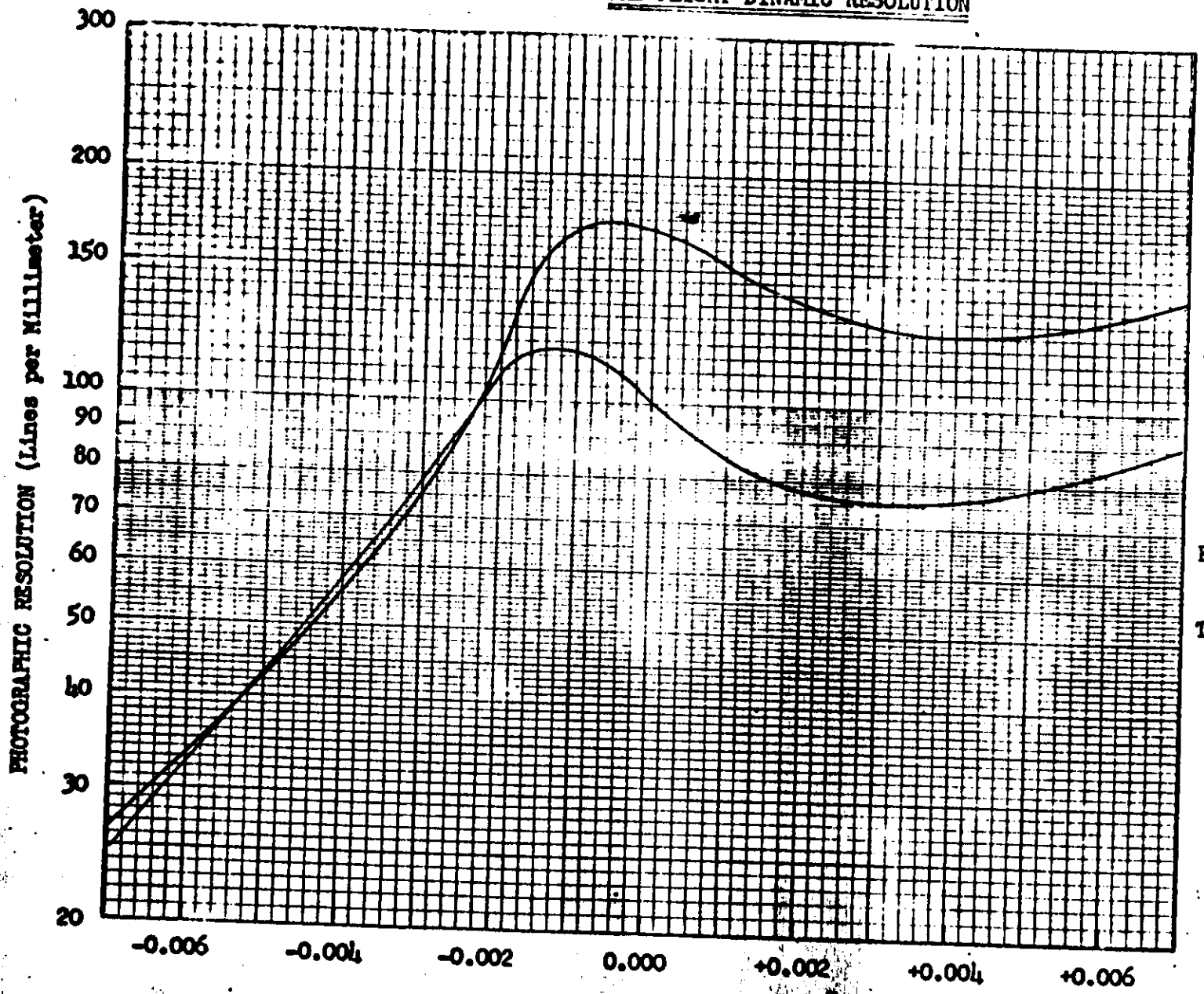


FIGURE 2-1

PRE-FLIGHT DYNAMIC RESOLUTION



Camera No: 168

Payload No: J-22

Resolution (l/mm)

High Contrast: 171

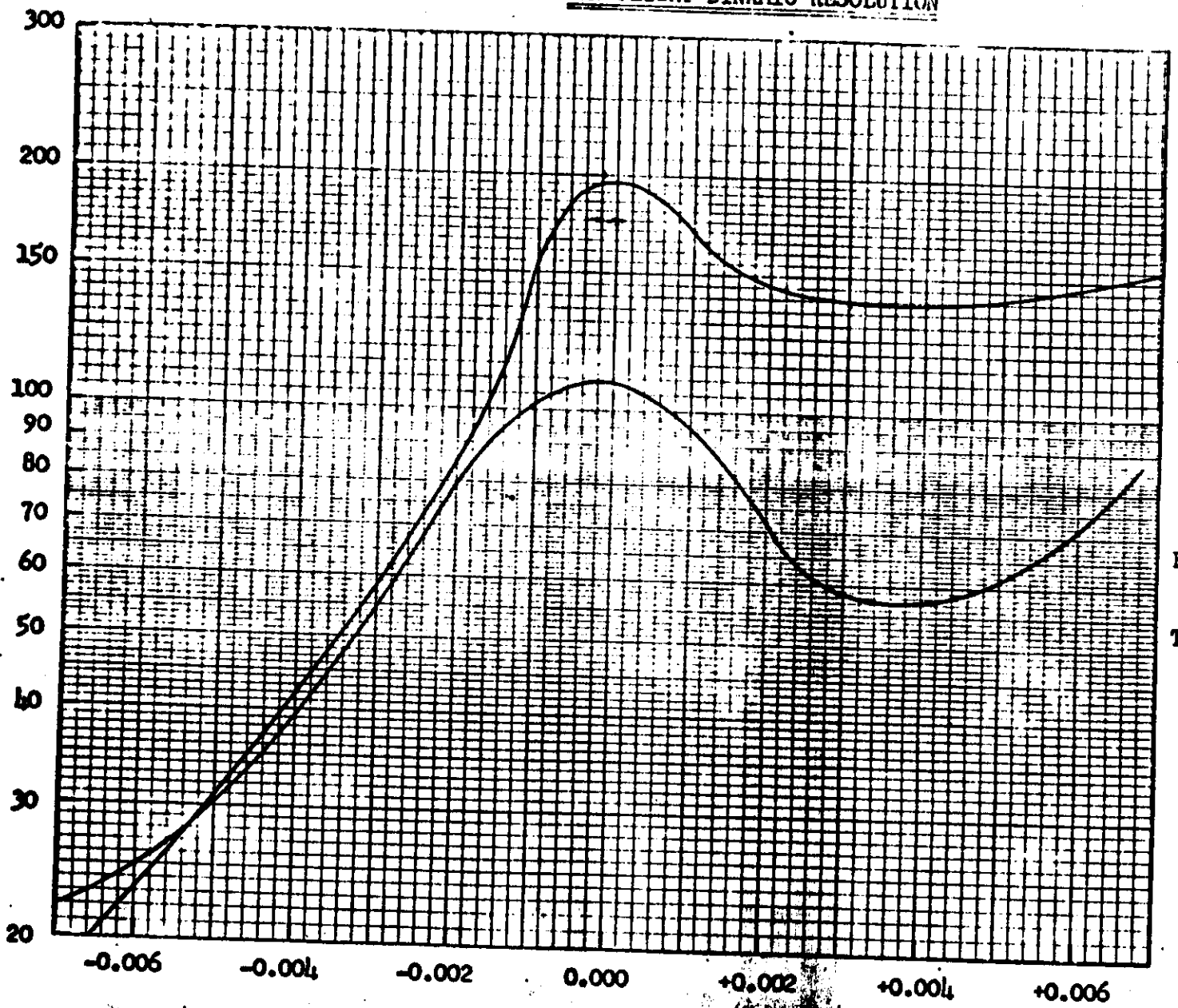
Low Contrast: 117

Film Type: 4404

Test Date: 8 April 196[redacted]

FIGURE 2-2

PRE-FLIGHT DYNAMIC RESOLUTION



Camera No: 169

Payload No: J-22

Resolution (l/mm)

High Contrast: 196

Low Contrast: 109

Film Type: 4404

Test Date: 2 April 196[illegible]

FIGURE 2-3

C. LIGHT LEAK TEST

The examination of the film threaded in the J-22 system during the light leak test determined that all of the fogging considered significant to flight performance resulted from a single light leak region at the drum of the Master Instrument. The felt seals at this location were readjusted, and subsequent examination showed that the leak was reduced to a level considered to be adequate for flight certification of the system.

SECTION 3

FLIGHT OPERATIONS

A. INSTRUMENTATION AND COMMAND PERFORMANCE

The telemetry instrumentation system operated satisfactorily except for the cycle counter for the slave camera. The counter malfunctioned between orbits 131[redacted], 132[redacted] and 133[redacted]. The counter gained approximately 90 counts between orbits 131 and 132 but lost approximately 90 counts between orbits 132 and 133. Similar problems as this (counter counting xx99 to xx00) have occurred in both test and flight but has never corrected itself. Improved cycle counters are scheduled to be installed in J-25 and up.

Normal response was obtained from all stored and real time commands Between orbit 30[redacted]ade and orbit 31[redacted] several unexplained ZEKE commands were experienced. The H-timer motor frequency setting changed causing the timer to be 17.3 seconds ahead of predicted at orbit 31[redacted] This caused one operation to occur early. The timer was then reset at orbit 31[redacted] RFI type noise coupled with slow relay response is considered to have caused the random command generation which caused the timer motor frequency change.

B. PANORAMIC CAMERA PERFORMANCE

Engineering operations were programmed for acquisition over [redacted] Tracking Station during orbits 9, 16, 31, 47, and 63 of Mission 1022-1, and 72, 79, 94, 110 and 126 of Mission 1022-2. Instrument dynamic operation was good on all engineering operations observed.

Instrument operation and payload metering was satisfactory throughout both Mission 1022-1 and 1022-2 as indicated on TLM by the center-of-format, lens rotation, and payload supply, take-up and horizon idler monitors. Start-up and shut-down was normal.

Cycle rate data obtained from the engineering operations indicated that instrument number 1 was running 1.6% to 2.65% slow in the limiter region. Instrument number 2 was running 1.65% to 3.10% slow in this same region. The cycle rate errors were approximately the same for both the -1 and -2 missions.

This indicates that the cycle rate error was not caused by temperature. However, the mag amp, V/h transducer and the V/h programmer temperature could be sensitive to temperature but are not monitored. The instruments operated within 1% of each other on all the engineering operations. Average 99/101 clutch ratios were 6/5 and 6/6 for the master and slave respectively. A summary of the engineering cycle rate data is presented in Table 3-1.

The center format switch S-105 malfunctioned for 10 frames on orbit 75. The H.O. cameras, data block and cycle counter failed to operate as a result.

Film consumption for the flight was as follows:

MISSION 1022-1

	Master	Slave
Cycles	2967	2943
Feet	8213*	8170*

MISSION 1022-2

Cycles	2935	2967
Feet	7758	7849

*Includes pre-flight test footage

C. STELLAR-INDEX PERFORMANCE

Both the -1 and -2 stellar/index cameras operated properly during the entire mission. Stellar/index events were observed on all of the engineering operations acquired at [redacted] Metering was normal for both units. The index shutter pulses were indicating properly during all of the daytime engineering operations at [redacted] The -1 index payload was depleted prior to the engineering operation on orbit 63[redacted] which was the last operation of the -1 mission. The -2 index supply was depleted on orbit 158 engineering operation which was the first stellar/index meter command after the -2 recovery. All S/I events occurred in the proper sequence throughout the flight.

J-22 MISSION 1022 CYCLE RATE SUMMARY-ENGR. OPERATIONS

REV/MODE	RAMP	T.U.R.	INST 168 ACT.	INST 168 NON. CALIB.	INST 168 DEV.	INST 169 ACT.	INST 169 NON. CALIB.	INST 169 DEV.	168/169 DIFF.
9 A	8 3	150	5.080	5.091	0.22	5.120	5.097	-0.46	0.79
16 A	8 3	1705	2.310	2.255	-2.46	2.321	2.266	-2.42	0.48
31 A	7 3	1845	2.233	2.200	-1.50	2.254	2.200	-2.45	0.94
47 A	7 3	1815	2.250	2.201	-2.23	2.265	2.201	-2.91	0.67
63 A	7 3	1866	2.236	2.200	-1.65	2.236	2.200	-1.65	-0.
72 B	7 3	365	4.490	4.445	-1.02	4.537	4.448	-2.00	1.05
79 B	7 3	1905	2.240	2.199	-1.85	2.249	2.199	-2.26	0.40
94 B	7 3	2018	2.250	2.201	-2.24	2.250	2.201	-2.24	-0.
110 B	7 3	2142	2.255	2.207	-2.17	2.263	2.207	-2.55	0.35
126 B	7 3	1982	2.258	2.200	-2.65	2.268	2.200	-3.10	0.44

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 3-1

D. CLOCK PERFORMANCE

Satisfactory clock correlation was obtained for both missions. Clock/System time correlation data is contained in Table 3-2. The system time is fitted to a best fit curve of clock versus system times which is represented by a second order equation in this case. The table includes the amounts that the recorded values of system time deviate from the corrected values.

The corrected system time values are computed from the equation - $y = a_2x^2 + a_1x + a_o$, where y = corrected system time and x = clock time.

E. PRESSURE MAKE-UP SYSTEM PERFORMANCE

The PMU supply consumption vs. camera operate time is plotted in Figure 3-1 . The overall average consumption rate was 7.42 PSIA/Minute of camera operate time. The plot of Figure 3-1 indicates that the PMU system is being heated during ascent and requires up to 2 days to dissipate. It is typical for past missions to have the same supply pressure at orbit 9 as the launch pressure. The instruments had been operated 24 minutes prior to orbit 9 and should have depleted 180 PSIA of the gas supply, based on the average flight consumption rate.

F. TEMPERATURE ENVIRONMENT

The temperature data obtained from [redacted] TLM acquisitions are summarized in Tables 3-3, and 3-4. Predicted vs actual flight temperatures are compared in Figures 3-2, 3-3 and 3-4.

The master camera drum temperature and the SRV-1 cassette mount temperatures were higher than predicted but were within the tolerance of $70 \pm 30^{\circ}$.

The clock temperature was lower than predicted at 56 to 58°F. Other temperatures were within the predicted ranges.

G. MONO OVERLAP REDUCTION EXPERIMENT

An experiment was conducted on this mission to verify dynamic operation of the system under simulated mono overlap reduction. To simulate overlap reduction, program 10 (stereo-disable) was used to delay the start up and shut down on one of the cameras. On orbits 1 and 47, only startup overlap was reduced. On orbit 126 the startup and shut down overlap was reduced. Vehicle dynamics, gas consumption and overlap on these experiments are still being analyzed.

MISSION 1022 PMU SUPPLY PRESSURE

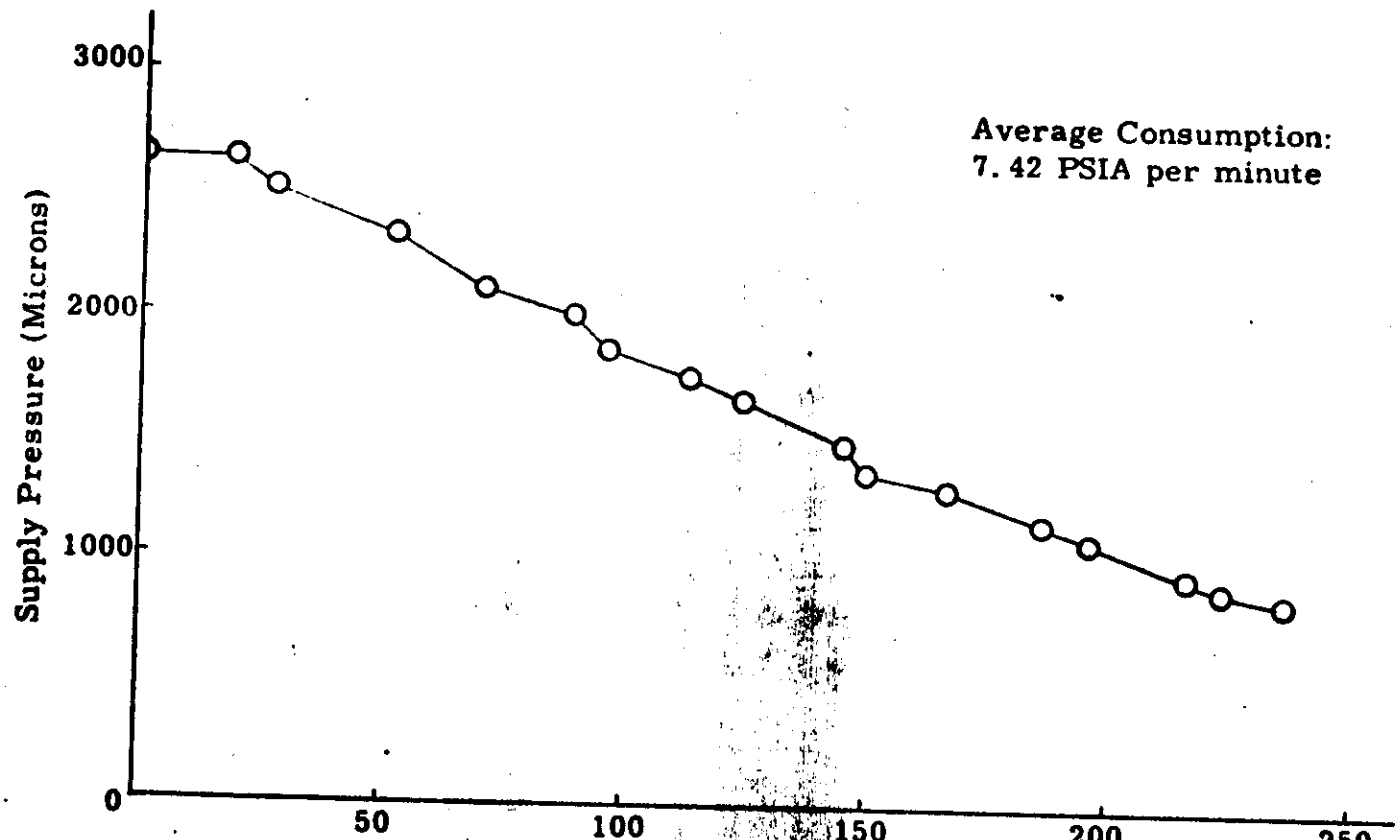


FIGURE 3-1

CLOCK SUMMARY
PRELIMINARY CLOCK CORRELATION

ORDER FIT 1

SYS TIME I/P	CL TIME I/P	COMP SYS TM	DELTA ST	REV	STA
40717.297	104793.64390	40717.30590	-0.00793	9	1
80485.598	144561.95590	80485.60710	-0.00813	16	1
36239.857	186716.21990	36239.85960	-0.00169	24	1
75995.477	226471.84490	75995.47380	0.00410	31	1
37206.245	274082.62690	37206.24290	0.00303	40	1
76949.312	313825.70790	76949.31310	-0.00018	47	1
32603.139	355879.54190	32603.13570	0.00423	55	1
77801.997	401078.40890	77801.99040	0.00751	63	1
39085.109	448761.53690	39085.10550	0.00445	72	1
78811.371	488487.81490	78811.37270	-0.00077	79	1
34546.657	530623.10890	34546.65530	0.00267	87	1
74347.909	33553.45890	74347.90650	0.00348	94	1
35449.792	81055.35490	35449.78960	0.00337	103	1
75234.395	120839.97690	75234.40080	-0.00483	110	1
36237.947	168243.53390	36237.94490	0.00304	118	1
76013.699	208019.30190	76013.70210	-0.00216	126	1
31735.473	250141.08790	31735.47670	-0.00272	134	1
76816.782	295222.41390	76816.79040	-0.00749	142	1

A0=-0.64076309620 05 A1= 0.999999728525D 00
SIGMA=0.00449 NO. POINTS= 18
RATIO OF CLOCK TIME TO SYS TIME= 0.100000027147D 01

ORDER FIT 2

SYS TIME I/P	CL TIME I/P	COMP SYS TM	DELTA ST	REV	STA
40717.297	104793.64390	40717.29910	-0.00111	9	1
80485.598	144561.95590	80485.60250	-0.00360	16	1
36239.857	186716.21990	36239.85720	0.00072	24	1
75995.477	226471.84490	75995.47320	0.00478	31	1
37206.245	274082.62690	37206.24400	0.00198	40	1
76949.312	313825.70790	76949.31530	-0.00238	47	1
32603.139	355879.54190	32603.13880	0.00111	55	1
77801.997	401078.40890	77801.99420	0.00371	63	1
39085.109	448761.53690	39085.10960	0.00032	72	1
78811.371	488487.81490	78811.37680	-0.00488	79	1
34546.657	530623.10890	34546.65910	-0.00114	87	1
74347.909	33553.45890	74347.90970	0.00022	94	1
35449.792	81055.35490	35449.79180	0.00113	103	1
75234.395	120839.97690	75234.40190	-0.00593	110	1
36237.947	168243.53390	36237.94430	0.00365	118	1
76013.699	208019.30190	76013.69980	0.00017	126	1
31735.473	250141.08790	31735.47220	0.00171	134	1
76816.782	295222.41390	76816.78340	-0.00046	142	1

A0=-0.64076323710 05 A1= 0.9999998066970 00
A2=-0.83746186556880-13
SIGMA=0.00272 NO. POINTS= 18

TABLE 3-2

TABLE 3-3

J-22 TEMPERATURE SUMMARY

SENSOR	ORBITS ACQUIRED																	
Master Camera	0	8	16	24	31	40	47	55	63	72	79	87	94	103	110	119	126	134
3	70	74	68	72	68	71	67	69	67	65	60	63	59	62	57	61	57	60
4	75	82	75	80	76	80	75	79	74	73	67	71	67	70	65	70	65	68
5	69	84	76	81	77	81	76	79	76	75	68	72	67	71	66	70	65	68
6	64	83	77	81	79	80	77	79	76	74	67	70	66	68	65	67	64	65
7	68	83	78	81	79	79	78	79	77	73	69	70	68	69	66	69	66	66
8	70	83	76	80	77	80	76	79	75	74	67	71	66	70	65	70	65	68
9	70	86	79	83	79	83	78	81	78	77	70	73	68	72	67	71	66	70
10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	69	80	75	77	73	76	73	74	72	66	63	64	61	63	60	62	59	59
12	69	74	66	71	68	72	66	70	66	65	59	65	58	63	58	62	57	61
13	67	84	77	80	78	80	76	77	74	71	67	67	65	66	63	65	62	63
AVG	69	82	75	79	75	78	74	77	74	71	66	69	64	67	63	67	63	65
Slave Camera																		
3	67	80	74	76	75	75	73	73	72	69	64	65	63	64	60	63	60	60
4	68	78	70	76	72	75	70	74	69	69	63	66	61	65	59	64	59	62
5	68	80	73	78	74	78	73	76	72	72	66	68	65	68	63	68	63	66
6	62	72	67	71	69	71	67	69	67	64	59	61	59	61	58	60	57	59
7	66	79	75	78	77	78	75	76	74	70	67	67	66	67	67	66	63	64
8	63	73	65	70	66	71	65	69	65	64	58	62	58	61	56	61	55	59
9	66	78	72	77	74	77	72	76	72	72	67	69	66	68	65	68	64	67
10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	74	71	66	69	70	69	66	68	66	64	60	61	58	60	58	61	58	60
12	71	81	73	78	75	78	72	77	72	72	66	69	64	67	63	67	62	65
13	65	73	68	71	71	72	68	70	68	64	60	60	60	60	58	60	58	59
AVG	67	76	70	74	73	74	70	73	70	68	63	65	62	64	60	64	60	58
Supply Spool																		
1	63	63	59	62	61	63	61	62	60	59	55	55	54	55	53	55	53	54
2	67	69	65	68	66	69	66	68	65	65	59	61	58	60	56	61	56	58

TABLE 3-4

J-22 TEMPERATURE SUMMARY

SENSOR	ORBITS ACQUIRED																	
	0	8	16	24	31	40	47	55	63	72	79	87	94	103	110	119	126	134
Fairing ("A") Barrel #1 ("B")																		
1	-	30	65	24	71	30	62	30	77	20	39	20	42	20	39	20	39	17
2	-	14	14	14	20	17	14	14	20	53	55	50	60	53	63	53	60	50
3	235	13	24	10	27	10	24	10	24	57	136	55	144	57	147	57	130	55
4	234	45	53	45	53	43	53	43	51	41	98	38	102	38	95	41	81	33
5	-	57	65	57	62	54	60	51	57	36	62	34	53	31	51	34	48	28
6	-	46	86	40	88	43	80	43	88	20	-	-	-	-	-	-	-	-
Barrel #2																		
1	162	46	66	52	63	43	60	40	57	31	55	28	49	28	43	28	40	22
2	152	44	99	44	102	42	93	42	99	39	84	37	84	37	82	37	71	32
3	237	59	130	54	140	59	130	59	153	57	126	57	136	57	140	59	123	57
4	225	51	51	51	57	54	54	51	62	45	51	48	57	45	57	48	57	48
5	199	49	60	49	62	49	60	49	60	36	49	36	49	34	49	36	47	34
Conic Adapter																		
1	177	43	55	43	55	43	49	40	52	30	40	26	37	26	35	26	29	23
Clock																		
1	90	61	57	59	59	59	57	57	57	49	49	46	46	51	46	46	46	46
2	92	59	55	57	57	57	57	57	57	49	46	46	46	46	46	46	44	44
Thrust Cone "A" to "B" SRV																		
1	119	41	35	37	35	37	34	35	34	57	54	55	52	54	51	54	50	52
2	81	62	51	54	49	54	48	51	47	65	62	62	61	61	59	61	58	58
Stellar/Index "A" to "B"																		
1	81	57	54	52	54	52	52	49	49	56	53	50	50	47	47	50	50	44
2	77	64	59	59	59	62	57	59	57	51	49	49	49	49	46	49	46	49
Recovery Battery "B" SRV																		
1	70	71	67	67	67	67	67	65	65	81	83	84	82	86	78	84	78	80
Master Cassette "A" SRV																		
2	91	72	65	67	66	67	65	66	66	-	-	-	-	-	-	-	-	-

J-22 INFLIGHT TEMPERATURES
Predicted Range (lines) vs Actual (x)

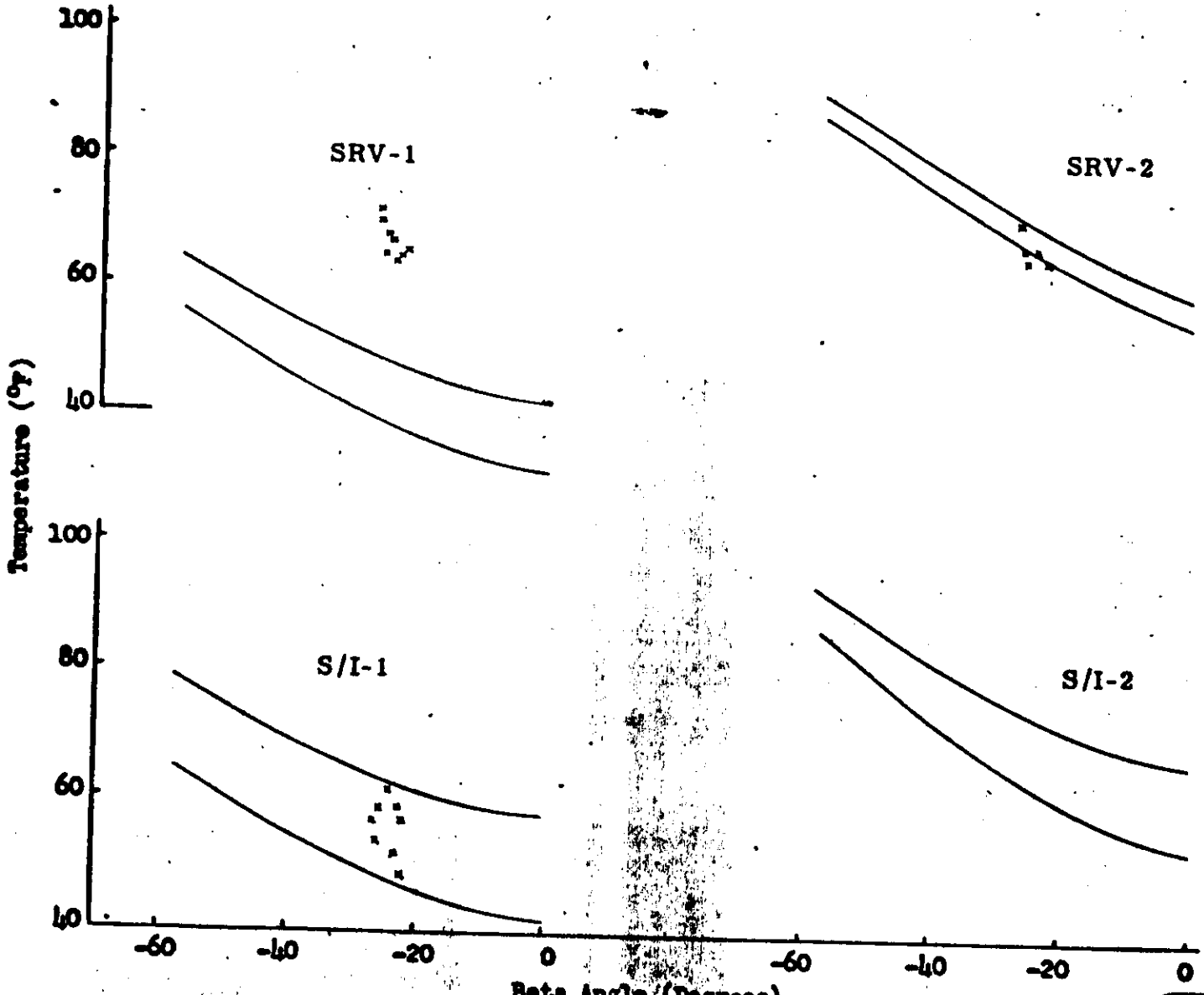


FIGURE 8-2

J-22 INFLIGHT TEMPERATURES
Predicted Range (lines) vs. Actual (x)

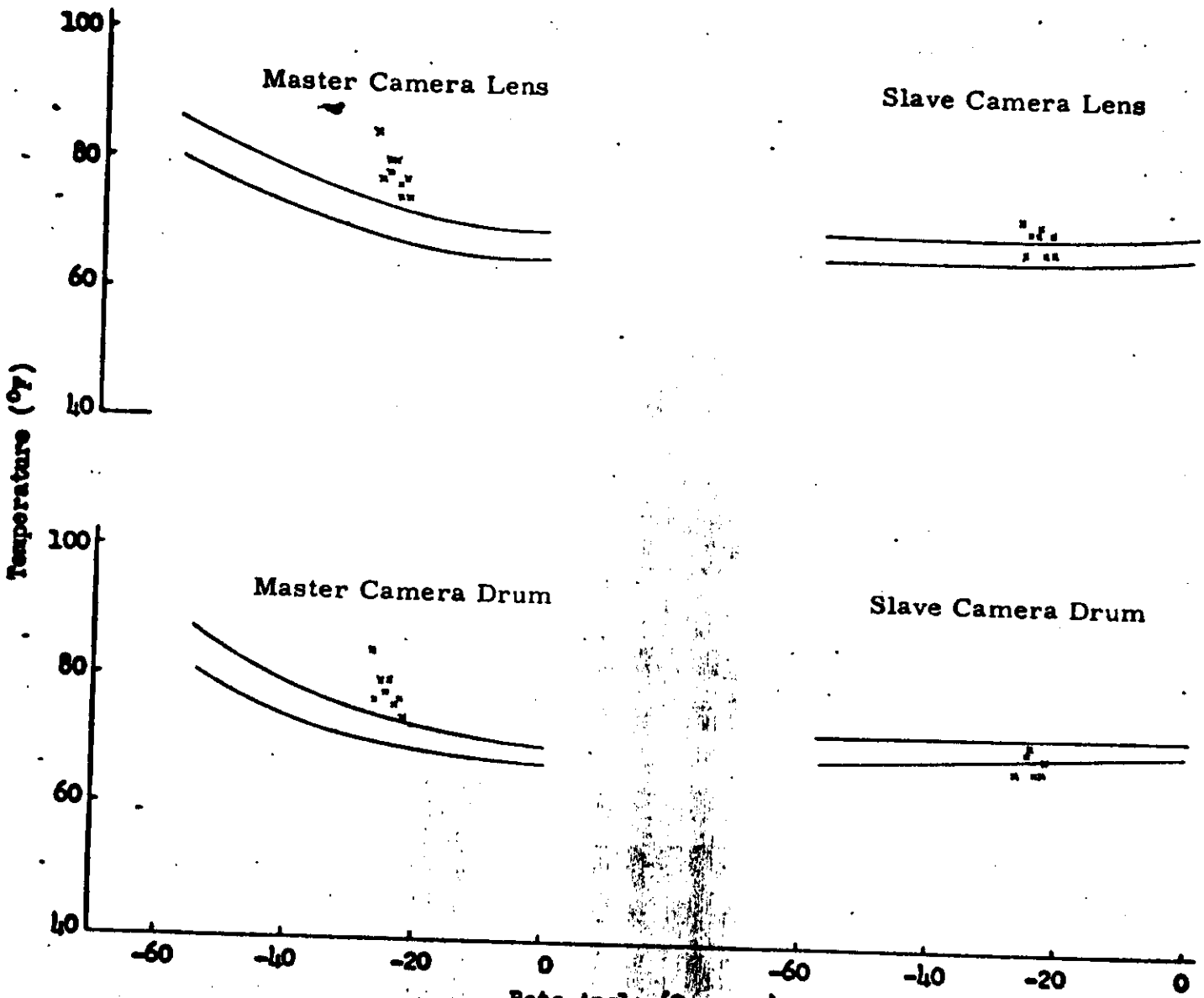


FIGURE 3-8

J-22 INFLIGHT TEMPERATURES
Predicted Range (lines) vs. Actual (x)

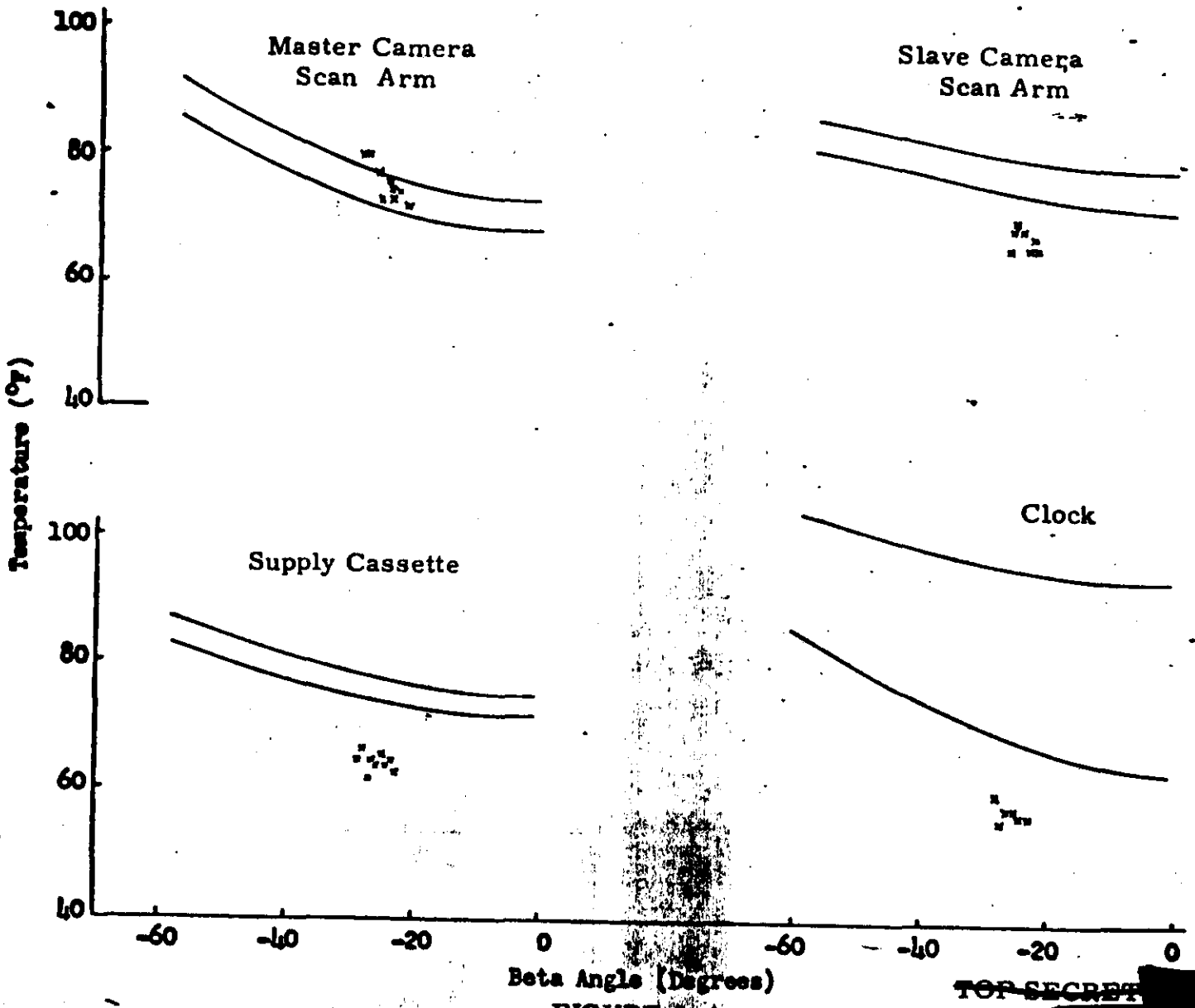


FIGURE 3-4

SECTION 4

MISSION 1022-1 RECOVERY SYSTEM

SRV #664 was received at A/P on 11 September 1964. The receiving inspection weight was 141 pounds. After modifications and incorporation of outstanding E.O.'s, the SRV was delivered to systems test for incorporation into the J-22 system.

The capsule was delivered to VAFB on 17 May 1965.

A successful air catch of the capsule was made on orbit 65. The impact was within normal tolerances. Table 4-1 lists the sequence of monitored re-entry and recovery event times.

The condition of the recovered capsule was satisfactory with damage limited to normal paint blistering. Post flight inspection and test showed no anomalies.

TABLE 4-1

RE-ENTRY SEQUENCE OF EVENTS

EVENT	SYSTEM TIME	DELTA TIME	
		Actual	Nominal
Transfer	2128.38	--	--
Electrical Disconnect	2129.43	1.05	$0.90^{+0.43}_{-0.40}$
Separation*	2130.37	1.99	2.00 ± 0.25
Spin**	2132.82	3.39	3.40 ± 0.30
Retro	2140.43	7.61	7.55 ± 0.45
Despin	2151.16	10.73	10.75 ± 0.54
T/C Separation	2152.82	1.66	1.50 ± 0.15
"G" Switch Open	2634.90	494.47	496.6
Parachute Cover Off	2668.96	34.06	34.0 ± 1.5
Drogue Chute Deployed	2669.54	0.58	0.63 ± 0.08
Drogue Chute Release	2680.09	10.55	$10.14^{+0.48}_{-0.40}$
Main Chute Deployed	2680.53	0.44	0.52 ± 0.13
Main Chute Disreefed	2685.29	4.76	$4.46^{+0.49}_{-0.29}$

* From Transfer
** From Electrical Disconnect

SECTION 5

MISSION 1022-2 RECOVERY SYSTEM

SRV #658 was received at A/P on 15 January 1964 at a receiving weight of 151.4 pounds. After modification and incorporation of outstanding E.O.'s the capsule was delivered to systems test for incorporation into the J-12 system.

The capsule was delivered to VAFB on 17 May 1965.

A successful air recovery was executed on orbit 144 on 28 July 1965. The impact point was within nominal dispersion tolerances. Table 5-1 lists the sequence of monitored re-entry and recovery events.

The condition of the recovered capsule was satisfactory with damage limited to normal paint blistering. Post flight inspection and test showed no anomalies.

TABLE 5-1

RE-ENTRY SEQUENCE OF EVENTS

EVENT	SYSTEM TIME	DELTA TIME	
		Actual	Nominal
Transfer	1083.20	--	--
Electrical Disconnect	1084.16	0.96	$0.90^{+0.43}_{-0.40}$
Separation*	1085.19	1.99	2.00 ± 0.25
Spin**	1087.57	3.41	3.40 ± 0.30
Retro	1095.04	7.47	7.55 ± 0.45
Despin	1105.88	10.84	10.75 ± 0.54
T/C Separation	1107.35	1.47	1.50 ± 0.15
"G" Switch Open	1637.59	530.24	537.4
Parachute Cover Off	1671.68	34.09	34.0 ± 1.5
Drogue Chute Deployed	1672.28	0.60	0.63 ± 0.08
Drogue Chute Release	1682.70	10.42	$10.14^{+0.48}_{-0.40}$
Main Chute Deployed	1683.26	0.56	0.52 ± 0.13
Main Chute Disreefed	1687.69	4.43	$4.46^{+0.49}_{-0.29}$

* From Transfer
** From Electrical Disconnect

SECTION 6

MASTER (FWD) PANORAMIC CAMERA

A. COMPONENT ASSIGNMENT

Component	Serial Number
Main Camera	168
Main Camera Lens	1532435
Supply Horizon Camera	181G10
Supply Horizon Camera Lens	812308
Take-up Horizon Camera	146A
Take-up Horizon Camera Lens	813513
Supply Cassette	SC-33

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

Take-Up (Starboard) Horizon Camera:

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

C. POST FLIGHT PERFORMANCE EVALUATION - FWD Camera

This camera produced 2976 frames (8213 feet, including pre-flight test footage) of photography during Mission 1022-1, and 2935 frames (7758 feet) during Mission 1022-2. The overall photographic quality was judged to be better than Missions 1021 and 1020, but not as good as the best earlier missions. Cloud coverage was estimated to be 35% on Mission 1022-1, and 45% on Mission 1022-2.

Image quality of material from the Master pan camera appeared to be slightly poorer than that of material from the Slave pan camera. From examination of the duplicate positive prints, it appeared that some highlight detail may have been lost from semi-specular solar reflections, however, this effect could have resulted from the way in which the duplicate was printed. Photographic interpreters using the material stated that while the Master material was not as good as the Slave, it did provide particularly good stereo viewing. This suggests that the differences in illumination geometry between the two cameras tended to increase the total information content of corresponding ground areas. Insofar as could be determined from the duplicate positives, there was very little difference between Master and Slave pan cameras in either the density or contrast of the imagery produced.

The Master panoramic camera and its auxiliary equipment operated in a generally satisfactory manner throughout both missions. The prinicpal functional defect was the failure of one fiducial lamp on the starboard (output) horizon camera on Pass D-08. As a result, the intensity of the remaining three fiducial lamps in this camera increased and caused blooming of the film images. This condition continued through the remainder of Mission 1022-1, and all of Mission 1022-2. Another defect of a minor nature was the slight blooming of the index mark located adjacent to the camera number. Other than these items, the functioning of all data lights was normal. Horizon camera operation was also normal.

Pre-flight testing of this instrument had shown some evidence of heavy banding near the start of scan. Although a careful check was made for this condition in the flight material, only slight indications of the effect could be detected. In fact, the extent of banding in this instrument was less than that of several recent systems which had shown less banding in test.

The Master camera film was unusually free of scratches. The usual rail marks were minor throughout both missions. A small scan head roller scratch was detected along the timing mark edge of the format. However, the film did

not contain the many small roller scratches observed in previous missions.

Although particular effort had been directed to elimination of light leaks from the pan cameras, the usual fogging from this source appeared on the last three frames of a pass and the first frame of the following pass. The forebody light leak affecting the sixth frame from the end of a pass during a first mission in some earlier systems was eliminated. There was no other light leak fogging.

SECTION 7

SLAVE (AFT) PANORAMIC CAMERA

A. COMPONENT ASSIGNMENT

Component	Serial Number
Main Camera	169
Main Camera Lens	1582435
Supply Horizon Camera	183G10
Supply Horizon Camera Lens	812311
Take-up Horizon Camera	183G9
Take-up Horizon Camera Lens	812297
Supply Cassette	SC-33

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	55mm f/6.8
Aperture Setting	f/8.0
Exposure Time	1/100 second
Filter Type	Wratten 25
Take-Up (Port) Horizon Camera:	
Lens	55mm f/6.8
Aperture Setting	f/6.8
Exposure Time	1/100 second
Filter Type	Wratten 25

C. POST FLIGHT PERFORMANCE EVALUATION - AFT Camera

This camera produced 2943 frames (8170 feet, including pre-flight test footage) of photography during Mission 1022-1, and 2967 frames (7849 Feet) of photography during Mission 1022-2. The overall photographic quality was judged to be slightly better than that of the Master instrument although contrast and density appeared comparable. The MIP frames for both missions were given a rating of 85 and were produced by the Slave camera.

The evaluation team compared the MIP frames of this mission with those of Mission 1006-1 and -2. Mission 1006 has been considered to contain the best image quality of any Corona mission to date, and the MIP frames of both parts of that mission had been assigned MIP values of 90. The evaluation team considered the MIP frames of Mission 1022 to be comparable, however, the MIP frame of Mission 1006-1 had an added advantage of more than 10% larger scale.

In examining the entire 1022 mission, it appeared that the variability of image quality may have been greater than usual. It appears probable that atmospheric conditions contributed significantly to this variability. Also, since the evaluation of image quality is necessarily subjective to a considerable degree, the presence of some areas with excellent quality may have given the impression that other areas were relatively poor.

The Slave panoramic camera and its auxiliary equipment operated in a generally satisfactory manner throughout both missions. The principal defect noted was the failure of the center-of-format switch for one frame (D-07 AFT 46) on Mission 1022-1, and again for ten consecutive frames (D-75 AFT 13 through 22) on Mission 1022-2. Failure of this switch eliminates operation of the horizon camera shutters, and lights for the horizon fiducials, camera serial number, index marks, and the binary time word. The 200 cycle timing mark corresponding to switch contact is not blanked.

A minus density streak appeared intermittently in the pan format during passes D-67 through D-70. This condition, which is observed occasionally in both test and flight film, is due to dirt (probably emulsion dust) in the exposure slit.

Pre-flight testing of this instrument had shown heavy banding near the start of scan. The condition was similar to that described on the Master pan camera. As was also the case with the Master pan camera, the flight results from the Slave pan camera showed only slight indications of banding.

Film from the Slave pan camera was exceptionally free from mechanically caused degradations. The rail scratches were minor throughout and the scratches from scan head rollers that appear on most flights were nonexistant. Although the film condition was excellent, there was apparently enough emulsion dust to produce the minus density streak already noted, and also some dust adhering to the film rail at the data block side to cause a rough edge to the pan format.

The usual fogging from light leaks of both pan cameras appeared on the Slave pan camera film. These light leaks affect the last four frames of a pass as well as the first of ;the following pass. Some of this fogging appears regularly while the rest appears only when the film has not been moved for several orbits. A leak from the forebody on Mission 1022-1 also appeared on the seventh frame from the end of a pass in the few cases where the film was not moved for several orbits. As already noted, this leak did not affect the Master camera film which is adjacent to the Slave film at this point.

SECTION 8

PANORAMIC CAMERA EXPOSURE

The exposure parameters of the panoramic cameras were the normal combinations of a 0.250 inch wide slit with a Wratten 25 filter on the Master camera and a 0.175 inch wide slit with a Wratten 21 filter on the Slave camera. These conditions place the nominal exposure between the intermediate and full level processing curves, as published by [redacted] for their 3404 emulsion.

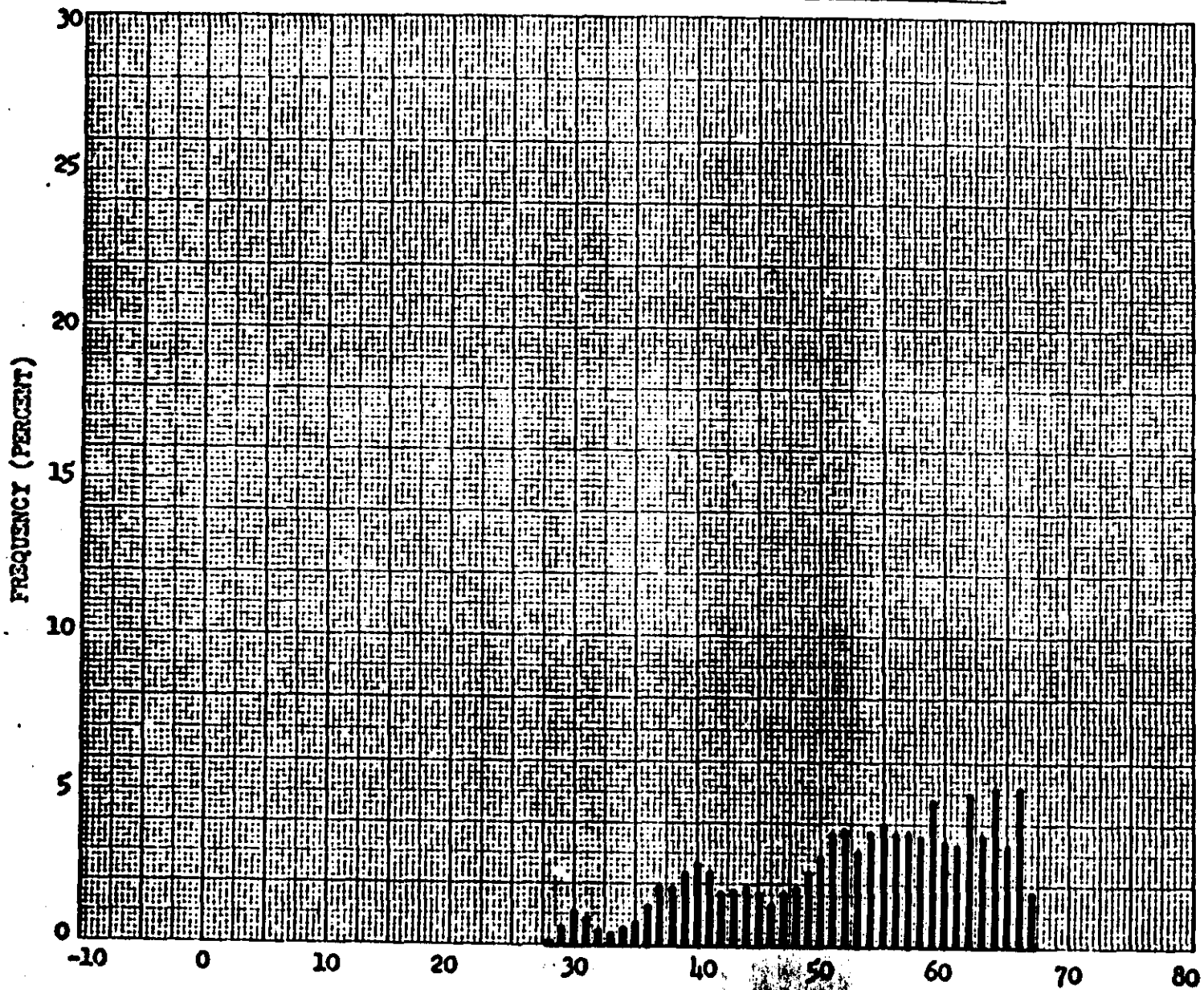
The illumination conditions during the mission were relatively uniform as the flight was conducted near the summer solstice. The frequency distributions of the solar elevations and solar azimuths encountered during the photographic operations are shown in Figures 8-1 through 8-4.

The nominal exposure times are shown as a function of latitude for passes D-08, D-40, D-72, D-104 and D-136 in Figures 8-5 through 8-9 for the Master camera and in Figures 8-10 through 8-14 for the Slave camera. 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
1022-1	FWD	Predicted	0.0	36.0	64.0
		Reported	8.0	36.0	56.0
1022-1	AFT	Predicted	0.0	89.2	10.8
		Reported	6.8	41.8	51.4
1022-2	FWD	Predicted	0.0	8.3	91.7
		Reported	0.5	37.0	62.5
1022-2	AFT	Predicted	0.0	100.0	0.0
		Reported	10.0	44.0	46.0

The nominal exposure for both cameras was, in general, half way between the Intermediate and Full processing curves. The variations between the predicted and reported values are therefore not considered significant as small changes in topography, weather and haze would become the predominant factors in the choice of processing level.

SOLAR ELEVATION FREQUENCY DISTRIBUTION



Mission No: 1022-1

Payload No: J-22

Camera No: 168

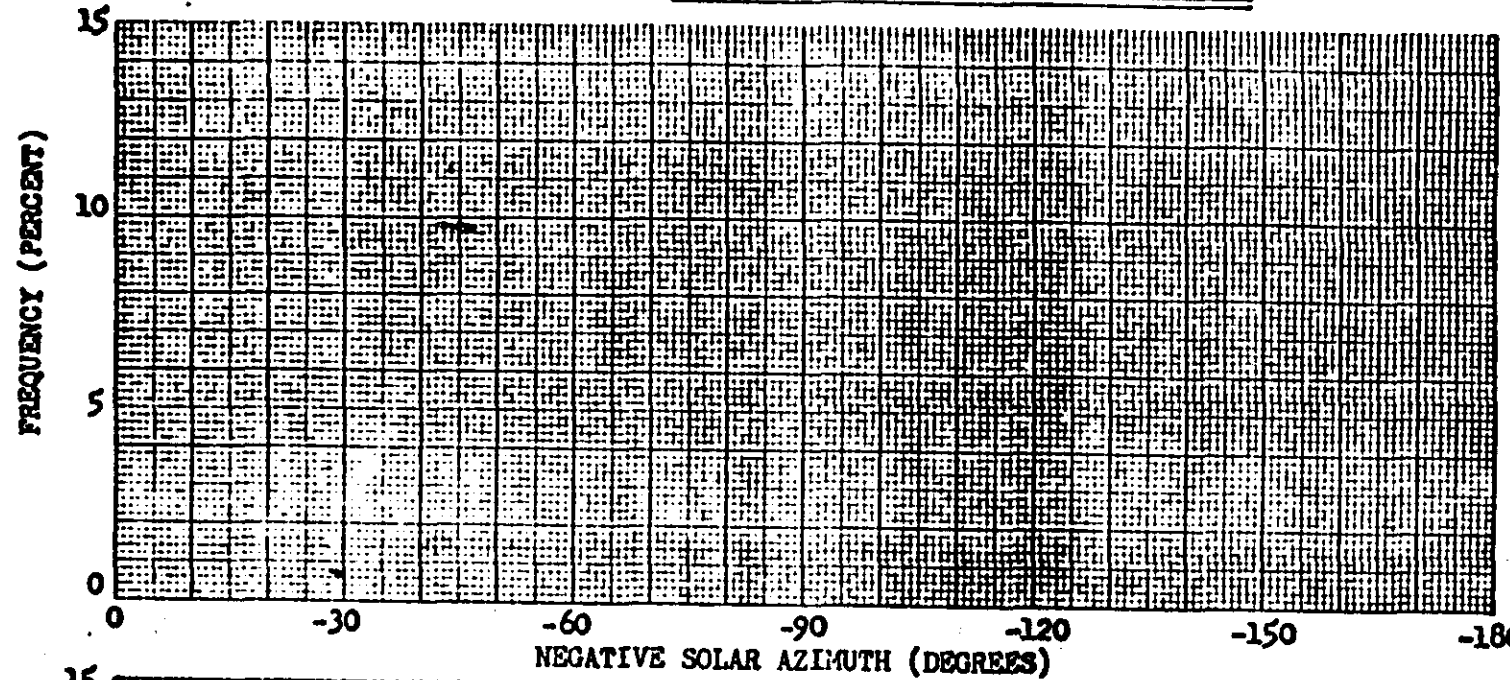
Launch Date: 7/19/65

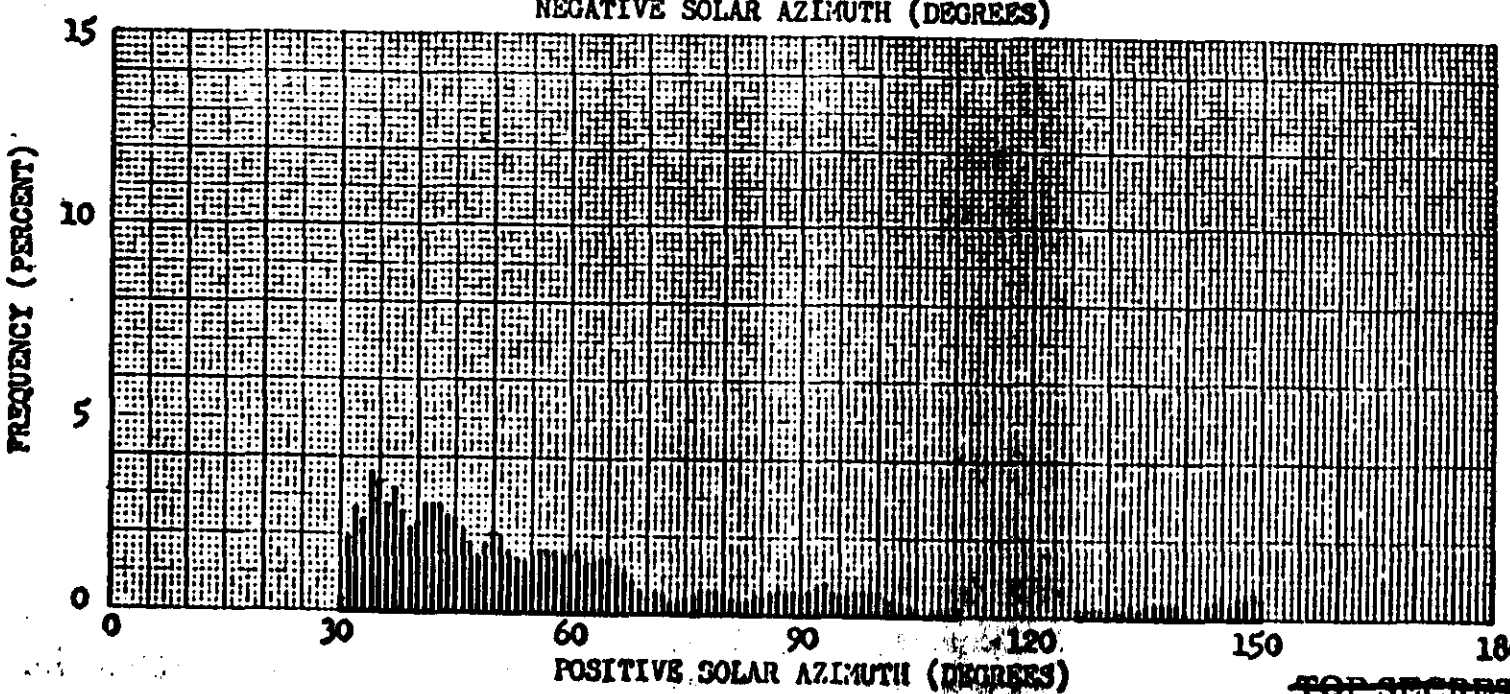
Launch Time: 2201 Z

Inclination: 85°

FIGURE 8-1

SOLAR AZIMUTH FREQUENCY DISTRIBUTION





Mission No: 1022-1

Payload No: J-22

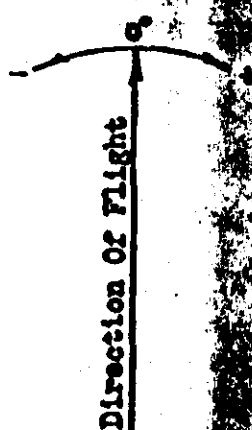
Camera No: 168

Launch Date: 7/19/65

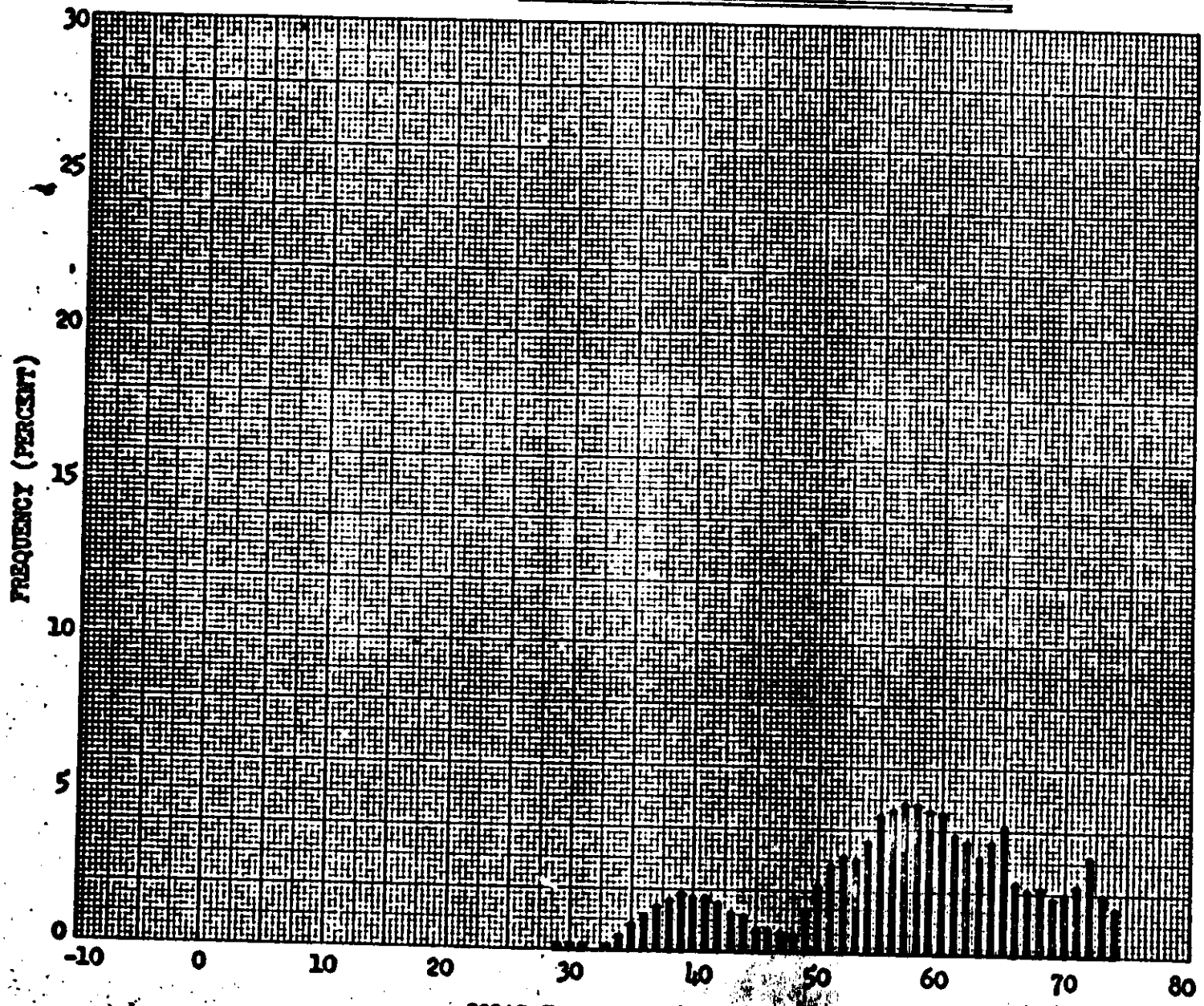
Launch Time: 2201 Z

Inclination: 85°

SIGN NOTATION



SOLAR ELEVATION FREQUENCY DISTRIBUTION



Mission No: 1022-2

Payload No: J-22

Camera No: 168

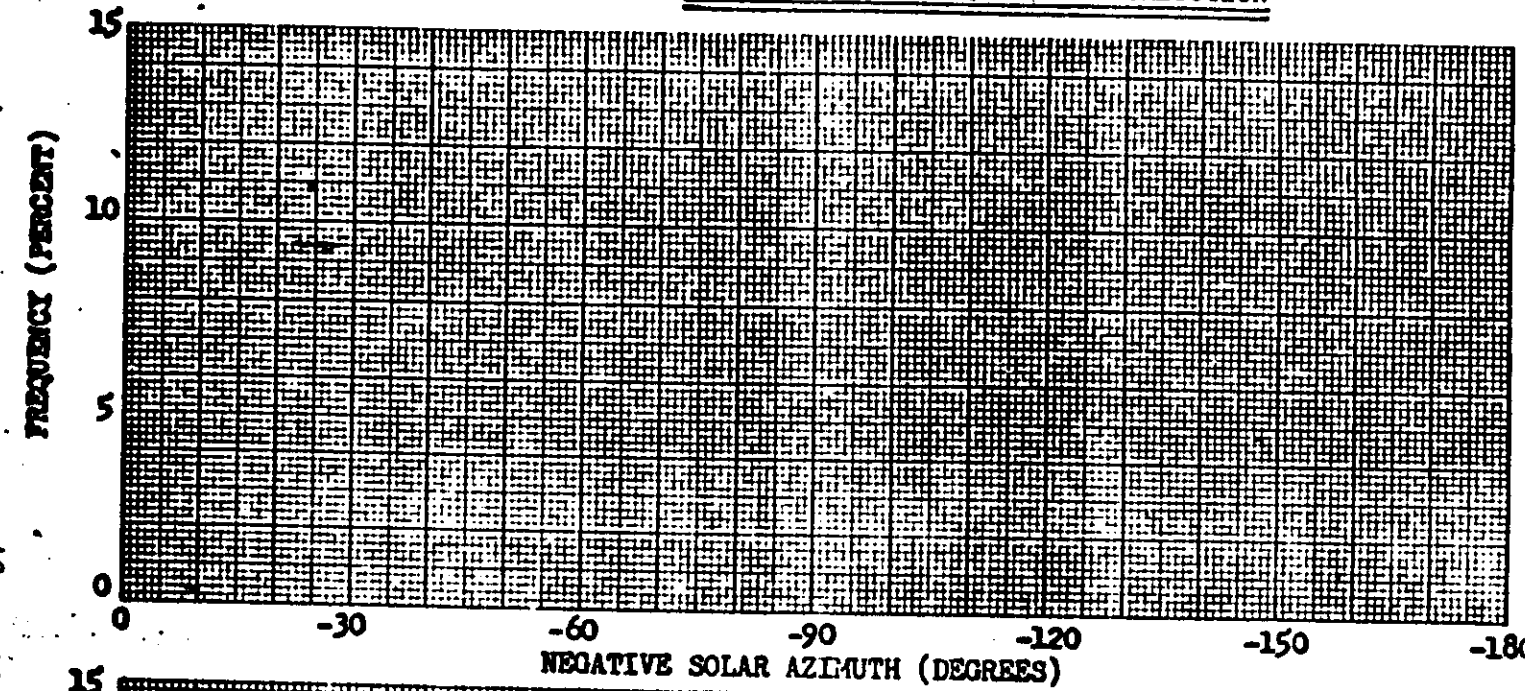
Launch Date: 7/19/65

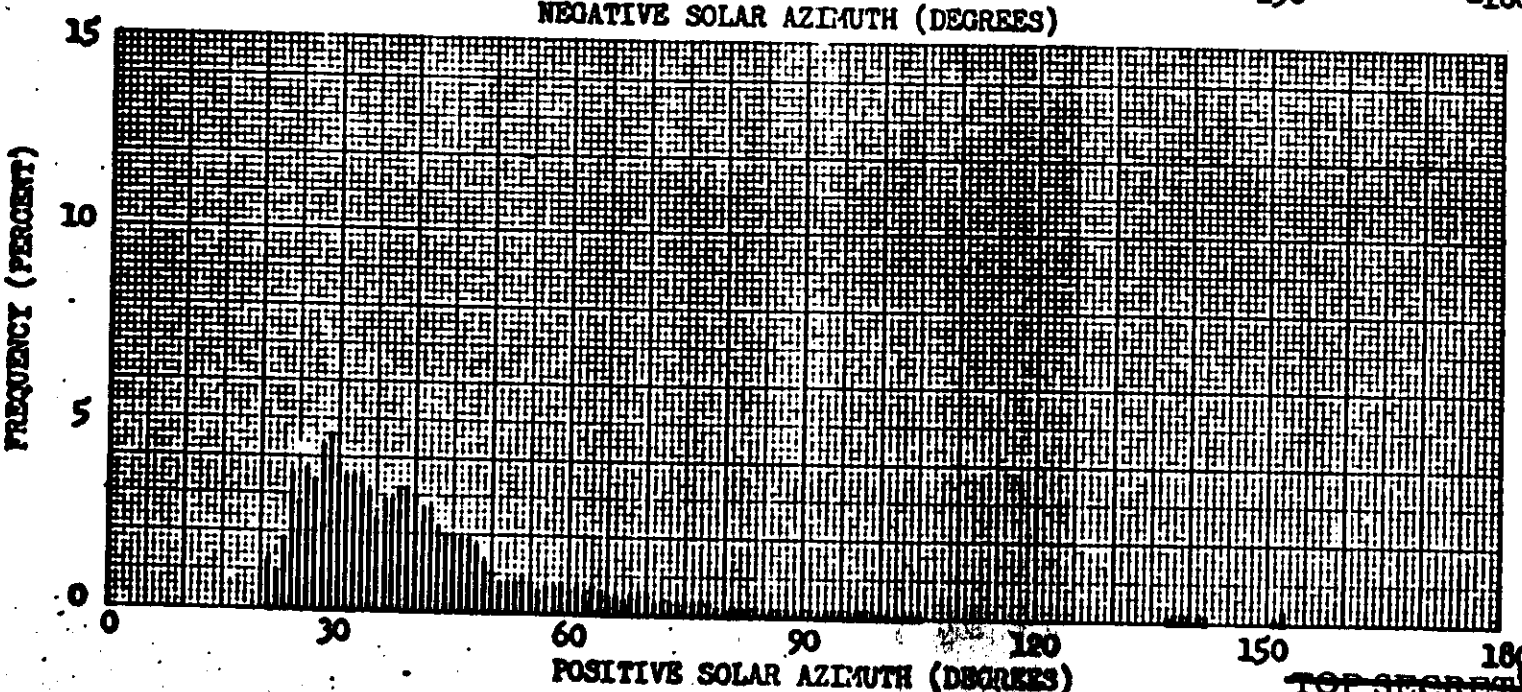
Launch Time: 2201 Z

Inclination: 85°

FIGURE 8-3

SOLAR AZIMUTH FREQUENCY DISTRIBUTION





Mission No: 1022-2

Payload No: J-22

Camera No: 168

Launch Date: 7/19/65

Launch Time: 2201 Z

Inclination: 85°

SIGN NOTATION

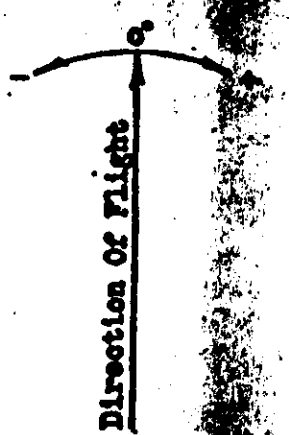
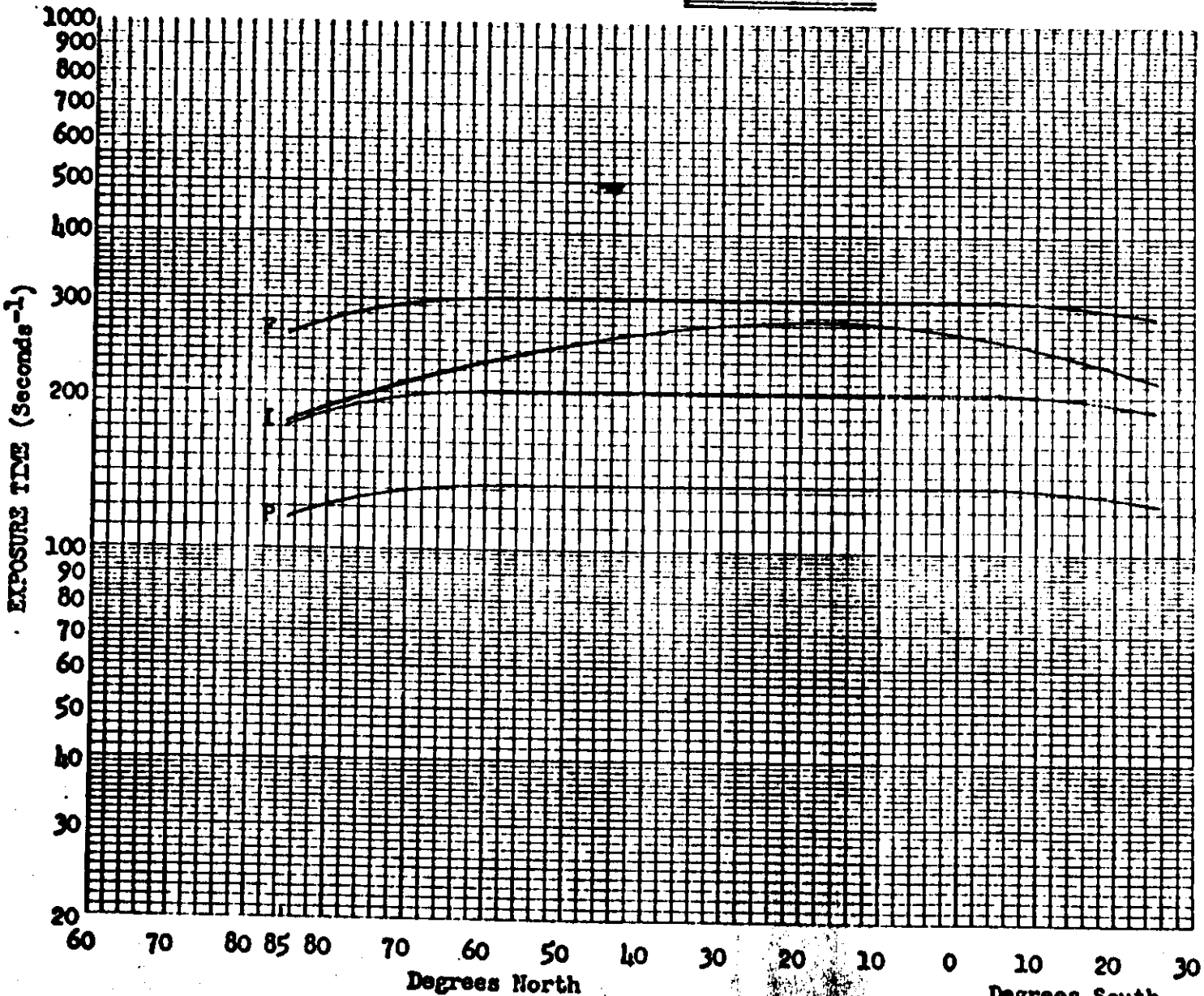


FIGURE 8-4

EXPOSURE POINTS



Mission No: 1022

Payload No: J-22

Camera No: 168

Pass No: 8

Launch Date: 7/19/65

Launch Time: 2201 Z

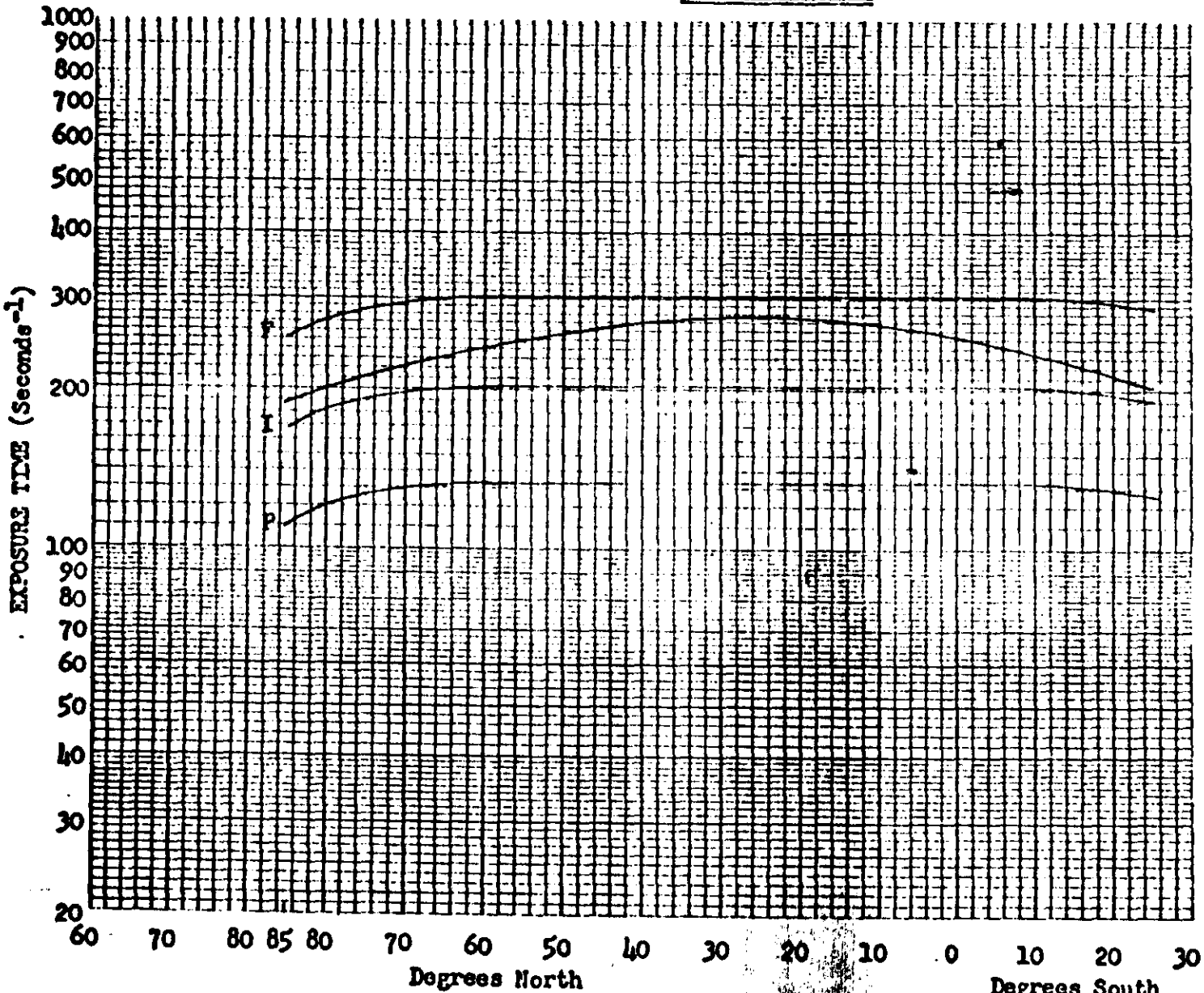
Slit Width: .250

Filter Type: Wratten 25

Film Type: 3404

FIGURE 8-5

EXPOSURE POINTS



Mission No: 1022

Payload No: J-22

Camera No: 168

Pass No: 40

Launch Date: 7/19/65

Launch Time: 2201 Z

Slit Width: .250

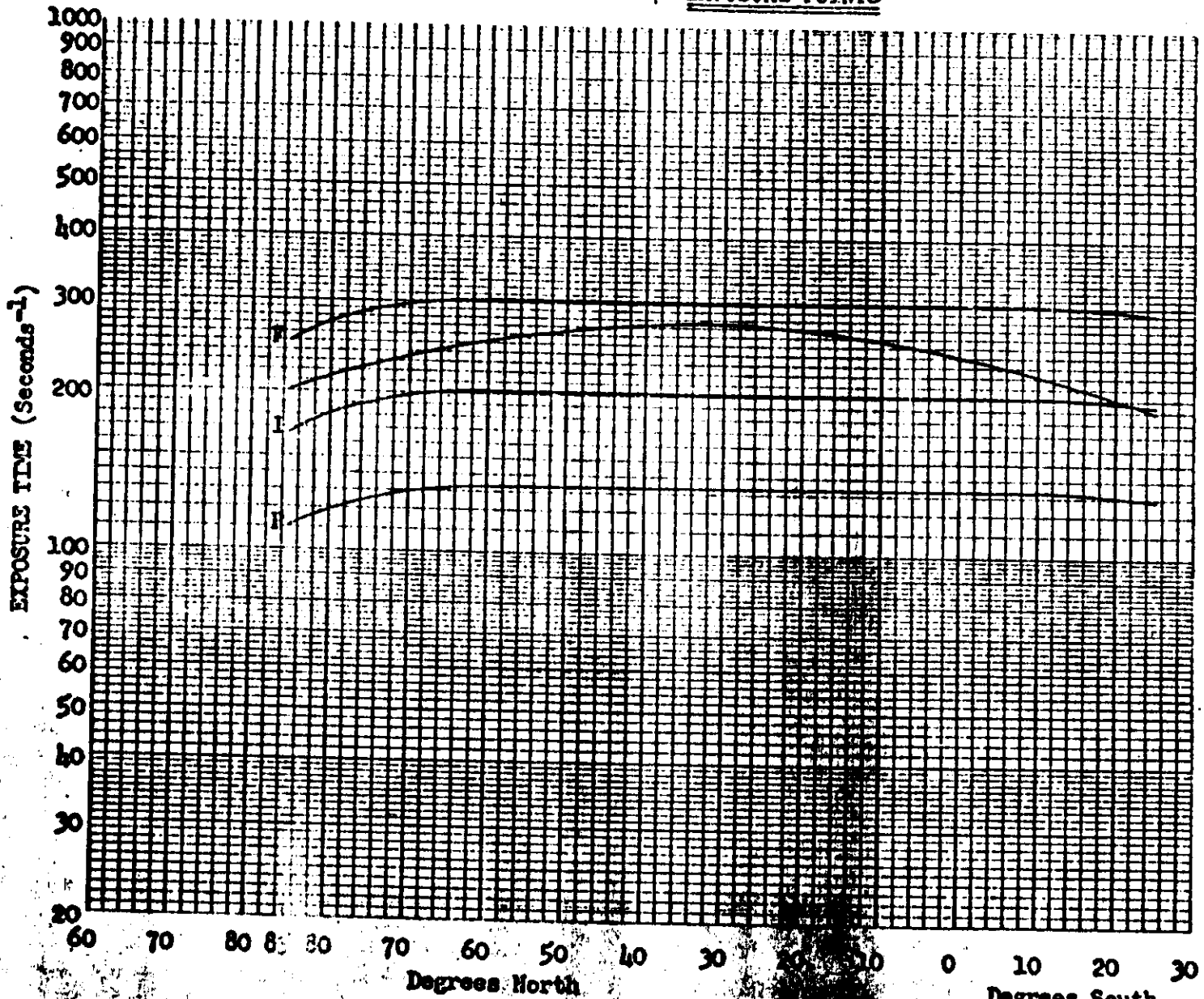
Filter Type: Wratten 25

Film Type: 3404

FIGURE 8-6

~~TOP SECRET~~ [redacted]

EXPOSURE POINTS



Mission No: 1022

Payload No: J-22

Camera No: 168

Pass No: 72

Launch Date: 7/19/65

Launch Time: 2201 Z

Slit Width: .250

Filter Type: Wratten [redacted]

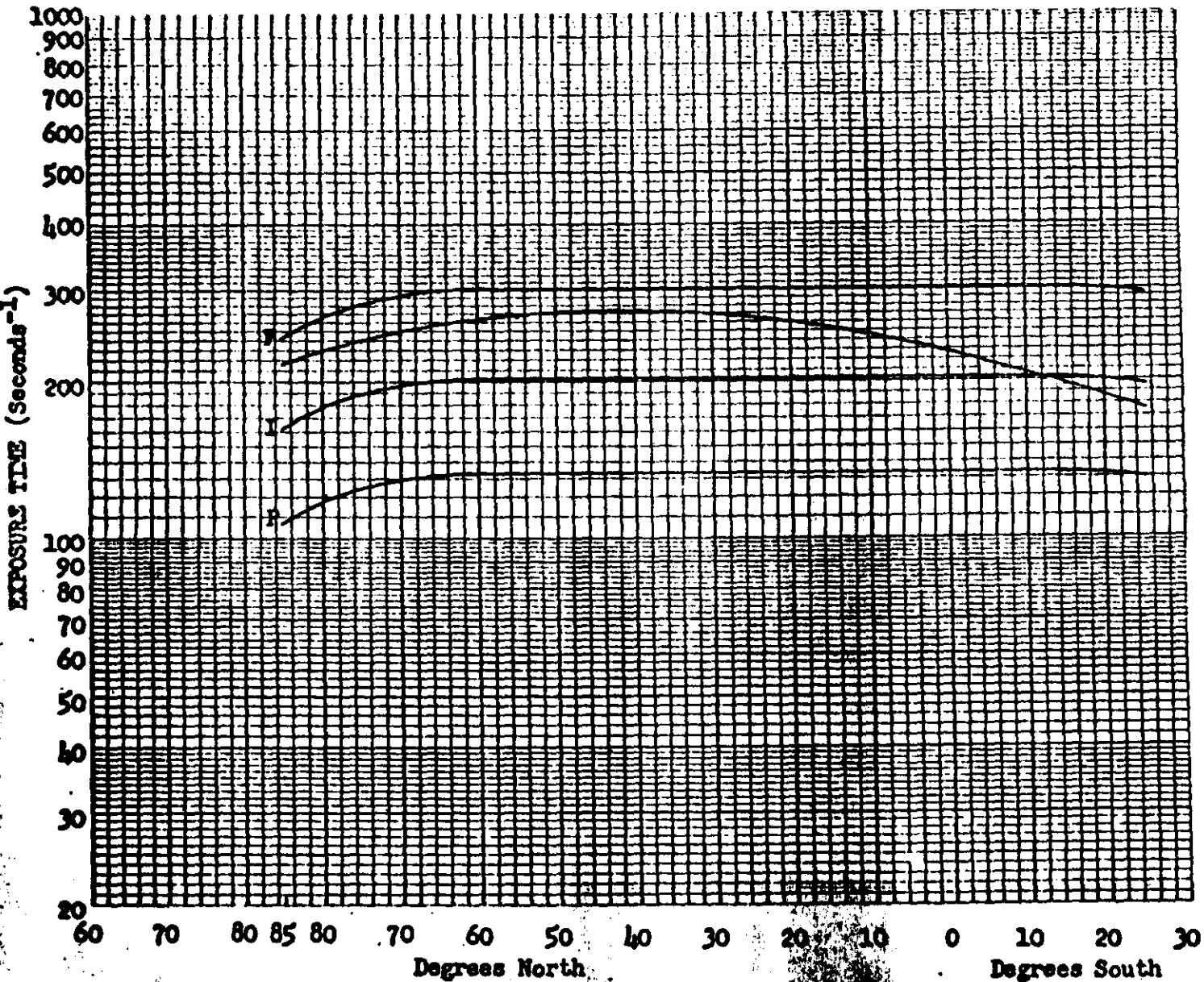
Film Type: 3404

LATI[redacted]

FIGU[redacted]

~~TOP SECRET~~ [redacted]

EXPOSURE POINTS



Mission No: 1022

Payload No: J-22

Camera No: 168

Pass No: 104

Launch Date: 7/19/65

Launch Time: 2201 Z

Slit Width: .250

Filter Type: Wratten 2

Film Type: 3404

FIGURE [illegible]

~~TOP SECRET~~ [redacted]

EXPOSURE POINTS

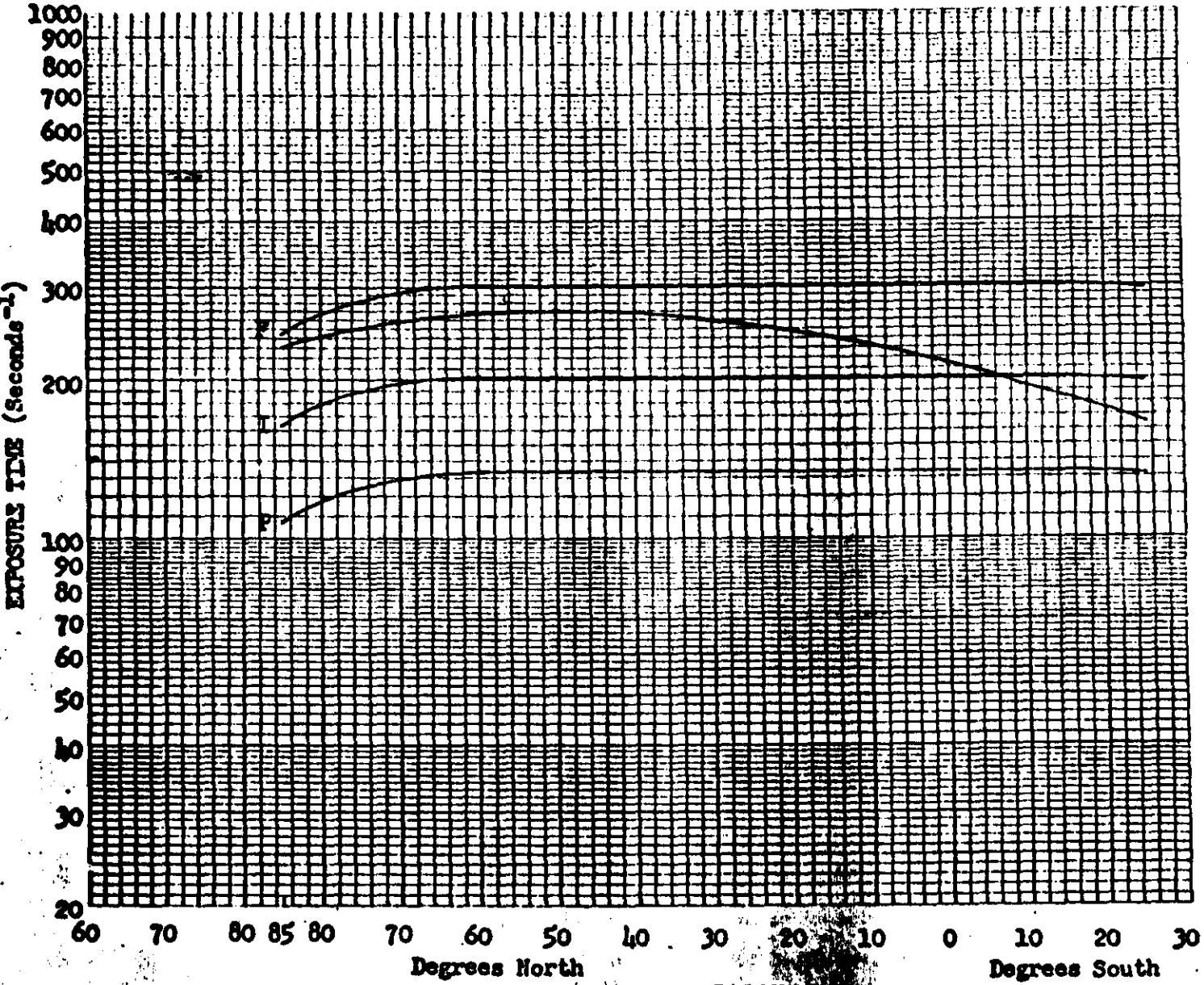


FIGURE [redacted]

Mission No: 1022

Payload No: J-22

Camera No: 168

Pass No: 136

Launch Date: 7/19/65

Launch Time: 2201 Z

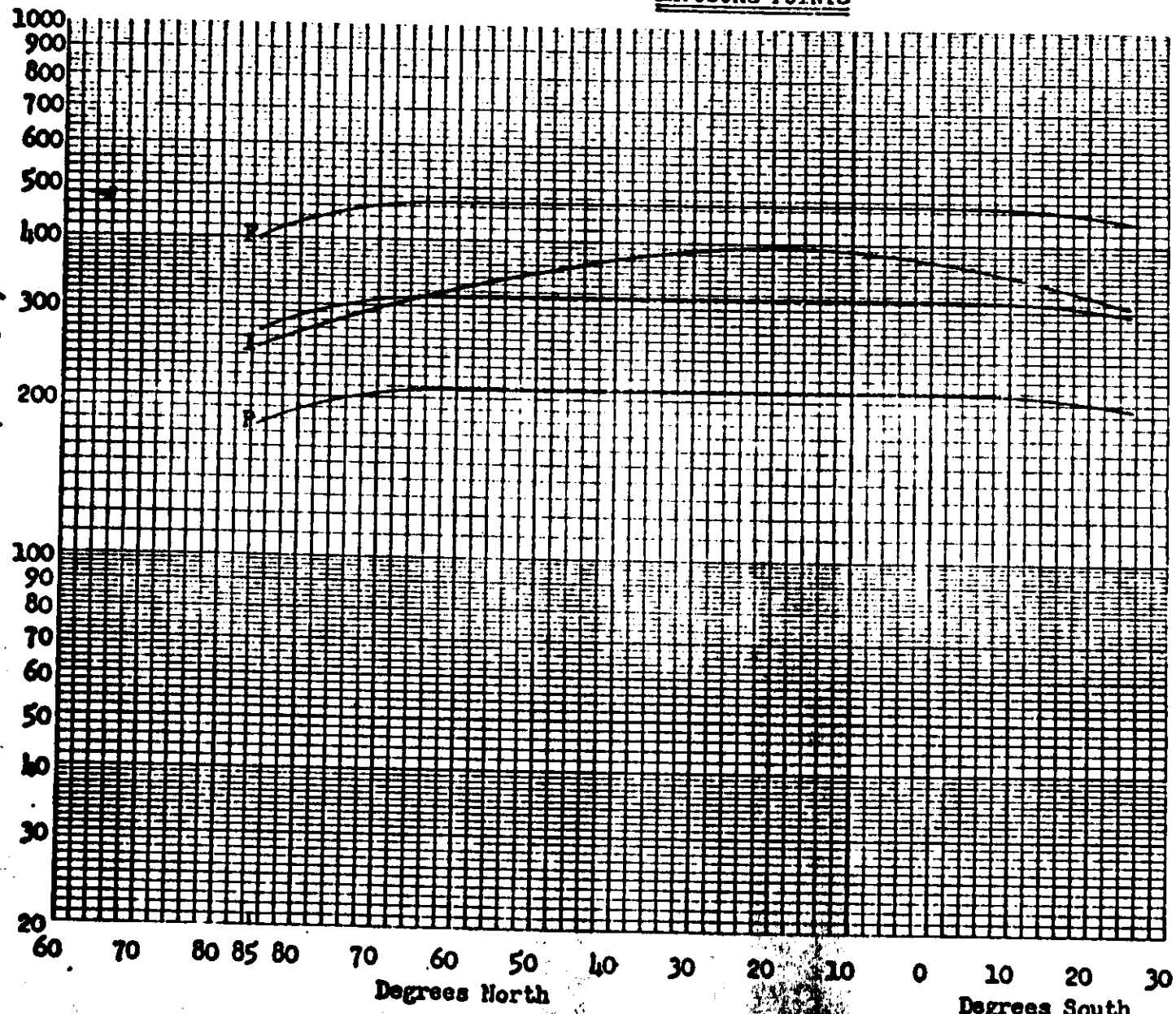
Slit Width: .250

Filter Type: Wratten [redacted]

Film Type: 3404

~~TOP SECRET~~ [redacted]

EXPOSURE POINTS



Mission No: 1022

Payload No: J-22

Camera No: 169

Pass No: 8

Launch Date: 7/19/65

Launch Time: 2201 Z

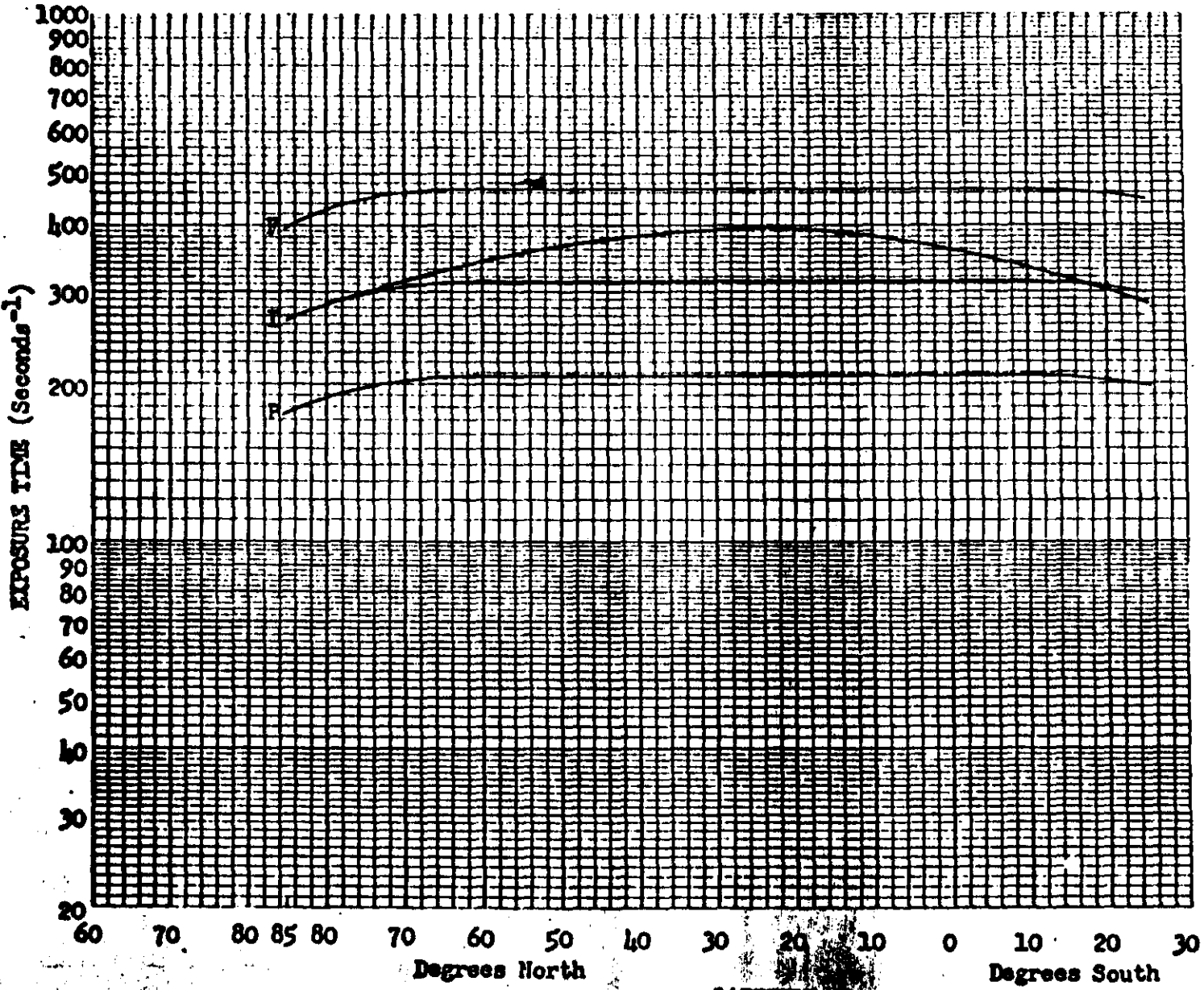
Slit Width: .175

Filter Type: Wratten 21

Film Type: 3404

FIGURE 8-10

EXPOSURE POINTS



Mission No: 1022

Payload No: J-22

Camera No: 169

Pass No: 40

Launch Date: 7/19/65

Launch Time: 2201 Z

Slit Width: .175

Filter Type: Wratten 21

Film Type: 3404

FIGURE [illegible]

TOP SECRET [redacted]

EXPOSURE POINTS

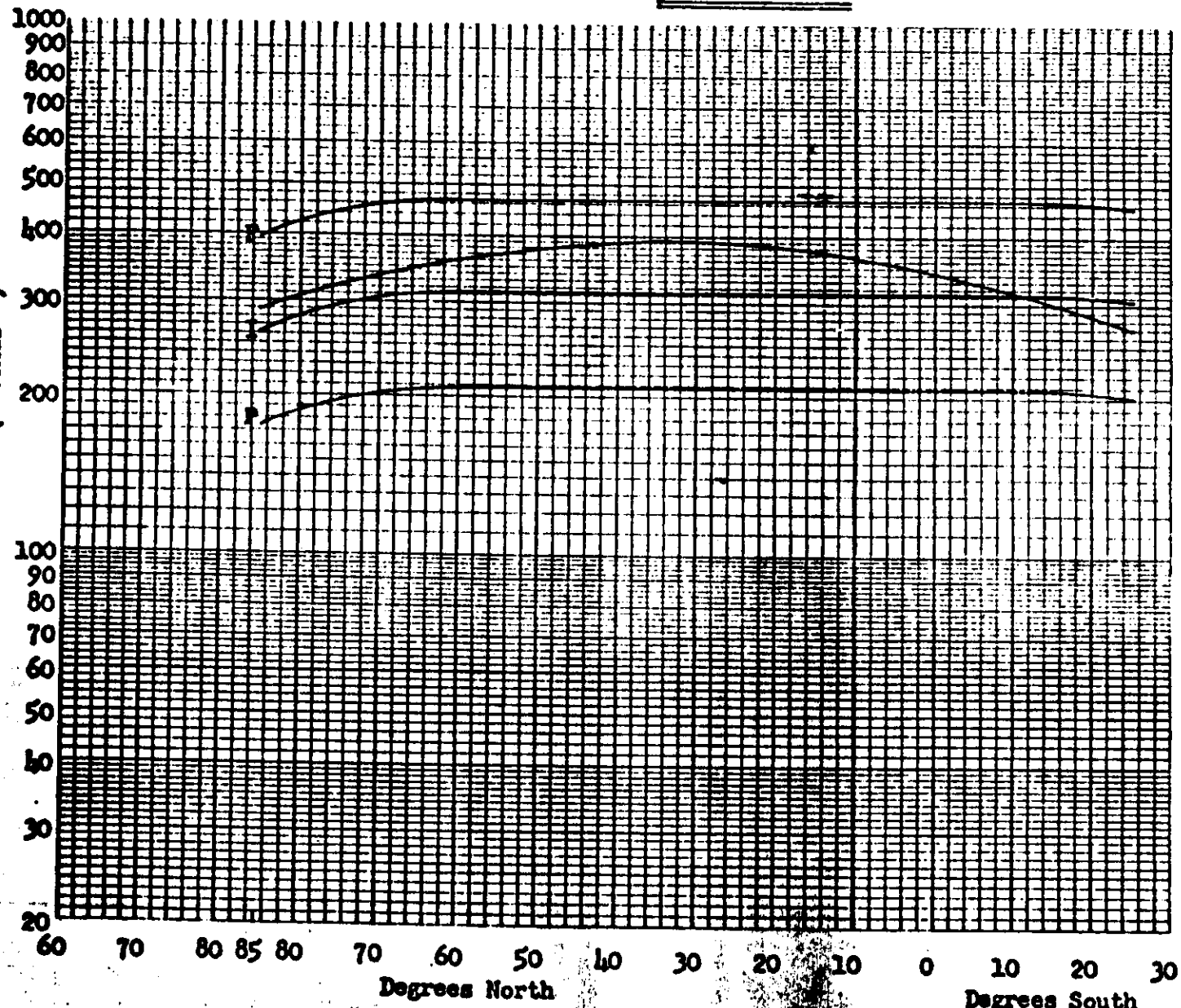


FIGURE 8-12

Mission No: 1022

Payload No: J-22

Camera No: 169

Pass No: 72

Launch Date: 7/19/65

Launch Time: 2201 Z

Slit Width: .175

Filter Type: Wratten

Film Type: 3404

TOP SECRET [redacted]

TOP SECRET [redacted]

EXPOSURE POINTS

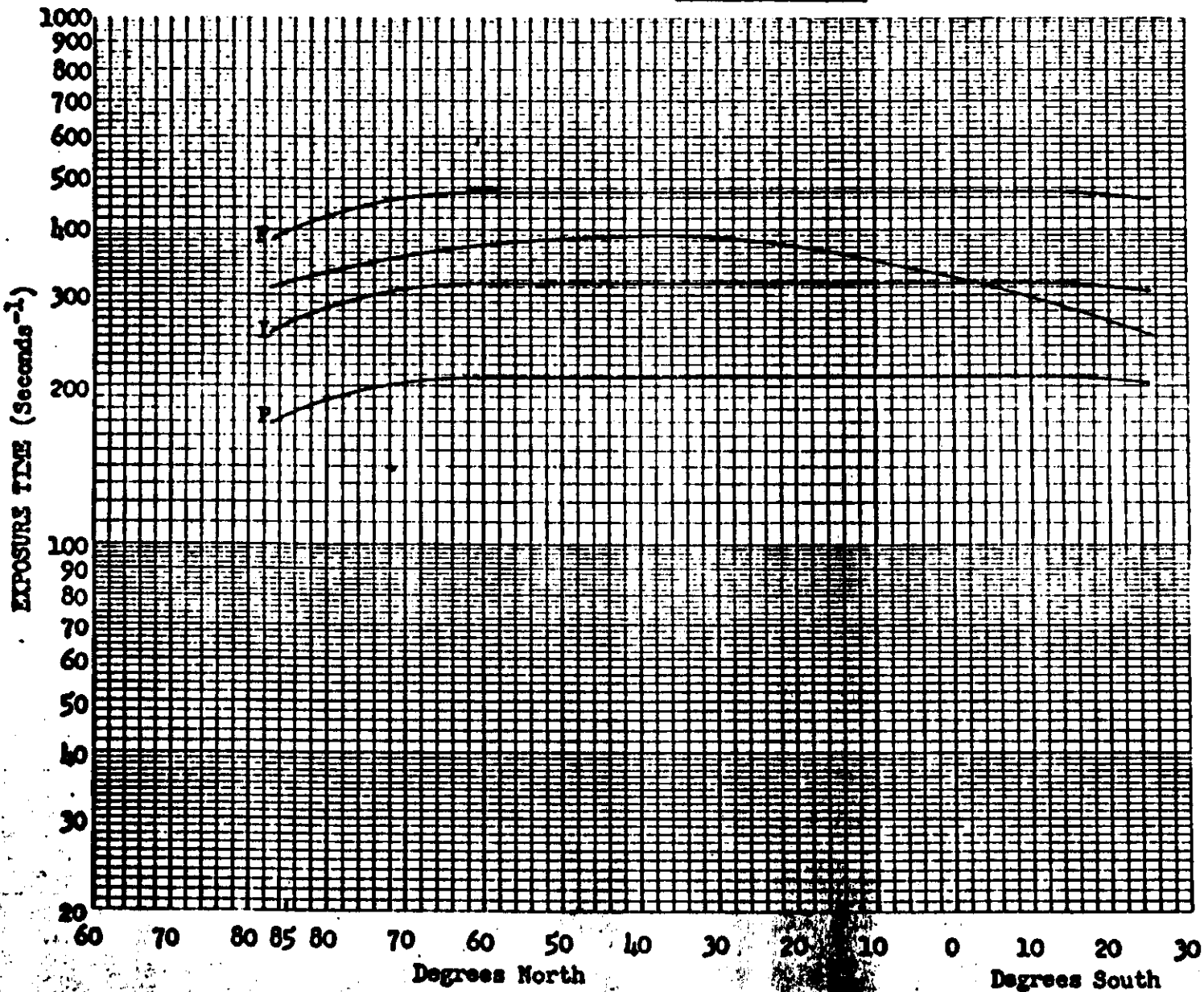


FIGURE [illegible]

Mission No: 1022

Payload No: J-22

Camera No: 169

Pass No: 104

Launch Date: 7/19/65

Launch Time: 2201 Z

Slit Width: .175

Filter Type: Wratten 21

Film Type: 3404

TOP SECRET [redacted]

EXPOSURE POINTS

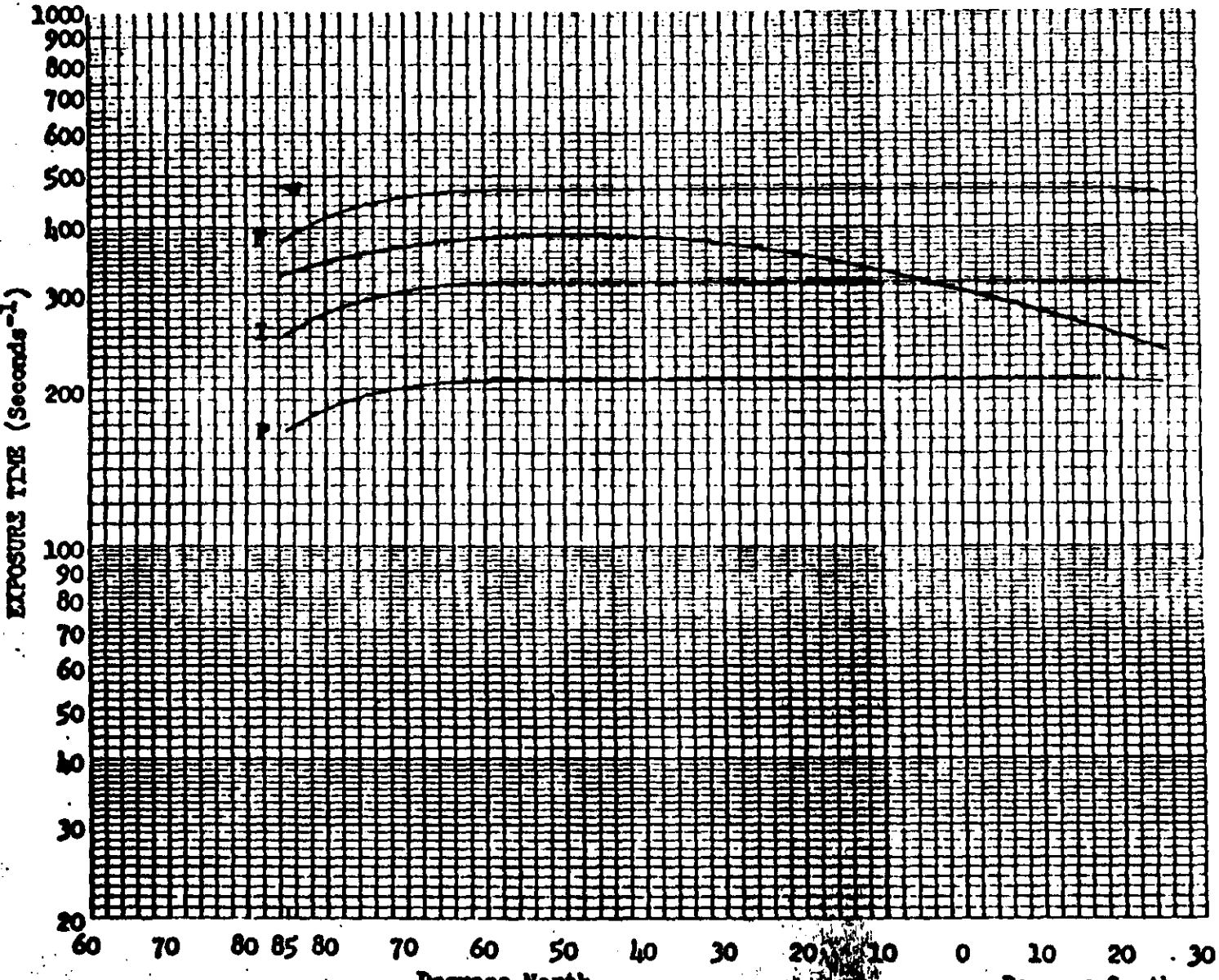


FIGURE 8.2.4

Mission No: 1022

Payload No: J-22

Camera No: 169

Pass No: 136

Launch Date: 7/19/65

Launch Time: 2201 Z

Slit Width: .175

Filter Type: Wratten [redacted]

Film Type: 3404

COLUMN NUMBER	HEADING	DATA
66-68	LAT.	Latitude
68	T	N = North, S = South
69-71	Sun Ele	Solar Elevation
72-74	CLD	Percent cloud cover
75-76	OL	Percent overlap
78	-	Processing level; 1 = Primary, 2 = Intermediate, 3 = Full
80	-	Figure 1 indicates that D min was measured in shadow area

The data key for the listings of the "Subject", "Terrain" and "Qualifiers" is shown below.

I SUBJECT

1. Buildings
2. Roads, runways
3. Tanks, A/C, other man-made
4. Non-cultural

II TERRAIN

1. Flat
2. Hilly
3. Mountains
4. Flat and snow
5. Hilly and snow
6. Mountains and snow

III EDGE QUALIFIERS

1. Clear
2. Snow
3. Hazy
4. Shadow
5. Snow and Haze
6. Snow and Shadow
7. Haze and Shadow
8. Snow, Haze and Shadow

SECTION 9

DIFFUSE DENSITY MEASUREMENTS

Tables 9-1 through 9-4 list mission data supplied by AFSPPF. This data includes the visual Reciprocal Edge Spread (RES) values, the area on the format in which the value was obtained and the general characteristics of the edge as shown on the data key page. The densitometric measurements of the base plus fog, minimum and maximum terrain densities and the maximum cloud densities are also listed with other general data such as solar elevation, altitude and overlap.

The columns are arranged in the following order:

COLUMN NUMBER	HEADING	DATA
1	-	Ascending or Descending pass
2-4	Pass Nbr	Pass Number
5	-	FWD or AFT camera
6-8	Frm Nbr	Frame Number
9-17	Area 1 RES	RES data in area 1
9-11	WWW	With flight RES value
12-14	AAA	Across flight RES value
15	S	Subject - see key
16	T	Terrain - see key
17	Q	Qualifiers - see key
18-26	Area 2 RES	RES data in area 2
27-35	Area 3 RES	RES data in area 3
36-44	Area 4 RES	RES data in area 4
45-53	Area 5 RES	RES data in area 5
54-66	D min	Terrain minimum density
57-59	D max	Terrain maximum density
60-62	D B+F	Base plus fog density
63-65	LIM max	Cloud maximum density

MISSION 1022-1

PAS	FRMAREA1	RESAREA2	RESAREA3	RESAREA4	RESAREA5	RES	D	D	D	LIM	SUN

NBR	NBRWWWAAASTQWWWAAASTQWWWAAASTQWWWAAASTQWWWAAASTQMINMAXB+FMAXLATELECLDOLP	
D001F005	094067211	046152020237651N+4409899 3
D001F015		02024063N+4510099 3
D002F005		02023070N+3910099 3
D005F005		075226020226801N+3008599 3
D005F015	085085431	056215018000781N+3200006 3
D005F025		062222020148761N+3300199 3
D005F035	094094411	046212020000741N+3500006 3
D005F045		036154020215721N+3700199 3
D005F055	078075411	034096020000711N+3900006 3
D005F065		040164018000691N+4100099 3
D005F080	094104111	034118020236401N+5902006 3
D005F090		048152020248391N+6006599 3
D006F005		043172021000651N+4300299 3
D006F015	082090411	030112021215641N+4400207 3
D006F025		031084020222621N+4601599 3
D006F035	082085411	029076020244601N+4706006 3
D006F043		032082020240591N+4807099 3
D006F053	104094111	035134020255531N+5307003 3
D006F063		063183020250511N+5408599 3
D006F073		078078432080199021251411N+5808599 3
D006F083		063180017242391N+5902099 3
D007F005		026106013237551N+5406599 2
D007F020	104094111	052154013236501N+5408599 2
D007F035		035170011000451N+5700099 2
D007F045	094085111	033187012000441N+5800006 2
D007F055		020222014227421N+5800199 2
D007F065	099090431	026180013000411N+5900005 2
D007F075		060180012000391N+6000099 2
D007F085		050164012000371N+6000005 2
D007F095	094094111	032234013200361N+6100199 2
D008F005		053093012218581N+4809899 2
D008F015		034117012222571N+4909099 2
D008F026	070075212	039142012205481N+5404503 2
D008F036		071192012225471N+5509599 2
D008F046	072067212	068180012235451N+5606008 2
D008F056		072170012232441N+5706099 2
D008F066	063055412	094169012242421N+5808099 2
D008F076		066200012226411N+5901099 2
D008F086	067067412	058170012204391N+6000106 2
D008F095	075078431	030154012230381N+6101007 2
A009F005		01600041N-2100099 2
D009F005	094094111	039135021232601N+4601502 3
D009F015		036124019238591N+4804599 3
D009F025	078075311	036110019242571N+4902005 3
D009F035		039152019242551N+5005099 3
D009F045	099104111	038172019244541N+5104505 3
D009F055		037160020242521N+5200599 3
D009F065	111094111	033138019244501N+5302006 3
D09F075		048148019242491N+5405099 3
D009F085	085094111	055152019238471N+5508006 3

TABLE 9-1

MISSION 1022-1

PAS	FRMAREA1	RESAREA2	RESAREA3	RESAREA4	RESAREA5	RES D	D	D LIN	SUV
NBR	NBRWWWAAASTOWWWAAASTOWWWAAASTOWWWAAASTOWWWAAASTOMINMAXB+FMAXLATELECLOOLP								
D009F095						05016001923645N+5602099 3			
D009F104						01923044N+5702099 3			
D010F005						06021401400024N+6300099 2			
D010F015		085085431				05419901421423N+6302004 2			
D010F025						11119501320222N+6204099 2			
D010F032					078067432	12419601220221N+6206099 2			
D011F005						09518601321227N+6307099 2			
D011F015		072085431				07519701300026N+6300003 2			
D011F025						08214401100022N+6300099 1			
DC11F033		078078431				06316501100021N+6200003 1			
D016F005						01117036N+6107599 1			
D018F005						05817001019667N+4209899 1			
DC18F015		094094431				02817601222365N+4309505 2			
D018F025						01220064N+4509599 2			
D018F038						01221817N+6304099 2			
D018F047						01217216N+6208099 2			
D019F005		094094411				03819201822570N+3901301 3			
D019F015						03014401900068N+4100099 3			
D019F030		067075411				05013001823061N+4704505 3			
D019F040						03522301823259N+4804099 3			
D019F050		085082411				03723401921557N+4900305 3			
D019F060						03422201823855N+5100599 3			
^019F070						01819253N+5209099 3			
J19F073						01822553N+5307099 3			
D020F005						05021002021973N+3700199 3			
D020F015		067082421				03518202019271N+3802005 3			
D020F025						02024468N+4009599 3			
D020F038		094090111				03408802223549N+5508505 3			
D020F048						01923847N+5609899 3			
D020F058		078000211				06021501900015S+4500003 3			
D020F068						04217101900017S+4300099 3			
D020F078		082085431				03314001919019S+4100108 3			
D020F088						05518601900021S+3900099 3			
DC22F005			057052412			08921502023981N+2906599 3			
D022F015						08620502222980N+3009899 3			
D022F025			063055412			07915402023674N+3609099 3			
D022F035						04414301923472N+3706599 3			
DC22F045		065057412				04014601924571N+3905505 3			
D022F055						03220201922569N+4003599 3			
D022F065		059054411				02913801823067N+4201010 3			
DC22F075						03416001922065N+4301099 3			
D022F085		063059422				02807601823864N+4500610 3			
D022F095						02817201923962N+4602099 3			
D022F105		078065112				04312001924556N+5008599 3			
DC22F115						04511801924255N+5108599 3			
D022F125		059057412				03209501924253N+5307008 3			
D022F135						02812201823204N+5701099 3			
D022F145		059061411				02913201922203N+5600107 3			
)22F155						04516101924101N+5504599 3			
D022F159						01924401N+5509599 3			

TABLE 8-1

MISSION 1022-1

PAS NBR	FRMAREA1	RESAREA2	RESAREA3	RESAREA4	RESAREA5	RES D	D	D	LIN	SUM
	NBRWWWAAASTQWWWAAASTQWWWAAASTQWWWAAASTQWWWAAASTQMINMAXB+FMAXLATELECLOCLP									
D023F005					10020801823080N+3009899					3
D023F013					0842070172107 9N+3109899					3
D023F023			078094111		0361330172314 9N+5407007					3
D023F033					0320940122294 8N+5506099					2
D023F043			104094111		0301180132084 6N+5606010					2
D023F053					0311380122234 5N+5700599					2
D023F063				090092211	0261450112274 3N+5800206					2
D023F073					0341280162284 2N+5903099					3
D023F083			085094111		0371640162094 0N+6000207					3
D023F093					0462360172363 9N+6104099					3
D023F103			085085431		0541920181343 7N+6207005					3
D023F113					0531820182373 6N+6307099					3
D023F123			104104111		0571700162283 1N+6303004					2
D023F133					0271660152283 0N+6305099					2
D023F143				078078112	0821540122242 8N+6308005					2
D023F153					0611660122312 7N+6408099					2
D023F163		104111111			0241060102002 5N+6406005					2
D023F173					0280760122282 4N+6408599					2
D024F005			082085211		0751950120002 5N+6400004					1
D024F015					1081550120002 4N+6400099					1
D025F005			070085211		0241240142345 6N+[illegible]					[illegible]
D025F015					0421510182335 5N+5104099					3
D025F025			072085212		0351640182309 3N+5206010					2
D025F035					0321380182345 2N+5301599					3
D025F045			078080212		0361620182205 0N+5403510					3
D025F055					0361720182304 9N+5603099					3
D025F062			085085212		0401640192324 8N+5705510					3
D025F072					0361550182440 1S+5301599					3
D025F082			070065422		0451550182360 3S+5204510					3
D025F092					0451250202420 4S+5105599					3
D025F102			072072421		0561340202360 6S+5000311					3
D025F112					0421400202380 8S+4900599					3
D025F122			078078421		0601160202220 9S+4700510					3
D026F005			094099431		0802080180002 3N+6400301					3
D026F015					0841960180002 2N+6400099					3
D026F025			072067433		1301750142152 1N+6300199					2
D026F035					0881780142151 9N+6300599					2
D027F005			070078431		0432150130008 1N+2999908					2
D027F015					0132558 0N+3010099					2
D027F020					0132247 9N+3110099					2
D028F005					1492100120006 4N+4400099					1
D028F015					0542020120006 3N+4500099					1
D028F025			090085431		0182040110006 1N+4700009					1
D029F005					0501200210002 1S+3800099					1
D029F015			094082411		0501480180002 3S+3700010					3
D029F025					0411520201322 5S+3500199					3
D029F035			078099211		0461400200002 7S+3300010					3
D029F045					0331350181762 9S+3200599					3
D029F055			085085111		0331900181863 1S+3008099					3
D030F005					0652250210007 3N+3600099					3

TABLE 9-1

MISSION 1022-1

PAS NBR	FRMAREA1	RESAREA2	RESAREA3	RESAREA4	RESAREA5	RES D	D	D	LIM	SUV
	NBRWWWAAASTQWWWAAASTQWWWAAASTQWWWAAASTQWWWAAASTQMINMAXB+FMAXLATELECLDOLP									
D030F015			078085411			045222022000720+3700008				3
D030F025						050226021000700+3900099				3
D030F031			094085411			040218021170690+4000109				3
D031F005			063059411			048182020000690+4100007				3
D031F015						032168020000670+4200099				3
D031F025			067065411			026088020186660+4300110				3
D031F035						038107020205640+4501099				3
D031F049			061061111			040200020235310+6402503				3
D031F059						060182020228300+6508099				3
D031F064						056168020240300+6509099				3
D035F005						02022257N+4910099				3
D035F015						034110020202560+5103099				3
D035F025			085078421			030170020215540+5200210				3
D035F035						032232020185530+5300399				3
D035F045			075082412			042152020210510+5408510				3
D035F050						02022451N+5510099				3
D036F005						040115020236490+5509099				3
D036F015			085078411			044078020234480+5609899				3
D036F025						044162020220460+5708599				3
D036F035			078078411			052087020230650+5809899				3
D036F045						069076020236440+5909899				3
D036F055						02022442N+6009099				3
D037F005			094104411			050192019205750+3401304				3
D037F015						032202019000740+3500099				3
D037F025			078082411			032170020000720+3700010				3
D037F035						032150019225700+3801599				3
D037F045			067059411			034144019236680+4003010				3
D037F055						040138018220670+4103099				3
D037F065			072082411			028085018231650+4300510				3
D037F076						030132018243520+5401599				3
D037F086				072085411		045130019239500+5507599				3
D037F100						036172020238400+6101099				3
D037F110			085078311			032180018245380+6201005				3
D038F005						042192019230730+3700599				3
D038F015			104094111			040105020235720+3802008				3
D038F025						030112020232700+3901599				3
D038F035			078078411			032185019215680+4100110				3
D038F045						028098018226660+4201599				3
D038F055			078082411			028124020240640+4406008				3
D038F065						033123019240630+4507599				3
D038F075						02023061N+4607999				3
D038F083						01923460N+4809599				3
D038F093			104090111			036139018215550+5100508				3
D038F103						029150020227540+5201599				3
D038F115		104104111				036164017235470+5706099				2
D038F125						031178014238460+5802099				2
D038F135			078082431			025175015232440+5803007				2
D038F145						021205014228420+5902599				2
D038F155			085090431			031195014225410+6002007				2
D038F165						056171014220390+6107599				2

TABLE 9-1

MISSION 1022-1

PAS NBR	FRMAREA1 NBRWWWAAASTQ	RESAREA2 WWWAAASTQ	RESAREA3 WWWAAASTQ	RESAREA4 WWWAAASTQ	RESAREA5 WWWAAASTQ	RES D MINMAX	D B+FMAX	D LIM LATELEC	SUN CLDULP
D039F005						01422446N+	5709899		2
D039F015					067072412078	15501322845N+	5808599		2
D039F025						03016401323443N+	5904099		2
D039F035				099090111		03817001221942N+	6000108		2
D039F045						02817901200040N+	6100099		2
D039F055			094104111			02722801223239N+	6203506		2
D039F065						03518201200037N+	6300099		2
D039F074			104085431			05116101200036N+	6400007		2
D040F005						01221069N+	4009999		2
D040F015						01221568N+	4109999		2
D040F020					078078411048	06801622267N+	4208599		2
D040F031						02813401821859N+	4805099		3
D040F041			104104111			02817601822657N+	5006009		3
D040F051						03215801821655N+	5107099		3
D040F061			094104111			03616801823354N+	5107510		3
D040F071						03015201823453N+	5308099		3
D040F081			104094111			03615201823251N+	5405010		3
D040F091						05316501823950N+	5508099		3
D040F101			094085111			04817001823248N+	5609010		3
D042F005						01523423N+	6006099		2
D042F015						01423222N+	6601[redacted]		
D042F025						01222821N+	6501[redacted]		
D042F035						04416801222219N+	6502[redacted]		
D042F039		072062422				05119001223019N+	6501599		2
D047F005						04119501423636N+	6307099		2
D047F012				085000211		04219001423535N+	6407005		2
D053F005						02817601822952N+	5405099		3
D053F015					094099111026	14001823851N+	5503099		3
D053F030						04019001924241N+	6102599		3
D053F040		099085111				04520501823640N+	6203006		2
D053F050						02617801422438N+	6202099		2
D053F060			085090111			02112601422236N+	6203502		2
D053F070						03212801422835N+	6203099		2
D053F080			104090111			02911801723533N+	6300502		3
D053F090						03017901722032N+	6301599		3
D053F100		099099111				03613601724530N+	6303003		3
D053F110						03011801923529N+	6403099		3
D053F120						08614001923827N+	6408599		3
D053F130			090099111			03213901923325N+	6405005		3
D053F140						03416301824624N+	6506099		3
D053F150			094090111			04315401823822N+	6508505		3
D053F160						01623521N+	6510099		2
D053F170						01423419N+	6610099		2
D053F179						01222018N+	6609099		2
D054F005						05411801321555N+	5109599		2
D054F015					085082111040	09801322054N+	5309099		2
D054F025						04813501823352N+	5408099		3
D054F041	094099111					07024201823240N+	6101505		3
D054F051						05615801422839N+	6205099		2
D054F061				070067411		06216001222637N+	6303506		2

TABLE 9-1

[redacted]

MISSION 1022-1
PAS FRMAREA1 RESAREA2 RESAREA3 RESAREA4 RESAREA5 RES D D D LIM SUN

NBR NBRWWWAAASTQWWWAAASTQWWWAAASTQWWWAAASTQWWWAAASTQMINMAXB+FMAXLATELECLDOLP

D054F071			04115601222836N+6306099	2
D054F081	067072411		06818001223034N+6407503	2
D054F091			03221001319433N+6502099	2
D054F101	067078411		03419401221632N+6508001	2
D054F111			03812001020030N+6609099	2
D054F120	072072411		02916201222629N+6708599	2
D055F005			01322258N+4810099	2
D055F015			03405401219657N+4909899	2
D055F025	055063212		02809801221855N+5108599	2
D055F035			03107001221854N+5207099	2
D055F045	070070112		03008201322752N+5307510	2
D055F055			02809801222751N+5408099	2
D055F065	059060212		03416601221249N+5506508	2
D055F075			04015201222348N+5606599	2
D055F085	054055212		05818201221246N+5706507	2
D055F095			02614001215245N+5801599	2
D055F105	067057412		03218201200043N+5900008	2
D055F115			04417601216242N+6000199	2
D055F125	061063212		06216801222740N+6100508	2
D055F135			06315501200039N+6200[illegible]	2
D055F149		063063112	10017801519437N+6[illegible]	[illegible]
D056F005			03006201822069N+4007[illegible]	[illegible]
D056F015		104094111	03010601822068N+4102[illegible]	[illegible]
D056F027			02815201822260N+4805099	3
D056F037	104094111		02812801822059N+4905008	3
D056F047			04610401823857N+5006099	3
D056F057	111104111		03414401824256N+5105008	3
D056F067			03613501822654N+5206099	3
D056F077	094094111		03812501823253N+5406008	3
D056F087			06413201823651N+5508599	3
D056F097085094111			05015001824050N+5608099	3
D056F107			05816801823248N+5705099	3
D056F117	094104111		04817201823447N+5800208	3
D056F127			04818201823045N+5900199	3
D056F137		078085111	04010201823443N+6100599	3
D056F147			09019201400031N+6600099	1
D056F157	085078431		05214001000030N+6600004	1
D056F167			04813501000028N+6700099	1
D056F173	078072431		07313801000028N+6700004	1
D058F005			06415401019627N+6700599	1
D058F015	085078431		03913201020826N+6703005	1
D058F025			03414801019324N+6706099	1
D058F032	085067431		05813601021023N+6701504	1
D062F005	090099111		02410101220225N+6805002	1
D062F015			02021101221324N+6801099	2
D063F006	104111111		01822601200036N+6500003	2
8 F			N+-0	

~~TOP SECRET~~ [redacted]

TABLE 9-1

MISSION 1022-1

```
PAS FRMAREA1 RESAREA2 RESAREA3 RESAREA4 RESAREA5 RES D  D  D LIM   SUN

NBR NBRWWWAAASTQWWWAAASTQWWWAAASTQWWWAAASTQWWWAAASTQMINMAXB+FMAXLATELECLDULP

D001A005099104111                                  06114002223065N+4309899 3
D002A005                                                  02023272N+3810099 3
D002A010                                           14822002022870N+3909899 3
D005A005099094411                                  06319802423081N+2908599 3
D005A015                                           09522202200079N+3100299 3
D005A025                  090085411                08422702200077N+3200002 3
D005A035                                           05521802200075N+3400099 3
D005A045                  099104411                05421802200073N+3600001 3
D005A055                                           04716202200072N+3800099 3
D005A065                  099094411                05113502200070N+4000002 3
D005A080                                           05718502124041N+5903599 3
D005A090          104104111                        06114402223840N+6005599 3
D006A005                                           05220802221866N+4200199 3
D006A015                  090090421                04613802221465N+4300202 3
D006A025                                           04910802119663N+4500299 3
D006A035                  085090421                03812002122861N+4601003 3
D006A042                                           03812602224160N+4705099 3
D006A052                  104104111                06417402023454N+5208002 3
D006A062                                           05421602023652N+5307099 3
D006A072                                           12417201723042N+5809899 2
D006A082                  072072411                05516701421840N+5905003 2
D007A005                                           06015702224056N+5004099 2
 007A020          104094111                        10215502323651N+5408099 2
D007A035                                           03518001500046N+5600099 2
D007A045                  118111111                03021001521645N+5700103 2
D007A055                                           02622401521243N+5800199 2
D007A065                  090099431                03021601422841N+5901503 2
D007A075                                           04518601500040N+5900099 2
D007A085094090111                                  04614501300038N+6000003 2
D007A094                                           04320501400036N+6100099 2
D008A005                                                  01220059N+4810099 1
D008A015                                           04005201019858N+4909899 1
D008A026                  065067412                04213401017049N+5404599 1
D008A036                                           07017201219348N+5506599 2
D008A046                  078072212                09816801221446N+5608099 2
D008A056                                           07115101020345N+5708599 1
D008A066                                           06712401019543N+5707599 1
D008A076                                           08016001019041N+5801099 1
D008A086                  067065431                03616201020040N+5901505 1
D008A094                  082090111                04819001220839N+6000106 1
A009A005                                                  01900039N-2299999 3
D009A005                                           04412002023361N+4503099 3
D009A015                  104094111                07015202023260N+4701005 3
D009A025                                           05014202023458N+4805099 3
D009A035                  094094111                04614802022456N+4906005 3
D009A045                                           06415702023255N+5006099 3
D009A055                  099104111                04214502023253N+5202005 3
D009A065                                           03819002023451N+5301099 3
 009A075                  104104111                06015202023050N+5405005 3
D009A085                                           08315802023448N+5508599 3
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TOP SECRET [redacted]

TABLE 9-2

MISSION 1022-1

PAS NBR	FRMAREA1	RESAREA2	RESAREA3	RESAREA4	RESAREA5	RES D	D	D LIM	SUM
	NBRWWWAAASTQWWWAAASTQWWWAAASTQWWWAAASTQWWWAAASTQMINMAXB+FMAXLATELECLDOLP								
D0009A095			094094111			060194020233 46N+5606005			3
D0009A103						082164018232 45N+5700899			3
D0010A005						11718001300025N+6300099			2
D0010A015		082090431				071195013000 24N+6300004			2
D0010A025						110190012000 23N+6300099			2
D0010A032			085090431			118170013000 22N+6300003			2
D0011A008				082094421		096172012215 28N+6302099			2
D0011A025						059162010000 23N+6300099			1
D0011A033		055067421				062154010000 22N+6300099			1
D0016A005						01015537N+6102599			1
D0018A005						01019768N+4110099			1
D0018A015					094094421041	18601017666N+4209099			1
D0018A025						056090010190 65N+4407599			1
D0018A038						02022417N+6305099			3
D0018A047						02020016N+6205099			3
D0019A005						050206017222 71N+3802099			2
D0019A015			078085411			052198020220 69N+4000202			3
D0019A030						072154020222 62N+4607099			3
D0019A040					094094411070	14502022660N+4709899			3
D0019A050						057230020218 58N+4802099			3
D0019A060			094094111			046180020224 56N+5001004			3
D0019A070						045220020220 54N+5100203			3
D0020A005			085082411			056204020000 74N+3600001			3
D020A015						085175020196 72N+3703599			3
D0020A025			085090411			055128020230 70N+3901504			3
D0020A037						045172020232 50N+5401099			3
D0020A047			085118111			053140020228 48N+5507599			3
D0020A059						048148020000 14S+4300099			3
D0020A069			078067421			045162020000 16S+4200004			3
D0020A079						054192020000 18S+4000099			3
D0020A089			085104111			052125020000 20S+3900004			3
D0022A005				085094411		088187015205 82N+2806599			2
D0022A013						082201013218 81N+2907599			2
D0022A025					072070411056	18501521075N+3508099			2
D0022A035						055115013203 73N+3607599			2
D0022A045			072072411			053120015229 72N+3806599			2
D0022A055						050135021220 70N+3903599			3
D0022A065			065078411			050175020221 68N+4102506			3
D0022A075						042145020225 66N+4200099			3
D0022A085			082085411			045110020190 65N+4400506			3
D0022A095						042100020210 63N+4501099			3
D0022A105078075111						047125020238 57N+4907099			3
D0022A115						032135013220 56N+5108599			2
D0022A123072078421						042093013226 55N+5108599			2
D0022A133						01819254N+5201099			3
D0022A143			094067421			027102019225 54N+5201005			3
D0022A153						044126018210 05N+5701099			3
D0023A005						02022281N+2910099			3
D023A014						080182016212 80N+3009899			2
D0023A024			094104111			036194013220 50N+5404003			2

TABLE 9-2

MISSION 1022-1
PAS FRMAREA1 RESAREA2 RESAREA3 RESAREA4 RESAREA5 RES D D D LIM SUN

NBR NBRWWWAAASTQWWWAAASTQWWWAAASTQWWWAAASTQWWWAAASTQMINMAXB+FMAXLATELECLDOLP

D023A034				04012601322249N+5506099	2
D023A044		104104111		03815401221847N+5605007	2
D023A054				04318601221846N+5702099	2
D023A064		094104111		04516201221844N+5800507	2
D023A074				04318001200043N+5800099	2
D023A084		090104111		02914301222241N+5903003	2
D023A094				03420401222240N+6008099	2
D023A104		085085431		03121801221438N+6106004	2
D023A114				04221401222036N+6204099	2
D023A124		099104111		03215001222432N+6305003	2
D023A134				03815201222231N+6305099	2
D023A144		082090112		07617201222529N+6307003	2
D023A154				05016401221628N+6407599	2
D023A164		090099111		03814401221826N+6407003	2
D023A174				04514601222225N+6400099	2
D024A005				08218801300026N+6400099	2
D024A015		090099111		11018201200025N+6400002	2
D025A005		104094111		04514901922357N+4900503	3
D025A015				05517502122556N+5102599	3
D025A025		094104111		06017202123154N+5204506	3
D025A035				05817502223553N+5303599	3
D025A045			085090111	04614502122851N+5403005	3
D025A055				04517302122650N+5502599	3
D025A072		099094111		05414002123301N+5403504	3
D025A082				05012002222502S+5304599	3
D025A092		085104111		06013002123603S+5203006	3
D025A102				04010002123005S+5102099	3
D025A112		094094431		05011502123307S+5001006	3
D025A121				04011202121508S+4900199	3
D026A005				09919401900024N+6400099	3
D026A015		078082431		10617401300023N+6400002	2
D026A025				12217401200022N+6400099	2
D026A035		075082431		07112301013020N+6400502	1
D027A005				04417401000082N+2800099	1
D027A015			078082411	04417401019281N+2909899	1
D028A005				08019801000065N+4300099	1
D028A015				10419801000064N+4400099	1
D028A025			067067432	04222001000062N+4600099	1
D029A005				05617101918220S+3900299	3
D029A015		000094211		05213201900022S+3800009	3
D029A025				05012501900024S+3600099	3
D029A035	085085211			04811001900026S+3400009	3
D029A045				04512001917728S+3300299	3
D029A055			085090111	06411401915530S+3101010	3
D030A005				06618801419174N+3500599	2
D030A015		078072431		04818401200073N+3600008	2
D030A025				04919501200071N+3800099	2
D030A031		085094431		03619401200070N+3900008	2
D031A005		070085411		04418001300070N+4000003	2
D031A015				02518401200068N+4100099	2

TABLE 9-2

MISSION 1022-1

```
PAS FRMAREA1 RESAREA2 RESAREA3 RESAREA4 RESAREA5 RES D  D  D LIM   SUN

NBR NBRWWWAAASTQWWWAAASTQWWWAAASTQWWWAAASTQWWWAAASTQMINMAXB+FMAXLATELECLDULP

D031A025                  063070411                  02715601300066N+4200006 2
D031A035                                             02506201419565N+4400399 2
D031A048                  078078111                  03316501423532N+6403001 2
D031A058                                             03017801422531N+6500599 2
D035A005          085072431                          03216201320458N+4907099 2
D035A015                                             08011402022057N+5007599 3
D035A025                  090094411                  05019802017455N+5100506 3
D035A035                                             03521202022754N+5202099 3
D035A045                  094085411                  03821402021752N+5401506 3
D036A005                                             04816502022050N+5409099 3
D036A015085085421                                    04209502022049N+5509099 3
D036A025                                             05411502022547N+5609099 3
D036A035090082421                                    05810802021846N+5709599 3
D036A045                                             06510201922545N+5809599 3
D036A055                                             06210202122543N+5908099 3
D037A005                                             13519002122676N+3309899 3
D037A015                  090082431                  05014802120575N+3400106 3
D037A025                                             04218802100073N+3600099 3
D037A035                  085078411                  03616002021071N+3801006 3
D037A045                                             04415402022769N+4007599 3
D037A055                  082085431                  06013002122768N+4105006 3
D037A065                                             05816802023166N+4306599 3
D037A076                  078090411                  04813302023052N+5307005 3
D037A086                                             04111001923051N+5407099 3
D037A100                  085085111                  04515201523341N+6006002 2
D037A110                                             03815501422139N+6100099 2
D038A005                  085078411                  04718401321074N+3601503 2
D038A015                                             05016201923073N+3701099 3
D038A025                  104090411                  05214501923271N+3901006 3
D038A035                                             04815201922269N+4000599 3
D038A045                  072085411                  04011601918867N+4200107 3
D038A055                                             04315701920665N+4302099 3
D038A065                  078085411                  04215001823064N+4502505 3
D038A075                                             04015801322662N+4603099 2
D038A093          078082311                          05413201820660N+4804599 3
D038A103                                             03509801922655N+5200599 3
D038A113                  111111411                  03320801322448N+5603501 2
D038A123                                             04717801222047N+5705099 2
D038A133                  094078411                  04017301222445N+5802005 2
D038A143                                             03417201221643N+5901599 2
D038A153                  104104311                  04117601222342N+6001005 2
D038A163                                             04516801221741N+6101099 2
D039A005                                             03214201121247N+5705099 2
D039A015                                                  01221646N+5810099 2
D039A025          085082112                          08019001221044N+5903005 2
D039A035                                             06217801120243N+6000299 2
D039A045                  082085411                  09317501100041N+6000005 2
D039A055                                             04117201200040N+6100099 2
D039A065                  094104111                  03517101121438N+6200202 2
D039A074                                             07517401100037N+6300099 2
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TABLE - 9-2

MISSION 1022-1

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PAS FRMAREA1 RESAREA2 RESAREA3 RESAREA4 RESAREA5 RES D  D  D LIM   SUN

NBR NBRWWWAAASTQWWWAAASTQWWWAAASTQWWWAAASTQWWWAAASTQMINMAXB+FMAXLATELECLDOLP

D040A005                                                    01220870N+3910099 2
D040A015          094111411                              03409201220469N+4004099 2
D040A032                                                 04217501621659N+4702099 3
D040A042                    104094111                    03817001921858N+4902005 3
D040A052                                                 04419302123256N+5001099 3
D040A062                    104104111                    04416802224055N+5103006 3
D040A072                                                 04018002224053N+5200099 3
D040A082                    118125111                    04418202224251N+5402010 3
D040A092                                                 06217502224445N+5507099 3
D040A102                    104099111                    08519702224448N+5605007 3
D042A005                                                 13219401623324N+6601099 2
D042A015                                                 13019601524023N+6606099 2
D042A025                                                 11120601523922N+6506099 2
D042A035                    067063432                    07220201423520N+6504003 2
D053A005                    094099311                    04210502023853N+5303002 3
D053A015                                                 06015302222652N+5403599 3
D053A030                    070063421                    06518801523441N+6101599 2
D053A040                                                 04618201523440N+6201599 2
D053A050099104311                                        02817701423238N+6202099 2
D053A060                                                 03817801422837N+6201099 2
D053A070                              090085411          04814801422035N+6202[illegible] 2
D053A080                                                 03616801600034N+6300[illegible] 2
D053A090                    118094411                    03817602223032N+6301[illegible] 2
D053A100                                                 06614002223831N+6301599 3
D053A110                    082094411                    05615602223029N+6401503 3
D053A120                                                 03511502224428N+6409899 3
D053A130                    094085411                    07014502223826N+6403599 3
D053A140                                                 05215602224624N+6502599 3
D053A150                    085085411                    07117502224223N+6505599 2
D053A160                                                 05614301623221N+6509099 2
D053A170                                                      01523220N+6610099 1
D053A178                                                      01120419N+6610099 1
D054A005                                                 04210501423456N+5009899 2
D054A015                                                 06614001423455N+5210099 2
D054A021                                          104118111071130014225 54N+5209599 2
D054A031                                                 04911801422453N+5407599 2
D054A041                    104104411                    03219401423641N+6102501 2
D054A051                                                 06017701423140N+6201599 2
D054A061                                                 07918201423838N+6303099 2
D054A067                              078085421          08118801423437N+6303599 2
D054A077                                                 06820801323336N+6403099 2
D054A087                    094104411                    07420201323335N+6407599 2
D054A097                                                 03222201422333N+6502099 2
D054A107                    094085411                    04721601423432N+6608501 2
D054A117                                                 07219401423430N+6604599 2
D055A005                                                      01422659N+4710099 2
D055A015                                                      01422458N+4910099 2
D055A025085094111                                        05610201422456N+5009899 2
D055A035                                                 04210201423055N+5108099 2
D055A045                    094104111                    03210601422353N+5208004 2
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TABLE 9-2

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MISSION 1022-1
PAS FRMAREA1 RESAREA2 RESAREA3 RESAREA4 RESAREA5 RES D  D  D LIM   SUN

NBR NBRWWWAAASTQWWWAAASTQWWWAAASTQWWWAAASTQWWWAAASTQMINMAXB+FMAXLATELECLDOLP

D055A055                                                  03013001322652N+5308599 2
D055A065                    099104111                     04815801422650N+5407006 2
D055A075                                                  03615501423249N+5504099 2
D055A085                    078082431                     06218801422847N+5607008 2
D055A095                                                  05019401220646N+5804099 2
D055A105                    072072411                     03713701000044N+5900099 1
D055A115                                                  05218601400043N+6000099 2
D055A125          104104111                               03820001420041N+6100205 2
D055A135                                                  09819201422240N+6201099 2
D055A145                    072078411                     13617201400039N+6300004 2
D056A005094072433                                         04220202023270N+3908099 3
D056A015                                                  04513802223669N+4007599 3
D056A026                    085070111                     04114802123161N+4603507 3
D056A036                                                  04516802123560N+4804099 3
D056A046                    082072111                     04614202124358N+4904010 3
D056A056                                                  05516402124157N+5003099 3
D056A066                    094090111                     07015702124755N+5106099 3
D056A076                                                  05917802124054N+5204099 3
D056A086                    078070112                     07114302124252N+5407099 3
D056A096                                                  09918902224251N+5508599 3
D056A106                    085085112                     08316602124549N+[illegible]
D056A116                                                  05116901824348N+57[illegible]
D056A126                    082078111                     03513801421446N+58[illegible]
D056A136                                                  02413001221944N+6300599 2
D056A145                                                  14019601300032N+6500099 2
D056A155085090111                                         10519201500031N+6600010 2
D056A165                                                  13520401500030N+6600099 2
D056A172                    072065411                     09620201400029N+6700009 2
D058A005                                                  07215201021027N+6704099 1
D058A015                                         078085431 05315001020626N+6705003 1
D058A025                                                  06713601020825N+6705099 1
D058A032                    085090431                     05015801020624N+6708003 1
D062A005                    059067311                     05018601323426N+6802501 1
D062A015                                                  04016401222725N+6802599 1
D063A005                    104104111                     03419001123237N+6400302 1
8   F                                                                   N+-0
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TABLE 9-2

[redacted]

MISSION 1022-2

PAS FRMAREA1	RESAREA2	RESAREA3	RESAREA4	RESAREA5	RES D D D LIM SUN
NBR NBRWWWAAASTQWWWAAASTQWWWAAASTQWWWAAASTQWWWAAASTQMINMAXB+FMAXLATELECLDOLP					
D067F005					0311150180007 1N+3700099 3
D067F015		067072431			0391150182007 0N+3800110 3
D067F025					0271740181726 8N+4000199 3
D067F035		094085411			0301950182026 7N+4100309 3
D067F045					0182364 5N+5910099 3
D067F055078082411					0571250162354 4N+6009899 2
D069F005		099104411			0361650122178 0N+2907099 2
D069F015					0201900122157 9N+3003599 2
D069F025		082090411			0331810192007 4N+3500503 3
D069F035					0401360182327 3N+3602099 3
D069F045			078070411		0290880192367 1N+3806099 3
D069F055					0421990192337 0N+3908599 3
D069F065094104111					0280970182305 6N+5101099 3
D069F075					0281550192185 5N+5200599 3
D069F085		094094411			0251340192275 3N+5301505 3
D069F095					0301250192395 2N+5402099 3
D069F108		082078421			0421670142224 1N+6200503 2
D069F118					0371540132344 0N+6302099 2
D069F128078085111					0251620132303 8N+6306099 2
D069F138					0231420132323 7N+6408599 2
D069F148		067072411			0221010132283 5N+6500099 2
D070F005					0851300112257 2N+3710099 2
D070F015					0112057 1N+3810099 2
D070F025				075070411	0301200152226 9N+4006599 3
D070F035					0361400182306 7N+4103099 3
D070F045				078082411	0471600172296 6N+4304005 3
D070F055					0281200122266 4N+4407099 2
D070F065				067085411	0220840112246 2N+4607099 2
D070F075					0400720132286 1N+4109599 2
D070F085			072085411		0261100172273 8N+5101005 3
D070F095					0351400182253 9N+5201099 3
D070F105	104094111				0321650182243 9N+5300505 3
D070F115					0381350182383 9N+5402599 3
D070F125				082078431	0481350172354 0N+5605005 2
D070F135					0551500122274 0N+5709599 2
D070F145			082082431		0381550122254 0N+5803599 2
D070F155					0411300122174 1N+5900199 2
D070F163				085078431	0281520122184 1N+6002099 2
D071F005					0122205 8N+4810099 2
D071F015		078072112			0361050132285 7N+5009899 2
D071F025					0401500172305 5N+3107099 3
D071F035		104094111			0421750172365 4N+5206008 3
D071F045					0381200172325 2N+5305099 3
D071F055		094094111			0461400172365 1N+5406508 3
D071F065					0281450132224 9N+5501099 2
D071F075		094094111			0291180131164 8N+5701507 2
D071F085					0341780120004 6N+5800099 2
D071F095		078082211			0681640120004 5N+5900005 2
D071F105					0821900130004 3N+6000099 2
A072F005					0120003 9N-2499999 2

~~TOP SECRET~~ [redacted]

TABLE 9-3

MISSION 1022-2

PAS NBR	FRMAREA1 RESAREA2 RESAREA3 RESAREA4 RESAREA5 RES WWWAAASTQ	D WWWAAASTQ	D WWWAAASTQ	D WWWAAASTQ	LIM WWWAAASTQ	SUM MINMAXB+FMAXLATELECLDOLP
D075F005						01222468N+4110099 2
D075F015						01019566N+4210099 1
D075F025	085072421					087178012222659N+4407010 2
D079F005						01321636N+6509599 2
D079F010						01322036N+6509899 2
D083F005						067118018210719N+3709899 3
D083F015	085067421					033098017000709N+3900007 3
D083F028						026130018000499N+5600099 3
D083F038		094090111				028115018230489N+5700599 3
D083F048						029130017210469N+5900199 3
D083F058	094085111					033110018223459N+6002099 3
D085F005						055085019215569N+5109899 3
D085F015						036072013231559N+5209899 2
D085F025				078085431		046135014228549N+5309599 2
D085F035						029140013220439N+6003099 2
D085F045	072072431					026151014226429N+6106004 2
D085F055						026165012226409N+6206099 2
D085F065	070067431					023150013227399N+6301502 2
D085F075						028225014218379N+6402099 2
D085F085	085085421					035185014220369N+6401003 3
D085F095						026160014230339N+6505099 3
D085F105	078082431					040145015242359N+6608099 2
D085F115						040229019235319N+6708099 3
D085F125	078078431					092228019245309N+6709599 3
D085F135						055108020240289N+6809099 3
D086F005						041146020238509N+5505099 3
D086F015	111104111					042161020000499N+5600006 3
D086F025						023106014214479N+5800199 2
D086F035	094094111					061178014000469N+5900005 2
D086F045						024202014222449N+6000199 2
D086F055		090094111				038151014234439N+6102005 2
D086F065						022153014235419N+6203599 2
D086F075		104094111				020150014235409N+6304505 2
D086F085						032220014228389N+6404099 2
D087F005	094090411					028150020230639N+4505003 3
D087F015						025158020232629N+4602599 3
D087F025	078085111					026153020225609N+4701505 3
D087F035						028125020233599N+4902099 3
D087F045	085094111					029170020215579N+5001505 3
D087F055						036146020232569N+5102099 3
D087F064	085090111					042150020232559N+5204006 3
D087F074						070196014220499N+5703599 2
D087F084	067059421					029170014214479N+5801005 2
D088F005	094104111					023102012210529N+5402005 2
D088F015						036144013218519N+5607599 2
D088F025		085090111				036123017228499N+5700705 3
D088F035						041139019232489N+5801099 3
D088F045	094094111					031135018222469N+5901505 3
D088F055						055155019209449N+6000599 3
D088F065		111104111				024112019227439N+6201005 3

TABLE 9-3

MISSION 1022-2

PAS NBR	FRMAREA1	RESAREA2	RESAREA3	RESAREA4	RESAREA5	RES D	D	D LIM	SUV
	NBRWWWAAASTQWWWAAASTQWWWAAASTQWWWAAASTQWWWAAASTQMINMAXB+FMAXLATELECLDOLP								
D088F071						033140017000 42N+6300099 3			
D094F005			085085111			026180014232 32N+6801001 2			
D094F015						024184014234 30N+6901599 2			
D097F005				078082431		038232020000 68N+4000005 3			
D097F015						041223020225 67N+4104099 3			
D097F025				067072411		048152019224 65N+4305005 3			
D097F030						054125020228 65N+4309099 3			
D098F005						089190018182 75N+3300599 3			
D098F015			078082411			040192013000 74N+3400007 2			
D098F025						044200017000 72N+3600099 3			
D098F035			078078411			026186018000 71N+3800008 3			
D098F045						032078019000 49N+4000099 3			
D099F005		072078411				032113019232 53N+5305599 3			
D099F015						040085019240 52N+5505599 3			
D099F025			082078411			029118018222 50N+5601006 3			
D099F035						033155018230 49N+5703599 3			
D099F045						019240 47N+5810099 3			
D099F055	065070412					058120019230 46N+5909899 3			
D099F065						040125019214 44N+6008599 3			
D099F075						018221 42N+6110099 3			
D099F082						018220 [redacted]			
D100F005			063075411			029078019229 59N+ [redacted]			
D100F015						029100019228 58N+ [redacted]			
D100F025			094094411			034110020235 56N+5002005 3			
D100F035						029138018237 55N+5202099 3			
D100F045			059067421			033265019234 53N+5302005 3			
D100F055						028112020235 52N+5402099 3			
D100F065					094078111027122018236 51N+5601505 3				
D100F075						028104019232 49N+7502599 3			
D100F088						018238 40N+6410099 3			
D100F093			082094111			040114016231 39N+7409599 2			
D100F101						033137013231 38N+6509099 2			
D101F005					075094411046158018224 73N+3604599 3				
D101F015						042088019230 72N+3709099 3			
D101F025					070067411033146019218 70N+3903507 3				
D101F035						040138019228 68N+4005599 3			
D101F053					085090411035126019236 56N+5103007 3				
D101F063						034112019234 54N+5202599 3			
D101F073					085085421034148019228 53N+5401507 3				
D101F083						028118019227 51N+5101099 3			
D101F095		082085431				060187014000 40N+6300001 2			
D101F105						099152014000 39N+6400099 2			
D101F115			075082411			036178012212 37N+6500501 2			
D101F125						030122013225 36N+6601599 2			
D101F135			078085411			036220012228 34N+6702501 2			
D101F145						024232013225 33N+6702599 2			
D101F155			094085411			020180013225 31N+6801002 2			
D101F165						023228013228 30N+6902599 2			
D101F171			075085431			034214013226 29N+7003502 2			
D102F005						029110014224 51N+5508099 2			

TOP SECRET [redacted]

TABLE -9-3

[redacted]

MISSION 1022-2

PAS FRMAREA1 RESAREA2 RESAREA3 RESAREA4 RESAREA5 RES D D D LIM SUN						
NBR NBRWWWAAASTQWWWAAASTQWWWAAASTQWWWAAASTQWWWAAASTQMINMAXB+FMAXLATELECLOOLP						
D102F015		094094111			034140012223501N+5607504	2
D102F025					030120013224481N+5708099	2
D102F035		094078211			032146012222461N+3806005	2
D102F045					034163012219451N+6005099	2
D102F051		072072421			032175012000441N+6000005	2
D103F005					01522069N+3910099	2
D103F015		078082421			047102020222681N+4005005	3
D103F025					031097020212661N+4202599	3
D103F035075085111					032151020221641N+4301505	3
D103F045					029106020220631N+4503599	3
D103F055	085072111				028140020232611N+4601505	3
D103F067					041152020232481N+5801099	3
D103F077		094090111			040152015220471N+5900505	2
D103F087					030134014174451N+6000199	2
D103F097		104090111			028120014202431N+6100205	2
D103F107					032136014228421N+6300599	2
D104F005			070078412		045062013228481N+5709999	2
D104F015					039165020232471N+5901099	3
D104F025	094094111				034150020130451N+6000103	3
D104F035					034160020000441N+6100099	3
D104F045082085211					033152020230[redacted]	
D104F055					034178020000501N+6[redacted]	
D104F065		090085111			037162020218391N+6[redacted]	
D104F072					038156020220381N+6[redacted]	
D110F005			075082431		032176015228361N+6603002	3
D110F015					030174013220351N+6701599	2
D110F025		078072421			057132012238291N+7000502	2
D110F035					033188012132271N+7101099	2
D110F045					01218026N+7101099	2
D115F005	082078411				033172013168751N+3300299	2
D115F015					096178018000741N+3400099	3
D115F025	078075411				052136019000721N+3600003	3
D115F035					030110019235701N+3700599	3
D115F045			094094411		036185019190691N+3901003	3
D115F055					032130020225671N+4001099	3
D115F065	090085411				034137019214651N+4200203	3
D115F075					025123019236641N+4301099	3
D115F085					01823752N+5510099	3
D115F095					01222050N+5610099	2
D115F109					01223244N+6109999	2
D115F119				078075212068130015208431N+6209599		2
D115F129					01220441N+6310099	2
D115F139					01222439N+6410099	2
D115F148					035107012228381N+6508099	2
D116F005					036096018230531N+5406099	3
D116F015		094104111			042100019234521N+5507504	3
D116F025					030152019236501N+5605099	3
D116F033	078082411				024087016226491N+5709099	3
D116F043					036126012178421N+6200199	3
D116F053		104090111			022180018187411N+6300104	2

~~TOP SECRET~~ [redacted]

TABLE 9-3

MISSION 1022-2

PAS FRMAREA1 RESAREA2 RESAREA3 RESAREA4 RESAREA5 RES D D D LIM SUN

NBR NBRWWWAAASTQWWWAAASTQWWWAAASTQWWWAAASTQWWWAAASTQMINMAXB+FMAXLATELECLDOLP

D116F063					03517501821939N+6300599	2
D116F073		090099111			03215201821637N+6403004	2
D116F083					02214401423036N+6503099	2
D116F093			094099111		04516501900034N+6500006	3
D116F103					03215102023133N+6601099	3
D116F113		104094111			03013901923231N+6602003	3
D116F123					03514501922629N+6703099	3
D116F133		104104111			03516302022928N+6802505	3
D116F143					03411102023626N+6802099	3
D116F153		104094111			03614401921525N+6902507	3
D116F163					04412501923123N+6903099	3
D116F173		099104111			04018601923621N+7004008	3
D116F183					06418202020420N+7101599	3
D116F193		094104111			04018401924018N+7104009	3
D116F202					04516001916317N+7201599	3
D118F005					01721673N+3510099	3
D118F014			082078411		08713001821672N+3609999	3
D118F024					05009501822258N+4907099	3
D118F034			070075411		04208001822757N+5007505	3
D118F044					04710001823059N+5108599	3
D118F054	094104111				04110001823254N+[illegible]	[illegible]
D118F064					05412201923552N+[illegible]	[illegible]
D118F074	090094111				04920201722851N+[illegible]	[illegible]
D118F084					05618501917049N+5600299	3
D118F094			085082411		07619401800047N+5800005	3
D118F104					04817501800046N+5900099	3
D118F114		085082411			06718701300044N+6000005	2
D118F124					05015801200043N+6200099	2
D118F134085090411					03216001100041N+6300005	2
D118F144					05517201100040N+6400099	2
D118F154			078085112		07018401215538N+6602099	2
D118F164					03922201200036N+6700099	2
D119F005		094090111			03008801723058N+4903003	3
D119F015					03810401922757N+5001099	3
D119F025		072085111			04011201822855N+5102005	3
D119F035					06617201823554N+5309599	3
D119F045					01823852N+5410099	3
D119F049				094085111	09015201823651N+5509099	3
D119F059					06013601823050N+5608599	3
D119F069		094094111			05216801823048N+5701005	3
D119F079					04313401823447N+5901099	3
D119F089		082094111			03914501823445N+6000505	3
D119F099					03013501923044N+6200599	3
D125F005			085090111		02914202022648N+5801001	3
D125F015					03116002022247N+5901099	3
D125F027			085085111		04018801923831N+7103501	3
D125F036					03716201923629N+7104099	3
D126F005		090094111			02819201823841N+6301002	3
D126F014					03016801820840N+6400199	3
D131F005			072065412		05010901822252N+5508599	3

TABLE 9-3

[redacted]

MISSION 1022-2

PAS FRMAREA1 RESAREA2 RESAREA3 RESAREA4 RESAREA5 RES D D D LIM SUN

NBR NBRWWWAAASTQWWWAAASTQWWWAAASTQWWWAAASTQWWWAAASTQMINMAXB+FMAXLATELECLDOLP

```
D131F015                                                    04210001822851N+5607099 3
D131F025                                 090094411          03309001723550N+5705503 3
D131F035                                                    03313101921548N+5801099 3
D131F045094094111                                           02716001721347N+6001003 3
D131F055                                                    02717401720045N+6101099 3
D131F065                                                    06211001824008S+5702099 3
D131F073                                                          01823710S+5502099 3
D132F005                                                    02709301823759N+4803099 3
D132F015                     094104111                      03008201622058N+4903505 3
D132F025                                                    02908701923056N+5003099 3
D132F035                     094104111                      02710801721755N+5201505 3
D132F045                                                    02910301823353N+5300599 3
D132F055                                              065070112075130018232 51N+5508099 3
D132F065                                                          01823450N+5610099 3
D132F075                     104104111                      02411501823532N+7002502 3
D132F085                                                    02814501723531N+7102599 3
D132F095                     111104111                      02814401723829N+7101008 3
D132F105                                                    03015201723828N+7102099 3
D132F115                     090094111                      03716001823726N+7204507 3
D132F125                                                    03715801823124N+7204099 3
D132F135            094090211                               03317001822[illegible]
D132F145                     090099111                      04313901823621N+[illegible]
D132F155                                                    03811001724019N+[illegible]
D134F005                                                          01521438N+5110099 2
D134F015                                                          01422237N+5010099 2
D134F025                     099094111                      04311001822655N+5105005 3
D134F035                                                    04211501721554N+5301599 3
D134F045                     099094111                      04010501823152N+5404005 3
D134F055                                                    03515201822650N+5600599 3
D134F065                                 090090111          03815101823449N+5707006 3
D135F005            072075111                               06416201923053N+5407002 3
D135F015                                                    06213301923452N+5509099 3
D135F025                     099094111                      05414701922850N+5608099 3
D135F035                                                    04516301923649N+5702599 2
D135F045            094099111                               03714501921247N+5902099 2
D135F055                                                    07318401922045N+6004099 2
D135F065                     085082411                      03612201423144N+6108099 2
D135F082                                                    04016301322505N+6701599 2
D135F092078085411                                           04517801323404N+6602002 2
D135F096                                                    04016201323704N+6501599 2
8   F                                                                     N+-0
```

~~TOP SECRET~~ [redacted]

TABLE 9-3

MISSION 1022-2

PAS FRMAREA1 RESAREA2 RESAREA3 RESAREA4 RESAREA5 RES D D D LIM SUM						
NBR NBRWWWAAASTQWWWAAASTQWWWAAASTQWWWAAASTQWWWAAASTQMINMAXB+FMAXLATELECLDOLP						
D067A005	085099411				055172020000 72N+3700099	3
D067A015					041138020000 71N+3100099	3
D067A025		082078421			041130020202 69N+4000105	2
D067A034					038160020145 68N+4100199	2
D067A044					01523646N+5910099	2
D067A054					01322945N+6010099	2
D069A005	075070421				075182012210 81N+2809599	2
D069A015					122186012228 80N+2909599	2
D069A025		085078411			037195013000 75N+3400004	2
D069A035					048160020210 74N+3500599	3
D069A045		090085411			051135020227 72N+3701504	3
D069A054					068126020234 71N+3906099	3
D069A064		078082411			036118020224 57N+5001504	3
D069A074					033132020241 56N+5101099	3
D069A084			090090111		036120021237 54N+5202004	3
D069A094					038145020228 53N+5302599	3
D069A106				078082421	042175017239 42N+6101504	2
D069A116					041178013230 40N+6201099	2
D069A124			075082421		050172012226 39N+6302004	2
D069A134					030198013230 37N+6306099	2
D069A144				085090411	025145012238 36N+6400599	1
D069A149					033155013225 35N+6506099	1
D070A005					01323273N+3610099	2
D070A015					01321872N+3710099	2
D070A017	067078411				031182013215 71N+3709099	3
D070A027					036105014216 70N+3909099	2
D070A037		072078421			037136015233 68N+4103505	2
D070A047					050167021224 66N+4203099	3
D070A057		065072421			094194020234 65N+4407599	3
D070A067					092175020241 63N+4508599	3
D070A077		063059411			066130020239 61N+4709599	3
D070A087					043156020238 56N+5102599	3
D070A097		075094111			042145020225 54N+5201505	3
D070A107					048118020215 53N+5301099	3
D070A117		094104111			050195020245 51N+5401005	3
D070A127					077186021240 50N+5506099	3
D070A137	072078421				100180020232 46N+5709099	3
D070A147					098177020239 47N+5804599	3
D070A157		094090111			065165017212 45N+5901005	2
D071A005			085094411		057122013224 59N+4809599	2
D071A015					047135012222 58N+4909099	2
D071A025		094094111			031143012226 56N+5005005	2
D071A035					032126012220 55N+5105099	2
D071A045	094104111				040140012240 53N+5305006	2
D071A055					035120012215 52N+5402099	2
D071A065		085082111			053156013235 50N+5508099	2
D071A075					040123012221 49N+5605099	2
D071A085		094078431			042186012222 47N+5800205	2
D071A095					090178013000 46N+5900099	2
D071A105		065072421			062128010000 44N+6000005	1

TOP SECRET [redacted]

TABLE 9-4

MISSION 1022-2

PAS FRMAREA1 RESAREA2 RESAREA3 RESAREA4 RESAREA5 RES D D D LIM SUN

NBR NBRWWWAAASTQWWWAAASTQWWWAAASTQWWWAAASTQWWWAAASTQMINMAXB+FMAXLATELECLDOLP

D088A045				03715002022247N+5902099	3
D088A055		094104111		04215502022045N+6002006	3
D088A065				04314501422144N+6101099	2
D088A070		104099111		04014901322043N+6100504	2
D094A005		085090431		02814501422933N+6705501	2
D094A015				03618601223631N+6803099	2
D094A017		085099431		04618401223631N+6902503	2
D097A005				03210401400069N+3900099	2
D097A015		094085411		02422001421268N+4000506	2
D097A025				03719301322266N+4208099	2
D097A030		085085411		03612001321465N+4208007	2
D098A005		082085411		02417001200076N+3200099	2
D098A015				02917801300075N+3300099	2
D098A025			090078411	04219001320073N+3502003	2
D098A035				04820001800071N+3700099	3
D098A047	078070411			05010602000069N+3900003	3
D099A005082082411				06113802023854N+5309599	3
D099A015				04413002023853N+5404099	3
D099A025		085085431		04514201823.51N+5500505	3
D099A035				04417902024050N+5602099	3
D099A045				02023448N+5810[illegible]	[illegible]
D099A055				02023846N+5910[illegible]	[illegible]
D099A065085078212				05911502021845N+6006599	[illegible]
D099A075				02022443N+6109099	3
D099A085				02022842N+6310099	3
D100A005				03610302023260N+4703099	3
D100A015			104104111	04213002023059N+4802503	3
D100A025				03610802024257N+5902099	3
D100A035		078078111		04813002023256N+5106099	3
D100A045				03417002023554N+5202099	3
D100A055		090099431		03810602023452N+5303503	3
D100A065				04914502023551N+5507099	3
D100A075			099094111	03314202024049N+5602503	3
D100A088				14017301523641N+6309099	2
D100A098				04611001223239N+6409899	2
D101A005		118104411		04819802021474N+3501003	3
D101A015				04514202022073N+3606599	3
D101A025		085099411		05813402022671N+3806005	3
D101A035				06511202023469N+3907599	3
D101A043	078085411			06521002023168N+4107599	3
D101A053				08015202022957N+5007099	3
D101A063		085094111		07315002023455N+5107005	3
D101A073				05013002023654N+5302099	3
D101A083		085099411		04413402022852N+5401005	3
D101A095				08017002200041N+6200099	2
D101A105	063075411			09418201219840N+6300505	2
D101A115				04217201220438N+6400599	2
D101A125		094099411		02217601019037N+6500502	1
101A135				02519601020235N+6603099	1
D101A145		072078411		02417501021034N+6702501	1

TABLE 9-4

MISSION 1022-2

```
PAS FRMAREA1 RESAREA2 RESAREA3 RESAREA4 RESAREA5 RES D  D  D LIM   SUN

NBR NBRWWWAAASTQWWWAAASTQWWWAAASTQWWWAAASTQWWWAAASTQMINMAXB+FMAXLATELECLDOLP

D101A155                                                  02821601020232N+6804099 1
D101A165                  104078411                       03314301223131N+6902503 2
D101A171                                                  03623201223230N+7005099 2
D102A005          104085111                               04210801221852N+5502001 2
D102A015                                                  05213001222551N+5603599 2
D102A025                  067072411                       04514201222647N+5703501 2
D102A035                                                  05016201222447N+5803099 2
D102A045                              085090211           04718001222446N+6002501 2
D102A051                                                  05120801222445N+6002099 2
D103A005                                                        01420570N+3810099 2
D103A015                                                        02123069N+3910099 3
D103A025                  078078421                       04509002022067N+4105006 3
D103A035                                                  04612502022465N+4207099 3
D103A045                  104111111                       03213402017764N+4401007 3
D103A055                                                  04416402021762N+4503599 3
D103A066                  094094111                       06219702023049N+5704502 3
D103A076                                                  05516601722748N+5801599 2
D103A086                  099104111                       03614201322046N+5902004 2
D103A096                                                  04217001300045N+6000099 2
D103A106                  104104111                       03512001322043N+6200505 [illegible]
D103A112                                                  04510501422[illegible]
D104A005                                                        01223046N+[illegible]
D104A015                  094104111                       05214601322848N+5[illegible]
D104A025                                                  04416401622246N+5900299 2
D104A035                  094094111                       05214502022645N+6000105 3
D104A045                                                  03818002000043N+6100099 3
D104A055                  099099111                       05015302022241N+6200205 3
D104A065                                                  05217402023554N+6400199 3
D104A072                  104085111                       05018202000039N+6400005 3
D110A005                                        085078431056204016242 37N+6603001 2
D110A015                                                  03817801322836N+6701099 2
D110A025                              082082421           06616001300030N+7000099 2
D110A035                                                  06117601322528N+7101099 2
D110A045          078085411                               06818401323226N+7100701 2
D115A005                  094094411                       03616201420776N+3200503 2
D115A015                                                  03916701200075N+3300099 2
D115A025                  078075421                       03811601400073N+3500006 2
D115A035                                                  04213502018171N+3600199 3
D115A045                  072078421                       06012802022970N+3806007 3
D115A055                                                  03810702024168N+3900399 3
D115A065                  085067421                       04220902022466N+4100505 3
D115A075                                                  05417202023865N+4301099 3
D115A085                                        059067412098144020228 53N+5409599 3
D115A095                                                        01622251N+5510099 3
D115A107                  082075212                       02706801019245N+6107599 1
D115A117                                                  04812001020744N+6209599 1
D115A127                                                        01218442N+6310099 1
D115A137                                                        01321440N+6410099 2
D115A147                                                        01321739N+6610099 2
D116A005072082311                                         04610301723354N+5307599 3
```


TABLE 9-4

[redacted]

MISSION 1022-2

PAS	FRMAREA1	RESAREA2	RESAREA3	RESAREA4	RESAREA5	RES	D	D	LTH	SUM
NBR	NBRWWAAASTQWWAAASTQWWAAASTQWWAAASTQWWAAASTQWWAAASTQMIWMAXB+FMAXLATELECLDOLP									
D116A015										049094020237S3N+5409099 3
D116A025		111118111								040173019239S1N+5505503 3
D116A033										038180021235S0N+5604099 3
D116A043			104078421							044178014215S3N+6200505 2
D116A053										044155014215S2N+6300599 2
D116A063			094085421							075162013000S0N+6300005 2
D116A073										040172013221S8N+6401599 2
D116A083			082085431							034165013227S7N+6501005 2
D116A093										028158013227S5N+6501099 2
D116A103			094094411							033150020220S4N+6601005 3
D116A113										037138020230S2N+6601099 3
D116A123			082078411							056158020230S0N+6701005 3
D116A133										042134021242S9N+6802099 3
D116A143			104118411							052125019243S7N+6802006 3
D116A153										050130021238S6N+6902599 3
D116A163			099118111							041153020225S4N+6902005 3
D116A173										045178020234S2N+7002099 3
D116A183			104104111							065180018224S1N+7100505 3
D116A193										026170014210S9N+7100503 2
D116A202				078075211						[redacted]
D118A005										[redacted]
D118A015										[redacted]
118A025					104099111					[redacted]
D118A035										047165020225S8N+5008599 [redacted]
D118A045			090085112							065137019232S6N+5109005 [redacted]
D118A055										063130021241S5N+5209099 3
D118A065			104104111							052152017225S3N+5408005 3
D118A075										032139013225S1N+5507599 2
D118A085			094094111							040150013205S0N+5601004 2
D118A095										045163012000S8N+5700099 2
D118A105			072078411							070180013000S7N+5900005 2
D118A115										037180013000S5N+6000099 2
D118A125			078094411							025146011000S4N+6100003 2
D118A135										080125011000S2N+6200099 1
D118A145		104099111								035135011000S0N+6400004 1
D118A155										070130011000S9N+6500099 1
D118A165	078082411									055128011000S7N+6600004 1
D119A005		082075411								050106018227S9N+4904001 3
D119A015										050174020229S8N+5002099 3
D119A025			094099111							042156020226S6N+5102001 3
D119A035										040095014235S5N+5205599 2
D119A045										067100012198S3N+5409999 1
D119A055	085090111									039078011202S1N+5509099 1
D119A065										030080012203S0N+5605999 2
D119A075					104099111					036146014215S8N+5801501 2
D119A085										032118014232S7N+5900599 2
D119A095			099094111							036110014240S5N+6000503 2
D119A103										030134017235S4N+6100599 2
125A005			099104211							050128024237S9N+5700502 3
D125A015										046158020230S8N+5801599 1

~~TOP SECRET~~ [redacted]

TABLE 9-4

MISSION 1022-2
PAS FRMAREA1 RESAREA2 RESAREA3 RESAREA4 RESAREA5 RES D D D LIM SUN

NBR NBRWWWAAASTQWWWAAASTQWWWAAASTQWWWAAASTQWWWAAASTQMINMAXB+FMAXLATELECLDOLP

D125A026		094104111	03714001323432N+7002002	2
D125A037		099104211	03915201423030N+7102005	2
D126A005		085082111	07216201424041N+6301002	2
D126A015		085085211	02420001400040N+6500003	2
D131A005			01220753N+5410099	1
D131A015		072075411	02105101121852N+5508004	1
D131A025			04005501422450N+5609099	2
D131A035		094094111	03909601822049N+5703004	3
D131A045			04213202023847N+5902099	3
D131A055		104104111	04115002123645N+6002505	3
D131A066			05712002124907S+5801099	3
D132A005			04412502223260N+4806099	3
D132A015		104099111	03910202224259N+4905005	3
D132A025			04211402223557N+5003099	3
D132A035		104104111	04414002223256N+5101504	3
D132A045			04517702224854N+5301599	3
D132A055	094099111		07514402224252N+5407099	3
D132A065			09016202223751N+5509099	3
D132A075		094099111	04617202223833N+6902005	3
D132A085			03821002223832N+7[illegible]	[illegible]
D132A095		094094111	[illegible]	[illegible]
D132A105			04615002224[illegible]	[illegible]
D132A115		094094111	05015402023[illegible]	[illegible]
D132A125			03613001423725N+7207099	[illegible]
D132A135		094094111	02413202224023N+7305[illegible]	[illegible]
D132A145			02611201423822N+7301599	2
D132A155		104094111	02611201423620N+7405006	2
D134A005			06816601422259N+4909899	2
D134A015			01120558N+5010099	1
D134A025			01824556N+5110099	3
D134A035		085090111	06412802222855N+5202002	3
D134A045			06818602124653N+5402599	3
D134A055099090111			03811501523451N+5501002	2
D134A065			04715401423750N+5601099	2
D135A005		104094111	03014401323054N+5305099	2
D135A015			01324253N+5409899	2
D135A025		104104111	06513501323551N+5509599	2
D135A035			04413701321850N+5706599	2
D135A045		078094111	03312501223248N+5804004	2
D135A055			03712201320548N+6008099	2
D135A065094090111			05516301322545N+6109599	2
D135A082			03016401024106N+6703599	2
D135A092		085094411	04916701323604N+6602506	2
D135A102			05516001324203N+6402599	2
D135A112		085072111	07110501324301S+6405006	2
D136A005		072078422	09816201100028N+7300005	1
D136A015			10016401100027N+7499999	1
D136A024070075412			06516501000025N+7499907	1
F			N+-0	

TABLE 9-4

TOP SECRET [redacted]

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
1022-1	FWD	Predicted	0.0	36.0	64.0
		Reported	8.0	36.0	56.0
		Computed	0.0	42.5	57.5
	AFT	Predicted	0.0	89.2	10.8
		Reported	6.8	41.8	51.4
		Computed	0.0	52.6	47.4
1022-2	FWD	Predicted	0.0	8.3	91.7
		Reported	0.5	37.0	62.5
		Computed	0.0	42.6	57.4
	AFT	Predicted	0.0	100.0	0.0
		Reported	10.0	44.0	46.0
		Computed	0.0	53.5	46.5

The correlation of the reported and computed percentages at the three processing levels is very good for both missions and is more consistent than the usual mission values.

The tabulations of density frequency distributions for Mission 1022-1 are shown in Tables 9-5 through 9-8. The graphical presentation of the density distribution are computer plotted in Figures 9-1 through 9-9 for the Fwd camera of Mission 1022-1 and Figures 9-10 through 9-18 for the Aft camera. Mission 1022-2 distributions for the Fwd camera are shown in Figures 9-19 through 9-27 and the Aft camera in Figures 9-28 through 9-36.

MISSION • 1022-1 • INSTRUMENT • FRWD 10-01-65 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	2	0	0	0	0	0	2	0	0
0.19	0	0	0	2	0	0	0	0	0	2	0	0
0.20	0	0	0	2	0	0	0	0	0	2	0	0
0.21	0	0	0	2	0	0	0	0	0	2	0	0
0.22	0	0	0	2	0	0	0	0	0	2	0	0
0.23	0	0	0	3	0	0	0	0	0	3	0	0
0.24	0	0	0	3	0	0	0	0	0	3	0	0
0.25	0	0	0	1	0	0	0	0	0	1	0	0
0.26	0	0	0	5	0	0	2	0	0	7	0	0
0.27	0	0	0	2	0	0	0	0	0	2	0	0
0.28	0	0	0	5	0	0	11	0	0	16	0	0
0.29	0	0	0	2	0	0	4	0	0	6	0	0
0.30	0	0	0	5	0	0	9	0	0	14	0	0
0.31	0	0	0	4	0	0	1	0	0	5	0	0
0.32	0	0	0	5	0	0	13	0	0	18	0	0
0.33	0	0	0	1	0	0	5	0	0	6	0	0
0.34	0	0	0	6	0	0	9	0	0	15	0	0
0.35	0	0	0	2	0	0	4	0	0	6	0	0
0.36	0	0	0	3	0	0	11	0	0	14	0	0
0.37	0	0	0	1	0	0	2	0	0	3	0	0
0.38	0	0	0	3	0	0	4	0	0	7	0	0
0.39	0	0	0	1	0	0	2	0	0	3	0	0
0.40	0	0	0	2	0	0	10	0	0	12	0	0
0.41	0	0	0	2	0	0	1	0	0	3	0	0
0.42	0	0	0	1	0	0	5	0	0	6	0	0
0.43	0	0	0	1	0	0	3	0	0	4	0	0
0.44	0	0	0	2	0	0	3	0	0	5	0	0
0.45	0	0	0	0	0	0	5	0	0	5	0	0
0.46	0	0	0	1	0	0	6	0	0	7	0	0
0.47	0	0	0	0	0	0	0	0	0	0	0	0
0.48	0	0	0	2	0	0	7	0	0	9	0	0
0.49	0	0	0	0	0	0	0	0	0	0	0	0
0.50	0	0	0	1	0	0	8	0	0	9	0	0
SUBTOTAL	0	0	0	67	0	0	125	0	0	192	0	0

TABLE 9-5

MISSION • 1022-1 • INSTRUMENT • FRND • 10-01-65 • 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	2	0	0	0	0	0	2	0	0
0.52	0	0	0	2	0	0	1	0	0	3	0	0
0.53	0	0	0	1	0	0	2	0	0	3	0	0
0.54	0	0	0	3	1	0	1	0	0	4	1	0
0.55	0	0	0	0	0	0	2	0	0	2	0	0
0.56	0	0	0	2	0	0	3	0	0	5	0	0
0.57	0	0	0	1	0	0	0	0	0	1	0	0
0.58	0	0	0	4	0	0	1	0	0	5	0	0
0.59	0	0	0	0	0	0	0	0	0	0	0	0
0.60	0	0	0	3	0	0	3	0	0	6	0	0
0.61	0	0	0	1	0	0	0	0	0	1	0	0
0.62	0	0	0	2	0	0	1	0	0	3	1	0
0.63	0	0	0	2	0	0	1	0	0	3	0	0
0.64	0	0	0	1	0	0	1	0	0	2	1	0
0.65	0	0	0	0	0	0	0	0	0	0	0	0
0.66	0	0	0	1	0	0	0	0	0	1	0	0
0.67	0	0	0	0	0	0	0	0	0	0	0	0
0.68	0	0	0	2	1	0	0	0	0	2	1	0
0.69	0	0	0	0	0	0	1	0	0	1	0	0
0.70	0	0	0	0	1	0	1	0	0	1	1	0
0.71	0	0	0	1	0	0	0	0	0	1	0	0
0.72	0	0	0	1	0	0	0	0	0	1	0	0
0.73	0	0	0	1	0	0	0	0	0	1	0	0
0.74	0	0	0	0	0	0	0	0	0	0	0	0
0.75	0	0	0	2	0	0	1	0	0	3	0	0
0.76	0	0	0	0	1	0	0	3	0	0	4	0
0.77	0	0	0	0	0	0	0	0	0	0	0	0
0.78	0	0	0	1	0	0	0	1	0	1	0	0
0.79	0	0	0	0	0	0	1	0	0	1	0	0
0.80	0	0	0	0	0	0	2	0	0	2	0	0
0.81	0	0	0	0	0	0	0	0	0	0	0	0
0.82	0	0	0	2	1	0	0	1	0	2	2	0
0.83	0	0	0	0	0	0	0	0	0	0	0	0
0.84	0	0	0	1	0	0	1	1	0	2	1	0
0.85	0	0	0	0	0	0	0	0	0	0	0	0
0.86	0	0	0	0	0	0	2	0	0	2	0	0
0.87	0	0	0	0	0	0	0	1	0	0	1	0
0.88	0	0	0	1	0	0	0	2	0	1	2	0
0.89	0	0	0	0	0	0	1	0	0	1	0	0
0.90	0	0	0	1	0	0	0	0	0	1	0	0
0.91	0	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
0.93	0	0	0	0	1	0	0	0	0	0	1	0
0.94	0	0	0	0	0	0	0	0	0	0	0	0
0.95	0	0	0	1	0	0	0	1	0	1	1	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	3	0	0	1	0	0	4	0
0.99	0	0	0	0	0	0	0	0	0	0	0	0
1.00	0	0	0	1	0	0	1	0	0	2	0	0
SUBTOTAL	0	0	0	41	10	0	28	14	0	69	24	0

TABLE 9-5

MISSION • 1022-1 • INSTRUMENT • FRWD 10-01-65 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
1.01	0	0	0	0	1	0	0	0	0	0	1	0
1.02	0	0	0	0	0	0	0	1	0	0	1	0
1.03	0	0	0	0	0	0	0	0	0	0	1	0
1.04	0	0	0	0	0	0	0	1	0	0	1	0
1.05	0	0	0	0	2	0	0	1	0	0	3	0
1.06	0	0	0	0	0	0	0	1	0	0	1	0
1.07	0	0	0	1	0	0	0	0	0	0	1	0
1.08	0	0	0	0	0	0	0	2	0	0	2	0
1.09	0	0	0	0	0	0	0	0	0	0	2	0
1.10	0	0	0	0	0	0	0	2	0	0	2	0
1.11	0	0	0	0	0	0	0	1	0	0	1	0
1.12	0	0	0	0	0	0	0	1	0	0	1	0
1.13	0	0	0	0	0	0	0	3	0	0	3	0
1.14	0	0	0	0	0	0	0	2	0	0	2	0
1.15	0	0	0	0	0	0	0	1	0	0	1	0
1.16	0	0	0	0	0	0	0	1	0	0	1	0
1.17	0	0	0	0	1	0	0	3	0	0	4	0
1.18	0	0	0	0	3	0	0	2	0	0	5	0
1.19	0	0	0	0	1	0	0	0	0	0	1	0
1.20	0	0	0	0	0	0	0	3	0	0	3	0
1.21	0	0	0	0	0	0	0	0	0	0	0	0
1.22	0	0	0	0	0	0	0	1	0	0	1	0
1.23	0	0	0	0	1	0	0	2	0	0	3	0
1.24	0	0	0	0	0	0	0	2	0	0	2	0
1.25	0	0	0	0	0	0	0	0	0	0	0	0
1.26	0	0	0	0	0	0	0	0	0	0	0	0
1.27	0	0	0	0	0	0	0	0	0	0	0	0
1.28	0	0	0	0	0	0	0	0	0	0	0	0
1.29	0	0	0	0	0	0	0	0	0	0	0	0
1.30	0	0	0	0	0	0	0	0	0	0	0	0
1.31	0	0	0	0	0	0	0	0	0	0	0	0
1.32	0	0	0	0	0	0	0	0	0	0	0	0
1.33	0	0	0	0	0	0	0	0	0	0	0	0
1.34	0	0	0	0	0	0	0	0	0	0	0	0
1.35	0	0	0	0	0	0	0	0	0	0	0	0
1.36	0	0	0	0	0	0	0	0	0	0	0	0
1.37	0	0	0	0	0	0	0	0	0	0	0	0
1.38	0	0	0	0	0	0	0	0	0	0	0	0
1.39	0	0	0	0	0	0	0	0	0	0	0	0
1.40	0	0	0	0	0	0	0	0	0	0	0	0
1.41	0	0	0	0	0	0	0	0	0	0	0	0
1.42	0	0	0	0	0	0	0	0	0	0	0	0
1.43	0	0	0	0	0	0	0	0	0	0	0	0
1.44	0	0	0	0	0	0	0	0	0	0	0	0
1.45	0	0	0	0	0	0	0	0	0	0	0	0
1.46	0	0	0	0	0	0	0	0	0	0	0	0
1.47	0	0	0	0	0	0	0	0	0	0	0	0
1.48	0	0	0	0	0	0	0	0	0	0	0	0
1.49	0	0	0	0	0	0	0	0	0	0	0	0
1.50	0	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	0	0	0	5	25	0	0	56	3	5	81	3

TABLE 9-5

~~TOP SECRET~~ [redacted]

MISSION • 1022-1 • INSTRUMENT • FRWD 10-01-65 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	0	0	1	0
1.52	0	0	0	0	1	0	0	9	0	0	10	0
1.53	0	0	0	0	0	0	0	3	0	0	7	0
1.54	0	0	0	0	4	0	0	2	0	0	5	0
1.55	0	0	0	0	3	0	0	0	0	0	1	0
1.56	0	0	0	0	1	0	0	0	0	0	0	0
1.57	0	0	0	0	0	0	0	1	0	0	2	0
1.58	0	0	0	0	1	0	0	0	0	0	0	0
1.59	0	0	0	0	0	0	0	3	0	0	4	0
1.60	0	0	0	0	1	0	0	1	0	0	2	0
1.61	0	0	0	0	1	0	0	2	0	0	3	0
1.62	0	0	0	0	1	0	0	3	0	0	7	0
1.63	0	0	0	0	4	0	0	1	0	0	2	0
1.64	0	0	0	0	1	0	0	0	0	0	3	0
1.65	0	0	0	0	3	0	0	0	0	0	0	0
1.66	0	0	0	0	0	0	0	0	0	0	0	0
1.67	0	0	0	0	2	0	0	1	0	0	1	0
1.68	0	0	0	0	1	0	0	0	0	0	0	0
1.69	0	0	0	0	6	0	0	0	0	0	0	0
1.70	0	0	0	0	1	0	0	0	0	0	0	0
1.71	0	0	0	0	0	0	0	0	0	0	0	0
1.72	0	0	0	0	0	0	0	0	0	0	0	0
1.73	0	0	0	0	0	0	0	0	0	0	0	0
1.74	0	0	0	0	0	0	0	0	0	0	0	0
1.75	0	0	0	0	2	0	0	0	0	0	0	0
1.76	0	0	0	0	0	0	0	2	0	0	2	0
1.77	0	0	0	0	2	0	0	0	0	0	4	0
1.78	0	0	0	0	0	0	0	0	0	0	0	0
1.79	0	0	0	0	4	0	0	0	0	0	4	0
1.80	0	0	0	0	2	0	0	0	0	0	2	0
1.81	0	0	0	0	5	0	0	1	0	0	6	0
1.82	0	0	0	0	0	0	0	0	0	0	0	0
1.83	0	0	0	0	3	0	0	7	0	0	10	0
1.84	0	0	0	0	0	0	0	1	0	0	1	0
1.85	0	0	0	0	0	0	0	1	0	0	1	0
1.86	0	0	0	0	1	0	0	1	0	0	2	0
1.87	0	0	0	0	1	0	0	0	0	0	1	0
1.88	0	0	0	0	0	0	0	0	0	0	0	0
1.89	0	0	0	0	0	0	0	2	0	0	4	0
1.90	0	0	0	0	2	0	0	2	0	0	4	0
1.91	0	0	0	0	2	0	0	2	0	0	4	0
1.92	0	0	0	0	2	0	0	2	0	0	4	0
1.93	0	0	0	0	1	2	0	0	0	0	1	2
1.94	0	0	0	0	1	2	0	0	0	0	1	2
1.95	0	0	0	0	3	2	0	0	0	0	3	2
1.96	0	0	0	0	2	3	0	1	0	0	3	3
1.97	0	0	0	0	1	0	0	0	0	0	1	0
1.98	0	0	0	0	0	0	0	0	0	0	0	0
1.99	0	0	0	0	1	0	0	1	0	0	2	0
2.00	0	0	0	0	1	4	0	1	0	0	2	4
SUBTOTAL	0	0	0	0	64	14	0	61	8	0	125	22

~~TOP SECRET~~ [redacted]

TABLE 9 - 5

[redacted]

MISSION • 1022-1 • INSTRUMENT • FRWD 10-01-65 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
2.01	0	0	0	0	0	0	0	0	0	0	0	0
2.02	0	0	0	0	1	3	0	2	1	0	3	4
2.03	0	0	0	0	0	1	0	0	0	0	0	1
2.04	0	0	0	0	1	1	0	0	0	0	1	1
2.05	0	0	0	0	1	1	0	0	2	0	1	3
2.06	0	0	0	0	1	1	0	0	2	0	1	3
2.07	0	0	0	0	1	0	0	0	0	0	1	0
2.08	0	0	0	0	0	3	0	0	2	0	0	3
2.09	0	0	0	0	0	3	0	0	0	0	0	3
2.10	0	0	0	0	2	3	0	0	1	0	2	4
2.11	0	0	0	0	1	0	3	0	0	0	1	3
2.12	0	0	0	0	0	3	0	0	1	0	0	3
2.13	0	0	0	0	0	1	0	0	0	0	0	1
2.14	0	0	0	0	1	0	4	0	0	0	1	4
2.15	0	0	0	0	1	0	4	0	3	0	1	7
2.16	0	0	0	0	0	1	0	0	0	0	0	1
2.17	0	0	0	0	0	0	5	0	0	0	0	5
2.18	0	0	0	0	0	0	5	0	1	0	0	6
2.19	0	0	0	0	0	0	4	0	0	0	0	4
2.20	0	0	0	0	0	0	4	0	0	0	0	4
2.21	0	0	0	0	0	1	0	0	0	0	0	1
2.22	0	0	0	0	0	0	5	0	0	0	0	5
2.23	0	0	0	0	0	0	3	0	0	0	0	3
2.24	0	0	0	0	0	0	4	0	0	0	0	4
2.25	0	0	0	0	0	0	2	0	0	0	0	2
2.26	0	0	0	0	0	1	3	0	1	0	0	4
2.27	0	0	0	0	0	0	3	0	0	0	0	3
2.28	0	0	0	0	1	0	0	0	0	0	1	0
2.29	0	0	0	0	0	0	0	0	0	0	0	0
2.30	0	0	0	0	0	0	0	0	0	0	0	0
2.31	0	0	0	0	0	0	0	0	0	0	0	0
2.32	0	0	0	0	0	0	0	0	0	0	0	0
2.33	0	0	0	0	0	0	0	0	0	0	0	0
2.34	0	0	0	0	0	0	0	0	0	0	0	0
2.35	0	0	0	0	0	0	0	0	0	0	0	0
2.36	0	0	0	0	0	0	0	0	0	0	0	0
2.37	0	0	0	0	0	0	0	0	0	0	0	0
2.38	0	0	0	0	0	0	0	0	0	0	0	0
2.39	0	0	0	0	0	0	0	0	0	0	0	0
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	14	89	0	22	132	0	36	221

[redacted]

TABLE 9-5

MISSION • 1022-1 • INSTRUMENT • FRWD 10-01-65 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	1	0	0	1
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	1	0	0	1	0	0	2
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	1	0	0	2	0	0	3
TOTAL	0	0	0	113	113	104	153	153	145	266	266	249

MISSION 1022-1 INSTR - FRWD 10-01-65 PROCESSING AND EXPOSURE ANALYSI

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	113	4 PC	45 PC	44 PC	6 PC	1 PC
FULL	153	50 PC	0 PC	49 PC	1 PC	0 PC
ALL LEVELS	266	30 PC	19 PC	47 PC	3 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

TABLE 9-5

MISSION • 1022-1 • INSTR • FRWD • 10-01-65 PLOT OF D MIN • TERRAIN • PROCESSING • INTERMEDIATE

ARITH MEAN • 0.49 • MEDIAN • 0.40 • STD DEV • 0.25 • RANGE • 0.18 TO 1.49 WITH 113 SAMPLES

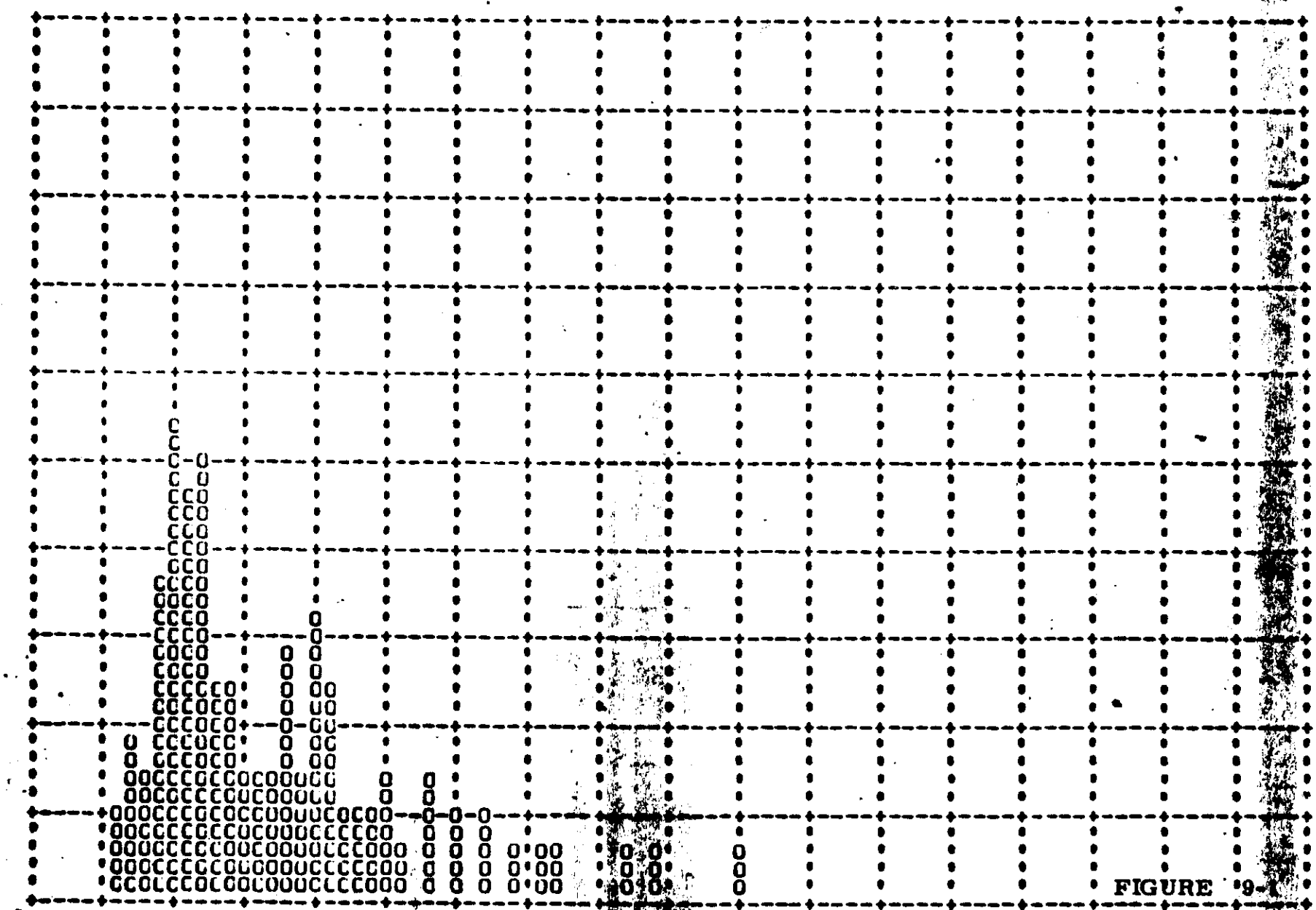


FIGURE 9-1

MISSION • 1022-1 • INSTR • FRWD • 10-01-65 PLOT OF D MAX • TERRAIN • PROCESSING • INTERMEDIATE

ARITH MEAN • 1.61 • MEDIAN • 1.68 • STD DEV • 0.38 • RANGE • 0.54 TO 2.36 WITH 113 SAMPLES

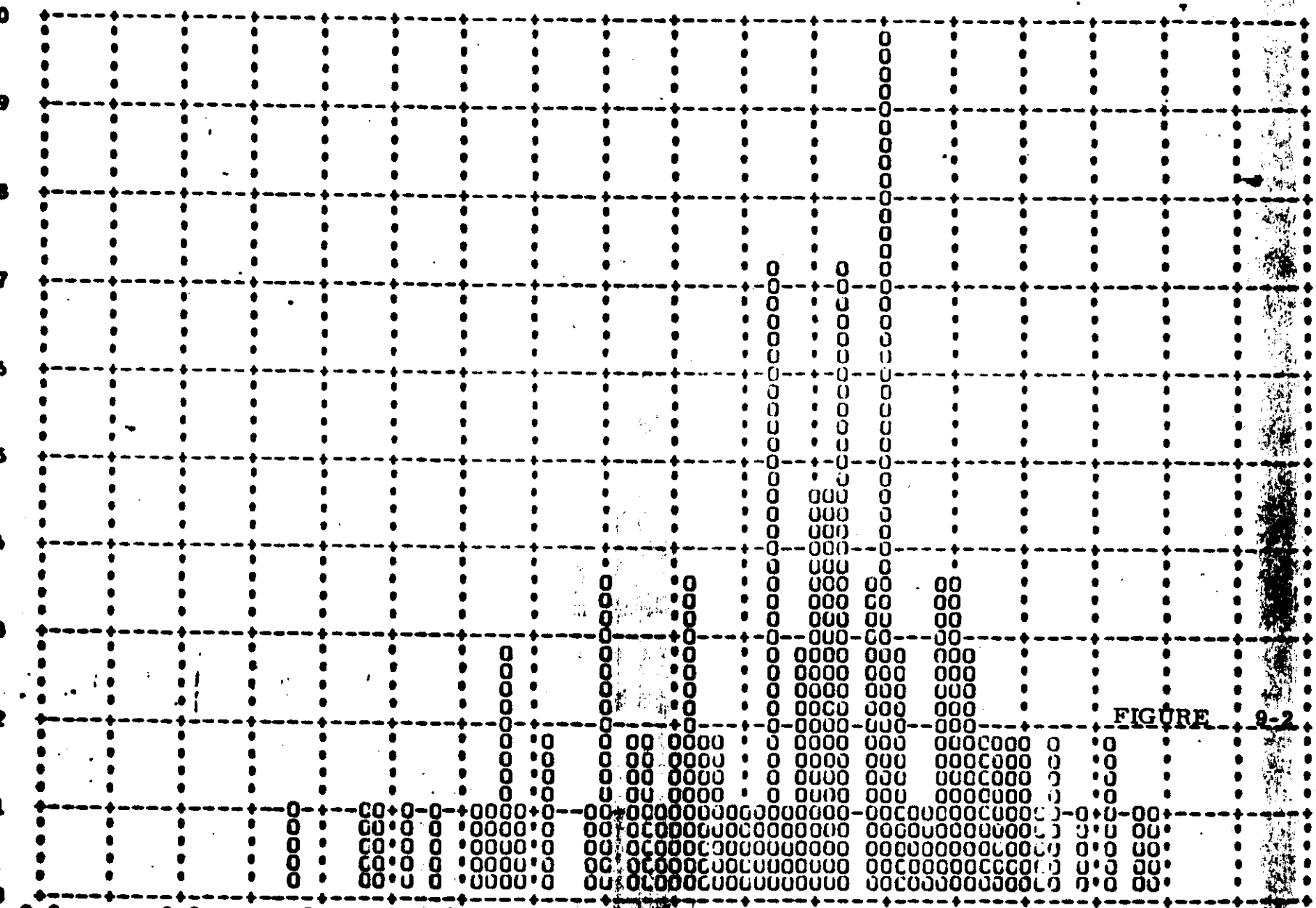


FIGURE 9-2

MISSION • 1022-1 • INSTR • FRWD • 10-01-65 PLOT OF D MAX • CLOUD • PROCESSING • INTERMEDIATE

ARITH MEAN • 2.19 • MEDIAN • 2.24 • STD DEV • 0.17 • RANGE • 1.52 TO 2.55 WITH 104 SAMPLES

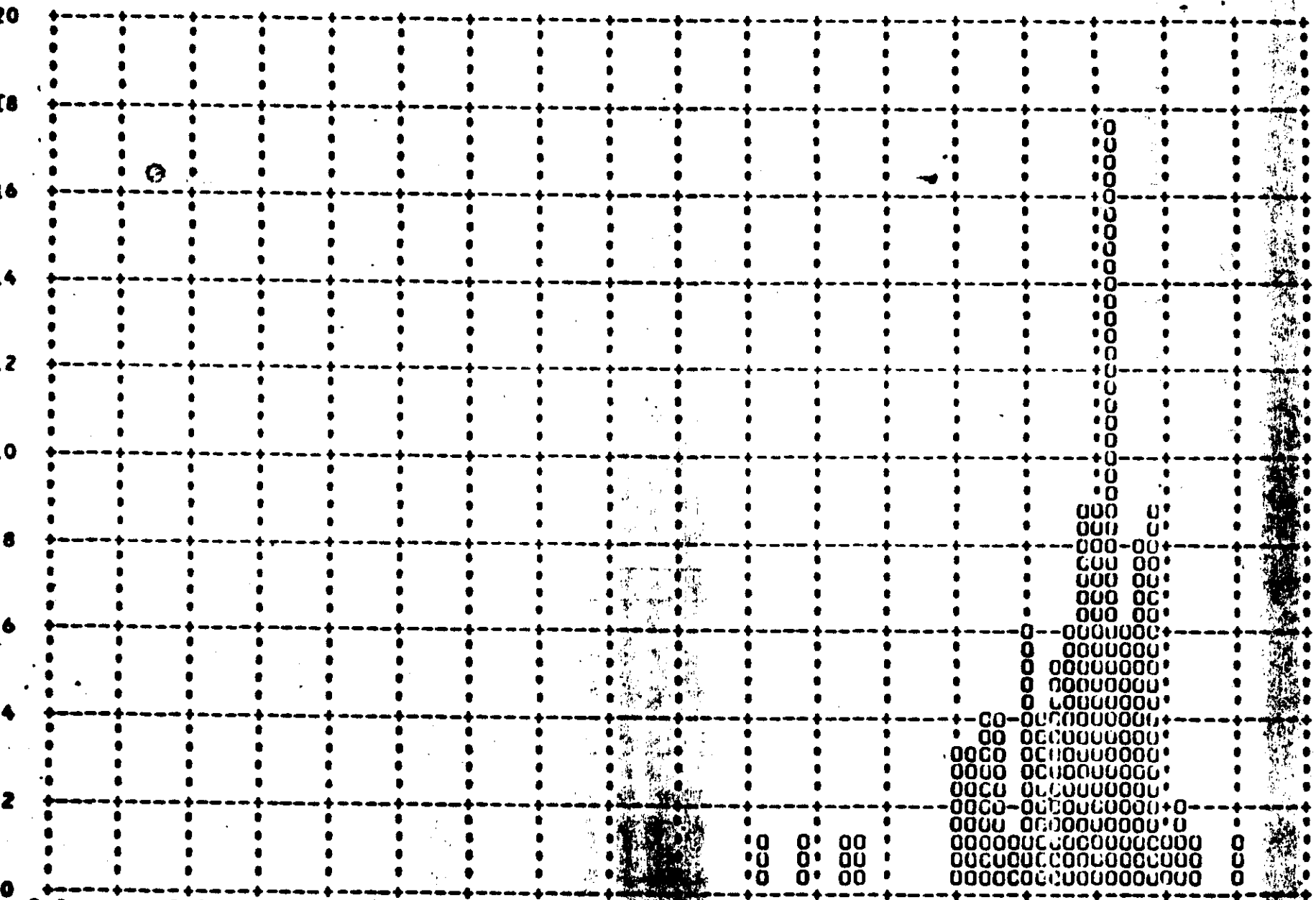


FIGURE 9-3

MISSION • 1022-1 • INSTR • FRWD • 10-01-65 PLOT OF D MIN • TERRAIN • PROCESSING • FULL

ARITH MEAN • 0.43 • MEDIAN • 0.39 • STD DEV • 0.14 • RANGE • 0.26 TO 1.00 WITH 153 SAMPLES

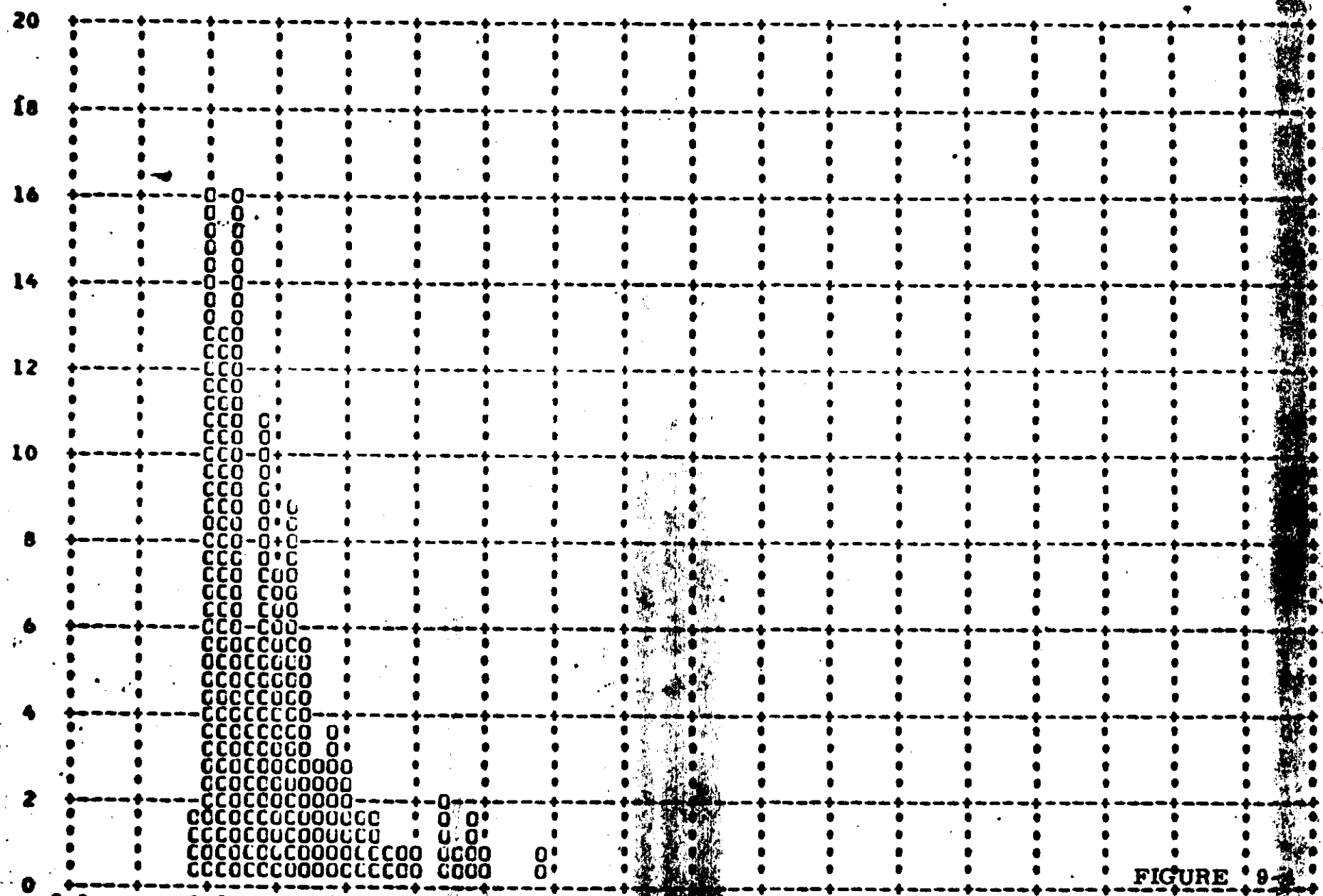


FIGURE 9-4

MISSION • 1022-1 • INSTR • FRWD • 10-01-65 PLOT OF D MAX • TERRAIN • PROCESSING • FULL

ARITH MEAN • 1.54 • MEDIAN • 1.52 • STD DEV • 0.39 • RANGE • 0.62 TO 2.42 WITH 153 SAMPLES

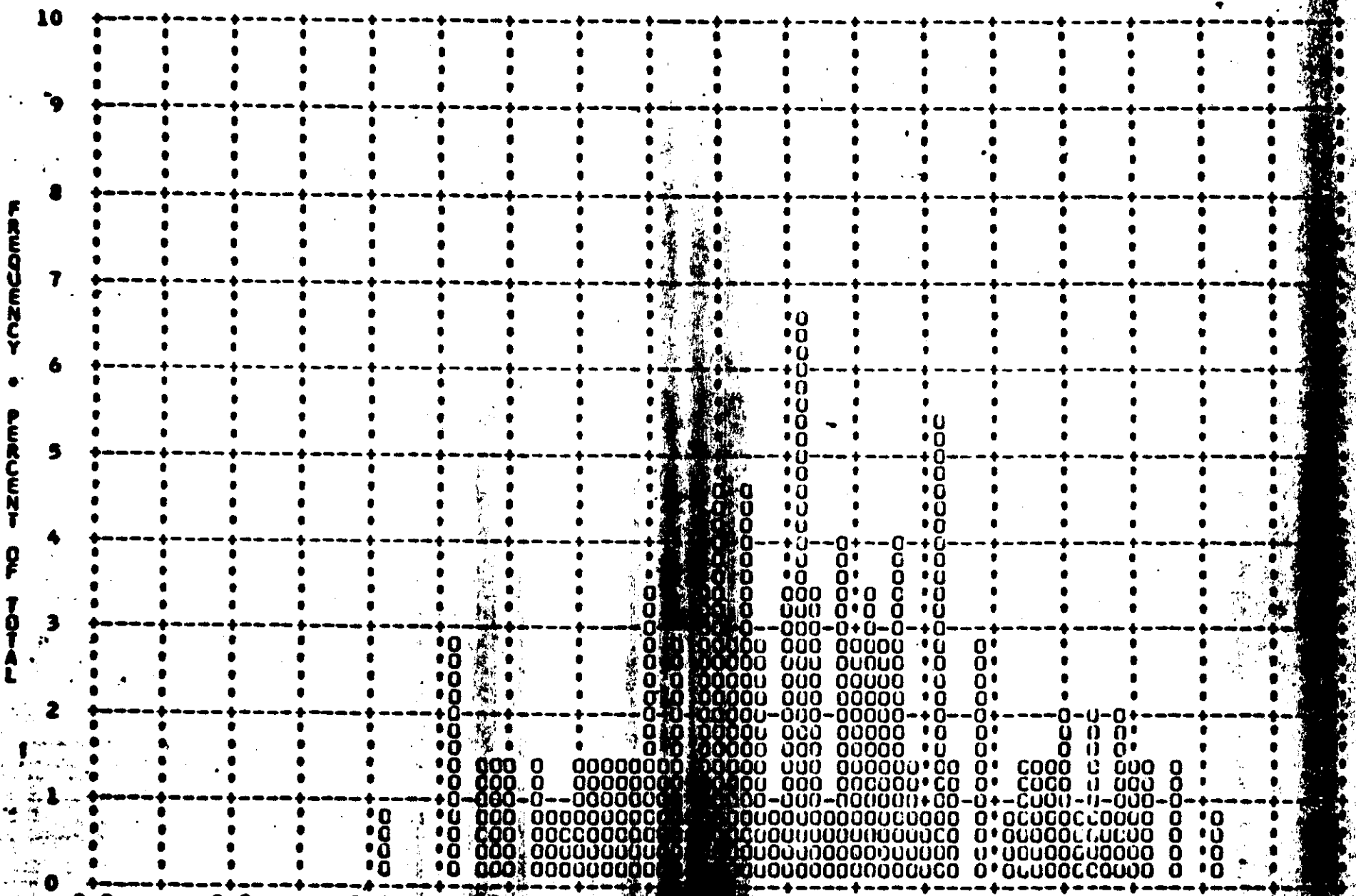


FIGURE 9-5

MISSION • 1022-1 • INSTR • FRWD • 10-01-65 PLOT OF D MAX • CLOUD • PROCESSING • FULL

ARITH MEAN • 2.28 • MEDIAN • 2.33 • STD DEV • 0.19 • RANGE • 1.32 TO 2.55 WITH 145 SAMPLES

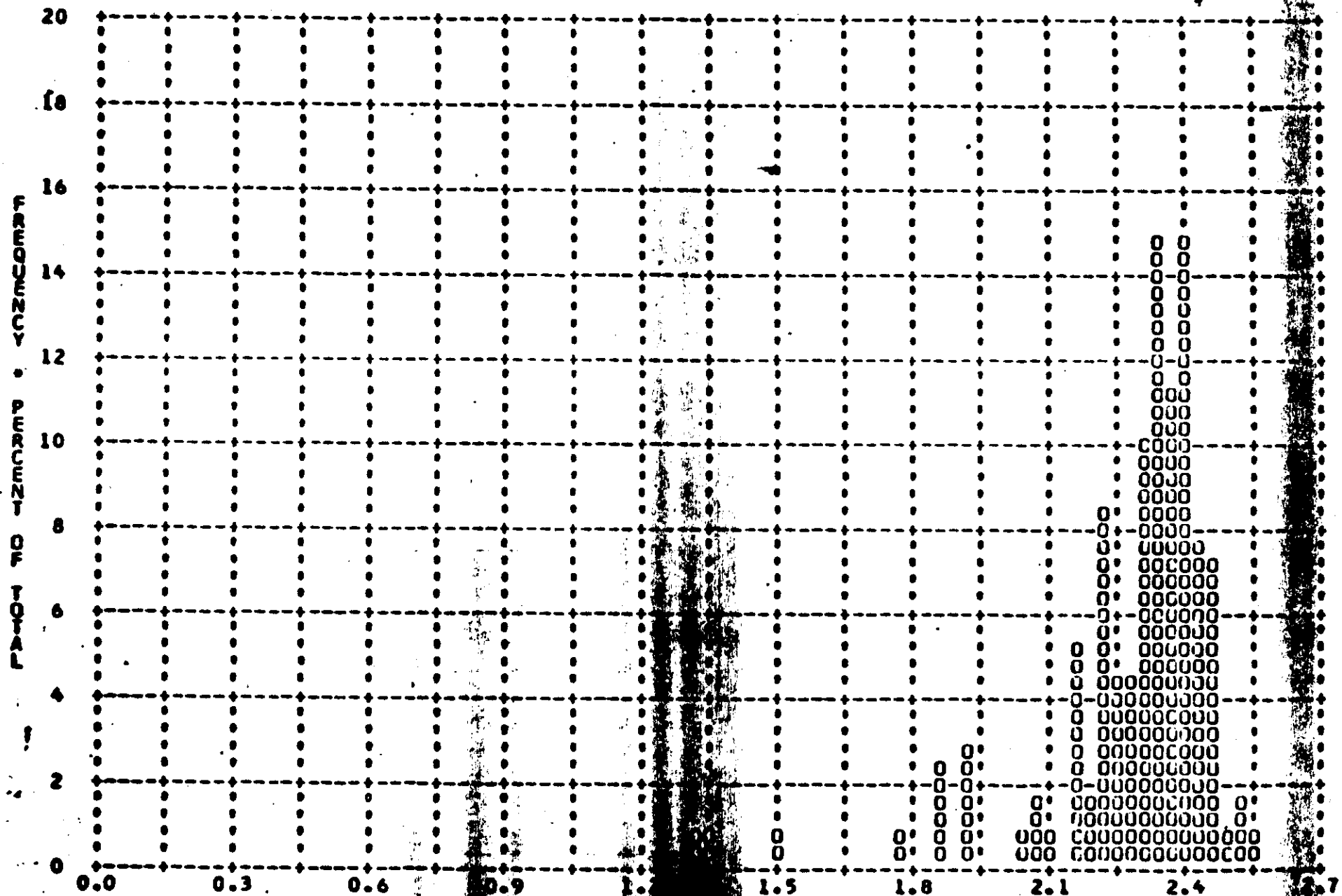


FIGURE 9-6

MISSION • 1022-1 • INSTR • FRWD • 10-01-65 PLOT OF D MIN • TERRAIN • PROCESSING • ALL LEVELS

ARITH MEAN • 0.45 • MEDIAN • 0.40 • STD DEV • 0.20 • RANGE • 0.18 TO 1.49 WITH 266 SAMPLES

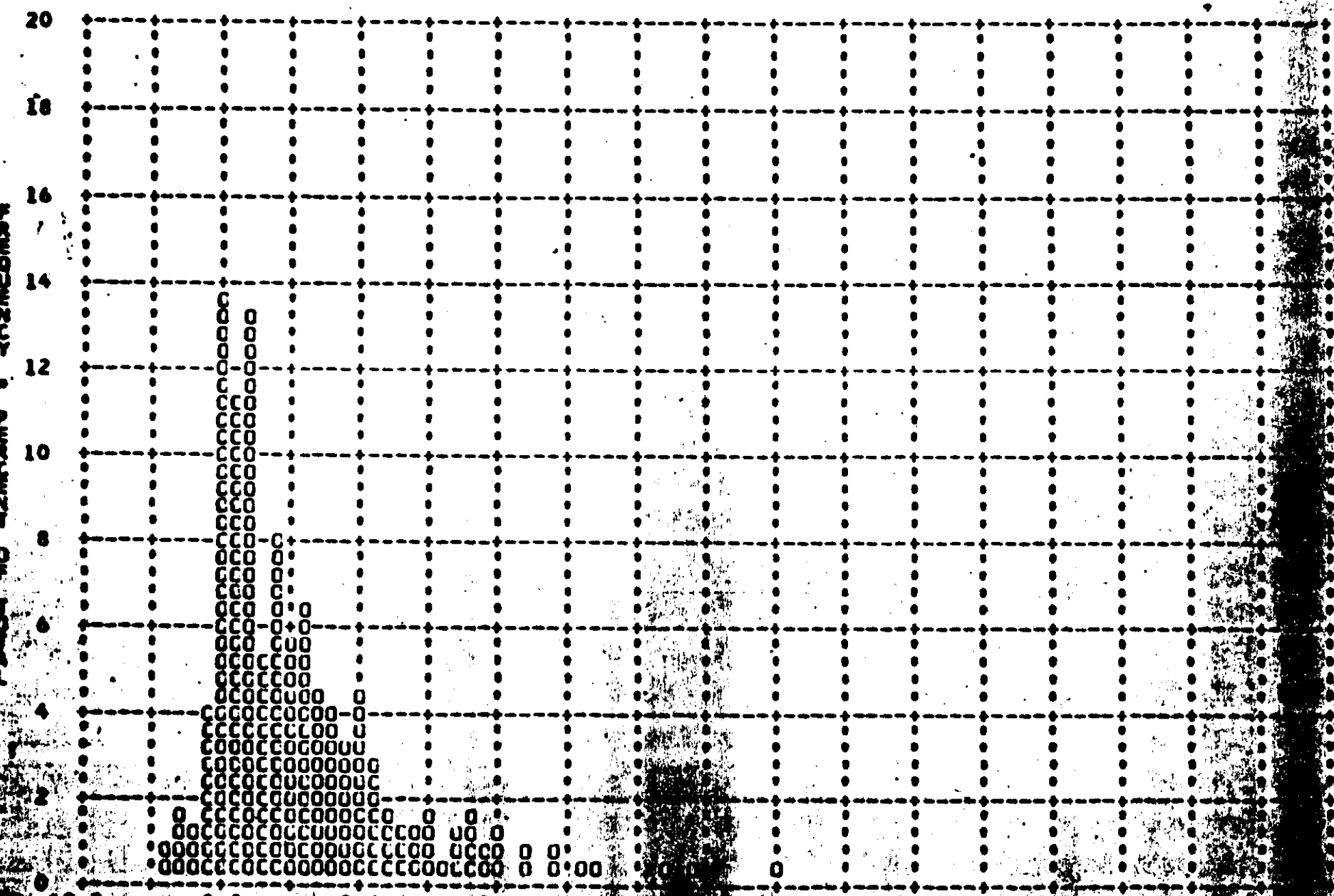


FIGURE 9-1

MISSION • 1022-1 • INSTR • FRWD • 10-01-65 PLOT OF D MAX • TERRAIN • PROCESSING • ALL LEVELS

ARITH MEAN • 1.57 • MEDIAN • 1.60 • STD DEV • 0.39 • RANGE • 0.54 TO 2.42 WITH 266 SAMPLES

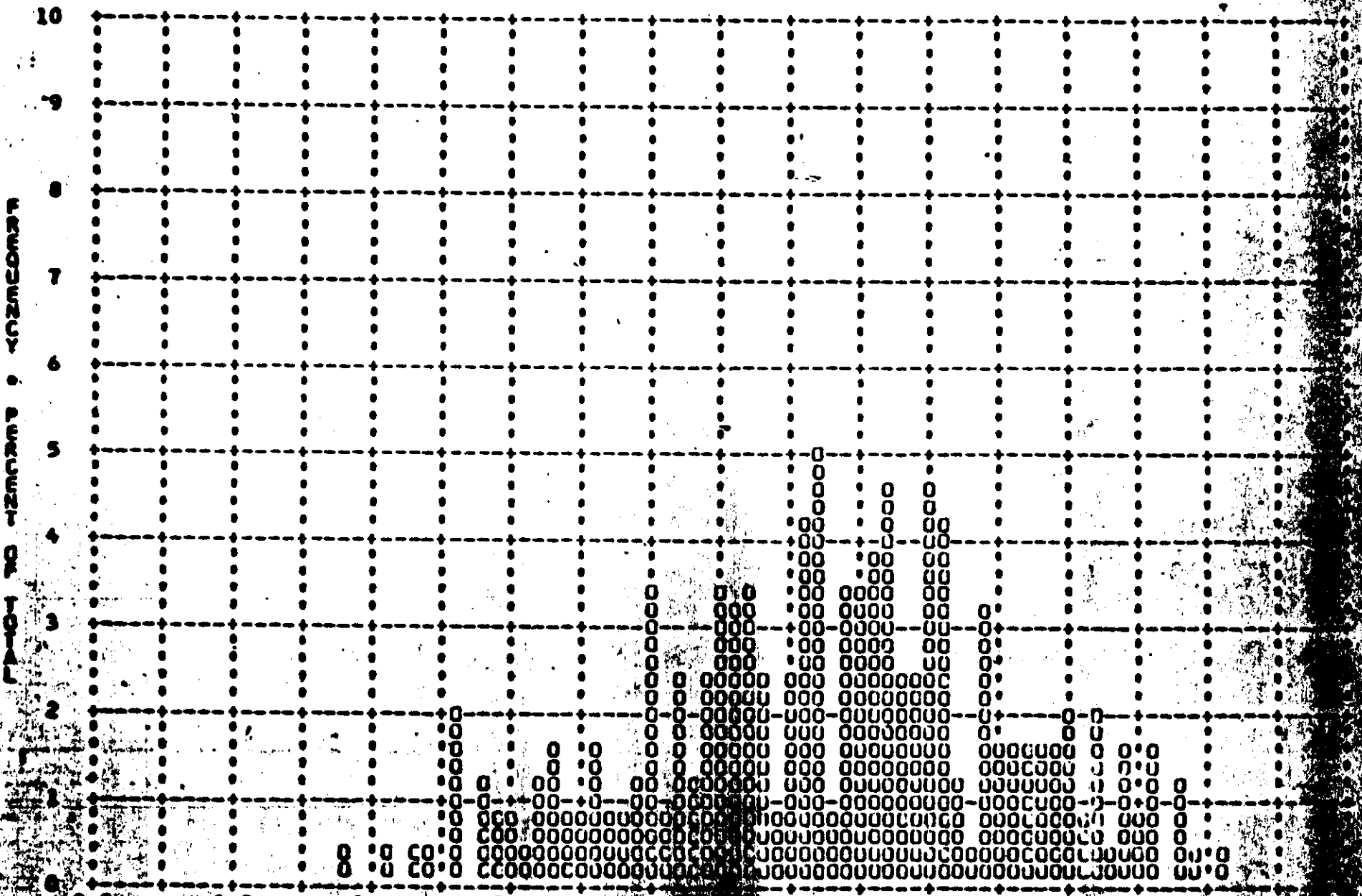


FIGURE 6-8

MISSION • 1022-1 • INSTR • FRWD • 10-01-65 PLOT OF D MAX • CLOUD • PROCESSING • ALL LEVELS

ARITH MEAN • 2.24 • MEDIAN • 2.29 • STD DEV • 0.19 • RANGE • 1.32 TO 2.55 WITH 249 SAMPLES

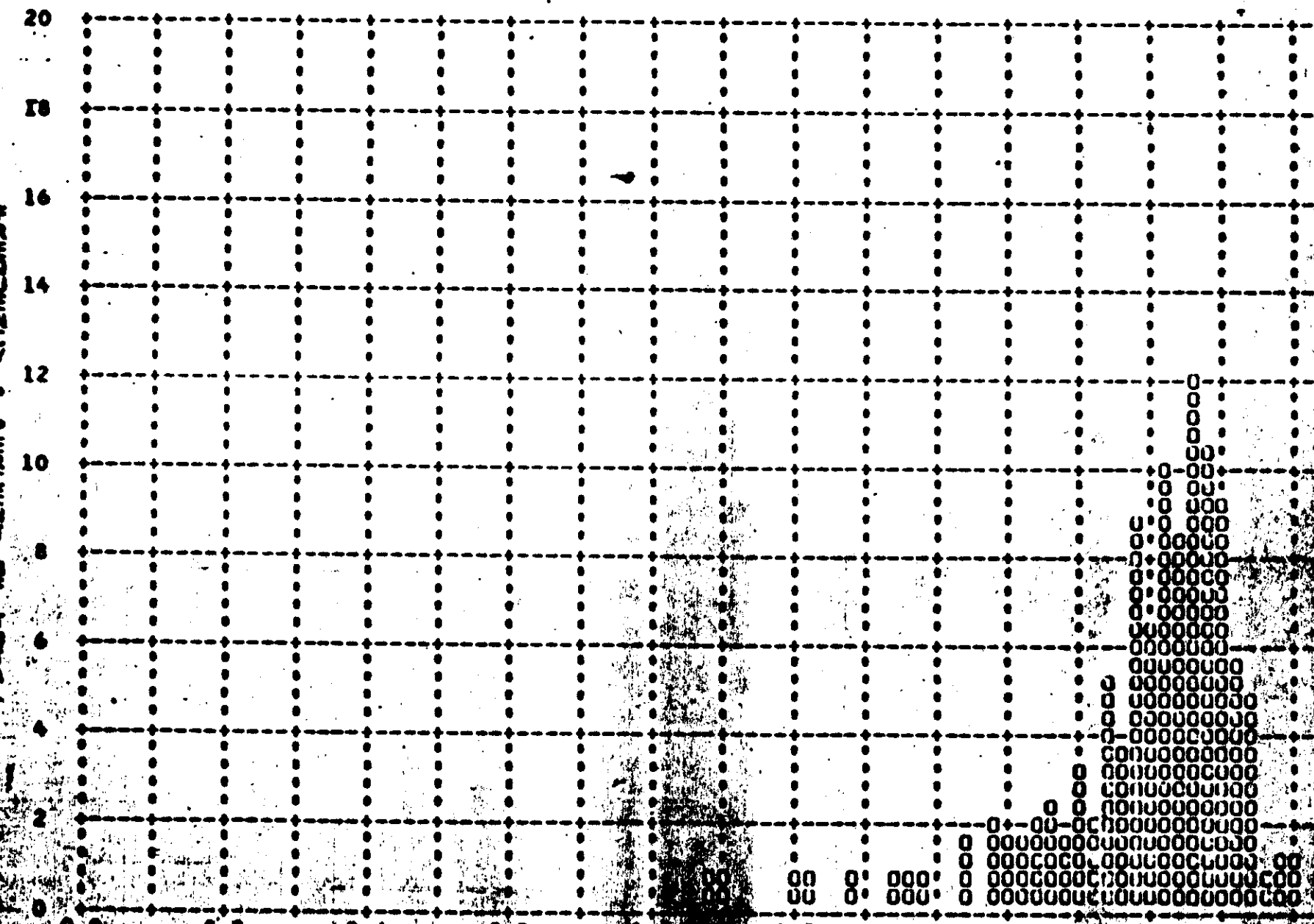


FIGURE 9-8

[redacted]

MISSION • 1022-1 • INSTRUMENT • AFT 10-01-62 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	1	0	0	0	0	0	1	0	0
0.25	0	0	0	2	0	0	0	0	0	2	0	0
0.26	0	0	0	1	0	0	0	0	0	1	0	0
0.27	0	0	0	1	0	0	1	0	0	2	0	0
0.28	0	0	0	1	0	0	0	0	0	1	0	0
0.29	0	0	0	1	0	0	0	0	0	1	0	0
0.30	0	0	0	4	0	0	0	0	0	4	0	0
0.31	0	0	0	1	0	0	0	0	0	1	0	0
0.32	0	0	0	7	0	0	0	0	0	7	0	0
0.33	0	0	0	2	0	0	0	0	0	2	0	0
0.34	0	0	0	4	0	0	0	0	0	4	0	0
0.35	0	0	0	3	0	0	3	0	0	6	0	0
0.36	0	0	0	5	0	0	1	0	0	6	0	0
0.37	0	0	0	1	0	0	0	0	0	1	0	0
0.38	0	0	0	6	0	0	6	0	0	12	0	0
0.39	0	0	0	5	0	0	4	0	0	9	0	0
0.40	0	0	0	3	0	0	2	0	0	5	0	0
0.41	0	0	0	7	0	0	8	0	0	15	0	0
0.42	0	0	0	3	0	0	1	0	0	4	0	0
0.43	0	0	0	3	0	0	6	0	0	9	0	0
0.44	0	0	0	4	0	0	9	0	0	13	0	0
0.45	0	0	0	3	0	0	5	0	0	8	0	0
0.46	0	0	0	4	0	0	5	0	0	9	0	0
0.47	0	0	0	2	0	0	1	0	0	3	0	0
0.48	0	0	0	5	0	0	9	0	0	14	0	0
0.49	0	0	0	2	0	0	3	0	0	5	0	0
0.50	0	0	0	5	0	0	9	0	0	14	0	0
SUBTOTAL	0	0	0	82	0	0	63	0	0	145	0	0

TABLE 9-6

MISSION • 1022-1 • INSTRUMENT • AFT 10-01-63 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	2	0	0	2	0	0
0.52	0	0	0	0	1	0	6	0	0	7	1	0
0.53	0	0	0	1	2	0	1	0	0	3	1	0
0.54	0	0	0	2	0	0	6	0	0	6	0	0
0.55	0	0	0	2	4	0	4	0	0	6	7	0
0.56	0	0	0	4	0	0	3	0	0	7	2	0
0.57	0	0	0	0	0	0	2	0	0	2	3	0
0.58	0	0	0	0	1	0	1	0	0	2	8	0
0.59	0	0	0	0	1	0	7	0	0	8	2	0
0.60	0	0	0	1	0	0	2	0	0	5	1	0
0.61	0	0	0	0	1	0	2	0	0	3	0	0
0.62	0	0	0	3	0	0	1	0	0	4	1	0
0.63	0	0	0	1	0	0	3	0	0	4	1	0
0.64	0	0	0	0	0	0	1	0	0	1	3	0
0.65	0	0	0	1	2	0	1	0	0	3	2	0
0.66	0	0	0	2	1	0	0	0	0	3	2	0
0.67	0	0	0	0	0	0	0	0	0	1	0	0
0.68	0	0	0	1	0	0	0	0	0	1	0	0
0.69	0	0	0	0	0	0	4	0	0	5	0	0
0.70	0	0	0	1	4	0	2	0	0	6	4	0
0.71	0	0	0	3	0	0	1	0	0	4	0	0
0.72	0	0	0	1	1	0	0	0	0	1	1	0
0.73	0	0	0	1	1	0	0	0	0	1	1	0
0.74	0	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
0.76	0	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
0.78	0	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
0.80	0	0	0	1	4	0	1	0	0	1	5	0
0.81	0	0	0	1	2	0	1	0	0	1	3	0
0.82	0	0	0	0	1	0	1	0	0	2	1	0
0.83	0	0	0	2	0	0	1	0	0	3	1	0
0.84	0	0	0	0	0	0	2	0	0	2	0	0
0.85	0	0	0	0	0	0	1	0	0	1	2	0
0.86	0	0	0	0	0	0	2	0	0	2	0	0
0.87	0	0	0	0	0	0	0	0	0	0	0	0
0.88	0	0	0	1	0	0	0	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	1	0	0	0	0	1	0	0
0.91	0	0	0	0	0	0	0	0	0	0	0	0
0.92	0	0	0	0	1	0	0	0	0	1	0	0
0.93	0	0	0	0	0	0	0	0	0	0	0	0
0.94	0	0	0	1	0	0	0	0	0	1	0	0
0.95	0	0	0	0	0	0	1	0	0	1	0	0
0.96	0	0	0	2	0	0	0	0	0	2	0	0
0.97	0	0	0	0	0	0	0	0	0	0	0	0
0.98	0	0	0	2	0	0	0	1	0	2	0	0
0.99	0	0	0	0	0	0	2	0	0	2	0	0
1.00	0	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	0	0	0	45	5	0	62	4	0	107	9	0

[redacted]

TABLE 9-6

MISSION • 1022-1 • INSTRUMENT • AFT 10-01-65 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
1.01	0	0	0	0	0	0	0	0	0	0	0	0
1.02	0	0	0	0	2	0	1	3	0	1	5	0
1.03	0	0	0	1	0	0	0	0	0	0	0	0
1.04	0	0	0	1	1	0	0	1	0	1	2	0
1.05	0	0	0	1	1	0	0	0	0	1	1	0
1.06	0	0	0	1	0	0	0	0	0	1	0	0
1.07	0	0	0	0	0	0	0	2	0	0	2	0
1.08	0	0	0	0	0	0	0	0	0	0	0	0
1.09	0	0	0	0	0	0	0	3	0	0	3	0
1.10	0	0	0	2	0	0	0	0	0	2	0	0
1.11	0	0	0	1	0	0	0	1	0	1	0	0
1.12	0	0	0	0	0	0	0	0	0	0	0	0
1.13	0	0	0	0	0	0	0	2	0	0	2	0
1.14	0	0	0	0	0	0	0	3	0	0	3	0
1.15	0	0	0	0	1	0	0	1	0	0	1	0
1.16	0	0	0	0	0	0	0	0	0	0	0	0
1.17	0	0	0	1	0	0	0	0	0	1	0	0
1.18	0	0	0	0	1	0	0	0	0	0	1	0
1.19	0	0	0	0	0	0	0	0	0	0	0	0
1.20	0	0	0	0	1	0	0	4	0	0	5	0
1.21	0	0	0	0	0	0	0	0	0	0	0	0
1.22	0	0	0	1	0	0	0	0	0	1	0	0
1.23	0	0	0	0	1	0	0	0	0	0	1	0
1.24	0	0	0	0	0	0	0	0	0	0	0	0
1.25	0	0	0	0	1	0	0	3	0	0	3	0
1.26	0	0	0	0	0	0	0	2	0	0	2	0
1.27	0	0	0	0	0	0	0	0	0	0	0	0
1.28	0	0	0	0	0	0	0	1	0	0	1	0
1.29	0	0	0	0	0	0	0	0	0	0	0	0
1.30	0	0	0	0	0	0	0	0	0	0	0	0
1.31	0	0	0	0	0	0	0	0	0	0	0	0
1.32	0	0	0	0	0	0	0	0	0	0	0	0
1.33	0	0	0	0	0	0	0	0	0	0	0	0
1.34	0	0	0	0	0	0	0	0	0	0	0	0
1.35	0	0	0	0	0	0	0	0	0	0	0	0
1.36	0	0	0	0	0	0	0	0	0	0	0	0
1.37	0	0	0	0	0	0	0	0	0	0	0	0
1.38	0	0	0	0	0	0	0	0	0	0	0	0
1.39	0	0	0	0	0	0	0	0	0	0	0	0
1.40	0	0	0	0	0	0	0	0	0	0	0	0
1.41	0	0	0	0	0	0	0	0	0	0	0	0
1.42	0	0	0	0	0	0	0	0	0	0	0	0
1.43	0	0	0	0	0	0	0	0	0	0	0	0
1.44	0	0	0	0	0	0	0	0	0	0	0	0
1.45	0	0	0	0	0	0	0	0	0	0	0	0
1.46	0	0	0	0	0	0	0	0	0	0	0	0
1.47	0	0	0	0	0	0	0	0	0	0	0	0
1.48	0	0	0	0	0	0	0	0	0	0	0	0
1.49	0	0	0	0	0	0	0	0	0	0	0	0
1.50	0	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	0	0	0	15	28	1	3	55	0	18	83	1

TABLE 9-6

MISSION • 1022-1 • INSTRUMENT • AFT 10-01-69 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
1.51	0	0	0	0	1	0	0	0	0	0	1	0
1.52	0	0	0	0	3	0	0	3	0	0	6	0
1.53	0	0	0	0	0	0	0	1	0	0	1	0
1.54	0	0	0	0	2	0	0	2	0	0	4	0
1.55	0	0	0	0	2	0	0	1	0	0	3	0
1.56	0	0	0	0	1	0	0	2	0	0	3	0
1.57	0	0	0	0	0	0	0	1	0	0	1	0
1.58	0	0	0	0	3	0	0	0	0	0	3	0
1.59	0	0	0	0	1	0	0	3	0	0	4	0
1.60	0	0	0	0	0	0	0	1	0	0	1	0
1.61	0	0	0	0	4	0	0	0	0	0	4	0
1.62	0	0	0	0	0	0	0	2	0	0	2	0
1.63	0	0	0	0	2	0	0	0	0	0	2	0
1.64	0	0	0	0	1	0	0	1	0	0	2	0
1.65	0	0	0	0	0	0	0	0	0	0	0	0
1.66	0	0	0	0	1	0	0	0	0	0	1	0
1.67	0	0	0	0	3	0	0	0	0	0	3	0
1.68	0	0	0	0	0	0	0	1	0	0	1	0
1.69	0	0	0	0	1	0	0	1	0	0	2	0
1.70	0	0	0	0	1	0	0	1	0	0	2	0
1.71	0	0	0	0	1	0	0	1	0	0	2	0
1.72	0	0	0	0	1	0	0	2	0	0	3	0
1.73	0	0	0	0	1	0	0	1	0	0	2	0
1.74	0	0	0	0	1	0	0	1	0	0	2	0
1.75	0	0	0	0	1	0	0	1	0	0	2	0
1.76	0	0	0	0	0	0	0	1	0	0	1	0
1.77	0	0	0	0	1	0	0	0	0	0	1	0
1.78	0	0	0	0	0	0	0	0	0	0	0	0
1.79	0	0	0	0	0	0	0	0	0	0	0	0
1.80	0	0	0	0	0	0	0	0	0	0	0	0
1.81	0	0	0	0	0	0	0	0	0	0	0	0
1.82	0	0	0	0	0	0	0	0	0	0	0	0
1.83	0	0	0	0	0	0	0	0	0	0	0	0
1.84	0	0	0	0	0	0	0	0	0	0	0	0
1.85	0	0	0	0	0	0	0	0	0	0	0	0
1.86	0	0	0	0	0	0	0	0	0	0	0	0
1.87	0	0	0	0	0	0	0	0	0	0	0	0
1.88	0	0	0	0	0	0	0	0	0	0	0	0
1.89	0	0	0	0	0	0	0	0	0	0	0	0
1.90	0	0	0	0	0	0	0	0	0	0	0	0
1.91	0	0	0	0	0	0	0	0	0	0	0	0
1.92	0	0	0	0	0	0	0	0	0	0	0	0
1.93	0	0	0	0	0	0	0	0	0	0	0	0
1.94	0	0	0	0	0	0	0	0	0	0	0	0
1.95	0	0	0	0	0	0	0	0	0	0	0	0
1.96	0	0	0	0	0	0	0	0	0	0	0	0
1.97	0	0	0	0	0	0	0	0	0	0	0	0
1.98	0	0	0	0	0	0	0	0	0	0	0	0
1.99	0	0	0	0	0	0	0	0	0	0	0	0
2.00	0	0	0	0	1	0	0	0	0	0	1	0
SUBTOTAL	0	0	0	0	90	15	0	56	10	0	146	25

TABLE 9-6

TOP SECRET [redacted]

MISSION • 1022-1 • INSTRUMENT • AFT • 10-01-69 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	1	0	0	0	0	0	1	0
2.02	0	0	0	0	3	0	0	1	0	0	1	0
2.03	0	0	0	0	0	2	0	0	0	0	4	0
2.04	0	0	0	0	2	1	0	0	0	0	3	1
2.05	0	0	0	0	1	2	0	0	1	0	2	2
2.06	0	0	0	0	2	0	0	0	2	0	0	3
2.07	0	0	0	0	0	2	0	0	0	0	3	0
2.08	0	0	0	0	2	0	0	0	3	0	0	3
2.09	0	0	0	0	0	1	0	0	0	0	3	0
2.10	0	0	0	0	1	0	0	0	3	0	0	3
2.11	0	0	0	0	0	0	0	0	0	0	2	0
2.12	0	0	0	0	0	1	0	0	1	0	1	1
2.13	0	0	0	0	0	0	0	0	0	0	1	0
2.14	0	0	0	0	1	0	0	0	1	0	1	1
2.15	0	0	0	0	0	0	0	0	0	0	0	0
2.16	0	0	0	0	0	1	0	0	0	0	0	1
2.17	0	0	0	0	0	0	0	0	0	0	0	0
2.18	0	0	0	0	0	0	0	0	0	0	0	0
2.19	0	0	0	0	0	0	0	0	0	0	0	0
2.20	0	0	0	0	0	0	0	0	0	0	0	0
2.21	0	0	0	0	0	0	0	0	0	0	0	0
2.22	0	0	0	0	0	0	0	0	0	0	0	0
2.23	0	0	0	0	0	0	0	0	0	0	0	0
2.24	0	0	0	0	0	0	0	0	0	0	0	0
2.25	0	0	0	0	0	0	0	0	0	0	0	0
2.26	0	0	0	0	0	0	0	0	0	0	0	0
2.27	0	0	0	0	0	0	0	0	0	0	0	0
2.28	0	0	0	0	0	0	0	0	0	0	0	0
2.29	0	0	0	0	0	0	0	0	0	0	0	0
2.30	0	0	0	0	0	0	0	0	0	0	0	0
2.31	0	0	0	0	0	0	0	0	0	0	0	0
2.32	0	0	0	0	0	0	0	0	0	0	0	0
2.33	0	0	0	0	0	0	0	0	0	0	0	0
2.34	0	0	0	0	0	0	0	0	0	0	0	0
2.35	0	0	0	0	0	0	0	0	0	0	0	0
2.36	0	0	0	0	0	0	0	0	0	0	0	0
2.37	0	0	0	0	0	0	0	0	0	0	0	0
2.38	0	0	0	0	0	0	0	0	0	0	0	0
2.39	0	0	0	0	0	0	0	0	0	0	0	0
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	19	99	0	13	107	0	32	206

TOP SECRET [redacted]

TABLE 9-6

MISSION • 1022-1 • INSTRUMENT • AFT 10-01-65 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	142	142	115	128	128	117	270	270	232

MISSION 1022-1 INSTR - AFT 10-01-65 PROCESSING AND EXPOSURE [redacted]

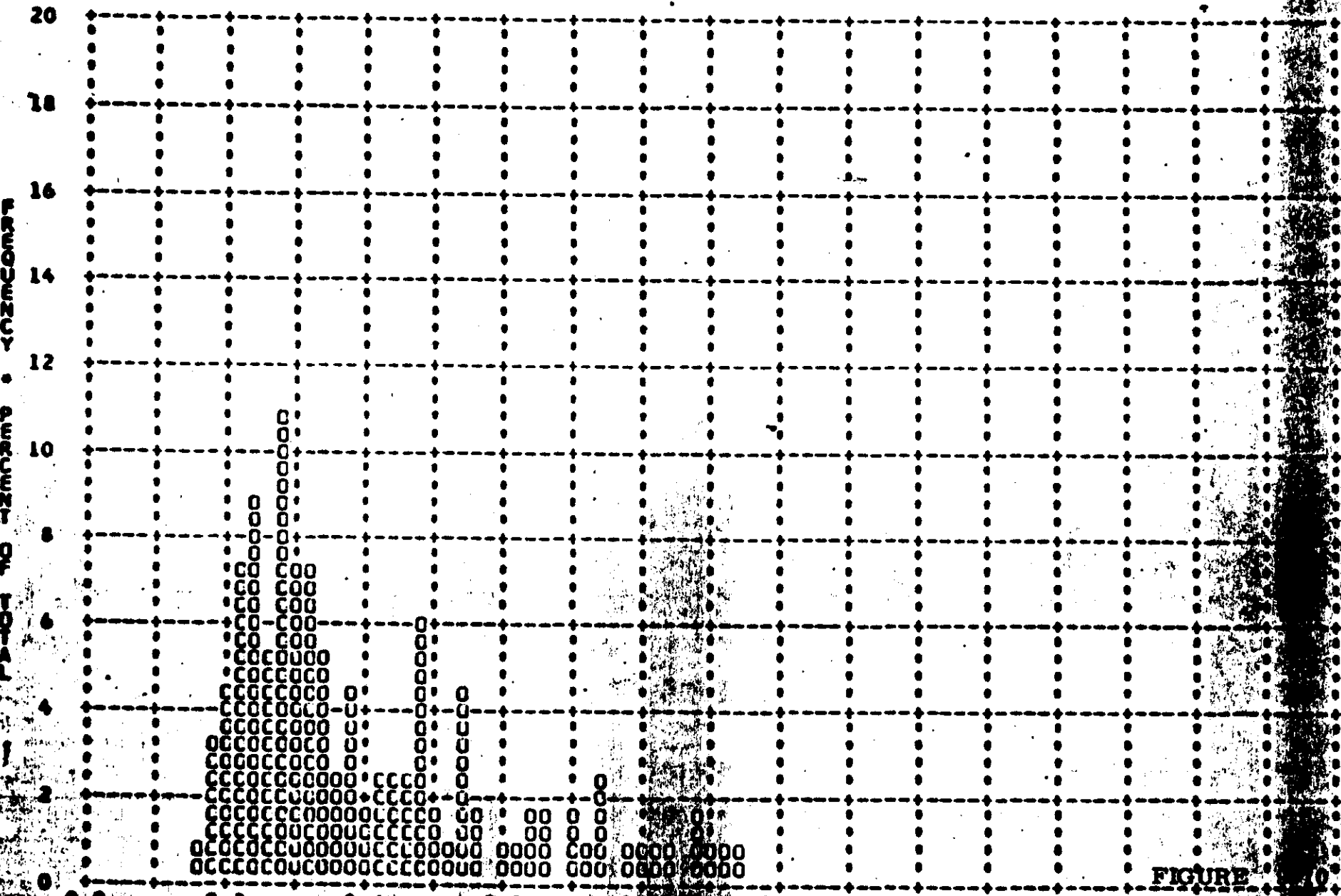
PROCESS LEVEL	SAMPLE SIZE	UNDER EXPOSED	UNDER PROCESSED	CORRECT EXP+PROC	OVER PROCESSED	OVER EXPOSED
PRIMARY	0	0 PC	0 PC	0 PC	0 PC	0 PC
INTERMEDIATE	142	0 PC	28 PC	58 PC	12 PC	2 PC
FULL	128	9 PC	0 PC	87 PC	5 PC	0 PC
ALL LEVELS	270	4 PC	15 PC	71 PC	9 PC	1 PC

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

TABLE 9-6

MISSION • 1022-1 • INSTR • AFT • 10-01-65 PLOT OF D MIN • TERRAIN • PROCESSING • INTERMEDIATE

ARITH MEAN • 0.58 • MEDIAN • 0.48 • STD DEV • 0.28 • RANGE • 0.24 TO 1.40 WITH 142 SAMPLES



FIGURE

MISSION • 1022-1 • INSTR • AFT • 10-01-65 PLOT OF D MAX • TERRAIN • PROCESSING • INTERMEDIATE

ARITH MEAN • 1.69 • MEDIAN • 1.74 • STD DEV • 0.32 • RANGE • 0.52 TO 2.24 WITH 142 SAMPLES

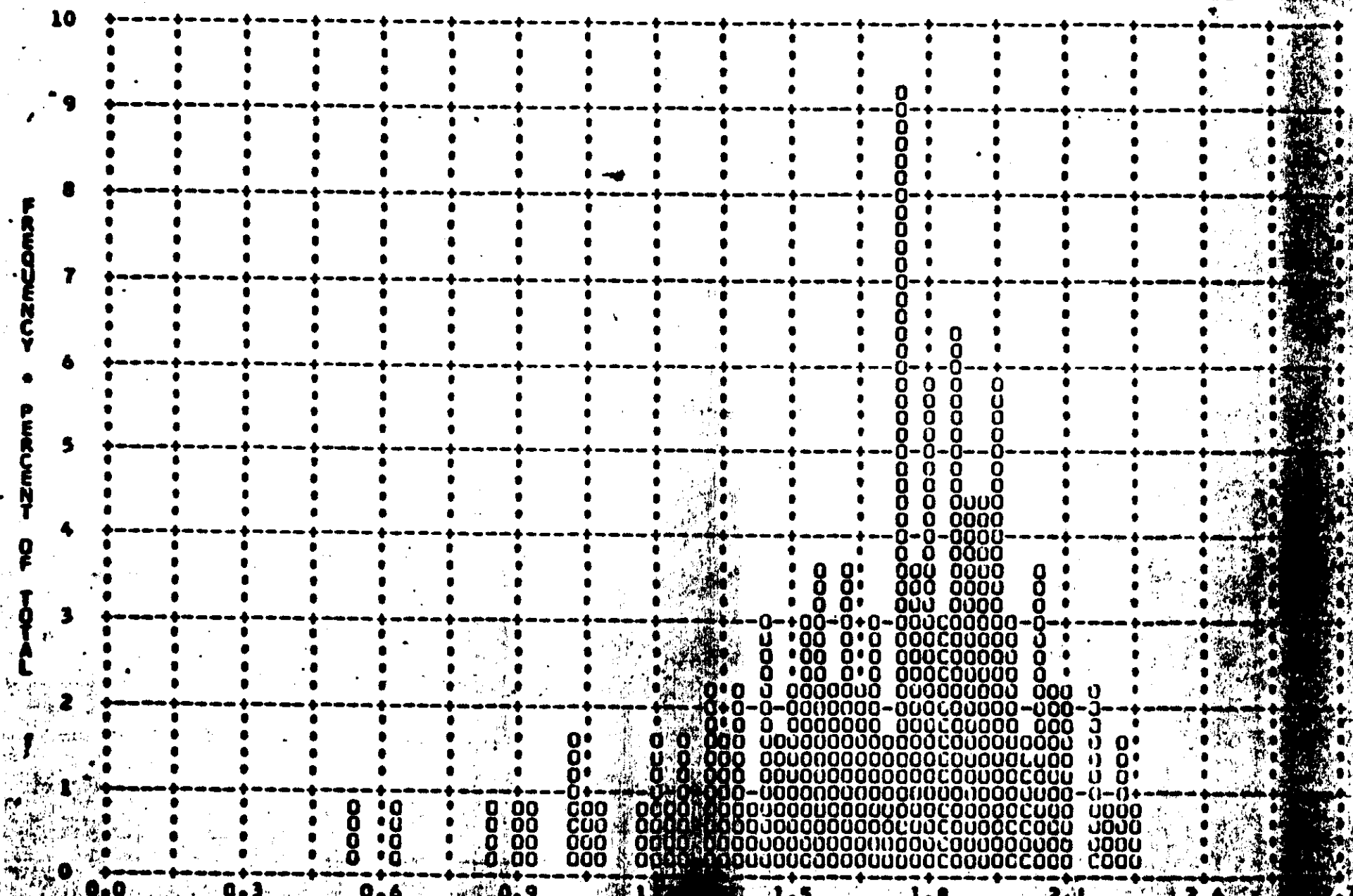


FIGURE 6-1

MISSION • 1022-1 • INSTR • AFT • 10-01-65 PLOT OF D MAX • CLOUD • PROCESSING • INTERMEDIATE

ARITH MEAN • 2.17 • MEDIAN • 2.20 • STD DEV • 0.17 • RANGE • 1.30 TO 2.40 WITH 115 SAMPLES

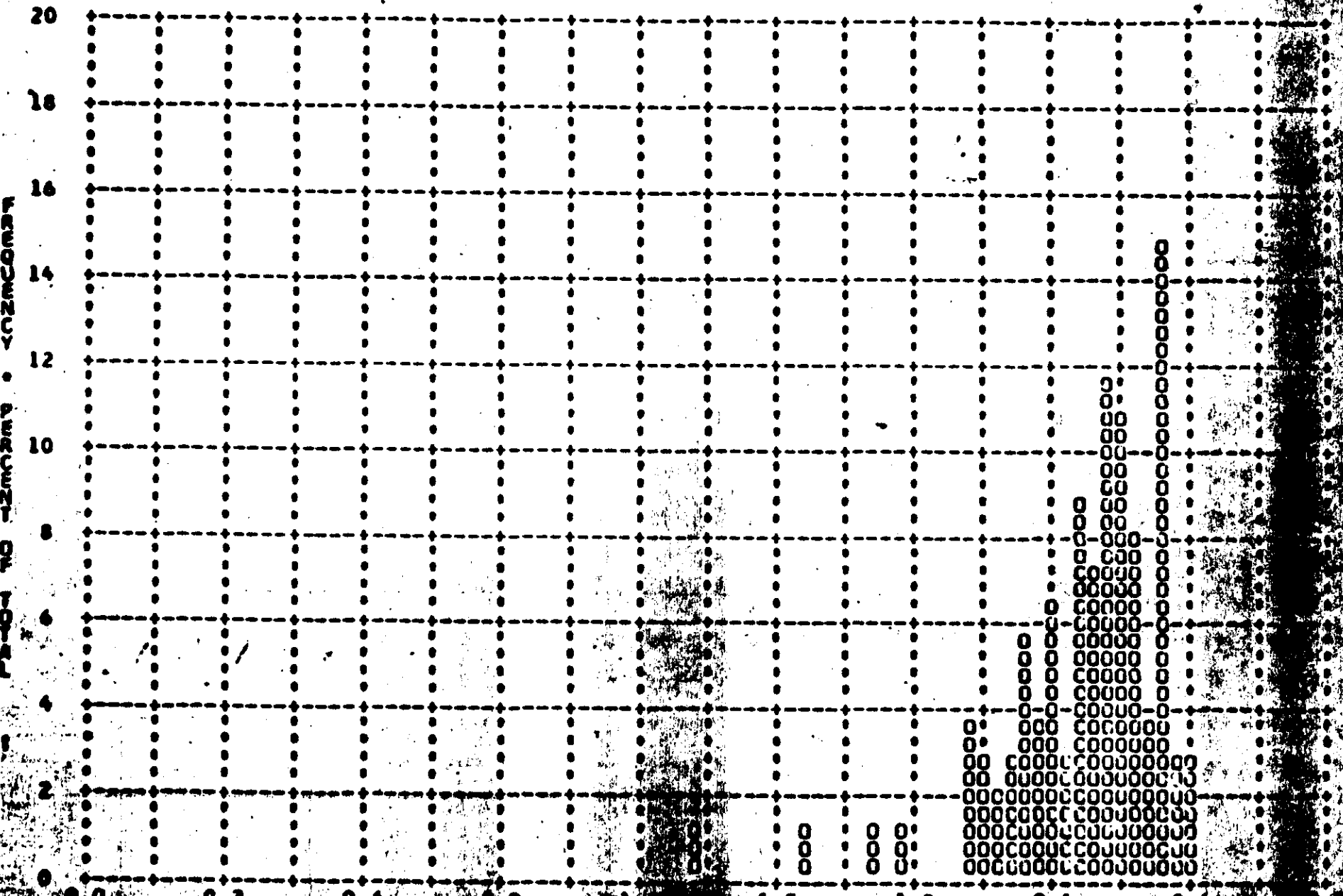
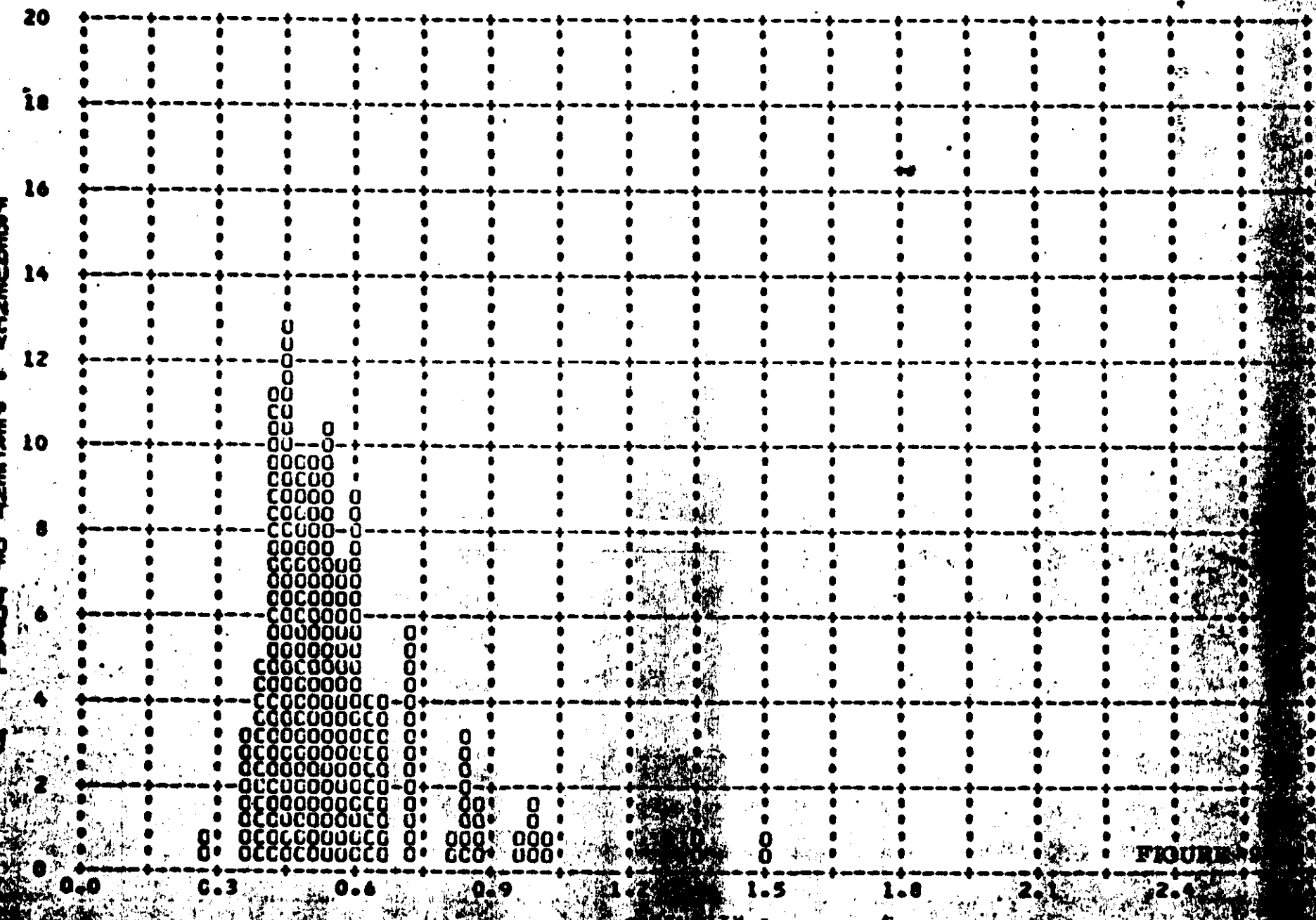


FIGURE 9-12

MISSION • 1022-1 • INSTR • AFT • 10-01-65 PLOT OF D MIN • TERRAIN • PROCESSING • FULL

ARITH MEAN • 0.55 • MEDIAN • 0.51 • STD DEV • 0.18 • RANGE • 0.27 TO 1.48 WITH 128 SAMPLES



FIGURE

[redacted]

MISSION • 1022-1 • INSTR • AFT • 10-01-65 PLOT OF D MAX • TERRAIN • PROCESSING • FULL

ARITH MEAN • 1.56 • MEDIAN • 1.54 • STD DEV • 0.33 • RANGE • 0.95 TO 2.30 WITH 128 SAMPLES

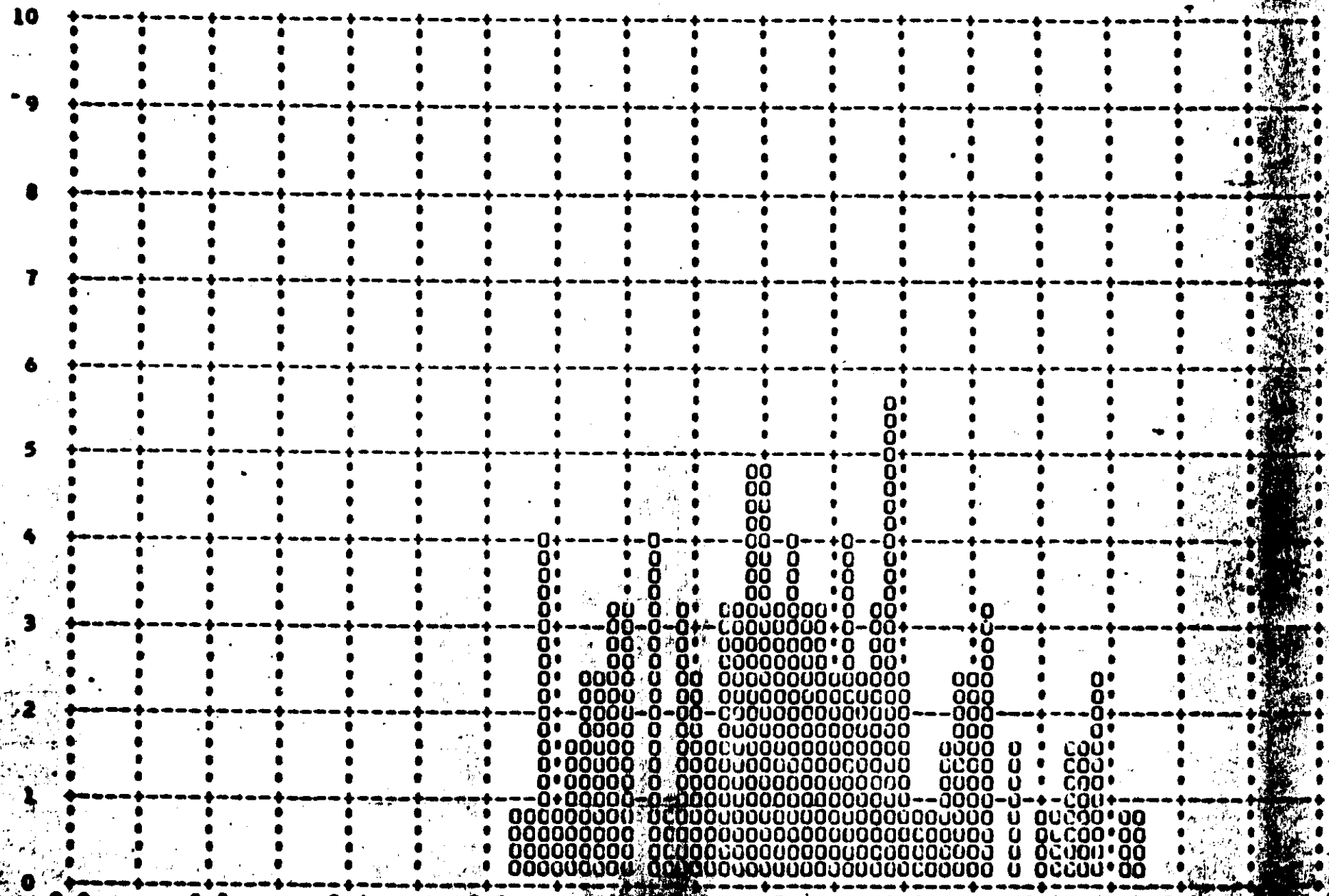


FIGURE 9

MISSION • 1022-1 • INSTR • AFT • 10-01-65 PLOT OF D MAX • CLOUD • PROCESSING • FULL

ARITH MEAN • 2.26 • MEDIAN • 2.30 • STD DEV • 0.16 • RANGE • 1.55 TO 2.47 WITH 117 SAMPLES

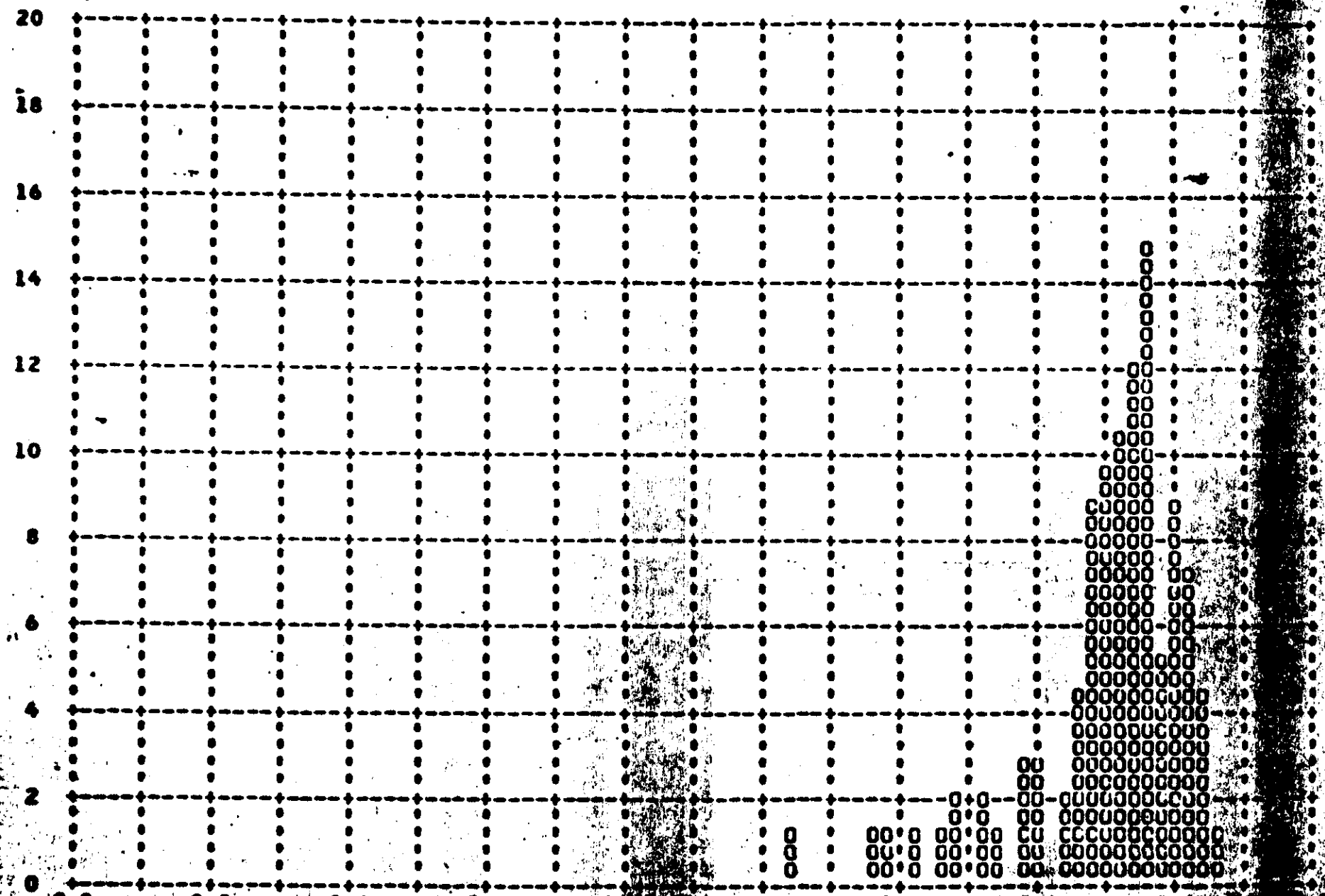


FIGURE 9

MISSION • 1022-1 • INSTR • AFT • 10-01-65 PLOT OF D MIN • TERRAIN • PROCESSING • ALL LEVELS

ARITH MEAN • 0.57 • MEDIAN • 0.50 • STD DEV • 0.24 • RANGE • 0.24 TO 1.48 WITH 270 SAMPLES

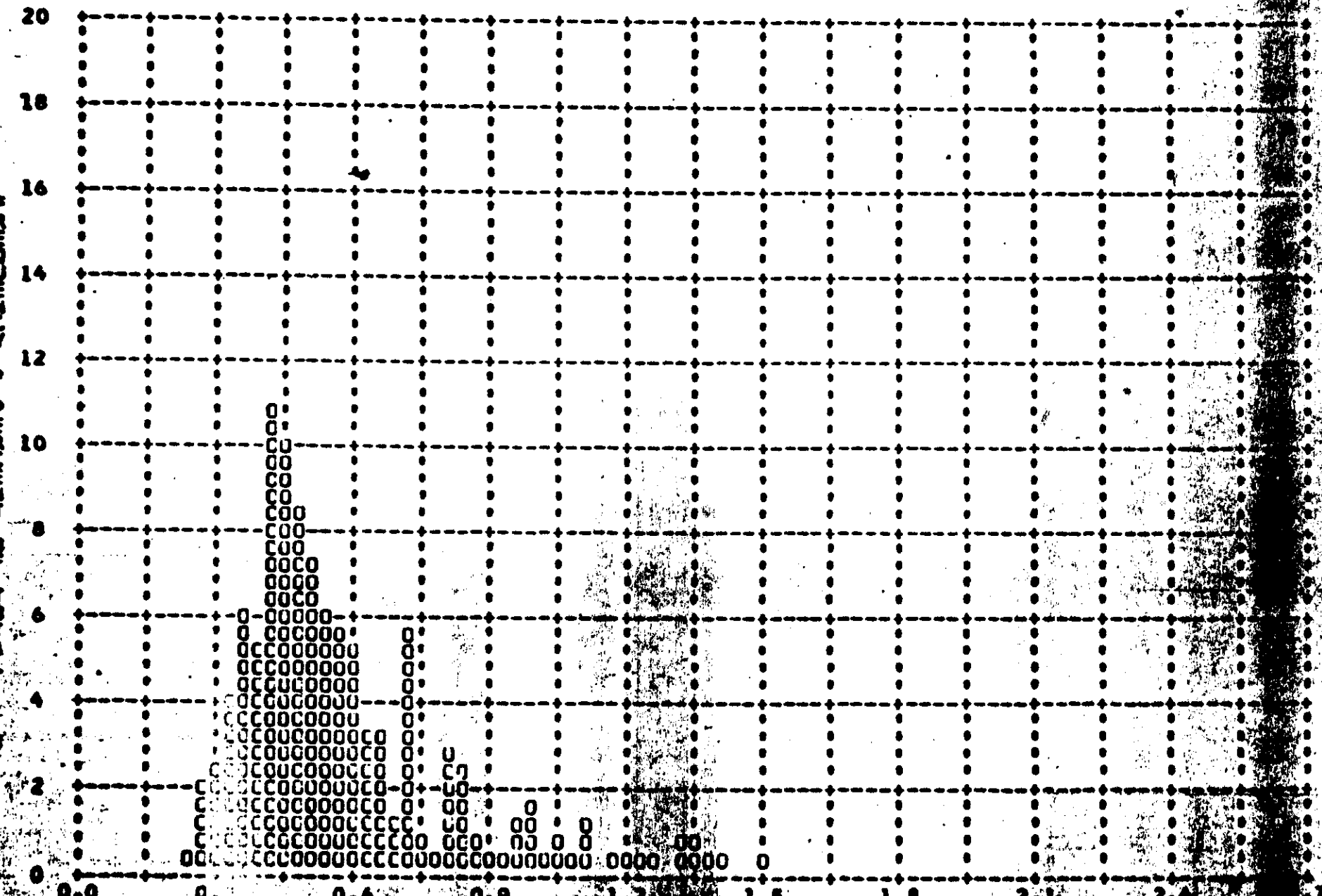


FIGURE 9-1

MISSION • 1022-1 • INSTR • AFT • 10-01-65 PLOT OF D MAX • TERRAIN • PROCESSING • ALL LEVELS

ARITH MEAN • 1.63 • MEDIAN • 1.68 • STD DEV • 0.33 • RANGE • 0.52 TO 2.30 WITH 270 SAMPLES

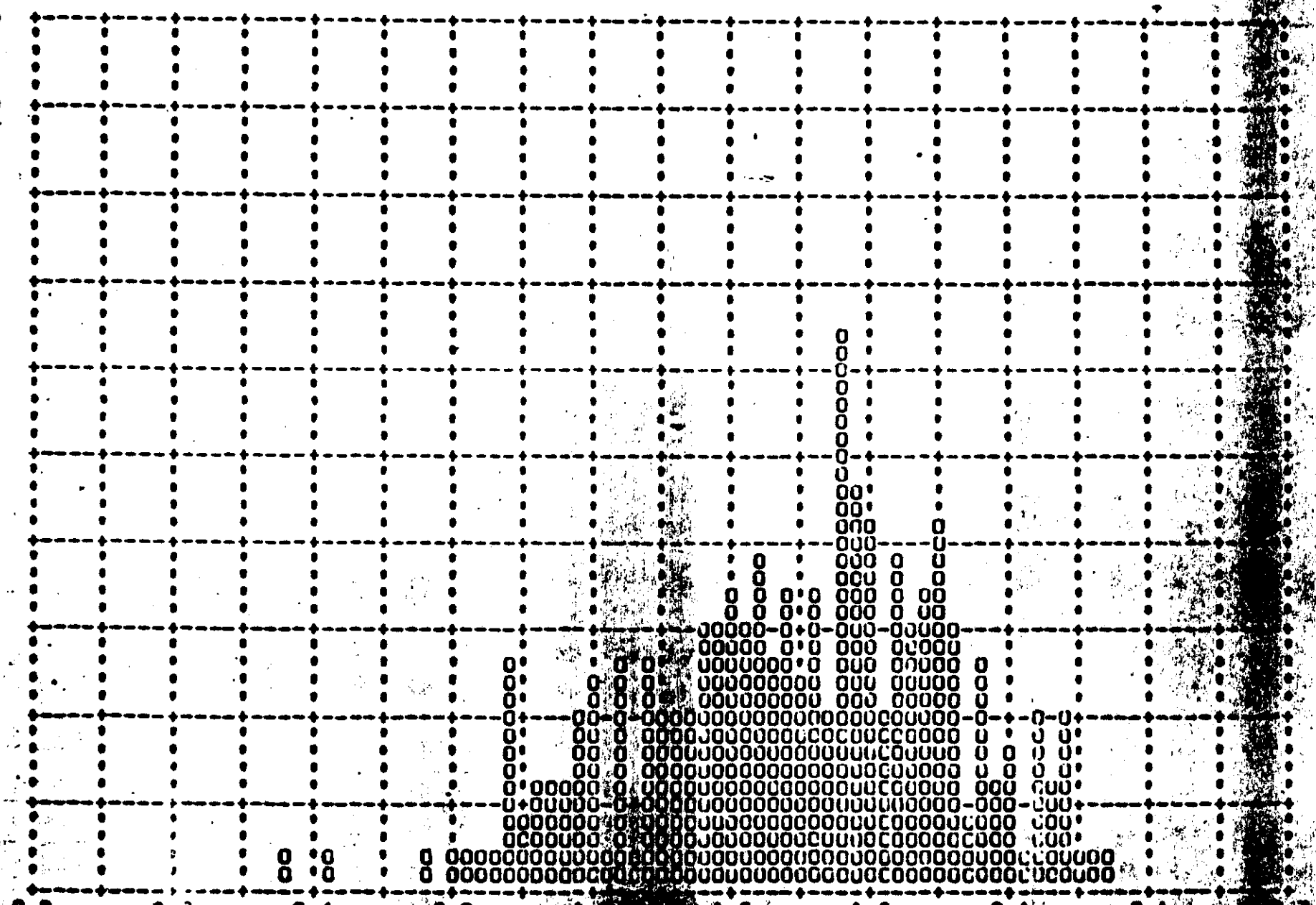


FIGURE 9-17

MISSION • 1022-1 • INSTR • AFT • 10-01-65 PLOT OF D MAX • CLOUD • PROCESSING • ALL LEVEL

ARITH MEAN • 2.21 • MEDIAN • 2.25 • STD DEV • 0.17 • RANGE • 1.30 TO 2.47 WITH 232 SAMPLES

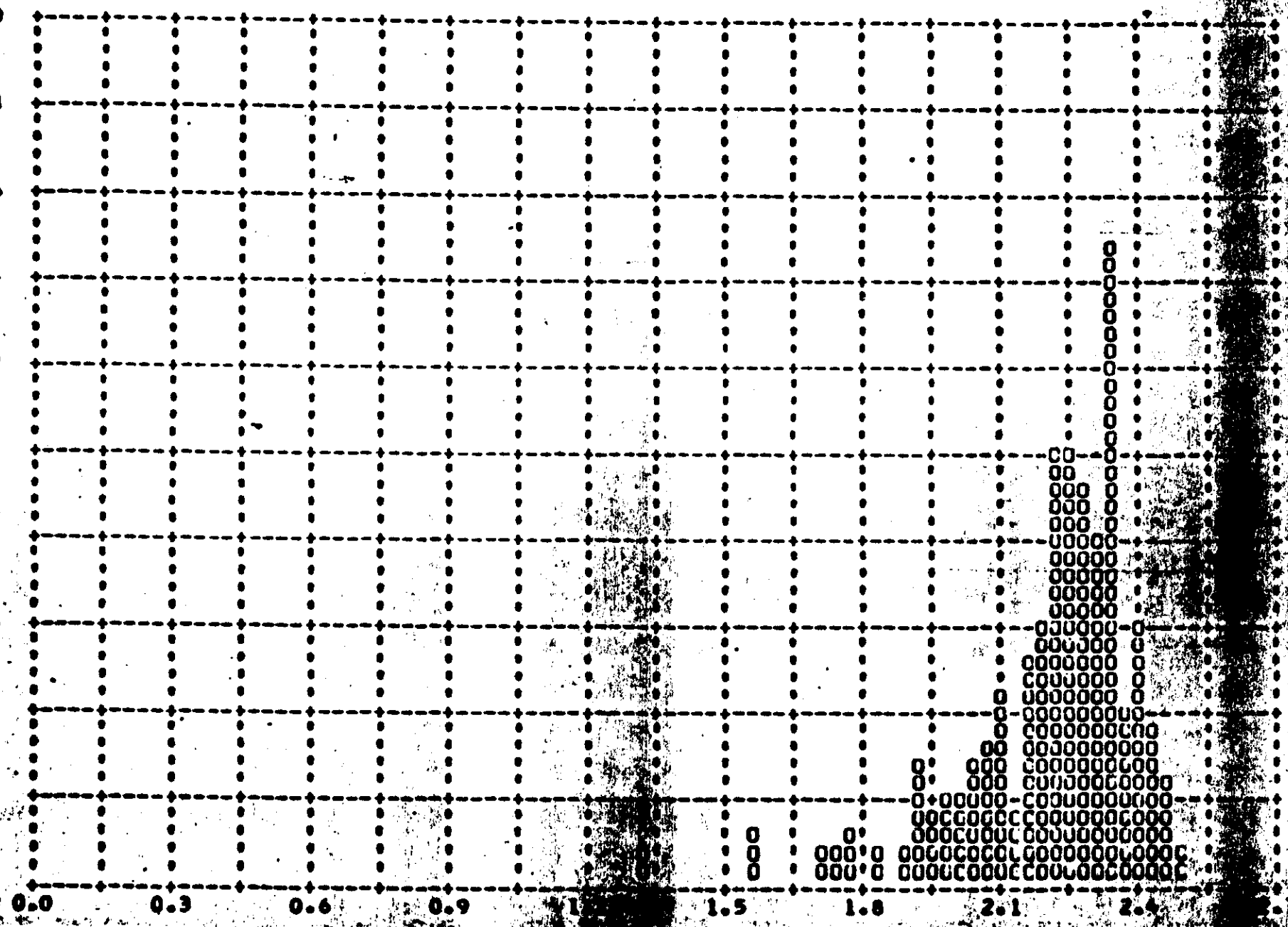


FIGURE 9-1

MISSION • 1022-2 • INSTRUMENT • FRWD 10-01-65 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	3	0	0	0	0	0	3	0	0
0.21	0	0	0	0	0	0	0	0	0	0	0	0
0.22	0	0	0	4	0	0	1	0	0	5	0	0
0.23	0	0	0	5	0	0	0	0	0	5	0	0
0.24	0	0	0	4	0	0	2	0	0	6	0	0
0.25	0	0	0	1	0	0	3	0	0	4	0	0
0.26	0	0	0	5	0	0	3	0	0	8	0	0
0.27	0	0	0	3	0	0	3	0	0	6	0	0
0.28	0	0	0	7	0	0	10	0	0	17	0	0
0.29	0	0	0	5	0	0	10	0	0	15	0	0
0.30	0	0	0	7	0	0	8	0	0	15	0	0
0.31	0	0	0	0	0	0	4	0	0	4	0	0
0.32	0	0	0	6	0	0	7	0	0	13	0	0
0.33	0	0	0	6	0	0	8	0	0	14	0	0
0.34	0	0	0	4	0	0	8	0	0	12	0	0
0.35	0	0	0	2	0	0	6	0	0	8	0	0
0.36	0	0	0	9	0	0	5	0	0	14	0	0
0.37	0	0	0	1	0	0	5	0	0	6	0	0
0.38	0	0	0	4	0	0	5	0	0	9	0	0
0.39	0	0	0	1	0	0	3	0	0	4	0	0
0.40	0	0	0	8	0	0	10	0	0	18	0	0
0.41	0	0	0	1	0	0	5	0	0	6	0	0
0.42	0	0	0	3	0	0	7	0	0	10	0	0
0.43	0	0	0	0	0	0	3	0	0	3	0	0
0.44	0	0	0	1	0	0	1	0	0	2	0	0
0.45	0	0	0	2	0	0	3	0	0	5	0	0
0.46	0	0	0	2	0	0	1	0	0	3	0	0
0.47	0	0	0	1	0	0	2	0	0	3	0	0
0.48	0	0	0	1	0	0	2	0	0	3	0	0
0.49	0	0	0	1	0	0	0	0	0	1	0	0
0.50	0	0	0	1	0	0	2	0	0	3	0	0
SUBTOTAL	0	0	0	98	0	0	127	0	0	225	0	0

TABLE 9-7

MISSION • 1022-2 • INSTRUMENT • FRWD 10-01-65 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	0	0	0	0	0	0	0	0
0.54	0	0	0	0	0	0	3	0	0	3	0	0
0.55	0	0	0	0	0	0	1	0	0	1	0	0
0.56	0	0	0	0	0	0	0	0	0	0	0	0
0.57	0	0	0	0	0	0	1	0	0	1	0	0
0.58	0	0	0	0	0	0	0	0	0	0	0	0
0.59	0	0	0	0	0	0	2	0	0	2	0	0
0.60	0	0	0	0	0	0	0	0	0	0	0	0
0.61	0	0	0	0	0	0	2	0	0	2	0	0
0.62	0	0	0	0	0	0	0	0	0	0	0	0
0.63	0	0	0	0	0	0	1	0	0	1	0	0
0.64	0	0	0	0	0	0	0	0	0	0	0	0
0.65	0	0	0	0	0	0	1	0	0	1	0	0
0.66	0	0	0	0	0	0	0	0	0	0	0	0
0.67	0	0	0	0	0	0	2	0	0	2	0	0
0.68	0	0	0	0	0	0	0	0	0	0	0	0
0.69	0	0	0	0	0	0	2	0	0	2	0	0
0.70	0	0	0	0	0	0	0	0	0	0	0	0
0.71	0	0	0	0	0	0	1	0	0	1	0	0
0.72	0	0	0	0	0	0	0	0	0	0	0	0
0.73	0	0	0	0	0	0	1	0	0	1	0	0
0.74	0	0	0	0	0	0	0	0	0	0	0	0
0.75	0	0	0	0	0	0	1	0	0	1	0	0
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	0	0	0	0	0	0
0.79	0	0	0	0	0	0	1	0	0	1	0	0
0.80	0	0	0	0	0	0	0	0	0	0	0	0
0.81	0	0	0	0	0	0	1	0	0	1	0	0
0.82	0	0	0	0	0	0	0	0	0	0	0	0
0.83	0	0	0	0	0	0	1	0	0	1	0	0
0.84	0	0	0	0	0	0	0	0	0	0	0	0
0.85	0	0	0	0	0	0	1	0	0	1	0	0
0.86	0	0	0	0	0	0	0	0	0	0	0	0
0.87	0	0	0	0	0	0	1	0	0	1	0	0
0.88	0	0	0	0	0	0	0	0	0	0	0	0
0.89	0	0	0	0	0	0	1	0	0	1	0	0
0.90	0	0	0	0	0	0	0	0	0	0	0	0
0.91	0	0	0	0	0	0	1	0	0	1	0	0
0.92	0	0	0	0	0	0	0	0	0	0	0	0
0.93	0	0	0	0	0	0	1	0	0	1	0	0
0.94	0	0	0	0	0	0	0	0	0	0	0	0
0.95	0	0	0	0	0	0	1	0	0	1	0	0
0.96	0	0	0	0	0	0	0	0	0	0	0	0
0.97	0	0	0	0	0	0	1	0	0	1	0	0
0.98	0	0	0	0	0	0	0	0	0	0	0	0
0.99	0	0	0	0	0	0	1	0	0	1	0	0
1.00	0	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	0	0	0	15	8	0	25	19	0	40	27	0

TABLE 9-7

MISSION • 1022-2 • INSTRUMENT • FRWD 10-01-65 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
1.01	0	0	0	0	1	0	0	0	0	0	1	0
1.02	0	0	0	0	1	0	0	1	0	0	1	0
1.03	0	0	0	0	1	0	0	1	0	0	1	0
1.04	0	0	0	0	1	0	0	2	0	0	2	0
1.05	0	0	0	0	1	0	0	1	0	0	2	0
1.06	0	0	0	0	1	0	0	1	0	0	2	0
1.07	0	0	0	0	1	0	0	1	0	0	2	0
1.08	0	0	0	0	1	0	0	1	0	0	1	0
1.09	0	0	0	0	1	0	0	1	0	0	1	0
1.10	0	0	0	0	1	0	0	1	0	0	1	0
1.11	0	0	0	0	1	0	0	1	0	0	1	0
1.12	0	0	0	0	1	0	0	1	0	0	1	0
1.13	0	0	0	0	1	0	0	1	0	0	1	0
1.14	0	0	0	0	1	0	0	1	0	0	1	0
1.15	0	0	0	0	1	0	0	1	0	0	1	0
1.16	0	0	0	0	1	0	0	1	0	0	1	0
1.17	0	0	0	0	1	0	0	1	0	0	1	0
1.18	0	0	0	0	1	0	0	1	0	0	1	0
1.19	0	0	0	0	1	0	0	1	0	0	1	0
1.20	0	0	0	0	1	0	0	1	0	0	1	0
1.21	0	0	0	0	1	0	0	1	0	0	1	0
1.22	0	0	0	0	1	0	0	1	0	0	1	0
1.23	0	0	0	0	1	0	0	1	0	0	1	0
1.24	0	0	0	0	1	0	0	1	0	0	1	0
1.25	0	0	0	0	1	0	0	1	0	0	1	0
1.26	0	0	0	0	1	0	0	1	0	0	1	0
1.27	0	0	0	0	1	0	0	1	0	0	1	0
1.28	0	0	0	0	1	0	0	1	0	0	1	0
1.29	0	0	0	0	1	0	0	1	0	0	1	0
1.30	0	0	0	0	1	0	0	1	0	0	1	0
1.31	0	0	0	0	1	0	0	1	0	0	1	0
1.32	0	0	0	0	1	0	0	1	0	0	1	0
1.33	0	0	0	0	1	0	0	1	0	0	1	0
1.34	0	0	0	0	1	0	0	1	0	0	1	0
1.35	0	0	0	0	1	0	0	1	0	0	1	0
1.36	0	0	0	0	1	0	0	1	0	0	1	0
1.37	0	0	0	0	1	0	0	1	0	0	1	0
1.38	0	0	0	0	1	0	0	1	0	0	1	0
1.39	0	0	0	0	1	0	0	1	0	0	1	0
1.40	0	0	0	0	1	0	0	1	0	0	1	0
1.41	0	0	0	0	1	0	0	1	0	0	1	0
1.42	0	0	0	0	1	0	0	1	0	0	1	0
1.43	0	0	0	0	1	0	0	1	0	0	1	0
1.44	0	0	0	0	1	0	0	1	0	0	1	0
1.45	0	0	0	0	1	0	0	1	0	0	1	0
1.46	0	0	0	0	1	0	0	1	0	0	1	0
1.47	0	0	0	0	1	0	0	1	0	0	1	0
1.48	0	0	0	0	1	0	0	1	0	0	1	0
1.49	0	0	0	0	1	0	0	1	0	0	1	0
1.50	0	0	0	0	1	0	0	1	0	0	1	0
SUBTOTAL	0	0	0	0	48	2	0	72	1	0	120	3

TOP SECRET [redacted]

TABLE 9-7

MISSION • 1022-2 • INSTRUMENT • FRWD 10-01-65 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	2	0	0	3	0	0	5	0
1.52	0	0	0	0	4	0	0	7	0	0	11	0
1.53	0	0	0	0	1	0	0	1	0	0	2	0
1.54	0	0	0	0	1	0	0	0	0	0	1	0
1.55	0	0	0	0	1	0	0	3	0	0	4	0
1.56	0	0	0	0	0	0	0	1	0	0	1	0
1.57	0	0	0	0	1	0	0	0	0	0	1	0
1.58	0	0	0	0	0	0	0	3	0	0	3	0
1.59	0	0	0	0	1	0	0	0	0	0	1	0
1.60	0	0	0	0	0	0	0	1	0	0	1	0
1.61	0	0	0	0	4	0	0	0	0	0	4	0
1.62	0	0	0	0	0	0	0	3	0	0	3	0
1.63	0	0	0	0	2	0	0	0	0	0	2	0
1.64	0	0	0	0	2	0	0	1	0	0	3	0
1.65	0	0	0	0	1	0	0	0	0	0	1	0
1.66	0	0	0	0	2	0	0	0	0	0	2	0
1.67	0	0	0	0	0	0	0	1	0	0	1	0
1.68	0	0	0	0	1	0	0	0	0	0	1	0
1.69	0	0	0	0	0	0	0	1	0	0	1	0
1.70	0	0	0	0	2	0	0	0	0	0	2	0
1.71	0	0	0	0	0	0	0	1	0	0	1	0
1.72	0	0	0	0	2	0	0	0	0	0	2	0
1.73	0	0	0	0	2	0	0	1	0	0	3	0
1.74	0	0	0	0	1	0	0	0	0	0	1	0
1.75	0	0	0	0	2	0	0	0	0	0	2	0
1.76	0	0	0	0	1	0	0	0	0	0	1	0
1.77	0	0	0	0	0	0	0	1	0	0	1	0
1.78	0	0	0	0	1	0	0	0	0	0	1	0
1.79	0	0	0	0	0	0	0	1	0	0	1	0
1.80	0	0	0	0	1	0	0	0	0	0	1	0
1.81	0	0	0	0	0	0	0	1	0	0	1	0
1.82	0	0	0	0	1	0	0	0	0	0	1	0
1.83	0	0	0	0	0	0	0	1	0	0	1	0
1.84	0	0	0	0	1	0	0	0	0	0	1	0
1.85	0	0	0	0	0	0	0	1	0	0	1	0
1.86	0	0	0	0	1	0	0	0	0	0	1	0
1.87	0	0	0	0	0	0	0	1	0	0	1	0
1.88	0	0	0	0	1	0	0	0	0	0	1	0
1.89	0	0	0	0	0	0	0	1	0	0	1	0
1.90	0	0	0	0	1	0	0	0	0	0	1	0
1.91	0	0	0	0	0	0	0	1	0	0	1	0
1.92	0	0	0	0	1	0	0	0	0	0	1	0
1.93	0	0	0	0	0	0	0	1	0	0	1	0
1.94	0	0	0	0	1	0	0	0	0	0	1	0
1.95	0	0	0	0	0	0	0	1	0	0	1	0
1.96	0	0	0	0	1	0	0	0	0	0	1	0
1.97	0	0	0	0	0	0	0	1	0	0	1	0
1.98	0	0	0	0	1	0	0	0	0	0	1	0
1.99	0	0	0	0	0	0	0	1	0	0	1	0
2.00	0	0	0	0	1	0	0	0	0	0	1	0
SUBTOTAL	0	0	0	0	48	7	0	56	8	0	104	15

TABLE 9-7

MISSION • 1022-2 • INSTRUMENT • FRWD 10-01-65 • 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	0	0	0	0
2.03	0	0	0	0	0	0	0	0	0	0	0	0
2.04	0	0	0	0	0	0	0	0	0	0	0	0
2.05	0	0	0	0	0	0	0	0	0	0	0	0
2.06	0	0	0	0	0	0	0	0	0	0	0	0
2.07	0	0	0	0	0	0	0	0	0	0	0	0
2.08	0	0	0	0	0	0	0	0	0	0	0	0
2.09	0	0	0	0	0	0	0	0	0	0	0	0
2.10	0	0	0	0	0	0	0	0	0	0	0	0
2.11	0	0	0	0	0	0	0	0	0	0	0	0
2.12	0	0	0	0	0	0	0	0	0	0	0	0
2.13	0	0	0	0	0	0	0	0	0	0	0	0
2.14	0	0	0	0	0	0	0	0	0	0	0	0
2.15	0	0	0	0	0	0	0	0	0	0	0	0
2.16	0	0	0	0	0	0	0	0	0	0	0	0
2.17	0	0	0	0	0	0	0	0	0	0	0	0
2.18	0	0	0	0	0	0	0	0	0	0	0	0
2.19	0	0	0	0	0	0	0	0	0	0	0	0
2.20	0	0	0	0	0	0	0	0	0	0	0	0
2.21	0	0	0	0	0	0	0	0	0	0	0	0
2.22	0	0	0	0	0	0	0	0	0	0	0	0
2.23	0	0	0	0	0	0	0	0	0	0	0	0
2.24	0	0	0	0	0	0	0	0	0	0	0	0
2.25	0	0	0	0	0	0	0	0	0	0	0	0
2.26	0	0	0	0	0	0	0	0	0	0	0	0
2.27	0	0	0	0	0	0	0	0	0	0	0	0
2.28	0	0	0	0	0	0	0	0	0	0	0	0
2.29	0	0	0	0	0	0	0	0	0	0	0	0
2.30	0	0	0	0	0	0	0	0	0	0	0	0
2.31	0	0	0	0	0	0	0	0	0	0	0	0
2.32	0	0	0	0	0	0	0	0	0	0	0	0
2.33	0	0	0	0	0	0	0	0	0	0	0	0
2.34	0	0	0	0	0	0	0	0	0	0	0	0
2.35	0	0	0	0	0	0	0	0	0	0	0	0
2.36	0	0	0	0	0	0	0	0	0	0	0	0
2.37	0	0	0	0	0	0	0	0	0	0	0	0
2.38	0	0	0	0	0	0	0	0	0	0	0	0
2.39	0	0	0	0	0	0	0	0	0	0	0	0
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	9	103	0	4	139	0	13	242

TABLE 9-7

~~TOP SECRET~~ [redacted]

MISSION • 1022-2 • INSTRUPENT • FRWD 10-01-65 • 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	1	0	0	1	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	1	0	0	1	0
TOTAL	0	0	0	113	113	112	152	152	148	265	265	260

MISSION 1022-2 INSTR - FRWD 10-01-65 PROCESSING AND EXPOSURE [illegible]

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	113	3 PC	65 PC	31 PC	1 PC	0 PC
FULL	152	60 PC	0 PC	39 PC	1 PC	0 PC
ALL LEVELS	265	35 PC	28 PC	35 PC	1 PC	0 PC

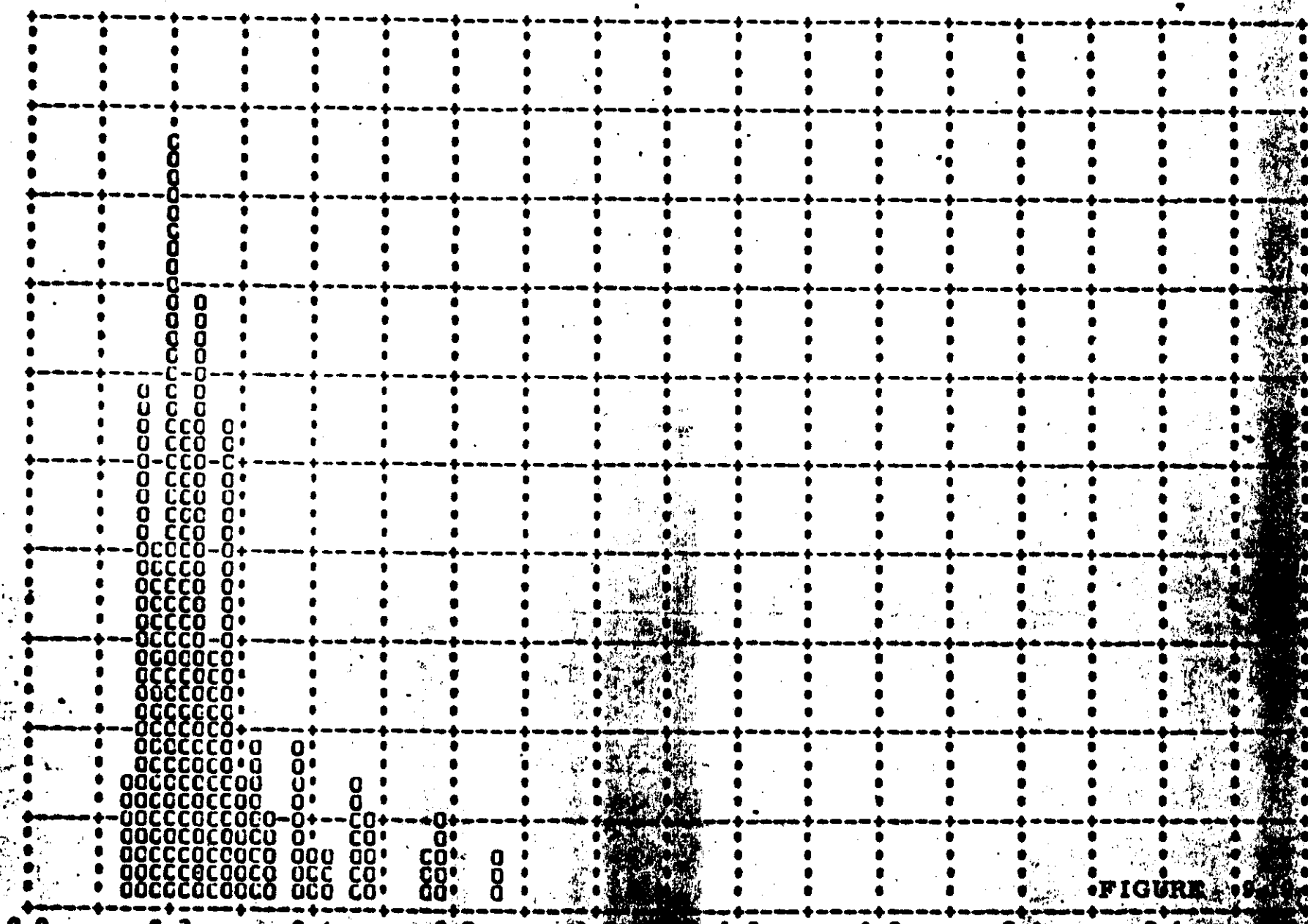
PROCESS LEVEL	BASE + FOG	UNDER EXPOSED	UNDER PROCESSED	CORRECT EXP+PROC	OVER PROCESSED	OVER EXPOSED
PRIMARY	0.01-0.09	0.01-0.13	0.14-0.39	0.40-0.90	----------	0.91 AND U
INTERMED	0.10-0.17	0.01-0.20	0.21-0.39	0.40-0.90	0.91-1.34	1.35 AND U
FULL	0.18 AND UP	0.01-0.39	----------	0.40-0.90	0.91-1.69	1.70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

~~TOP SECRET~~ [redacted]

TABLE 9-7

MISSION • 1022-2 • INSTR • FRWD • 10-01-65 PLOT OF C MIN • TERRAIN • PROCESSING • INTERMEDIATE

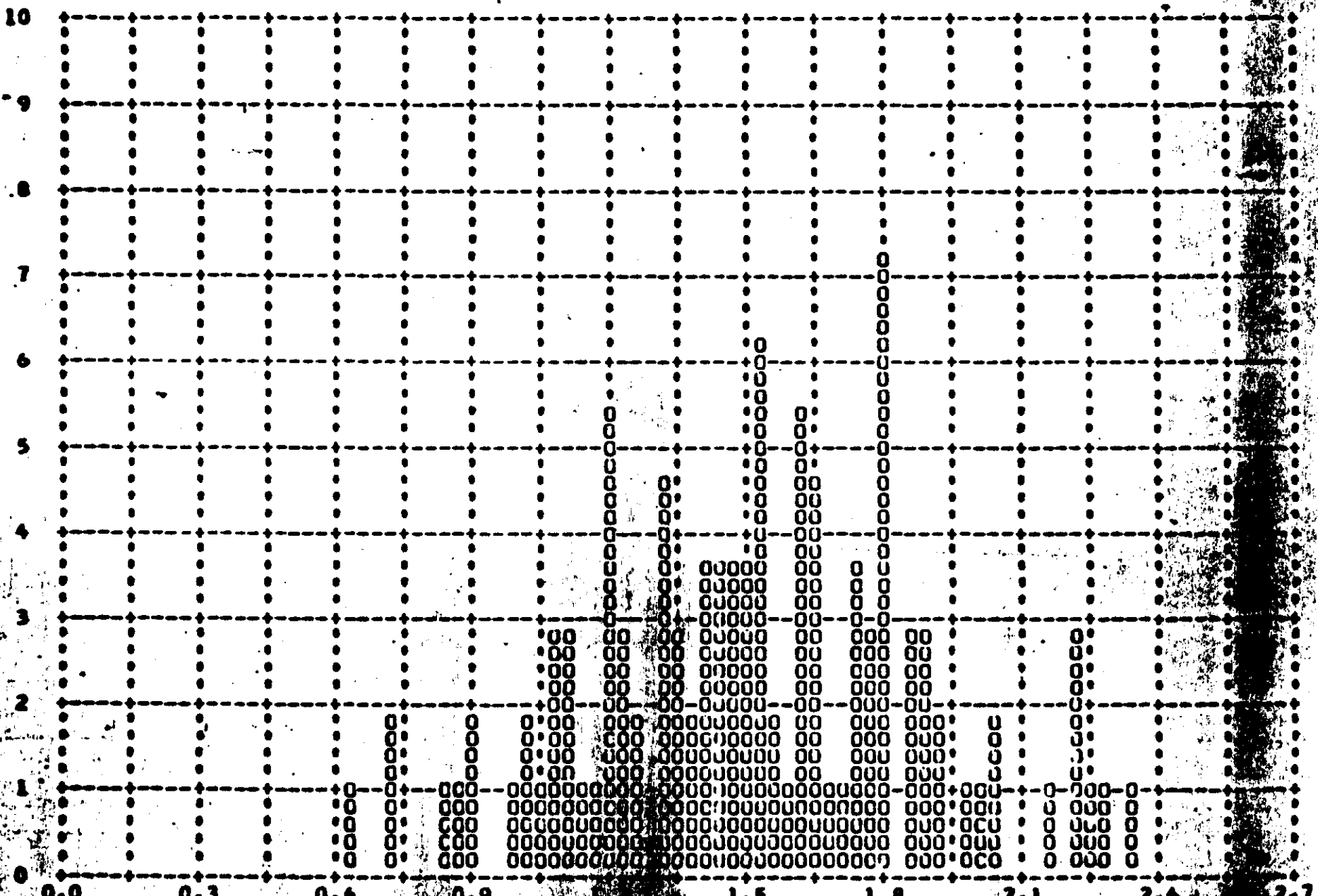
ARITH MEAN • 0.38 • MEDIAN • 0.34 • STD DEV • 0.15 • RANGE • 0.20 TO 0.99 WITH 113 SAMPLES



FIGURE

MISSION • 1022-2 • INSTR • FRWD • 10-01-65 PLOT OF D MAX • TERRAIN • PROCESSING • INTERMEDIATE

ARITH MEAN • 1.50 • MEDIAN • 1.51 • STD DEV • 0.36 • RANGE • 0.62 TO 2.32 WITH 113 SAMPLES



SITY •

FIGURE

[redacted]

MISSION • 1022-2 • INSTR • FRWD • 10-01-65 PLOT OF D MAX • CLOUD • PROCESSING • INTERMEDIATE

ARITH MEAN • 2.20 • MEDIAN • 2.25 • STD DEV • 0.19 • RANGE • 1.16 TO 2.42 WITH 112 SAMPLES

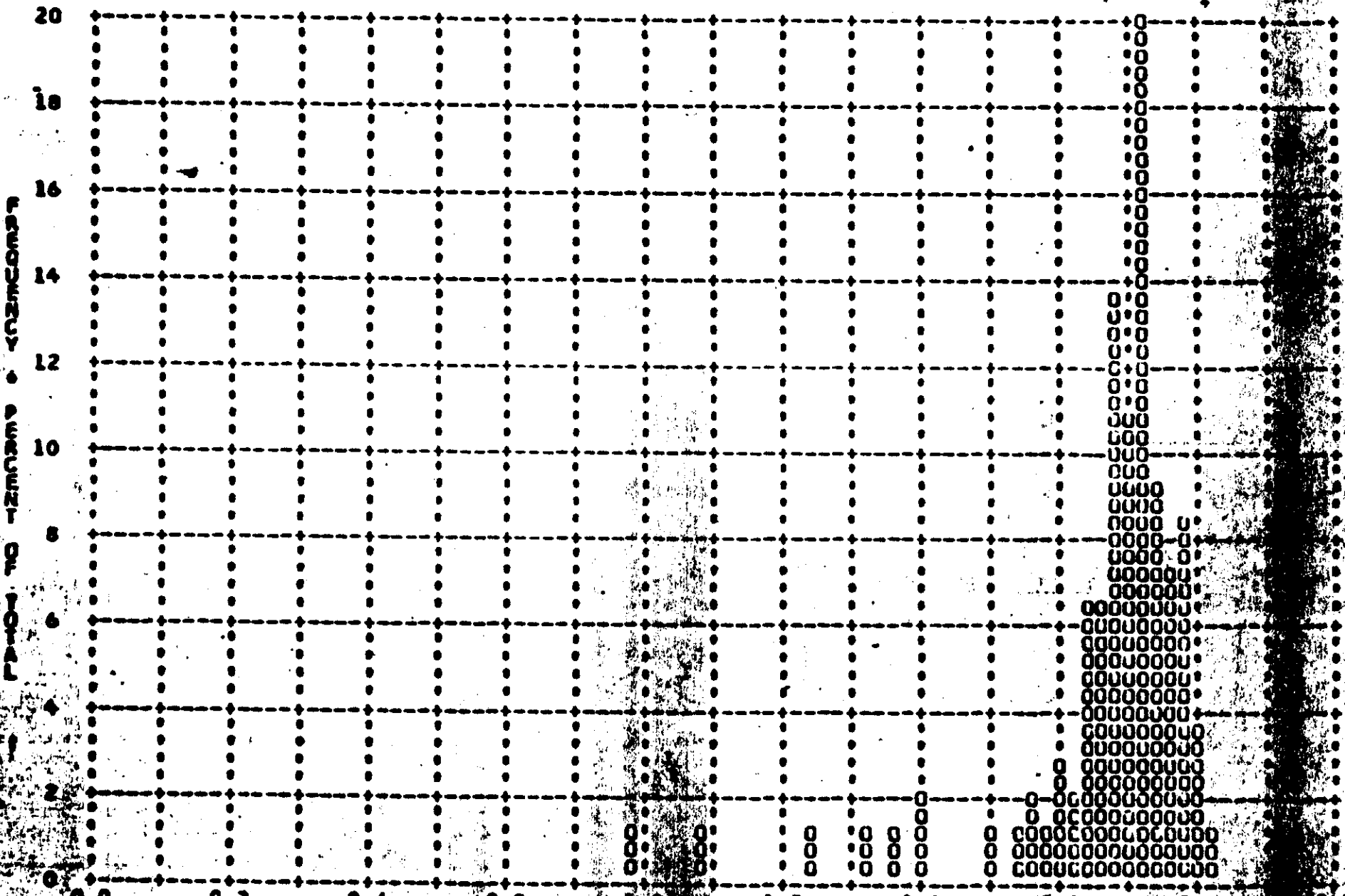


FIGURE 8-

[redacted]

MISSION • 1022-2 • INSTR • FRWD • 10-01-65 PLOT OF D MIN • TERRAIN • PROCE ING • FULL

ARITH MEAN • 0.40 • MEDIAN • 0.36 • STD DEV • 0.14 • RANGE • 0.22 TO 0.96 WI 152 SAMPLES

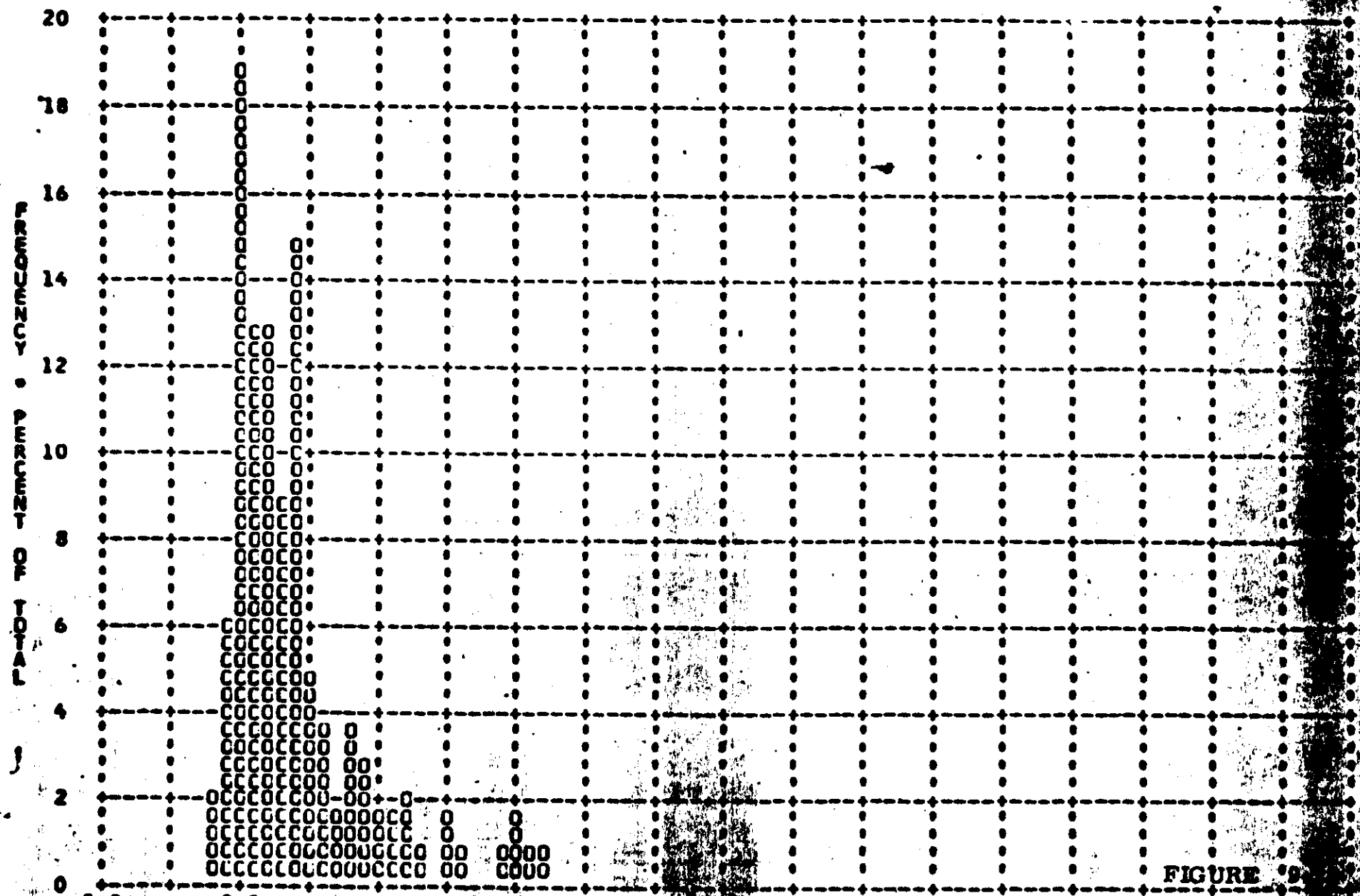


FIGURE 9

MISSION • 1022-2 • INSTR • FRWD • 10-01-65 PLOT OF D MAX • TERRAIN • PROCESSING • FULL

ARITH MEAN • 1.41 • MEDIAN • 1.40 • STD DEV • 0.34 • RANGE • 0.78 TO 2.65 WITH 152 SAMPLES

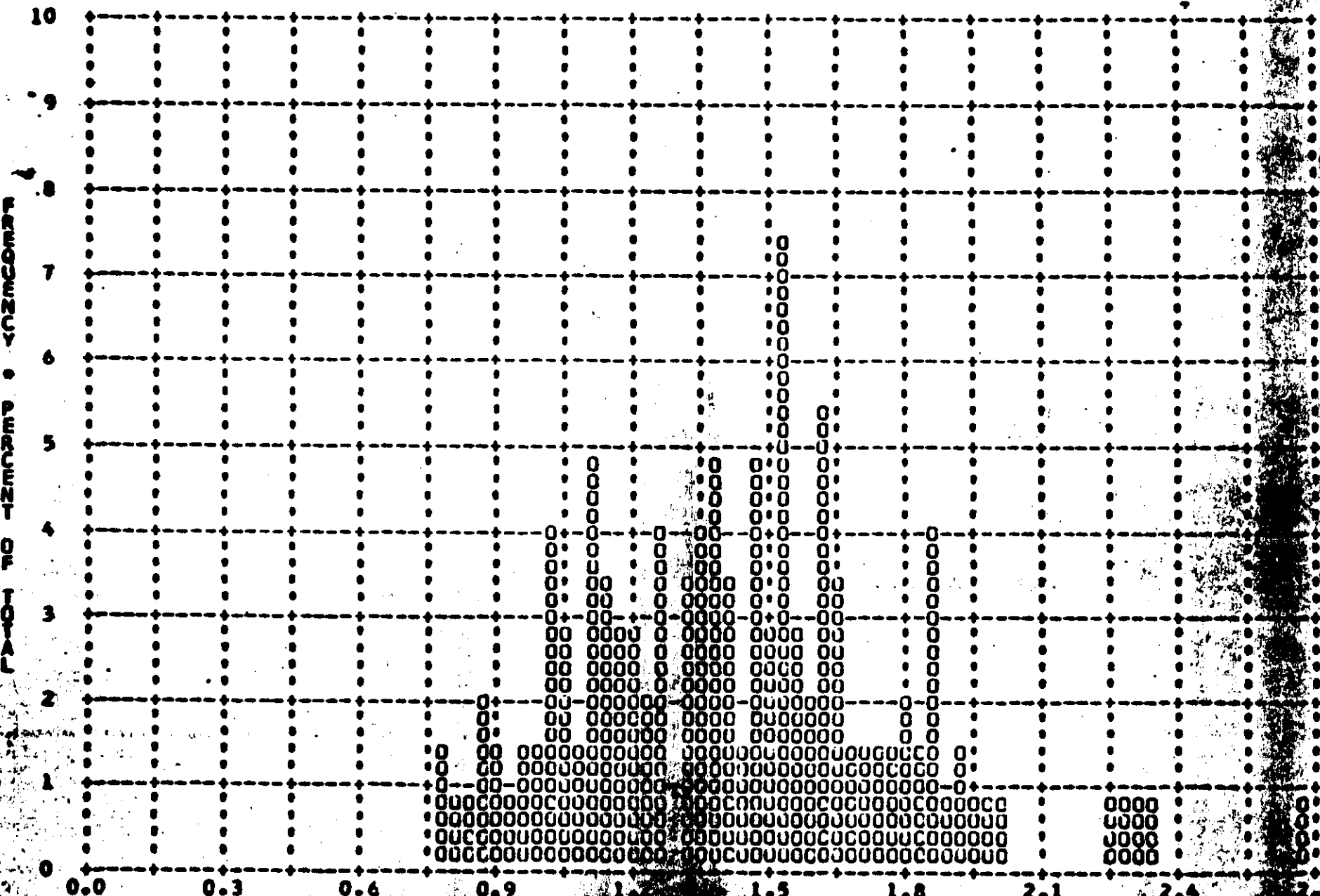


FIGURE 9-2

MISSION • 1022-2 • INSTR • FRWD • 10-01-65 PLOT OF D MAX • CLOUD • PROCESSING • FULL

ARITH MEAN • 2.25 • MEDIAN • 2.30 • STD DEV • 0.16 • RANGE • 1.30 TO 2.45 WITH 148 SAMPLES

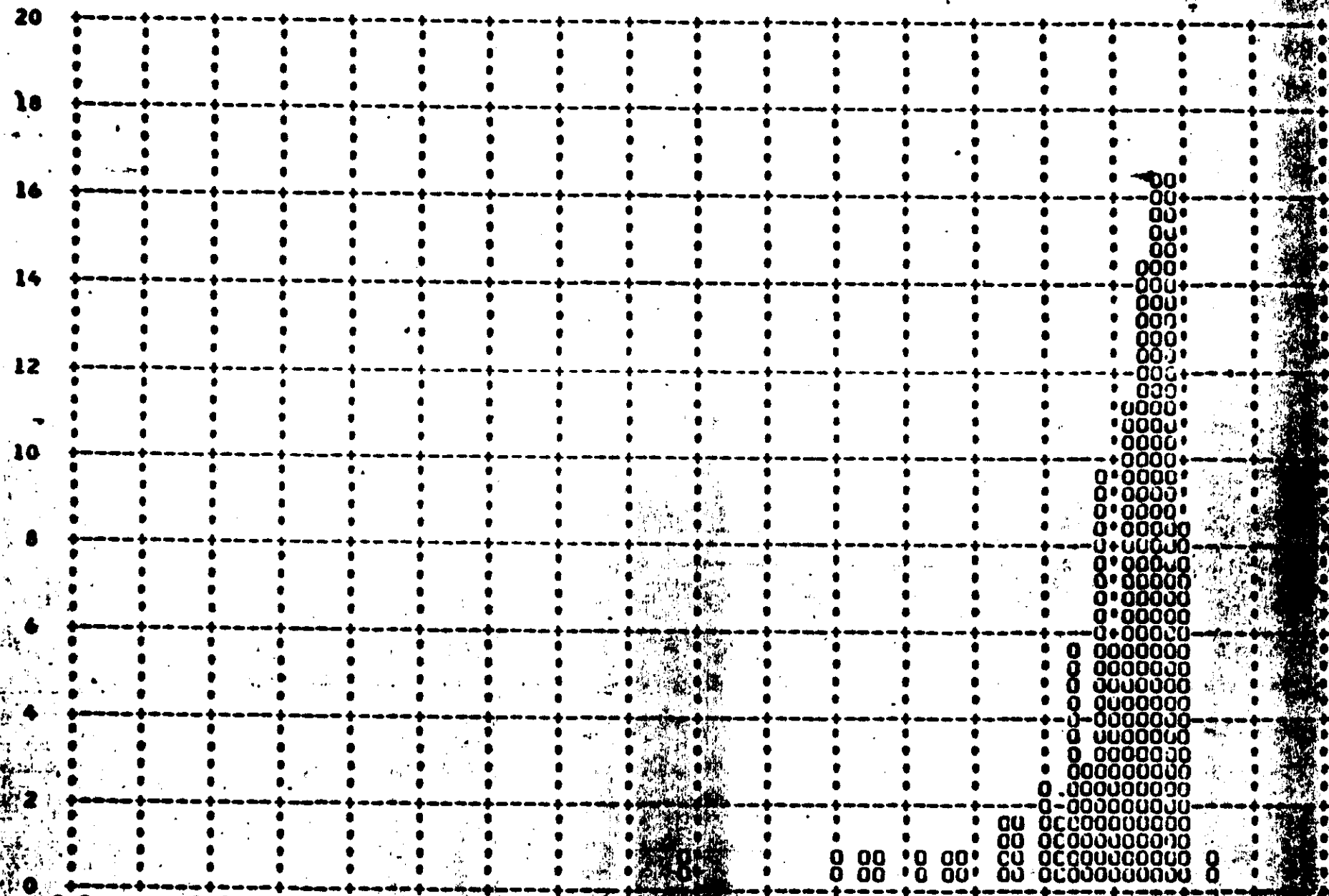


FIGURE 9-24

MISSION • 1022-2 • INSTR • FRWD • 10-01-65 PLOT OF D MIN • TERRAIN • PROCESSING • ALL LEVELS

ARITH MEAN • 0.39 • MEDIAN • 0.35 • STD DEV • 0.15 • RANGE • 0.20 TO 0.99 WITH 265 SAMPLES

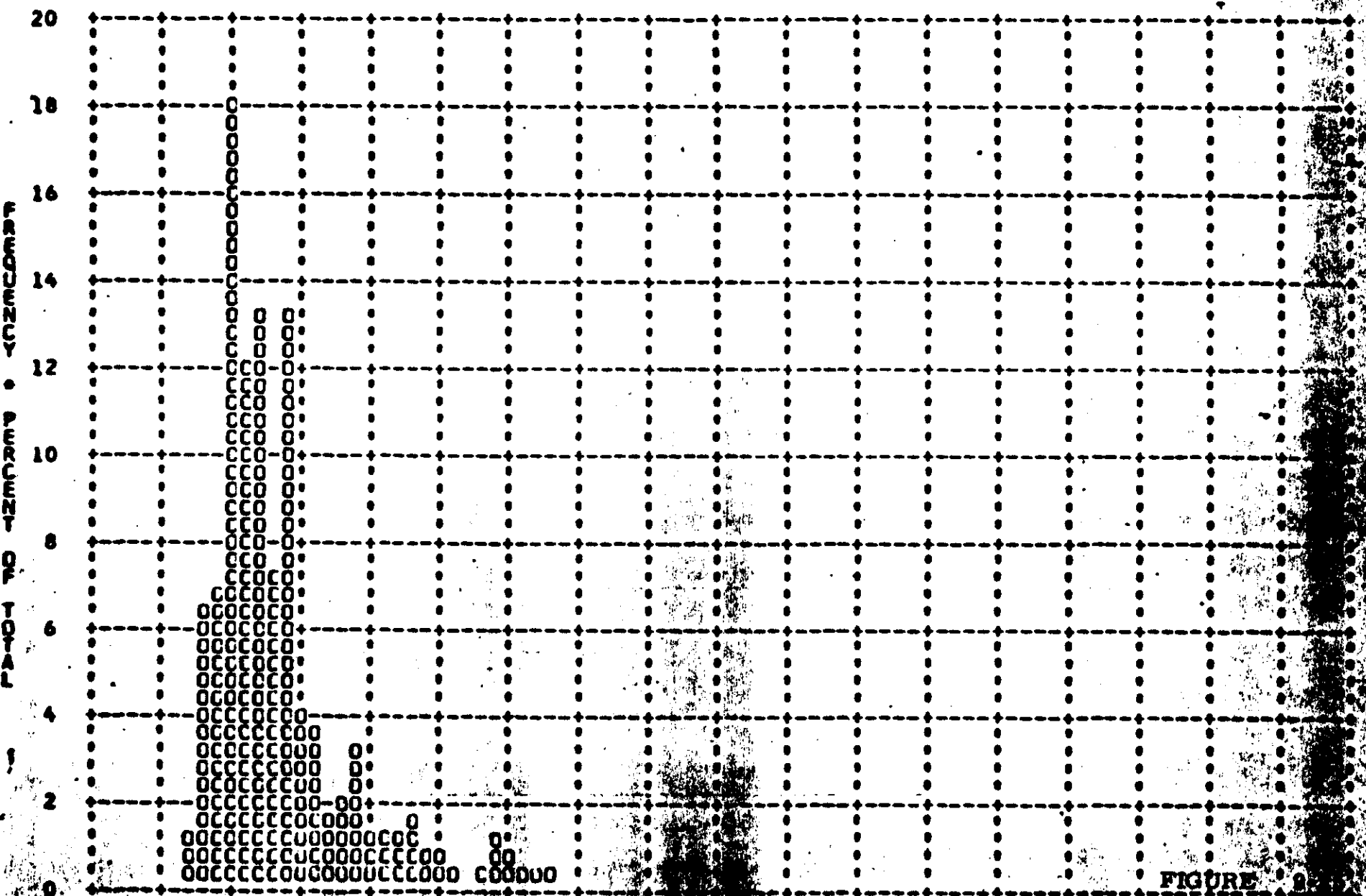


FIGURE 9

MISSION • 1022-2 • INSTR • FRWD • 10-01-65 PLOT OF D MAX • TERRAIN • PROCESSING • ALL LEVELS

ARITH MEAN • 1.45 • MEDIAN • 1.45 • STD DEV • 0.35 • RANGE • 0.62 TO 2.65 WITH 265 SAMPLES

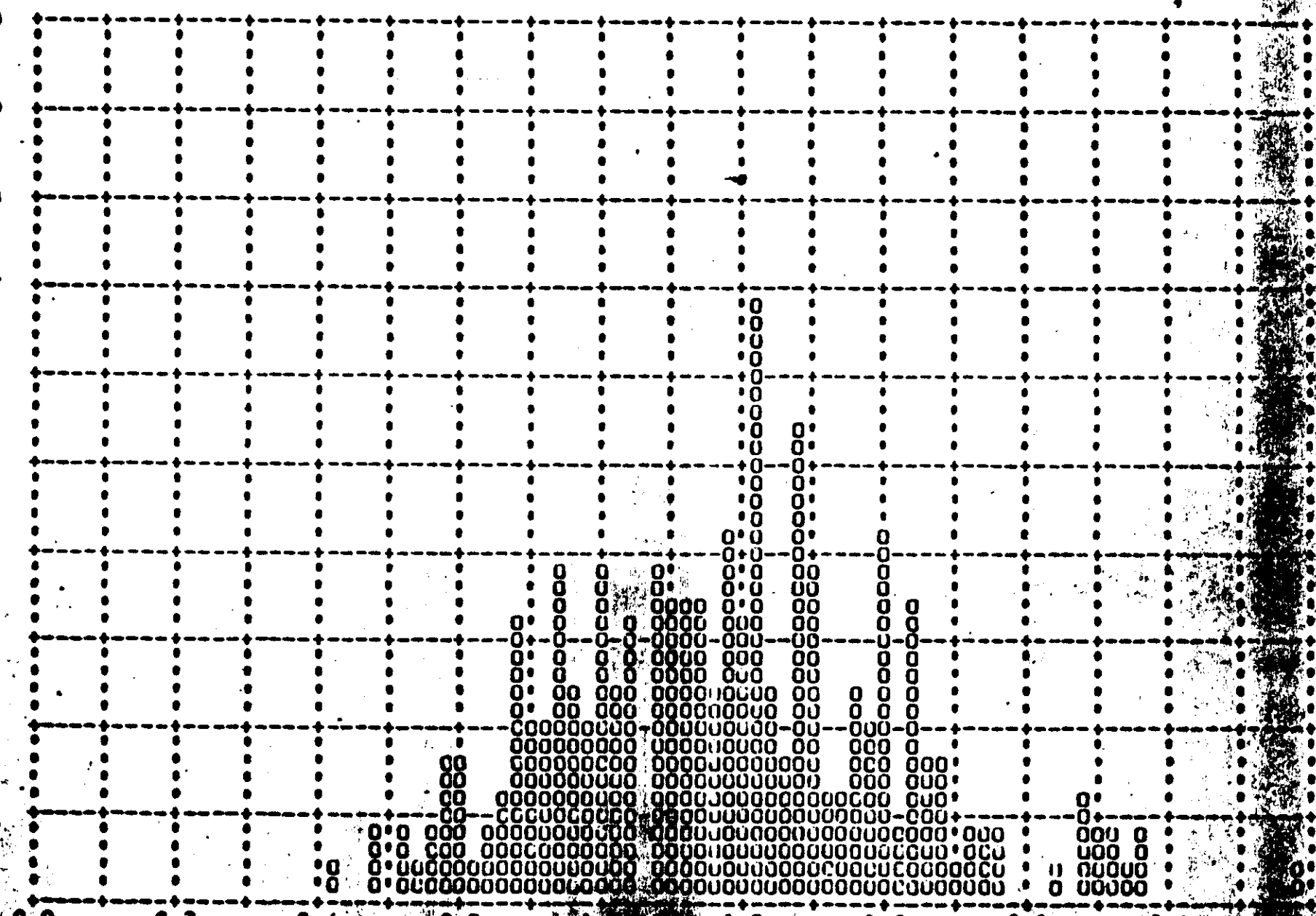


FIGURE 9-

MISSION • 1022-2 • INSTR • FRWD • 10-01-65 PLOT OF U MAX • CLOUD • PROCESSING • ALL LEVELS

ARITH MEAN • 2.23 • MEDIAN • 2.28 • STD DEV • 0.17 • RANGE • 1.16 TO 2.45 WITH 260 SAMPLES

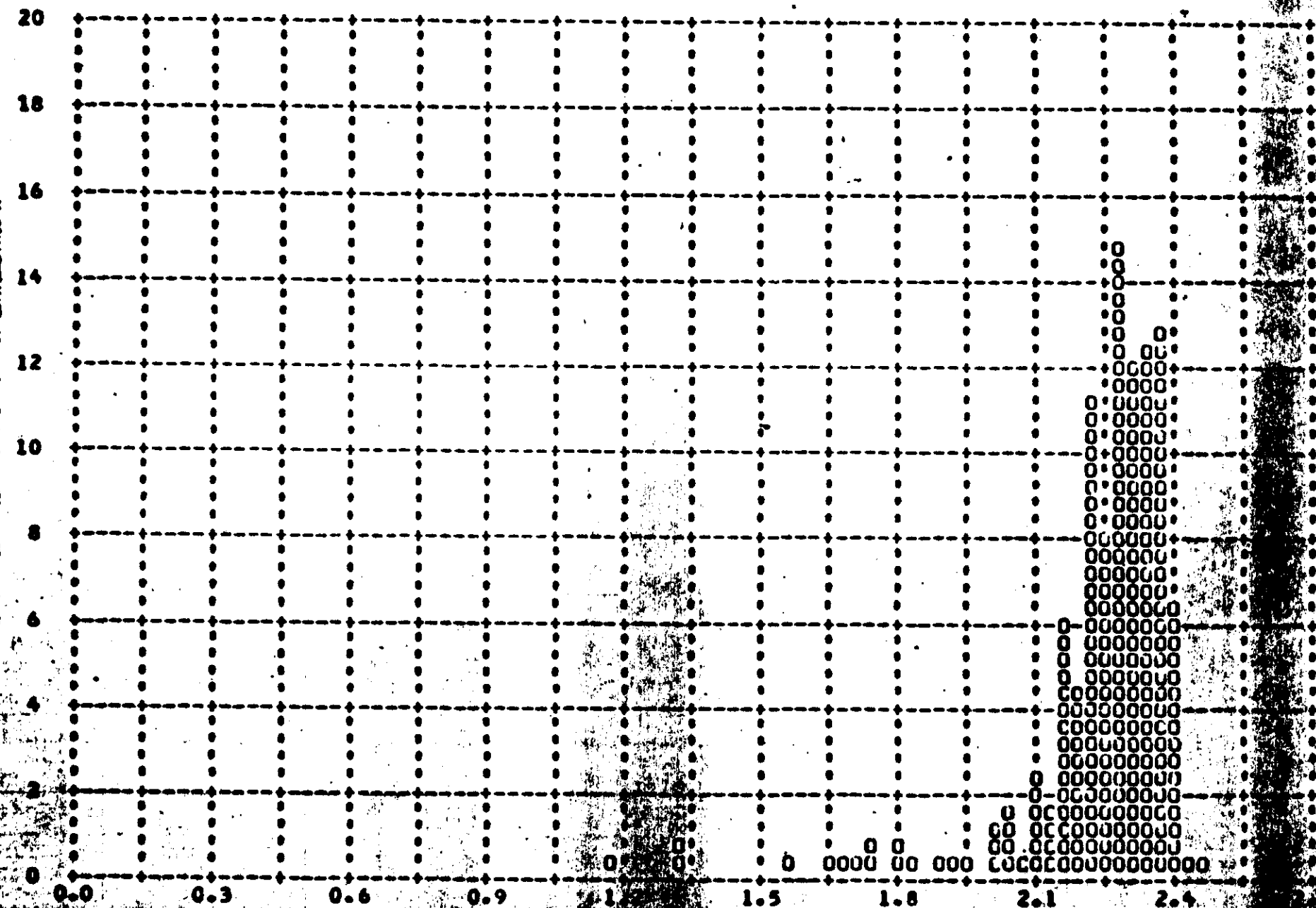


FIGURE 9-27

MISSION • 1022-2 • INSTRUMENT • AFT • 10-01-69 • 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	1	0	0	0	0	0	1	0	0
0.22	0	0	0	1	0	0	0	0	0	1	0	0
0.23	0	0	0	0	0	0	1	0	0	1	0	0
0.24	0	0	0	5	0	0	0	0	0	6	0	0
0.25	0	0	0	3	0	0	0	0	0	3	0	0
0.26	0	0	0	4	0	0	0	0	0	4	0	0
0.27	0	0	0	2	0	0	0	0	0	2	0	0
0.28	0	0	0	3	0	0	0	0	0	3	0	0
0.29	0	0	0	1	0	0	0	0	0	1	0	0
0.30	0	0	0	6	0	0	1	0	0	7	0	0
0.31	0	0	0	4	0	0	0	0	0	4	0	0
0.32	0	0	0	5	0	0	1	0	0	6	0	0
0.33	0	0	0	4	0	0	3	0	0	7	0	0
0.34	0	0	0	2	0	0	2	0	0	4	0	0
0.35	0	0	0	4	0	0	1	0	0	5	0	0
0.36	0	0	0	9	0	0	5	0	0	14	0	0
0.37	0	0	0	6	0	0	4	0	0	10	0	0
0.38	0	0	0	4	0	0	8	0	0	12	0	0
0.39	0	0	0	3	0	0	2	0	0	5	0	0
0.40	0	0	0	11	0	0	2	0	0	13	0	0
0.41	0	0	0	2	0	0	6	0	0	8	0	0
0.42	0	0	0	8	0	0	9	0	0	17	0	0
0.43	0	0	0	1	0	0	1	0	0	2	0	0
0.44	0	0	0	4	0	0	6	0	0	10	0	0
0.45	0	0	0	5	0	0	6	0	0	11	0	0
0.46	0	0	0	3	0	0	4	0	0	7	0	0
0.47	0	0	0	1	0	0	5	0	0	6	0	0
0.48	0	0	0	1	0	0	2	0	0	3	0	0
0.49	0	0	0	4	1	0	12	0	0	16	1	0
0.50	0	0	0	110	1	0	82	0	0	192	1	0
SUBTOTAL												

TABLE 9-8

~~TOP SECRET~~ [redacted]

MISSION • 1022-2 • INSTRUMENT • AFT 10-01-65 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	1	1	0	2	0	0	3	1	0
0.52	0	0	0	3	0	0	3	0	0	6	1	0
0.53	0	0	0	1	0	0	0	0	0	1	0	0
0.54	0	0	0	0	0	0	2	0	0	2	0	0
0.55	0	0	0	5	1	0	2	0	0	7	1	0
0.56	0	0	0	1	0	0	1	0	0	2	0	0
0.57	0	0	0	1	0	0	1	0	0	2	0	0
0.58	0	0	0	1	0	0	2	0	0	3	0	0
0.59	0	0	0	0	0	0	1	0	0	1	0	0
0.60	0	0	0	1	0	0	1	0	0	2	0	0
0.61	0	0	0	0	0	0	1	0	0	1	0	0
0.62	0	0	0	1	0	0	1	0	0	2	0	0
0.63	0	0	0	0	0	0	2	0	0	2	0	0
0.64	0	0	0	3	0	0	4	0	0	7	0	0
0.65	0	0	0	1	0	0	1	0	0	2	0	0
0.66	0	0	0	1	0	0	2	0	0	3	0	0
0.67	0	0	0	2	0	0	2	0	0	4	0	0
0.68	0	0	0	2	0	0	2	0	0	4	0	0
0.69	0	0	0	1	0	0	0	0	0	1	0	0
0.70	0	0	0	2	0	0	1	0	0	3	0	0
0.71	0	0	0	1	0	0	1	0	0	2	0	0
0.72	0	0	0	1	0	0	1	0	0	2	0	0
0.73	0	0	0	0	0	0	1	0	0	1	0	0
0.74	0	0	0	2	0	0	1	0	0	3	0	0
0.75	0	0	0	0	0	0	1	0	0	1	0	0
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	0	0	0	0	0	0
0.79	0	0	0	0	0	0	0	0	0	0	0	0
0.80	0	0	0	1	0	0	2	0	0	3	0	0
0.81	0	0	0	0	0	0	0	0	0	0	0	0
0.82	0	0	0	0	0	0	1	0	0	1	0	0
0.83	0	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
0.85	0	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
0.87	0	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
0.89	0	0	0	0	0	0	0	0	0	0	0	0
0.90	0	0	0	0	0	0	1	0	0	1	0	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	2	0	0
0.93	0	0	0	0	0	0	1	0	0	1	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	1	0	0	1	0	0
0.97	0	0	0	0	0	0	0	0	0	0	0	0
0.98	0	0	0	0	0	0	2	0	0	2	0	0
0.99	0	0	0	1	0	0	0	0	0	1	0	0
1.00	0	0	0	1	0	0	1	0	0	2	0	0
SUBTOTAL	0	0	0	33	7	0	44	5	0	77	12	0

~~TOP SECRET~~ [redacted]

TABLE 9-8

MISSION • 1022-2 • INSTRUMENT • AFT 10-01-65 DENSITY FREQ DISTR

DENSITY VALUE	PRIMARY MIN	PRIMARY MAX	PRIMARY LIM	INTERMEDIATE MIN	INTERMEDIATE MAX	INTERMEDIATE LIM	PULL MIN	PULL MAX	PULL 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	0	1	0	0	1	0
1.03	0	0	0	0	1	0	0	1	0	0	2	0
1.04	0	0	0	0	3	0	0	9	0	0	1	0
1.05	0	0	0	0	0	0	0	3	0	0	3	0
1.06	0	0	0	0	1	0	0	1	0	0	3	0
1.07	0	0	0	0	0	0	0	1	0	0	1	0
1.08	0	0	0	0	2	0	0	0	0	0	2	0
1.09	0	0	0	0	0	0	0	1	0	0	3	0
1.10	0	0	0	0	2	0	0	0	0	0	3	0
1.11	0	0	0	0	0	0	0	1	0	0	3	0
1.12	0	0	0	0	2	0	0	1	0	0	3	0
1.13	0	0	0	0	0	0	0	1	0	0	3	0
1.14	0	0	0	0	1	0	0	1	0	0	2	0
1.15	0	0	0	0	1	0	0	1	0	0	1	0
1.16	0	0	0	0	0	0	0	0	0	0	0	0
1.17	0	0	0	0	1	0	0	0	0	0	1	0
1.18	0	0	0	0	0	0	0	2	0	0	3	0
1.19	0	0	0	0	4	0	0	2	0	0	6	0
1.20	0	0	0	0	0	0	0	2	0	0	6	0
1.21	0	0	0	0	2	0	0	0	0	0	2	0
1.22	0	0	0	1	1	0	0	0	0	1	1	0
1.23	0	0	0	0	0	0	0	0	0	0	0	0
1.24	0	0	0	0	2	0	0	0	0	0	2	0
1.25	0	0	0	0	0	0	0	5	0	0	7	0
1.26	0	0	0	0	1	0	0	0	0	0	1	0
1.27	0	0	0	0	2	0	0	3	0	0	5	0
1.28	0	0	0	0	0	0	0	0	0	0	0	0
1.29	0	0	0	0	3	0	0	9	0	0	12	0
1.30	0	0	0	0	0	0	0	0	0	1	0	0
1.31	0	0	0	0	1	0	0	3	0	0	3	0
1.32	0	0	0	0	0	0	0	0	0	0	0	0
1.33	0	0	0	0	1	0	0	4	0	0	5	0
1.34	0	0	0	0	4	0	0	3	0	0	7	0
1.35	0	0	0	0	1	0	0	0	0	0	1	0
1.36	0	0	0	0	1	0	0	1	0	0	2	0
1.37	0	0	0	0	1	0	0	3	0	0	4	0
1.38	0	0	0	0	1	0	0	0	0	0	1	0
1.39	0	0	0	0	1	0	0	3	0	0	4	0
1.40	0	0	0	0	3	0	0	0	0	0	3	0
1.41	0	0	0	0	0	0	0	1	0	0	1	0
1.42	0	0	0	0	2	0	0	0	0	0	2	0
1.43	0	0	0	0	1	0	0	3	0	0	4	0
1.44	0	0	0	0	2	0	0	1	0	0	3	0
1.45	0	0	0	0	2	0	0	2	0	0	4	0
1.46	0	0	0	0	4	0	0	2	0	0	6	0
1.47	0	0	0	0	0	0	0	0	0	0	0	0
1.48	0	0	0	0	0	0	0	0	0	0	0	0
1.49	0	0	0	0	1	0	0	0	0	0	1	0
1.50	0	0	0	0	1	0	0	0	0	0	1	0
SUBTOTAL	0	0	0	2	54	0	0	65	1	2	119	1

TABLE 9-8

MISSION • 1022-2 • INSTRUMENT • AFT 10-01-65 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	0	0	1	0
1.52	0	0	0	0	2	0	0	1	0	0	3	0
1.53	0	0	0	0	0	0	0	2	0	0	2	0
1.54	0	0	0	0	1	0	0	2	0	0	5	0
1.55	0	0	0	0	2	0	0	3	0	0	5	0
1.56	0	0	0	0	0	0	0	3	0	0	0	0
1.57	0	0	0	0	1	0	0	2	0	0	4	0
1.58	0	0	0	0	0	0	0	2	0	0	1	0
1.59	0	0	0	0	2	0	0	1	0	0	2	0
1.60	0	0	0	0	1	0	0	2	0	0	7	0
1.61	0	0	0	0	5	0	0	1	0	0	2	0
1.62	0	0	0	0	3	0	0	2	0	0	5	0
1.63	0	0	0	0	3	0	0	2	0	0	2	0
1.64	0	0	0	0	2	0	0	0	0	0	4	0
1.65	0	0	0	0	3	0	0	1	0	0	1	0
1.66	0	0	0	0	1	0	0	2	0	0	4	0
1.67	0	0	0	0	4	0	0	1	0	0	5	0
1.68	0	0	0	0	0	0	0	2	0	0	2	0
1.69	0	0	0	0	3	0	0	0	0	0	3	0
1.70	0	0	0	0	1	0	0	1	0	0	2	0
1.71	0	0	0	0	1	0	0	0	0	0	1	0
1.72	0	0	0	0	5	0	0	0	0	0	5	0
1.73	0	0	0	0	3	0	0	0	0	0	3	0
1.74	0	0	0	0	0	0	0	0	0	0	0	0
1.75	0	0	0	0	5	0	0	0	0	0	5	0
1.76	0	0	0	0	3	0	0	0	0	0	3	0
1.77	0	0	0	0	0	0	0	0	0	0	0	0
1.78	0	0	0	0	4	0	0	0	0	0	4	0
1.79	0	0	0	0	0	0	0	0	0	0	0	0
1.80	0	0	0	0	3	0	0	0	0	0	3	0
1.81	0	0	0	0	1	0	0	0	0	0	1	0
1.82	0	0	0	0	3	0	0	0	0	0	3	0
1.83	0	0	0	0	1	0	0	0	0	0	1	0
1.84	0	0	0	0	2	0	0	0	0	0	2	0
1.85	0	0	0	0	0	0	0	0	0	0	0	0
1.86	0	0	0	0	1	0	0	0	0	0	1	0
1.87	0	0	0	0	0	0	0	0	0	0	0	0
1.88	0	0	0	0	1	0	0	0	0	0	1	0
1.89	0	0	0	0	0	0	0	0	0	0	0	0
1.90	0	0	0	0	1	0	0	0	0	0	1	0
1.91	0	0	0	0	0	0	0	0	0	0	0	0
1.92	0	0	0	0	0	0	0	0	0	0	0	0
1.93	0	0	0	0	0	0	0	0	0	0	0	0
1.94	0	0	0	0	0	0	0	0	0	0	0	0
1.95	0	0	0	0	0	0	0	0	0	0	0	0
1.96	0	0	0	0	0	0	0	0	0	0	0	0
1.97	0	0	0	0	0	0	0	0	0	0	0	0
1.98	0	0	0	0	0	0	0	0	0	0	0	0
1.99	0	0	0	0	0	0	0	0	0	0	0	0
2.00	0	0	0	0	2	1	0	0	0	0	2	1
SUBTOTAL	0	0	0	0	76	11	0	52	2	0	128	13

TABLE 9-8

MISSION • 1022-2 • INSTRUMENT • AFT 10-01-65 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	0	0	0	0
2.03	0	0	0	0	0	1	0	0	2	0	0	5
2.04	0	0	0	0	0	1	0	0	1	0	0	3
2.05	0	0	0	0	0	2	0	0	0	0	0	7
2.06	0	0	0	0	0	0	0	0	0	0	0	0
2.07	0	0	0	0	0	1	0	0	0	0	0	3
2.08	0	0	0	0	0	0	0	0	0	0	0	0
2.09	0	0	0	0	0	0	0	0	1	0	0	4
2.10	0	0	0	0	0	0	0	0	0	0	0	0
2.11	0	0	0	0	0	0	0	0	0	0	0	2
2.12	0	0	0	0	0	0	0	0	0	0	0	2
2.13	0	0	0	0	0	0	0	0	1	0	0	3
2.14	0	0	0	0	0	0	0	0	0	0	0	0
2.15	0	0	0	0	0	1	0	0	2	0	0	7
2.16	0	0	0	0	0	1	0	0	0	0	0	1
2.17	0	0	0	0	0	0	0	0	1	0	0	2
2.18	0	0	0	0	0	0	0	0	0	0	0	0
2.19	0	0	0	0	0	1	0	0	1	0	0	5
2.20	0	0	0	0	0	1	0	0	0	0	0	1
2.21	0	0	0	0	0	0	0	0	0	0	0	0
2.22	0	0	0	0	0	0	0	0	0	0	0	1
2.23	0	0	0	0	0	0	0	0	0	0	0	0
2.24	0	0	0	0	0	0	0	0	0	0	0	1
2.25	0	0	0	0	0	0	0	0	0	0	0	0
2.26	0	0	0	0	0	0	0	0	0	0	0	0
2.27	0	0	0	0	0	0	0	0	0	0	0	0
2.28	0	0	0	0	0	0	0	0	0	0	0	0
2.29	0	0	0	0	0	0	0	0	0	0	0	0
2.30	0	0	0	0	0	1	0	0	0	0	0	1
2.31	0	0	0	0	0	0	0	0	0	0	0	0
2.32	0	0	0	0	0	1	0	0	1	0	0	1
2.33	0	0	0	0	0	0	0	0	0	0	0	0
2.34	0	0	0	0	0	0	0	0	0	0	0	0
2.35	0	0	0	0	0	0	0	0	0	0	0	0
2.36	0	0	0	0	0	0	0	0	0	0	0	0
2.37	0	0	0	0	0	0	0	0	0	0	0	0
2.38	0	0	0	0	0	0	0	0	0	0	0	0
2.39	0	0	0	0	0	0	0	0	0	0	0	0
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	7	128	0	4	121	0	11	249

TABLE 9-8

MISSION • 1022-2 • INSTRUMENT • AFT 10-01-65 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	145	145	139	126	126	124	271	271	263

MISSION 1022-2 INSTR - AFT 10-01-65 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	145	0 PC	46 PC	50 PC	3 PC	1 PC
FULL	126	22 PC	0 PC	73 PC	5 PC	0 PC
ALL LEVELS	271	10 PC	25 PC	61 PC	4 PC	0 PC

PROCESS LEVEL	BASE + FOG	UNDER EXPOSED	UNDER PROCESSED	CURRECT 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

TABLE 9-8

MISSION • 1022-2 • INSTR • AFT • 10-01-65 PLOT OF D MIN • TERRAIN • PROCESSING • INTERMEDIATE

ARITH MEAN • 0.45 • MEDIAN • 0.40 • STD DEV • 0.19 • RANGE • 0.21 TO 1.40 WITH 145 SAMPLES

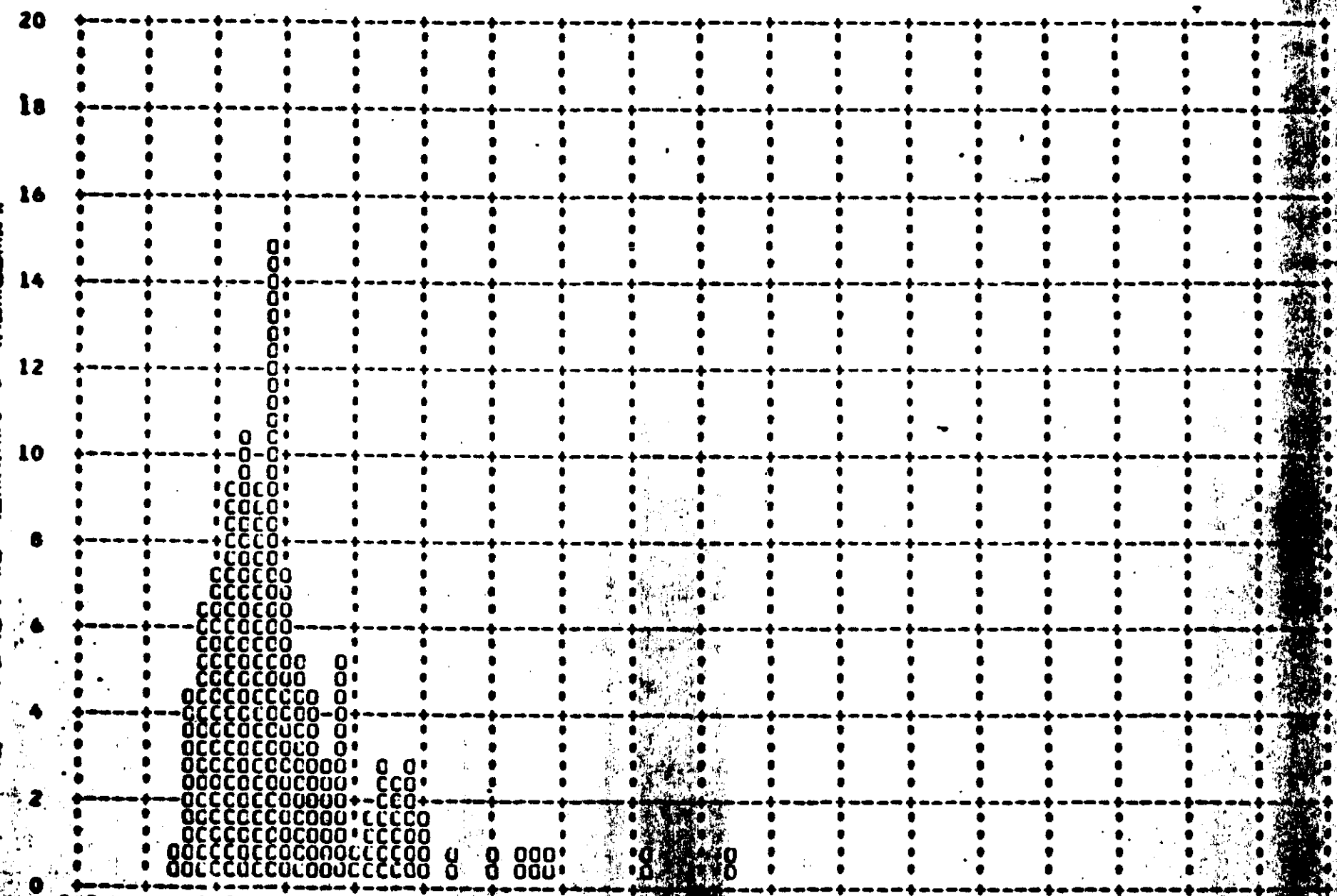


FIGURE 9-28

MISSION • 1022-2 • INSTR • AFT • 10-01-65 PLOT OF D MAX • TERRAIN • PROCESSING • INTERMEDIATE

ARITH MEAN • 1.53 • MEDIAN • 1.61 • STD DEV • 0.34 • RANGE • 0.50 TO 2.32 WITH 145 SAMPLES

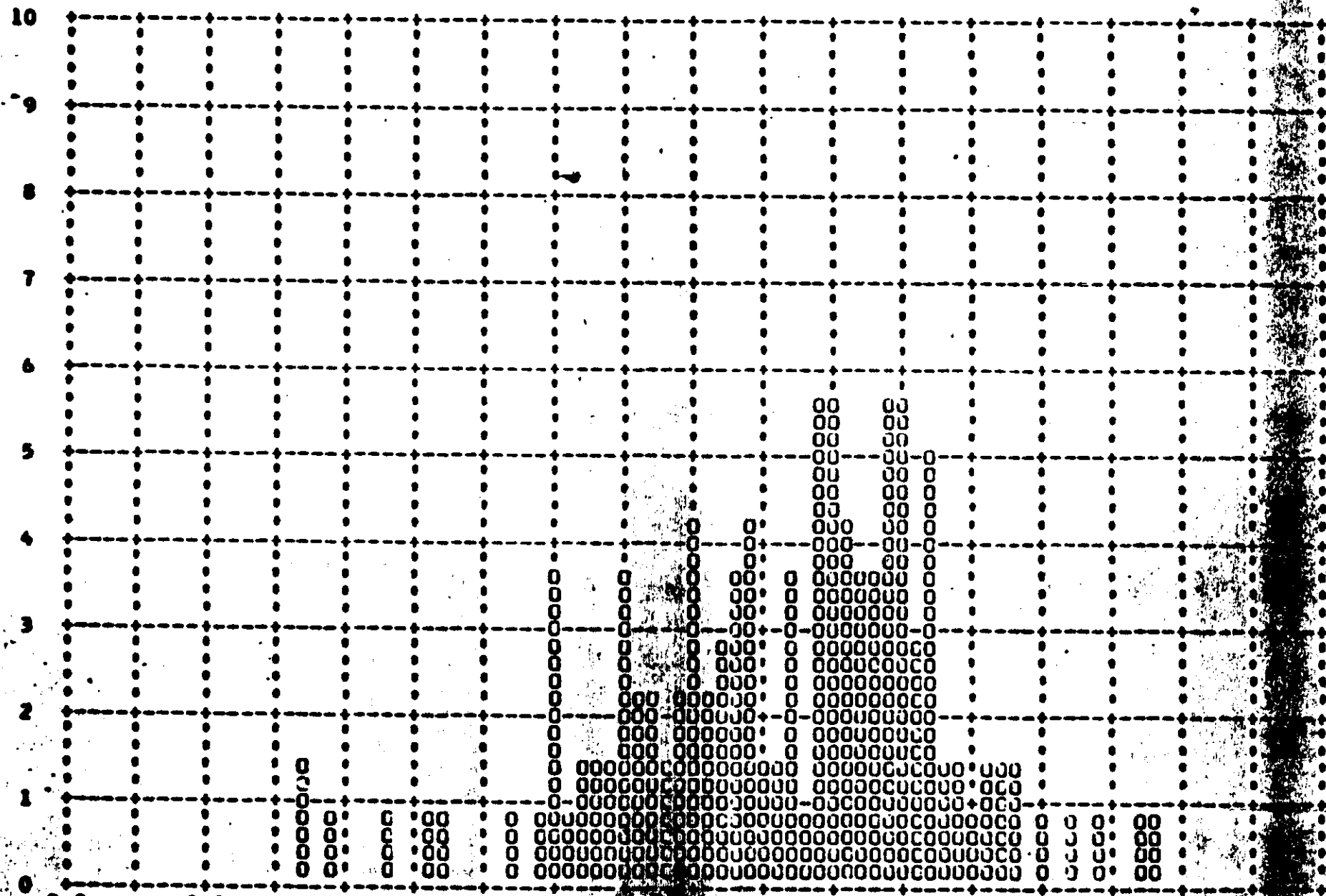


FIGURE 9

MISSION • 1022-2 • INSTR • AFT • 10-01-65 PLOT OF D MAX • CLOUD • PROCESSING • INTERMEDIATE

ARITH MEAN • 2.22 • MEDIAN • 2.24 • STD DEV • 0.14 • RANGE • 1.73 TO 2.43 WITH 139 SAMPLES

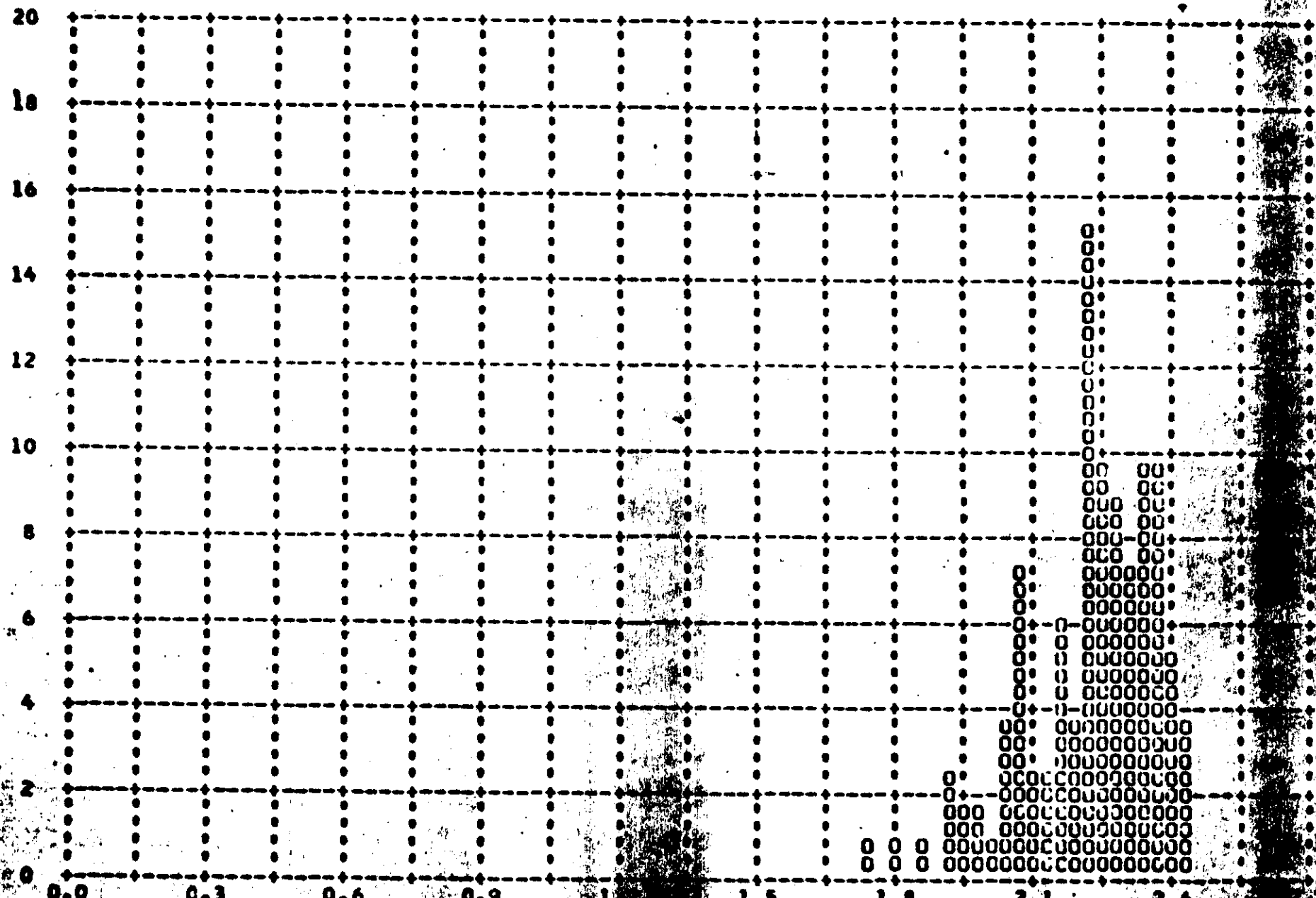


FIGURE 9-

MISSION • 1022-2 • INSTR • AFT • 10-01-65 PLOT OF D MIN • TERRAIN • PROCESSING • FULL

ARITH MEAN • 0.51 • MEDIAN • 0.48 • STD DEV • 0.16 • RANGE • 0.24 TO 1.00 WITH 126 SAMPLES

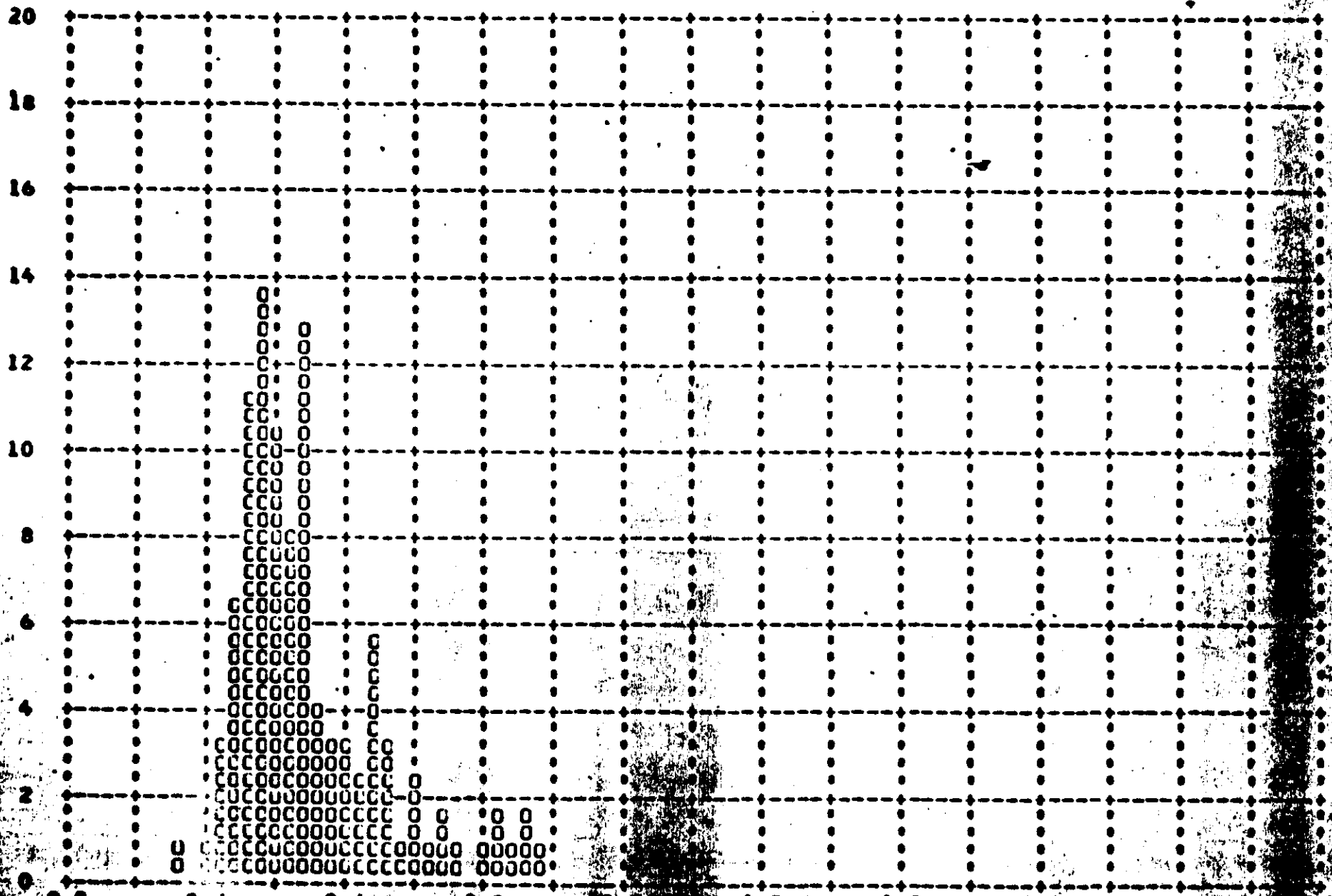


FIGURE D-11

MISSION • 1022-2 • INSTR • AFT • 10-01-65 PLOT OF D MAX • TERRAIN • PROCESSING • FULL

ARITH MEAN • 1.48 • MEDIAN • 1.46 • STD DEV • 0.29 • RANGE • 0.75 TO 2.32 WITH 126 SAMPLES

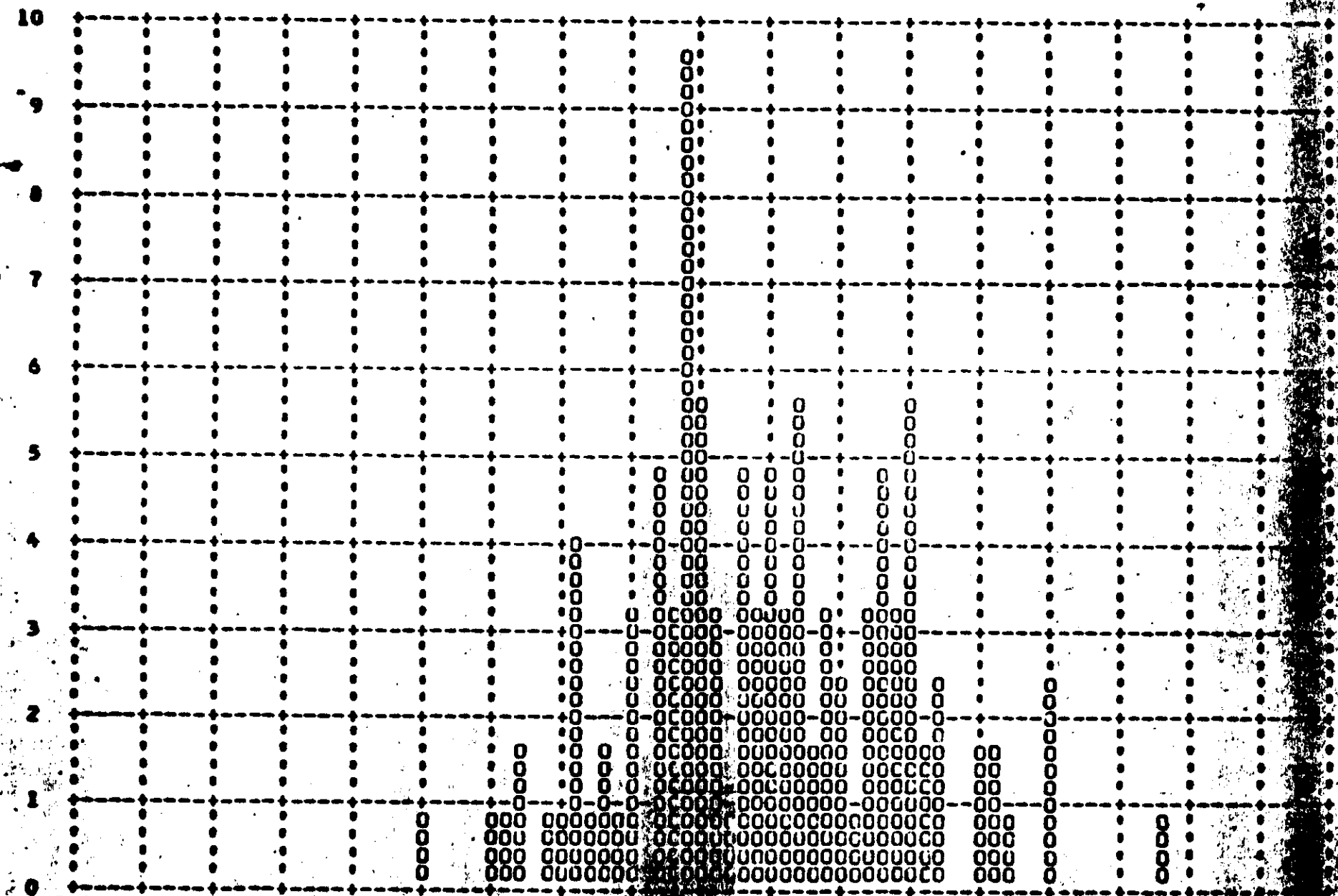


FIGURE 9-32

MISSION • 1022-2 • INSTR • AFT • 10-01-65 PLOT OF D MAX • CLOUD • PROCESSING • FULL

ARITH MEAN • 2.30 • MEDIAN • 2.32 • STD DEV • 0.14 • RANGE • 1.45 TO 2.49 WITH 124 SAMPLES

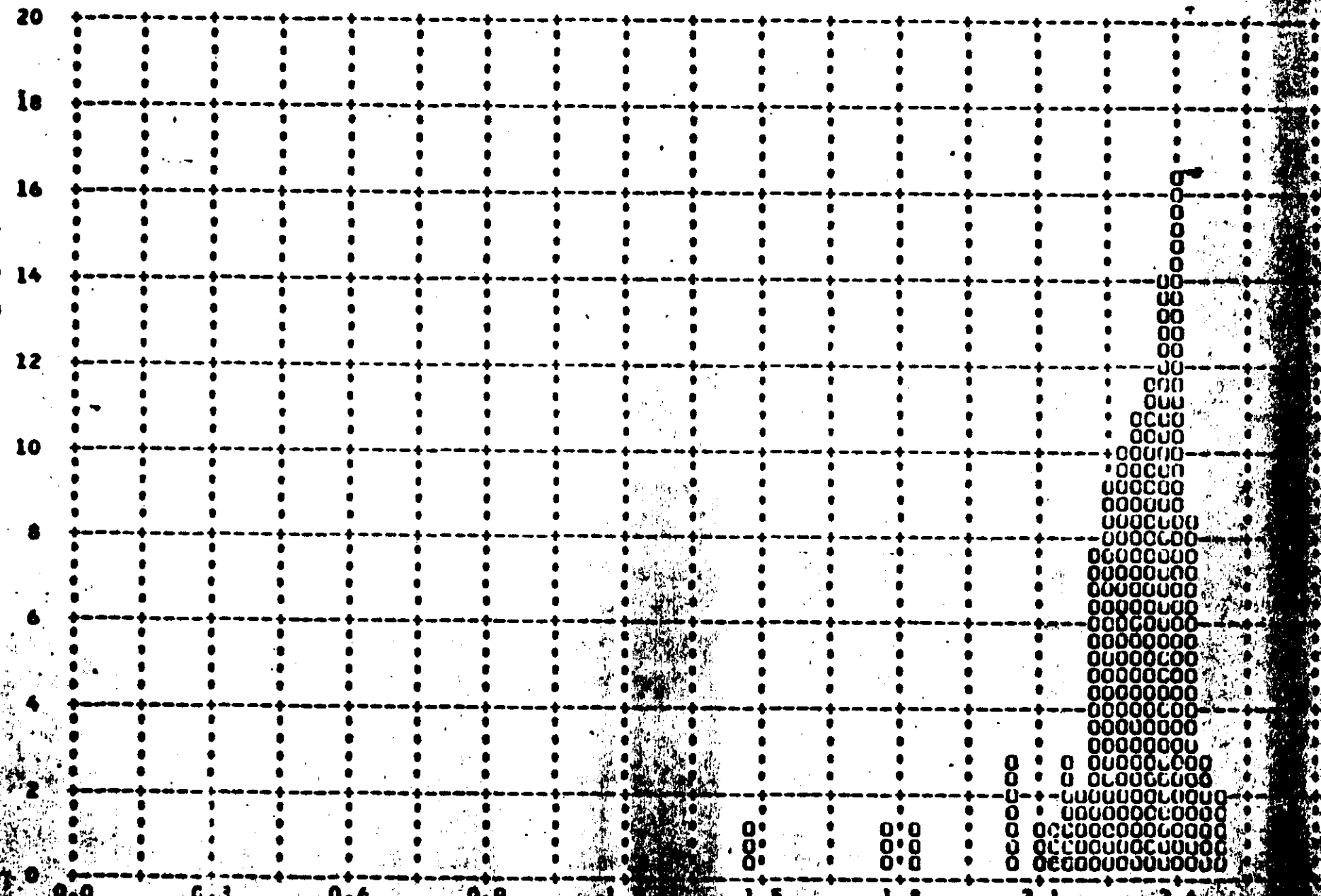


FIGURE 9-33

MISSION • 1022-2 • INSTR • AFT • 10-01-65 PLOT OF D MIN • TERRAIN • PROCESSING • ALL LEVELS

ARITH MEAN • 0.48 • MEDIAN • 0.44 • STD DEV • 0.18 • RANGE • 0.21 TO 1.40 WITH 271 SAMPLES

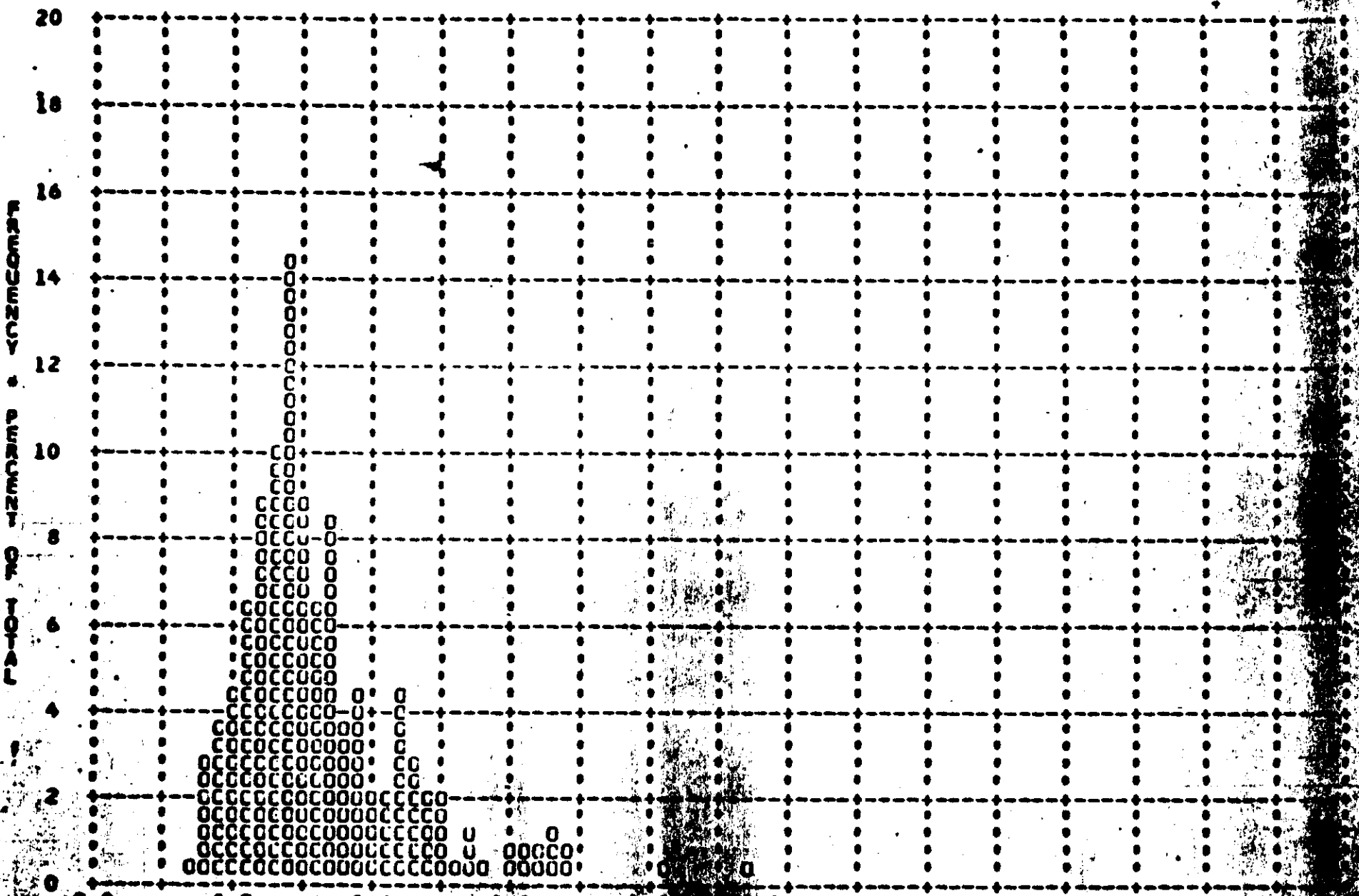


FIGURE 9-34

MISSION • 1022-2 • INSTR • AFT • 10-01-65 PLOT OF D MAX • TERRAIN • PROCESSING • ALL LEVELS

ARITH MEAN • 1.51 • MEDIAN • 1.52 • STD DEV • 0.32 • RANGE • 0.50 TO 2.32 WITH 271 SAMPLES

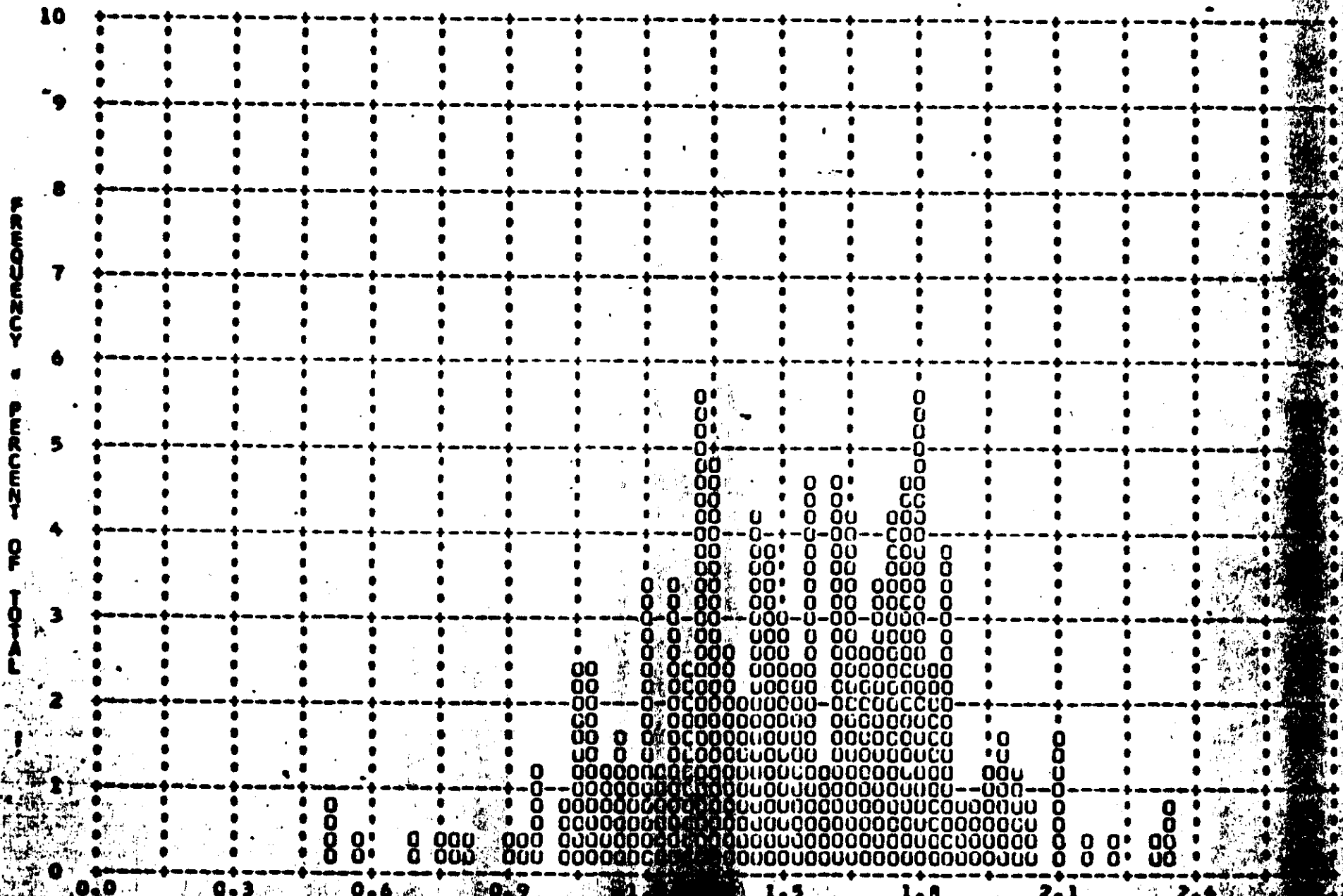


FIGURE 9-35

MISSION • 1022-2 • INSTR • AFT • 10-01-65 PLOT OF D MAX • CLOUD • PROCESSING • ALL LEVELS

ARITH MEAN • 2.25 • MEDIAN • 2.28 • STD DEV • 0.14 • RANGE • 1.45 TO 2.49 WITH 263 SAMPLES

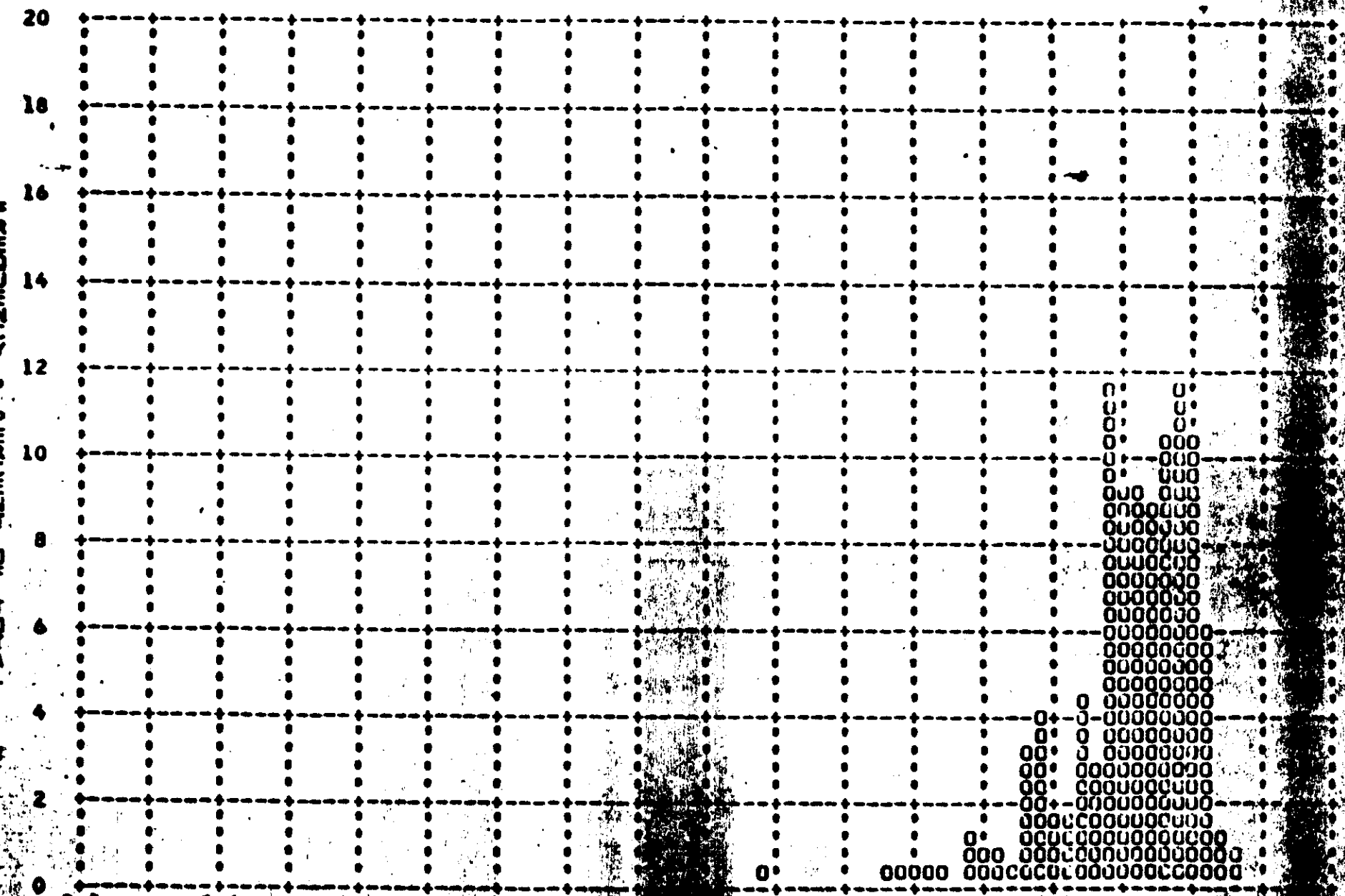


FIGURE 9-36

Table 9-9 shows the distribution of the minimum terrain density measurements that are within and outside of the desired control range of 0.40 to 0.90 density. The percentage of values below 0.30 density are tabulated below:

Mission	Camera	
1022-1	FWD	15.4
	AFT	2.9
1022-2	FWD	26.1
	AFT	7.7
Average		12.9

Analysis of the density data has shown some significant departures from the normal values observed from recent missions. The terrain and cloud maximum density values are within the nominal experience range however the terrain minimum density values are considerably lower particularly in the Fwd camera film.

The same slit width and filter combinations have been used on all panoramic cameras since Mission 1014. Missions 1014, 1015 an 1016 have not been used as a basis of comparison as they were all conducted within one month of the winter solstice and are not considered representative. Mission 1021 is not considered representative as it was a nose-forward mapping mission and was operated in an abnormal latitude band.

The data shows that approximately 22% of all the film was underprocessed and 20% was underexposed based on the criteria that all minimum density values should be 0.40 or greater. The percentage of underprocessed film is somewhat higher than experienced since Mission 1017, as can be seen in Table 18-3. The percentage of underexposed film, based on the 0.40 D criteria, is significantly higher than experienced since Mission 1017 and represents a marked increase over Mission 1020.

It is not likely that this major change was caused by improper calibration of the densitometers used to make the density measurements. The close agreement of the reported and computed processing percentages shows that the base plus fog measurements were correct. These values are within the same calibration range as the minimum density values hence it can be concluded that the measurements are correct.

Both Missions 1020 and 1022 were launched at essentially the same time of day and operated in similar bands of solar elevation and azimuth. As seen in Table 18-3, Mission 1020 density measurements indicate essentially no underexposure and approximately 18% underprocessing. The Mission 1020 density measurements show that the percentage of values below 0.30 density is approximately 3% which is within the normal experienced range. Mission 1022 shows an average of 12.9% of D min values below 0.3 density.

The predicted full processing level for the Fwd looking camera is in general a greater percentage than for the Aft camera. This bias condition will give rise to borderline D min values. Statistically the Fwd camera is inevitably going to produce more underexposed (.40 D min) frames than the Aft camera.

A further study is underway to evaluate the reported underexposure in relation to information content and the 0.40 D min density criteria. The present camera exposure has produced a high rating for information content.

MISSION 1022-1 INSTR - FRWD 10-01-65 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	113	4 PC	45 PC	44 PC	6 PC	1 PC
FULL	153	50 PC	0 PC	49 PC	1 PC	0 PC
ALL LEVELS	266	30 PC	19 PC	47 PC	3 PC	0 PC

MISSION 1022-1 INSTR - AFT 10-01-65 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	142	0 PC	28 PC	58 PC	12 PC	2 PC
FULL	128	9 PC	0 PC	87 PC	5 PC	0 PC
ALL LEVELS	270	4 PC	15 PC	71 PC	9 PC	1 PC

MISSION 1022-2 INSTR - FRWD 10-01-65 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	113	3 PC	65 PC	31 PC	1 PC	0 PC
FULL	152	60 PC	0 PC	39 PC	1 PC	0 PC
ALL LEVELS	265	35 PC	28 PC	35 PC	1 PC	0 PC

MISSION 1022-2 INSTR - AFT 10-01-65 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	145	0 PC	46 PC	50 PC	3 PC	1 PC
FULL	126	22 PC	0 PC	73 PC	5 PC	0 PC
ALL LEVELS	271	10 PC	25 PC	61 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

SECTION 10

PERFORMANCE MEASUREMENTS

The photography acquired during Missions 1022-1 and 1022-2 received an MIP rating of 85. A summary is tabulated below of the average visual RES values and MTF/AIM resolution values measured by AFSPPF and the MTF/AIM resolution values by [redacted] The microdensitometer slit used by both organizations was 1 micron wide and 80 microns long.

Mission	Camera	Visual RES	AFSPPF	[redacted]
1022-1	FWD	82	66	78
1022-1	AFT	88	83	100
1022-2	FWD	86	68	74
1022-2	AFT	87	92	99

The details of the measurement and computing techniques, targets measured and target locations are fully reported in the evaluation report published by AFSPPF and are therefore not included in this report.

SECTION 11

OBSERVED DATA

There were nine descending passes available for evaluation over U.S. territory. The best detail was comparable to the best of previous missions.

Pass D-1 over Alaska had 90% cloud cover and contained no cultural features.

Pass D-31 included targets at Fort Huachuca. The permanent targets were imaged near the end of the format in the Aft camera at a ground resolution of 20 feet along and cross track. The portable targets indicated a 16 and 12 foot along track resolution for the fore and aft cameras respectively. The cross track targets were not set up in time.

Pass D-47 showed that the Pahrump targets were not being maintained and the area is being used for storage.

Pass D-63 covered the San Francisco Bay area on a clear day. The suspension cables on the Bay Bridge (36" diameter) could be seen. At Travis AFB and NAS Moffett aircraft nacelles were prominent. A 12 inch, aluminum painted water pipe, crossing a 30 foot ditch was measured as 6 feet and a 42 inch pipe crossing Nimitz Freeway measured out as 9 feet. The Aft photography had finer detail and better contrast than the Fwd.

Pass D-94 covered the portable targets in the Fort Huachuca area. The Fwd camera recorded ground resolutions of 12 foot along track and 16 foot cross track. The Aft looking camera recorded the best resolutions of any Corona system with 8 foot along and cross track. This medium contrast target had a reported bar reflectance of 4% and background of 37%. The calculated image resolution was 131 lines per millimeter.

Pass D-110 over the fixed targets at Indian Springs, the resolution was 8 foot in the Aft camera and 12 foot in the Fwd camera.

Pass D-125 imaged the portable targets near Waco, Texas in the center of the format. The largest target (16 foot) was not resolved along track, but it was across track in the Fwd camera. The Slave camera resolved 16 foot and 12 foot ground resolution along and cross track respectively.

Pass D-126 was over northern California. The meteorological conditions were good for photography and both pan cameras produced equally excellent imagery. At Susanville cars and trucks were sharply defined.

[redacted]

SECTION 12

MISSION 1022-1 STELLAR-INDEX CAMERA

A. COMPONENT ASSIGNMENT

Component	Serial Number
Camera	D 65
Index Reseau	77
Stellar Reseau	70

B. CAMERA DATA AND FLIGHT SETTINGS

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

C. POST FLIGHT EVALUATION

This camera produced 389 frames of Stellar photography and 392 frames of Index photography. In general, the photography from both Stellar and Index cameras was satisfactory throughout Mission 1022-1.

Approximately 40% of each stellar format was affected by flare, however, there were satisfactory star images in such areas. At least 25 stars were imaged in any one stellar format. The fiducial marks bloomed throughout the mission but were usable. There was also fogging along both edges of the film intermittently throughout the mission. More than one-quarter of the formats contained elongated star images. Past analytical and empirical investigation has shown similar elongated star images to be related to dynamic unbalance of the pan instruments during the two second exposure.

The last 100 frames (approximately) of stellar film contain small emulsion cracks from edge to edge, and the last eight frames are severely fogged. These defects are characteristic of the current system configuration. The former defect is apparently due to the film having a set from dry and brittle emulsion near the supply spool hub and being moved over small radius rollers. The latter defect is often accompanied by abrasions and static discharge marks, which indicate that damage occurs from whipping of the loose end of the film at the takeup spool.

The index film showed a minor static discharge along the serial number edge for approximately 30 frames during the mission. Four defects were associated with the end of the roll of film: (1) the last 10 inches were severely fogged, (2) the last 25 frames have static discharge markings, (3) the last 25 frames have small emulsion cracks, and (4) the last four frames are severely abraded. The causes for these four defects are the same as those described in the preceding paragraph for the stellar film, except that the extent of static discharge suggests that contact with the film chute also produces static markings.

SECTION 13

MISSION 1022-2 STELLAR-INDEX CAMERA

A. COMPONENT ASSIGNMENT

Component	Serial Number
Camera	D 24
Index Reseau	24
Stellar Reseau	24

B. CAMERA DATA AND FLIGHT SETTINGS

Stellar Camera:

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

Index Camera:

Lens	39mm f/4.5
Exposure Time	1/500 second
Filter Type	Wratten 21
Film Type	Eastman Type 3400

C. POST FLIGHT EVALUATION

This camera produced 404 frames of Stellar photograph and 442 frames of Index photography. In general, the photography from both Stellar and Index cameras was satisfactory throughout Mission 1022-2.

Approximately 50% of each stellar format was affected by flare, however, there were satisfactory star images in such areas. Fifteen to twenty stars were imaged in any one stellar format. The fiducials bloomed throughout the mission but were usable. Three defects affecting the film but not degrading the operational value were noted. Edge fog appeared intermittently along the camera number edge throughout the mission. A plus density streak parallel

to the film edge and located between the format and the correlation light appeared continuously from before the first frame through frame 279. This streak was accompanied by an abrasion and a small amount of static discharge. The cause has not been identified although it is similar to a previous manufacturing defect. Finally, there were static discharges that appeared intermittently between frames, and originating near the bottom edge of the film. These marks appear to be the result of platen pressure.

Two defects are noted that are associated with the end of the film. These are edge-to-edge emulsion cracks in the last 125 frames, and abrasions in the last fifteen frames. The causes of these defects are discussed in the previous section on Stellar-Index Camera #D-65.

The elongated star images that appeared during Mission 1022-1, were also observed during Mission 1022-2.

The index film showed a number of minor defects which, in general, did not degrade the operational value of the product. Edge static was noted intermittently throughout the mission along the camera number edge. A plus density streak and abrasion located parallel to the film edge and between the format and the correlation lamp appeared for approximately the first half of the mission. A thin wavering minus density streak appeared across approximately the last fifty frames. Specific causes of these defects have not been determined.

The correlation lamp position showed crescent-shaped images due to a displacement of the lamp holder away from the reseau plate. The crescent image is formed by internally reflected light and thus affects all exposures. The correlation lamp provided only slight additional illumination, so that it was difficult to determine when this lamp was on. It has been determined that the lamp holder in this unit was an old style which is no longer used. Since there is only one more camera in inventory equipped with such a lamp holder, and since the newer lamp holder is considered much less likely to shift position, no corrective action is recommended.

A small spot, apparently due to static discharge, occurred randomly on 28 frames throughout the mission. The spots showed only slight variations in shape and location in the format. While a cause has not been determined, it appears possible that the spot was generated in the chute after the film was exposed in the camera.

Although the resolution of the index film appeared good, the quality was degraded by Newton Rings. While Newton Rings have frequently been detected in index photography, they have not been as prominent as in this

mission. Since the reseau plate was thoroughly cleaned at the time of payload loading, it appears unlikely that there was an oil film on the surface. There is no evidence that the rings are caused by dirt particles. Unless the conditions observed in this one instrument continue in other systems, no action is recommended.

The Index camera contained film and was operated after both the pan camera and stellar unit had run out of film. Nine frames were exposed after pass D-137, which was the last reported in the Advanced Projects performance estimate. It was later determined that these nine frames were exposed on pass D-142.

The stellar and index films of both missions contained identifying markings of the film manufacturer along the film edge. It has been a policy of the program that such commercial markings are not to appear on flight film. The presence of such markings has no effect on flight performance and is reported solely as a deviation from established policy.

SECTION 14

VEHICLE ATTITUDE

The vehicle attitude errors for Mission 1022 were 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 1022-1 and Figures 14-7 through 14-12 for Mission 1022-2.

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

	Mission 1022-1		Mission 1022-2	
Value	90%	Range	90%	Range
Pitch Error (^{o})	0.47	-0.75 to +0.75	0.40	-0.68 to +0.58
Roll Error (^{o})	0.51	-0.88 to +0.32	0.51	-0.90 to +0.22
Yaw Error (^{o})	0.89	-1.10 to +1.15	0.90	-1.20 to +0.85
Pitch Rate (^{o}/hr)	28.3	-60 to +65	29.4	-45 to +100
Roll Rate (^{o}/hr)	27.1	-90 to +90	27.3	-80 to +100
Yaw Rate (^{o}/hr)	23.8	-32 to +56	31.0	-38 to +50

The performance of the attitude control system is comparable to the control systems used on recent missions. The panoramic photography was not degraded by the attitude control system.

In order to evaluate the dynamic effects of stereo-suppress mode operations, roll and pitch data was measured from horizon photos by NPIC. This data is shown in Figure 14-13. It is seen that roll rates of the order of 100 degrees/hour are induced by the single pan instrument starts and stops. This condition is typical of that observed in the past with mono operations.

A careful examination was made of the panoramic frames exposed during the stereo-suppress operations. No degradations that could be attributed to this mode of operation were detected.

J-22 A BUCKET - FWD INSTR FRAMES 1-6 OF EACH OP OMITTED 90 PERCENT = 0.4

Y = PITCH ANGLE ERROR - DEGREES (X) VERSUS FREQUENCY - PERCENT (Y)

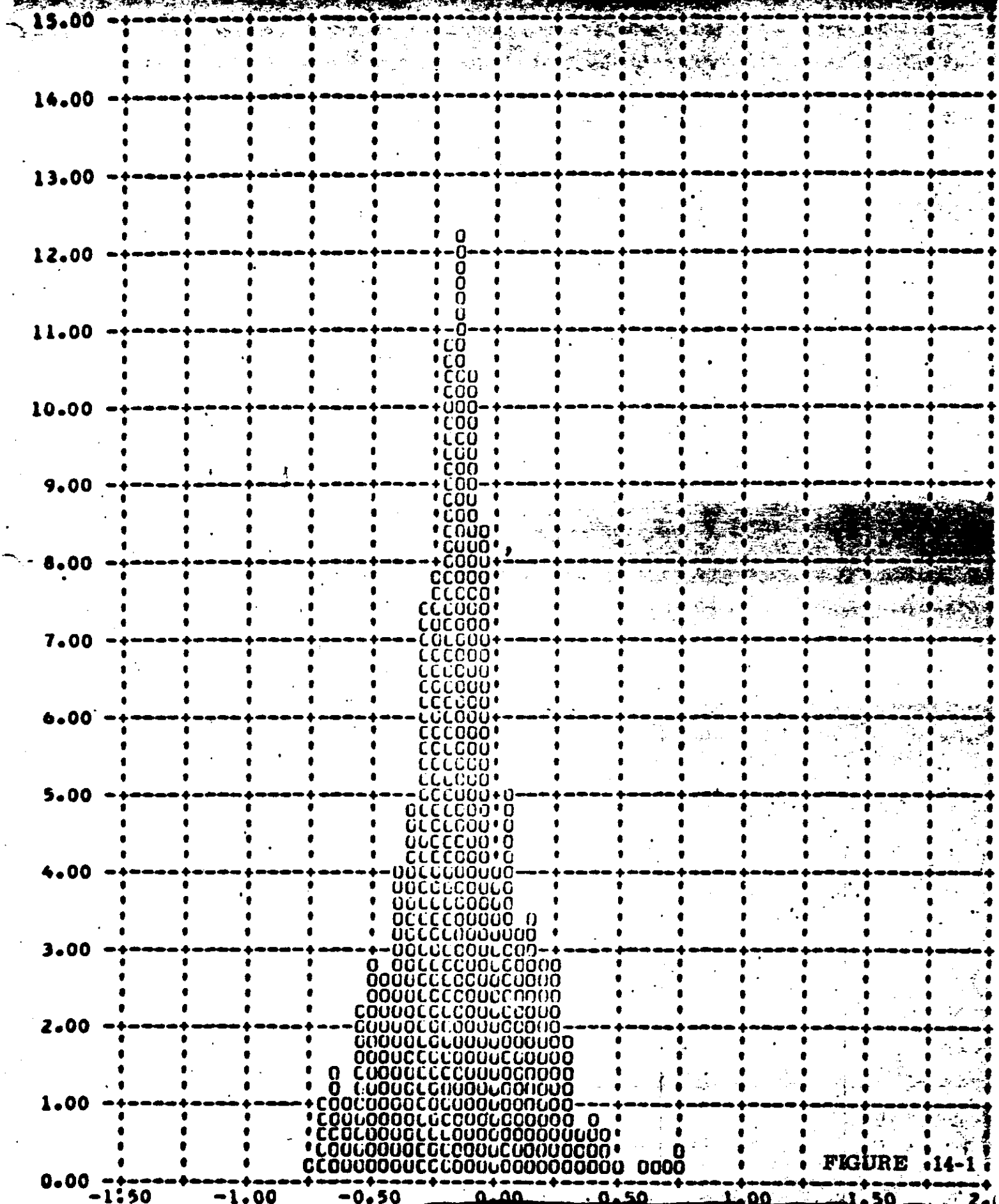


FIGURE 14-1

MISSION 1022A1 ~~TOP SECRET~~ [redacted]

J-22 A BUCKET - FWD INSTR [redacted] FRAMES 1-6 OF EACH OF [redacted] OMITTED 90 PERCENT [redacted] 0.

[redacted] ROLL ANGLE ERROR - DEGREES [redacted] PERCENT

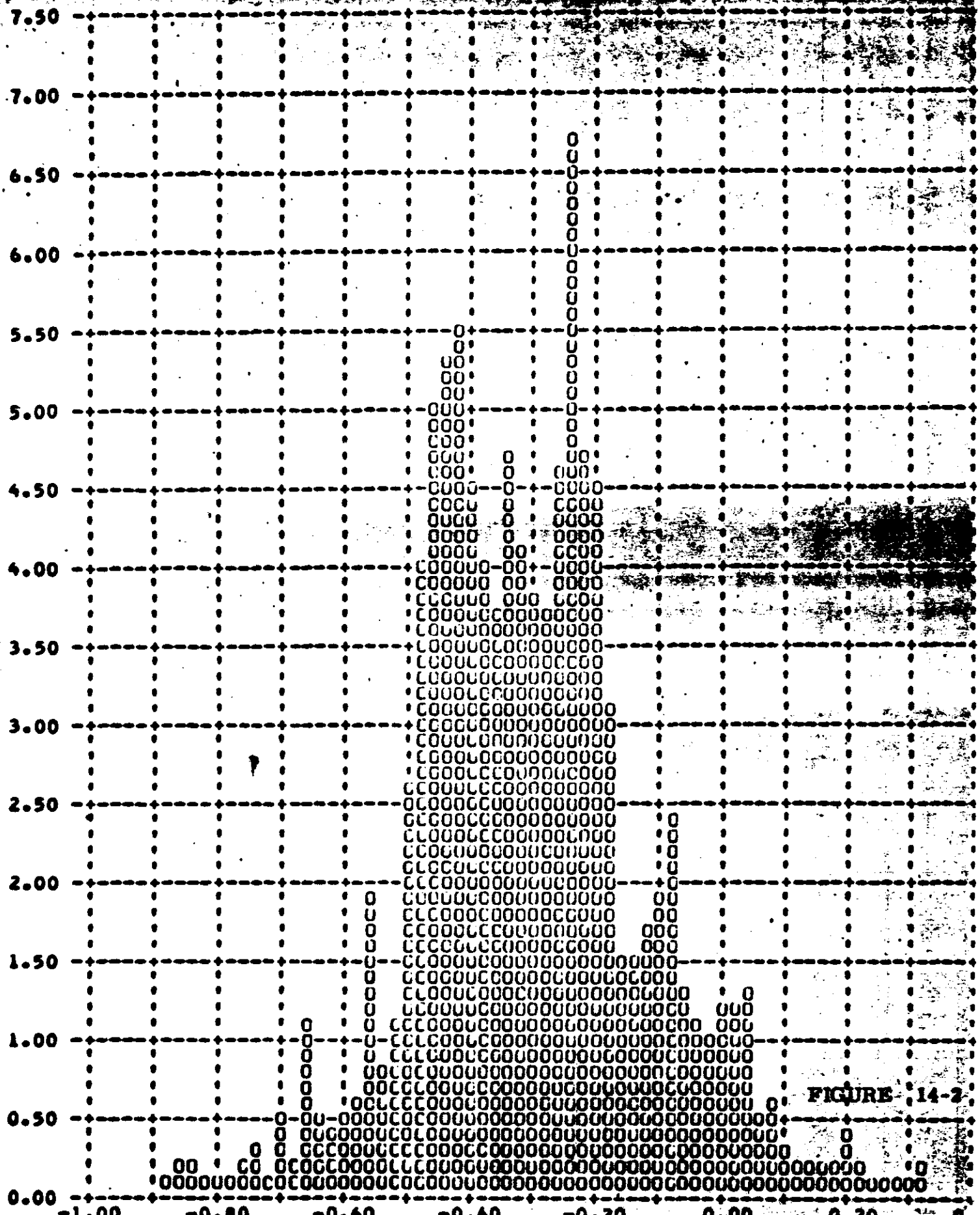


FIGURE 14-2

J-22 A BUCKET - FWD INSTR. - FRAMES 1-6 OF EACH GP OMITTED - 90 PERCENT = 0.

Y - YAW ANGLE ERROR - DEGREES [redacted] FREQUENCY - PERCENT [redacted]

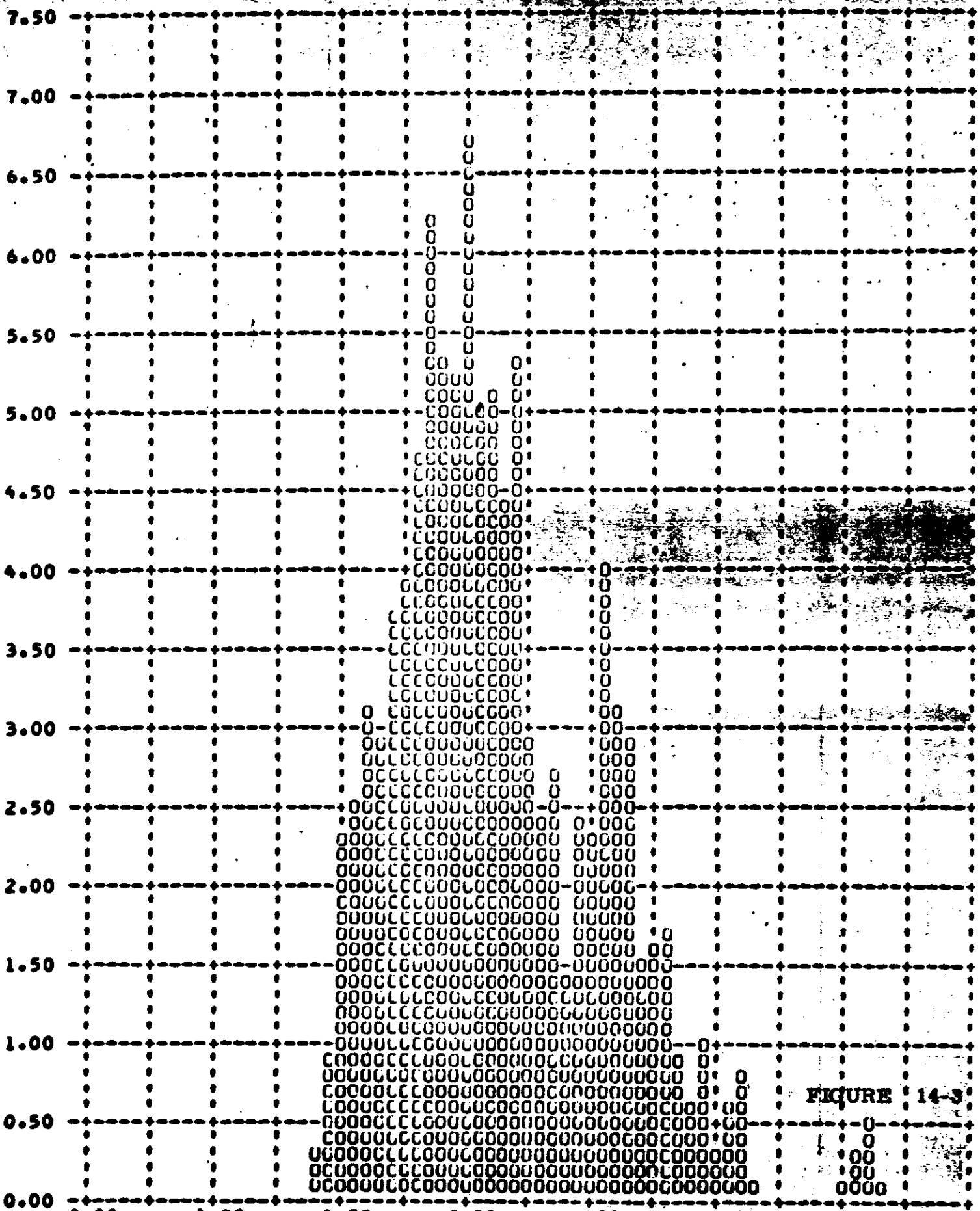


FIGURE 14-3

J-22 A BUCKET - FWD INSTR FRAMES 1-6 OF EACH OP OMITTED 90 PERCENT [redacted]

Y PITCH RATE ERROR - DEG/HOUR (X) VERSUS FREQUENCY - PERCENT (Y)

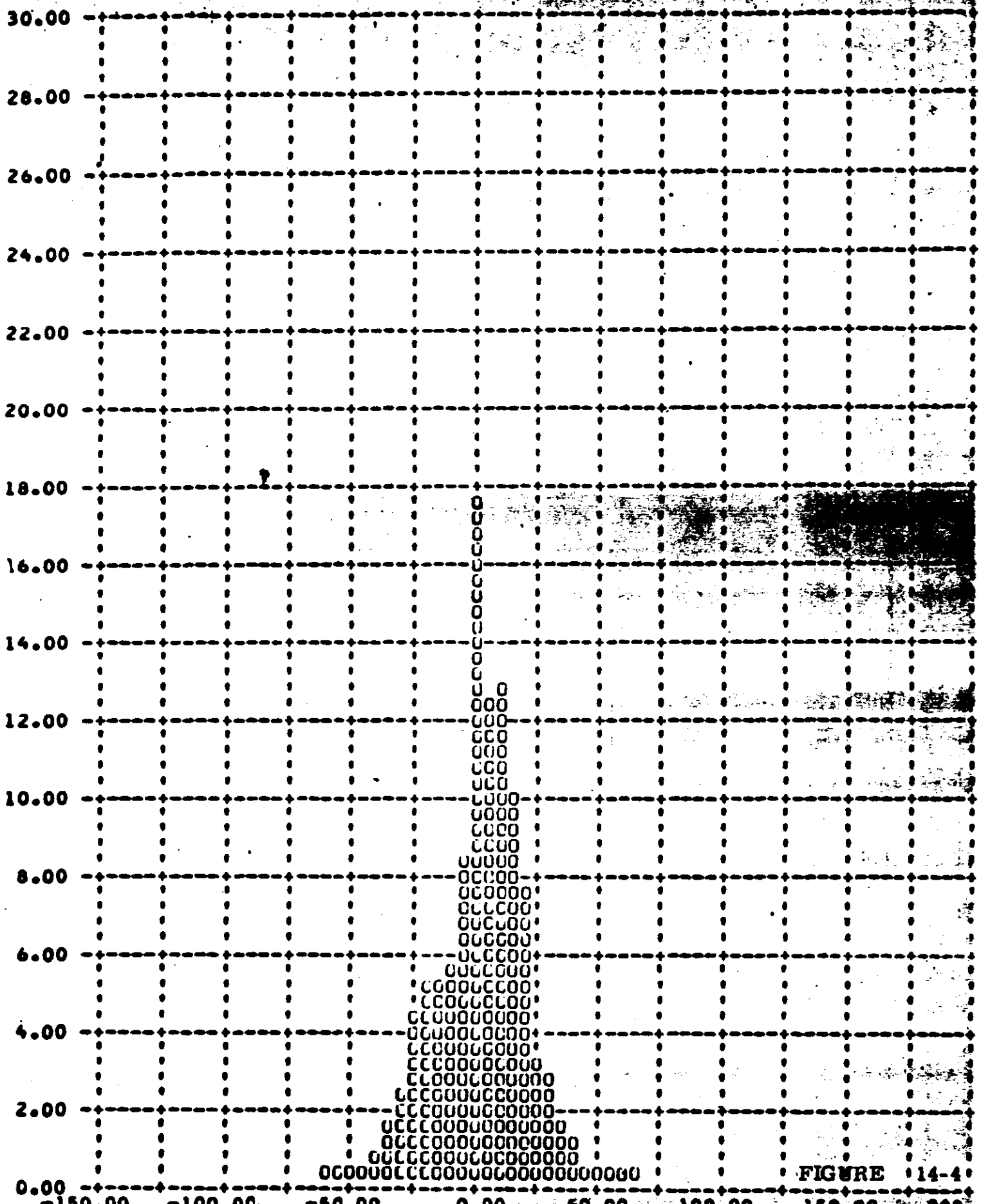


FIGURE 14-4

J-22 A BUCKET - END INSIA [illegible] FRAMES 1-6 OF EACH [illegible] OMITTED = 90 PERCENT [illegible]

V = ROLL RATE ERROR - DEG/HOUR [illegible] FREQUENCY = PERCENT [illegible]

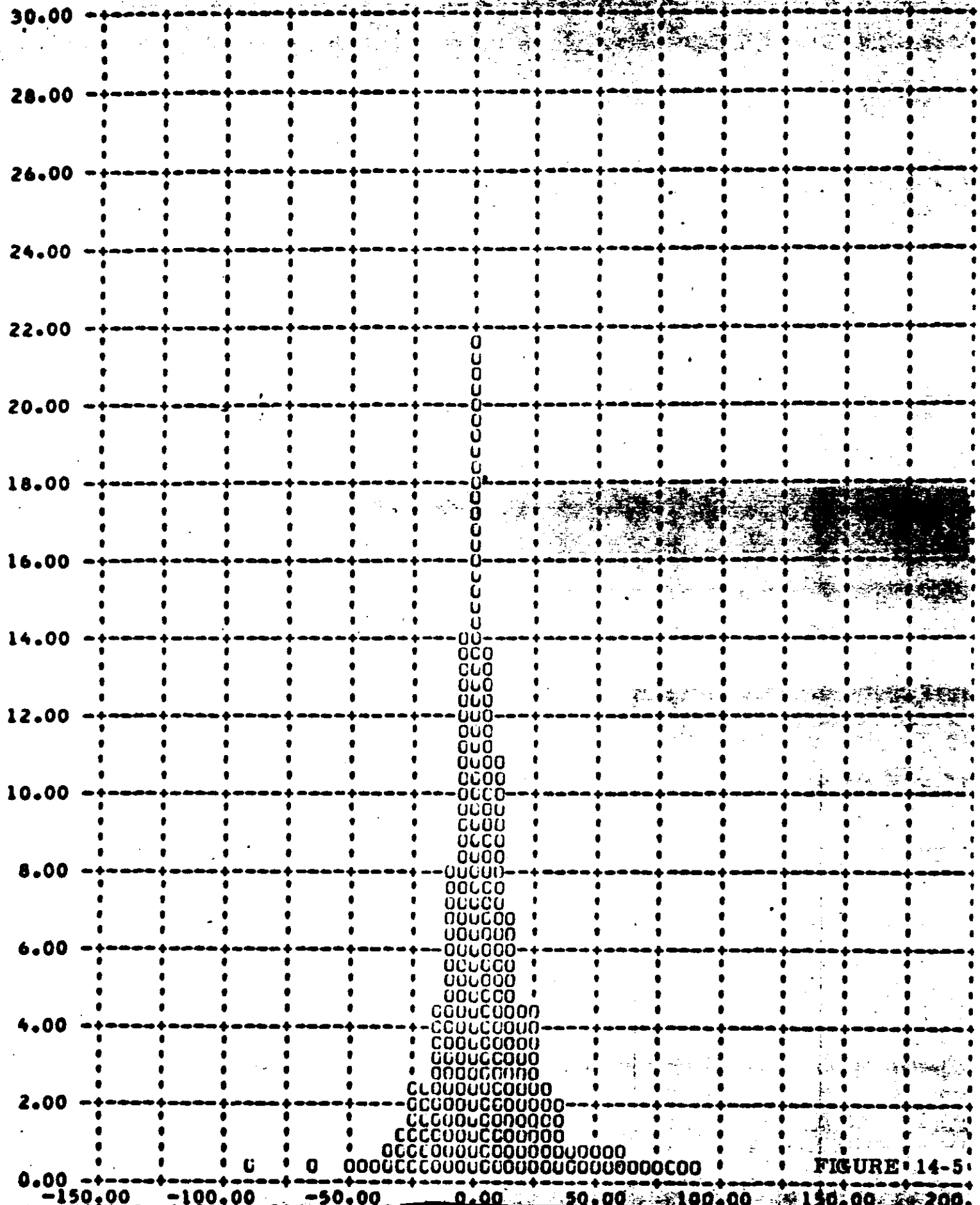


FIGURE 14-5

J-22 A BUCKET - FWD INSTR FRAMES 1-6 OF EACH OP OMITTED 90 PERCENT = 23

Y YAW RATE ERROR - DEG/HOUR [redacted] PERCENT

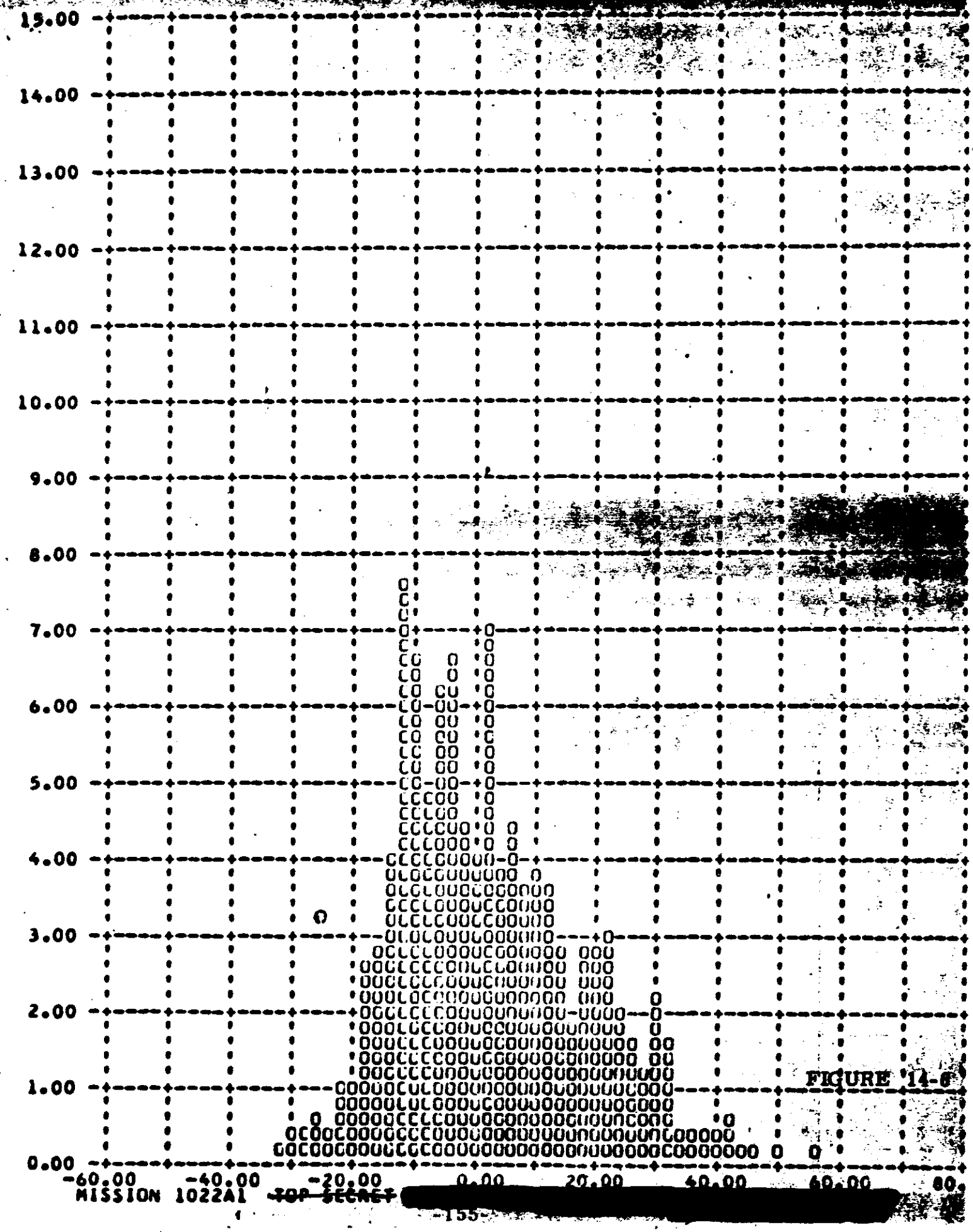


FIGURE 14-6

MISSION 1022A1 ~~TOP SECRET~~ [redacted]

J-22 B BUCKET - FWD INSTR - FRAMES 1-6 OF EACH OF UNITTED 90 PERCENT = 0.5

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

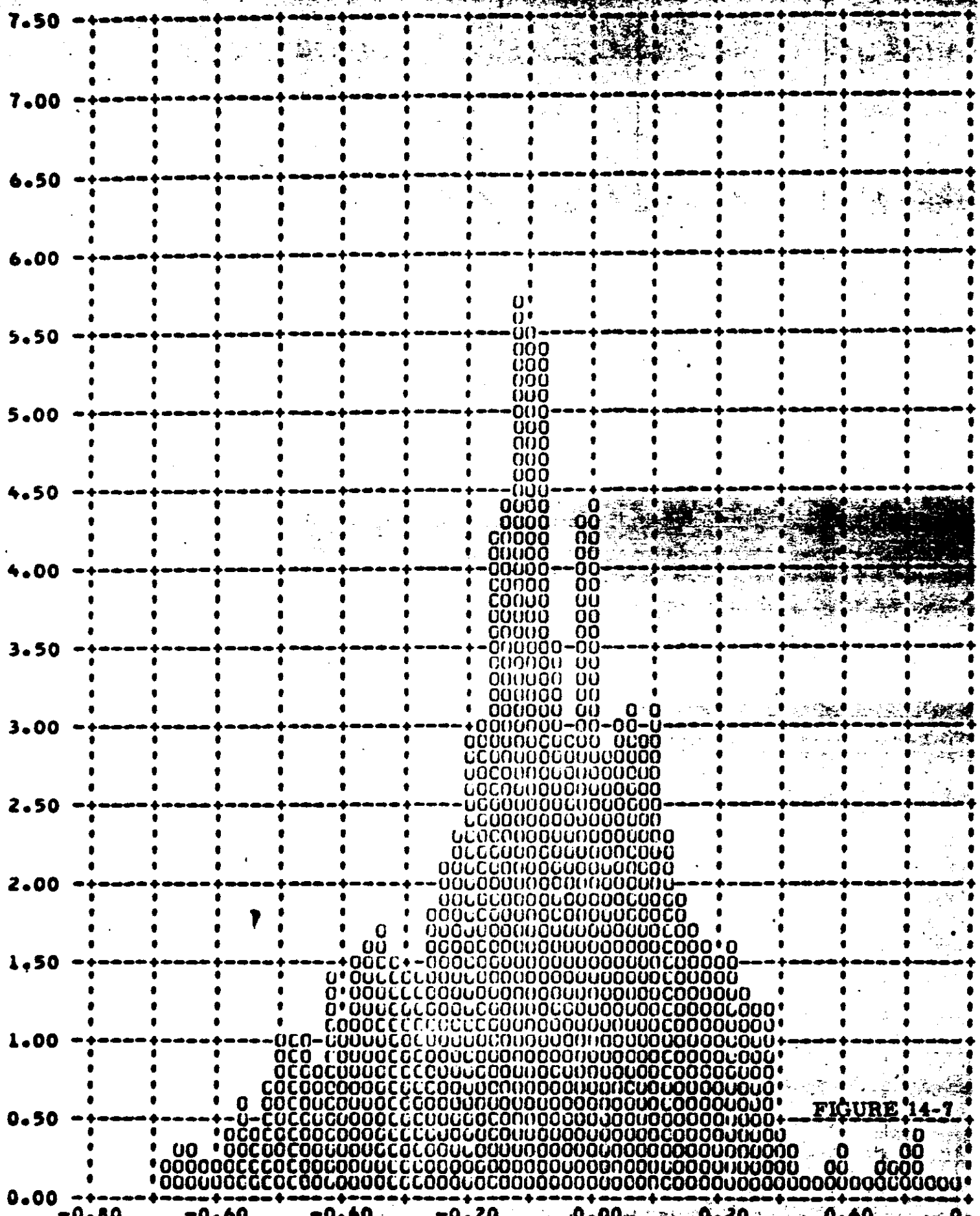


FIGURE 14-7

J-22 B BUCKET - FWD INSTR [illegible] FRAMES 1-6 OP [illegible] OMITTED [illegible] 90 PERCENT [illegible]

[illegible] Y ROLL ANGLE ERROR - DEGREES (X) [illegible] FREQUENCY - PERCENT [illegible]

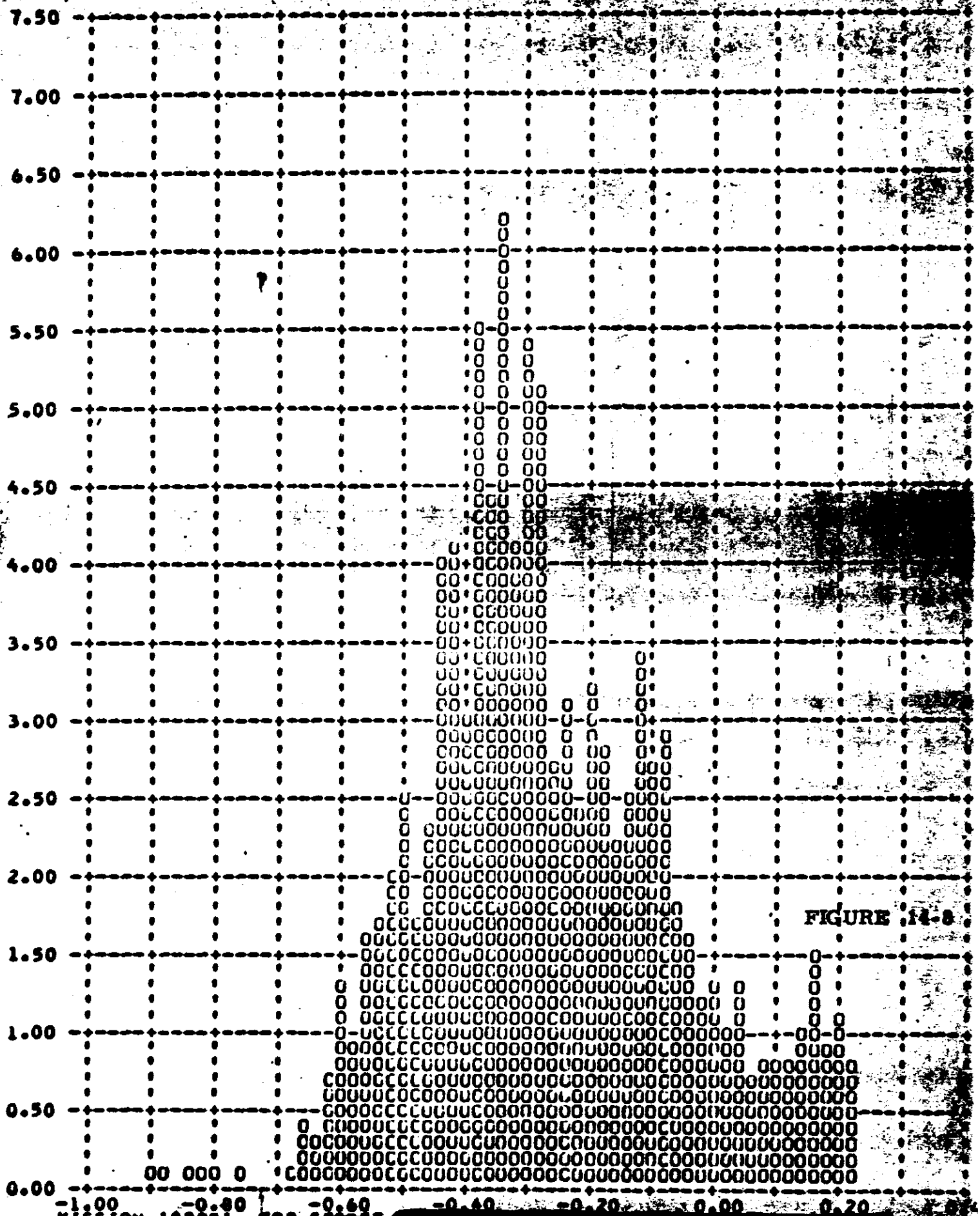


FIGURE 14-8

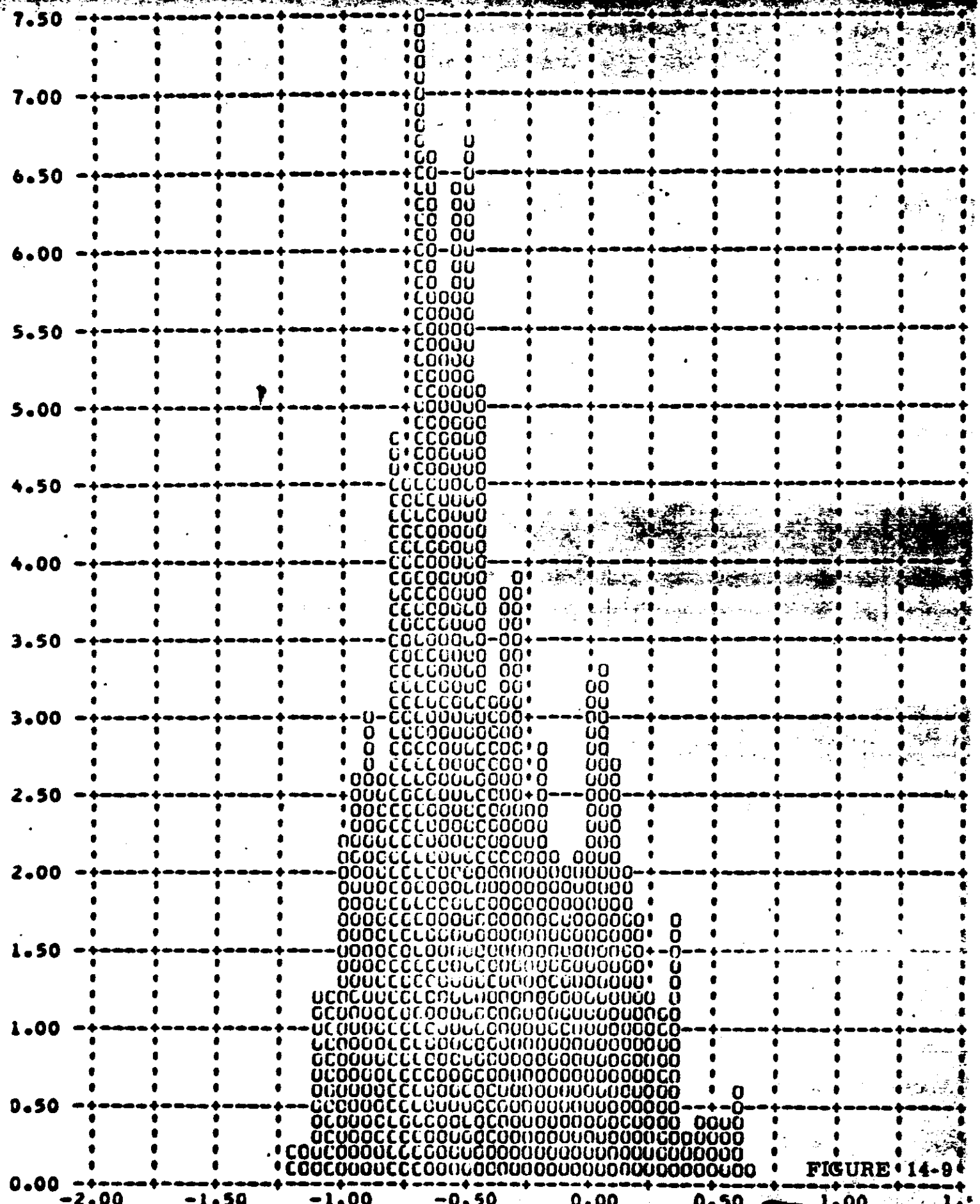

Y - YAW ANGLE ERROR - DEGREES
7.50
7.00
6.50
6.00
5.50
5.00
4.50
4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
-2.00
-1.50
-1.00
-0.50
0.00
0.50
1.00

FIGURE 14-9

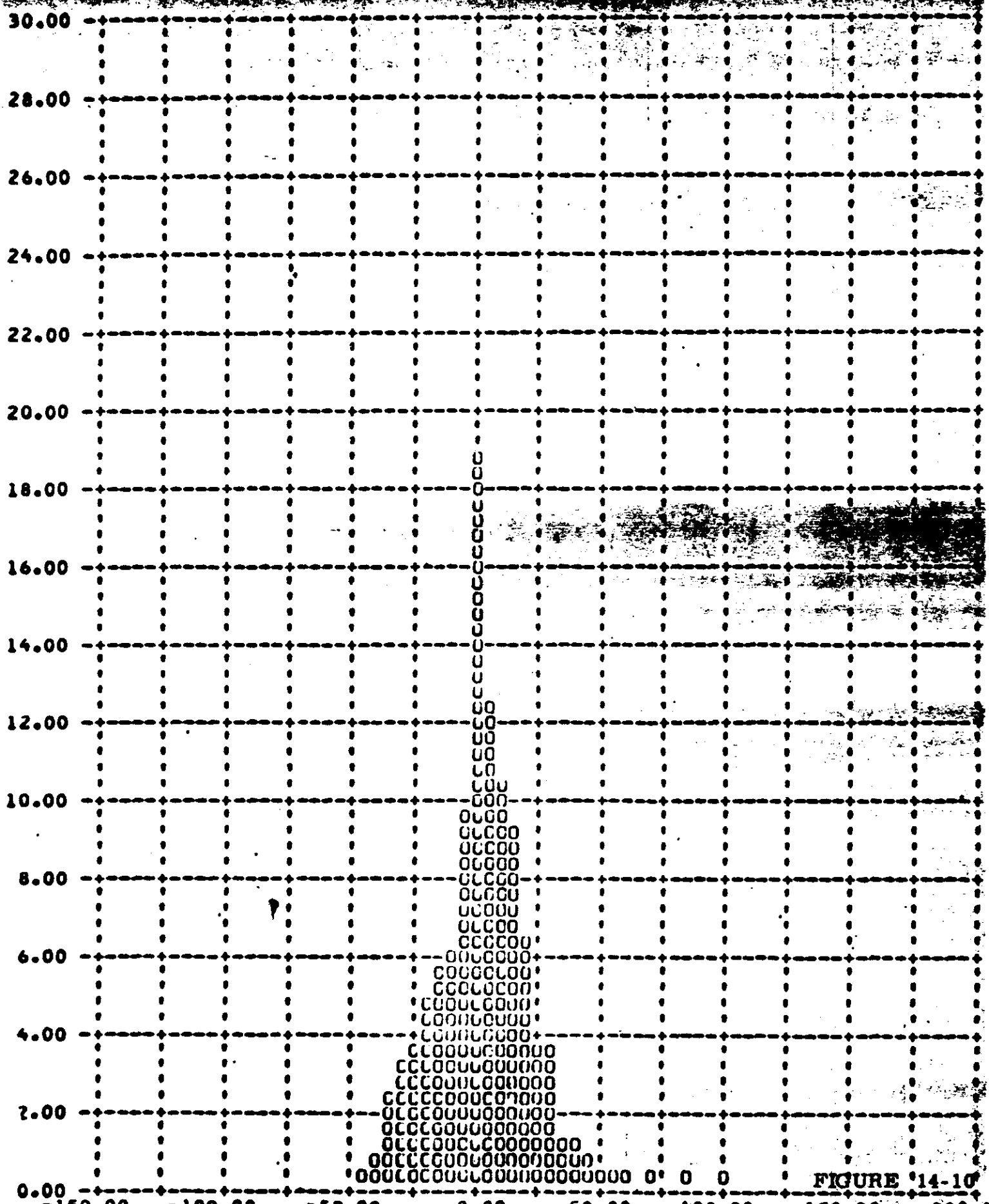

Y = PITCH RATE ERROR, DEG/HOUR
30.00
28.00
26.00
24.00
22.00
20.00
18.00
16.00
14.00
12.00
10.00
8.00
6.00
4.00
2.00
0.00
-150.00
-100.00
-50.00
0.00
50.00
100.00
150.00
200.0

FIGURE 14-10

J-22 B BUCKET - FWD INSTR FRAMES 1-6 OF EACH OF UNITTED 90 PERCENT

Y - ROLL RATE ERROR DEG/HOUR

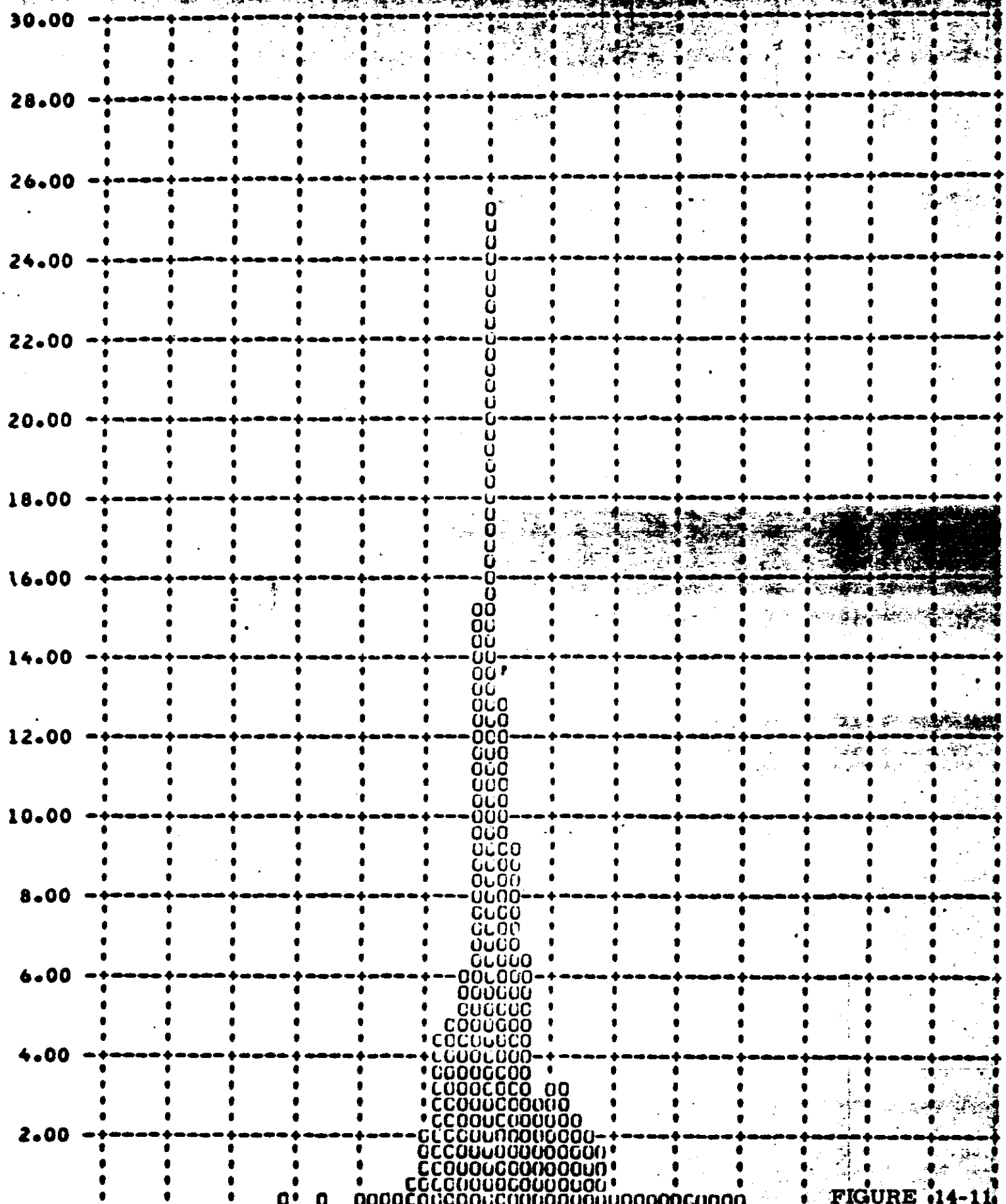


FIGURE 14-11

J-22 B BUCKET - FWD INSTR FRAMES 1-6 OF EACH OP OMITTED 90 PERCENT - 31

Y YAW RATE ERROR - DEG/HOUR [redacted]

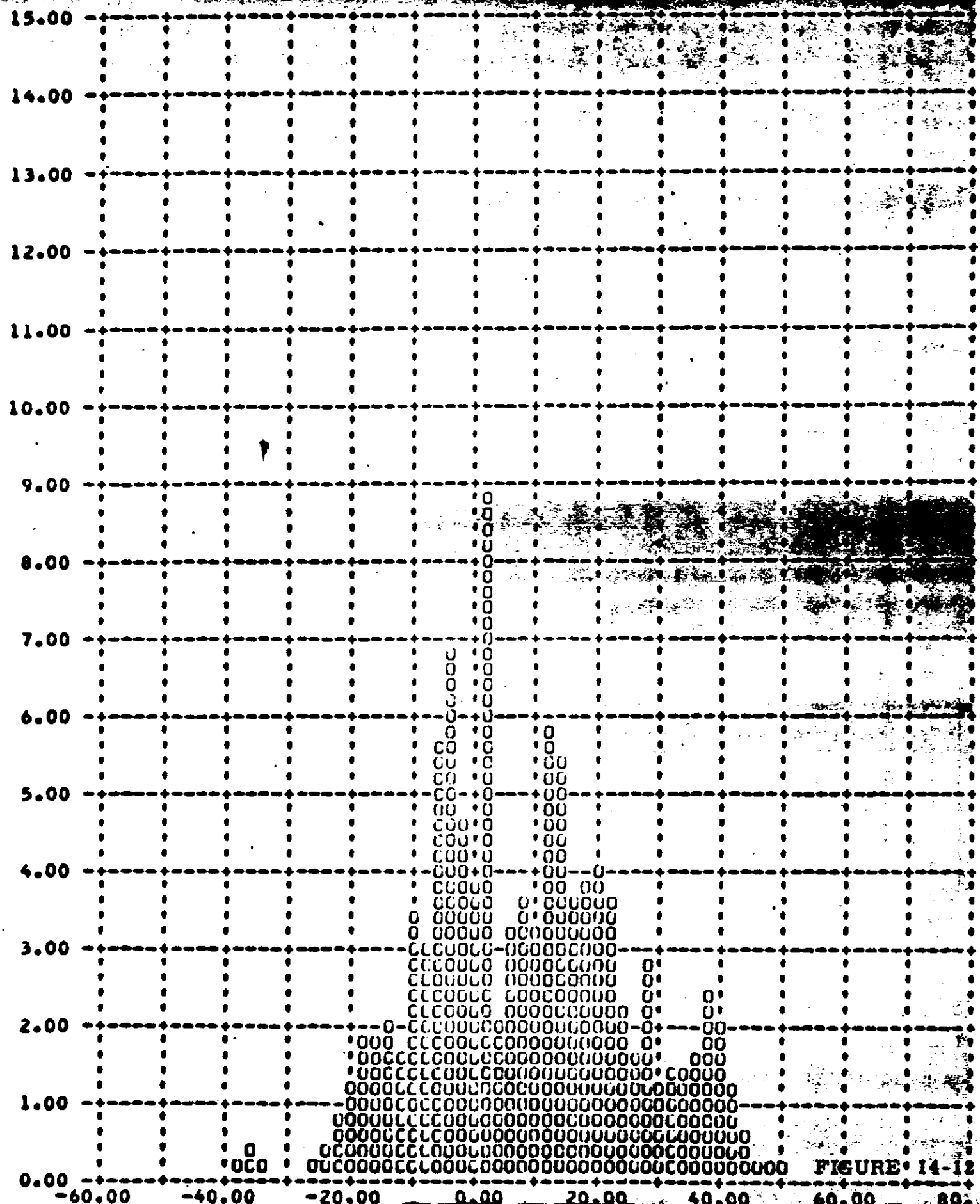


FIGURE 14-12

MISSION 102281 ~~TOP SECRET~~ [redacted]

 [redacted]

K&E 10 X 10 TO THE INCH 359-5
KEUFFEL & ESSER CO. MADE IN U.S.A.

ROLL & PITCH IN STEREO-SUPPRESS MODE - Mission 1022

Roll and pitch values indicated by Master & Slave Horizon Cameras are plotted for Stereo-Suppress sequences. Abscissa scale is 0.1 inch per panoramic frame. Slave camera frames are plotted to time closest to that of Master camera exposure. Ordinate scale is 0.1 inch per 5 minutes of arc. Ordinate values have not been adjusted for instrument alignment bias.

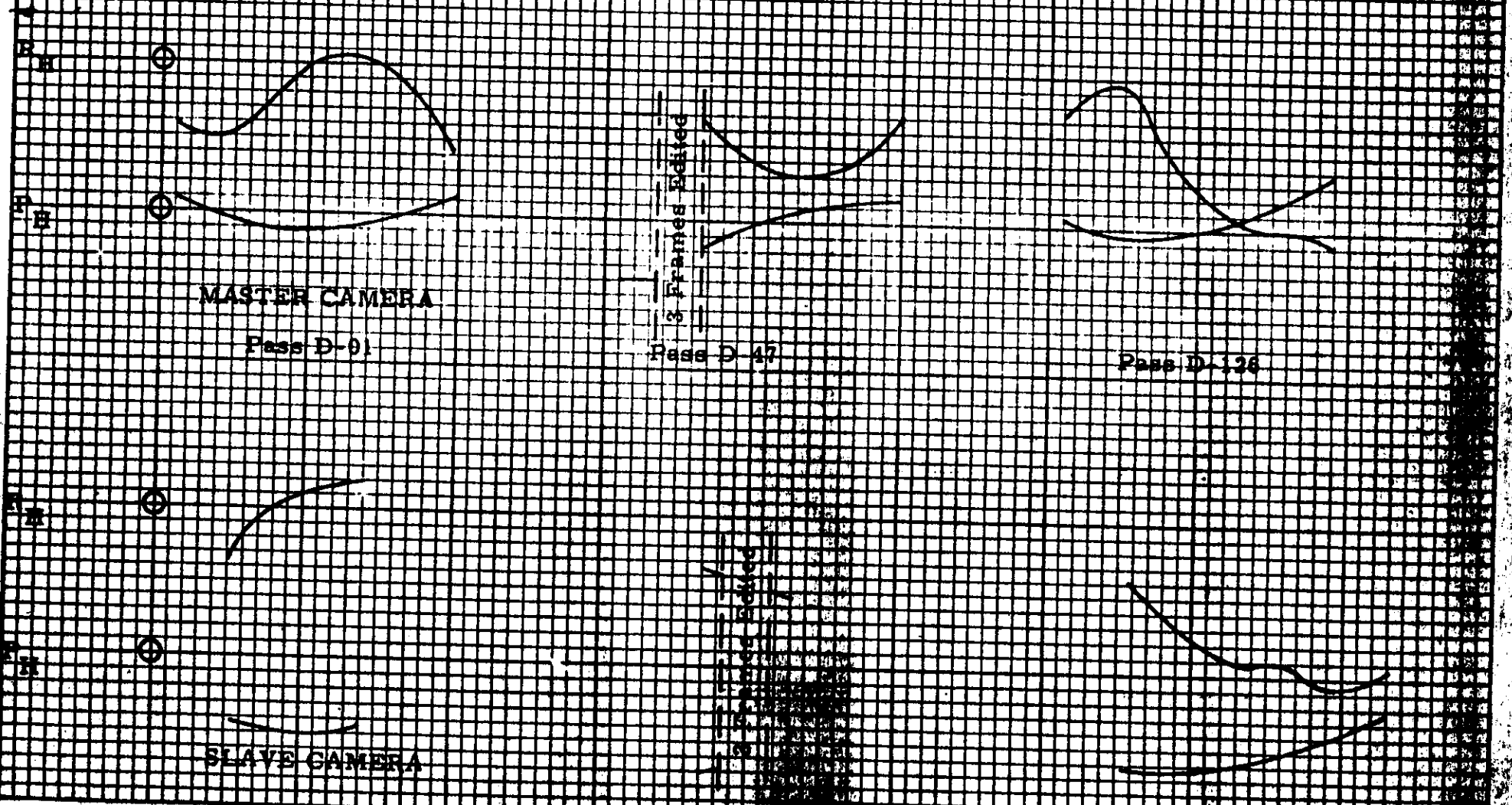


FIGURE [redacted]

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 error and resolution limits are computer plotted and are shown in Figures 15-1 through 15-12.

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

The range data for the along and across track resolution limits is excessively broad. Passes D-29, D-131 and D-135 were located in quadrant 3, which is an area where the V/h program can not match the orbital V/h, as a consequence the resolution capability is decreased.

The variation between the forward and aft camera data is a result of the slower exposure time in the forward camera to compensate for filter and slit width differences between instruments.

MISSION 1022
V/h RATIO AND RESOLUTION LIMITS

VALUE	UNITS	CAMERA	Mission 1022-1 90%	Mission 1022-1 Range	Mission 1022-2 90%	Mission 1022-2 Range
V/h Ratio Error	%	FWD	3.49	-5.0 to +6.0	2.56	-2.8 to +5.6
		AFT	3.02	-5.4 to +5.2	1.79	-2.8 to +3.2
Along Track Resolution Limit	Feet	FWD	9.83	0.5 to 17.5	8.04	0.2 to 15.1
		AFT	6.21	0.2 to 11.2	4.89	0.2 to 8.0
Cross Track Resolution Limit	Feet	FWD	8.62	0.2 to 10.6	8.43	0.2 to 14
		AFT	6.07	0.2 to 7.4	5.94	0.4 to 10

TABLE 15-1

J-22 A BUCKET - FWD INSIR [redacted] FRAMES 1-6 OF EACH UP OMITTED 90 PERCENT = 3.

[redacted] V/H RATIO ERROR, PERCENT [redacted] PERCENT

FIGURE 15-1

MISSION 1022AI ~~TOP SECRET~~ [redacted]

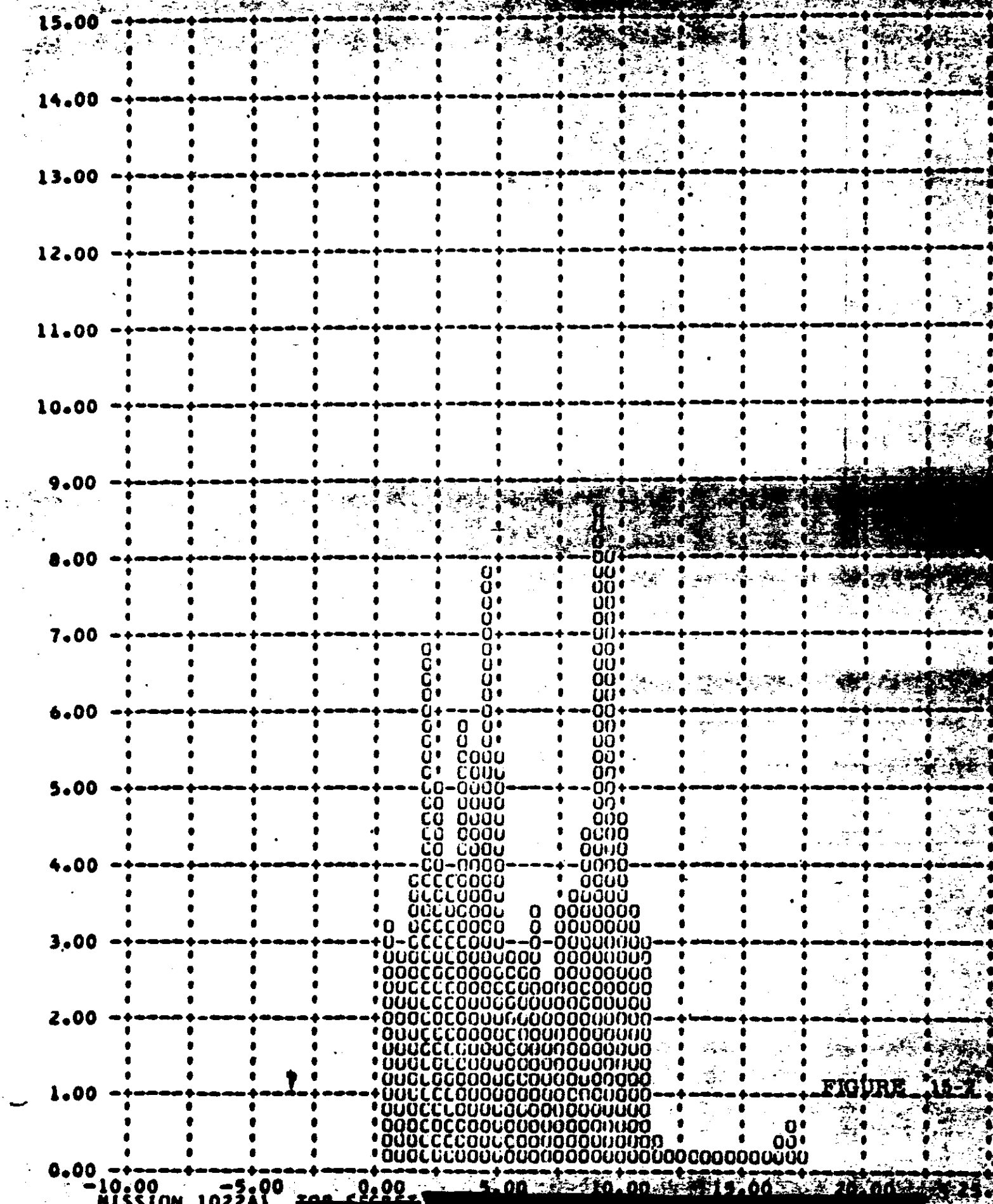

V - ALONG TRACK RESOLUTION LIMIT - FEET
FREQUENCY - PERCENT
15.00
14.00
13.00
12.00
11.00
10.00
9.00
8.00
7.00
6.00
5.00
4.00
3.00
2.00
1.00
0.00
-10.00
-5.00
0.00
5.00
10.00
15.00
20.00
25.0

FIGURE 15-7

J-22 A BUCKET - FWD INSTR FRAMES 1-6 OF EACH OP OMITTED 90 PERCENT [redacted]

Y CROSS TRACK RESOLUTION LIMIT [redacted]

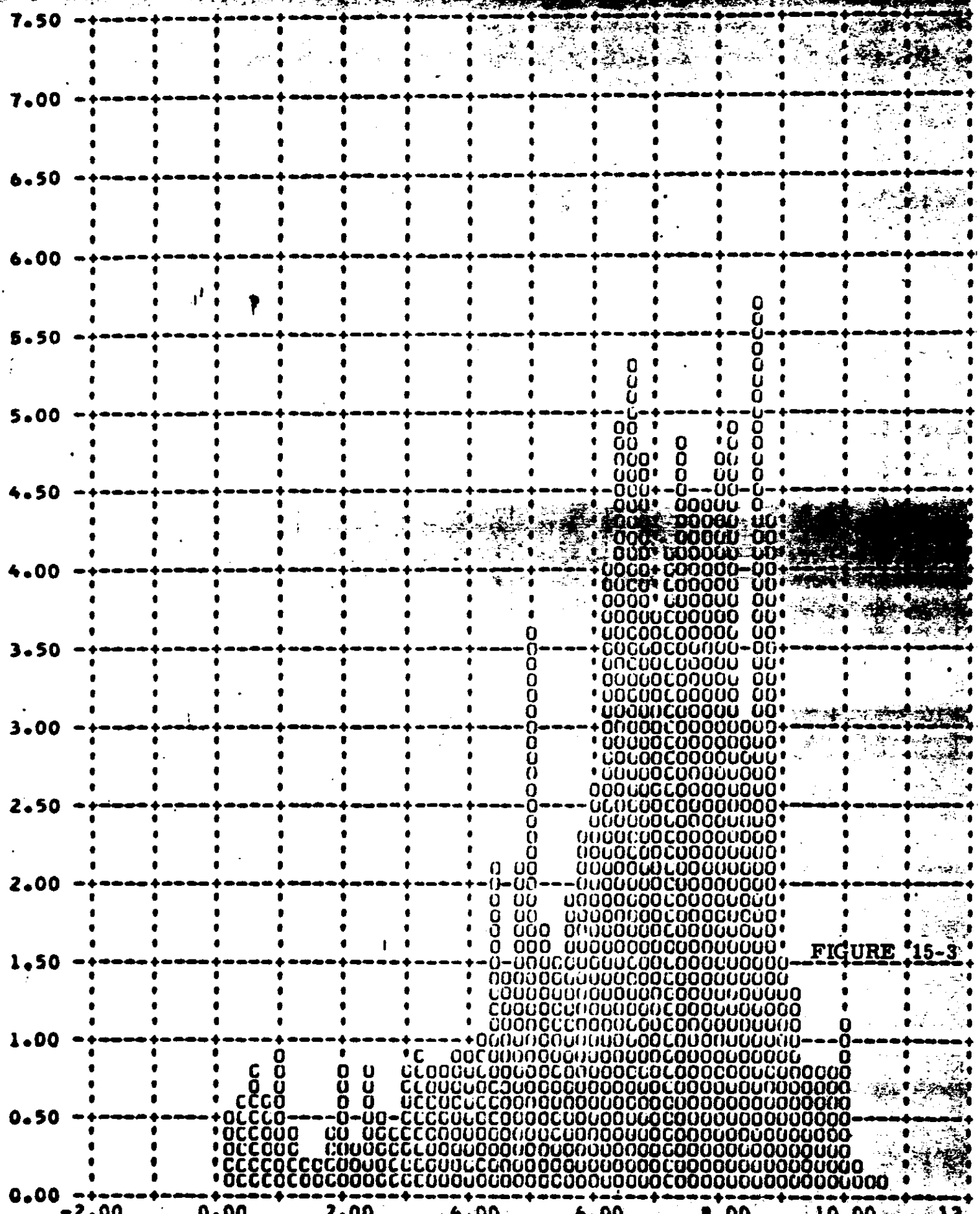


FIGURE 15-3

MISSION 1022A1 TOP SECRET [redacted]

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

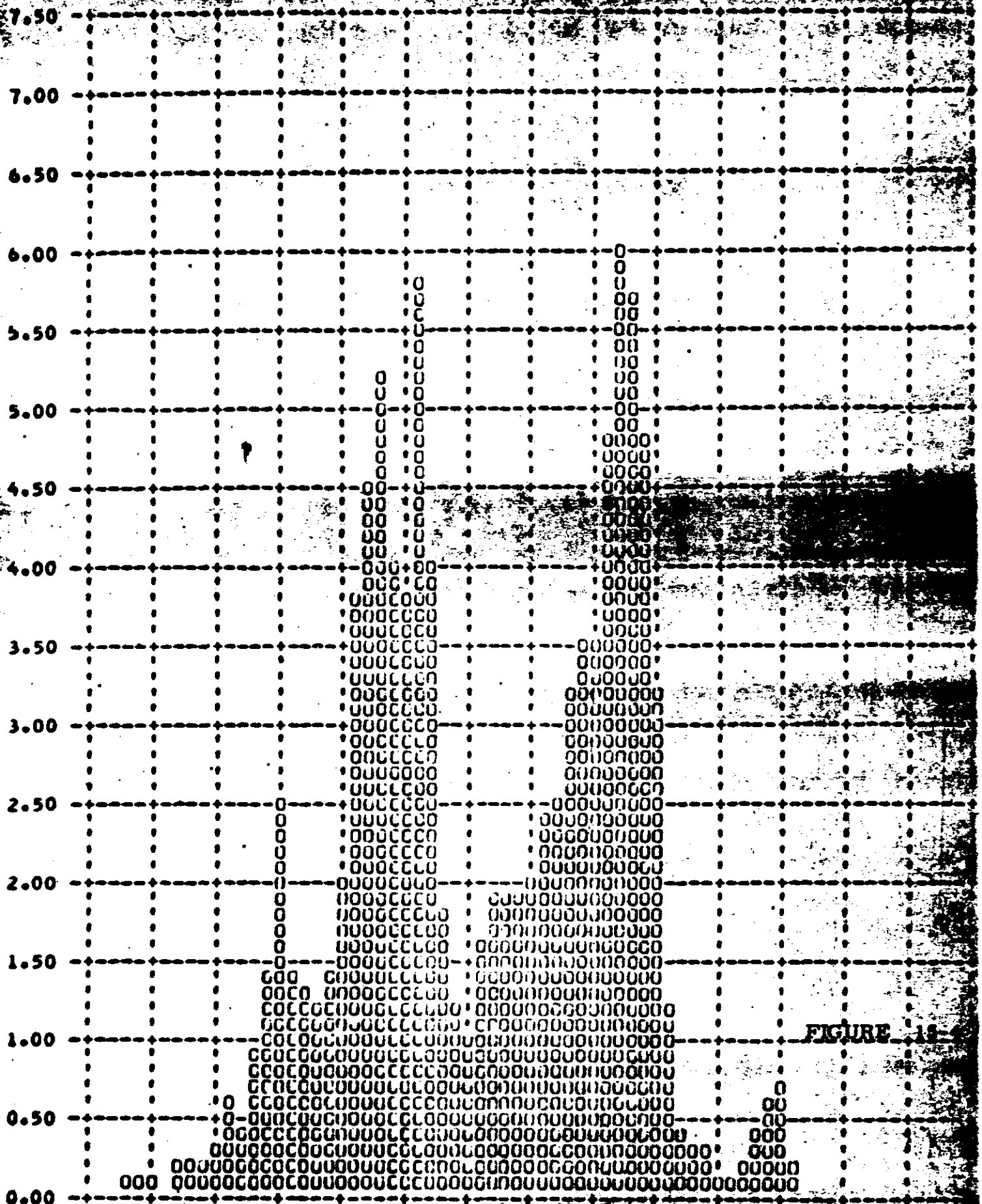


FIGURE 18

J-22 A BUCKET - AFT INSTR FRAMES 1-6 OF EACH UP OMITTED 90 PERCENT = 6.2

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

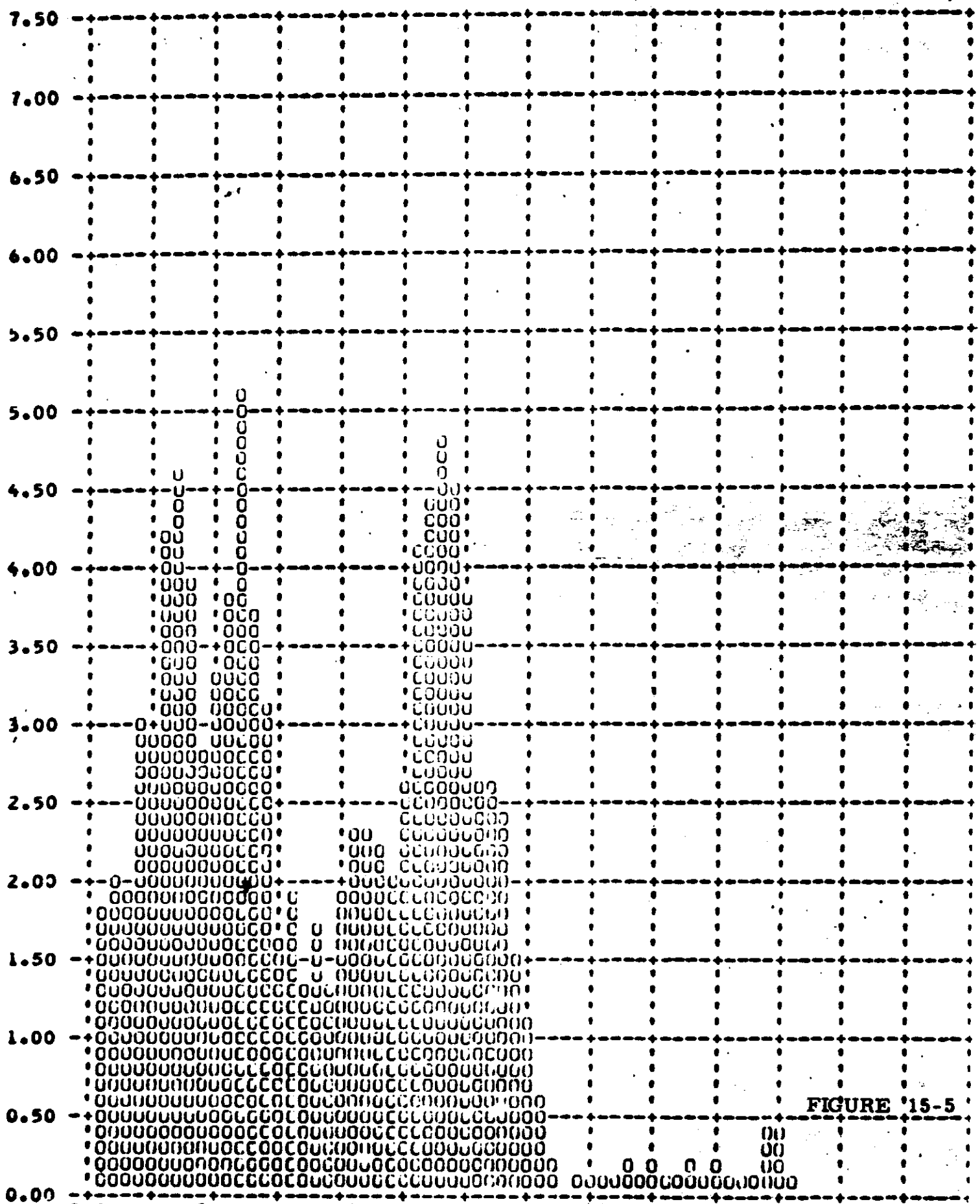


FIGURE 15-5

J-22 A BUCKET - AFT INSTR FRAMES 1-6 OF EACH OP OMITTED 90 PERCENT = 6.0

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

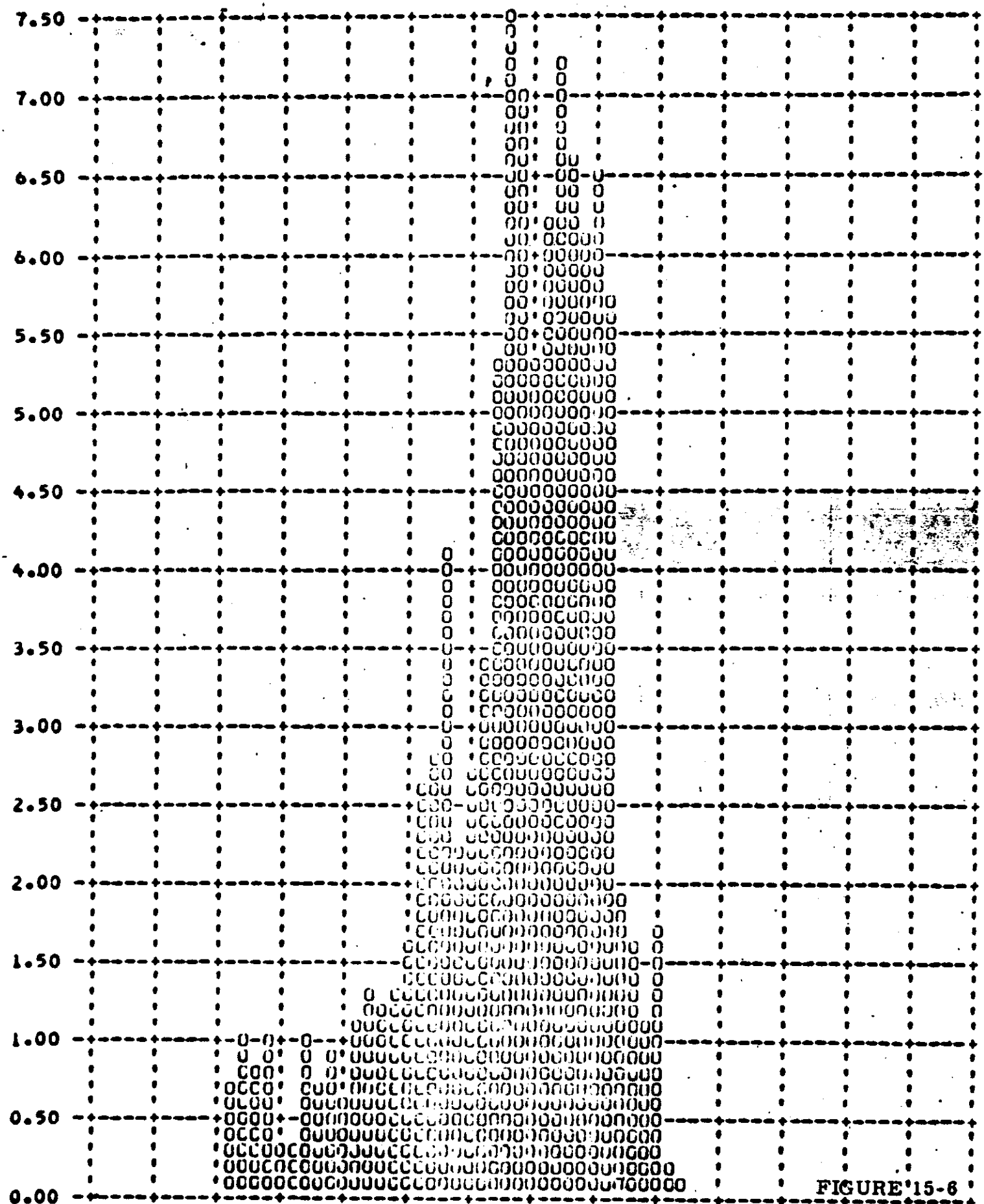


FIGURE 15-6

J-22 B BUCKET - FWD INSTR FRAMES 1-6 OF EACH OP OMITTED 90 PERCENT = 2.5

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

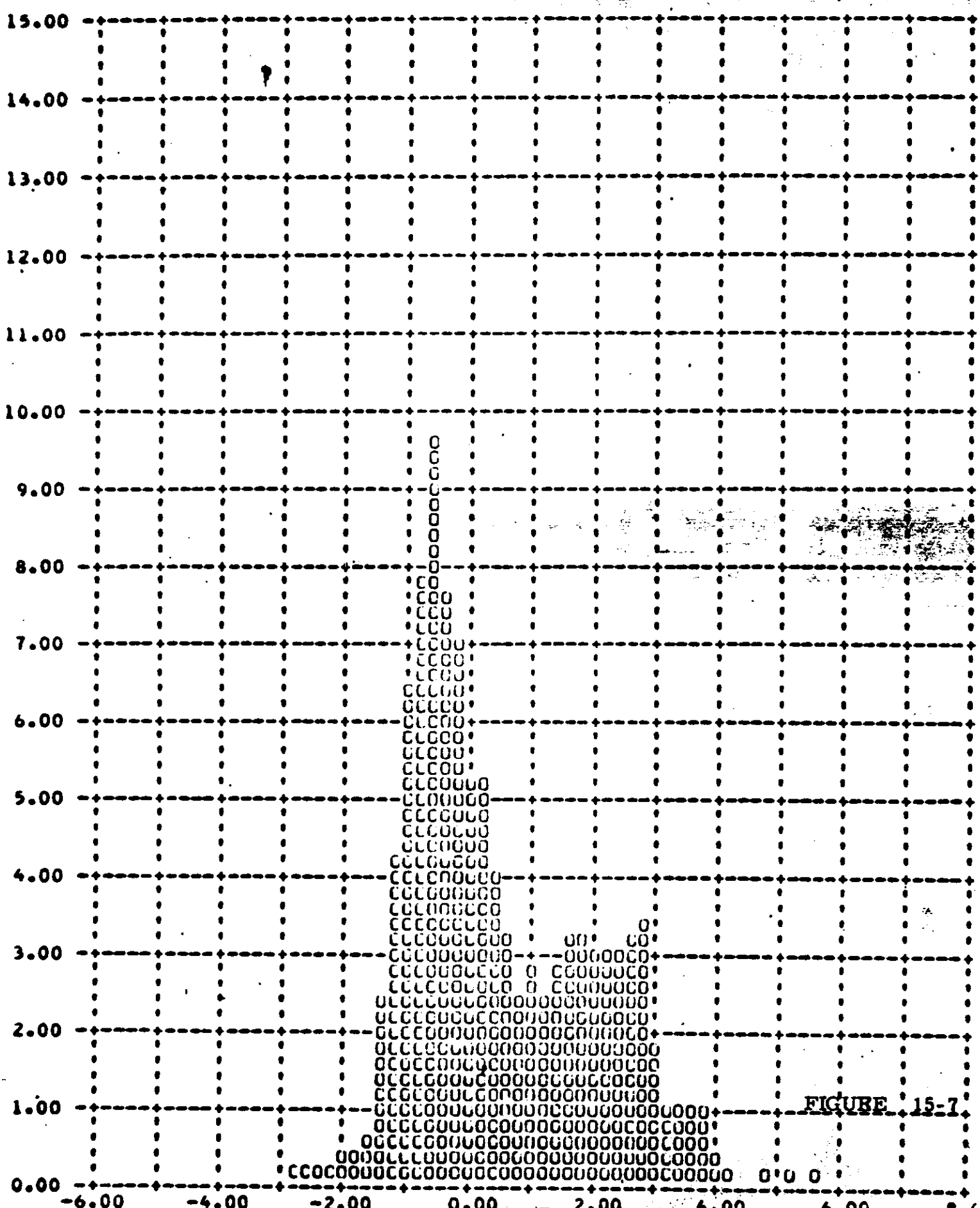


FIGURE 15-7

J-22 B BUCKET - FWD INSTR FRAMES 1-6 OF EACH OP OMITTED 90 PERCENT = 8.0

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

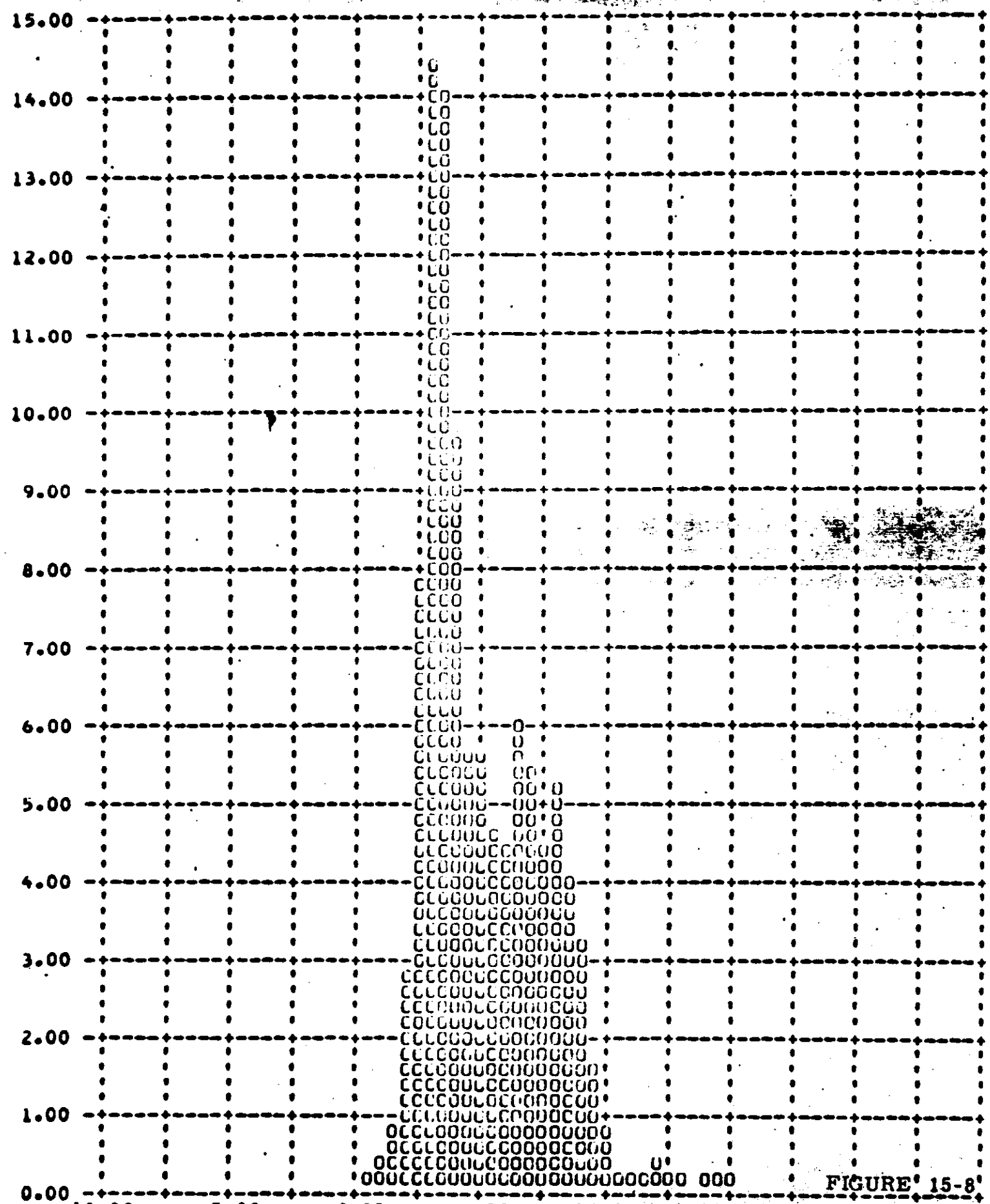


FIGURE 15-8

J-22 B BUCKET - FWD INSTR FRAMES 1-6 OF EACH OP OMITTED 90 PERCENT = 8.4

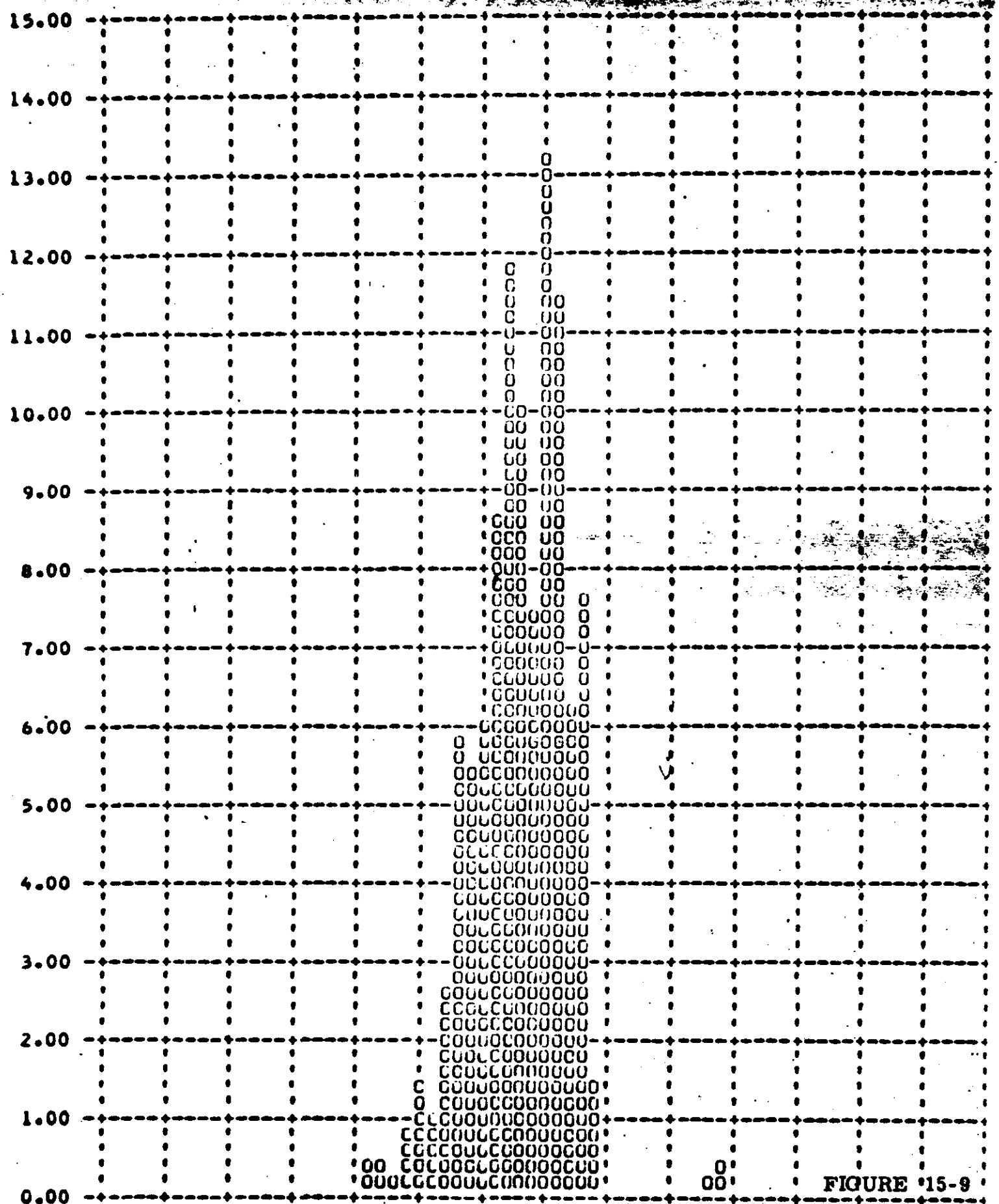


FIGURE 15-9

J-22 B BUCKET - AFT INSTR - FRAMES 1-6 OF EACH OF OMITTED 90 PERCENT = 1.7

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

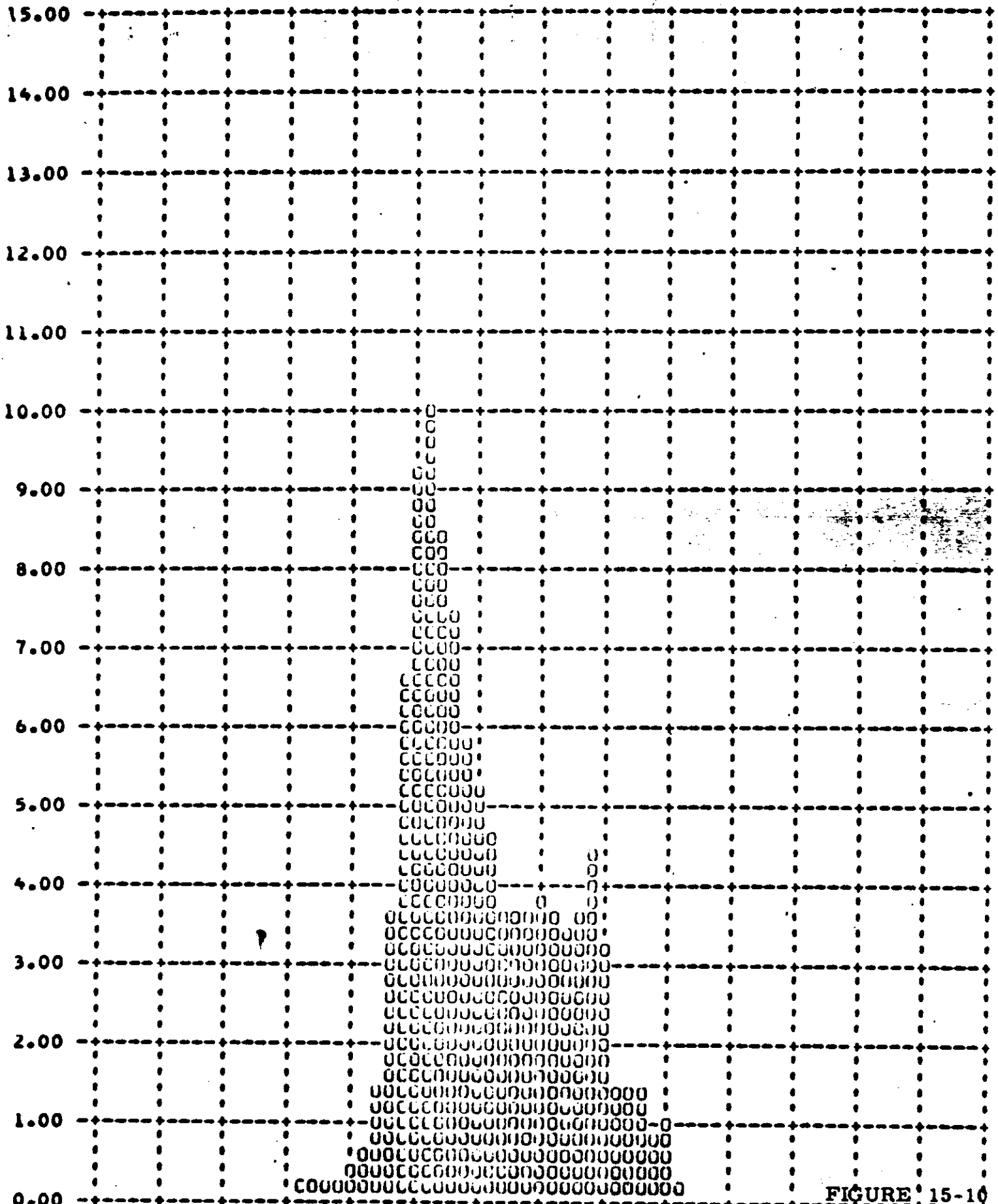


FIGURE 15-10

J-22 B BUCKET - AFT INSTR - FRAMES 1-6 OF EACH DP UNLITTED - 90 PERCENT

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

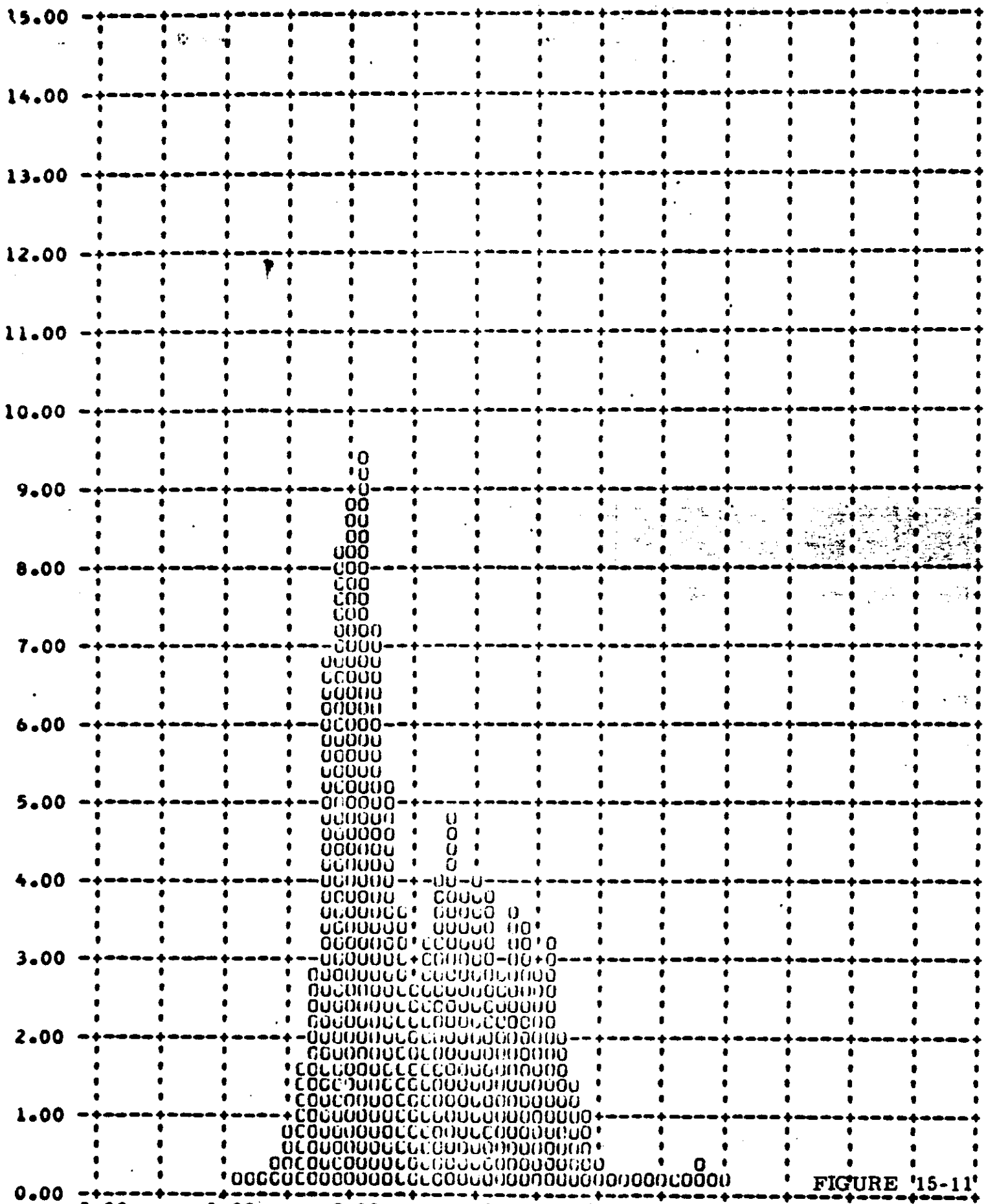


FIGURE 15-11

J-22 A BUCKET - AFT INSTR FRAMES 1-6 OF EACH UP UNITTED 90 PERCENT = 5.9

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

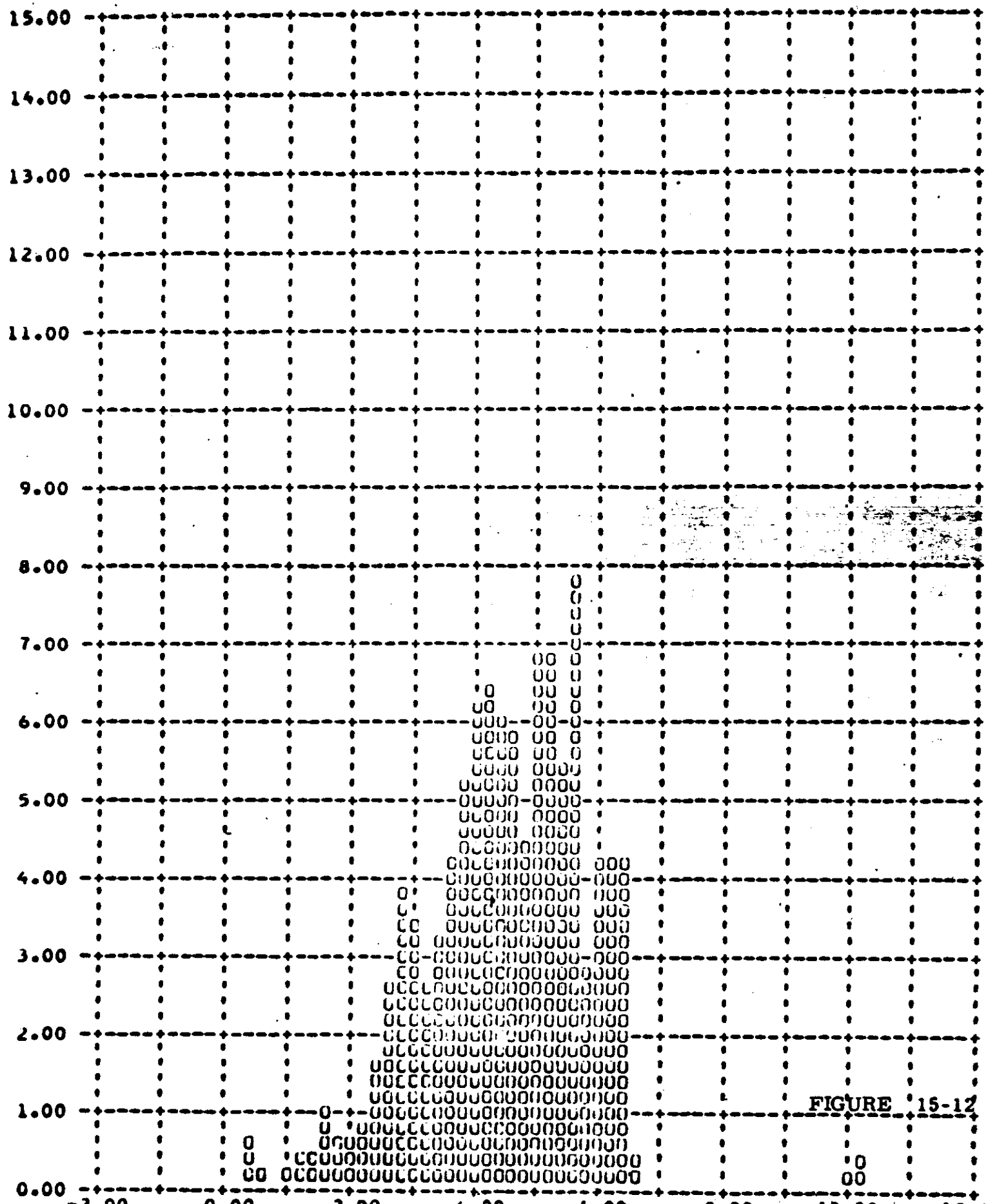


FIGURE 15-12

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 1022-1	
	B + F	
Emulsion	Density	Radiation
Type 3401	0.18	.63R
Royal X Pan	0.21	.30R
	Mission 1022-2	
Type 3401	0.21	.90R
Royal X Pan	0.25	.40R

The mean total radiation seen by the take-up cassettes during both missions was approximately 0.3 roentgens. This level is essentially the same as received furing recent missions and 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.

Panoramic Camera Reliability

Sample Size - 112 opportunities to operate.
One failure - S/I Programmer on system J-19
Assume - 3000 cycles per camera per mission.
Estimated Reliability = 98.5% at 50% confidence level.

Main Camera Door Reliability

Sample Size - 40 vehicles x 2 doors = 80 opportunities to operate.
Estimated Reliability = 99.2% at 50% confidence level.

Payload Command & Control Reliability

Sample Size - 5784 hours operation
1 failure
Estimated Reliability = 97.3% at 50% confidence level.

Payload Clock Reliability

Sample Size - 5784 hours operation
No failures
Estimated Reliability = 98.9% at 50% confidence level.

Estimated Reliability of Payload Functioning on orbit: 96.9% at 50% confidence level.

Recovery System Reliability

45 opportunities to recover
1 failure - improper separation due to water seal - cutter failure.
Estimated Reliability = 96.3% at 50% confidence level.

Stellar-Index Camera Reliability

Sample begins with J-5
Sample size = 11,550 cycles
Number of failures = 2
Estimated Reliability = 90.7% at 50% confidence level.

Horizon Camera Reliability

Sample includes J5A and up
Sample Size = 73,400 cycles
Estimated Reliability of Single Camera = 98.0% at 50% confidence level
Estimated Reliability of Four Horizon Cameras at a Parallel Redundant System = 99.9% at 50% confidence level

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 18-4.

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.

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	029/29/29 / [redacted]
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	049/53/42 / [redacted]
1007	J-07	1609	6/19/64	2318 Z	85.0	99.2	41.8	65 / 128	144	0.250	W-25	145	0.200	W-21	043/43/43 / [redacted]
1008	J-10	1177	7/10/64	2314 Z	85.0	99.4	40.6	49 / 112	150	0.200	W-21	151	0.200	W-21	048/48/48 / [redacted]
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	056/54/56 / [redacted]
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	041/41/41 / [redacted]
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	030/30/30 / [redacted]
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	051/51/47 / [redacted]
1013	J-15	1173	11/2/64	2130 Z	80.0	100.0	28.0	65 / —	158	0.225	W-21	159	0.225	W-21	052/49/55 / [redacted]
1014	J-16	1180	11/18/64	2036 Z	70.0	103.2	69.6	81 / 145	162	0.250	W-25	139	0.175	W-21	053/59/49 / [redacted]
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	061/61/61 / [redacted]
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	055/55/50 / [redacted]
1017	J-14	1611	2/25/65	2144 Z	75.0	97.2	25.9	81 / 146	140	0.250	W-25	165	0.175	W-21	021/21/21 / [redacted]
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	020/20/20 / [redacted]
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	039/39/35 / [redacted]
1020	J-20	1613	6/9/65	2158 Z	75.1	97.1	40.6	97 / 113	136	0.250	W-25	137	0.175	W-21	067/65/60 / [redacted]
1021	J-21	1615	8/18/65	1803 Z	75.0	109.2	24.3	81 / 161	166	0.175	W-21	167	0.250	W-25	063/69/69 / [redacted]
1022	J-22	1617	7/19/65	2201 Z	85.0	99.7	30.3	66 / 144	168	0.250	W-25	169	0.175	W-21	065/77/70 / [redacted]

TABLE 18-1

PERFORMANCE SUMMARY

MISSION NUMBER	CAMERA	SERIAL NUMBER	M I P VALUE	VISUAL RES	AFSPPL MTF/AIM [redacted] SLIT (μ)	AVERAGE	SLIT (μ)	AVERAGE	SLIT (μ)	AVERAGE ALL	AVERAGE HIGH	90% ATTITUDE ERROR (°) PITCH	ROLL	YAW	90% ATTITUDE RATES (7HR) PITCH	ROLL	YAW	90% V/H ERROR (%)	90% RESOLUTION LIMIT (FEET) ALONG TRACK	CROSS TRACK
1004-1	FWD	124	85	78	350	97	43	109	320	115	127	0.45	0.42	1.08	30.0	25.0	21.0	5.1	7.7	6.8
	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	6.8
	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	10.1	7.0
	AFT			83		72		90		87	94									
1007-1	FWD	144	85	80	350	60	43	87	320	82	91	0.58	0.46	1.43	37.6	25.9	29.9	3.8	3.1	9.4
	AFT			86		63		83		97	110							4.6	2.1	7.8
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	8.8
	AFT			78		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	8.4
	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	27.6	3.3	5.3	5.6
	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	8.9
	AFT			87		87				72	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	0.59	0.70	1.21	45.4	23.6	30.7	4.6	7.5	8.8
	AFT			90		82		85		87	98									
1011-1	FWD	160	90	84	350	78	80	96	80	78	87	0.77	0.39	0.97	45.1	28.9	31.1	2.3	5.3	8.8
	AFT	161		84		77		86		83	93									
1012-1	FWD	156	85	92	—	—	80	91	80	84	98	0.68	0.51	—	47.1	33.2	—	1.8	4.8	—
	AFT			91				87		89	100									
1012-2	FWD	157	85	91				89		84	91	0.97	0.77	0.51	45.2	30.7	20.4	3.9	3.3	8.0
	AFT			89				96		85	98									
1013-1	FWD	158	85	89	—	—	80	94	80	85	99	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	36.5	29.0	32.3	4.5	8.6	8.2
1014-1	FWD	162	80	87	—	—	80	78	80	74	86	0.62	0.41	1.46	35.0	36.1	38.5	2.2	6.2	8.8
	AFT			83				80		95	107	0.62	0.41	1.44	34.8	36.0	38.3	3.3	2.8	8.3
1014-2	FWD	139	80	83				75		70	77	1.08	0.55	—	38.4	36.4	—	1.4	6.4	—
	AFT			86				84		80	88	1.06	0.59	—	38.1	36.0	—	3.2	2.2	—
1015-1	FWD	138	85	87	—	—	80	76	80	90	—	0.65	0.38	0.53	47.0	29.4	38.2	5.0	5.8	7.8
	AFT			87				73		97		0.64	0.39	0.53	46.9	29.2	38.2	6.3	3.4	8.8
1015-2	FWD	141	85	83				72		89		*								*
	AFT			82				72		90										
1016-1	FWD	132	85	85	—	—	80	56	80	81	—	0.72	0.83	2.01	48.9	30.2	40.4	2.0	5.5	10.8
	AFT			83				61		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				55		92		0.83	0.93	2.19	42.2	27.2	39.9	1.5	4.9	8.8
	AFT			91				86		91		0.83	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	86	0.49	0.76	2.50	35.5	32.2	38.4	3.3	9.8	11.6
	AFT			75				70		94	107	0.49	0.76	2.49	35.3	32.0	38.3	4.3	8.3	8.1
1017-2	FWD	165	85	85				65		80	94	0.69	0.45	—	36.5	34.0	—	1.8	6.2	—
	AFT			85				69		86	101	0.69	0.45	—	36.3	33.8	—	2.3	8.3	—
1018-1	FWD	122	85	79	—	—	80	70	80	82	92	0.91	0.48	—	47.4	36.7	—	3.4	8.6	—
	AFT			77				74		96	109	0.90	0.47	—	48.2	36.2	—	3.2	3.7	—
1018-2	FWD	123	85	84				78		77	89	0.84	0.63	—	34.7	30.7	—	3.1	8.6	—
	AFT			88				71		91	103	0.85	0.63	—	34.8	30.7	—	2.8	4.1	—

* DATA NOT PRESENTLY AVAILABLE

TABLE 18-2

PERFORMANCE SUMMARY

MISSION NUMBER	CAMERA	SERIAL NUMBER	M I P VALLE	VISUAL RES	AFSPPL MTF/AIM SLIT (μ)	AFSPPL MTF/AIM AVERAGE	[redacted] SLIT (μ)	[redacted] AVERAGE	[redacted] AVERAGE ALL	[redacted] AVERAGE HIGH	90% ATTITUDE ERROR (°) PITCH	90% ATTITUDE ERROR (°) ROLL	90% ATTITUDE ERROR (°) YAW	90% ATTITUDE RATES (°/HR) PITCH	90% ATTITUDE RATES (°/HR) ROLL	90% ATTITUDE RATES (°/HR) YAW	90% V/H ERROR (%)	90% RESOLUTION LIMIT (FEET) ALONG TRACK	90% RESOLUTION LIMIT (FEET) CROSS TRACK
1019-1	FWD	118	85	81	—	—	80	78	88	104	0.43	0.36	0.97	31.6	34.7	33.0	3.3	9.3	9.1
	AFT	119		99				83	87	101	0.44	0.37	0.96	31.6	34.9	33.1	3.8	8.0	8.8
1020-1	FWD	136	80	88	—	—	80	69	78	90	0.46	0.35	0.78	37.4	31.8	28.7	5.4	5.8	8.4
	AFT			89				82	94	105	0.46	0.35	0.78	37.4	31.8	28.7	5.3	4.2	7.9
1020-2	FWD	137	—	—				—	—	—	0.41	0.17		42.6	23.8	42.5	3.5	6.4	7.6
	AFT			—				—	—	—	0.41	0.17		42.6	23.8	42.5	3.4	4.8	8.8
1021-1	FWD	166	85	88	—	—	80	77	86	99	0.55	0.37	0.81	34.9	32.6	26.2	2.7	8.8	8.9
	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	167	85	85				74	88	112	0.59	0.65	—	44.7	50.6	—	3.1	9.2	—
	AFT			74				62	—	—	—	—	—	—	—	—	—	—	—
1022-1	FWD	168	85	88	—	—	80	66	78	91	0.47	0.51	0.89	28.3	27.1	23.8	3.5	9.8	8.8
	AFT			91				83	101	111	0.47	0.51	0.90	27.9	26.6	23.8	3.0	8.2	8.1
1022-2	FWD	169	85	90				68	74	84	0.40	0.51	0.90	29.4	27.3	31.0	2.8	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

TABLE 18-3

EXPOSURE - PROCESSING SUMMARY

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	3	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	3	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	36
	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	80
	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	80
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	2.30	2.12	2.18	0	11	77	9	3	48
1007-1	FWD	12	49	50	103	0	5	95	1	20	79	0	25	75	0.26	1.22	0.52	0.47	0.62	2.20	1.44	1.40	1.22	1.36	2.17	2.21	20	8	67	5	0	80
	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	1.82	1.52	1.54	2.39	2.20	2.24	1	13	80	8	1	80
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	85
	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	88
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	48
	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	48
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	85
	AFT	29	56	42	105	0	100	0	3	30	67	0	29	71	0.32	1.64	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	85
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	2.35	5	4	77	14	0	80
	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	0.63	2.51	2.32	2.36	1	3	73	20	0	80
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	85
	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	2.60	2.31	2.34	1	4	77	18	0	85
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	1.58	1.52	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	1.39	1.00	2.44	2.14	2.20	22	4	67	6	0	48
	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	2.19	2.27	13	3	76	8	0	48
1011-1	FWD	2	55	33	66	0	64	36	2	23	75	2	23	75	0.18	0.93	0.50	0.46	0.56	2.38	1.48	1.43	0.78	2.40	2.07	2.16	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	0.53	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	48
	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	0.58	0.36	0.52	2.29	1.56	1.59	1.21	2.41	2.03	2.10	7	13	78	4	0	45
	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	1.89	1.63	1.10	2.36	1.97	2.03	5	5	74	16	0	42
1014-1	FWD	0	59	15	71	0	21	79	1	38	61	0	63	37	0.17	0.99	0.40	0.36	0.28	2.36	1.40	1.42	1.01	2.38	1.94	2.05	27	33	39	1	0	60
	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	0.29	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	0.46	2.28	1.49	1.50	0.80	2.36	1.86	1.95	14	0	77	8	0	48
1015-2	FWD	0	80	-2	71	0	10	90	0	10	90	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	45
	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	45
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	58	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	1.82	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	0.48	2.23	1.74	1.78	0.60	2.32	1.93	2.00	1	8	77	13	1	25
	AFT	-1	57	19	98	0	17	83	24	58	18	4	90	6	0.20	1.62	0.64	0.60	0.60	2.28	1.78	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	135	0	7	93	18	62	20	0	89	11	0.20	1.54	0.64	0.62	0.30	2.30	1.82	1.68	0.38	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	0.66	2.22	1.86	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	2.20	1.88	1.80	1.03	2.28	1.95	2.00	1	12	77	8	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	1.80	1.84	0.90	2.26	1.85	1.91	1	31	86	8	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	2.26	1.70	1.74	1.09	2.35	1.98	2.04	0	8	58	33	2	49

TABLE 18-3

EXPOSURE - PROCESSING SUMMARY

MISSION NUMBER	CAMERA	SOLAR ELEVATION RANGE (°)		SOLAR AZIMUTH RANGE (°)		PREDICTED PROCESSING (%)			REPORTED PROCESSING (%)			COMPUTED PROCESSING (%)			TERRAIN D-MIN				TERRAIN D-MAX				CLOUD D-MAX				UNDER EXPOSED (%)	UNDER PROCESSED (%)	NOMINAL EXP & PRO (%)	OVER PROCESSED (%)	OVER EXPOSED (%)	CLOUD COVER (%)
															RANGE				RANGE				RANGE									
		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						
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	48
	AFT	23	70	21	152	0	92	8	26	55	19	3	87	10	0.13	1.70	0.68	0.60	0.39	2.26	1.46	1.45	0.80	2.30	1.96	2.02	1	13	70	14	3	48
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	48
	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	8	0	48
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	36
	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	36
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	1.34	1.05	2.23	1.82	1.85	14	13	66	6	0	20
	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	1.82	1.50	1.30	2.36	1.94	1.94	6	0	71	21	1	20
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	36
	AFT	27	67	28	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	36
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	35	28	35	1	0	48
	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	1.91	1.52	1.45	2.49	2.25	2.28	10	25	61	4	0	48

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 OPERATIONS / FAILURES / RELIABILITY	SAMPLE CYCLES / FAILURES / RELIABILITY	SAMPLE HOURS / FAILURES / RELIABILITY	SAMPLE HOURS / FAILURES / RELIABILITY	RELIABILITY	SAMPLE CAPSULES / FAILURES / RELIABILITY	SAMPLE CYCLES / FAILURES / RELIABILITY	SAMPLE CYCLES / FAILURES / RELIABILITY
9038 To 1008	60 / 1 / 97.3	52 / 0 / 98.6	3124 / 0 / 98.0	3124 / 0 / 98.0	96.1	18 / 1 / 90.7	3400 / 3 / 83.1	12,000 / 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 / 89.3	15,000 / 0 / 93.4
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 / 94.4
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 / 96.2
1012	76 / 1 / 97.8	60 / 0 / 98.9	3720 / 0 / 98.2	3720 / 0 / 98.2	96.9	26 / 1 / 93.8	5525 / 0 / 94.7	24,000 / 0 / 96.8
1013	78 / 1 / 97.8	62 / 0 / 99.0	3940 / 1 / 96.9	3940 / 0 / 98.3	96.0	28 / 1 / 94.0	5950 / 0 / 95.1	25,500 / 0 / 96.8
1014	82 / 1 / 97.9	64 / 0 / 99.0	4066 / 1 / 96.1	4066 / 0 / 98.3	96.1	30 / 1 / 94.4	6375 / 1 / 89.6	28,500 / 0 / 96.4
1015	86 / 1 / 98.0	66 / 0 / 99.0	4320 / 1 / 96.3	4320 / 0 / 98.4	96.1	32 / 1 / 94.8	7225 / 1 / 90.4	31,500 / 0 / 96.7
1016	90 / 1 / 98.1	68 / 0 / 99.0	4560 / 1 / 96.5	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 / 96.7	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 / 96.8	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 / 96.9	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

** 1000 SAMPLE OUT OF SEQUENCE

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	108 / 1 / 98.8	78 / 0 / 99.1	5544 / 1 / 97.1	5544 / 0 / 98.9	96.9	43 / 1 / 96.1	10,650 / 2 / 89.9	48,000 / 0 / 97.9
1021	104 / 1 / 98.8	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	11,650 / 2 / 90.7	51,000 / 0 / 98.0

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