~~TOP SECRET~~ [redacted]

[redacted] Cy [redacted]

[redacted]

1101

1400039093

CR-1 PERFORMANCE

[redacted]

CR-1 ASCENT PERFORMANCE

- ASCENT NORMAL
- IN-FLT RESET (DOOR EJECT) REC'D. AS PROGRAMMED
- A/P TO ORBIT MODE REC'D. AS PROGRAMMED
- INSTRUMENTATION SWITCHOVER TO ORBITAL MODE - NORMAL
- P/L SYSTEM IN STANDBY AT FADE – ALL STATUS MONITORS NORMAL
- NO PAN LENS ROTATION DURING ASCENT
- ASCENT VIBRATION WITHIN QUAL LEVELS
  - [redacted] – MEASUREMENT –

	LEVEL
INSTRUMENT FORWARD BARREL RING STATION 86	2.7 g's
INSTRUMENT DELTA MOUNT FITTING STATION 114	3.4 g's
INSTRUMENT DELTA +Y APEX STATION 114	2.7 g's
AGENA IRP STATION 255	2.2 g's

  FREQUENCY - 17.5 CPS
  MAXIMUM - 11 SECONDS PRIOR TO MECO
- ASCENT TEMPERATURES °F (MAX)

	TEMPERATURE	TIME TO MAXIMUM
PANORAMIC CAMERA #1	68	NO CHANGE
PANORAMIC CAMERA #2	72	NO CHANGE
DSIC	69	NO CHANGE
PMU	72	NO CHANGE
SRV 'A'	101	NO CHANGE
SRV 'B'	137	NO CHANGE
FAIRING	486	230 SEC
DISICONIC	437	230 SEC
INSTRUMENT BARREL	384	230 SEC

[redacted]

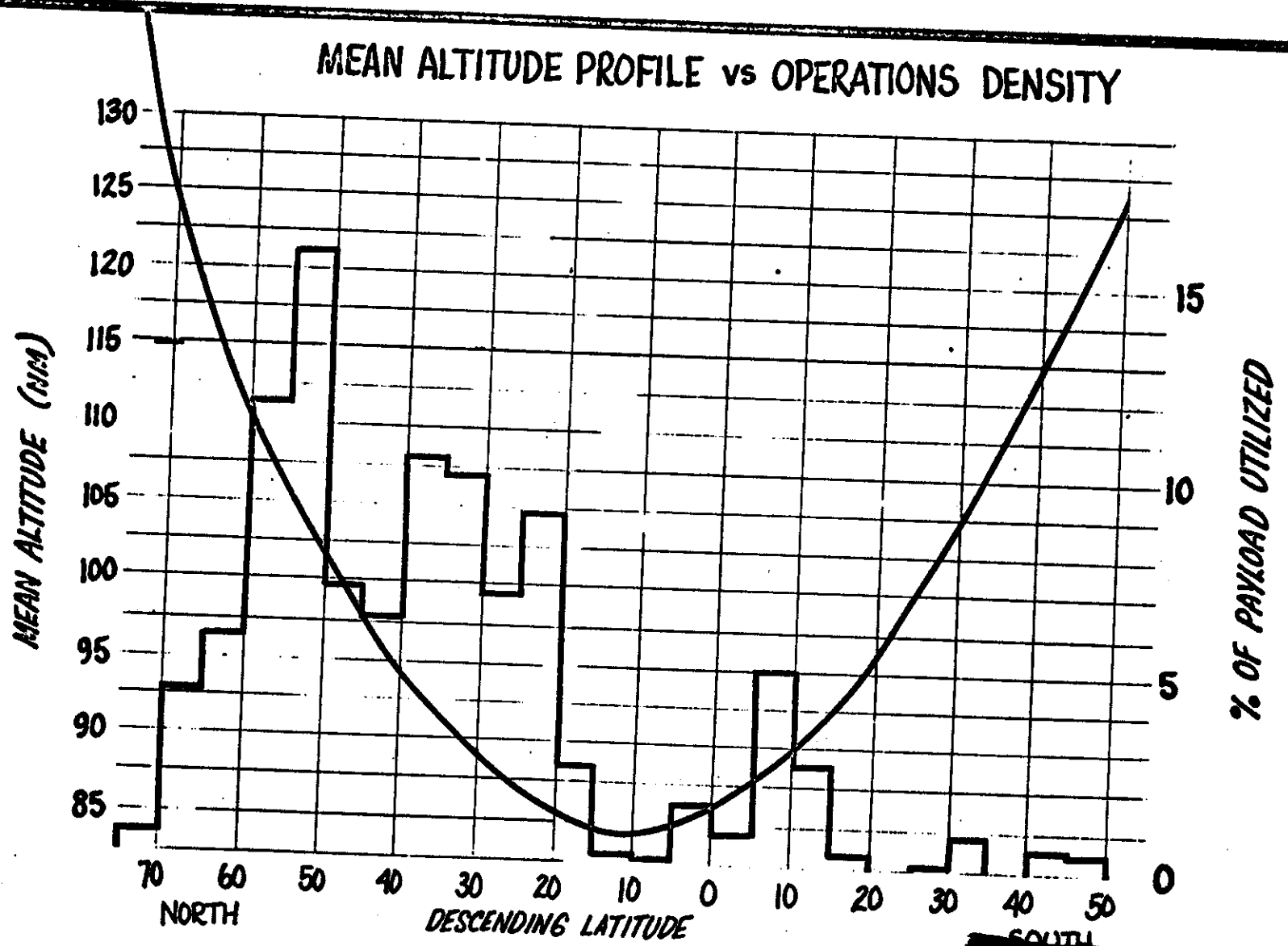
CR-1 1641 ORBITAL PARAMETERS

- PARAMETERS WERE WELL WITHIN 3 SIGMA

PARAMETER	PRED. REV. 1	REV. 1	REV. 2
PERIOD (MIN.)	90.04	90.06	90.04
PERIGEE (NM)	84.8	86.0	84.8
APOGEE	215.1	213.8	213.8
ECCENTRICITY	0.0182	0.0178	0.0180
INCLINATION (DEG)	80.0	80.06	80.08
ARG OF PERIGEE	162	173.5	174.3

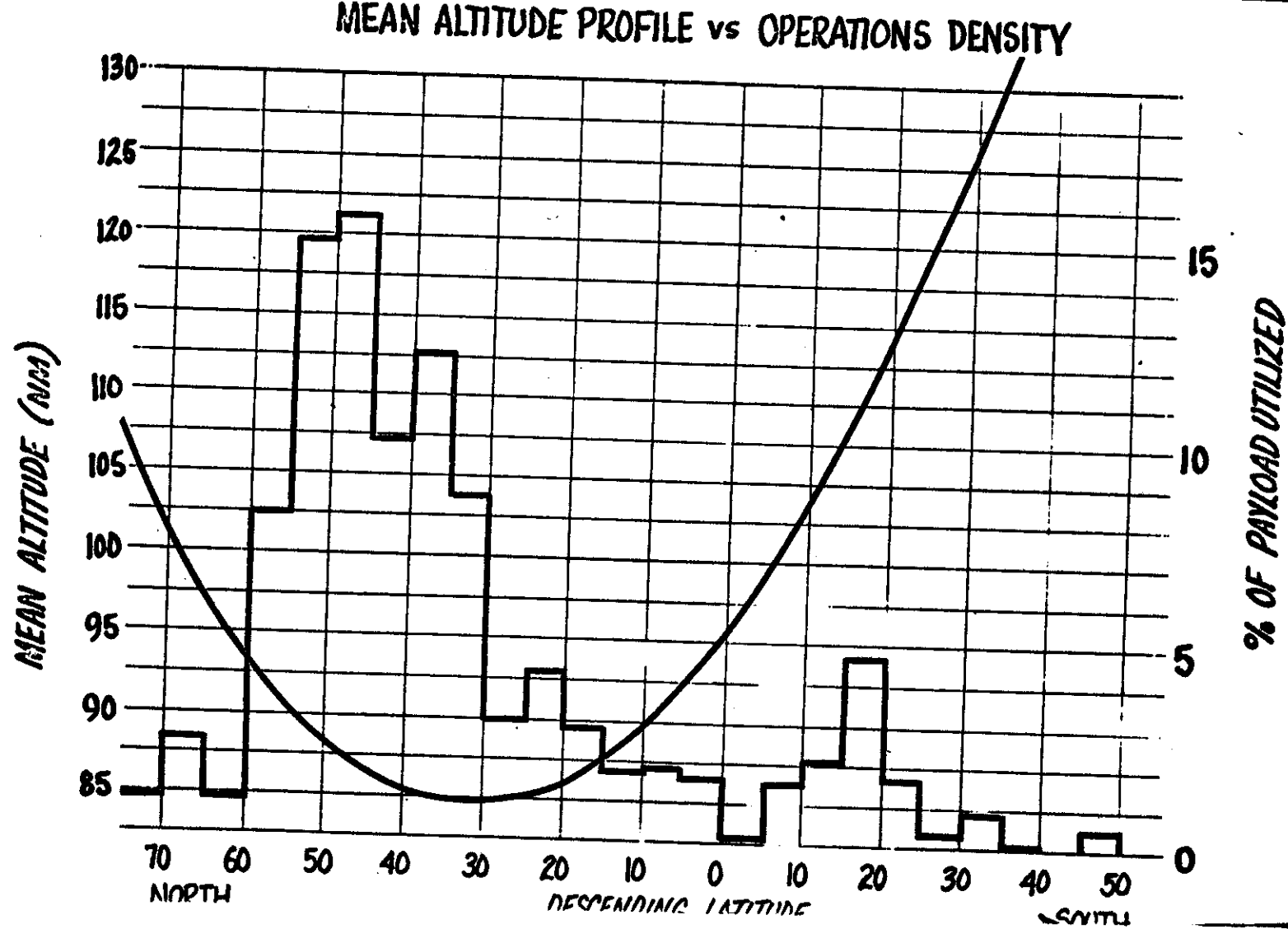
[redacted]

1101-1 / CR-1


MEAN ALTITUDE PROFILE vs OPERATIONS DENSITY
MEAN ALTITUDE (NM)
130
125
120
115
110
105
100
95
90
85
% OF PAYLOAD UTILIZED
15
10
5
0
70
60
50
40
30
20
10
0
10
20
30
40
50
NORTH
DESCENDING LATITUDE
SOUTH

[redacted]

1101-2 / CR-1



CR-1 1641 PERFORMANCE SUMMARY

- ASCENT PERFORMANCE - NORMAL
- PAN CAMERA PERFORMANCE - NORMAL
- CUT & WRAP SEQUENCE - NORMAL (KZ-38)
- DISIC PERFORMANCE - NORMAL
- CUT AND SPLICE SEQUENCE - NORMAL (KZ-39)
- FMC SYSTEM PERFORMANCE
  - YAW AND OBLATENESS PROGRAMMERS - NORMAL
  - ECCENTRICITY PROGRAMMER - SENSITIVE TO NOISE GENERATED BY COMMAND SYSTEM
- EXPOSURE CONTROL SYSTEM -
  - SENSITIVE TO NOISE GENERATED BY COMMAND SYSTEM
  - DISIC DAY-NIGHT AND NIGHT-DAY SEQUENCE TIMERS REVERSED PRE-FLIGHT
- COMMAND SYSTEM - NORMAL WITHIN RESTRICTIONS
- CLOCK SYSTEM - NORMAL
- PMU SYSTEM - NORMAL
- INSTRUMENTATION SYSTEM - NORMAL
- THERMAL ENVIRONMENT - 20° F LOWER THAN NOMINAL, 10° F LOWER THAN PREDICTED
- ORBITAL PARAMETERS-WITHIN 3 SIGMA
- OAS OPERATION - 5 FIRINGS NORMAL OPERATION
- -1 AND -2 RECOVERY SYSTEM OPERATION - NORMAL AIR CATCH
- -1 AND -2 RECOVERY SYSTEM TAPE RECORDER - NORMAL

[redacted]

CR-1 PAN CAMERA PERFORMANCE

CYCLE PERIODS ON ENGINEERING OPERATIONS

PASS	PAN #1 NOMINAL	PAN #1 ACTUAL	PAN #1 %ERROR	PAN #2 NOMINAL	PAN #2 ACTUAL	PAN #2 % ERROR
9	3.451	3.470	0.7 S	3.451	3.465	0.6 S
16	2.061	2.070		2.062	2.06	
32	1.963	1.990	1.3 S	1.964	1.985	1.1 S
48	1.942	1.950	0.4 S	1.943	1.960	0.8 S
63	1.928	1.940	0.6 S	1.929	1.936	0.4 S
72	3.215	3.228	0.4 S	3.215	3.228	0.4 S
89	3.702	3.730	0.75 S	3.702	3.735	0.9 S
111	1.843	1.835	0.4 F	1.844	1.855	0.6 S
127	1.845	1.850	0.3 S	1.846	1.847	—
143	1.849	1.850	—	1.850	1.850	—
159	1.810	1.804	0.3 S	1.810	1.804	0.3 F
175	1.821	1.805	0.8 F	1.822	1.810	0.6 F

INSTRUMENT OPERATIONS NORMAL ON PASSES MONITORED ON TELEMETRY

STARTUP - SHUTDOWN - TRANSPORT FUNCTIONS NORMAL

CUT & WRAP (KZ-38), TRANSFER TO SECOND MISSION NORMAL

CR-1 PERFORMANCE

DISIC —

- DISIC SYSTEM OPERATION NORMAL
- CUT & SPLICE AND TRANSFER TO -2 MISSION NORMAL

FMC PROGRAMMER

- ECCENTRICITY PROGRAMMER DELAY TIMED OUT EARLY ON MOST PASSES WHERE COMMANDS WERE ISSUED DURING DELAY - EARLY TIME OUT OCCURRED ON REVS 5-9 AND 22
- RESTRICTED COMMAND DURING TIME OUT, AFTER REV 22 - SUBSEQUENT TIME OUTS NORMAL

EXPOSURE CONTROL SYSTEM

- EXPOSURE CONTROL TIMER SENSITIVE TO NOISE GENERATED BY COMMAND SYSTEM
- EARLY TIME OUT ON REV 159, 43 SEC EARLY AND REV 175, 23 SEC EARLY
- DISIC TIMER T2 & T5 REVERSED FROM DESIRED THEREFORE SWITCH TO 1/500 OCCURRED 320 SEC LATE AND SWITCH TO 1/250 OCCURRED 320 SEC EARLY

COMMAND SYSTEM

- COMMAND SYSTEM PERFORMED NORMALLY THROUGHOUT FLIGHT

CLOCK

- CLOCK/SYSTEM TIME CORRELATION PERFORMED MANUALLY DURING FLIGHT INDICATED NORMAL PERFORMANCE OF SERIAL OUTPUT

[redacted]

CR-1 PERFORMANCE

PMU SYSTEM

- PMU SYSTEM OPERATED NORMALLY

INSTRUMENTATION SYSTEM

- INSTRUMENTATION SYSTEM OPERATED NORMAL WITH POSSIBLE EXCEPTION OF PAN #2 PLATEN POSITION MONITOR

THERMAL ENVIRONMENT

- THERMAL ENVIRONMENT 20° F LOWER THAN NOMINAL - 10° F LOWER THAN PREDICTED
- TEMPERATURE DATA FROM DAYTIME [redacted] PASSES:

DAY—	1	2	3	4	5	6	7	8	9	10	11	12
PAN #1 (AVG)	47	47	46	49	50	48	48	48	51	52	53	55
DELTA (AVG)	40	40	40	46	47	44	46	42	53	50	50	55
PAN #2 (AVG)	47	46	46	49	48	49	49	49	51	52	52	55
SUPPLY CASSETTE	50	47	47	52	52	53	53	52	56	57	57	60
SRV 'A' TAKE-UP	60	58	59	59	58	-	-	-	-	-	-	-
SRV 'B' TAKE-UP	60	52	51	50	52	53	52	53	52	54	55	58
DISIC (AVG)	44	42	44	43	43	43	41	42	42	44	43	50

PAN CAMERA INSTRUMENT TEMPERATURES COMPARED PRIOR TO AND AFTER ENGINEERING OPERATIONS ON PASSES 72, 111 AND 143 - NO CHANGE OBSERVED

[redacted]

CR-1 PERFORMANCE

OAS OPERATION

- FTV 1641 CARRIED 6 OAS ROCKETS
- 5 ROCKETS UTILIZED - PERIOD GAIN APPROXIMATELY 10 SEC/ROCKET
- 1 ROCKET FIRED ON REVS 66, 98, 112, 162, 192 - OPERATION NORMAL ON ALL PASSES

RECOVERY SYSTEM

- -1 RECOVERY SYSTEM OPERATION NORMAL - AIR CATCH WITHIN PREDICTABLE IMPACT DISPERSION
- -2 RECOVERY SYSTEM OPERATION NORMAL - AIR CATCH WITHIN PREDICTABLE IMPACT DISPERSION

TAPE RECORDER SYSTEM

- TAPE RECORDER OPERATION NORMAL
- TOTAL OF 98 MINUTES OF RECORD TIME (BOTH MISSIONS)
- OCCASIONAL BIT DROPOUT IN RECORDER - APPEARS TO BE WITHIN SPEC
- DATA RECOVERY WITHIN CAPABILITY OF SOFTWARE
- DATA PROCESSED AND TRANSMITTED TO CUSTOMER FOR EVALUATION - NO FEEDBACK

CR-1 PAN CAMERA IMAGE QUALITY

- INSTRUMENT #302 (AFT LOOKING) BELOW AVERAGE OF J1 MISSIONS
- INSTRUMENT #303 (FWD. LOOKING) AS GOOD AS OR BETTER THAN J1 DURING SECOND MISSION
- COVERAGE PRIOR TO REV 25 APPEARS DEGRADED
- #302 AND #303 HAVE A BAND OF DOUBLE IMAGERY AT START OF SCAN

[redacted]

CR-1 FLIGHT PERFORMANCE

PAN CAMERA IMAGE QUALITY

- FINAL A/P RESOLUTION TEST RESULTS (@ 70° F)

CAMERA	FILTER	FOCAL POSITION	RESOLUTION
#302 (AFT-LOOKING)	W-21 (GELATIN)	-.002"	70 L/MM
		-.001	98
		.000	118
		+.001	118
		+.002	106
#303 (FWD. LOOKING)	W-23A (GELATIN)	-.002	110
		-.001	118
		.000	101
		+.001	101
		+.002	101

- REPORTED FOCAL SHIFT CHARACTERISTIC: +0.00025" PER +30° F
- INSTRUMENT #303 TEST AND FLIGHT RESULTS APPEAR CONSISTENT
- INSTRUMENT #302 APPEARS TO HAVE HAD AN ANOMALY IN FLIGHT [redacted]

CR-1 EXPOSURE CONTROL EVALUATION

- BASELINE DATA OBTAINED ON REVS 14, 16, 127 WITH NORMAL FILTERS AND OPERATIONAL SLITS
- REV 143 COMPARISON OF PRIMARY AND ALTERNATE FILTERS WITH FILTER CHANGE DURING OPERATION.
- REV 157 NORMAL FILTERS AND MAXIMUM SLIT OPENING
- REV 159 THROUGH EXPOSURE TEST USING ALL SLIT CONTROL POSITIONS DURING CONTINUOUS OPERATE
- REV 173 BASELINE WITH ALTERNATE FILTERS
- REV 175 ALTERNATE FILTER PAN CAMERA #1

[redacted]

[redacted]

CR-1 POST MISSION TEST PLAN

- EXERCISE ALL COMMANDS NOT USED DURING MISSION
- MONO OPERATION
- EMERGENCY MODE OPERATION
- YAW PROGRAMMER PHASE CHECK
- EARLY TIMER MALFUNCTION CHECKOUT