The launch of FTV 1136 occurred at 2:04 PST on 11/5/62. CK-14 was the primary payload system aboard. The door to the master instrument failed to eject on ascent. All other ascent functions appeared normal. The following orbital parameters were achieved:

TABLE I

Orbital Parameters (Orbit 23)

	Nominal	Actual
Period (Min.)	90.68	90.72
Apogee (N.M.)	223.26	225
Perigee (N.M.)	112.58	112
Eccentricity	.0154	.0155
Inclination (Deg.)	74.88	74.99
Perigee Latitude (Deg.)	22.33	24.95

INSTRUMENT OPERATION

Panoramic Instruments. Both panoramic instruments operated throughout the flight. The cycle period of both instruments was approximately 4% slower than the pre-flight nominals. Cycle period variation between instruments was 0.2%. IMC match was good. Ramps 3 and 8 were used for the entire flight.

On ascent, the telemetry data indicated the door for the number one (master) instrument did not come off as programmed. However, telemetry indicated the door came off sometime during orbit 7. This has been verified by the processed payload which had no exposed frames for the master instrument prior to pass 8.

[redacted]

[redacted]

The processed payload indicates [redacted] horizon and the stellar index doors came off as programmed on [redacted] since all the pyros in the forward barrel and those for the stellar index are energized from a common voltage bus and since the stellar index and horizon doors came off it is safe to assume that voltage was applied to the main door pyros. Therefore, the failure would seem to be a mechanical hangup or a failure of the pyros to ignite as opposed to an electrical failure.

An investigation into the failure and its possible causes is continuing.

No other system dynamic problems were evident on the telemetry data.

Stellar Index. The stellar index unit was operating normally on all observed telemetry acquisitions during the flight.

Clock Performance. The clock error on this flight was the largest recorded to date on an M system using systems time as a standard. A time loss of 181 milliseconds was recorded between orbits 9 and 41. The last clock accuracy test prior to launch indicated the clock was off 7 microseconds in a 5 minute test. The maximum allowable error is 17 micro seconds for a 5 minute test. The time loss appeared to be linear throughout the flight, therefore, good time correlation can be achieved.

Temperature Environment. Enclosure I is a tabulation of the in-flight temperatures. The temperatures were fairly well stabilized by orbit 9. The temperature range was from 61 to 78 degrees for the main instruments during the flight.

Pirani Gage. A pirani gage was flown to monitor the internal system pressure during the flight. The internal pressure had decreased to 290 microns at telemetry fade on launch (475 seconds after launch). At the

[redacted]

[redacted]

beginning of acquisition at [redacted] was on and four cycles had been completed. Enclosure II is a plot of the pressure during this pass. On the telemetry acquisition at [redacted] on pass 7 the pressure was at 31 microns at acquisition and 29 microns at fade, a total time of 500 seconds. By pass 7 [redacted] the pressure had decreased to approximately 20 microns. On pass 9 [redacted] the pressure was less than 10 microns at acquisition and increased to 18 microns during the engineering operation of 10 cycles on each instrument. Enclosures III and IV are plots the pressure observed on passes 9 and 15, and 25 and 41 respectively. The pressure was observed to be less than 10 microns on all other telemetry acquisitions during the flight (See Enclosure V). On pass 65, after separation, the pressure monitor indicated less than 6 microns verifying the pirani gage calibration. Enclosure VI is a plot of the pirani gage calibration used on this flight.

Recovery System Performance. A successful air catch recovery was made on orbit 65. Due to the low inclination of the orbit no telemetry data was acquired of the recovery sequence. The condition of the recovered capsule was good with little or no heating damage. The water seals were closed and appeared to have functioned normally.

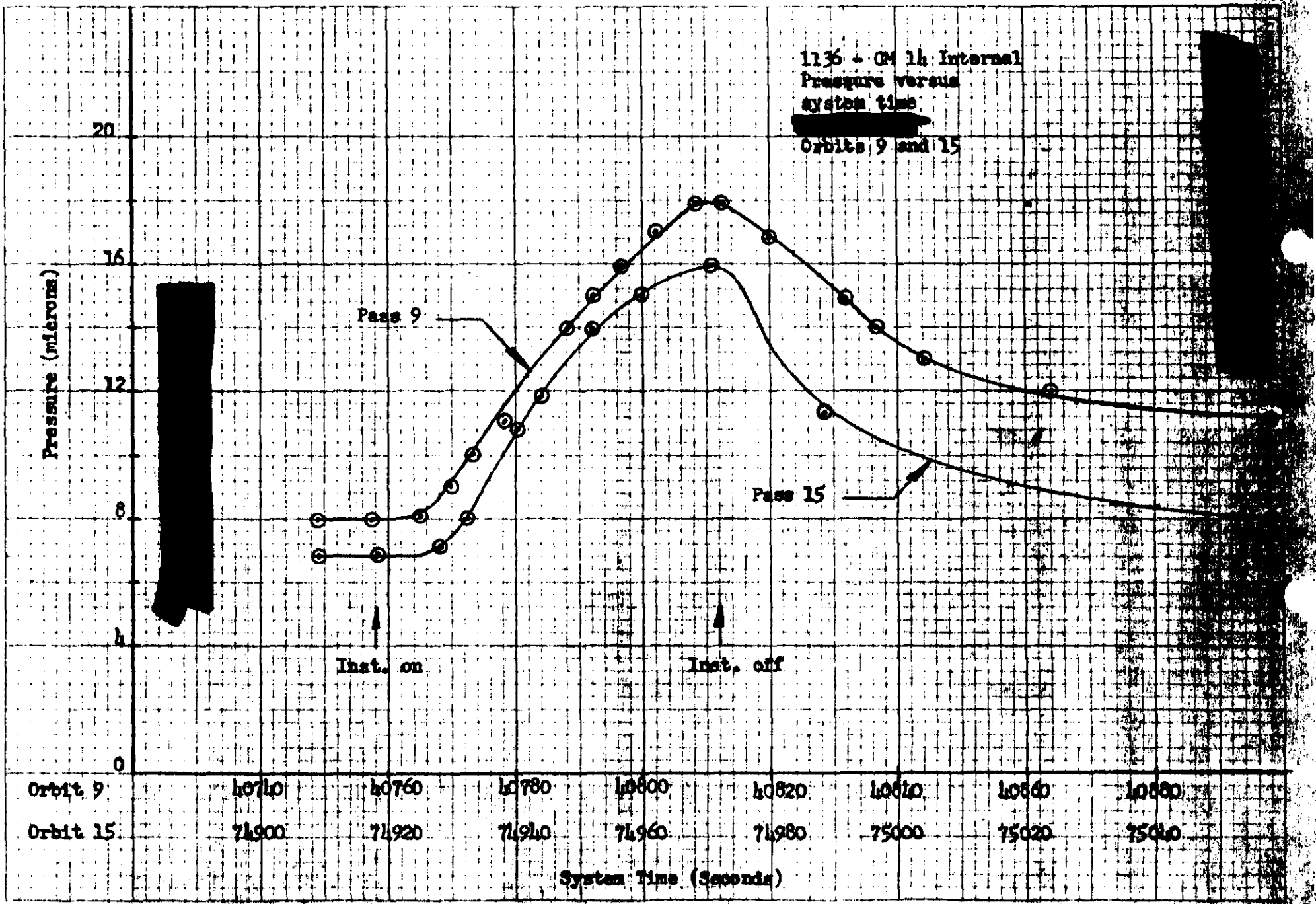
Enclosure VII is a plot of the re-entry trajectory.

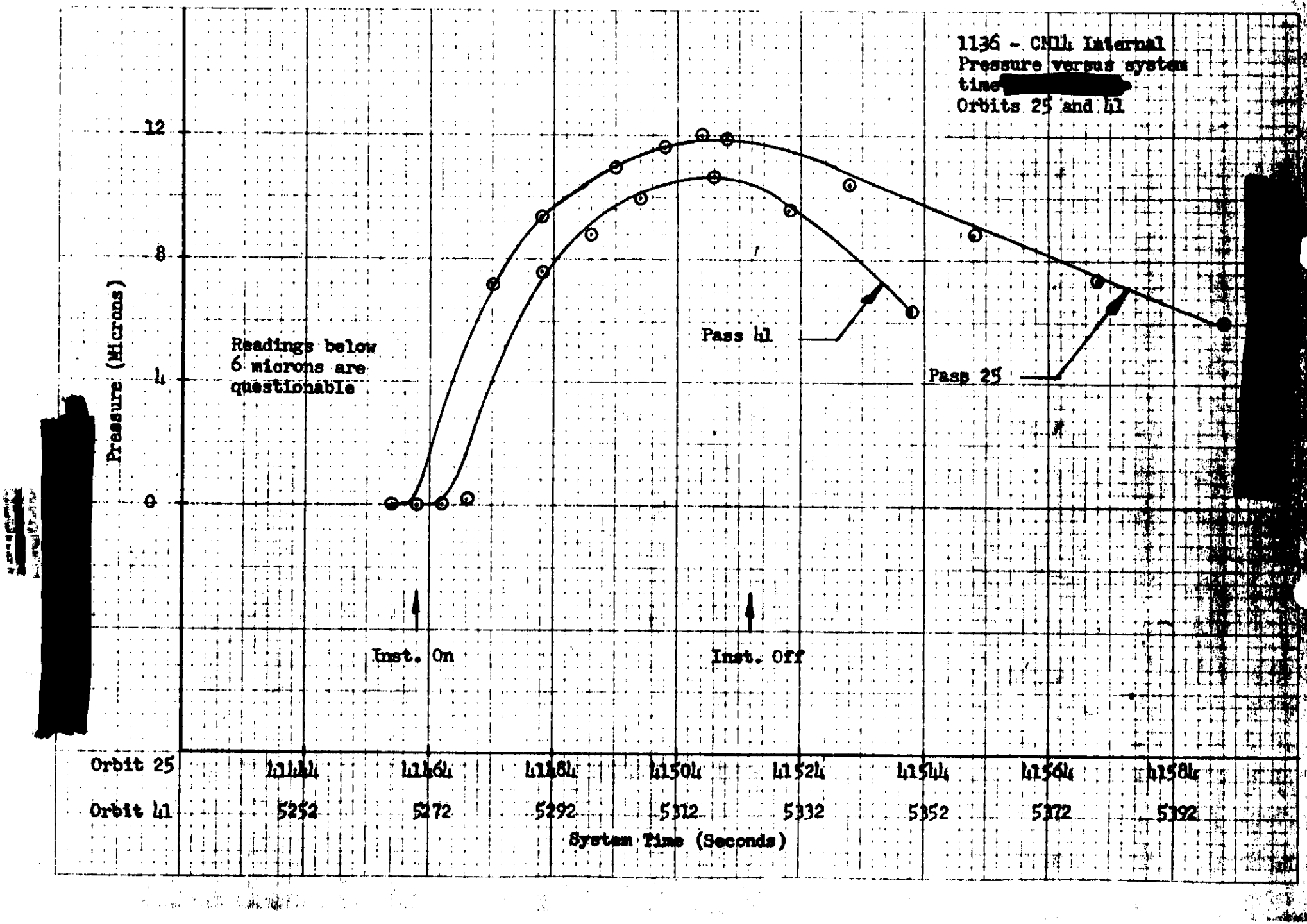
Enclosure VIII is a diagram of the location and the temperatures recorded by the temp-plates installed on the recovery system.

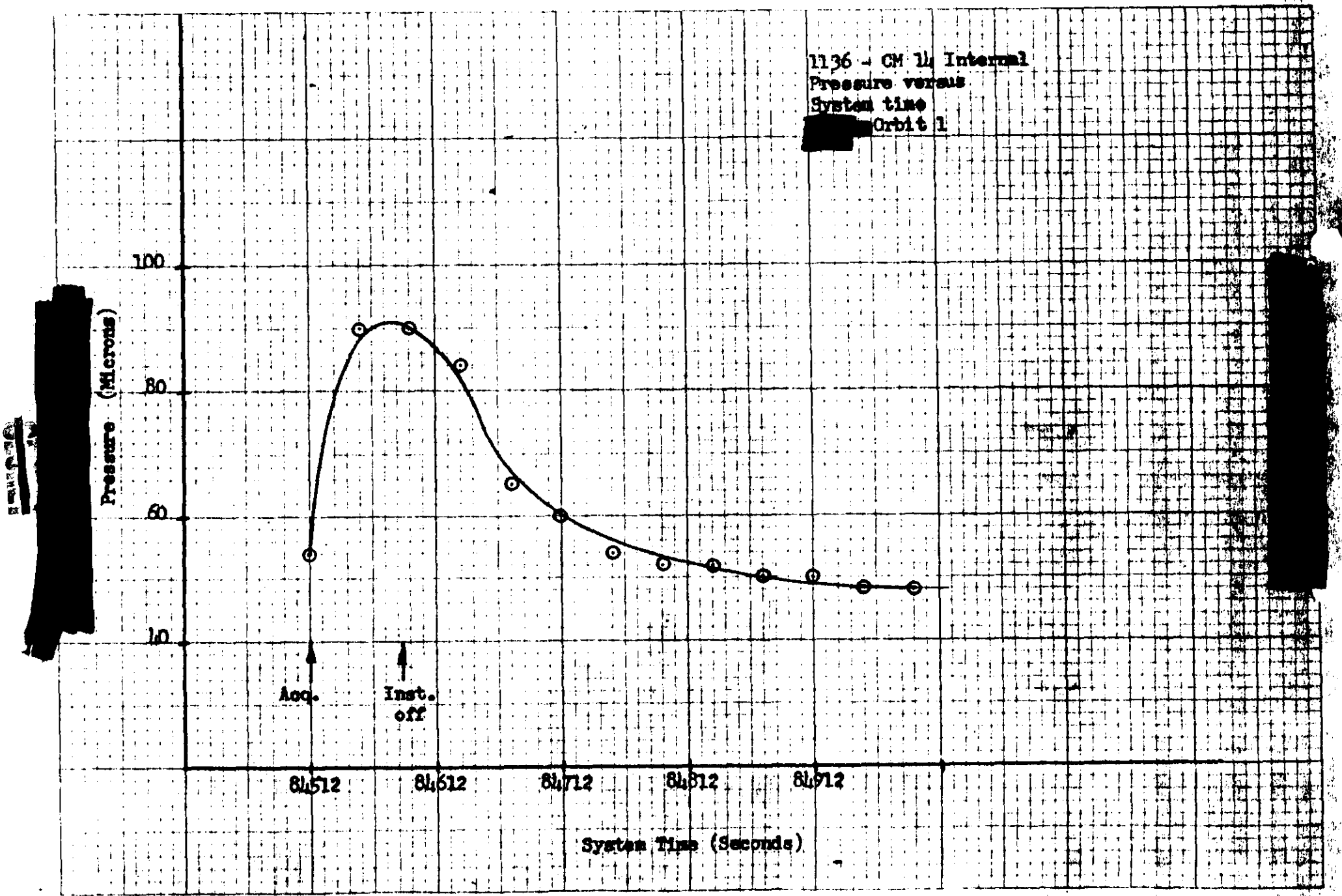
[redacted]

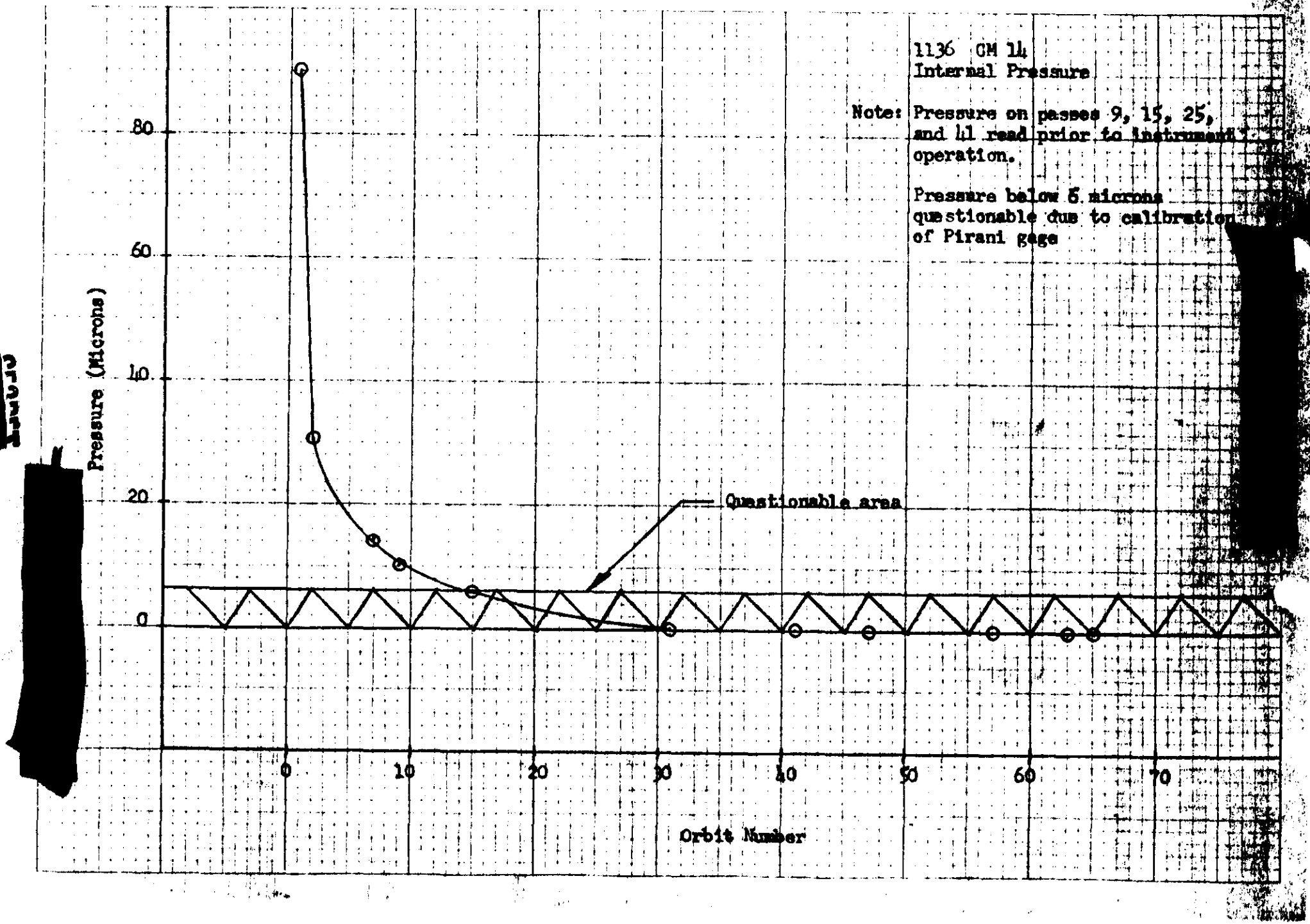
C_M 14 1136 TEMPERATURE SUMMARY

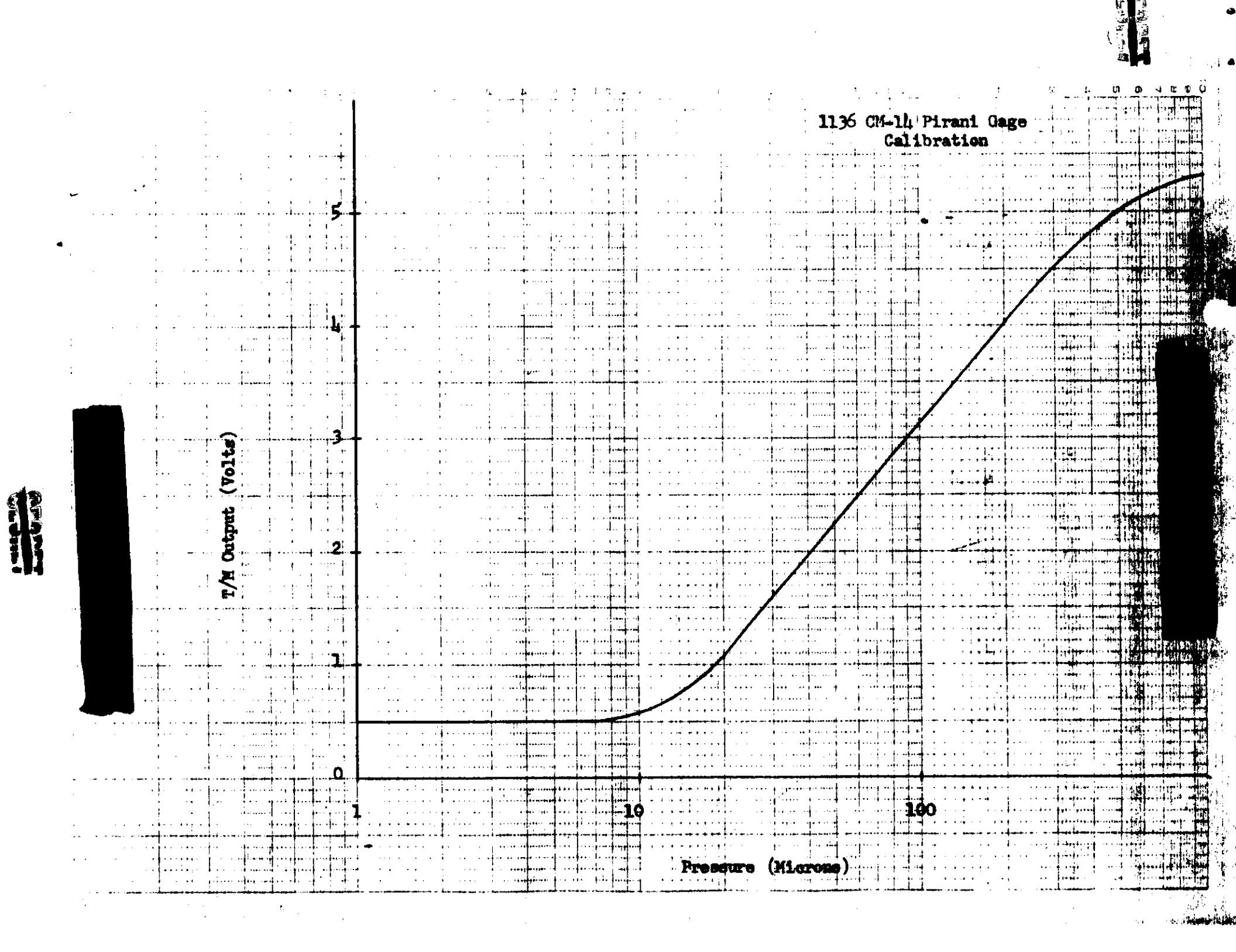
Temp. Sensor	Launch Liftoff	+475 Sec.	Orbit 1	9	15	25	31	41	47	57	63
Inst. No. 1											
7	68.9	68.9	85.5	78.3	72.4	76.2	71.9	74.9	71.9	72.8	71.1
12	68.9	83.2	80.0	54.9	48.3	51.8	46.2	50.2	46.2	49.3	46.1
2	71.1	71.1	85.0	78.3	70.0	74.4	70.6	72.4	70.6	70.4	70.0
11	68.9	95.2	81.5	70.0	63.0	67.0	60.7	66.5	61.1	64.7	59.5
13	68.9	70.0	85.7	71.1	65.0	67.5	63.4	66.5	63.0	64.1	60.7
5	76.0	77.1	83.1	71.1	66.0	68.7	63.7	66.5	63.6	64.5	63.0
Inst. No. 2											
5	68.9	68.9	75.8	73.6	69.0	70.4	66.7	68.9	66.7	67.3	65.2
12	65.2	68.9	78.1	80.7	70.0	78.3	69.3	76.0	70.6	74.0	64.1
11	-	66.4	77.1	71.1	69.0	70.9	67.8	68.9	66.9	66.3	61.9
13	-	59.5	76.0	73.6	69.0	71.9	69.1	70.0	67.2	67.6	64.1
7	66.5	66.5	78.3	76.0	70.0	73.6	69.8	72.4	69.5	69.8	68.9
2	65.2	64.1	75.5	73.6	69.0	72.6	69.3	71.1	68.7	69.3	66.5
S/I Unit											
2	80.7	91.5	86.6	61.9	56.0	58.5	54.2	57.2	53.0	57.4	52.2
Fairing											
1	69.2	-	-	-	-	-	-	-	-	-	-
4	71.8	-	73.2	58.5	51.0	51.1	46.5	53.8	53.8	59.5	40.2
Clock											
1	73.6	92.9	91.0	59.5	55.0	57.8	54.9	57.2	53.6	57.2	41.3
Thrust Cone											
1	64	79	78.8	63	53.0	59.0	53.0	58	51.3	57.8	51.3

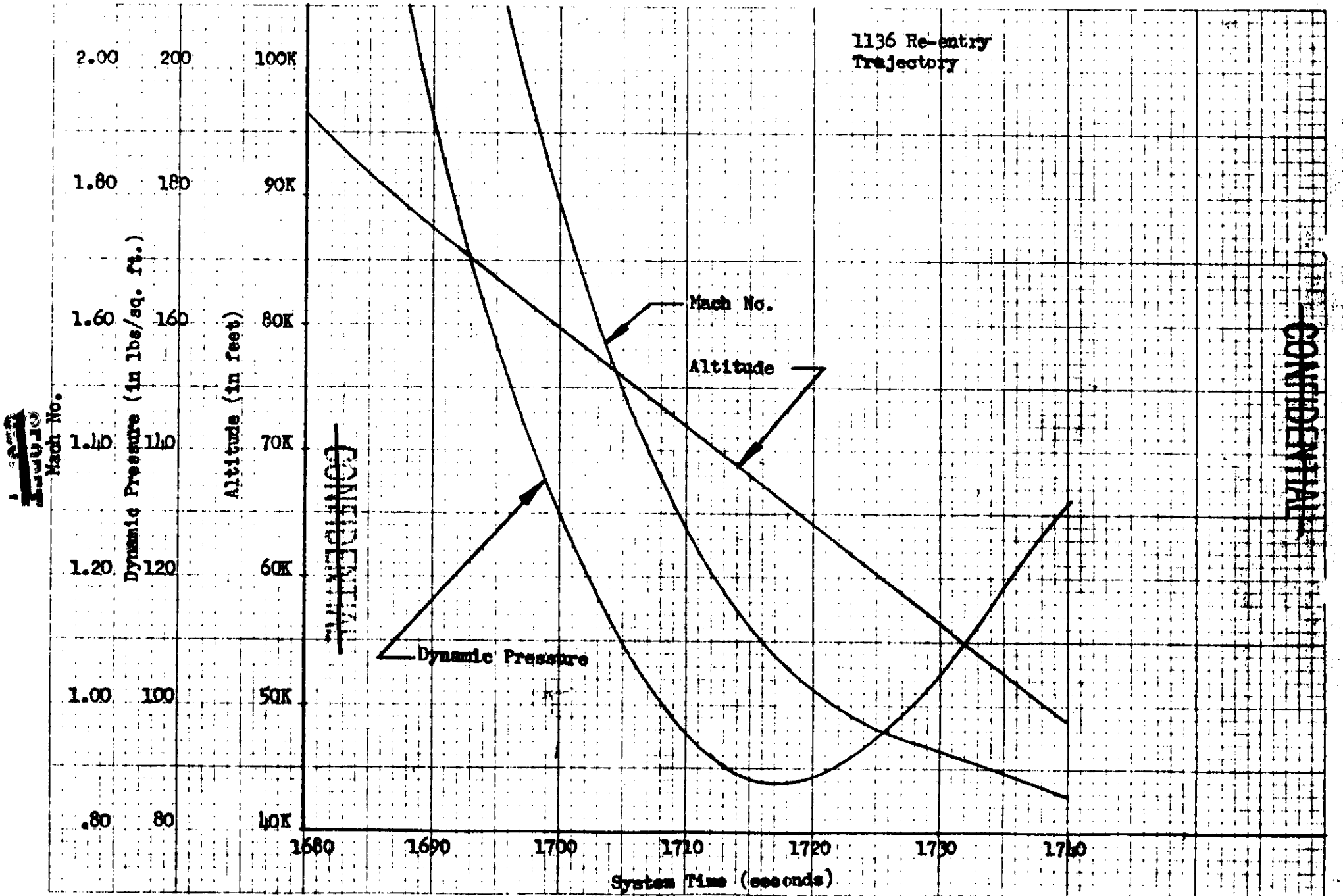

1136 - CM 14 Internal
Pressure versus
system time
[redacted]
Orbits 9 and 15
Pressure (microns)
20
16
12
8
4
0
Pass 9
Pass 15
Inst. on
Inst. off
Orbit 9
Orbit 15
40740
40760
40780
40800
40820
40840
40860
40880
74900
74920
74940
74960
74980
75000
75020
75040
System Time (Seconds)


1136 - CH4 Internal Pressure versus system time
Orbits 25 and 41
12
8
4
0
Pressure (Microns)
Readings below 6 microns are questionable
Pass 41
Pass 25
Inst. On
Inst. Off
Orbit 25
Orbit 41
41444
5252
41464
5272
41484
5292
41504
5312
41524
5332
41544
5352
41564
5372
41584
5392
System Time (Seconds)

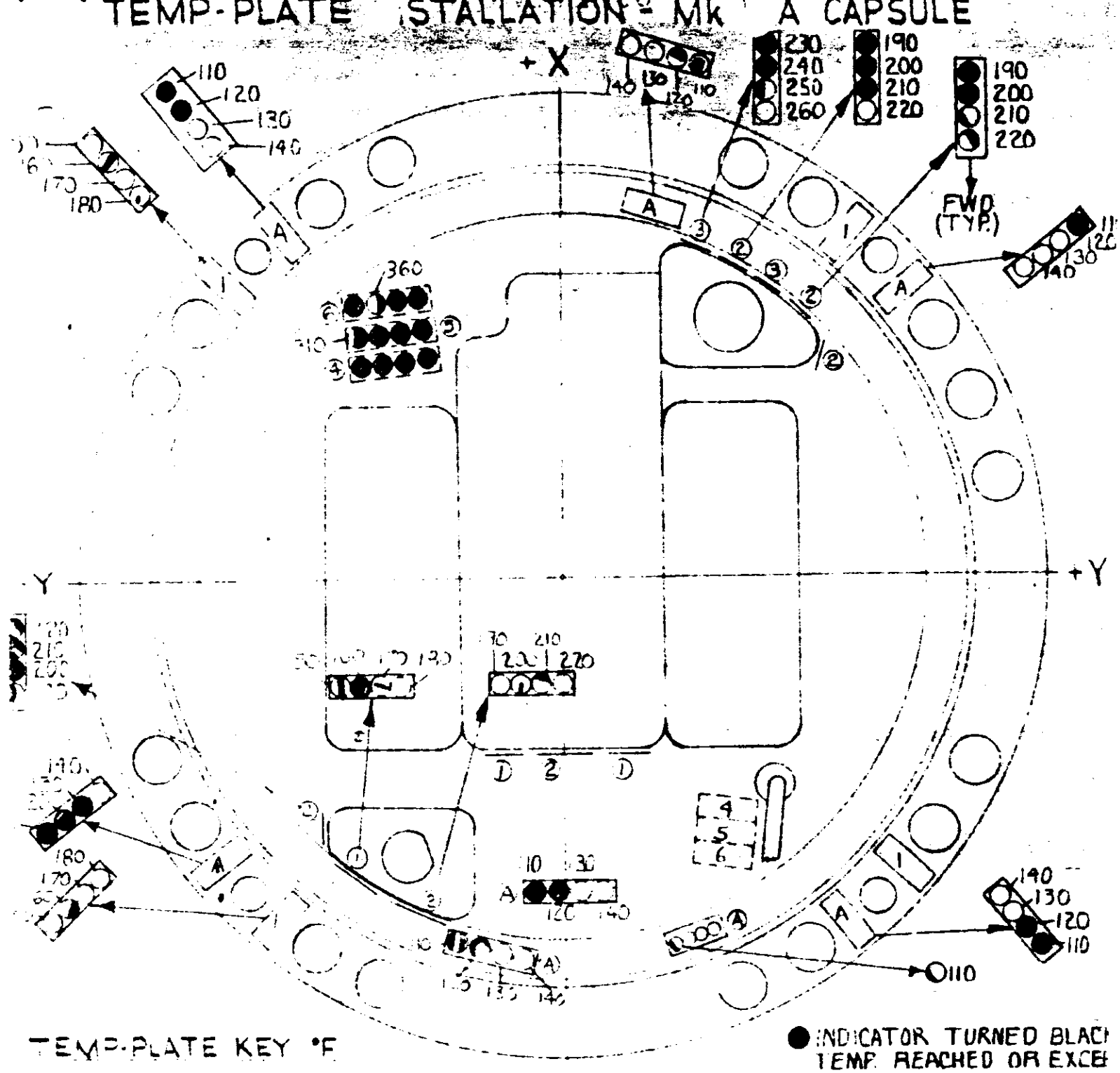

1136 - CM 1½ Internal
Pressure versus
System time
[redacted] Orbit 1
100
80
60
40
Pressure (Microns)
Acq.
Inst. off
84512
84612
84712
84812
84912
System Time (Seconds)


1136 GM 14
Internal Pressure
Note: Pressure on passes 9, 15, 25, and 41 read prior to instrument operation.
Pressure below 5 microns questionable due to calibration of Pirani gage
Questionable area
Pressure (Microns)
80
60
40
20
0
0
10
20
30
40
50
60
70
Orbit Number


1136 CM-14 Pirani Gage
Calibration
T/M Output (Volts)
0
1
2
3
4
5
1
10
100
Pressure (Microns)


1136 Re-entry Trajectory
Mach No.
Altitude
Dynamic Pressure
Mach No.
Dynamic Pressure (in lbs/sq. ft.)
Altitude (in feet)
2.00
1.80
1.60
1.40
1.20
1.00
.80
200
180
160
140
120
100
80
100K
90K
80K
70K
60K
50K
40K
1680
1690
1700
1710
1720
1730
1740
System Time (seconds)
CONFIDENTIAL
CONFIDENTIAL

TEMP-PLATE INSTALLATION - Mk A CAPSULE



TEMP-PLATE KEY °F

A - 110-120-130-140
- - 150-160-170-180
2 - 190-200-210-220
3 - 230-240-250-260
4 - 270-280-290-300
5 - 310-320-330-340
6 - 350-360-370-380
- - 390-410-435-450

● INDICATOR TURNED BLACK TEMP. REACHED OR EXCEEDED INDICATED LEVEL

TEMP-PLATE LOCATED ON PARACHUTE RISER

LOOKING FORWARD

FIGURE 136

(SEE USE OF TEMP-PLATES)

EQUIVALENT EXPOSURE TIME IN SEC.
1/200
1/300
1/150
1/100
1/60
1/40
1/30
1/20
SOLAR ALTITUDE - DEG.
LATITUDE - DEG. N., SOUTH BOUND
EUGENE DIETZGEN CO.
MADE IN U. S. A.
NO. 340N-L2 10 DIETZGEN GRAPH PAPER
SEMI LOGARITHMIC
2 CYCLES X 10 DIVISIONS PER INCH