SECRET 9049 [redacted]

PRELIMINARY FLIGHT SUMMARY

FTV 1155 CM-16

Launch of 1155 CM-16 occurred at 1:30 PM PST on 12-4-62. The orbit achieved had a lower than nominal period with perigee in the southern hemisphere due primarily to a lower than nominal booster velocity that could not be made up by the Agena. The orbital parameters were as follows:

TABLE I

ORBITAL PARAMETERS (ORBIT 8)

	Nominal	Actual
Period (min)	90.3	88.98
Apogee (N.M.)	203.98	179
Perigee (N.M.)	113.03	72
Eccentricity	.0127	.0149
Inclination (Deg)	64.92	65.19
Perigee Latitude (Deg)	23.62 N	40 S

The S-Band Beacon (Command transponder) was lost for approximately 80 seconds during ascent and was not working during Orbit 1 over [redacted] It was also intermittent on several other passes during the flight. The vehicle command execution was marginal as a result of this intermittent failure. However, payload performance was not impaired due to this failure.

Telemetry Channel 14, used to monitor the payload system status functions became inoperative on ascent and was intermittent during the flight. The only useable data obtained was on Orbits 1, 2, 8 and 40. The primary payload monitors; V/h position and film footage pot monitors were verified by Link II telemetry.

Instrument Operation - The payload system was operating properly on Pass 10 over [redacted] the only engineering operation during telemetry acquisition. Both panoramic instruments were running approximately 3% faster than the preflight nominals with little or no variation between instruments. The I.M.C. match was good (3% to 6%) using Ramp 2.

A slit width of 0.025 inches and a WRATTEN 21 filter was used on both panoramic instruments. The horizon optics were set at F 6.8 with a 1/100 sec. exposure time and WRATTEN 25 filters on both instruments.

There were no payload system dynamic problems evident in the limited telemetry data obtained during this flight.

SECRET

Stellar/Index - Stellar Index No. D2/2/2 was flown with CM 16. Telemetry data on Pass 10 indicated it was operating properly.

The Stellar Camera was set at F 1.9 with a 1/2 sec. exposure time. A filter was not used. The Index Camera was set at F 4.5 with a 1/125 second exposure time and, a WRATTEN 21 filter.

Clock Operation - The clock operation was only observed on Pass 10. A check of the clock output during this pass indicated the clock was operating correctly. The last accuracy test prior to launch indicated an error of 1 micro-second in a 5 minute test - an acceptable error.

Temperature Environment - The thermal control mosaic was designed to give "stovepipe" temperatures of 80 degrees. Temperature data is only available on Orbits 1, 2, 8 and 40. This data indicates the temperatures were fairly well stabilized by Orbit 2. The stovepipe temperatures were 80.7 and 85.5 degrees for Instruments 1 and 2 respectively on this pass. A tabulation of the on-orbit temperature obtained during the flight is enclosed.

Temperature sensors 11 and 13 on Instrument No. 2 were recorded on-orbit and played back during telemetry acquisition. Data from selected passes is included in this report.

Pirani Gage - There was not enough data obtained to provide a complete analysis of the internal pressure of the system. However, the data available indicates the pirani gage was operating correctly. The pressure recorded on Orbit 1 was 40 microns. The pressure had decreased to 20 microns by Orbit 2 and to 8 microns by Orbit 8. On Orbit 40 the pirani gage monitor output indicated a pressure below the calibrated output of the gage.

Recovery System Performance - An air recovery attempt was made on Orbit 3¼ and proved unsuccessful.

Due to the low inclination of the orbit, the retro events were not monitored by the [redacted] tracking station. Good telemetry coverage of the parachute deployment sequence was obtained by the [redacted] tracking station. The parachute deployment sequence appeared normal in all aspects from telemetry data.

The cause of the failure was a result of the rigging pole hitting the parachute and the rigging not making good contact with the parachute. The accelerometer output on the telemetry data indicates contact with the parachute was made for approximately 0.3 to 0.4 seconds. The telemetry signal continued after water impact and was still evident at the time search was terminated by the tracking station. The impact range was reported as 17 N.M. from the tracking station at [redacted]. This appeared to be within 20 miles of the predicted impact point.

A plot of the re-entry trajectory is included in this report.

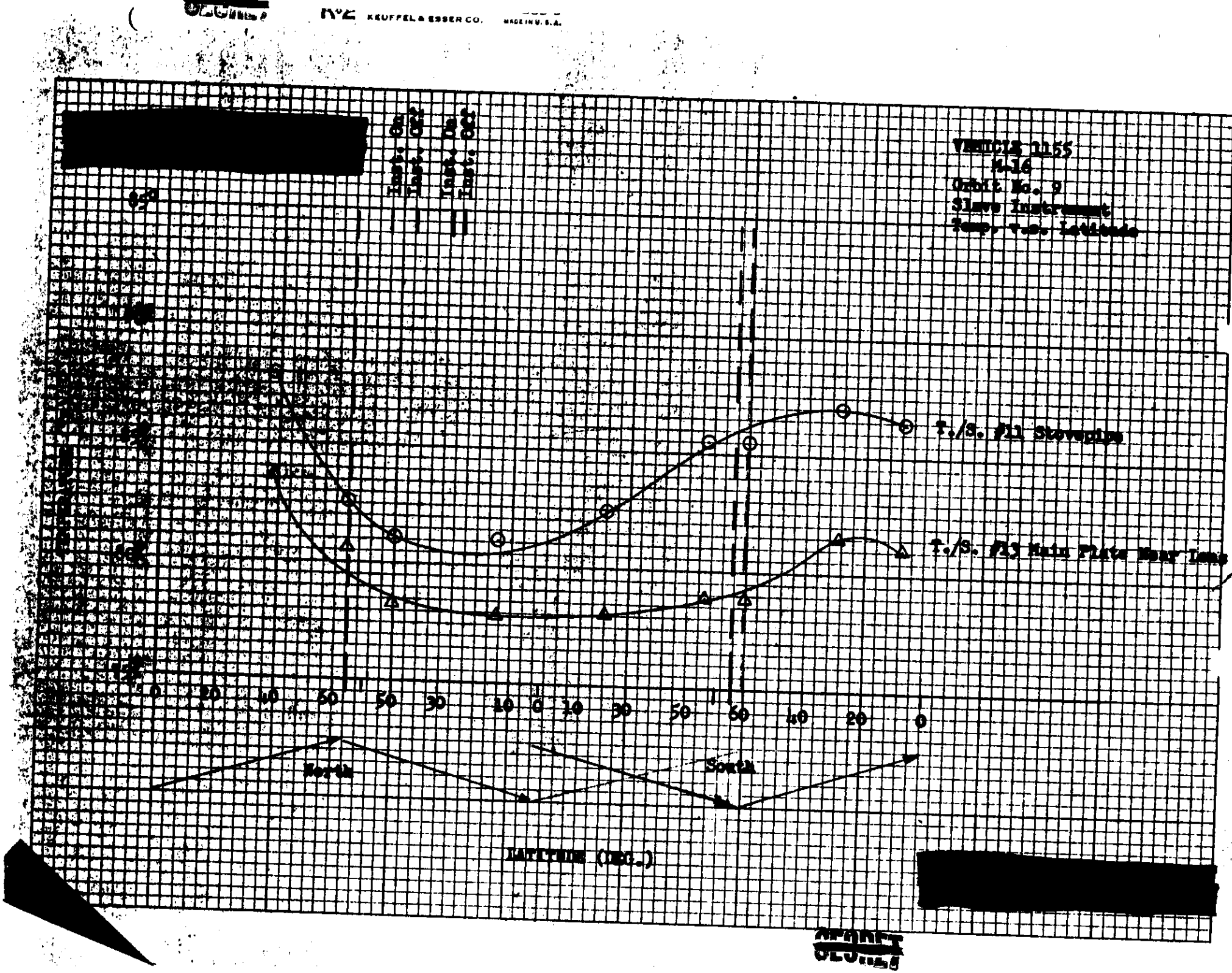
[redacted]

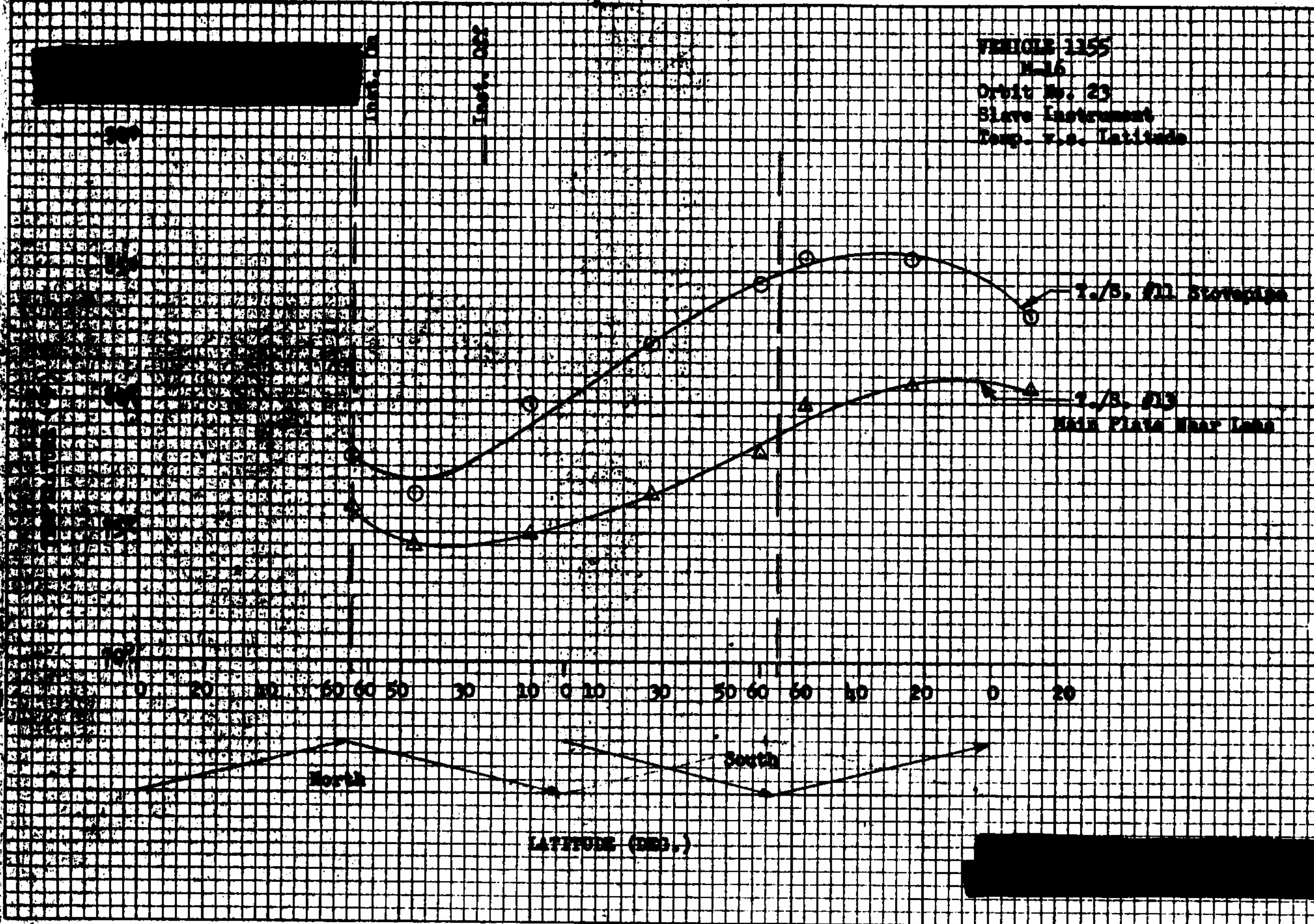
[redacted]

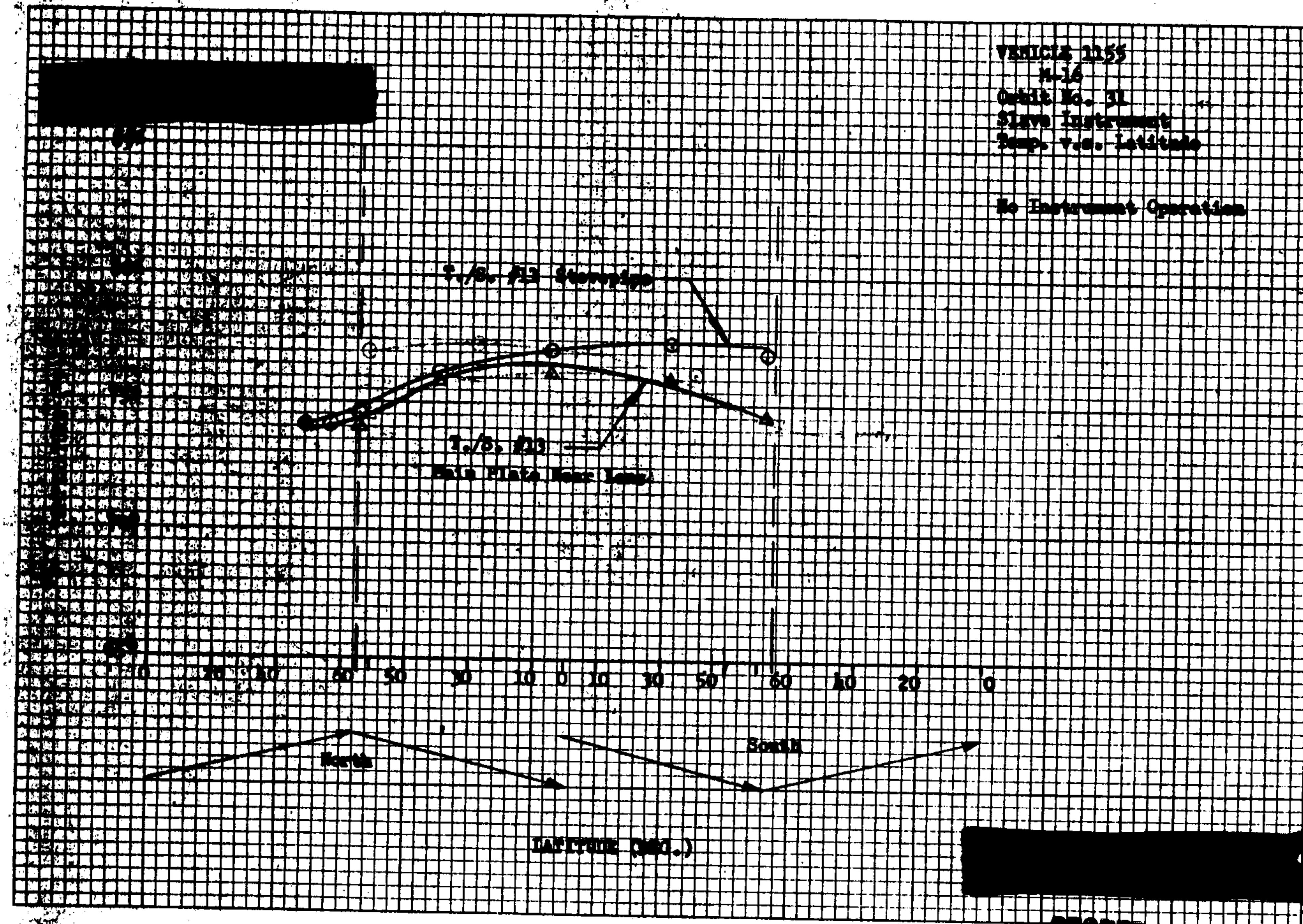
1155 CM 16 TEMPERATURE SUMMARY

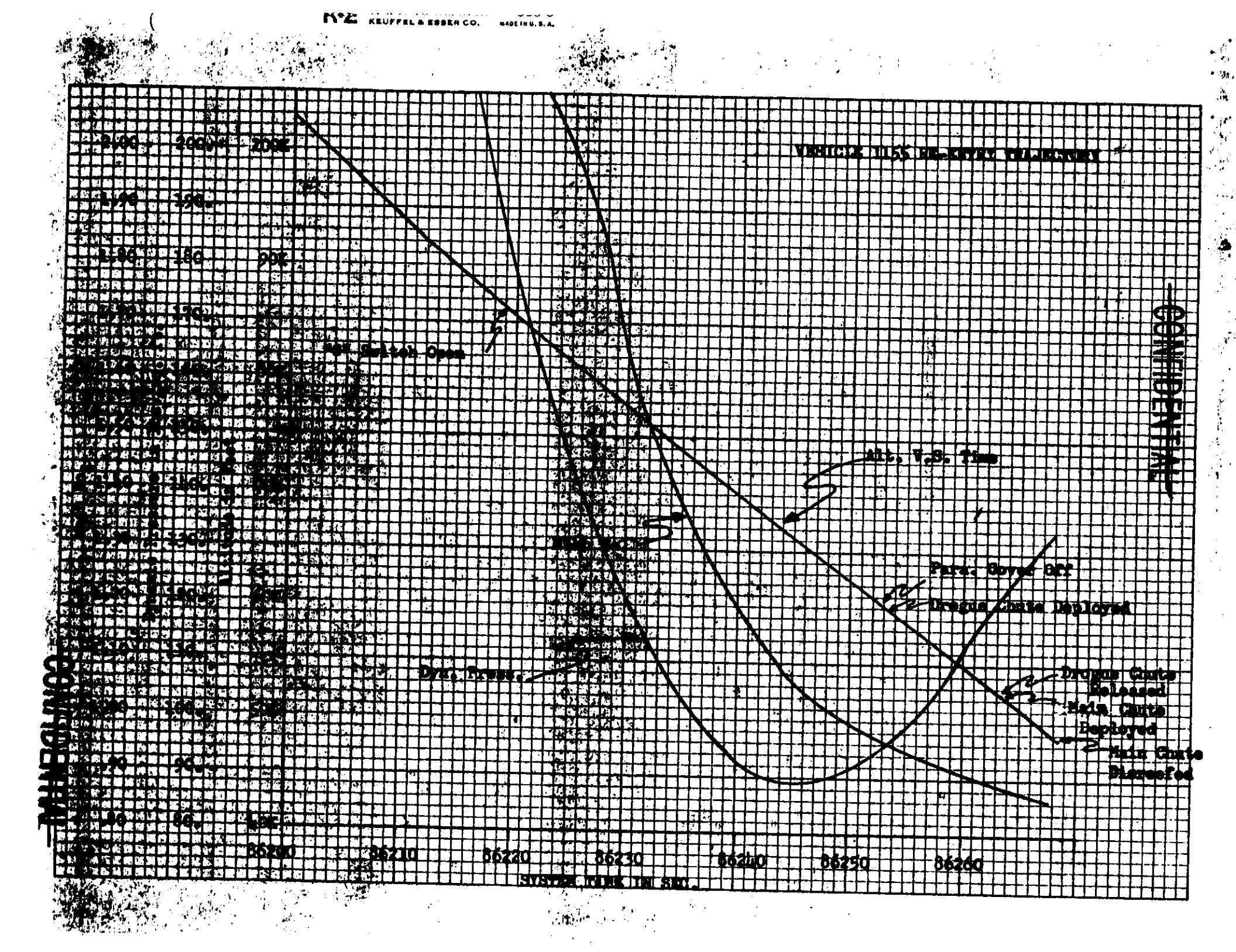
Temp. Sensor	ORBIT NO. 1	2	8	40
Inst. No. 1				
2	84.4	83.1	80.7	88.9
5	89.7	83.1	82.0	82.2
7	87.9	89.1	87.9	98.1
11	89.5	80.7	80.7	-
12	92.3	73.6	70.0	-
13	92.0	85.5	82.0	71.1
Inst. No. 2				
2	84.6	85.5	87.9	102.4
5	85.0	80.7	84.2	107.4
7	82.6	80.7	82.0	97.5
11	88.3	85.5	83.1	100.1
12	93.2	92.8	102.6	113.5
13	83.3	80.7	82.0	91.5
Clock				
1	104.5	82.0	71.1	72.4
Thrust Cone				
1	82.7	74.6	74.6	-

[redacted]


KEUFFEL & ESSER CO.
VEHICLE 2155
4-16
Orbit No. 9
Slave Instrument
Temp. vs. Latitude
T./S. #11 Stovepipe
T./S. #13 Main Plate Near Lens
0 20 40 50 50 30 10 0 10 30 50 60 40 20 0
North
South
LATITUDE (DEG.)






KEUFFEL & ESSER CO. MADE IN U.S.A.
VEHICLE 1155 RE-ENTRY TELEMETRY
Alt. V.S. Time
Para. Cover Off
Drogue Chute Deployed
Dyn. Press.
Drogue Chute Released
Main Chute Deployed
Main Chute Disreefed
SYSTEM TIME IN SEC.
86200
86210
86220
86230
86240
86250
86260
CONFIDENTIAL