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Shuttle Payload Bay Thermal Environments

Summary and Conclusion Report for STS FLIGHTS 1-5

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ABSTRACT

This report summarizes the thermal data for the payload bay of the first five shuttle flights and presents the engineering evaluation of that data. After a general discussion on mission profiles and vehicle configurations, the thermal design and flight instrumentation systems of the payload bay are described. This is followed by the presentation of the thermal flight data sources and a categorization of the data. A thermal flight data summarization section provides temperature data for the five phases of a typical mission profile. These are: Prelaunch, Ascent, On-Orbit, Entry and Postlanding. The thermal flight data characterization section encompasses this flight data for flight to flight variations, payload effects, temperature ranges, and other variations. Discussion of the thermal environment prediction models in use by industry and various NASA Centers, and the results predicted by these models, is followed by an evaluation of the correlation between the actual flight data and the results predicted by the models. The report concludes with an evaluation of the available thermal data from the viewpoint of the user concerned with establishing the thermal environment in the payload bay. The data deficiencies are discussed and recommendations for their elimination are presented.

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It is anticipated that this report will prove to be useful to the STS user community in developing realistic thermal environment design and test requirements for shuttle payloads.

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1.0 INTRODUCTION

This report summarizes the results of the thermal environmental data for the payload bay taken during the first 5 shuttle flights. The evaluation of the data and its application to payloads are the primary objectives of this report. Methods of thermal environment prediction developed by industry and government centers, including computer prediction programs and methodologies will also be discussed.

2.0 SCOPE AND OVERVIEW

The mission profile of a typical Space Shuttle flight, launch vehicle configuration and a general overview of the thermal environments in the shuttle payload bay for STS flights 1-5 are dicussed in this section.

2.1 Mission Profile

The Space Shuttle System, Figure 2-1, is used to place flight experiments and spacecraft in earth orbit and to provide the initial boost phase for interplanetary spacecraft. In order to design these experiments and spacecraft for survival in the thermal environment of the shuttle payload bay, this environment must be measured and the accuracy of the data estimated for typical mission profiles. A typical mission profile consists of five phases: Prelaunch, Ascent, On-Orbit, Entry and Postlanding as shown in Figure 2-2.

2.2 Launch Vehicle Configuration

The STS configurations for the data taken during the first 5 shuttle flights are summarized in Table 2-1(Reference 1). All payload pallets on these flights were generally of the type developed by the European Space Agency (ESA),except for the Development Flight Instrumentation (DFI) pallet.

Table 2-1 Launch Vehicle Configuration

	STS 1	STS 2-4	STS 5
a. OV-102 Vehicle			
b. Launch from Kennedy Space Center (KSC)	x	x	x
c. No thrust augmentation	x	x	x
d. Full thermal radiator panels	x	x	x
e. Payload bay vents open at all times	x	x	x
f. Payload bay with ESA pallet payloads		x	
g. Payload bay with DFI pallet payload	x	x	
h. Payload bay with DFI pallet and TELESAT payloads			x

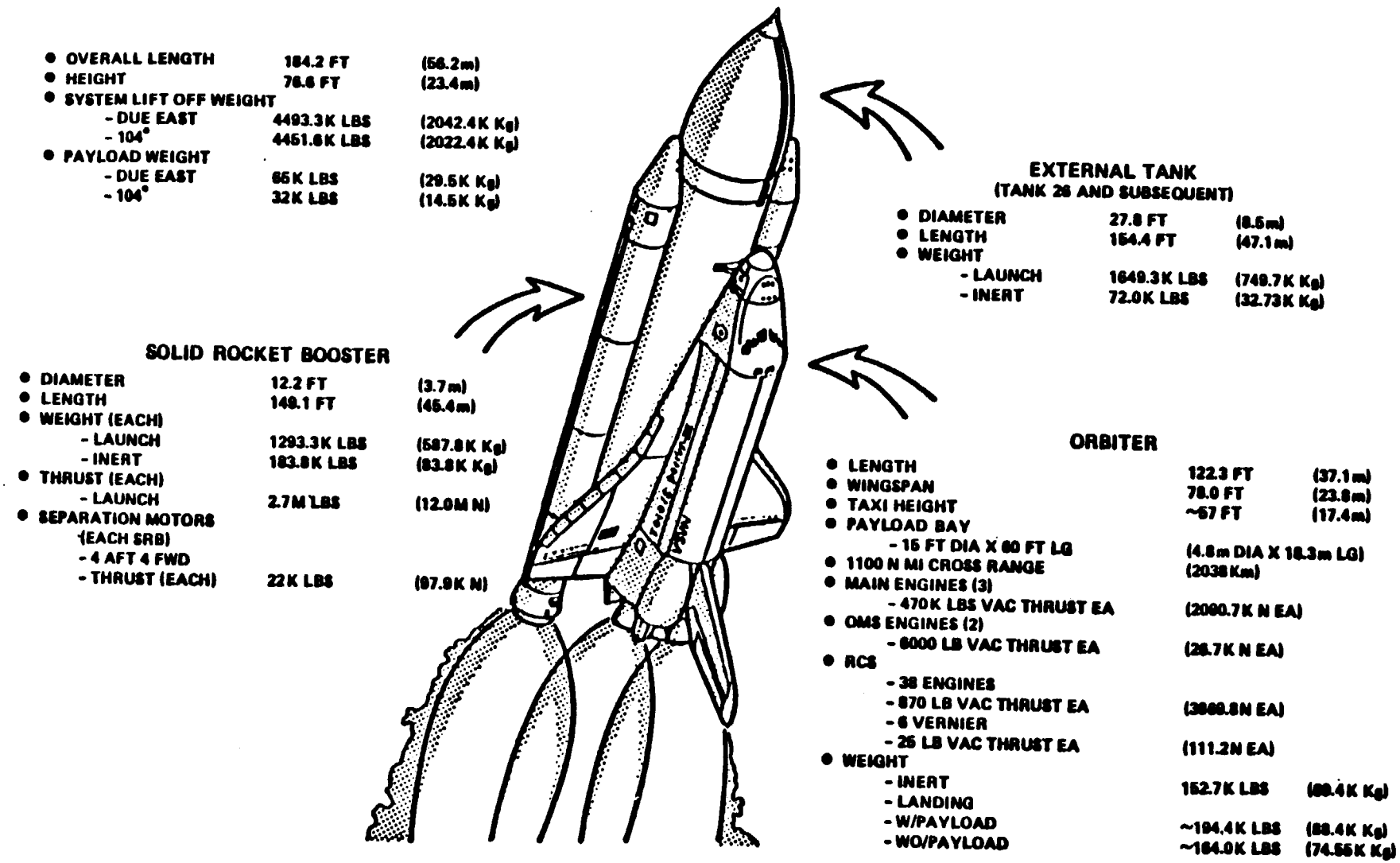


Figure 2-1. Space Shuttle System

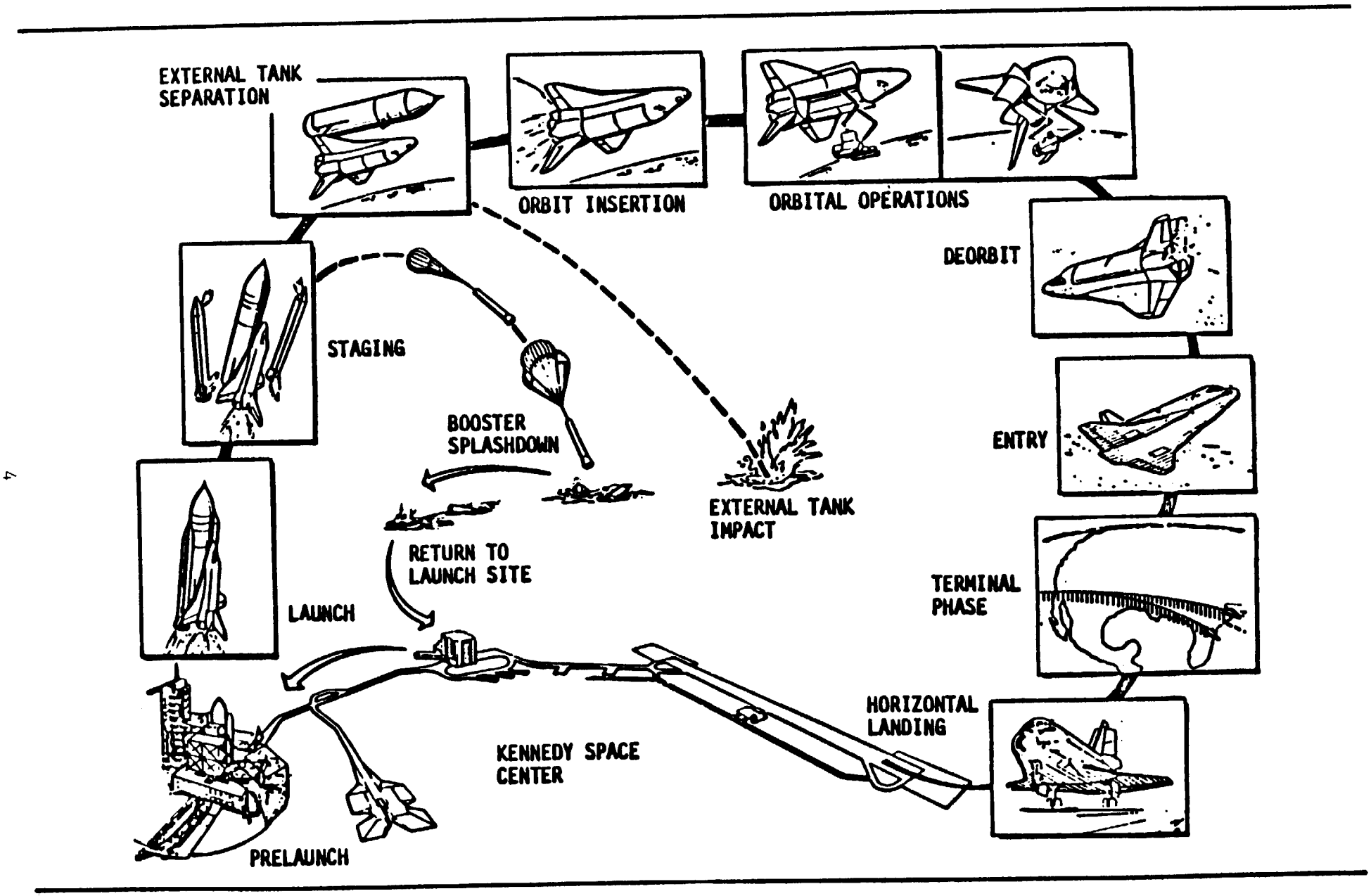


Figure 2-2. Typical Mission Profile

2.3 The Payload Bay Thermal Environment

The Payload Bay prelaunch thermal environment is primarily affected by the climatic conditions at the launching pad and Air and Nitrogen Purge System of the Shuttle. During the Ascent phase, expansion cooling of the existing air, followed by the soakback from the hot structure dominates the thermal environment. In the On-Orbit phase, the payload doors are normally open and occasionally closed and the elements of the sun, earth and deep space strongly affect the thermal environment. During Entry, compression heating of the air affects the payload bay temperature. In the Postlanding phase, at the landing site, the thermal environment is again affected by the climatic condition, the soakback from the hot structure, and the postlanding gaseous purge system.

There is good agreement among NASA centers and industry in the methods used to define small payload thermal environments. However, it is generally agreed that there are still significant deficiencies in the payload bay data base because:(1) Each payload is different;(2) Each flight is different; (3) Flight data pertaining to the payload bay is limited; and, (4) Flight data for the payloads is virtually non-existent.

3.0 THERMAL CONTROL SYSTEM

The Shuttle Orbiter midsection includes the 60 foot long by 15 foot diameter payload bay, lower fuselage structure and subsystems, payload bay doors, radiators, and wings. The Thermal Control System (TCS) for the midsection controls the thermal environment of the lower equipment bay and affects the thermal environment of the payload bay proper. The thermal environment of payloads, located in the bay, are primarily influenced by the view of the sun, earth, and deep space, their station location and the heat transmission created by their attachment to the orbiter midsection structure.

During prelaunch and postlanding phases, environmental conditioning is provided by the vehicle-level air and gaseous nitrogen purge system (Figure 3-1). The purge system provides a positive pressure inert atmosphere for contamination control and minimizes the GH2 buildup after external tank loading by converting from air to GN2. During the postlanding entry-heating-soakback period, the purge provides attenuation of the potential peak temperatures which the subsystem components would be subjected to without the purge.

Limited thermal control of the Shuttle payload bay is accomplished through the use of fibrous and multilayer insulation (MLI) blankets, and heat sources and sinks supplemented by selected attitude constraints. The basic insulation design consists of bulk fibrous insulation (TG-15000) sized to protect subsystems from overheating during entry and postlanding-thermal soakback. This insulation is supplemented by MLI for low weight, high thermal efficiency on orbit (Figure 3-2).

3.1 ORBITER MIDSECTION

Except for specific, detail differences among the orbiters, multilayer insulation (MLI) and TG15000 insulation blankets are employed in the midsection TCS. The payload bay outer surface insulation is made of Armalon (Teflon-impregnated fiber glass fabric, commonly known as Beta cloth). Beneath the outer surface is a multilayered insulation blanket from Station Xo=582 to 919. From Station Xo=919 to 1191, the outer surface is insulated with 1.05 and 1.80 inch thick TG15000 on the upper and lower areas, respectively. In the wing torque-box area (Station Xo=1191 to 1305.5) the outer surface is insulated with 1.35 inches of TG15000 above the wing carry thru structure. The top of the wing torque-box is covered with ten layers of MLI. The top layers of all MLI and TG15000 that view the payload bay (w/o liner) are also Beta cloth. The payload bay liner,used for contamination control for specific payloads is a single layer of Beta cloth; therefore, the optical properties of the payload bay are the same with or without the liner (OV 102). The forward section of the lower bay structure (Xo=584 to 919) is insulated inboard with TG15000 thicknesses of 0.75 inch on the sides and 1.50 inches on the bottom to help protect the orbiter equipment in the area. The portion of the sidewall above the sill longeron is covered with 1.05 inches of TG15000. The aft section (Xo=919 to 1305.5) is uninsulated on the sides and bottom, except for 1.35 inches of TG15000 on the sidewall above the sill longerons. The bottom of the sill longeron is covered with 1.05 inch thick TG15000

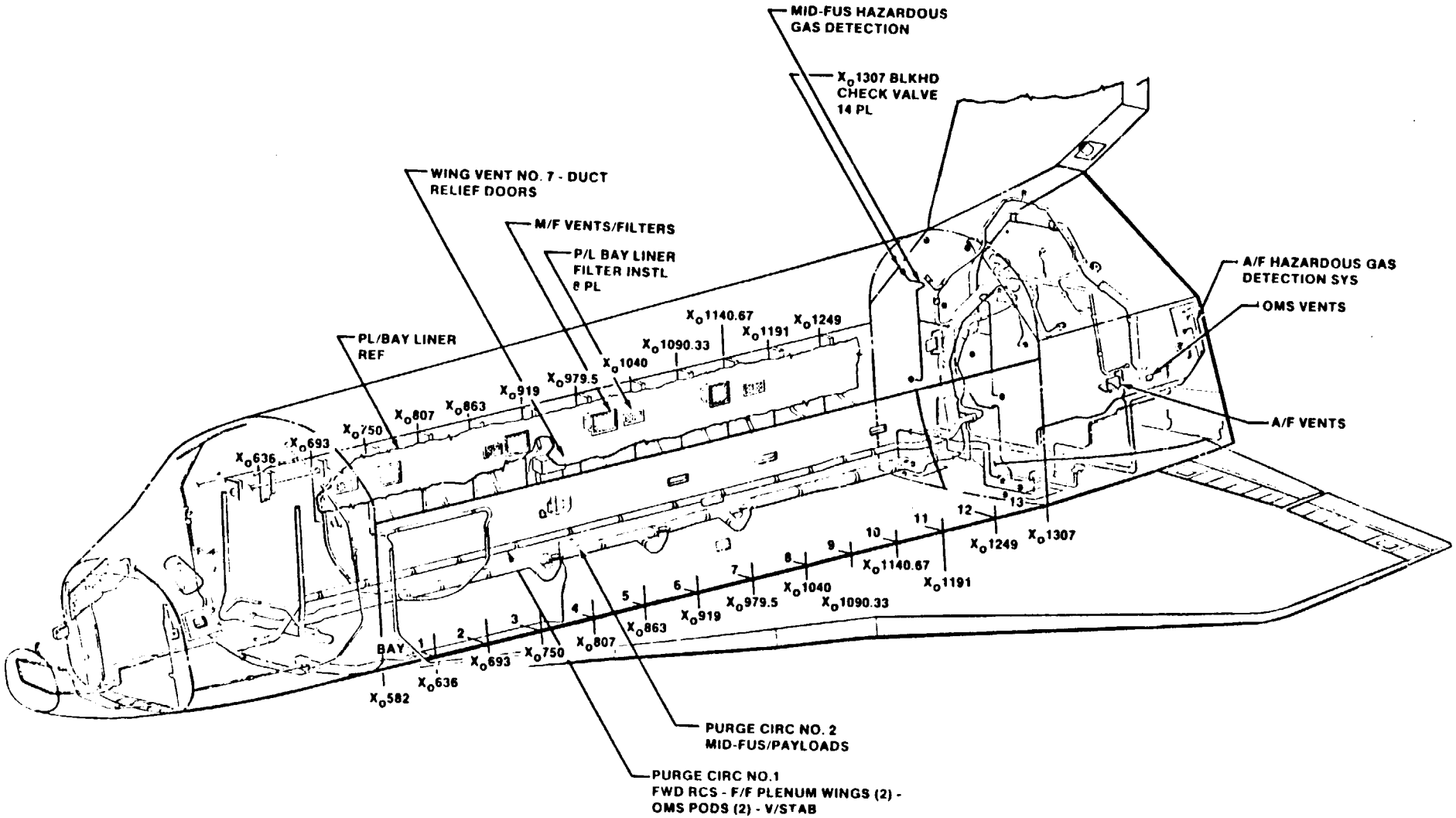


Figure 3-1. Purge, Vent and Drain (PVD) System

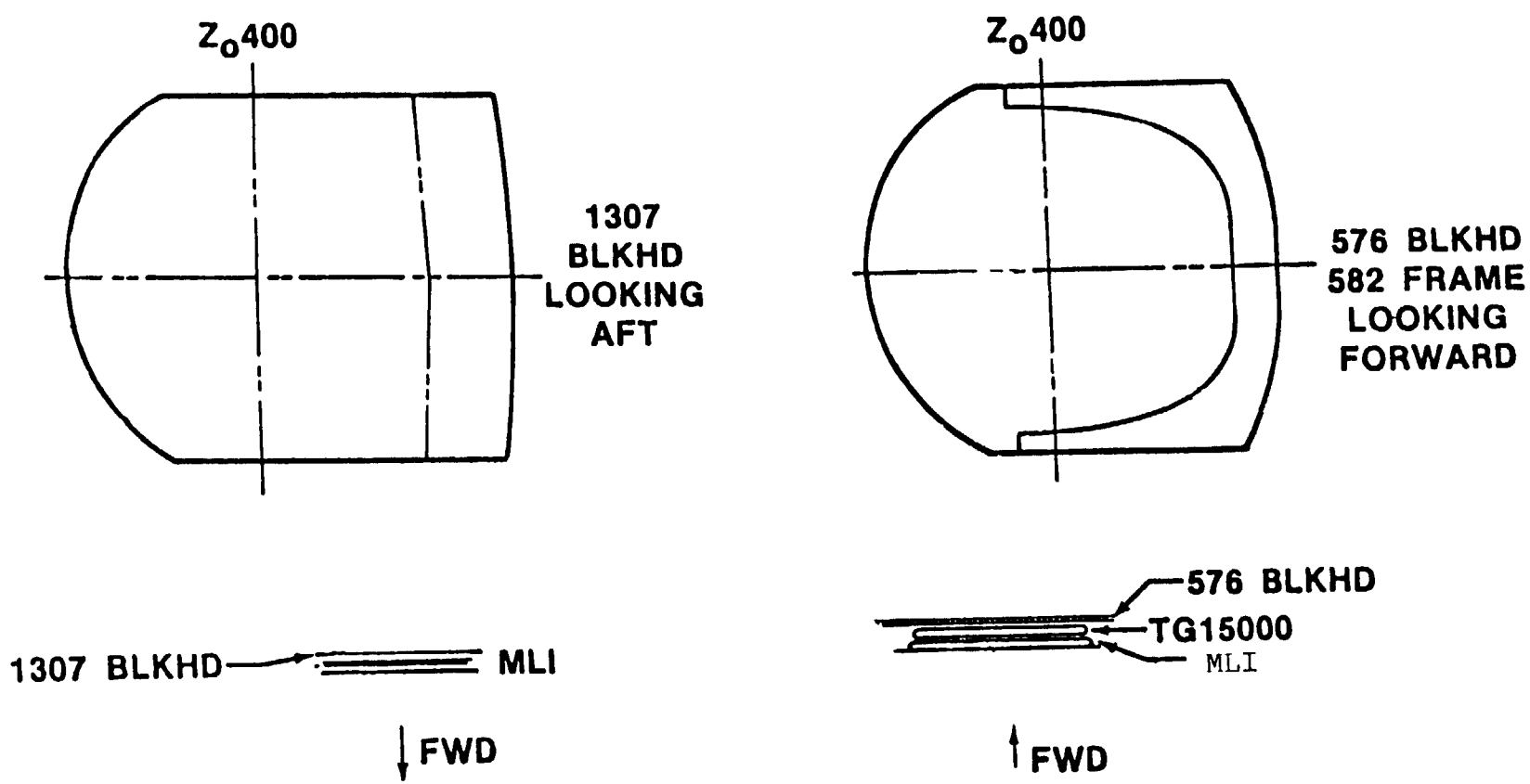
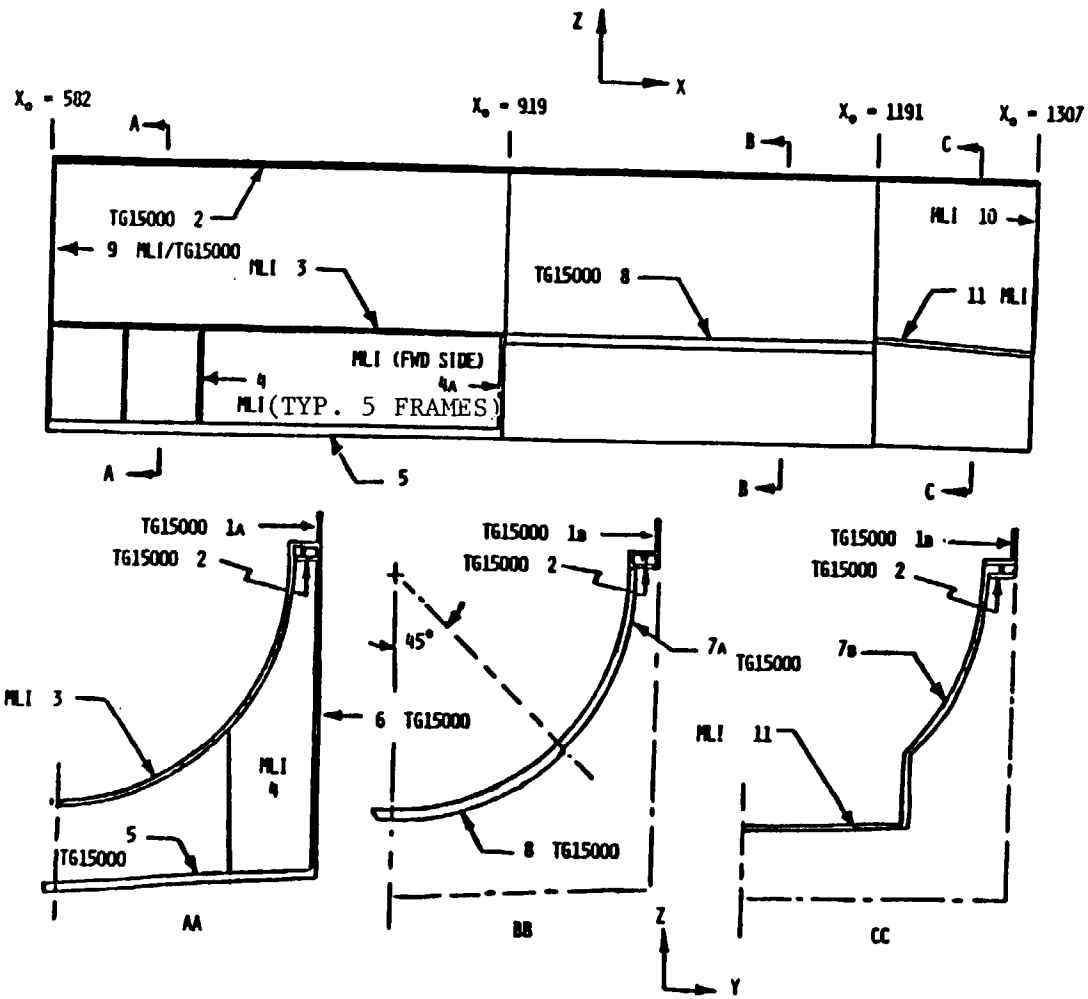


Figure 3-2. Insulation Configuration



	COVERAGE (X_o STATION)	TYPE	THICKNESS IN. (CM.)
1a	582 - 919	TG15000	1.05 (2.67)
1b	919 - 1307	TG15000	1.35 (3.43)
2	582 - 1307	TG15000	1.05 (2.67)
3	582 - 919	MLI	10 LAYERS
4	FRAMES 582 - 863	MLI	10 LAYERS
4a	FRAME FWD SIDE 919	MLI	10 LAYERS
5	582 - 919	TG15000	1.50 (3.81)
6	582 - 919	TG15000	0.75 (1.91)
7a	919 - 1191	TG15000	1.05 (2.67)
7b	1191 - 1307	TG15000	1.35 (3.43)
8	919 - 1191	TG15000	1.80 (4.57)
9	FWD BULKHEAD ABOVE LINER	MLI/TG15000	10 LAYERS/ 1.5 (3.81)
	BELOW LINER	MLI	10 LAYERS
10	AFT BULKHEAD	MLI	10 LAYERS
11	WING BOX	MLI	10 LAYERS
	PLB DOORS 582 - 1307	TG15000	0.45 (1.14)

(OV-102)

Figure 3-2. Insulation Configuration (Cont.)

insulation. The forward bulkhead is insulated with ten layers of MLI facing the payload bay crew module,and an additional 1.5 inch thick blanket of TG15000 is applied above the PLB liner forward of the MLI. The aft bulkhead is insulated above the outer surface with ten layers of MLI. The entire concave surface of the payload bay doors is covered with 0.45 inch thick TG15000.

3.2 BASIC MID-FUSELAGE STRUCTURE

The basic mid-fuselage structure consists mostly of aluminum skin, frames, longerons, and a wing torque-box, protected at the orbiter outer surfaces by the Thermal Protection System (TPS) insulation. The graphite epoxy payload bay doors are isolated from the bay during open-door operations. The forward and aft ends of the midsection are closed out with the structural bulkheads, which are insulated on the payload bay side. The forward bulkhead actually forms the aft wall of the forward fuselage crew compartment, and stays nearly constant at the 70 deg F internal habitable environment temperature. The aft bulkhead is thermally passive and its temperature essentially follows the aft fuselage environment. An aluminum sill longeron that is covered with a white coating runs lengthwise along both sides of the payload bay. This is used for structural stiffening, as well as to provide attach points for payloads. The longeron lower surface is insulated with TG15000. Twelve structural frames are installed in the midsection lower fuselage (Figure 3-3). The upper caps of these frames match the circular contour of the payload bay and are exposed to the payload bay environment. The optical properties of the caps are approximately the same as the liner. The lower surface of these caps is insulated from the lower fuselage environment with MLI. Due to the relatively small area the caps expose to the payload bay, the direct impact on the radiation interchange in the resulting payload bay temperatures is small. However,the caps do affect wire tray temperatures and conduction heat transfer at payload attach points. The aft section of the lower mid-fuselage (Xo=1191 to 1305.5) constitutes an aluminum and aluminum/boron wing torque carry thru box. The upper panel of the wing box is covered on the top with MLI which is exposed to the payload bay environment.

3.3 ORBITER/PAYLOAD RETENTION FITTINGS

Shuttle payloads are attached to the Orbiter by means of bridge fittings. Bridges will be installed at the Orbiter longerons and between the main frames at the keel as needed for specific payloads. The bridges will have standard fittings on which payload trunnions will rest. Figures 3-4 and 3-5 show a typical longeron bridge fitting and a typical keel bridge fitting. These payload attach points provide the primary heat conduction paths between the Orbiter and the payloads. All longeron bridges are titanium and the longeron latches are inconel. The keel bridge assemblies for bays 2 through 5 and 12 are aluminum only; bays 6 through 11 are either aluminum or titanium.

3.4 WIRE TRAYS

Two relatively massive white aluminum wire trays, approximately three feet wide, extend nearly the length of the payload bay on both sides. The wire trays are attached to the twelve frame caps but not to the forward or aft bulkheads. The wire trays are used to route Orbiter electrical system wiring between the forward, mid and aft fuselage sections. The lower surface of the trays is covered with insulation as follows: 10 layers of MLI forward of Xo=919, 1.05 inches of TG15000 blanket from Xo=919 to Xo=1191 and 1.35 inches of TG15000 blanket aft of Xo=1191. The upper wire tray surface, covered with the white coating is exposed to the payload bay environment. Each tray spans 21.7 deg of the semi-cylindrical payload bay area and covers the region from Xo=600 to Xo=1292. The mass of the tray,combined with the conduction to the frames tends to moderate local bay temperatures.

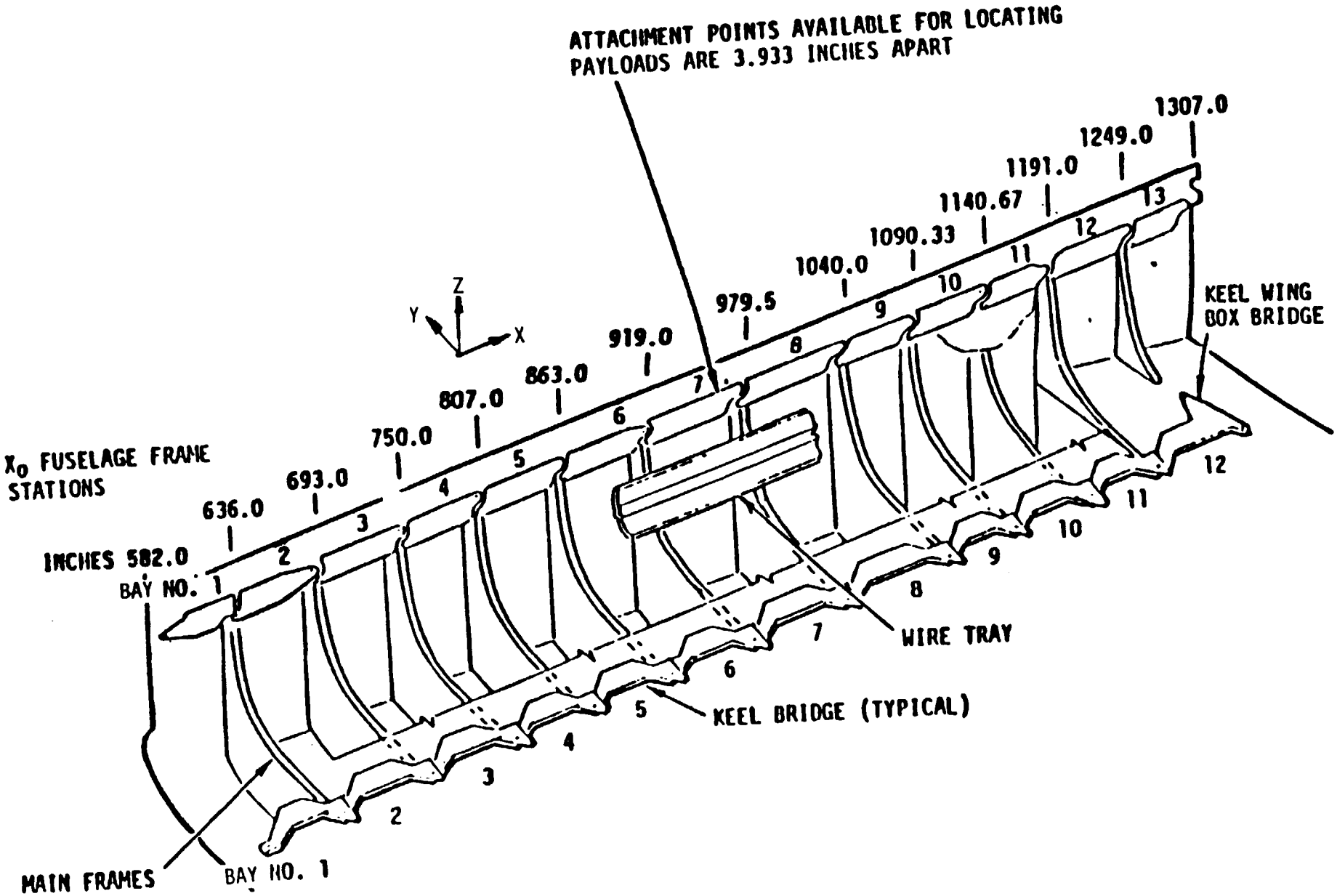


Figure 3-3. Orbiter/Payload Bridges

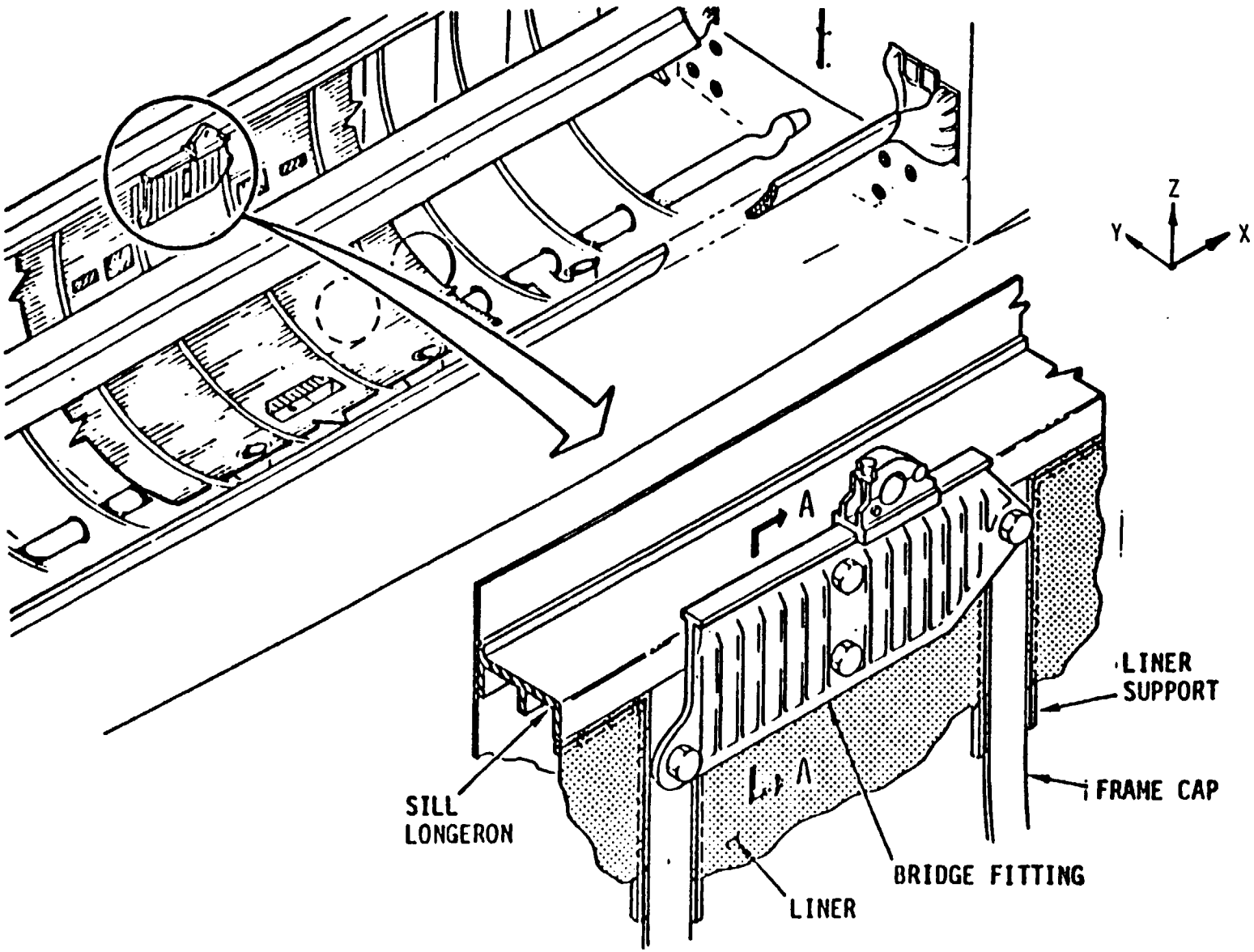


Figure 3-4. Typical Longeron Fitting

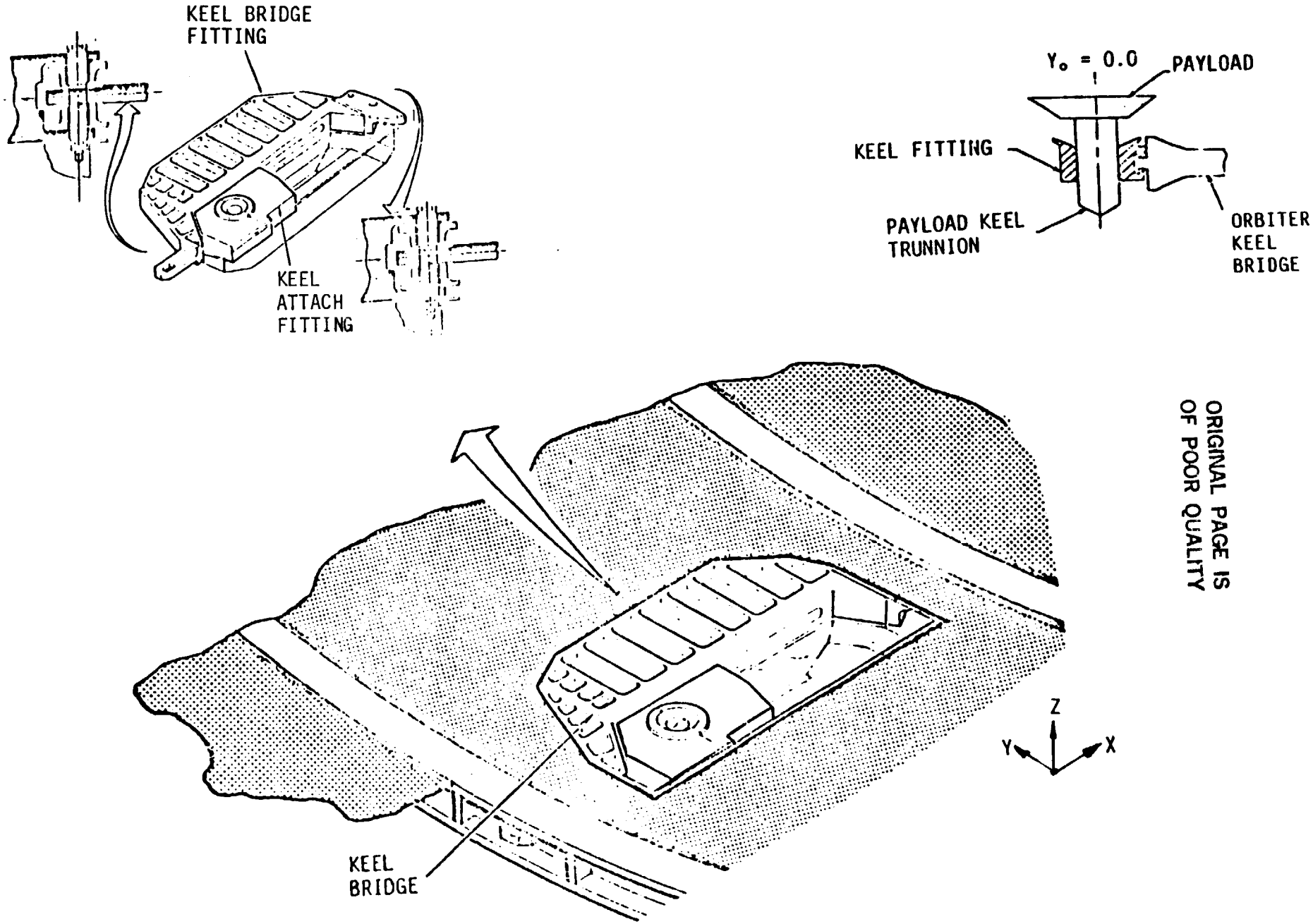


Figure 3-5. Typical Keel Fitting

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4.0 THERMAL FLIGHT INSTRUMENTATION SYSTEM

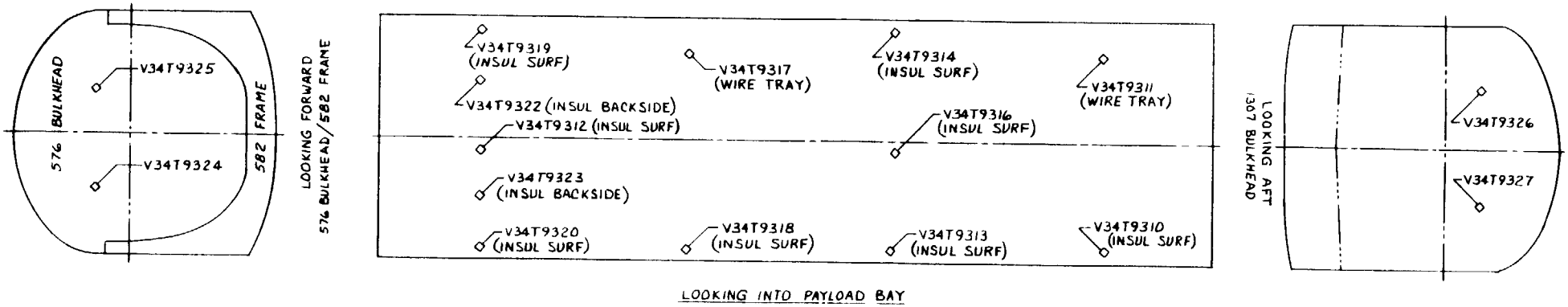
The thermal environment in the Space Shuttle Bay is measured and recorded by the Developmental Flight Instrumentation System (DFI). This instrumentation package employs Resistance Thermal Devices (RTD) to measure the temperatures which are recorded on-orbit or downlinked in real time during the mission.

An interactive computer terminal system, or trend monitoring system (TMS), was instituted by which terminals were provided for the retrieval and plotted display of data in near real time.

Raw data was recorded on the Mission Control Center Network Interface Processor (NIP) tapes. The TMS and CCT tapes, which provided most of the data for this report, were generated from the NIP tapes by different data processing methods. The normal lag between the real time data and the TMS data base updates was approximately two hours.

The 50 RTDs of the system which are of interest for payload environments are grouped into three series. The 91 series consists of 8 RTDs located on the left and right side mid-fuselage longerons of the shuttle. The 18 RTDs of the 93 series consist of 12 in the cylindrical bay proper, 4 on the forward bulkhead at Sta 576 and 2 at the aft bulkhead at Sta 1307. The 92 series consists of a total of 24 RTDs located on the bridge and keel fittings, payload bay doors and the Development Flight Instrumentation (DFI) package. Not all of the RTD measurements were recorded for each flight; some devices recorded temperatures on fittings which were installed for specific flights. Figures 4-1 and 4-2 provide an overall view of the RTD locations. A limited number of measurements were down-linked in real time during the missions but the majority of the thermal data, especially the PLB data, was collected by the DFI which records on-orbit.

Of the payload bay liner measurements in Figure 4-1, V34T9312, V34T9318 and V34T93320 provided what were believed to be representative empty bay responses. V34T9319 was shaded by a tool box and therefore provided data on the response of the liner when it was in close proximity to a payload. V34T9310 was mistakenly placed on the wire tray. Two other measurements, V34T9311 and V34T9317 were purposely placed on the wire trays since these responses have a significant effect on payload temperatures and on the overall payload bay thermal environment. The three measurements, V34T9313, V34T9314 and V34T9316 were in the vicinity of the payloads on the first five flights. These give some indication of the severity of the solar entrapment phenomenon. However, two of the RTDs were placed on the bay vent filters. This dampened the temperature responses. The third RTD did not function correctly and, in addition, was covered by a payload.



MEASUREMENT NUMBER	X_o	Y_o	Z_o	DESCRIPTION	REMARKS
V34T9310	1215.0	-96.0	385.0	LH Payload Bay Insul Surface X=1215	On Wiretray
V34T9311	1215.0	+74.0	385.0	RH Payload Bay Wire Tray Surf X=1215	On Wiretray
V34T9312	670.0	-10.0	--	Center Payload Bay Insul Surface X=670	Representative of empty bay
V34T9313	1030.0	-96.0	385.0	LH Payload Bay Insul Surface @ X=1030	Close to Payloads; on vent filter
V34T9314	1030.0	+96.0	385.0	RH Payload Bay Insul Surface @ X=1030	Close to Payloads; on vent filter
V34T9316	1030.0	-10.0	--	Center Payload Bay Insul Surf @ X=1030	Close to Payloads; Broke on STS-3
V34T9317	850.0	+74.0	385.0	RH Payload Bay Wire Tray Surface X=850	On Wiretray
V34T9318	850.0	-96.0	385.0	LH Payload Bay Insul Surface @ X=850	Representative of Empty Bay
V34T9319	670.0	+96.0	385.0	RH Payload Bay Insul Surface @ X=670	Shaded by Tool Box
V34T9320	670.0	-96.0	385.0	LH Payload Bay Insul Surface @ X=670	Representative of Empty Bay
V34T9324	576.0	-47.0	430.0	LH 576 Bulkhead MLI Insul Surface	On Bulkhead
V34T9325	576.0	+37.5	430.0	RH 576 Bulkhead MLI Insul Surface	On Bulkhead
V34T9326	1307.0	-50.0	430.0	LH 1307 Bulkhead Insulation Surface	On Bulkhead
V34T9327	1307.0	+50	430.0	RH 1307 Bulkhead Insulation Surface	On Bulkhead

Figure 4-1. Cargo Bay Measurement Locations

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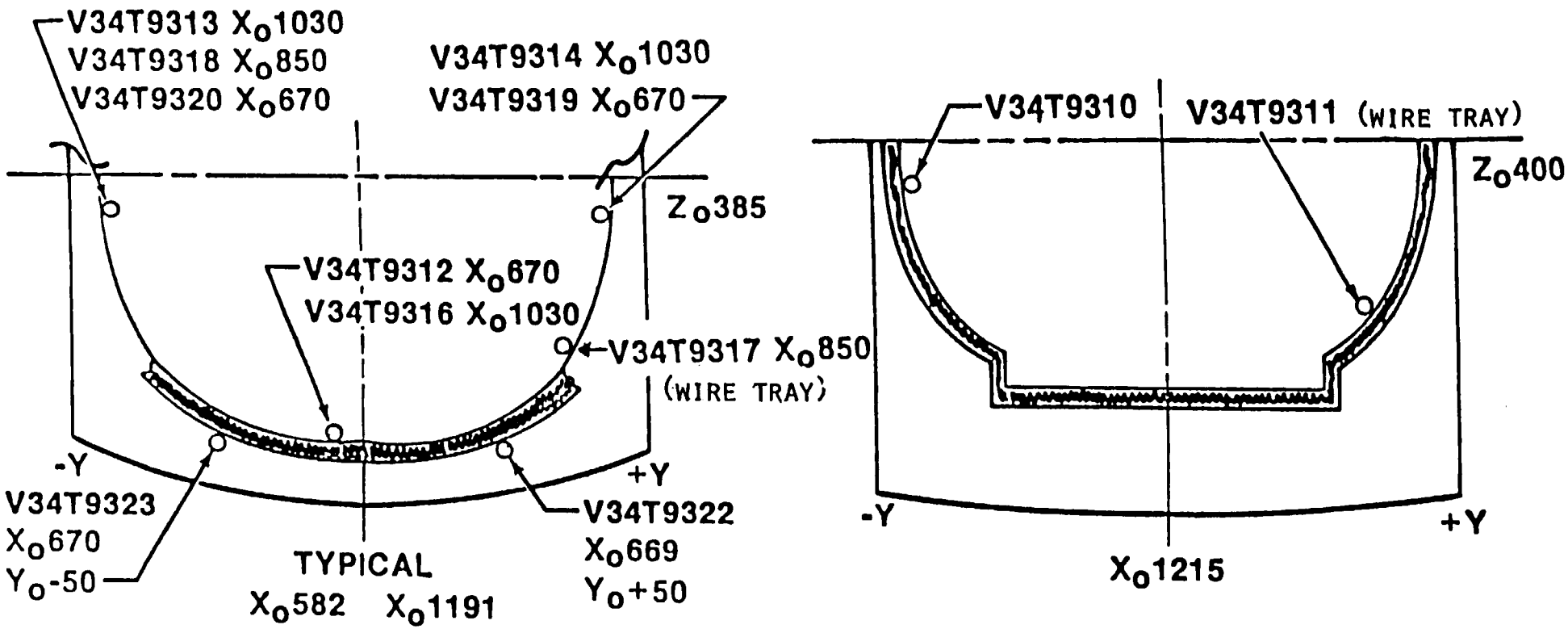


Figure 4-1 . (cont.)

5.0 DATA SOURCES AND CATEGORIZATION

Temperature measurements which are relevant to the definition of the payload bay thermal environment were chosen for this report. The flight data includes the temperature measurements from four basic elements of the payload bay: the payload bay liners, wire trays, and the forward and aft bulkheads. A total of 14 temperature measurement locations, defined in terms of TCS terminology, are listed below for reference:

V34T9310 through 14
V34T9316 through 20
V34T9324 through 27

The temperature data from the wings, radiators, etc. are not included in this report because of the time and funding limitations established for this task. All flight data for the payload bay thermal environment was obtained from the DFI (Development Flight Instrumentation) temperature measurements. DFI data were taken for STS Flights 1 thru 5. The DFI system was removed from the shuttle after STS 5; therefore, subsequent flights yield no payload bay temperature data. The DFI data is stored on CCT tapes and TMS trend monitoring system tapes. CCT tapes have a high sample rate and are very voluminuous.TMS tapes have sample rates sufficient for thermal trend studies and shuttle operational control but not sufficient for data curve generation. All data that was available to JPL was used in this report. The flight data used in this report is categorized as follows:

(1) Computer Compatibility Tape (CCT)Data
(2) Trend Monitoring System Tape (TMS)Data
(3) Miscellaneous Data

5.1 CCT Thermal Flight Data

The CCT flight data was obtained from NASA Johnson Space Center/R.Brown and Lockheed/S.Williams. This data was organized into files designated as JPL files f001-f80. The organization of the data in these files, which cover three different time periods for STS flights 3 and 4, is summarized in Table 5-1.

TABLE 5-1
CCT Thermal Load Data - Payload Bay

	FLIGHT	STS-3			STS-4		
MSMT #	MET-HRS	104-116	121-124	140-142	8-22	88-100	120-136
V34T9310	(2)	f1	f14	f27	*f40	f53	f67
11	(2)	f2	f15	f28	*f41	f54	f68
12	(1)	f3	f16	f29	*f42	f55	f69
13	(2)	** f4	**f17	**f30	*f43	f56	f70
14	(2)	** f5	**f18	**f31	*f44	f57	f71
16	(2)	***	***	***	*f45	f58	f72
17	(1)	f6	f19	f32	*f46	f59	f73
18	(1)	f7	f20	f33	*f47	f60	f74
19	(1)	f8	f21	f34	*f48	f61	f75
20	(1)	f9	f22	f35	*f49	f62	f76
24	(3)	f10	f23	f36	*f50	f63	f77
25	(3)	f11	f24	f37	*f51	f64	f78
26	(3)	f12	f25	f38	*f52	f65	f79
27	(3)	f13	f26	f39	****	f66	f80

(1) measurement locations @ forward half of payload bay
(2) measurement locations @ aft half of payload bay
(3) measurement locations @ fwd and aft bulkheads
* Data files for STS-4 were too sparse to permit curve fitting.
** Data Files for STS-3 not used since the sensor was installed beneath the filter flanges instead of on top of them.These temperatures do not reflect the true payload bay temperatures.
*** Sensor V34T9316 was broken on STS-3 resulting in loss of data.
**** Sensor data for V34T9327 not available.

5.2 TMS Thermal Flight Data

The TMS flight data presented in this report was obtained from JSC Report 19956-" Orbital Payload Bay Flight Temperature Data ". Report 19956 provides DFI data for 50 measurement locations in the payload bay area for STS Flights 1-5 and for 6 measurement locations on the longerons for STS Flights 6-8. This data is presented in plotted form for the mission phases from lift-off to landing. No prelaunch or postlanding data are included. The data sample rate used to obtain the TMS data was not sufficient to reveal the cyclic nature of the temperatures in the payload bay; however, this data is useful for showing trends, defining upper and lower temperature values, cross checking of CCT data and for general background use for the plotting of thermal data.

Selected TMS data was organized into designated JPL files for the 14 measurement locations previously used for the CCT data.The data file designations, applicable to STS Flights 1-5, are presented in Table 5-2.

TABLE 5-2
TMS Flight Data Categorization

MSMT #	STS FLIGHT				
	1	2	3	4	5
V34T9310	f100	f114	f128 *	f142	f156
11	f101	f115	f129	f143	f157
12	f102 *	f116 *	f130 *	f144 *	f158 *
13	f103	f117	f131	f145	f159
14	f104	f118	f132	f146	f160
16	f105 **	f119 **	f133	f147	f161
17	f106	f120	f134	f148	f162
18	f107	f121	f135 *	f149	f163
19	f108	f122	f136 *	f150	f164
20	f109	f123	f137 *	f151	f165
24	f110	f124	f138 *	f152	f166
25	f111	f125	f139 *	f153	f167
26	f112	f126	f140 *	f154	f168
27	f113	f127	f141 *	f155	f169

* TMS data for this file has been digitized and plotted for this report. See Appendix A. These files have been used extensively in the summarization and characterization of the thermal flight data in this report.

** TMS data for this file has been digitized and plotted for Figure 7-1 only.

5.3 Miscellaneous Thermal Flight Data

The data in this category was obtained from workshops, conventions, reports, presentations and personal communications. The main sources of data were Rockwell-International/C.Pagan and C.Rose and JSC/R.Brown.

Prelaunch, Ascent/Initial Open Door, Entry and Postlanding Phases of the missions are covered exclusively by this category 3 data.The categorization of the data is presented in Tables 5-3 and 5-4.

TABLE 5-3
Misc.Thermal Data Categorization

Mission Phase	JPL File #	Total Files
Prelaunch/Ascent	f202a-205n	56
Ascent	f210-221	12
On-Orbit	f230-243	14
Entry	f260-270	11
Postlanding	f280-281	2
PLB Launch/Entry Pressures	f290-291	2

TABLE 5-4
Payload Bay-Prelaunch And Ascent Data

MSMT #	Mission Flight			
	STS 2 *	STS 3	STS 4	STS 5
V34T9310	f202 a	f203 a	f204 a	f205 a
11	b	b	b	b
12	c	c	c	c
13	d	d	d	d $
14	e	e	e	e
16	f	f $	f	f
17	g	g	g	g
18	h	h	h	h
19	i	i	i	i
20	j	j	j	j
24	k **	k	k	k
25	l	l	l	l
26	m	m	m	m
27	n	n	n	n **

NOTES: Data from CCT tapes-C.Pagan/Rockwell International.
* Prelaunch Data only
** Digitized files in Appendix A
$ Bad Data

5.4 Thermal Flight Data Summary

A summary of the thermal flight data for categories 1 thru 3 is presented in Table 5-5. This table is arranged to show mission phases, shuttle attitudes and measurement locations. The 126 files represented in this table are designated as JPL Flight Data Files and are presented in Appendix A. These Flight Data Files consist of (1) a numerical tabulation of temperature data points versus mission elapsed time and (2) a corresponding graphic representation of the data points. The digitized numerical and the graphical data are stored on disks and are available to interested users.

TABLE 5-5
Summary of JPL Thermal Flight Data Computer Files

Mission Phase	Attitude	PLB Doors	Msmt Location	CCT (1)	TMS (2)	MISC (3)
Prelaunch	-	closed	fwd PLB	-	-	f202k
			aft PLB	-	-	f205n
Ascent	-	closed	aft PLB	-	-	f210-221
On-Orbit	Nose Sun	open	fwd PLB	f3,6-9 16,19-22	-	f239-242
	STS-3		aft PLB	f1-2,14-15	-	-
			BLKHDS	f10-13 23-26	-	-
	Top Sun	open	fwd PLB	f29,32-35	f102,116 130,148, 158	f243
	STS-3		aft PLB	f27-28	-	-
			BLKHDS	f36-39	-	-
	Bottom Sun	open	fwd PLB	f42,47-48	-	-
	STS-4		aft PLB	f43-45	-	-
			BLKHDS	f50-52	-	-
	Tail Sun STS-4	open	fwd PLB	f55,59-62 69,73-76	-	f230-233 Orb-Rate
	Tail-Sun Orb Rate		aft PLB	f53-58,67 68,70-72 *	-	-
	STS-3		BLKHDS	f63-66 77-80	-	f234 Orb-Rate
	ZLV YPOP XPOP	open	fwd PLB	-	-	f235-238
	STS-3 Multiple Attitude	open	fwd PLB	-	f135-137	-
			aft PLB	-	f128	-
			BLKHDS	-	f138-141	-
Entry	-	closed	all	-	-	f260-270
Postlanding	-	closed	all	-	-	f280-281
Pressure	-	closed	all	-	-	f290-291

Fwd PLB Msmt # V34T9312-17-18-19-20 Aft PLB Msmt #V34T9310-11-13-14-16
BLKHD Msmt # V34T9324-25-26-27 *f55 excluded

5.5 Thermal Flight Data Listings

To facilitate referencing with Appendix A, all JPL thermal flight data files are listed in Table 5-6 according to file number. This tabulation provides the Measurement Number, STS Flight Number, Mission Phases, Mission Elapsed Times, Shuttle Attitudes, Max-Min Temperatures and Data Source.

Table 5-6. JPL Shuttle Thermal Environment Data Files

JPL FILE NO	TEMP SENSOR	STS NO	MISSION PHASES	START MET (HRS)	END MET (HRS)	ATTITUDE	NO OF DATA PTS	MAX TEMP (F)	MIN TEMP (F)	DATA(1) SOURCE
f 1	V34T9310	STS-3	on-orbit	104.00	116.00	nose sun	55	3.69	-47.30	1
f 2	V34T9311	STS-3	on-orbit	104.00	116.00	nose sun	58	-14.26	-44.80	1
f 3	V34T9312	STS-3	on-orbit	104.00	116.00	nose sun	68	54.21	-115.27	1
f 6	V34T9317	STS-3	on-orbit	104.00	116.00	nose sun	54	-26.82	-72.55	1
f 7	V34T9318	STS-3	on-orbit	104.00	116.00	nose sun	67	18.92	-117.69	1
f 8	V34T9319	STS-3	on-orbit	104.00	116.00	nose sun	76	0.91	-55.02	1
f 9	V34T9320	STS-3	on-orbit	104.00	116.00	nose sun	68	40.01	-110.30	1
f 10	V34T9324	STS-3	on-orbit	104.00	116.00	nose sun	68	42.32	-89.36	1
f 11	V34T9325	STS-3	on-orbit	104.00	116.00	nose sun	77	57.97	-110.75	1
f 12	V34T9326	STS-3	on-orbit	104.00	116.00	nose sun	57	-9.32	-75.32	1
f 13	V34T9327	STS-3	on-orbit	104.00	116.00	nose sun	53	7.91	-90.73	1
f 14	V34T9310	STS-3	on-orbit	121.00	124.00	nose sun	37	-1.33	-42.25	1
f 15	V34T9311	STS-3	on-orbit	121.00	124.00	nose sun	45	-16.82	-39.57	1
f 16	V34T9312	STS-3	on-orbit	121.00	124.00	nose sun	43	46.80	-108.10	1
f 19	V34T9317	STS-3	on-orbit	121.00	124.00	nose sun	39	-29.45	-69.78	1
f 20	V34T9318	STS-3	on-orbit	121.00	124.00	nose sun	42	13.94	-112.83	1
f 21	V34T9319	STS-3	on-orbit	121.00	124.00	nose sun	45	-4.20	-52.29	1
f 22	V34T9320	STS-3	on-orbit	121.00	124.00	nose sun	42	31.54	-105.57	1
f 23	V34T9324	STS-3	on-orbit	121.00	124.00	nose sun	45	34.11	-82.45	1
f 24	V34T9325	STS-3	on-orbit	121.00	124.00	nose sun	54	46.80	-102.43	1
f 25	V34T9326	STS-3	on-orbit	121.00	124.00	nose sun	44	-14.22	-52.43	1
f 26	V34T9327	STS-3	on-orbit	121.00	124.00	nose sun	38	-15.06	-57.93	1
f 27	V34T9310	STS-3	on-orbit	140.00	142.00	top sun	10	148.14	87.98	1
f 28	V34T9311	STS-3	on-orbit	140.00	142.00	top sun	11	172.07	106.50	1
f 29	V34T9312	STS-3	on-orbit	140.00	142.00	top sun	11	252.46	-18.23	1
f 32	V34T9317	STS-3	on-orbit	140.00	142.00	top sun	10	106.48	38.89	1
f 33	V34T9318	STS-3	on-orbit	140.00	142.00	top sun	10	135.16	1.11	1
f 34	V34T9319	STS-3	on-orbit	140.00	142.00	top sun	14	150.84	69.96	1
f 35	V34T9320	STS-3	on-orbit	140.00	142.00	top sun	10	130.15	-11.90	1
f 36	V34T9324	STS-3	on-orbit	140.00	142.00	top sun	11	127.21	8.58	1
f 37	V34T9325	STS-3	on-orbit	140.00	142.00	top sun	12	106.79	-6.89	1
f 38	V34T9326	STS-3	on-orbit	140.00	142.00	top sun	9	122.16	59.56	1

NOTES: (1) DATA SOURCE 1 = COMPUTER COMPATIBILITY TAPE (CCT)
DATA SOURCE 2 = JSC REPORT NO 19956
DATA SOURCE 3 = WORKSHOPS, CONVENTIONS, PERSONAL COMMUNICATIONS, ETC

Table 5-6. JPL Shuttle Thermal Environment Data Files (Cont.)

JPL FILE NO	TEMP SENSOR	STS NO	MISSION PHASES	START MET (HRS)	END MET (HRS)	ATTITUDE	NO OF DATA PTS	MAX TEMP (F)	MIN TEMP (F)	DATA(1) SOURCE
f 39	V34T9327	STS-3	on-orbit	140.00	142.00	top sun	13	118.27	40.20	1
f 42	V34T9312	STS-4	on-orbit	8.00	22.00	bot sun	84	52.52	-87.08	1
f 43	V34T9313	STS-4	on-orbit	8.00	22.00	bot sun	54	29.06	-24.64	1
f 44	V34T9314	STS-4	on-orbit	8.00	22.00	bot sun	44	28.82	-19.88	1
f 45	V34T9316	STS-4	on-orbit	8.00	22.00	bot sun	43	31.89	-12.13	1
f 47	V34T9318	STS-4	on-orbit	8.00	22.00	bot sun	85	67.52	-80.27	1
f 48	V34T9319	STS-4	on-orbit	8.00	22.00	bot sun	44	44.64	-27.29	1
f 50	V34T9324	STS-4	on-orbit	8.00	22.00	bot sun	69	16.17	-82.90	1
f 51	V34T9325	STS-4	on-orbit	8.00	22.00	bot sun	88	13.23	-186.89	1
f 52	V34T9326	STS-4	on-orbit	8.00	22.00	bot sun	65	18.71	-52.43	1
f 53	V34T9310	STS-4	on-orbit	88.00	100.00	tail sun	87	39.54	-35.11	1
f 54	V34T9311	STS-4	on-orbit	88.00	100.00	tail sun	85	34.39	-29.53	1
f 55	V34T9312	STS-4	on-orbit	88.00	100.00	tail sun	96	52.02	-89.82	1
f 56	V34T9313	STS-4	on-orbit	88.00	100.00	tail sun	92	57.20	-31.95	1
f 57	V34T9314	STS-4	on-orbit	88.00	100.00	tail sun	91	54.87	-37.16	1
f 58	V34T9316	STS-4	on-orbit	88.00	100.00	tail sun	83	54.83	-29.72	1
f 59	V34T9317	STS-4	on-orbit	88.00	100.00	tail sun	81	21.48	-62.51	1
f 60	V34T9318	STS-4	on-orbit	88.00	100.00	tail sun	95	39.85	-92.16	1
f 61	V34T9319	STS-4	on-orbit	88.00	100.00	tail sun	98	23.83	-39.46	1
f 62	V34T9320	STS-4	on-orbit	88.00	100.00	tail sun	95	42.06	-92.71	1
f 63	V34T9324	STS-4	on-orbit	88.00	100.00	tail sun	101	44.65	-82.83	1
f 64	V34T9325	STS-4	on-orbit	88.00	100.00	tail sun	101	8.83	-97.32	1
f 65	V34T9326	STS-4	on-orbit	88.00	100.00	tail sun	94	42.08	-69.77	1
f 66	V34T9327	STS-4	on-orbit	88.00	100.00	tail sun	92	50.43	-87.95	1
f 67	V34T9310	STS-4	on-orbit	120.00	136.00	tail sun	112	-14.18	-52.40	1
f 68	V34T9311	STS-4	on-orbit	120.00	136.00	tail sun	124	-24.35	-52.49	1
f 69	V34T9312	STS-4	on-orbit	120.00	136.00	tail sun	139	3.92	-99.62	1
f 70	V34T9313	STS-4	on-orbit	120.00	136.00	tail sun	131	-11.72	-54.84	1
f 71	V34T9314	STS-4	on-orbit	120.00	136.00	tail sun	129	-11.76	-59.82	1
f 72	V34T9316	STS-4	on-orbit	120.00	136.00	tail sun	110	-14.30	-54.75	1
f 73	V34T9317	STS-4	on-orbit	120.00	136.00	tail sun	113	-26.79	-82.57	1
f 74	V34T9318	STS-4	on-orbit	120.00	136.00	tail sun	128	-6.53	-107.47	1

NOTES: (1) DATA SOURCE 1 = COMPUTER COMPATIBILITY TAPE (CCT)
DATA SOURCE 2 = JSC REPORT NO 19956
DATA SOURCE 3 = WORKSHOPS, CONVENTIONS, PERSONAL COMMUNICATIONS, ETC

Table 5-6. JPL Shuttle Thermal Environment Data Files (Cont.)

JPL FILE NO	TEMP SENSOR	STS NO	MISSION PHASES	START MET (HRS)	END MET (HRS)	ATTITUDE	NO OF DATA PTS	MAX TEMP (F)	MIN TEMP (F)	DATA(1) SOURCE
f 75	V34T9319	STS-4	on-orbit	120.00	136.00	tail sun	143	-24.27	-59.83	1
f 76	V34T9320	STS-4	on-orbit	120.00	136.00	tail sun	126	-8.87	-104.93	1
f 77	V34T9324	STS-4	on-orbit	120.00	136.00	tail sun	154	-21.82	-97.14	1
f 78	V34T9325	STS-4	on-orbit	120.00	136.00	tail sun	147	42.12	-110.47	1
f 79	V34T9326	STS-4	on-orbit	120.00	136.00	tail sun	135	13.77	-89.77	1
f 80	V34T9327	STS-4	on-orbit	120.00	136.00	tail sun	136	32.66	-103.51	1
f102	V34T9312	STS-1	on-orbit	0.00	60.00	+zlv ypop	214	285.33	-80.62	2
f116	V34T9312	STS-2	on-orbit	0.00	72.00	+zlv ypop	181	99.12	-100.00	2
f128	V34T9310	STS-3	on-orbit	0.00	180.00	multiple	338	159.48	-87.10	2
f130	V34T9312	STS-3	on-orbit	0.00	180.00	multiple	380	257.03	-143.38	2
f135	V34T9318	STS-3	on-orbit	0.00	180.00	multiple	357	143.01	-158.88	2
f136	V34T9319	STS-3	on-orbit	0.00	180.00	multiple	336	158.72	-99.50	2
f137	V34T9320	STS-3	on-orbit	0.00	180.00	multiple	357	138.39	-141.91	2
f138	V34T9324	STS-3	on-orbit	0.00	180.00	multiple	362	137.95	-124.42	2
f139	V34T9325	STS-3	on-orbit	0.00	180.00	multiple	368	119.59	-138.76	2
f140	V34T9326	STS-3	on-orbit	0.00	180.00	multiple	345	121.92	-116.96	2
f141	V34T9327	STS-3	on-orbit	0.00	180.00	multiple	347	129.67	-128.02	2
f144	V34T9312	STS-4	on-orbit	0.00	180.00	multiple	415	202.94	-99.37	2
f158	V34T9312	STS-5	on-orbit	0.00	144.00	multiple	274	217.80	-115.81	2
f202	V34T9324	STS-2	prelaunch	0.00	13.11	launch	99	70.11	64.90	3
f205	V34T9327	STS-5	prelaunch	0.00	9.27	launch	29	83.17	62.96	3
f210	V34T9311	STS-1	ascent	0.00	3.00	ascent	22	80.63	5.78	3
f211	V34T9317	STS-1	ascent	0.00	3.00	ascent	24	80.35	3.12	3
f212	V34T9320	STS-1	ascent	0.00	6.00	ascent	50	83.06	-41.94	3
f213	V34T9310	STS-2	ascent	0.00	3.00	ascent	21	77.92	36.66	3
f214	V34T9320	STS-2	ascent	0.00	1.00	ascent	49	70.97	50.22	3
f215	V34T9325	STS-2	ascent	0.00	1.00	ascent	45	70.74	59.97	3
f216	V34T9326	STS-2	ascent	0.00	1.00	ascent	28	71.30	43.09	3
f217	V34T9312	STS-2	ascent	0.00	3.00	ascent	19	83.18	0.28	3
f218	V34T9312	STS-3	ascent	0.00	1.00	ascent	15	80.87	62.85	3
f219	V34T9318	STS-3	ascent	0.00	1.00	ascent	27	73.02	47.18	3
f220	V34T9324	STS-3	ascent	0.00	1.00	ascent	14	70.33	59.82	3

NOTES: (1) DATA SOURCE 1 = COMPUTER COMPATIBILITY TAPE (CCT)
DATA SOURCE 2 = JSC REPORT NO 19956
DATA SOURCE 3 = WORKSHOPS, CONVENTIONS, PERSONAL COMMUNICATIONS, ETC

Table 5-6. JPL Shuttle Thermal Environment Data Files (Cont.)

JPL FILE NO	TEMP SENSOR	STS NO	MISSION PHASES	START MET (HRS)	END MET (HRS)	ATTITUDE	NO OF DATA PTS	MAX TEMP (F)	MIN TEMP (F)	DATA(1) SOURCE
f221	V34T9326	STS-3	ascent	0.00	1.00	ascent	24	72.97	49.78	3
f230	V34T9318	STS-3	on-orbit	12.00	18.00	tail sun	28	-22.49	-138.79	3
f231	V34T9312	STS-3	on-orbit	28.00	36.00	tail sun	45	42.03	-149.75	3
f232	V34T9318	STS-3	on-orbit	28.00	36.00	tail sun	52	46.27	-159.41	3
f233	V34T9317	STS-3	on-orbit	28.00	36.00	tail sun	47	13.48	-124.34	3
f234	V34T9325	STS-3	on-orbit	28.00	36.00	tail sun	60	41.33	-145.00	3
f235	V34T9312	STS-1	on-orbit	12.00	24.00	+zlv ypop	55	278.93	-79.26	3
f236	V34T9312	STS-2	on-orbit	12.00	30.00	+zlv ypop	32	57.12	21.08	3
f237	V34T9320	STS-2	on-orbit	12.00	20.00	+zlv ypop	46	73.62	16.18	3
f238	V34T9312	STS-2	on-orbit	20.00	40.00	+zlv ypop	78	109.29	-80.39	3
f239	V34T9312	STS-3	on-orbit	112.00	122.00	nose sun	80	41.60	-109.97	3
f240	V34T9312	STS-3	on-orbit	116.00	124.00	nose sun	36	45.00	-107.14	3
f241	V34T9318	STS-3	on-orbit	116.00	124.00	nose sun	37	13.27	-113.06	3
f242	V34T9317	STS-3	on-orbit	116.00	124.00	nose sun	37	-31.97	-69.87	3
f243	V34T9312	STS-3	on-orbit	128.33	143.33	top sun	182	263.03	-15.03	3
f260	V34T9311	STS-1	entry	50.00	62.00	entry	41	75.62	18.62	3
f261	V34T9312	STS-1	entry	48.00	88.00	entry	35	75.11	0.55	3
f262	V34T9313	STS-1	entry	48.00	88.00	entry	85	91.53	13.83	3
f263	V34T9312	STS-2	entry	48.00	65.00	entry	75	67.57	-22.10	3
f264	V34T9312	STS-2	entry	53.60	55.80	entry	36	66.60	21.88	3
f265	V34T9310	STS-2	entry	53.60	55.80	entry	26	65.66	29.64	3
f266	V34T9312	STS-3	entry	188.00	200.00	entry	47	72.86	16.00	3
f267	V34T9318	STS-3	entry	191.40	193.00	entry	36	65.09	11.25	3
f268	V34T9312	STS-3	entry	191.40	193.00	entry	44	69.87	16.61	3
f269	V34T9325	STS-3	entry	191.40	193.00	entry	45	67.42	13.56	3
f270	V34T9327	STS-3	entry	191.40	193.00	entry	46	85.19	39.91	3
f280	V34T9312	STS-1	postldg	0.00	25.00	postldg	147	75.09	56.95	3
f281	V34T9312	STS-1	postldg	52.00	82.00	postldg	36	75.56	63.31	3
f290	pressure	STS-1	launch	0.00	0.03	launch	49	15.05	0.07	3
f291	pressure	STS-2	entry	0.00	0.56	entry	120	13.66	0.17	3

NOTES: (1) DATA SOURCE 1 = COMPUTER COMPATIBILITY TAPE (CCT)
DATA SOURCE 2 = JSC REPORT NO 19956
DATA SOURCE 3 = WORKSHOPS, CONVENTIONS, PERSONAL COMMUNICATIONS, ETC

6.0 THERMAL FLIGHT DATA SUMMARIZATION

This section summarizes the thermal flight data that was available to JPL for the preparation of this report.This includes the three previously described categories of flight data and portions of JSC report 19956 related to the thermal environment of the payload bay. The summarization is presented in terms of the five mission phases: Prelaunch, Ascent, On-Orbit, Entry, and Postlanding. In addition, the thermal flight data for the On-Orbit phase of the mission is summarized in terms of the shuttle flight attitudes. Excluded from these attitude holds are the gravity gradient and other miscellaneous short duration attitude modes which yield a limited amount of data.

For each mission phase and distinct shuttle attitude, the thermal flight data is shown on a single plot using a uniform time and temperature scale. This facilitates the evaluation of the flight to flight temperature variations for a particular phase or attitude hold.Table 6-1 provides a listing of the mission phases, figures, data files, and related information. Although a large amount of thermal flight data is available, the amount that lends itself to this form of summarization is relatively limited. Hopefully, this summarization of the thermal flight data will lead to meaningful conclusions.

Table 6-1. Shuttle PLB Flight Temperature Data Summary

Figure	Figure Title	Mission Phases	Mission No's	Temp Sensor no	JPL File no	JPL Data File Used
6-1	Prelaunch PLB Liner Temps	Prelaunch	STS-1-5	-	p910 (g910.g)	f202k, 205n
6-2	Ascent & Initial Open-Dr PLB Surface Temps	Ascent	STS-1,2,3	11,12,17, 18,20,24-26	p906 (g906.g)	f210 thru 221
6-3	Payload Bay Pressure During Launch	Ascent	STS-1	-	p912 (g912.g)	f290
6-7	Temp Ranges for the Top-Sun Att.	On-Orbit	STS-1-5	12	p930a,b (g930a.g) (g930b.g)	f29,102,116,130 144,158,243a
6-8	Temp Ranges for the Bot-Sun Att.	On-Orbit	STS-4	12	p931 & 931a (g931a.g)	f42,144
6-9	Temp Ranges for the Nose-Sun Att.	On-Orbit	STS-3,5	12	p932 & 932a (g932a.g)	f3,16,130,158, 239,240
6-10	Temp Ranges for the Tail-Sun Att.	On-Orbit	STS-1,2,3,4,5	12	p933 & 933a (g933a.g)	f55,69,102,116, 130,144,158,231
6-11	Temp Ranges for the Starbd-Sun Att.	On-Orbit	STS-5	12	p934 (g934.g)	f158
6-12	Temp Ranges for the +ZLV YPOP Att.	On-Orbit	STS-1,2,5	12	p935 & 935a (g935a.g)	f102,116,158, 235,238
6-13	Temp Ranges for the +ZLV XPOP Att.	On-Orbit	STS-1,2,4,5	12	p936 (g936.g)	f144 (f102, f116,f158 as background)
6-14	Temp Ranges for the PTC Att.	On-Orbit	STS-1,3,4,5	12	p937 (g937.g)	f102,130,144, 158
6-15	Entry PLB Surface Temps	Entry	STS-1,2,3	10-13,18,25, 27	p907 (g907.g)	f260 thru 270
6-16	STS-1 & -2 Entry PLB Surface Temp	Entry	STS-1 & 2	10-13	p908 (g908.g)	f1,2,3,5,260
6-17	STS-3 Entry PLB Liner Temps	Entry	STS-3	12,18,25,27	p909 (g909.g)	f266,267,269, 270
6-18	Postlanding Liner Temps	Postlanding	STS-1	12	p911 (g911.g)	f280
6-19	PLB COMPT Press No. 2	Entry	STS-2	V07P9085A	p913 (g913.g)	f291

6.1 Prelaunch Phase

Prelaunch payload bay temperature data was usually recorded from T-24 hours to liftoff. The events for this period are air purge, N2 purge and termination of N2 purge. The temperature variation usually ranges between 70 and 80 deg F.

Prelaunch thermal data, in plotted form, for STS Flights 2,3,4, and 5 were obtained from Rockwell International(C.Pagan). All 14 measurement locations covering the entire payload bay were included in this data with two exceptions: Measurement V34T9316 for STS-3 and V34T9313 for STS-5 were not available due to bad data. All 54 files are shown in Table 5-4 and are stored in JPL Section 513 computer files.

All prelaunch thermal data shows a fluctuation in a narrow range. The low value of the data was 65 deg F recorded for V34T9324 on STS-2. The high value of 80 deg F was recorded for measurement V34T9327 on STS-5 at the aft bulkhead. The remaining thermal data falls between these values for STS 2 thru 5 for all measurement locations. The prelaunch data for these two extreme cases is presented in Figure 6-1. The temperature scales were chosen to conform to those used in JSC Report 19956 and correlates with measurement V34T9312 for STS-3. These wide range temperature scales will be used exclusively in this report except where a close-up examination of the thermal flight data is desired.

The prelaunch flight data was studied from an average temperature view point as follows: for each flight and measurement location, an average temperature was first calculated by taking the arithmetic mean of the high and low temperatures. The result of this calculation for all 14 measurements is shown in Table 6-2. As indicated by these average measurements, V34T9312 and V34T9327 were consistently high and measurement V34T9324 was consistently low. These readings, therefore, were excluded from the definition of a bulk average temperature as shown in the table.

According to the bulk average temperatures, the prelaunch thermal environment for the payload bay can be characterized as ranging between 70 and 75 deg F. This is well within the expected temperature range of the payload bay based on the purge gas temperature which is 70 deg F at the supply inlet.

It is noted, however, that for each of the flights the external environment was similar to the payload bay environment; therefore, very little variation in the payload bay temperature was expected with or without the purge gas.

FIG. 6-1. PLB PRELAUNCH FLIGHT TEMPERATURES

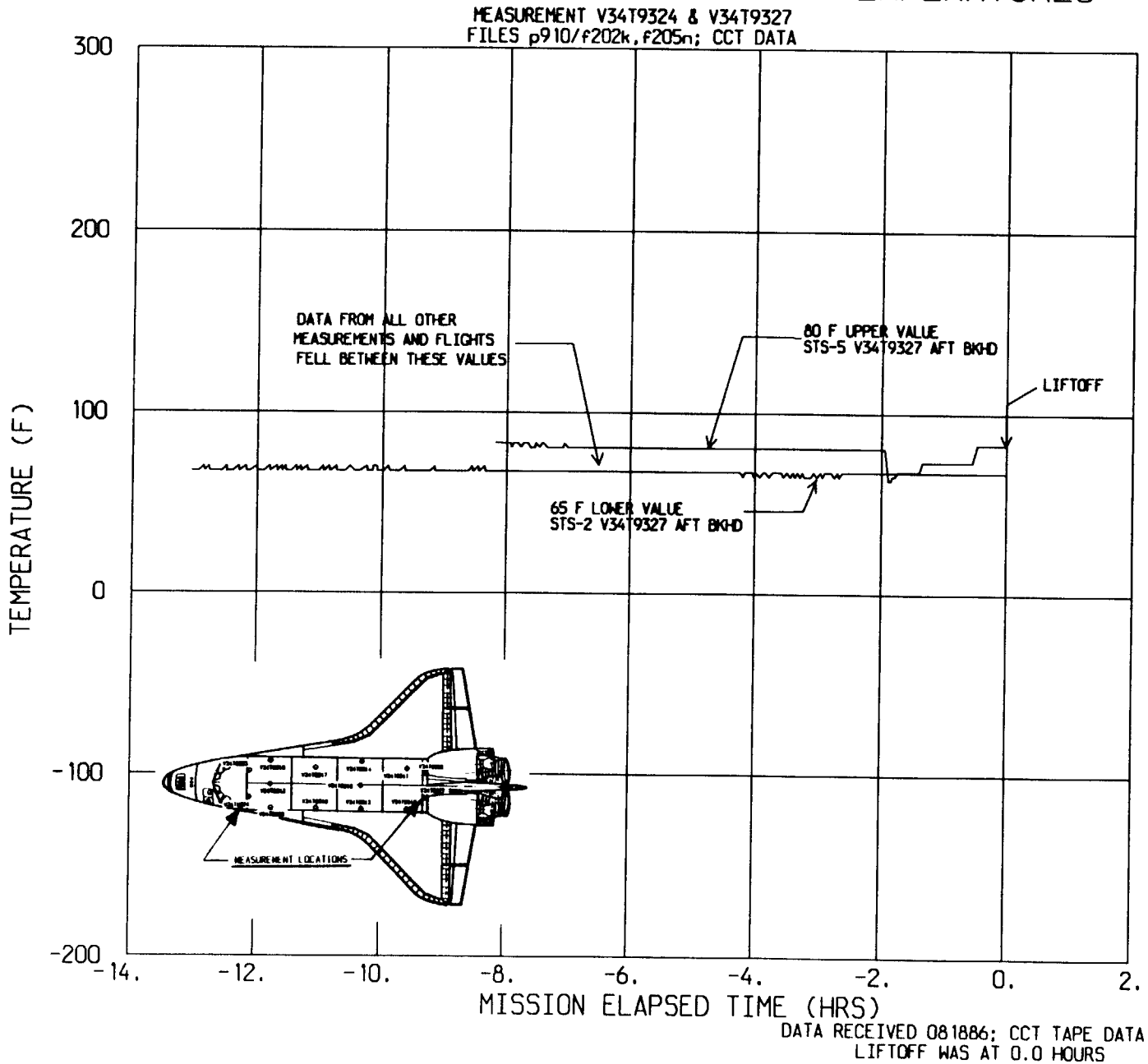


TABLE 6-2

PRELAUNCH
AVERAGE PAYLOAD BAY TEMPERATURES - deg F

Measurement	STS-2	STS-3	STS-4	STS-5
V34T9310	70	72.5	74	75
11	72.5	74	76.5	75
12	74	79	79	79
13	70	74	75	**
14	69	74	74	75
16	69	**	74	75
17	72.5	74	74	75
18	69	71	74	75
19	70	74	74	75
20	70	71	72.5	75
24	67.5	70	71.5	72.5
25	71.5	74	74	75
26	69	71	74	74
27	76.5	77.5	79	80
bulk average	70	73	74	75

Notes: avg temp defined as midpoint between high and low temp readings for msmt for prelaunch duration.

bulk avg temp is arithmetic mean of all msmt averages for each flight after excluding the two high and low readings.

** bad data.

6.2 Ascent Phase

Temperature data for the ascent and initial open payload bay door phases for STS flights were obtained during such significant thermal events as decompression cooling, ascent heating, radiator flow, and by the space cooling from the payload door opening.

Flight temperature data for this mission phase is shown in Figure 6-2. The flight data was taken from 9 measurement locations covering the entire payload bay. Twelve data files covering STS Flights 1,2,and 3 were used for this plot. Additional ascent data covering STS Flights 3,4 and 5 was obtained subsequently and is included in JPL f files but is not reflected in the figure due to time limitations.

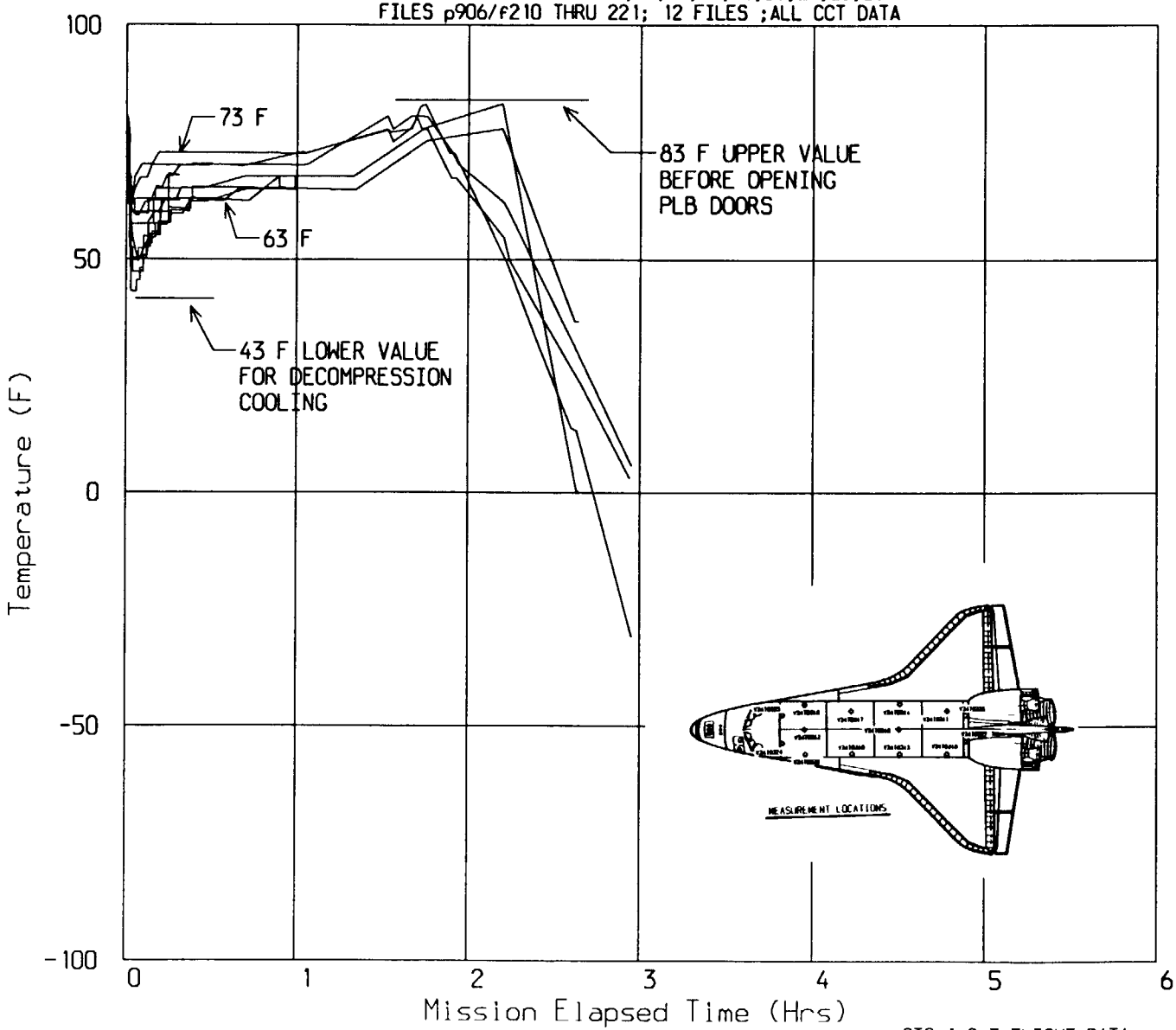
As indicated in Figure 6-2, the payload bay temperatures show a temperature drop at liftoff as a result of the expansion cooling of the gas in the payload bay. The extent of this cooling is tabulated in Table 6-3 for the indicated flights.

TABLE 6-3
Payload Bay Ascent Temperatures - deg F

Flight #	Msmt #	Initial Temp	Final Temp	Temp Drop	Time hrs	JPL File
STS-1	V34T9311	78	60	18	0.02	f210
	17	80	60	20	0.03	211
	20	77	59	18	0.07	212
STS-2	10	70	50	20	0.07	213
	20	71	50	21	0.07	214
	25	71	60	11	0.05	215
	26	71	43	28	0.05	216
	12	74	57	17	0.03	217
STS-3	12	81	63	18	0.04	218
	18	73	47	26	0.07	219
	24	70	60	10	0.05	220
	26	73	50	23	0.03	221

FIG. 6-2. ASCT & INIT OPEN-DR PLB SURFACE TEMPS

MEASUREMENTS V34T9310, 11, 12, 17, 18, 20, 24, 25, 26
FILES p906/f210 THRU 221; 12 FILES ;ALL CCT DATA



STS-1,2,3 FLIGHT DATA
0 HR = LIFTOFF TIME

It is noted that decompression cooling gave steep drops in the temperatures for short time periods, 0.02 to 0.07 hours after liftoff, for all measurements and all flights. The lower value of temperature appears to be approximately 43 deg F. A typical temperature rise due to ascent heating follows the expansion cooling. This is followed by approximately 1 hour of thermal equilibrium at a temperature of 63 to 73 deg F with an upper value of approximately 83 deg F. The payload bay temperatures dropped sharply immediately after the opening of the payload bay doors. The transient cooling rates after the door open sequence are shown in Table 6-4. These rates ranged between 71 and 193 deg F/hr. The rates are dependent on the payload view to space (dictated by orbiter attitude) and are also influenced by the orbit position where the doors are open (day versus night side).

TABLE 6-4
Payload Bay Door Open Sequence Temperatures

Flight #	Msmt #	Temp Rate deg F/hr	Min Temp deg F **	JPL File #
STS-1	V34T9311	- 77	6	f210
	V34T9317	- 71	3	211
	V34T9320	- 138 *	-42	212
STS-2	V34T9310	- 98	37	213
	V34T9312	- 193 *	0	217

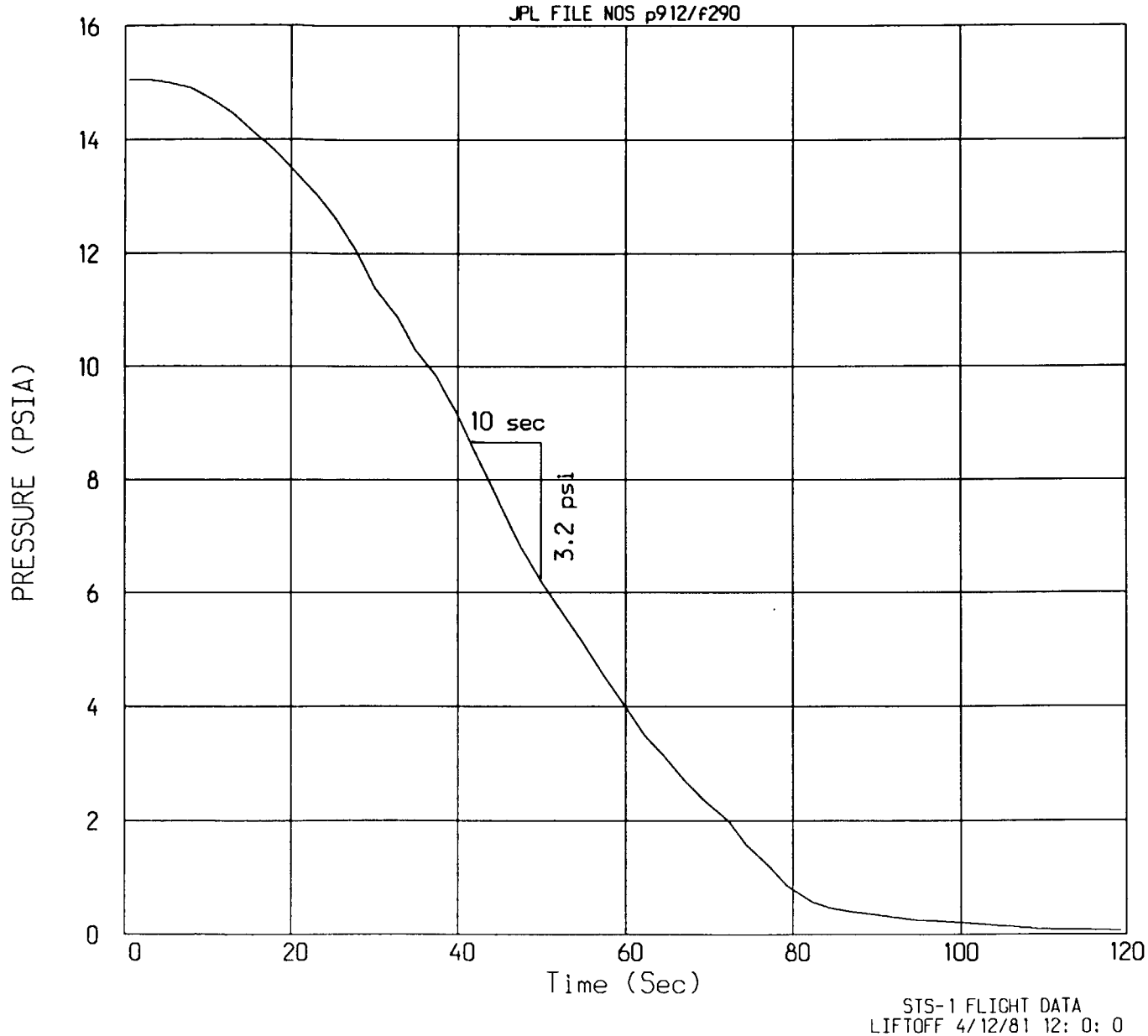
Notes:* No payload influence contributed to faster response.
** Data V34T9320,25,26 for Ascent Phase-STS-2 not received by JPL.

Payload bay pressures during the launch phase are shown in Figure 6-3 for the first 120 seconds after lift-off. This STS-1 data shows that the pressure declined rapidly approximately 10 seconds after lift-off, from 1 atmosphere to essentially a vacuum in about 120 seconds. This data agrees well with the data shown in JSC report 07700 Volume XIV,"Space Shuttle System Payload Accommodations". The maximum reduction rate occurred at ~40 seconds and reached ~ 0.32 psi/sec (17 torr/sec).

6.3 On-Orbit Phase

During the On-Orbit Phase of the mission with the payload doors open, the thermal environment of the payload bay is primarily dependent on the orbiter orientation(attitude), the angle between the orbital plane of the Orbiter and the earth-sun vector (Beta angle), the attitude hold times,and the presence of the payload itself. A brief description of flight attitudes and payload placement effects on the payload bay temperatures is provided in this section prior to the presentation of temperature data.

FIG. 6-3. PAYLOAD BAY PRESSURES DURING LAUNCH



6.3.1 On-Orbit Flight Attitudes

The On-Orbit attitudes are defined in Space Shuttle vehicle structural coordinates: -X nose, +X tail, +Z top, -Z bottom, +Y starboard side, and -Y port side. The attitude hold types are defined as Solar Inertial (SI), Single Axis Inertial (SAI), and Earth Local Vertical (LV). The angle between the orbital plane of the Orbiter and the earth-sun solar vector is designated as the Beta angle.

The Passive Thermal Control attitude (PTC) consists of a continuous roll of 2 to 5 revolutions per hour about the X axis with the X axis perpendicular to the solar vector. With all Beta Angles, this generally provides the most thermally benign attitude for the vehicle.

The Tail To Sun-Payload Bay to Space Orbital Rate attitude (+XSAI) subjects the payload bay(depending on the Beta Angle) to the coldest environment.

The Nose to Sun Attitude (-XSI) provides a relatively cold environment for the aft and mid-fuselage payload bay and a warm environment for the forward fuselage.

The Starboard Side to Sun attitude (+YSI) subjects the starboard side of the payload bay structure to the relatively hot environment and the port side to the cold environment creating side to side thermal gradients.

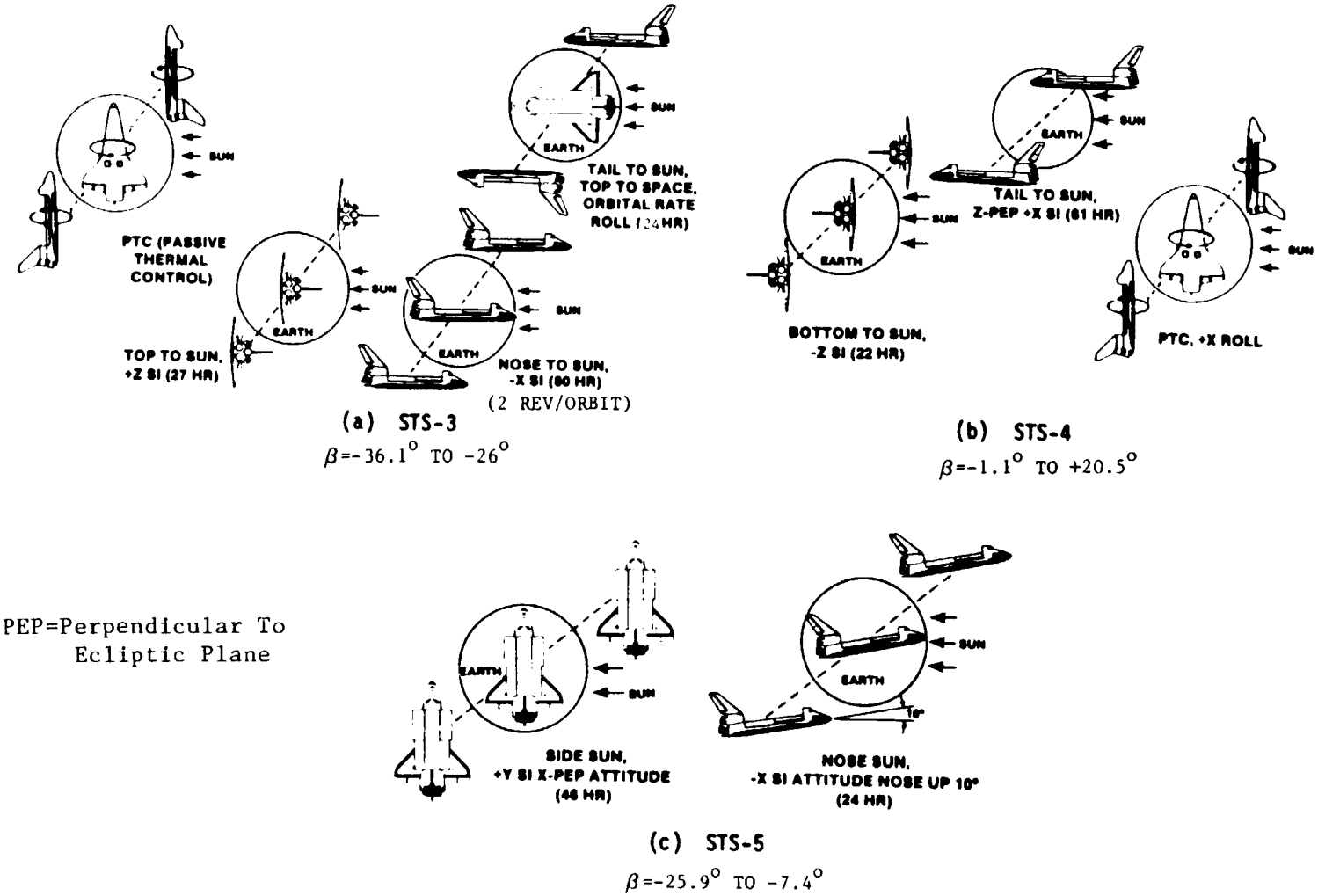
The Payload Bay to Sun attitude (+ZSI) subjects the payload bay to the maximum hot environment.

The Tail to Sun Attitude (+XSI) provides a relatively cold environment for the forward fuselage and mid-fuselage payload bay and a warm environment for the aft fuselage.

The On-Orbit flight attitudes and attitude time lines for STS-3 thru STS-5 are shown in Figures 6-4 and 6-5. The attitudes flown for STS-3 were a PTC (thermal conditioning mode) before and after the first attitude hold of +XSAI for 24 hours. This was followed by a -XSI (nose to sun) attitude for 80 hours. The next attitude, +ZSI (top to sun) was held for 27 hours, followed by a 12 hour PTC(thermal conditioning mode).

6.3.2 Payload Effects

The cargo of a typical Space Shuttle flight will consist of a complement of one or more payloads transported into earth orbit to achieve specific mission objectives. The pallet mounted payloads are attached to the orbiter by trunnions secured to the longeron bridge and keel bridge fittings. The payload configuration and its location in the Orbiter bay can reduce the view factor of the RTDs to the external environment with subsequent attenuation of the temperature data. Variations in the temperature profiles of the RTDs in the vicinity of payloads may be attributed to this effect. The locations of the DFI and OSS-1 payloads for STS-3 are shown in Figure 6-6.



PEP=Perpendicular To Ecliptic Plane

Figure 6-4. On-Orbit Flight Attitudes

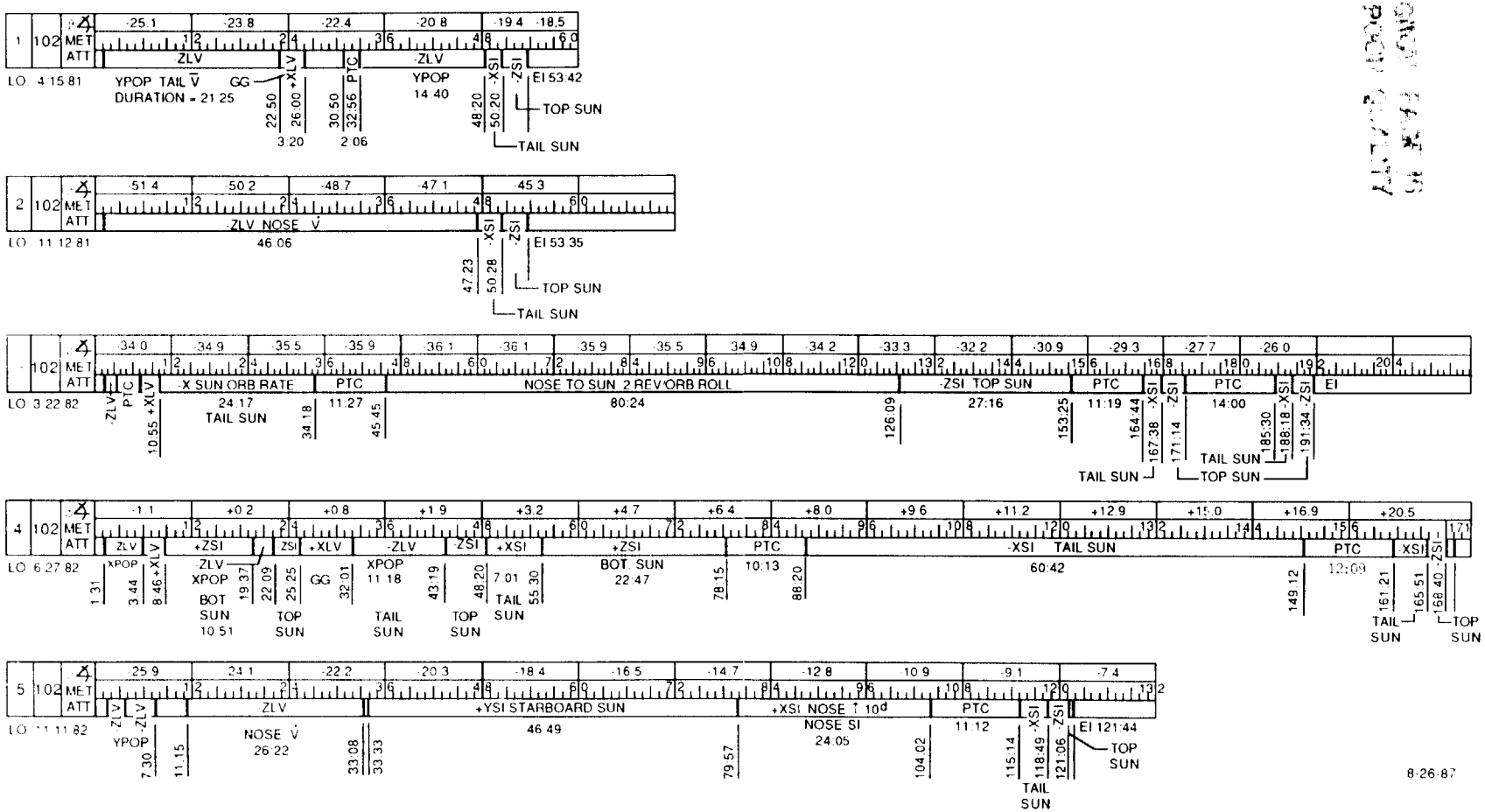


Figure 6-5. STS Flight Attitude Timelines

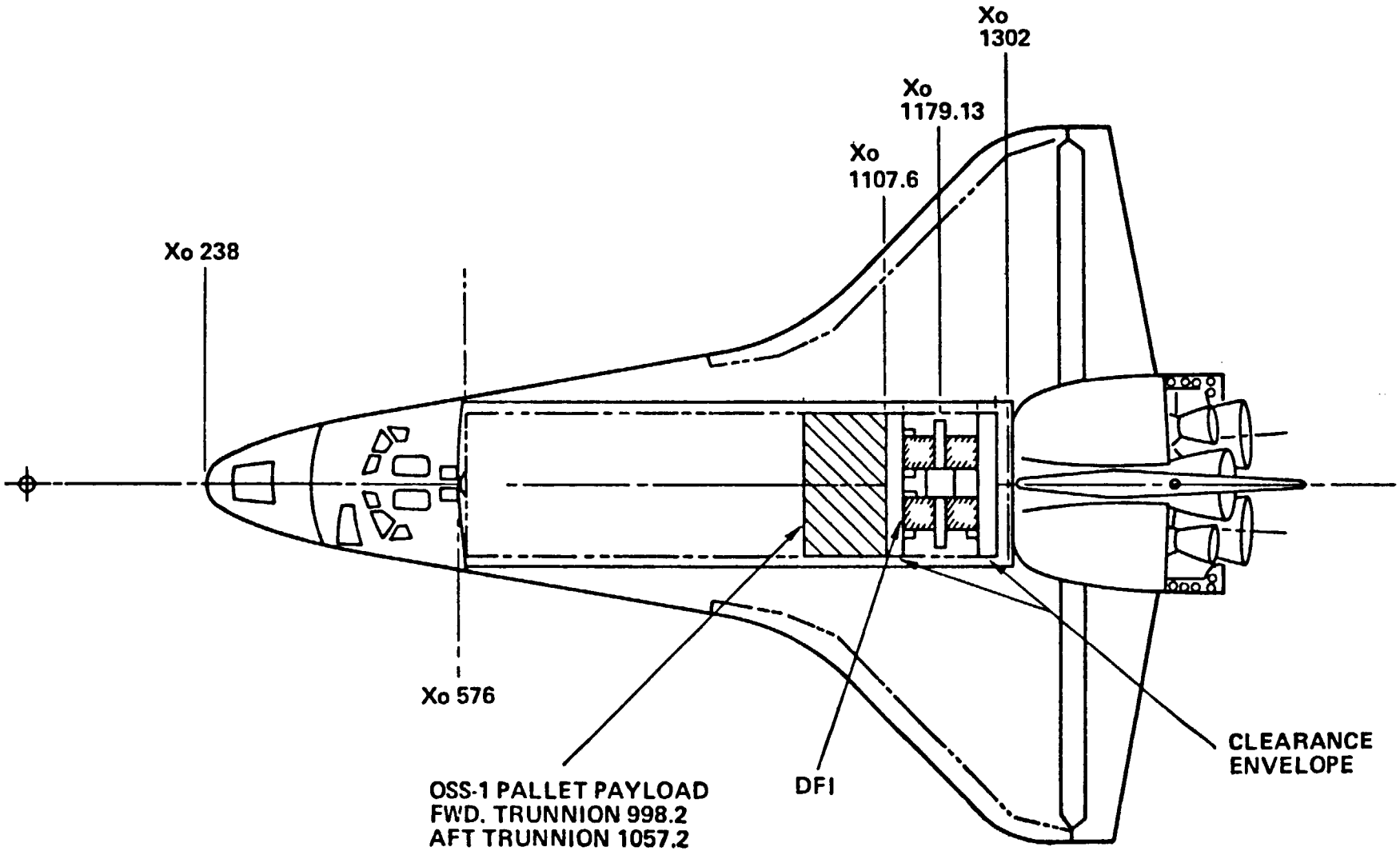


Figure 6-6. STS-3 Locations of OSS-1 and DFI Pallets

6.4 On-Orbit Temperature Data

The temperature data for the various On-Orbit attitudes is summarized in the following section.

6.4.1 Top-Sun Attitude Temperatures

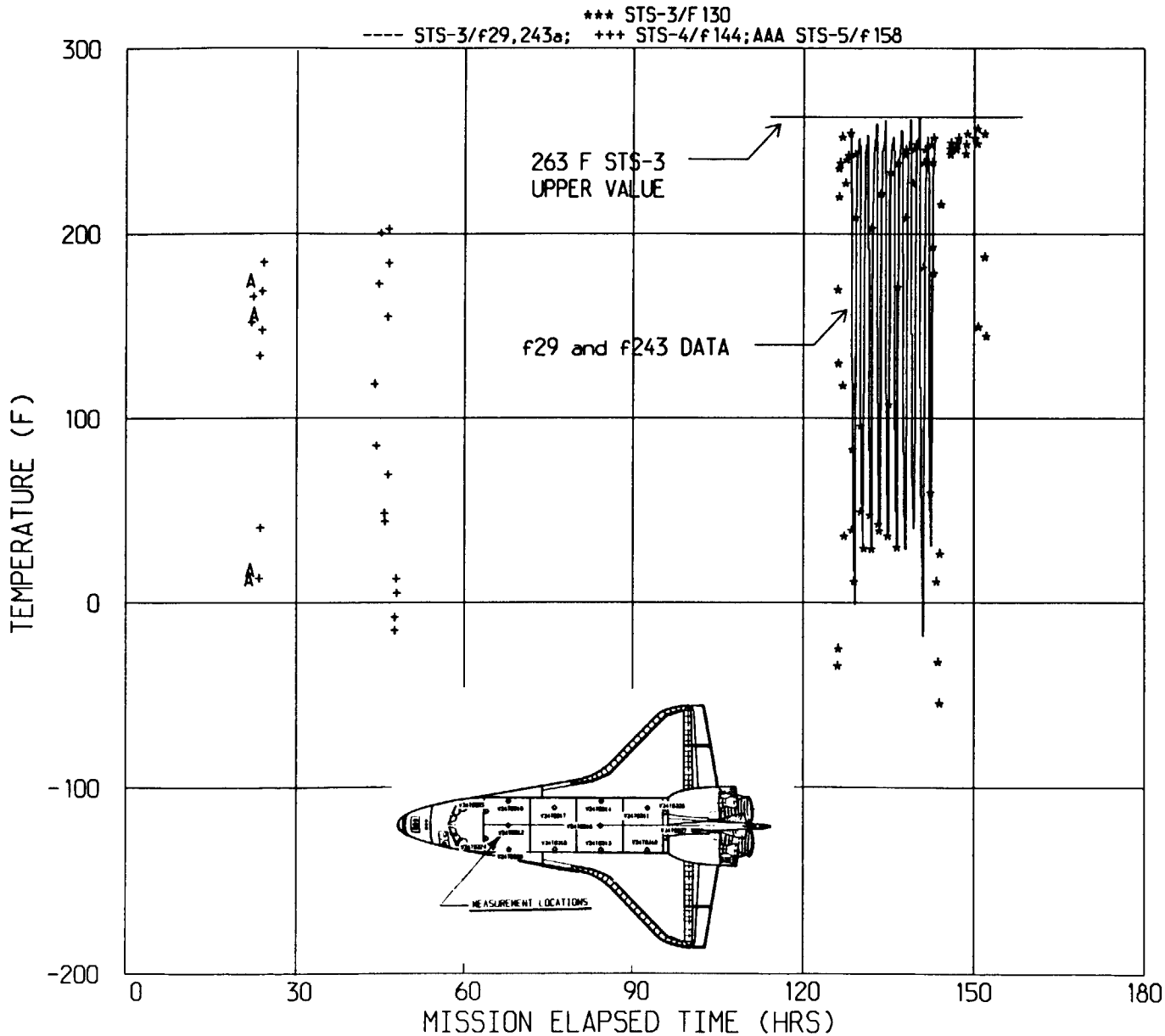
The start and end sequences for the Top-Sun attitudes were first identified from the mission time lines for STS Flights 1-5. The data files were searched for the measurement that proved to be the most responsive and the least influenced by payload placement. Measurement V34T9312, located in the forward bottom of the payload bay, met these requirements and the data from this measurement is representative of the empty payload bay environment. Table 6-5 summarizes the flight data files and the mission elapsed times for this temperature data and the results are plotted in Figure 6-7 . The TMS data is presented in symbolic notation and the CCT data is represented by continuous lines.

TABLE 6-5
Top-Sun Attitude Temperature Files

Flight #	Data File #	Mission Elapsed Time (hrs)
3	130 *	126.15-153.42
	29 **	140.65-141.84
	243 **	128.32-143.06
4	144 *	22.00-25.42,44.02-48.33
5	158	21.50-23.33

* TMS data
** CCT Data

FIG. 6-7. TEMP RANGES FOR THE TOP-SUN ATTITUDE
(MEASUREMENT V34T9312 - FWD PLB BOTTOM)



JPL FILES p930/p930a;DFI DATA FROM
REP JSC 19956 AND CCT TAPES

The data in Figure 6-7 indicates that the Top-Sun steady state temperature was established only in STS-3 for a MET of 120-150 hours. The upper temperature value in this case was 263 deg F before correction. No definitive lower value could be discerned from the data shown.

The cyclic nature of the payload bay temperatures, not observable from TMS data, was clearly displayed by the CCT data from files f29 and f243 (solid lines). Good agreement between TMS and CCT data was noted for this case. Popular opinion holds that the temperature data for the Top-Sun attitude, particularly for measurement V34T9312, requires correction for the so-called "Greenhouse Effect".

The Greenhouse Effect assumes that local energy trapping may have occurred in the transparent Beta cloth pocket that the RTDs were mounted in leading to higher recorded temperature readings than the actual temperatures. This correction has not been applied to the data in this report. For STS-1, upper value temperatures exceeding 263 deg F are present in TMS data file f102 for the following MET:

Mission Elapsed Time hrs	Temperature deg F
11.07	280
11.12	285
22.34	268
23.01	277
48.03	274
STS-1 Data Msmt V34T9312	

The highest recorded temperature was 285 deg F which occurred at 11.12 MET. Assuming these temperatures are for the Top-Sun attitude, they would be expected to be higher than STS-3 values due to the lack of Tedlar layer in the RTD pocket that was installed on STS-3.

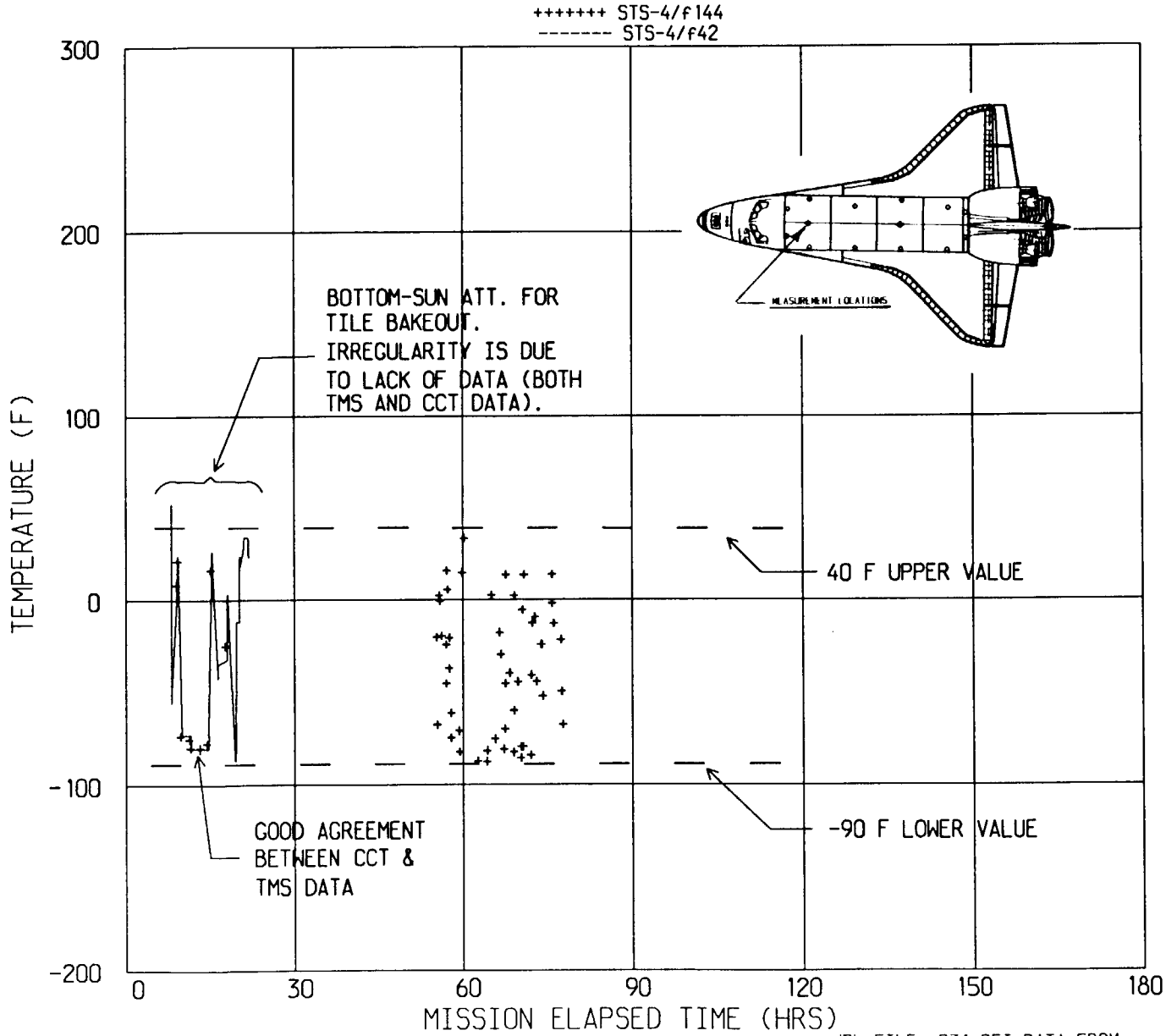
6.4.2 Bottom-Sun Attitude Temperatures

The Bottom-Sun Attitude was flown only on STS-4 and the METs for this flight attitude were as follows:

8:46-18:50 MET (Sun Cone Angle 90 deg, Sun Clock Angle 145 deg)
55:30-78:15 MET (Sun Cone Angle 90 deg, Sun Clock Angle 180 deg)

The temperature data for these periods are contained in CCT data file f42 and TMS data file f144. The collective data is presented in graphical form in Figure 6-8. The temperature ranges for this attitude are well defined and were between the values of 40 and -90 deg F.

FIG. 6-8. TEMP RANGES FOR THE BOTTOM-SUN ATTITUDE
(MEASUREMENT V34T9312 - FWD PLB BOTTOM)



JPL FILE p931;DFI DATA FROM
REP JSC 19956 AND CCT TAPES

6.4.3 Nose-Sun Attitude Temperatures

The Nose-Sun Attitude was flown on STS-3 and STS-5 for relatively long durations as indicated by the mission elapsed times indicated below:

STS-3 45:45-126:09 MET, 2 revs/orbit
STS-5 79:57-104:02 MET, + 10 deg pitch

For STS-5 , the Orbiter had a positive pitch attitude of 10 deg. The temperature data for this attitude is contained in the following files:

STS-3 CCT data files f3,16,239,240
TMS data files f130
STS-5 TMS data files f158

The data is presented graphically in Figure 6-9. The temperature ranges for this attitude are very well defined with a lower value of -118 deg F and an upper value of 54 deg F. For STS-5, the Orbiter's 10 deg pitch angle did not seem to affect the lower temperature value; however, the upper temperature value was reduced by as much as 84 deg F (54 to -30) as a result of attitude differences. The flight temperatures show good agreement between the CCT and TMS data.

6.4.4 Tail-Sun Attitude Temperatures

The Tail-Sun Attitude was flown on all five STS missions for seven sequences and time durations varying from 2 to 61 hours. STS-4 recorded the longest mission elapsed time for this attitude hold with the MET of 88.20 to 149.12 hours. The flight data for this attitude hold is summarized in Table 6-6.

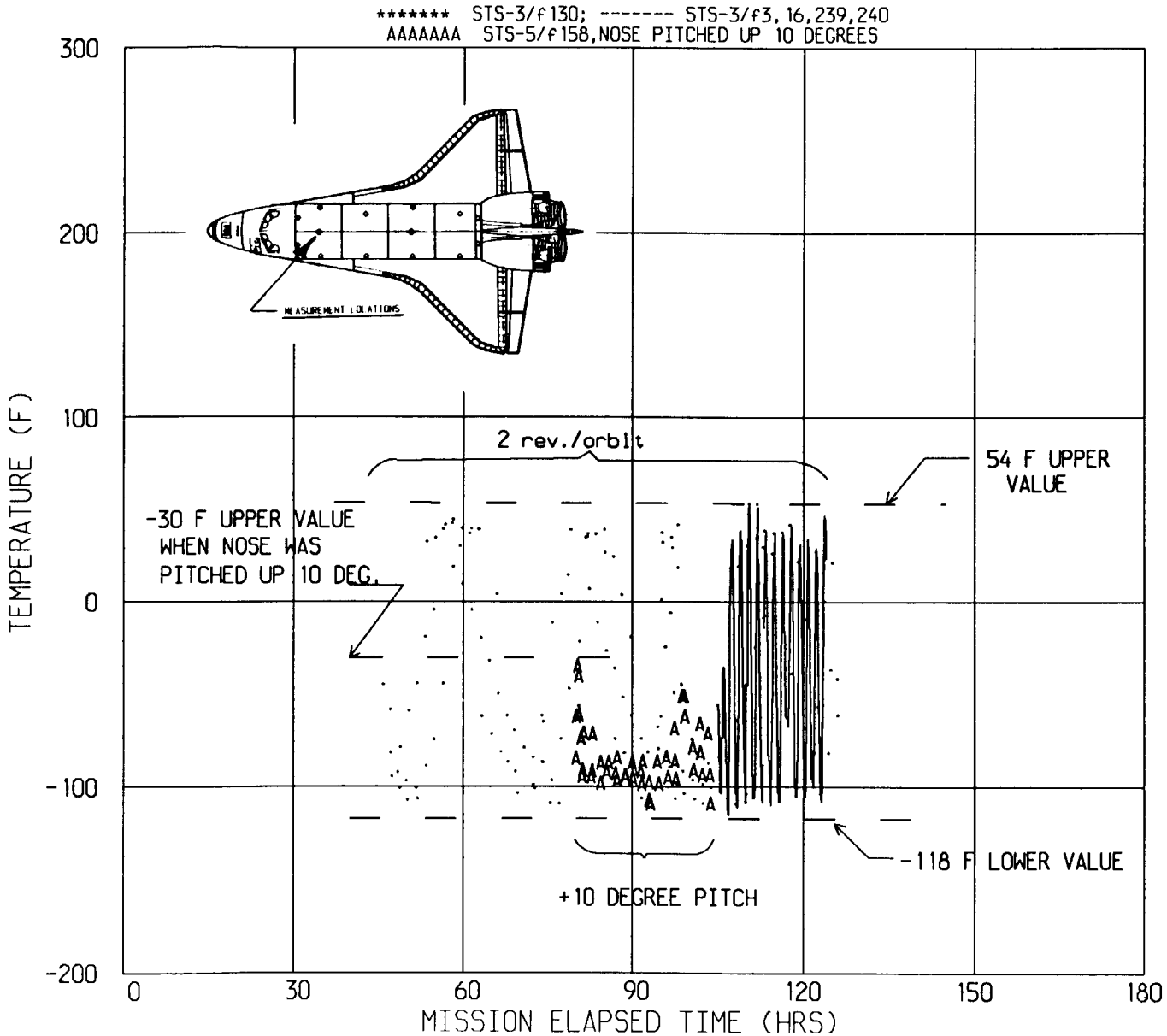
TABLE 6-6
Tail-Sun Attitude Temperature Files

Flight	Mission Elapsed Time	Data Files
STS 1	48:29-50:20	f102*
2	47:23-50:28	116*
3	10:55-34:18 (orb rate)	231+
3	164:44-167:38	130*,
4	48:20-55:30,88:20-149:12 161:21-165:51	144* 55+,69+
5	115:14-118:49	158*

* TMS data + CCT data

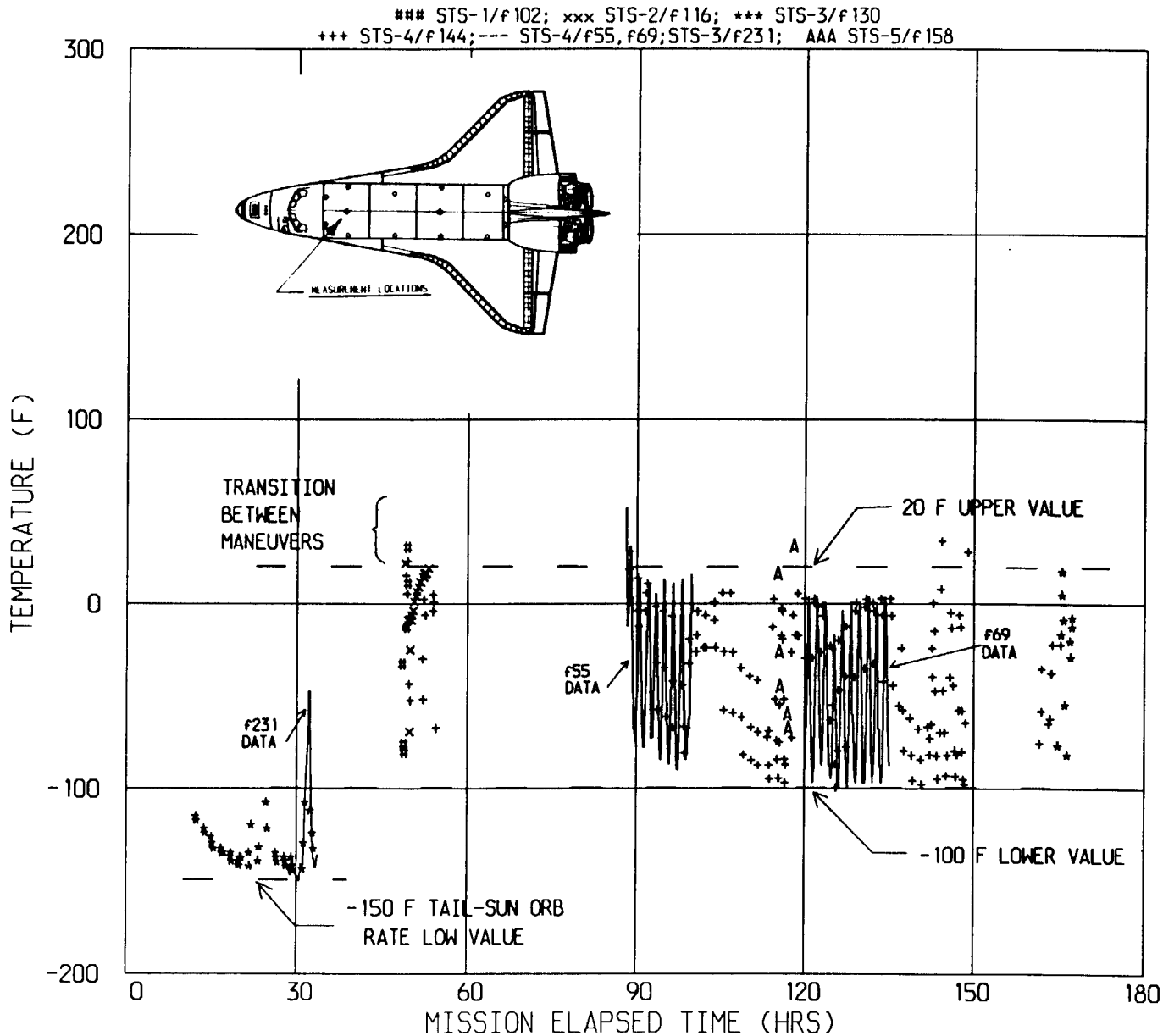
The temperature plots, shown in Figure 6-10, reveal that the temperature range for the Tail-Sun SI attitude hold is well defined with an upper value of 20 deg F and a lower value of -100 deg F. The data is consistent and agrees well for all flights.

FIG. 6-9. TEMP RANGES FOR THE NOSE-SUN ATTITUDE
(MEASUREMENT V34T9312 - FWD PLB BOTTOM)



JPL FILE p932; DFI DATA FROM
REP JSC 19956 & CCT TAPES

FIG. 6-10. TEMP RANGES FOR THE TAIL-SUN ATTITUDE
(MEASUREMENT V34T9312 - FWD PLB BOTTOM)



JPL FILE p933;DFI DATA FROM REP JSC 19956 AND CCT TAPES

The warmer temperature readings of 55 deg F may be after door closure. Although the lower value of temperature for the Tail-Sun orbital rate attitude is indicated as -150 deg F by measurement V34T9312, a lower temperature of -159 deg F was recorded by measurement V34T9318 which is located on the port side forward liner in the payload bay for approximately the same flight conditions. This is indicated by data file f135 or f232 at approximately 31.26 hours MET. Not shown on the plot is a singular temperature reading of -187 deg F recorded by measurement V34T9325 which is located on the starboard side of the forward bulkhead.This temperature occurred on STS-4 during a maneuver to obtain a Bottom-Sun Attitude for the bakeout of the orbiter tiles at approximately 8.15 hours MET and shows up as a single data point in file f51.

6.4.5 Starboard-Sun Attitude Temperatures

This attitude was flown only on STS-5 for a MET duration of about 47 hours, from 33:08-79:57. The temperature data presented in Figure 6-11 was obtained from JSC Report 19956 which indicates a temperature range of 26 to -120 deg F.

6.4.6 ZLV Attitude Temperatures

This attitude, with the payload bay facing the earth, was flown eleven times during flights of STS-1,2,4 and 5. The flight variations for this attitude and other specifics are given in Table 6-7.

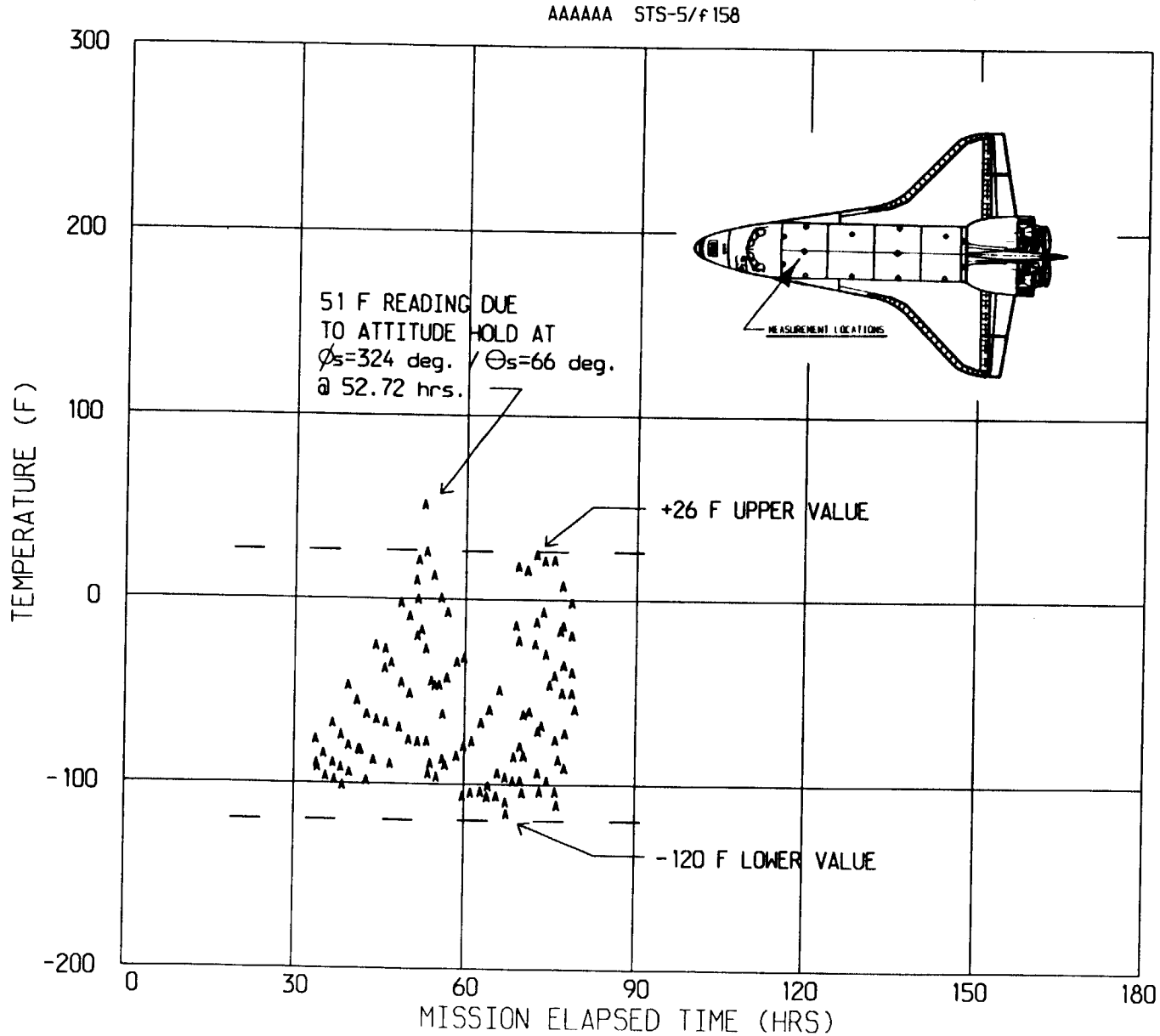
TABLE 6-7
+ZLV Attitude Temperature Files

Flight #	Attitude	Mission Elapsed Time	JPL Data Files
STS 1	+ZLV YPOP Tail V	3:11:30-6:48:56 12:07:56-21:34:56	f102
	+ZLV YPOP Tail V	1:12:07:56-1:21:43:56	f102
2	+ZLV YPOP Nose V	4:15-7:35 12:35:00-1:11:15:00 1:12:55:00-1:23:21:00 *	116
4	+ZLV XPOP Stbd V	18:50-22:00 32:45-44:01	144
5	+ZLV YPOP Nose V	3:34:00-7:30:00 11:15:00-1:00:35:00 1:02:58:00-1:07:37:00	158

* Beta Angle = -51.4 to -47.1 deg

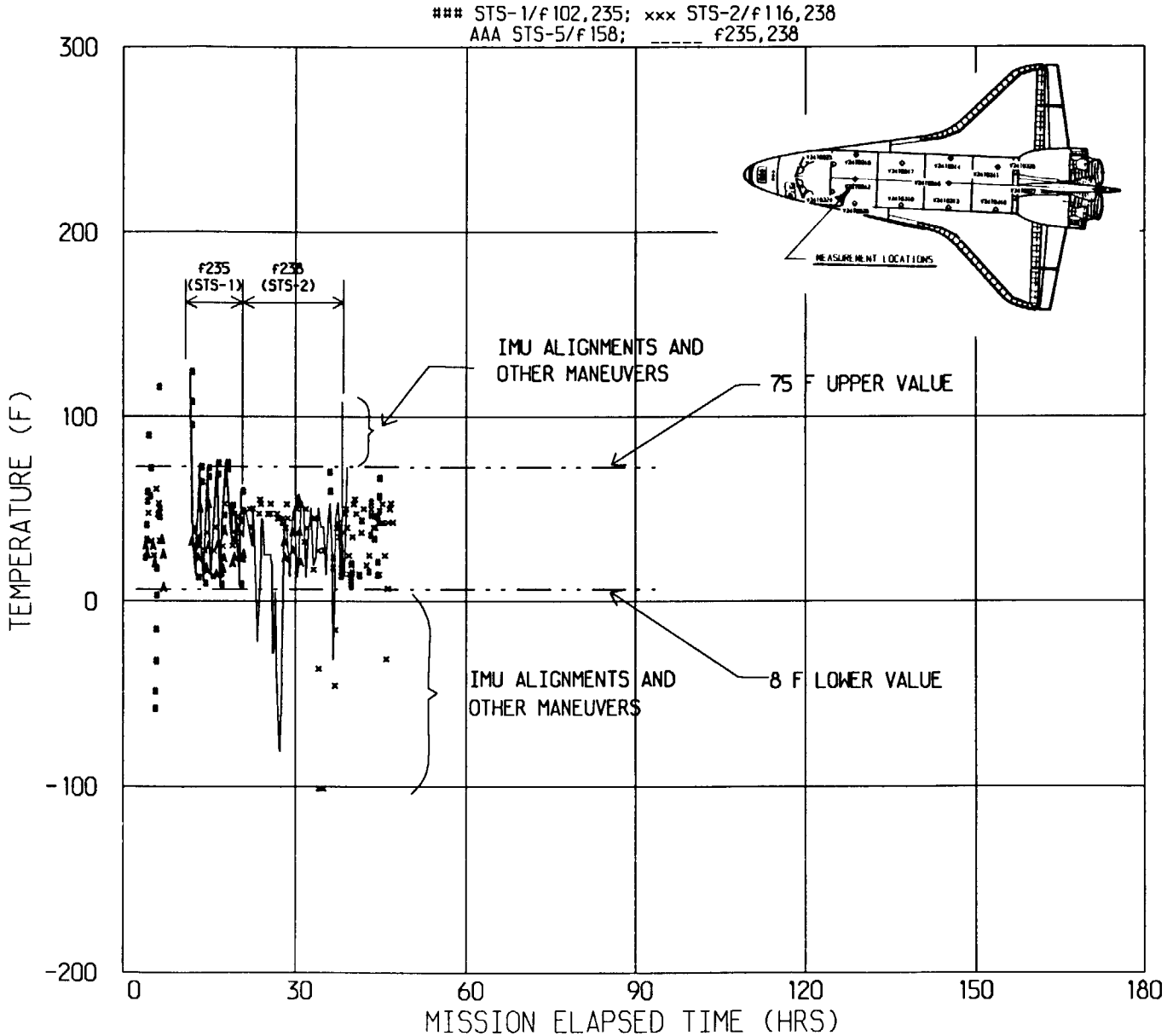
In summarizing the flight data for the -ZLV attitude, no distinction was made for the attitude variations except between the YPOP and XPOP attitudes. As a result, all -ZLV YPOP data is presented in Figure 6-12. All the temperature data for this attitude appears to fall within the range of +8 and +75 deg F. The identical data is repeated in Figure 6-13 where it serves as background for the XPOP data which is shown in large cross symbols.

FIG. 6-11. TEMP RANGES FOR THE STRBD-SUN ATTITUDE
(MEASUREMENT V34T9312 - FWD PLB BOTTOM)



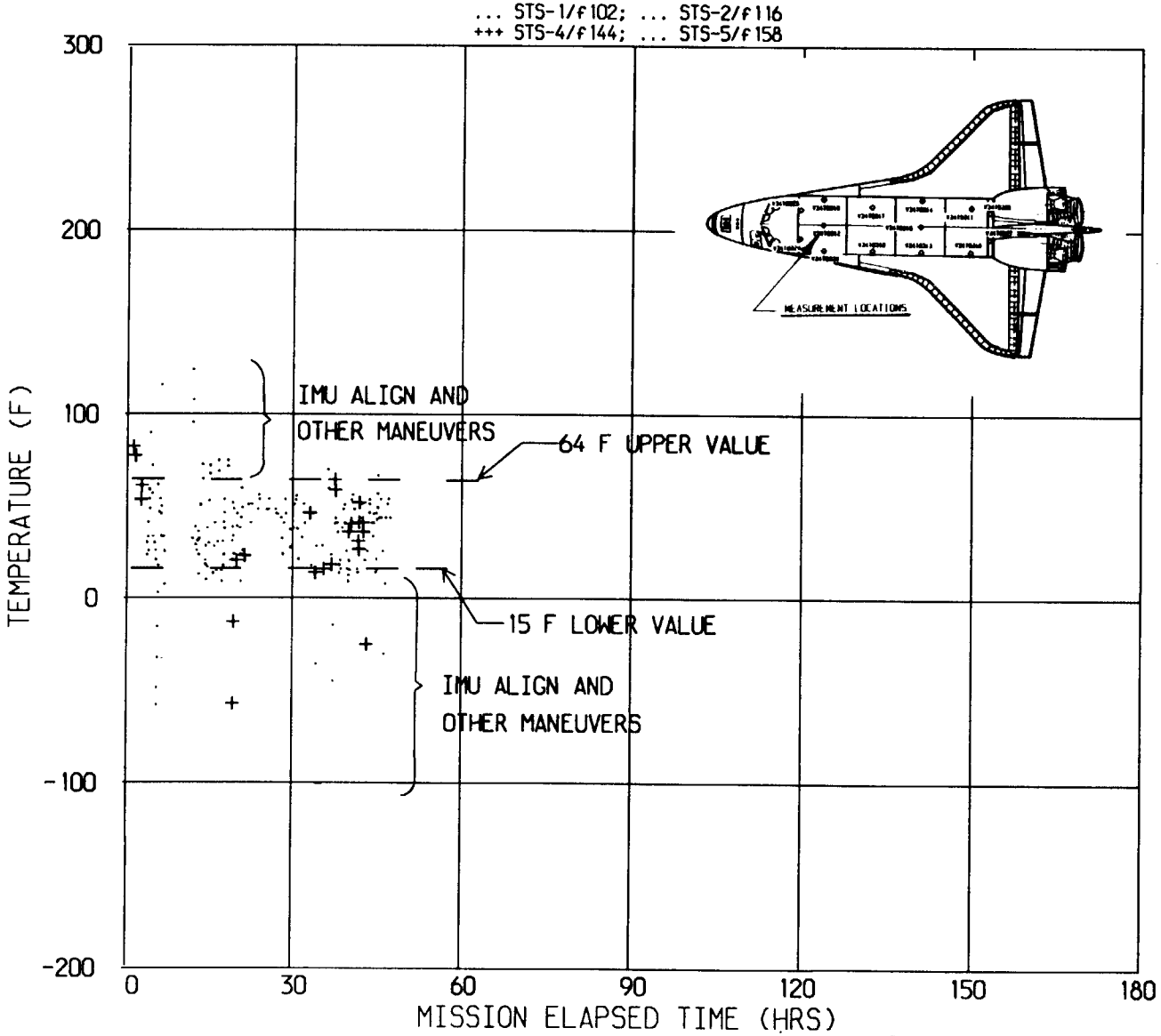
JPL FILE p934;DFI DATA FROM
REP JSC 19956

FIG. 6-12. TEMP RANGES FOR +ZLV YPOP ATTITUDE
(MEASUREMENT V34T9312 - FWD PLB BOTTOM)



JPL FILE p935
REP JSC 19956

FIG. 6-13. TEMP RANGES FOR THE +ZLV XPOP ATTITUDE
(MEASUREMENT V34T9312 - FWD PLB BOTTOM)



JPL FILE p936
REP JSC 19956

6.4.7 PTC Attitude Temperature Data

This Passive Thermal Control attitude was flown seven times in four flights as indicated in Table 6-8.

TABLE 6-8
PTC Attitude Temperature Data

Flight #	Mission elapsed Time	JPL Data File
STS 1	30:50-32:57	f102
3	3:19-6:44,34:18-45:45,153:26-162:40, 171:15-185:16*	130
4	78:15-88:20,149:02-149:24	144
5	104:03-114:58	158

* no data

The only data available for this attitude is contained in JSC Report 19956. This report does not show data for the MET period 171:15-185:16 for STS-3. Also, data from this report for STS-1, MET 30:50-32:57, STS-3, MET 3:19-6:44, and STS-4, MET 78:15-88:20, are not presented due to their short durations and proximities to warm attitudes.

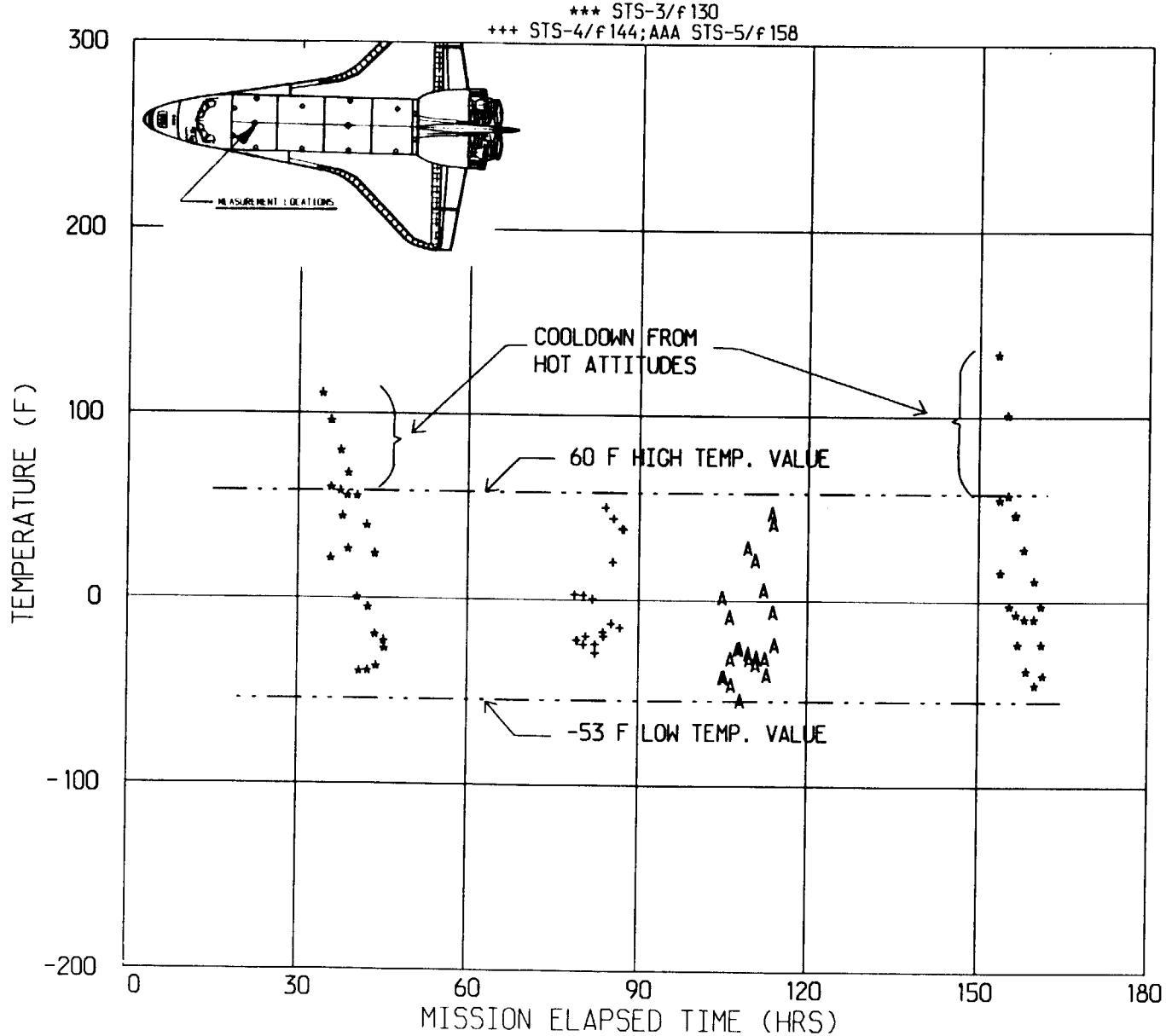
The temperature data for this flight attitude is shown in Figure 6-14. Except for the two cooldown periods from hot attitudes for STS-3, all data appears to fall within the range of -53 to +60 deg F.

6.5 Entry And Postlanding Phase

Figure 6-15 provides an overall look at the temperature data for this mission phase for all available data from all flights. This data is contained in JPL files f260-270. Detailed views of the temperatures for STS-1 and 2 are shown in Figure 6-16 and in Figure 6-17 for STS-3.

The entry temperature data was collected from various presentations and reports and is contained in eleven files, f260-270 for STS-1,2, and 3. This data is for seven measurements, V34T9310-13,18,25,and 27 covering the entire payload bay. This collection of data, presented as a single plot in Figure 6-15, gives an overall and comparative view of the available data. It is noted that the temperature scale is enlarged to enhance the data and the common time scale has placed the STS-3 data away from the STS-1 and 2 data. Portions of the data from Figure 6-15 are expanded in Figures 6-16 and 6-17 to show the results of the major thermal events of this mission phase; namely, both the entry heating and the gas purge of the payload bay. The data in these figures indicates that the entry heat continued to affect the payload bay till the time of touchdown. Approximately 40 minutes after touchdown, the payload bay temperatures were influenced by the ground purge system. The effect of this *soakback* heating, on the payload bay liners, was largely attenuated by the thermal insulation and suppressed by the ground

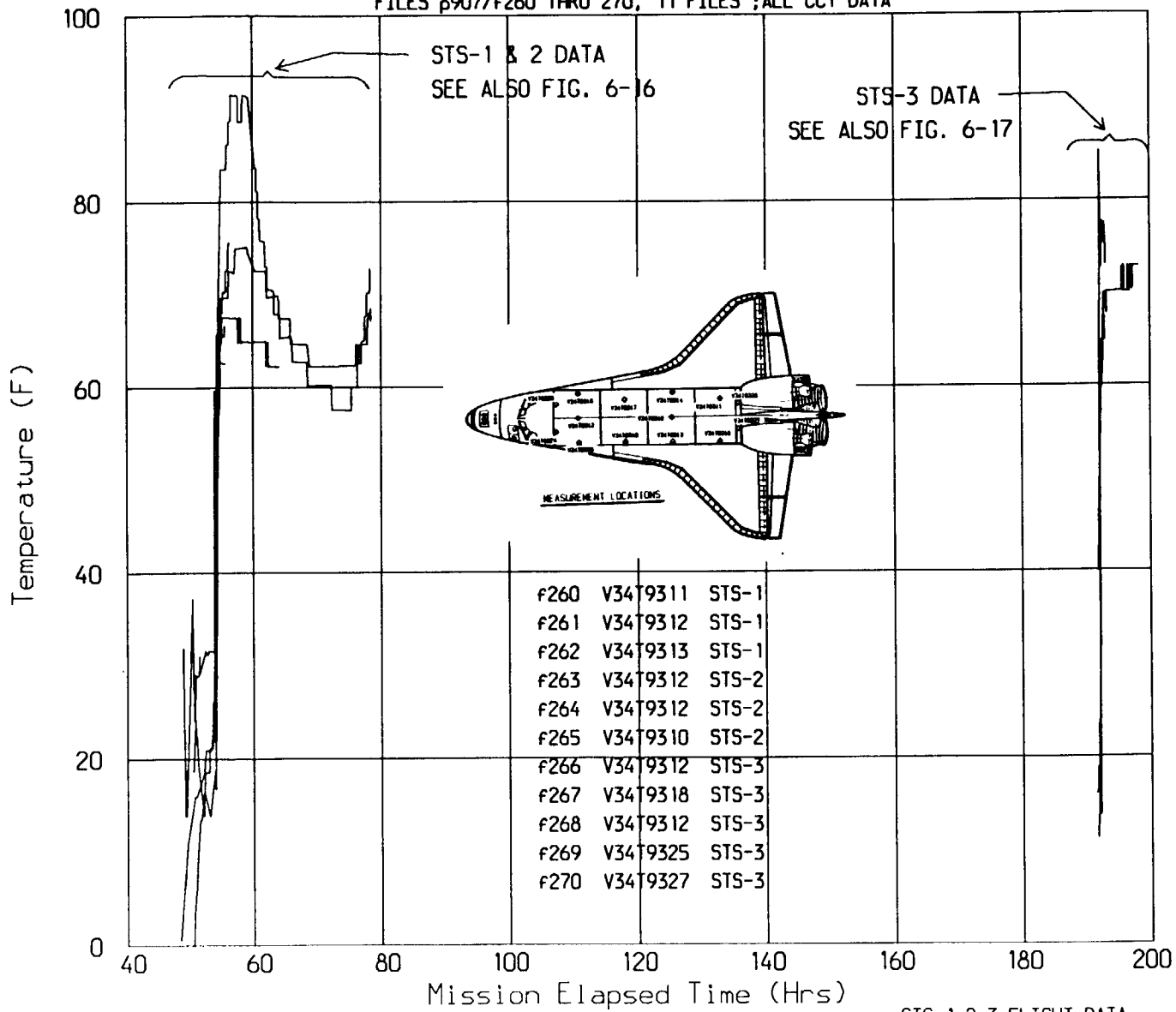
FIG. 6-14. TEMP RANGES FOR THE PTC ATTITUDES
(MEASUREMENT V34T9312 - FWD PLB BOTTOM)



JPL FILE p937; DFI DATA FROM
REP JSC 19956

FIG.6-15. ENTRY PLB SURFACE TEMPERATURES

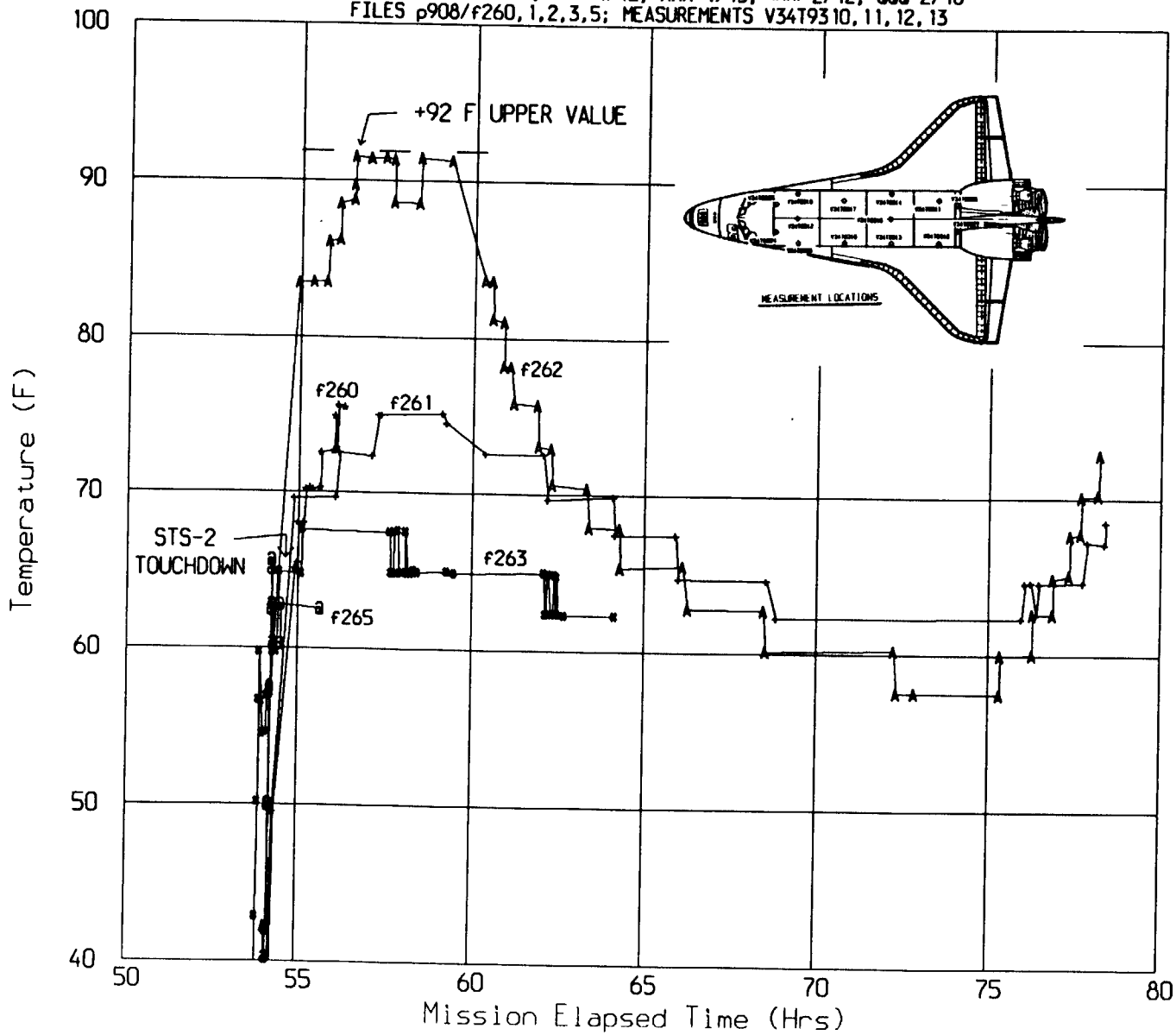
MEASUREMENTS V34T9310, 11, 12, 13, 18, 25, 27
FILES p907/f260 THRU 270, 11 FILES ;ALL CCT DATA



STS-1,2,3 FLIGHT DATA
MISSION DURATIONS WERE DIFFERENT

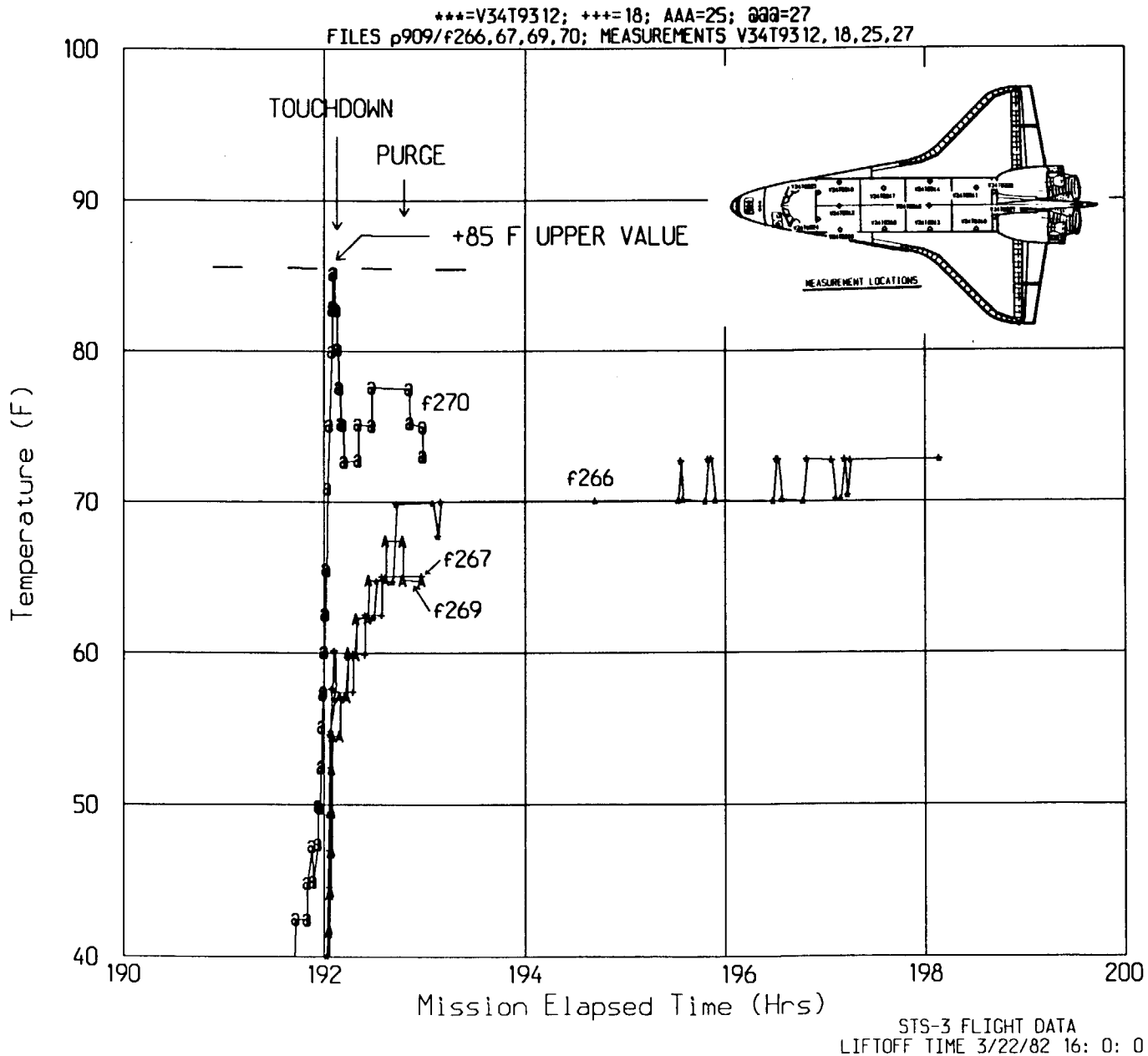
FIG. 6-16. STS-1 & -2 ENTRY PLB SURFACE TEMPS

***=STS-1/V34T9311; +++=1/12; AAA=1/13; ###=2/12; @@@=2/10
FILES p908/f260,1,2,3,5; MEASUREMENTS V34T9310,11,12,13



STS-1,2 FLIGHT DATA
LIFTOFF TIMES ARE 4/12/81 & 11/12/81

FIG. 6-17. STS-3 ENTRY PLB LINER TEMPERATURES



purge for this nominal entry condition.

The extent of the entry heating of the payload bay liners resulted in temperatures of 85 deg F for STS-3 and 92 deg F for STS-1. Available data indicates that the experienced entry environment for the payload bay liners can be described as benign. It should be pointed out, however, that the design entry conditions were not flown and it is possible that temperatures for these entry trajectories will be much more severe.

The postlanding temperature data is contained in files f280 and 281. The most complete set of data exists for STS-1 for Measurement V34T9312 in file f280. Measurement V34T9312 measures the liner temperature at the bottom of the forward payload bay from the time of touchdown for a period of 25 hours and is shown in Figure 6-18. The effect of heat soakback, that is, the heating of the payload bay area by the release of the energy that was stored in the mid-fuselage structure during the entry phase (may also be partially due to solar heating) is clearly revealed in this plot for the period following touchdown. This soakback temperature stabilized at about 75 deg F at which time the natural cooling of the outside environment begins to take effect. The temperature rise at 22 hours after touchdown is due to solar heating on the day following the landing. It would be of interest to compare this set of data with entry and postlanding data for other flights to establish a worst case analysis, to determine if the temperature level of 220 deg F for this mission phase needs to be revised downward for JSC 07700,Vol.XIV, "STS Payload Accommodations",ICD 2-19001, Pages 6-8.

The pressure rise in the payload bay during the entry phase for STS-2 is shown in Figure 6-19. This pressure data was obtained from R.G.Brown's personal data file book and is stored in JPL file f291. The PLB pressures rose from 0.81 psia at 1649.14 sec to 13.25 psia at 1940.65 sec from entry. This is an approximate rate of rise of 0.043 psi/sec or 2.21 torr/sec. This data compares favorably with the pressure data presented in Volume XIV.

FIG. 6-18. POSTLANDING LINER TEMPERATURES

FILE NOS p911/f280a; STS-1 MEASUREMENT V34T9312 DFI DATA

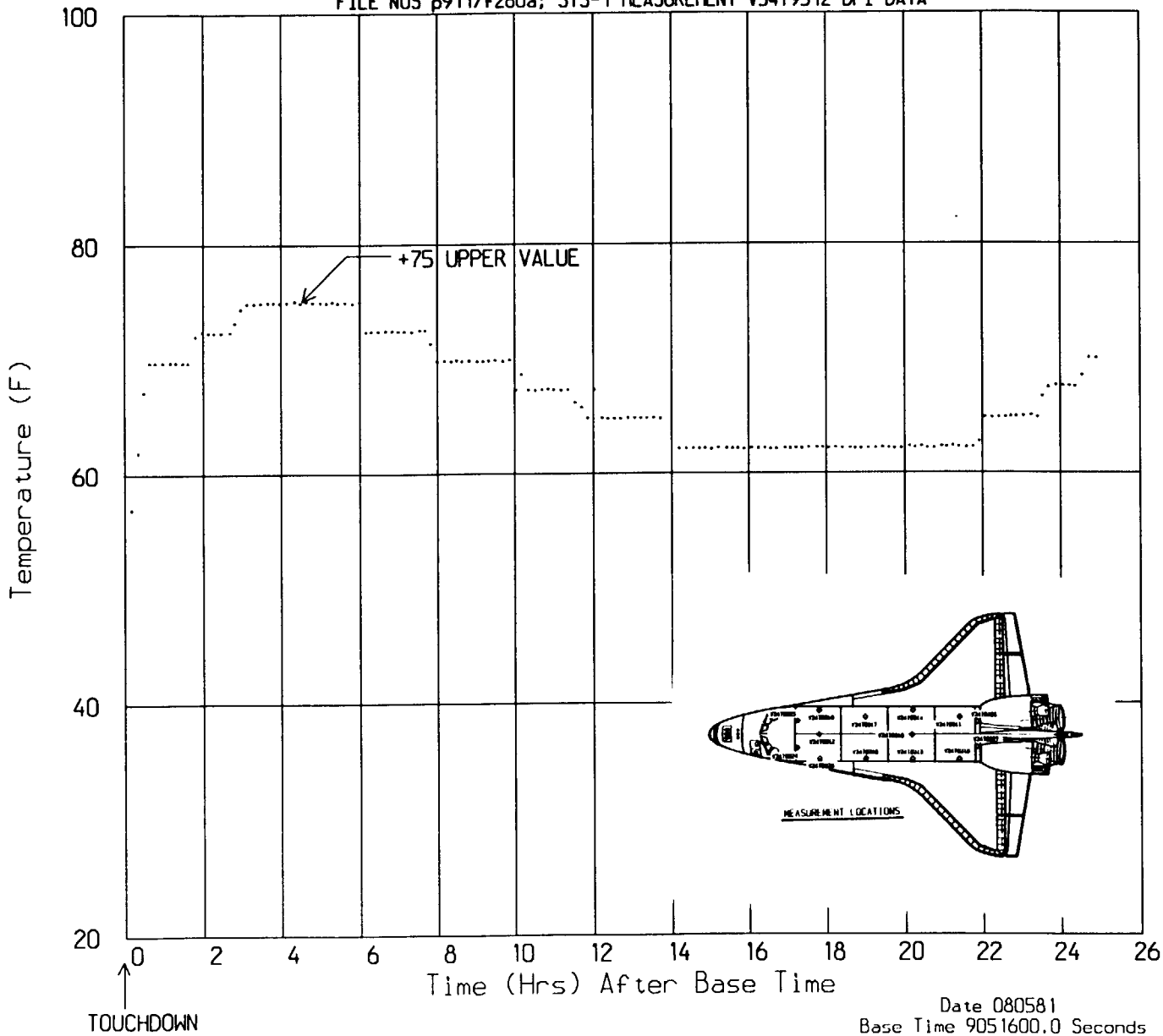
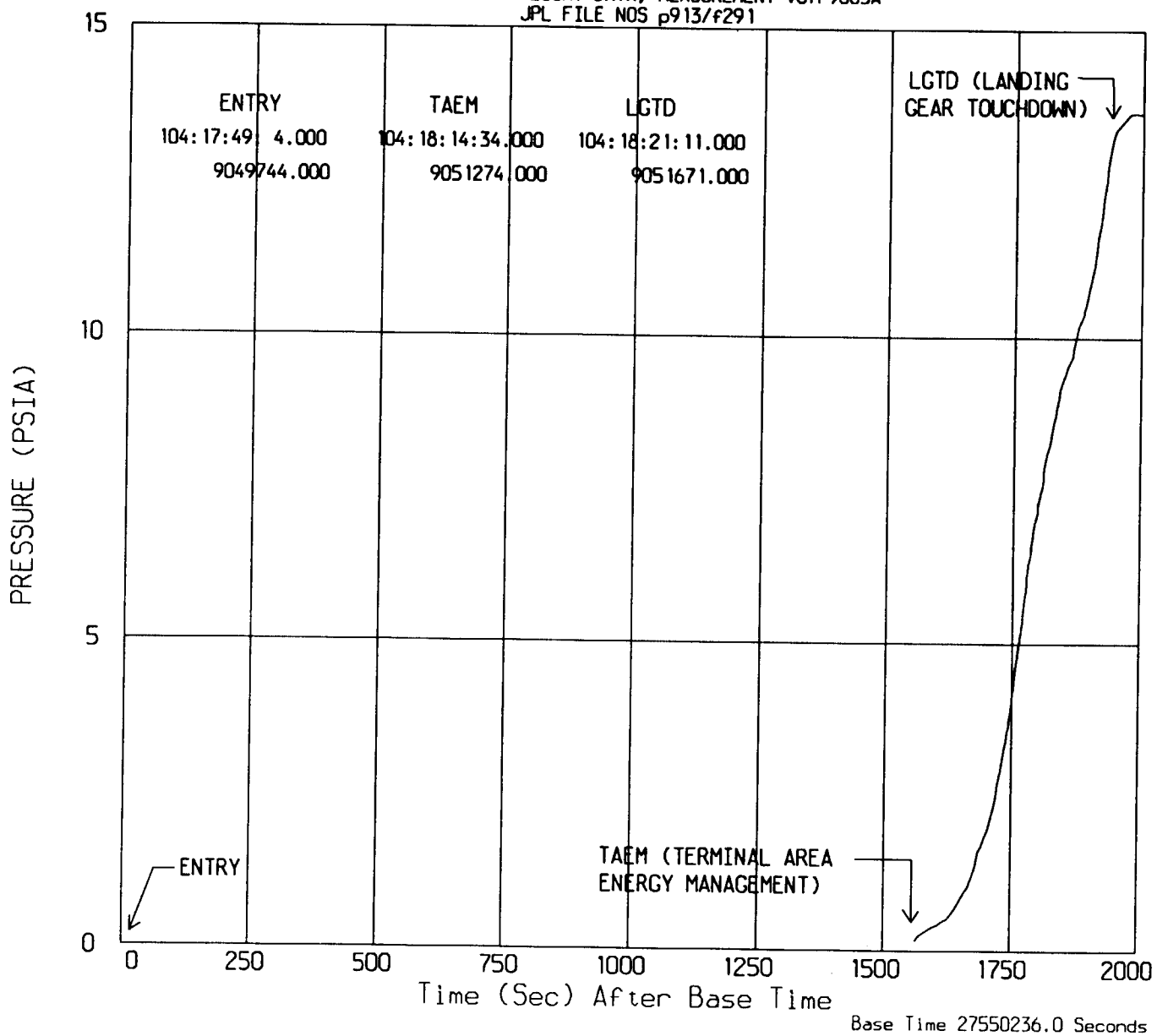


FIG. 6-19. PAYLOAD BAY COMPT PRESS 2 NO 83

STS-2 ENTRY FLIGHT DATA; MEASUREMENT V07P9085A
JPL FILE NOS p913/f291



7.0 THERMAL FLIGHT DATA CHARACTERIZATION

This section of the report presents the characterization of the thermal flight data. Unique features, general trends and temperature values are discussed and presented in graphical form.This characterization is limited to the On-Orbit Phase of the flight missions. Characterization of the Prelaunch, Ascent,Entry and Postlanding Phases were not performed since the trends, values and ranges, flight to flight variations and thermal features were all fairly regular and well defined as evidenced from the previous section of this report.

In developing the flight data characterization, attention was concentrated on seven major areas:

- Payload Influences.
- Longitudinal Temperature Variations.
- Circumferential Temperature Variations.
- Cyclic Temperature Data.
- Sun Effects and Orbiter Attitudes.
- Temperature Ranges and Temperature Extremes.
- Temperature Data Comparisons- Vol. XIV and Flight Data.

The results of the characterization are presented in this section with the aid of the data plots summarized in Table 7-1.

Table 7-1. Shuttle PLB Flight Temp Data Characterizations Summary

Figure No.	Mission Phases	Title of Figure	Mission Nos.	Temp Sensor No. V34T93XX	JPL Plot File Nos.	JPL Data File Nos.
7-1a	On-Orbit	Payload Influence on PLB Temps from STS-1	STS-1	12,16	p941/g941	f102,105
7-1b	On-Orbit	Payload Influence on PLB Temps from STS-2	STS-2	12,16	p942/g942	f116,119
7-2	On-Orbit	Dampening Effect of Payload/STS-3 Bulkhead Temps	STS-3	24,25,26,27	p917/g917	f10-13; 23-26; 36-39
7-3	On-Orbit	Payload Influence/STS-3 Liner Temps	STS-3	10,11,12	p901/g901	f1,2,3
7-4	On-Orbit	Payload Influence/Effect of the Toolbox	STS-3	12,19,20	p905/g905	f3,8,9
7-5	On-Orbit	Payload Influence/STS-4 PLB Bottom Liner Temps	STS-4	12,16	p916/g916	f42,55,69;45,58,72
7-6	On-Orbit	Dampening Effect of Payload/STS-4 Bulkhead Temps	STS-4	24,25,26,27	p918/g918	f50-52; 63-66; 70-80
7-7	On-Orbit	Payload Influence/STS-4 Starboard Liner Temps	STS-4	14,19	p915/g915	f48,61,75; 44,57,71
7-8	On-Orbit	PLB Temp Longitudinal Variations	STS-3	24,25,20,19 18,10,27,26	p925/g925	f135-141; 128
7-9	On-Orbit	Port-Side Temp Longitudinal Variations	STS-3	24,20,18,10,27	p926/g926	f128,135,137,138,141
7-10	On-Orbit	Circumf. Var/STS-4 AFT PLB Temp	STS-4	13,14,16	p919/g919	f43-45,56-58,70-72
7-11	On-Orbit	Circumf. Var/Zoom Look STS-4 AFT PLB Temp	STS-4	13,14,16	p920/g920	f70-72
7-12	On-Orbit	Circumf. Var/STS-3 PLB Lin Temp	STS-3	12,20	p904/g904	f3,9,16,22,29,35
7-13	On-Orbit	Circum. Var/STS-3 Top Sun Lin Top	STS-3	12,20	p939/g939	f29,35,130,137
7-14	On-Orbit	Cyclic nature of PLB Temps	STS-3	12	p902/g902,g130	f3,16,29,130,243
7-15	On-Orbit	Zoomed-Look of the Cyclic Data	STS-3	12	p914/g914	f3,16,29,130,243
7-16	On-Orbit	Effect of the Sun (Shuttle Altitudes)	STS-1,5	12	p938/g938	f3,42,69,144,158,235,238,239,243
7-17	On-Orbit	Payload Bay Temp Ranges	STS-1,2, 3,4,5	12	p900/g900	f102,116,130,144,158

Note: A file name forefixed with the letter p indicates the plot program in Fortran language used to generate the plot by the Hewlett-Packard 7470A Two-Pen Plotter at JPL. Prefix g indicates the corresponding graphics module.

7.1 Payload Influence On Temperature

The influence of the payloads on the payload bay temperatures was studied by comparing temperature data measurements far from the payloads(empty bay responses) with those in proximity of the payloads (fwd and aft). A summary table of the data obtained in the payload influence study for STS-1, STS-2, and STS-3 is presented in Table 7-2.

TABLE 7-2
Payload Influence on Temperature
STS-1 STS-2 STS-3

Figure Ref	Msmt Location	Payload	Fwd Msmt	Aft Msmt
7-1 a,b	STS-1,STS-2 Bot PLB	DFI,ACIP OSTA-1	V34T9312	V34T9316
7-2	STS-3 Bulkheads	DFI,OSS-1	V34T9324,25	V34T9326,27
7-3	STS-3 Fwd PLB	Tool Box	V34T9312,19,20	-

It is evident from Figures 7-1 thru 7-3 that the overall influence of the DFI, OSTA-1, OSS-1 and the tool box payloads in the proximity of a temperature sensor render a dampening effect on the temperature. The payload bay upper temperature value was reduced and the lower temperature value was higher than where no payload influence exists. This would indicate that the payload blockage of the temperature sensor's view of the Sun or deep space has a moderating effect on the temperature data recorded for the payload bay liner. Table 7-3 summarizes the main features of the payload influence effect for STS-1, STS-2, and STS-3.

TABLE 7-3
Payload Influence on Temperature, Main Features
STS-1 STS-2 STS-3

Figure Ref	Attitude	Msmt Location	Payload	P/L Inf Deg F	
				Hot	Cold
STS-1 7-1 a	+ZLV YPOP	Fwd-Aft Bottom Bay Liner	DFI,ACIP etc	Small*	+45
STS-2 7-1 b	+ZLV Nose V	Fwd-Aft Bottom Bay Liner	DFI,ACIP OSTA-1 etc.	Small*	Small*
STS-3 7-2	Nose-Sun	Fwd-Aft Bulkheads	DFI, OSS-1 etc	-84 -60	+47 +46
	Top-Sun			Neglble	+48
STS-3 7-3	Nose-Sun	Fwd Liner	Tool Box	-50	+60

*For IMU Alinement & RCS Attitudes data shows P/L Infl up to 194 Deg F

FIG.7-1a. PAYLOAD INFLUENCE ON PLB TEMPS FROM STS-1
(MEASUREMENTS V34T9312,16 - FWD AND AFT PLB BOTTOM)

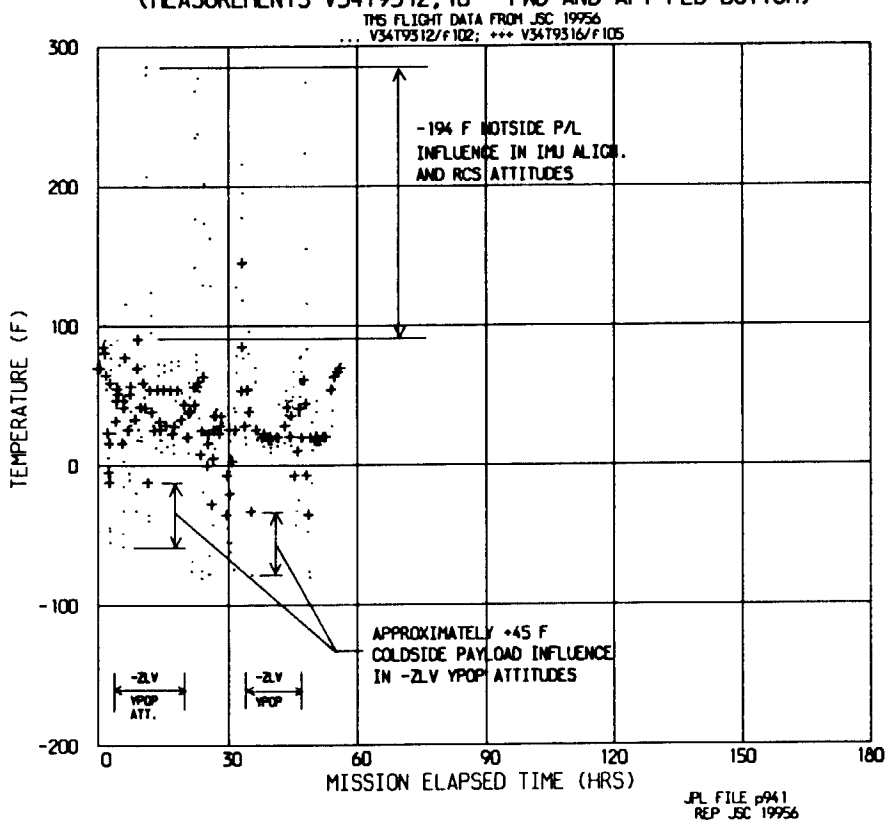


FIG.7-1b. PAYLOAD INFLUENCE ON PLB TEMPS FROM STS-2
(MEASUREMENTS V34T9312,16 - FWD AND AFT PLB BOTTOM)

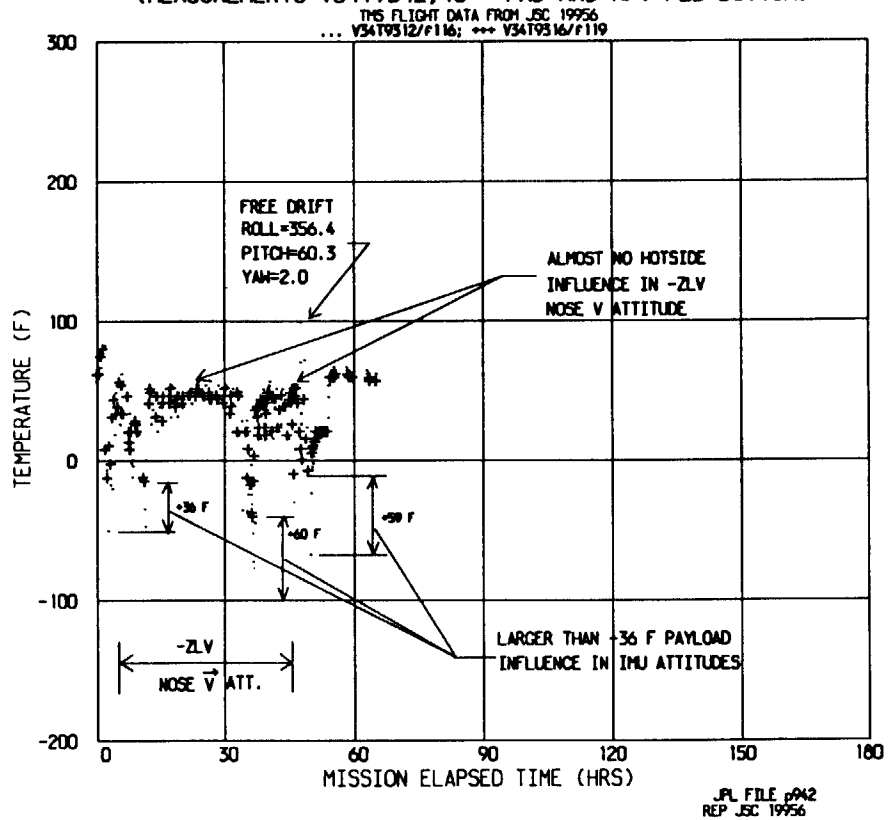


FIG. 7-2. DAMPENING EFFECT OF PAYLOAD/STS-3 BKHD TEMPS

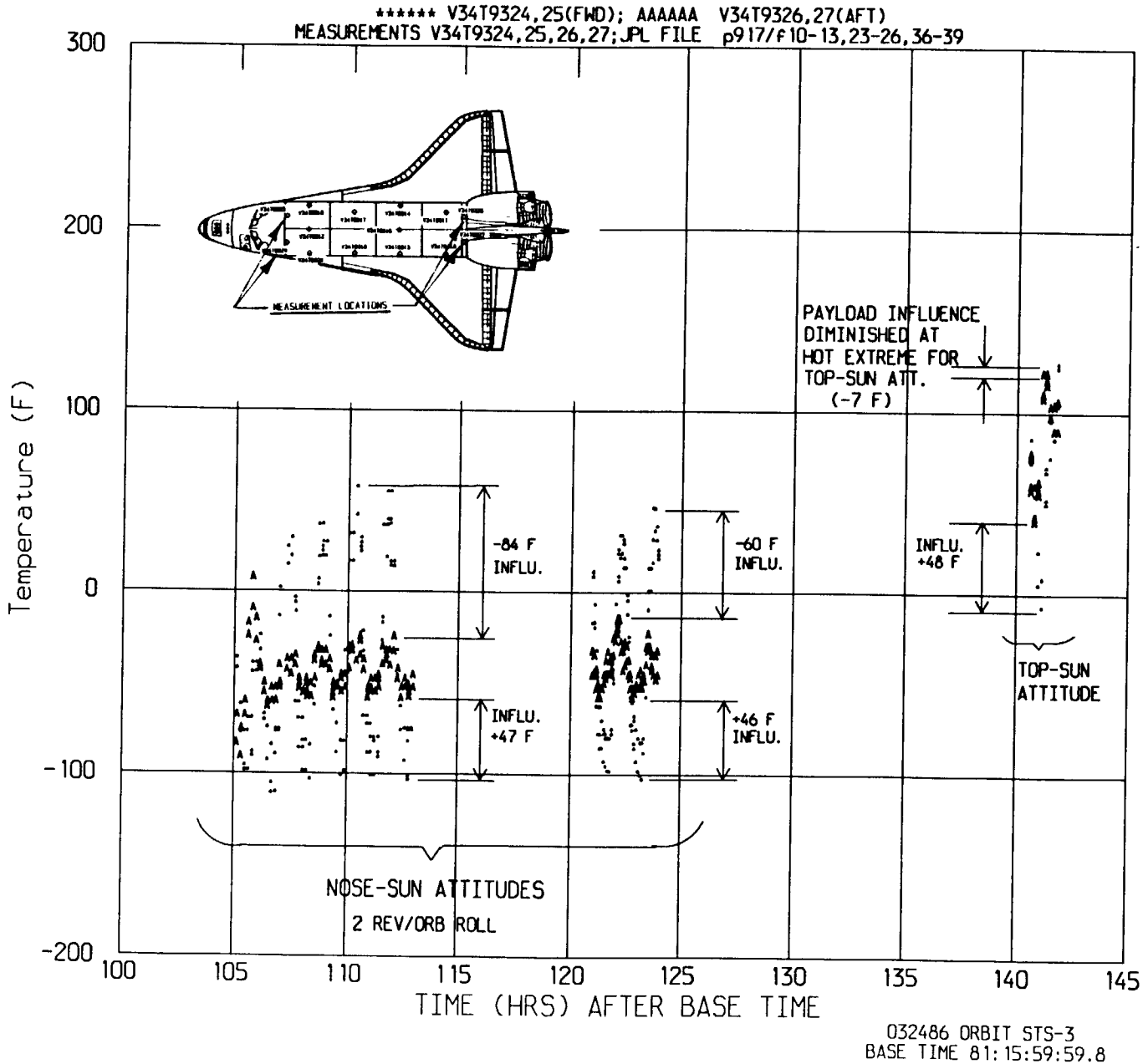
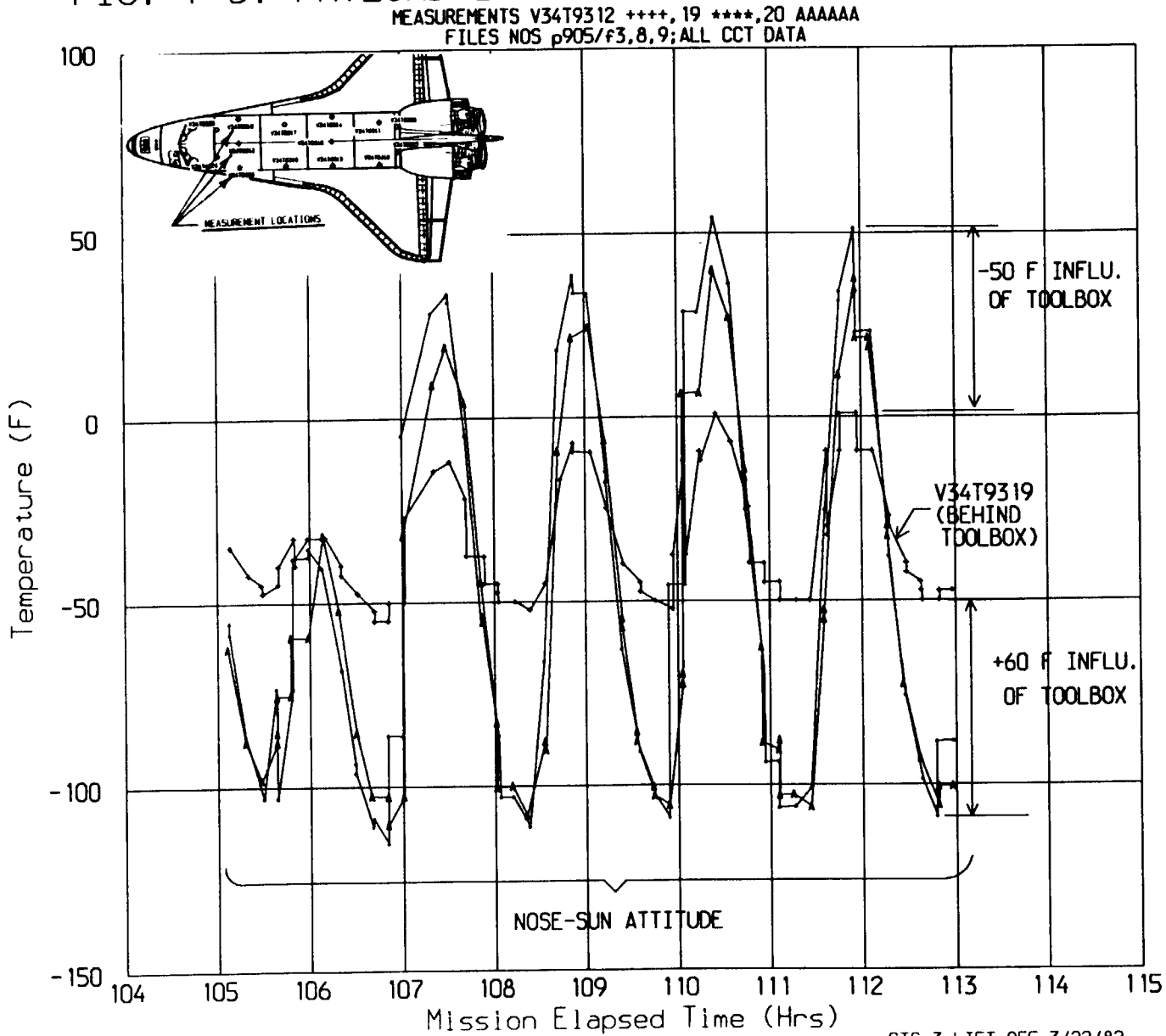


FIG. 7-3. PAYLOAD INFLUENCE/EFFECT OF THE TOOLBOX



STS-3 LIFT-OFF 3/22/82
ATTITUDE= NOSE-SUN; Time 16: 0: 0

It is evident from this table, that it will be difficult to rationally quantify the influence of the payloads on the temperature in the liner because of the configuration and properties of the payloads. This also shows a definite need for an integrated thermal analysis of a mathematical model configured with the payload and payload bay as a single entity to determine the temperature sensitivity to payload configuration, properties, and location.

A similar study was made for the STS-4 payload bay liner and bulkhead temperature data as influenced by the following payloads: DFI, IECM(Induced Environment Contamination Monitor), DATE, DOD-82-1 and others. As in STS-3, the payloads were located, for the most part in the aft section of the payload bay. Table 7-4 provides a summary of the data utilized for this study and Figures 7-4 thru 7-7 present the results graphically. The dampening effect of the payloads on the temperature sensors was not as pronounced in STS-4, when compared to STS-3.

TABLE 7-4
Payload Influence on Temperature
STS-4

Figure Ref	Attitude	MSMT #	Location	Temp Diff Deg F		Payload
7-4	Tail-Sun	V34T9312, 18,20	Fwd Bot & Side	- 13 to	+ 56 to	DFI
		V34T9316	Aft Bottom	- 14	+ 63	IECM
7-5	Bottom-Sun	V34T9312	Fwd Bottom	-5	+77	
		V34T9316	Aft Bottom	-5	+77	
	Tail-Sun			-12	+59	
				-20	+46	
7-6	Bottom-Sun	V34T9324, 25	Fwd Blkhd	+8 *	+50	
		V34T9326, 27	Aft Blkhd			
	Tail-Sun			-14	+10	
				-10	+9	
7-7	Bottom-Sun	V34T9319, 20	Strbd Side Liner	+16 *	+6	
	Tail-Sun			+14 *	-4 *	

* opposite of expected trend due to shading by tool box and/or payloads

FIG. 7-4. PAYLOAD INFLUENCE FROM STS-4 FLIGHT DATA

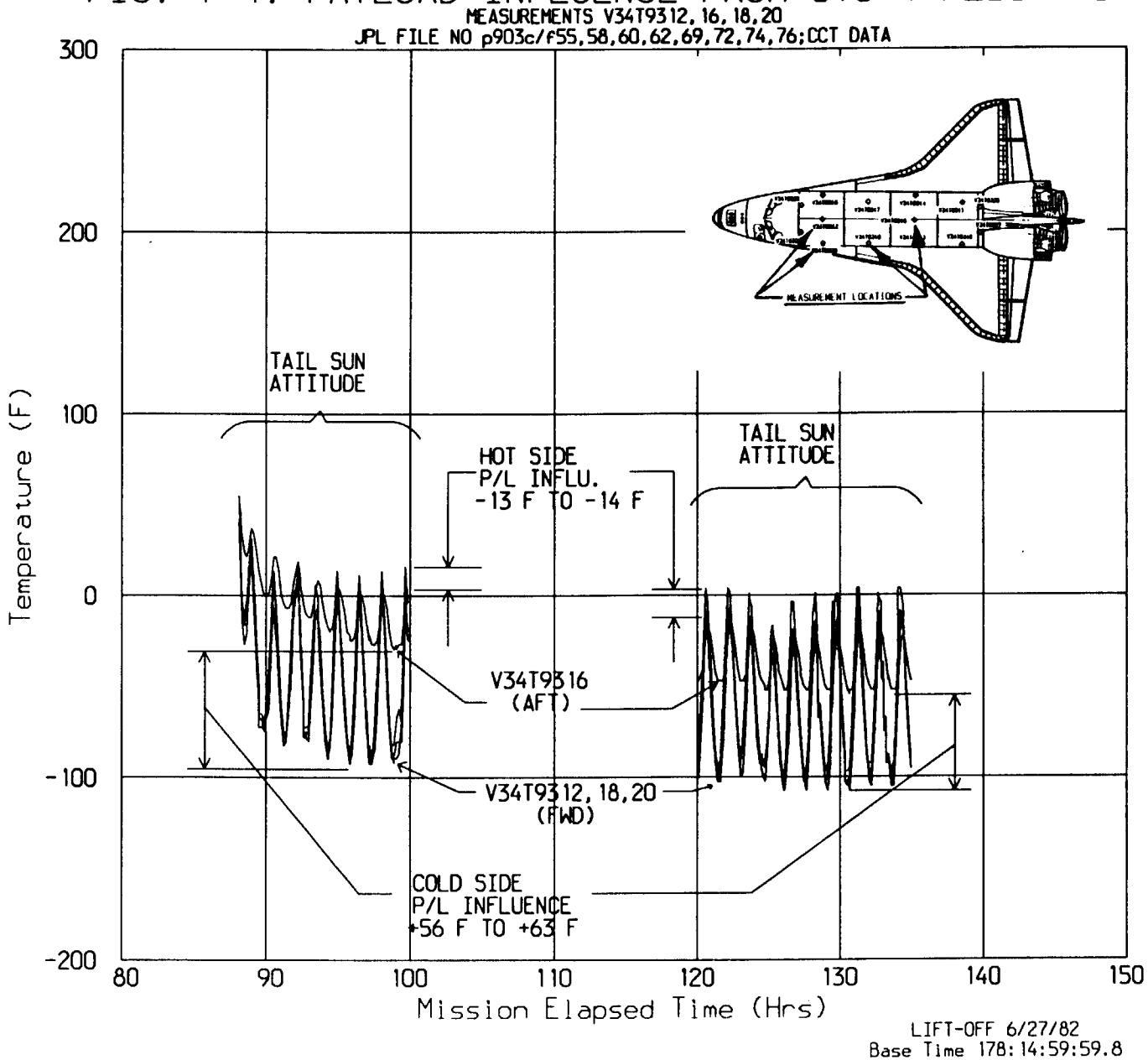


FIG. 7-5. PAYLOAD INFLUENCE/STS-4 PLB BOT LINER TEMPS

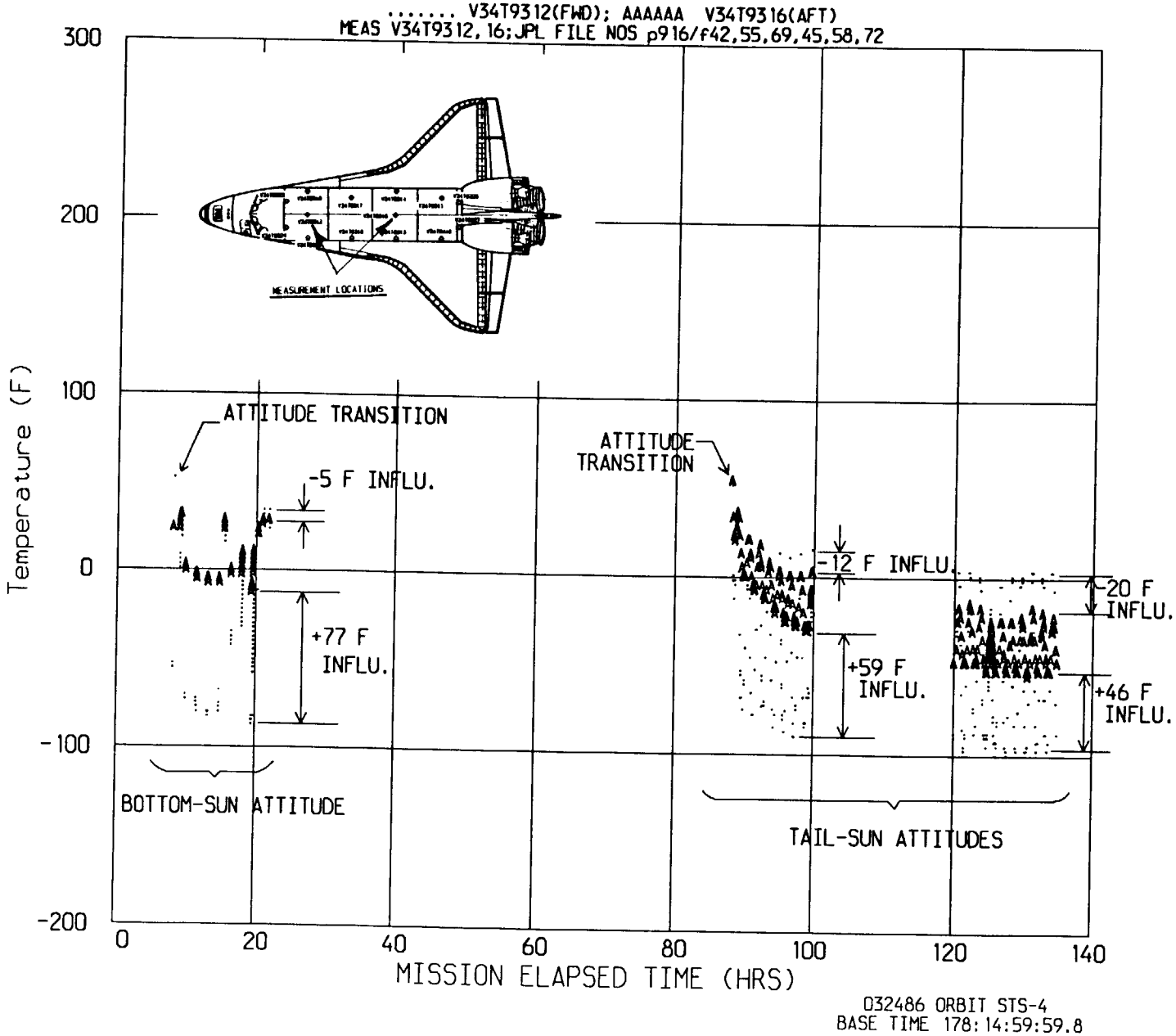


FIG. 7-6. DAMPENING EFFECT OF PAYLOADS/STS-4 BKHD TEMPS

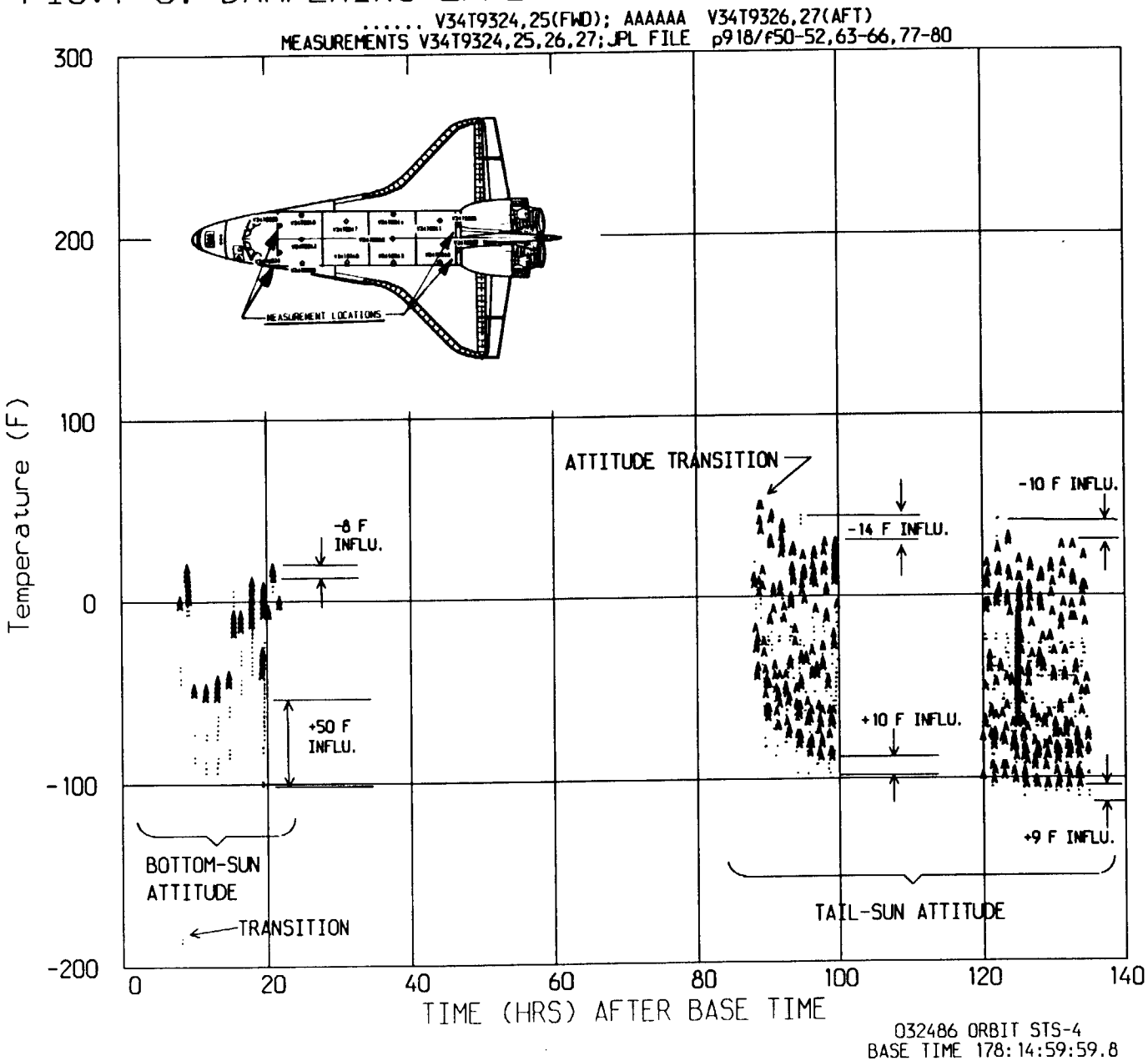
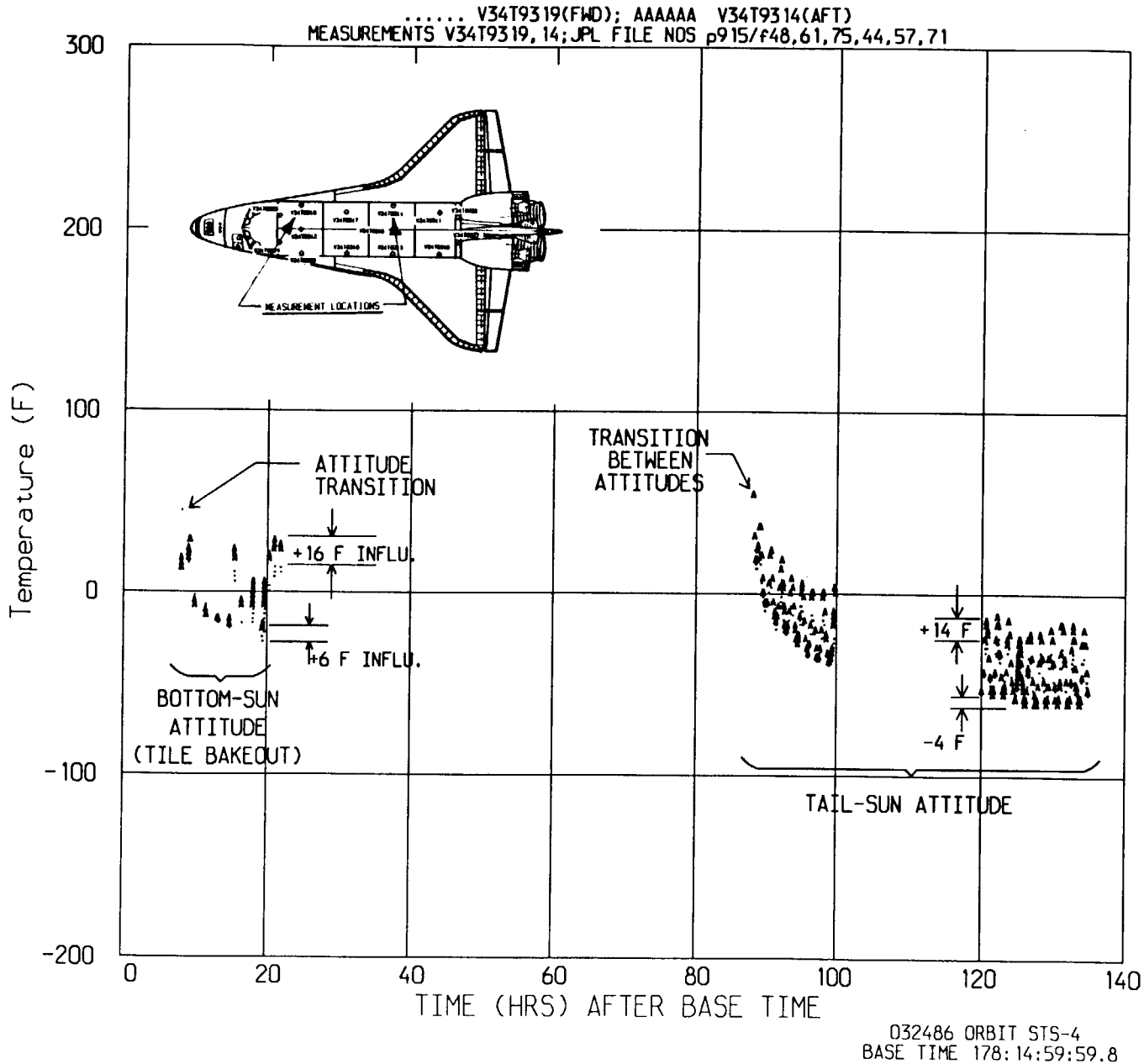


FIG.7-7 . PAYLOAD INFLUENCE/STS-4 STRBD LINER TEMPS



7.2 Longitudinal Temperature Variations

The flight temperature data was studied for variations along the X axis of the orbiter from station Xo=576 at the forward bulkhead to station Xo= 1307 at the rear bulkhead. Variations in thermal properties and installation were not evaluated in the study and flight data is presented as recorded. The only significant length of time for which a hot case thermal equilibrium was established for the payload bay liner occurred in STS-3 with a Top-Sun Attitude at a MET of 126:09 to 153:00 hours. The specifics are tabulated in Table 7-5 and the graphical results are shown in Figures 7-8 and 7-9. It is noted that the bottom liner measurements V34T9312, V34T9316 were not included in this data set since these temperature variations were covered under payload effects. Since measurements V34T9313 and V34T9314 were installed underneath the filter flanges instead of above them, this data was also excluded . All data used was obtained from TMS tapes, JSC Report 19956.

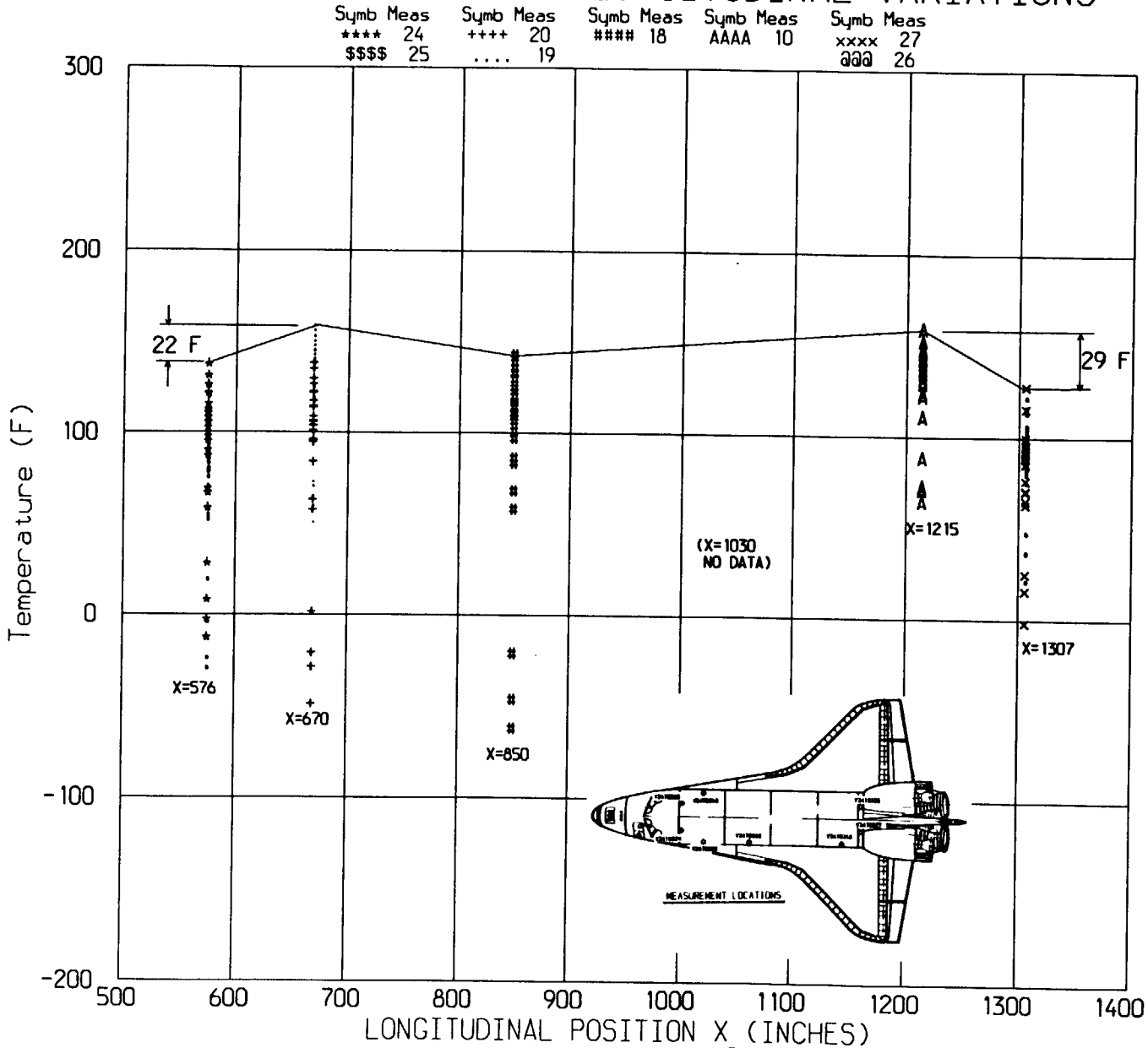
TABLE 7-5
Longitudinal Temperature Variations STS-3

Measurement #	Xo Station	Attitude	Mission Elapsed Time	JPL Data File
V34T9324	576	Top-Sun	126:09-153:00 hrs	f138
25				139
20	670			137
19				136
18	850			135
10 *	1215			128
26	1307			140
27				141

*V34t9310 installed on the wire tray.Included to complete data set.

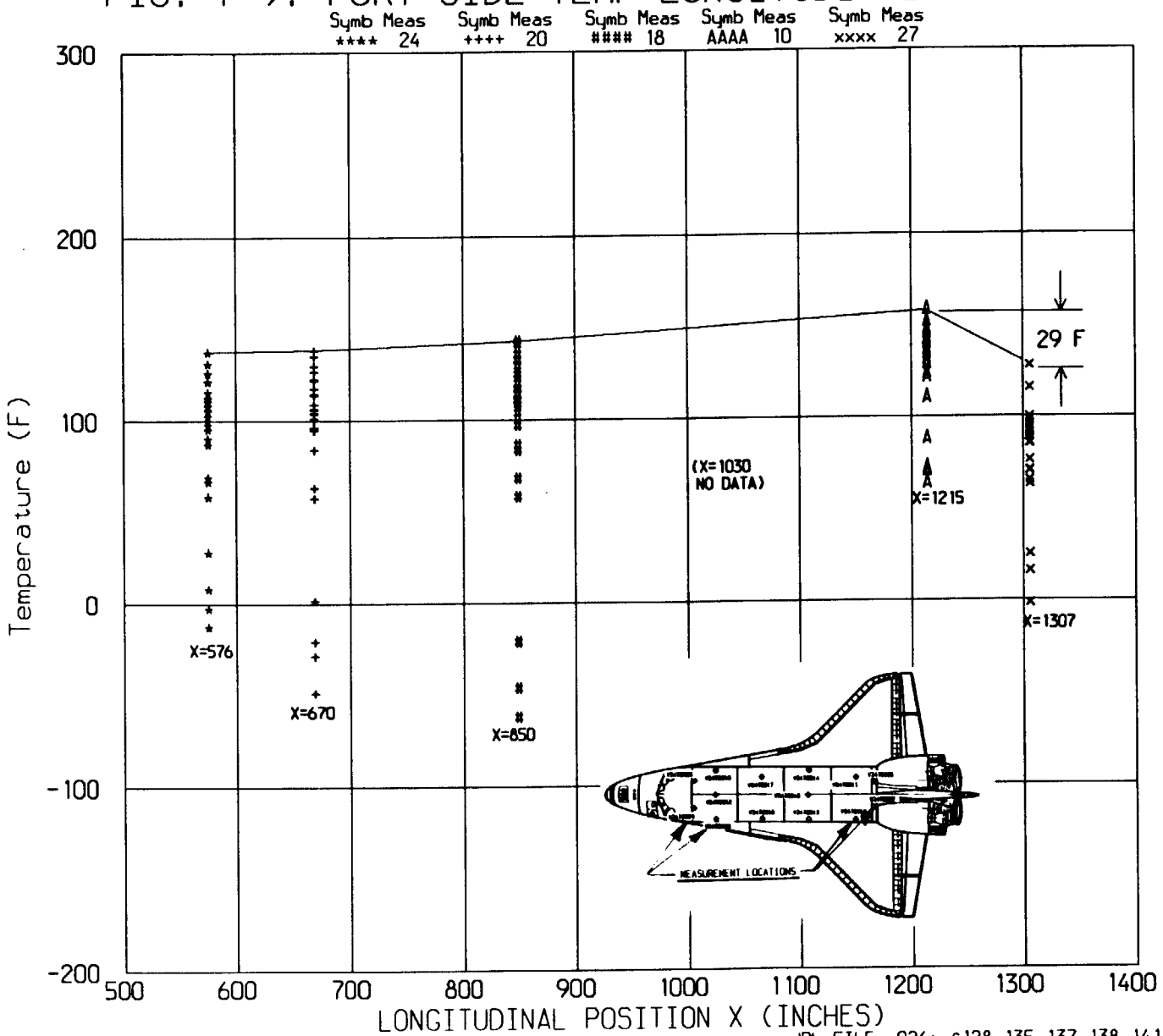
The data shown in Figure 7-8 indicates that the temperature may vary in a wide range at each longitudinal station(from + 143 Deg F @ MET=152 hrs to - 62 Deg F @ MET=144 hrs deg F at Xo=850) depending on the orbiter attitude relative to the sun. The upper temperature values, however, show less variation with the largest difference occurring at the aft bulkhead. This difference is shown by measurement V34T9310 at station Xo=1215 on the port side liner which was approximately 29 deg F greater than measurement V34T9327 on the aft bulkhead at station Xo=1307. At the forward bulkhead, this variation was on the order of 22 deg F. To delineate this variation further, the temperature data for the port side only was plotted in Figure 7-9. Thus, the temperature differences between the port and starboard side are eliminated and the port side temperature is more complete with respect to the longitudinal station coordinate. The longitudinal variation at the forward bulkhead is then almost non-existent. At the aft bulkhead, however, the same variation remains and is logically attributed to the influence of the payloads.

FIG. 7-8. PLB TEMP LONGITUDINAL VARIATIONS



JPL FILE p925/f128, 135, 136, 137, 138, 139, 140, 141
MET=139 to 153 HRS;STS-3 TOP-SUN DATA FROM REP 19956

FIG. 7-9. PORT-SIDE TEMP LONGITUDINAL VARIATION



JPL FILE p926; f128, 135, 137, 138, 141
STS-3 DFI DATA FROM REP JSC 19956; METs 139 to 153 HRS

7.3 Circumferential Temperature Variations

Aft payload bay temperature data for STS-4, obtained from measurements V34T9313, 14 and 16 is plotted in Figure 7-10. As seen in this figure, the data has a tendency to overlap for each attitude hold which indicates a weak dependence of temperature on the bay circumferential angle. The steady-state portion of the Tail-Sun data was enlarged for a closer examination in Figure 7-11. The variation in temperature in the circumferential direction was approximately 5 deg F. This would indicate that the view out of the payload bay does not appear to significantly alter the temperature data with the bay circumferential angle for these specific attitudes. However, payload effects may influence this conclusion.

The circumferential temperature variation is again examined in Figure 7-12 for the forward payload bay using STS-3 data. The measurements used were V34T9312 and V34T9320. V34T9319 data was not used since this was influenced by the tool box payload. As indicated in the figure, there is a weak dependence of temperature on bay circumferential angle. For the Nose-Sun attitude, the temperature readings from V34T9312 at the bottom of the payload bay and from V34T9320 on the payload vertical wall are approximately the same. This would indicate that the temperature environment is independent of the bay angle for the Nose-Sun attitude. For the Top-Sun attitude ,however, the temperature variation indicates a strong dependence on the bay circumferential angle. This dependence is examined more closely in Figure 7-13 which used additional data from JSC Report 19956. The circumferential variations in this case were found to be approximately 117 deg F.

7.4 Orbital Temperature Variations

For this section, a mini-study consisting of the following tasks was performed:

CCT and TMS data were examined to determine the level of agreement between these data sets.

Payload bay temperature data was examined for orbital variations.

TMS data which, in general, is not suitable for curve fitting or drawing conclusions about orbital variations in payload bay temperatures was examined to determine if it could be used to determine overall temperature ranges, general temperature trends,and radiative thermal environments. This would have the advantage of not having to resort to the voluminous and hard to handle CCT data.

For this study, STS-3 and measurement V34T9312, which is located at the forward bottom of the payload bay provided the most informative data. The JPL data files used were:

.TMS data File f130
.CCT data Files f3,16,29,231,239,240,243a

All the above flight data is shown in Figure 7-14. A "zoomed"

FIG. 7-10. CIRCUMFERENTIAL VARIATIONS/STS-4 AFT PLB TEMPS

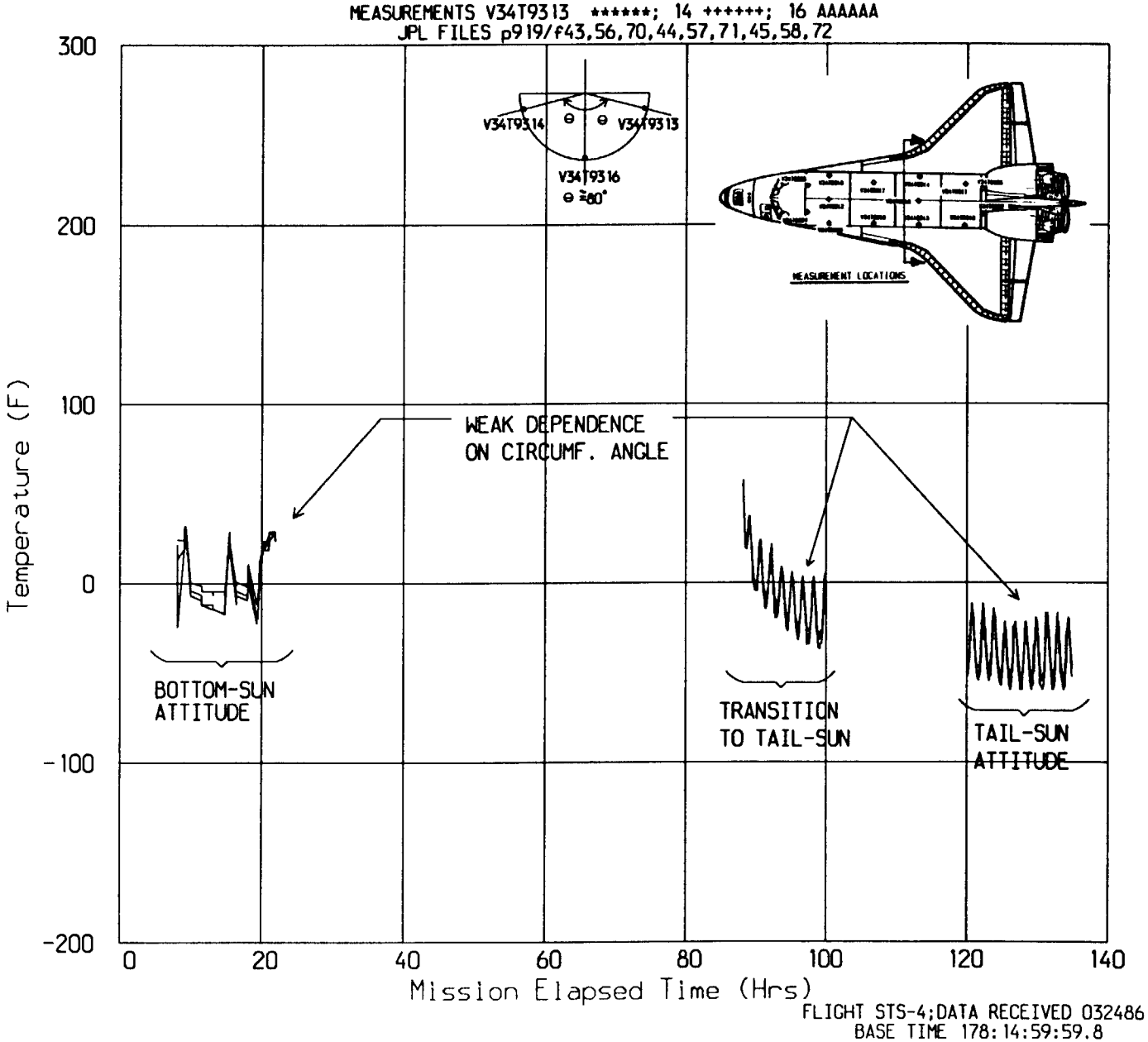


FIG. 7-11. CIRCUMF VARIA/ZOOM LOOK STS-4 AFT PLB TEMPS

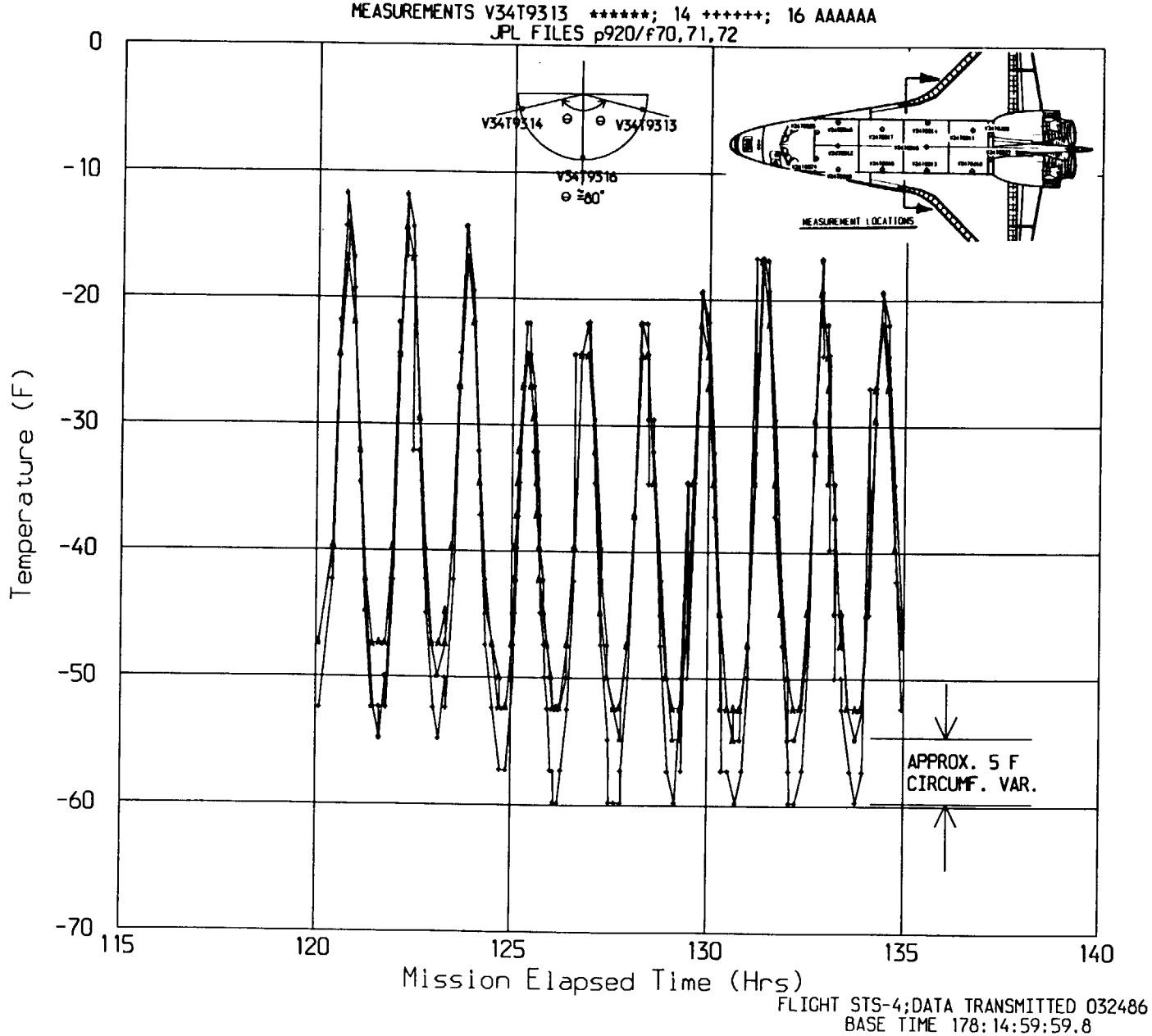


FIG. 7-12. CIRCUMF VARIATIONS/STS-3 PLB LINER TEMPS

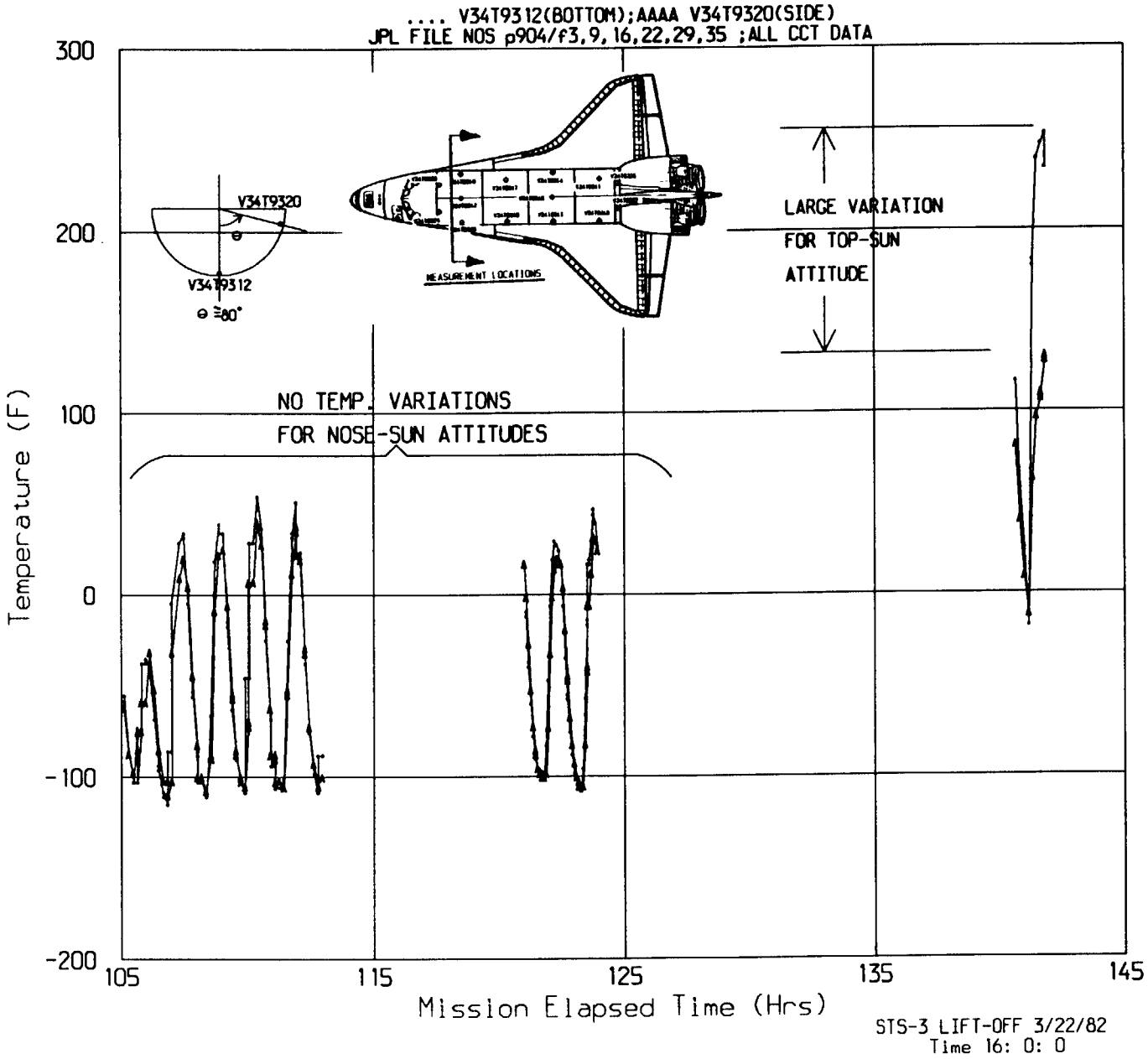
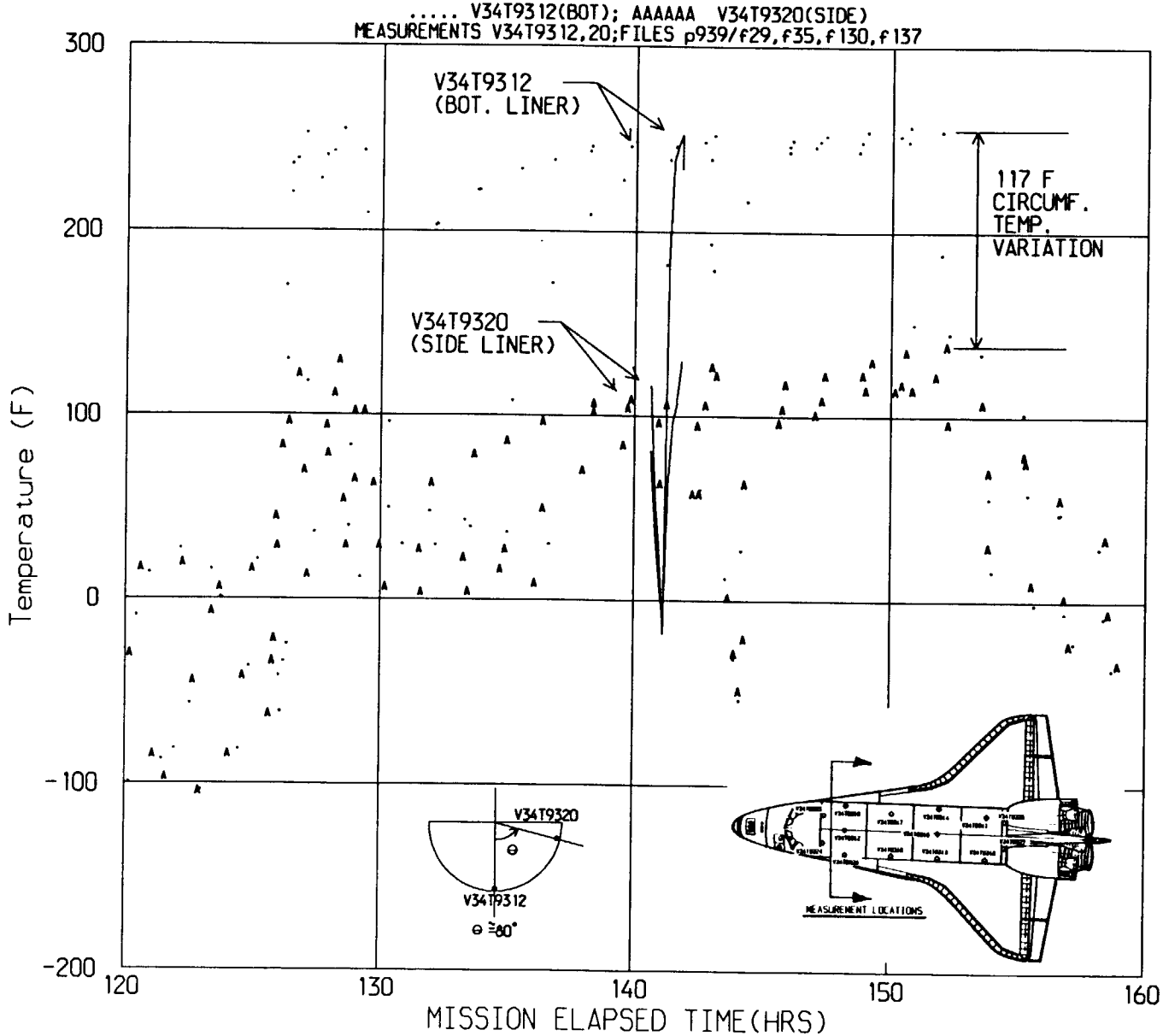


FIG. 7-13. CIRCUMF VAR/ STS-3 TOP SUN LINER TEMPS



MISSION FLIGHT STS-3
DATA FROM JSC REP 19956 AND CCT TAPES

FIG. 7-14. ORBITAL VARIATIONS OF THE PLB TEMPS

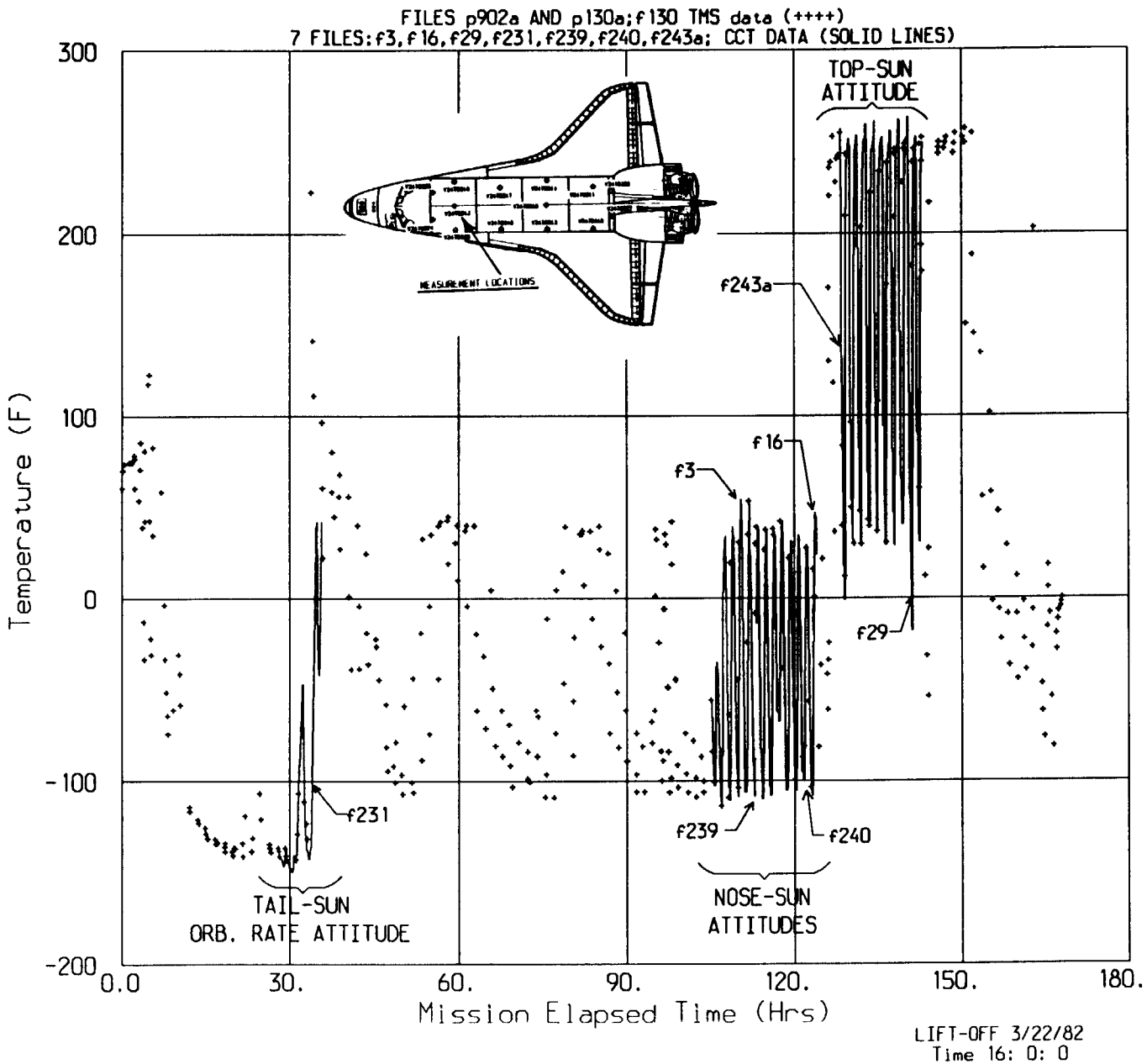
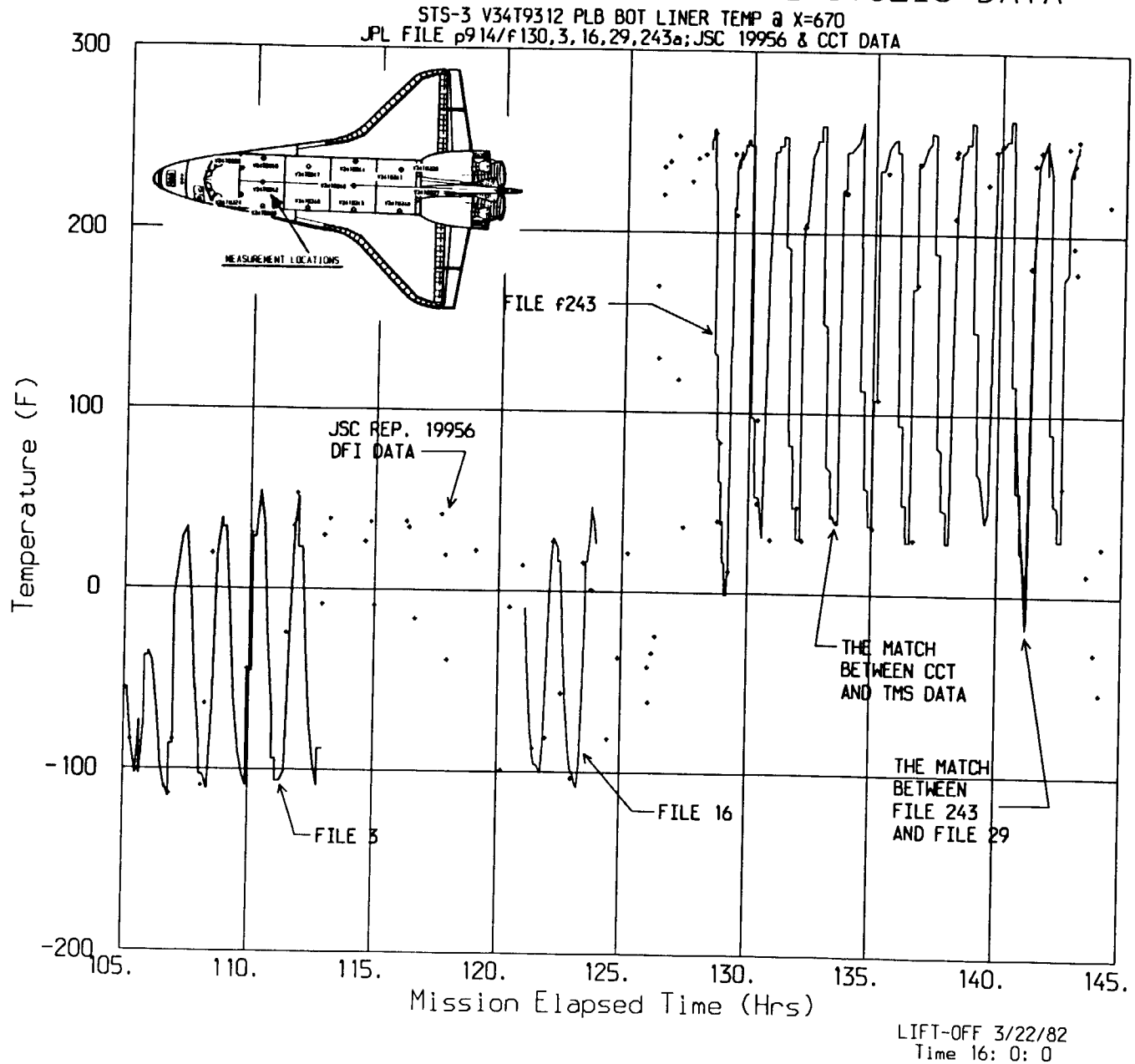


FIG.7-15. ZOOMED LOOK OF THE CYCLIC DATA



look at this data is presented in Figure 7-15, which used data files f3,16,29,130 and 243.

It is clear from Figure 7-14 that the CCT and TMS data match well both for the Nose-Sun and Top-Sun attitudes where the greatest amount of data exists. In the Tail-Sun Orb Rate attitude, the cold portion of the orbit, there is again good agreement. The upper temperature values, however, vary considerably. The mismatch for this portion of the data remains to be explained. The CCT data files appear to be in good agreement among themselves in terms of files merging into each other(f3,239 and 240) or files duplicating each other(f29 and 243).

The orbital variation of the payload bay temperature , shown in Figure 7-15 for the steady state condition, clearly reveals the cyclic nature of the temperature variation. Consistency also exists in the orbital period for both the Nose-Sun and Top-Sun attitudes.

It is evident from Figures 7-14 and 7-15 that, given enough TMS data over time, the TMS data alone could be used to define the temperature ranges and general trends. Also the upper and lower temperature values could be established via TMS data alone and the results would be essentially the same as those established by using both the TMS and CCT data simultaneously.

7.5 Attitude Temperature Variations

Representative flight temperature data for each shuttle attitude was chosen from the data files and plotted as shown in Figure 7-16. The primary objective was to show the relative steady state temperature levels as a function of shuttle attitude. Table 7-6 provides the particulars on the flights,data files, etc.

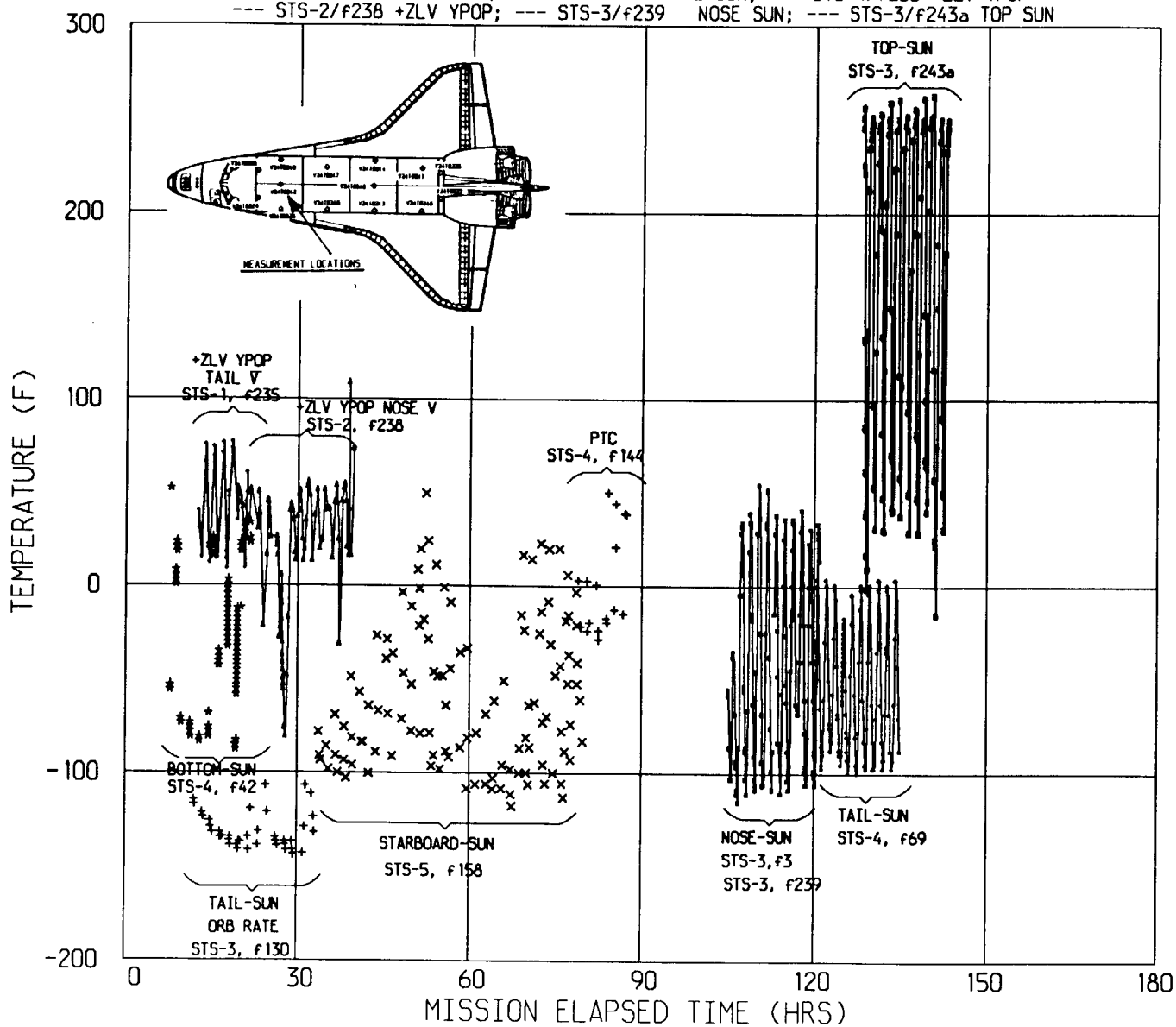
TABLE 7-6
Attitude Temperature Variations

Attitude	Mission	Mission Elapsed Time	Data File	Msmt #
Nose- Sun	STS-3	104-116,112-122	f3, f239	V34T9312
Bottom-Sun	STS-4	8-22	f42	
Tail-Sun		120-136	f69	
PTC		78:15-88:20	f144	
Stbrd-Sun	STS-5	33:09-79:57	f158	
+ZLV YPOP Tail V	STS-1	12-24	f235	
+ZLV YPOP Nose V	STS-2	20-40	f238	
Top-Sun	STS-3	128-143	f243	

As shown in Figure 7-16, the Top-Sun Attitude temperatures were unique as expected. As a result of solar heating, the temperatures for this attitude exceeded the ranges for any other attitude. The upper value temperature for this attitude was 263

FIG. 7-16. EFFECT OF THE SUN (SHUTTLE ATTITUDES)
(MEASUREMENT V34T9312 - FWD PLB BOTTOM)

+++ STS-3/f130 TAIL SUN; *** STS-4/f42 BOT SUN; +++ STS-4/f144 PTC; xxx STS-5/f158 STRBD SUN
--- STS-3/f3 NOSE SUN;--- STS-4/f69 TAIL SUN; --- STS-1/f235 +ZLV YPOP
--- STS-2/f238 +ZLV YPOP; --- STS-3/f239 NOSE SUN; --- STS-3/f243a TOP SUN



JPL FILE p938;DFI DATA FROM
REP JSC 19956 AND CCT TAPES

deg F and the lower value was 30 deg F. The temperature range was 233 deg F. With the exception of the Top-Sun attitude, the temperature ranges for all other attitudes were between -143 and +78 deg F. These ranges decreased to -116 to +56 deg F if the Tail-Sun orbital rate and the +ZLV YPOP Tail V attitudes were excluded from consideration.

The coldest attitude flown was the Tail-Sun Orbital Rate Attitude. The lower temperature value for this attitude was -143 deg F. Other temperature extremes are discussed in subsequent paragraphs.

The most benign attitudes flown were the +ZLV YPOP Attitudes. The majority of the temperature data for these attitudes was between 0 and 78 deg F.

It should be noted that the Greenhouse Effect, where solar energy might be entrapped in the temperature sensor installation as a result of the wave length differences between the transmitted heat flux and the emitted heat flux, was not compensated for in the presented data.

7.6 Temperature Ranges

Figure 7-17 is a plot of temperature data recorded by measurement V34T9312, the fastest response measurement in the payload bay. The data used for this plot was obtained from JSC Report 19956. This data included all attitudes for flights STS-1 thru 5. The time periods covered were from lift-off to entry. Additional data from JPL file f135 for measurement V34T9318 on STS-3 was added to this group to cover the cold temperature extremes. The purpose of this plot is to present a graphical display of the full range of payload bay temperatures in a single setting.

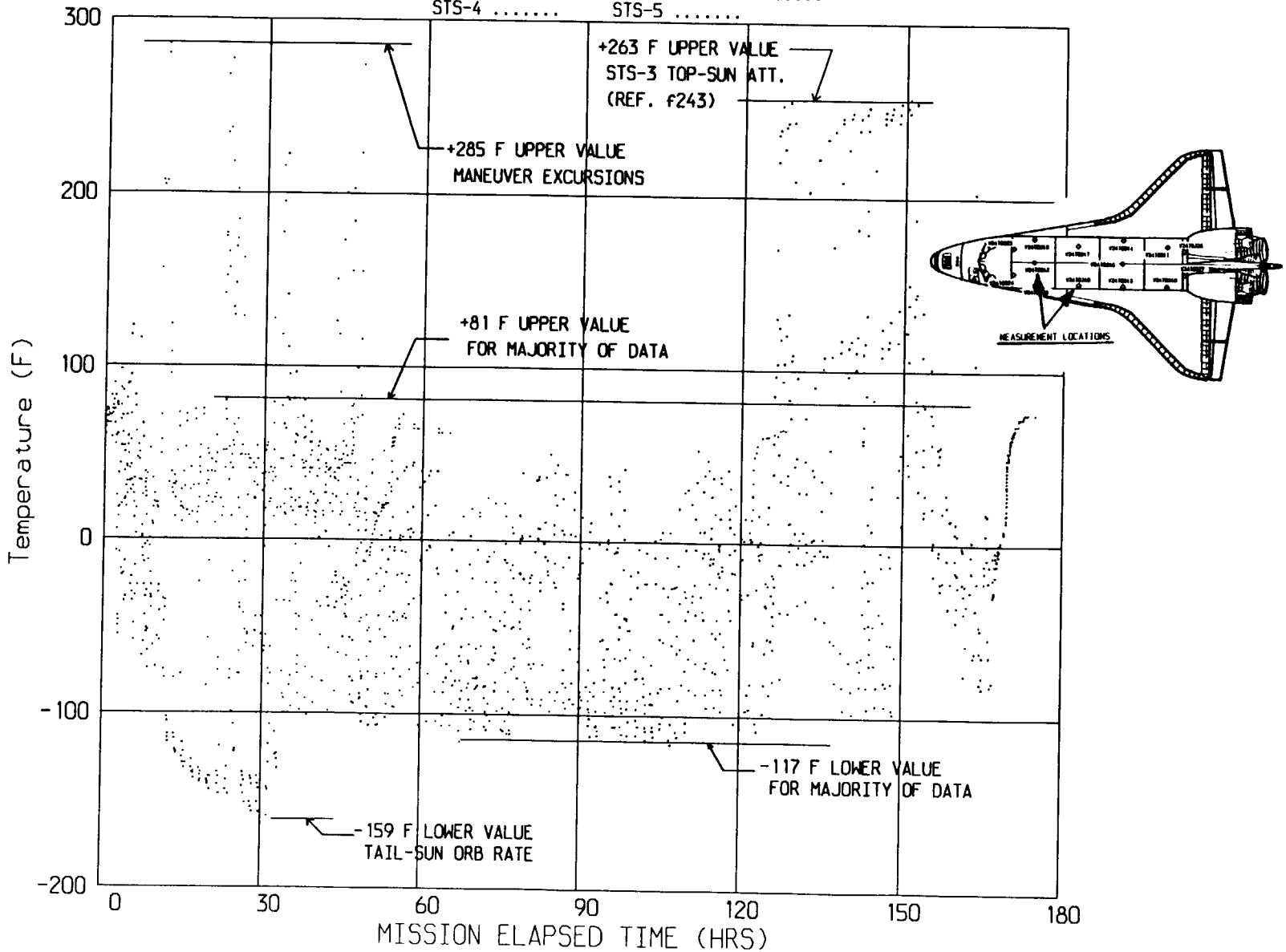
As indicated by this data,the majority of the data,covering all shuttle attitudes, ranged between -117 and +81 deg F. For the Top-Sun attitude, the upper value recorded was 263 deg F by measurement V34T9312 on STS-3. The low value of temperature in the figure is -159 deg F which occurred on STS-3, with the Tail-Sun Orbital Rate Attitude and was recorded by V34T9318. Circumferential view factor effects, forward bulkhead blockage,and payload blockage may have resulted in compensating effects which caused V34T931 (side liner) to be colder than V34T9312(bottom liner). It is surprising to note that the coldest reading on any JPL file was from neither of these measurements.The coldest temperature recorded was for STS-4 by measurement V34T9325, with a Bottom-Sun attitude. This data in JPL file f51 shows a temperature of -187 deg F on the forward bulkhead. This occurs as a single data point and raises a question as to its validity. (D.Coronado/Rockwell International/Houston submitted the following explanation on 8/26/87:The low Beta Tail-Sun Orb rate with Top to Space attitude maintained a limited view of the earth at all times. The Bottom to Sun SI attitude, however, provided a full view to space during the night side pass. It is possible that the minimum temperature registered on the forward bulkhead liner is valid.)

The high value of temperature was 285 deg F,recorded by measurement V34T9312 on STS-1 during a brief attitude excursion. This data is stored in JPL data file f102. The reason for this

FIG. 7-17. PAYLOAD BAY TEMPERATURE RANGES

MEASUREMENTS V34T9312, 18 DATA; JSC REP 19956

STS-1 ..... STS-2 ..... STS-3 .....
STS-4 ..... STS-5 .....



STS-1,2,3,4,5 DFI TMS DATA
JPL FILE NOS p900a/f102, 116, 130, 135, 144, 158

extreme temperature is not clear and may be due to the Greenhouse Effect.

The upper and lower temperature values in the payload bay for all phases of the mission and for all major orbiter attitudes flown for STS Flights 1 thru 5 are summarized in Table 7-7. Corresponding figures from Volume XIV are also included for reference.

TABLE 7-7
Summary of Temperature Ranges

Mission Phase	Recorded Temperatures deg F				Figure	Remarks
	Maximum		Minimum			
	JPL	Vol XIV	JPL	Vol XIV		
Prelaunch	80	120 (3)	65	40 (3)	6-1	
Ascent	83	150 (3)	43	40	6-2	
Top-Sun	263 (1)	200 (2)	-20	-250 (3)	6-7	
Tail-Sun	55	200	-100	-250	6-10	
Tail-Sun Orb Rate	55	200	-150	-250	6-10	
Bottom-Sun	40	200	-90	-250	6-8	
Nose-Sun	54	200	-118	-250	6-9	
Stbd- Sun	55	200	-120	-250	6-11	
+ZLV YPOP	110	200	-100	-250	6-12	
+ZLV XPOP	65	200	-84	-250	6-13	
PTC	140	200	-80	-250	6-14	
Entry	92	220 (4)	-	-50	6-15-17	
Postlanding	75	220	-	-50	6-18	

(1) no greenhouse effect compensation (2) may be low specification
(3) conservative (4) May be high specification

8.0 FLIGHT DATA - PREDICTION MODEL CORRELATIONS

This section of the report reviews the correlation between the temperatures predicted by the Thermal Math Models (TMM) and the temperature measurements obtained from STS-1 thru 5 flight data.

A brief description of the TMMs is followed by the results of the correlation work performed by Rockwell International/Houston. A summary of the differences between the TMMs and the actual flight data is followed by a discussion of the baseline changes made to the TMMs to improve the predictions for future flights.

8.1 The Thermal Math Models

The TMMs used for an integrated thermal analysis of the payloads and the orbiter for a prescribed thermal environment are well documented in the following reports:

JSC Report ES3-76-1	Orbiter Mid-Section Payload Bay Thermal Math Model Description (Model # SSX001D), June, 1983.
JSC Report ES3-77-3	390 Node Atmospheric Orbiter Mid-Section/Payload Bay Thermal Math Model Description (Model #SSX002D), September, 1983.
JSC Report 19540A	Open Door Simplified Orbiter Thermal Simulator Description, October, 1985.
JSC Report 19692A	Closed Door Simplified Orbiter Thermal Simulator Description, August, 1985.

The SSX001 Model was developed by NASA and Rockwell International/Houston and is generally referred to as the 390 node model. It simulates the orbiter midsection/payload bay in an open door configuration and is intended for the modeling of the On-Orbit phases and attitudes of the mission. This TMM simulates the:

Thermal Protection Subsystem (TPS) - External Insulation.
Mid-Fuselage and Aft-Fuselage Structure.
Payload Bay Doors-Radiators and Wings.
Payload Bay Liners-Wire Trays-Bulkheads and Longerons.

The SSX002D Model is similar to the first. It simulates the orbiter mid-section/payload bay with the payload bay doors closed. This model is suitable for prelaunch, ascent entry and the postlanding phases of the mission but does not consider the effect of the Sun, Planet or Space.

The latter two models, derived from the 390 node model, are referred to as SOTs and document 3 describes this model as:

"This new tool is not a model, in the usual sense, but rather a flexible thermal characterization of the orbiter designed to allow the user to build the model, in any given thermal analyzer format, and with node size granularity tailored (within given constraints) to the unique payload configuration. The payload bay

C-2

is divided into a minimum number of thermal zones defined as areas having uniform thermal characteristics throughout. For orbiter elements outside the bay, the user has the option of defining the areas as thermal boundaries with temperatures driven to represent the effect of the external environment,or modeling the orbiter elements and calculating temperatures based on the orbital environments."

By using the SOT models, the point of focus for thermal modeling is moved from the orbiter payload bay to the payloads themselves. These models provide a convenient method of prescribing the boundary conditions for the payload thermal math models.

The correlation performed by Rockwell International/Houston, for the midsection of the orbiter, and the portion reviewed and presented in this report for the payload environment definition, were based on the 390 node TMMs, both the open and closed door versions. The SOT models were not used.

8.2 Flight Data - TMM Prediction Correlation

The correlation between the temperatures predicted by the 390 node TMMs and the actual measured flight temperatures is mainly documented in the following two reports:

SEH-ITA-82-277 Preliminary 390 Node Thermal Math Model Correlation Report, Rockwell International/Houston, Rose/Payne, 13 October, 1983.

SEH-ITA-82-111T 390 Node/OSTA/DFI Integrated Thermal Math Model STS-2 Comparison, Rockwell International/Houston, Internal Ltr, 28 April, 1982.

The flight temperature data used for this correlation was for STS-2,3,and 5. The correlation is presented using reproduced plots from the above reports and is limited to the payload bay proper, including the bay liners, the wire trays, and the forward and aft bulkheads.

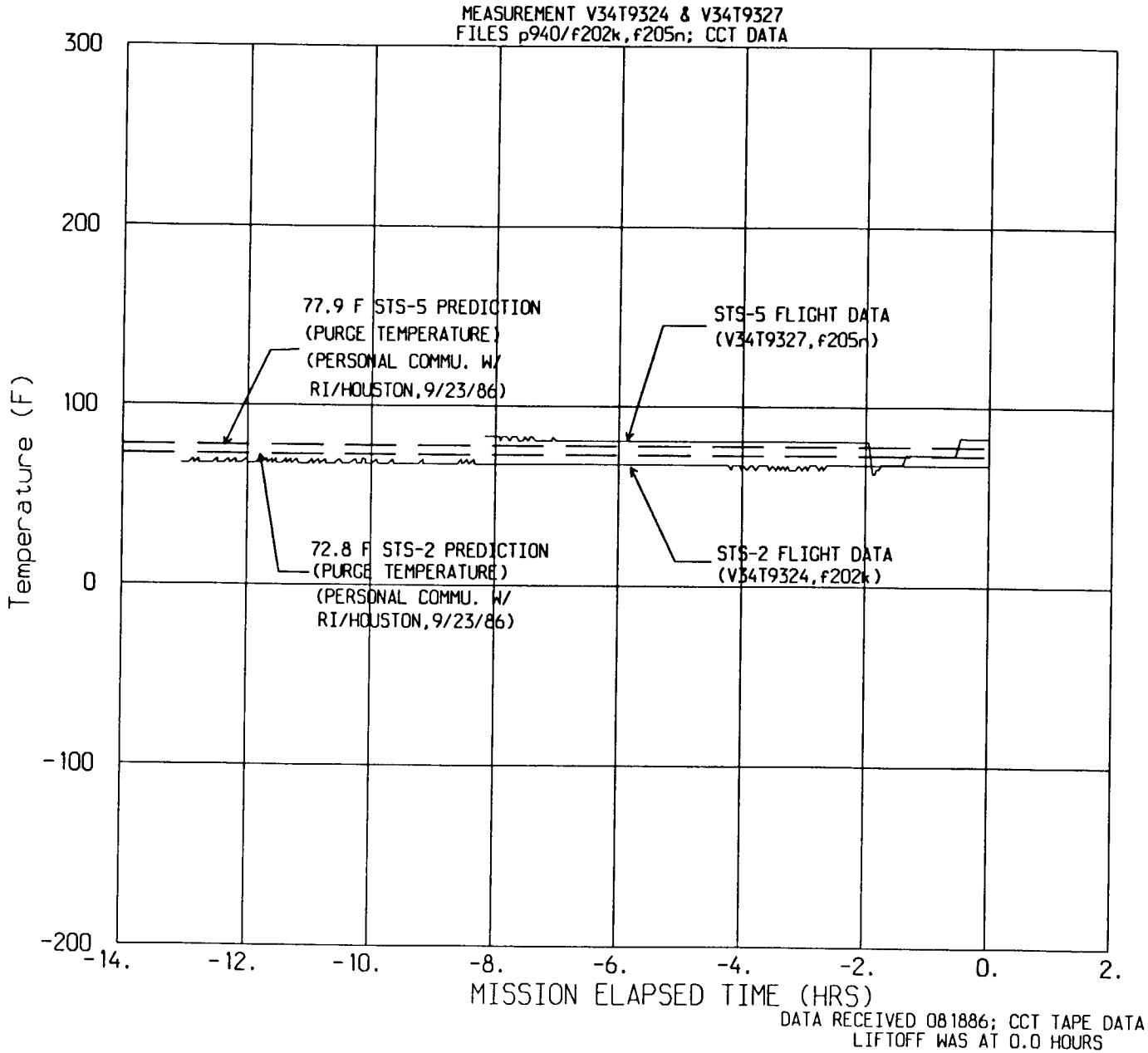
8.2.1 Correlation of Prelaunch Data

The correlation of the predicted and flight data for this mission phase is shown in Figure 8-1. Flight data from measurement V34T9324 on STS-2 and measurement V34T9327 on STS-5 were compared with the corresponding TMM data. These measurements were chosen because they represented the high and low extremes of all the prelaunch temperature data. The flight temperature data was taken from JPL files f202k and f205n. The predicted TMM temperatures were taken to be the gaseous nitrogen purge temperatures at the purge inlet shortly before lift-off. The data in Figure 8-1 shows that the temperatures correlate within 3 deg F under a nominal benign external thermal environment.

8.2.2 Correlation of Ascent Data

The correlation of the ascent flight data with the TMM predictions is shown in Figures 8-2 thru 8-8. The details on the specifics for these correlations are summarized in Table 8-1.

FIG.8-1. CORRELATION OF PLB PRELAUNCH TEMPERATURES



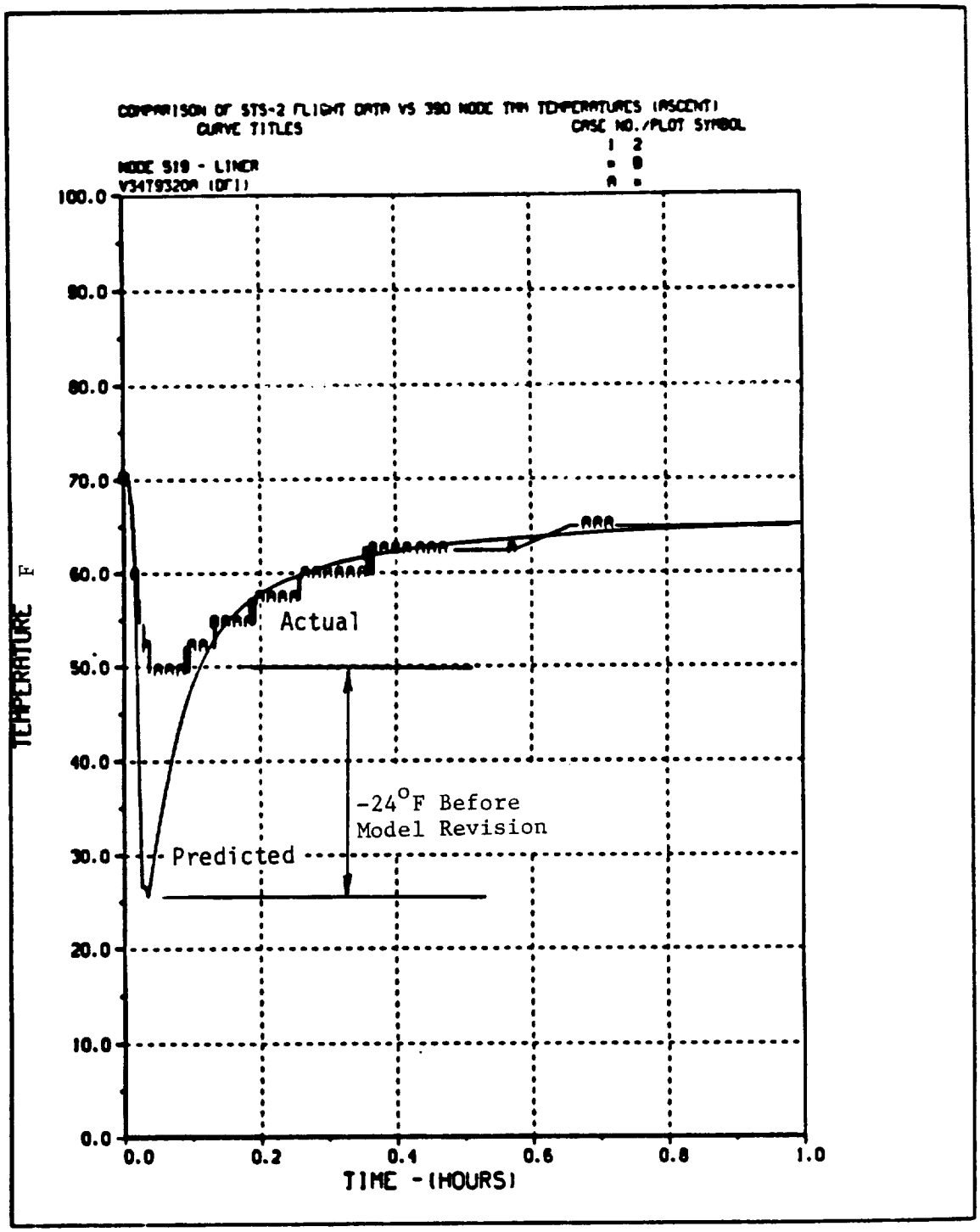


FIGURE 8-2. 390 TMM LINER PREDICTIONS (NODE 519) VS. STS-2 FLIGHT DATA FOR ASCENT

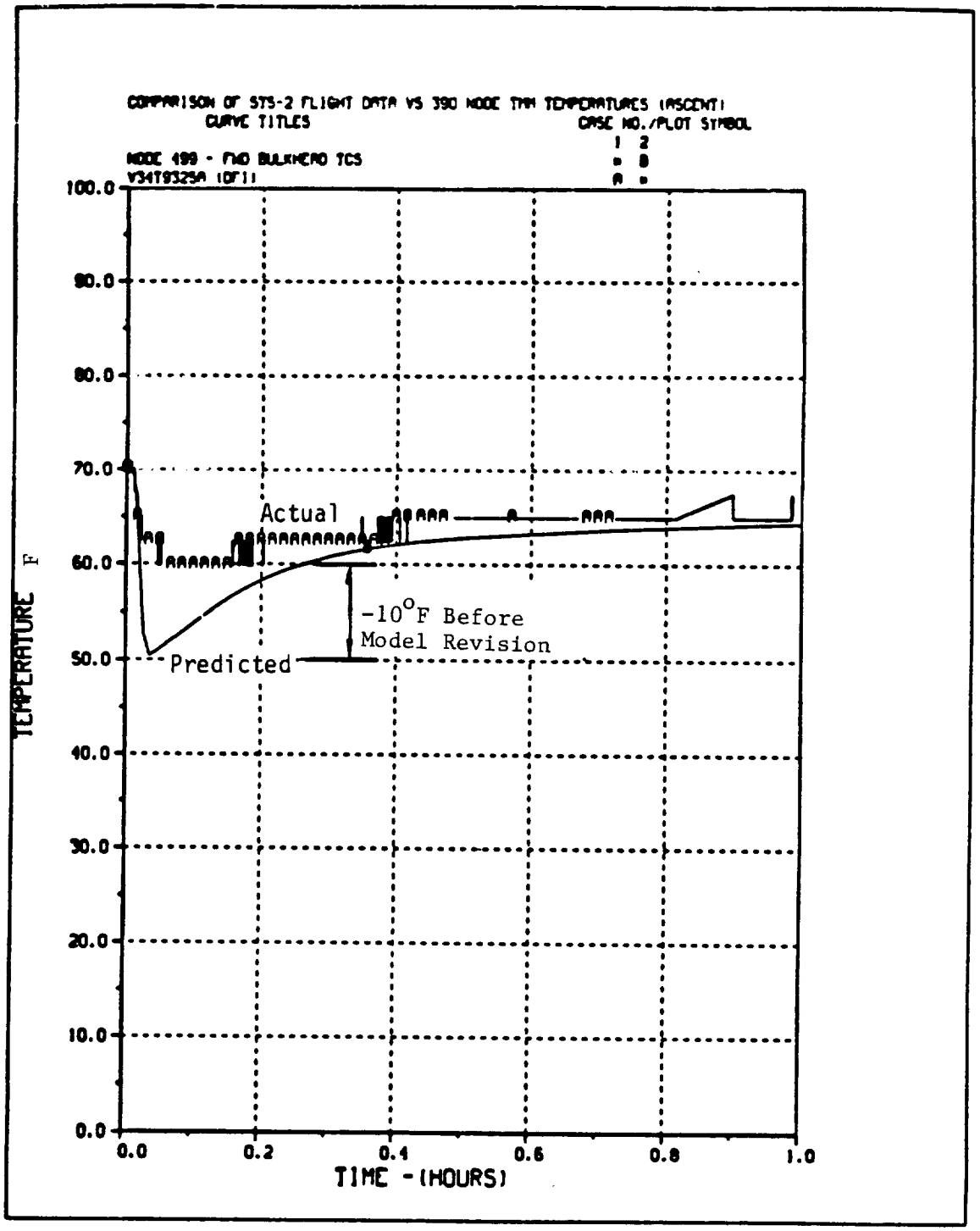


FIGURE 8-3. FORWARD BULKHEAD STS-2 FLIGHT DATA VS. 390 TMM (NODE 499) PREDICTIONS FOR ASCENT

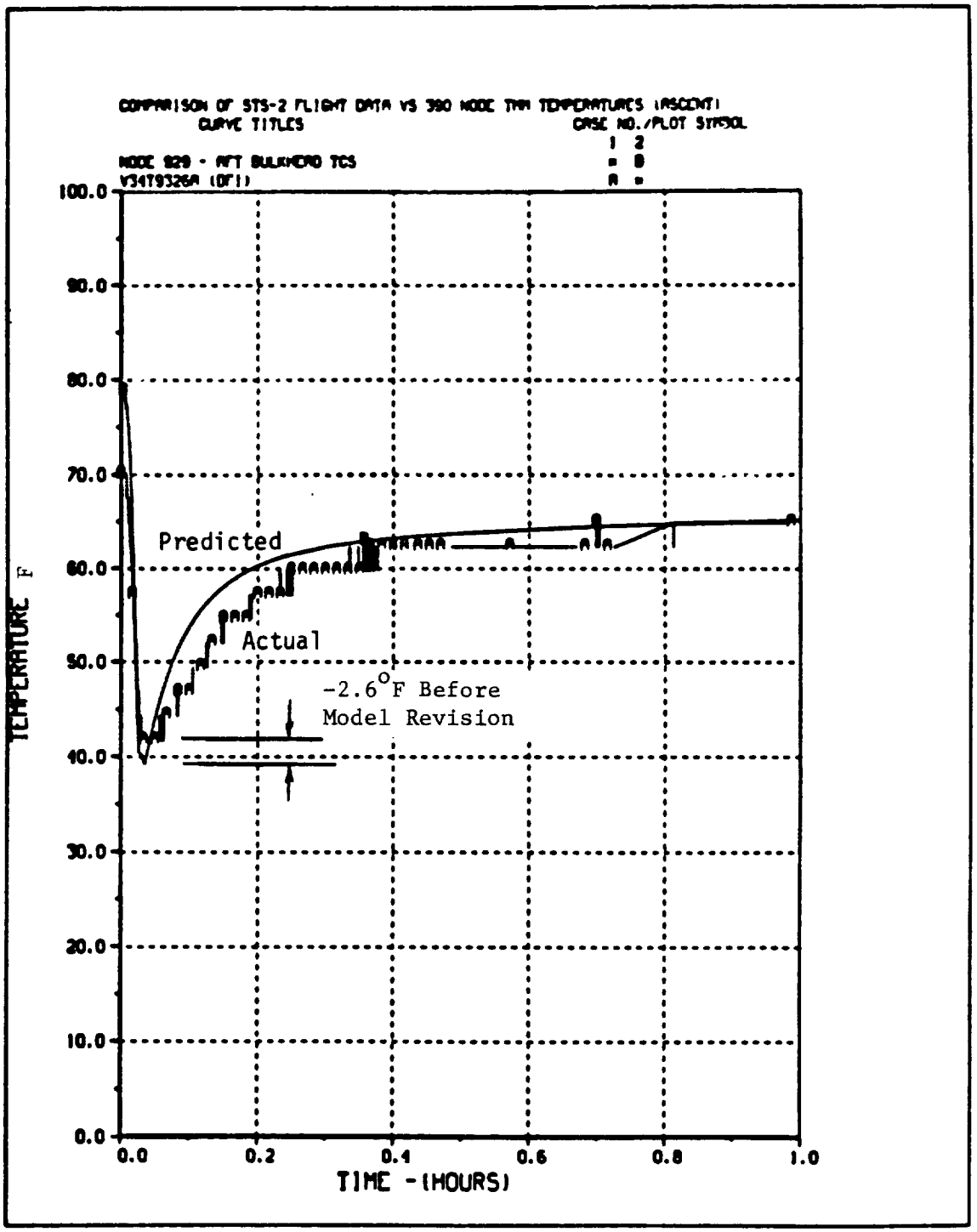


FIGURE 8-4. AFT BULKHEAD TCS STS-2 FLIGHT DATA VS. 390 TMM (NODE 929) PREDICTIONS FOR ASCENT

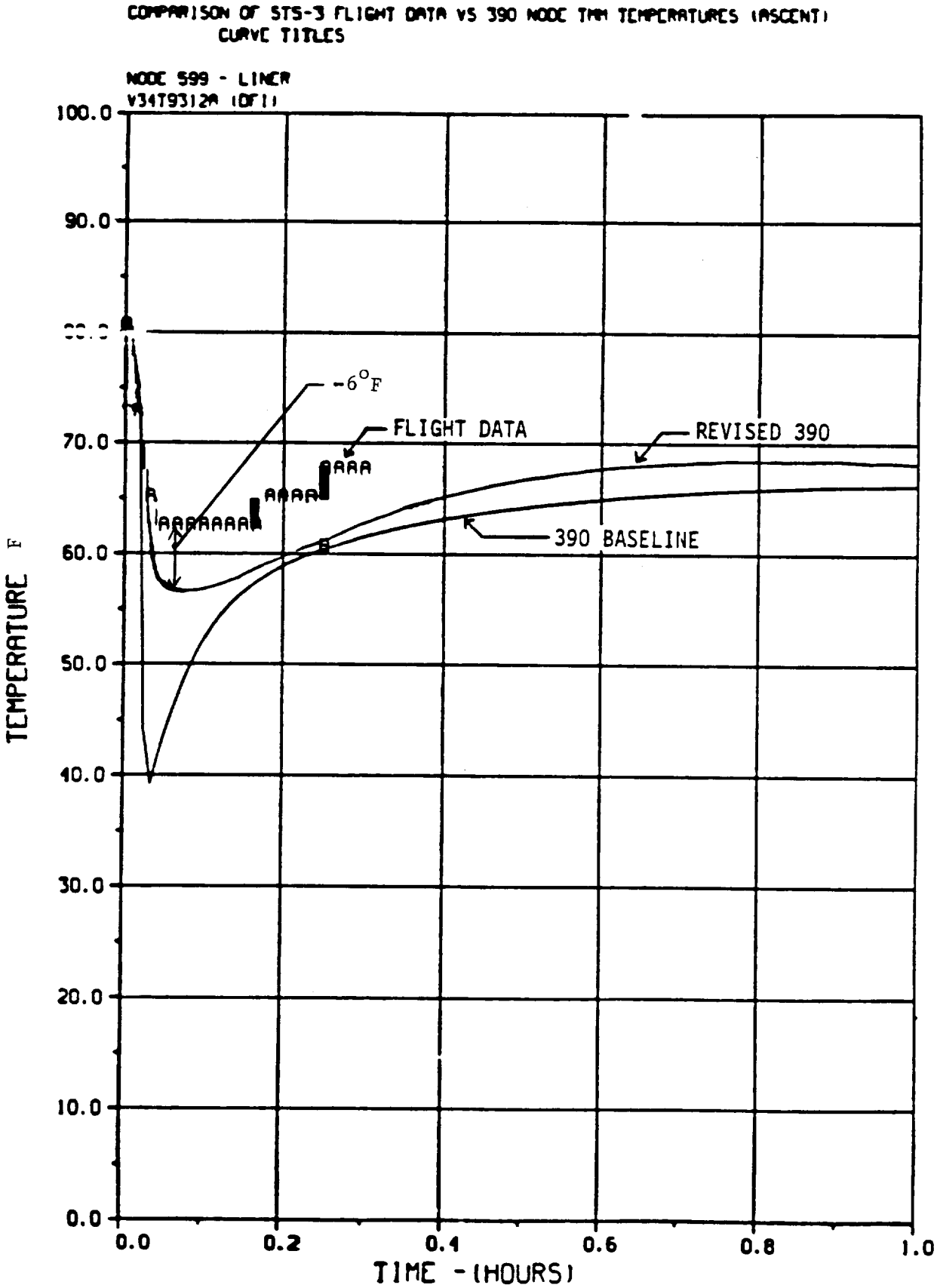


FIGURE 8-5. "Baseline" and "Revised" 390 Node TMM Liner Ascent Predictions (Node 599) vs. STS-3 Flight Data

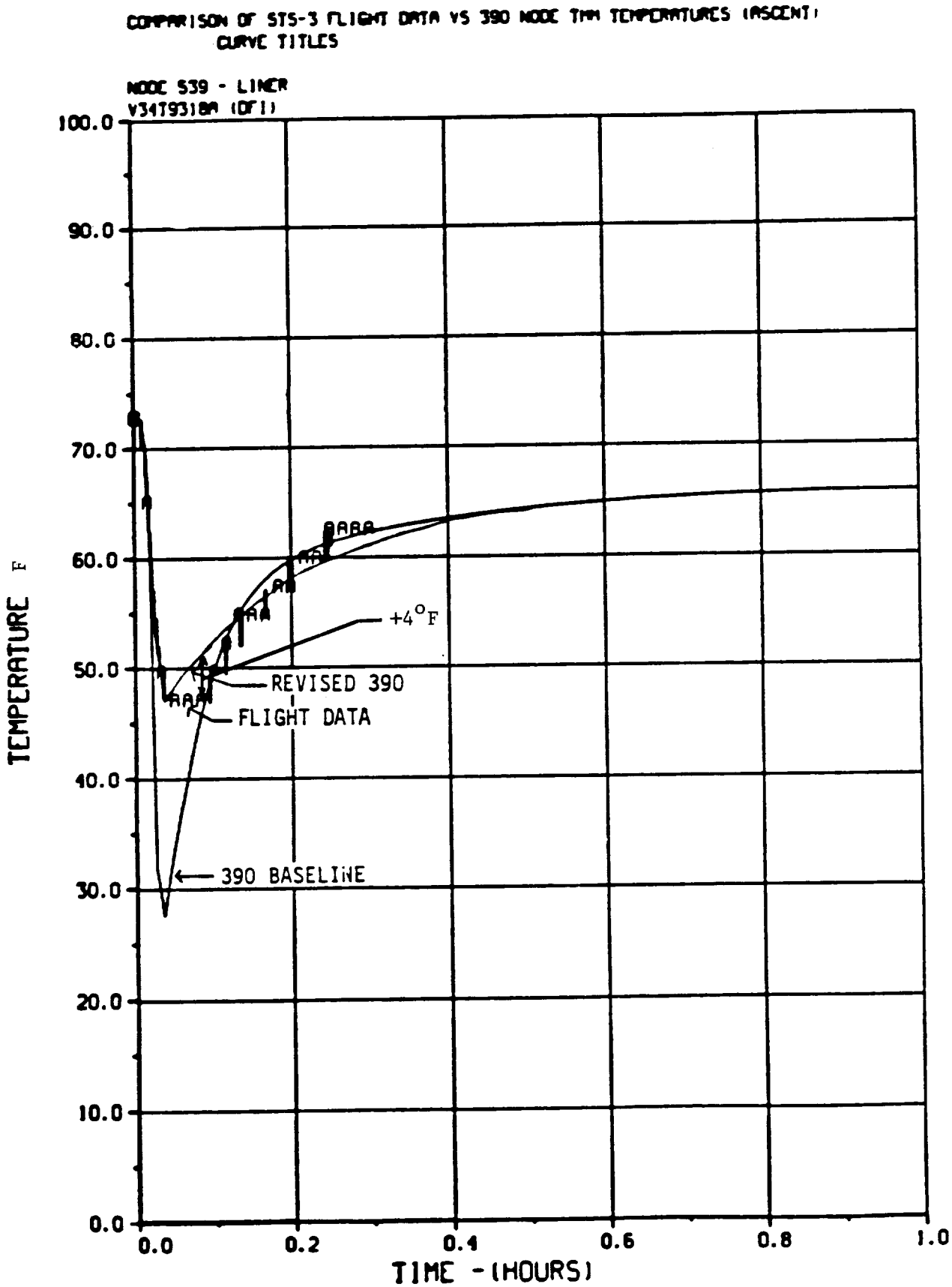


FIGURE 8-6. "Baseline" and "Revised" 390 Node TMM Liner (Node 539) Ascent Predictions vs. STS-3 Flight Data

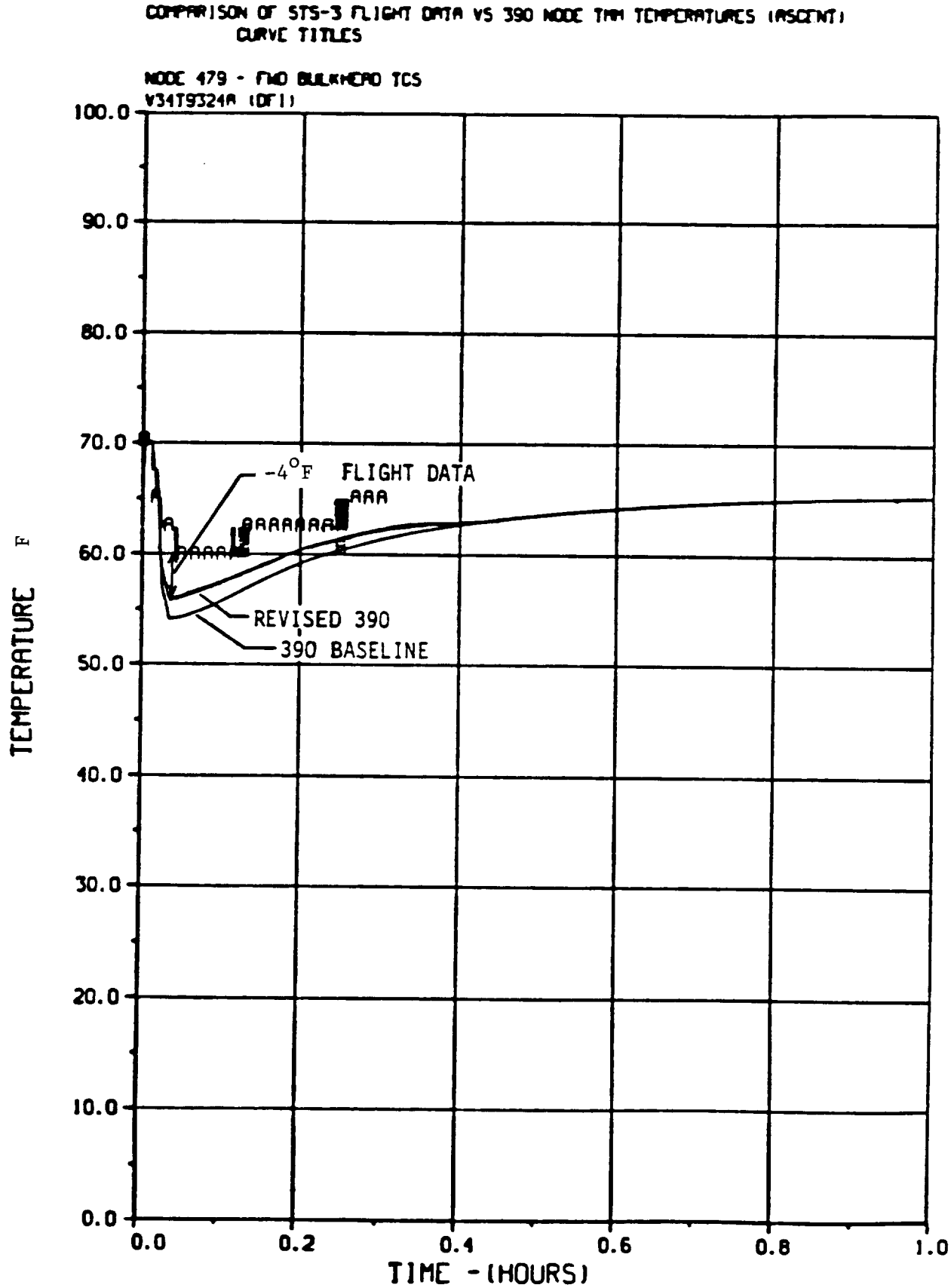


FIGURE 8-7. "Baseline" and "Revised" 390 Node TMM Forward Bulkhead Insulation (Node 479) Ascent Predictions vs. STS-3 Flight Data

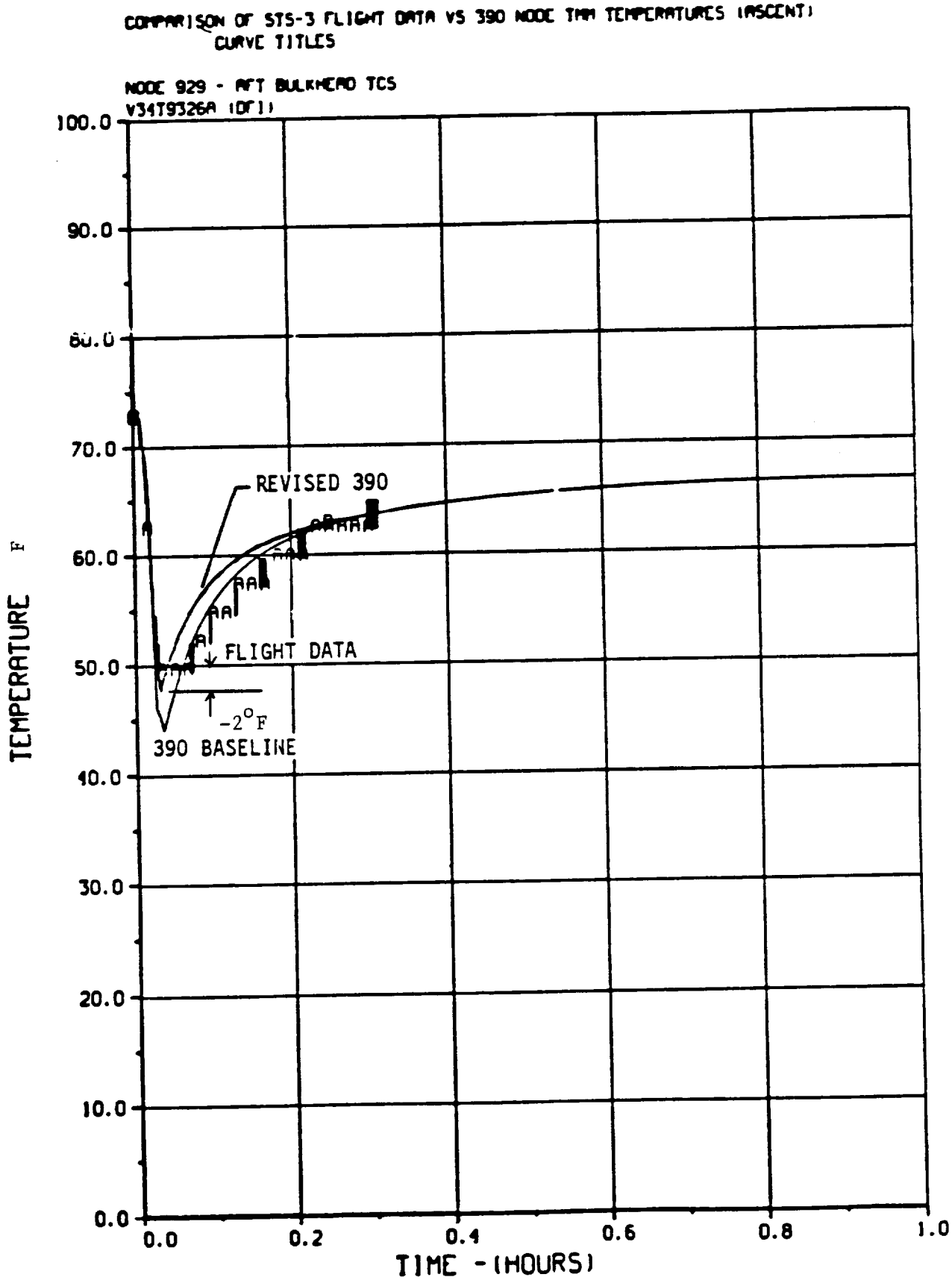


FIGURE 8-8. "Baseline" and "Revised" 390 Node TMM Aft Bulkhead Insulation (Node 929) Ascent Predictions vs. STS-3 Flight Data

TABLE 8-1
Ascent Phase Temperature Correlations

Figure	Mission Phase	Flight	Msmt #	Msmt Location	Reference
8-2	Ascent	STS-2	V34T9320	Fwd Side Liner	SEH-ITA-82-111T
8-3			V34T9325	Fwd Blkhd	
8-4			V34T9326	Aft Blkhd	
8-5		STS-3	V34T9312	Bot Liner	SEH-ITA-82-277
8-6			V34T9318	Fwd Side Liner	
8-7			V34T9324	Fwd Blkhd	
8-8			V34T9326	Aft Blkhd	

The ascent data for STS-2 was correlated in Figures 8-2 thru 8-4. The maximum discrepancies were 24 deg F for measurement V34T9320 on the forward liner, 10 deg F for measurement V34T9325 on the forward bulkhead, and 2.6 deg F for measurement V34T9326 on the aft bulkhead. It is believed that these correlations were made before the revision of the prediction model. The ascent data for STS-3 was correlated in Figures 8-5 thru 8-8 for 4 measurements. The predicted temperatures from both the baseline model and the revised 390 node model are shown. The maximum discrepancies between the flight temperature measurements and those predicted by the revised 390 node model are listed in Table 8-2.

TABLE 8-2
STS-3 Temperature Correlations

Msmt #	Location	Temp Variation
V34T9312	Fwd Bot Liner	6 deg F
V34T9318	Fwd Side Liner	4 deg F
V34T9324	Fwd Blkhd	4 deg F
V34T9326	Aft Blkhd	2 deg F

8.2.3 Correlation of Tail-Sun/Top-Space Orbital Rate Data

The correlation of the TMM predicted temperatures with flight temperature measurements for the Tail-Sun/Top-Space Orb Rate attitude are shown in Figures 8-9 thru 8-13. The specifics are given in Table 8-3.

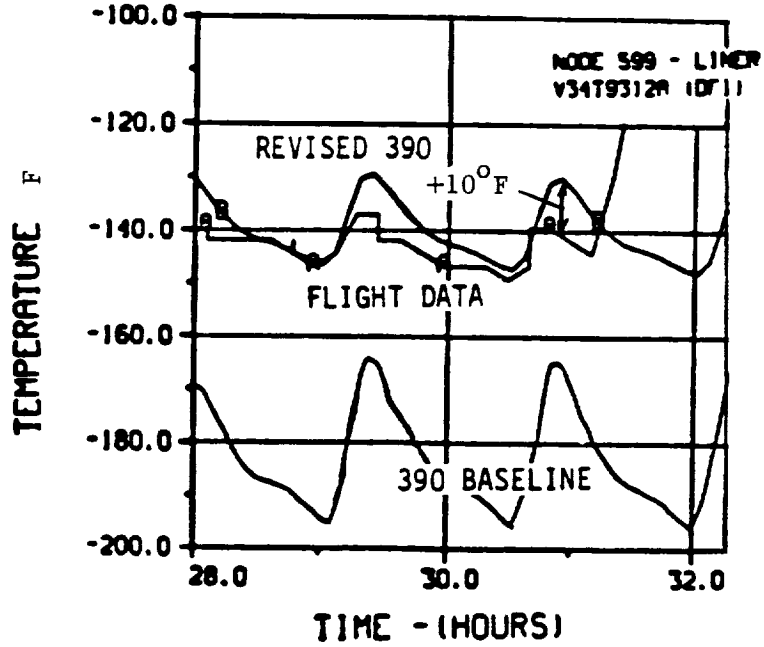


FIGURE 8-9. **"Baseline" and "Revised" 390 Node TMM Liner (Node 599) Predictions vs. STS-3 Tail-to-Sun** Orb Rate Flight Data

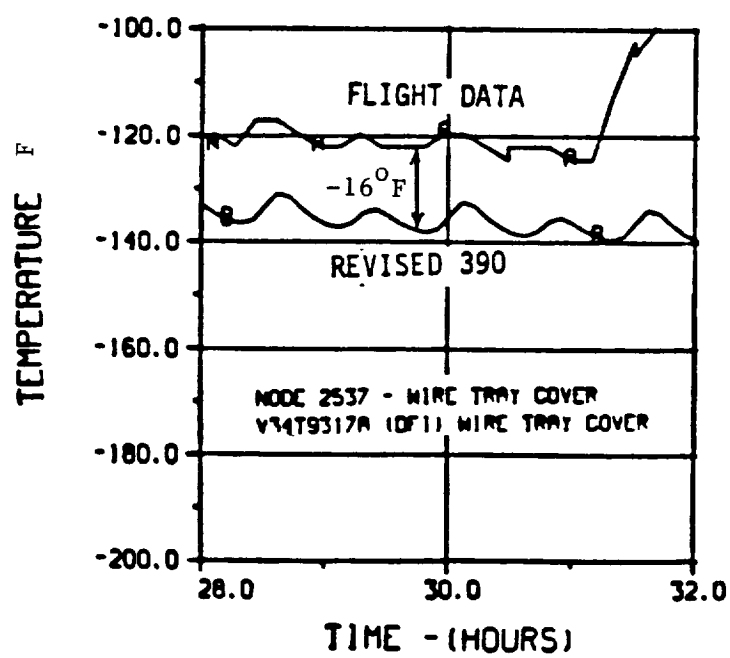


FIGURE 8-10. **Revised 390 Node TMM Wire Tray Predictions vs. STS-3 Tail-to-Sun** Orb Rate Flight Data

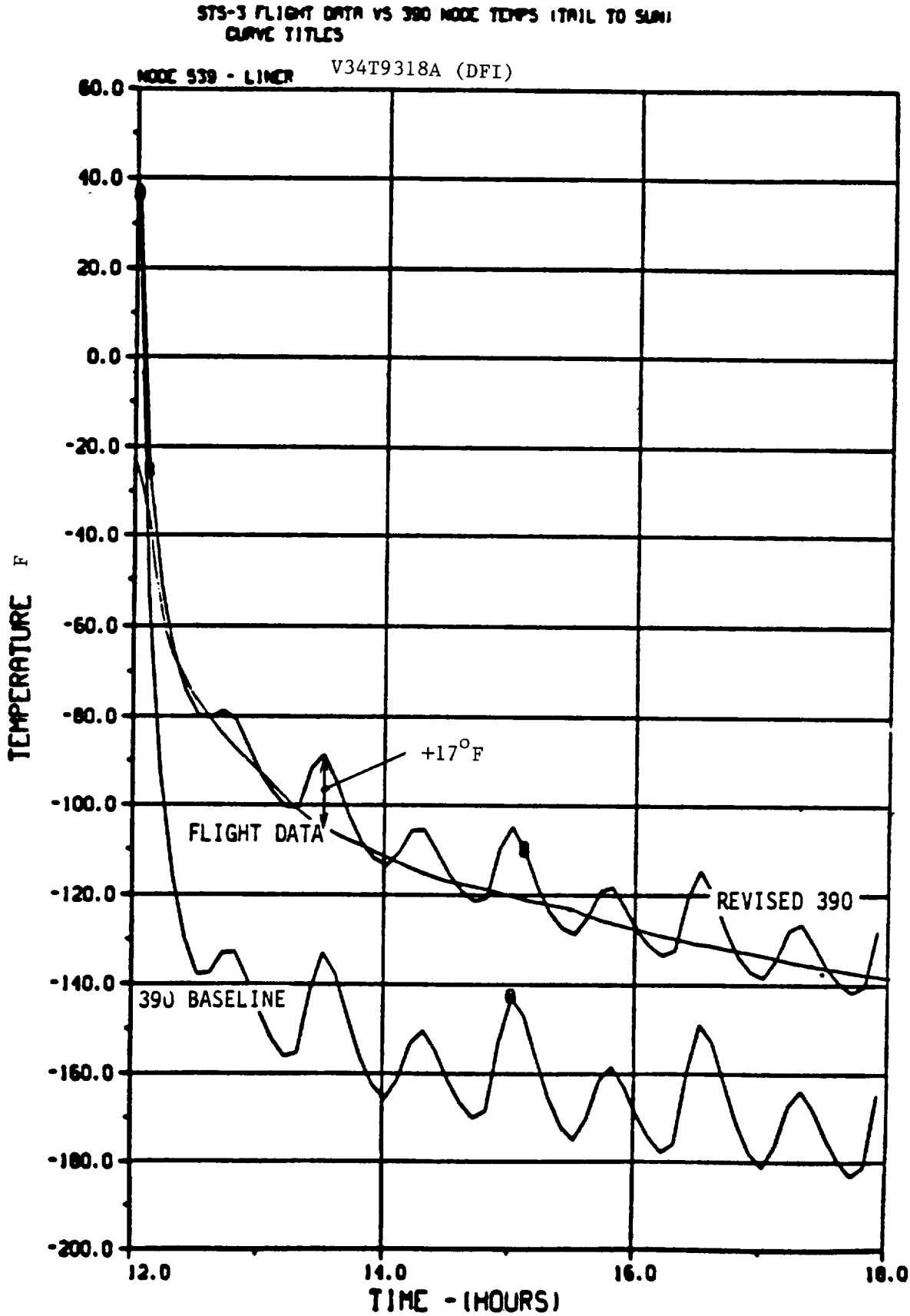


FIGURE 8-11. STS-3 Flight Data vs. 390 Node TMM Liner (Node 539) Predictions for Initial Tail-to-Sun Phase

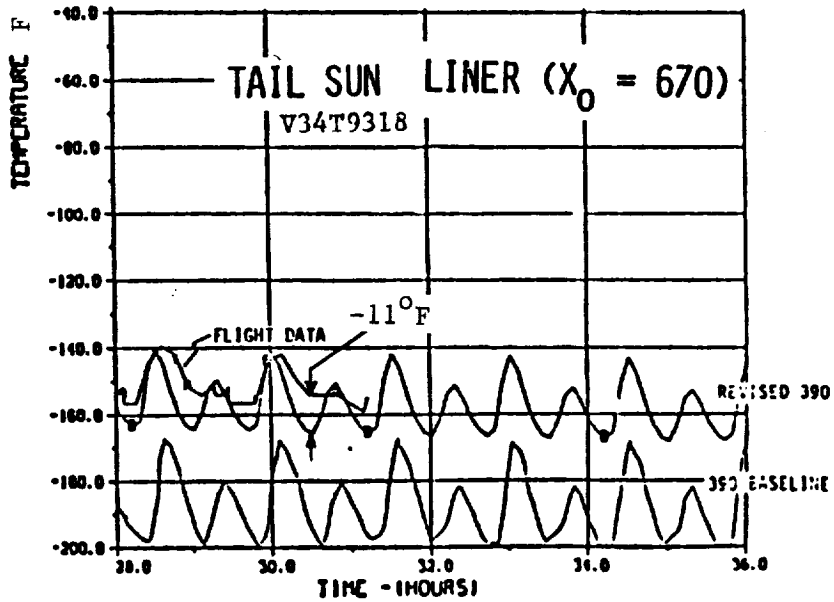


FIGURE 8-12. STS-3 FLIGHT DATA VS 390-NODE TMM PREDICTIONS TAIL-SUN ALTITUDE, LINER @ X_0=670

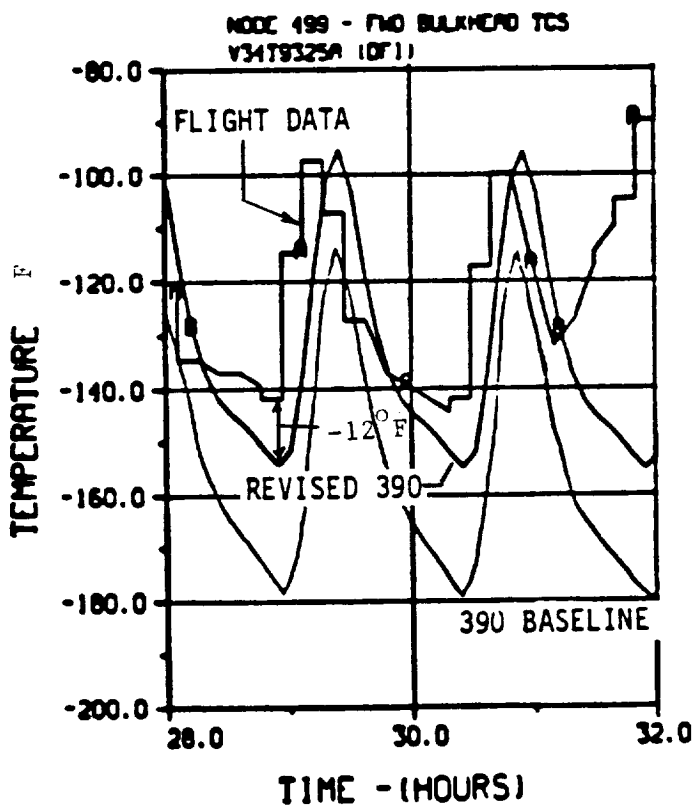


FIGURE 8-13. "Baseline" and "Revised" 390 Node TMM Forward Bulkhead Insulation (Node 499) Predictions vs. STS-3 Tail-to-Sun Flight Data

TABLE 8-3
Tail-Sun/Top-Space Orbital Rate Temperature Correlations

Figure	Mission Phase	Flight #	Msmt #	Location	Reference
8-9	On-Orbit	STS-3	V34T9312	Bot Liner	SEH-ITA 82-277
8-10			V34T9317	Wire Tray	
8-11			V34T9318	Liner	
8-12			V34T9318	Liner	SEH-ITA 82-111
8-13			V34T9325	Blkhd	SEH-ITA 82-277

For the data presented in Figures 8-9 thru 8-13, the maximum temperature discrepancies between the temperatures predicted by the 390 node model and the actual recorded flight temperatures are summarized in Table 8-4.

TABLE 8-4
STS-3 Temperature Correlations

Msmt #	Location	Temp Variation
V34T9312	Fwd Bot Liner	10 deg F
V34T9317	Fwd Port Liner	16 deg F
V34T9318 *	Fwd Stbd Liner	17 deg F
V34T9318 **		11 deg F
V34T9325	Fwd Blkd	12 deg F

* Met 12-18 hrs. ** Met 28-36 hrs

8.2.4 Correlation of Nose-Sun Data

The correlation of 390 Node TMM model predicted temperatures with the flight measurements is presented in Figures 8-14 thru 8-16. Table 8-5 summarizes the information for the STS-3 Nose-Sun attitude.

TABLE 8-5
STS-3 Nose-Sun Phase Temperature Correlations

Figure	Mission Phase	Msmt #	Location	Reference	Temp Variation
8-14	On-Orbit	V34T9312	Fwd Bot Lin	SEH-ITA 82-277	9 deg F
8-15		V34T9317	Wire Tray		11 deg F
8-16		V34T9318	Fwd Prt Lin		27 deg F

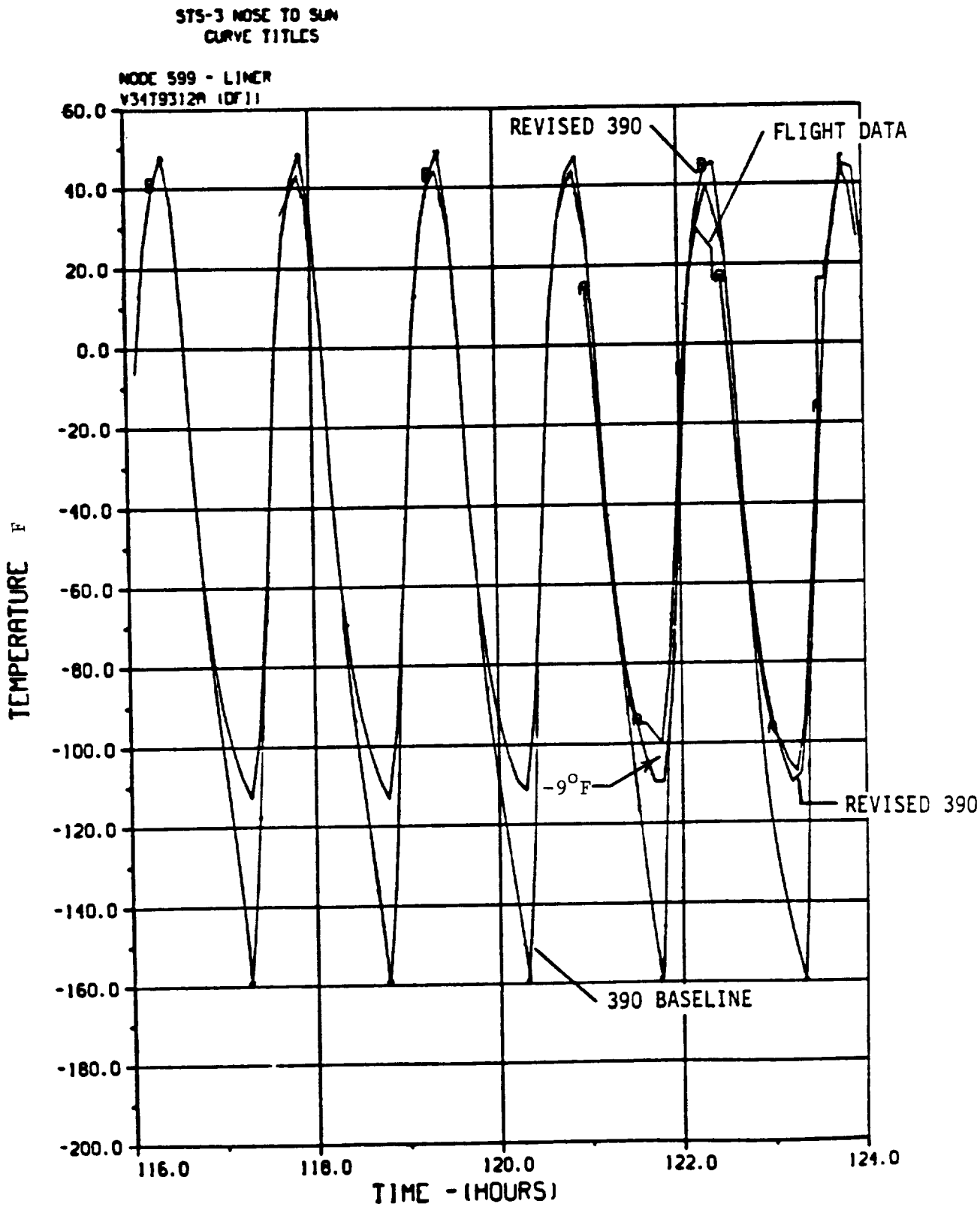


FIGURE 8-14. STS-3 Nose-to-Sun Flight Data vs. "Baseline" and "Revised" 390 Node TMM Liner (Node 599) Predictions

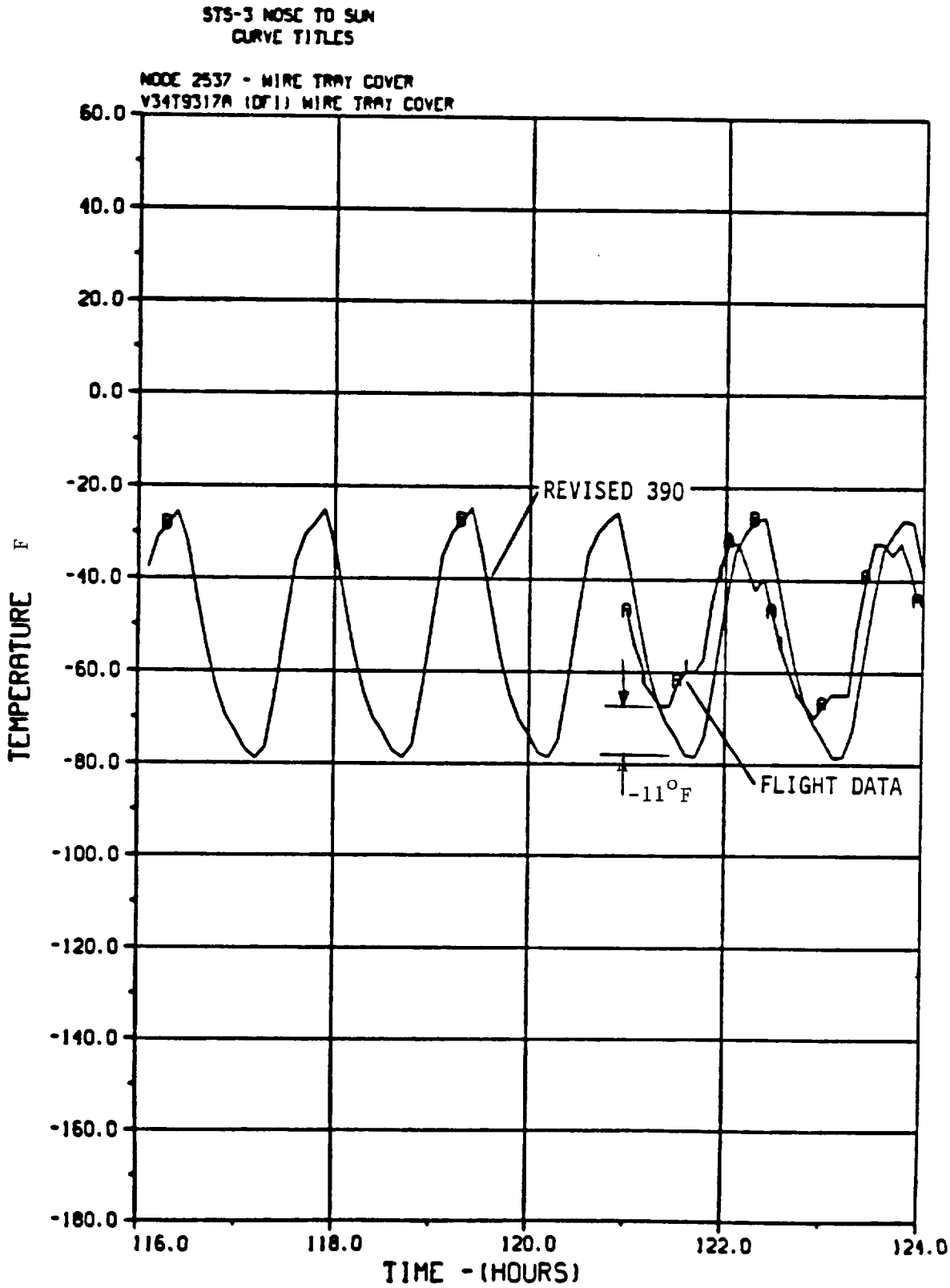


FIGURE 8-15. Revised 390 Node TMM Wire Tray Predictions vs. STS-3 Nose-to-Sun Flight Data

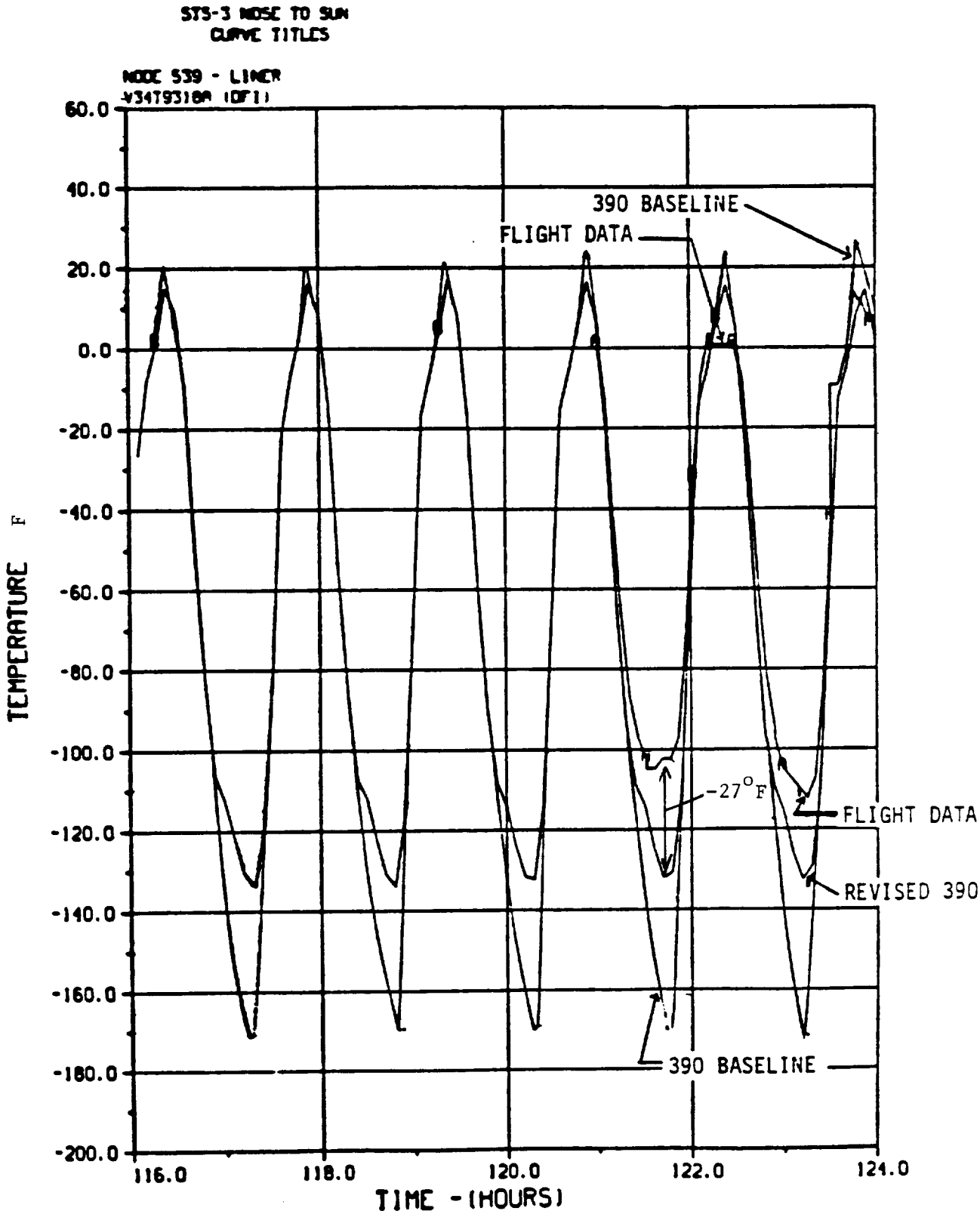


FIGURE 8-16. STS-3 Nose-to-Sun Flight Data vs. "Baseline" and "Revised" 390 Node TMM Liner (Node 539) Predictions

8.2.5 Correlation of Top-Sun Data

The correlation of the Top-Sun temperatures for STS-3 was performed by Rockwell International/Houston. Table 8-6 provides the details on the data used for Figures 8-17 and 8-18. It is believed that the flight data used for these figures were obtained from TMS tapes, which accounts for the sparsity of the data. This makes the correlation task difficult. The data in the table represents the best estimate of the correlation.

TABLE 8-6
STS-3 Top-Sun Phase Temperature Correlations

Figure	Mission Phase	Msmt #	Location	Reference	Temp Variation
8-17	On-Orbit	V34T9318	Fwd Prt Lin	SEH-ITA 82-277	36 deg F
8-18		V34T9325	Fwd Stb Bld		17 deg F
8-19		unknown	Liner	SEH-ITA 82-111	13 deg F
8-20		V34T9317	Wire Tray		16 deg F

8.2.6 Correlation of Entry Data

The specifics for this phase are presented in Table 8-7 and the plotted data is presented in Figures 8-21 thru 8-26. The variations are 16,25,11,17,11, and 10 deg F, respectively.

TABLE 8-7
Entry Phase Temperature Correlations

Figure	Mission Phase	Flight #	Msmt #	Location	Reference
8-21	Entry	STS-2	V34T9310	Liner	SEH-ITA 82-111
8-22			V34T9312		
8-23		STS-3	V34T9312		SEH-ITA 82-277
8-24			V34T9318		
8-25			V34T9325	Blkhd	
8-26			V34T9327		

8.2.7 Correlation of Postlanding Data

Figure 8-27 presents the correlation between the flight data and the predicted temperatures via the 390 node model.The maximum variation is 2.5 deg F.

8.3 THERMAL MATH MODEL REVISIONS

Prior to attempting to correlate the prediction temperatures of the 390 node thermal math model and the actual flight temperature data for STS-3, Rockwell International/Houston made the following baseline changes to the TMM:

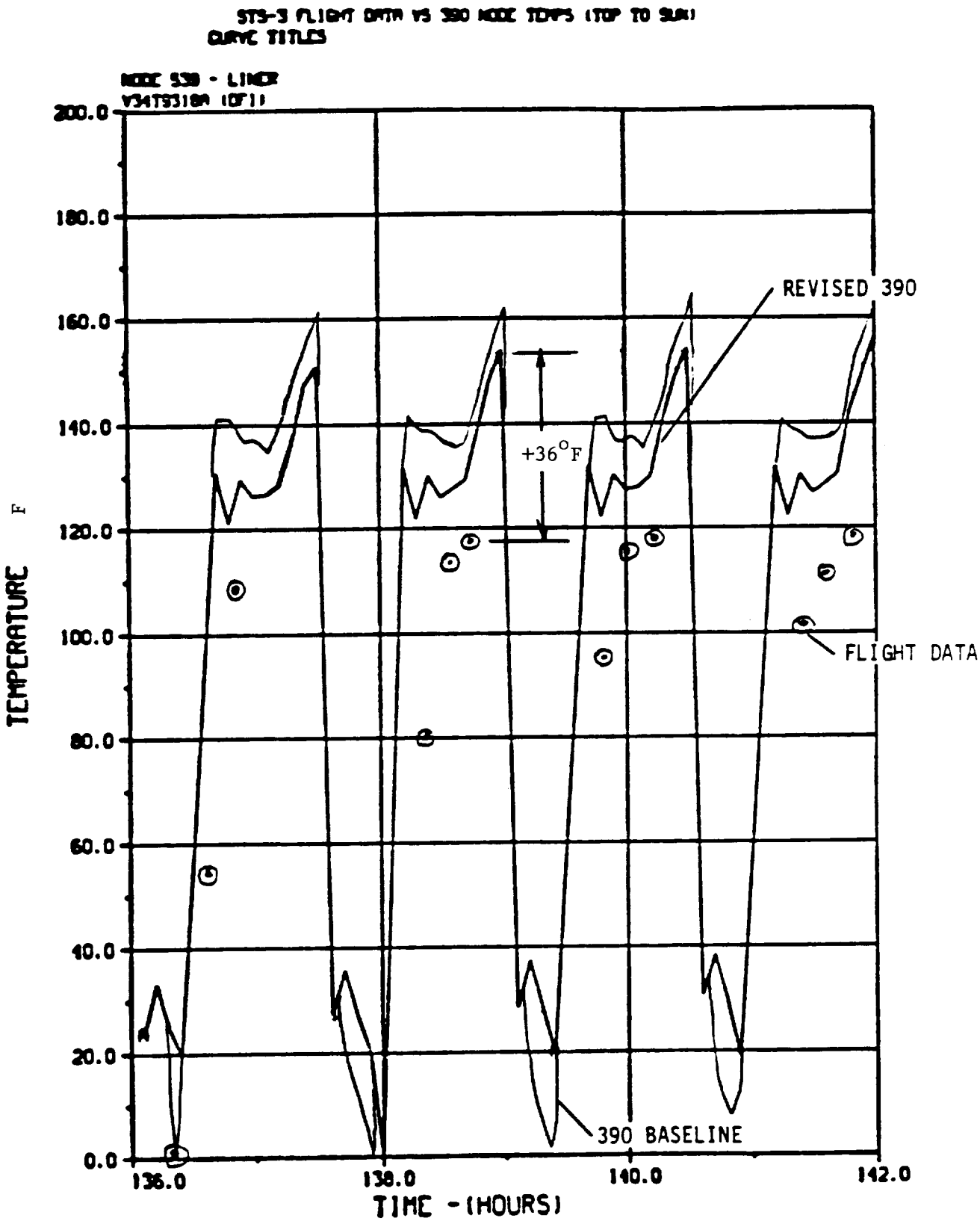


FIGURE 8-17. Top-to-Sun Liner Temperatures vs. 390 Node Baseline and Revised TMM Predictions (Node 539)

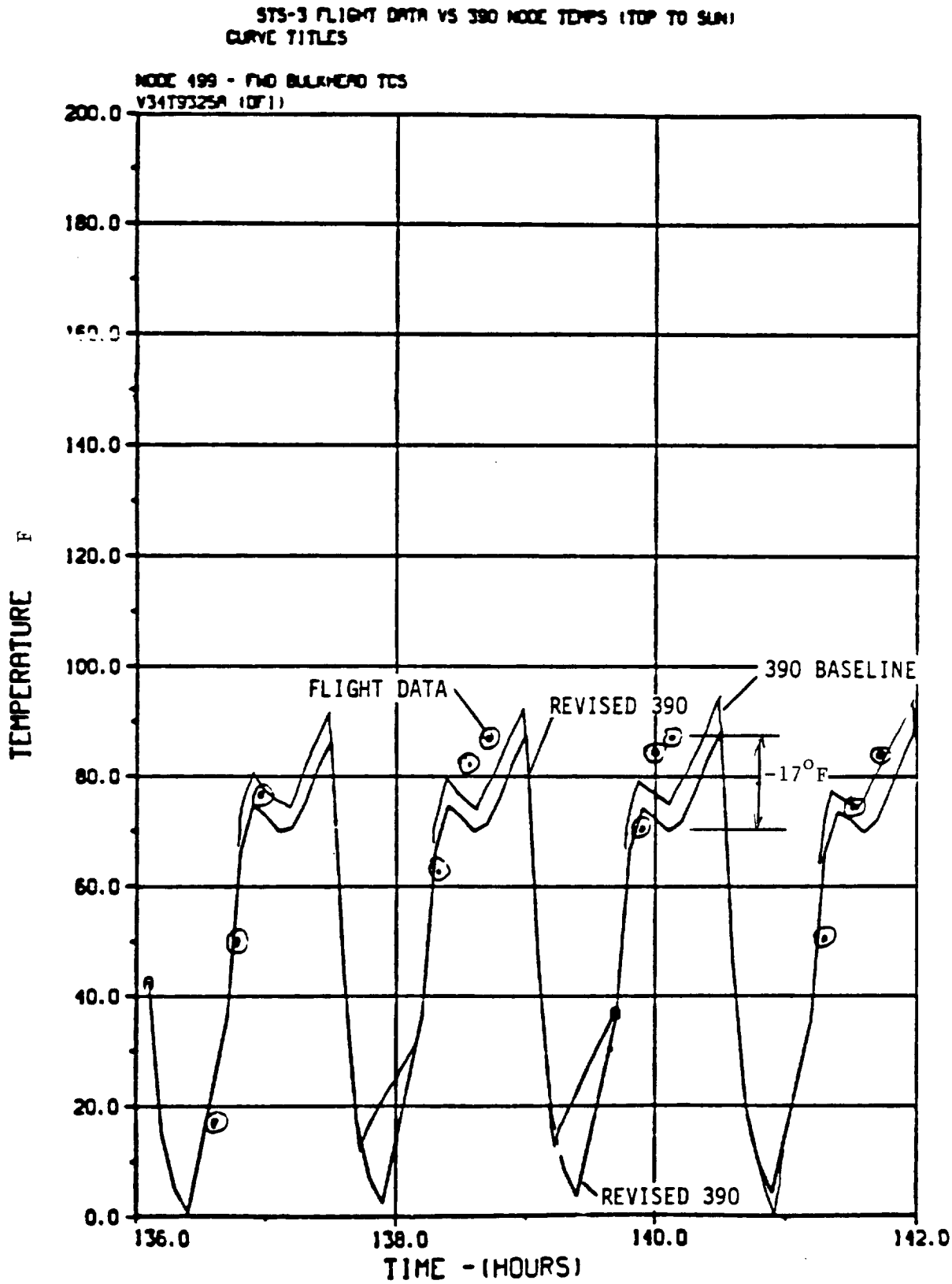


FIGURE 8-18. "Baseline" and "Revised" 390 Node TMM Forward Bulkhead Insulation Predictions vs. STS-3 Top-to-Sun Flight Data

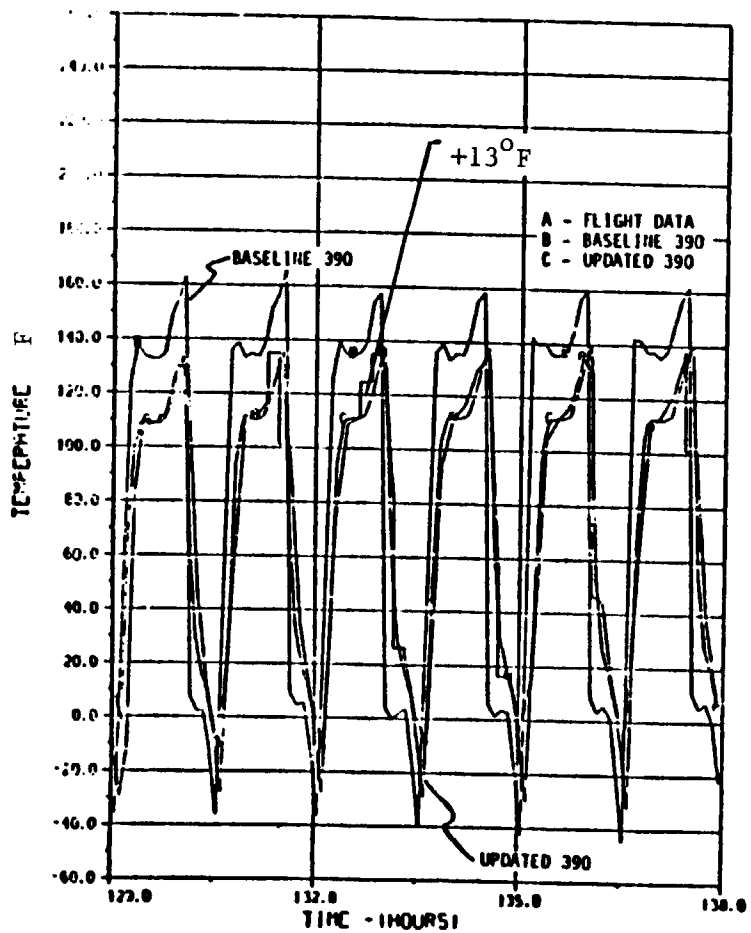


FIGURE 8-19. STS-3 FLIGHT DATA VS 390-NODE PREDICTIONS TOP-SUN ALTITUDE, LINER @ X_0=670

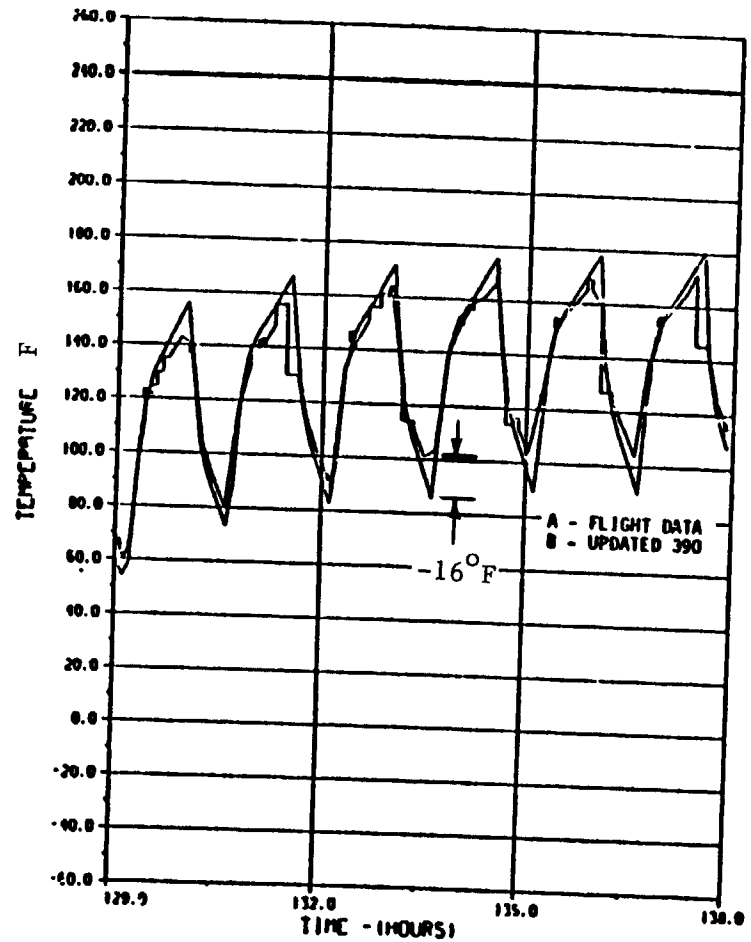


FIGURE 8-20. STS-3 FLIGHT DATA VS 390-NODE PREDICTIONS TOP-SUN ALTITUDE, WIRE TRAY

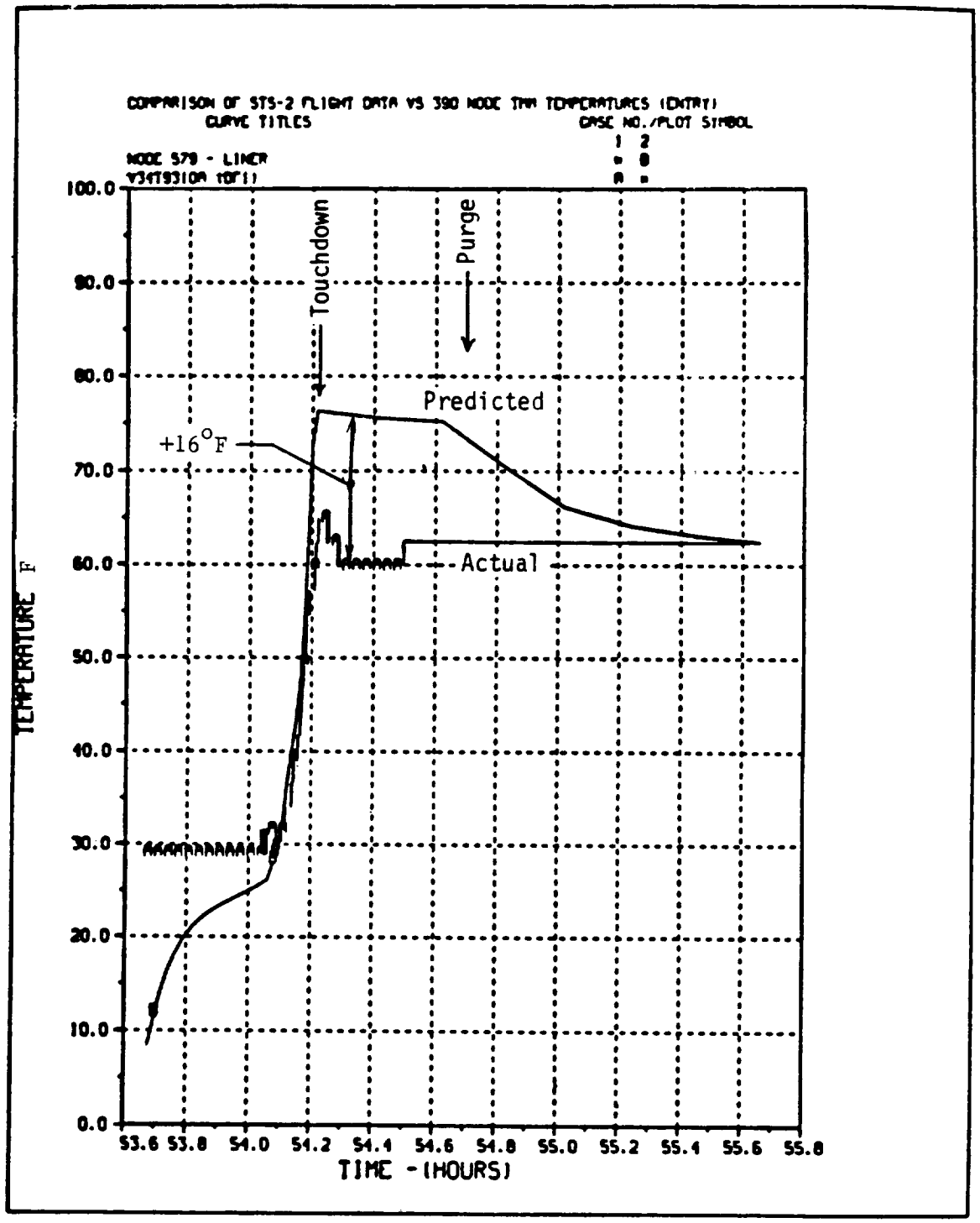


FIGURE 8-21. STS-2 ENTRY FLIGHT DATA VS. 390 TMM (NODE 579) LINER PREDICTIONS

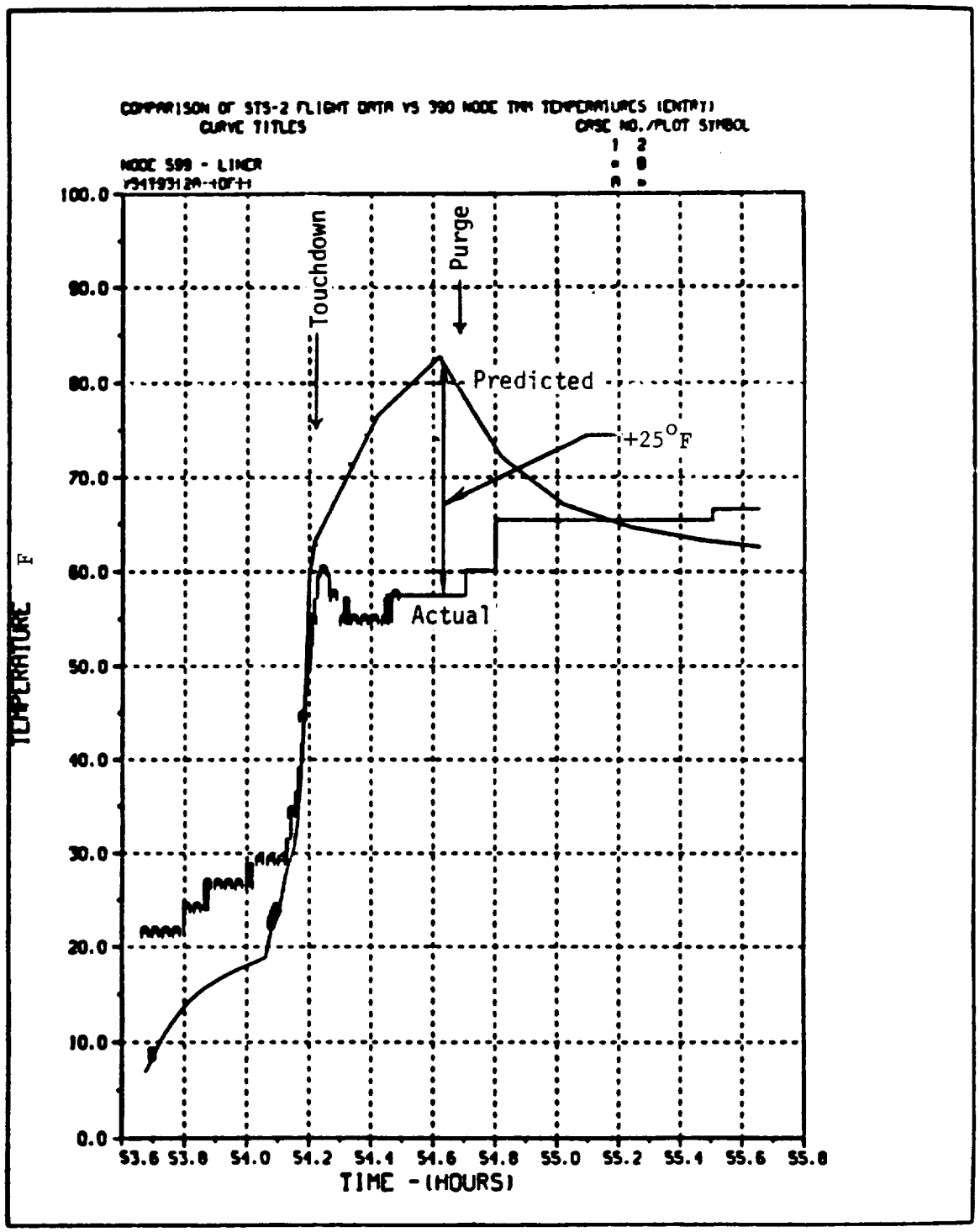


FIGURE 8-22. STS-2 ENTRY FLIGHT DATA VS. 390 TMM (NODE 599) LINER PREDICTIONS

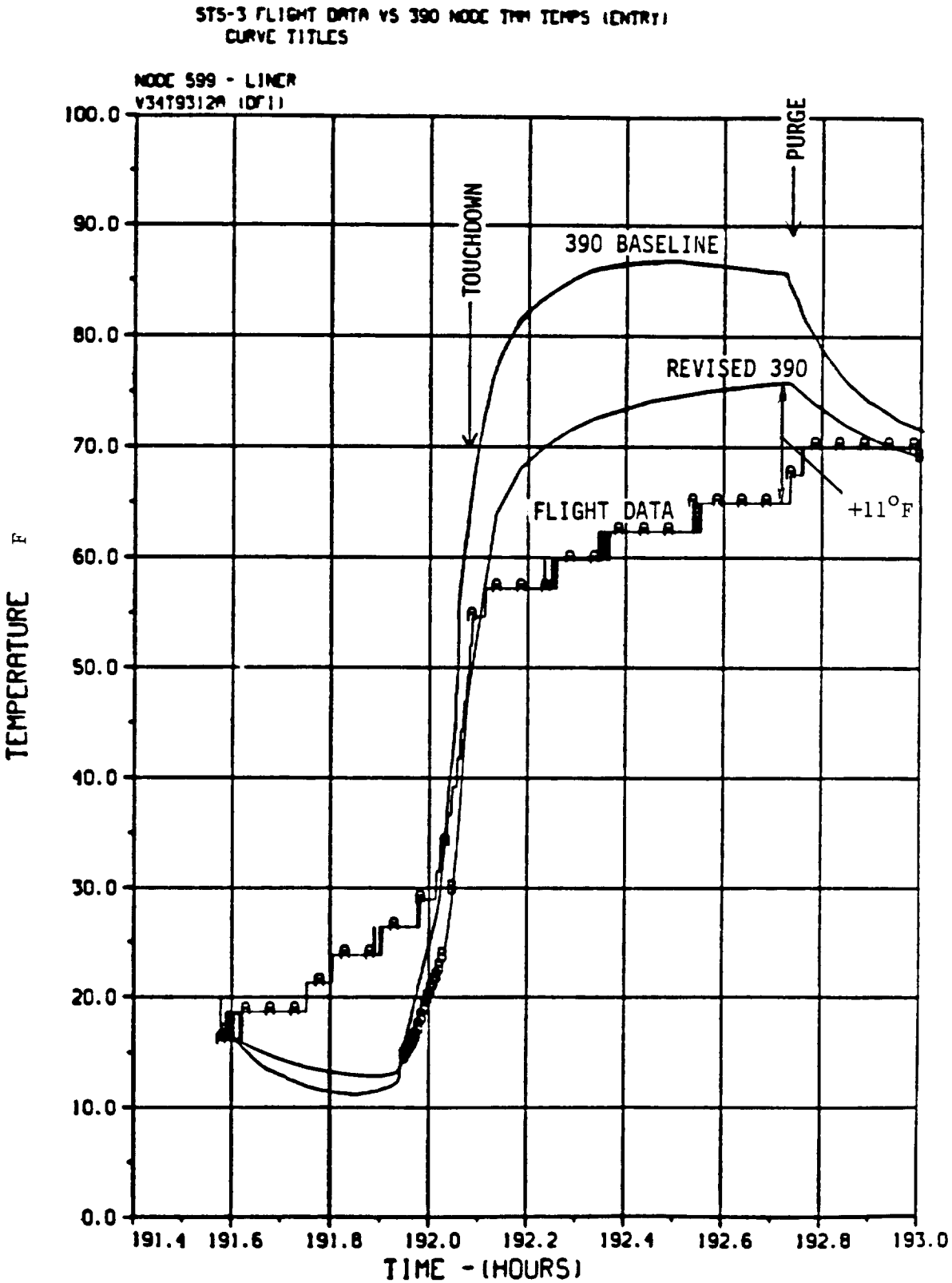


FIGURE 8-23. "Baseline" and "Revised" 390 Node TMM Liner Predictions (Node 599) vs. STS-3 Entry Flight Data

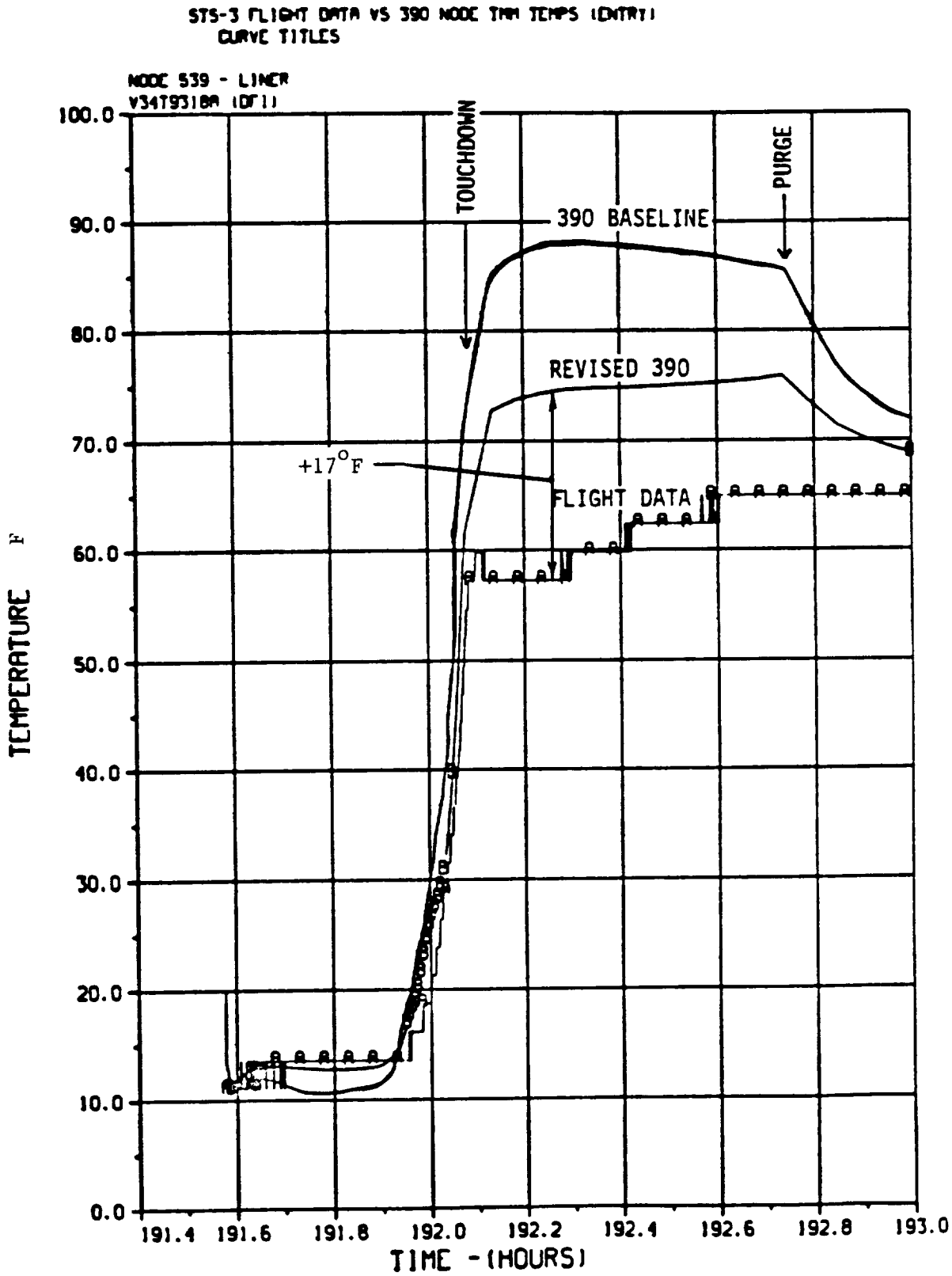


FIGURE 8-24. "Baseline" and "Revised" 390 Node TMM Liner Predictions (Node 539) vs. STS-3 Entry Flight Data

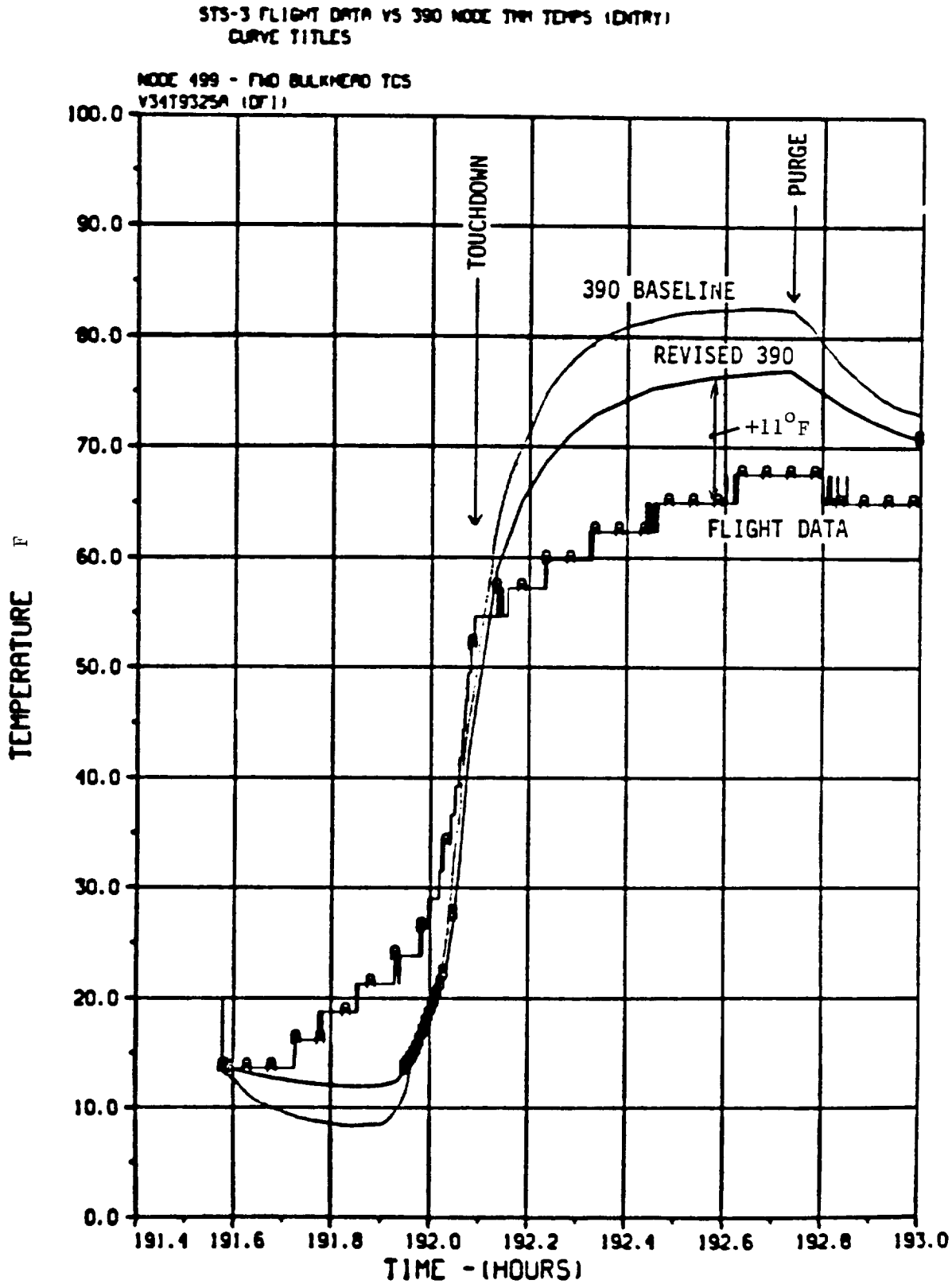


FIGURE 8-25 "Baseline" and "Revised" 390 Node TMM Forward Bulkhead Insulation (Node 499) vs. STS-3 Entry Flight Data

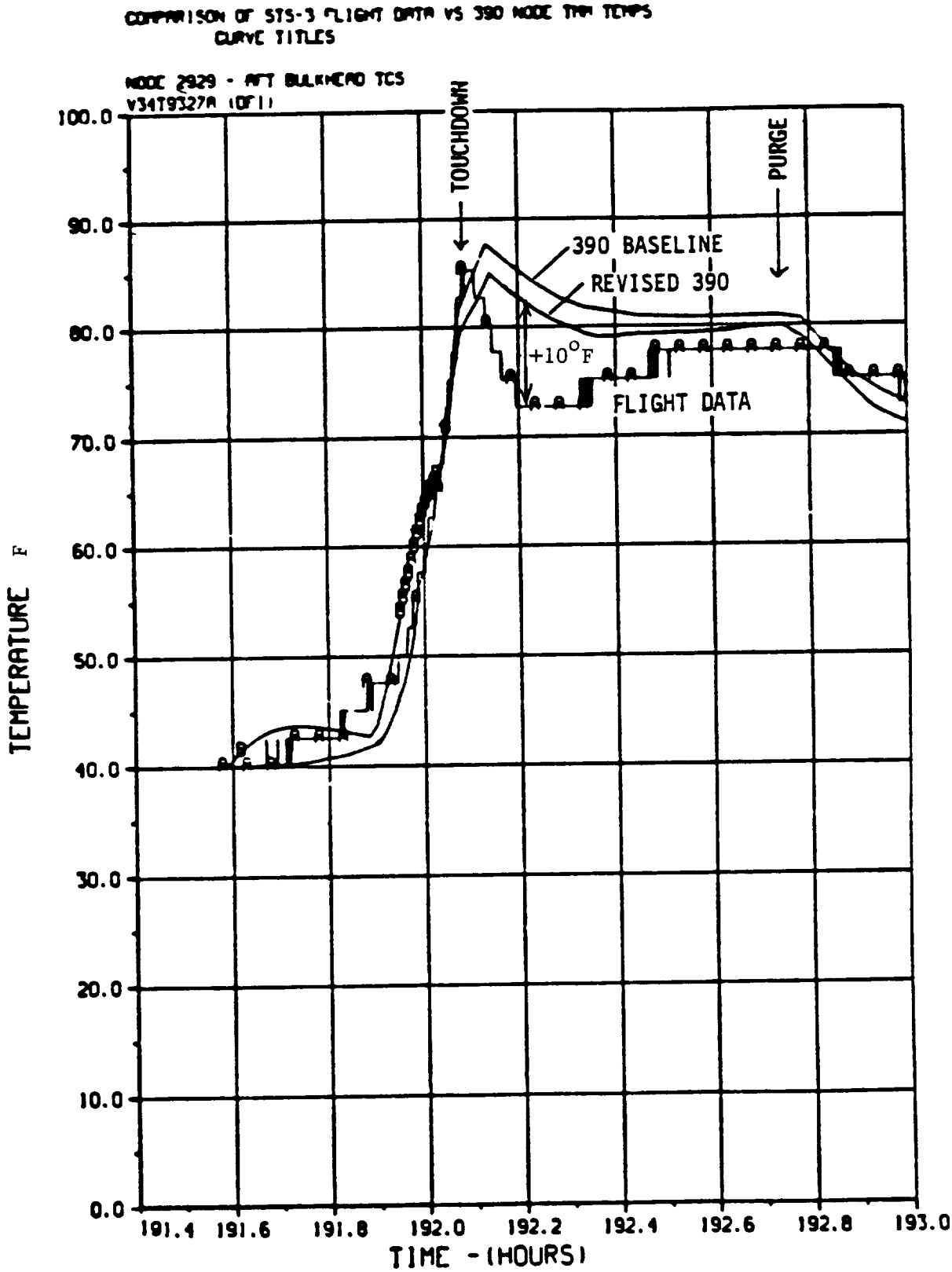


FIGURE 8-26. "Baseline" and "Revised" 390 Node TMM Aft Bulkhead Insulation (Node 2929) vs. STS-3 Entry Flight Data

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OF POOR QUALITY

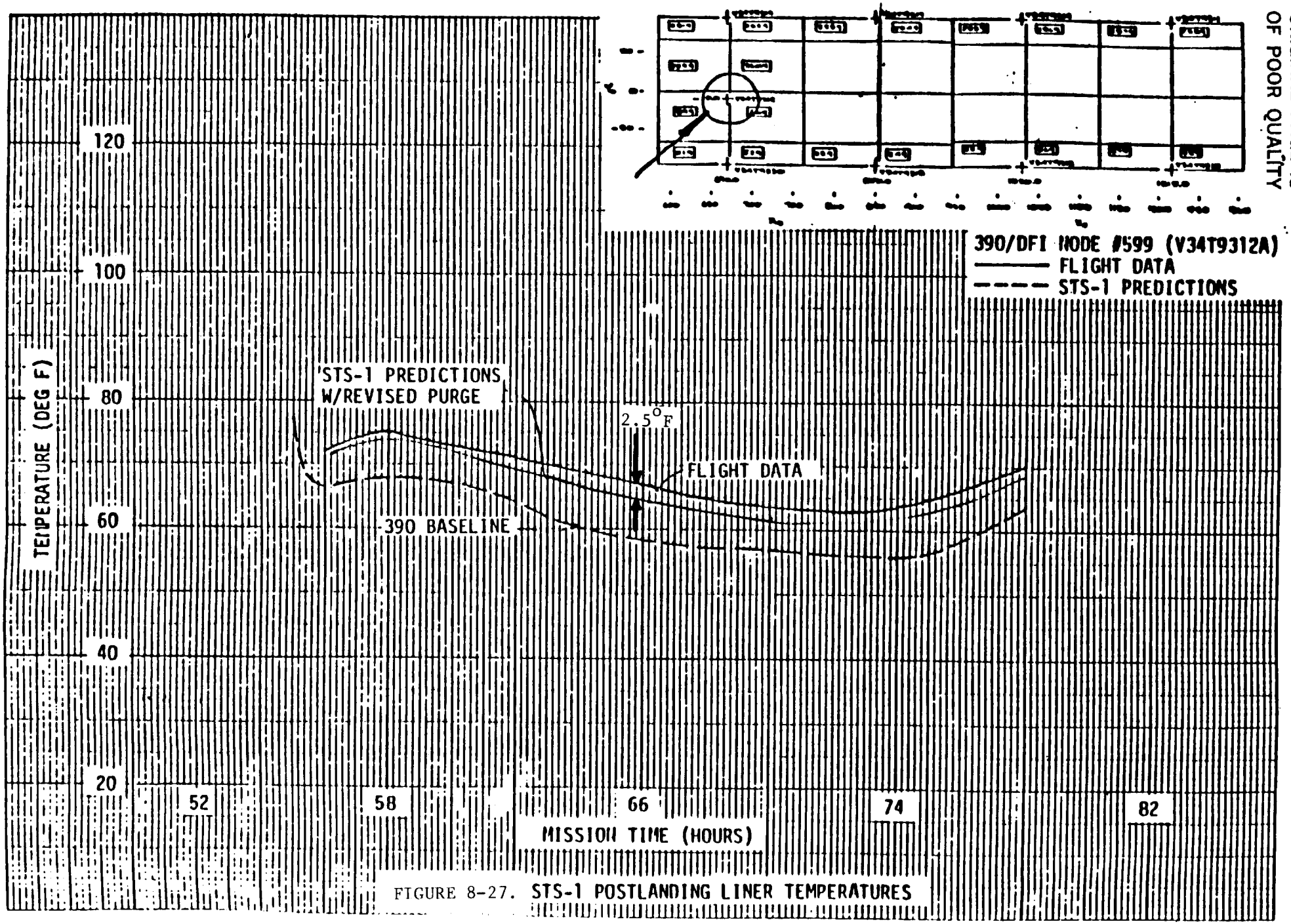

FIGURE 8-27. STS-1 POSTLANDING LINER TEMPERATURES

Most payload bay surface temperatures were initialized with flight data,the remainder were initialized at 70 deg F which was very close to the average environmental temperature.

STS-3 flight data was used to drive the Orbiter's structure during the ascent phase (0-.25 hours).

Heating rates from a ZLV Attitude were applied to the external TPS from .25 to 2.0 hours.

Fuel cell heat rejection logic was included.

These changes were deemed necessary even if the TMM provided a close simulation of the Orbiter midsection and the thermal environment. The computer run with the above described changes is generally referred to as the baseline run. Additional changes to the TMM were recommended by Rockwell International /Houston after studying the results of the correlations presented in the previous sections. These changes are relevant to the payload bay thermal environment. The changes recommended by RI/Houston and the basis for the changes are summarized in Table 8-8. As a consequence of these changes, the authors anticipate the effects indicated in the table.

TABLE 8-8
Thermal Math Model Revisions

Change	Basis for Change	Anticipated Effect
Increase masses of MLI and TG15000 insulation by a factor of 1.5-2.0	Improved Mass data from RI/Downey Weights Group	Improved correlation in transient temperatures
Increase MLI and TG15000 conductivity values.	Estimated slower decay rate in pressure in MLI and TG15000 insulation	Improved temperature correlation during expansion cooling in ascent & on-orbit phase
Include boundary effects of fwd lower bay equipment	To complete thermal model	Improved correlation in postlanding phase
Revise entry vent air inlet temperature curve and ascent air temp equations	To improve temperature accuracy and computation	Improved correlation of entry and ascent phases
Revise solar absorptance and IR emittance values of the liner	Better values now available	Improved Top-Sun and Tail-Sun correlations

In most of the figures in this section, the temperature predictions made from this baseline run were plotted along with the TMM prediction after additional changes were made to the model as well as the actual flight temperature measurements themselves.

8.4 THERMAL MATH MODEL VERIFICATION STATUS

The differences between the temperatures predicted by the 390 node TMM and the flight temperature measurements, taken from Figures 8-1 thru 8-27, are summarized in Table 8-9. The 5 baseline cases are excluded from the summarization discussion.

TABLE 8-9
Thermal Math Model ~ Flight Measurement Comparisons

Figure	Phase	Attitude	Flight	Msmt #	Location	Temp Diff	Remarks
8-1	PreInch	------	STS-2 -5	V34T9324 27	Bulkheads	+- 3 deg	
8-2	Ascent	Launch	STS-2	V43T9320	Liner	-24 deg	Baseline
8-3				V34T9325	Fwd Blkhd	-10 deg	
8-4				V34T9326	Aft Blkhd	-3 deg	
8-5			STS-3	V34T9312	Bot Liner	-6 deg	
8-6				V34T9318	Liner	0 deg	4 warmup
8-7				V34Y9324	Fwd Blkhd	-4 deg	
8-8				V34T9326	Aft Blkhd	-2 deg	
8-9	OnOrbit	Tail-Sun	STS-3	V34T9312	Bot Liner	+10 deg	
8-10				V34T9317	Wire Tray	-16 deg	
8-11				V34T9318	Liner	+17 deg	transnt
8-12						-11 deg	
8-13				V34T9325	Blkhd	-12 deg	
8-14	OnOrbit	Nose-Sun	STS-3	V34T9312	Liner	-9 deg	
8-15				V34T9317	Wire Tray	-11 deg	
8-16				V34T9318	Liner	-27 deg	
8-17	OnOrbit	Top-Sun	STS-3	V34T9318	Liner	+36 deg	Peaks
8-18				V34T9325	Blkhd	-17 deg	
8-19				unknown	Liner	+13 deg	
8-20				V34T9317	Wire Tray	-16 deg	Valley
8-21	Entry	------	STS-2	V34T9310	Liner	+16 deg	Baseline
8-22				V34T9312		+25 deg	
8-23			STS-3			+11 deg	
8-24				V34T9318		+17 deg	
8-25				V34T9325	Blkhd	+11 deg	
8-26				V34T9327		+10 deg	
8-27	Postldg	------	STS-1	V34T98312	Liner	-3 deg	

It is evident that the TMM predicted colder low temperatures than the flight measurements for the Ascent Phase with a range of 0-6 deg F. It predicted warmer temperatures than the actual flight measurements in the Entry Phase of the mission. The variations in this case having a range of 10-17 deg F. For the On-Orbit Phase of the mission, it appears that the TMM predicted colder temperatures for the Tail-Sun and Nose-Sun attitudes by approximately 10-27 deg F. In general, the TMM overpredicted on the higher temperatures and underpredicted on the lower temperatures for the Top-Sun cyclic temperature variations. The range of temperature variations being between 13-36 deg F. In view of the fact that the correlation work described in this section is preliminary in nature and the recommended changes have not been permanently incorporated in the 390 node model, the following recommendations are offered for consideration:

The verification studies of the TMMs be regarded as partially verified.

All the studies proposed by Rockwell International/Houston as listed in Table 8-10 below be implemented and all the proposed modifications to the TMMs be incorporated,if not already done so. The emphasis of the correlation effort should be based on the basic physics of the phenomena rather than trying to get precise agreement between the predicted and actual flight temperatures for all phases of the mission.It is noted that the size of a typical node ,such as node 531 for the forward starboard side liner is 30 square feet.

TABLE 8-10 THERMAL MATH MODEL PROPOSED STUDIES (1)
* Study on Entry Structural Drivers
* Study on Bulkhead Structures as Boundary Nodes
* Evaluation of Optical Properties of Payload Bay Liner
* Correlation Of TMM Predictions with STS-4 and STS-5 Flight Data
* Establish Improved Correlations for Lower Bay Equipment
* Study the Greenhouse Effect on the RTDs
* Finalize a Correlation Report
Note (1):A majority of these studies were completed prior to the release of this summary report.

9.0 CONCLUSIONS AND RECOMMENDATIONS

In the conduction of this task, JPL has collected and organized the available temperature data relating to the Shuttle Payload Bay thermal environment. The methodology used for the data reduction, analysis, and documentation has proven adequate for the task.

Due to time and resource limitations, flight temperature data for the payload bay longerons, trunnions and bridge fittings are not covered in this report. Evaluation of this data along with an evaluation of the Beta angle effect on flight temperatures could prove to be an important adjunct to this study. Furthermore, the review of the Thermal Math Models conducted herein was a cursory one because of the limited resources and essentially represents a critique of Rockwell's correlation effort. A more complete review would entail an independent evaluation of the thermal nodal network, the calculation of the thermal conductances and the variations between actual flight temperatures and those predicted by the model.

With respect to the nature and availability of the temperature data relating to the Shuttle payload bay, it would appear that for multi-flown flight attitudes sufficient data exists to predict the thermal environment. However, this is not necessarily true of the less flown flight attitudes where a sparsity of data exists. The least understood aspect of the payload bay thermal environment may well be the mutual influence between the payload bay and the payloads and how this effects the temperatures. This would require an integrated thermal analysis prediction model and verification by flight data.

The results obtained may be utilized to effect a start in establishing a Thermal Environment Data Base for Shuttle Payloads. The completion of this task has resulted in:

An improved definitive Shuttle Payload Bay Thermal Environment.

The initiation of a user oriented STS Payload Bay Temperature Data Base.

Making available to a community of users, via this report, a limited numerical and graphical data base that defines the thermal environment of the shuttle payload bay.

A review of the Thermal Math Models in use for predicting flight temperatures.

In general,the flight data examined in this task would indicate that the thermal environment of the Orbiter Payload Bay is, as frequently described in workshops, technical paper presentations, etc., a "benign" environment for most payloads. The reduction, evaluation, presentation and compilation of the data in this report provide a rational basis for making that judgement.

Based on the findings obtained during the conduct of this task, the following recommendations are advanced:

In performing tasks of this nature, provide access to the raw and primary data tapes to the project monitor in addition to any tabulation of data points and plots. This will provide a measure of flexibility in the utilization of the data to suit the project needs.

Extend the thermal environmental definition effort to include the conduction environment. This would involve the organization, evaluation, and presentation of the flight temperature data related to the longerons, bridge fittings, and trunnions which serve as heat conduction paths to and from the payloads.

Perform an in-depth analysis of the"Greenhouse Effect" and correlate the results with flight data.

Consider a comprehensive update of the temperature and thermal properties data presented in JSC Report 07700,Vol XIV - "Space Shuttle System Payload Accommodations" with that presented in ICD 2-19001 - "Shuttle Orbiter/Payload Standard Interfaces" to eliminate conservatism.

Conduct a study of the payload bay/payload interaction effects on the temperature using available flight data. In this regard, it is recommended that future flight data include payload temperature data as well as payload bay data.

Evaluate the accuracy of the flight instrumentation system and its related data.

Improve the overall documentation and distribution of flight temperature data and its related reduction and interpretation.

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APPENDIX A

Shuttle Environment - Data Files

TABLE A-1. JPL SHUTTLE THERMAL ENVIRONMENT DATA FILES

JPL FILE NO	TEMP SENSOR	STS NO	MISSION PHASES	START MET (HRS)	END MET (HRS)	ATTITUDE	NO OF DATA PTS	MAX TEMP (F)	MIN TEMP (F)	DATA(1) SOURCE
f 1	V34T9310	STS-3	on-orbit	104.00	116.00	nose sun	55	3.69	-47.30	1
f 2	V34T9311	STS-3	on-orbit	104.00	116.00	nose sun	58	-14.26	-44.80	1
f 3	V34T9312	STS-3	on-orbit	104.00	116.00	nose sun	68	54.21	-115.27	1
f 6	V34T9317	STS-3	on-orbit	104.00	116.00	nose sun	54	-26.82	-72.55	1
f 7	V34T9318	STS-3	on-orbit	104.00	116.00	nose sun	67	18.92	-117.69	1
f 8	V34T9319	STS-3	on-orbit	104.00	116.00	nose sun	76	0.91	-55.02	1
f 9	V34T9320	STS-3	on-orbit	104.00	116.00	nose sun	68	40.01	-110.30	1
f 10	V34T9324	STS-3	on-orbit	104.00	116.00	nose sun	68	42.32	-89.36	1
f 11	V34T9325	STS-3	on-orbit	104.00	116.00	nose sun	77	57.97	-110.75	1
f 12	V34T9326	STS-3	on-orbit	104.00	116.00	nose sun	57	-9.32	-75.32	1
f 13	V34T9327	STS-3	on-orbit	104.00	116.00	nose sun	53	7.91	-90.73	1
f 14	V34T9310	STS-3	on-orbit	121.00	124.00	nose sun	37	-1.33	-42.25	1
f 15	V34T9311	STS-3	on-orbit	121.00	124.00	nose sun	45	-16.82	-39.57	1
f 16	V34T9312	STS-3	on-orbit	121.00	124.00	nose sun	43	46.80	-108.10	1
f 19	V34T9317	STS-3	on-orbit	121.00	124.00	nose sun	39	-29.45	-69.78	1
f 20	V34T9318	STS-3	on-orbit	121.00	124.00	nose sun	42	13.94	-112.83	1
f 21	V34T9319	STS-3	on-orbit	121.00	124.00	nose sun	45	-4.20	-52.29	1
f 22	V34T9320	STS-3	on-orbit	121.00	124.00	nose sun	42	31.54	-105.57	1
f 23	V34T9324	STS-3	on-orbit	121.00	124.00	nose sun	45	34.11	-82.45	1
f 24	V34T9325	STS-3	on-orbit	121.00	124.00	nose sun	54	46.80	-102.43	1
f 25	V34T9326	STS-3	on-orbit	121.00	124.00	nose sun	44	-14.22	-52.43	1
f 26	V34T9327	STS-3	on-orbit	121.00	124.00	nose sun	38	-15.06	-57.93	1
f 27	V34T9310	STS-3	on-orbit	140.00	142.00	top sun	10	148.14	87.98	1
f 28	V34T9311	STS-3	on-orbit	140.00	142.00	top sun	11	172.07	106.50	1
f 29	V34T9312	STS-3	on-orbit	140.00	142.00	top sun	11	252.46	-18.23	1
f 32	V34T9317	STS-3	on-orbit	140.00	142.00	top sun	10	106.48	38.89	1
f 33	V34T9318	STS-3	on-orbit	140.00	142.00	top sun	10	135.16	1.11	1
f 34	V34T9319	STS-3	on-orbit	140.00	142.00	top sun	14	150.84	69.96	1
f 35	V34T9320	STS-3	on-orbit	140.00	142.00	top sun	10	130.15	-11.90	1
f 36	V34T9324	STS-3	on-orbit	140.00	142.00	top sun	11	127.21	8.58	1
f 37	V34T9325	STS-3	on-orbit	140.00	142.00	top sun	12	106.79	-6.89	1
f 38	V34T9326	STS-3	on-orbit	140.00	142.00	top sun	9	122.16	59.56	1

NOTES: (1) DATA SOURCE 1 = COMPUTER COMPATIBILITY TAPE (CCT)
DATA SOURCE 2 = JSC REPORT NO 19956
DATA SOURCE 3 = WORKSHOPS, CONVENTIONS, PERSONAL COMMUNICATIONS, ETC

TABLE A-1. JPL SHUTTLE THERMAL ENVIRONMENT DATA FILES (CONT)

JPL FILE NO	TEMP SENSOR	STS NO	MISSION PHASES	START MET (HRS)	END MET (HRS)	ATTITUDE	NO OF DATA PTS	MAX TEMP (F)	MIN TEMP (F)	DATA(1) SOURCE
f 39	V34T9327	STS-3	on-orbit	140.00	142.00	top sun	13	118.27	40.20	1
f 42	V34T9312	STS-4	on-orbit	8.00	22.00	bot sun	84	52.52	-87.08	1
f 43	V34T9313	STS-4	on-orbit	8.00	22.00	bot sun	54	29.06	-24.64	1
f 44	V34T9314	STS-4	on-orbit	8.00	22.00	bot sun	44	28.82	-19.88	1
f 45	V34T9316	STS-4	on-orbit	8.00	22.00	bot sun	43	31.89	-12.13	1
f 47	V34T9318	STS-4	on-orbit	8.00	22.00	bot sun	85	67.52	-80.27	1
f 48	V34T9319	STS-4	on-orbit	8.00	22.00	bot sun	44	44.64	-27.29	1
f 50	V34T9324	STS-4	on-orbit	8.00	22.00	bot sun	69	16.17	-82.90	1
f 51	V34T9325	STS-4	on-orbit	8.00	22.00	bot sun	88	13.23	-186.89	1
f 52	V34T9326	STS-4	on-orbit	8.00	22.00	bot sun	65	18.71	-52.43	1
f 53	V34T9310	STS-4	on-orbit	88.00	100.00	tail sun	87	39.54	-35.11	1
f 54	V34T9311	STS-4	on-orbit	88.00	100.00	tail sun	85	34.39	-29.53	1
f 55	V34T9312	STS-4	on-orbit	88.00	100.00	tail sun	96	52.02	-89.82	1
f 56	V34T9313	STS-4	on-orbit	88.00	100.00	tail sun	92	57.20	-31.95	1
f 57	V34T9314	STS-4	on-orbit	88.00	100.00	tail sun	91	54.87	-37.16	1
f 58	V34T9316	STS-4	on-orbit	88.00	100.00	tail sun	83	54.83	-29.72	1
f 59	V34T9317	STS-4	on-orbit	88.00	100.00	tail sun	81	21.48	-62.51	1
f 60	V34T9318	STS-4	on-orbit	88.00	100.00	tail sun	95	39.85	-92.16	1
f 61	V34T9319	STS-4	on-orbit	88.00	100.00	tail sun	98	23.83	-39.46	1
f 62	V34T9320	STS-4	on-orbit	88.00	100.00	tail sun	95	42.06	-92.71	1
f 63	V34T9324	STS-4	on-orbit	88.00	100.00	tail sun	101	44.65	-82.83	1
f 64	V34T9325	STS-4	on-orbit	88.00	100.00	tail sun	101	8.83	-97.32	1
f 65	V34T9326	STS-4	on-orbit	88.00	100.00	tail sun	94	42.08	-69.77	1
f 66	V34T9327	STS-4	on-orbit	88.00	100.00	tail sun	92	50.43	-87.95	1
f 67	V34T9310	STS-4	on-orbit	120.00	136.00	tail sun	112	-14.18	-52.40	1
f 68	V34T9311	STS-4	on-orbit	120.00	136.00	tail sun	124	-24.35	-52.49	1
f 69	V34T9312	STS-4	on-orbit	120.00	136.00	tail sun	139	3.92	-99.62	1
f 70	V34T9313	STS-4	on-orbit	120.00	136.00	tail sun	131	-11.72	-54.84	1
f 71	V34T9314	STS-4	on-orbit	120.00	136.00	tail sun	129	-11.76	-59.82	1
f 72	V34T9316	STS-4	on-orbit	120.00	136.00	tail sun	110	-14.30	-54.75	1
f 73	V34T9317	STS-4	on-orbit	120.00	136.00	tail sun	113	-26.79	-82.57	1
f 74	V34T9318	STS-4	on-orbit	120.00	136.00	tail sun	128	-6.53	-107.47	1

NOTES: (1) DATA SOURCE 1 = COMPUTER COMPATIBILITY TAPE (CCT)
DATA SOURCE 2 = JSC REPORT NO 19956
DATA SOURCE 3 = WORKSHOPS, CONVENTIONS, PERSONAL COMMUNICATIONS, ETC

TABLE A-1. JPL SHUTTLE THERMAL ENVIRONMENT DATA FILES (CONT)

JPL FILE NO	TEMP SENSOR	STS NO	MISSION PHASES	START MET (HRS)	END MET (HRS)	ATTITUDE	NO OF DATA PTS	MAX TEMP (F)	MIN TEMP (F)	DATA(1) SOURCE
f 75	V34T9319	STS-4	on-orbit	120.00	136.00	tail sun	143	-24.27	-59.83	1
f 76	V34T9320	STS-4	on-orbit	120.00	136.00	tail sun	126	-8.87	-104.93	1
f 77	V34T9324	STS-4	on-orbit	120.00	136.00	tail sun	154	-21.82	-97.14	1
f 78	V34T9325	STS-4	on-orbit	120.00	136.00	tail sun	147	42.12	-110.47	1
f 79	V34T9326	STS-4	on-orbit	120.00	136.00	tail sun	135	13.77	-89.77	1
f 80	V34T9327	STS-4	on-orbit	120.00	136.00	tail sun	136	32.66	-103.51	1
f102	V34T9312	STS-1	on-orbit	0.00	60.00	+zlv ypop	214	285.33	-80.62	2
f116	V34T9312	STS-2	on-orbit	0.00	72.00	+zlv ypop	181	99.12	-100.00	2
f128	V34T9310	STS-3	on-orbit	0.00	180.00	multiple	338	159.48	-87.10	2
f130	V34T9312	STS-3	on-orbit	0.00	180.00	multiple	380	257.03	-143.38	2
f135	V34T9318	STS-3	on-orbit	0.00	180.00	multiple	357	143.01	-158.88	2
f136	V34T9319	STS-3	on-orbit	0.00	180.00	multiple	336	158.72	-99.50	2
f137	V34T9320	STS-3	on-orbit	0.00	180.00	multiple	357	138.39	-141.91	2
f138	V34T9324	STS-3	on-orbit	0.00	180.00	multiple	362	137.95	-124.42	2
f139	V34T9325	STS-3	on-orbit	0.00	180.00	multiple	368	119.59	-138.76	2
f140	V34T9326	STS-3	on-orbit	0.00	180.00	multiple	345	121.92	-116.96	2
f141	V34T9327	STS-3	on-orbit	0.00	180.00	multiple	347	129.67	-128.02	2
f144	V34T9312	STS-4	on-orbit	0.00	180.00	multiple	415	202.94	-99.37	2
f158	V34T9312	STS-5	on-orbit	0.00	144.00	multiple	274	217.80	-115.81	2
f202	V34T9324	STS-2	prelaunch	0.00	13.11	launch	99	70.11	64.90	3
f205	V34T9327	STS-5	prelaunch	0.00	9.27	launch	29	83.17	62.96	3
f210	V34T9311	STS-1	ascent	0.00	3.00	ascent	22	80.63	5.78	3
f211	V34T9317	STS-1	ascent	0.00	3.00	ascent	24	80.35	3.12	3
f212	V34T9320	STS-1	ascent	0.00	6.00	ascent	50	83.06	-41.94	3
f213	V34T9310	STS-2	ascent	0.00	3.00	ascent	21	77.92	36.66	3
f214	V34T9320	STS-2	ascent	0.00	1.00	ascent	49	70.97	50.22	3
f215	V34T9325	STS-2	ascent	0.00	1.00	ascent	45	70.74	59.97	3
f216	V34T9326	STS-2	ascent	0.00	1.00	ascent	28	71.30	43.09	3
f217	V34T9312	STS-2	ascent	0.00	3.00	ascent	19	83.18	0.28	3
f218	V34T9312	STS-3	ascent	0.00	1.00	ascent	15	80.87	62.85	3
f219	V34T9318	STS-3	ascent	0.00	1.00	ascent	27	73.02	47.18	3
f220	V34T9324	STS-3	ascent	0.00	1.00	ascent	14	70.33	59.82	3

NOTES: (1) DATA SOURCE 1 = COMPUTER COMPATIBILITY TAPE (CCT)
DATA SOURCE 2 = JSC REPORT NO 19956
DATA SOURCE 3 = WORKSHOPS, CONVENTIONS, PERSONAL COMMUNICATIONS, ETC

TABLE A-1. JPL SHUTTLE THERMAL ENVIRONMENT DATA FILES (CONT)

JPL FILE NO	TEMP SENSOR	STS NO	MISSION PHASES	START MET (HRS)	END MET (HRS)	ATTITUDE	NO OF DATA PTS	MAX TEMP (F)	MIN TEMP (F)	DATA(1) SOURCE
f221	V34T9326	STS-3	ascent	0.00	1.00	ascent	24	72.97	49.78	3
f230	V34T9318	STS-3	on-orbit	12.00	18.00	tail sun	28	-22.49	-138.79	3
f231	V34T9312	STS-3	on-orbit	28.00	36.00	tail sun	45	42.03	-149.75	3
f232	V34T9318	STS-3	on-orbit	28.00	36.00	tail sun	52	46.27	-159.41	3
f233	V34T9317	STS-3	on-orbit	28.00	36.00	tail sun	47	13.48	-124.34	3
f234	V34T9325	STS-3	on-orbit	28.00	36.00	tail sun	60	41.33	-145.00	3
f235	V34T9312	STS-1	on-orbit	12.00	24.00	+zlv ypop	55	278.93	-79.26	3
f236	V34T9312	STS-2	on-orbit	12.00	30.00	+zlv ypop	32	57.12	21.08	3
f237	V34T9320	STS-2	on-orbit	12.00	20.00	+zlv ypop	46	73.62	16.18	3
f238	V34T9312	STS-2	on-orbit	20.00	40.00	+zlv ypop	78	109.29	-80.39	3
f239	V34T9312	STS-3	on-orbit	112.00	122.00	nose sun	80	41.60	-109.97	3
f240	V34T9312	STS-3	on-orbit	116.00	124.00	nose sun	36	45.00	-107.14	3
f241	V34T9318	STS-3	on-orbit	116.00	124.00	nose sun	37	13.27	-113.06	3
f242	V34T9317	STS-3	on-orbit	116.00	124.00	nose sun	37	-31.97	-69.87	3
f243	V34T9312	STS-3	on-orbit	128.33	143.33	top sun	182	263.03	-15.03	3
f260	V34T9311	STS-1	entry	50.00	62.00	entry	41	75.62	18.62	3
f261	V34T9312	STS-1	entry	48.00	88.00	entry	35	75.11	0.55	3
f262	V34T9313	STS-1	entry	48.00	88.00	entry	85	91.53	13.83	3
f263	V34T9312	STS-2	entry	48.00	65.00	entry	75	67.57	-22.10	3
f264	V34T9312	STS-2	entry	53.60	55.80	entry	36	66.60	21.88	3
f265	V34T9310	STS-2	entry	53.60	55.80	entry	26	65.66	29.64	3
f266	V34T9312	STS-3	entry	188.00	200.00	entry	47	72.86	16.00	3
f267	V34T9318	STS-3	entry	191.40	193.00	entry	36	65.09	11.25	3
f268	V34T9312	STS-3	entry	191.40	193.00	entry	44	69.87	16.61	3
f269	V34T9325	STS-3	entry	191.40	193.00	entry	45	67.42	13.56	3
f270	V34T9327	STS-3	entry	191.40	193.00	entry	46	85.19	39.91	3
f280	V34T9312	STS-1	postldg	0.00	25.00	postldg	147	75.09	56.95	3
f281	V34T9312	STS-1	postldg	52.00	82.00	postldg	36	75.56	63.31	3
f290	pressure	STS-1	launch	0.00	0.03	launch	49	15.05	0.07	3
f291	pressure	STS-2	entry	0.00	0.56	entry	120	13.66	0.17	3

NOTES: (1) DATA SOURCE 1 = COMPUTER COMPATIBILITY TAPE (CCT)
DATA SOURCE 2 = JSC REPORT NO 19956
DATA SOURCE 3 = WORKSHOPS, CONVENTIONS, PERSONAL COMMUNICATIONS, ETC

Table A-2. JPL Shuttle Thermal Environment Computer File List

dgt.c	f24	f62	g210.g	g37.g	g910.g	p14.f	p270.f	p9.f
f0	f240	f63	g211.g	g38.g	g911.g	p140.f	p28.f	p900.f
f00	f241	f64	g212.g	g39.g	g912.g	p141.f	p280.f	p900a.f
f1	f242	f65	g213.g	g42.g	g913.g	p144.f	p281.f	p901.f
f10	f243	f66	g214.g	g43.g	g914.g	p15.f	p29.f	p902.f
f102	f243a	f67	g215.g	g44.g	g915.g	p158.f	p290.f	p902a.f
f11	f25	f68	g216.g	g45.g	g916.g	p16.f	p291.f	p903.f
f116	f26	f69	g217.g	g47.g	g917.g	p19.f	p3.f	p904.f
f12	f260	f7	g218.g	g48.g	g918.g	p2.f	p32.f	p905.f
f128	f261	f70	g219.g	g50.g	g919.g	p20.f	p33.f	p906.f
f13	f262	f71	g22.g	g51.g	g920.g	p202k.f	p34.f	p907.f
f130	f262a	f72	g220.g	g52.g	g925.g	p205n.f	p35.f	p908.f
f135	f263	f73	g221.g	g53.g	g926.g	p21.f	p36.f	p909.f
f136	f264	f74	g23.g	g54.g	g930.g	p210.f	p37.f	p910.f
f137	f265	f75	g230.g	g55.g	g930a.g	p211.f	p38.f	p911.f
f138	f266	f76	g231.g	g56.g	g931.g	p212.f	p39.f	p912.f
f139	f267	f77	g232.g	g57.g	g931a.g	p213.f	p42.f	p913.f
f14	f268	f78	g233.g	g58.g	g932.g	p214.f	p43.f	p914.f
f140	f269	f79	g234.g	g59.g	g932a.g	p215.f	p44.f	p915.f
f141	f27	f8	g235.g	g6.g	g933.g	p216.f	p45.f	p916.f
f144	f270	f80	g236.g	g60.g	g933a.g	p217.f	p47.f	p917.f
f15	f28	f9	g237.g	g61.g	g934.g	p218.f	p48.f	p918.f
f158	f280	fdata	g238.g	g62.g	g935.g	p219.f	p50.f	p919.f
f16	f280a	filelist	g239.g	g63.g	g935a.g	p22.f	p51.f	p920.f
f19	f281	ftbl.f	g24.g	g64.g	g936.g	p220.f	p52.f	p925.f
f2	f29	ftmp1	g240.g	g65.g	g937.g	p221.f	p53.f	p926.f
f20	f290	ftmp2	g241.g	g66.g	g938.g	p23.f	p54.f	p930.f
f202k	f291	g1.g	g242.g	g67.g	g938a.g	p230.f	p55.f	p930a.f
f205n	f3	g10.g	g243.g	g68.g	g939.g	p231.f	p56.f	p931.f
f21	f32	g102.g	g243a.g	g69.g	g939a.g	p232.f	p57.f	p931a.f
f210	f33	g11.g	g25.g	g7.g	g940.g	p233.f	p58.f	p932.f
f211	f34	g116.g	g26.g	g70.g	g940a.g	p234.f	p59.f	p932a.f
f212	f35	g12.g	g260.g	g71.g	glbl.g	p235.f	p6.f	p933.f
f212a	f36	g128.g	g261.g	g72.g	glbl2.g	p236.f	p60.f	p933a.f
f213	f37	g13.g	g262.g	g73.g	junk	p237.f	p61.f	p934.f
f214	f38	g130.g	g263.g	g74.g	lbl.f	p238.f	p62.f	p935.f
f215	f39	g130a.g	g264.g	g75.g	lst	p239.f	p63.f	p935a.f
f216	f42	g130b.g	g265.g	g76.g	lst.f	p24.f	p64.f	p936.f
f217	f43	g135.g	g266.g	g77.g	makefile	p240.f	p65.f	p937.f
f218	f44	g136.g	g267.g	g78.g	order.f	p241.f	p66.f	p938.f
f219	f45	g137.g	g268.g	g79.g	p1.f	p242.f	p67.f	p938a.f
f22	f47	g138.g	g269.g	g8.g	p10.f	p243.f	p68.f	p939.f
f220	f48	g139.g	g27.g	g80.g	p102.f	p243a.f	p69.f	p939a.f
f221	f50	g14.g	g270.g	g9.g	p11.f	p25.f	p7.f	p940.f
f23	f51	g140.g	g28.g	g900.g	p116.f	p26.f	p70.f	renum.f
f230	f52	g141.g	g280.g	g900a.g	p12.f	p260.f	p71.f	roc.f
f231	f53	g144.g	g281.g	g901.g	p128.f	p261.f	p72.f	rt.f
f232	f54	g15.g	g29.g	g902.g	p13.f	p262.f	p73.f	sen.f
f233	f55	g158.g	g290.g	g902a.g	p130.f	p263.f	p74.f	text.f
f234	f56	g16.g	g291.g	g903.g	p130a.f	p264.f	p75.f	trt.f
f235	f57	g19.g	g3.g	g904.g	p130b.f	p265.f	p76.f	trtp.f
f235a	f58	g2.g	g32.g	g905.g	p135.f	p266.f	p77.f	–
f236	f59	g20.g	g33.g	g906.g	p136.f	p267.f	p78.f	–
f237	f6	g202k.g	g34.g	g907.g	p137.f	p268.f	p79.f	–
f238	f60	g205n.g	g35.g	g908.g	p138.f	p269.f	p8.f	–
f239	f61	g21.g	g36.g	g909.g	p139.f	p27.f	p80.f	

A 1
File No=f1 STS-3 V34T9310A MID FUS PLB LIN TEMP X=1250

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	105.12	-34.45	35	110.42	3.69	69	0.00	0.00	103	0.00	0.00
2	105.13	-37.27	36	110.57	-1.45	70	0.00	0.00	104	0.00	0.00
3	105.31	-44.83	37	110.74	-16.76	71	0.00	0.00	105	0.00	0.00
4	105.48	-47.15	38	110.75	-19.43	72	0.00	0.00	106	0.00	0.00
5	105.62	-42.21	39	110.92	-32.28	73	0.00	0.00	107	0.00	0.00
6	105.83	-29.46	40	111.10	-39.94	74	0.00	0.00	108	0.00	0.00
7	105.98	-21.66	41	111.10	-42.31	75	0.00	0.00	109	0.00	0.00
8	106.16	-24.37	42	111.28	-44.88	76	0.00	0.00	110	0.00	0.00
9	106.33	-34.50	43	111.28	-42.31	77	0.00	0.00	111	0.00	0.00
10	106.49	-44.88	44	111.44	-42.31	78	0.00	0.00	112	0.00	0.00
11	106.69	-47.20	45	111.61	-24.57	79	0.00	0.00	113	0.00	0.00
12	106.84	-47.25	46	111.77	-3.92	80	0.00	0.00	114	0.00	0.00
13	107.02	-44.93	47	111.95	1.12	81	0.00	0.00	115	0.00	0.00
14	107.34	-6.53	48	112.12	-3.97	82	0.00	0.00	116	0.00	0.00
15	107.52	-6.49	49	112.29	-22.00	83	0.00	0.00	117	0.00	0.00
16	107.67	-14.19	50	112.47	-34.65	84	0.00	0.00	118	0.00	0.00
17	107.68	-16.66	51	112.62	-39.99	85	0.00	0.00	119	0.00	0.00
18	107.86	-29.56	52	112.63	-42.26	86	0.00	0.00	120	0.00	0.00
19	108.02	-39.89	53	112.80	-44.98	87	0.00	0.00	121	0.00	0.00
20	108.19	-44.93	54	112.97	-42.31	88	0.00	0.00	122	0.00	0.00
21	108.37	-47.30	55	112.98	-39.99	89	0.00	0.00	123	0.00	0.00
22	108.39	-44.83	56	0.00	0.00	90	0.00	0.00	124	0.00	0.00
23	108.53	-37.32	57	0.00	0.00	91	0.00	0.00	125	0.00	0.00
24	108.72	-11.53	58	0.00	0.00	92	0.00	0.00	126	0.00	0.00
25	108.87	-1.40	59	0.00	0.00	93	0.00	0.00	127	0.00	0.00
26	109.05	-3.92	60	0.00	0.00	94	0.00	0.00	128	0.00	0.00
27	109.22	-16.66	61	0.00	0.00	95	0.00	0.00	129	0.00	0.00
28	109.39	-32.28	62	0.00	0.00	96	0.00	0.00	130	0.00	0.00
29	109.59	-39.89	63	0.00	0.00	97	0.00	0.00	131	0.00	0.00
30	109.73	-44.98	64	0.00	0.00	98	0.00	0.00	132	0.00	0.00
31	109.91	-44.88	65	0.00	0.00	99	0.00	0.00	133	0.00	0.00
32	110.09	-29.56	66	0.00	0.00	100	0.00	0.00	134	0.00	0.00
33	110.23	-6.63	67	0.00	0.00	101	0.00	0.00	135	0.00	0.00
34	110.42	3.69	68	0.00	0.00	102	0.00	0.00	136	0.00	0.00

Max Temp= 3.69 F; Min Temp= -47.30 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

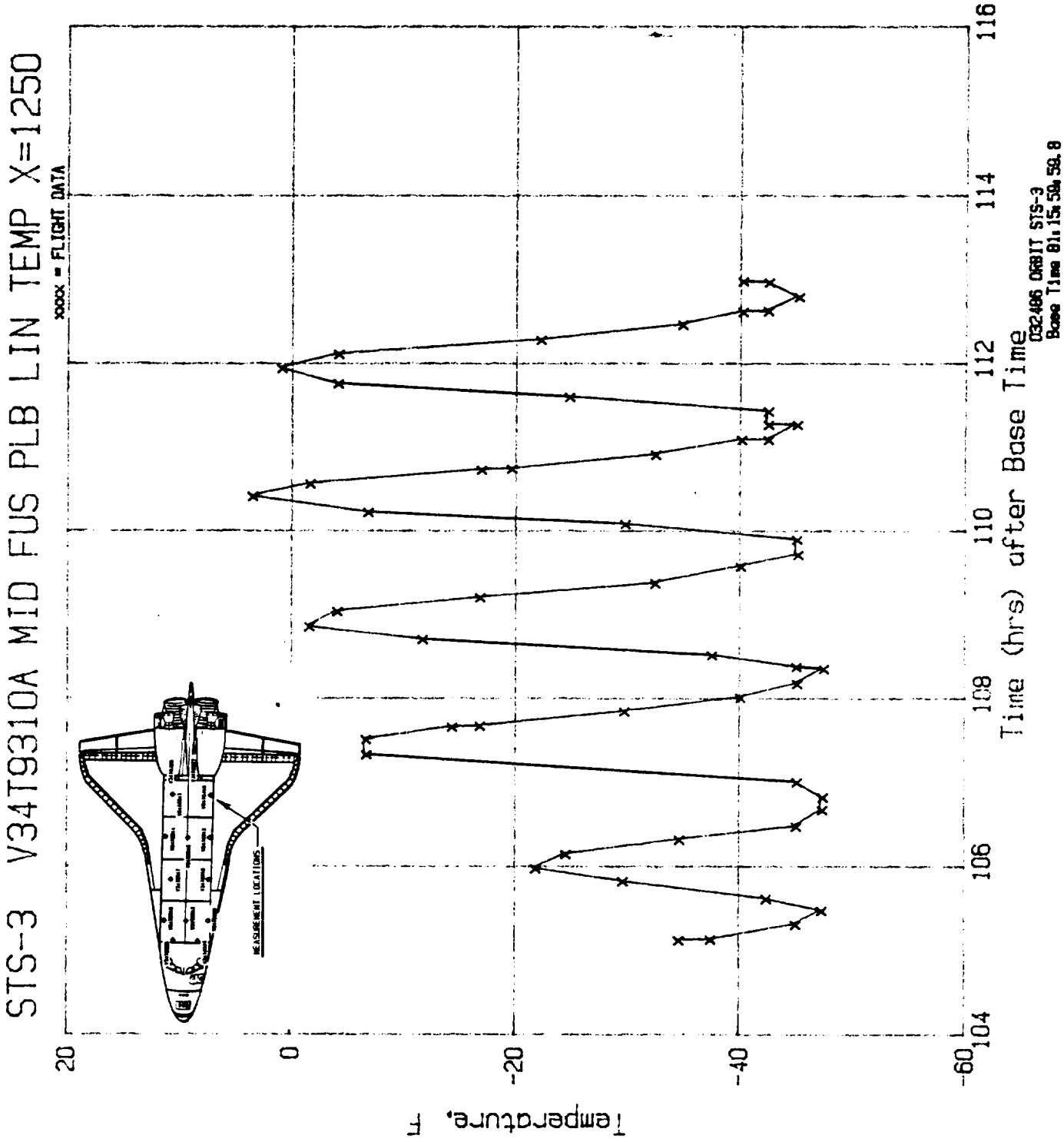
STS-3 V34T9310A MID FUS PLB LIN TEMP X=1250
xxxx = FLIGHT DATA
MEASUREMENT LOCATIONS
Temperature, F
20
0
-20
-40
-60
Time (hrs) after Base Time
104
106
108
110
112
114
116
032486 ORBIT STS-3
Base Time 81:15:50:59.8

Figure A-1

A 2
File No=f2

STS-3 V34T9311A PLB WIRE COVER TEMP X=1215

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	105.11	-34.63	35	110.05	-27.00	69	0.00	0.00	103	0.00	0.00
2	105.29	-37.19	36	110.05	-19.33	70	0.00	0.00	104	0.00	0.00
3	105.45	-39.80	37	110.23	-19.29	71	0.00	0.00	105	0.00	0.00
4	105.62	-29.53	38	110.38	-14.26	72	0.00	0.00	106	0.00	0.00
5	105.63	-37.17	39	110.57	-19.31	73	0.00	0.00	107	0.00	0.00
6	105.78	-29.58	40	110.57	-21.85	74	0.00	0.00	108	0.00	0.00
7	105.79	-27.04	41	110.74	-27.02	75	0.00	0.00	109	0.00	0.00
8	105.96	-27.02	42	110.92	-34.66	76	0.00	0.00	110	0.00	0.00
9	105.97	-29.56	43	111.10	-37.14	77	0.00	0.00	111	0.00	0.00
10	106.14	-34.63	44	111.10	-39.75	78	0.00	0.00	112	0.00	0.00
11	106.32	-39.83	45	111.24	-39.78	79	0.00	0.00	113	0.00	0.00
12	106.49	-42.29	46	111.44	-34.63	80	0.00	0.00	114	0.00	0.00
13	106.66	-44.80	47	111.59	-24.43	81	0.00	0.00	115	0.00	0.00
14	106.85	-44.73	48	111.75	-16.77	82	0.00	0.00	116	0.00	0.00
15	106.85	-34.58	49	111.94	-14.31	83	0.00	0.00	117	0.00	0.00
16	106.99	-34.58	50	111.95	-21.85	84	0.00	0.00	118	0.00	0.00
17	106.99	-27.04	51	112.10	-21.87	85	0.00	0.00	119	0.00	0.00
18	107.33	-21.82	52	112.30	-29.56	86	0.00	0.00	120	0.00	0.00
19	107.49	-21.85	53	112.46	-34.63	87	0.00	0.00	121	0.00	0.00
20	107.70	-29.58	54	112.63	-37.17	88	0.00	0.00	122	0.00	0.00
21	107.86	-34.63	55	112.81	-39.75	89	0.00	0.00	123	0.00	0.00
22	108.03	-39.80	56	112.81	-37.19	90	0.00	0.00	124	0.00	0.00
23	108.04	-42.27	57	112.82	-32.07	91	0.00	0.00	125	0.00	0.00
24	108.21	-42.29	58	112.97	-32.04	92	0.00	0.00	126	0.00	0.00
25	108.36	-42.32	59	0.00	0.00	93	0.00	0.00	127	0.00	0.00
26	108.55	-32.04	60	0.00	0.00	94	0.00	0.00	128	0.00	0.00
27	108.69	-21.85	61	0.00	0.00	95	0.00	0.00	129	0.00	0.00
28	108.86	-19.31	62	0.00	0.00	96	0.00	0.00	130	0.00	0.00
29	109.04	-21.85	63	0.00	0.00	97	0.00	0.00	131	0.00	0.00
30	109.21	-29.58	64	0.00	0.00	98	0.00	0.00	132	0.00	0.00
31	109.40	-34.63	65	0.00	0.00	99	0.00	0.00	133	0.00	0.00
32	109.56	-37.17	66	0.00	0.00	100	0.00	0.00	134	0.00	0.00
33	109.74	-39.75	67	0.00	0.00	101	0.00	0.00	135	0.00	0.00
34	109.91	-37.12	68	0.00	0.00	102	0.00	0.00	136	0.00	0.00

Max Temp= -14.26 F; Min Temp= -44.80 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

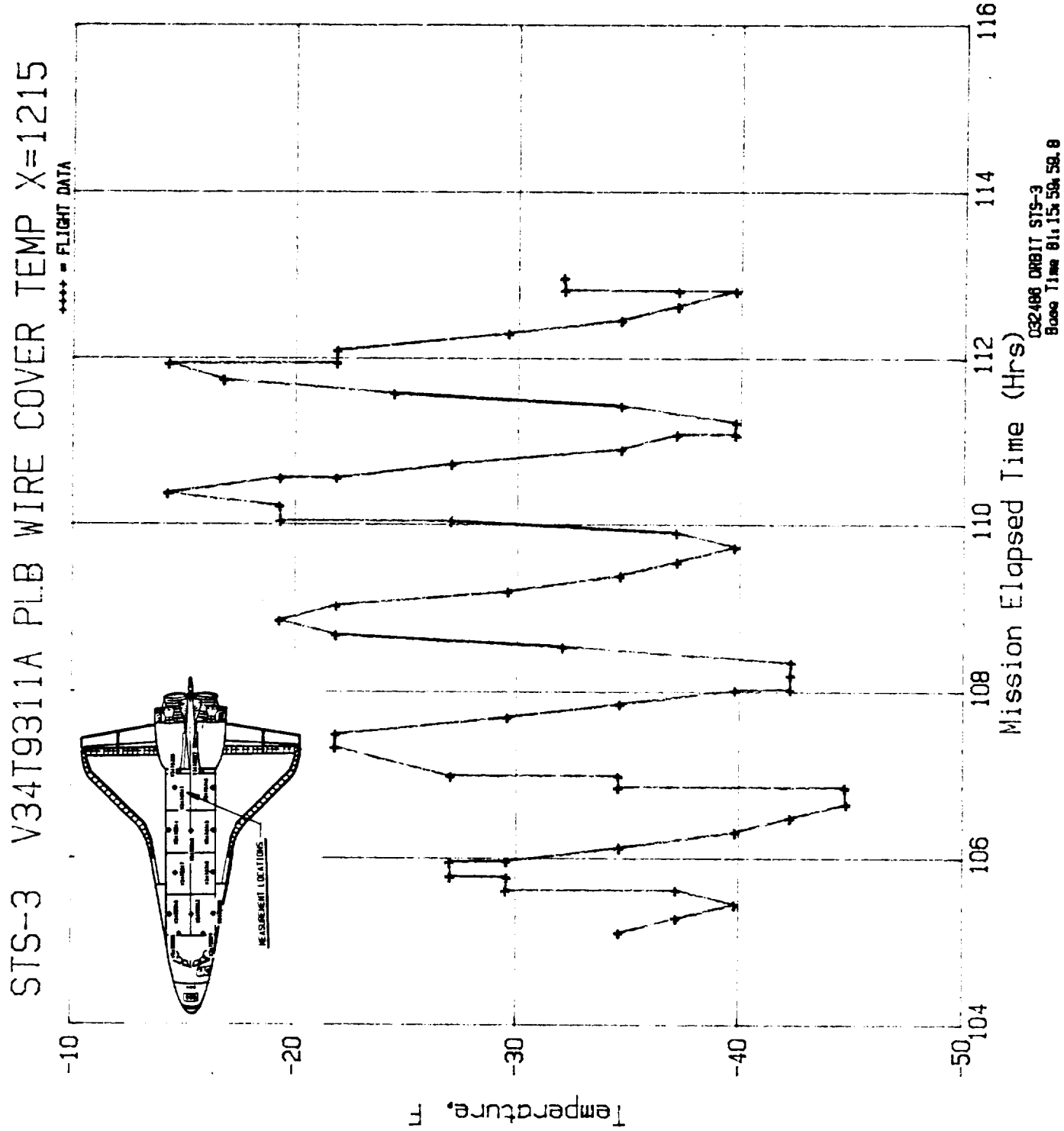
STS-3 V34T9311A PLB WIRE COVER TEMP X=1215
++++ = FLIGHT DATA
MEASUREMENT LOCATIONS
Temperature, F
-10
-20
-30
-40
-50
104
106
108
110
112
114
116
Mission Elapsed Time (Hrs)
032486 ORBIT STS-3
Base Time 81:15:59:59.8

Figure A-2

A 3
File No=f3 STS-3 V34T9312A MID FUS PLB CTR BTM TEMP X=670

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	105.13	-55.35	35	108.88	33.93	69	0.00	0.00	103	0.00	0.00
2	105.13	-58.42	36	109.03	33.77	70	0.00	0.00	104	0.00	0.00
3	105.30	-86.23	37	109.22	-14.78	71	0.00	0.00	105	0.00	0.00
4	105.49	-102.98	38	109.22	-17.55	72	0.00	0.00	106	0.00	0.00
5	105.63	-73.33	39	109.39	-63.03	73	0.00	0.00	107	0.00	0.00
6	105.64	-102.98	40	109.58	-90.84	74	0.00	0.00	108	0.00	0.00
7	105.81	-73.48	41	109.75	-102.98	75	0.00	0.00	109	0.00	0.00
8	105.81	-37.98	42	109.90	-108.67	76	0.00	0.00	110	0.00	0.00
9	105.98	-37.52	43	109.90	-105.90	77	0.00	0.00	111	0.00	0.00
10	105.98	-35.22	44	109.90	-45.67	78	0.00	0.00	112	0.00	0.00
11	106.13	-40.60	45	110.08	-45.51	79	0.00	0.00	113	0.00	0.00
12	106.34	-68.41	46	110.08	28.70	80	0.00	0.00	114	0.00	0.00
13	106.49	-93.61	47	110.22	28.55	81	0.00	0.00	115	0.00	0.00
14	106.49	-96.22	48	110.40	54.21	82	0.00	0.00	116	0.00	0.00
15	106.67	-110.82	49	110.57	36.39	83	0.00	0.00	117	0.00	0.00
16	106.68	-108.67	50	110.73	-25.08	84	0.00	0.00	118	0.00	0.00
17	106.84	-115.27	51	110.93	-68.41	85	0.00	0.00	119	0.00	0.00
18	106.84	-86.08	52	110.94	-93.92	86	0.00	0.00	120	0.00	0.00
19	107.00	-86.23	53	111.09	-93.76	87	0.00	0.00	121	0.00	0.00
20	107.00	-4.64	54	111.09	-106.21	88	0.00	0.00	122	0.00	0.00
21	107.32	28.55	55	111.27	-105.90	89	0.00	0.00	123	0.00	0.00
22	107.50	33.77	56	111.44	-100.98	90	0.00	0.00	124	0.00	0.00
23	107.51	31.62	57	111.60	-25.23	91	0.00	0.00	125	0.00	0.00
24	107.68	-4.64	58	111.77	31.62	92	0.00	0.00	126	0.00	0.00
25	107.85	-56.12	59	111.77	34.08	93	0.00	0.00	127	0.00	0.00
26	107.86	-53.35	60	111.93	51.29	94	0.00	0.00	128	0.00	0.00
27	108.04	-86.23	61	111.94	23.02	95	0.00	0.00	129	0.00	0.00
28	108.04	-88.38	62	112.11	23.33	96	0.00	0.00	130	0.00	0.00
29	108.06	-102.98	63	112.29	-37.98	97	0.00	0.00	131	0.00	0.00
30	108.20	-102.98	64	112.46	-75.78	98	0.00	0.00	132	0.00	0.00
31	108.38	-110.97	65	112.64	-98.52	99	0.00	0.00	133	0.00	0.00
32	108.54	-66.26	66	112.79	-108.51	100	0.00	0.00	134	0.00	0.00
33	108.70	18.56	67	112.79	-88.38	101	0.00	0.00	135	0.00	0.00
34	108.87	38.84	68	112.97	-88.23	102	0.00	0.00	136	0.00	0.00

Max Temp= 54.21 F; Min Temp=-115.27 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

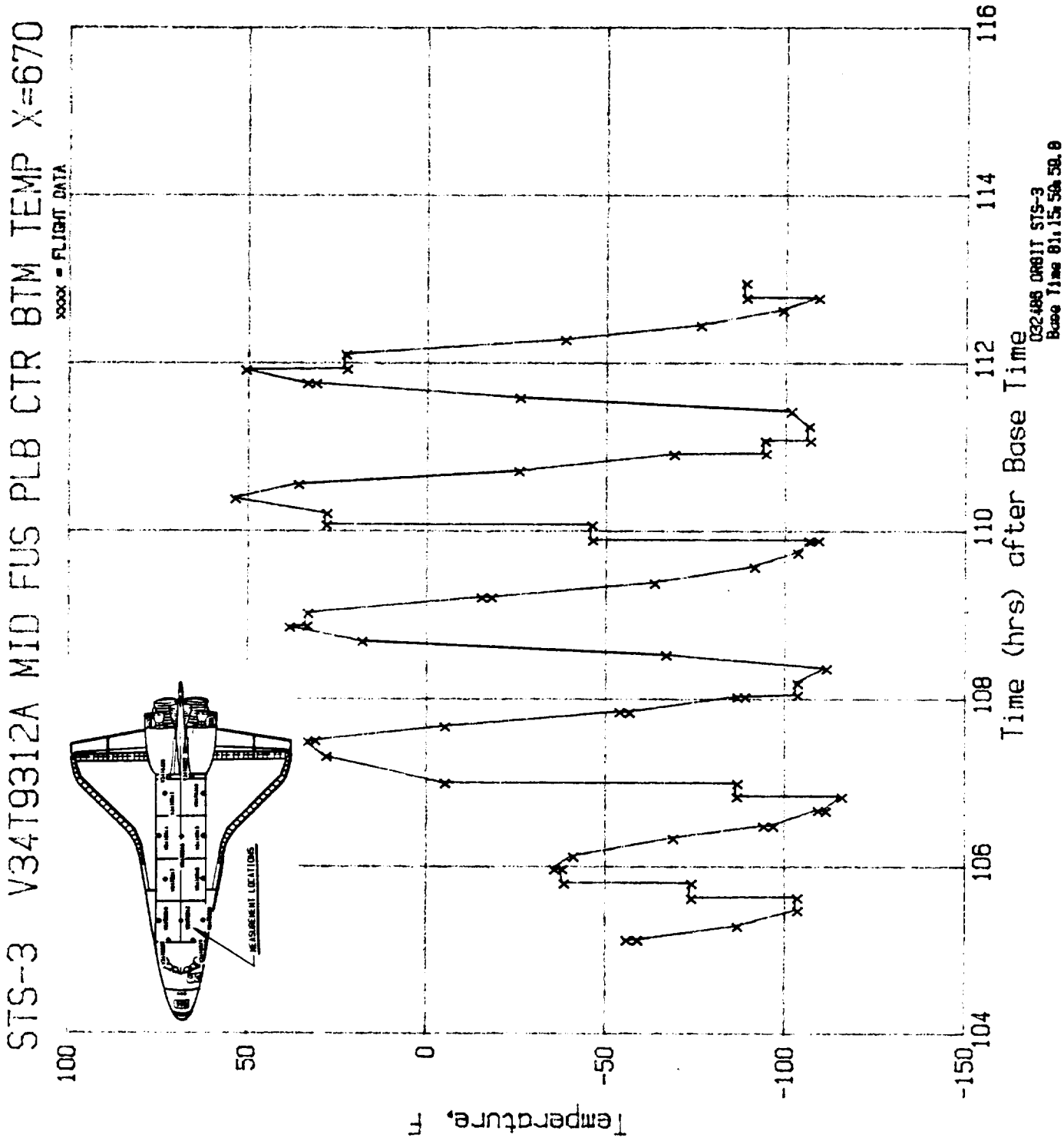
STS-3 V34T9312A MID FUS PLB CTR BTM TEMP X=670
XXXX = FLIGHT DATA
MEASUREMENT LOCATIONS
Temperature, F
100
50
0
-50
-100
-150
Time (hrs) after Base Time
104
106
108
110
112
114
116
032486 ORBIT STS-3
Base Time 01:15:50.0

Figure A-3

A 6
File No=f6

STS-3 V34T9317A PLB WIRE TRAY COVER TEMP X=850

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	105.14	-59.94	35	110.41	-26.82	69	0.00	0.00	103	0.00	0.00
2	105.31	-67.50	36	110.57	-39.65	70	0.00	0.00	104	0.00	0.00
3	105.48	-70.06	37	110.58	-42.25	71	0.00	0.00	105	0.00	0.00
4	105.65	-62.50	38	110.75	-57.42	72	0.00	0.00	106	0.00	0.00
5	105.66	-59.94	39	110.94	-65.13	73	0.00	0.00	107	0.00	0.00
6	105.80	-44.55	40	110.94	-65.13	74	0.00	0.00	108	0.00	0.00
7	105.98	-44.73	41	111.11	-67.58	75	0.00	0.00	109	0.00	0.00
8	106.16	-57.31	42	111.27	-67.61	76	0.00	0.00	110	0.00	0.00
9	106.33	-67.58	43	111.45	-52.26	77	0.00	0.00	111	0.00	0.00
10	106.51	-72.51	44	111.59	-31.94	78	0.00	0.00	112	0.00	0.00
11	106.66	-72.55	45	111.76	-29.42	79	0.00	0.00	113	0.00	0.00
12	106.67	-70.06	46	111.95	-26.82	80	0.00	0.00	114	0.00	0.00
13	106.86	-69.91	47	112.10	-44.73	81	0.00	0.00	115	0.00	0.00
14	107.01	-44.51	48	112.30	-59.90	82	0.00	0.00	116	0.00	0.00
15	107.35	-36.91	49	112.45	-65.13	83	0.00	0.00	117	0.00	0.00
16	107.50	-39.62	50	112.46	-67.54	84	0.00	0.00	118	0.00	0.00
17	107.71	-54.89	51	112.62	-67.54	85	0.00	0.00	119	0.00	0.00
18	107.86	-65.09	52	112.64	-67.54	86	0.00	0.00	120	0.00	0.00
19	108.05	-69.95	53	112.81	-67.58	87	0.00	0.00	121	0.00	0.00
20	108.21	-67.58	54	112.96	-44.66	88	0.00	0.00	122	0.00	0.00
21	108.36	-65.13	55	0.00	0.00	89	0.00	0.00	123	0.00	0.00
22	108.55	-39.54	56	0.00	0.00	90	0.00	0.00	124	0.00	0.00
23	108.70	-31.83	57	0.00	0.00	91	0.00	0.00	125	0.00	0.00
24	108.70	-34.35	58	0.00	0.00	92	0.00	0.00	126	0.00	0.00
25	108.87	-34.43	59	0.00	0.00	93	0.00	0.00	127	0.00	0.00
26	109.05	-39.58	60	0.00	0.00	94	0.00	0.00	128	0.00	0.00
27	109.23	-57.38	61	0.00	0.00	95	0.00	0.00	129	0.00	0.00
28	109.41	-67.39	62	0.00	0.00	96	0.00	0.00	130	0.00	0.00
29	109.56	-67.54	63	0.00	0.00	97	0.00	0.00	131	0.00	0.00
30	109.57	-69.99	64	0.00	0.00	98	0.00	0.00	132	0.00	0.00
31	109.75	-67.61	65	0.00	0.00	99	0.00	0.00	133	0.00	0.00
32	109.91	-57.31	66	0.00	0.00	100	0.00	0.00	134	0.00	0.00
33	110.06	-34.43	67	0.00	0.00	101	0.00	0.00	135	0.00	0.00
34	110.24	-31.90	68	0.00	0.00	102	0.00	0.00	136	0.00	0.00

Max Temp= -26.82 F; Min Temp= -72.55 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

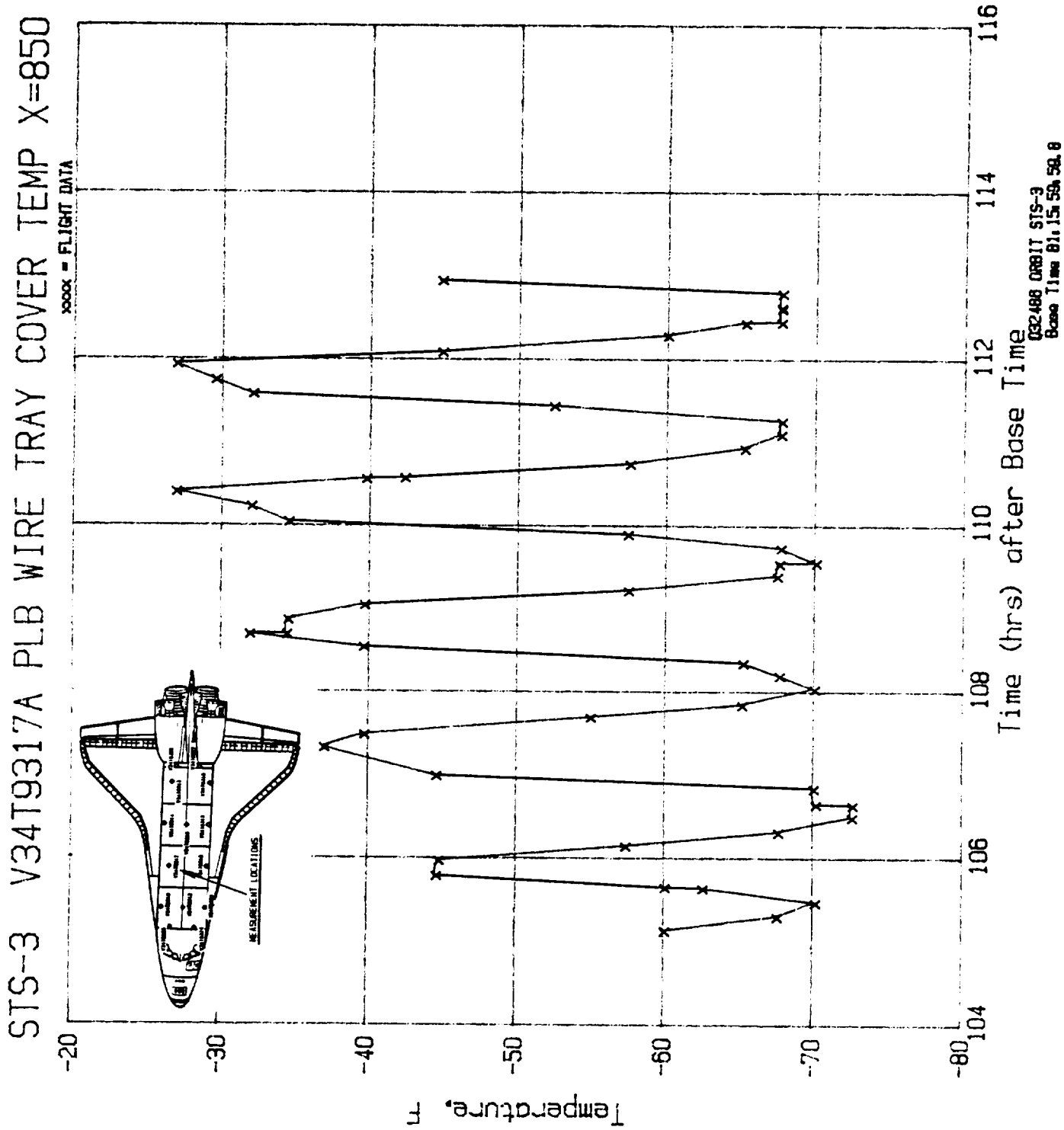
STS-3 V34T9317A PLB WIRE TRAY COVER TEMP X=850
xxxx = FLIGHT DATA
MEASUREMENT LOCATIONS
Temperature, F
-20
-30
-40
-50
-60
-70
-80
Time (hrs) after Base Time
104
106
108
110
112
114
116
OS2488 ORBIT STS-3
Base Time 81:15:59:59.0

Figure A-6

A 7
File No=f7 STS-3 V34T9318A MID FUS PLB LIN LS TEMP X=850

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	105.14	-87.71	35	109.39	-67.81	69	0.00	0.00	103	0.00	0.00
2	105.31	-107.86	36	109.58	-97.91	70	0.00	0.00	104	0.00	0.00
3	105.49	-105.65	37	109.75	-107.74	71	0.00	0.00	105	0.00	0.00
4	105.63	-75.43	38	109.92	-110.20	72	0.00	0.00	106	0.00	0.00
5	105.64	-73.10	39	110.08	-3.93	73	0.00	0.00	107	0.00	0.00
6	105.64	-55.04	40	110.09	-75.43	74	0.00	0.00	108	0.00	0.00
7	105.82	-55.16	41	110.23	-3.93	75	0.00	0.00	109	0.00	0.00
8	105.82	-52.95	42	110.42	18.92	76	0.00	0.00	110	0.00	0.00
9	105.98	-52.70	43	110.57	13.51	77	0.00	0.00	111	0.00	0.00
10	106.14	-32.43	44	110.57	10.93	78	0.00	0.00	112	0.00	0.00
11	106.14	-34.77	45	110.74	-27.27	79	0.00	0.00	113	0.00	0.00
12	106.34	-57.37	46	110.75	-24.57	80	0.00	0.00	114	0.00	0.00
13	106.49	-95.82	47	110.94	-75.31	81	0.00	0.00	115	0.00	0.00
14	106.70	-110.07	48	111.10	-98.03	82	0.00	0.00	116	0.00	0.00
15	106.84	-105.65	49	111.10	-100.49	83	0.00	0.00	117	0.00	0.00
16	106.85	-117.69	50	111.10	-110.20	84	0.00	0.00	118	0.00	0.00
17	107.01	-34.77	51	111.28	-110.20	85	0.00	0.00	119	0.00	0.00
18	107.02	-105.65	52	111.44	-107.86	86	0.00	0.00	120	0.00	0.00
19	107.33	-6.88	53	111.61	-60.32	87	0.00	0.00	121	0.00	0.00
20	107.53	0.74	54	111.61	-57.49	88	0.00	0.00	122	0.00	0.00
21	107.68	-6.88	55	111.78	-3.93	89	0.00	0.00	123	0.00	0.00
22	107.88	-57.49	56	111.78	-1.47	90	0.00	0.00	124	0.00	0.00
23	108.05	-93.12	57	111.93	16.09	91	0.00	0.00	125	0.00	0.00
24	108.05	-107.86	58	111.93	13.27	92	0.00	0.00	126	0.00	0.00
25	108.20	-107.86	59	111.93	5.77	93	0.00	0.00	127	0.00	0.00
26	108.39	-112.65	60	112.11	5.77	94	0.00	0.00	128	0.00	0.00
27	108.55	-93.00	61	112.28	-42.26	95	0.00	0.00	129	0.00	0.00
28	108.70	-14.25	62	112.29	-44.84	96	0.00	0.00	130	0.00	0.00
29	108.70	-11.79	63	112.47	-85.63	97	0.00	0.00	131	0.00	0.00
30	108.87	3.32	64	112.65	-103.07	98	0.00	0.00	132	0.00	0.00
31	109.04	8.60	65	112.81	-112.78	99	0.00	0.00	133	0.00	0.00
32	109.04	5.90	66	112.81	-105.65	100	0.00	0.00	134	0.00	0.00
33	109.23	-17.20	67	112.99	-105.41	101	0.00	0.00	135	0.00	0.00
34	109.23	-19.78	68	0.00	0.00	102	0.00	0.00	136	0.00	0.00

Max Temp= 18.92 F; Min Temp=-117.69 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

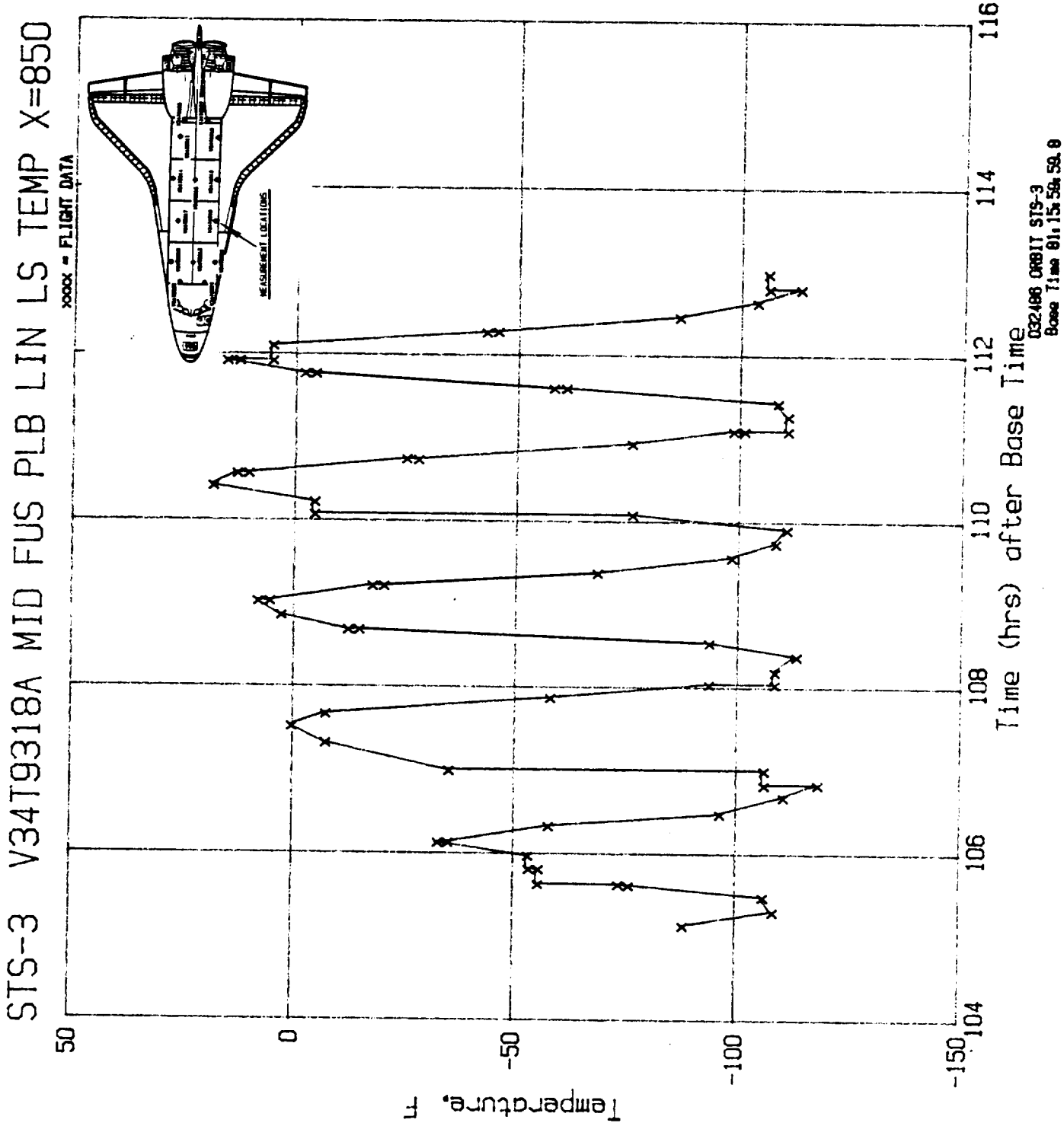
STS-3 V34T9318A MID FUS PLB LIN LS TEMP X=850
XXXX = FLIGHT DATA
MEASUREMENT LOCATIONS
Temperature, F
50
0
-50
-100
-150
104
106
108
110
112
114
116
Time (hrs) after Base Time
032486 ORBIT STS-3
Base Time 01:15:56.59.0

Figure A-7

A 8
File No=f8

STS-3 V34T9319A MID FUS PLB LIN RS TEMP X=670

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	105.14	-34.85	35	108.87	-9.20	69	112.48	-39.88	103	0.00	0.00
2	105.34	-42.49	36	109.06	-9.35	70	112.48	-42.44	104	0.00	0.00
3	105.48	-45.06	37	109.23	-24.73	71	112.63	-44.96	105	0.00	0.00
4	105.49	-47.42	38	109.41	-39.88	72	112.64	-47.37	106	0.00	0.00
5	105.66	-45.01	39	109.60	-45.01	73	112.65	-49.89	107	0.00	0.00
6	105.66	-39.98	40	109.60	-47.47	74	112.83	-49.89	108	0.00	0.00
7	105.83	-32.43	41	109.76	-50.04	75	112.83	-47.47	109	0.00	0.00
8	105.84	-39.83	42	109.95	-52.21	76	112.97	-47.37	110	0.00	0.00
9	105.84	-37.56	43	109.95	-37.51	77	0.00	0.00	111	0.00	0.00
10	105.98	-32.38	44	110.07	-11.96	78	0.00	0.00	112	0.00	0.00
11	106.17	-32.33	45	110.09	-37.46	79	0.00	0.00	113	0.00	0.00
12	106.34	-39.88	46	110.24	-9.30	80	0.00	0.00	114	0.00	0.00
13	106.34	-42.49	47	110.25	-11.91	81	0.00	0.00	115	0.00	0.00
14	106.52	-47.52	48	110.42	0.86	82	0.00	0.00	116	0.00	0.00
15	106.70	-52.26	49	110.58	-6.78	83	0.00	0.00	117	0.00	0.00
16	106.70	-55.02	50	110.77	-24.54	84	0.00	0.00	118	0.00	0.00
17	106.85	-55.02	51	110.78	-39.78	85	0.00	0.00	119	0.00	0.00
18	106.86	-50.09	52	110.94	-39.83	86	0.00	0.00	120	0.00	0.00
19	107.03	-49.99	53	110.94	-45.06	87	0.00	0.00	121	0.00	0.00
20	107.03	-27.10	54	111.11	-45.01	88	0.00	0.00	122	0.00	0.00
21	107.35	-14.48	55	111.11	-49.89	89	0.00	0.00	123	0.00	0.00
22	107.52	-11.91	56	111.29	-49.99	90	0.00	0.00	124	0.00	0.00
23	107.69	-21.87	57	111.29	-49.99	91	0.00	0.00	125	0.00	0.00
24	107.70	-37.51	58	111.44	-49.94	92	0.00	0.00	126	0.00	0.00
25	107.89	-37.56	59	111.62	-9.20	93	0.00	0.00	127	0.00	0.00
26	107.90	-45.10	60	111.63	-32.28	94	0.00	0.00	128	0.00	0.00
27	108.04	-45.06	61	111.63	-29.72	95	0.00	0.00	129	0.00	0.00
28	108.04	-47.52	62	111.77	-9.20	96	0.00	0.00	130	0.00	0.00
29	108.05	-49.99	63	111.77	0.86	97	0.00	0.00	131	0.00	0.00
30	108.23	-50.04	64	111.95	0.91	98	0.00	0.00	132	0.00	0.00
31	108.39	-52.26	65	111.96	-9.25	99	0.00	0.00	133	0.00	0.00
32	108.56	-45.10	66	112.12	-9.20	100	0.00	0.00	134	0.00	0.00
33	108.73	-16.89	67	112.30	-27.05	101	0.00	0.00	135	0.00	0.00
34	108.87	-6.88	68	112.30	-29.82	102	0.00	0.00	136	0.00	0.00

Max Temp= 0.91 F; Min Temp= -55.02 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

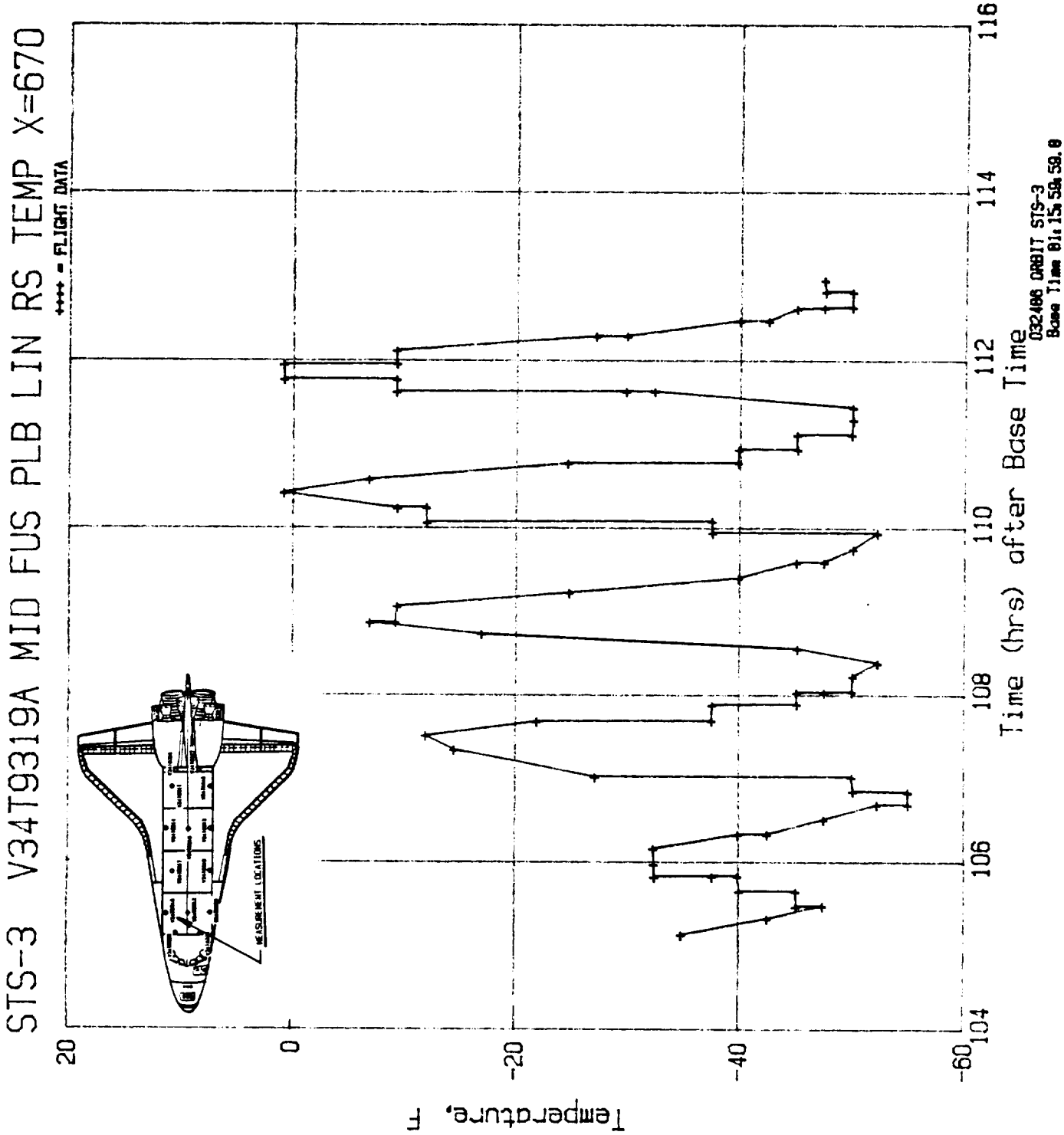
STS-3 V34T9319A MID FUS PLB LIN RS TEMP X=670
**** = FLIGHT DATA
MEASUREMENT LOCATIONS
Temperature, F
20
0
-20
-40
-60
Time (hrs) after Base Time
104
106
108
110
112
114
116
032486 ORBIT STS-3
Base Time 8:15:58.0

Figure A-8

A 9
File No=f9 STS-3 V34T9320A MID FUS PLB LIN LS TEMP X=670

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	105.11	-62.45	35	109.55	-88.10	69	0.00	0.00	103	0.00	0.00
2	105.30	-87.85	36	109.73	-100.43	70	0.00	0.00	104	0.00	0.00
3	105.47	-98.09	37	109.74	-102.90	71	0.00	0.00	105	0.00	0.00
4	105.64	-87.98	38	109.90	-105.36	72	0.00	0.00	106	0.00	0.00
5	105.64	-85.27	39	110.05	-72.56	73	0.00	0.00	107	0.00	0.00
6	105.64	-75.40	40	110.05	-69.98	74	0.00	0.00	108	0.00	0.00
7	105.79	-75.15	41	110.05	6.47	75	0.00	0.00	109	0.00	0.00
8	105.79	-59.37	42	110.24	6.60	76	0.00	0.00	110	0.00	0.00
9	105.98	-59.37	43	110.39	40.01	77	0.00	0.00	111	0.00	0.00
10	106.14	-31.75	44	110.56	27.07	78	0.00	0.00	112	0.00	0.00
11	106.31	-52.22	45	110.73	-14.12	79	0.00	0.00	113	0.00	0.00
12	106.50	-85.51	46	110.73	-16.58	80	0.00	0.00	114	0.00	0.00
13	106.66	-102.53	47	110.90	-62.70	81	0.00	0.00	115	0.00	0.00
14	106.84	-102.77	48	110.91	-88.47	82	0.00	0.00	116	0.00	0.00
15	106.84	-110.30	49	111.09	-90.57	83	0.00	0.00	117	0.00	0.00
16	107.01	-102.65	50	111.10	-87.98	84	0.00	0.00	118	0.00	0.00
17	107.01	-32.00	51	111.10	-102.90	85	0.00	0.00	119	0.00	0.00
18	107.34	9.06	52	111.25	-102.65	86	0.00	0.00	120	0.00	0.00
19	107.48	19.42	53	111.44	-105.98	87	0.00	0.00	121	0.00	0.00
20	107.68	4.13	54	111.59	-55.18	88	0.00	0.00	122	0.00	0.00
21	107.85	-44.70	55	111.59	-52.59	89	0.00	0.00	123	0.00	0.00
22	108.02	-82.80	56	111.76	11.41	90	0.00	0.00	124	0.00	0.00
23	108.02	-100.43	57	111.94	37.67	91	0.00	0.00	125	0.00	0.00
24	108.19	-100.06	58	111.94	34.71	92	0.00	0.00	126	0.00	0.00
25	108.35	-107.95	59	111.94	21.52	93	0.00	0.00	127	0.00	0.00
26	108.55	-87.98	60	112.08	21.52	94	0.00	0.00	128	0.00	0.00
27	108.56	-90.32	61	112.09	18.93	95	0.00	0.00	129	0.00	0.00
28	108.70	-9.06	62	112.28	-29.53	96	0.00	0.00	130	0.00	0.00
29	108.85	21.76	63	112.28	-32.49	97	0.00	0.00	131	0.00	0.00
30	109.04	24.48	64	112.44	-72.81	98	0.00	0.00	132	0.00	0.00
31	109.21	-6.10	65	112.62	-92.91	99	0.00	0.00	133	0.00	0.00
32	109.40	-54.81	66	112.81	-105.49	100	0.00	0.00	134	0.00	0.00
33	109.40	-57.15	67	112.81	-100.55	101	0.00	0.00	135	0.00	0.00
34	109.55	-85.51	68	112.96	-100.43	102	0.00	0.00	136	0.00	0.00

Max Temp= 40.01 F; Min Temp=-110.30 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

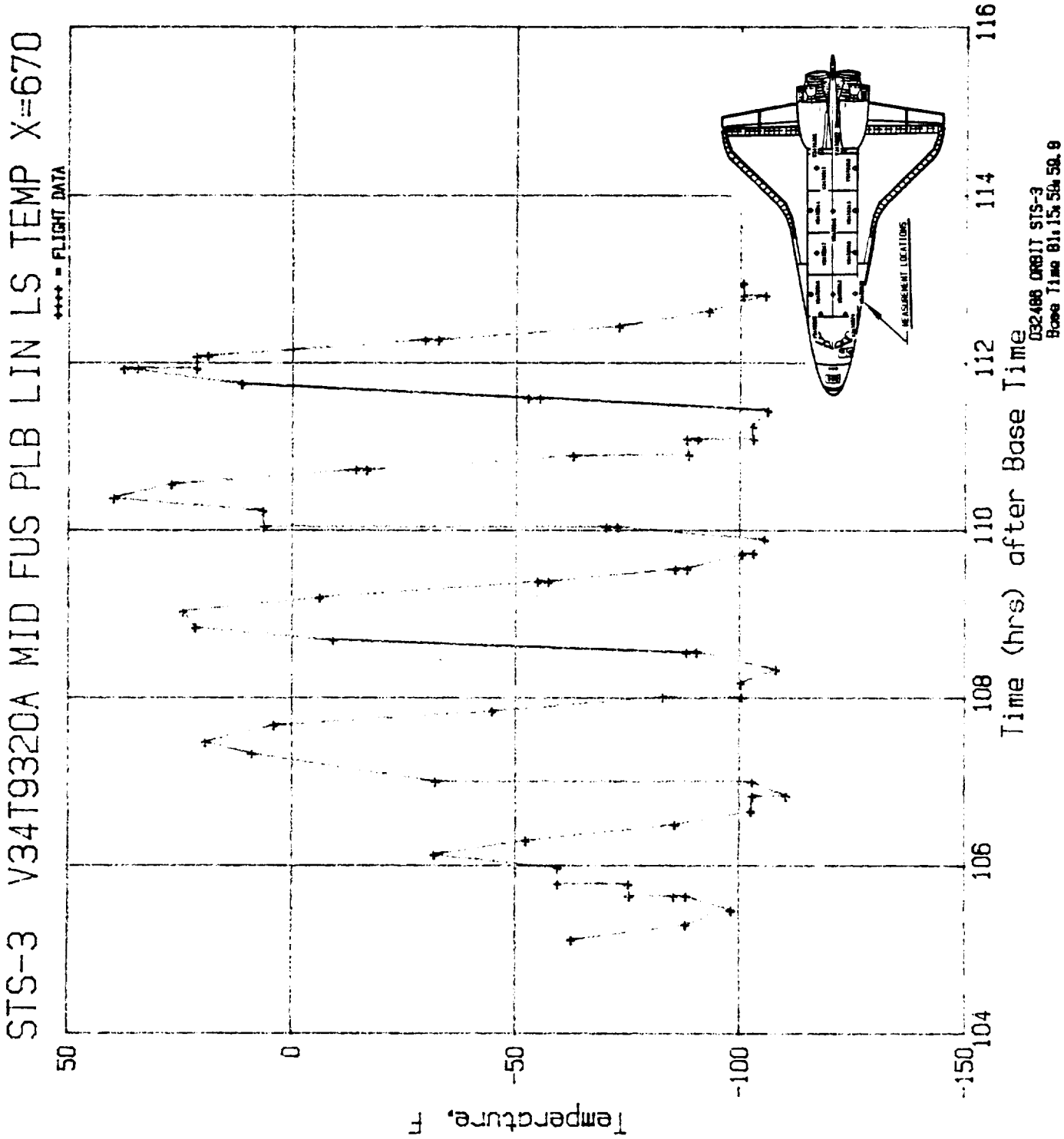
STS-3 V34T9320A MID FUS PLB LIN LS TEMP X=670
++++ = FLIGHT DATA
Temperature, F
50
0
-50
-100
-150
104
106
108
110
112
114
116
Time (hrs) after Base Time
MEASUREMENT LOCATIONS
032486 ORBIT STS-3
Base Time 81:15:54:59.8

Figure A-9

A 10
File No=f10

STS-3 V34T9324A MID FUS FWD BHD INSUL TEMP Y=-47

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	105.13	-36.52	35	109.21	-13.94	69	0.00	0.00	103	0.00	0.00
2	105.29	-62.15	36	109.38	-51.97	70	0.00	0.00	104	0.00	0.00
3	105.45	-76.87	37	109.55	-72.52	71	0.00	0.00	105	0.00	0.00
4	105.62	-76.96	38	109.74	-82.05	72	0.00	0.00	106	0.00	0.00
5	105.63	-69.74	39	109.88	-82.14	73	0.00	0.00	107	0.00	0.00
6	105.79	-69.56	40	109.89	-44.66	74	0.00	0.00	108	0.00	0.00
7	105.80	-44.39	41	110.04	-44.66	75	0.00	0.00	109	0.00	0.00
8	105.98	-44.29	42	110.05	16.78	76	0.00	0.00	110	0.00	0.00
9	106.14	-24.03	43	110.22	16.78	77	0.00	0.00	111	0.00	0.00
10	106.33	-51.70	44	110.39	42.32	78	0.00	0.00	112	0.00	0.00
11	106.48	-74.55	45	110.57	24.46	79	0.00	0.00	113	0.00	0.00
12	106.66	-84.36	46	110.58	22.15	80	0.00	0.00	114	0.00	0.00
13	106.84	-89.36	47	110.71	-21.71	81	0.00	0.00	115	0.00	0.00
14	106.85	-77.14	48	110.90	-55.12	82	0.00	0.00	116	0.00	0.00
15	106.97	-77.14	49	110.91	-57.43	83	0.00	0.00	117	0.00	0.00
16	106.98	-13.66	50	110.92	-72.61	84	0.00	0.00	118	0.00	0.00
17	107.33	14.74	51	111.07	-72.61	85	0.00	0.00	119	0.00	0.00
18	107.49	19.56	52	111.08	-80.01	86	0.00	0.00	120	0.00	0.00
19	107.67	-3.39	53	111.24	-80.10	87	0.00	0.00	121	0.00	0.00
20	107.68	-6.17	54	111.25	-82.14	88	0.00	0.00	122	0.00	0.00
21	107.82	-47.07	55	111.44	-79.92	89	0.00	0.00	123	0.00	0.00
22	107.83	-69.74	56	111.57	-26.62	90	0.00	0.00	124	0.00	0.00
23	108.02	-69.83	57	111.76	19.09	91	0.00	0.00	125	0.00	0.00
24	108.03	-81.96	58	111.78	39.91	92	0.00	0.00	126	0.00	0.00
25	108.17	-82.05	59	111.92	39.91	93	0.00	0.00	127	0.00	0.00
26	108.18	-82.05	60	111.93	37.42	94	0.00	0.00	128	0.00	0.00
27	108.36	-84.36	61	111.94	16.69	95	0.00	0.00	129	0.00	0.00
28	108.54	-62.34	62	112.10	16.69	96	0.00	0.00	130	0.00	0.00
29	108.68	3.92	63	112.28	-32.08	97	0.00	0.00	131	0.00	0.00
30	108.69	6.79	64	112.43	-62.89	98	0.00	0.00	132	0.00	0.00
31	108.86	24.74	65	112.62	-74.92	99	0.00	0.00	133	0.00	0.00
32	108.87	22.33	66	112.77	-75.02	100	0.00	0.00	134	0.00	0.00
33	108.88	19.56	67	112.78	-82.23	101	0.00	0.00	135	0.00	0.00
34	109.03	19.37	68	112.94	-74.92	102	0.00	0.00	136	0.00	0.00

Max Temp= 42.32 F; Min Temp= -89.36 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

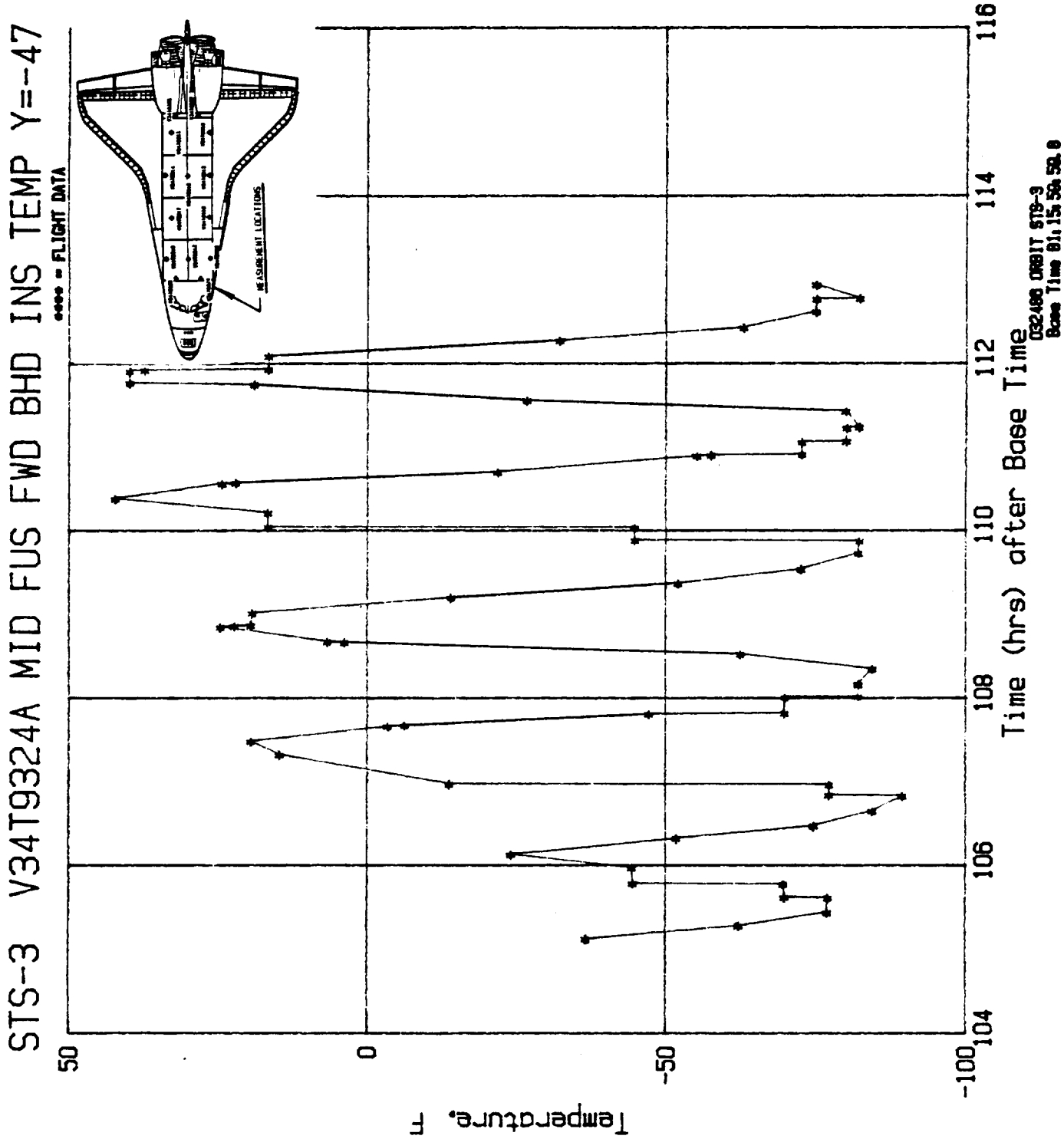
STS-3 V34T9324A MID FUS FWD BHD INS TEMP Y=-47
**** = FLIGHT DATA
MEASUREMENT LOCATIONS
Temperature, F
50
0
-50
-100
104
106
108
110
112
114
116
Time (hrs) after Base Time
032488 ORBIT STS-3
Base Time 81:15:50:50.0

Figure A-10

A 11
File No=f11

STS-3 V34T9325A MID FUS FWD BHD INS TEMP Y=37.5

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	105.14	-42.15	35	108.70	36.96	69	112.10	13.94	103	0.00	0.00
2	105.30	-75.53	36	108.71	19.04	70	112.29	-45.55	104	0.00	0.00
3	105.30	-77.69	37	108.89	37.27	71	112.30	-42.77	105	0.00	0.00
4	105.48	-95.61	38	108.89	27.38	72	112.44	-75.99	106	0.00	0.00
5	105.48	-98.24	39	109.06	27.22	73	112.63	-92.83	107	0.00	0.00
6	105.65	-98.08	40	109.23	-24.54	74	112.79	-103.18	108	0.00	0.00
7	105.65	-98.08	41	109.40	-65.17	75	112.79	-101.02	109	0.00	0.00
8	105.81	-90.51	42	109.56	-88.35	76	112.79	-76.14	110	0.00	0.00
9	105.82	-88.20	43	109.75	-100.87	77	112.96	-75.99	111	0.00	0.00
10	105.82	-39.52	44	109.89	-98.55	78	0.00	0.00	112	0.00	0.00
11	106.00	-39.37	45	109.89	-32.57	79	0.00	0.00	113	0.00	0.00
12	106.15	-32.57	46	110.06	-32.73	80	0.00	0.00	114	0.00	0.00
13	106.34	-67.49	47	110.07	31.86	81	0.00	0.00	115	0.00	0.00
14	106.34	-70.74	48	110.23	32.01	82	0.00	0.00	116	0.00	0.00
15	106.50	-92.68	49	110.40	57.97	83	0.00	0.00	117	0.00	0.00
16	106.68	-105.35	50	110.58	29.70	84	0.00	0.00	118	0.00	0.00
17	106.68	-110.75	51	110.58	26.92	85	0.00	0.00	119	0.00	0.00
18	106.86	-110.14	52	110.73	-32.88	86	0.00	0.00	120	0.00	0.00
19	106.86	-75.68	53	110.73	-68.26	87	0.00	0.00	121	0.00	0.00
20	107.00	-75.68	54	110.92	-68.42	88	0.00	0.00	122	0.00	0.00
21	107.01	2.04	55	110.93	-88.50	89	0.00	0.00	123	0.00	0.00
22	107.34	24.60	56	111.09	-88.20	90	0.00	0.00	124	0.00	0.00
23	107.51	29.54	57	111.10	-100.87	91	0.00	0.00	125	0.00	0.00
24	107.70	-11.09	58	111.25	-100.71	92	0.00	0.00	126	0.00	0.00
25	107.71	-60.69	59	111.44	-90.82	93	0.00	0.00	127	0.00	0.00
26	107.86	-60.85	60	111.44	-88.35	94	0.00	0.00	128	0.00	0.00
27	107.86	-60.85	61	111.58	36.80	95	0.00	0.00	129	0.00	0.00
28	107.86	-85.88	62	111.59	-17.12	96	0.00	0.00	130	0.00	0.00
29	108.04	-98.55	63	111.59	-14.18	97	0.00	0.00	131	0.00	0.00
30	108.05	-85.88	64	111.76	36.65	98	0.00	0.00	132	0.00	0.00
31	108.05	-85.88	65	111.77	36.65	99	0.00	0.00	133	0.00	0.00
32	108.20	-98.55	66	111.77	55.19	100	0.00	0.00	134	0.00	0.00
33	108.36	-103.03	67	111.94	55.19	101	0.00	0.00	135	0.00	0.00
34	108.56	-52.50	68	111.94	14.25	102	0.00	0.00	136	0.00	0.00

Max Temp= 57.97 F; Min Temp=-110.75 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

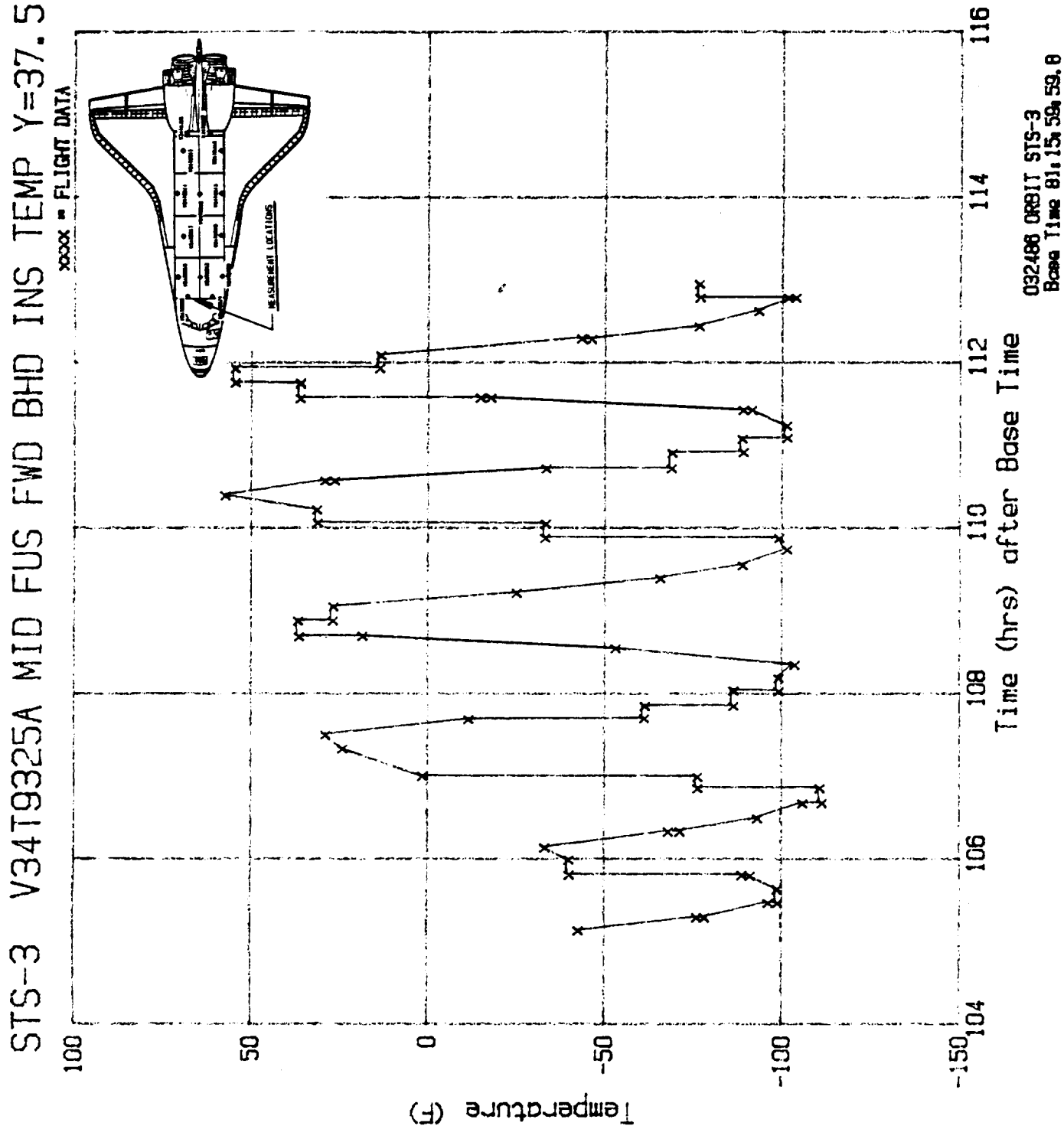
STS-3 V34T9325A MID FUS FWD BHD INS TEMP Y=37.5
xxxx = FLIGHT DATA
MEASUREMENT LOCATIONS
032486 ORBIT STS-3
Base Time 81:15:59:59.8
Time (hrs) after Base Time
Temperature (F)
100
50
0
-50
-100
-150
104
106
108
110
112
114
116

Figure A-11

A 12
File No=f12

STS-3 V34T9326A MID FUS AFT BHD INS TEMP Y=-50

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	105.16	-67.78	35	110.10	-42.24	69	0.00	0.00	103	0.00	0.00
2	105.34	-75.32	36	110.24	-32.19	70	0.00	0.00	104	0.00	0.00
3	105.51	-60.28	37	110.24	-29.53	71	0.00	0.00	105	0.00	0.00
4	105.63	-24.55	38	110.24	-29.53	72	0.00	0.00	106	0.00	0.00
5	105.81	-9.32	39	110.58	-24.50	73	0.00	0.00	107	0.00	0.00
6	105.98	-27.31	40	110.58	-27.16	74	0.00	0.00	108	0.00	0.00
7	106.15	-40.02	41	110.75	-37.26	75	0.00	0.00	109	0.00	0.00
8	106.16	-42.44	42	110.95	-52.69	76	0.00	0.00	110	0.00	0.00
9	106.35	-50.08	43	111.10	-52.64	77	0.00	0.00	111	0.00	0.00
10	106.51	-60.38	44	111.10	-55.01	78	0.00	0.00	112	0.00	0.00
11	106.69	-60.43	45	111.29	-54.96	79	0.00	0.00	113	0.00	0.00
12	106.70	-60.43	46	111.45	-52.59	80	0.00	0.00	114	0.00	0.00
13	106.86	-60.28	47	111.61	-39.88	81	0.00	0.00	115	0.00	0.00
14	107.02	-52.79	48	111.79	-34.80	82	0.00	0.00	116	0.00	0.00
15	107.03	-50.13	49	111.79	-32.19	83	0.00	0.00	117	0.00	0.00
16	107.35	-37.36	50	111.94	-32.19	84	0.00	0.00	118	0.00	0.00
17	107.53	-37.36	51	112.12	-24.55	85	0.00	0.00	119	0.00	0.00
18	107.70	-34.95	52	112.31	-42.19	86	0.00	0.00	120	0.00	0.00
19	107.88	-47.62	53	112.48	-52.59	87	0.00	0.00	121	0.00	0.00
20	107.89	-50.08	54	112.64	-52.59	88	0.00	0.00	122	0.00	0.00
21	108.06	-55.06	55	112.82	-57.67	89	0.00	0.00	123	0.00	0.00
22	108.22	-55.06	56	112.82	-54.96	90	0.00	0.00	124	0.00	0.00
23	108.22	-57.82	57	113.00	-52.59	91	0.00	0.00	125	0.00	0.00
24	108.41	-57.82	58	0.00	0.00	92	0.00	0.00	126	0.00	0.00
25	108.57	-47.66	59	0.00	0.00	93	0.00	0.00	127	0.00	0.00
26	108.72	-32.29	60	0.00	0.00	94	0.00	0.00	128	0.00	0.00
27	108.89	-32.29	61	0.00	0.00	95	0.00	0.00	129	0.00	0.00
28	109.06	-32.29	62	0.00	0.00	96	0.00	0.00	130	0.00	0.00
29	109.24	-37.31	63	0.00	0.00	97	0.00	0.00	131	0.00	0.00
30	109.41	-50.03	64	0.00	0.00	98	0.00	0.00	132	0.00	0.00
31	109.41	-52.69	65	0.00	0.00	99	0.00	0.00	133	0.00	0.00
32	109.59	-52.64	66	0.00	0.00	100	0.00	0.00	134	0.00	0.00
33	109.76	-54.96	67	0.00	0.00	101	0.00	0.00	135	0.00	0.00
34	109.92	-52.69	68	0.00	0.00	102	0.00	0.00	136	0.00	0.00

Max Temp= -9.32 F; Min Temp= -75.32 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

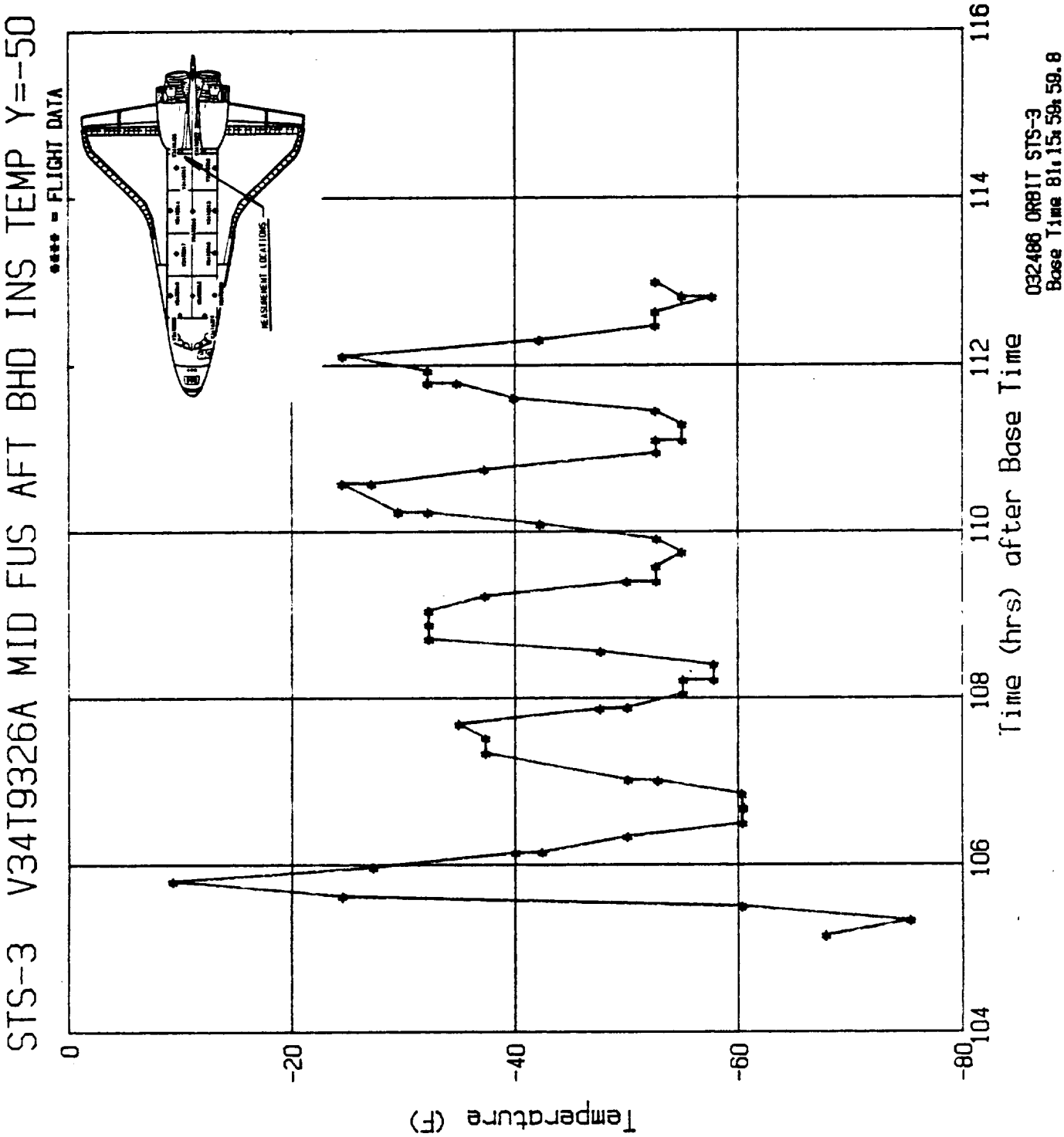
STS-3 V34T9326A MID FUS AFT BHD INS TEMP Y=-50
**** = FLIGHT DATA
MEASUREMENT LOCATIONS
Temperature (F)
0
-20
-40
-60
-80
104
106
108
110
112
114
116
Time (hrs) after Base Time
032486 ORBIT STS-3
Base Time 81:15:59:59.8

Figure A-12

A 13
File No=f13

STS-3 V34T9327A MID FUS AFT BHD INS TEMP Y=50

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	105.14	-83.39	35	110.08	-30.14	69	0.00	0.00	103	0.00	0.00
2	105.32	-90.73	36	110.23	-32.66	70	0.00	0.00	104	0.00	0.00
3	105.49	-68.11	37	110.41	-37.85	71	0.00	0.00	105	0.00	0.00
4	105.63	-17.45	38	110.58	-35.03	72	0.00	0.00	106	0.00	0.00
5	105.80	7.91	39	110.74	-43.04	73	0.00	0.00	107	0.00	0.00
6	105.97	-14.78	40	110.93	-58.32	74	0.00	0.00	108	0.00	0.00
7	106.15	-42.89	41	111.09	-47.94	75	0.00	0.00	109	0.00	0.00
8	106.33	-55.57	42	111.27	-47.94	76	0.00	0.00	110	0.00	0.00
9	106.48	-63.36	43	111.44	-47.86	77	0.00	0.00	111	0.00	0.00
10	106.49	-60.47	44	111.44	-45.56	78	0.00	0.00	112	0.00	0.00
11	106.67	-52.98	45	111.60	-30.21	79	0.00	0.00	113	0.00	0.00
12	106.84	-52.98	46	111.78	-37.92	80	0.00	0.00	114	0.00	0.00
13	107.00	-40.44	47	111.95	-40.30	81	0.00	0.00	115	0.00	0.00
14	107.34	-42.97	48	112.11	-32.73	82	0.00	0.00	116	0.00	0.00
15	107.52	-45.49	49	112.29	-47.94	83	0.00	0.00	117	0.00	0.00
16	107.69	-40.30	50	112.46	-58.39	84	0.00	0.00	118	0.00	0.00
17	107.86	-53.13	51	112.63	-47.94	85	0.00	0.00	119	0.00	0.00
18	108.04	-55.72	52	112.79	-50.68	86	0.00	0.00	120	0.00	0.00
19	108.19	-47.94	53	112.99	-45.56	87	0.00	0.00	121	0.00	0.00
20	108.19	-50.68	54	0.00	0.00	88	0.00	0.00	122	0.00	0.00
21	108.38	-50.53	55	0.00	0.00	89	0.00	0.00	123	0.00	0.00
22	108.54	-37.92	56	0.00	0.00	90	0.00	0.00	124	0.00	0.00
23	108.55	-35.03	57	0.00	0.00	91	0.00	0.00	125	0.00	0.00
24	108.71	-30.21	58	0.00	0.00	92	0.00	0.00	126	0.00	0.00
25	108.88	-37.85	59	0.00	0.00	93	0.00	0.00	127	0.00	0.00
26	108.88	-40.30	60	0.00	0.00	94	0.00	0.00	128	0.00	0.00
27	109.05	-40.37	61	0.00	0.00	95	0.00	0.00	129	0.00	0.00
28	109.24	-42.89	62	0.00	0.00	96	0.00	0.00	130	0.00	0.00
29	109.39	-58.24	63	0.00	0.00	97	0.00	0.00	131	0.00	0.00
30	109.39	-55.65	64	0.00	0.00	98	0.00	0.00	132	0.00	0.00
31	109.57	-50.68	65	0.00	0.00	99	0.00	0.00	133	0.00	0.00
32	109.74	-47.86	66	0.00	0.00	100	0.00	0.00	134	0.00	0.00
33	109.74	-45.49	67	0.00	0.00	101	0.00	0.00	135	0.00	0.00
34	109.90	-45.56	68	0.00	0.00	102	0.00	0.00	136	0.00	0.00

Max Temp= 7.91 F; Min Temp= -90.73 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

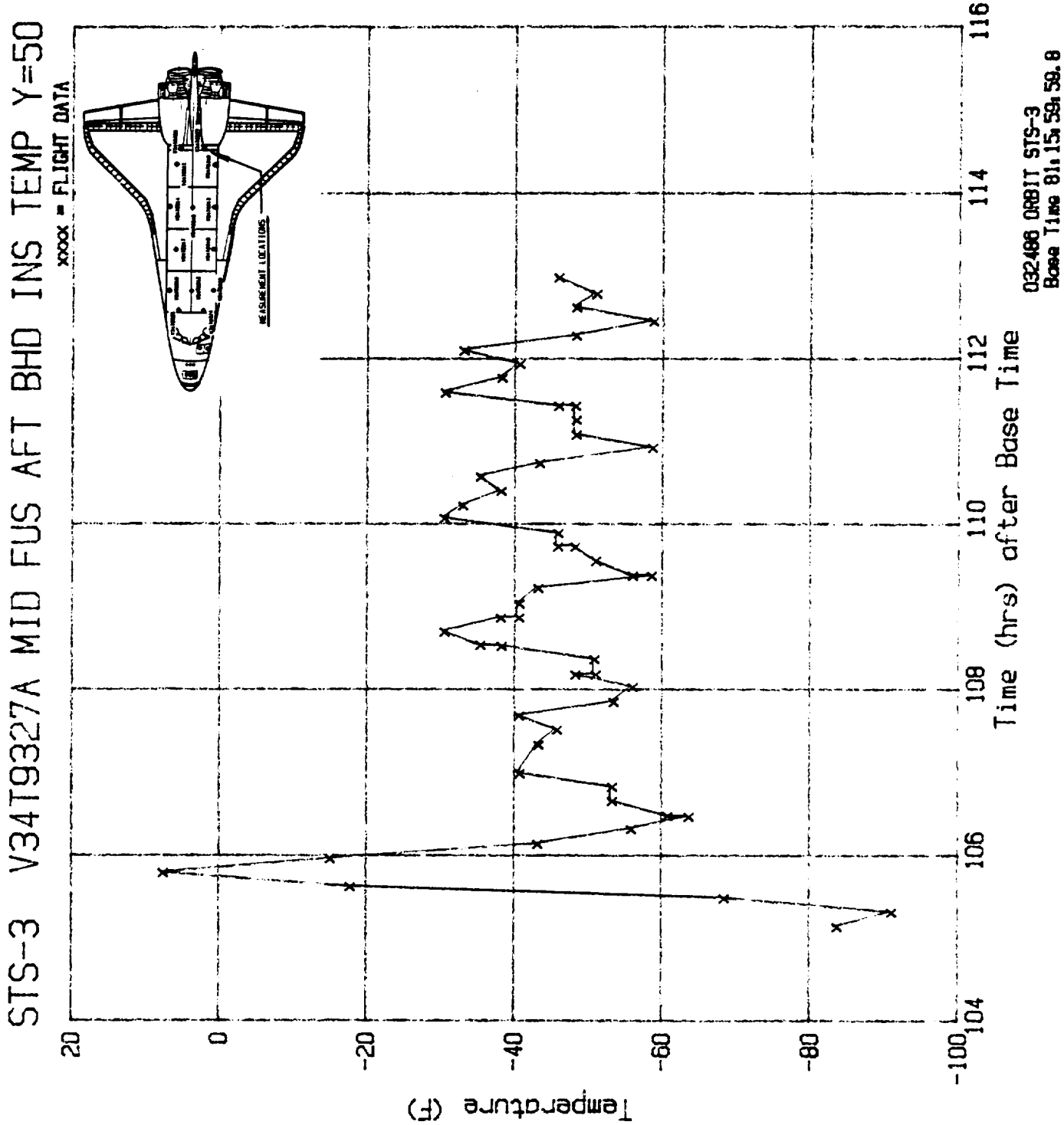
STS-3 V34T9327A MID FUS AFT BHD INS TEMP Y=50
xxxx = FLIGHT DATA
MEASUREMENT LOCATIONS
032486 ORBIT STS-3
Base Time 81:15:59:58.8
Time (hrs) after Base Time
Temperature (F)
20
0
-20
-40
-60
-80
-100
104
106
108
110
112
114
116

Figure A-13

A 14
File No=f14 STS-3 V34T9310A MID FUS PLB LS LIN TEMP X=1250

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	121.08	-16.76	35	123.77	-4.04	69	0.00	0.00	103	0.00	0.00
2	121.17	-21.88	36	123.85	-4.07	70	0.00	0.00	104	0.00	0.00
3	121.18	-24.48	37	123.94	-6.67	71	0.00	0.00	105	0.00	0.00
4	121.26	-29.57	38	0.00	0.00	72	0.00	0.00	106	0.00	0.00
5	121.34	-34.69	39	0.00	0.00	73	0.00	0.00	107	0.00	0.00
6	121.43	-39.78	40	0.00	0.00	74	0.00	0.00	108	0.00	0.00
7	121.52	-39.78	41	0.00	0.00	75	0.00	0.00	109	0.00	0.00
8	121.61	-39.72	42	0.00	0.00	76	0.00	0.00	110	0.00	0.00
9	121.70	-39.72	43	0.00	0.00	77	0.00	0.00	111	0.00	0.00
10	121.78	-39.75	44	0.00	0.00	78	0.00	0.00	112	0.00	0.00
11	121.86	-37.25	45	0.00	0.00	79	0.00	0.00	113	0.00	0.00
12	121.95	-27.07	46	0.00	0.00	80	0.00	0.00	114	0.00	0.00
13	122.04	-16.76	47	0.00	0.00	81	0.00	0.00	115	0.00	0.00
14	122.04	-14.23	48	0.00	0.00	82	0.00	0.00	116	0.00	0.00
15	122.13	-6.48	49	0.00	0.00	83	0.00	0.00	117	0.00	0.00
16	122.22	-1.33	50	0.00	0.00	84	0.00	0.00	118	0.00	0.00
17	122.30	-3.92	51	0.00	0.00	85	0.00	0.00	119	0.00	0.00
18	122.38	-6.51	52	0.00	0.00	86	0.00	0.00	120	0.00	0.00
19	122.47	-6.48	53	0.00	0.00	87	0.00	0.00	121	0.00	0.00
20	122.56	-11.64	54	0.00	0.00	88	0.00	0.00	122	0.00	0.00
21	122.65	-19.41	55	0.00	0.00	89	0.00	0.00	123	0.00	0.00
22	122.73	-27.13	56	0.00	0.00	90	0.00	0.00	124	0.00	0.00
23	122.82	-32.22	57	0.00	0.00	91	0.00	0.00	125	0.00	0.00
24	122.82	-34.78	58	0.00	0.00	92	0.00	0.00	126	0.00	0.00
25	122.90	-37.35	59	0.00	0.00	93	0.00	0.00	127	0.00	0.00
26	122.99	-39.88	60	0.00	0.00	94	0.00	0.00	128	0.00	0.00
27	123.08	-42.22	61	0.00	0.00	95	0.00	0.00	129	0.00	0.00
28	123.17	-42.25	62	0.00	0.00	96	0.00	0.00	130	0.00	0.00
29	123.26	-42.22	63	0.00	0.00	97	0.00	0.00	131	0.00	0.00
30	123.34	-42.25	64	0.00	0.00	98	0.00	0.00	132	0.00	0.00
31	123.43	-32.25	65	0.00	0.00	99	0.00	0.00	133	0.00	0.00
32	123.51	-19.48	66	0.00	0.00	100	0.00	0.00	134	0.00	0.00
33	123.60	-11.76	67	0.00	0.00	101	0.00	0.00	135	0.00	0.00
34	123.69	-9.20	68	0.00	0.00	102	0.00	0.00	136	0.00	0.00

Max Temp= -1.33 F; Min Temp= -42.25 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

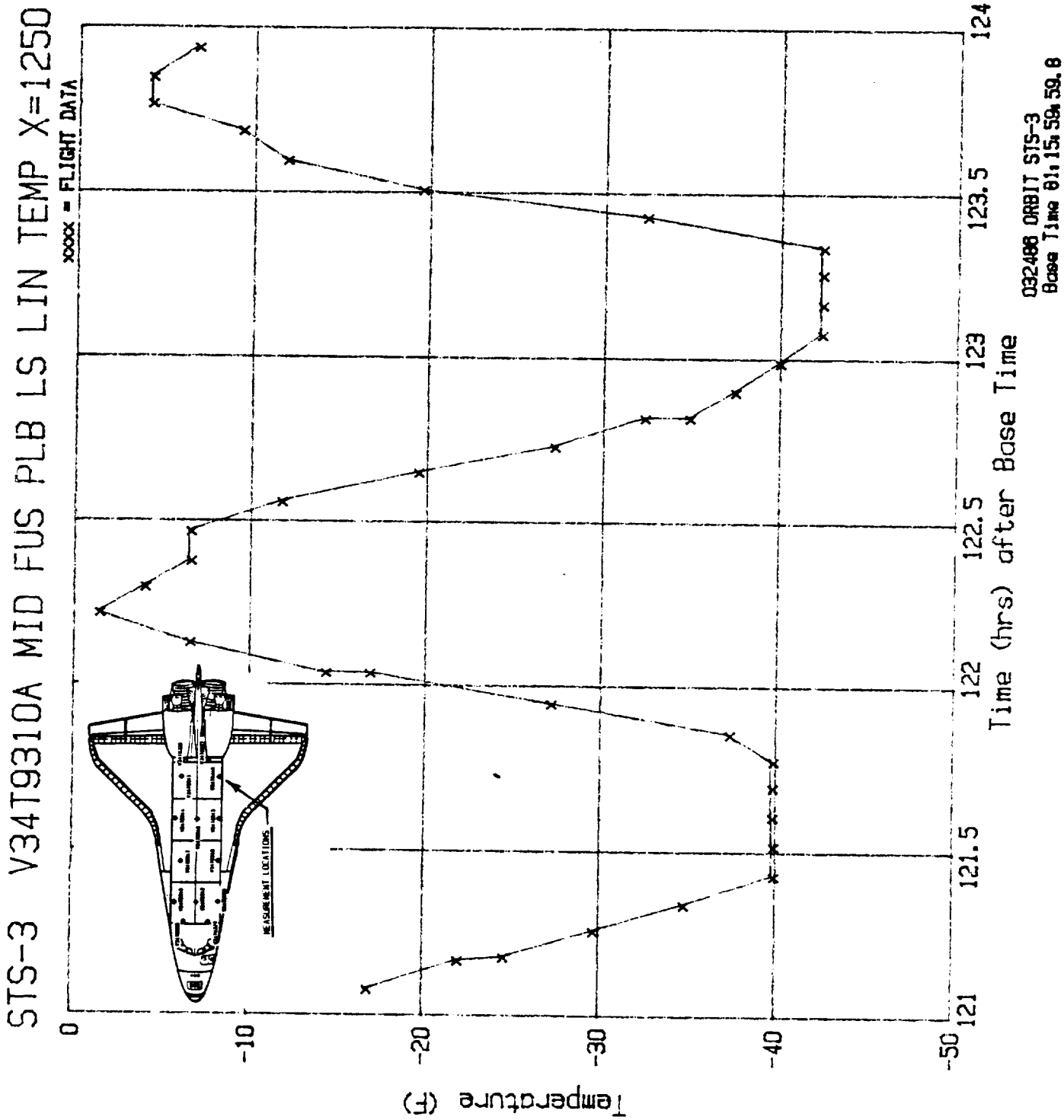
STS-3 V34T9310A MID FUS PLB LS LIN TEMP X=1250
xxxx = FLIGHT DATA
MEASUREMENT LOCATIONS
Temperature (F)
0
-10
-20
-30
-40
-50
121
121.5
122
122.5
123
123.5
124
Time (hrs) after Base Time
032486 ORBIT STS-3
Base Time 01:15:59:59.8

Figure A-14

A 15
File No=f15

STS-3 V34T9311A PLB WIRE TRAY COVER TEMP X=1215

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	121.00	-24.48	35	123.34	-32.16	69	0.00	0.00	103	0.00	0.00
2	121.09	-27.04	36	123.43	-27.05	70	0.00	0.00	104	0.00	0.00
3	121.18	-29.61	37	123.51	-24.47	71	0.00	0.00	105	0.00	0.00
4	121.26	-32.18	38	123.51	-21.91	72	0.00	0.00	106	0.00	0.00
5	121.35	-34.70	39	123.51	-21.91	73	0.00	0.00	107	0.00	0.00
6	121.44	-37.17	40	123.60	-21.91	74	0.00	0.00	108	0.00	0.00
7	121.44	-37.17	41	123.60	-19.37	75	0.00	0.00	109	0.00	0.00
8	121.53	-37.17	42	123.68	-19.39	76	0.00	0.00	110	0.00	0.00
9	121.61	-37.17	43	123.77	-16.88	77	0.00	0.00	111	0.00	0.00
10	121.61	-37.14	44	123.85	-19.39	78	0.00	0.00	112	0.00	0.00
11	121.70	-37.17	45	123.95	-21.93	79	0.00	0.00	113	0.00	0.00
12	121.78	-34.70	46	0.00	0.00	80	0.00	0.00	114	0.00	0.00
13	121.87	-29.59	47	0.00	0.00	81	0.00	0.00	115	0.00	0.00
14	121.96	-27.07	48	0.00	0.00	82	0.00	0.00	116	0.00	0.00
15	122.04	-21.90	49	0.00	0.00	83	0.00	0.00	117	0.00	0.00
16	122.13	-16.82	50	0.00	0.00	84	0.00	0.00	118	0.00	0.00
17	122.21	-19.37	51	0.00	0.00	85	0.00	0.00	119	0.00	0.00
18	122.30	-21.90	52	0.00	0.00	86	0.00	0.00	120	0.00	0.00
19	122.38	-21.93	53	0.00	0.00	87	0.00	0.00	121	0.00	0.00
20	122.39	-21.93	54	0.00	0.00	88	0.00	0.00	122	0.00	0.00
21	122.39	-24.48	55	0.00	0.00	89	0.00	0.00	123	0.00	0.00
22	122.48	-24.48	56	0.00	0.00	90	0.00	0.00	124	0.00	0.00
23	122.56	-27.04	57	0.00	0.00	91	0.00	0.00	125	0.00	0.00
24	122.65	-29.61	58	0.00	0.00	92	0.00	0.00	126	0.00	0.00
25	122.74	-32.16	59	0.00	0.00	93	0.00	0.00	127	0.00	0.00
26	122.82	-34.72	60	0.00	0.00	94	0.00	0.00	128	0.00	0.00
27	122.91	-34.67	61	0.00	0.00	95	0.00	0.00	129	0.00	0.00
28	122.91	-37.15	62	0.00	0.00	96	0.00	0.00	130	0.00	0.00
29	123.00	-37.15	63	0.00	0.00	97	0.00	0.00	131	0.00	0.00
30	123.09	-37.14	64	0.00	0.00	98	0.00	0.00	132	0.00	0.00
31	123.09	-39.57	65	0.00	0.00	99	0.00	0.00	133	0.00	0.00
32	123.16	-39.57	66	0.00	0.00	100	0.00	0.00	134	0.00	0.00
33	123.17	-37.15	67	0.00	0.00	101	0.00	0.00	135	0.00	0.00
34	123.26	-37.15	68	0.00	0.00	102	0.00	0.00	136	0.00	0.00

Max Temp= -16.82 F; Min Temp= -39.57 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

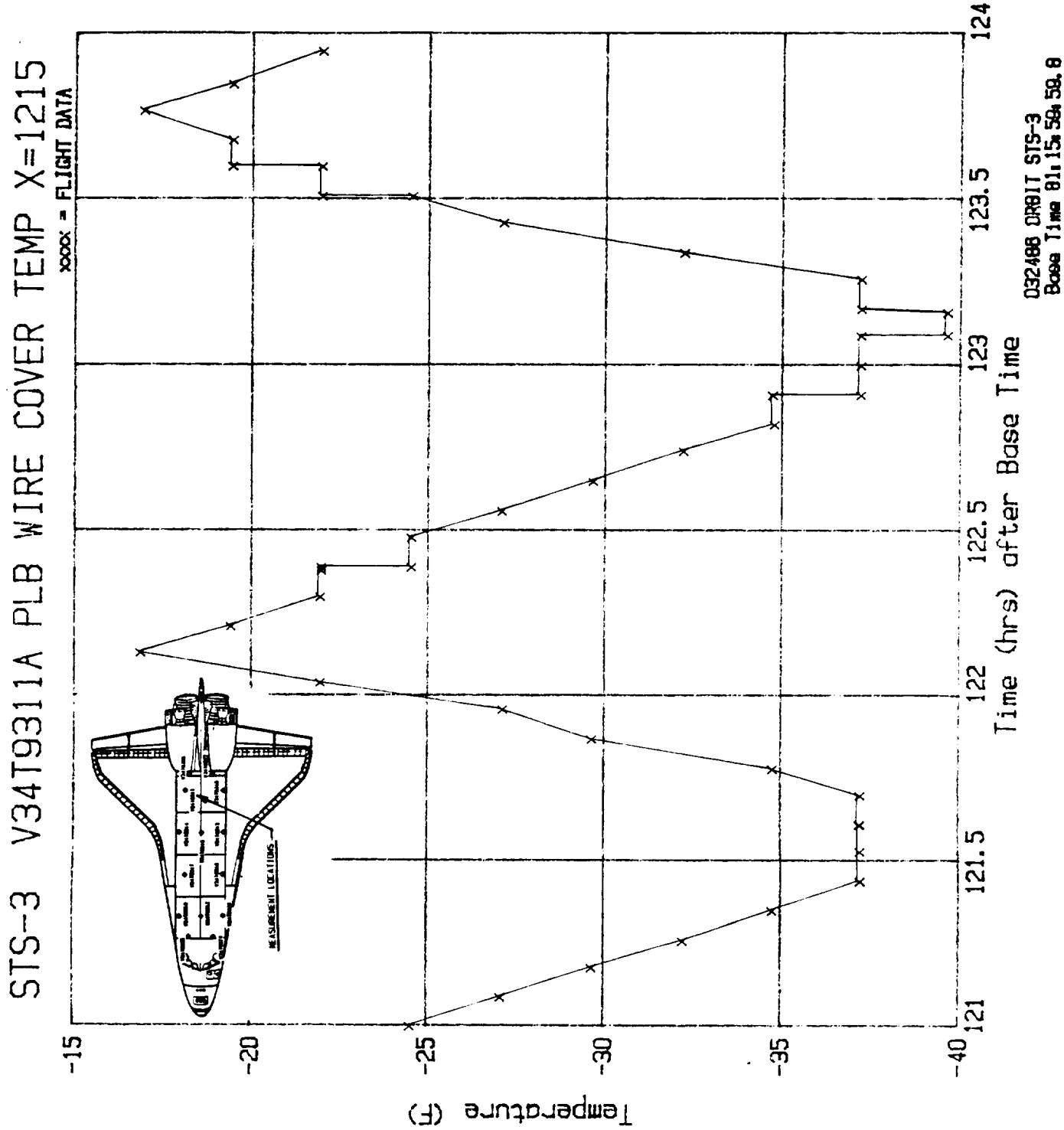
STS-3 V34T9311A PLB WIRE COVER TEMP X=1215
xxxx = FLIGHT DATA
MEASUREMENT LOCATIONS
Temperature (F)
-15
-20
-25
-30
-35
-40
121
121.5
122
122.5
123
123.5
124
Time (hrs) after Base Time
032488 ORBIT STS-3
Base Time 81:15:58:59.8

Figure A-15

A 16
File No=f16

STS-3 V34T9312A MID FUS PLB CTR BTM TEMP X=670

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	121.08	-9.52	35	123.52	-14.08	69	0.00	0.00	103	0.00	0.00
2	121.08	-12.11	36	123.52	16.61	70	0.00	0.00	104	0.00	0.00
3	121.17	-37.12	37	123.60	16.36	71	0.00	0.00	105	0.00	0.00
4	121.17	-39.96	38	123.60	19.07	72	0.00	0.00	106	0.00	0.00
5	121.26	-60.17	39	123.69	29.17	73	0.00	0.00	107	0.00	0.00
6	121.35	-77.91	40	123.77	46.80	74	0.00	0.00	108	0.00	0.00
7	121.44	-88.14	41	123.77	43.96	75	0.00	0.00	109	0.00	0.00
8	121.44	-90.36	42	123.86	39.28	76	0.00	0.00	110	0.00	0.00
9	121.52	-95.90	43	123.95	26.46	77	0.00	0.00	111	0.00	0.00
10	121.61	-95.90	44	0.00	0.00	78	0.00	0.00	112	0.00	0.00
11	121.70	-98.24	45	0.00	0.00	79	0.00	0.00	113	0.00	0.00
12	121.78	-100.34	46	0.00	0.00	80	0.00	0.00	114	0.00	0.00
13	121.87	-82.96	47	0.00	0.00	81	0.00	0.00	115	0.00	0.00
14	121.96	-47.23	48	0.00	0.00	82	0.00	0.00	116	0.00	0.00
15	122.04	-6.44	49	0.00	0.00	83	0.00	0.00	117	0.00	0.00
16	122.13	19.07	50	0.00	0.00	84	0.00	0.00	118	0.00	0.00
17	122.21	29.30	51	0.00	0.00	85	0.00	0.00	119	0.00	0.00
18	122.30	26.96	52	0.00	0.00	86	0.00	0.00	120	0.00	0.00
19	122.39	24.00	53	0.00	0.00	87	0.00	0.00	121	0.00	0.00
20	122.39	16.61	54	0.00	0.00	88	0.00	0.00	122	0.00	0.00
21	122.48	16.97	55	0.00	0.00	89	0.00	0.00	123	0.00	0.00
22	122.56	-6.44	56	0.00	0.00	90	0.00	0.00	124	0.00	0.00
23	122.65	-34.90	57	0.00	0.00	91	0.00	0.00	125	0.00	0.00
24	122.73	-55.11	58	0.00	0.00	92	0.00	0.00	126	0.00	0.00
25	122.73	-57.46	59	0.00	0.00	93	0.00	0.00	127	0.00	0.00
26	122.83	-75.57	60	0.00	0.00	94	0.00	0.00	128	0.00	0.00
27	122.91	-88.02	61	0.00	0.00	95	0.00	0.00	129	0.00	0.00
28	123.00	-98.24	62	0.00	0.00	96	0.00	0.00	130	0.00	0.00
29	123.09	-100.34	63	0.00	0.00	97	0.00	0.00	131	0.00	0.00
30	123.17	-105.64	64	0.00	0.00	98	0.00	0.00	132	0.00	0.00
31	123.26	-108.10	65	0.00	0.00	99	0.00	0.00	133	0.00	0.00
32	123.35	-95.66	66	0.00	0.00	100	0.00	0.00	134	0.00	0.00
33	123.44	-57.21	67	0.00	0.00	101	0.00	0.00	135	0.00	0.00
34	123.52	-16.67	68	0.00	0.00	102	0.00	0.00	136	0.00	0.00

Max Temp= 46.80 F; Min Temp=-108.10 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

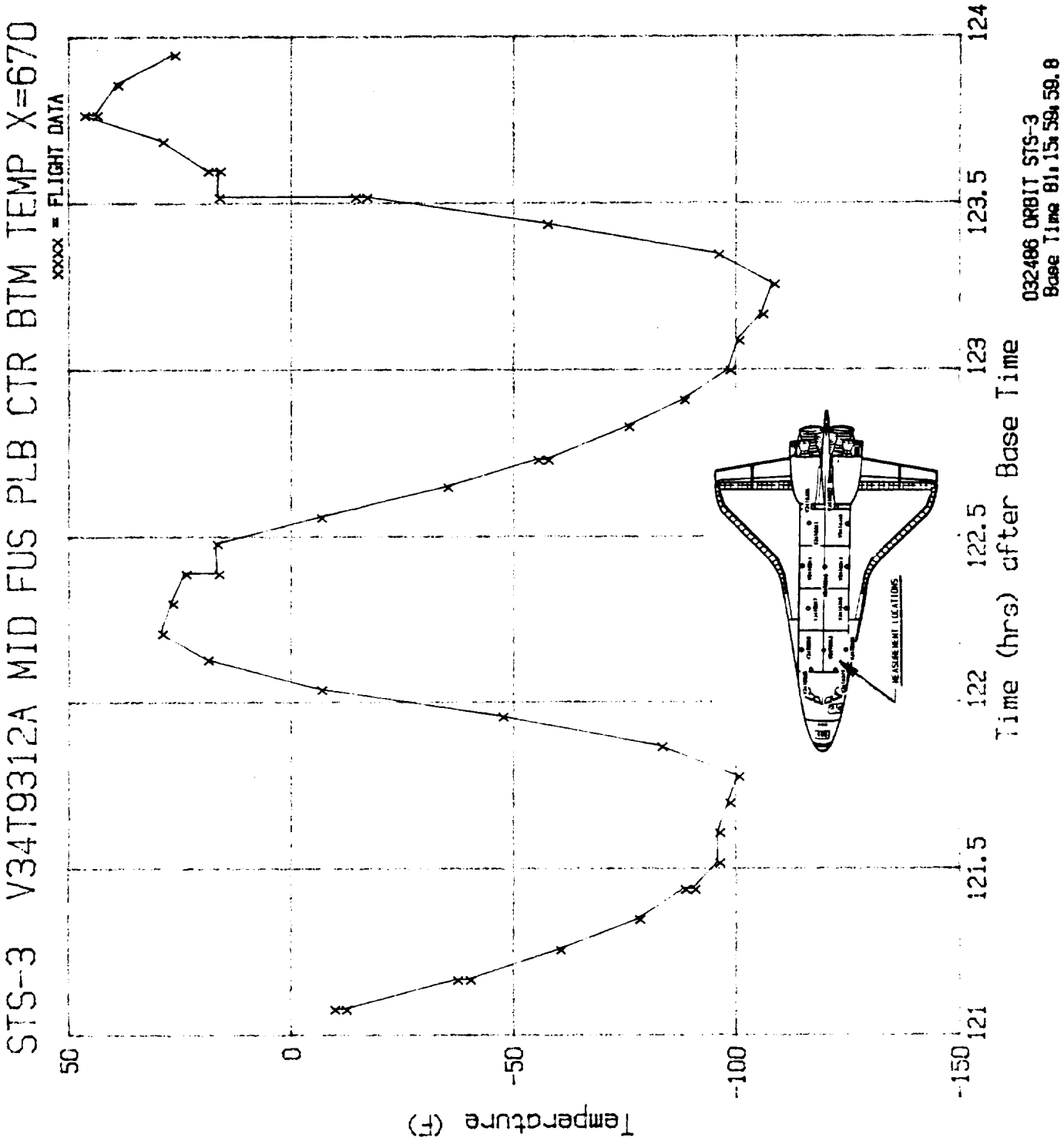
STS-3 V34T9312A MID FUS PLB CTR BTM TEMP X=670
xxxx = FLIGHT DATA
032486 ORBIT STS-3
Base Time 81:15:59:59.8
Temperature (F)
50
0
-50
-100
-150
Time (hrs) after Base Time
121
121.5
122
122.5
123
123.5
124
MEASUREMENT LOCATIONS

Figure A-16

A 19
File No=f19

STS-3 V34T9317A PLB WIRE TRAY COVER TEMP X=850

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	121.00	-47.16	35	123.60	-32.10	69	0.00	0.00	103	0.00	0.00
2	121.09	-54.73	36	123.69	-34.59	70	0.00	0.00	104	0.00	0.00
3	121.18	-59.87	37	123.78	-32.13	71	0.00	0.00	105	0.00	0.00
4	121.18	-62.33	38	123.87	-37.12	72	0.00	0.00	106	0.00	0.00
5	121.26	-64.77	39	123.95	-44.66	73	0.00	0.00	107	0.00	0.00
6	121.35	-67.20	40	0.00	0.00	74	0.00	0.00	108	0.00	0.00
7	121.43	-67.20	41	0.00	0.00	75	0.00	0.00	109	0.00	0.00
8	121.52	-62.33	42	0.00	0.00	76	0.00	0.00	110	0.00	0.00
9	121.61	-57.35	43	0.00	0.00	77	0.00	0.00	111	0.00	0.00
10	121.61	-59.90	44	0.00	0.00	78	0.00	0.00	112	0.00	0.00
11	121.70	-59.87	45	0.00	0.00	79	0.00	0.00	113	0.00	0.00
12	121.79	-57.35	46	0.00	0.00	80	0.00	0.00	114	0.00	0.00
13	121.87	-44.57	47	0.00	0.00	81	0.00	0.00	115	0.00	0.00
14	121.95	-37.03	48	0.00	0.00	82	0.00	0.00	116	0.00	0.00
15	122.04	-29.45	49	0.00	0.00	83	0.00	0.00	117	0.00	0.00
16	122.04	-31.98	50	0.00	0.00	84	0.00	0.00	118	0.00	0.00
17	122.12	-31.98	51	0.00	0.00	85	0.00	0.00	119	0.00	0.00
18	122.22	-37.06	52	0.00	0.00	86	0.00	0.00	120	0.00	0.00
19	122.31	-42.08	53	0.00	0.00	87	0.00	0.00	121	0.00	0.00
20	122.39	-39.61	54	0.00	0.00	88	0.00	0.00	122	0.00	0.00
21	122.48	-47.16	55	0.00	0.00	89	0.00	0.00	123	0.00	0.00
22	122.56	-52.27	56	0.00	0.00	90	0.00	0.00	124	0.00	0.00
23	122.56	-54.79	57	0.00	0.00	91	0.00	0.00	125	0.00	0.00
24	122.65	-59.93	58	0.00	0.00	92	0.00	0.00	126	0.00	0.00
25	122.74	-64.83	59	0.00	0.00	93	0.00	0.00	127	0.00	0.00
26	122.83	-67.32	60	0.00	0.00	94	0.00	0.00	128	0.00	0.00
27	122.91	-69.78	61	0.00	0.00	95	0.00	0.00	129	0.00	0.00
28	123.00	-67.38	62	0.00	0.00	96	0.00	0.00	130	0.00	0.00
29	123.09	-64.86	63	0.00	0.00	97	0.00	0.00	131	0.00	0.00
30	123.17	-64.83	64	0.00	0.00	98	0.00	0.00	132	0.00	0.00
31	123.26	-64.83	65	0.00	0.00	99	0.00	0.00	133	0.00	0.00
32	123.35	-49.68	66	0.00	0.00	100	0.00	0.00	134	0.00	0.00
33	123.43	-39.64	67	0.00	0.00	101	0.00	0.00	135	0.00	0.00
34	123.52	-32.10	68	0.00	0.00	102	0.00	0.00	136	0.00	0.00

Max Temp= -29.45 F; Min Temp= -69.78 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

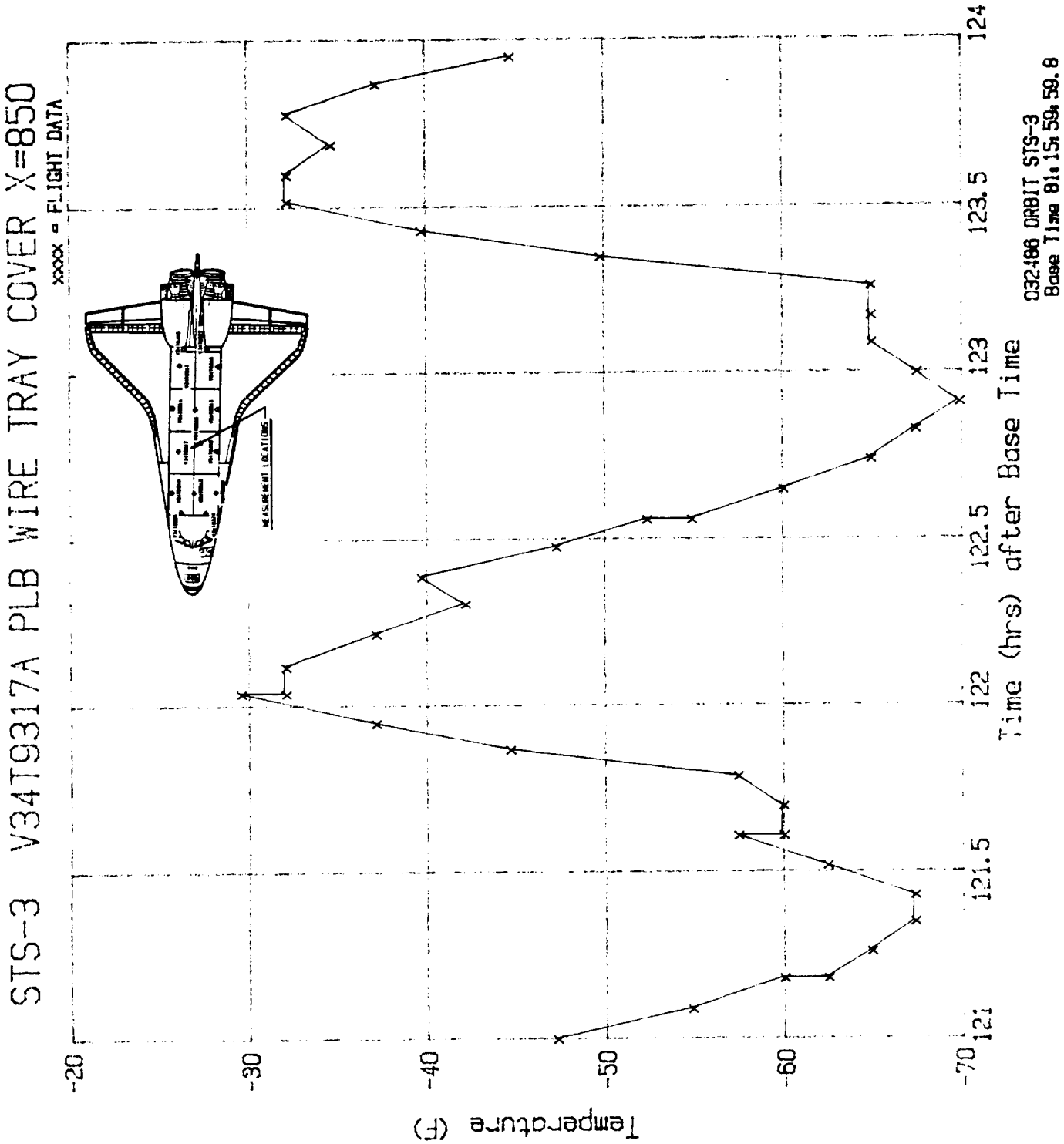
STS-3 V34T9317A PLB WIRE TRAY COVER X=850
xxxx = FLIGHT DATA
MEASUREMENT LOCATIONS
Temperature (F)
-20
-30
-40
-50
-60
-70
Time (hrs) after Base Time
121
121.5
122
122.5
123
123.5
124
032486 ORBIT STS-3
Base Time 81:15:59:59.8

Figure A-19

A 20
File No=f20

STS-3 V34T9318A MID FUS PLB LNR LS TEMP=850

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	121.00	1.00	35	123.43	-82.43	69	0.00	0.00	103	0.00	0.00
2	121.08	-11.54	36	123.52	-42.55	70	0.00	0.00	104	0.00	0.00
3	121.17	-42.31	37	123.52	-39.48	71	0.00	0.00	105	0.00	0.00
4	121.25	-67.66	38	123.52	-9.20	72	0.00	0.00	106	0.00	0.00
5	121.34	-87.85	39	123.60	-9.20	73	0.00	0.00	107	0.00	0.00
6	121.43	-97.94	40	123.68	-1.57	74	0.00	0.00	108	0.00	0.00
7	121.52	-102.49	41	123.77	13.94	75	0.00	0.00	109	0.00	0.00
8	121.52	-104.95	42	123.86	10.86	76	0.00	0.00	110	0.00	0.00
9	121.61	-105.08	43	123.95	5.94	77	0.00	0.00	111	0.00	0.00
10	121.69	-102.62	44	0.00	0.00	78	0.00	0.00	112	0.00	0.00
11	121.78	-102.62	45	0.00	0.00	79	0.00	0.00	113	0.00	0.00
12	121.87	-97.94	46	0.00	0.00	80	0.00	0.00	114	0.00	0.00
13	121.96	-72.34	47	0.00	0.00	81	0.00	0.00	115	0.00	0.00
14	122.04	-31.97	48	0.00	0.00	82	0.00	0.00	116	0.00	0.00
15	122.13	-6.12	49	0.00	0.00	83	0.00	0.00	117	0.00	0.00
16	122.21	4.09	50	0.00	0.00	84	0.00	0.00	118	0.00	0.00
17	122.21	1.14	51	0.00	0.00	85	0.00	0.00	119	0.00	0.[illegible]
18	122.30	1.38	52	0.00	0.00	86	0.00	0.00	120	0.00	0.00
19	122.39	1.38	53	0.00	0.00	87	0.00	0.00	121	0.00	0.00
20	122.47	1.38	54	0.00	0.00	88	0.00	0.00	122	0.00	0.00
21	122.56	-6.00	55	0.00	0.00	89	0.00	0.00	123	0.00	0.00
22	122.65	-29.51	56	0.00	0.00	90	0.00	0.00	124	0.00	0.00
23	122.65	-32.34	57	0.00	0.00	91	0.00	0.00	125	0.00	0.00
24	122.73	-59.91	58	0.00	0.00	92	0.00	0.00	126	0.00	0.00
25	122.82	-82.43	59	0.00	0.00	93	0.00	0.00	127	0.00	0.00
26	122.91	-95.35	60	0.00	0.00	94	0.00	0.00	128	0.00	0.00
27	122.91	-98.18	61	0.00	0.00	95	0.00	0.00	129	0.00	0.00
28	123.00	-105.20	62	0.00	0.00	96	0.00	0.00	130	0.00	0.00
29	123.09	-107.78	63	0.00	0.00	97	0.00	0.00	131	0.00	0.00
30	123.17	-110.49	64	0.00	0.00	98	0.00	0.00	132	0.00	0.00
31	123.17	-112.71	65	0.00	0.00	99	0.00	0.00	133	0.00	0.00
32	123.26	-112.83	66	0.00	0.00	100	0.00	0.00	134	0.00	0.00
33	123.34	-107.78	67	0.00	0.00	101	0.00	0.00	135	0.00	0.00
34	123.43	-85.38	68	0.00	0.00	102	0.00	0.00	136	0.00	0.00

Max Temp= 13.94 F; Min Temp=-112.83 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

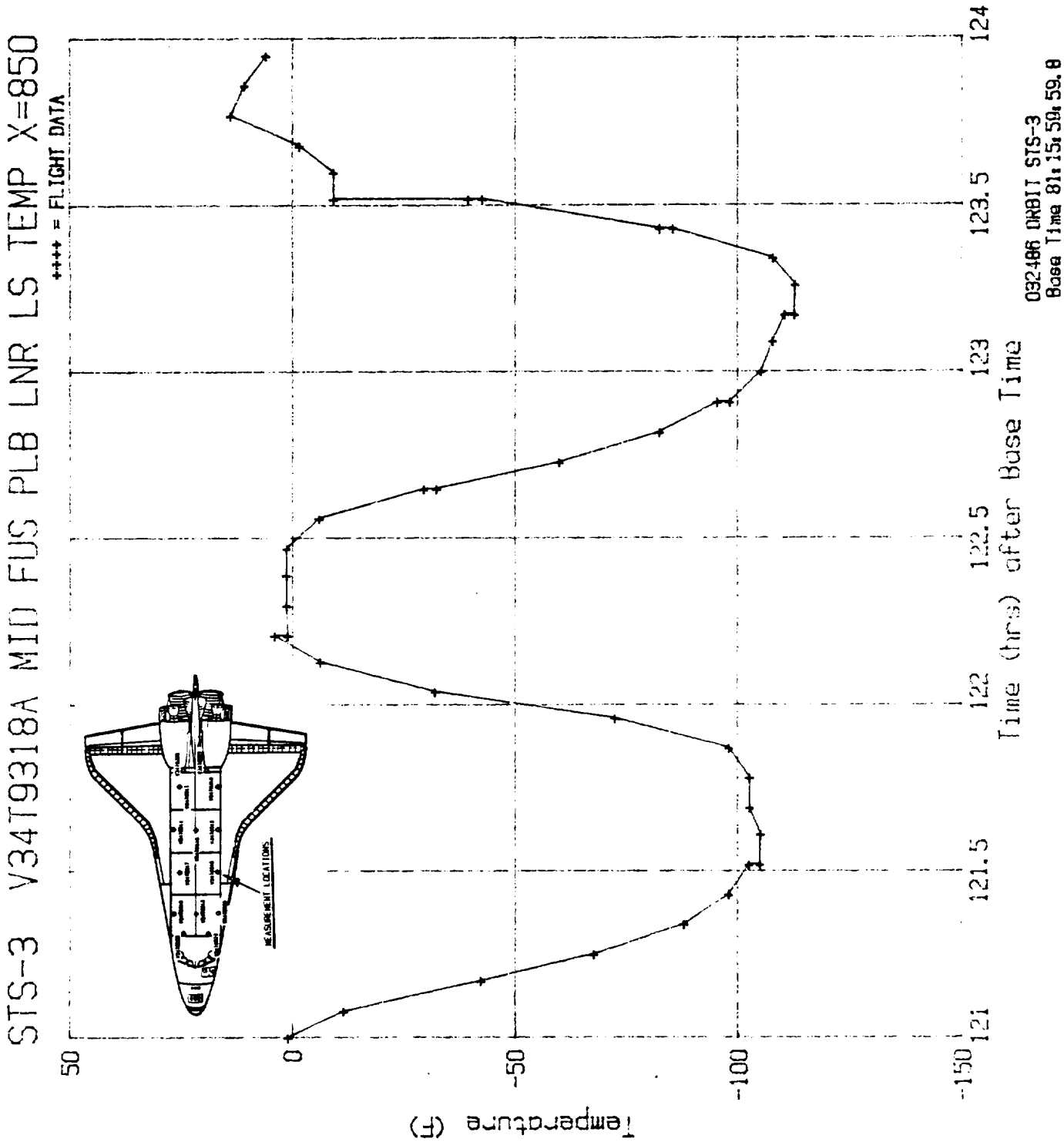
STS-3 V34T9318A MID FUS PLB LNR LS TEMP X=850
++++ = FLIGHT DATA
MEASUREMENT LOCATIONS
Temperature (F)
50
0
-50
-100
-150
Time (hrs) after Base Time
121
121.5
122
122.5
123
123.5
124
032486 ORBIT STS-3
Base Time 81:15:59:59.8

Figure A-20

21
File No=f21 STS-3 V34T9319A MID FUS PLB LNR RS TEMP X=670

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	121.00	-14.35	35	123.35	-49.93	69	0.00	0.00	103	0.00	0.00
2	121.08	-22.05	36	123.44	-42.30	70	0.00	0.00	104	0.00	0.00
3	121.18	-29.54	37	123.52	-27.18	71	0.00	0.00	105	0.00	0.00
4	121.18	-32.08	38	123.52	-16.93	72	0.00	0.00	106	0.00	0.00
5	121.26	-37.28	39	123.60	-16.93	73	0.00	0.00	107	0.00	0.00
6	121.35	-42.30	40	123.69	-11.91	74	0.00	0.00	108	0.00	0.00
7	121.44	-44.84	41	123.69	-4.24	75	0.00	0.00	109	0.00	0.00
8	121.52	-47.46	42	123.78	-4.20	76	0.00	0.00	110	0.00	0.00
9	121.61	-47.42	43	123.87	-6.64	77	0.00	0.00	111	0.00	0.00
10	121.70	-47.39	44	123.95	-9.33	78	0.00	0.00	112	0.00	0.00
11	121.79	-47.39	45	123.95	-11.95	79	0.00	0.00	113	0.00	0.00
12	121.79	-49.93	46	0.00	0.00	80	0.00	0.00	114	0.00	0.00
13	121.87	-47.46	47	0.00	0.00	81	0.00	0.00	115	0.00	0.00
14	121.96	-37.32	48	0.00	0.00	82	0.00	0.00	116	0.00	0.00
15	122.04	-24.63	49	0.00	0.00	83	0.00	0.00	117	0.00	0.00
16	122.13	-16.85	50	0.00	0.00	84	0.00	0.00	118	0.00	0.00
17	122.13	-14.31	51	0.00	0.00	85	0.00	0.00	119	0.00	0.00
18	122.22	-9.18	52	0.00	0.00	86	0.00	0.00	120	0.00	0.00
19	122.30	-9.18	53	0.00	0.00	87	0.00	0.00	121	0.00	0.00
20	122.39	-11.87	54	0.00	0.00	88	0.00	0.00	122	0.00	0.00
21	122.39	-14.35	55	0.00	0.00	89	0.00	0.00	123	0.00	0.00
22	122.47	-14.38	56	0.00	0.00	90	0.00	0.00	124	0.00	0.00
23	122.56	-22.02	57	0.00	0.00	91	0.00	0.00	125	0.00	0.00
24	122.56	-29.65	58	0.00	0.00	92	0.00	0.00	126	0.00	0.00
25	122.65	-29.54	59	0.00	0.00	93	0.00	0.00	127	0.00	0.00
26	122.74	-37.28	60	0.00	0.00	94	0.00	0.00	128	0.00	0.00
27	122.83	-42.30	61	0.00	0.00	95	0.00	0.00	129	0.00	0.00
28	122.92	-44.88	62	0.00	0.00	96	0.00	0.00	130	0.00	0.00
29	123.00	-47.42	63	0.00	0.00	97	0.00	0.00	131	0.00	0.00
30	123.09	-47.39	64	0.00	0.00	98	0.00	0.00	132	0.00	0.00
31	123.09	-49.97	65	0.00	0.00	99	0.00	0.00	133	0.00	0.00
32	123.17	-49.93	66	0.00	0.00	100	0.00	0.00	134	0.00	0.00
33	123.26	-49.90	67	0.00	0.00	101	0.00	0.00	135	0.00	0.00
34	123.26	-52.29	68	0.00	0.00	102	0.00	0.00	136	0.00	0.00

Max Temp= -4.20 F; Min Temp= -52.29 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

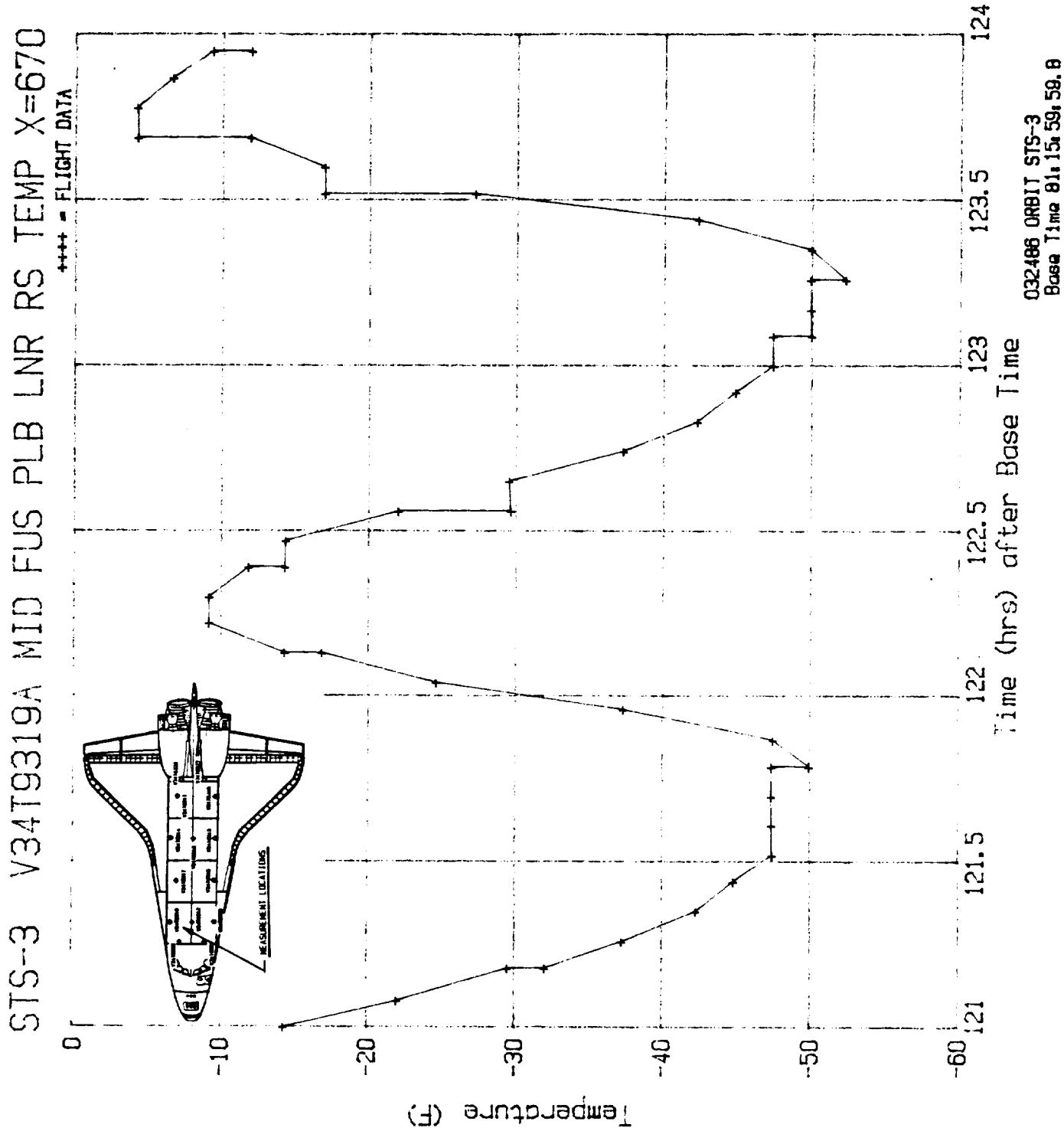
STS-3 V34T9319A MID FUS PLB LNR RS TEMP X=670
++++ = FLIGHT DATA
MEASUREMENT LOCATIONS
Temperature (F)
0
-10
-20
-30
-40
-50
-60
Time (hrs) after Base Time
121
121.5
122
122.5
123
123.5
124
032486 ORBIT STS-3
Base Time 81:15:59:59.0

Figure A-21

A 22
File No=f22

STS-3 V34T9320A MID FUS PLB LNR LS TEMP X=670

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	121.00	16.52	35	123.52	-42.55	69	0.00	0.00	103	0.00	0.00
2	121.08	-1.82	36	123.52	-39.85	70	0.00	0.00	104	0.00	0.00
3	121.17	-27.29	37	123.52	-6.49	71	0.00	0.00	105	0.00	0.00
4	121.26	-52.77	38	123.60	-6.37	72	0.00	0.00	106	0.00	0.00
5	121.35	-72.83	39	123.69	11.11	73	0.00	0.00	107	0.00	0.00
6	121.44	-85.75	40	123.77	31.54	74	0.00	0.00	108	0.00	0.00
7	121.44	-88.09	41	123.86	28.95	75	0.00	0.00	109	0.00	0.00
8	121.52	-95.85	42	123.95	23.78	76	0.00	0.00	110	0.00	0.00
9	121.61	-98.43	43	0.00	0.00	77	0.00	0.00	111	0.00	0.00
10	121.70	-98.43	44	0.00	0.00	78	0.00	0.00	112	0.00	0.00
11	121.70	-100.65	45	0.00	0.00	79	0.00	0.00	113	0.00	0.00
12	121.78	-100.65	46	0.00	0.00	80	0.00	0.00	114	0.00	0.00
13	121.88	-98.55	47	0.00	0.00	81	0.00	0.00	115	0.00	0.00
14	121.96	-73.08	48	0.00	0.00	82	0.00	0.00	116	0.00	0.00
15	122.04	-32.58	49	0.00	0.00	83	0.00	0.00	117	0.00	0.00
16	122.12	-1.69	50	0.00	0.00	84	0.00	0.00	118	0.00	0.00
17	122.21	13.69	51	0.00	0.00	85	0.00	0.00	119	0.00	0.00
18	122.30	18.98	52	0.00	0.00	86	0.00	0.00	120	0.00	0.00
19	122.39	18.98	53	0.00	0.00	87	0.00	0.00	121	0.00	0.00
20	122.39	16.52	54	0.00	0.00	88	0.00	0.00	122	0.00	0.00
21	122.47	16.52	55	0.00	0.00	89	0.00	0.00	123	0.00	0.00
22	122.56	3.60	56	0.00	0.00	90	0.00	0.00	124	0.00	0.00
23	122.64	-19.66	57	0.00	0.00	91	0.00	0.00	125	0.00	0.00
24	122.74	-45.02	58	0.00	0.00	92	0.00	0.00	126	0.00	0.00
25	122.74	-47.35	59	0.00	0.00	93	0.00	0.00	127	0.00	0.00
26	122.83	-67.66	60	0.00	0.00	94	0.00	0.00	128	0.00	0.00
27	122.92	-82.80	61	0.00	0.00	95	0.00	0.00	129	0.00	0.00
28	123.00	-92.89	62	0.00	0.00	96	0.00	0.00	130	0.00	0.00
29	123.09	-100.40	63	0.00	0.00	97	0.00	0.00	131	0.00	0.00
30	123.17	-102.86	64	0.00	0.00	98	0.00	0.00	132	0.00	0.00
31	123.17	-105.57	65	0.00	0.00	99	0.00	0.00	133	0.00	0.00
32	123.26	-105.45	66	0.00	0.00	100	0.00	0.00	134	0.00	0.00
33	123.35	-105.45	67	0.00	0.00	101	0.00	0.00	135	0.00	0.00
34	123.44	-82.43	68	0.00	0.00	102	0.00	0.00	136	0.00	0.00

Max Temp= 31.54 F; Min Temp=-105.57 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

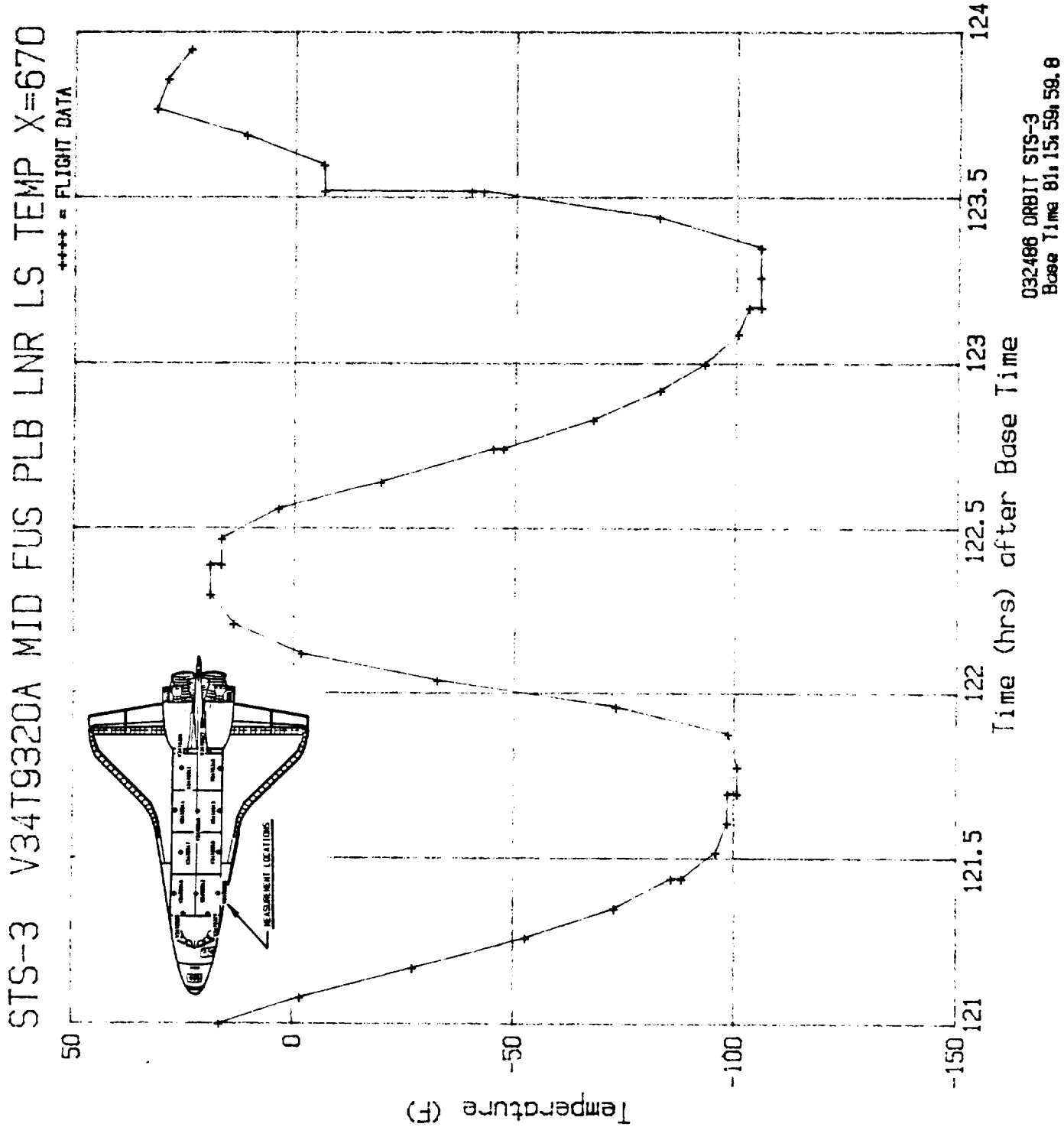
STS-3 V34T9320A MID FUS PLB LNR LS TEMP X=670
++++ = FLIGHT DATA
MEASUREMENT LOCATIONS
Temperature (F)
50
0
-50
-100
-150
Time (hrs) after Base Time
121
121.5
122
122.5
123
123.5
124
032486 ORBIT STS-3
Base Time 81:15:59:59.8

Figure A-22

A 23
File No=f23 STS-3 V34T9324A MID FUS FWD BHD INS TEMP Y=-47

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	121.00	11.48	35	123.26	-82.27	69	0.00	0.00	103	0.00	0.00
2	121.09	-6.53	36	123.34	-79.96	70	0.00	0.00	104	0.00	0.00
3	121.18	-31.83	37	123.43	-57.42	71	0.00	0.00	105	0.00	0.00
4	121.26	-49.75	38	123.51	-22.04	72	0.00	0.00	106	0.00	0.00
5	121.35	-62.78	39	123.51	0.86	73	0.00	0.00	107	0.00	0.00
6	121.43	-70.26	40	123.60	1.05	74	0.00	0.00	108	0.00	0.00
7	121.52	-75.06	41	123.69	16.47	75	0.00	0.00	109	0.00	0.00
8	121.52	-77.65	42	123.77	34.11	76	0.00	0.00	110	0.00	0.00
9	121.61	-77.56	43	123.86	28.85	77	0.00	0.00	111	0.00	0.00
10	121.61	-79.96	44	123.94	21.00	78	0.00	0.00	112	0.00	0.00
11	121.70	-79.77	45	123.94	18.60	79	0.00	0.00	113	0.00	0.00
12	121.78	-79.96	46	0.00	0.00	80	0.00	0.00	114	0.00	0.00
13	121.87	-75.06	47	0.00	0.00	81	0.00	0.00	115	0.00	0.00
14	121.96	-49.75	48	0.00	0.00	82	0.00	0.00	116	0.00	0.00
15	121.96	-47.35	49	0.00	0.00	83	0.00	0.00	117	0.00	0.00
16	122.04	-16.50	50	0.00	0.00	84	0.00	0.00	118	0.00	0.00
17	122.13	6.31	51	0.00	0.00	85	0.00	0.00	119	0.00	0.00
18	122.13	8.99	52	0.00	0.00	86	0.00	0.00	120	0.00	0.00
19	122.21	19.15	53	0.00	0.00	87	0.00	0.00	121	0.00	0.00
20	122.30	21.55	54	0.00	0.00	88	0.00	0.00	122	0.00	0.00
21	122.39	18.87	55	0.00	0.00	89	0.00	0.00	123	0.00	0.00
22	122.39	13.79	56	0.00	0.00	90	0.00	0.00	124	0.00	0.00
23	122.47	13.89	57	0.00	0.00	91	0.00	0.00	125	0.00	0.00
24	122.56	-1.26	58	0.00	0.00	92	0.00	0.00	126	0.00	0.00
25	122.56	-4.31	59	0.00	0.00	93	0.00	0.00	127	0.00	0.00
26	122.65	-24.35	60	0.00	0.00	94	0.00	0.00	128	0.00	0.00
27	122.65	-27.03	61	0.00	0.00	95	0.00	0.00	129	0.00	0.00
28	122.74	-44.95	62	0.00	0.00	96	0.00	0.00	130	0.00	0.00
29	122.82	-60.38	63	0.00	0.00	97	0.00	0.00	131	0.00	0.00
30	122.91	-67.86	64	0.00	0.00	98	0.00	0.00	132	0.00	0.00
31	122.91	-70.26	65	0.00	0.00	99	0.00	0.00	133	0.00	0.00
32	122.99	-75.25	66	0.00	0.00	100	0.00	0.00	134	0.00	0.00
33	123.08	-79.96	67	0.00	0.00	101	0.00	0.00	135	0.00	0.00
34	123.17	-82.45	68	0.00	0.00	102	0.00	0.00	136	0.00	0.00

Max Temp= 34.11 F; Min Temp= -82.45 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

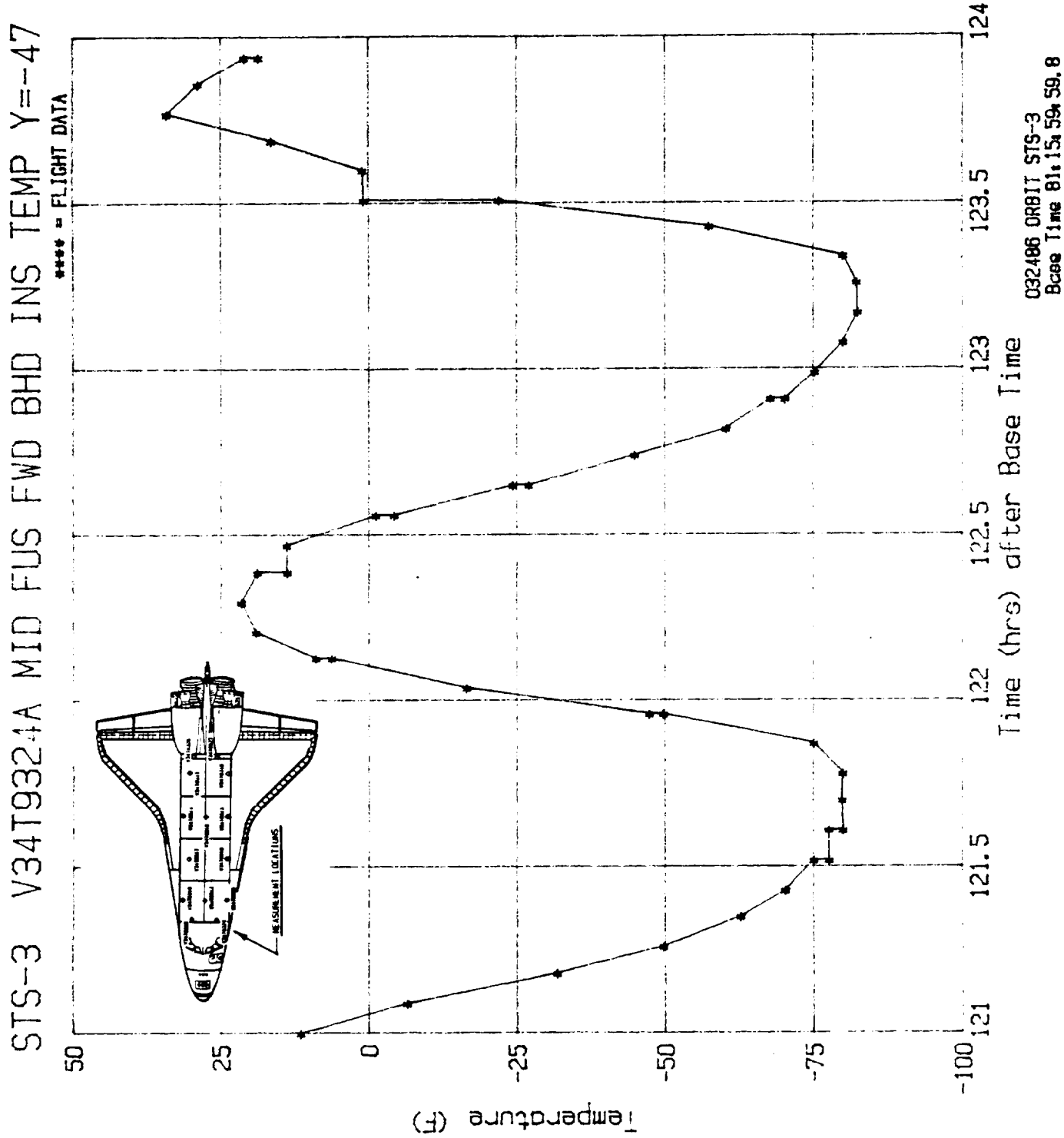
STS-3 V34T9324A MID FUS FWD BHD INS TEMP Y=-47
**** = FLIGHT DATA
MEASUREMENT LOCATIONS
Temperature (F)
50
25
0
-25
-50
-75
-100
Time (hrs) after Base Time
121
121.5
122
122.5
123
123.5
124
032486 ORBIT STS-3
Base Time 81:15:59:59.8

Figure A-23

A 24
File No=f24

STS-3 V34T9325A MID FUS FWD BHD INS TEMP Y=37.5

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	121.00	11.16	35	122.74	-72.80	69	0.00	0.00	103	0.00	0.00
2	121.00	8.70	36	122.82	-72.56	70	0.00	0.00	104	0.00	0.00
3	121.00	-16.63	37	122.82	-75.63	71	0.00	0.00	105	0.00	0.00
4	121.08	-19.45	38	122.90	-83.01	72	0.00	0.00	106	0.00	0.00
5	121.09	-16.50	39	122.91	-85.71	73	0.00	0.00	107	0.00	0.00
6	121.09	-42.32	40	122.99	-92.84	74	0.00	0.00	108	0.00	0.00
7	121.17	-42.44	41	123.08	-98.13	75	0.00	0.00	109	0.00	0.00
8	121.17	-44.90	42	123.17	-100.22	76	0.00	0.00	110	0.00	0.00
9	121.18	-62.48	43	123.26	-102.43	77	0.00	0.00	111	0.00	0.00
10	121.26	-62.72	44	123.34	-88.05	78	0.00	0.00	112	0.00	0.00
11	121.26	-77.72	45	123.42	-50.06	79	0.00	0.00	113	0.00	0.00
12	121.34	-77.84	46	123.51	-9.50	80	0.00	0.00	114	0.00	0.00
13	121.34	-77.84	47	123.51	13.49	81	0.00	0.00	115	0.00	0.00
14	121.35	-85.59	48	123.60	13.61	82	0.00	0.00	116	0.00	0.00
15	121.43	-85.46	49	123.69	29.23	83	0.00	0.00	117	0.00	0.00
16	121.52	-92.84	50	123.69	46.80	84	0.00	0.00	118	0.00	0.00
17	121.61	-95.42	51	123.77	46.44	85	0.00	0.00	119	0.00	0.00
18	121.70	-97.76	52	123.86	36.60	86	0.00	0.00	120	0.00	0.00
19	121.78	-98.00	53	123.94	23.45	87	0.00	0.00	121	0.00	0.00
20	121.87	-77.84	54	123.94	20.87	88	0.00	0.00	122	0.00	0.00
21	121.95	-42.32	55	0.00	0.00	89	0.00	0.00	123	0.00	0.00
22	122.04	-6.18	56	0.00	0.00	90	0.00	0.00	124	0.00	0.00
23	122.12	21.36	57	0.00	0.00	91	0.00	0.00	125	0.00	0.00
24	122.13	23.94	58	0.00	0.00	92	0.00	0.00	126	0.00	0.00
25	122.21	31.68	59	0.00	0.00	93	0.00	0.00	127	0.00	0.00
26	122.29	31.56	60	0.00	0.00	94	0.00	0.00	128	0.00	0.00
27	122.38	29.23	61	0.00	0.00	95	0.00	0.00	129	0.00	0.00
28	122.38	27.01	62	0.00	0.00	96	0.00	0.00	130	0.00	0.00
29	122.38	13.74	63	0.00	0.00	97	0.00	0.00	131	0.00	0.00
30	122.47	13.74	64	0.00	0.00	98	0.00	0.00	132	0.00	0.00
31	122.56	-11.83	65	0.00	0.00	99	0.00	0.00	133	0.00	0.00
32	122.56	-37.03	66	0.00	0.00	100	0.00	0.00	134	0.00	0.00
33	122.65	-36.79	67	0.00	0.00	101	0.00	0.00	135	0.00	0.00
34	122.73	-57.44	68	0.00	0.00	102	0.00	0.00	136	0.00	0.00

Max Temp= 46.80 F; Min Temp=-102.43 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

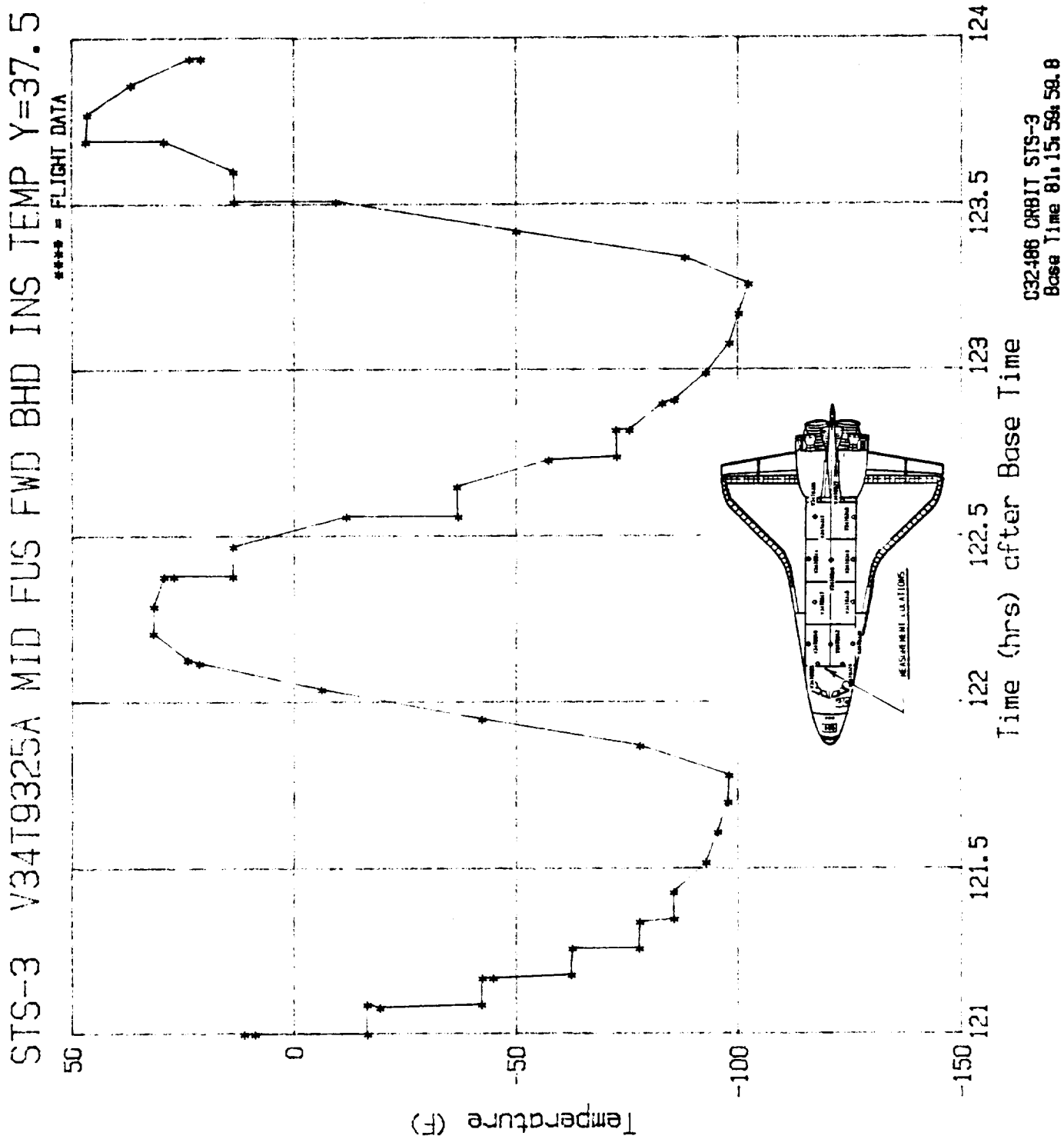
STS-3 V34T9325A MID FUS FWD BHD INS TEMP Y=37.5
**** = FLIGHT DATA
Temperature (F)
50
0
-50
-100
-150
121
121.5
122
122.5
123
123.5
124
Time (hrs) after Base Time
C32486 ORBIT STS-3
Base Time 81, 15, 59, 59.8
MEASUREMENT LOCATIONS

Figure A-24

A 25
File No=f25

STS-3 V34T9326A MID FUS AFT BHD INS TEMP Y=-50

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	121.00	-31.98	35	123.26	-52.43	69	0.00	0.00	103	0.00	0.00
2	121.09	-34.51	36	123.34	-47.38	70	0.00	0.00	104	0.00	0.00
3	121.18	-42.24	37	123.43	-39.74	71	0.00	0.00	105	0.00	0.00
4	121.18	-44.79	38	123.51	-32.08	72	0.00	0.00	106	0.00	0.00
5	121.26	-49.90	39	123.51	-29.52	73	0.00	0.00	107	0.00	0.00
6	121.34	-52.36	40	123.60	-29.55	74	0.00	0.00	108	0.00	0.00
7	121.43	-52.36	41	123.69	-34.57	75	0.00	0.00	109	0.00	0.00
8	121.52	-49.90	42	123.78	-34.60	76	0.00	0.00	110	0.00	0.00
9	121.61	-47.35	43	123.86	-34.63	77	0.00	0.00	111	0.00	0.00
10	121.61	-44.82	44	123.94	-32.11	78	0.00	0.00	112	0.00	0.00
11	121.70	-44.88	45	0.00	0.00	79	0.00	0.00	113	0.00	0.00
12	121.78	-44.82	46	0.00	0.00	80	0.00	0.00	114	0.00	0.00
13	121.78	-44.82	47	0.00	0.00	81	0.00	0.00	115	0.00	0.00
14	121.87	-44.85	48	0.00	0.00	82	0.00	0.00	116	0.00	0.00
15	121.87	-42.30	49	0.00	0.00	83	0.00	0.00	117	0.00	0.00
16	121.95	-34.54	50	0.00	0.00	84	0.00	0.00	118	0.00	0.00
17	122.04	-26.90	51	0.00	0.00	85	0.00	0.00	119	0.00	0.00
18	122.13	-19.30	52	0.00	0.00	86	0.00	0.00	120	0.00	0.00
19	122.13	-16.74	53	0.00	0.00	87	0.00	0.00	121	0.00	0.00
20	122.13	-14.22	54	0.00	0.00	88	0.00	0.00	122	0.00	0.00
21	122.21	-14.28	55	0.00	0.00	89	0.00	0.00	123	0.00	0.00
22	122.30	-26.93	56	0.00	0.00	90	0.00	0.00	124	0.00	0.00
23	122.39	-32.04	57	0.00	0.00	91	0.00	0.00	125	0.00	0.00
24	122.39	-29.46	58	0.00	0.00	92	0.00	0.00	126	0.00	0.00
25	122.47	-26.93	59	0.00	0.00	93	0.00	0.00	127	0.00	0.00
26	122.56	-29.46	60	0.00	0.00	94	0.00	0.00	128	0.00	0.00
27	122.65	-37.12	61	0.00	0.00	95	0.00	0.00	129	0.00	0.00
28	122.73	-44.85	62	0.00	0.00	96	0.00	0.00	130	0.00	0.00
29	122.73	-47.38	63	0.00	0.00	97	0.00	0.00	131	0.00	0.00
30	122.82	-52.43	64	0.00	0.00	98	0.00	0.00	132	0.00	0.00
31	122.91	-52.43	65	0.00	0.00	99	0.00	0.00	133	0.00	0.00
32	123.00	-52.43	66	0.00	0.00	100	0.00	0.00	134	0.00	0.00
33	123.09	-52.40	67	0.00	0.00	101	0.00	0.00	135	0.00	0.00
34	123.17	-52.40	68	0.00	0.00	102	0.00	0.00	136	0.00	0.00

Max Temp= -14.22 F; Min Temp= -52.43 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

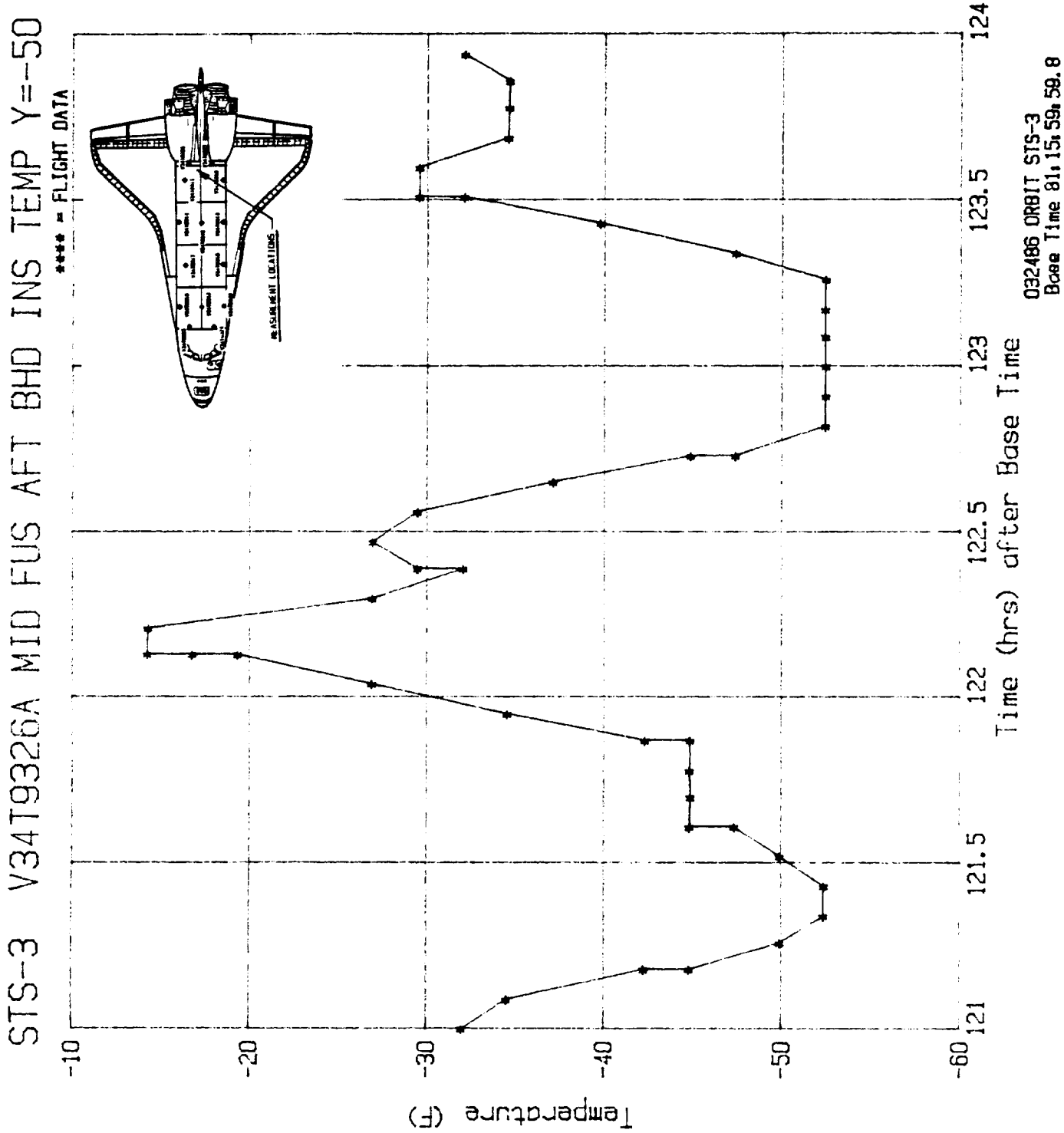
STS-3 V34T9326A MID FUS AFT BHD INS TEMP Y=-50
**** = FLIGHT DATA
MEASUREMENT LOCATIONS
Temperature (F)
-10
-20
-30
-40
-50
-60
121
121.5
122
122.5
123
123.5
124
Time (hrs) after Base Time
032486 ORBIT STS-3
Base Time 81:15:59:58.8

Figure A-25

A 26
File No=f26

STS-3 V34T9327A MID FUS AFT BHD INS TEMP Y=50

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	121.00	-45.42	35	123.69	-42.86	69	0.00	0.00	103	0.00	0.00
2	121.08	-45.42	36	123.78	-45.39	70	0.00	0.00	104	0.00	0.00
3	121.17	-52.97	37	123.87	-47.95	71	0.00	0.00	105	0.00	0.00
4	121.26	-57.87	38	123.95	-45.33	72	0.00	0.00	106	0.00	0.00
5	121.35	-57.87	39	0.00	0.00	73	0.00	0.00	107	0.00	0.00
6	121.43	-52.94	40	0.00	0.00	74	0.00	0.00	108	0.00	0.00
7	121.52	-45.36	41	0.00	0.00	75	0.00	0.00	109	0.00	0.00
8	121.60	-37.68	42	0.00	0.00	76	0.00	0.00	110	0.00	0.00
9	121.69	-32.69	43	0.00	0.00	77	0.00	0.00	111	0.00	0.00
10	121.78	-37.71	44	0.00	0.00	78	0.00	0.00	112	0.00	0.00
11	121.86	-37.71	45	0.00	0.00	79	0.00	0.00	113	0.00	0.00
12	121.86	-35.18	46	0.00	0.00	80	0.00	0.00	114	0.00	0.00
13	121.95	-25.10	47	0.00	0.00	81	0.00	0.00	115	0.00	0.00
14	122.04	-22.58	48	0.00	0.00	82	0.00	0.00	116	0.00	0.00
15	122.12	-22.61	49	0.00	0.00	83	0.00	0.00	117	0.00	0.00
16	122.12	-20.02	50	0.00	0.00	84	0.00	0.00	118	0.00	0.00
17	122.21	-15.06	51	0.00	0.00	85	0.00	0.00	119	0.00	0.00
18	122.30	-32.66	52	0.00	0.00	86	0.00	0.00	120	0.00	0.00
19	122.39	-42.86	53	0.00	0.00	87	0.00	0.00	121	0.00	0.00
20	122.48	-40.27	54	0.00	0.00	88	0.00	0.00	122	0.00	0.00
21	122.56	-37.65	55	0.00	0.00	89	0.00	0.00	123	0.00	0.00
22	122.65	-45.39	56	0.00	0.00	90	0.00	0.00	124	0.00	0.00
23	122.73	-52.97	57	0.00	0.00	91	0.00	0.00	125	0.00	0.00
24	122.82	-57.93	58	0.00	0.00	92	0.00	0.00	126	0.00	0.00
25	122.91	-55.44	59	0.00	0.00	93	0.00	0.00	127	0.00	0.00
26	123.00	-50.44	60	0.00	0.00	94	0.00	0.00	128	0.00	0.00
27	123.09	-45.39	61	0.00	0.00	95	0.00	0.00	129	0.00	0.00
28	123.17	-42.83	62	0.00	0.00	96	0.00	0.00	130	0.00	0.00
29	123.26	-47.98	63	0.00	0.00	97	0.00	0.00	131	0.00	0.00
30	123.34	-45.39	64	0.00	0.00	98	0.00	0.00	132	0.00	0.00
31	123.43	-30.07	65	0.00	0.00	99	0.00	0.00	133	0.00	0.00
32	123.52	-22.64	66	0.00	0.00	100	0.00	0.00	134	0.00	0.00
33	123.61	-30.04	67	0.00	0.00	101	0.00	0.00	135	0.00	0.00
34	123.69	-40.30	68	0.00	0.00	102	0.00	0.00	136	0.00	0.00

Max Temp= -15.06 F; Min Temp= -57.93 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

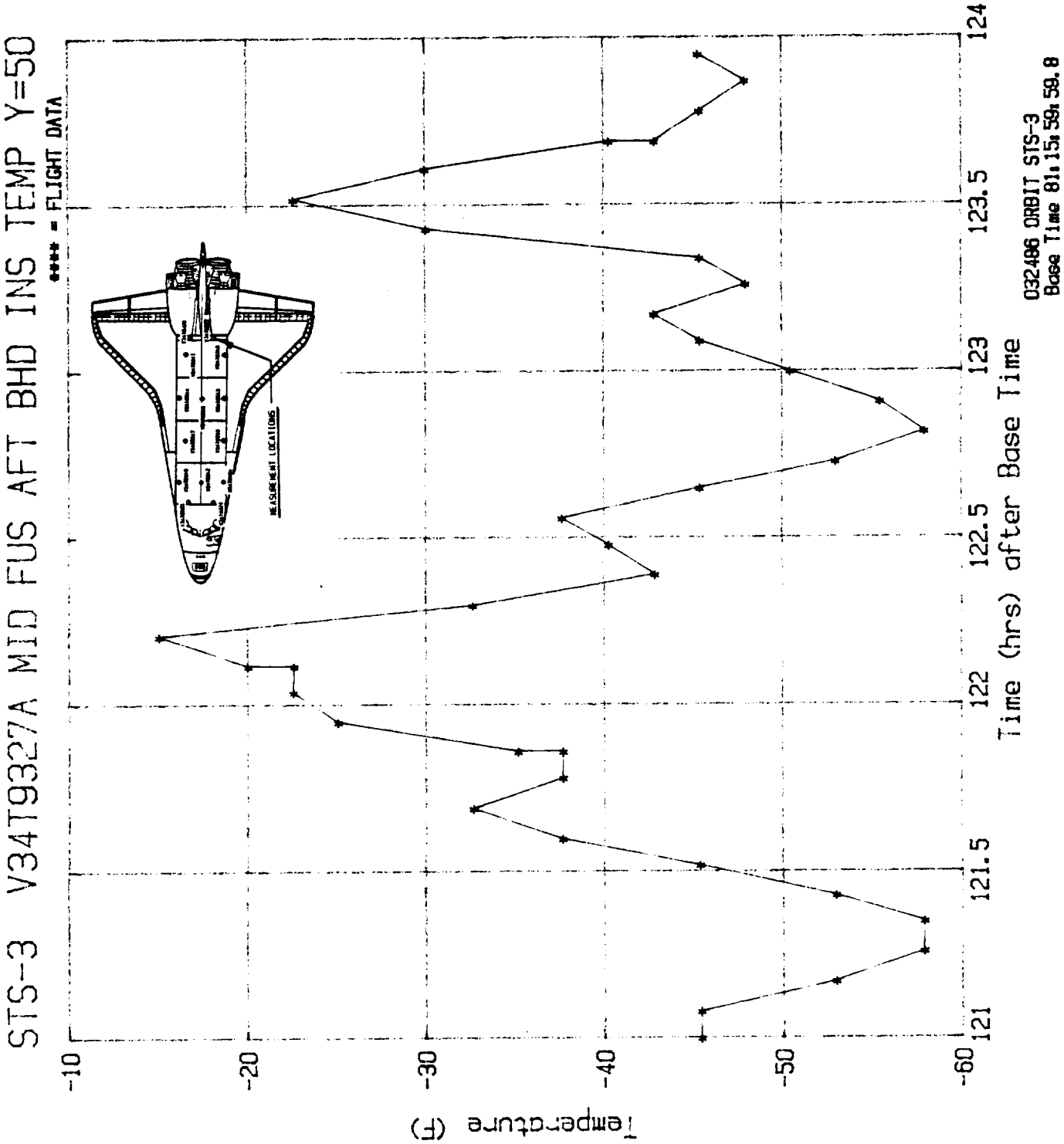
STS-3 V34T9327A MID FUS AFT BHD INS TEMP Y=50
**** = FLIGHT DATA
MEASUREMENT LOCATIONS
-10
-20
-30
-40
-50
-60
Temperature (F)
121
121.5
122
122.5
123
123.5
124
Time (hrs) after Base Time
032486 ORBIT STS-3
Base Time 81:15:59:59.8

Figure A-26

A 27
File No=f27

STS-3 V34T9310A MID FUS PLB LIN LS TEMP X=1250

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	140.65	124.65	35	0.00	0.00	69	0.00	0.00	103	0.00	0.00
2	140.82	103.63	36	0.00	0.00	70	0.00	0.00	104	0.00	0.00
3	140.99	93.19	37	0.00	0.00	71	0.00	0.00	105	0.00	0.00
4	140.99	90.58	38	0.00	0.00	72	0.00	0.00	106	0.00	0.00
5	141.16	87.98	39	0.00	0.00	73	0.00	0.00	107	0.00	0.00
6	141.16	90.73	40	0.00	0.00	74	0.00	0.00	108	0.00	0.00
7	141.33	124.65	41	0.00	0.00	75	0.00	0.00	109	0.00	0.00
8	141.50	137.90	42	0.00	0.00	76	0.00	0.00	110	0.00	0.00
9	141.67	143.02	43	0.00	0.00	77	0.00	0.00	111	0.00	0.00
10	141.84	148.14	44	0.00	0.00	78	0.00	0.00	112	0.00	0.00
11	0.00	0.00	45	0.00	0.00	79	0.00	0.00	113	0.00	0.00
12	0.00	0.00	46	0.00	0.00	80	0.00	0.00	114	0.00	0.00
13	0.00	0.00	47	0.00	0.00	81	0.00	0.00	115	0.00	0.00
14	0.00	0.00	48	0.00	0.00	82	0.00	0.00	116	0.00	0.00
15	0.00	0.00	49	0.00	0.00	83	0.00	0.00	117	0.00	0.00
16	0.00	0.00	50	0.00	0.00	84	0.00	0.00	118	0.00	0.00
17	0.00	0.00	51	0.00	0.00	85	0.00	0.00	119	0.00	0.00
18	0.00	0.00	52	0.00	0.00	86	0.00	0.00	120	0.00	0.00
19	0.00	0.00	53	0.00	0.00	87	0.00	0.00	121	0.00	0.00
20	0.00	0.00	54	0.00	0.00	88	0.00	0.00	122	0.00	0.00
21	0.00	0.00	55	0.00	0.00	89	0.00	0.00	123	0.00	0.00
22	0.00	0.00	56	0.00	0.00	90	0.00	0.00	124	0.00	0.00
23	0.00	0.00	57	0.00	0.00	91	0.00	0.00	125	0.00	0.00
24	0.00	0.00	58	0.00	0.00	92	0.00	0.00	126	0.00	0.00
25	0.00	0.00	59	0.00	0.00	93	0.00	0.00	127	0.00	0.00
26	0.00	0.00	60	0.00	0.00	94	0.00	0.00	128	0.00	0.00
27	0.00	0.00	61	0.00	0.00	95	0.00	0.00	129	0.00	0.00
28	0.00	0.00	62	0.00	0.00	96	0.00	0.00	130	0.00	0.00
29	0.00	0.00	63	0.00	0.00	97	0.00	0.00	131	0.00	0.00
30	0.00	0.00	64	0.00	0.00	98	0.00	0.00	132	0.00	0.00
31	0.00	0.00	65	0.00	0.00	99	0.00	0.00	133	0.00	0.00
32	0.00	0.00	66	0.00	0.00	100	0.00	0.00	134	0.00	0.00
33	0.00	0.00	67	0.00	0.00	101	0.00	0.00	135	0.00	0.00
34	0.00	0.00	68	0.00	0.00	102	0.00	0.00	136	0.00	0.00

Max Temp= 148.14 F; Min Temp= 87.98 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

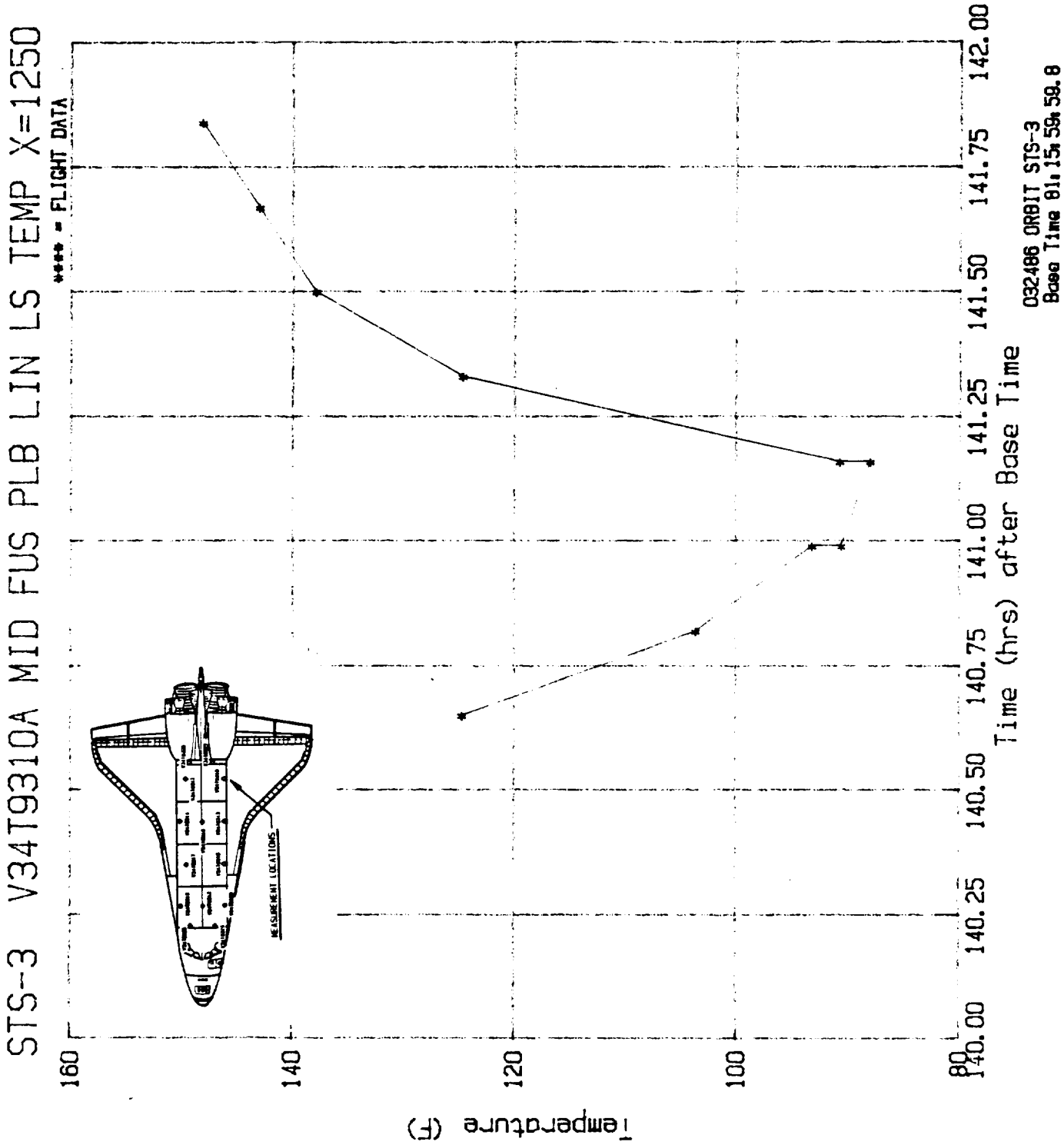
STS-3 V34T9310A MID FUS PLB LIN LS TEMP X=1250
**** - FLIGHT DATA
MEASUREMENT LOCATIONS
Temperature (F)
160
140
120
100
80
140.00
140.25
140.50
140.75
141.00
141.25
141.50
141.75
142.00
Time (hrs) after Base Time
032486 ORBIT STS-3
Base Time 81:15:59:58.8

Figure A-27

A 28
File No=f28

STS-3 V34T9311A PLB WIRE TRAY COVER TEMP X=1215

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	140.65	137.68	35	0.00	0.00	69	0.00	0.00	103	0.00	0.00
2	140.82	121.87	36	0.00	0.00	70	0.00	0.00	104	0.00	0.00
3	140.99	108.97	37	0.00	0.00	71	0.00	0.00	105	0.00	0.00
4	141.16	106.50	38	0.00	0.00	72	0.00	0.00	106	0.00	0.00
5	141.33	142.96	39	0.00	0.00	73	0.00	0.00	107	0.00	0.00
6	141.33	145.71	40	0.00	0.00	74	0.00	0.00	108	0.00	0.00
7	141.50	156.16	41	0.00	0.00	75	0.00	0.00	109	0.00	0.00
8	141.67	164.09	42	0.00	0.00	76	0.00	0.00	110	0.00	0.00
9	141.84	161.43	43	0.00	0.00	77	0.00	0.00	111	0.00	0.00
10	141.84	169.31	44	0.00	0.00	78	0.00	0.00	112	0.00	0.00
11	141.84	172.07	45	0.00	0.00	79	0.00	0.00	113	0.00	0.00
12	0.00	0.00	46	0.00	0.00	80	0.00	0.00	114	0.00	0.00
13	0.00	0.00	47	0.00	0.00	81	0.00	0.00	115	0.00	0.00
14	0.00	0.00	48	0.00	0.00	82	0.00	0.00	116	0.00	0.00
15	0.00	0.00	49	0.00	0.00	83	0.00	0.00	117	0.00	0.00
16	0.00	0.00	50	0.00	0.00	84	0.00	0.00	118	0.00	0.00
17	0.00	0.00	51	0.00	0.00	85	0.00	0.00	119	0.00	0.00
18	0.00	0.00	52	0.00	0.00	86	0.00	0.00	120	0.00	0.00
19	0.00	0.00	53	0.00	0.00	87	0.00	0.00	121	0.00	0.00
20	0.00	0.00	54	0.00	0.00	88	0.00	0.00	122	0.00	0.00
21	0.00	0.00	55	0.00	0.00	89	0.00	0.00	123	0.00	0.00
22	0.00	0.00	56	0.00	0.00	90	0.00	0.00	124	0.00	0.00
23	0.00	0.00	57	0.00	0.00	91	0.00	0.00	125	0.00	0.00
24	0.00	0.00	58	0.00	0.00	92	0.00	0.00	126	0.00	0.00
25	0.00	0.00	59	0.00	0.00	93	0.00	0.00	127	0.00	0.00
26	0.00	0.00	60	0.00	0.00	94	0.00	0.00	128	0.00	0.00
27	0.00	0.00	61	0.00	0.00	95	0.00	0.00	129	0.00	0.00
28	0.00	0.00	62	0.00	0.00	96	0.00	0.00	130	0.00	0.00
29	0.00	0.00	63	0.00	0.00	97	0.00	0.00	131	0.00	0.00
30	0.00	0.00	64	0.00	0.00	98	0.00	0.00	132	0.00	0.00
31	0.00	0.00	65	0.00	0.00	99	0.00	0.00	133	0.00	0.00
32	0.00	0.00	66	0.00	0.00	100	0.00	0.00	134	0.00	0.00
33	0.00	0.00	67	0.00	0.00	101	0.00	0.00	135	0.00	0.00
34	0.00	0.00	68	0.00	0.00	102	0.00	0.00	136	0.00	0.00

Max Temp= 172.07 F; Min Temp= 106.50 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

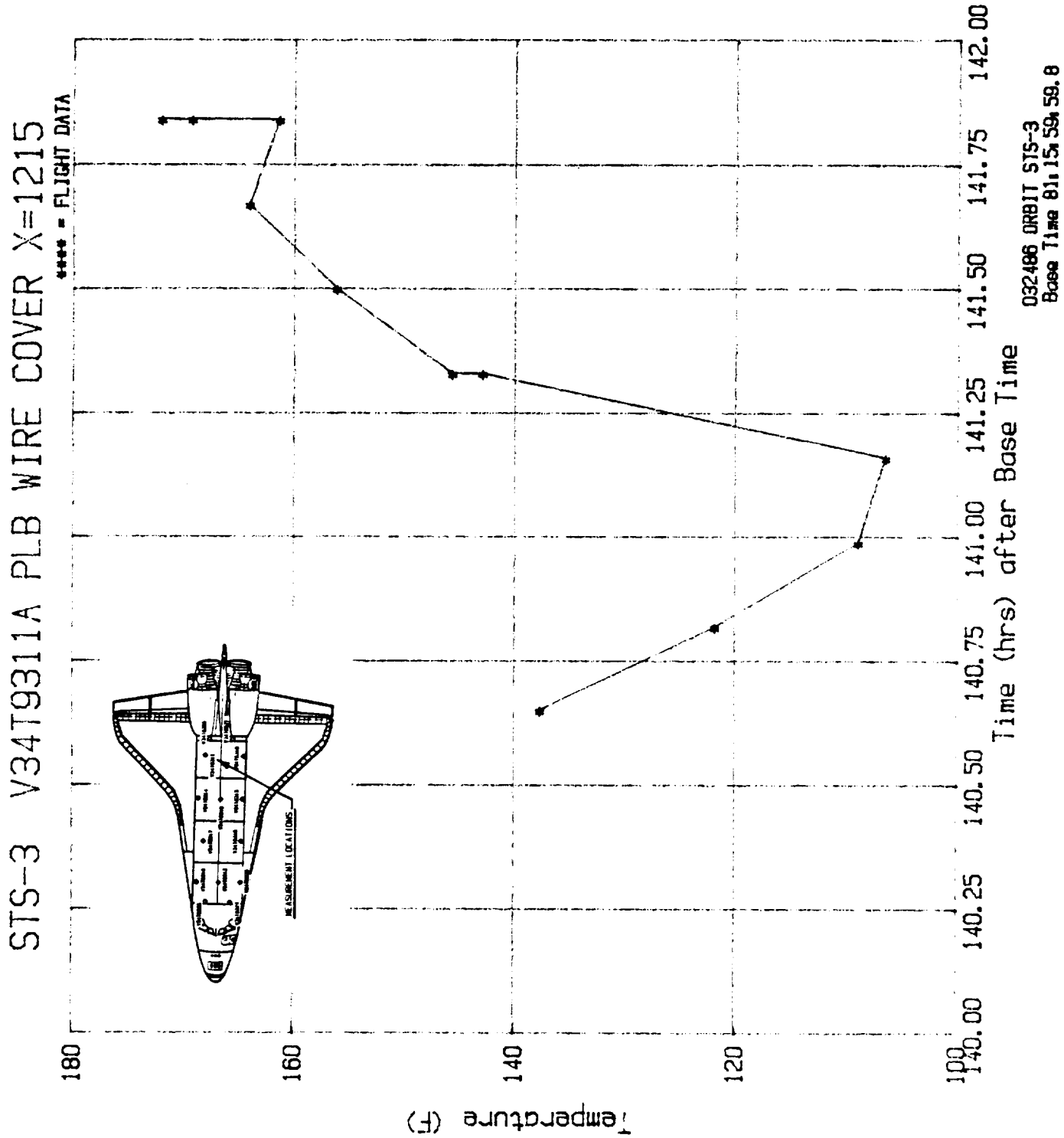
STS-3 V34T9311A PLB WIRE COVER X=1215
**** = FLIGHT DATA
MEASUREMENT LOCATIONS
Temperature (F)
180
160
140
120
100
Time (hrs) after Base Time
140.00
140.25
140.50
140.75
141.00
141.25
141.50
141.75
142.00
032486 ORBIT STS-3
Base Time 81:15:59:59.8

Figure A-28

A 29
File No=f29

STS-3 V34T9312A MID FUS PLB CTR BTM TEMP X=670

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	140.65	116.50	35	0.00	0.00	69	0.00	0.00	103	0.00	0.00
2	140.82	57.39	36	0.00	0.00	70	0.00	0.00	104	0.00	0.00
3	140.99	24.63	37	0.00	0.00	71	0.00	0.00	105	0.00	0.00
4	140.99	22.66	38	0.00	0.00	72	0.00	0.00	106	0.00	0.00
5	141.16	-18.23	39	0.00	0.00	73	0.00	0.00	107	0.00	0.00
6	141.33	179.80	40	0.00	0.00	74	0.00	0.00	108	0.00	0.00
7	141.33	183.00	41	0.00	0.00	75	0.00	0.00	109	0.00	0.00
8	141.50	238.42	42	0.00	0.00	76	0.00	0.00	110	0.00	0.00
9	141.67	246.55	43	0.00	0.00	77	0.00	0.00	111	0.00	0.00
10	141.84	252.46	44	0.00	0.00	78	0.00	0.00	112	0.00	0.00
11	141.84	233.74	45	0.00	0.00	79	0.00	0.00	113	0.00	0.00
12	0.00	0.00	46	0.00	0.00	80	0.00	0.00	114	0.00	0.00
13	0.00	0.00	47	0.00	0.00	81	0.00	0.00	115	0.00	0.00
14	0.00	0.00	48	0.00	0.00	82	0.00	0.00	116	0.00	0.00
15	0.00	0.00	49	0.00	0.00	83	0.00	0.00	117	0.00	0.00
16	0.00	0.00	50	0.00	0.00	84	0.00	0.00	118	0.00	0.00
17	0.00	0.00	51	0.00	0.00	85	0.00	0.00	119	0.00	0.00
18	0.00	0.00	52	0.00	0.00	86	0.00	0.00	120	0.00	0.00
19	0.00	0.00	53	0.00	0.00	87	0.00	0.00	121	0.00	0.00
20	0.00	0.00	54	0.00	0.00	88	0.00	0.00	122	0.00	0.00
21	0.00	0.00	55	0.00	0.00	89	0.00	0.00	123	0.00	0.00
22	0.00	0.00	56	0.00	0.00	90	0.00	0.00	124	0.00	0.00
23	0.00	0.00	57	0.00	0.00	91	0.00	0.00	125	0.00	0.00
24	0.00	0.00	58	0.00	0.00	92	0.00	0.00	126	0.00	0.00
25	0.00	0.00	59	0.00	0.00	93	0.00	0.00	127	0.00	0.00
26	0.00	0.00	60	0.00	0.00	94	0.00	0.00	128	0.00	0.00
27	0.00	0.00	61	0.00	0.00	95	0.00	0.00	129	0.00	0.00
28	0.00	0.00	62	0.00	0.00	96	0.00	0.00	130	0.00	0.00
29	0.00	0.00	63	0.00	0.00	97	0.00	0.00	131	0.00	0.00
30	0.00	0.00	64	0.00	0.00	98	0.00	0.00	132	0.00	0.00
31	0.00	0.00	65	0.00	0.00	99	0.00	0.00	133	0.00	0.00
32	0.00	0.00	66	0.00	0.00	100	0.00	0.00	134	0.00	0.00
33	0.00	0.00	67	0.00	0.00	101	0.00	0.00	135	0.00	0.00
34	0.00	0.00	68	0.00	0.00	102	0.00	0.00	136	0.00	0.00

Max Temp= 252.46 F; Min Temp= -18.23 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

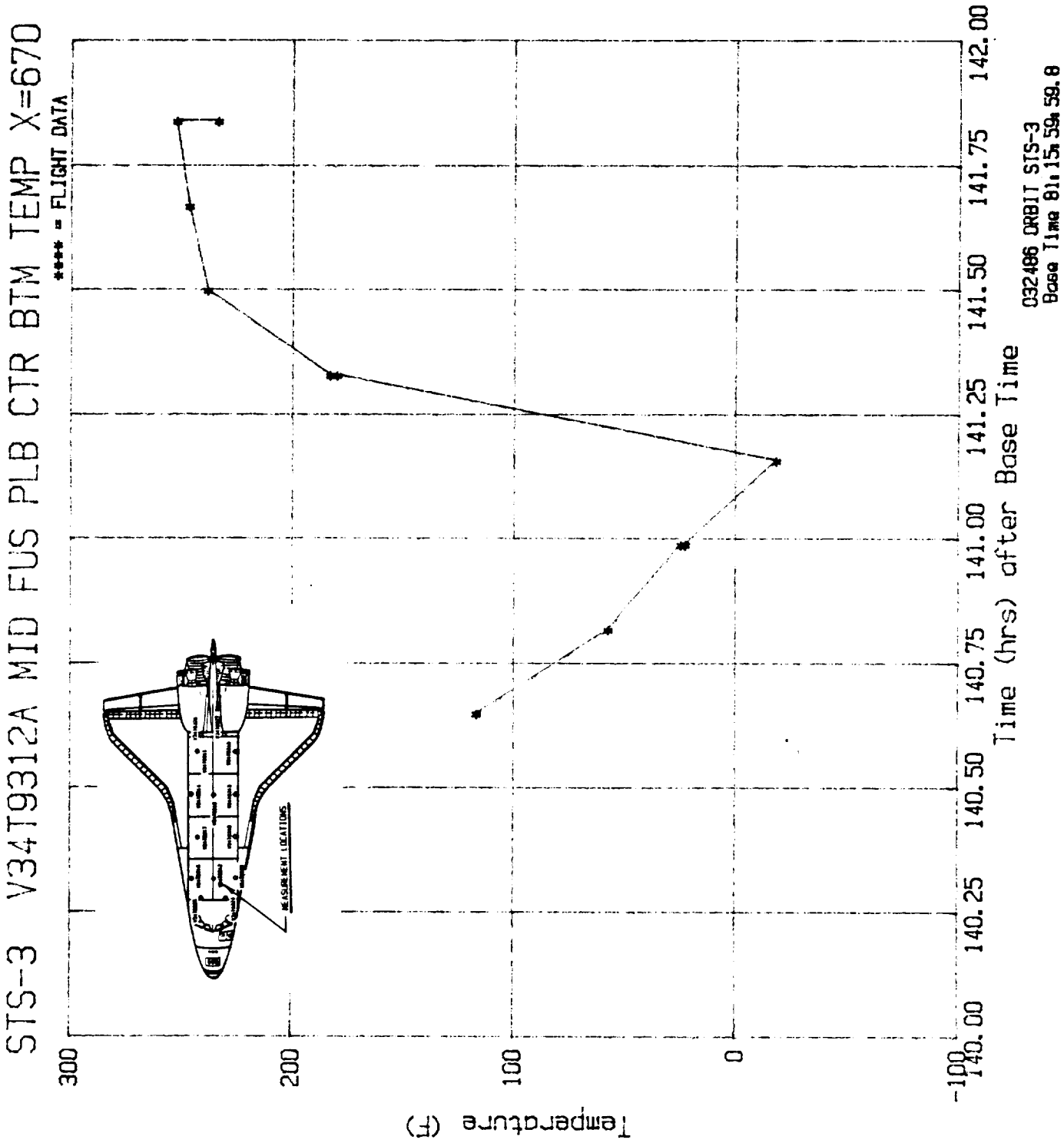
STS-3 V34T9312A MID FUS PLB CTR BTM TEMP X=670
**** = FLIGHT DATA
MEASUREMENT LOCATIONS
Temperature (F)
300
200
100
0
-100
140.00
140.25
140.50
140.75
141.00
141.25
141.50
141.75
142.00
Time (hrs) after Base Time
032486 ORBIT STS-3
Base Time 81:15:59:59.8

Figure A-29

A 32
File No=f32

STS-3 V34T9317A PLB WIRE TRAY COVER TEMP X=850

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	140.65	67.28	35	0.00	0.00	69	0.00	0.00	103	0.00	0.00
2	140.65	64.88	36	0.00	0.00	70	0.00	0.00	104	0.00	0.00
3	140.82	59.69	37	0.00	0.00	71	0.00	0.00	105	0.00	0.00
4	140.99	44.01	38	0.00	0.00	72	0.00	0.00	106	0.00	0.00
5	141.16	38.89	39	0.00	0.00	73	0.00	0.00	107	0.00	0.00
6	141.16	41.36	40	0.00	0.00	74	0.00	0.00	108	0.00	0.00
7	141.33	96.23	41	0.00	0.00	75	0.00	0.00	109	0.00	0.00
8	141.50	98.70	42	0.00	0.00	76	0.00	0.00	110	0.00	0.00
9	141.67	101.30	43	0.00	0.00	77	0.00	0.00	111	0.00	0.00
10	141.84	106.48	44	0.00	0.00	78	0.00	0.00	112	0.00	0.00
11	0.00	0.00	45	0.00	0.00	79	0.00	0.00	113	0.00	0.00
12	0.00	0.00	46	0.00	0.00	80	0.00	0.00	114	0.00	0.00
13	0.00	0.00	47	0.00	0.00	81	0.00	0.00	115	0.00	0.00
14	0.00	0.00	48	0.00	0.00	82	0.00	0.00	116	0.00	0.00
15	0.00	0.00	49	0.00	0.00	83	0.00	0.00	117	0.00	0.00
16	0.00	0.00	50	0.00	0.00	84	0.00	0.00	118	0.00	0.00
17	0.00	0.00	51	0.00	0.00	85	0.00	0.00	119	0.00	0.00
18	0.00	0.00	52	0.00	0.00	86	0.00	0.00	120	0.00	0.00
19	0.00	0.00	53	0.00	0.00	87	0.00	0.00	121	0.00	0.00
20	0.00	0.00	54	0.00	0.00	88	0.00	0.00	122	0.00	0.00
21	0.00	0.00	55	0.00	0.00	89	0.00	0.00	123	0.00	0.00
22	0.00	0.00	56	0.00	0.00	90	0.00	0.00	124	0.00	0.00
23	0.00	0.00	57	0.00	0.00	91	0.00	0.00	125	0.00	0.00
24	0.00	0.00	58	0.00	0.00	92	0.00	0.00	126	0.00	0.00
25	0.00	0.00	59	0.00	0.00	93	0.00	0.00	127	0.00	0.00
26	0.00	0.00	60	0.00	0.00	94	0.00	0.00	128	0.00	0.00
27	0.00	0.00	61	0.00	0.00	95	0.00	0.00	129	0.00	0.00
28	0.00	0.00	62	0.00	0.00	96	0.00	0.00	130	0.00	0.00
29	0.00	0.00	63	0.00	0.00	97	0.00	0.00	131	0.00	0.00
30	0.00	0.00	64	0.00	0.00	98	0.00	0.00	132	0.00	0.00
31	0.00	0.00	65	0.00	0.00	99	0.00	0.00	133	0.00	0.00
32	0.00	0.00	66	0.00	0.00	100	0.00	0.00	134	0.00	0.00
33	0.00	0.00	67	0.00	0.00	101	0.00	0.00	135	0.00	0.00
34	0.00	0.00	68	0.00	0.00	102	0.00	0.00	136	0.00	0.00

Max Temp= 106.48 F; Min Temp= 38.89 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

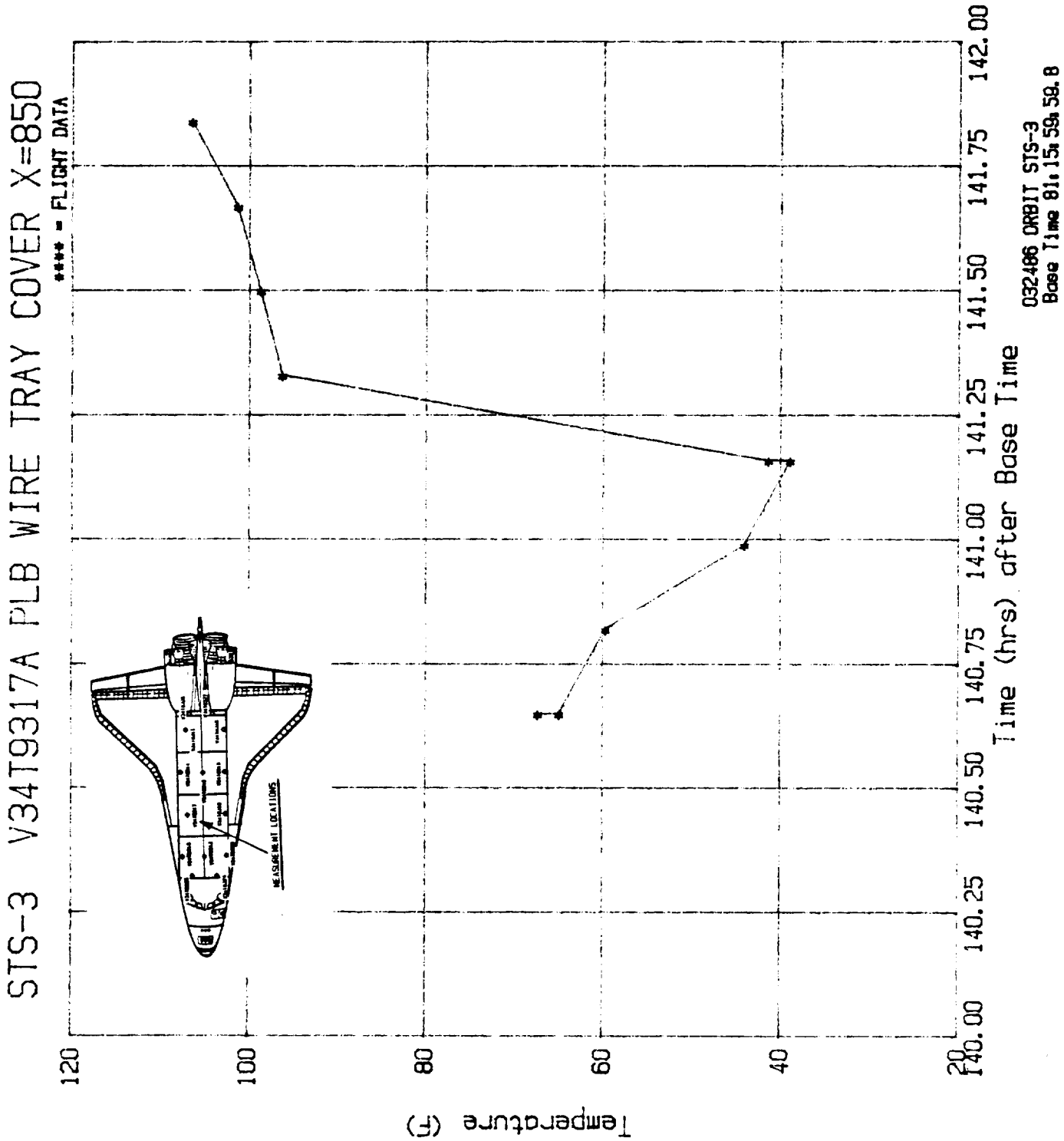
STS-3 V34T9317A PLB WIRE TRAY COVER X=850
**** - FLIGHT DATA
MEASUREMENT LOCATIONS
Temperature (F)
120
100
80
60
40
20
140.00
140.25
140.50
140.75
141.00
141.25
141.50
141.75
142.00
Time (hrs) after Base Time
032486 ORBIT STS-3
Base Time 81:15:59:59.8

Figure A-32

A 33
File No=f33 STS-3 V34T9318A MID FUS PLB LIN LS TEMP X=850

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	140.65	62.32	35	0.00	0.00	69	0.00	0.00	103	0.00	0.00
2	140.65	59.56	36	0.00	0.00	70	0.00	0.00	104	0.00	0.00
3	140.82	18.62	37	0.00	0.00	71	0.00	0.00	105	0.00	0.00
4	140.99	1.11	38	0.00	0.00	72	0.00	0.00	106	0.00	0.00
5	141.16	41.40	39	0.00	0.00	73	0.00	0.00	107	0.00	0.00
6	141.33	101.51	40	0.00	0.00	74	0.00	0.00	108	0.00	0.00
7	141.50	111.65	41	0.00	0.00	75	0.00	0.00	109	0.00	0.00
8	141.67	119.48	42	0.00	0.00	76	0.00	0.00	110	0.00	0.00
9	141.84	127.23	43	0.00	0.00	77	0.00	0.00	111	0.00	0.00
10	141.84	135.16	44	0.00	0.00	78	0.00	0.00	112	0.00	0.00
11	0.00	0.00	45	0.00	0.00	79	0.00	0.00	113	0.00	0.00
12	0.00	0.00	46	0.00	0.00	80	0.00	0.00	114	0.00	0.00
13	0.00	0.00	47	0.00	0.00	81	0.00	0.00	115	0.00	0.00
14	0.00	0.00	48	0.00	0.00	82	0.00	0.00	116	0.00	0.00
15	0.00	0.00	49	0.00	0.00	83	0.00	0.00	117	0.00	0.00
16	0.00	0.00	50	0.00	0.00	84	0.00	0.00	118	0.00	0.00
17	0.00	0.00	51	0.00	0.00	85	0.00	0.00	119	0.00	0.00
18	0.00	0.00	52	0.00	0.00	86	0.00	0.00	120	0.00	0.00
19	0.00	0.00	53	0.00	0.00	87	0.00	0.00	121	0.00	0.00
20	0.00	0.00	54	0.00	0.00	88	0.00	0.00	122	0.00	0.00
21	0.00	0.00	55	0.00	0.00	89	0.00	0.00	123	0.00	0.00
22	0.00	0.00	56	0.00	0.00	90	0.00	0.00	124	0.00	0.00
23	0.00	0.00	57	0.00	0.00	91	0.00	0.00	125	0.00	0.00
24	0.00	0.00	58	0.00	0.00	92	0.00	0.00	126	0.00	0.00
25	0.00	0.00	59	0.00	0.00	93	0.00	0.00	127	0.00	0.00
26	0.00	0.00	60	0.00	0.00	94	0.00	0.00	128	0.00	0.00
27	0.00	0.00	61	0.00	0.00	95	0.00	0.00	129	0.00	0.00
28	0.00	0.00	62	0.00	0.00	96	0.00	0.00	130	0.00	0.00
29	0.00	0.00	63	0.00	0.00	97	0.00	0.00	131	0.00	0.00
30	0.00	0.00	64	0.00	0.00	98	0.00	0.00	132	0.00	0.00
31	0.00	0.00	65	0.00	0.00	99	0.00	0.00	133	0.00	0.00
32	0.00	0.00	66	0.00	0.00	100	0.00	0.00	134	0.00	0.00
33	0.00	0.00	67	0.00	0.00	101	0.00	0.00	135	0.00	0.00
34	0.00	0.00	68	0.00	0.00	102	0.00	0.00	136	0.00	0.00

Max Temp= 135.16 F; Min Temp= 1.11 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

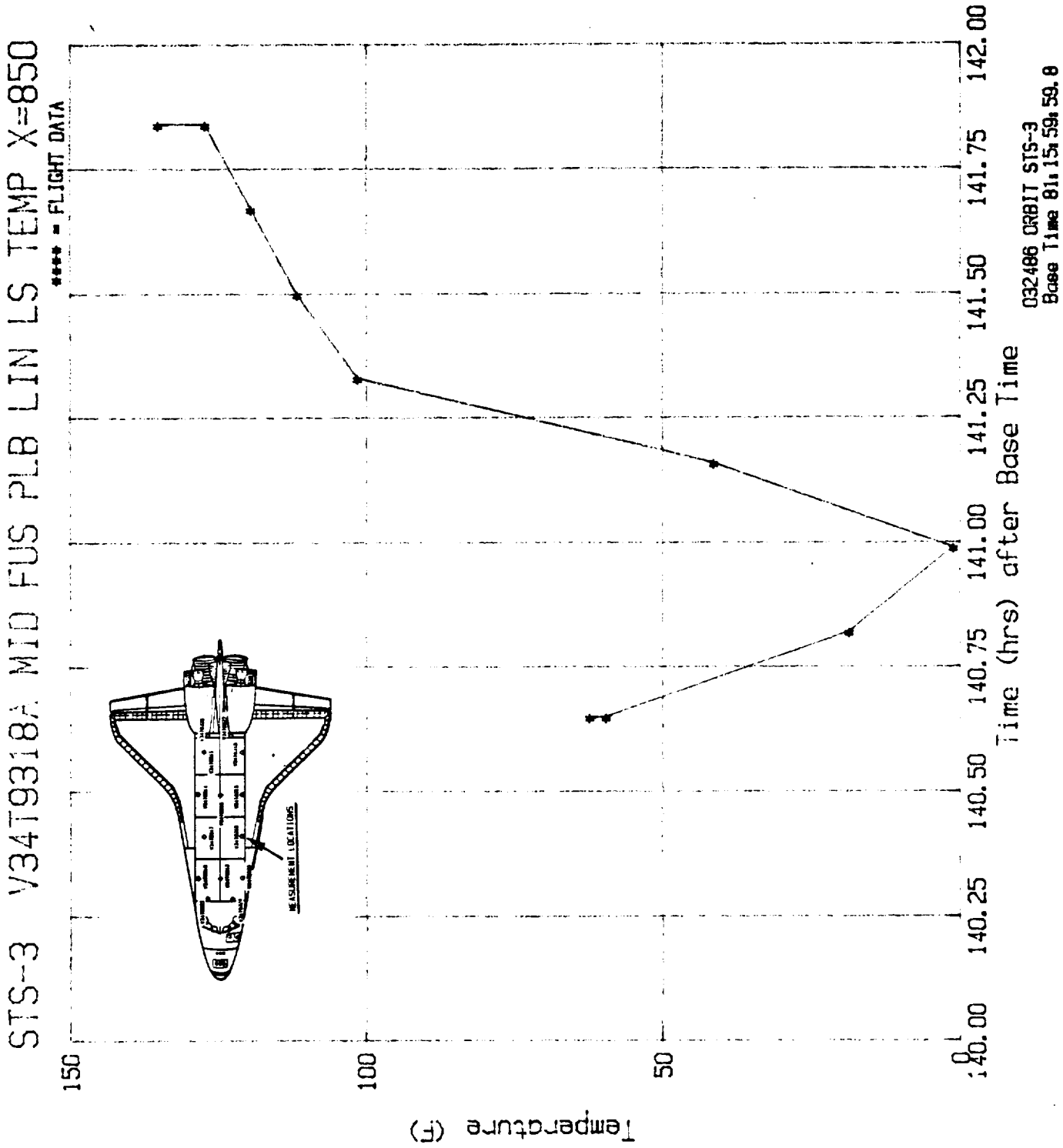
STS-3 V34T9318A MID FUS PLB LIN LS TEMP X=850
**** = FLIGHT DATA
MEASUREMENT LOCATIONS
Temperature (F)
150
100
50
0
140.00
140.25
140.50
140.75
141.00
141.25
141.50
141.75
142.00
Time (hrs) after Base Time
032486 ORBIT STS-3
Base Time 81:15:59:59.8

Figure A-33

A 34
File No=f34

STS-3 V34T9319A MID FUS PLB LIN RS TEMP X=670

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	140.65	106.37	35	0.00	0.00	69	0.00	0.00	103	0.00	0.00
2	140.65	103.60	36	0.00	0.00	70	0.00	0.00	104	0.00	0.00
3	140.82	82.82	37	0.00	0.00	71	0.00	0.00	105	0.00	0.00
4	140.99	72.67	38	0.00	0.00	72	0.00	0.00	106	0.00	0.00
5	141.16	69.96	39	0.00	0.00	73	0.00	0.00	107	0.00	0.00
6	141.33	119.41	40	0.00	0.00	74	0.00	0.00	108	0.00	0.00
7	141.33	122.12	41	0.00	0.00	75	0.00	0.00	109	0.00	0.00
8	141.33	137.98	42	0.00	0.00	76	0.00	0.00	110	0.00	0.00
9	141.50	137.92	43	0.00	0.00	77	0.00	0.00	111	0.00	0.00
10	141.50	143.27	44	0.00	0.00	78	0.00	0.00	112	0.00	0.00
11	141.67	143.27	45	0.00	0.00	79	0.00	0.00	113	0.00	0.00
12	141.67	145.73	46	0.00	0.00	80	0.00	0.00	114	0.00	0.00
13	141.84	150.84	47	0.00	0.00	81	0.00	0.00	115	0.00	0.00
14	141.84	145.61	48	0.00	0.00	82	0.00	0.00	116	0.00	0.00
15	0.00	0.00	49	0.00	0.00	83	0.00	0.00	117	0.00	0.00
16	0.00	0.00	50	0.00	0.00	84	0.00	0.00	118	0.00	0.00
17	0.00	0.00	51	0.00	0.00	85	0.00	0.00	119	0.00	0.00
18	0.00	0.00	52	0.00	0.00	86	0.00	0.00	120	0.00	0.00
19	0.00	0.00	53	0.00	0.00	87	0.00	0.00	121	0.00	0.00
20	0.00	0.00	54	0.00	0.00	88	0.00	0.00	122	0.00	0.00
21	0.00	0.00	55	0.00	0.00	89	0.00	0.00	123	0.00	0.00
22	0.00	0.00	56	0.00	0.00	90	0.00	0.00	124	0.00	0.00
23	0.00	0.00	57	0.00	0.00	91	0.00	0.00	125	0.00	0.00
24	0.00	0.00	58	0.00	0.00	92	0.00	0.00	126	0.00	0.00
25	0.00	0.00	59	0.00	0.00	93	0.00	0.00	127	0.00	0.00
26	0.00	0.00	60	0.00	0.00	94	0.00	0.00	128	0.00	0.00
27	0.00	0.00	61	0.00	0.00	95	0.00	0.00	129	0.00	0.00
28	0.00	0.00	62	0.00	0.00	96	0.00	0.00	130	0.00	0.00
29	0.00	0.00	63	0.00	0.00	97	0.00	0.00	131	0.00	0.00
30	0.00	0.00	64	0.00	0.00	98	0.00	0.00	132	0.00	0.00
31	0.00	0.00	65	0.00	0.00	99	0.00	0.00	133	0.00	0.00
32	0.00	0.00	66	0.00	0.00	100	0.00	0.00	134	0.00	0.00
33	0.00	0.00	67	0.00	0.00	101	0.00	0.00	135	0.00	0.00
34	0.00	0.00	68	0.00	0.00	102	0.00	0.00	136	0.00	0.00

Max Temp= 150.84 F; Min Temp= 69.96 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

C-3

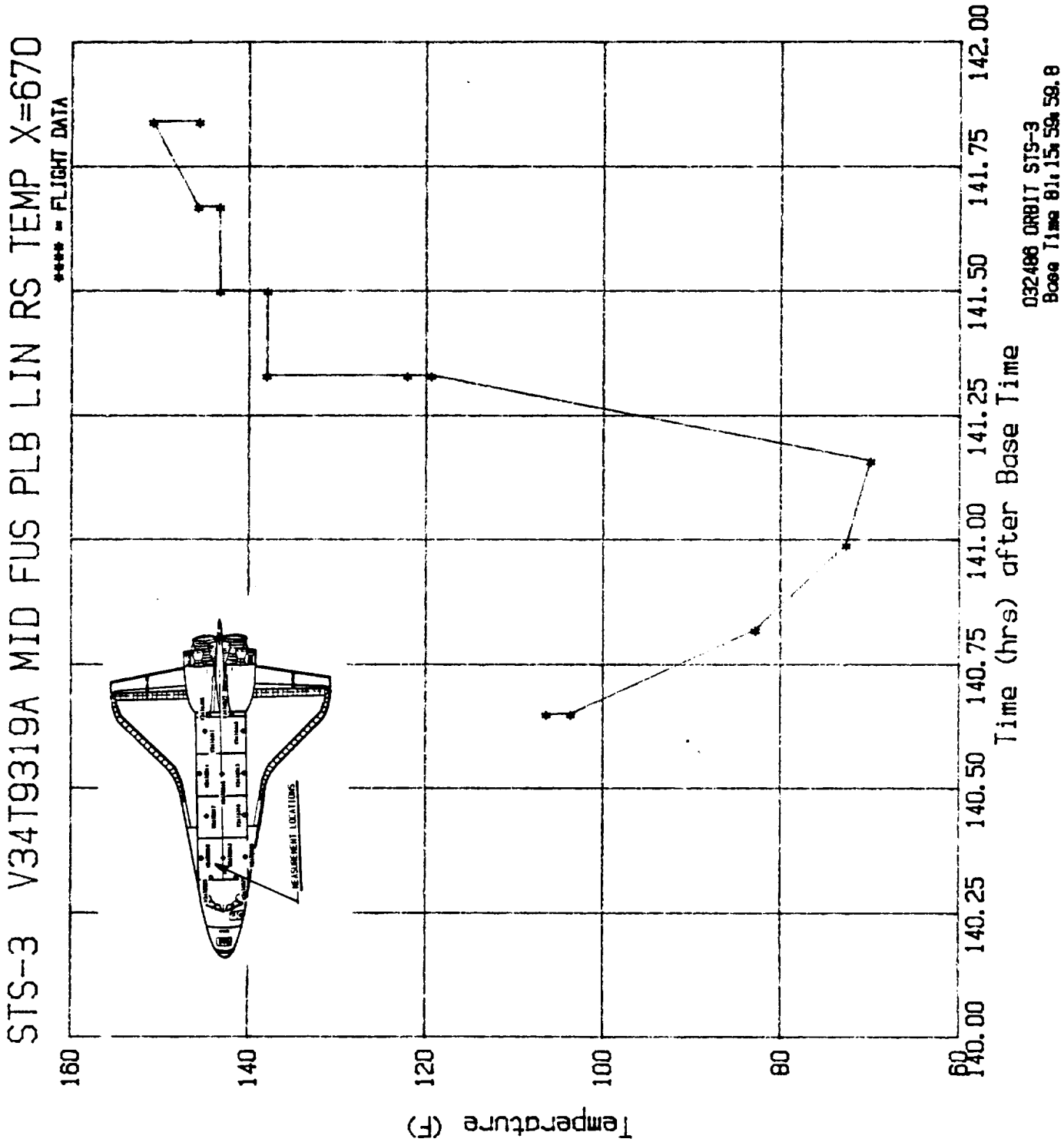
STS-3 V34T9319A MID FUS PLB LIN RS TEMP X=670
**** = FLIGHT DATA
MEASUREMENT LOCATIONS
Temperature (F)
160
140
120
100
80
60
140.00
140.25
140.50
140.75
141.00
141.25
141.50
141.75
142.00
Time (hrs) after Base Time
032486 ORBIT STS-3
Base Time 81:15:59:59.8

Figure A-34

A 35
File No=f35 STS-3 V34T9320A MID FUS PLB LIN LS TEMP X=670

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	140.65	81.07	35	0.00	0.00	69	0.00	0.00	103	0.00	0.00
2	140.82	39.64	36	0.00	0.00	70	0.00	0.00	104	0.00	0.00
3	140.99	8.69	37	0.00	0.00	71	0.00	0.00	105	0.00	0.00
4	141.16	-11.90	38	0.00	0.00	72	0.00	0.00	106	0.00	0.00
5	141.33	63.07	39	0.00	0.00	73	0.00	0.00	107	0.00	0.00
6	141.50	96.73	40	0.00	0.00	74	0.00	0.00	108	0.00	0.00
7	141.67	106.97	41	0.00	0.00	75	0.00	0.00	109	0.00	0.00
8	141.67	109.43	42	0.00	0.00	76	0.00	0.00	110	0.00	0.00
9	141.84	127.81	43	0.00	0.00	77	0.00	0.00	111	0.00	0.00
10	141.84	130.15	44	0.00	0.00	78	0.00	0.00	112	0.00	0.00
11	0.00	0.00	45	0.00	0.00	79	0.00	0.00	113	0.00	0.00
12	0.00	0.00	46	0.00	0.00	80	0.00	0.00	114	0.00	0.00
13	0.00	0.00	47	0.00	0.00	81	0.00	0.00	115	0.00	0.00
14	0.00	0.00	48	0.00	0.00	82	0.00	0.00	116	0.00	0.00
15	0.00	0.00	49	0.00	0.00	83	0.00	0.00	117	0.00	0.00
16	0.00	0.00	50	0.00	0.00	84	0.00	0.00	118	0.00	0.00
17	0.00	0.00	51	0.00	0.00	85	0.00	0.00	119	0.00	0.00
18	0.00	0.00	52	0.00	0.00	86	0.00	0.00	120	0.00	0.00
19	0.00	0.00	53	0.00	0.00	87	0.00	0.00	121	0.00	0.00
20	0.00	0.00	54	0.00	0.00	88	0.00	0.00	122	0.00	0.00
21	0.00	0.00	55	0.00	0.00	89	0.00	0.00	123	0.00	0.00
22	0.00	0.00	56	0.00	0.00	90	0.00	0.00	124	0.00	0.00
23	0.00	0.00	57	0.00	0.00	91	0.00	0.00	125	0.00	0.00
24	0.00	0.00	58	0.00	0.00	92	0.00	0.00	126	0.00	0.00
25	0.00	0.00	59	0.00	0.00	93	0.00	0.00	127	0.00	0.00
26	0.00	0.00	60	0.00	0.00	94	0.00	0.00	128	0.00	0.00
27	0.00	0.00	61	0.00	0.00	95	0.00	0.00	129	0.00	0.00
28	0.00	0.00	62	0.00	0.00	96	0.00	0.00	130	0.00	0.00
29	0.00	0.00	63	0.00	0.00	97	0.00	0.00	131	0.00	0.00
30	0.00	0.00	64	0.00	0.00	98	0.00	0.00	132	0.00	0.00
31	0.00	0.00	65	0.00	0.00	99	0.00	0.00	133	0.00	0.00
32	0.00	0.00	66	0.00	0.00	100	0.00	0.00	134	0.00	0.00
33	0.00	0.00	67	0.00	0.00	101	0.00	0.00	135	0.00	0.00
34	0.00	0.00	68	0.00	0.00	102	0.00	0.00	136	0.00	0.00

Max Temp= 130.15 F; Min Temp= -11.90 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

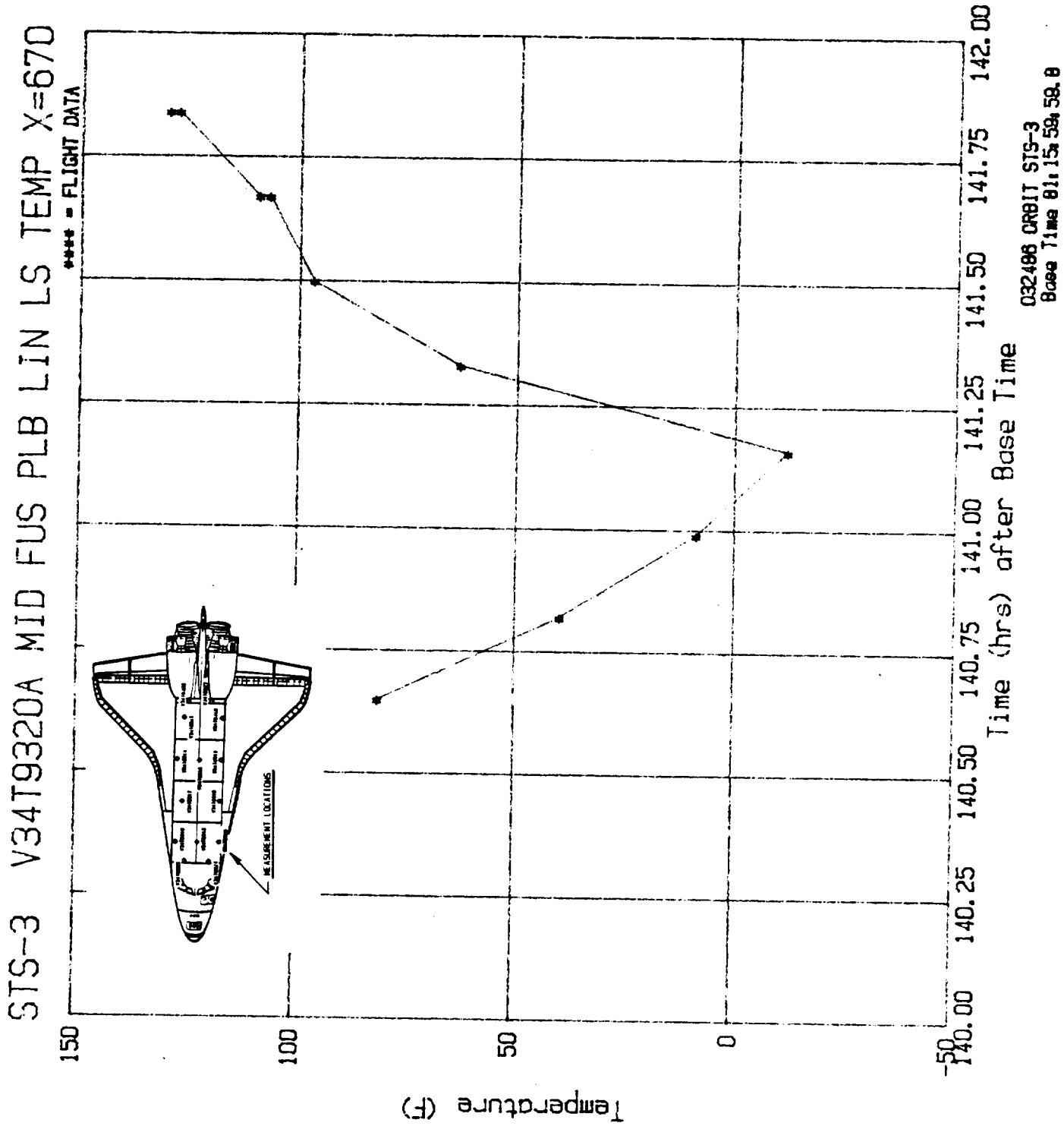
STS-3 V34T9320A MID FUS PLB LIN LS TEMP X=670
**** = FLIGHT DATA
MEASUREMENT LOCATIONS
Temperature (F)
150
100
50
0
-50
140.00
140.25
140.50
140.75
141.00
141.25
141.50
141.75
142.00
Time (hrs) after Base Time
032486 ORBIT STS-3
Base Time 81:15:59:58.0

Figure A-35

A 36
File No=f36 STS-3 V34T9324A MID FUS FWD BHD INS TEMP Y=-47

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	140.65	85.79	35	0.00	0.00	69	0.00	0.00	103	0.00	0.00
2	140.82	54.43	36	0.00	0.00	70	0.00	0.00	104	0.00	0.00
3	140.99	23.52	37	0.00	0.00	71	0.00	0.00	105	0.00	0.00
4	141.16	8.58	38	0.00	0.00	72	0.00	0.00	106	0.00	0.00
5	141.33	67.34	39	0.00	0.00	73	0.00	0.00	107	0.00	0.00
6	141.33	70.02	40	0.00	0.00	74	0.00	0.00	108	0.00	0.00
7	141.50	95.85	41	0.00	0.00	75	0.00	0.00	109	0.00	0.00
8	141.50	98.62	42	0.00	0.00	76	0.00	0.00	110	0.00	0.00
9	141.67	106.37	43	0.00	0.00	77	0.00	0.00	111	0.00	0.00
10	141.84	124.91	44	0.00	0.00	78	0.00	0.00	112	0.00	0.00
11	141.84	127.21	45	0.00	0.00	79	0.00	0.00	113	0.00	0.00
12	0.00	0.00	46	0.00	0.00	80	0.00	0.00	114	0.00	0.00
13	0.00	0.00	47	0.00	0.00	81	0.00	0.00	115	0.00	0.00
14	0.00	0.00	48	0.00	0.00	82	0.00	0.00	116	0.00	0.00
15	0.00	0.00	49	0.00	0.00	83	0.00	0.00	117	0.00	0.00
16	0.00	0.00	50	0.00	0.00	84	0.00	0.00	118	0.00	0.00
17	0.00	0.00	51	0.00	0.00	85	0.00	0.00	119	0.00	0.00
18	0.00	0.00	52	0.00	0.00	86	0.00	0.00	120	0.00	0.00
19	0.00	0.00	53	0.00	0.00	87	0.00	0.00	121	0.00	0.00
20	0.00	0.00	54	0.00	0.00	88	0.00	0.00	122	0.00	0.00
21	0.00	0.00	55	0.00	0.00	89	0.00	0.00	123	0.00	0.00
22	0.00	0.00	56	0.00	0.00	90	0.00	0.00	124	0.00	0.00
23	0.00	0.00	57	0.00	0.00	91	0.00	0.00	125	0.00	0.00
24	0.00	0.00	58	0.00	0.00	92	0.00	0.00	126	0.00	0.00
25	0.00	0.00	59	0.00	0.00	93	0.00	0.00	127	0.00	0.00
26	0.00	0.00	60	0.00	0.00	94	0.00	0.00	128	0.00	0.00
27	0.00	0.00	61	0.00	0.00	95	0.00	0.00	129	0.00	0.00
28	0.00	0.00	62	0.00	0.00	96	0.00	0.00	130	0.00	0.00
29	0.00	0.00	63	0.00	0.00	97	0.00	0.00	131	0.00	0.00
30	0.00	0.00	64	0.00	0.00	98	0.00	0.00	132	0.00	0.00
31	0.00	0.00	65	0.00	0.00	99	0.00	0.00	133	0.00	0.00
32	0.00	0.00	66	0.00	0.00	100	0.00	0.00	134	0.00	0.00
33	0.00	0.00	67	0.00	0.00	101	0.00	0.00	135	0.00	0.00
34	0.00	0.00	68	0.00	0.00	102	0.00	0.00	136	0.00	0.00

Max Temp= 127.21 F; Min Temp= 8.58 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

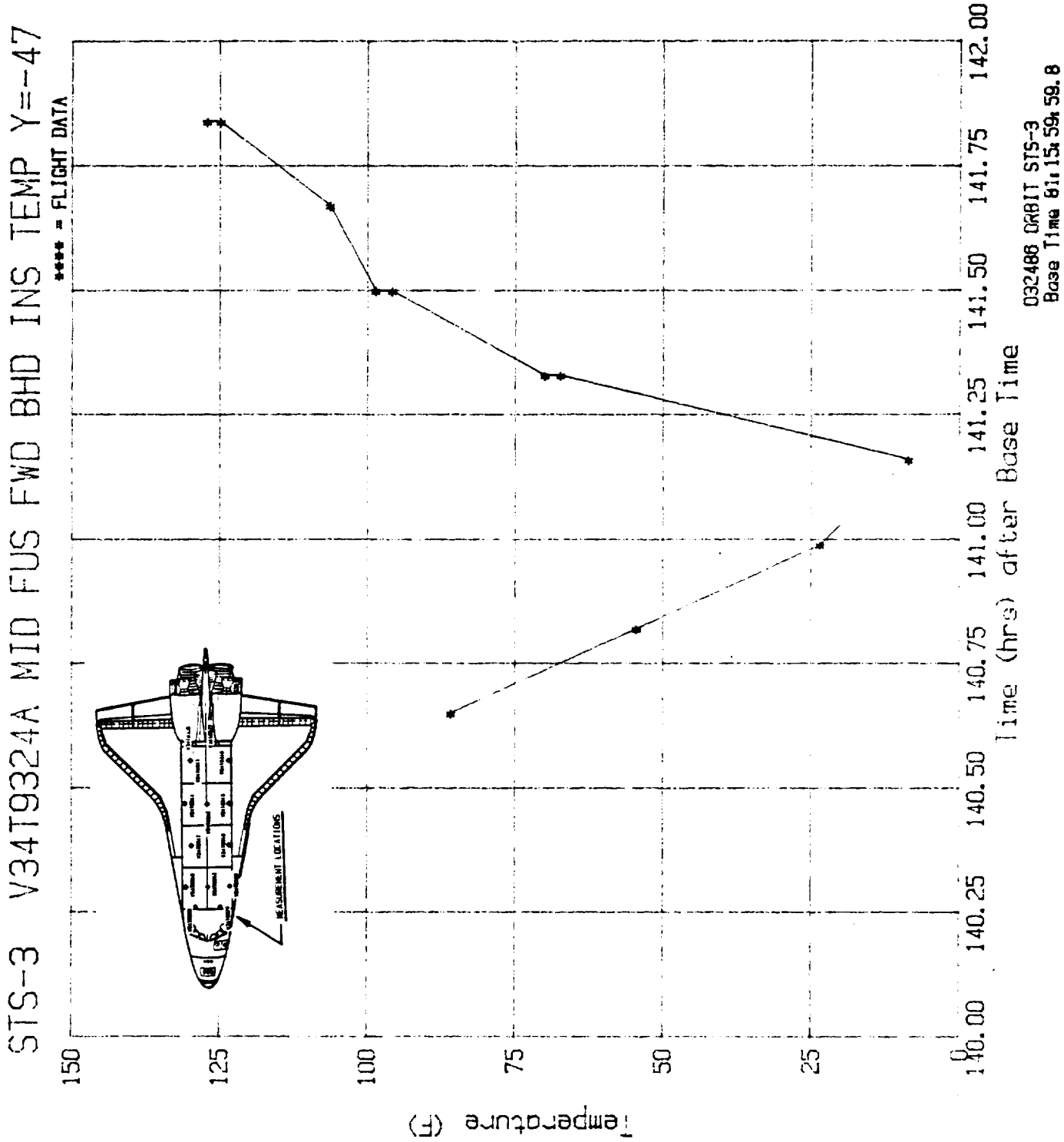
STS-3 V34T9324A MID FUS FWD BHD INS TEMP Y=-47
**** = FLIGHT DATA
MEASUREMENT LOCATIONS
Temperature (F)
150
125
100
75
50
25
0
Time (hrs) after Base Time
140.00
140.25
140.50
140.75
141.00
141.25
141.50
141.75
142.00
032486 ORBIT STS-3
Base Time 81:15:59:59.8

Figure A-36

A 37
File No=f37 STS-3 V34T9325A MID FUS FWD BHD INS TEMP Y=37.5

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	140.65	72.78	35	0.00	0.00	69	0.00	0.00	103	0.00	0.00
2	140.82	44.22	36	0.00	0.00	70	0.00	0.00	104	0.00	0.00
3	140.99	5.31	37	0.00	0.00	71	0.00	0.00	105	0.00	0.00
4	141.16	-6.89	38	0.00	0.00	72	0.00	0.00	106	0.00	0.00
5	141.16	-6.89	39	0.00	0.00	73	0.00	0.00	107	0.00	0.00
6	141.33	49.58	40	0.00	0.00	74	0.00	0.00	108	0.00	0.00
7	141.33	52.08	41	0.00	0.00	75	0.00	0.00	109	0.00	0.00
8	141.33	52.08	42	0.00	0.00	76	0.00	0.00	110	0.00	0.00
9	141.50	75.37	43	0.00	0.00	77	0.00	0.00	111	0.00	0.00
10	141.67	85.54	44	0.00	0.00	78	0.00	0.00	112	0.00	0.00
11	141.84	103.93	45	0.00	0.00	79	0.00	0.00	113	0.00	0.00
12	141.84	106.79	46	0.00	0.00	80	0.00	0.00	114	0.00	0.00
13	0.00	0.00	47	0.00	0.00	81	0.00	0.00	115	0.00	0.00
14	0.00	0.00	48	0.00	0.00	82	0.00	0.00	116	0.00	0.00
15	0.00	0.00	49	0.00	0.00	83	0.00	0.00	117	0.00	0.00
16	0.00	0.00	50	0.00	0.00	84	0.00	0.00	118	0.00	0.00
17	0.00	0.00	51	0.00	0.00	85	0.00	0.00	119	0.00	0.00
18	0.00	0.00	52	0.00	0.00	86	0.00	0.00	120	0.00	0.00
19	0.00	0.00	53	0.00	0.00	87	0.00	0.00	121	0.00	0.00
20	0.00	0.00	54	0.00	0.00	88	0.00	0.00	122	0.00	0.00
21	0.00	0.00	55	0.00	0.00	89	0.00	0.00	123	0.00	0.00
22	0.00	0.00	56	0.00	0.00	90	0.00	0.00	124	0.00	0.00
23	0.00	0.00	57	0.00	0.00	91	0.00	0.00	125	0.00	0.00
24	0.00	0.00	58	0.00	0.00	92	0.00	0.00	126	0.00	0.00
25	0.00	0.00	59	0.00	0.00	93	0.00	0.00	127	0.00	0.00
26	0.00	0.00	60	0.00	0.00	94	0.00	0.00	128	0.00	0.00
27	0.00	0.00	61	0.00	0.00	95	0.00	0.00	129	0.00	0.00
28	0.00	0.00	62	0.00	0.00	96	0.00	0.00	130	0.00	0.00
29	0.00	0.00	63	0.00	0.00	97	0.00	0.00	131	0.00	0.00
30	0.00	0.00	64	0.00	0.00	98	0.00	0.00	132	0.00	0.00
31	0.00	0.00	65	0.00	0.00	99	0.00	0.00	133	0.00	0.00
32	0.00	0.00	66	0.00	0.00	100	0.00	0.00	134	0.00	0.00
33	0.00	0.00	67	0.00	0.00	101	0.00	0.00	135	0.00	0.00
34	0.00	0.00	68	0.00	0.00	102	0.00	0.00	136	0.00	0.00

Max Temp= 106.79 F; Min Temp= -6.89 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

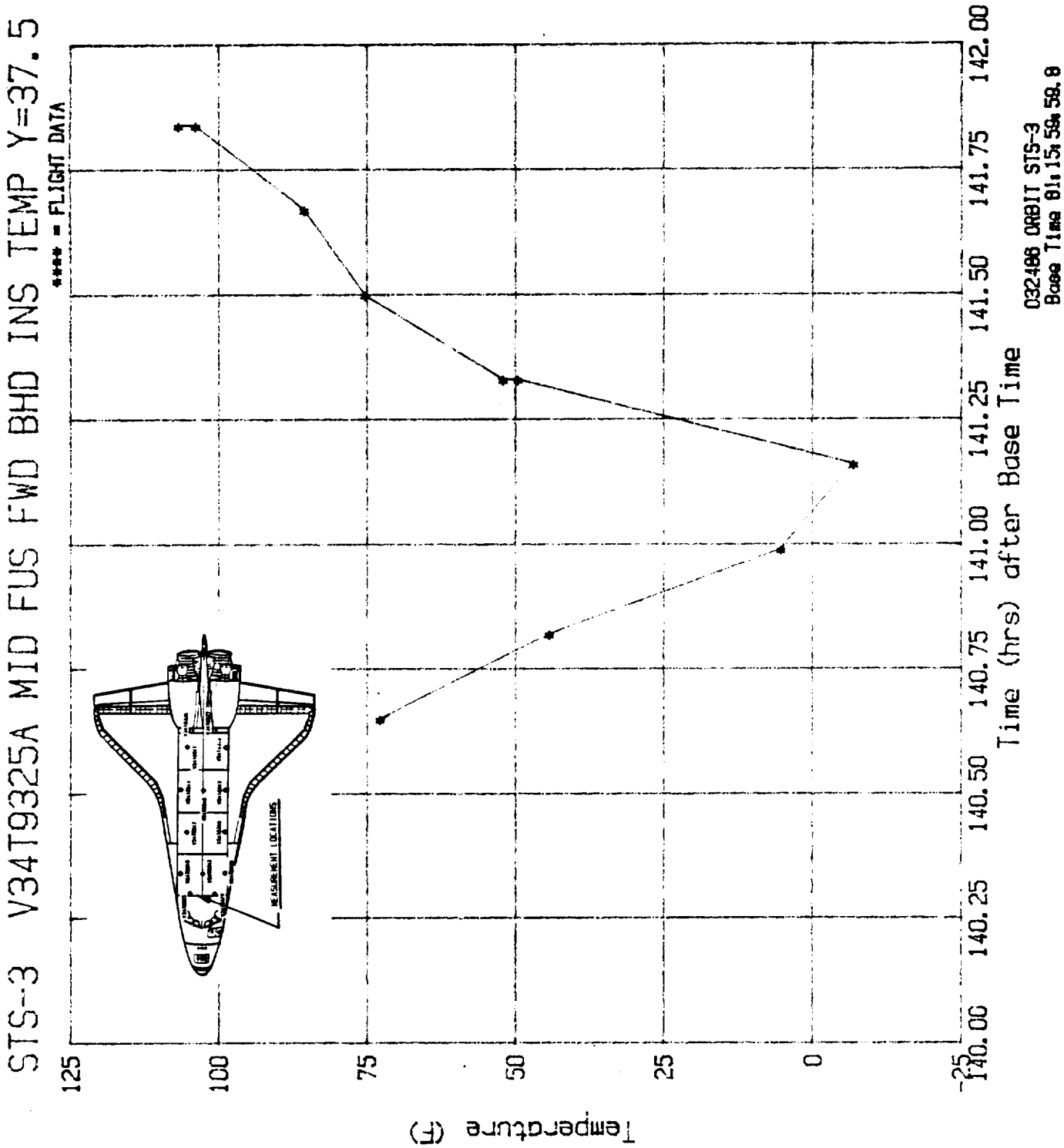
STS-3 V34T9325A MID FUS FWD BHD INS TEMP Y=37.5
**** = FLIGHT DATA
MEASUREMENT LOCATIONS
Temperature (F)
125
100
75
50
25
0
-25
140.00
140.25
140.50
140.75
141.00
141.25
141.50
141.75
142.00
Time (hrs) after Base Time
032486 ORBIT STS-3
Base Time 81:15:56:58.8

Figure A-37

A 38
File No=f38

STS-3 V34T9326A MID FUS AFT BHD INS TEMP Y=-50

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	140.65	77.64	35	0.00	0.00	69	0.00	0.00	103	0.00	0.00
2	140.65	75.30	36	0.00	0.00	70	0.00	0.00	104	0.00	0.00
3	140.82	59.56	37	0.00	0.00	71	0.00	0.00	105	0.00	0.00
4	140.99	62.02	38	0.00	0.00	72	0.00	0.00	106	0.00	0.00
5	141.16	122.16	39	0.00	0.00	73	0.00	0.00	107	0.00	0.00
6	141.33	122.16	40	0.00	0.00	74	0.00	0.00	108	0.00	0.00
7	141.50	103.65	41	0.00	0.00	75	0.00	0.00	109	0.00	0.00
8	141.67	103.78	42	0.00	0.00	76	0.00	0.00	110	0.00	0.00
9	141.84	106.54	43	0.00	0.00	77	0.00	0.00	111	0.00	0.00
10	0.00	0.00	44	0.00	0.00	78	0.00	0.00	112	0.00	0.00
11	0.00	0.00	45	0.00	0.00	79	0.00	0.00	113	0.00	0.00
12	0.00	0.00	46	0.00	0.00	80	0.00	0.00	114	0.00	0.00
13	0.00	0.00	47	0.00	0.00	81	0.00	0.00	115	0.00	0.00
14	0.00	0.00	48	0.00	0.00	82	0.00	0.00	116	0.00	0.00
15	0.00	0.00	49	0.00	0.00	83	0.00	0.00	117	0.00	0.00
16	0.00	0.00	50	0.00	0.00	84	0.00	0.00	118	0.00	0.00
17	0.00	0.00	51	0.00	0.00	85	0.00	0.00	119	0.00	0.00
18	0.00	0.00	52	0.00	0.00	86	0.00	0.00	120	0.00	0.00
19	0.00	0.00	53	0.00	0.00	87	0.00	0.00	121	0.00	0.00
20	0.00	0.00	54	0.00	0.00	88	0.00	0.00	122	0.00	0.00
21	0.00	0.00	55	0.00	0.00	89	0.00	0.00	123	0.00	0.00
22	0.00	0.00	56	0.00	0.00	90	0.00	0.00	124	0.00	0.00
23	0.00	0.00	57	0.00	0.00	91	0.00	0.00	125	0.00	0.00
24	0.00	0.00	58	0.00	0.00	92	0.00	0.00	126	0.00	0.00
25	0.00	0.00	59	0.00	0.00	93	0.00	0.00	127	0.00	0.00
26	0.00	0.00	60	0.00	0.00	94	0.00	0.00	128	0.00	0.00
27	0.00	0.00	61	0.00	0.00	95	0.00	0.00	129	0.00	0.00
28	0.00	0.00	62	0.00	0.00	96	0.00	0.00	130	0.00	0.00
29	0.00	0.00	63	0.00	0.00	97	0.00	0.00	131	0.00	0.00
30	0.00	0.00	64	0.00	0.00	98	0.00	0.00	132	0.00	0.00
31	0.00	0.00	65	0.00	0.00	99	0.00	0.00	133	0.00	0.00
32	0.00	0.00	66	0.00	0.00	100	0.00	0.00	134	0.00	0.00
33	0.00	0.00	67	0.00	0.00	101	0.00	0.00	135	0.00	0.00
34	0.00	0.00	68	0.00	0.00	102	0.00	0.00	136	0.00	0.00

Max Temp= 122.16 F; Min Temp= 59.56 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

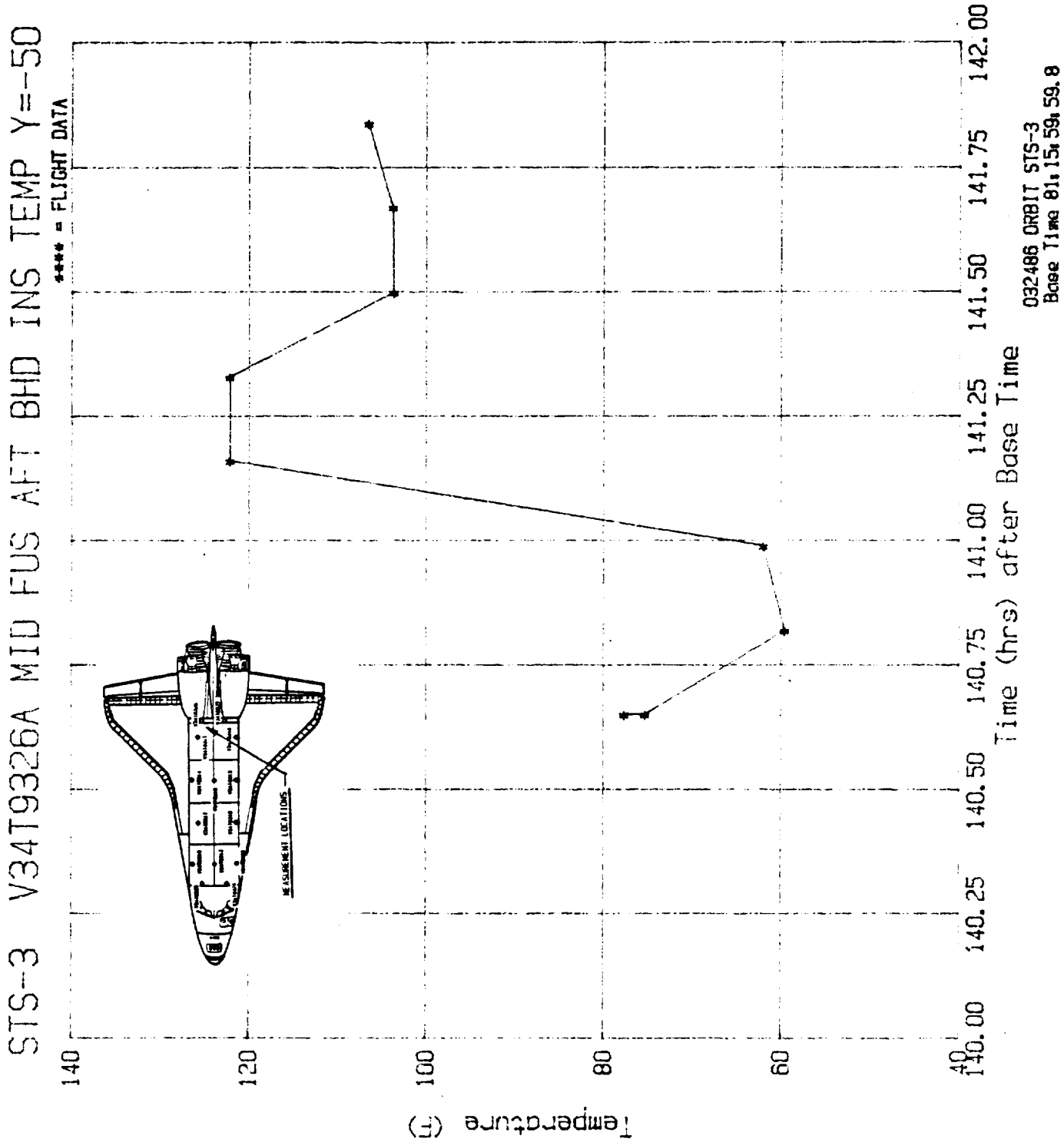
STS-3 V34T9326A MID FUS AFT BHD INS TEMP Y=-50
**** = FLIGHT DATA
MEASUREMENT LOCATIONS
Temperature (F)
140
120
100
80
60
40
140.00
140.25
140.50
140.75
141.00
141.25
141.50
141.75
142.00
Time (hrs) after Base Time
032486 ORBIT STS-3
Base Time 81:15:59:59.8

Figure A-38

A 39
File No=f39

STS-3 V34T9327A MID FUS AFT BHD INS TEMP Y=50

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	140.65	59.96	35	0.00	0.00	69	0.00	0.00	103	0.00	0.00
2	140.65	57.40	36	0.00	0.00	70	0.00	0.00	104	0.00	0.00
3	140.82	42.51	37	0.00	0.00	71	0.00	0.00	105	0.00	0.00
4	140.82	40.20	38	0.00	0.00	72	0.00	0.00	106	0.00	0.00
5	140.99	54.94	39	0.00	0.00	73	0.00	0.00	107	0.00	0.00
6	140.99	57.50	40	0.00	0.00	74	0.00	0.00	108	0.00	0.00
7	141.16	108.12	41	0.00	0.00	75	0.00	0.00	109	0.00	0.00
8	141.16	110.68	42	0.00	0.00	76	0.00	0.00	110	0.00	0.00
9	141.33	118.27	43	0.00	0.00	77	0.00	0.00	111	0.00	0.00
10	141.33	115.61	44	0.00	0.00	78	0.00	0.00	112	0.00	0.00
11	141.50	97.97	45	0.00	0.00	79	0.00	0.00	113	0.00	0.00
12	141.67	90.18	46	0.00	0.00	80	0.00	0.00	114	0.00	0.00
13	141.84	90.18	47	0.00	0.00	81	0.00	0.00	115	0.00	0.00
14	0.00	0.00	48	0.00	0.00	82	0.00	0.00	116	0.00	0.00
15	0.00	0.00	49	0.00	0.00	83	0.00	0.00	117	0.00	0.00
16	0.00	0.00	50	0.00	0.00	84	0.00	0.00	118	0.00	0.00
17	0.00	0.00	51	0.00	0.00	85	0.00	0.00	119	0.00	0.00
18	0.00	0.00	52	0.00	0.00	86	0.00	0.00	120	0.00	0.00
19	0.00	0.00	53	0.00	0.00	87	0.00	0.00	121	0.00	0.00
20	0.00	0.00	54	0.00	0.00	88	0.00	0.00	122	0.00	0.00
21	0.00	0.00	55	0.00	0.00	89	0.00	0.00	123	0.00	0.00
22	0.00	0.00	56	0.00	0.00	90	0.00	0.00	124	0.00	0.00
23	0.00	0.00	57	0.00	0.00	91	0.00	0.00	125	0.00	0.00
24	0.00	0.00	58	0.00	0.00	92	0.00	0.00	126	0.00	0.00
25	0.00	0.00	59	0.00	0.00	93	0.00	0.00	127	0.00	0.00
26	0.00	0.00	60	0.00	0.00	94	0.00	0.00	128	0.00	0.00
27	0.00	0.00	61	0.00	0.00	95	0.00	0.00	129	0.00	0.00
28	0.00	0.00	62	0.00	0.00	96	0.00	0.00	130	0.00	0.00
29	0.00	0.00	63	0.00	0.00	97	0.00	0.00	131	0.00	0.00
30	0.00	0.00	64	0.00	0.00	98	0.00	0.00	132	0.00	0.00
31	0.00	0.00	65	0.00	0.00	99	0.00	0.00	133	0.00	0.00
32	0.00	0.00	66	0.00	0.00	100	0.00	0.00	134	0.00	0.00
33	0.00	0.00	67	0.00	0.00	101	0.00	0.00	135	0.00	0.00
34	0.00	0.00	68	0.00	0.00	102	0.00	0.00	136	0.00	0.00

Max Temp= 118.27 F; Min Temp= 40.20 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

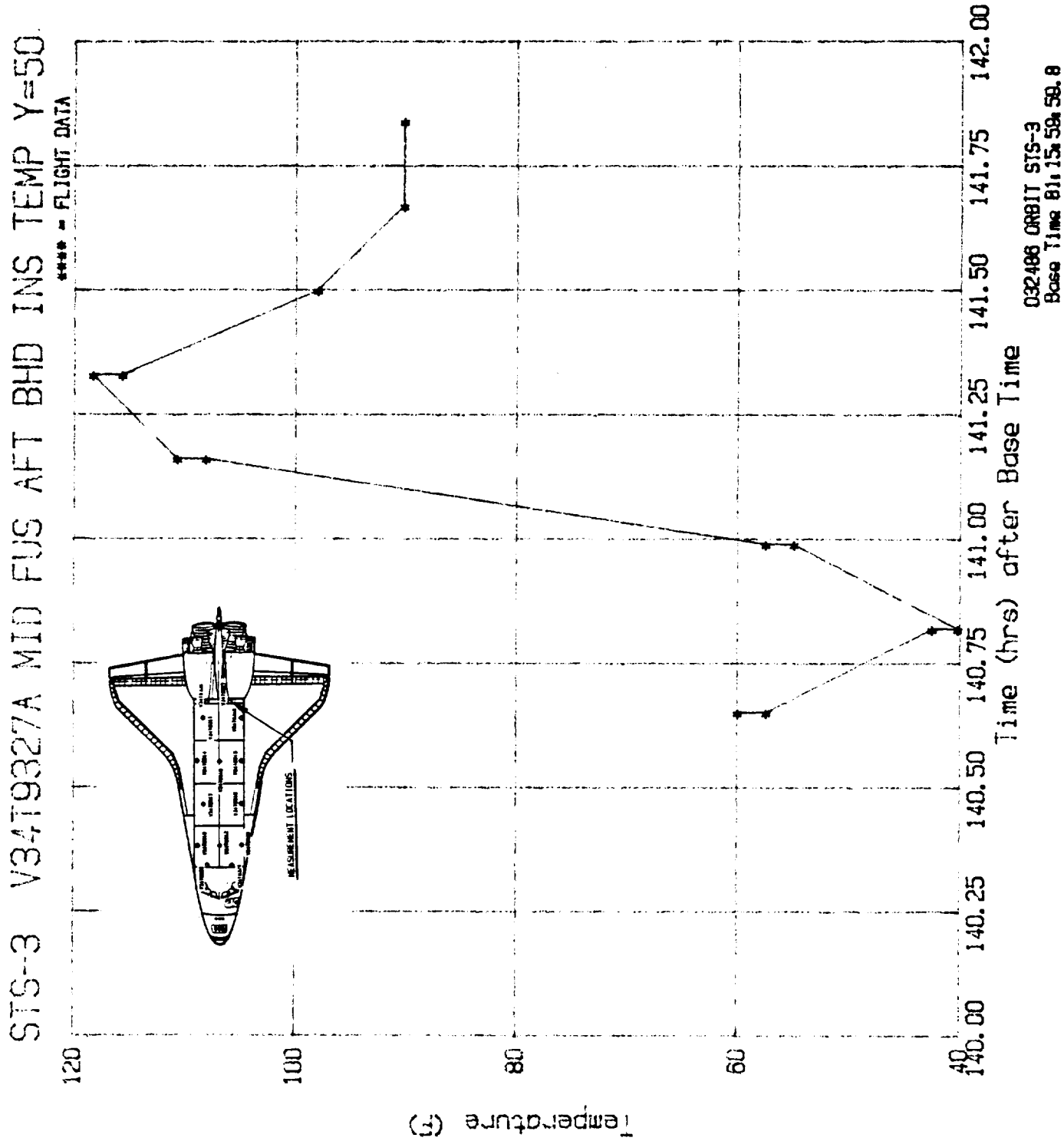
STS-3 V34T9327A MID FUS AFT BHD INS TEMP Y=50
**** - FLIGHT DATA
MEASUREMENT LOCATIONS
Temperature (F)
120
100
80
60
40
140.00
140.25
140.50
140.75
141.00
141.25
141.50
141.75
142.00
Time (hrs) after Base Time
032486 ORBIT STS-3
Base Time 81:15:59:50.8

Figure A-39

A 42

File No=f42 STS-4 V34T9312A MID FUS PLB CTR BTM TEMP X=670

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	8.11	-52.77	35	18.06	-32.35	69	19.69	-22.02	103	0.00	0.00
2	8.11	-55.23	36	18.06	-30.01	70	19.70	-19.68	104	0.00	0.00
3	8.13	52.52	37	18.06	-27.55	71	19.71	-17.22	105	0.00	0.00
4	9.07	1.11	38	18.06	-24.72	72	19.71	-14.64	106	0.00	0.00
5	9.08	3.20	39	18.06	-22.02	73	19.73	-11.81	107	0.00	0.00
6	9.09	5.78	40	18.07	-19.56	74	20.33	-11.56	108	0.00	0.00
7	9.09	8.73	41	18.08	-17.10	75	20.33	23.62	109	0.00	0.00
8	9.22	21.40	42	18.08	-14.64	76	20.37	21.28	110	0.00	0.00
9	9.23	23.74	43	18.09	-11.69	77	20.40	18.70	111	0.00	0.00
10	9.28	23.86	44	18.09	-9.35	78	20.98	26.20	112	0.00	0.00
11	9.30	21.53	45	18.10	-7.01	79	21.02	28.78	113	0.00	0.00
12	9.33	18.57	46	18.10	-4.06	80	21.06	31.61	114	0.00	0.00
13	9.98	-70.48	47	18.11	-1.48	81	21.09	34.07	115	0.00	0.00
14	10.00	-72.94	48	18.12	0.86	82	21.91	34.07	116	0.00	0.00
15	11.54	-72.82	49	18.12	3.32	83	21.92	26.08	117	0.00	0.00
16	11.55	-74.91	50	19.42	-84.62	84	21.94	23.49	118	0.00	0.00
17	11.61	-77.24	51	19.46	-87.08	85	0.00	0.00	119	0.00	0.00
18	11.65	-80.20	52	19.53	-84.87	86	0.00	0.00	120	0.00	0.00
19	13.15	-80.20	53	19.53	-82.53	87	0.00	0.00	121	0.00	0.00
20	13.19	-82.78	54	19.63	-52.77	88	0.00	0.00	122	0.00	0.00
21	13.25	-80.44	55	19.64	-82.53	89	0.00	0.00	123	0.00	0.00
22	14.77	-80.32	56	19.64	-58.06	90	0.00	0.00	124	0.00	0.00
23	14.78	-77.49	57	19.64	-55.10	91	0.00	0.00	125	0.00	0.00
24	14.79	-67.90	58	19.66	-50.68	92	0.00	0.00	126	0.00	0.00
25	14.80	-75.28	59	19.66	-47.97	93	0.00	0.00	127	0.00	0.00
26	15.45	26.20	60	19.66	-40.34	94	0.00	0.00	128	0.00	0.00
27	15.46	23.86	61	19.67	-44.90	95	0.00	0.00	129	0.00	0.00
28	15.47	21.40	62	19.67	-42.56	96	0.00	0.00	130	0.00	0.00
29	15.49	18.70	63	19.67	-37.88	97	0.00	0.00	131	0.00	0.00
30	15.51	15.87	64	19.68	-32.47	98	0.00	0.00	132	0.00	0.00
31	16.51	-42.44	65	19.68	-30.26	99	0.00	0.00	133	0.00	0.00
32	16.51	-40.22	66	19.68	-27.55	100	0.00	0.00	134	0.00	0.00
33	16.52	-37.76	67	19.69	-35.18	101	0.00	0.00	135	0.00	0.00
34	16.52	-34.81	68	19.69	-24.72	102	0.00	0.00	136	0.00	0.00

Max Temp= 52.52 F; Min Temp= -87.08 F.

Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

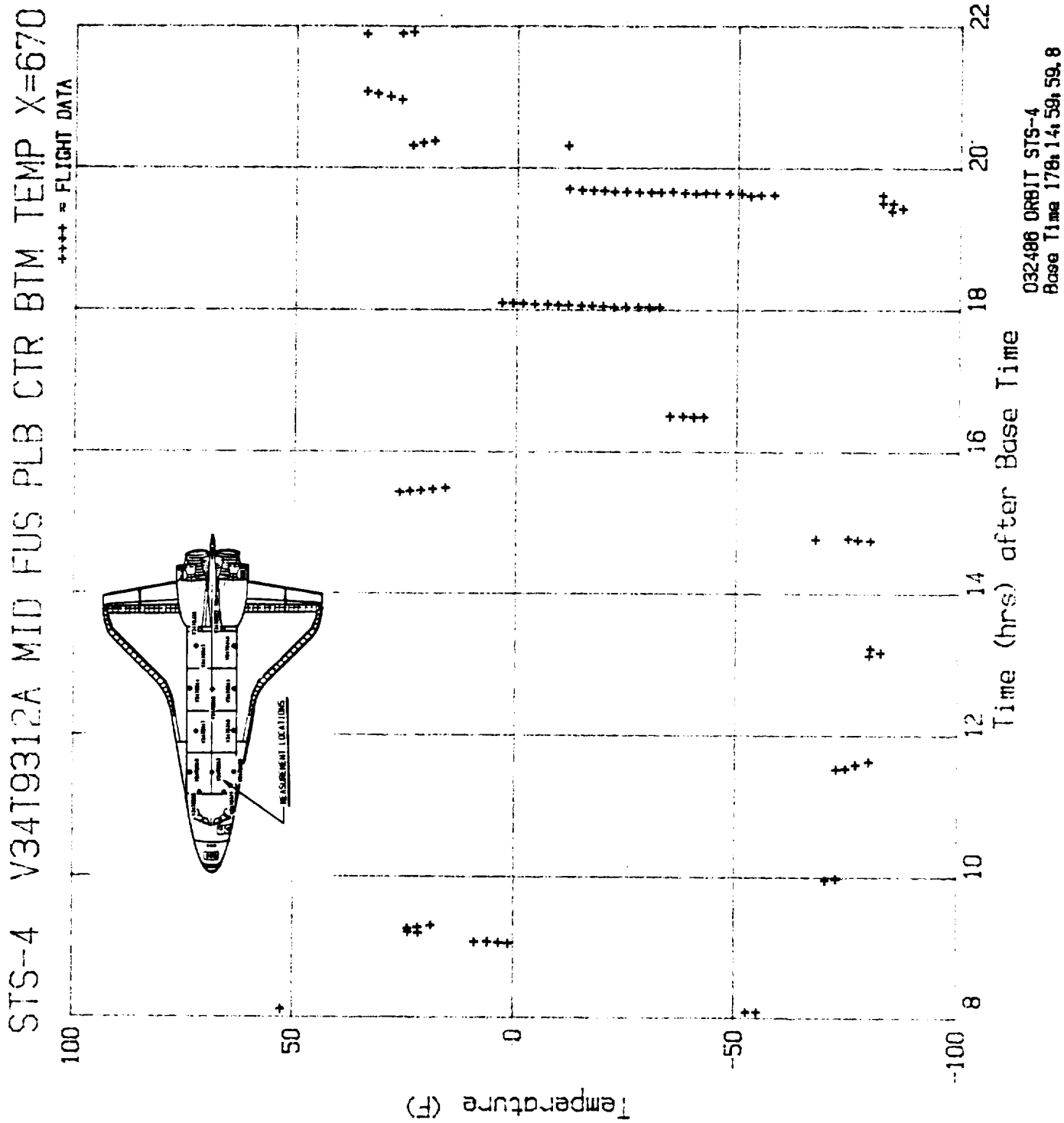
STS-4 V34T9312A MID FUS PLB CTR BTM TEMP X=670
++++ = FLIGHT DATA
032486 ORBIT STS-4
Base Time 178:14:59:59.8
Time (hrs) after Base Time
Temperature (F)
100
50
0
-50
-100
8
10
12
14
16
18
20
22
MEASUREMENT LOCATIONS

Figure A-42

A 43
File No=f43 STS-3 V34T9313A MID FUS PLB LNR LS TEMP X=1030

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	8.08	18.97	35	19.62	-9.61	69	0.00	0.00	103	0.00	0.00
2	8.09	21.47	36	19.62	-7.03	70	0.00	0.00	104	0.00	0.00
3	8.14	-24.64	37	19.65	-4.38	71	0.00	0.00	105	0.00	0.00
4	9.06	19.04	38	19.67	-2.03	72	0.00	0.00	106	0.00	0.00
5	9.09	21.47	39	19.70	0.70	73	0.00	0.00	107	0.00	0.00
6	9.24	29.06	40	19.70	3.20	74	0.00	0.00	108	0.00	0.00
7	9.34	29.06	41	20.29	23.54	75	0.00	0.00	109	0.00	0.00
8	9.98	-1.73	42	20.29	21.18	76	0.00	0.00	110	0.00	0.00
9	9.99	-4.16	43	20.34	21.18	77	0.00	0.00	111	0.00	0.00
10	11.53	-6.74	44	20.35	18.53	78	0.00	0.00	112	0.00	0.00
11	11.56	-9.54	45	20.94	18.53	79	0.00	0.00	113	0.00	0.00
12	11.63	-9.54	46	20.94	21.18	80	0.00	0.00	114	0.00	0.00
13	11.64	-11.97	47	21.00	23.46	81	0.00	0.00	115	0.00	0.00
14	13.13	-11.97	48	21.01	21.18	82	0.00	0.00	116	0.00	0.00
15	13.17	-14.84	49	21.06	23.61	83	0.00	0.00	117	0.00	0.00
16	13.24	-14.55	50	21.84	28.55	84	0.00	0.00	118	0.00	0.00
17	14.79	-17.05	51	21.86	26.26	85	0.00	0.00	119	0.00	0.00
18	14.79	-14.70	52	21.87	23.39	86	0.00	0.00	120	0.00	0.00
19	15.43	23.76	53	21.89	26.34	87	0.00	0.00	121	0.00	0.00
20	15.46	21.25	54	21.91	23.46	88	0.00	0.00	122	0.00	0.00
21	15.48	18.67	55	0.00	0.00	89	0.00	0.00	123	0.00	0.00
22	16.47	-12.04	56	0.00	0.00	90	0.00	0.00	124	0.00	0.00
23	16.48	-9.61	57	0.00	0.00	91	0.00	0.00	125	0.00	0.00
24	16.48	-6.96	58	0.00	0.00	92	0.00	0.00	126	0.00	0.00
25	18.01	-9.61	59	0.00	0.00	93	0.00	0.00	127	0.00	0.00
26	18.04	-7.03	60	0.00	0.00	94	0.00	0.00	128	0.00	0.00
27	18.06	-4.46	61	0.00	0.00	95	0.00	0.00	129	0.00	0.00
28	18.08	-2.03	62	0.00	0.00	96	0.00	0.00	130	0.00	0.00
29	18.11	0.85	63	0.00	0.00	97	0.00	0.00	131	0.00	0.00
30	19.34	-22.58	64	0.00	0.00	98	0.00	0.00	132	0.00	0.00
31	19.37	-22.58	65	0.00	0.00	99	0.00	0.00	133	0.00	0.00
32	19.37	-20.00	66	0.00	0.00	100	0.00	0.00	134	0.00	0.00
33	19.46	-20.00	67	0.00	0.00	101	0.00	0.00	135	0.00	0.00
34	19.48	-17.05	68	0.00	0.00	102	0.00	0.00	136	0.00	0.00

Max Temp= 29.06 F; Min Temp= -24.64 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

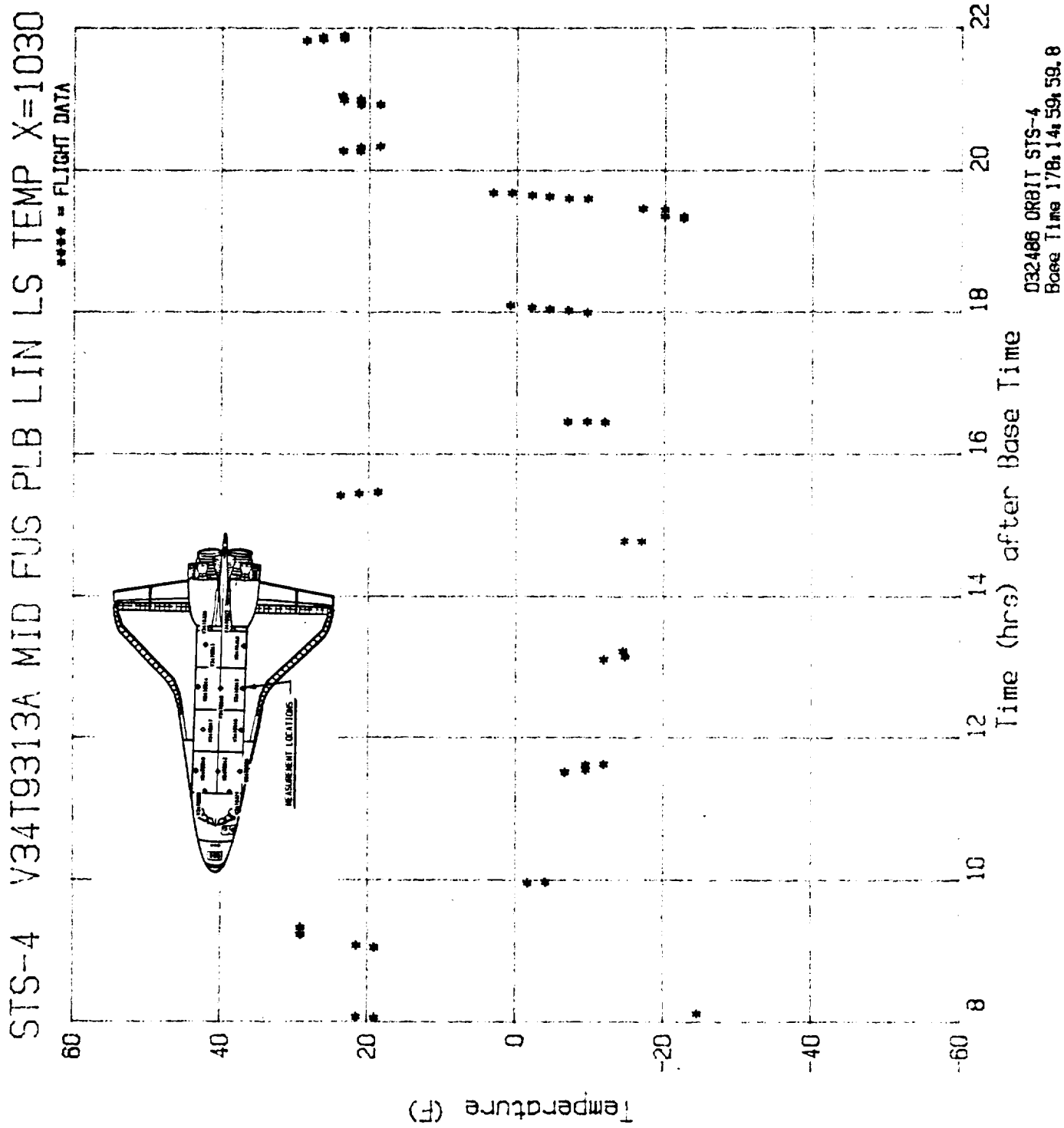
STS-4 V34T9313A MID FUS PLB LIN LS TEMP X=1030
**** = FLIGHT DATA
MEASUREMENT LOCATIONS
Temperature (F)
60
40
20
0
-20
-40
-60
Time (hrs) after Base Time
8
10
12
14
16
18
20
22
D32486 ORBIT STS-4
Base Time 178:14:59:59.8

Figure A-43

A 44
File No=f44

STS-4 V34T9314A MID FUS PLB LIN RS TEMP X=1030

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	8.09	18.77	35	19.68	0.44	69	0.00	0.00	103	0.00	0.00
2	8.09	15.96	36	19.68	3.10	70	0.00	0.00	104	0.00	0.00
3	8.11	13.30	37	19.70	5.76	71	0.00	0.00	105	0.00	0.00
4	9.06	18.77	38	20.30	20.76	72	0.00	0.00	106	0.00	0.00
5	9.06	21.13	39	20.34	18.55	73	0.00	0.00	107	0.00	0.00
6	9.08	23.87	40	20.96	23.65	74	0.00	0.00	108	0.00	0.00
7	9.23	28.74	41	21.01	26.08	75	0.00	0.00	109	0.00	0.00
8	9.30	28.82	42	21.07	28.67	76	0.00	0.00	110	0.00	0.00
9	9.97	-4.58	43	21.89	26.16	77	0.00	0.00	111	0.00	0.00
10	9.99	-7.02	44	21.93	23.65	78	0.00	0.00	112	0.00	0.00
11	11.52	-9.68	45	0.00	0.00	79	0.00	0.00	113	0.00	0.00
12	11.53	-12.49	46	0.00	0.00	80	0.00	0.00	114	0.00	0.00
13	11.62	-12.41	47	0.00	0.00	81	0.00	0.00	115	0.00	0.00
14	13.12	-14.63	48	0.00	0.00	82	0.00	0.00	116	0.00	0.00
15	13.24	-14.48	49	0.00	0.00	83	0.00	0.00	117	0.00	0.00
16	14.79	-17.51	50	0.00	0.00	84	0.00	0.00	118	0.00	0.00
17	14.79	-14.56	51	0.00	0.00	85	0.00	0.00	119	0.00	0.00
18	15.44	23.72	52	0.00	0.00	86	0.00	0.00	120	0.00	0.00
19	15.46	20.99	53	0.00	0.00	87	0.00	0.00	121	0.00	0.00
20	15.48	18.55	54	0.00	0.00	88	0.00	0.00	122	0.00	0.00
21	16.48	-7.09	55	0.00	0.00	89	0.00	0.00	123	0.00	0.00
22	16.48	-4.58	56	0.00	0.00	90	0.00	0.00	124	0.00	0.00
23	18.02	-7.09	57	0.00	0.00	91	0.00	0.00	125	0.00	0.00
24	18.04	-4.73	58	0.00	0.00	92	0.00	0.00	126	0.00	0.00
25	18.05	-1.92	59	0.00	0.00	93	0.00	0.00	127	0.00	0.00
26	18.08	0.52	60	0.00	0.00	94	0.00	0.00	128	0.00	0.00
27	18.11	3.10	61	0.00	0.00	95	0.00	0.00	129	0.00	0.00
28	18.12	5.84	62	0.00	0.00	96	0.00	0.00	130	0.00	0.00
29	19.37	-19.88	63	0.00	0.00	97	0.00	0.00	131	0.00	0.00
30	19.44	-19.80	64	0.00	0.00	98	0.00	0.00	132	0.00	0.00
31	19.48	-17.36	65	0.00	0.00	99	0.00	0.00	133	0.00	0.00
32	19.63	-7.09	66	0.00	0.00	100	0.00	0.00	134	0.00	0.00
33	19.64	-4.73	67	0.00	0.00	101	0.00	0.00	135	0.00	0.00
34	19.66	-1.85	68	0.00	0.00	102	0.00	0.00	136	0.00	0.00

Max Temp= 28.82 F; Min Temp= -19.88 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

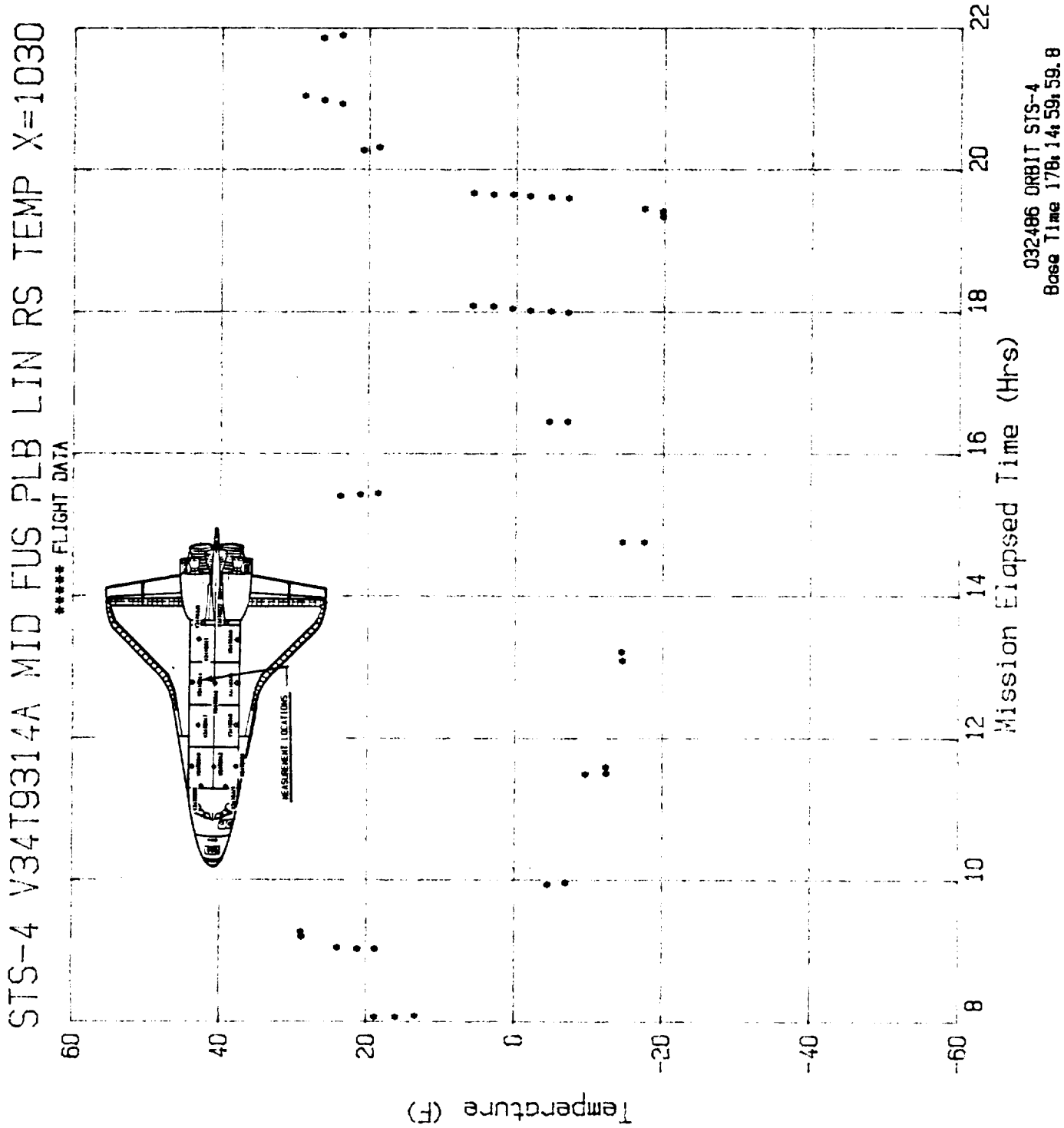
STS-4 V34T9314A MID FUS PLB LIN RS TEMP X=1030
***** FLIGHT DATA
MEASUREMENT LOCATIONS
Temperature (F)
60
40
20
0
-20
-40
-60
Mission Elapsed Time (Hrs)
8
10
12
14
16
18
20
22
032486 ORBIT STS-4
Base Time 178: 14: 59: 59.8

Figure A-44

A 45
File No=f45 STS-4 V34T9316A MID FUS PLB INS CL yo TP X=1030

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	8.07	24.12	35	19.69	5.84	69	0.00	0.00	103	0.00	0.00
2	9.06	23.90	36	19.70	8.29	70	0.00	0.00	104	0.00	0.00
3	9.07	26.71	37	19.70	10.95	71	0.00	0.00	105	0.00	0.00
4	9.07	29.15	38	20.32	23.82	72	0.00	0.00	106	0.00	0.00
5	9.19	31.81	39	20.35	21.01	73	0.00	0.00	107	0.00	0.00
6	9.30	31.89	40	20.96	26.34	74	0.00	0.00	108	0.00	0.00
7	9.97	3.26	41	20.98	28.71	75	0.00	0.00	109	0.00	0.00
8	9.99	0.52	42	21.07	28.71	76	0.00	0.00	110	0.00	0.00
9	11.53	-1.70	43	21.89	28.71	77	0.00	0.00	111	0.00	0.00
10	11.59	-1.63	44	0.00	0.00	78	0.00	0.00	112	0.00	0.00
11	11.60	-4.59	45	0.00	0.00	79	0.00	0.00	113	0.00	0.00
12	13.11	-4.51	46	0.00	0.00	80	0.00	0.00	114	0.00	0.00
13	13.18	-6.88	47	0.00	0.00	81	0.00	0.00	115	0.00	0.00
14	13.21	-4.51	48	0.00	0.00	82	0.00	0.00	116	0.00	0.00
15	14.77	-4.66	49	0.00	0.00	83	0.00	0.00	117	0.00	0.00
16	14.79	-6.88	50	0.00	0.00	84	0.00	0.00	118	0.00	0.00
17	15.45	28.85	51	0.00	0.00	85	0.00	0.00	119	0.00	0.00
18	15.45	26.56	52	0.00	0.00	86	0.00	0.00	120	0.00	0.00
19	15.47	23.75	53	0.00	0.00	87	0.00	0.00	121	0.00	0.00
20	16.47	-1.92	54	0.00	0.00	88	0.00	0.00	122	0.00	0.00
21	16.49	0.59	55	0.00	0.00	89	0.00	0.00	123	0.00	0.00
22	18.02	-2.07	56	0.00	0.00	90	0.00	0.00	124	0.00	0.00
23	18.04	0.59	57	0.00	0.00	91	0.00	0.00	125	0.00	0.00
24	18.06	2.96	58	0.00	0.00	92	0.00	0.00	126	0.00	0.00
25	18.08	5.84	59	0.00	0.00	93	0.00	0.00	127	0.00	0.00
26	18.09	8.14	60	0.00	0.00	94	0.00	0.00	128	0.00	0.00
27	18.11	10.65	61	0.00	0.00	95	0.00	0.00	129	0.00	0.00
28	19.37	-12.13	62	0.00	0.00	96	0.00	0.00	130	0.00	0.00
29	19.38	-9.54	63	0.00	0.00	97	0.00	0.00	131	0.00	0.00
30	19.47	-9.54	64	0.00	0.00	98	0.00	0.00	132	0.00	0.00
31	19.49	-6.95	65	0.00	0.00	99	0.00	0.00	133	0.00	0.00
32	19.63	-1.78	66	0.00	0.00	100	0.00	0.00	134	0.00	0.00
33	19.63	0.59	67	0.00	0.00	101	0.00	0.00	135	0.00	0.00
34	19.65	3.03	68	0.00	0.00	102	0.00	0.00	136	0.00	0.00

Max Temp= 31.89 F; Min Temp= -12.13 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

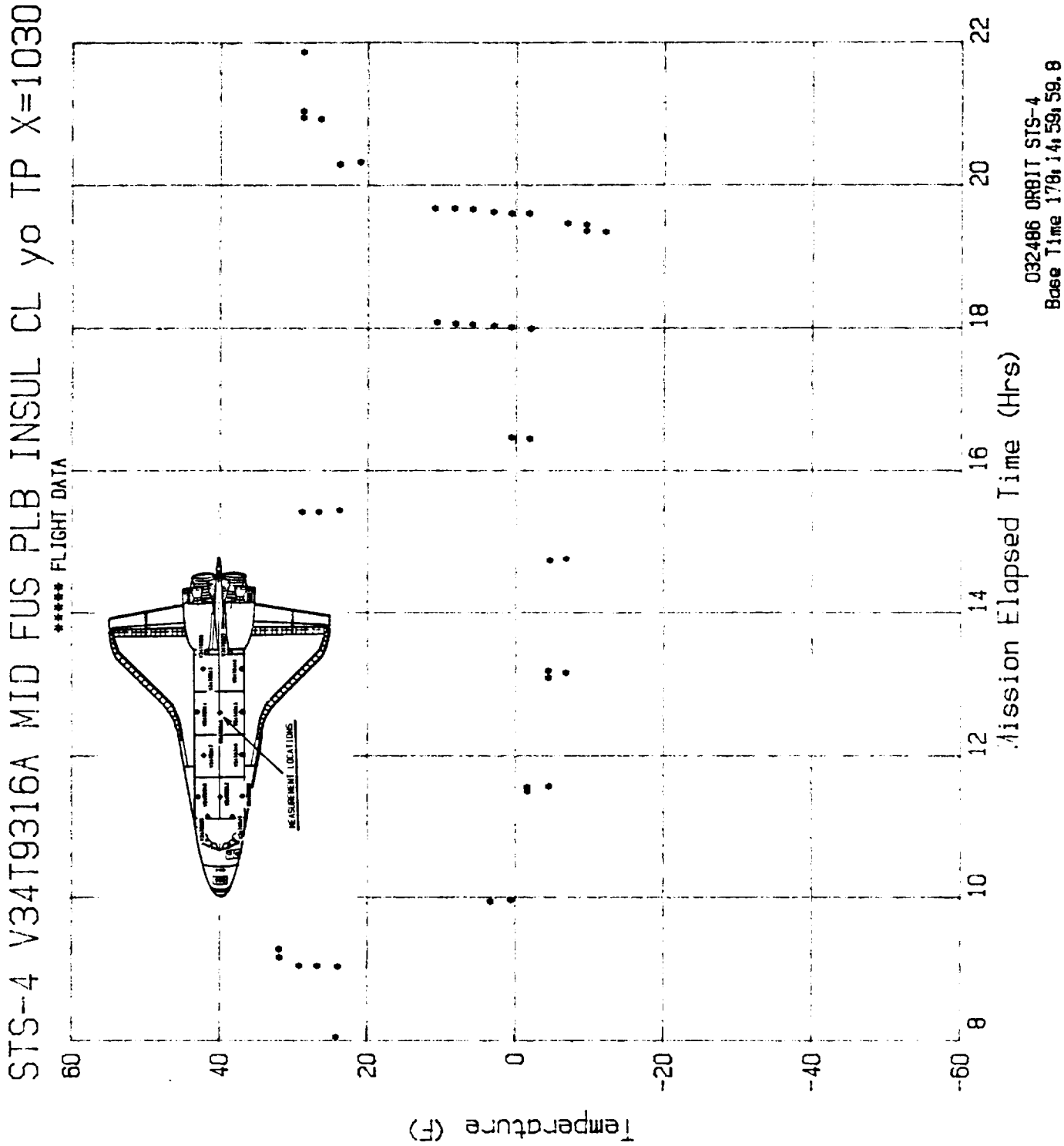
STS-4 V34T9316A MID FUS PLB INSUL CL yo TP X=1030
***** FLIGHT DATA
MEASUREMENT LOCATIONS
Temperature (F)
60
40
20
0
-20
-40
-60
Mission Elapsed Time (Hrs)
8
10
12
14
16
18
20
22
032486 ORBIT STS-4
Base Time 178: 14: 59: 59.8

Figure A-45

A 47
File No=f47

STS-4 V34T9318A MID FUS PLB LIN LS TEMP X=850

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	8.10	-42.40	35	16.50	-27.45	69	20.36	1.23	103	0.00	0.00
2	8.11	-45.34	36	16.50	-25.00	70	20.38	-1.84	104	0.00	0.00
3	9.06	3.43	37	16.50	-22.30	71	20.41	-4.53	105	0.00	0.00
4	9.07	5.64	38	16.50	-14.71	72	20.97	67.52	106	0.00	0.00
5	9.09	8.33	39	18.02	-22.18	73	20.97	64.83	107	0.00	0.00
6	9.20	5.64	40	18.02	-19.49	74	20.97	62.01	108	0.00	0.00
7	9.22	3.43	41	18.02	-17.03	75	20.98	59.44	109	0.00	0.00
8	9.25	1.10	42	18.03	-14.71	76	20.99	57.11	110	0.00	0.00
9	9.27	-2.08	43	18.05	-12.25	77	21.02	54.41	111	0.00	0.00
10	9.29	-4.78	44	18.05	-9.31	78	21.03	51.59	112	0.00	0.00
11	9.31	-6.99	45	18.06	-6.74	79	21.03	49.14	113	0.00	0.00
12	9.99	-74.88	46	18.07	-4.66	80	21.05	46.81	114	0.00	0.00
13	10.02	-74.75	47	18.08	-2.08	81	21.06	44.49	115	0.00	0.00
14	11.55	-77.94	48	18.08	0.86	82	21.08	41.67	116	0.00	0.00
15	11.60	-77.82	49	18.10	3.31	83	21.11	38.85	117	0.00	0.00
16	11.61	-75.12	50	18.10	5.51	84	21.93	3.31	118	0.00	0.00
17	11.63	-72.43	51	19.41	-79.90	85	21.96	0.98	119	0.00	0.00
18	13.12	-80.27	52	19.47	-79.78	86	0.00	0.00	120	0.00	0.00
19	13.13	-77.70	53	19.52	-79.90	87	0.00	0.00	121	0.00	0.00
20	13.15	-75.37	54	19.63	-60.17	88	0.00	0.00	122	0.00	0.00
21	13.17	-72.67	55	19.64	-58.09	89	0.00	0.00	123	0.00	0.00
22	13.18	-70.47	56	19.64	-55.27	90	0.00	0.00	124	0.00	0.00
23	13.20	-68.01	57	19.66	-52.45	91	0.00	0.00	125	0.00	0.00
24	13.21	-65.56	58	19.66	-50.00	92	0.00	0.00	126	0.00	0.00
25	13.23	-62.62	59	19.67	-47.92	93	0.00	0.00	127	0.00	0.00
26	13.25	-60.42	60	19.67	-45.10	94	0.00	0.00	128	0.00	0.00
27	14.78	-60.54	61	19.69	-42.52	95	0.00	0.00	129	0.00	0.00
28	14.78	-58.09	62	19.70	-39.95	96	0.00	0.00	130	0.00	0.00
29	14.79	-55.51	63	19.70	-37.87	97	0.00	0.00	131	0.00	0.00
30	14.81	-52.70	64	19.70	-35.17	98	0.00	0.00	132	0.00	0.00
31	15.47	-6.86	65	19.71	-32.60	99	0.00	0.00	133	0.00	0.00
32	15.48	-9.31	66	19.71	-27.57	100	0.00	0.00	134	0.00	0.00
33	15.49	-12.13	67	19.72	-29.78	101	0.00	0.00	135	0.00	0.00
34	15.50	-14.83	68	19.73	-25.00	102	0.00	0.00	136	0.00	0.00

Max Temp= 67.52 F; Min Temp= -80.27 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

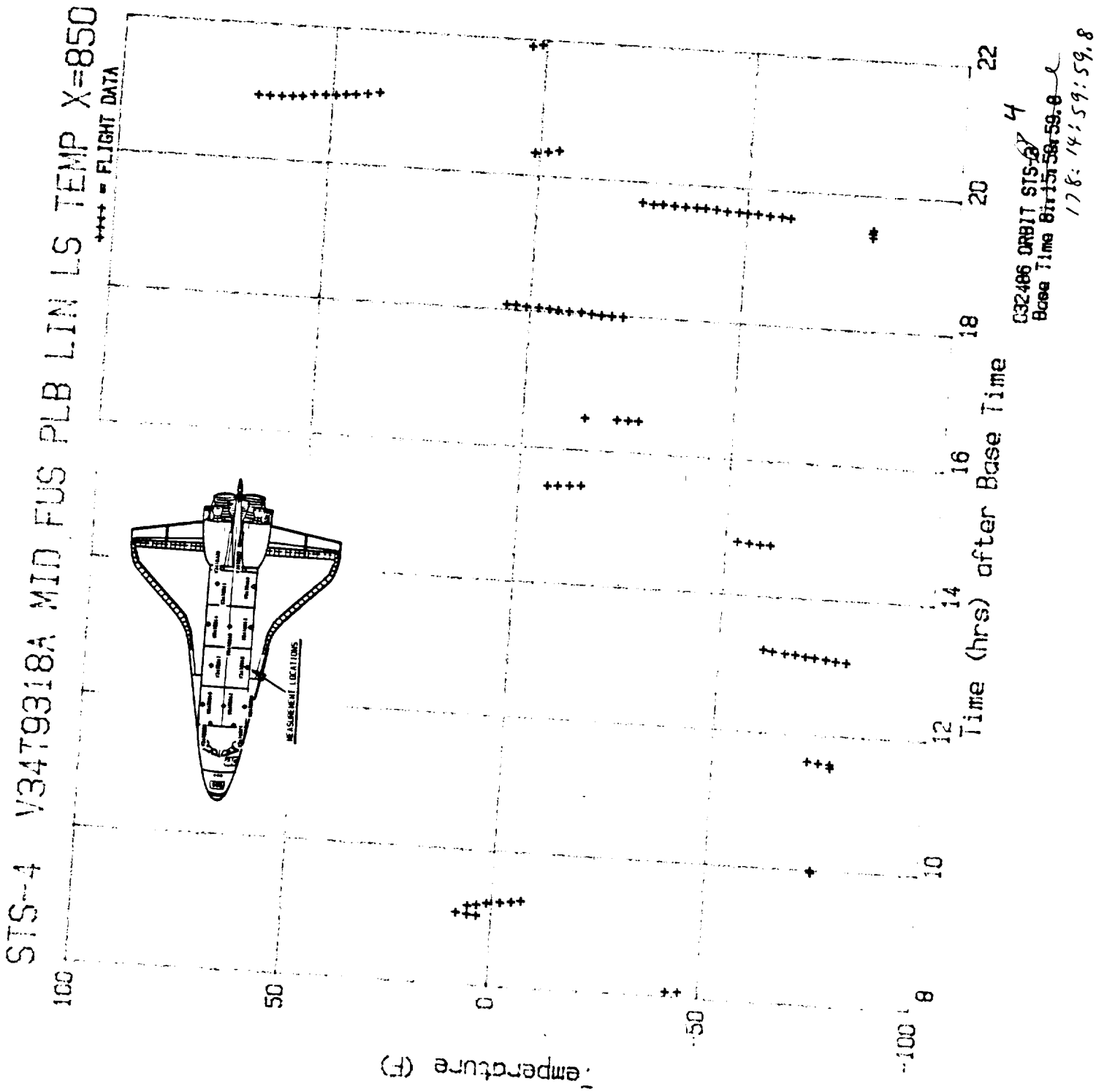

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Figure A-47

A 48
File No=f48

STS-4 V34T9319A MID FUS PLB LIN RS TEMP X=670

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	8.08	16.14	35	20.32	3.24	69	0.00	0.00	103	0.00	0.00
2	8.09	18.78	36	20.36	0.42	70	0.00	0.00	104	0.00	0.00
3	8.11	44.64	37	20.37	3.24	71	0.00	0.00	105	0.00	0.00
4	9.07	16.08	38	21.00	8.22	72	0.00	0.00	106	0.00	0.00
5	9.07	18.66	39	21.01	10.74	73	0.00	0.00	107	0.00	0.00
6	9.22	21.24	40	21.10	13.56	74	0.00	0.00	108	0.00	0.00
7	9.34	21.36	41	21.11	10.80	75	0.00	0.00	109	0.00	0.00
8	9.98	-1.73	42	21.88	13.38	76	0.00	0.00	110	0.00	0.00
9	9.99	-4.43	43	21.92	13.44	77	0.00	0.00	111	0.00	0.00
10	11.50	-6.89	44	21.93	10.74	78	0.00	0.00	112	0.00	0.00
11	11.54	-9.78	45	0.00	0.00	79	0.00	0.00	113	0.00	0.00
12	11.60	-12.11	46	0.00	0.00	80	0.00	0.00	114	0.00	0.00
13	13.11	-14.82	47	0.00	0.00	81	0.00	0.00	115	0.00	0.00
14	13.16	-17.15	48	0.00	0.00	82	0.00	0.00	116	0.00	0.00
15	13.25	-17.09	49	0.00	0.00	83	0.00	0.00	117	0.00	0.00
16	14.79	-19.85	50	0.00	0.00	84	0.00	0.00	118	0.00	0.00
17	15.44	10.92	51	0.00	0.00	85	0.00	0.00	119	0.00	0.00
18	15.47	8.40	52	0.00	0.00	86	0.00	0.00	120	0.00	0.00
19	15.49	5.64	53	0.00	0.00	87	0.00	0.00	121	0.00	0.00
20	16.49	-17.15	54	0.00	0.00	88	0.00	0.00	122	0.00	0.00
21	18.03	-17.15	55	0.00	0.00	89	0.00	0.00	123	0.00	0.00
22	18.05	-14.88	56	0.00	0.00	90	0.00	0.00	124	0.00	0.00
23	18.10	-12.17	57	0.00	0.00	91	0.00	0.00	125	0.00	0.00
24	18.13	-9.72	58	0.00	0.00	92	0.00	0.00	126	0.00	0.00
25	18.13	-6.95	59	0.00	0.00	93	0.00	0.00	127	0.00	0.00
26	19.35	-24.83	60	0.00	0.00	94	0.00	0.00	128	0.00	0.00
27	19.40	-27.29	61	0.00	0.00	95	0.00	0.00	129	0.00	0.00
28	19.48	-27.22	62	0.00	0.00	96	0.00	0.00	130	0.00	0.00
29	19.64	-22.19	63	0.00	0.00	97	0.00	0.00	131	0.00	0.00
30	19.65	-19.85	64	0.00	0.00	98	0.00	0.00	132	0.00	0.00
31	19.69	-17.15	65	0.00	0.00	99	0.00	0.00	133	0.00	0.00
32	19.69	-14.88	66	0.00	0.00	100	0.00	0.00	134	0.00	0.00
33	19.70	-12.17	67	0.00	0.00	101	0.00	0.00	135	0.00	0.00
34	19.72	-9.78	68	0.00	0.00	102	0.00	0.00	136	0.00	0.00

Max Temp= 44.64 F; Min Temp= -27.29 F.
- not data points and are entered for convenience only

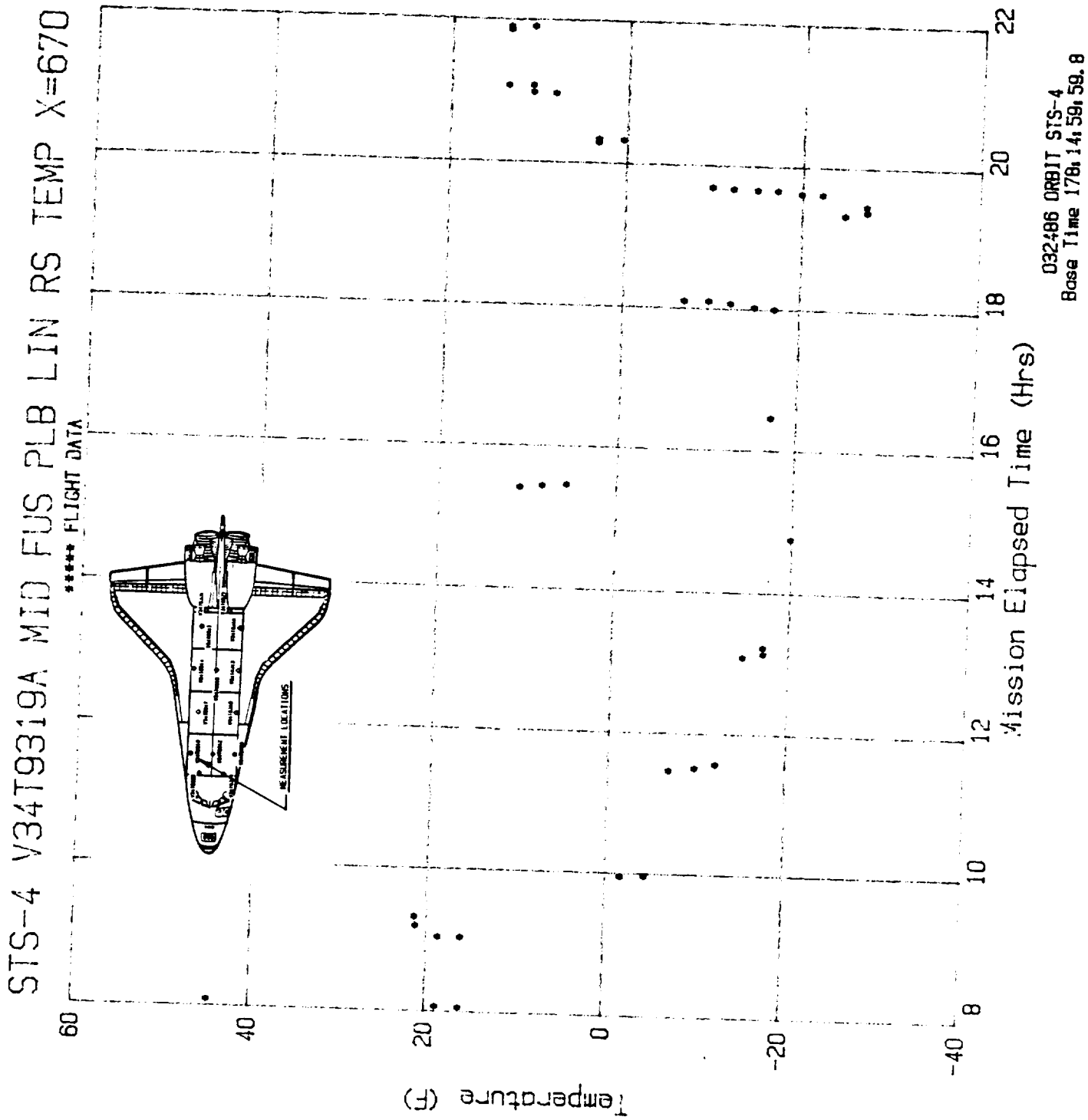
STS-4 V34T9319A MID FUS PLB LIN RS TEMP X=670
***** FLIGHT DATA
MEASUREMENT LOCATIONS
Temperature (F)
60
40
20
0
-20
-40
Mission Elapsed Time (Hrs)
8
10
12
14
16
18
20
22
032486 ORBIT STS-4
Base Time 178:14:59:59.8

Figure A-48

A 50
File No=f50

STS-4 V34T9324A MID FUS FWD BHD TEMP Y=-47

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	8.12	-45.16	35	18.06	-17.08	69	21.95	-4.32	103	0.00	0.00
2	8.12	-42.51	36	18.06	-11.99	70	0.00	0.00	104	0.00	0.00
3	9.08	-1.52	37	18.09	-9.04	71	0.00	0.00	105	0.00	0.00
4	9.09	0.69	38	18.09	-6.76	72	0.00	0.00	106	0.00	0.00
5	9.21	3.34	39	18.09	-4.18	73	0.00	0.00	107	0.00	0.00
6	9.23	0.54	40	19.42	-80.17	74	0.00	0.00	108	0.00	0.00
7	9.26	-1.60	41	19.44	-82.83	75	0.00	0.00	109	0.00	0.00
8	9.29	-4.47	42	19.50	-82.90	76	0.00	0.00	110	0.00	0.00
9	9.32	-6.98	43	19.53	-79.95	77	0.00	0.00	111	0.00	0.00
10	10.02	-73.02	44	19.63	-67.79	78	0.00	0.00	112	0.00	0.00
11	11.58	-75.53	45	19.63	-65.21	79	0.00	0.00	113	0.00	0.00
12	11.66	-75.45	46	19.63	-62.70	80	0.00	0.00	114	0.00	0.00
13	11.67	-72.87	47	19.64	-59.98	81	0.00	0.00	115	0.00	0.00
14	13.15	-75.45	48	19.64	-57.69	82	0.00	0.00	116	0.00	0.00
15	13.17	-72.80	49	19.65	-55.04	83	0.00	0.00	117	0.00	0.00
16	13.20	-70.59	50	19.66	-52.46	84	0.00	0.00	118	0.00	0.00
17	13.21	-67.86	51	19.66	-50.10	85	0.00	0.00	119	0.00	0.00
18	13.24	-65.28	52	19.67	-47.30	86	0.00	0.00	120	0.00	0.00
19	13.26	-63.00	53	19.67	-44.86	87	0.00	0.00	121	0.00	0.00
20	14.78	-62.92	54	19.68	-42.36	88	0.00	0.00	122	0.00	0.00
21	14.80	-60.05	55	19.68	-37.49	89	0.00	0.00	123	0.00	0.00
22	14.81	-57.76	56	19.69	-39.85	90	0.00	0.00	124	0.00	0.00
23	15.47	-6.68	57	19.70	-34.69	91	0.00	0.00	125	0.00	0.00
24	15.48	-9.12	58	19.70	-29.61	92	0.00	0.00	126	0.00	0.00
25	15.51	-11.84	59	19.71	-32.33	93	0.00	0.00	127	0.00	0.00
26	15.51	-14.20	60	19.71	-27.10	94	0.00	0.00	128	0.00	0.00
27	16.51	-34.69	61	20.33	-4.18	95	0.00	0.00	129	0.00	0.00
28	16.51	-32.33	62	20.34	-6.76	96	0.00	0.00	130	0.00	0.00
29	16.51	-29.68	63	20.40	-6.68	97	0.00	0.00	131	0.00	0.00
30	16.51	-27.03	64	20.41	-9.04	98	0.00	0.00	132	0.00	0.00
31	18.03	-24.89	65	20.96	13.59	99	0.00	0.00	133	0.00	0.00
32	18.05	-22.01	66	20.98	16.17	100	0.00	0.00	134	0.00	0.00
33	18.05	-19.58	67	21.06	13.59	101	0.00	0.00	135	0.00	0.00
34	18.05	-14.20	68	21.91	-1.67	102	0.00	0.00	136	0.00	0.00

Max Temp= 16.17 F; Min Temp= -82.90 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

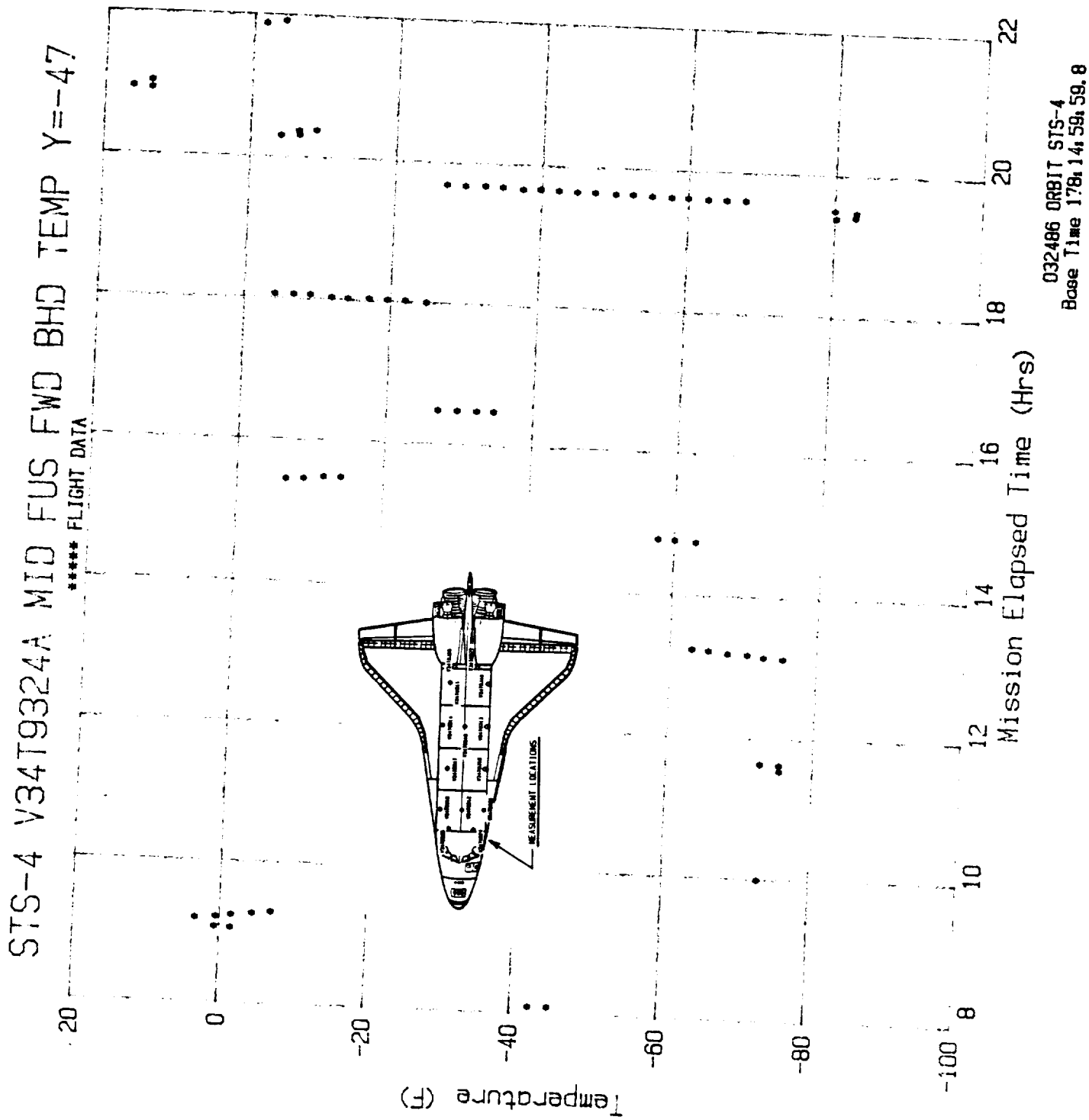
STS-4 V34T9324A MID FUS FWD BHD TEMP Y=-47
***** FLIGHT DATA
032486 ORBIT STS-4
Base Time 178:14:59:59.8
Mission Elapsed Time (Hrs)
Temperature (F)
20
0
-20
-40
-60
-80
-100
8
10
12
14
16
18
20
22
MEASUREMENT LOCATIONS

Figure A-50

A 51
File No=f51

STS-4 V34T9325A MID FUS FWD BHD TEMP Y=37.5

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	8.09	-35.69	35	16.48	-48.25	69	19.70	-39.75	103	0.00	0.00
2	8.09	-37.72	36	16.48	-45.48	70	19.70	-37.54	104	0.00	0.00
3	8.14	-184.49	37	16.49	-43.08	71	19.71	-35.51	105	0.00	0.00
4	8.15	-186.89	38	18.02	-40.12	72	19.71	-30.52	106	0.00	0.00
5	9.05	-7.26	39	18.03	-37.72	73	19.71	-27.75	107	0.00	0.00
6	9.06	-4.68	40	18.03	-35.32	74	19.72	-32.92	108	0.00	0.00
7	9.06	-0.06	41	18.04	-33.29	75	19.72	-24.98	109	0.00	0.00
8	9.07	-2.28	42	18.04	-30.52	76	19.73	-22.22	110	0.00	0.00
9	9.18	5.48	43	18.04	-27.57	77	20.31	0.31	111	0.00	0.00
10	9.26	5.66	44	18.07	-24.98	78	20.35	-2.09	112	0.00	0.00
11	9.30	2.89	45	18.07	-22.40	79	20.38	-4.49	113	0.00	0.00
12	9.32	-0.25	46	18.08	-20.00	80	20.95	5.48	114	0.00	0.00
13	9.98	-85.54	47	18.08	-17.97	81	20.95	8.43	115	0.00	0.00
14	10.00	-88.12	48	18.09	-15.57	82	21.01	8.43	116	0.00	0.00
15	11.52	-88.12	49	18.09	-12.62	83	21.01	10.83	117	0.00	0.00
16	11.53	-91.08	50	18.10	-9.66	84	21.03	13.05	118	0.00	0.00
17	11.56	-94.03	51	19.38	-98.83	85	21.11	13.23	119	0.00	0.00
18	11.63	-94.03	52	19.38	-101.05	86	21.88	2.89	120	0.00	0.00
19	11.63	-91.45	53	19.46	-101.05	87	21.90	-0.06	121	0.00	0.00
20	13.11	-94.03	54	19.50	-99.02	88	21.94	-0.06	122	0.00	0.00
21	13.15	-90.89	55	19.63	-75.75	89	0.00	0.00	123	0.00	0.00
22	13.18	-88.31	56	19.63	-68.55	90	0.00	0.00	124	0.00	0.00
23	13.24	-88.31	57	19.64	-72.98	91	0.00	0.00	125	0.00	0.00
24	13.25	-85.72	58	19.64	-70.58	92	0.00	0.00	126	0.00	0.00
25	14.77	-83.69	59	19.64	-66.15	93	0.00	0.00	127	0.00	0.00
26	14.78	-85.72	60	19.64	-63.57	94	0.00	0.00	128	0.00	0.00
27	14.81	-83.32	61	19.64	-60.62	95	0.00	0.00	129	0.00	0.00
28	14.81	-81.11	62	19.66	-57.85	96	0.00	0.00	130	0.00	0.00
29	15.45	5.85	63	19.66	-55.08	97	0.00	0.00	131	0.00	0.00
30	15.45	2.89	64	19.67	-53.05	98	0.00	0.00	132	0.00	0.00
31	15.47	-0.06	65	19.67	-50.65	99	0.00	0.00	133	0.00	0.00
32	15.47	-2.09	66	19.68	-48.62	100	0.00	0.00	134	0.00	0.00
33	15.49	-4.68	67	19.68	-45.85	101	0.00	0.00	135	0.00	0.00
34	16.47	-50.46	68	19.68	-43.08	102	0.00	0.00	136	0.00	0.00

Max Temp= 13.23 F; Min Temp=-186.89 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

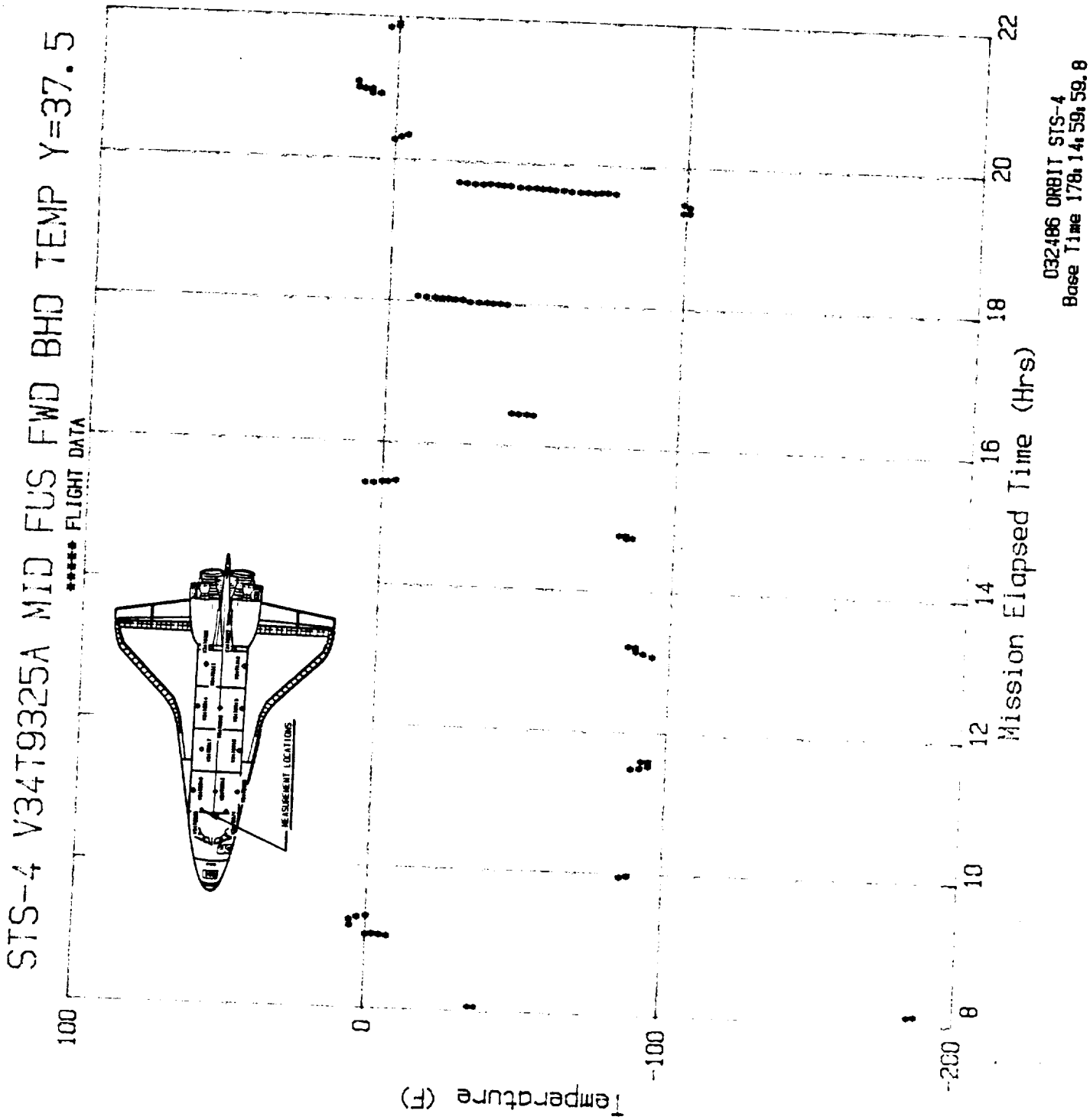
STS-4 V34T9325A MID FUS FWD BHD TEMP Y=37.5
***** FLIGHT DATA
MEASUREMENT LOCATIONS
100
0
-100
-200
Temperature (F)
8
10
12
14
16
18
20
22
Mission Elapsed Time (Hrs)
032486 ORBIT STS-4
Base Time 178:14:59:59.8

Figure A-51

A 52
File No=f52

STS-4 V34T9326A MID FUS AFT BHD TEMP Y=-50

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	8.12	0.86	35	18.05	-9.42	69	0.00	0.00	103	0.00	0.00
2	8.13	-1.85	36	18.06	-6.95	70	0.00	0.00	104	0.00	0.00
3	9.09	13.60	37	18.06	-4.25	71	0.00	0.00	105	0.00	0.00
4	9.11	16.37	38	18.06	-1.85	72	0.00	0.00	106	0.00	0.00
5	9.12	18.71	39	18.09	0.80	73	0.00	0.00	107	0.00	0.00
6	9.24	13.66	40	18.10	3.20	74	0.00	0.00	108	0.00	0.00
7	9.25	11.32	41	18.10	6.03	75	0.00	0.00	109	0.00	0.00
8	9.28	8.55	42	18.12	8.37	76	0.00	0.00	110	0.00	0.00
9	9.30	6.09	43	18.13	11.14	77	0.00	0.00	111	0.00	0.00
10	9.32	3.38	44	19.40	-40.25	78	0.00	0.00	112	0.00	0.00
11	9.35	0.86	45	19.44	-37.42	79	0.00	0.00	113	0.00	0.00
12	10.02	-47.38	46	19.47	-35.14	80	0.00	0.00	114	0.00	0.00
13	10.02	-50.09	47	19.50	-32.31	81	0.00	0.00	115	0.00	0.00
14	11.61	-52.31	48	19.52	-29.91	82	0.00	0.00	116	0.00	0.00
15	11.64	-50.03	49	19.53	-27.26	83	0.00	0.00	117	0.00	0.00
16	11.67	-47.45	50	19.62	-7.02	84	0.00	0.00	118	0.00	0.00
17	13.17	-52.43	51	19.62	-4.31	85	0.00	0.00	119	0.00	0.00
18	13.19	-50.09	52	19.64	-1.85	86	0.00	0.00	120	0.00	0.00
19	13.22	-47.38	53	19.66	0.80	87	0.00	0.00	121	0.00	0.00
20	13.24	-45.17	54	19.68	3.26	88	0.00	0.00	122	0.00	0.00
21	13.27	-42.52	55	19.69	5.97	89	0.00	0.00	123	0.00	0.00
22	14.78	-45.05	56	19.70	8.31	90	0.00	0.00	124	0.00	0.00
23	14.79	-42.65	57	20.37	-4.12	91	0.00	0.00	125	0.00	0.00
24	14.80	-40.25	58	20.41	-6.89	92	0.00	0.00	126	0.00	0.00
25	15.49	-6.89	59	20.97	16.25	93	0.00	0.00	127	0.00	0.00
26	15.50	-9.35	60	21.01	18.52	94	0.00	0.00	128	0.00	0.00
27	15.50	-11.94	61	21.04	16.31	95	0.00	0.00	129	0.00	0.00
28	15.53	-14.58	62	21.09	13.48	96	0.00	0.00	130	0.00	0.00
29	15.53	-17.17	63	21.10	16.25	97	0.00	0.00	131	0.00	0.00
30	16.51	-14.65	64	21.92	0.80	98	0.00	0.00	132	0.00	0.00
31	16.52	-12.00	65	21.94	-1.91	99	0.00	0.00	133	0.00	0.00
32	16.52	-9.48	66	0.00	0.00	100	0.00	0.00	134	0.00	0.00
33	16.52	-7.02	67	0.00	0.00	101	0.00	0.00	135	0.00	0.00
34	18.05	-11.94	68	0.00	0.00	102	0.00	0.00	136	0.00	0.00

Max Temp= 18.71 F; Min Temp= -52.43 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

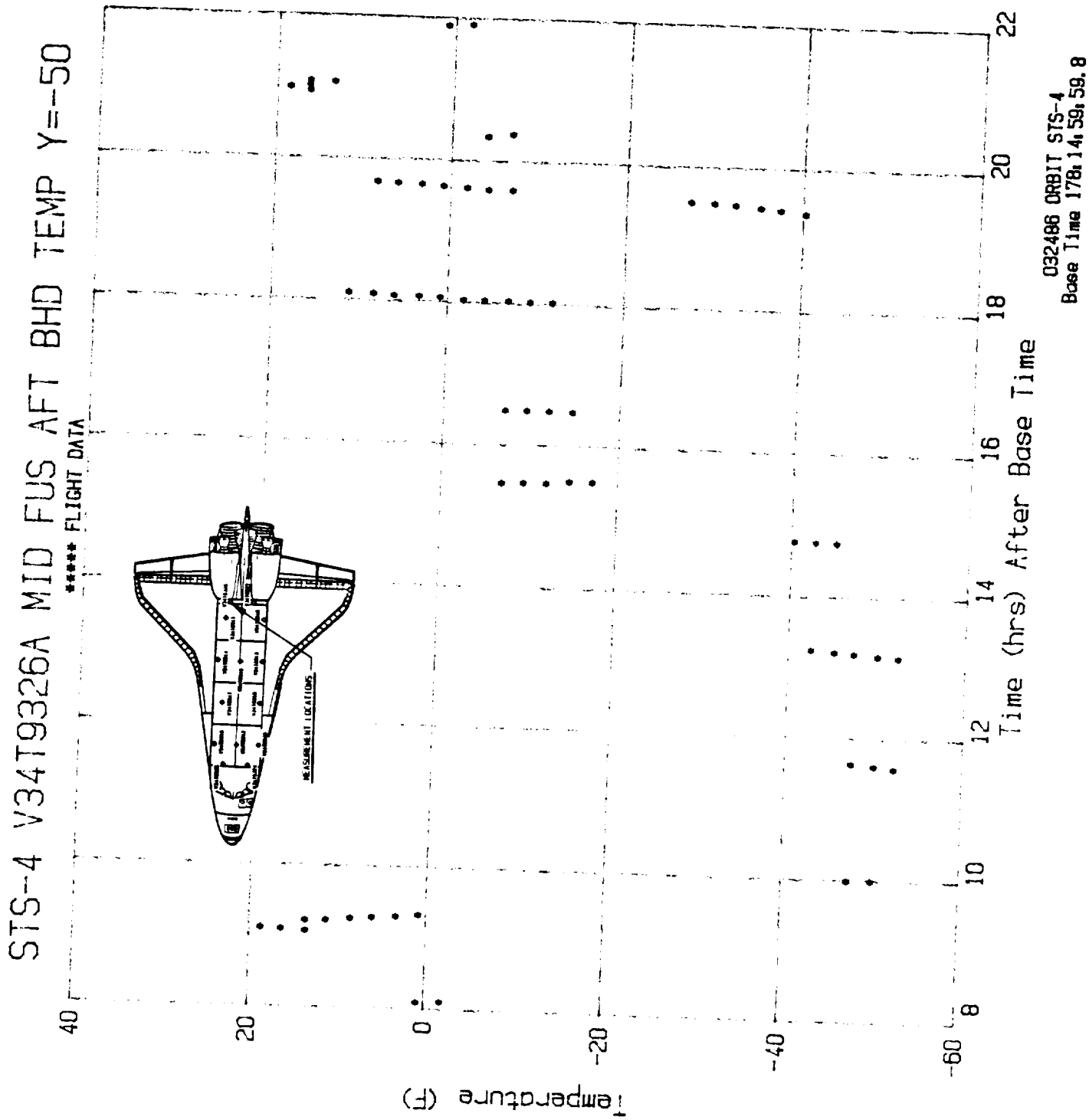
STS-4 V34T9326A MID FUS AFT BHD TEMP Y=-50
***** FLIGHT DATA
MEASUREMENT LOCATIONS
Temperature (F)
40
20
0
-20
-40
-60
Time (hrs) After Base Time
8
10
12
14
16
18
20
22
032486 ORBIT STS-4
Base Time 178: 14: 59: 59.8

Figure A-52

A 53
File No=f53

STS-4 V34T9310A MID FUS PLB LIN LS TEMP X=1250

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	88.32	39.54	35	93.43	-4.32	69	98.21	-1.96	103	0.00	0.00
2	88.47	26.77	36	93.43	-1.81	70	98.22	-4.39	104	0.00	0.00
3	88.66	21.53	37	93.61	3.21	71	98.37	-6.83	105	0.00	0.00
4	88.82	23.96	38	93.77	3.29	72	98.38	-9.64	106	0.00	0.00
5	88.98	34.15	39	93.78	0.92	73	98.54	-19.83	107	0.00	0.00
6	89.16	34.30	40	93.94	-4.32	74	98.73	-27.51	108	0.00	0.00
7	89.32	23.89	41	93.94	-6.90	75	98.88	-32.23	109	0.00	0.00
8	89.51	13.99	42	94.12	-14.58	76	99.07	-32.38	110	0.00	0.00
9	89.67	3.29	43	94.27	-19.53	77	99.07	-35.11	111	0.00	0.00
10	89.85	-1.81	44	94.28	-22.26	78	99.23	-35.11	112	0.00	0.00
11	90.03	-4.39	45	94.46	-24.70	79	99.24	-32.23	113	0.00	0.00
12	90.20	-4.25	46	94.62	-22.41	80	99.41	-32.23	114	0.00	0.00
13	90.38	3.29	47	94.78	-14.51	81	99.57	-22.34	115	0.00	0.00
14	90.52	16.06	48	94.97	-4.32	82	99.58	-19.83	116	0.00	0.00
15	90.71	18.72	49	95.12	0.92	83	99.59	-17.10	117	0.00	0.00
16	90.87	11.04	50	95.31	-4.32	84	99.60	-14.66	118	0.00	0.00
17	90.88	8.46	51	95.48	-11.78	85	99.68	-4.39	119	0.00	0.00
18	91.04	0.92	52	95.65	-19.53	86	99.85	0.92	120	0.00	0.00
19	91.23	-6.83	53	95.84	-27.21	87	99.86	-2.03	121	0.00	0.00
20	91.38	-11.85	54	95.99	-29.87	88	0.00	0.00	122	0.00	0.00
21	91.57	-11.85	55	96.00	-27.21	89	0.00	0.00	123	0.00	0.00
22	91.72	-9.42	56	96.18	-27.21	90	0.00	0.00	124	0.00	0.00
23	91.73	-6.61	57	96.35	-19.53	91	0.00	0.00	125	0.00	0.00
24	91.89	1.00	58	96.50	-6.83	92	0.00	0.00	126	0.00	0.00
25	92.08	13.85	59	96.50	-4.32	93	0.00	0.00	127	0.00	0.00
26	92.22	18.87	60	96.67	-1.81	94	0.00	0.00	128	0.00	0.00
27	92.42	11.11	61	96.83	-6.90	95	0.00	0.00	129	0.00	0.00
28	92.42	8.53	62	97.02	-16.95	96	0.00	0.00	130	0.00	0.00
29	92.57	-1.74	63	97.18	-24.48	97	0.00	0.00	131	0.00	0.00
30	92.58	-4.32	64	97.36	-29.87	98	0.00	0.00	132	0.00	0.00
31	92.75	-11.85	65	97.53	-32.23	99	0.00	0.00	133	0.00	0.00
32	92.93	-17.10	66	97.69	-29.80	100	0.00	0.00	134	0.00	0.00
33	93.09	-14.51	67	97.87	-22.34	101	0.00	0.00	135	0.00	0.00
34	93.27	-11.70	68	98.01	-6.76	102	0.00	0.00	136	0.00	0.00

Max Temp= 39.54 F; Min Temp= -35.11 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

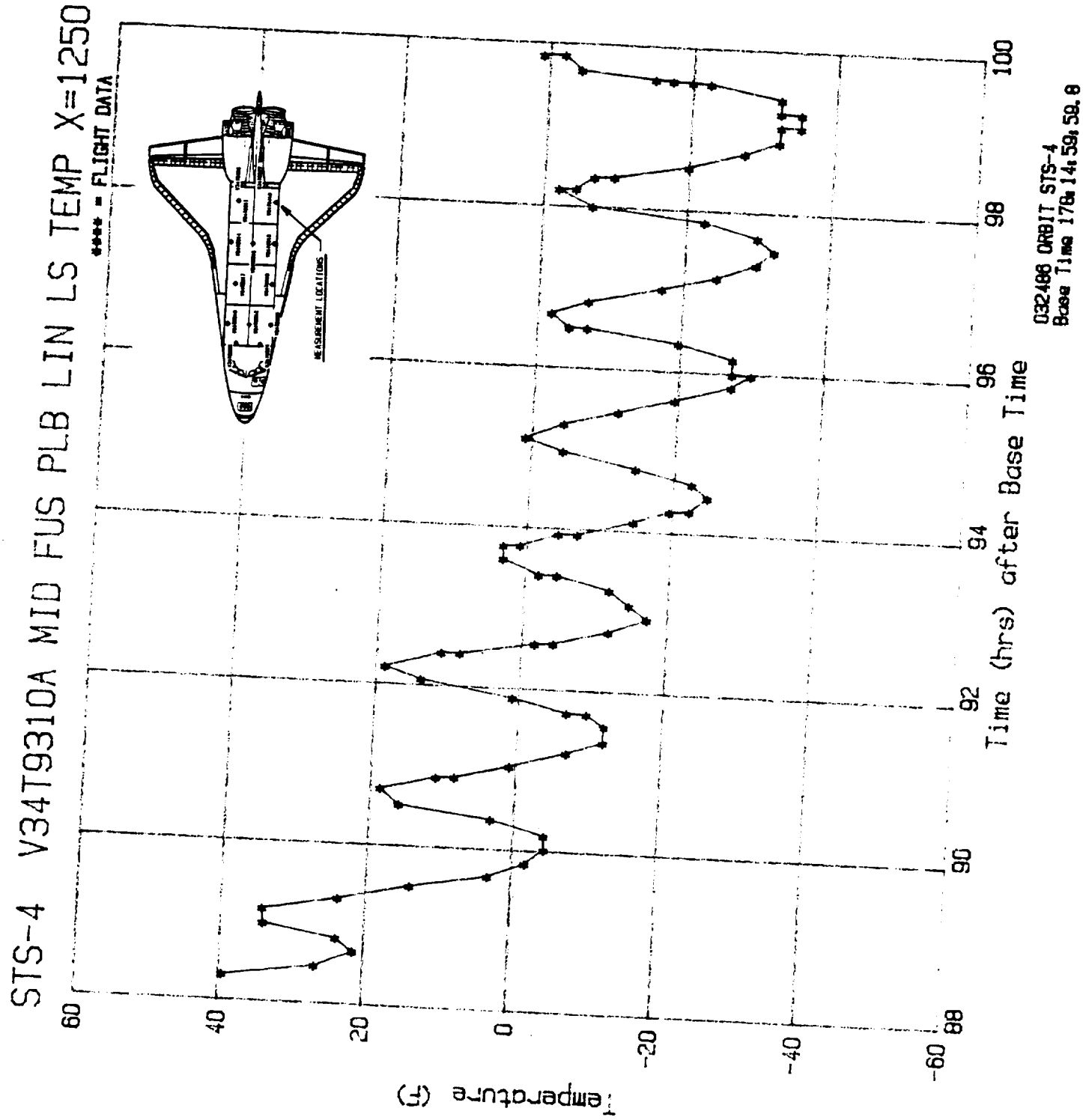
STS-4 V34T9310A MID FUS PLB LIN LS TEMP X=1250
**** = FLIGHT DATA
MEASUREMENT LOCATIONS
Temperature (F)
60
40
20
0
-20
-40
-60
88
90
92
94
96
98
100
Time (hrs) after Base Time
032486 ORBIT STS-4
Base Time 178: 14: 59: 59.8

Figure A-53

A 54
File No=f54

STS-4 V34T9311A PLB WIRE TRAY COVER TEMP X=1215

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	88.28	31.79	35	92.93	-11.97	69	97.88	-14.58	103	0.00	0.00
2	88.47	29.13	36	93.11	-6.86	70	98.05	-6.86	104	0.00	0.00
3	88.62	29.13	37	93.26	-4.15	71	98.05	-9.27	105	0.00	0.00
4	88.82	31.69	38	93.44	0.86	72	98.22	-14.48	106	0.00	0.00
5	88.98	34.39	39	93.61	-1.75	73	98.39	-19.64	107	0.00	0.00
6	89.13	26.67	40	93.78	-4.20	74	98.58	-24.66	108	0.00	0.00
7	89.33	18.96	41	93.78	-6.91	75	98.73	-27.12	109	0.00	0.00
8	89.49	13.79	42	93.96	-11.92	76	98.74	-29.53	110	0.00	0.00
9	89.49	8.73	43	94.11	-16.99	77	98.93	-29.43	111	0.00	0.00
10	89.67	8.63	44	94.30	-19.74	78	99.08	-24.61	112	0.00	0.00
11	89.84	3.37	45	94.46	-19.69	79	99.25	-29.43	113	0.00	0.00
12	90.00	5.88	46	94.64	-14.58	80	99.43	-27.07	114	0.00	0.00
13	90.19	5.97	47	94.80	-9.27	81	99.56	-14.48	115	0.00	0.00
14	90.34	13.69	48	94.96	-4.15	82	99.58	-11.92	116	0.00	0.00
15	90.52	18.86	49	95.15	-6.76	83	99.61	-9.27	117	0.00	0.00
16	90.52	16.20	50	95.32	-11.83	84	99.69	-6.86	118	0.00	0.00
17	90.69	11.04	51	95.49	-16.94	85	99.88	-16.94	119	0.00	0.00
18	90.87	3.37	52	95.67	-22.00	86	0.00	0.00	120	0.00	0.00
19	91.05	-1.70	53	95.84	-24.66	87	0.00	0.00	121	0.00	0.00
20	91.22	-4.15	54	96.03	-24.56	88	0.00	0.00	122	0.00	0.00
21	91.22	-6.91	55	96.18	-19.69	89	0.00	0.00	123	0.00	0.00
22	91.41	-6.86	56	96.34	-11.87	90	0.00	0.00	124	0.00	0.00
23	91.55	-4.15	57	96.51	-6.81	91	0.00	0.00	125	0.00	0.00
24	91.74	-1.75	58	96.68	-11.92	92	0.00	0.00	126	0.00	0.00
25	91.90	5.93	59	96.87	-16.89	93	0.00	0.00	127	0.00	0.00
26	92.06	13.69	60	97.01	-22.15	94	0.00	0.00	128	0.00	0.00
27	92.25	11.09	61	97.20	-24.66	95	0.00	0.00	129	0.00	0.00
28	92.25	8.63	62	97.21	-27.17	96	0.00	0.00	130	0.00	0.00
29	92.25	-1.75	63	97.22	-29.53	97	0.00	0.00	131	0.00	0.00
30	92.40	-1.70	64	97.37	-29.48	98	0.00	0.00	132	0.00	0.00
31	92.59	-6.91	65	97.38	-27.17	99	0.00	0.00	133	0.00	0.00
32	92.59	-9.37	66	97.53	-27.12	100	0.00	0.00	134	0.00	0.00
33	92.76	-9.32	67	97.71	-22.20	101	0.00	0.00	135	0.00	0.00
34	92.76	-11.92	68	97.87	-16.99	102	0.00	0.00	136	0.00	0.00

Max Temp= 34.39 F; Min Temp= -29.53 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

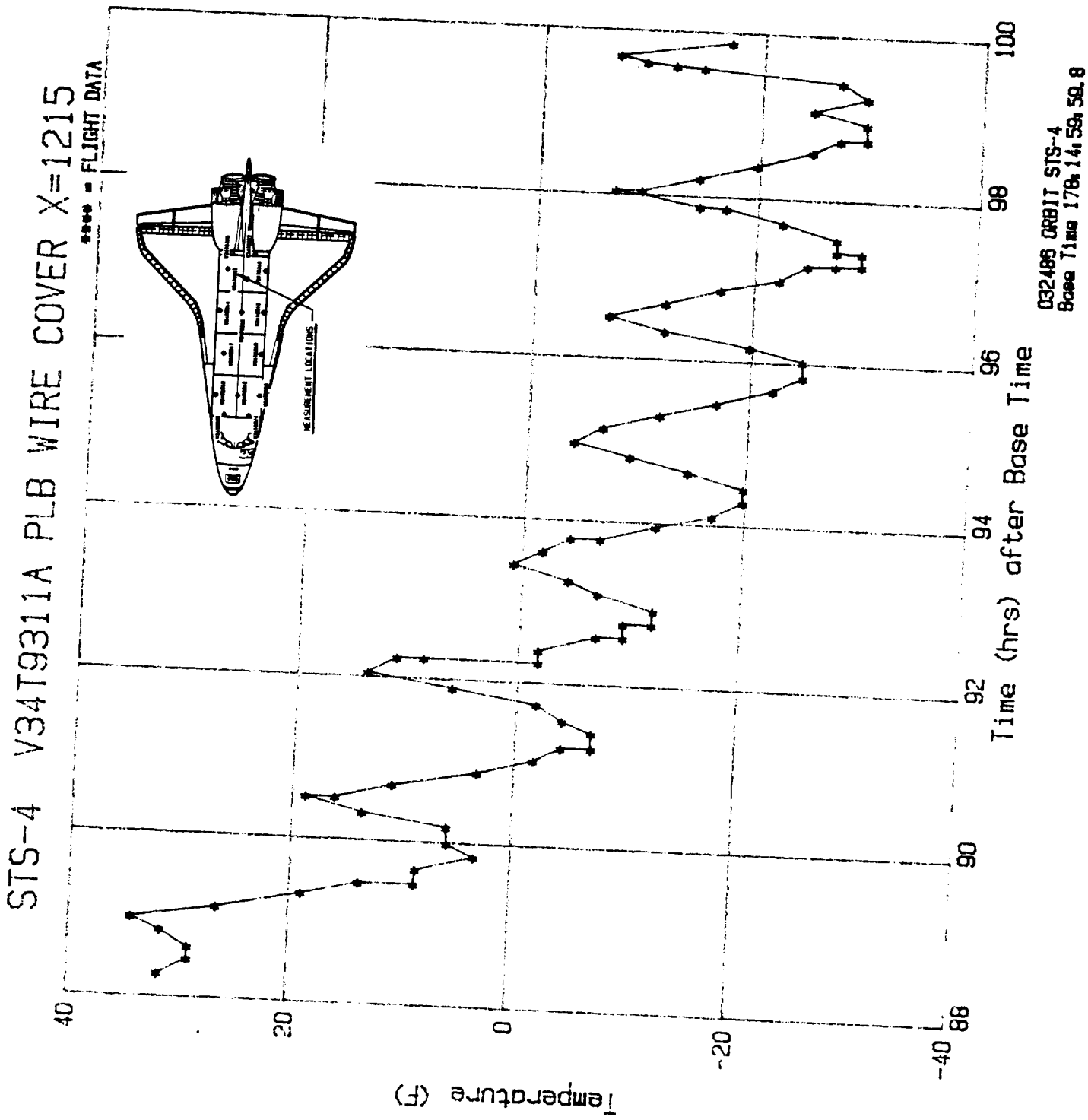
STS-4 V34T9311A PLB WIRE COVER X=1215
**** = FLIGHT DATA
MEASUREMENT LOCATIONS
Temperature (F)
40
20
0
-20
-40
88
90
92
94
96
98
100
Time (hrs) after Base Time
032486 ORBIT STS-4
Base Time 178: 14: 59: 58.8

Figure A-54

A 55
File No=f55

STS-4 V34T9312A MID FUS PLB CTR BTM TEMP X=670

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	88.13	52.02	35	92.59	-55.58	69	97.20	-82.33	103	0.00	0.00
2	88.31	1.10	36	92.59	-72.64	70	97.37	-89.82	104	0.00	0.00
3	88.31	-1.96	37	92.77	-72.39	71	97.54	-74.60	105	0.00	0.00
4	88.48	-12.15	38	92.94	-72.39	72	97.54	-72.27	106	0.00	0.00
5	88.65	-1.72	39	92.94	-70.18	73	97.70	-45.03	107	0.00	0.00
6	88.66	-4.42	40	93.09	-45.28	74	97.88	-11.90	108	0.00	0.00
7	88.81	18.53	41	93.27	-19.39	75	98.03	13.50	109	0.00	0.00
8	88.98	31.29	42	93.43	5.64	76	98.21	-9.08	110	0.00	0.00
9	88.99	28.59	43	93.61	-1.84	77	98.38	-45.15	111	0.00	0.00
10	89.16	3.31	44	93.78	-32.39	78	98.57	-67.73	112	0.00	0.00
11	89.34	-32.52	45	93.96	-58.04	79	98.75	-84.29	113	0.00	0.00
12	89.52	-55.34	46	94.14	-74.60	80	98.75	-82.21	114	0.00	0.00
13	89.53	-52.76	47	94.29	-84.66	81	98.90	-82.09	115	0.00	0.00
14	89.53	-67.98	48	94.49	-77.67	82	99.10	-67.61	116	0.00	0.00
15	89.68	-67.85	49	94.63	-47.85	83	99.24	-62.45	117	0.00	0.00
16	89.88	-74.72	50	94.79	-12.02	84	99.41	-67.61	118	0.00	0.00
17	90.03	-60.49	51	94.79	-9.20	85	99.41	-65.03	119	0.00	0.00
18	90.03	-58.28	52	94.97	13.62	86	99.56	-32.39	120	0.00	0.00
19	90.20	-40.12	53	95.12	-4.42	87	99.57	-29.57	121	0.00	0.00
20	90.37	-6.87	54	95.32	-35.21	88	99.57	-27.36	122	0.00	0.00
21	90.38	-4.54	55	95.33	-37.55	89	99.58	-24.79	123	0.00	0.00
22	90.52	13.50	56	95.49	-60.25	90	99.58	-22.09	124	0.00	0.00
23	90.73	-12.02	57	95.49	-62.33	91	99.59	-19.39	125	0.00	0.00
24	90.88	-45.40	58	95.66	-77.67	92	99.59	-16.93	126	0.00	0.00
25	91.05	-65.40	59	95.67	-80.12	93	99.60	-14.72	127	0.00	0.00
26	91.24	-77.67	60	95.85	-87.12	94	99.61	-12.02	128	0.00	0.00
27	91.39	-77.55	61	96.00	-75.21	95	99.67	15.83	129	0.00	0.00
28	91.59	-52.15	62	96.18	-47.48	96	99.85	-4.54	130	0.00	0.00
29	91.73	-29.57	63	96.33	-11.66	97	0.00	0.00	131	0.00	0.00
30	91.89	-4.54	64	96.50	11.17	98	0.00	0.00	132	0.00	0.00
31	92.07	5.64	65	96.67	-6.63	99	0.00	0.00	133	0.00	0.00
32	92.23	10.80	66	96.85	-42.33	100	0.00	0.00	134	0.00	0.00
33	92.42	-27.24	67	97.03	-67.73	101	0.00	0.00	135	0.00	0.00
34	92.58	-58.04	68	97.19	-89.69	102	0.00	0.00	136	0.00	0.00

Max Temp= 52.02 F; Min Temp= -89.82 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

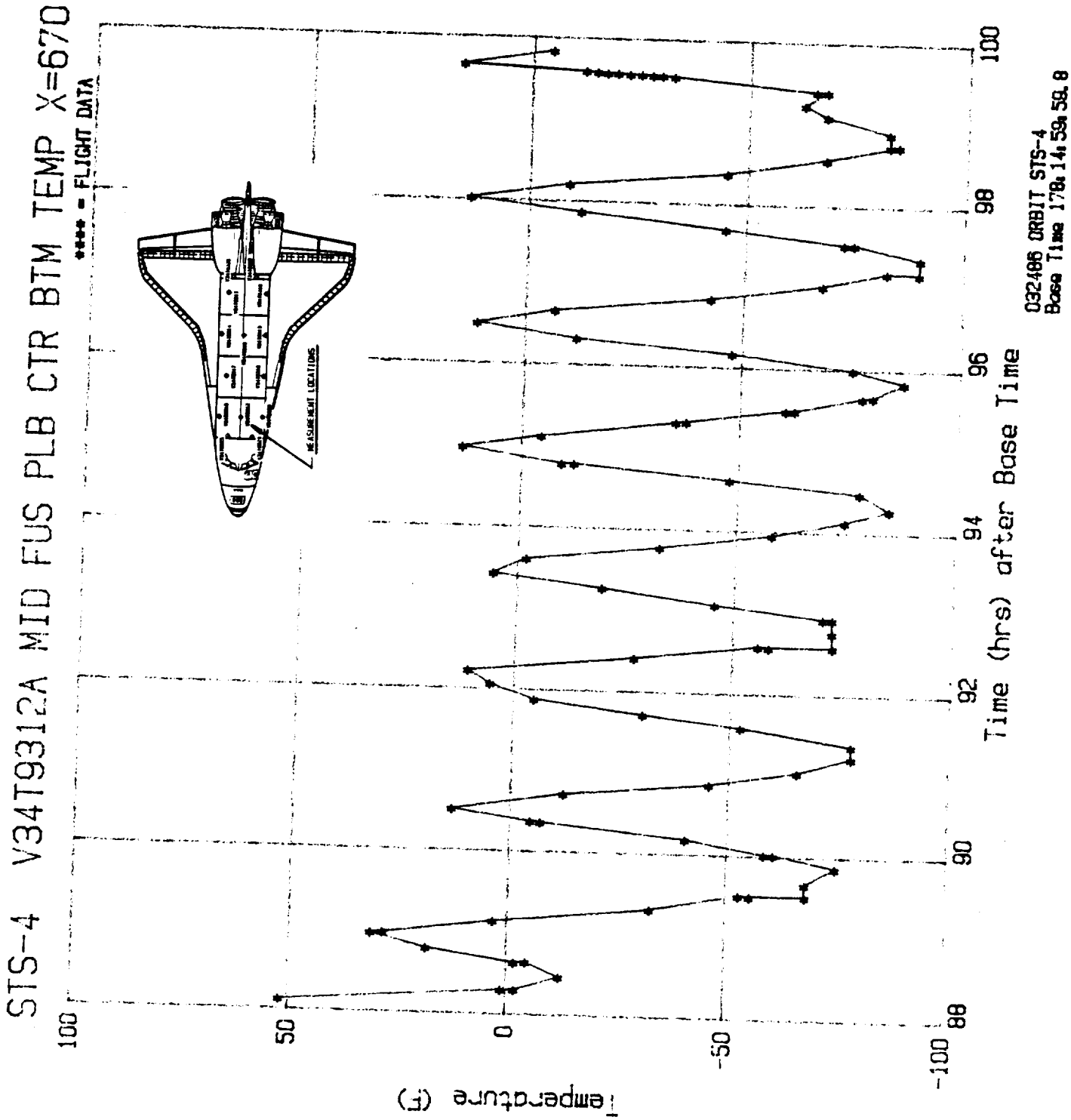
STS-4 V34T9312A MID FUS PLB CTR BTM TEMP X=670
**** = FLIGHT DATA
MEASUREMENT LOCATIONS
032486 ORBIT STS-4
Base Time 178: 14: 59: 59.8
Time (hrs) after Base Time
Temperature (F)
100
50
0
-50
-100
88
90
92
94
96
98
100

Figure A-55

A 56
File No=f56

STS-4 V34T9313A MID FUS PLB LIN LS TEMP X=1030

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	88.13	57.24	35	92.77	-12.11	69	97.21	-29.74	103	0.00	0.00
2	88.13	54.78	36	92.93	-17.03	70	97.38	-29.56	104	0.00	0.00
3	88.29	34.02	37	92.93	-14.63	71	97.53	-31.95	105	0.00	0.00
4	88.49	23.70	38	93.13	-14.69	72	97.53	-29.62	106	0.00	0.00
5	88.64	18.60	39	93.27	-9.53	73	97.74	-26.92	107	0.00	0.00
6	88.82	23.82	40	93.45	0.72	74	97.88	-19.73	108	0.00	0.00
7	88.99	34.02	41	93.61	8.34	75	97.88	-16.97	109	0.00	0.00
8	88.99	36.78	42	93.62	5.88	76	98.04	-1.79	110	0.00	0.00
9	89.14	36.84	43	93.77	5.88	77	98.22	3.30	111	0.00	0.00
10	89.35	23.76	44	93.98	-4.31	78	98.23	0.79	112	0.00	0.00
11	89.49	13.50	45	94.11	-12.05	79	98.38	-6.95	113	0.00	0.00
12	89.52	3.30	46	94.12	-14.69	80	98.58	-16.97	114	0.00	0.00
13	89.68	3.24	47	94.29	-19.79	81	98.59	-19.73	115	0.00	0.00
14	89.86	-1.79	48	94.48	-22.00	82	98.74	-26.98	116	0.00	0.00
15	90.02	-1.92	49	94.64	-22.06	83	98.92	-31.89	117	0.00	0.00
16	90.03	-4.31	50	94.82	-12.05	84	99.09	-31.89	118	0.00	0.00
17	90.21	-1.73	51	94.97	0.79	85	99.25	-29.62	119	0.00	0.00
18	90.36	5.95	52	95.14	5.88	86	99.44	-26.86	120	0.00	0.00
19	90.54	21.30	53	95.15	3.24	87	99.58	-14.57	121	0.00	0.00
20	90.71	23.70	54	95.32	0.79	88	99.58	-11.99	122	0.00	0.00
21	90.88	13.50	55	95.49	-9.53	89	99.61	-9.53	123	0.00	0.00
22	91.06	0.79	56	95.50	-12.11	90	99.69	0.79	124	0.00	0.00
23	91.22	-6.95	57	95.67	-19.73	91	99.88	5.95	125	0.00	0.00
24	91.40	-12.05	58	95.84	-24.77	92	99.88	3.30	126	0.00	0.00
25	91.40	-9.59	59	95.85	-26.98	93	0.00	0.00	127	0.00	0.00
26	91.56	-9.66	60	96.04	-26.92	94	0.00	0.00	128	0.00	0.00
27	91.73	-7.01	61	96.19	-24.64	95	0.00	0.00	129	0.00	0.00
28	91.91	3.30	62	96.36	-16.90	96	0.00	0.00	130	0.00	0.00
29	92.06	16.08	63	96.52	-1.73	97	0.00	0.00	131	0.00	0.00
30	92.07	13.44	64	96.67	3.30	98	0.00	0.00	132	0.00	0.00
31	92.24	21.36	65	96.68	0.72	99	0.00	0.00	133	0.00	0.00
32	92.41	8.34	66	96.87	-4.25	100	0.00	0.00	134	0.00	0.00
33	92.60	-4.31	67	97.03	-14.63	101	0.00	0.00	135	0.00	0.00
34	92.60	-12.17	68	97.21	-24.64	102	0.00	0.00	136	0.00	0.00

Max Temp= 57.24 F; Min Temp= -31.95 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

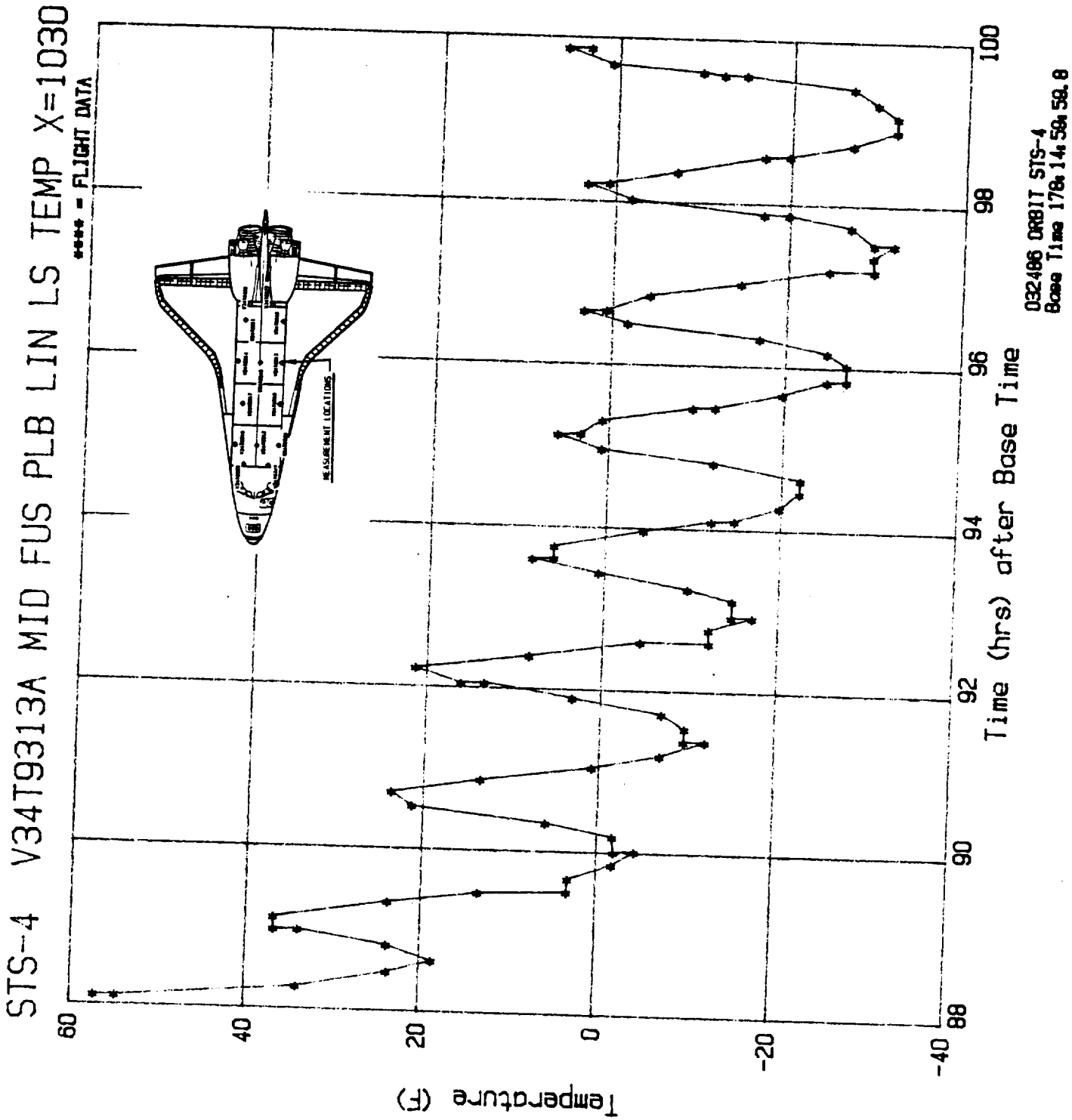
STS-4 V34T9313A MID FUS PLB LIN LS TEMP X=1030
**** = FLIGHT DATA
MEASUREMENT LOCATIONS
Temperature (F)
60
40
20
0
-20
-40
88
90
92
94
96
98
100
Time (hrs) after Base Time
032486 ORBIT STS-4
Base Time 178:14:58:58.8

Figure A-56

A 57
File No=f57

STS-4 V34T9314A MID FUS PLB LIN RS TEMP X=1030

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	88.12	54.87	35	92.59	-17.15	69	97.54	-34.50	103	0.00	0.00
2	88.31	31.77	36	92.76	-17.15	70	97.70	-29.68	104	0.00	0.00
3	88.47	18.68	37	92.76	-19.80	71	97.88	-19.80	105	0.00	0.00
4	88.66	18.93	38	92.94	-19.74	72	98.03	-1.70	106	0.00	0.00
5	88.81	23.87	39	93.10	-17.21	73	98.03	0.64	107	0.00	0.00
6	88.81	26.52	40	93.28	-9.67	74	98.21	0.64	108	0.00	0.00
7	88.98	36.96	41	93.44	0.64	75	98.38	-9.61	109	0.00	0.00
8	89.15	36.96	42	93.61	8.61	76	98.57	-22.21	110	0.00	0.00
9	89.33	21.27	43	93.78	3.48	77	98.57	-24.81	111	0.00	0.00
10	89.51	8.67	44	93.95	-6.83	78	98.74	-32.34	112	0.00	0.00
11	89.51	0.70	45	94.13	-19.80	79	98.90	-37.16	113	0.00	0.00
12	89.67	0.64	46	94.14	-17.08	80	99.09	-37.16	114	0.00	0.00
13	89.85	-4.55	47	94.27	-24.74	81	99.10	-34.44	115	0.00	0.00
14	90.02	-4.42	48	94.48	-27.34	82	99.25	-34.38	116	0.00	0.00
15	90.19	-4.61	49	94.63	-24.93	83	99.41	-32.28	117	0.00	0.00
16	90.37	5.83	50	94.63	-22.33	84	99.41	-29.75	118	0.00	0.00
17	90.52	21.27	51	94.81	-12.08	85	99.57	-16.96	119	0.00	0.00
18	90.71	23.80	52	94.98	0.64	86	99.58	-14.74	120	0.00	0.00
19	90.88	8.55	53	95.12	5.77	87	99.59	-12.08	121	0.00	0.00
20	91.05	-4.55	54	95.13	3.55	88	99.59	-9.55	122	0.00	0.00
21	91.23	-9.61	55	95.32	-1.64	89	99.66	3.42	123	0.00	0.00
22	91.24	-12.08	56	95.48	-14.74	90	99.86	3.42	124	0.00	0.00
23	91.39	-14.86	57	95.67	-24.81	91	99.86	0.64	125	0.00	0.00
24	91.58	-12.14	58	95.85	-29.81	92	0.00	0.00	126	0.00	0.00
25	91.74	-6.89	59	96.01	-32.34	93	0.00	0.00	127	0.00	0.00
26	91.91	3.48	60	96.20	-27.28	94	0.00	0.00	128	0.00	0.00
27	92.08	13.61	61	96.34	-17.08	95	0.00	0.00	129	0.00	0.00
28	92.22	18.74	62	96.50	-1.70	96	0.00	0.00	130	0.00	0.00
29	92.24	5.89	63	96.51	0.64	97	0.00	0.00	131	0.00	0.00
30	92.42	3.48	64	96.68	0.70	98	0.00	0.00	132	0.00	0.00
31	92.43	5.89	65	97.03	-19.86	99	0.00	0.00	133	0.00	0.00
32	92.43	-6.83	66	97.19	-29.75	100	0.00	0.00	134	0.00	0.00
33	92.59	-6.89	67	97.20	-34.56	101	0.00	0.00	135	0.00	0.00
34	92.59	-9.67	68	97.38	-34.50	102	0.00	0.00	136	0.00	0.00

Max Temp= 54.87 F; Min Temp= -37.16 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

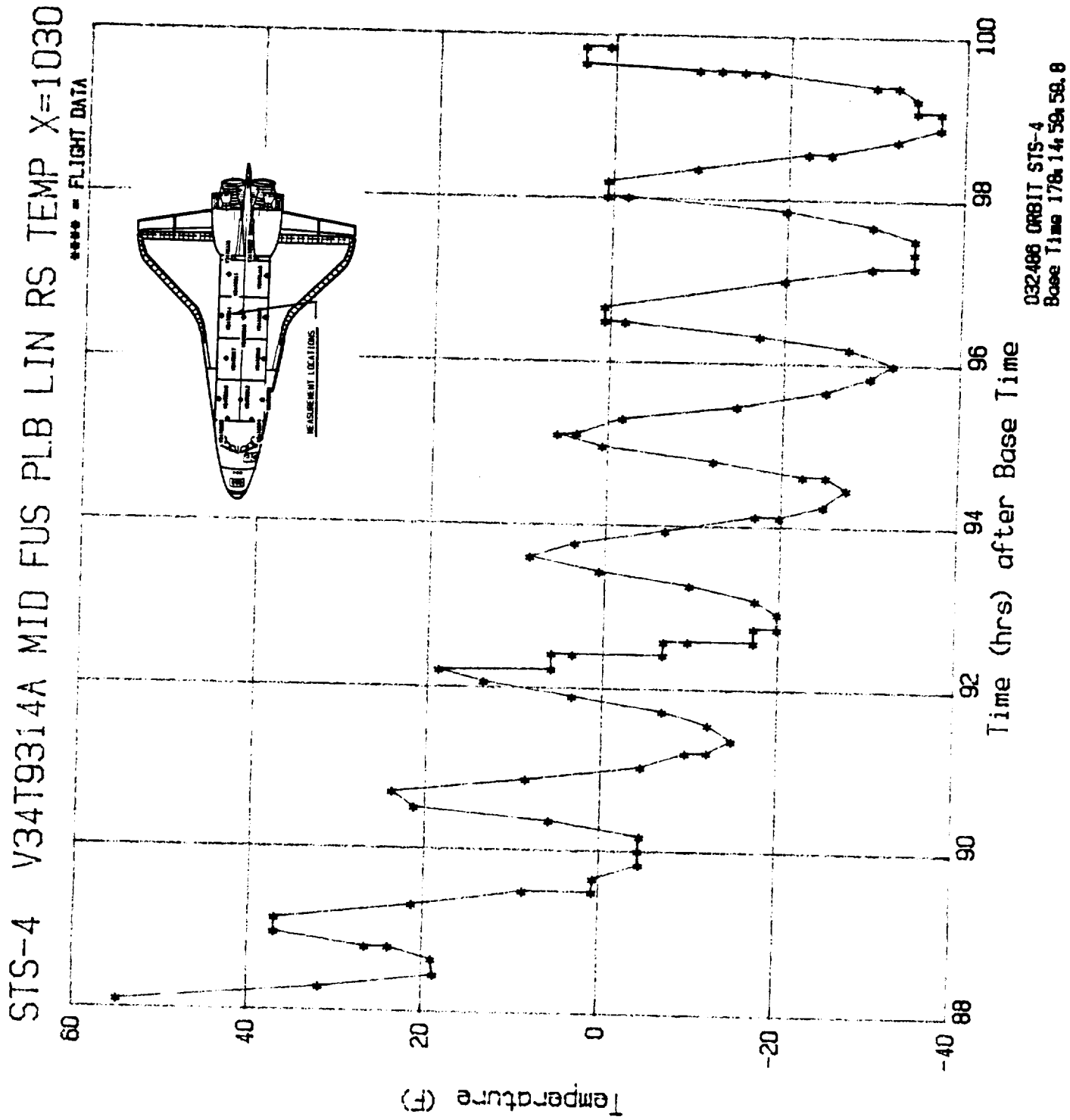
STS-4 V34T9314A MID FUS PLB LIN RS TEMP X=1030
**** = FLIGHT DATA
MEASUREMENT LOCATIONS
032486 ORBIT STS-4
Base Time 178:14:59:58.8
Time (hrs) after Base Time
Temperature (F)
60
40
20
0
-20
-40
88
90
92
94
96
98
100

Figure A-57

A 58
File No=f58

STS-4 V34T9316A MID FUS PLB INS CL yo TP X=1030

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	88.11	54.83	35	93.26	-7.06	69	98.21	0.64	103	0.00	0.00
2	88.30	34.01	36	93.44	3.29	70	98.39	-7.06	104	0.00	0.00
3	88.47	23.61	37	93.60	8.40	71	98.56	-19.86	105	0.00	0.00
4	88.63	21.21	38	93.78	5.87	72	98.74	-27.13	106	0.00	0.00
5	88.82	26.44	39	93.95	-4.47	73	98.91	-29.72	107	0.00	0.00
6	88.82	28.78	40	94.12	-11.98	74	99.07	-27.13	108	0.00	0.00
7	88.97	36.79	41	94.29	-17.03	75	99.08	-29.72	109	0.00	0.00
8	89.14	34.01	42	94.46	-19.86	76	99.26	-26.95	110	0.00	0.00
9	89.32	23.61	43	94.64	-17.09	77	99.42	-27.01	111	0.00	0.00
10	89.48	13.57	44	94.79	-9.58	78	99.57	-14.82	112	0.00	0.00
11	89.67	5.87	45	94.97	0.70	79	99.58	-12.11	113	0.00	0.00
12	89.83	0.64	46	94.97	3.23	80	99.60	-9.64	114	0.00	0.00
13	90.02	0.76	47	95.14	3.35	81	99.60	-7.12	115	0.00	0.00
14	90.18	0.64	48	95.30	-1.88	82	99.69	3.29	116	0.00	0.00
15	90.36	8.28	49	95.50	-9.52	83	99.86	3.29	117	0.00	0.00
16	90.52	21.15	50	95.51	-11.92	84	0.00	0.00	118	0.00	0.00
17	90.69	21.21	51	95.65	-19.86	85	0.00	0.00	119	0.00	0.00
18	90.88	13.51	52	95.84	-22.14	86	0.00	0.00	120	0.00	0.00
19	90.89	10.99	53	95.85	-24.85	87	0.00	0.00	121	0.00	0.00
20	91.03	0.64	54	96.02	-24.85	88	0.00	0.00	122	0.00	0.00
21	91.22	-4.59	55	96.18	-21.96	89	0.00	0.00	123	0.00	0.00
22	91.39	-7.12	56	96.36	-14.69	90	0.00	0.00	124	0.00	0.00
23	91.55	-7.06	57	96.36	-11.92	91	0.00	0.00	125	0.00	0.00
24	91.75	-4.41	58	96.50	0.70	92	0.00	0.00	126	0.00	0.00
25	91.89	5.87	59	96.68	0.76	93	0.00	0.00	127	0.00	0.00
26	92.06	13.45	60	96.86	-4.35	94	0.00	0.00	128	0.00	0.00
27	92.23	18.50	61	97.02	-14.75	95	0.00	0.00	129	0.00	0.00
28	92.23	18.44	62	97.21	-24.79	96	0.00	0.00	130	0.00	0.00
29	92.39	8.28	63	97.22	-22.08	97	0.00	0.00	131	0.00	0.00
30	92.39	5.81	64	97.37	-27.07	98	0.00	0.00	132	0.00	0.00
31	92.60	-4.47	65	97.54	-27.19	99	0.00	0.00	133	0.00	0.00
32	92.74	-9.64	66	97.71	-24.85	100	0.00	0.00	134	0.00	0.00
33	92.93	-12.04	67	97.88	-16.97	101	0.00	0.00	135	0.00	0.00
34	93.10	-11.98	68	98.06	0.64	102	0.00	0.00	136	0.00	0.00

Max Temp= 54.83 F; Min Temp= -29.72 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

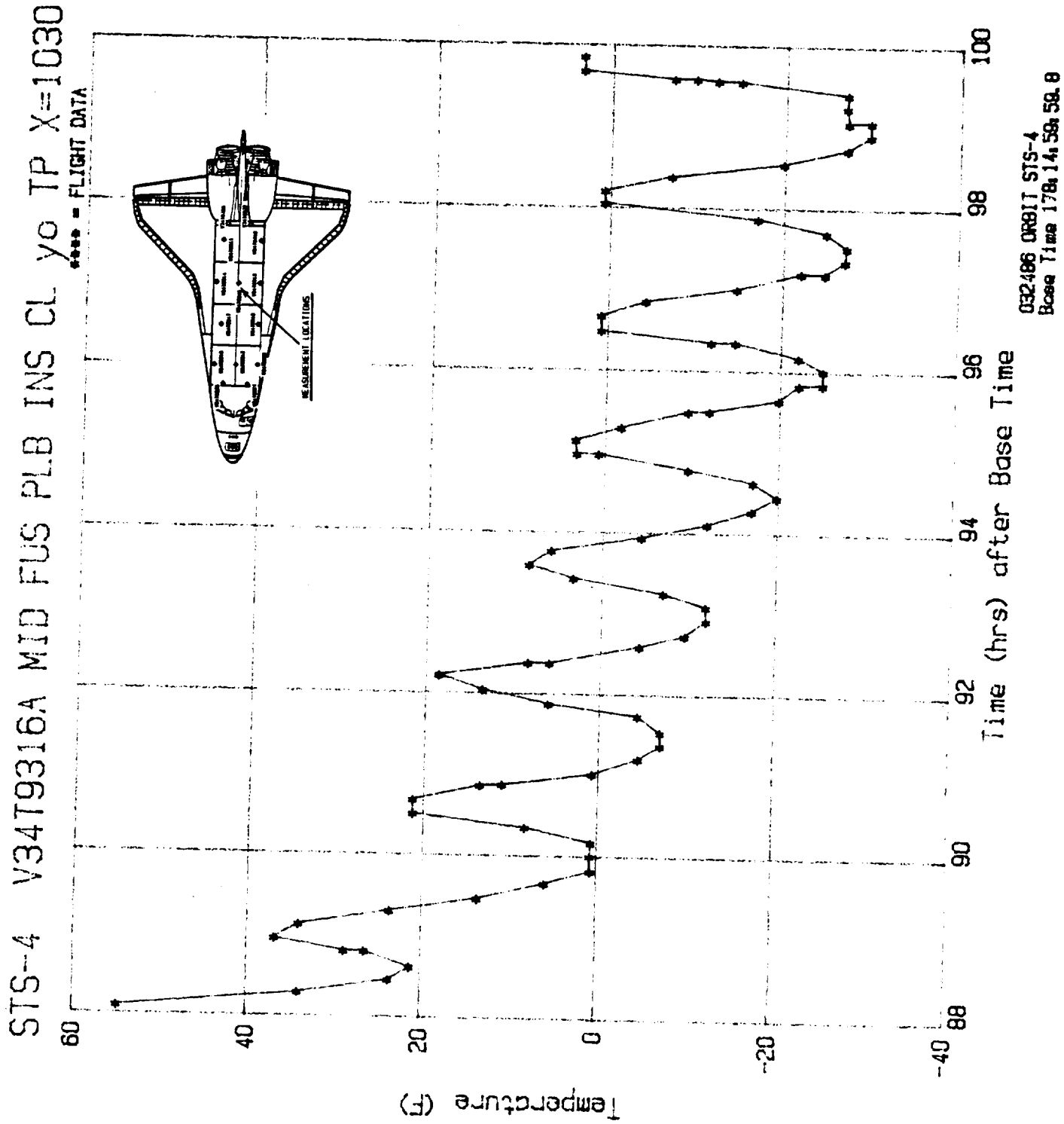
STS-4 V34T9316A MID FUS PLB INS CL Yo TP X=1030
**** = FLIGHT DATA
MEASUREMENT LOCATIONS
Temperature (F)
60
40
20
0
-20
-40
Time (hrs) after Base Time
88
90
92
94
96
98
100
032486 ORBIT STS-4
Base Time 178:14:59:58.8

Figure A-58

A 59
File No=f59

STS-4 V34T9317A PLB WIRE TRAY COVER TEMP X=850

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	88.11	13.80	35	92.92	-44.87	69	98.38	-47.60	103	0.00	0.00
2	88.29	-4.28	36	93.10	-37.27	70	98.56	-57.42	104	0.00	0.00
3	88.47	-4.21	37	93.25	-24.50	71	98.73	-62.51	105	0.00	0.00
4	88.63	0.96	38	93.44	-11.66	72	98.91	-62.44	106	0.00	0.00
5	88.81	13.87	39	93.59	-17.12	73	99.07	-50.04	107	0.00	0.00
6	88.96	21.48	40	93.78	-29.89	74	99.25	-52.32	108	0.00	0.00
7	89.13	6.27	41	93.96	-44.94	75	99.41	-44.87	109	0.00	0.00
8	89.14	3.47	42	94.11	-50.11	76	99.55	-22.14	110	0.00	0.00
9	89.33	-11.81	43	94.29	-55.20	77	99.56	-19.34	111	0.00	0.00
10	89.48	-22.07	44	94.45	-52.40	78	99.57	-16.97	112	0.00	0.00
11	89.48	-24.58	45	94.62	-42.58	79	99.58	-14.39	113	0.00	0.00
12	89.68	-29.67	46	94.78	-24.50	80	99.68	-9.37	114	0.00	0.00
13	89.83	-32.10	47	94.95	-14.61	81	99.85	-34.76	115	0.00	0.00
14	89.84	-34.83	48	95.13	-22.07	82	0.00	0.00	116	0.00	0.00
15	90.01	-27.16	49	95.31	-37.27	83	0.00	0.00	117	0.00	0.00
16	90.18	-19.26	50	95.48	-50.04	84	0.00	0.00	118	0.00	0.00
17	90.34	-1.55	51	95.65	-55.20	85	0.00	0.00	119	0.00	0.00
18	90.52	6.35	52	95.83	-60.22	86	0.00	0.00	120	0.00	0.00
19	90.68	-11.88	53	96.01	-55.06	87	0.00	0.00	121	0.00	0.00
20	90.87	-27.01	54	96.16	-44.94	88	0.00	0.00	122	0.00	0.00
21	91.03	-37.27	55	96.35	-26.86	89	0.00	0.00	123	0.00	0.00
22	91.21	-42.66	56	96.48	-16.97	90	0.00	0.00	124	0.00	0.00
23	91.39	-44.87	57	96.67	-27.16	91	0.00	0.00	125	0.00	0.00
24	91.54	-37.34	58	96.86	-42.58	92	0.00	0.00	126	0.00	0.00
25	91.54	-34.76	59	97.01	-52.40	93	0.00	0.00	127	0.00	0.00
26	91.74	-26.94	60	97.21	-60.00	94	0.00	0.00	128	0.00	0.00
27	91.88	-9.23	61	97.35	-62.51	95	0.00	0.00	129	0.00	0.00
28	92.06	-1.62	62	97.53	-57.49	96	0.00	0.00	130	0.00	0.00
29	92.06	-4.28	63	97.70	-47.45	97	0.00	0.00	131	0.00	0.00
30	92.23	-9.37	64	97.86	-27.16	98	0.00	0.00	132	0.00	0.00
31	92.38	-32.18	65	98.04	-16.97	99	0.00	0.00	133	0.00	0.00
32	92.59	-42.44	66	98.20	-32.03	100	0.00	0.00	134	0.00	0.00
33	92.74	-47.53	67	98.21	-29.74	101	0.00	0.00	135	0.00	0.00
34	92.92	-47.53	68	98.38	-44.87	102	0.00	0.00	136	0.00	0.00

Max Temp= 21.48 F; Min Temp= -62.51 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

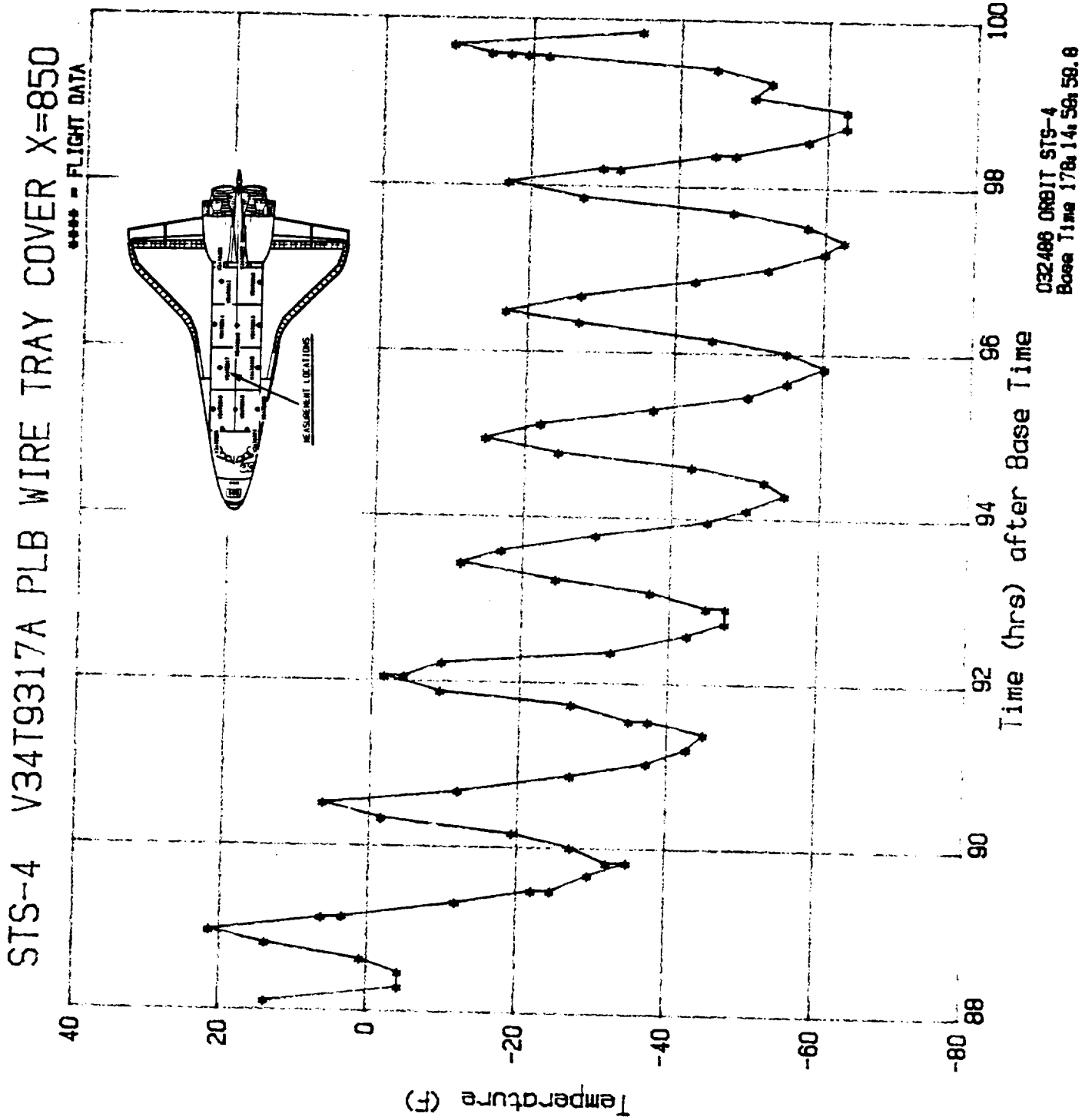
STS-4 V34T9317A PLB WIRE TRAY COVER X=850
**** = FLIGHT DATA
MEASUREMENT LOCATIONS
Temperature (F)
40
20
0
-20
-40
-60
-80
Time (hrs) after Base Time
88
90
92
94
96
98
100
032486 ORBIT STS-4
Base Time 178: 14: 50: 58.8

Figure A-59

A 60
File No=f60

STS-4 V34T9318A MID FUS PLB LIN LS TEMP X=850

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	88.11	39.85	35	92.75	-75.18	69	97.02	-62.82	103	0.00	0.00
2	88.32	-14.21	36	92.75	-77.77	70	97.20	-92.07	104	0.00	0.00
3	88.47	-27.03	37	92.94	-79.98	71	97.21	-82.20	105	0.00	0.00
4	88.64	-21.96	38	93.09	-62.73	72	97.36	-92.16	106	0.00	0.00
5	88.82	3.60	39	93.26	-42.44	73	97.54	-84.87	107	0.00	0.00
6	88.96	26.75	40	93.43	-11.81	74	97.69	-67.80	108	0.00	0.00
7	88.97	24.26	41	93.44	-8.86	75	97.70	-65.04	109	0.00	0.00
8	89.16	9.04	42	93.59	-6.64	76	97.86	-32.01	110	0.00	0.00
9	89.32	-21.96	43	93.79	-24.45	77	98.03	3.41	111	0.00	0.00
10	89.32	-24.26	44	93.94	-52.68	78	98.20	-9.13	112	0.00	0.00
11	89.50	-49.82	45	94.12	-72.69	79	98.39	-39.67	113	0.00	0.00
12	89.50	-65.13	46	94.12	-75.18	80	98.55	-67.71	114	0.00	0.00
13	89.69	-65.04	47	94.29	-84.96	81	98.74	-84.96	115	0.00	0.00
14	89.85	-70.30	48	94.46	-84.96	82	98.89	-92.16	116	0.00	0.00
15	90.03	-67.71	49	94.64	-65.04	83	98.90	-89.48	117	0.00	0.00
16	90.18	-62.82	50	94.64	-62.55	84	99.08	-89.48	118	0.00	0.00
17	90.36	-32.01	51	94.78	-34.87	85	99.25	-87.27	119	0.00	0.00
18	90.51	3.51	52	94.95	-4.24	86	99.39	-75.09	120	0.00	0.00
19	90.69	-4.43	53	95.12	-6.73	87	99.56	-32.10	121	0.00	0.00
20	90.88	-34.69	54	95.13	-9.04	88	99.56	-29.89	122	0.00	0.00
21	91.04	-60.33	55	95.31	-32.10	89	99.56	-27.12	123	0.00	0.00
22	91.24	-75.09	56	95.49	-60.33	90	99.57	-24.54	124	0.00	0.00
23	91.39	-79.98	57	95.65	-79.98	91	99.57	-22.14	125	0.00	0.00
24	91.56	-65.13	58	95.86	-89.58	92	99.58	-19.65	126	0.00	0.00
25	91.74	-47.32	59	96.01	-87.45	93	99.60	-16.70	127	0.00	0.00
26	91.75	-45.02	60	96.01	-84.96	94	99.67	3.23	128	0.00	0.00
27	91.88	-14.48	61	96.18	-67.90	95	99.84	-19.56	129	0.00	0.00
28	92.07	3.51	62	96.35	-34.87	96	0.00	0.00	130	0.00	0.00
29	92.22	13.93	63	96.35	-31.92	97	0.00	0.00	131	0.00	0.00
30	92.22	11.25	64	96.49	1.01	98	0.00	0.00	132	0.00	0.00
31	92.40	-27.12	65	96.49	-1.29	99	0.00	0.00	133	0.00	0.00
32	92.40	-29.80	66	96.68	-8.95	100	0.00	0.00	134	0.00	0.00
33	92.59	-60.52	67	96.84	-37.27	101	0.00	0.00	135	0.00	0.00
34	92.60	-75.37	68	97.01	-65.04	102	0.00	0.00	136	0.00	0.00

Max Temp= 39.85 F; Min Temp= -92.16 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

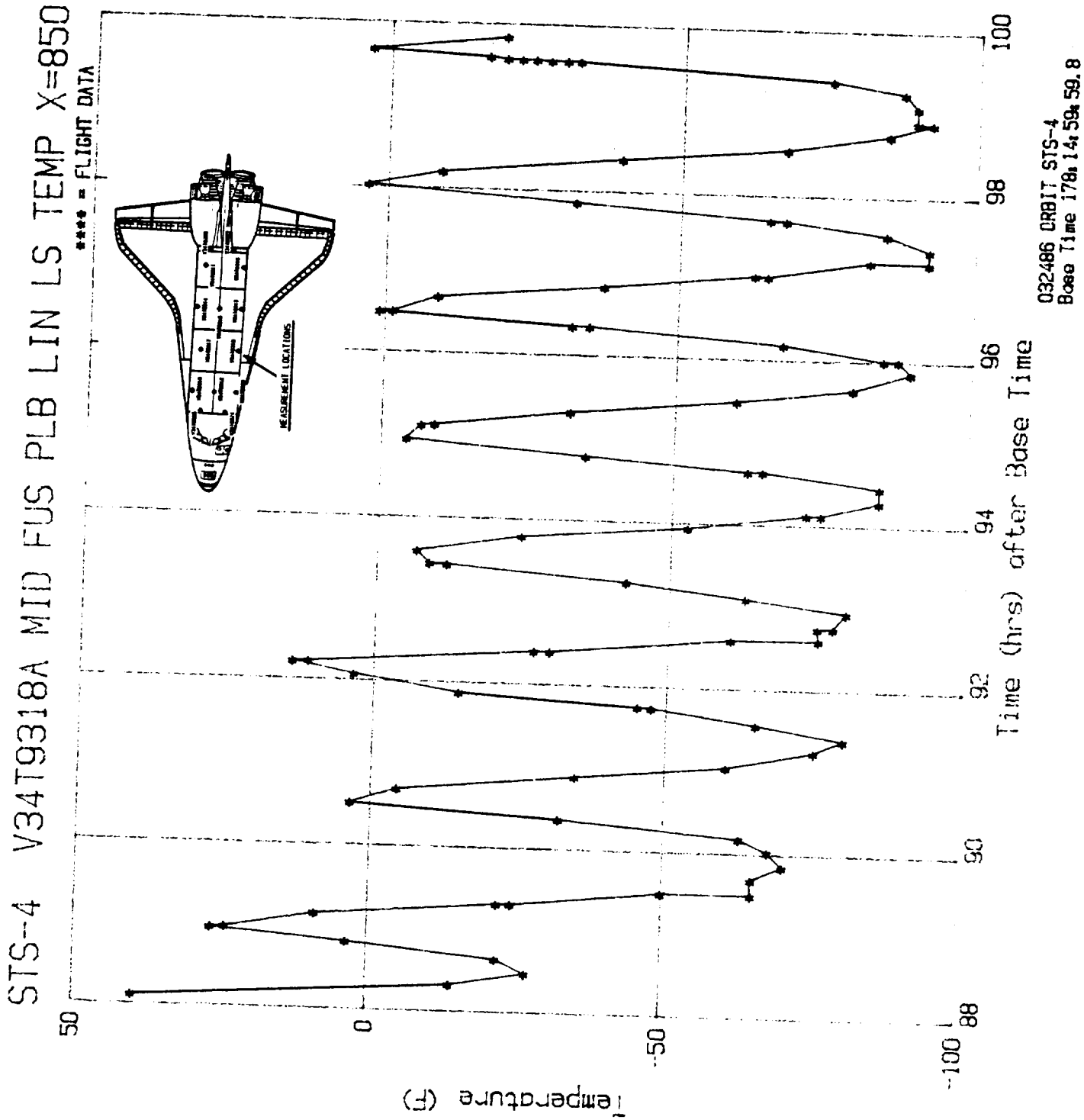
STS-4 V34T9318A MID FUS PLB LIN LS TEMP X=850
**** = FLIGHT DATA
MEASUREMENT LOCATIONS
Temperature (F)
50
0
-50
-100
Time (hrs) after Base Time
88
90
92
94
96
98
100
032486 ORBIT STS-4
Base Time 178: 14: 59: 59.8

Figure A-60

A 61
File No=f61

STS-4 V34T9319A MID FUS PLB LIN RS TEMP X=670

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	88.28	23.83	35	92.24	0.84	69	96.36	-22.21	103	0.00	0.00
2	88.46	16.17	36	92.25	-6.88	70	96.50	-11.84	104	0.00	0.00
3	88.47	13.66	37	92.39	-6.93	71	96.51	-14.55	105	0.00	0.00
4	88.62	13.61	38	92.41	-14.64	72	96.69	-14.59	106	0.00	0.00
5	88.82	18.82	39	92.60	-14.64	73	96.70	-22.21	107	0.00	0.00
6	88.96	21.38	40	92.61	-19.71	74	96.86	-22.21	108	0.00	0.00
7	89.13	18.82	41	92.75	-19.75	75	97.03	-29.58	109	0.00	0.00
8	89.14	16.02	42	92.75	-22.31	76	97.04	-34.55	110	0.00	0.00
9	89.32	8.40	43	92.93	-22.31	77	97.23	-34.45	111	0.00	0.00
10	89.32	5.90	44	93.12	-19.75	78	97.23	-36.95	112	0.00	0.00
11	89.48	0.74	45	93.26	-14.59	79	97.37	-37.00	113	0.00	0.00
12	89.48	-1.87	46	93.45	-6.88	80	97.56	-37.00	114	0.00	0.00
13	89.48	-4.47	47	93.60	-6.83	81	97.72	-32.14	115	0.00	0.00
14	89.67	-4.32	48	93.78	-11.99	82	97.89	-24.52	116	0.00	0.00
15	89.68	-6.98	49	93.95	-19.66	83	98.06	-11.74	117	0.00	0.00
16	89.83	-6.93	50	94.13	-24.62	84	98.06	-14.55	118	0.00	0.00
17	89.83	-9.53	51	94.29	-27.22	85	98.23	-16.95	119	0.00	0.00
18	90.01	-6.83	52	94.46	-27.17	86	98.41	-24.57	120	0.00	0.00
19	90.19	-6.88	53	94.64	-24.67	87	98.58	-32.14	121	0.00	0.00
20	90.35	0.84	54	94.80	-17.05	88	98.58	-34.45	122	0.00	0.00
21	90.53	5.90	55	94.80	-14.55	89	98.75	-36.90	123	0.00	0.00
22	90.69	3.29	56	94.80	-6.83	90	98.93	-39.46	124	0.00	0.00
23	90.69	-4.37	57	94.97	-6.83	91	99.09	-36.90	125	0.00	0.00
24	90.88	-4.37	58	94.97	-9.48	92	99.29	-36.86	126	0.00	0.00
25	91.05	-12.04	59	95.15	-9.43	93	99.44	-36.90	127	0.00	0.00
26	91.22	-17.05	60	95.16	-17.00	94	99.58	-29.48	128	0.00	0.00
27	91.40	-17.10	61	95.32	-17.00	95	99.61	-27.08	129	0.00	0.00
28	91.40	-19.75	62	95.50	-24.67	96	99.63	-24.57	130	0.00	0.00
29	91.54	-14.64	63	95.66	-29.58	97	99.72	-14.50	131	0.00	0.00
30	91.56	-17.10	64	95.84	-34.64	98	99.88	-14.59	132	0.00	0.00
31	91.75	-11.89	65	95.85	-32.29	99	0.00	0.00	133	0.00	0.00
32	91.90	-6.88	66	96.02	-34.59	100	0.00	0.00	134	0.00	0.00
33	92.07	-4.37	67	96.03	-32.19	101	0.00	0.00	135	0.00	0.00
34	92.08	-1.87	68	96.18	-29.58	102	0.00	0.00	136	0.00	0.00

Max Temp= 23.83 F; Min Temp= -39.46 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

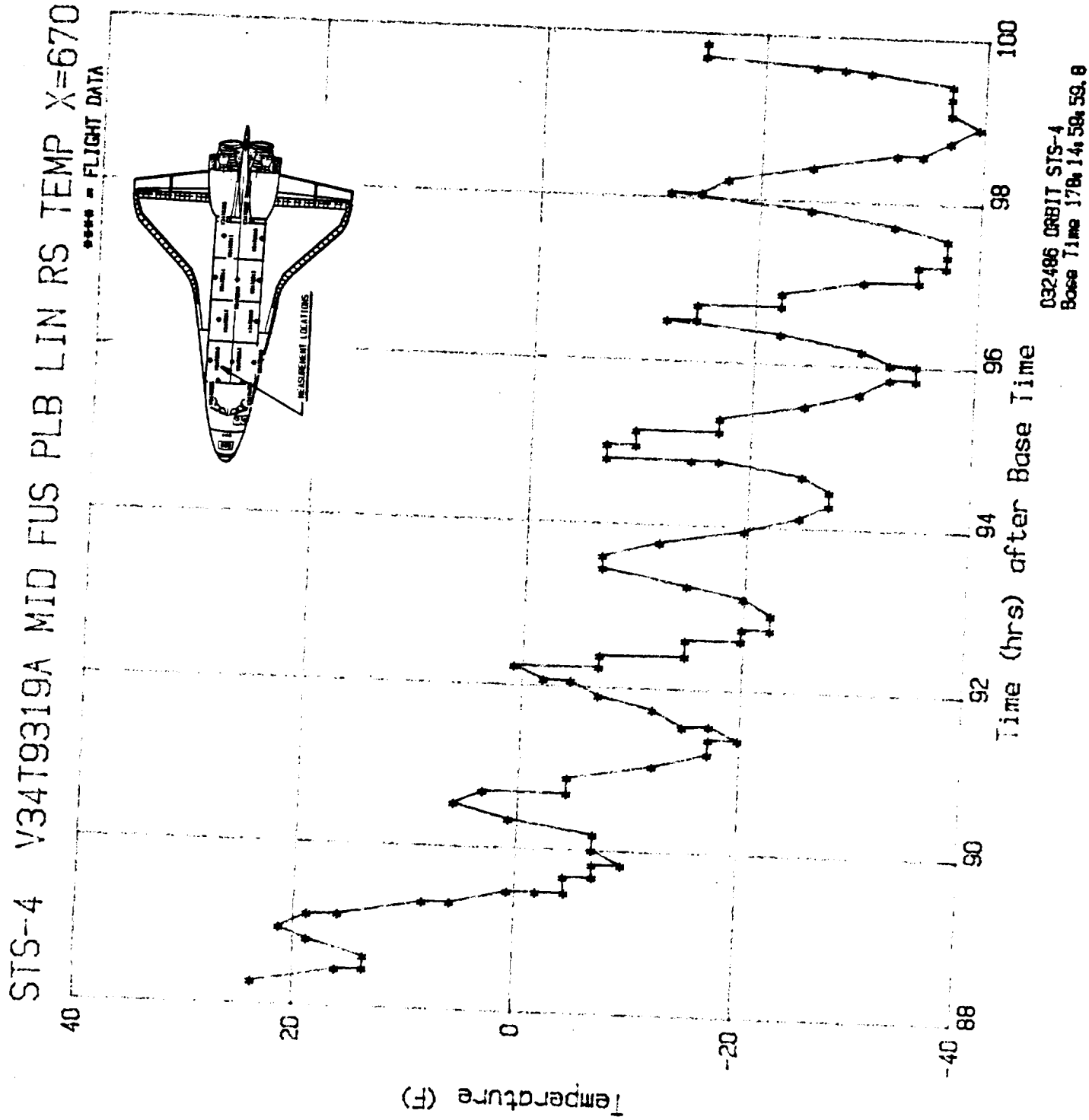
STS-4 V34T9319A MID FUS PLB LIN RS TEMP X=670
**** = FLIGHT DATA
MEASUREMENT LOCATIONS
Temperature (F)
40
20
0
-20
-40
Time (hrs) after Base Time
88
90
92
94
96
98
100
032486 ORBIT STS-4
Base Time 17d 14h 59m 59.8

Figure A-61

A 62
File No=f62

STS-4 V34T9320A MID FUS PLB LIN LS TEMP X=670

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	88.13	42.06	35	92.77	-75.26	69	97.22	-92.52	103	0.00	0.00
2	88.29	-6.68	36	92.93	-75.26	70	97.38	-92.43	104	0.00	0.00
3	88.49	-16.83	37	92.93	-72.68	71	97.53	-77.85	105	0.00	0.00
4	88.49	-14.34	38	93.12	-49.88	72	97.54	-75.26	106	0.00	0.00
5	88.63	-8.98	39	93.26	-29.94	73	97.72	-52.74	107	0.00	0.00
6	88.63	-6.58	40	93.45	-9.08	74	97.73	-49.69	108	0.00	0.00
7	88.81	11.23	41	93.61	-14.43	75	97.87	-22.09	109	0.00	0.00
8	88.82	8.83	42	93.78	-39.82	76	98.06	-1.78	110	0.00	0.00
9	88.99	16.58	43	93.98	-62.89	77	98.23	-22.09	111	0.00	0.00
10	89.14	-6.68	44	94.12	-80.25	78	98.40	-49.88	112	0.00	0.00
11	89.34	-37.23	45	94.31	-89.85	79	98.40	-52.92	113	0.00	0.00
12	89.49	-60.40	46	94.47	-80.15	80	98.59	-75.45	114	0.00	0.00
13	89.49	-72.58	47	94.62	-52.74	81	98.75	-89.66	115	0.00	0.00
14	89.68	-72.49	48	94.63	-49.88	82	98.93	-87.45	116	0.00	0.00
15	89.84	-72.58	49	94.80	-19.32	83	99.09	-80.15	117	0.00	0.00
16	90.01	-60.49	50	94.95	1.17	84	99.27	-80.15	118	0.00	0.00
17	90.20	-52.65	51	94.95	-1.23	85	99.44	-80.25	119	0.00	0.00
18	90.35	-26.98	52	95.14	-14.43	86	99.57	-49.97	120	0.00	0.00
19	90.52	-6.68	53	95.14	-16.92	87	99.57	-47.48	121	0.00	0.00
20	90.70	-24.58	54	95.31	-42.40	88	99.58	-45.26	122	0.00	0.00
21	90.71	-22.18	55	95.32	-45.35	89	99.59	-42.40	123	0.00	0.00
22	90.89	-50.06	56	95.49	-68.25	90	99.61	-39.82	124	0.00	0.00
23	91.06	-70.37	57	95.67	-82.74	91	99.61	-37.51	125	0.00	0.00
24	91.22	-82.55	58	95.84	-92.71	92	99.62	-34.92	126	0.00	0.00
25	91.40	-80.06	59	96.03	-77.75	93	99.68	-12.31	127	0.00	0.00
26	91.55	-55.23	60	96.18	-55.23	94	99.69	-14.62	128	0.00	0.00
27	91.72	-34.74	61	96.18	-52.65	95	99.88	-24.68	129	0.00	0.00
28	91.89	-11.94	62	96.34	-21.91	96	0.00	0.00	130	0.00	0.00
29	92.06	-1.32	63	96.51	-1.32	97	0.00	0.00	131	0.00	0.00
30	92.24	6.34	64	96.51	-4.28	98	0.00	0.00	132	0.00	0.00
31	92.39	-29.75	65	96.67	-19.51	99	0.00	0.00	133	0.00	0.00
32	92.59	-60.49	66	96.87	-47.57	100	0.00	0.00	134	0.00	0.00
33	92.60	-77.94	67	97.02	-72.86	101	0.00	0.00	135	0.00	0.00
34	92.76	-77.75	68	97.22	-87.63	102	0.00	0.00	136	0.00	0.00

Max Temp= 42.06 F; Min Temp= -92.71 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

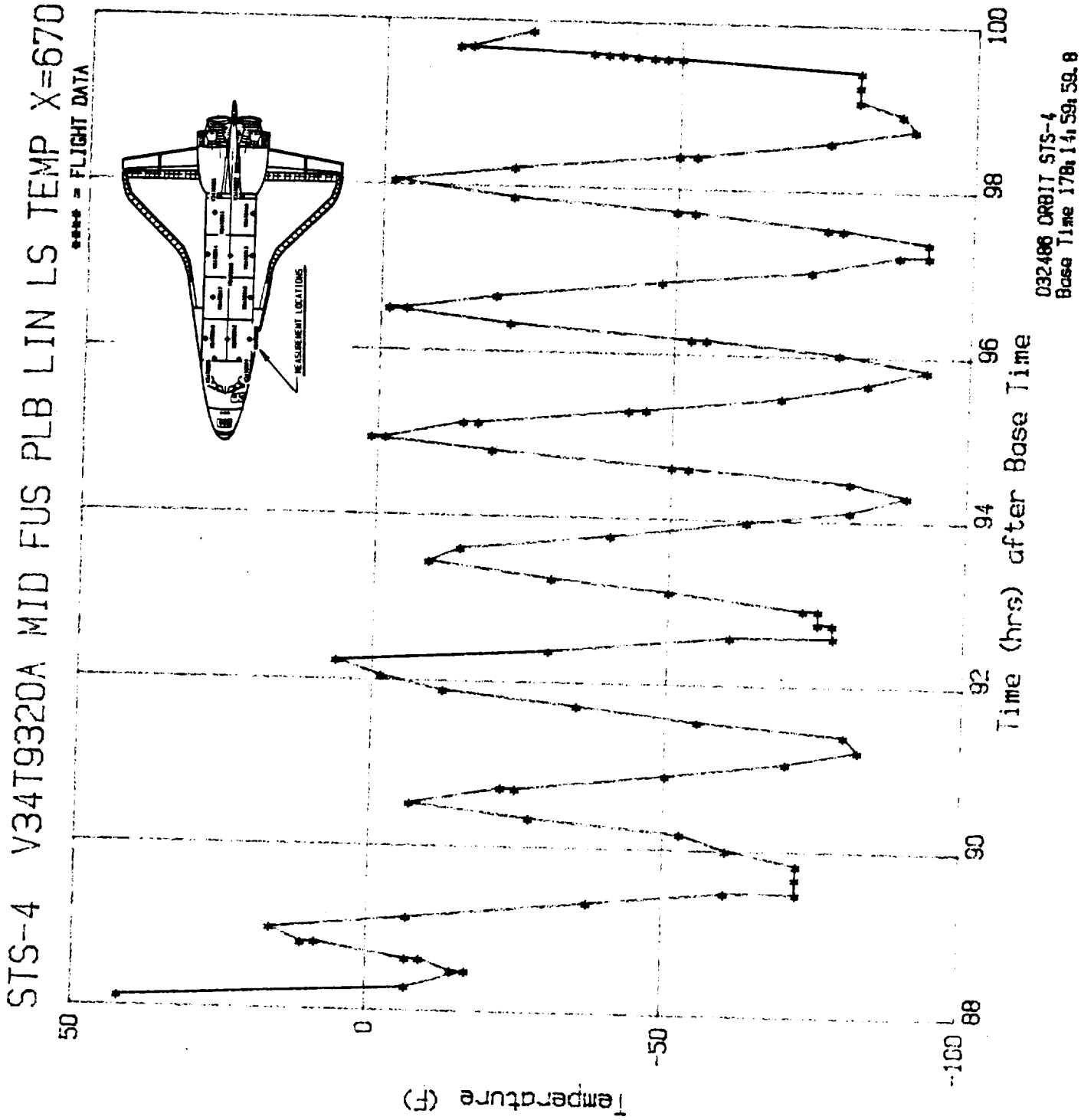
STS-4 V34T9320A MID FUS PLB LIN LS TEMP X=670
**** = FLIGHT DATA
MEASUREMENT LOCATIONS
Temperature (F)
50
0
-50
-100
Time (hrs) after Base Time
88
90
92
94
96
98
100
032486 ORBIT STS-4
Base Time 178:14:59:59.8

Figure A-62

A 63
File No=f63

STS-4 V34T9324A MID FUS FWD BHD INS TEMP Y=-47

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	88.13	19.08	35	92.23	-1.51	69	96.33	-12.22	103	0.00	0.00
2	88.32	-4.28	36	92.41	-42.58	70	96.49	-17.11	104	0.00	0.00
3	88.47	3.57	37	92.59	-65.29	71	96.49	-19.51	105	0.00	0.00
4	88.64	1.17	38	92.60	-62.52	72	96.68	-39.72	106	0.00	0.00
5	88.83	8.92	39	92.75	-62.62	73	96.85	-60.58	107	0.00	0.00
6	88.97	-1.60	40	92.76	-37.32	74	97.02	-75.45	108	0.00	0.00
7	88.98	-4.37	41	92.94	-37.32	75	97.20	-82.74	109	0.00	0.00
8	89.18	-21.91	42	93.09	-24.40	76	97.20	-62.71	110	0.00	0.00
9	89.18	-24.49	43	93.09	-22.09	77	97.34	-62.80	111	0.00	0.00
10	89.34	-45.08	44	93.26	-17.11	78	97.35	-60.49	112	0.00	0.00
11	89.51	-62.80	45	93.44	-17.02	79	97.53	-34.83	113	0.00	0.00
12	89.52	-60.58	46	93.61	-35.11	80	97.69	-29.75	114	0.00	0.00
13	89.68	-62.62	47	93.79	-52.74	81	97.86	-14.43	115	0.00	0.00
14	89.85	-50.25	48	93.95	-68.15	82	98.02	-19.60	116	0.00	0.00
15	89.85	-47.38	49	94.12	-80.06	83	98.21	-39.82	117	0.00	0.00
16	90.03	-22.09	50	94.29	-68.06	84	98.21	-42.68	118	0.00	0.00
17	90.04	-24.31	51	94.29	-65.38	85	98.39	-62.80	119	0.00	0.00
18	90.19	-24.49	52	94.45	-39.82	86	98.55	-77.75	120	0.00	0.00
19	90.36	-12.22	53	94.46	-42.40	87	98.73	-82.83	121	0.00	0.00
20	90.36	-14.34	54	94.63	-24.40	88	98.88	-50.34	122	0.00	0.00
21	90.52	-19.69	55	94.77	44.65	89	99.06	-37.51	123	0.00	0.00
22	90.71	-37.42	56	94.77	39.48	90	99.24	-57.72	124	0.00	0.00
23	90.72	-39.91	57	94.78	42.34	91	99.24	-60.58	125	0.00	0.00
24	90.89	-57.91	58	94.96	13.63	92	99.41	-72.68	126	0.00	0.00
25	91.04	-70.46	59	94.97	11.23	93	99.56	-55.23	127	0.00	0.00
26	91.24	-70.18	60	95.13	-27.35	94	99.56	-52.74	128	0.00	0.00
27	91.24	-67.97	61	95.32	-52.83	95	99.57	-50.34	129	0.00	0.00
28	91.38	-45.08	62	95.50	-70.37	96	99.59	-47.48	130	0.00	0.00
29	91.55	-24.77	63	95.65	-80.15	97	99.59	-45.17	131	0.00	0.00
30	91.56	-22.18	64	95.84	-65.11	98	99.60	-42.58	132	0.00	0.00
31	91.73	-22.00	65	95.84	-62.62	99	99.60	-39.82	133	0.00	0.00
32	91.89	-12.12	66	96.00	-39.82	100	99.68	-14.52	134	0.00	0.00
33	92.08	-1.51	67	96.00	-37.32	101	99.85	-35.02	135	0.00	0.00
34	92.23	1.17	68	96.16	-27.26	102	0.00	0.00	136	0.00	0.00

Max Temp= 44.65 F; Min Temp= -82.83 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

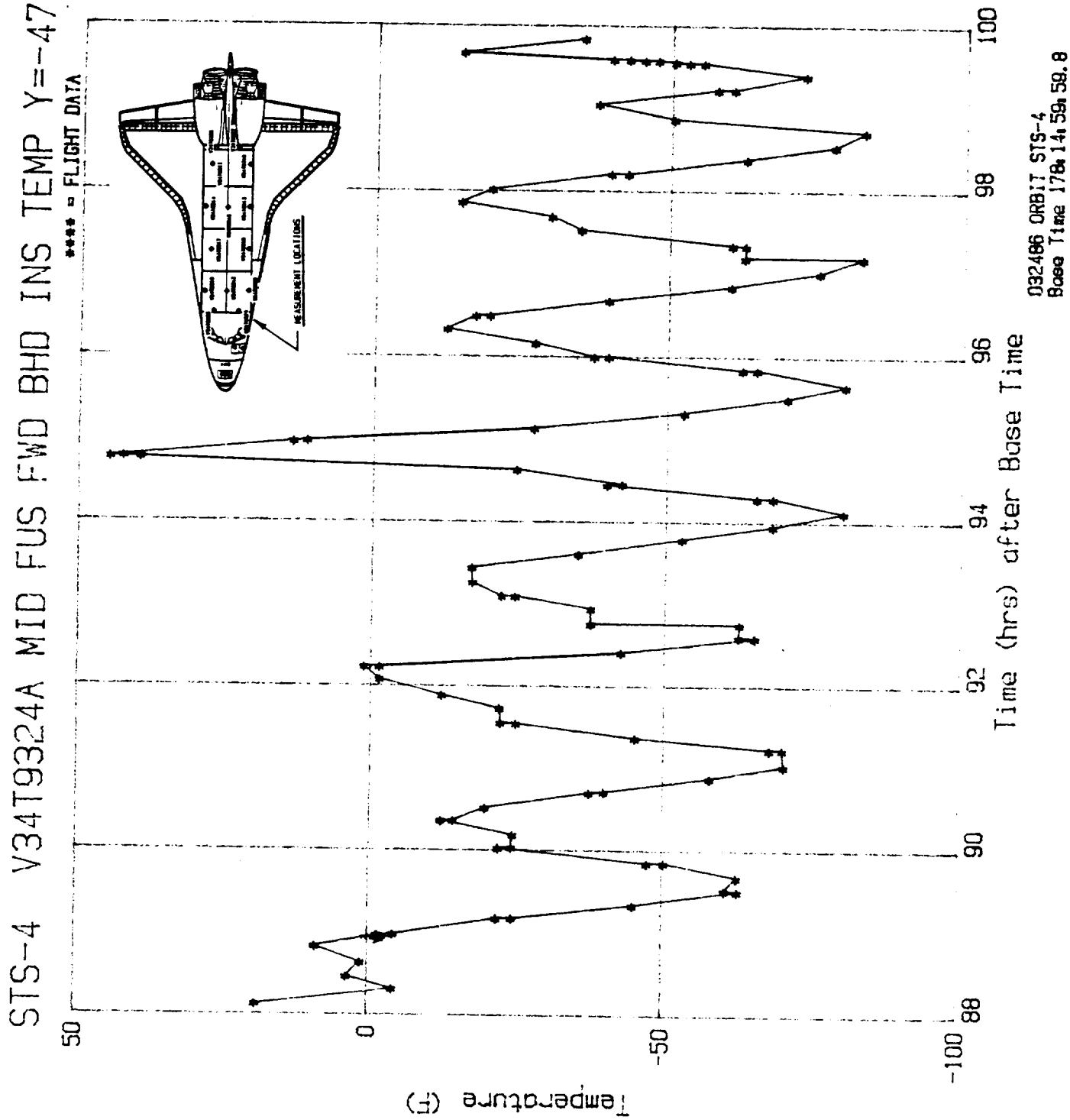
STS-4 V34T9324A MID FUS FWD BHD INS TEMP Y=-47
**** = FLIGHT DATA
MEASUREMENT LOCATIONS
032486 ORBIT STS-4
Base Time 178: 14: 59: 59.8
Time (hrs) after Base Time
Temperature (F)
50
0
-50
-100
88
90
92
94
96
98
100

Figure A-63

A 64
File No=f64

STS-4 V34T9325A MID FUS FWD BHD INS TEMP Y=37.5

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	88.11	8.83	35	92.43	-80.06	69	96.71	-74.98	103	0.00	0.00
2	88.31	-6.68	36	92.59	-74.98	70	96.85	-74.98	104	0.00	0.00
3	88.46	3.48	37	92.60	-80.15	71	96.85	-92.25	105	0.00	0.00
4	88.47	0.98	38	92.74	-42.22	72	97.02	-92.15	106	0.00	0.00
5	88.64	0.98	39	92.76	-74.89	73	97.20	-72.68	107	0.00	0.00
6	88.82	6.43	40	92.76	-72.77	74	97.36	-72.68	108	0.00	0.00
7	88.98	-11.94	41	92.93	-41.94	75	97.53	-39.72	109	0.00	0.00
8	89.18	-37.42	42	92.94	-39.72	76	97.69	-32.06	110	0.00	0.00
9	89.34	-60.31	43	93.09	-24.40	77	97.86	-16.92	111	0.00	0.00
10	89.52	-77.75	44	93.26	-16.74	78	98.04	-26.80	112	0.00	0.00
11	89.52	-82.37	45	93.43	-22.00	79	98.21	-52.55	113	0.00	0.00
12	89.69	-82.28	46	93.61	-44.98	80	98.40	-74.89	114	0.00	0.00
13	89.86	-65.29	47	93.80	-65.11	81	98.40	-77.57	115	0.00	0.00
14	90.03	-26.80	48	93.96	-85.23	82	98.56	-92.25	116	0.00	0.00
15	90.18	-24.58	49	94.14	-97.14	83	98.56	-94.92	117	0.00	0.00
16	90.35	-14.62	50	94.29	-80.25	84	98.76	-97.05	118	0.00	0.00
17	90.36	-11.85	51	94.29	-77.57	85	98.89	-55.23	119	0.00	0.00
18	90.53	-26.89	52	94.45	-47.57	86	99.07	-32.06	120	0.00	0.00
19	90.53	-29.75	53	94.63	-26.71	87	99.25	-62.80	121	0.00	0.00
20	90.71	-52.65	54	94.78	6.52	88	99.41	-84.95	122	0.00	0.00
21	90.72	-49.97	55	94.95	3.57	89	99.57	-62.80	123	0.00	0.00
22	90.72	-72.77	56	94.97	-37.32	90	99.57	-60.31	124	0.00	0.00
23	90.90	-72.77	57	95.13	-37.32	91	99.57	-57.54	125	0.00	0.00
24	91.05	-87.54	58	95.14	-62.89	92	99.58	-55.23	126	0.00	0.00
25	91.25	-82.28	59	95.32	-62.80	93	99.58	-52.55	127	0.00	0.00
26	91.38	-52.55	60	95.50	-84.95	94	99.60	-49.51	128	0.00	0.00
27	91.56	-24.58	61	95.67	-97.32	95	99.60	-47.38	129	0.00	0.00
28	91.74	-24.58	62	95.85	-74.89	96	99.61	-44.89	130	0.00	0.00
29	91.88	-11.94	63	96.00	-41.94	97	99.61	-42.03	131	0.00	0.00
30	92.08	-1.14	64	96.17	-26.80	98	99.68	-9.17	132	0.00	0.00
31	92.22	-6.77	65	96.33	-11.85	99	99.68	-14.52	133	0.00	0.00
32	92.23	-52.55	66	96.49	-24.40	100	99.84	-14.43	134	0.00	0.00
33	92.41	-52.55	67	96.49	-52.55	101	99.84	-16.83	135	0.00	0.00
34	92.41	-55.32	68	96.69	-52.46	102	0.00	0.00	136	0.00	0.00

Max Temp= 8.83 F; Min Temp= -97.32 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

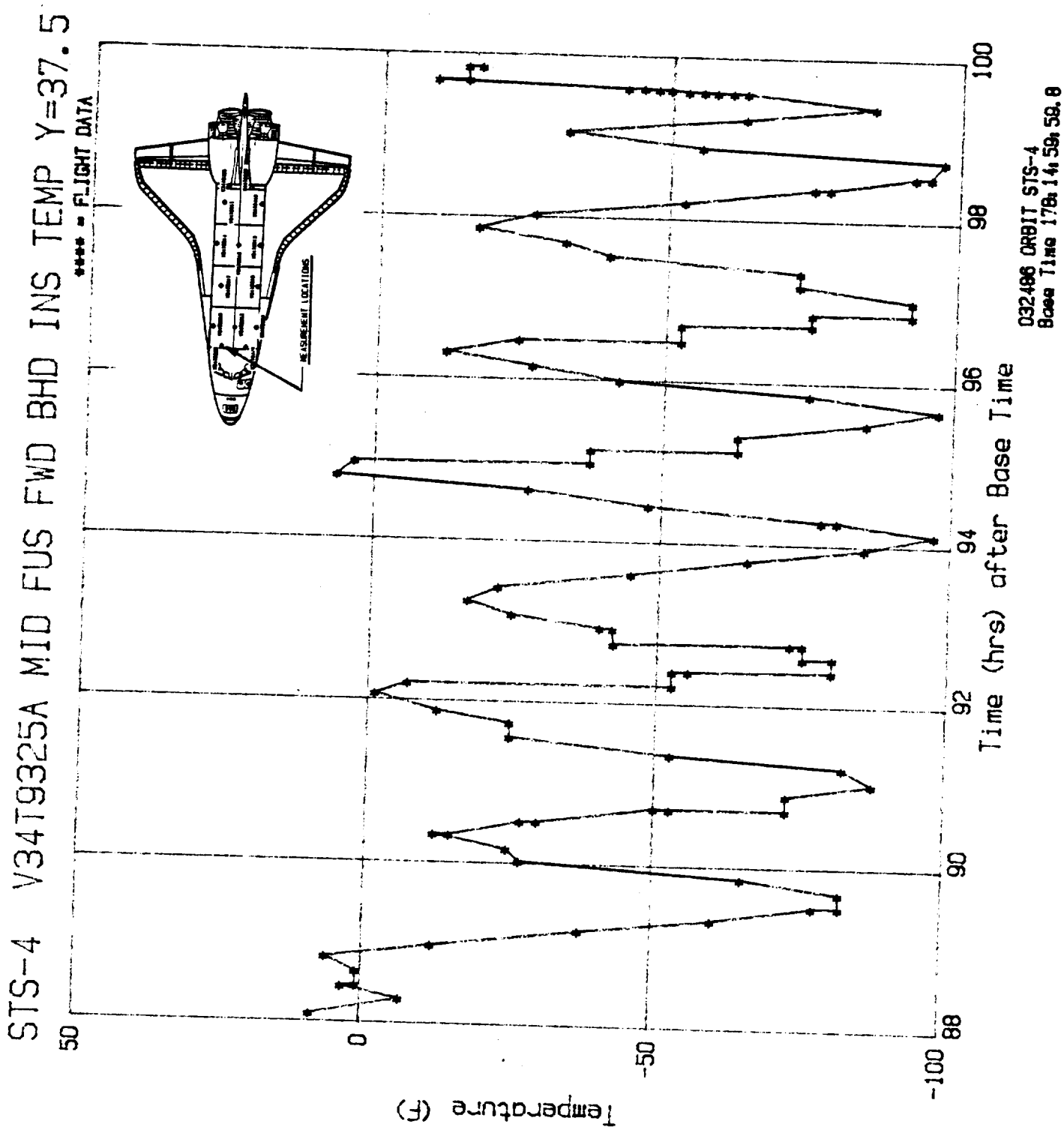
STS-4 V34T9325A MID FUS FWD BHD INS TEMP Y=37.5
**** = FLIGHT DATA
MEASUREMENT LOCATIONS
032486 ORBIT STS-4
Base Time 176: 14: 59: 58.8
Time (hrs) after Base Time
Temperature (F)
50
0
-50
-100
88
90
92
94
96
98
100

Figure A-64

A 65
File No=f65

STS-4 V34T9326A MID FUS AFT BHD INS TEMP Y=-50

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	88.12	11.02	35	92.93	-57.78	69	97.02	-42.71	103	0.00	0.00
2	88.30	-17.11	36	93.12	-55.09	70	97.22	-59.93	104	0.00	0.00
3	88.49	-27.18	37	93.26	-37.48	71	97.38	-67.00	105	0.00	0.00
4	88.49	-24.72	38	93.26	-35.02	72	97.54	-69.77	106	0.00	0.00
5	88.63	-22.34	39	93.44	-4.20	73	97.73	-62.55	107	0.00	0.00
6	88.82	8.64	40	93.44	-1.74	74	97.87	-27.18	108	0.00	0.00
7	88.97	42.08	41	93.60	16.41	75	98.05	13.87	109	0.00	0.00
8	89.13	36.85	42	93.60	14.02	76	98.05	16.33	110	0.00	0.00
9	89.33	5.95	43	93.76	11.02	77	98.20	16.48	111	0.00	0.00
10	89.50	-24.72	44	93.77	8.72	78	98.38	-9.42	112	0.00	0.00
11	89.69	-39.94	45	93.95	-24.65	79	98.39	-11.81	113	0.00	0.00
12	89.84	-45.02	46	94.12	-50.25	80	98.58	-45.02	114	0.00	0.00
13	89.84	-47.71	47	94.31	-59.86	81	98.75	-62.39	115	0.00	0.00
14	90.02	-47.79	48	94.47	-64.93	82	98.93	-66.93	116	0.00	0.00
15	90.20	-47.56	49	94.47	-62.55	83	98.93	-69.62	117	0.00	0.00
16	90.35	-11.81	50	94.64	-59.70	84	99.09	-69.54	118	0.00	0.00
17	90.51	31.78	51	94.80	-34.95	85	99.26	-62.47	119	0.00	0.00
18	90.52	29.17	52	94.81	-32.26	86	99.42	-27.03	120	0.00	0.00
19	90.68	29.17	53	94.96	3.41	87	99.42	-24.49	121	0.00	0.00
20	90.87	-6.81	54	95.13	11.10	88	99.54	8.56	122	0.00	0.00
21	91.06	-37.56	55	95.14	14.02	89	99.55	10.95	123	0.00	0.00
22	91.23	-50.25	56	95.30	-1.74	90	99.57	13.95	124	0.00	0.00
23	91.41	-55.24	57	95.49	-35.02	91	99.58	16.25	125	0.00	0.00
24	91.55	-55.17	58	95.67	-57.63	92	99.59	18.63	126	0.00	0.00
25	91.55	-52.48	59	95.85	-64.85	93	99.68	18.71	127	0.00	0.00
26	91.75	-42.87	60	96.03	-67.24	94	99.87	-4.27	128	0.00	0.00
27	91.89	3.26	61	96.18	-62.70	95	0.00	0.00	129	0.00	0.00
28	91.89	5.95	62	96.35	-29.87	96	0.00	0.00	130	0.00	0.00
29	92.05	23.94	63	96.49	11.02	97	0.00	0.00	131	0.00	0.00
30	92.23	29.32	64	96.50	8.72	98	0.00	0.00	132	0.00	0.00
31	92.23	26.55	65	96.66	14.10	99	0.00	0.00	133	0.00	0.00
32	92.39	-11.81	66	96.66	10.95	100	0.00	0.00	134	0.00	0.00
33	92.60	-42.79	67	96.85	-6.73	101	0.00	0.00	135	0.00	0.00
34	92.76	-52.55	68	97.02	-39.87	102	0.00	0.00	136	0.00	0.00

Max Temp= 42.08 F; Min Temp= -69.77 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

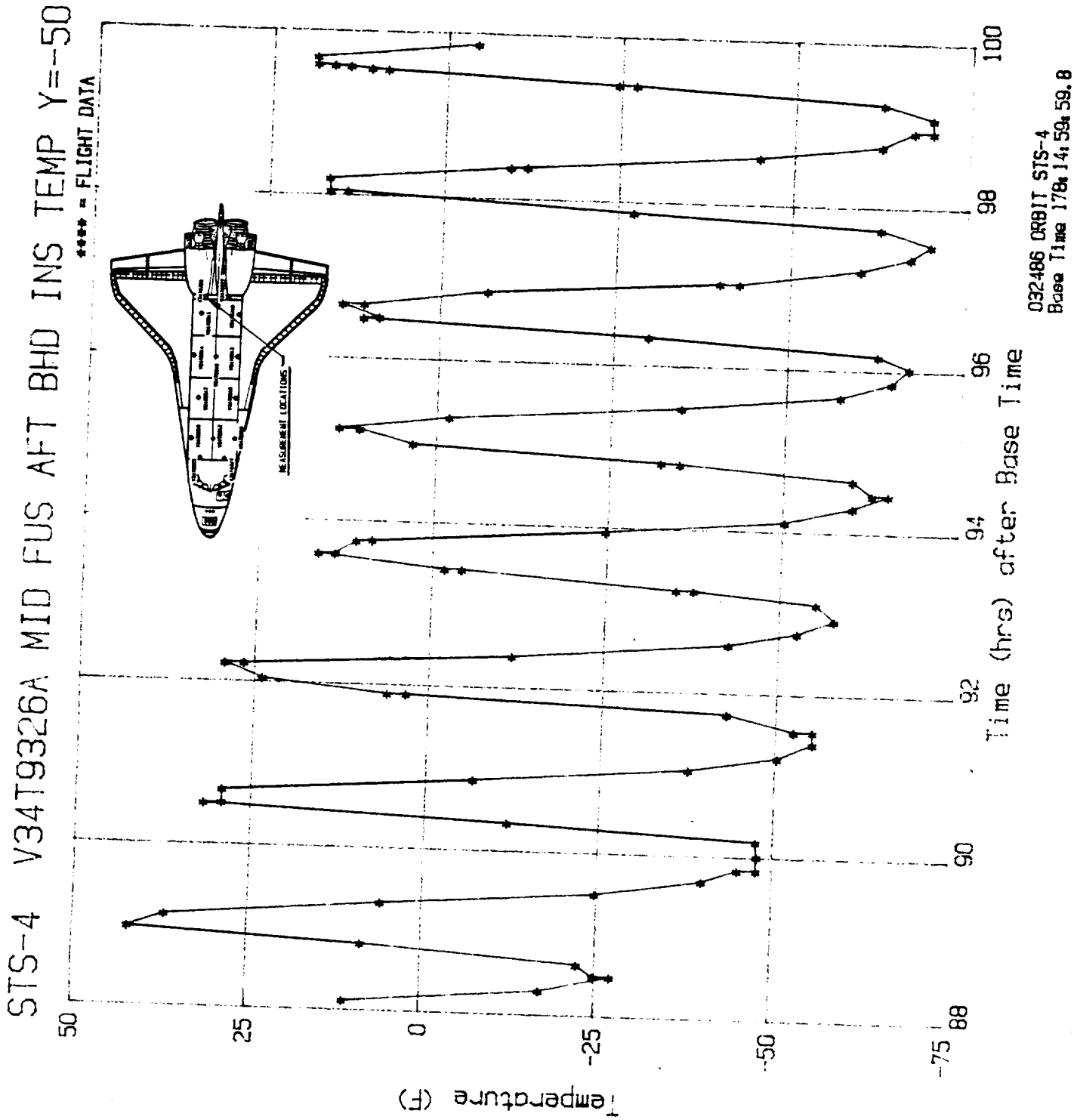
STS-4 V34T9326A MID FUS AFT BHD INS TEMP Y=-50
**** = FLIGHT DATA
MEASUREMENT LOCATIONS
032486 ORBIT STS-4
Base Time 178: 14: 59: 59.8
Time (hrs) after Base Time
Temperature (F)
50
25
0
-25
-50
-75
88
90
92
94
96
98
100

Figure A-65

A 66
File No=f66

STS-4 V34T9327A MID FUS AFT BHD INS TEMP Y=50

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	88.14	7.13	35	92.95	-75.52	69	97.54	-87.82	103	0.00	0.00
2	88.34	-28.41	36	93.11	-73.06	70	97.70	-80.69	104	0.00	0.00
3	88.50	-43.30	37	93.44	-0.12	71	97.70	-78.35	105	0.00	0.00
4	88.50	-40.84	38	93.59	24.97	72	97.86	-38.50	106	0.00	0.00
5	88.66	-38.50	39	93.78	27.18	73	97.87	-35.92	107	0.00	0.00
6	88.84	2.34	40	93.78	24.97	74	98.04	24.85	108	0.00	0.00
7	88.97	50.31	41	93.95	-17.84	75	98.19	29.89	109	0.00	0.00
8	89.16	50.43	42	94.12	-58.79	76	98.39	4.80	110	0.00	0.00
9	89.33	14.51	43	94.30	-75.40	77	98.39	2.34	111	0.00	0.00
10	89.52	-30.50	44	94.46	-80.93	78	98.56	-48.59	112	0.00	0.00
11	89.70	-53.38	45	94.64	-78.23	79	98.74	-75.40	113	0.00	0.00
12	89.86	-61.01	46	94.64	-75.40	80	98.90	-85.36	114	0.00	0.00
13	89.86	-63.35	47	94.78	-46.00	81	99.07	-85.12	115	0.00	0.00
14	90.04	-65.93	48	94.79	-48.71	82	99.08	-87.95	116	0.00	0.00
15	90.04	-63.22	49	94.96	7.13	83	99.25	-68.27	117	0.00	0.00
16	90.20	-61.13	50	95.13	22.63	84	99.39	-20.30	118	0.00	0.00
17	90.37	-12.92	51	95.29	14.76	85	99.54	17.10	119	0.00	0.00
18	90.53	42.93	52	95.30	12.42	86	99.55	19.80	120	0.00	0.00
19	90.70	45.26	53	95.50	-32.84	87	99.55	22.51	121	0.00	0.00
20	90.88	2.21	54	95.65	-68.51	88	99.56	12.18	122	0.00	0.00
21	90.89	4.67	55	95.86	-80.81	89	99.57	24.72	123	0.00	0.00
22	91.05	-43.30	56	96.01	-85.49	90	99.58	27.06	124	0.00	0.00
23	91.26	-62.98	57	96.18	-81.06	91	99.67	30.01	125	0.00	0.00
24	91.40	-71.22	58	96.18	-78.35	92	99.84	12.30	126	0.00	0.00
25	91.58	-70.85	59	96.35	-43.05	93	0.00	0.00	127	0.00	0.00
26	91.74	-58.67	60	96.35	-40.84	94	0.00	0.00	128	0.00	0.00
27	91.88	2.46	61	96.49	17.10	95	0.00	0.00	129	0.00	0.00
28	92.08	33.09	62	96.68	24.97	96	0.00	0.00	130	0.00	0.00
29	92.23	39.98	63	96.68	22.76	97	0.00	0.00	131	0.00	0.00
30	92.23	37.52	64	96.83	7.26	98	0.00	0.00	132	0.00	0.00
31	92.41	-5.54	65	97.01	-38.50	99	0.00	0.00	133	0.00	0.00
32	92.60	-48.71	66	97.01	-40.71	100	0.00	0.00	134	0.00	0.00
33	92.60	-51.05	67	97.21	-73.31	101	0.00	0.00	135	0.00	0.00
34	92.76	-68.63	68	97.36	-85.36	102	0.00	0.00	136	0.00	0.00

Max Temp= 50.43 F; Min Temp= -87.95 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

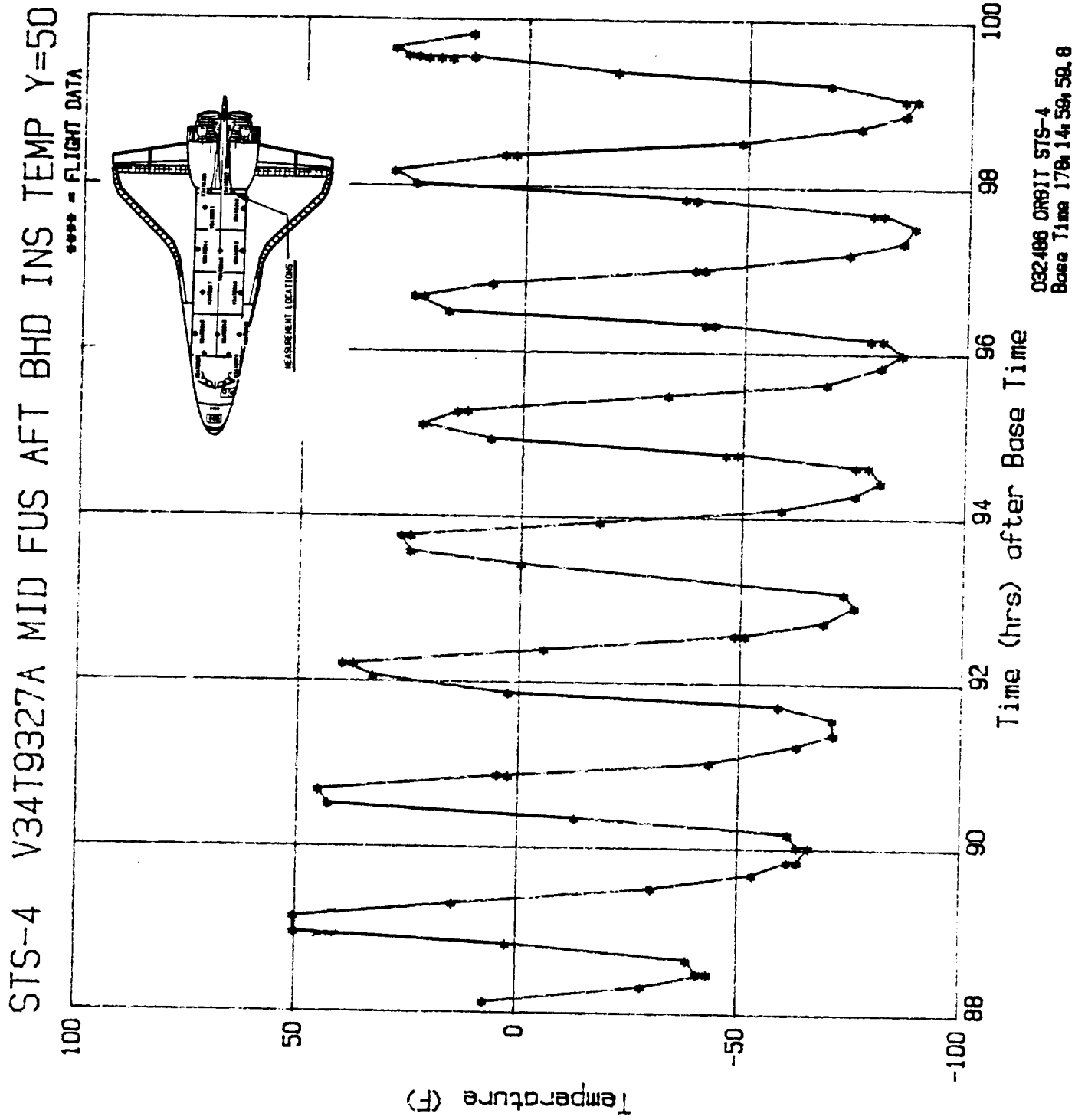
STS-4 V34T9327A MID FUS AFT BHD INS TEMP Y=50
**** = FLIGHT DATA
MEASUREMENT LOCATIONS
Temperature (F)
100
50
0
-50
-100
Time (hrs) after Base Time
88
90
92
94
96
98
100
032486 ORBIT STS-4
Base Time 178: 14: 59: 58.8

Figure A-66

A 67
File No=f67

STS-4 V34T9310A MID FUS PLB LIN LS TEMP X=1250

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	120.09	-47.32	35	125.03	-47.35	69	128.64	-31.97	103	133.76	-52.37
2	120.44	-39.63	36	125.06	-44.80	70	128.80	-39.69	104	133.91	-52.40
3	120.59	-26.83	37	125.08	-42.22	71	128.96	-47.35	105	133.91	-49.91
4	120.59	-24.34	38	125.13	-39.66	72	129.15	-52.40	106	134.08	-44.86
5	120.78	-16.71	39	125.15	-37.08	73	129.33	-52.34	107	134.26	-29.48
6	120.95	-19.26	40	125.20	-34.52	74	129.47	-47.38	108	134.38	-21.97
7	121.11	-29.38	41	125.32	-26.86	75	129.64	-37.11	109	134.56	-24.58
8	121.29	-39.66	42	125.38	-24.37	76	129.64	-34.58	110	134.77	-34.58
9	121.48	-47.29	43	125.45	-24.37	77	129.83	-21.91	111	134.93	-42.28
10	121.63	-49.85	44	125.46	-26.83	78	129.98	-24.40	112	134.94	-44.86
11	121.63	-52.34	45	125.54	-26.86	79	130.16	-32.06	113	0.00	0.00
12	121.80	-49.85	46	125.64	-32.03	80	130.35	-42.22	114	0.00	0.00
13	121.80	-47.29	47	125.73	-37.14	81	130.50	-47.35	115	0.00	0.00
14	122.00	-42.22	48	125.82	-42.18	82	130.68	-52.40	116	0.00	0.00
15	122.14	-26.83	49	125.93	-44.83	83	130.86	-52.37	117	0.00	0.00
16	122.28	-14.18	50	126.00	-47.35	84	131.02	-47.32	118	0.00	0.00
17	122.30	-16.71	51	126.07	-49.91	85	131.17	-34.52	119	0.00	0.00
18	122.47	-16.74	52	126.15	-52.40	86	131.34	-19.35	120	0.00	0.00
19	122.65	-26.86	53	126.25	-52.37	87	131.51	-19.35	121	0.00	0.00
20	122.82	-39.69	54	126.44	-47.29	88	131.68	-29.45	122	0.00	0.00
21	123.02	-44.80	55	126.58	-39.69	89	131.87	-39.72	123	0.00	0.00
22	123.17	-47.32	56	126.74	-26.89	90	132.06	-47.32	124	0.00	0.00
23	123.34	-47.32	57	126.93	-24.40	91	132.19	-52.34	125	0.00	0.00
24	123.51	-39.66	58	127.10	-29.45	92	132.38	-52.37	126	0.00	0.00
25	123.69	-26.83	59	127.27	-39.69	93	132.39	-49.91	127	0.00	0.00
26	123.83	-16.71	60	127.45	-47.35	94	132.56	-44.80	128	0.00	0.00
27	124.01	-19.29	61	127.63	-52.37	95	132.71	-32.06	129	0.00	0.00
28	124.01	-21.85	62	127.78	-52.34	96	132.85	-19.45	130	0.00	0.00
29	124.20	-29.42	63	127.95	-47.35	97	132.85	-21.94	131	0.00	0.00
30	124.36	-39.66	64	128.14	-39.69	98	133.05	-24.46	132	0.00	0.00
31	124.52	-44.80	65	128.14	-37.08	99	133.23	-32.06	133	0.00	0.00
32	124.73	-49.91	66	128.28	-24.37	100	133.38	-42.28	134	0.00	0.00
33	124.88	-52.34	67	128.44	-24.40	101	133.58	-49.94	135	0.00	0.00
34	124.89	-49.88	68	128.64	-29.45	102	133.59	-47.38	136	0.00	0.00

Max Temp= -14.18 F; Min Temp= -52.40 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

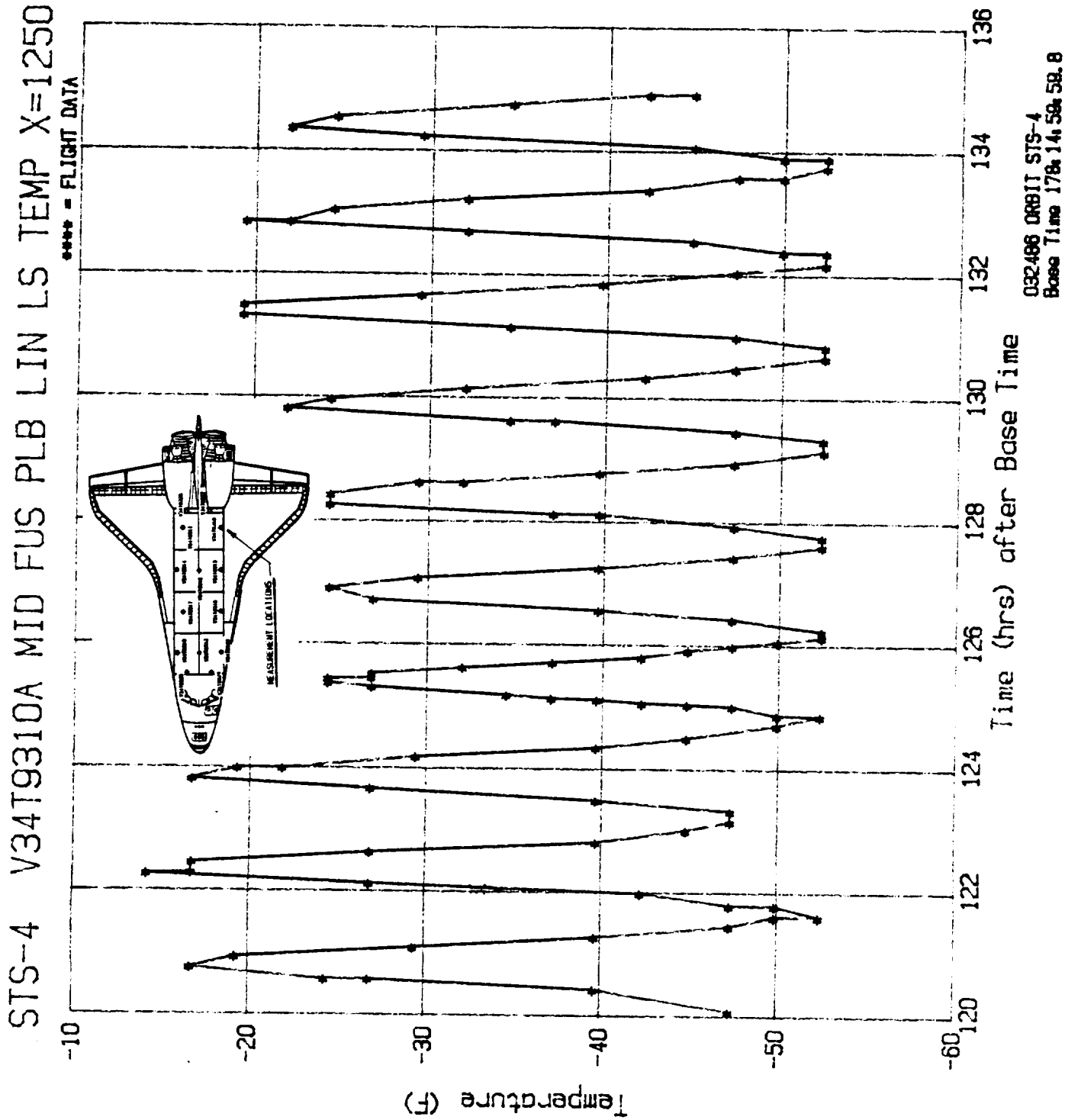
STS-4 V34T9310A MID FUS PLB LIN LS TEMP X=1250
**** = FLIGHT DATA
MEASUREMENT LOCATIONS
Temperature (F)
-10
-20
-30
-40
-50
-60
Time (hrs) after Base Time
120
122
124
126
128
130
132
134
136
032486 ORBIT STS-4
Base Time 178: 14: 58: 58.8

Figure A-67

A 68
File No=f68 STS-4 V34T9311A PLB WIRE TRAY COVER TEMP X=1215

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	120.06	-44.67	35	124.69	-47.36	69	127.61	-52.44	103	132.36	-44.72
2	120.06	-42.17	36	124.88	-47.36	70	127.77	-47.38	104	132.53	-39.73
3	120.43	-31.90	37	124.89	-44.67	71	127.91	-39.68	105	132.70	-29.46
4	120.57	-24.35	38	125.01	-42.17	72	128.09	-34.62	106	132.85	-32.02
5	120.73	-26.89	39	125.03	-39.68	73	128.26	-32.00	107	132.88	-37.21
6	120.94	-31.98	40	125.06	-37.16	74	128.42	-37.19	108	133.03	-37.21
7	121.10	-37.16	41	125.09	-34.62	75	128.43	-42.22	109	133.04	-44.77
8	121.10	-39.68	42	125.14	-32.00	76	128.59	-42.22	110	133.23	-47.41
9	121.25	-42.20	43	125.26	-32.02	77	128.80	-47.38	111	133.24	-44.72
10	121.45	-44.72	44	125.37	-34.62	78	128.96	-49.93	112	133.37	-47.38
11	121.63	-44.72	45	125.46	-37.14	79	129.12	-52.44	113	133.54	-49.98
12	121.76	-42.20	46	125.54	-39.70	80	129.30	-47.41	114	133.73	-49.93
13	121.78	-39.68	47	125.63	-42.25	81	129.46	-34.67	115	133.89	-44.74
14	121.95	-34.62	48	125.63	-44.74	82	129.47	-42.15	116	134.03	-37.21
15	122.13	-24.35	49	125.70	-44.72	83	129.47	-39.70	117	134.05	-39.73
16	122.13	-26.86	50	125.78	-44.72	84	129.60	-32.02	118	134.22	-26.99
17	122.28	-26.89	51	125.80	-47.33	85	129.61	-34.64	119	134.22	-29.51
18	122.44	-34.62	52	125.88	-47.36	86	129.80	-32.02	120	134.40	-34.69
19	122.65	-39.68	53	125.99	-47.33	87	129.99	-37.21	121	134.41	-32.07
20	122.81	-42.22	54	126.00	-49.93	88	130.14	-44.72	122	134.56	-39.73
21	122.82	-44.69	55	126.06	-49.95	89	130.31	-47.43	123	134.74	-44.79
22	122.97	-44.72	56	126.14	-49.95	90	130.32	-49.98	124	134.94	-47.38
23	123.16	-47.36	57	126.23	-47.33	91	130.51	-49.93	125	0.00	0.00
24	123.16	-44.72	58	126.39	-42.22	92	130.67	-52.49	126	0.00	0.00
25	123.33	-42.20	59	126.57	-37.16	93	130.83	-47.38	127	0.00	0.00
26	123.47	-37.14	60	126.57	-31.98	94	131.01	-39.65	128	0.00	0.00
27	123.47	-34.59	61	126.73	-31.98	95	131.16	-32.02	129	0.00	0.00
28	123.65	-26.89	62	126.90	-37.19	96	131.16	-29.46	130	0.00	0.00
29	123.82	-29.41	63	127.11	-42.17	97	131.31	-29.46	131	0.00	0.00
30	123.99	-34.62	64	127.25	-47.41	98	131.49	-37.16	132	0.00	0.00
31	124.18	-39.70	65	127.26	-44.72	99	131.68	-42.17	133	0.00	0.00
32	124.18	-42.22	66	127.43	-47.38	100	131.85	-47.41	134	0.00	0.00
33	124.36	-44.72	67	127.43	-49.95	101	132.03	-50.00	135	0.00	0.00
34	124.51	-47.36	68	127.61	-49.98	102	132.21	-49.95	136	0.00	0.00

Max Temp= -24.35 F; Min Temp= -52.49 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

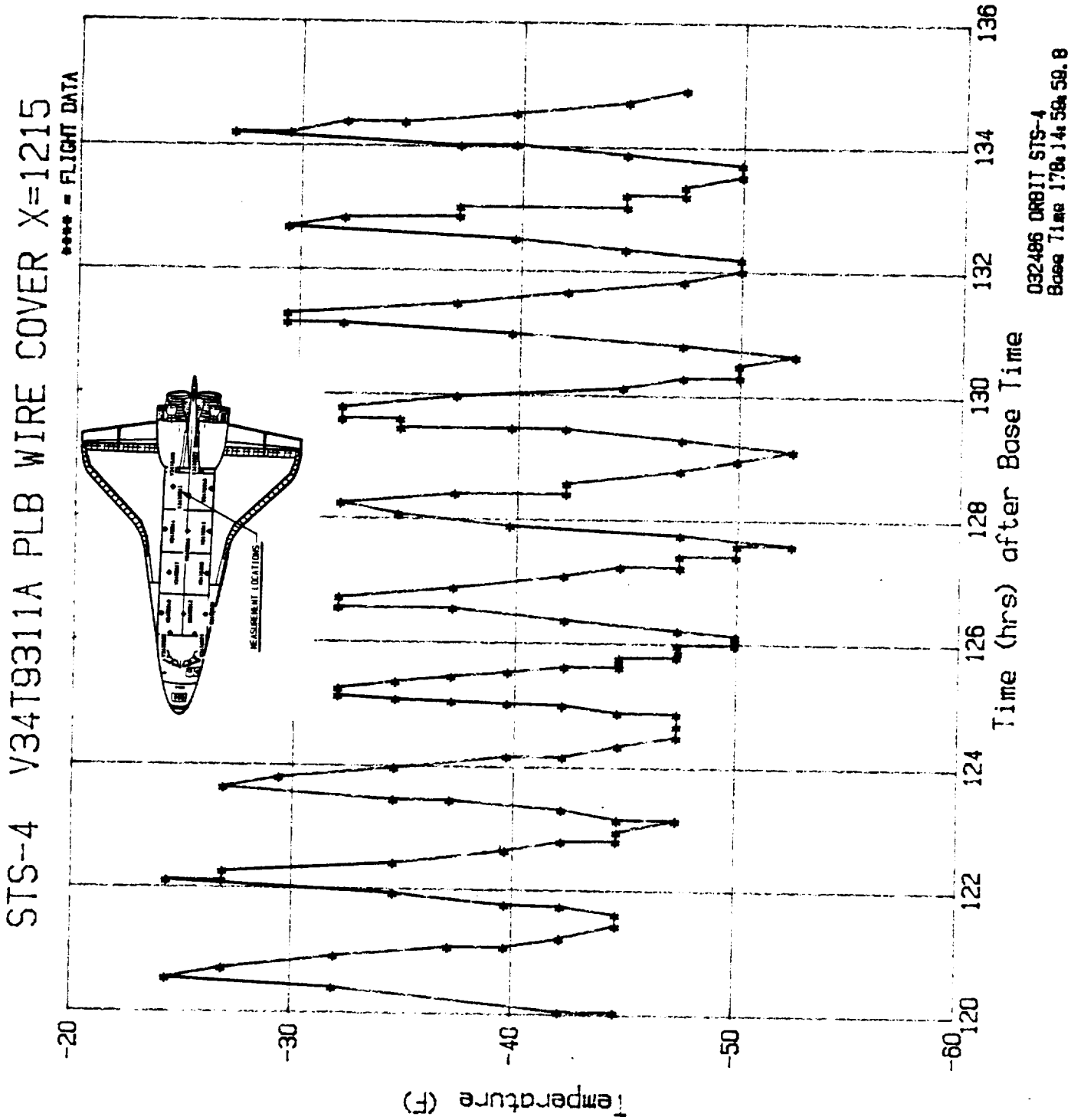
STS-4 V34T9311A PLB WIRE COVER X=1215
**** = FLIGHT DATA
MEASUREMENT LOCATIONS
Temperature (F)
-20
-30
-40
-50
-60
Time (hrs) after Base Time
120
122
124
126
128
130
132
134
136
032486 ORBIT STS-4
Base Time 178: 14: 58: 59.8

Figure A-68

A 69
File No=f69

STS-4 V34T9312A MID FUS PLB CTR BTM TEMP X=670

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	120.08	-89.62	35	124.70	-94.77	69	126.24	-82.46	103	130.53	-96.92
2	120.08	-87.38	36	124.86	-87.38	70	126.24	-80.08	104	130.69	-94.62
3	120.42	-32.08	37	124.88	-89.69	71	126.38	-47.31	105	130.83	-70.00
4	120.42	-29.31	38	125.01	-60.15	72	126.55	-19.31	106	131.00	-34.77
5	120.59	3.92	39	125.02	-62.38	73	126.57	-4.00	107	131.18	-1.46
6	120.73	-3.85	40	125.03	-57.38	74	126.73	-4.00	108	131.18	3.77
7	120.94	-36.92	41	125.03	-55.00	75	126.90	-24.46	109	131.33	3.69
8	121.12	-64.92	42	125.04	-52.54	76	126.90	-27.15	110	131.51	-29.54
9	121.27	-84.92	43	125.04	-49.77	77	127.10	-57.31	111	131.51	-32.31
10	121.45	-96.92	44	125.05	-47.31	78	127.27	-80.23	112	131.70	-62.69
11	121.45	-94.69	45	125.06	-44.92	79	127.43	-94.85	113	131.86	-82.54
12	121.64	-89.46	46	125.07	-42.08	80	127.60	-99.62	114	132.03	-97.00
13	121.64	-87.23	47	125.08	-39.77	81	127.61	-97.00	115	132.04	-92.38
14	121.78	-60.08	48	125.09	-37.00	82	127.79	-77.46	116	132.21	-92.15
15	121.95	-29.31	49	125.10	-34.69	83	127.92	-39.69	117	132.37	-67.77
16	122.11	3.85	50	125.10	-32.15	84	128.08	-11.69	118	132.52	-34.77
17	122.28	1.15	51	125.11	-29.46	85	128.27	1.08	119	132.53	-32.23
18	122.43	-19.38	52	125.12	-27.08	86	128.28	-1.38	120	132.68	0.85
19	122.63	-49.69	53	125.14	-24.54	87	128.43	-27.08	121	132.69	-1.54
20	122.82	-72.62	54	125.16	-21.77	88	128.44	-60.15	122	132.86	-4.15
21	122.83	-75.00	55	125.17	-19.46	89	128.60	-60.23	123	132.88	-37.15
22	122.97	-87.46	56	125.26	-16.69	90	128.80	-82.46	124	133.04	-37.08
23	123.15	-82.38	57	125.35	-24.46	91	128.97	-94.85	125	133.04	-67.85
24	123.33	-57.31	58	125.44	-39.85	92	129.12	-97.00	126	133.22	-67.85
25	123.49	-27.15	59	125.56	-54.92	93	129.30	-75.23	127	133.23	-87.62
26	123.64	1.08	60	125.63	-67.69	94	129.46	-3.85	128	133.39	-87.62
27	123.64	-1.38	61	125.71	-77.31	95	129.47	-39.77	129	133.39	-87.62
28	123.83	-6.46	62	125.72	-80.08	96	129.60	-3.92	130	133.56	-96.92
29	124.00	-42.15	63	125.79	-87.54	97	129.78	1.08	131	133.75	-92.38
30	124.17	-70.00	64	125.89	-92.31	98	129.80	-1.54	132	133.93	-62.62
31	124.18	-67.77	65	126.00	-99.54	99	129.99	-32.31	133	134.05	-27.23
32	124.37	-87.38	66	126.08	-99.46	100	130.15	-62.54	134	134.05	3.54
33	124.53	-87.46	67	126.15	-92.23	101	130.32	-82.54	135	134.21	3.62
34	124.54	-89.62	68	126.16	-94.69	102	130.34	-97.00	136	134.41	-6.77

A 69(Cont)
File No=f69 (Cont.) STS-4 V34T9312A MID FUS PLB CTR BTM TEMP X=670

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
137	134.57	-42.23	171	0.00	0.00	205	0.00	0.00	239	0.00	0.00
138	134.75	-70.15	172	0.00	0.00	206	0.00	0.00	240	0.00	0.00
139	134.93	-87.54	173	0.00	0.00	207	0.00	0.00	241	0.00	0.00
140	0.00	0.00	174	0.00	0.00	208	0.00	0.00	242	0.00	0.00
141	0.00	0.00	175	0.00	0.00	209	0.00	0.00	243	0.00	0.00
142	0.00	0.00	176	0.00	0.00	210	0.00	0.00	244	0.00	0.00
143	0.00	0.00	177	0.00	0.00	211	0.00	0.00	245	0.00	0.00
144	0.00	0.00	178	0.00	0.00	212	0.00	0.00	246	0.00	0.00
145	0.00	0.00	179	0.00	0.00	213	0.00	0.00	247	0.00	0.00
146	0.00	0.00	180	0.00	0.00	214	0.00	0.00	248	0.00	0.00
147	0.00	0.00	181	0.00	0.00	215	0.00	0.00	249	0.00	0.00
148	0.00	0.00	182	0.00	0.00	216	0.00	0.00	250	0.00	0.00
149	0.00	0.00	183	0.00	0.00	217	0.00	0.00	251	0.00	0.00
150	0.00	0.00	184	0.00	0.00	218	0.00	0.00	252	0.00	0.00
151	0.00	0.00	185	0.00	0.00	219	0.00	0.00	253	0.00	0.00
152	0.00	0.00	186	0.00	0.00	220	0.00	0.00	254	0.00	0.00
153	0.00	0.00	187	0.00	0.00	221	0.00	0.00	255	0.00	0.00
154	0.00	0.00	188	0.00	0.00	222	0.00	0.00	256	0.00	0.00
155	0.00	0.00	189	0.00	0.00	223	0.00	0.00	257	0.00	0.00
156	0.00	0.00	190	0.00	0.00	224	0.00	0.00	258	0.00	0.00
157	0.00	0.00	191	0.00	0.00	225	0.00	0.00	259	0.00	0.00
158	0.00	0.00	192	0.00	0.00	226	0.00	0.00	260	0.00	0.00
159	0.00	0.00	193	0.00	0.00	227	0.00	0.00	261	0.00	0.00
160	0.00	0.00	194	0.00	0.00	228	0.00	0.00	262	0.00	0.00
161	0.00	0.00	195	0.00	0.00	229	0.00	0.00	263	0.00	0.00
162	0.00	0.00	196	0.00	0.00	230	0.00	0.00	264	0.00	0.00
163	0.00	0.00	197	0.00	0.00	231	0.00	0.00	265	0.00	0.00
164	0.00	0.00	198	0.00	0.00	232	0.00	0.00	266	0.00	0.00
165	0.00	0.00	199	0.00	0.00	233	0.00	0.00	267	0.00	0.00
166	0.00	0.00	200	0.00	0.00	234	0.00	0.00	268	0.00	0.00
167	0.00	0.00	201	0.00	0.00	235	0.00	0.00	269	0.00	0.00
168	0.00	0.00	202	0.00	0.00	236	0.00	0.00	270	0.00	0.00
169	0.00	0.00	203	0.00	0.00	237	0.00	0.00	271	0.00	0.00
170	0.00	0.00	204	0.00	0.00	238	0.00	0.00	272	0.00	0.00

Max Temp= 3.92 F; Min Temp= -99.62 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

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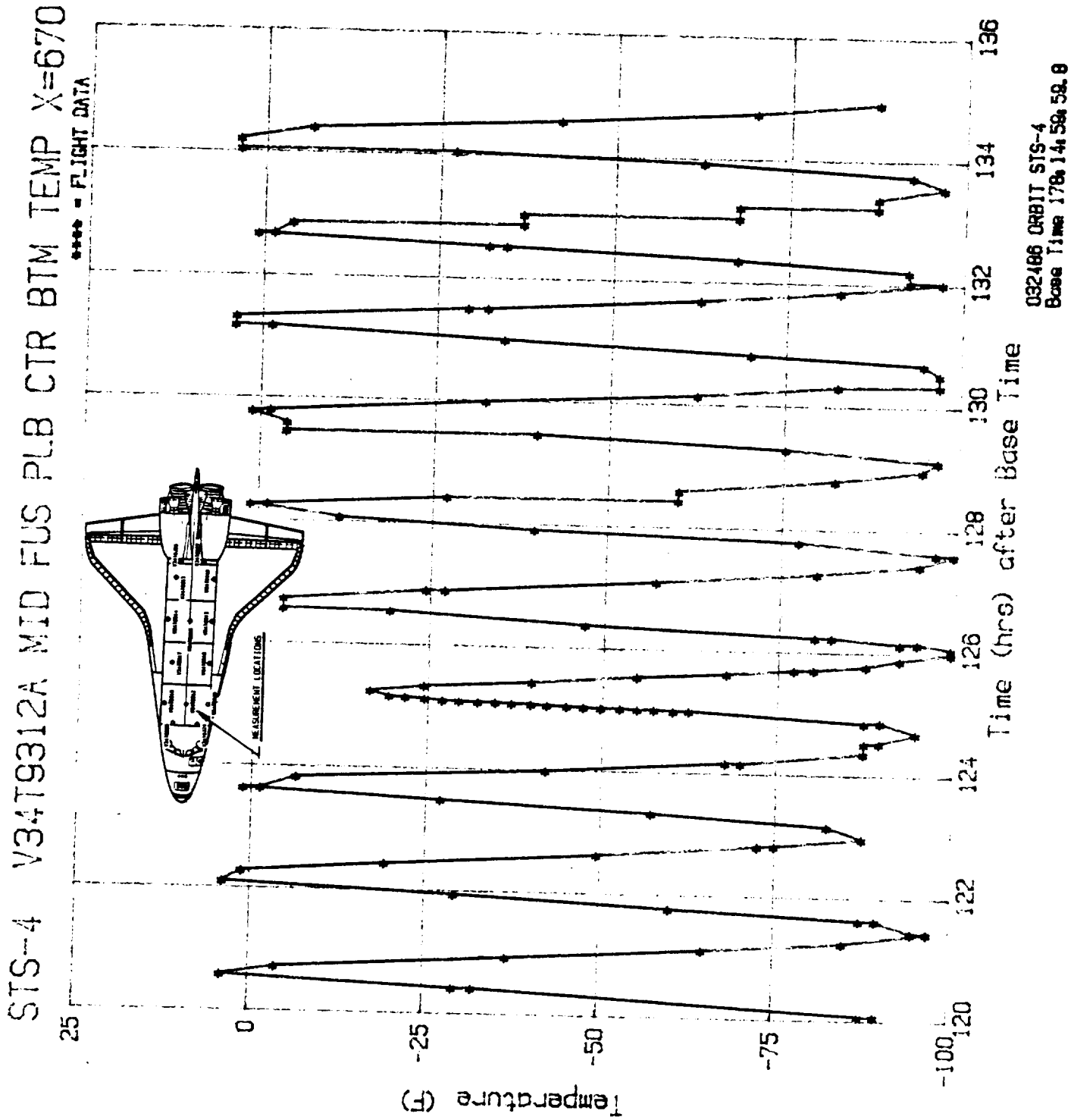

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Figure A-69

A 70
File No=f70

STS-4 V34T9313A MID FUS PLB LIN LS TEMP X=1030

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP. (F)
1	120.08	-47.34	35	125.06	-44.82	69	127.79	-52.35	103	132.05	-49.92
2	120.42	-39.72	36	125.11	-42.24	70	127.95	-47.34	104	132.05	-52.41
3	120.58	-21.77	37	125.12	-39.75	71	128.11	-37.11	105	132.05	-54.81
4	120.71	-14.27	38	125.13	-37.11	72	128.25	-21.92	106	132.23	-54.74
5	120.72	-11.72	39	125.17	-34.55	73	128.42	-21.86	107	132.40	-52.38
6	120.91	-16.76	40	125.17	-32.00	74	128.45	-29.48	108	132.54	-47.37
7	120.91	-19.34	41	125.27	-26.90	75	128.60	-29.48	109	132.54	-44.85
8	121.10	-32.00	42	125.35	-21.86	76	128.60	-32.03	110	132.70	-32.07
9	121.26	-44.79	43	125.43	-21.89	77	128.81	-42.27	111	132.87	-16.85
10	121.44	-52.38	44	125.45	-24.35	78	128.97	-49.95	112	132.87	-19.40
11	121.63	-52.32	45	125.55	-26.90	79	129.13	-54.81	113	132.88	-21.89
12	121.64	-54.74	46	125.64	-32.07	80	129.32	-54.81	114	133.03	-21.89
13	121.78	-49.89	47	125.71	-37.17	81	129.32	-52.38	115	133.05	-34.55
14	121.79	-52.29	48	125.71	-39.72	82	129.48	-34.49	116	133.05	-34.55
15	121.94	-42.24	49	125.80	-42.27	83	129.49	-47.28	117	133.23	-34.55
16	122.10	-21.86	50	125.80	-44.82	84	129.62	-34.52	118	133.23	-44.85
17	122.11	-24.35	51	125.90	-47.37	85	129.79	-19.37	119	133.42	-44.82
18	122.28	-11.75	52	125.98	-49.89	86	129.99	-21.77	120	133.58	-52.32
19	122.44	-14.27	53	126.05	-52.38	87	130.15	-32.10	121	133.77	-54.74
20	122.63	-29.48	54	126.17	-52.35	88	130.31	-44.82	122	133.95	-52.41
21	122.83	-42.24	55	126.24	-52.38	89	130.34	-52.41	123	134.07	-44.82
22	122.98	-47.37	56	126.41	-49.92	90	130.52	-52.38	124	134.24	-29.48
23	123.14	-49.89	57	126.41	-47.34	91	130.69	-54.84	125	134.24	-26.96
24	123.34	-47.37	58	126.57	-39.72	92	130.84	-54.81	126	134.41	-19.43
25	123.49	-39.72	59	126.57	-24.35	93	130.85	-52.38	127	134.58	-21.89
26	123.65	-26.93	60	126.75	-24.32	94	131.02	-47.34	128	134.58	-24.38
27	123.80	-14.27	61	126.89	-21.86	95	131.19	-34.49	129	134.75	-34.62
28	123.99	-19.34	62	127.08	-29.48	96	131.20	-32.07	130	134.95	-44.85
29	124.16	-32.07	63	127.27	-39.72	97	131.32	-16.79	131	134.95	-47.34
30	124.34	-42.27	64	127.28	-42.21	98	131.32	-16.76	132	0.00	0.00
31	124.52	-47.40	65	127.44	-47.37	99	131.49	-16.82	133	0.00	0.00
32	124.69	-52.35	66	127.44	-49.95	100	131.49	-19.34	134	0.00	0.00
33	124.87	-52.38	67	127.61	-52.35	101	131.70	-29.45	135	0.00	0.00
34	125.04	-47.34	68	127.79	-54.81	102	131.87	-42.18	136	0.00	0.00

Max Temp= -11.72 F; Min Temp= -54.84 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

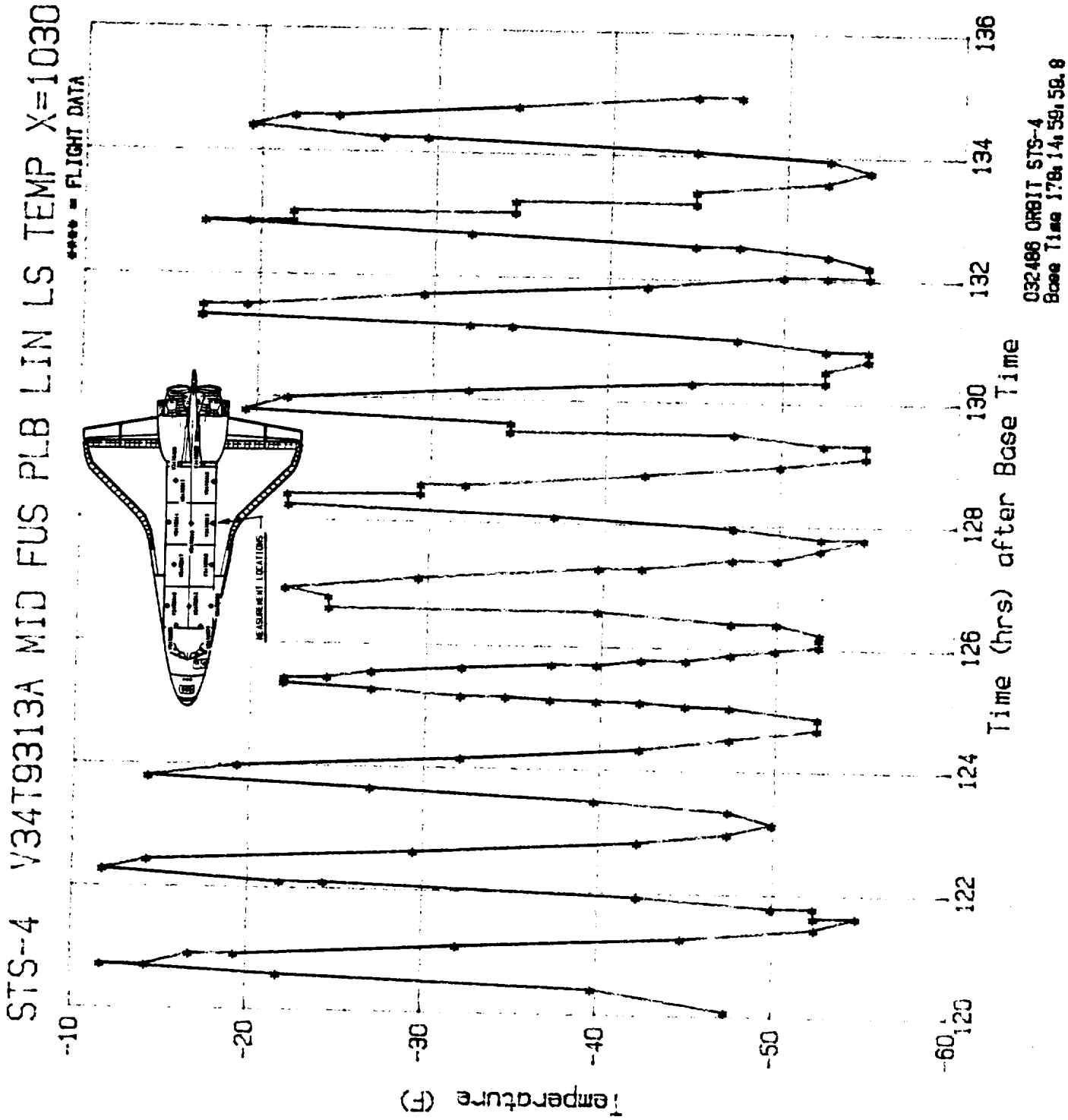
STS-4 V34T9313A MID FUS PLB LIN LS TEMP X=1030
**** = FLIGHT DATA
MEASUREMENT LOCATIONS
032486 ORBIT STS-4
Base Time 17h 14m 59s 58.8
Time (hrs) after Base Time
Temperature (F)
-10
-20
-30
-40
-50
-60
120
122
124
126
128
130
132
134
136

Figure A-70

A 71
File No=f71

STS-4 V34T9314A MID FUS PLB LIN RS TEMP X=1030

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	120.10	-52.45	35	124.88	-57.26	69	127.48	-54.88	103	131.70	-37.19
2	120.43	-42.34	36	125.05	-49.98	70	127.50	-59.75	104	131.91	-47.39
3	120.57	-24.40	37	125.06	-47.42	71	127.64	-59.78	105	132.08	-57.26
4	120.76	-16.66	38	125.09	-44.93	72	127.80	-59.82	106	132.09	-59.78
5	120.77	-14.13	39	125.12	-42.34	73	127.80	-57.29	107	132.23	-59.78
6	120.94	-19.25	40	125.15	-39.81	74	127.97	-49.98	108	132.43	-57.23
7	120.94	-21.81	41	125.17	-37.25	75	128.13	-37.19	109	132.58	-47.39
8	121.12	-34.63	42	125.21	-34.60	76	128.27	-21.81	110	132.70	-29.51
9	121.31	-44.83	43	125.22	-32.04	77	128.45	-24.33	111	132.87	-16.72
10	121.48	-52.39	44	125.30	-26.95	78	128.47	-34.63	112	132.88	-19.28
11	121.64	-54.85	45	125.37	-24.36	79	128.64	-34.60	113	132.90	-24.43
12	121.64	-52.39	46	125.44	-24.36	80	128.80	-47.45	114	133.08	-24.33
13	121.82	-52.42	47	125.45	-26.92	81	128.99	-57.32	115	133.10	-39.81
14	121.98	-42.34	48	125.54	-29.51	82	129.18	-59.78	116	133.24	-39.75
15	122.13	-24.36	49	125.55	-32.10	83	129.34	-49.98	117	133.25	-49.98
16	122.28	-11.76	50	125.65	-37.25	84	129.35	-57.29	118	133.42	-49.92
17	122.29	-16.69	51	125.74	-44.90	85	129.49	-34.63	119	133.43	-52.42
18	122.47	-16.69	52	125.83	-47.39	86	129.50	-49.98	120	133.64	-57.29
19	122.48	-32.10	53	125.85	-49.95	87	129.67	-34.54	121	133.78	-59.72
20	122.64	-32.10	54	125.92	-52.45	88	129.82	-19.28	122	133.95	-57.32
21	122.84	-44.93	55	126.00	-57.29	89	130.00	-24.36	123	134.10	-26.99
22	123.03	-52.39	56	126.07	-57.32	90	130.17	-37.22	124	134.11	-44.93
23	123.17	-54.82	57	126.08	-59.78	91	130.36	-49.98	125	134.27	-26.95
24	123.33	-50.01	58	126.18	-59.82	92	130.38	-57.26	126	134.41	-19.31
25	123.35	-52.42	59	126.27	-57.29	93	130.53	-57.29	127	134.60	-26.99
26	123.54	-42.31	60	126.43	-52.48	94	130.73	-59.78	128	134.80	-42.31
27	123.67	-26.89	61	126.58	-42.34	95	130.89	-57.29	129	134.95	-52.36
28	123.68	-24.30	62	126.58	-39.78	96	131.03	-49.92	130	0.00	0.00
29	123.82	-14.25	63	126.58	-24.36	97	131.03	-47.39	131	0.00	0.00
30	124.03	-21.84	64	126.75	-24.36	98	131.18	-16.72	132	0.00	0.00
31	124.20	-37.19	65	126.94	-24.33	99	131.19	-32.10	133	0.00	0.00
32	124.35	-47.45	66	126.94	-21.78	100	131.37	-16.66	134	0.00	0.00
33	124.54	-52.42	67	127.10	-34.60	101	131.52	-19.25	135	0.00	0.00
34	124.74	-57.23	68	127.27	-47.39	102	131.70	-34.63	136	0.00	0.00

Max Temp= -11.76 F; Min Temp= -59.82 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

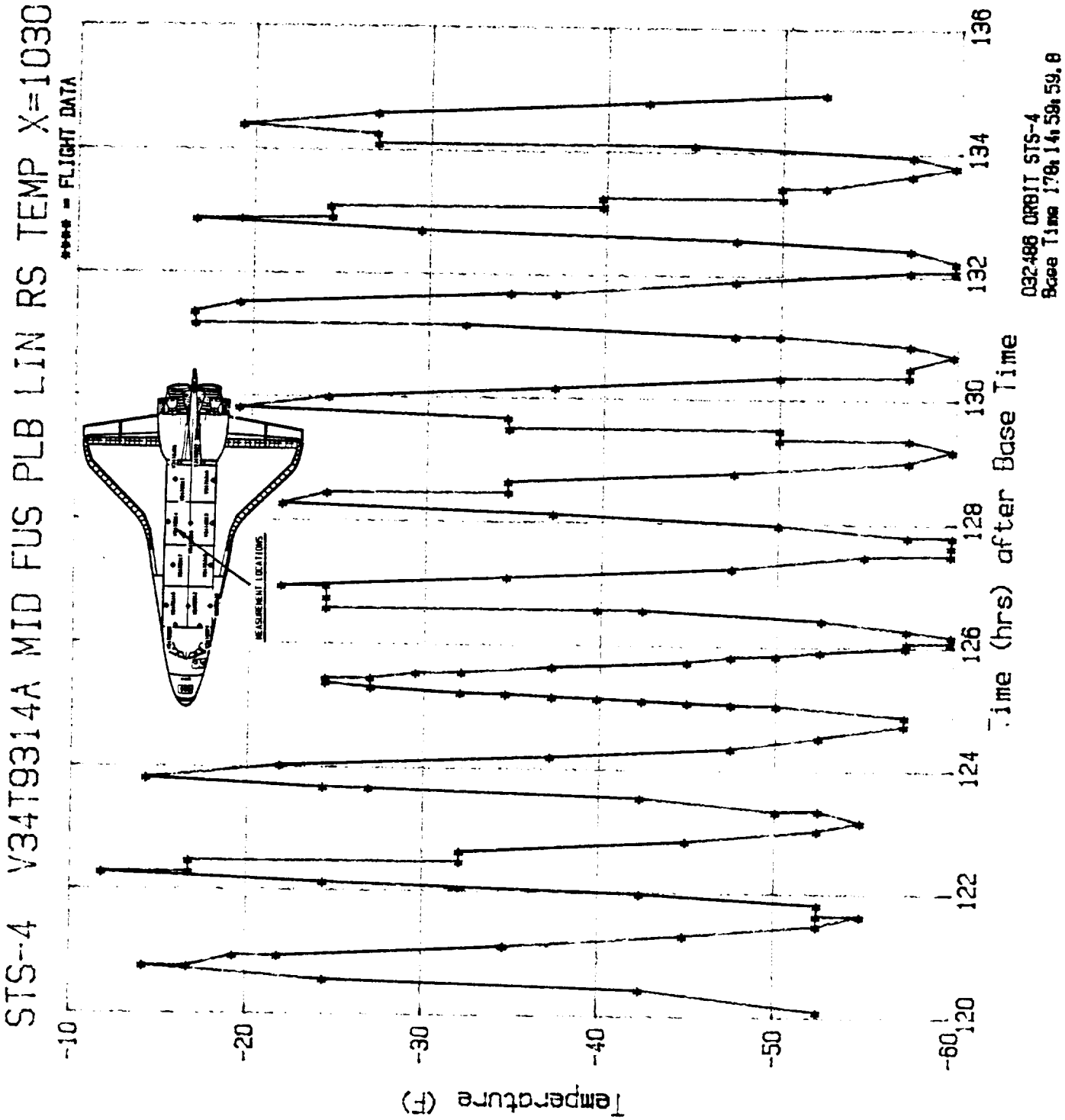
STS-4 V34T9314A MID FUS PLB LIN RS TEMP X=1030
**** - FLIGHT DATA
MEASUREMENT LOCATIONS
032488 ORBIT STS-4
Base Time 178:14:59:59.8
Time (hrs) after Base Time
Temperature (F)
-10
-20
-30
-40
-50
-60
120
122
124
126
128
130
132
134
136

Figure A-71

A 72
File No=f72

STS-4 V34T9316A MID FUS PLB INS CL yo TP X=1030

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	120.07	-47.32	35	125.13	-37.12	69	129.12	-52.35	103	133.92	-52.35
2	120.45	-39.61	36	125.14	-34.57	70	129.32	-52.35	104	134.06	-44.83
3	120.57	-24.37	37	125.17	-32.02	71	129.47	-47.32	105	134.24	-29.50
4	120.73	-16.79	38	125.27	-26.92	72	129.62	-34.51	106	134.24	-27.05
5	120.94	-21.82	39	125.37	-24.40	73	129.79	-21.95	107	134.41	-21.95
6	121.11	-32.02	40	125.46	-26.89	74	129.98	-24.43	108	134.56	-26.98
7	121.27	-42.19	41	125.53	-29.44	75	129.98	-26.95	109	134.76	-39.70
8	121.46	-47.38	42	125.63	-34.51	76	130.14	-34.57	110	134.95	-47.35
9	121.63	-47.29	43	125.63	-37.12	77	130.32	-44.83	111	0.00	0.00
10	121.78	-47.32	44	125.70	-39.67	78	130.52	-52.35	112	0.00	0.00
11	121.96	-39.70	45	125.70	-42.22	79	130.67	-54.75	113	0.00	0.00
12	122.13	-24.40	46	125.81	-44.77	80	130.68	-52.35	114	0.00	0.00
13	122.27	-14.30	47	125.90	-47.35	81	130.84	-52.38	115	0.00	0.00
14	122.44	-16.79	48	126.01	-49.83	82	131.03	-47.32	116	0.00	0.00
15	122.65	-29.47	49	126.07	-52.35	83	131.17	-34.48	117	0.00	0.00
16	122.81	-39.67	50	126.15	-52.35	84	131.17	-32.02	118	0.00	0.00
17	122.99	-47.29	51	126.23	-52.32	85	131.33	-16.85	119	0.00	0.00
18	123.18	-47.29	52	126.42	-47.32	86	131.52	-21.89	120	0.00	0.00
19	123.33	-44.74	53	126.60	-39.67	87	131.70	-34.54	121	0.00	0.00
20	123.34	-47.29	54	126.73	-24.40	88	131.86	-44.80	122	0.00	0.00
21	123.49	-39.67	55	126.90	-24.43	89	132.05	-49.90	123	0.00	0.00
22	123.67	-26.92	56	127.10	-32.02	90	132.20	-52.35	124	0.00	0.00
23	123.83	-16.82	57	127.26	-42.19	91	132.36	-52.32	125	0.00	0.00
24	124.00	-21.86	58	127.26	-44.77	92	132.54	-44.80	126	0.00	0.00
25	124.18	-34.54	59	127.44	-49.90	93	132.71	-32.05	127	0.00	0.00
26	124.37	-44.77	60	127.63	-52.35	94	132.71	-29.50	128	0.00	0.00
27	124.53	-47.32	61	127.77	-52.32	95	132.85	-19.40	129	0.00	0.00
28	124.71	-49.90	62	127.95	-47.38	96	133.02	-24.47	130	0.00	0.00
29	124.72	-52.32	63	128.12	-37.09	97	133.04	-27.01	131	0.00	0.00
30	124.88	-52.26	64	128.28	-24.43	98	133.23	-37.12	132	0.00	0.00
31	125.02	-47.32	65	128.42	-24.40	99	133.39	-47.35	133	0.00	0.00
32	125.04	-44.77	66	128.61	-34.51	100	133.40	-44.77	134	0.00	0.00
33	125.08	-42.22	67	128.81	-44.80	101	133.57	-52.32	135	0.00	0.00
34	125.08	-39.67	68	128.95	-49.86	102	133.77	-52.35	136	0.00	0.00

Max Temp= -14.30 F; Min Temp= -54.75 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

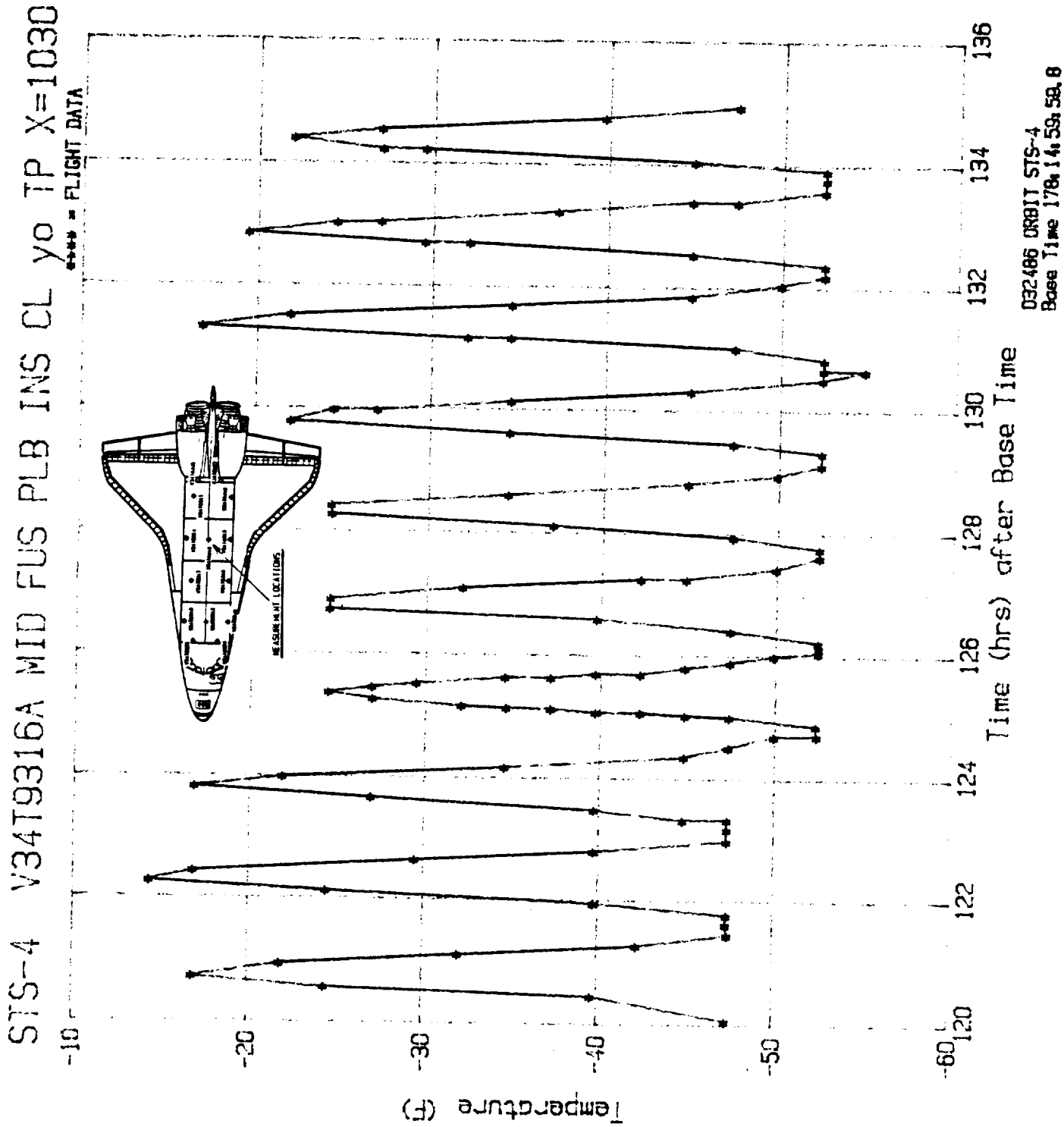
STS-4 V34T9316A MID FUS PLB INS CL yo TP X=1030
FLIGHT DATA
MEASUREMENT LOCATIONS
Temperature (F)
-10
-20
-30
-40
-50
-60
Time (hrs) after Base Time
120
122
124
126
128
130
132
134
136
032486 ORBIT STS-4
Base Time 178:14:59:58.8

Figure A-72

73
File No=f73 STS-4 V34T9317A PLB WIRE TRAY COVER X=850

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	120.09	-69.92	35	125.07	-49.74	69	128.27	-39.59	103	133.39	-75.09
2	120.43	-44.66	36	125.08	-47.03	70	128.44	-47.03	104	133.60	-80.01
3	120.58	-26.79	37	125.11	-44.76	71	128.64	-64.65	105	133.75	-77.35
4	120.78	-34.23	38	125.13	-42.06	72	128.79	-75.09	106	133.91	-67.46
5	120.94	-46.98	39	125.16	-39.54	73	128.95	-80.06	107	134.06	-47.08
6	121.11	-62.39	40	125.30	-39.54	74	129.15	-80.01	108	134.25	-29.40
7	121.29	-69.87	41	125.38	-44.62	75	129.31	-75.04	109	134.41	-39.64
8	121.46	-74.99	42	125.45	-52.20	76	129.31	-72.38	110	134.59	-54.81
9	121.62	-72.43	43	125.54	-59.73	77	129.46	-54.71	111	134.78	-67.41
10	121.80	-62.44	44	125.55	-62.39	78	129.63	-39.50	112	134.79	-69.92
11	121.97	-47.03	45	125.65	-67.41	79	129.82	-36.98	113	134.93	-75.04
12	122.13	-26.79	46	125.73	-72.48	80	129.82	-39.50	114	0.00	0.00
13	122.30	-34.33	47	125.84	-77.35	81	129.98	-49.78	115	0.00	0.00
14	122.48	-46.98	48	125.91	-80.16	82	129.98	-52.34	116	0.00	0.00
15	122.65	-62.39	49	126.00	-80.06	83	130.16	-67.46	117	0.00	0.00
16	122.82	-69.92	50	126.06	-82.57	84	130.34	-75.04	118	0.00	0.00
17	123.01	-74.99	51	126.16	-80.11	85	130.52	-80.11	119	0.00	0.00
18	123.16	-75.04	52	126.25	-75.04	86	130.69	-80.01	120	0.00	0.00
19	123.34	-62.44	53	126.43	-62.34	87	130.87	-72.38	121	0.00	0.00
20	123.51	-46.98	54	126.56	-44.71	88	131.00	-52.20	122	0.00	0.00
21	123.67	-31.91	55	126.57	-46.98	89	131.16	-34.33	123	0.00	0.00
22	123.68	-34.38	56	126.73	-37.03	90	131.35	-34.33	124	0.00	0.00
23	123.83	-36.98	57	126.74	-39.59	91	131.35	-36.98	125	0.00	0.00
24	124.02	-52.25	58	126.95	-46.98	92	131.51	-49.78	126	0.00	0.00
25	124.21	-67.41	59	127.10	-62.39	93	131.68	-67.41	127	0.00	0.00
26	124.35	-75.04	60	127.11	-64.70	94	131.89	-75.09	128	0.00	0.00
27	124.53	-75.04	61	127.26	-75.04	95	132.05	-80.01	129	0.00	0.00
28	124.54	-77.45	62	127.49	-80.01	96	132.19	-80.01	130	0.00	0.00
29	124.74	-80.11	63	127.62	-82.52	97	132.38	-69.92	131	0.00	0.00
30	124.87	-72.38	64	127.77	-75.04	98	132.55	-49.78	132	0.00	0.00
31	125.02	-59.63	65	127.95	-57.37	99	132.68	-32.01	133	0.00	0.00
32	125.02	-57.42	66	127.95	-54.76	100	132.85	-37.03	134	0.00	0.00
33	125.03	-54.76	67	128.12	-41.96	101	133.08	-52.25	135	0.00	0.00
34	125.05	-52.25	68	128.26	-36.94	102	133.24	-67.46	136	0.00	0.00

Max Temp= -26.79 F; Min Temp= -82.57 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

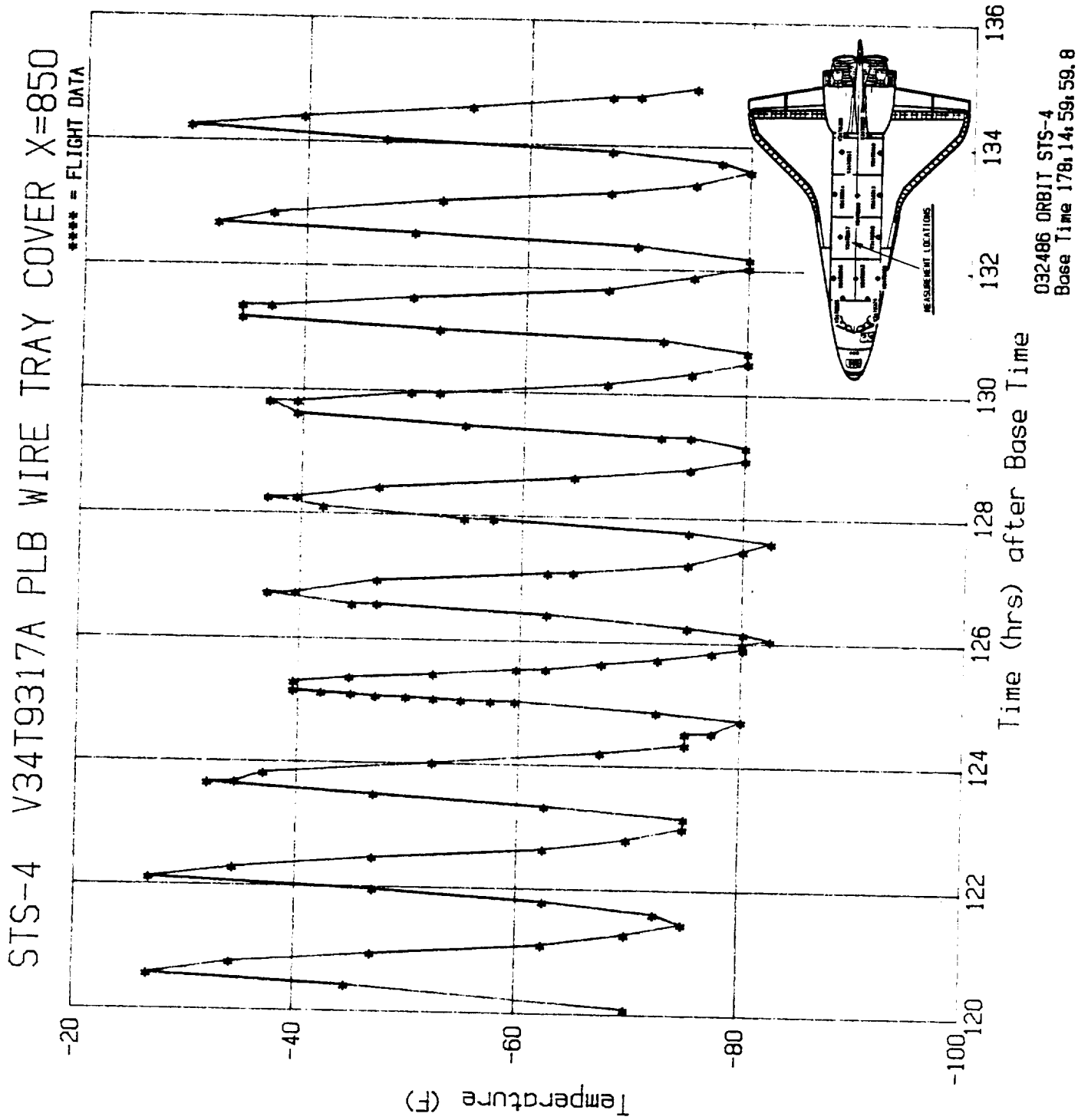
STS-4 V34T9317A PLB WIRE TRAY COVER X=850
**** = FLIGHT DATA
Temperature (F)
-20
-40
-60
-80
-100
Time (hrs) after Base Time
120
122
124
126
128
130
132
134
136
032486 ORBIT STS-4
Base Time 178:14:59:59.8

Figure A-73

A 74
File No=f74

STS-4 V34T9318A MID FUS PLB LIN LS TEMP X=850

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	120.10	-100.32	35	124.73	-102.48	69	126.72	-19.30	103	131.52	-31.83
2	120.43	-52.35	36	124.89	-87.56	70	126.92	-29.37	104	131.53	-29.21
3	120.58	-11.53	37	125.03	-67.42	71	127.10	-57.27	105	131.69	-62.27
4	120.59	-14.15	38	125.03	-64.96	72	127.27	-82.49	106	131.88	-87.64
5	120.76	-11.69	39	125.04	-62.19	73	127.46	-100.40	107	132.06	-102.48
6	120.95	-34.44	40	125.04	-59.96	74	127.65	-107.47	108	132.21	-105.01
7	121.11	-65.04	41	125.04	-57.35	75	127.77	-95.10	109	132.37	-85.26
8	121.29	-87.64	42	125.06	-52.35	76	127.95	-62.19	110	132.54	-57.35
9	121.49	-102.40	43	125.07	-54.81	77	128.13	-34.29	111	132.55	-54.74
10	121.64	-102.48	44	125.08	-49.74	78	128.27	-13.99	112	132.69	-16.76
11	121.64	-100.32	45	125.10	-47.28	79	128.43	-32.06	113	132.84	-8.99
12	121.81	-80.18	46	125.11	-44.74	80	128.45	-60.04	114	132.87	-37.05
13	121.97	-49.66	47	125.13	-42.05	81	128.62	-60.04	115	133.04	-37.05
14	122.12	-11.61	48	125.13	-39.74	82	128.80	-85.18	116	133.06	-67.50
15	122.13	-13.99	49	125.14	-36.98	83	128.97	-102.48	117	133.23	-67.34
16	122.28	-6.53	50	125.15	-34.52	84	129.15	-107.47	118	133.24	-89.94
17	122.47	-24.45	51	125.17	-32.06	85	129.33	-92.64	119	133.39	-89.87
18	122.47	-26.91	52	125.19	-29.29	86	129.45	-24.45	120	133.58	-105.17
19	122.65	-59.89	53	125.29	-24.37	87	129.47	-62.12	121	133.75	-104.94
20	122.66	-57.27	54	125.38	-26.75	88	129.63	-24.37	122	133.91	-82.49
21	122.84	-82.56	55	125.46	-36.98	89	129.82	-11.53	123	134.07	-49.66
22	123.02	-97.56	56	125.55	-52.35	90	129.98	-32.06	124	134.24	-11.84
23	123.02	-100.09	57	125.63	-67.50	91	129.99	-34.44	125	134.39	-11.84
24	123.18	-97.48	58	125.73	-80.18	92	130.16	-62.35	126	134.56	-39.82
25	123.34	-77.49	59	125.83	-87.72	93	130.35	-87.64	127	134.77	-69.88
26	123.51	-47.28	60	125.83	-89.94	94	130.37	-102.40	128	134.94	-92.71
27	123.68	-16.61	61	125.93	-97.56	95	130.52	-102.48	129	0.00	0.00
28	123.68	-13.91	62	126.01	-105.01	96	130.69	-107.47	130	0.00	0.00
29	123.83	-11.61	63	126.08	-107.40	97	130.85	-87.64	131	0.00	0.00
30	124.00	-39.67	64	126.15	-105.09	98	131.01	-59.81	132	0.00	0.00
31	124.21	-69.73	65	126.25	-97.56	99	131.01	-57.27	133	0.00	0.00
32	124.36	-92.71	66	126.44	-72.34	100	131.16	-19.37	134	0.00	0.00
33	124.37	-89.87	67	126.58	-44.59	101	131.17	-6.61	135	0.00	0.00
34	124.54	-97.63	68	126.59	-19.22	102	131.33	-6.61	136	0.00	0.00

Max Temp= -6.53 F; Min Temp=-107.47 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

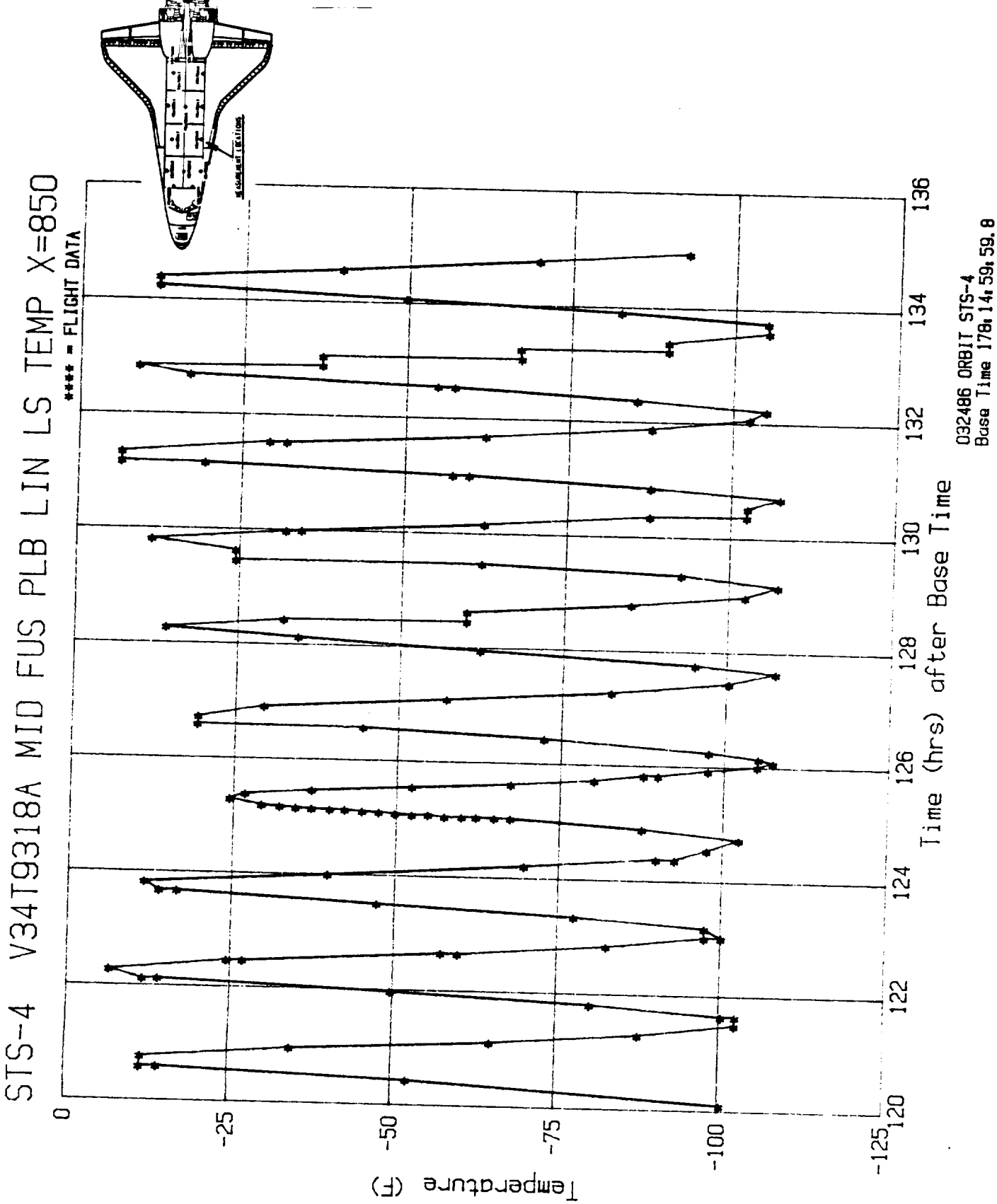
STS-4 V34T9318A MID FUS PLB LIN LS TEMP X=850
**** = FLIGHT DATA
Temperature (F)
0
-25
-50
-75
-100
-125
Time (hrs) after Base Time
120
122
124
126
128
130
132
134
136
032486 ORBIT STS-4
Base Time 178: 14: 59: 59.8

Figure A-74

A 75
File No=f75

STS-4 V34T9319A MID FUS PLB LIN RS TEMP X=670

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	120.08	-52.30	35	123.84	-29.43	69	126.93	-37.10	103	130.84	-57.33
2	120.45	-42.09	36	124.01	-37.08	70	127.10	-44.75	104	130.84	-54.82
3	120.46	-44.68	37	124.19	-44.75	71	127.26	-52.33	105	131.02	-49.91
4	120.58	-29.43	38	124.37	-49.88	72	127.45	-57.33	106	131.02	-39.62
5	120.60	-31.97	39	124.53	-52.33	73	127.45	-59.80	107	131.16	-29.48
6	120.76	-29.43	40	124.71	-54.79	74	127.64	-59.78	108	131.17	-39.62
7	120.78	-26.76	41	124.90	-54.77	75	127.64	-57.24	109	131.33	-29.52
8	120.97	-34.53	42	125.03	-52.30	76	127.78	-57.29	110	131.34	-32.07
9	121.11	-44.70	43	125.04	-49.83	77	127.94	-49.81	111	131.52	-37.10
10	121.28	-47.34	44	125.06	-47.32	78	128.11	-42.21	112	131.69	-47.39
11	121.29	-49.86	45	125.12	-44.73	79	128.27	-32.02	113	131.87	-52.38
12	121.49	-52.28	46	125.17	-42.11	80	128.27	-34.61	114	132.05	-57.29
13	121.63	-52.28	47	125.22	-39.59	81	128.42	-37.10	115	132.05	-59.80
14	121.79	-49.86	48	125.31	-37.08	82	128.62	-44.75	116	132.19	-59.78
15	121.80	-44.73	49	125.39	-37.08	83	128.62	-47.37	117	132.37	-54.82
16	121.96	-44.70	50	125.45	-39.57	84	128.62	-47.39	118	132.53	-47.42
17	121.98	-31.99	51	125.48	-42.11	85	128.80	-52.35	119	132.54	-49.93
18	122.14	-31.94	52	125.55	-44.70	86	128.95	-57.26	120	132.70	-39.67
19	122.15	-26.79	53	125.64	-47.32	87	129.13	-57.33	121	132.70	-37.10
20	122.29	-26.81	54	125.71	-49.86	88	129.14	-59.83	122	132.84	-32.12
21	122.29	-24.27	55	125.72	-52.30	89	129.32	-54.79	123	132.85	-34.66
22	122.47	-24.27	56	125.81	-52.33	90	129.32	-49.91	124	132.86	-39.67
23	122.47	-26.84	57	125.93	-54.74	91	129.33	-57.36	125	133.04	-47.42
24	122.47	-34.58	58	125.93	-57.21	92	129.46	-39.62	126	133.05	-39.67
25	122.65	-37.05	59	126.02	-57.29	93	129.47	-49.88	127	133.22	-47.42
26	122.66	-34.56	60	126.07	-57.31	94	129.63	-39.62	128	133.38	-52.38
27	122.81	-44.70	61	126.15	-57.31	95	129.81	-32.02	129	133.39	-54.82
28	123.00	-49.86	62	126.23	-57.33	96	130.00	-37.17	130	133.39	-54.84
29	123.18	-52.25	63	126.41	-52.30	97	130.01	-39.62	131	133.57	-57.24
30	123.18	-49.81	64	126.42	-49.86	98	130.14	-47.39	132	133.57	-59.83
31	123.33	-47.32	65	126.58	-44.70	99	130.34	-52.35	133	133.75	-59.83
32	123.51	-42.11	66	126.58	-42.21	100	130.36	-57.21	134	133.76	-57.16
33	123.69	-31.94	67	126.59	-34.61	101	130.52	-57.24	135	133.89	-54.82
34	123.84	-26.81	68	126.73	-34.61	102	130.67	-59.78	136	134.05	-47.42

75(Cont)

File No=f75 (Cont.) STS-4 V34T9319A MID FUS PLB LIN RS TEMP X=670

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
137	134.06	-37.15	171	0.00	0.00	205	0.00	0.00	239	0.00	0.00
138	134.25	-37.13	172	0.00	0.00	206	0.00	0.00	240	0.00	0.00
139	134.40	-34.68	173	0.00	0.00	207	0.00	0.00	241	0.00	0.00
140	134.56	-42.26	174	0.00	0.00	208	0.00	0.00	242	0.00	0.00
141	134.76	-47.42	175	0.00	0.00	209	0.00	0.00	243	0.00	0.00
142	134.77	-49.88	176	0.00	0.00	210	0.00	0.00	244	0.00	0.00
143	134.93	-54.84	177	0.00	0.00	211	0.00	0.00	245	0.00	0.00
144	0.00	0.00	178	0.00	0.00	212	0.00	0.00	246	0.00	0.00
145	0.00	0.00	179	0.00	0.00	213	0.00	0.00	247	0.00	0.00
146	0.00	0.00	180	0.00	0.00	214	0.00	0.00	248	0.00	0.00
147	0.00	0.00	181	0.00	0.00	215	0.00	0.00	249	0.00	0.00
148	0.00	0.00	182	0.00	0.00	216	0.00	0.00	250	0.00	0.00
149	0.00	0.00	183	0.00	0.00	217	0.00	0.00	251	0.00	0.00
150	0.00	0.00	184	0.00	0.00	218	0.00	0.00	252	0.00	0.00
151	0.00	0.00	185	0.00	0.00	219	0.00	0.00	253	0.00	0.00
152	0.00	0.00	186	0.00	0.00	220	0.00	0.00	254	0.00	0.00
153	0.00	0.00	187	0.00	0.00	221	0.00	0.00	255	0.00	0.00
154	0.00	0.00	188	0.00	0.00	222	0.00	0.00	256	0.00	0.00
155	0.00	0.00	189	0.00	0.00	223	0.00	0.00	257	0.00	0.00
156	0.00	0.00	190	0.00	0.00	224	0.00	0.00	258	0.00	0.00
157	0.00	0.00	191	0.00	0.00	225	0.00	0.00	259	0.00	0.00
158	0.00	0.00	192	0.00	0.00	226	0.00	0.00	260	0.00	0.00
159	0.00	0.00	193	0.00	0.00	227	0.00	0.00	261	0.00	0.00
160	0.00	0.00	194	0.00	0.00	228	0.00	0.00	262	0.00	0.00
161	0.00	0.00	195	0.00	0.00	229	0.00	0.00	263	0.00	0.00
162	0.00	0.00	196	0.00	0.00	230	0.00	0.00	264	0.00	0.00
163	0.00	0.00	197	0.00	0.00	231	0.00	0.00	265	0.00	0.00
164	0.00	0.00	198	0.00	0.00	232	0.00	0.00	266	0.00	0.00
165	0.00	0.00	199	0.00	0.00	233	0.00	0.00	267	0.00	0.00
166	0.00	0.00	200	0.00	0.00	234	0.00	0.00	268	0.00	0.00
167	0.00	0.00	201	0.00	0.00	235	0.00	0.00	269	0.00	0.00
168	0.00	0.00	202	0.00	0.00	236	0.00	0.00	270	0.00	0.00
169	0.00	0.00	203	0.00	0.00	237	0.00	0.00	271	0.00	0.00
170	0.00	0.00	204	0.00	0.00	238	0.00	0.00	272	0.00	0.00

Max Temp= -24.27 F; Min Temp= -59.83 F.

Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

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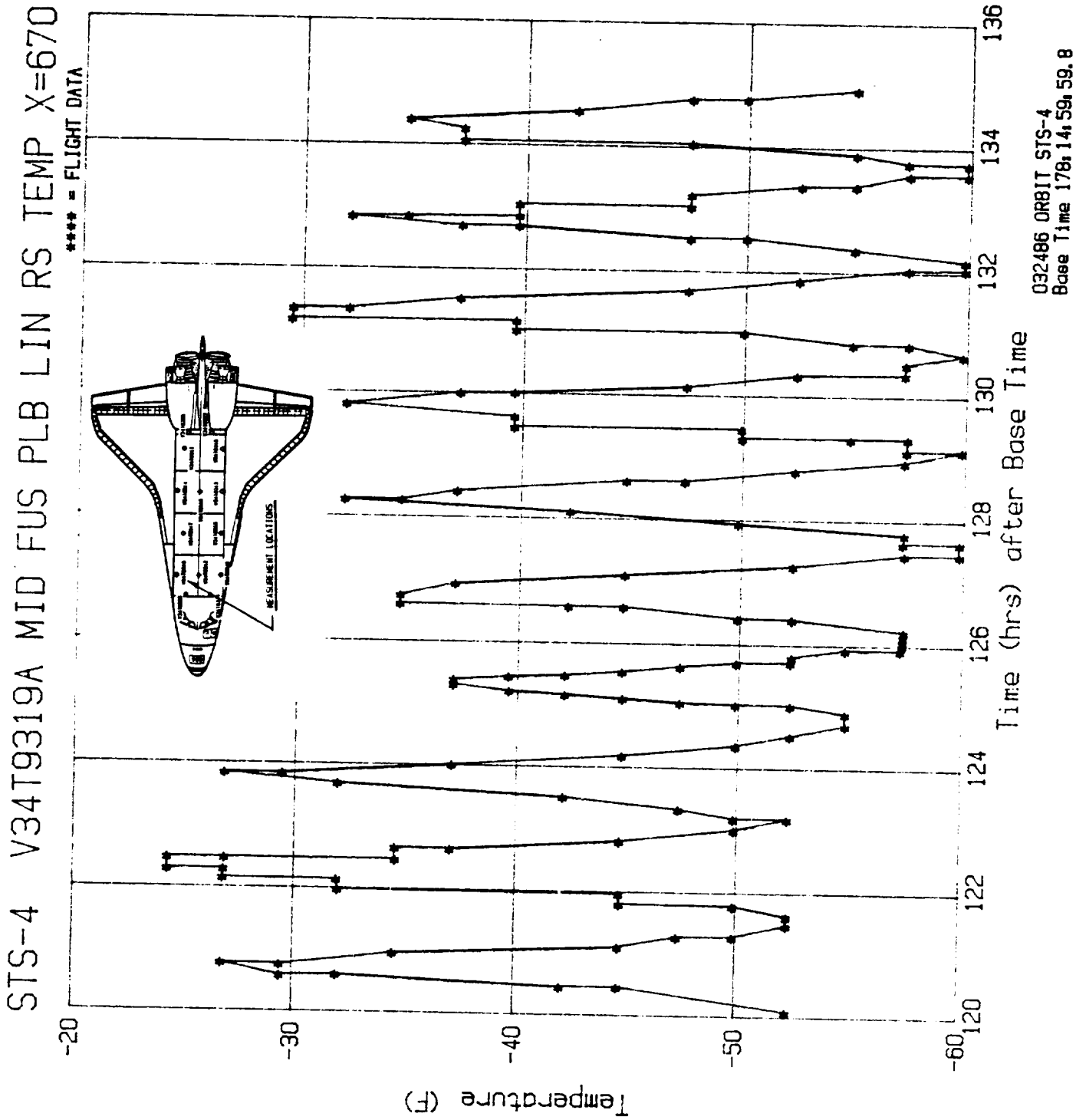

Figure A-75

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A 76
File No=f76

STS-4 V34T9320A MID FUS PLB LIN LS TEMP X=670

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	120.08	-92.59	35	125.02	-59.63	69	127.93	-44.78	103	132.03	-95.32
2	120.40	-37.09	36	125.02	-57.49	70	128.09	-21.65	104	132.05	-102.56
3	120.57	-8.87	37	125.03	-54.68	71	128.26	-16.70	105	132.21	-95.17
4	120.73	-19.29	38	125.05	-52.32	72	128.44	-42.19	106	132.22	-97.54
5	120.93	-47.14	39	125.05	-49.80	73	128.45	-39.61	107	132.39	-67.17
6	121.12	-75.00	40	125.06	-47.14	74	128.46	-67.32	108	132.53	-39.61
7	121.28	-92.51	41	125.07	-44.85	75	128.62	-67.32	109	132.68	-11.82
8	121.44	-102.49	42	125.09	-42.12	76	128.79	-87.71	110	132.89	-19.36
9	121.63	-92.44	43	125.10	-39.61	77	128.97	-102.64	111	132.90	-47.07
10	121.77	-62.29	44	125.11	-36.95	78	129.13	-99.83	112	133.05	-47.07
11	121.93	-34.21	45	125.13	-34.29	79	129.30	-75.07	113	133.06	-74.93
12	122.10	-11.60	46	125.16	-32.07	80	129.47	-44.70	114	133.23	-74.93
13	122.28	-14.04	47	125.25	-31.92	81	129.47	-16.70	115	133.24	-92.44
14	122.43	-26.75	48	125.34	-39.68	82	129.61	-16.63	116	133.42	-92.44
15	122.62	-52.24	49	125.44	-49.80	83	129.78	-14.04	117	133.60	-104.85
16	122.63	-54.53	50	125.55	-62.29	84	129.78	-16.85	118	133.76	-92.59
17	122.83	-79.88	51	125.64	-75.00	85	129.99	-42.27	119	133.94	-64.80
18	122.98	-92.51	52	125.72	-85.12	86	130.16	-69.98	120	134.08	-34.36
19	123.14	-82.76	53	125.79	-92.66	87	130.32	-90.30	121	134.09	-9.01
20	123.33	-57.27	54	125.90	-99.98	88	130.33	-102.56	122	134.24	-9.01
21	123.47	-31.92	55	126.00	-104.85	89	130.52	-104.93	123	134.44	-21.72
22	123.63	-11.60	56	126.08	-104.85	90	130.53	-102.49	124	134.59	-49.80
23	123.64	-13.97	57	126.17	-97.54	91	130.70	-99.90	125	134.77	-77.51
24	123.82	-21.50	58	126.25	-82.68	92	130.70	-97.54	126	134.95	-95.25
25	123.82	-24.31	59	126.38	-52.24	93	130.83	-72.34	127	0.00	0.00
26	124.01	-52.17	60	126.55	-31.92	94	130.84	-70.05	128	0.00	0.00
27	124.17	-75.00	61	126.57	-21.65	95	131.00	-42.19	129	0.00	0.00
28	124.17	-77.59	62	126.74	-21.58	96	131.00	-39.53	130	0.00	0.00
29	124.36	-92.59	63	126.90	-39.61	97	131.18	-11.67	131	0.00	0.00
30	124.52	-92.51	64	127.08	-64.95	98	131.18	-14.04	132	0.00	0.00
31	124.53	-92.51	65	127.29	-87.56	99	131.33	-14.04	133	0.00	0.00
32	124.69	-92.51	66	127.45	-102.64	100	131.50	-42.12	134	0.00	0.00
33	124.85	-82.68	67	127.62	-102.64	101	131.70	-69.90	135	0.00	0.00
34	125.01	-62.29	68	127.79	-80.02	102	131.88	-90.30	136	0.00	0.00

Max Temp= -8.87 F; Min Temp=-104.93 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

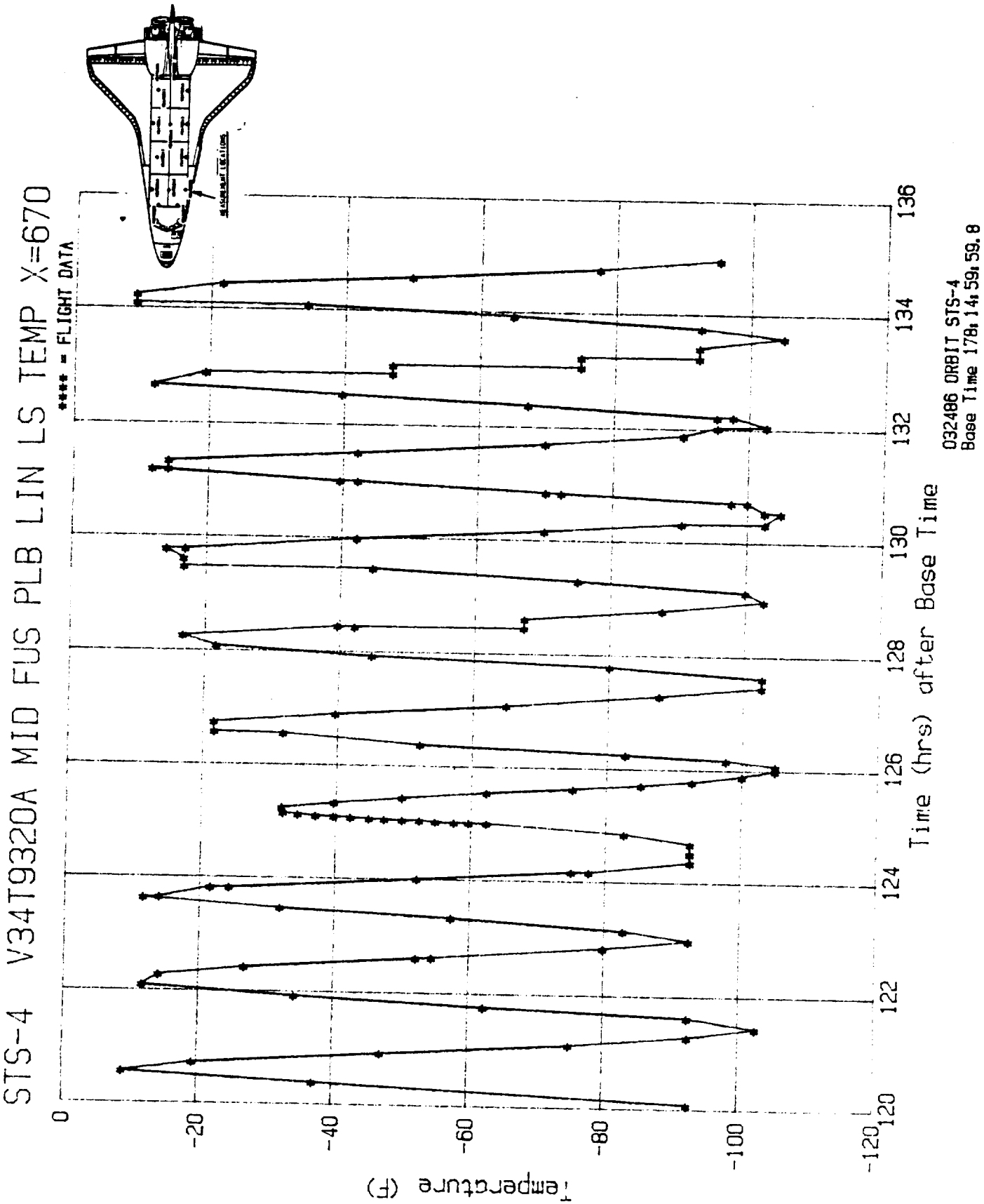
STS-4 V34T9320A MID FUS PLB LIN LS TEMP X=670
**** = FLIGHT DATA
032486 ORBIT STS-4
Base Time 178:14:59.8
Time (hrs) after Base Time
Temperature (F)
0
-20
-40
-60
-80
-100
-120
120
122
124
126
128
130
132
134
136

Figure A-76

A 77
File No=f77

STS-4 V34T9324A MID FUS FWD BHD INS TEMP Y=-47

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	120.06	-47.14	35	125.28	-49.80	69	127.63	-92.41	103	130.67	-59.66
2	120.43	-21.87	36	125.38	-54.68	70	127.77	-67.44	104	130.68	-59.80
3	120.74	-39.66	37	125.48	-64.73	71	127.77	-67.34	105	130.80	-44.68
4	120.96	-59.70	38	125.55	-75.12	72	127.78	-44.63	106	130.82	-42.02
5	121.11	-75.02	39	125.62	-82.61	73	127.90	-44.63	107	130.97	-41.97
6	121.11	-77.39	40	125.69	-82.61	74	127.91	-29.31	108	130.98	-26.80
7	121.29	-87.54	41	125.70	-87.54	75	127.91	-29.36	109	131.14	-26.90
8	121.48	-74.98	42	125.72	-89.90	76	128.08	-26.85	110	131.32	-37.04
9	121.61	-44.73	43	125.81	-89.90	77	128.08	-26.90	111	131.49	-37.00
10	121.76	-34.38	44	125.81	-92.46	78	128.26	-26.85	112	131.52	-59.66
11	121.94	-21.82	45	125.83	-94.73	79	128.26	-36.95	113	131.66	-59.61
12	122.81	-57.39	46	125.93	-94.78	80	128.40	-37.04	114	131.68	-80.05
13	122.98	-54.73	47	126.00	-94.73	81	128.42	-59.70	115	131.69	-82.56
14	123.16	-41.92	48	126.01	-87.54	82	128.64	-80.05	116	131.86	-82.56
15	123.31	-29.36	49	126.05	-87.54	83	128.80	-80.05	117	131.89	-94.68
16	123.46	-21.87	50	126.06	-69.95	84	128.82	-92.41	118	132.06	-94.53
17	123.65	-24.38	51	126.13	-69.95	85	128.96	-92.46	119	132.06	-87.49
18	123.66	-26.85	52	126.14	-54.78	86	129.10	-92.51	120	132.19	-57.39
19	123.83	-39.61	53	126.21	-54.73	87	129.11	-62.41	121	132.33	-57.34
20	124.02	-59.80	54	126.21	-44.73	88	129.30	-62.32	122	132.34	-44.73
21	124.20	-77.49	55	126.39	-44.73	89	129.30	-44.73	123	132.50	-44.68
22	124.21	-80.15	56	126.39	-34.38	90	129.44	-31.97	124	132.50	-29.41
23	124.37	-85.02	57	126.56	-26.90	91	129.44	-29.31	125	132.51	-27.04
24	124.51	-57.39	58	126.56	-34.38	92	129.61	-24.38	126	132.68	-26.95
25	124.71	-75.07	59	126.72	-36.95	93	129.79	-24.43	127	132.69	-26.90
26	124.88	-67.39	60	126.72	-36.95	94	129.80	-39.56	128	132.70	-29.31
27	125.00	-47.04	61	126.89	-37.00	95	129.97	-39.56	129	132.84	-42.02
28	125.01	-49.80	62	126.93	-57.34	96	129.98	-62.41	130	132.84	-44.63
29	125.03	-44.83	63	127.11	-57.34	97	130.13	-62.46	131	133.06	-64.78
30	125.06	-41.92	64	127.12	-77.39	98	130.14	-82.66	132	133.06	-67.44
31	125.09	-39.56	65	127.25	-77.44	99	130.33	-82.66	133	133.24	-84.98
32	125.16	-42.07	66	127.27	-92.41	100	130.35	-94.68	134	133.40	-97.14
33	125.16	-44.78	67	127.46	-92.51	101	130.52	-89.85	135	133.57	-97.09
34	125.27	-47.09	68	127.47	-94.68	102	130.65	-89.85	136	133.58	-84.93

A 77(Cont)
File No=f77 (Cont.) STS-4 V34T9324A MID FUS FWD BHD INS TEMP Y=-47

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
137	133.59	-84.93	171	0.00	0.00	205	0.00	0.00	239	0.00	0.00
138	133.74	-57.34	172	0.00	0.00	206	0.00	0.00	240	0.00	0.00
139	133.75	-54.68	173	0.00	0.00	207	0.00	0.00	241	0.00	0.00
140	133.89	-54.73	174	0.00	0.00	208	0.00	0.00	242	0.00	0.00
141	133.89	-39.61	175	0.00	0.00	209	0.00	0.00	243	0.00	0.00
142	134.01	-39.66	176	0.00	0.00	210	0.00	0.00	244	0.00	0.00
143	134.01	-27.00	177	0.00	0.00	211	0.00	0.00	245	0.00	0.00
144	134.22	-26.95	178	0.00	0.00	212	0.00	0.00	246	0.00	0.00
145	134.22	-29.36	179	0.00	0.00	213	0.00	0.00	247	0.00	0.00
146	134.40	-29.31	180	0.00	0.00	214	0.00	0.00	248	0.00	0.00
147	134.41	-47.00	181	0.00	0.00	215	0.00	0.00	249	0.00	0.00
148	134.55	-47.00	182	0.00	0.00	216	0.00	0.00	250	0.00	0.00
149	134.57	-67.39	183	0.00	0.00	217	0.00	0.00	251	0.00	0.00
150	134.75	-67.39	184	0.00	0.00	218	0.00	0.00	252	0.00	0.00
151	134.77	-87.39	185	0.00	0.00	219	0.00	0.00	253	0.00	0.00
152	134.95	-87.44	186	0.00	0.00	220	0.00	0.00	254	0.00	0.00
153	134.96	-97.14	187	0.00	0.00	221	0.00	0.00	255	0.00	0.00
154	0.00	0.00	188	0.00	0.00	222	0.00	0.00	256	0.00	0.00
155	0.00	0.00	189	0.00	0.00	223	0.00	0.00	257	0.00	0.00
156	0.00	0.00	190	0.00	0.00	224	0.00	0.00	258	0.00	0.00
157	0.00	0.00	191	0.00	0.00	225	0.00	0.00	259	0.00	0.00
158	0.00	0.00	192	0.00	0.00	226	0.00	0.00	260	0.00	0.00
159	0.00	0.00	193	0.00	0.00	227	0.00	0.00	261	0.00	0.00
160	0.00	0.00	194	0.00	0.00	228	0.00	0.00	262	0.00	0.00
161	0.00	0.00	195	0.00	0.00	229	0.00	0.00	263	0.00	0.00
162	0.00	0.00	196	0.00	0.00	230	0.00	0.00	264	0.00	0.00
163	0.00	0.00	197	0.00	0.00	231	0.00	0.00	265	0.00	0.00
164	0.00	0.00	198	0.00	0.00	232	0.00	0.00	266	0.00	0.00
165	0.00	0.00	199	0.00	0.00	233	0.00	0.00	267	0.00	0.00
166	0.00	0.00	200	0.00	0.00	234	0.00	0.00	268	0.00	0.00
167	0.00	0.00	201	0.00	0.00	235	0.00	0.00	269	0.00	0.00
168	0.00	0.00	202	0.00	0.00	236	0.00	0.00	270	0.00	0.00
169	0.00	0.00	203	0.00	0.00	237	0.00	0.00	271	0.00	0.00
170	0.00	0.00	204	0.00	0.00	238	0.00	0.00	272	0.00	0.00

Max Temp= -21.82 F; Min Temp= -97.14 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

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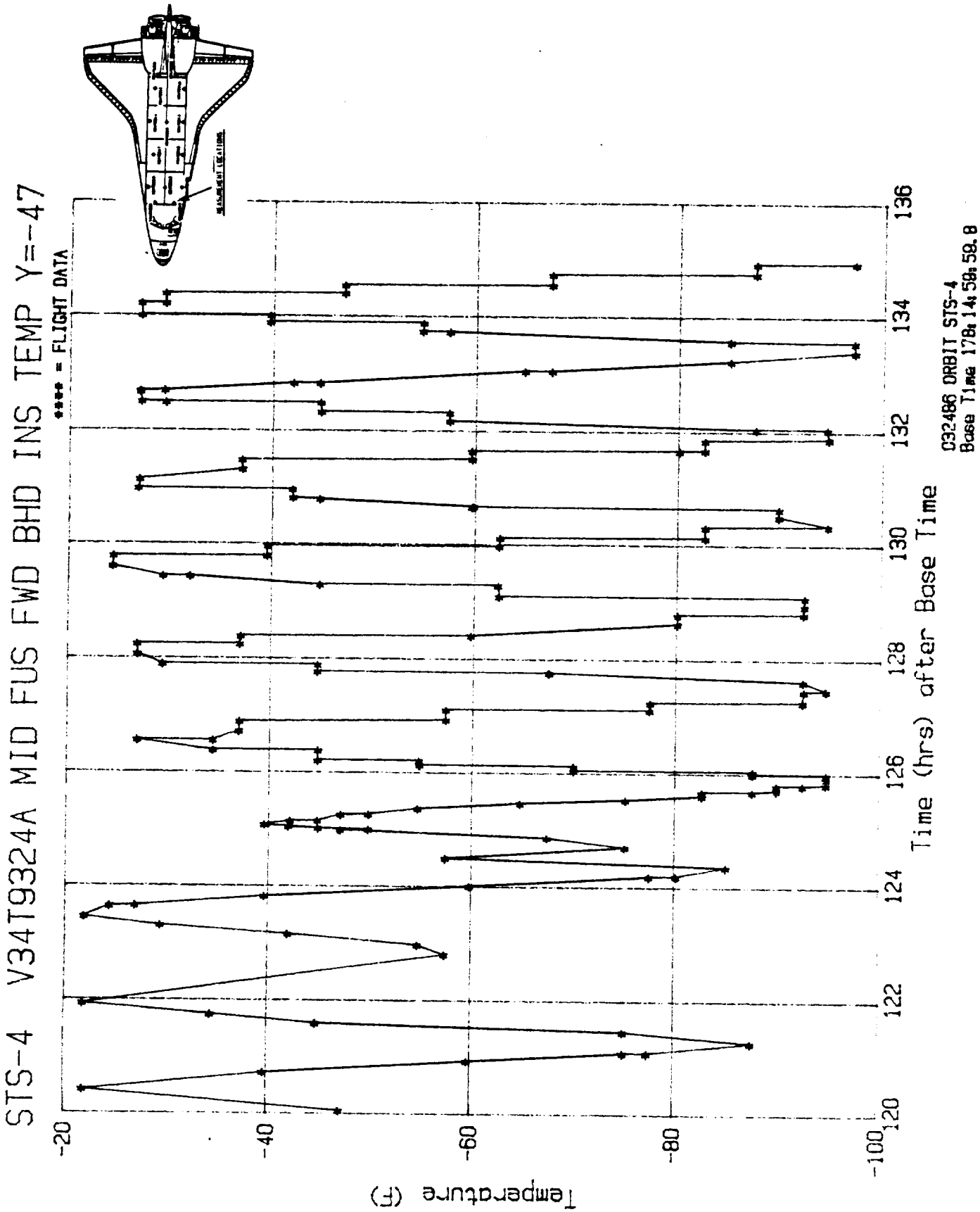

Figure A-77

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A 78
File No=f78

STS-4 V34T9325A MID FUS FWD BHD INS TEMP Y=37.5

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	120.11	-52.34	35	124.38	-100.25	69	127.48	-105.05	103	130.84	-42.24
2	120.44	-24.63	36	124.57	-67.73	70	127.63	-72.17	104	130.86	-62.32
3	120.62	-24.63	37	124.57	-69.70	71	127.79	-44.83	105	131.02	-42.24
4	120.78	-49.51	38	124.72	-92.36	72	127.80	-72.17	106	131.03	-26.97
5	120.78	-52.46	39	124.88	-85.47	73	127.96	-44.83	107	131.21	-26.60
6	120.97	-72.29	40	124.90	-82.51	74	127.96	-26.60	108	131.36	-44.95
7	120.97	-75.25	41	125.06	-57.39	75	128.11	-26.72	109	131.52	-44.95
8	121.17	-92.36	42	125.07	-54.93	76	128.30	-26.72	110	131.53	-67.73
9	121.32	-105.05	43	125.07	-52.22	77	128.30	-45.07	111	131.72	-67.61
10	121.45	-52.34	44	125.10	-49.38	78	128.47	-45.07	112	131.73	-92.61
11	121.47	-87.81	45	125.14	-47.29	79	128.49	-67.61	113	131.90	-92.49
12	121.64	-39.41	46	125.20	-49.75	80	128.65	-90.39	114	131.90	-107.64
13	121.66	-52.34	47	125.21	-52.46	81	128.81	-90.27	115	132.05	-107.88
14	121.81	-39.29	48	125.30	-59.73	82	128.82	-107.64	116	132.05	-95.44
15	121.81	-24.51	49	125.39	-67.49	83	128.82	-105.42	117	132.22	-59.73
16	121.96	-24.51	50	125.48	-80.30	84	129.01	-105.05	118	132.41	-59.48
17	121.96	-24.51	51	125.58	-88.18	85	129.01	-102.59	119	132.41	-44.95
18	122.13	31.90	52	125.68	-97.91	86	129.15	-102.34	120	132.54	-26.97
19	122.14	29.31	53	125.76	-105.05	87	129.15	-67.61	121	132.55	-44.95
20	122.14	29.31	54	125.82	-110.22	88	129.31	-44.83	122	132.70	-26.85
21	122.14	41.87	55	125.91	-110.47	89	129.32	-65.02	123	132.71	-29.56
22	122.32	42.12	56	126.01	-97.91	90	129.49	-29.31	124	132.91	-29.43
23	122.47	-3.82	57	126.08	-77.59	91	129.66	-24.51	125	132.92	-49.38
24	122.64	-3.69	58	126.19	-59.48	92	129.81	-24.51	126	133.08	-75.12
25	122.87	-57.27	59	126.27	-44.70	93	129.82	-45.20	127	133.24	-95.32
26	123.01	-57.39	60	126.28	-47.17	94	130.02	-44.83	128	133.43	-107.51
27	123.16	-44.95	61	126.42	-36.95	95	130.03	-69.83	129	133.44	-110.34
28	123.35	-32.02	62	126.59	-26.97	96	130.19	-69.83	130	133.60	-110.34
29	123.52	-24.38	63	126.60	-44.95	97	130.20	-92.61	131	133.61	-92.49
30	123.67	-32.27	64	126.78	-44.83	98	130.33	-107.64	132	133.75	-57.51
31	123.67	-34.98	65	126.94	-67.49	99	130.34	-92.61	133	133.76	-92.61
32	123.86	-49.63	66	127.11	-88.05	100	130.54	-100.37	134	133.92	-37.19
33	124.06	-75.12	67	127.30	-87.81	101	130.70	-62.56	135	133.94	-57.39
34	124.21	-95.32	68	127.32	-104.93	102	130.71	-100.25	136	134.08	-37.19

A 78(Cont)

File No=78 (Cont.) STS-4 V34T9325A MID FUS FWD BHD INS TEMP Y=37.5

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
137	134.08	-24.63	171	0.00	0.00	205	0.00	0.00	239	0.00	0.00
138	134.26	-32.39	172	0.00	0.00	206	0.00	0.00	240	0.00	0.00
139	134.43	-32.39	173	0.00	0.00	207	0.00	0.00	241	0.00	0.00
140	134.45	-55.17	174	0.00	0.00	208	0.00	0.00	242	0.00	0.00
141	134.62	-55.05	175	0.00	0.00	209	0.00	0.00	243	0.00	0.00
142	134.62	-77.83	176	0.00	0.00	210	0.00	0.00	244	0.00	0.00
143	134.76	-77.83	177	0.00	0.00	211	0.00	0.00	245	0.00	0.00
144	134.79	-97.91	178	0.00	0.00	212	0.00	0.00	246	0.00	0.00
145	134.97	-98.15	179	0.00	0.00	213	0.00	0.00	247	0.00	0.00
146	134.97	-107.64	180	0.00	0.00	214	0.00	0.00	248	0.00	0.00
147	134.97	-110.34	181	0.00	0.00	215	0.00	0.00	249	0.00	0.00
148	0.00	0.00	182	0.00	0.00	216	0.00	0.00	250	0.00	0.00
149	0.00	0.00	183	0.00	0.00	217	0.00	0.00	251	0.00	0.00
150	0.00	0.00	184	0.00	0.00	218	0.00	0.00	252	0.00	0.00
151	0.00	0.00	185	0.00	0.00	219	0.00	0.00	253	0.00	0.00
152	0.00	0.00	186	0.00	0.00	220	0.00	0.00	254	0.00	0.00
153	0.00	0.00	187	0.00	0.00	221	0.00	0.00	255	0.00	0.00
154	0.00	0.00	188	0.00	0.00	222	0.00	0.00	256	0.00	0.00
155	0.00	0.00	189	0.00	0.00	223	0.00	0.00	257	0.00	0.00
156	0.00	0.00	190	0.00	0.00	224	0.00	0.00	258	0.00	0.00
157	0.00	0.00	191	0.00	0.00	225	0.00	0.00	259	0.00	0.00
158	0.00	0.00	192	0.00	0.00	226	0.00	0.00	260	0.00	0.00
159	0.00	0.00	193	0.00	0.00	227	0.00	0.00	261	0.00	0.00
160	0.00	0.00	194	0.00	0.00	228	0.00	0.00	262	0.00	0.00
161	0.00	0.00	195	0.00	0.00	229	0.00	0.00	263	0.00	0.00
162	0.00	0.00	196	0.00	0.00	230	0.00	0.00	264	0.00	0.00
163	0.00	0.00	197	0.00	0.00	231	0.00	0.00	265	0.00	0.00
164	0.00	0.00	198	0.00	0.00	232	0.00	0.00	266	0.00	0.00
165	0.00	0.00	199	0.00	0.00	233	0.00	0.00	267	0.00	0.00
166	0.00	0.00	200	0.00	0.00	234	0.00	0.00	268	0.00	0.00
167	0.00	0.00	201	0.00	0.00	235	0.00	0.00	269	0.00	0.00
168	0.00	0.00	202	0.00	0.00	236	0.00	0.00	270	0.00	0.00
169	0.00	0.00	203	0.00	0.00	237	0.00	0.00	271	0.00	0.00
170	0.00	0.00	204	0.00	0.00	238	0.00	0.00	272	0.00	0.00

Max Temp= 42.12 F; Min Temp=-110.47 F.

Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

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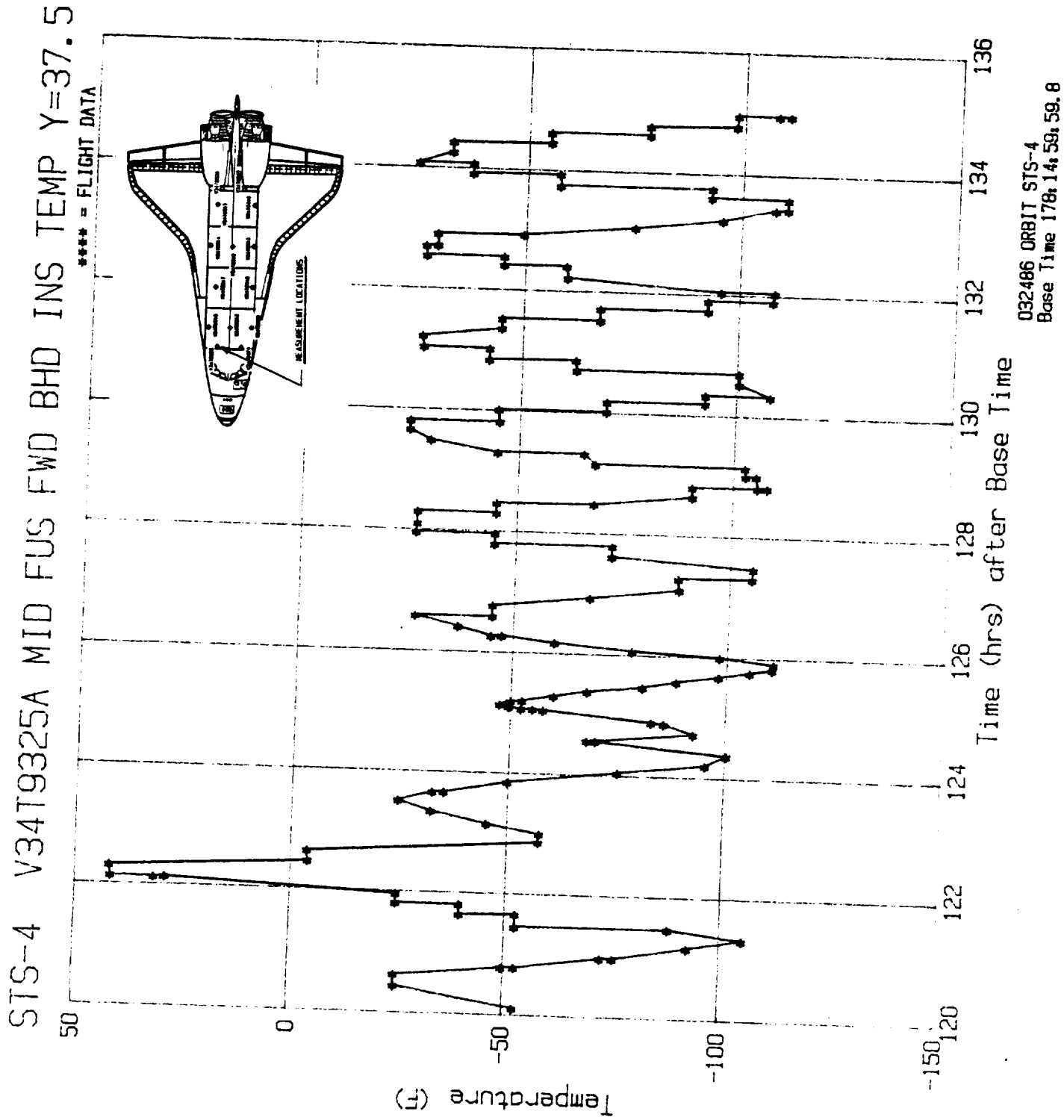

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Figure A-78

A 79
File No=f79

STS-4 V34T9326A MID FUS AFT BHD INS TEMP Y=-50

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	120.10	-77.46	35	124.74	-82.38	69	126.26	-84.92	103	130.69	-89.77
2	120.44	-49.77	36	124.89	-70.00	70	126.43	-72.54	104	130.70	-87.46
3	120.58	-6.69	37	125.01	-55.00	71	126.57	-39.69	105	130.87	-84.69
4	120.58	-3.92	38	125.03	-52.38	72	126.58	-42.31	106	131.02	-62.62
5	120.75	6.08	39	125.03	-49.85	73	126.73	-6.62	107	131.03	-60.23
6	120.76	8.69	40	125.04	-47.54	74	126.90	-1.62	108	131.17	-16.77
7	120.94	-3.85	41	125.05	-44.85	75	127.10	-32.31	109	131.34	11.23
8	121.10	-37.00	42	125.06	-39.92	76	127.26	-62.54	110	131.52	-3.92
9	121.10	-39.85	43	125.07	-42.23	77	127.27	-65.15	111	131.68	-42.31
10	121.29	-62.62	44	125.07	-37.15	78	127.46	-80.08	112	131.69	-44.69
11	121.29	-64.92	45	125.08	-35.00	79	127.64	-87.54	113	131.87	-70.08
12	121.48	-77.38	46	125.10	-32.23	80	127.78	-87.54	114	131.89	-72.69
13	121.63	-82.38	47	125.10	-29.46	81	127.78	-84.77	115	132.06	-82.46
14	121.63	-80.00	48	125.11	-27.31	82	127.96	-67.92	116	132.19	-87.46
15	121.80	-77.38	49	125.13	-24.38	83	128.13	-32.15	117	132.39	-84.85
16	121.80	-75.23	50	125.13	-22.08	84	128.26	-1.54	118	132.39	-82.54
17	121.98	-47.46	51	125.15	-19.54	85	128.26	-3.85	119	132.58	-57.31
18	122.13	-4.00	52	125.15	-16.85	86	128.42	-6.62	120	132.69	-11.77
19	122.28	13.62	53	125.17	-14.31	87	128.63	-39.77	121	132.85	11.23
20	122.46	3.69	54	125.17	-11.69	88	128.64	-37.00	122	132.85	8.54
21	122.46	0.85	55	125.29	-1.46	89	128.80	-67.69	123	133.05	-11.85
22	122.65	-39.85	56	125.36	3.85	90	128.96	-82.46	124	133.23	-47.46
23	122.83	-65.00	57	125.37	1.00	91	129.15	-87.54	125	133.39	-75.38
24	123.01	-77.38	58	125.43	-6.62	92	129.32	-87.54	126	133.59	-84.85
25	123.18	-80.15	59	125.52	-21.92	93	129.48	-65.00	127	133.76	-87.38
26	123.33	-72.69	60	125.53	-24.38	94	129.62	-21.92	128	133.91	-82.46
27	123.50	-44.77	61	125.62	-42.31	95	129.82	1.08	129	134.08	-52.46
28	123.68	-3.85	62	125.72	-57.38	96	129.98	-9.08	130	134.26	-4.00
29	123.82	13.77	63	125.82	-67.77	97	130.15	-42.31	131	134.39	5.85
30	124.01	-9.08	64	125.82	-70.00	98	130.15	-44.92	132	134.57	-14.46
31	124.20	-47.46	65	125.92	-77.31	99	130.35	-69.92	133	134.78	-52.38
32	124.36	-70.00	66	126.01	-82.46	100	130.36	-72.69	134	134.94	-75.23
33	124.53	-80.15	67	126.06	-84.92	101	130.52	-82.54	135	134.95	-77.46
34	124.54	-77.38	68	126.15	-84.92	102	130.54	-84.77	136	0.00	0.00

Max Temp= 13.77 F; Min Temp= -89.77 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

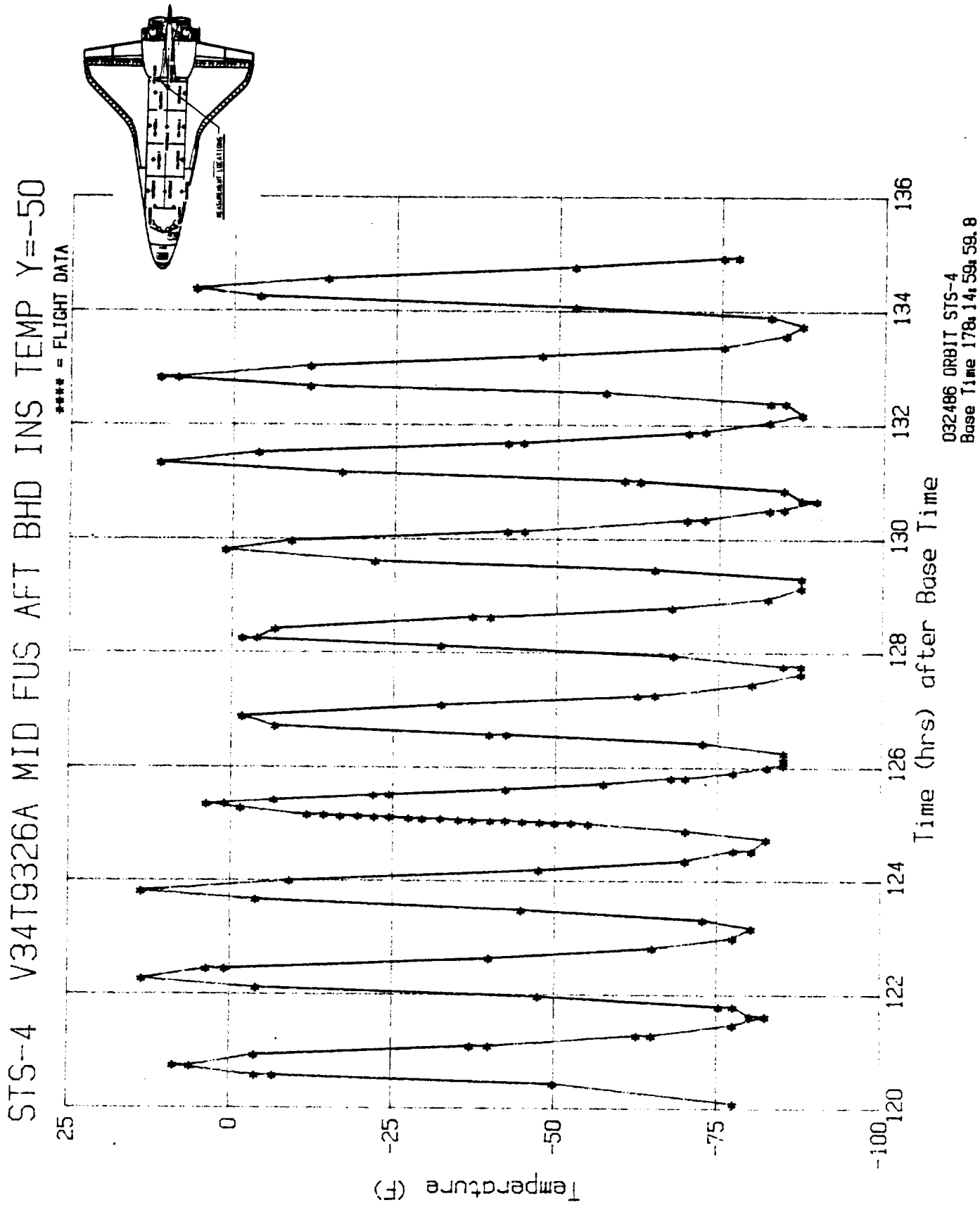
STS-4 V34T9326A MID FUS AFT BHD INS TEMP Y=-50
**** = FLIGHT DATA
032486 ORBIT STS-4
Base Time 178, 14, 59, 8
Time (hrs) after Base Time
Temperature (F)
25
0
-25
-50
-75
-100
120
122
124
126
128
130
132
134
136

Figure A-79

A 80
File No=f80 STS-4 V34T9327A MID FUS AFT BHD INS TEMP Y=50

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	120.09	-98.71	35	124.86	-88.38	69	125.89	-88.50	103	130.00	7.44
2	120.42	-70.54	36	125.04	-70.42	70	125.98	-96.25	104	130.18	-30.44
3	120.42	-67.96	37	125.04	-67.96	71	126.07	-98.71	105	130.31	-76.20
4	120.57	-4.61	38	125.04	-65.87	72	126.07	-100.68	106	130.52	-96.25
5	120.58	-7.44	39	125.04	-63.04	73	126.18	-103.38	107	130.70	-103.51
6	120.74	17.77	40	125.05	-60.46	74	126.25	-103.26	108	130.86	-100.80
7	120.91	12.61	41	125.06	-55.78	75	126.40	-90.71	109	131.02	-75.95
8	121.10	-32.78	42	125.07	-57.87	76	126.58	-47.79	110	131.20	-12.61
9	121.26	-75.71	43	125.07	-53.08	77	126.74	2.28	111	131.34	27.86
10	121.43	-93.42	44	125.07	-50.74	78	126.74	5.23	112	131.50	17.77
11	121.62	-101.05	45	125.07	-47.91	79	126.90	17.77	113	131.71	-30.44
12	121.79	-96.00	46	125.09	-45.69	80	126.91	15.44	114	131.89	-75.83
13	121.93	-65.74	47	125.09	-43.36	81	127.07	-15.07	115	132.03	-96.37
14	122.11	-2.40	48	125.09	-40.65	82	127.28	-65.62	116	132.22	-103.38
15	122.11	0.06	49	125.10	-38.07	83	127.44	-90.59	117	132.40	-99.71
16	122.28	25.77	50	125.11	-35.24	84	127.44	-93.30	118	132.55	-7[illegible].66
17	122.43	15.44	51	125.11	-33.15	85	127.61	-100.92	119	132.70	-4.86
18	122.43	12.73	52	125.12	-30.44	86	127.80	-103.26	120	132.87	27.86
19	122.62	-37.82	53	125.12	-27.61	87	127.94	-86.04	121	133.04	7.44
20	122.84	-78.29	54	125.13	-25.28	88	127.95	-83.33	122	133.22	-40.90
21	122.99	-93.30	55	125.14	-23.06	89	128.10	-37.82	123	133.23	-37.95
22	123.15	-98.59	56	125.14	-20.36	90	128.10	-35.36	124	133.43	-78.41
23	123.34	-93.42	57	125.15	-17.53	91	128.26	9.90	125	133.44	-80.75
24	123.51	-60.33	58	125.16	-14.94	92	128.43	12.48	126	133.58	-96.13
25	123.64	-2.28	59	125.17	-12.85	93	128.44	9.78	127	133.58	-98.59
26	123.64	0.06	60	125.17	-10.15	94	128.59	-22.94	128	133.75	-103.26
27	123.82	32.66	61	125.17	-7.20	95	128.79	-70.54	129	133.93	-98.71
28	123.83	30.20	62	125.26	10.02	96	128.98	-93.54	130	134.08	-63.28
29	124.00	10.02	63	125.33	19.99	97	129.14	-103.51	131	134.23	2.03
30	124.17	-45.57	64	125.42	10.02	98	129.32	-103.38	132	134.23	4.98
31	124.35	-83.58	65	125.52	-4.74	99	129.50	-80.50	133	134.41	22.08
32	124.36	-80.75	66	125.64	-30.44	100	129.63	-22.82	134	134.59	4.98
33	124.54	-96.25	67	125.71	-55.66	101	129.79	17.65	135	134.75	-45.57
34	124.70	-100.68	68	125.80	-75.83	102	129.79	15.07	136	134.94	-83.95

Max Temp= 32.66 F; Min Temp=-103.51 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

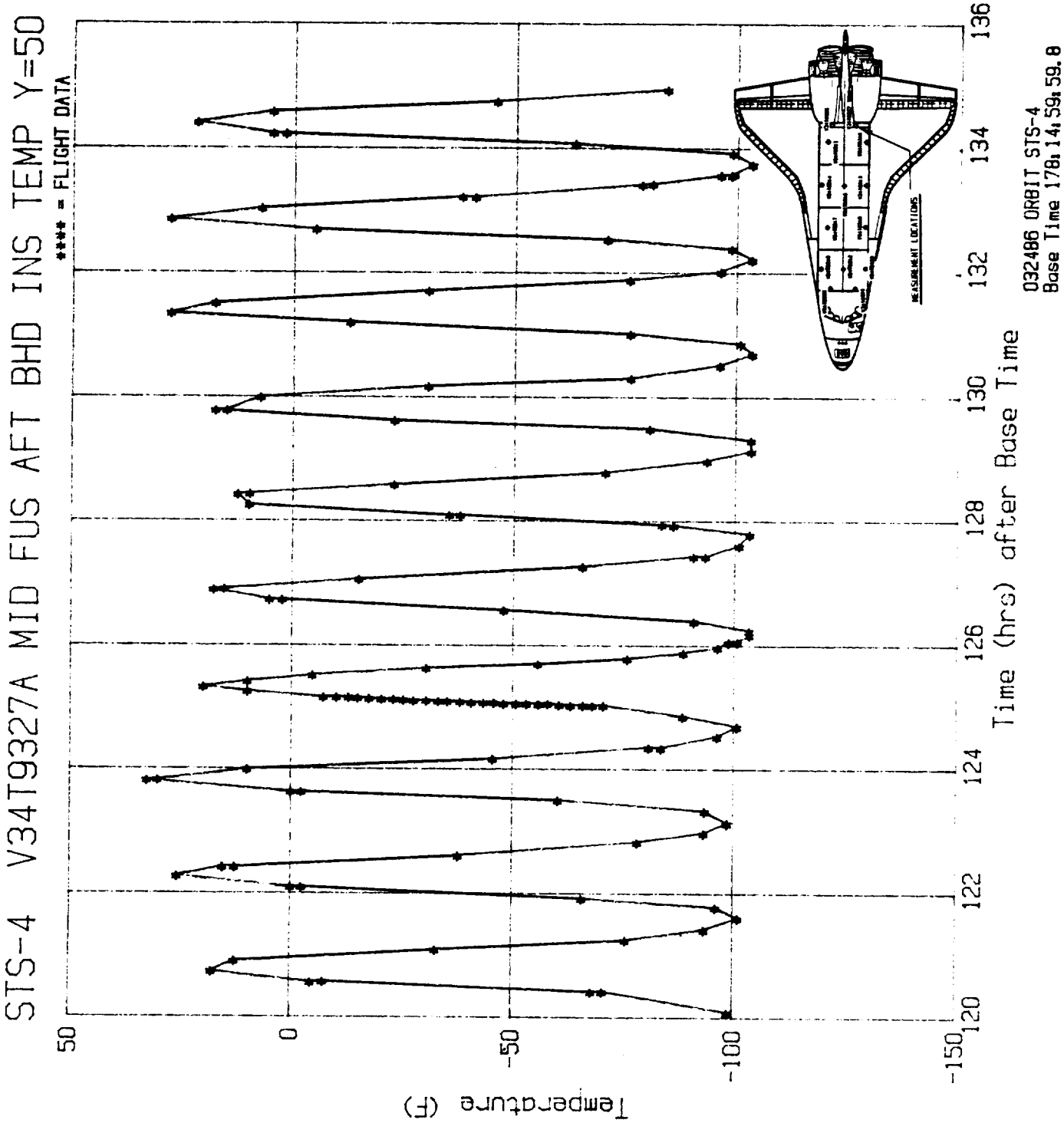
STS-4 V34T9327A MID FUS AFT BHD INS TEMP Y=50
**** = FLIGHT DATA
Temperature (F)
50
0
-50
-100
-150
Time (hrs) after Base Time
120
122
124
126
128
130
132
134
136
MEASUREMENT LOCATIONS
032486 ORBIT STS-4
Base Time 178: 14: 59: 59. 8

Figure A-80

A102
File No=f102 STS-1 V34T9312 PLB BOT LINER TEMP X=670

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	0.00	70.20	35	6.25	46.81	69	14.53	18.07	103	23.90	-75.47
2	0.18	73.09	36	6.51	115.87	70	14.55	9.71	104	24.12	129.46
3	0.50	75.10	37	6.58	45.61	71	15.24	67.30	105	24.16	65.91
4	0.58	74.88	38	6.63	49.85	72	15.26	71.93	106	24.19	-19.05
5	1.29	82.45	39	7.22	0.25	73	15.90	13.39	107	24.41	202.08
6	1.50	100.27	40	7.29	-5.67	74	16.82	74.65	108	24.43	173.61
7	1.61	100.25	41	7.32	-10.36	75	16.88	68.81	109	25.39	-77.50
8	1.63	100.27	42	7.63	38.70	76	17.38	14.84	110	25.62	-64.80
9	1.72	89.77	43	7.64	31.88	77	17.43	8.94	111	25.70	162.65
10	2.03	54.38	44	7.67	28.99	78	17.85	46.36	112	25.75	-77.70
11	2.48	5.59	45	8.83	-19.80	79	18.48	74.88	113	25.80	128.79
12	2.79	-44.53	46	8.90	-32.66	80	18.49	71.48	114	26.39	-42.75
13	2.87	-46.98	47	9.23	18.07	81	19.32	51.71	115	26.73	4.93
14	2.90	18.51	48	9.44	25.87	82	19.41	33.57	116	26.80	0.12
15	2.93	-55.18	49	10.02	20.74	83	20.06	39.01	117	26.88	12.17
16	2.98	-7.68	50	10.09	17.52	84	20.12	45.61	118	26.92	25.20
17	3.06	68.81	51	10.64	71.48	85	20.80	8.94	119	27.15	40.57
18	3.08	76.88	52	10.64	48.96	86	20.88	43.69	120	27.42	40.57
19	3.09	86.87	53	10.65	57.05	87	20.98	59.50	121	28.26	22.97
20	4.06	23.42	54	11.07	279.76	88	21.07	48.96	122	28.44	23.19
21	4.28	33.13	55	11.12	206.76	89	21.67	-75.72	123	28.76	30.77
22	4.30	41.24	56	11.12	285.33	90	21.73	-68.78	124	29.79	-44.75
23	4.46	58.77	57	11.65	-39.85	91	22.21	141.95	125	29.79	-54.96
24	4.46	53.87	58	11.70	-35.33	92	22.34	268.16	126	30.24	30.23
25	4.51	59.28	59	12.20	124.11	93	22.37	234.71	127	30.34	-4.43
26	4.65	89.77	60	12.21	95.37	94	22.38	176.68	128	30.37	17.74
27	5.01	56.83	61	12.23	107.83	95	22.61	79.73	129	30.42	7.48
28	5.02	71.93	62	12.62	38.70	96	22.64	74.65	130	30.53	-61.91
29	5.85	-48.76	63	12.68	28.99	97	22.71	68.58	131	30.71	-55.40
30	5.86	-58.08	64	13.21	31.21	98	22.92	237.39	132	31.29	-74.80
31	5.97	-15.49	65	13.31	12.83	99	23.01	277.15	133	31.34	22.97
32	5.99	-32.43	66	13.89	72.65	100	23.30	33.89	134	31.37	41.15
33	6.07	3.02	67	13.94	64.57	101	23.35	52.97	135	31.77	38.48
34	6.09	17.62	68	14.34	18.07	102	23.88	-80.62	136	31.80	127.68

A102(Cont)
File No=f102(Cont.) STS-1 V34T9312 PLB BOT LINER TEMP X=670

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
137	31.90	78.89	171	44.74	21.09	205	51.25	15.40	239	0.00	0.00
138	31.93	66.58	172	44.76	46.14	206	51.46	14.73	240	0.00	0.00
139	33.24	215.67	173	44.87	42.49	207	52.49	19.85	241	0.00	0.00
140	33.25	177.40	174	45.03	48.96	208	52.70	19.85	242	0.00	0.00
141	33.37	118.54	175	45.05	56.61	209	52.99	20.07	243	0.00	0.00
142	33.46	195.24	176	45.08	66.58	210	54.19	27.78	244	0.00	0.00
143	33.51	76.88	177	45.74	-42.97	211	54.28	55.94	245	0.00	0.00
144	34.03	20.07	178	45.85	-32.43	212	54.32	38.92	246	0.00	0.00
145	34.12	15.06	179	46.45	-24.85	213	55.39	69.98	247	0.00	0.00
146	34.72	80.00	180	46.48	35.67	214	56.26	72.43	248	0.00	0.00
147	34.81	95.56	181	46.66	76.88	215	0.00	0.00	249	0.00	0.00
148	35.11	28.76	182	46.74	49.18	216	0.00	0.00	250	0.00	0.00
149	35.26	41.38	183	46.80	62.12	217	0.00	0.00	251	0.00	0.00
150	35.56	-78.61	184	46.92	58.61	218	0.00	0.00	252	0.00	0.00
151	36.27	69.75	185	46.95	78.17	219	0.00	0.00	253	0.00	0.00
152	36.36	59.44	186	47.01	67.02	220	0.00	0.00	254	0.00	0.00
153	36.80	18.07	187	47.27	18.07	221	0.00	0.00	255	0.00	0.00
154	36.84	23.54	188	47.90	223.34	222	0.00	0.00	256	0.00	0.00
155	38.25	13.61	189	47.93	-5.23	223	0.00	0.00	257	0.00	0.00
156	38.29	17.96	190	48.03	274.03	224	0.00	0.00	258	0.00	0.00
157	38.51	20.52	191	48.22	155.10	225	0.00	0.00	259	0.00	0.00
158	39.94	8.94	192	48.32	83.12	226	0.00	0.00	260	0.00	0.00
159	39.96	12.39	193	48.33	115.86	227	0.00	0.00	261	0.00	0.00
160	40.07	20.30	194	48.56	-47.43	228	0.00	0.00	262	0.00	0.00
161	40.14	15.29	195	48.67	-32.66	229	0.00	0.00	263	0.00	0.00
162	41.49	13.84	196	48.90	-76.16	230	0.00	0.00	264	0.00	0.00
163	41.86	43.47	197	49.01	-80.38	231	0.00	0.00	265	0.00	0.00
164	43.15	15.84	198	49.46	-12.81	232	0.00	0.00	266	0.00	0.00
165	43.44	35.80	199	49.54	30.45	233	0.00	0.00	267	0.00	0.00
166	43.50	46.36	200	49.59	10.94	234	0.00	0.00	268	0.00	0.00
167	43.55	53.42	201	50.51	38.34	235	0.00	0.00	269	0.00	0.00
168	44.13	33.66	202	50.57	46.06	236	0.00	0.00	270	0.00	0.00
169	44.26	45.84	203	50.91	15.62	237	0.00	0.00	271	0.00	0.00
170	44.66	14.06	204	51.12	15.40	238	0.00	0.00	272	0.00	0.00

Max Temp= 285.33 F; Min Temp= -80.62 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

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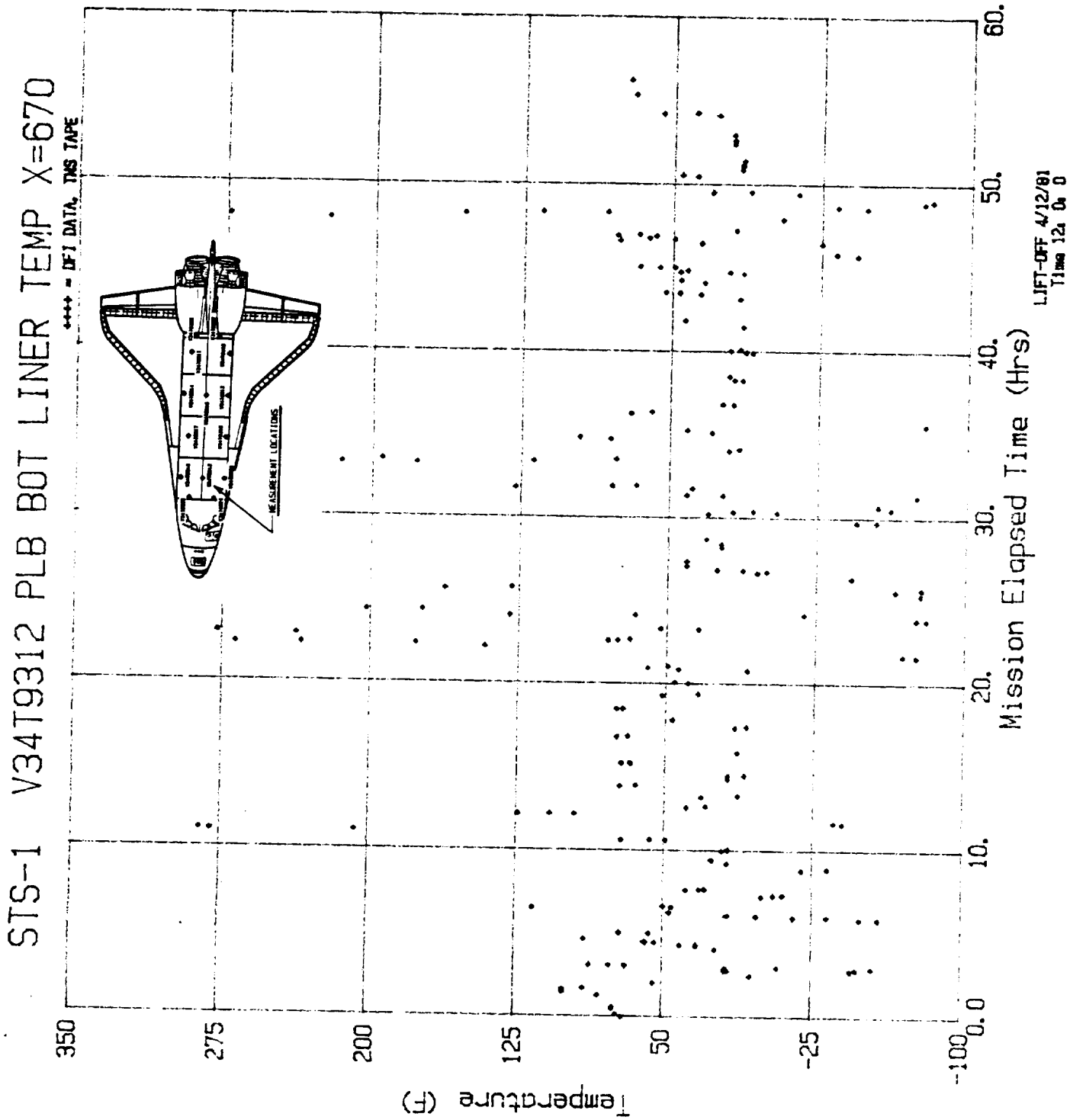

Figure A-102

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A116
File No=f116

STS-2 V34T9312 PLB BOT LINER TEMP X=670

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	0.00	56.36	35	13.16	36.31	69	32.17	40.72	103	39.17	51.07
2	0.22	64.19	36	14.40	20.66	70	33.37	18.13	104	39.27	41.05
3	0.39	66.61	37	14.44	28.37	71	33.42	46.01	105	39.34	40.94
4	0.59	66.72	38	14.79	38.40	72	33.67	46.12	106	39.61	25.73
5	1.08	66.61	39	16.02	28.26	73	34.18	28.36	107	39.73	15.92
6	1.58	76.75	40	16.19	41.16	74	34.25	-35.54	108	40.03	20.66
7	2.07	82.37	41	17.57	30.91	75	34.30	-100.00	109	40.20	35.98
8	2.42	-6.89	42	17.77	41.27	76	34.66	-100.00	110	40.47	53.61
9	2.83	-50.08	43	17.87	53.72	77	35.10	-100.00	111	40.67	56.36
10	3.40	-17.36	44	19.20	31.13	78	35.24	28.69	112	40.94	48.54
11	3.80	-20.00	45	19.30	38.62	79	35.30	18.13	113	41.41	15.92
12	4.24	18.46	46	19.50	48.65	80	35.31	-100.00	114	41.78	38.29
13	4.58	48.76	47	20.66	38.29	81	35.31	-35.99	115	42.20	51.18
14	5.13	33.66	48	20.80	43.91	82	35.41	23.49	116	42.72	20.66
15	5.57	25.95	49	22.18	51.07	83	35.62	-24.52	117	43.16	25.84
16	5.97	61.87	50	22.55	41.05	84	35.86	-20.00	118	43.55	51.18
17	6.41	54.05	51	22.73	51.29	85	36.17	8.02	119	43.95	40.94
18	6.63	33.77	52	23.88	48.43	86	36.25	-3.26	120	44.34	41.05
19	6.78	33.66	53	24.01	56.14	87	36.34	-24.71	121	44.91	15.81
20	7.79	33.77	54	24.18	53.72	88	36.37	-31.01	122	45.31	43.69
21	7.80	23.83	55	25.44	48.32	89	36.47	-43.39	123	45.58	53.94
22	7.83	26.81	56	25.76	48.54	90	36.63	-52.40	124	45.67	43.69
23	7.99	13.39	57	25.86	53.94	91	36.78	-72.34	125	45.95	25.84
24	8.18	-2.15	58	26.97	48.43	92	36.88	-77.41	126	46.19	-30.03
25	8.36	-12.07	59	27.14	46.01	93	37.15	-44.68	127	46.44	8.21
26	8.58	0.61	60	27.36	45.90	94	37.22	-14.49	128	46.46	7.88
27	8.64	-4.26	61	28.49	40.94	95	37.44	40.72	129	46.51	43.80
28	9.76	20.77	62	28.67	53.72	96	37.57	43.58	130	46.81	51.18
29	9.96	18.46	63	28.84	46.01	97	37.89	40.94	131	47.01	54.16
30	11.26	-34.55	64	30.29	38.18	98	37.98	35.87	132	47.33	43.80
31	11.49	-47.33	65	30.39	51.07	99	38.38	18.13	133	47.52	20.77
32	11.63	0.28	66	30.61	53.61	100	38.58	15.92	134	47.74	99.12
33	12.87	26.06	67	31.80	33.22	101	38.77	38.29	135	47.75	16.03
34	12.97	31.13	68	32.04	51.18	102	38.97	48.43	136	47.76	70.37

A116(Cont)
File No=f116(Cont.) STS-2 V34T9312 PLB BOT LINER TEMP X=670

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
137	47.89	26.06	171	55.46	64.08	205	0.00	0.00	239	0.00	0.00
138	47.89	34.00	172	55.49	66.72	206	0.00	0.00	240	0.00	0.00
139	47.93	26.81	173	58.32	66.72	207	0.00	0.00	241	0.00	0.00
140	48.26	16.03	174	58.32	64.30	208	0.00	0.00	242	0.00	0.00
141	48.61	71.90	175	58.94	64.30	209	0.00	0.00	243	0.00	0.00
142	49.15	23.53	176	59.11	64.08	210	0.00	0.00	244	0.00	0.00
143	49.64	-7.22	177	60.02	64.08	211	0.00	0.00	245	0.00	0.00
144	50.00	-67.39	178	63.00	64.41	212	0.00	0.00	246	0.00	0.00
145	50.10	-23.38	179	63.03	61.87	213	0.00	0.00	247	0.00	0.00
146	50.30	-7.24	180	63.59	61.87	214	0.00	0.00	248	0.00	0.00
147	50.36	-4.57	181	65.15	61.98	215	0.00	0.00	249	0.00	0.00
148	50.60	-2.15	182	0.00	0.00	216	0.00	0.00	250	0.00	0.00
149	50.75	2.92	183	0.00	0.00	217	0.00	0.00	251	0.00	0.00
150	51.12	5.67	184	0.00	0.00	218	0.00	0.00	252	0.00	0.00
151	51.20	8.32	185	0.00	0.00	219	0.00	0.00	253	0.00	0.00
152	51.52	10.74	186	0.00	0.00	220	0.00	0.00	254	0.00	0.00
153	51.79	13.50	187	0.00	0.00	221	0.00	0.00	255	0.00	0.00
154	51.94	13.50	188	0.00	0.00	222	0.00	0.00	256	0.00	0.00
155	52.38	16.03	189	0.00	0.00	223	0.00	0.00	257	0.00	0.00
156	52.50	18.24	190	0.00	0.00	224	0.00	0.00	258	0.00	0.00
157	52.68	18.24	191	0.00	0.00	225	0.00	0.00	259	0.00	0.00
158	52.87	18.24	192	0.00	0.00	226	0.00	0.00	260	0.00	0.00
159	53.27	20.88	193	0.00	0.00	227	0.00	0.00	261	0.00	0.00
160	53.61	20.88	194	0.00	0.00	228	0.00	0.00	262	0.00	0.00
161	54.18	30.47	195	0.00	0.00	229	0.00	0.00	263	0.00	0.00
162	54.18	53.72	196	0.00	0.00	230	0.00	0.00	264	0.00	0.00
163	54.20	45.34	197	0.00	0.00	231	0.00	0.00	265	0.00	0.00
164	54.23	58.79	198	0.00	0.00	232	0.00	0.00	266	0.00	0.00
165	54.43	54.16	199	0.00	0.00	233	0.00	0.00	267	0.00	0.00
166	54.43	56.47	200	0.00	0.00	234	0.00	0.00	268	0.00	0.00
167	54.52	58.90	201	0.00	0.00	235	0.00	0.00	269	0.00	0.00
168	54.60	56.47	202	0.00	0.00	236	0.00	0.00	270	0.00	0.00
169	54.75	64.52	203	0.00	0.00	237	0.00	0.00	271	0.00	0.00
170	54.77	59.01	204	0.00	0.00	238	0.00	0.00	272	0.00	0.00

Max Temp= 99.12 F; Min Temp=-100.00 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

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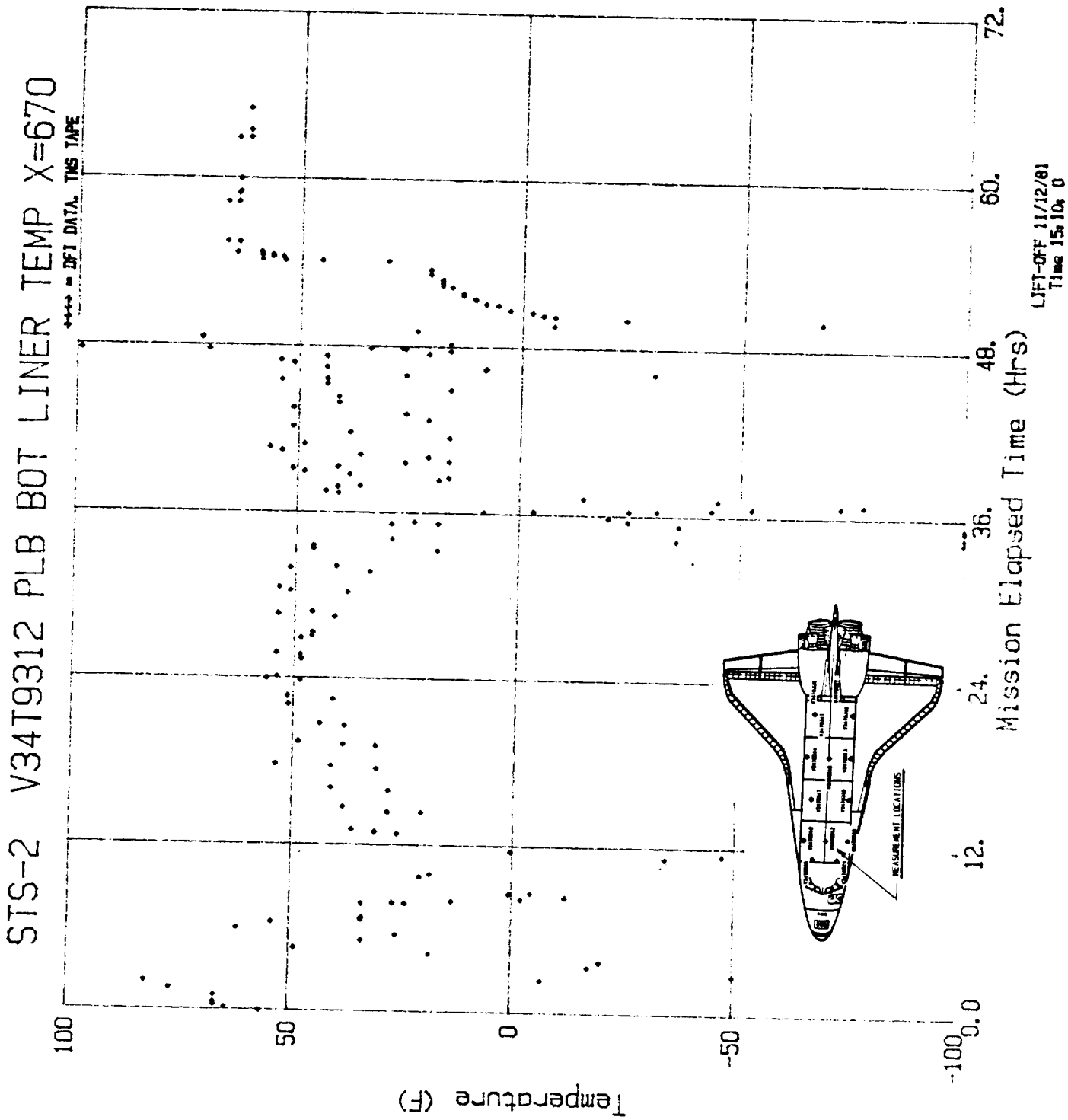

Figure A-116

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A128
File No=f128

STS-3 V34T9310 LH PLB INS TEMP X=1215

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	0.00	53.97	35	12.10	-19.46	69	32.84	-64.83	103	51.42	-32.19
2	0.00	53.97	36	13.27	-27.40	70	33.67	3.20	104	51.97	-19.46
3	0.18	67.03	37	13.58	-27.23	71	33.79	29.16	105	53.20	-32.19
4	0.98	70.01	38	13.64	-32.69	72	33.91	35.94	106	53.45	-16.48
5	1.17	74.97	39	14.87	-34.84	73	35.14	26.35	107	53.51	-1.60
6	1.66	70.01	40	15.11	-37.49	74	35.45	44.38	108	54.74	-11.69
7	2.27	66.87	41	15.36	-39.97	75	35.63	23.37	109	54.80	-32.03
8	2.46	64.06	42	16.71	-44.10	76	36.92	33.79	110	54.98	1.05
9	2.70	74.81	43	16.83	-47.24	77	37.04	48.84	111	56.27	-24.26
10	3.07	59.59	44	17.14	-50.06	78	37.35	42.39	112	56.33	-2.09
11	3.07	43.88	45	18.12	-50.06	79	38.40	38.92	113	56.52	5.68
12	3.32	33.63	46	18.18	-54.69	80	38.64	51.65	114	57.81	3.03
13	3.62	74.81	47	18.49	-57.00	81	38.70	38.92	115	58.18	5.51
14	3.75	57.11	48	19.54	-57.17	82	39.93	49.01	116	58.18	0.39
15	3.99	82.91	49	19.78	-60.14	83	40.36	29.49	117	59.41	-4.41
16	4.48	90.19	50	20.09	-62.62	84	40.42	10.64	118	59.65	0.72
17	4.55	64.06	51	21.44	-65.44	85	41.53	47.02	119	61.00	0.55
18	4.73	38.75	52	21.75	-67.59	86	41.96	29.33	120	61.00	-4.24
19	4.91	33.46	53	21.81	-65.27	87	42.14	10.80	121	61.37	-7.22
20	5.34	75.14	54	22.98	-72.05	88	43.25	41.57	122	62.48	3.36
21	5.53	54.30	55	23.41	-75.03	89	43.43	21.39	123	62.91	-11.69
22	6.57	77.62	56	24.63	-67.42	90	43.62	8.49	124	63.22	-24.75
23	6.63	49.34	57	24.88	-71.72	91	44.91	20.89	125	64.75	-16.98
24	7.00	41.40	58	26.29	-82.30	92	45.03	13.78	126	64.94	-29.05
25	7.25	41.40	59	26.72	-81.97	93	45.28	5.51	127	65.86	-6.73
26	7.56	33.79	60	27.77	-84.45	94	46.69	-4.41	128	65.92	-22.27
27	7.68	23.21	61	27.77	-86.77	95	46.87	-11.85	129	66.10	-32.03
28	8.54	30.98	62	27.95	-87.10	96	47.12	-14.17	130	67.33	-26.74
29	8.72	27.67	63	29.12	-84.29	97	48.53	-21.94	131	67.64	-34.67
30	10.08	-1.93	64	31.12	-74.74	98	48.84	-24.42	132	69.11	-29.38
31	10.20	3.20	65	31.18	-86.79	99	48.96	-19.29	133	69.24	-37.32
32	10.44	7.99	66	31.43	-56.74	100	49.88	-26.57	134	69.67	-39.47
33	11.61	-17.14	67	32.53	-62.69	101	50.01	-19.46	135	72.25	-39.64
34	11.86	-17.31	68	32.78	-67.31	102	50.13	-29.05	136	72.43	-44.10

A128(Cont)
File No=f128(Cont.)

STS-3 V34T9310 LH PLB INS TEMP X=1215

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
137	74.03	-32.19	171	93.19	-36.82	205	105.73	-46.91	239	125.14	-8.38
138	74.21	-39.47	172	93.44	-41.29	206	107.26	-43.61	240	125.32	3.53
139	75.75	-46.75	173	93.75	-43.94	207	107.26	-46.42	241	126.06	3.53
140	75.81	-43.77	174	94.67	-32.36	208	108.61	-44.10	242	126.12	22.55
141	75.99	-22.44	175	94.67	-29.05	209	108.74	-36.49	243	126.18	39.42
142	77.04	-46.91	176	95.34	-13.51	210	108.74	-11.36	244	126.25	-19.29
143	77.10	-19.46	177	95.41	-4.08	211	110.03	-43.94	245	126.37	59.76
144	77.22	-39.14	178	95.96	-4.41	212	110.09	-29.05	246	126.43	75.47
145	78.63	-31.86	179	95.96	-19.29	213	110.27	-6.89	247	126.86	91.01
146	78.70	-14.00	180	96.51	-43.77	214	111.69	-24.59	248	126.92	67.36
147	78.88	-7.22	181	96.70	-39.14	215	111.93	-4.08	249	127.41	36.60
148	80.48	-41.46	182	96.94	-43.94	216	112.12	1.05	250	127.66	75.47
149	80.72	-32.03	183	97.00	-18.63	217	113.28	-16.15	251	127.84	91.01
150	81.83	-6.89	184	97.13	-7.06	218	113.53	-3.75	252	128.09	112.02
151	81.95	-4.24	185	97.31	-7.06	219	113.53	-7.06	253	128.15	101.27
152	82.26	-9.21	186	97.49	-28.72	220	114.82	-4.24	254	128.95	57.77
153	83.24	-6.39	187	97.80	-41.29	221	114.82	-7.39	255	128.95	75.63
154	83.80	-13.84	188	98.05	-47.08	222	115.06	-13.67	256	129.19	47.19
155	84.84	-4.41	189	98.17	-43.94	223	116.29	-4.08	257	129.44	109.04
156	85.15	-7.06	190	98.42	-7.06	224	116.85	-15.99	258	130.18	88.70
157	85.45	-19.46	191	98.42	-11.52	225	118.01	-0.61	259	130.36	73.32
158	86.93	-4.08	192	98.72	-27.07	226	118.38	-7.06	260	130.61	59.76
159	87.11	-21.78	193	99.03	-43.77	227	118.63	-24.09	261	131.65	78.28
160	87.11	-34.18	194	99.34	-46.75	228	119.30	-36.49	262	131.90	95.48
161	88.16	-7.22	195	100.51	-37.32	229	120.66	-13.18	263	131.96	67.53
162	88.46	-25.91	196	100.57	-43.94	230	120.84	-9.04	264	133.31	82.91
163	88.71	-37.16	197	101.00	-47.24	231	121.58	-39.31	265	133.43	75.80
164	89.82	-17.14	198	102.23	-41.95	232	121.88	-36.33	266	133.80	108.54
165	89.88	-16.81	199	102.53	-46.58	233	122.13	-4.41	267	135.09	83.08
166	90.18	-31.53	200	102.59	-49.56	234	122.99	-26.24	268	135.22	86.05
167	90.25	-39.47	201	103.58	-39.14	235	123.54	-41.62	269	135.22	119.63
168	91.84	-34.01	202	103.95	-44.10	236	123.79	-11.52	270	136.26	82.58
169	92.09	-41.46	203	105.05	-37.49	237	124.34	-11.52	271	136.38	102.09
170	92.21	-44.27	204	105.48	-43.94	238	124.71	-34.18	272	136.51	127.40

C-4

A128(Cont)
File No=f128(Cont.) STS-3 V34T9310 LH PLB INS TEMP X=1215

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
273	138.04	132.36	307	153.89	108.88	341	0.00	0.00	375	0.00	0.00
274	138.04	140.79	308	153.95	96.14	342	0.00	0.00	376	0.00	0.00
275	138.10	114.50	309	155.30	106.56	343	0.00	0.00	377	0.00	0.00
276	139.52	122.60	310	155.43	95.98	344	0.00	0.00	378	0.00	0.00
277	139.82	137.49	311	155.80	75.80	345	0.00	0.00	379	0.00	0.00
278	139.95	143.61	312	157.09	83.41	346	0.00	0.00	380	0.00	0.00
279	141.17	124.59	313	157.09	62.73	347	0.00	0.00	381	0.00	0.00
280	141.24	137.82	314	157.39	54.80	348	0.00	0.00	382	0.00	0.00
281	141.36	143.94	315	158.31	70.67	349	0.00	0.00	383	0.00	0.00
282	142.59	111.19	316	158.56	54.80	350	0.00	0.00	384	0.00	0.00
283	142.65	132.52	317	158.87	44.87	351	0.00	0.00	385	0.00	0.00
284	142.71	142.94	318	160.16	60.25	352	0.00	0.00	386	0.00	0.00
285	142.77	71.17	319	160.77	36.60	353	0.00	0.00	387	0.00	0.00
286	143.02	148.24	320	161.63	52.32	354	0.00	0.00	388	0.00	0.00
287	143.26	130.04	321	161.94	42.72	355	0.00	0.00	389	0.00	0.00
288	143.69	88.70	322	162.18	34.29	356	0.00	0.00	390	0.00	0.00
289	144.31	64.72	323	163.47	34.29	357	0.00	0.00	391	0.00	0.00
290	144.43	73.15	324	163.54	29.49	358	0.00	0.00	392	0.00	0.00
291	144.49	111.36	325	163.72	80.76	359	0.00	0.00	393	0.00	0.00
292	145.84	140.63	326	164.95	34.45	360	0.00	0.00	394	0.00	0.00
293	145.90	129.88	327	165.38	24.04	361	0.00	0.00	395	0.00	0.00
294	145.97	135.34	328	165.44	19.40	362	0.00	0.00	396	0.00	0.00
295	147.07	137.65	329	165.99	42.56	363	0.00	0.00	397	0.00	0.00
296	147.38	143.44	330	165.99	36.93	364	0.00	0.00	398	0.00	0.00
297	147.56	146.58	331	166.42	31.97	365	0.00	0.00	399	0.00	0.00
298	149.04	143.61	332	167.04	8.65	366	0.00	0.00	400	0.00	0.00
299	149.16	148.90	333	167.28	5.68	367	0.00	0.00	401	0.00	0.00
300	150.63	146.25	334	167.65	18.91	368	0.00	0.00	402	0.00	0.00
301	150.82	153.03	335	167.77	26.68	369	0.00	0.00	403	0.00	0.00
302	151.00	146.25	336	167.77	21.39	370	0.00	0.00	404	0.00	0.00
303	151.99	159.48	337	168.20	31.81	371	0.00	0.00	405	0.00	0.00
304	152.29	159.48	338	168.70	34.12	372	0.00	0.00	406	0.00	0.00
305	152.42	137.82	339	0.00	0.00	373	0.00	0.00	407	0.00	0.00
306	153.58	135.17	340	0.00	0.00	374	0.00	0.00	408	0.00	0.00

Max Temp= 159.48 F; Min Temp= -87.10 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

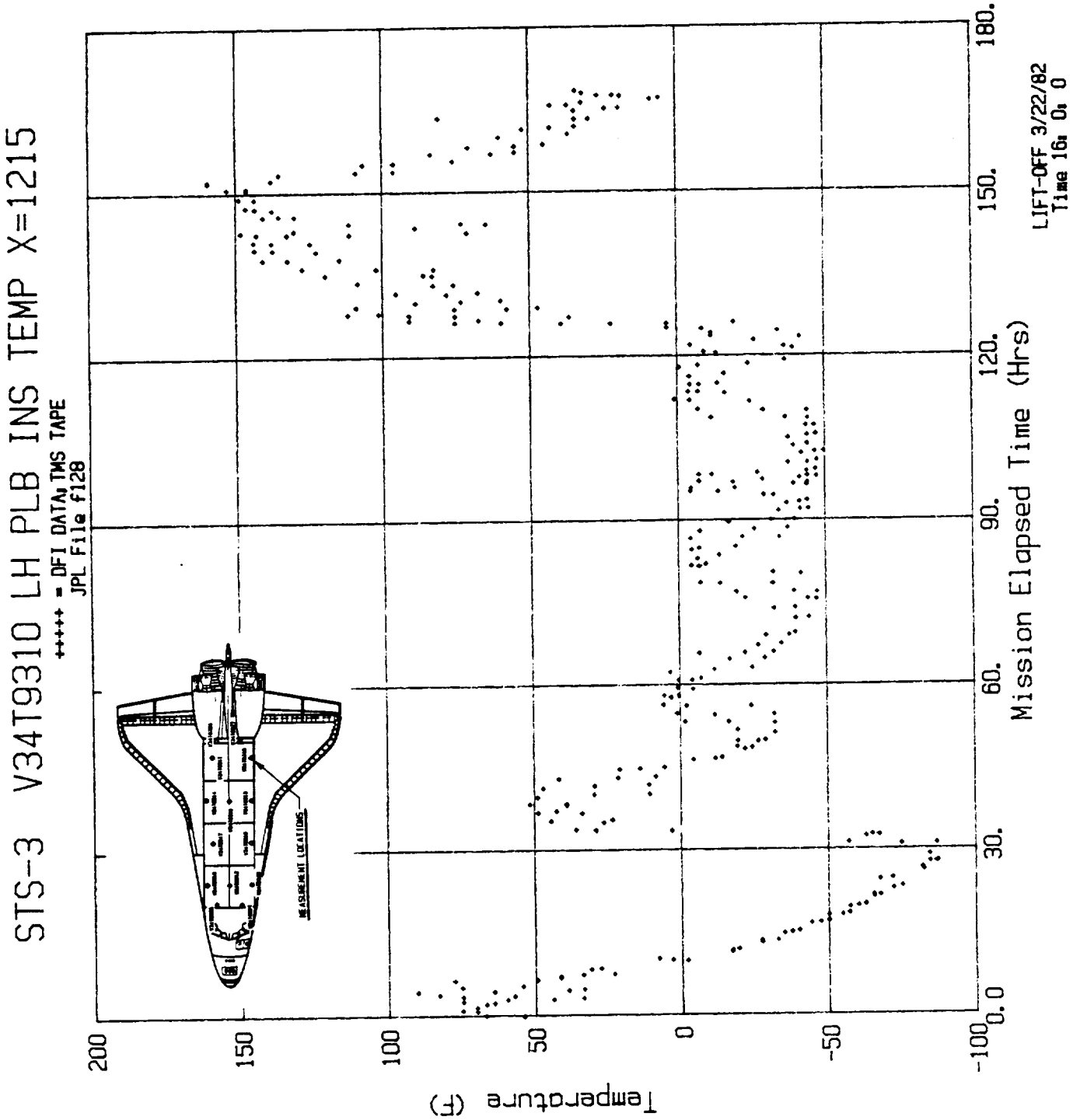
STS-3 V34T9310 LH PLB INS TEMP X=1215
++++ = DFI DATA, TMS TAPE
JPL File f128
MEASUREMENT LOCATIONS
Temperature (F)
200
150
100
50
0
-50
-100
0.0
30.
60.
90.
120.
150.
180.
Mission Elapsed Time (Hrs)
LIFT-OFF 3/22/82
Time 16: 0: 0

Figure A-128

A130
File No=f130

STS-3 V34T9312 PLB BOT LINER TEMP X=670

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	0.17	60.36	35	12.30	-114.31	69	29.65	-143.38	103	48.64	-91.81
2	0.34	70.22	36	12.36	-116.58	70	31.23	-142.62	104	48.97	-100.66
3	0.62	73.76	37	13.76	-121.13	71	31.51	-128.72	105	49.09	-78.67
4	1.46	74.52	38	13.93	-123.15	72	31.73	-106.72	106	50.10	-96.61
5	1.74	74.27	39	15.05	-125.43	73	32.69	-111.27	107	50.32	-106.98
6	1.91	74.27	40	15.22	-128.72	74	33.08	-123.15	108	50.55	-58.95
7	2.36	78.31	41	15.50	-131.50	75	33.25	-131.50	109	51.89	-100.66
8	2.41	76.54	42	16.79	-131.75	76	33.98	222.65	110	52.06	-44.03
9	2.47	60.36	43	16.96	-134.28	77	34.26	141.51	111	52.17	-106.22
10	3.15	53.54	44	17.19	-133.77	78	34.48	111.17	112	53.47	-19.01
11	3.37	70.73	45	18.48	-135.79	79	35.94	96.51	113	53.58	-88.52
12	3.43	85.64	46	18.53	-134.02	80	36.06	60.36	114	53.75	32.56
13	3.82	38.88	47	18.59	-138.57	81	36.11	21.94	115	54.93	-4.35
14	3.99	-12.94	48	19.77	-138.57	82	37.63	58.34	116	54.98	-74.37
15	4.16	-33.42	49	19.88	-138.32	83	37.68	80.33	117	55.26	34.83
16	4.21	80.84	50	19.99	-140.85	84	38.02	44.69	118	56.56	39.64
17	4.21	42.16	51	19.99	-140.85	85	38.86	55.81	119	56.56	-44.29
18	4.83	117.75	52	20.11	-136.55	86	39.03	67.95	120	57.00	41.91
19	5.00	123.05	53	20.39	-136.80	87	39.09	27.00	121	58.18	42.67
20	5.05	42.42	54	21.73	-134.02	88	40.61	55.81	122	58.30	44.69
21	5.28	-22.04	55	21.79	-141.10	89	40.72	0.96	123	58.35	18.91
22	5.39	-30.89	56	22.13	-119.11	90	41.17	-38.98	124	59.53	30.28
23	5.67	82.86	57	23.36	-138.32	91	42.35	39.89	125	59.87	39.89
24	5.67	34.58	58	23.53	-130.99	92	42.63	-4.35	126	59.98	9.81
25	7.24	58.34	59	24.77	-106.72	93	42.68	-38.73	127	61.22	37.11
26	7.75	-3.84	60	24.99	-120.88	94	43.81	24.47	128	61.50	39.89
27	7.86	-33.42	61	26.51	-134.28	95	43.92	-19.01	129	61.61	-4.35
28	8.14	-51.62	62	26.56	-136.55	96	44.14	-36.20	130	62.79	39.64
29	8.37	-64.26	63	26.79	-138.83	97	45.38	-22.30	131	62.96	39.64
30	8.42	-74.37	64	28.08	-136.55	98	45.55	-26.59	132	63.24	-19.51
31	9.38	-61.22	65	28.25	-138.07	99	46.00	-44.79	133	63.35	-61.73
32	10.33	-30.89	66	28.36	-141.10	100	47.29	-58.19	134	64.64	-31.90
33	10.56	-41.51	67	29.32	-136.55	101	47.34	-81.45	135	64.98	-71.33
34	10.61	-58.44	68	29.49	-140.85	102	47.57	-94.34	136	65.93	4.25

A130(Cont)
File No=f130(Cont.) STS-3 V34T9312 PLB BOT LINER TEMP X=670

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
137	66.22	-49.60	171	85.20	39.38	205	97.44	-48.58	239	111.76	34.83
138	66.66	-80.94	172	85.31	26.74	206	97.50	-49.09	240	111.88	53.03
139	67.79	-61.48	173	85.54	-26.59	207	97.55	-84.23	241	112.94	-8.39
140	67.96	-86.50	174	86.83	24.47	208	97.61	-83.97	242	113.00	29.78
141	69.08	-69.31	175	87.00	-35.95	209	97.78	-106.22	243	113.22	38.88
142	69.30	-91.56	176	87.11	-74.12	210	98.06	-98.38	244	114.63	26.49
143	69.70	-103.19	177	88.23	3.99	211	98.17	41.91	245	114.85	37.36
144	70.82	-78.92	178	88.40	-51.62	212	98.17	18.66	246	115.02	-8.90
145	72.45	-83.97	179	88.68	-81.70	213	98.73	-44.29	247	116.26	37.87
146	72.45	-98.63	180	89.86	-19.01	214	98.79	-45.05	248	116.37	34.58
147	72.79	-100.66	181	89.97	-61.48	215	99.13	-91.30	249	116.65	-15.98
148	74.02	-61.48	182	90.14	-89.28	216	99.24	-103.44	250	117.66	41.91
149	74.13	-86.50	183	90.25	-89.28	217	100.53	-74.12	251	117.83	19.41
150	74.19	-86.75	184	91.83	-73.86	218	100.70	-96.11	252	117.94	-38.73
151	74.30	-64.76	185	91.88	-96.36	219	101.04	-106.22	253	119.06	21.94
152	75.54	-108.75	186	91.88	-105.97	220	101.93	-78.16	254	120.19	-99.14
153	75.76	-96.36	187	92.92	-81.21	221	102.44	-98.38	255	120.47	-9.15
154	75.88	-11.17	188	93.34	-105.97	222	102.44	-98.38	256	120.97	14.11
155	77.11	-109.00	189	94.62	-67.71	223	102.50	-108.75	257	121.48	-87.01
156	77.39	-74.12	190	94.73	-79.37	224	103.39	-86.75	258	121.98	-81.19
157	77.50	4.25	191	95.14	-61.73	225	103.79	-106.22	259	122.21	27.25
158	78.68	14.61	192	95.25	1.21	226	103.84	-100.15	260	122.60	-56.67
159	78.85	-46.81	193	95.31	37.61	227	105.08	-55.92	261	123.05	-103.44
160	79.13	39.13	194	95.53	32.31	228	105.30	-83.97	262	123.44	15.87
161	80.54	-86.00	195	95.87	-24.32	229	105.64	-100.66	263	123.78	0.71
162	80.59	-56.42	196	95.98	-24.32	230	106.88	-113.55	264	123.84	0.46
163	80.76	-21.54	197	96.32	-83.47	231	106.99	-83.72	265	124.51	-81.45
164	81.77	35.09	198	96.32	-83.97	232	108.17	-109.00	266	124.90	-36.70
165	82.17	35.34	199	96.43	-99.90	233	108.28	-63.75	267	125.24	21.44
166	82.22	37.11	200	96.66	-89.03	234	108.51	19.41	268	126.08	-41.61
167	82.50	7.03	201	96.77	-5.86	235	109.91	-44.54	269	126.14	-61.13
168	83.63	36.86	202	96.94	-5.86	236	109.97	-103.69	270	126.25	-33.92
169	83.63	36.86	203	96.99	35.09	237	110.08	30.54	271	126.30	170.25
170	83.96	-11.17	204	97.16	29.52	238	111.48	-24.32	272	126.36	130.21

A130(Cont)
File No=f130(Cont.) STS-3 V34T9312 PLB BOT LINER TEMP X=670

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
273	126.37	-24.57	307	138.22	243.38	341	151.98	188.02	375	167.34	-28.43
274	126.47	220.43	308	138.22	209.00	342	152.31	145.05	376	167.53	-11.93
275	126.48	235.79	309	138.27	245.90	343	153.55	134.43	377	167.59	-7.13
276	126.70	238.83	310	139.51	227.70	344	153.88	55.56	378	168.04	-4.60
277	127.04	252.73	311	139.79	246.16	345	154.00	16.13	379	168.09	-2.58
278	127.15	118.25	312	140.01	248.69	346	155.23	101.57	380	168.32	0.20
279	127.43	36.35	313	141.25	182.20	347	155.40	57.84	381	0.00	0.00
280	127.60	227.96	314	141.36	238.83	348	155.68	-1.82	382	0.00	0.00
281	127.83	240.60	315	141.59	245.90	349	156.64	47.22	383	0.00	0.00
282	128.11	242.87	316	142.60	60.11	350	156.69	47.47	384	0.00	0.00
283	128.50	254.75	317	142.71	248.43	351	156.86	-6.37	385	0.00	0.00
284	128.78	39.64	318	142.96	239.18	352	157.20	-22.55	386	0.00	0.00
285	128.84	83.37	319	142.96	193.56	353	158.21	28.77	387	0.00	0.00
286	129.23	11.83	320	143.10	252.22	354	158.38	-8.90	388	0.00	0.00
287	129.29	243.38	321	143.10	179.17	355	158.71	-36.96	389	0.00	0.00
288	129.40	209.50	322	143.61	11.83	356	160.06	-8.90	390	0.00	0.00
289	129.40	209.50	323	143.94	-31.65	357	160.12	11.83	391	0.00	0.00
290	130.35	96.26	324	144.17	-53.89	358	160.23	-44.54	392	0.00	0.00
291	130.35	49.75	325	144.22	27.00	359	161.35	-1.82	393	0.00	0.00
292	130.91	29.78	326	144.39	216.58	360	161.47	-22.55	394	0.00	0.00
293	131.98	47.72	327	146.02	246.41	361	161.75	-39.48	395	0.00	0.00
294	132.15	203.19	328	146.02	243.38	362	162.87	-27.10	396	0.00	0.00
295	132.21	203.69	329	146.13	249.70	363	162.98	-6.62	397	0.00	0.00
296	132.21	29.52	330	147.03	246.16	364	163.21	202.68	398	0.00	0.00
297	133.39	42.92	331	147.20	249.19	365	164.61	-47.07	399	0.00	0.00
298	133.61	39.38	332	147.43	252.22	366	164.72	-61.98	400	0.00	0.00
299	133.83	222.14	333	148.72	243.63	367	165.06	-76.14	401	0.00	0.00
300	133.89	222.40	334	148.83	248.69	368	165.57	-15.98	402	0.00	0.00
301	135.07	36.60	335	149.05	254.50	369	165.73	17.90	403	0.00	0.00
302	135.24	108.14	336	150.35	252.22	370	165.73	5.51	404	0.00	0.00
303	135.52	233.77	337	150.68	249.19	371	166.02	-8.39	405	0.00	0.00
304	136.70	30.28	338	150.74	257.03	372	166.30	-54.15	406	0.00	0.00
305	136.76	171.84	339	150.91	150.10	373	166.69	-81.19	407	0.00	0.00
306	136.81	238.57	340	151.98	254.50	374	167.20	-19.77	408	0.00	0.00

Max Temp= 257.03 F; Min Temp=-143.38 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

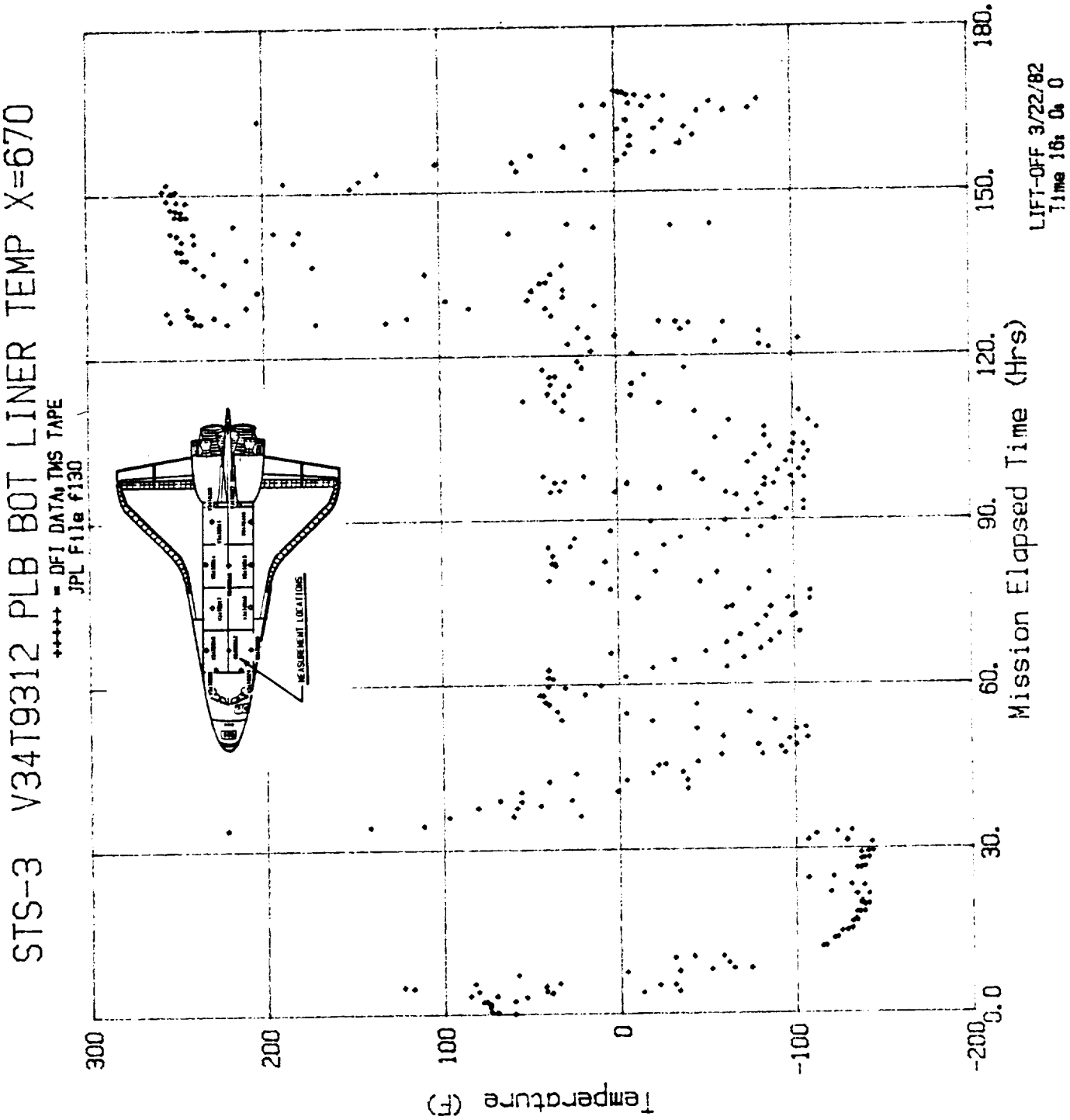
STS-3 V34T9312 PLB BOT LINER TEMP X=670
+++++ = DFI DATA, TMS TAPE
JPL File f130
MEASUREMENT LOCATIONS
LIFT-OFF 3/22/82
Time 16: 0: 0
Mission Elapsed Time (Hrs)
Temperature (F)
0.0
30.
60.
90.
120.
150.
180.
300
200
100
0
-100
-200

Figure A-130

A135
File No=f135

STS-3 V34T9318 LH PLB INS TEMP X=850

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	1.10	71.07	35	13.62	-114.68	69	35.67	47.74	103	53.61	-102.14
2	1.65	79.87	36	13.98	-122.37	70	35.79	81.19	104	53.81	-11.44
3	1.89	66.45	37	15.20	-117.10	71	35.98	55.67	105	54.91	-41.80
4	2.20	59.19	38	15.33	-122.16	72	37.32	45.32	106	54.97	-95.93
5	2.69	37.62	39	15.63	-128.75	73	37.44	70.85	107	54.97	-6.38
6	2.99	43.34	40	16.85	-126.77	74	38.91	40.92	108	56.31	-78.77
7	3.05	97.91	41	17.16	-134.47	75	39.09	61.61	109	56.31	-6.60
8	3.30	20.02	42	17.22	-137.55	76	39.09	55.89	110	56.50	1.76
9	3.48	-20.90	43	18.26	-131.83	77	40.43	45.32	111	57.90	1.54
10	3.91	22.44	44	18.44	-139.53	78	40.43	22.00	112	58.03	6.38
11	3.97	-35.86	45	19.91	-139.53	79	40.50	-36.08	113	58.45	4.18
12	4.21	71.29	46	20.33	-144.15	80	41.78	26.84	114	59.80	-11.66
13	4.34	89.33	47	21.98	-136.45	81	42.02	4.40	115	59.92	4.40
14	4.89	94.83	48	22.04	-146.34	82	42.51	-33.44	116	59.92	1.10
15	5.01	27.94	49	23.26	-143.93	83	43.61	34.98	117	61.02	-6.16
16	5.13	-26.62	50	23.75	-146.56	84	43.79	-39.38	118	61.14	14.30
17	5.50	-35.64	51	24.31	-99.23	85	43.92	-21.12	119	61.51	-3.30
18	5.74	12.10	52	24.91	-122.16	86	45.08	-29.04	120	62.54	19.80
19	5.86	76.35	53	26.44	-142.17	87	45.14	-33.66	121	62.97	-16.28
20	7.15	66.23	54	26.68	-146.34	88	45.38	-56.11	122	63.16	-62.27
21	7.21	1.76	55	27.05	-151.40	89	46.73	-56.55	123	64.74	-41.80
22	7.39	-67.11	56	27.96	-151.18	90	46.85	-79.21	124	64.93	-79.21
23	7.57	-13.42	57	28.21	-154.04	91	46.97	-79.21	125	65.78	-5.50
24	7.63	-26.62	58	28.45	-156.68	92	47.21	-93.51	126	66.09	-51.05
25	7.82	-43.78	59	29.37	-151.18	93	48.68	-88.67	127	66.21	-83.61
26	8.06	-53.69	60	29.67	-156.90	94	48.80	-91.09	128	67.43	-66.67
27	8.92	-26.62	61	31.26	-158.88	95	49.09	-104.78	129	67.68	-91.31
28	8.98	-34.10	62	31.38	-143.93	96	50.02	-95.93	130	69.20	-70.85
29	10.20	-56.11	63	31.45	-117.76	97	50.33	-86.47	131	69.51	-96.37
30	10.44	-26.84	64	32.85	-123.69	98	50.50	-106.54	132	69.73	-108.52
31	12.15	-102.36	65	33.15	-126.33	99	51.41	-102.58	133	70.97	-83.61
32	12.33	-104.56	66	33.84	66.45	100	51.84	-106.76	134	72.26	-90.65
33	12.39	-112.04	67	34.20	63.59	101	51.86	-79.21	135	72.35	-107.20
34	13.49	-112.26	68	34.39	81.85	102	53.38	-56.11	136	72.72	-108.96

A135(Cont)
File No=f135(Cont.) STS-3 V34T9318 LH PLB INS TEMP X=850

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
137	73.97	-51.27	171	90.09	-95.93	205	103.35	-93.07	239	121.24	-96.37
138	74.03	-68.87	172	91.44	-83.61	206	103.74	-108.52	240	121.85	-95.49
139	74.33	-81.63	173	92.08	-101.92	207	103.98	-111.82	241	122.10	1.54
140	75.90	-109.40	174	92.26	-112.04	208	104.87	-86.25	242	122.52	-58.53
141	75.90	-114.46	175	92.90	-88.89	209	105.20	-107.20	243	123.28	-108.08
142	75.98	-49.06	176	93.24	-106.54	210	105.26	-104.12	244	123.56	-9.24
143	77.02	-98.79	177	93.54	-111.60	211	107.16	-104.34	245	123.99	-5.72
144	77.18	-111.16	178	94.37	-56.33	212	107.22	-116.22	246	124.36	-97.91
145	77.20	-31.24	179	94.79	-71.95	213	108.44	-111.82	247	124.78	-35.64
146	78.49	-79.21	180	95.04	-29.04	214	108.48	-13.42	248	125.15	11.66
147	78.79	-18.48	181	95.28	-0.66	215	108.54	-90.87	249	125.82	-29.48
148	78.91	1.10	182	95.71	16.28	216	109.82	-73.71	250	125.82	-55.89
149	79.16	1.54	183	95.77	-23.76	217	109.88	-4.18	251	125.95	-17.82
150	80.44	-86.47	184	96.08	-91.09	218	109.97	-108.74	252	126.07	58.09
151	80.50	-90.87	185	96.41	-106.54	219	111.41	-55.89	253	126.13	85.37
152	80.75	-71.07	186	96.84	-106.54	220	111.53	13.86	254	126.13	40.04
153	81.66	-6.38	187	96.87	-41.58	221	111.65	-3.96	255	126.31	96.81
154	82.15	1.54	188	96.99	-3.30	222	113.18	-5.94	256	126.62	104.07
155	82.21	7.26	189	97.18	9.46	223	113.18	-44.22	257	126.86	124.97
156	83.31	-1.32	190	97.42	-55.89	224	113.24	6.38	258	127.04	51.71
157	83.50	11.00	191	97.73	-91.09	225	114.46	-8.80	259	127.35	-11.88
158	83.56	-9.24	192	97.94	-114.46	226	114.58	8.80	260	127.72	93.95
159	85.14	9.46	193	98.12	-110.50	227	114.89	-11.44	261	127.90	104.29
160	85.14	3.96	194	98.15	-15.84	228	116.05	-1.32	262	128.20	120.57
161	85.27	-23.76	195	98.28	1.76	229	116.23	14.08	263	128.57	132.89
162	86.73	6.38	196	98.76	-44.22	230	116.60	-13.42	264	128.75	34.32
163	86.98	-38.94	197	99.01	-95.93	231	118.00	14.30	265	129.00	11.66
164	87.04	3.96	198	99.10	-111.38	232	118.07	9.24	266	129.18	72.83
165	87.10	-81.63	199	100.54	-78.77	233	118.31	-44.22	267	129.24	106.27
166	88.01	-9.02	200	100.69	-102.36	234	118.98	-3.74	268	129.43	109.35
167	88.32	-62.05	201	100.75	-111.38	235	119.06	-103.90	269	130.04	44.88
168	88.38	-90.65	202	102.06	-88.67	236	120.16	-106.32	270	130.16	6.38
169	89.66	-21.12	203	102.39	-106.54	237	120.39	-31.90	271	130.65	-11.22
170	89.91	-69.09	204	102.46	-113.58	238	120.75	1.54	272	131.69	6.60

A135(Cont)
File No=f135(Cont.) STS-3 V34T9318 LH PLB INS TEMP X=850

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
273	131.99	-11.44	307	147.14	113.97	341	164.85	-49.06	375	0.00	0.00
274	131.99	72.83	308	147.26	117.71	342	165.16	-64.47	376	0.00	0.00
275	133.34	1.98	309	147.44	129.37	343	165.16	-82.51	377	0.00	0.00
276	133.40	-9.24	310	148.97	117.27	344	165.52	-11.66	378	0.00	0.00
277	133.64	90.87	311	149.03	135.97	345	166.01	16.94	379	0.00	0.00
278	134.86	-3.52	312	150.62	122.77	346	166.07	-0.88	380	0.00	0.00
279	135.05	19.58	313	150.93	138.61	347	166.38	-21.34	381	0.00	0.00
280	135.11	101.65	314	150.99	106.27	348	166.50	-64.47	382	0.00	0.00
281	136.21	-6.60	315	151.96	132.89	349	167.05	-78.99	383	0.00	0.00
282	136.51	54.35	316	152.15	143.01	350	167.23	-29.70	384	0.00	0.00
283	136.63	108.91	317	152.45	83.39	351	167.36	-27.06	385	0.00	0.00
284	138.16	81.19	318	153.61	108.69	352	167.66	-18.26	386	0.00	0.00
285	138.34	111.33	319	153.80	81.41	353	167.91	-8.80	387	0.00	0.00
286	138.41	117.93	320	154.04	19.36	354	167.91	-11.88	388	0.00	0.00
287	139.81	113.75	321	155.32	75.47	355	168.21	-6.38	389	0.00	0.00
288	139.81	97.03	322	155.57	81.41	356	168.27	-3.52	390	0.00	0.00
289	140.18	117.49	323	155.87	1.32	357	168.58	1.76	391	0.00	0.00
290	141.15	111.11	324	156.67	55.45	358	0.00	0.00	392	0.00	0.00
291	141.21	101.21	325	156.97	52.15	359	0.00	0.00	393	0.00	0.00
292	141.40	120.13	326	156.97	-3.96	360	0.00	0.00	394	0.00	0.00
293	142.50	110.23	327	157.28	-26.40	361	0.00	0.00	395	0.00	0.00
294	142.56	58.09	328	158.38	21.78	362	0.00	0.00	396	0.00	0.00
295	142.68	67.99	329	158.44	-8.80	363	0.00	0.00	397	0.00	0.00
296	142.80	116.39	330	158.81	-36.52	364	0.00	0.00	398	0.00	0.00
297	143.11	132.45	331	159.97	6.38	365	0.00	0.00	399	0.00	0.00
298	143.23	86.25	332	160.15	-15.84	366	0.00	0.00	400	0.00	0.00
299	143.72	-21.34	333	160.39	-36.08	367	0.00	0.00	401	0.00	0.00
300	143.96	-46.42	334	161.49	-3.52	368	0.00	0.00	402	0.00	0.00
301	144.15	-62.27	335	161.68	-29.26	369	0.00	0.00	403	0.00	0.00
302	144.57	83.61	336	161.92	-23.54	370	0.00	0.00	404	0.00	0.00
303	144.70	-21.12	337	163.14	1.76	371	0.00	0.00	405	0.00	0.00
304	145.92	114.41	338	163.14	-16.06	372	0.00	0.00	406	0.00	0.00
305	145.92	108.69	339	163.51	103.85	373	0.00	0.00	407	0.00	0.00
306	145.98	124.75	340	164.79	-79.87	374	0.00	0.00	408	0.00	0.00

Max Temp= 143.01 F; Min Temp=-158.88 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

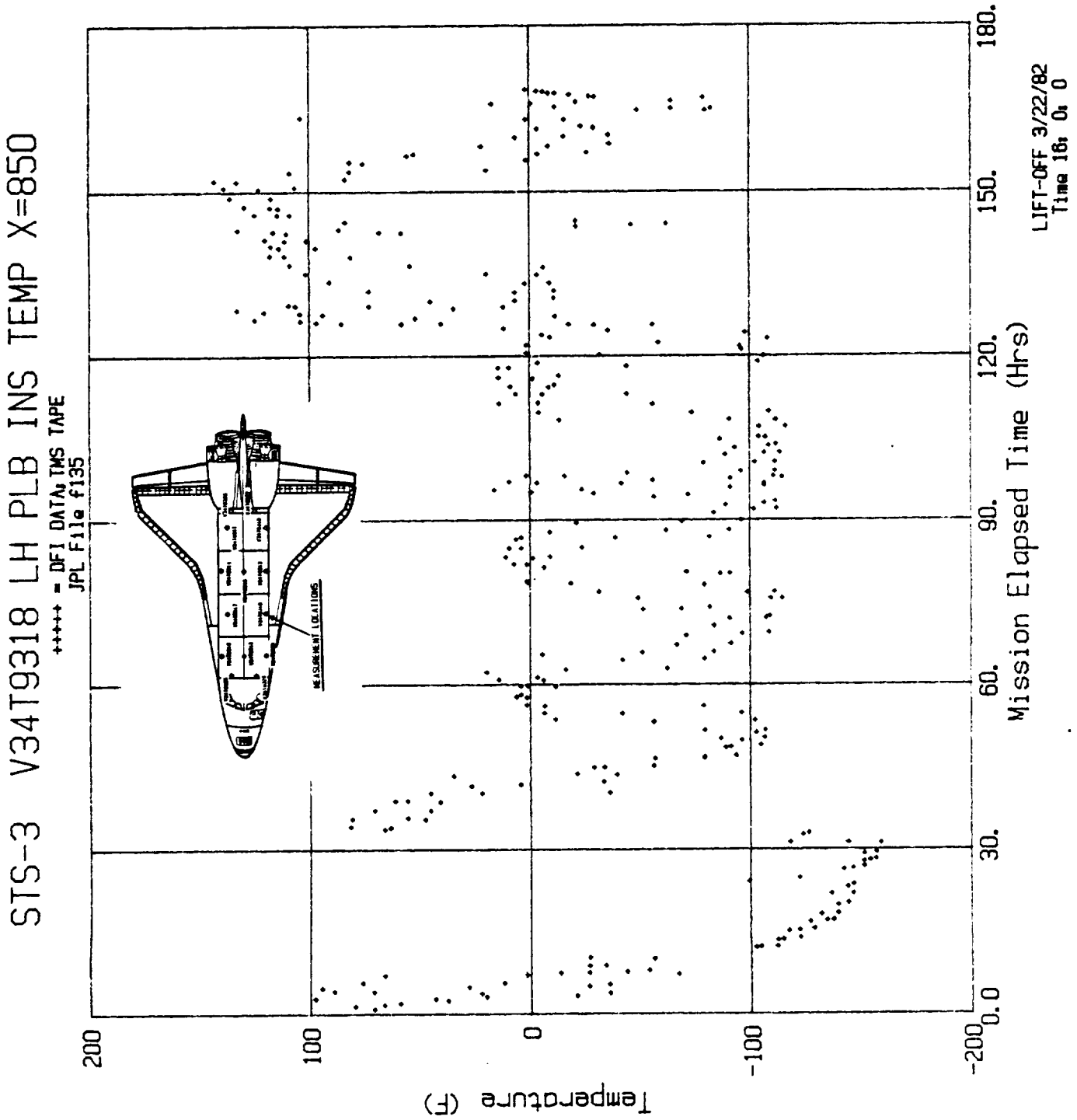
STS-3 V34T9318 LH PLB INS TEMP X=850
+++++ = DFI DATA, TMS TAPE
JPL File f135
MEASUREMENT LOCATIONS
Temperature (F)
200
100
0
-100
-200
0.0
30.
60.
90.
120.
150.
180.
Mission Elapsed Time (Hrs)
LIFT-OFF 3/22/82
Time 16: 0: 0

Figure A-135

A136
File No=f136

STS-3 V34T9319 RH PLB INS TEMP X=670

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	0.12	70.39	35	13.88	-44.19	69	38.76	13.76	103	57.90	-1.10
2	0.86	70.23	36	15.04	-51.79	70	39.01	26.64	104	58.15	0.88
3	2.38	65.11	37	15.16	-54.93	71	39.31	14.09	105	58.27	-6.71
4	2.93	65.44	38	15.29	-57.07	72	40.66	5.83	106	59.61	-6.71
5	3.42	83.43	39	16.81	-61.53	73	40.72	24.33	107	59.86	-12.00
6	3.55	59.66	40	17.12	-67.14	74	40.90	-11.83	108	61.26	-6.05
7	3.73	44.30	41	18.59	-71.44	75	42.00	18.38	109	61.39	-3.58
8	3.97	36.38	42	18.59	-73.91	76	42.13	3.52	110	61.45	-16.29
9	4.16	57.51	43	19.87	-79.20	77	42.43	-9.03	111	62.61	-1.27
10	4.28	70.72	44	20.18	-79.36	78	43.59	18.55	112	63.04	-18.93
11	4.52	85.58	45	21.71	-84.98	79	43.78	-1.27	113	63.22	-33.79
12	4.83	87.89	46	21.89	-81.34	80	44.08	-9.19	114	64.38	-24.38
13	4.83	57.68	47	23.29	-86.30	81	45.37	-1.27	115	64.75	-33.63
14	5.14	36.38	48	23.60	-84.15	82	45.73	-3.58	116	65.79	-12.16
15	5.38	31.26	49	24.76	-81.84	83	45.92	-12.00	117	66.15	-29.00
16	5.56	46.95	50	24.95	-86.63	84	46.77	-16.29	118	66.52	-36.76
17	5.69	67.91	51	26.47	-91.41	85	46.90	-21.74	119	67.62	-33.96
18	7.28	57.68	52	26.72	-94.39	86	47.08	-27.02	120	67.81	-42.21
19	7.40	36.54	53	27.94	-94.06	87	48.42	-27.19	121	69.09	-36.93
20	7.70	26.64	54	28.25	-96.53	88	48.91	-31.48	122	69.27	-44.03
21	7.95	18.38	55	29.59	-99.50	89	48.97	-26.69	123	69.46	-46.01
22	8.19	13.92	56	31.37	-99.50	90	50.20	-33.79	124	70.74	-39.24
23	8.25	8.97	57	31.49	-94.06	91	50.32	-26.69	125	72.27	-44.36
24	8.99	3.36	58	32.71	-91.08	92	50.38	-37.09	126	72.39	-39.41
25	8.99	0.06	59	33.02	-94.22	93	51.66	-36.93	127	72.57	-44.03
26	9.97	-1.43	60	34.18	52.06	94	51.85	-26.53	128	73.98	-36.93
27	10.21	9.30	61	34.30	33.74	95	53.25	-36.93	129	74.16	-42.05
28	10.21	1.05	62	34.67	21.35	96	53.38	-21.90	130	75.63	-46.51
29	10.46	-1.27	63	35.83	5.83	97	53.56	-3.58	131	75.88	-24.05
30	11.80	-27.02	64	35.89	29.11	98	54.97	-33.79	132	76.00	-46.34
31	12.11	-27.02	65	36.13	-3.58	99	55.09	-18.60	133	77.34	-46.01
32	12.53	-31.48	66	37.24	11.45	100	55.39	-3.41	134	77.34	-41.55
33	13.76	-41.72	67	37.42	26.80	101	56.56	-28.84	135	77.40	-18.60
34	13.76	-44.03	68	37.72	18.38	102	56.68	-1.27	136	78.57	-33.96

A136(Cont)
File No=f136(Cont.) STS-3 V34T9319 RH PLB INS TEMP X=670

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
137	78.81	-16.29	171	95.63	-6.71	205	111.58	-29.17	239	126.50	70.72
138	78.99	-6.55	172	95.81	-23.89	206	111.89	-9.36	240	126.87	96.31
139	80.28	-41.72	173	96.18	-41.88	207	111.95	0.88	241	126.99	108.53
140	80.46	-36.60	174	96.18	-44.52	208	113.11	-24.05	242	127.42	55.20
141	80.58	-26.86	175	96.60	-44.19	209	113.36	-11.83	243	127.54	18.38
142	81.81	-6.88	176	96.79	-18.27	210	113.54	-7.04	244	127.97	105.89
143	82.24	-6.55	177	97.03	-6.55	211	114.95	-11.67	245	128.03	93.01
144	82.42	-13.81	178	97.03	-9.36	212	115.07	-9.19	246	128.27	116.29
145	83.64	-6.22	179	97.52	-31.32	213	115.25	-21.41	247	128.52	121.74
146	83.82	-18.60	180	98.25	-46.51	214	116.23	-9.36	248	129.01	57.35
147	84.80	-3.74	181	98.38	-11.67	215	116.54	-9.36	249	129.13	39.52
148	85.11	-26.36	182	98.56	-3.58	216	116.72	-24.71	250	129.44	101.27
149	85.23	-9.03	183	98.93	-28.84	217	117.94	-3.58	251	129.56	36.71
150	85.48	-27.02	184	99.23	-44.03	218	118.06	-29.00	252	129.68	116.62
151	86.70	-6.22	185	99.42	-46.34	219	118.13	-12.16	253	130.60	70.56
152	86.94	-26.69	186	100.39	-39.41	220	119.10	-46.01	254	130.78	52.06
153	87.13	-39.57	187	100.64	-44.36	221	119.35	-11.67	255	131.03	41.99
154	88.47	-13.81	188	101.01	-47.00	222	120.33	-46.18	256	132.13	49.75
155	88.59	-31.48	189	102.04	-41.55	223	120.75	-13.98	257	132.13	57.35
156	88.65	-39.08	190	102.29	-46.67	224	121.49	-44.03	258	132.31	103.91
157	89.82	-21.57	191	103.82	-43.70	225	122.04	-46.67	259	133.59	62.14
158	90.00	-33.63	192	103.94	-46.51	226	122.16	-9.36	260	133.90	122.07
159	90.00	-44.03	193	104.00	-49.48	227	122.71	-36.43	261	133.90	59.66
160	91.65	-44.19	194	105.16	-41.72	228	122.96	-49.64	262	135.24	64.94
161	91.77	-39.57	195	105.22	-33.46	229	123.69	-16.62	263	135.67	129.50
162	91.83	-46.67	196	105.47	-44.19	230	124.24	-16.79	264	135.67	85.91
163	93.24	-41.55	197	106.69	-49.31	231	124.61	-44.03	265	136.77	64.94
164	93.55	-46.18	198	106.88	-54.43	232	125.16	-36.93	266	136.83	106.22
165	93.79	-46.34	199	108.46	-51.62	233	125.52	-13.65	267	137.02	134.62
166	94.46	-37.09	200	108.59	-44.19	234	126.20	-33.63	268	138.36	140.56
167	94.77	-42.38	201	109.01	-16.62	235	126.26	-39.74	269	138.49	121.90
168	94.83	-39.41	202	109.99	-51.95	236	126.44	41.83	270	138.67	145.18
169	95.20	-21.57	203	110.18	-36.76	237	126.44	26.97	271	139.83	129.83
170	95.26	-6.88	204	110.24	-11.83	238	126.50	85.58	272	140.07	142.71

A136(Cont)
File No=f136(Cont.) STS-3 V34T9319 RH PLB INS TEMP X=670

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
273	140.26	145.18	307	155.30	75.34	341	0.00	0.00	375	0.00	0.00
274	141.54	137.42	308	155.60	55.20	342	0.00	0.00	376	0.00	0.00
275	141.60	121.90	309	156.95	62.96	343	0.00	0.00	377	0.00	0.00
276	141.85	142.71	310	157.50	41.99	344	0.00	0.00	378	0.00	0.00
277	142.89	139.24	311	157.50	36.38	345	0.00	0.00	379	0.00	0.00
278	142.89	64.94	312	158.54	50.25	346	0.00	0.00	380	0.00	0.00
279	143.01	116.29	313	158.66	36.38	347	0.00	0.00	381	0.00	0.00
280	143.13	144.85	314	158.72	28.95	348	0.00	0.00	382	0.00	0.00
281	143.25	152.78	315	160.01	41.99	349	0.00	0.00	383	0.00	0
282	143.56	129.50	316	160.01	30.93	350	0.00	0.00	384	0.00	0.
283	143.80	72.87	317	160.37	21.35	351	0.00	0.00	385	0.00	0.00
284	143.99	59.66	318	161.72	33.74	352	0.00	0.00	386	0.00	0.00
285	144.05	50.41	319	161.78	24.33	353	0.00	0.00	387	0.00	0.00
286	144.48	70.39	320	162.09	18.38	354	0.00	0.00	388	0.00	0.00
287	144.66	118.77	321	163.55	16.57	355	0.00	0.00	389	0.00	0.00
288	146.01	137.42	322	163.68	84.09	356	0.00	0.00	390	0.00	0.00
289	146.25	145.18	323	163.68	18.71	357	0.00	0.00	391	0.00	0.00
290	146.25	140.56	324	164.84	21.02	358	0.00	0.00	392	0.00	0.00
291	147.53	140.73	325	165.14	13.92	359	0.00	0.00	393	0.00	0.00
292	147.66	145.18	326	165.20	8.97	360	0.00	0.00	394	0.00	0.00
293	147.78	147.83	327	165.75	18.38	361	0.00	0.00	395	0.00	0.00
294	148.88	145.35	328	165.94	24.00	362	0.00	0.00	396	0.00	0.00
295	148.94	140.73	329	166.30	13.92	363	0.00	0.00	397	0.00	0.00
296	149.06	153.11	330	166.43	18.55	364	0.00	0.00	398	0.00	0.00
297	150.41	150.14	331	166.61	0.72	365	0.00	0.00	399	0.00	0.00
298	150.84	156.08	332	166.98	-7.04	366	0.00	0.00	400	0.00	0.00
299	150.90	124.88	333	167.77	0.55	367	0.00	0.00	401	0.00	0.00
300	152.30	140.73	334	168.20	3.52	368	0.00	0.00	402	0.00	0.00
301	152.49	158.72	335	168.57	4.35	369	0.00	0.00	403	0.00	0.00
302	152.49	119.43	336	168.87	6.49	370	0.00	0.00	404	0.00	0.00
303	153.71	114.64	337	0.00	0.00	371	0.00	0.00	405	0.00	0.00
304	153.77	83.43	338	0.00	0.00	372	0.00	0.00	406	0.00	0.00
305	153.77	70.72	339	0.00	0.00	373	0.00	0.00	407	0.00	0.00
306	155.24	88.22	340	0.00	0.00	374	0.00	0.00	408	0.00	0.00

Max Temp= 158.72 F; Min Temp= -99.50 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

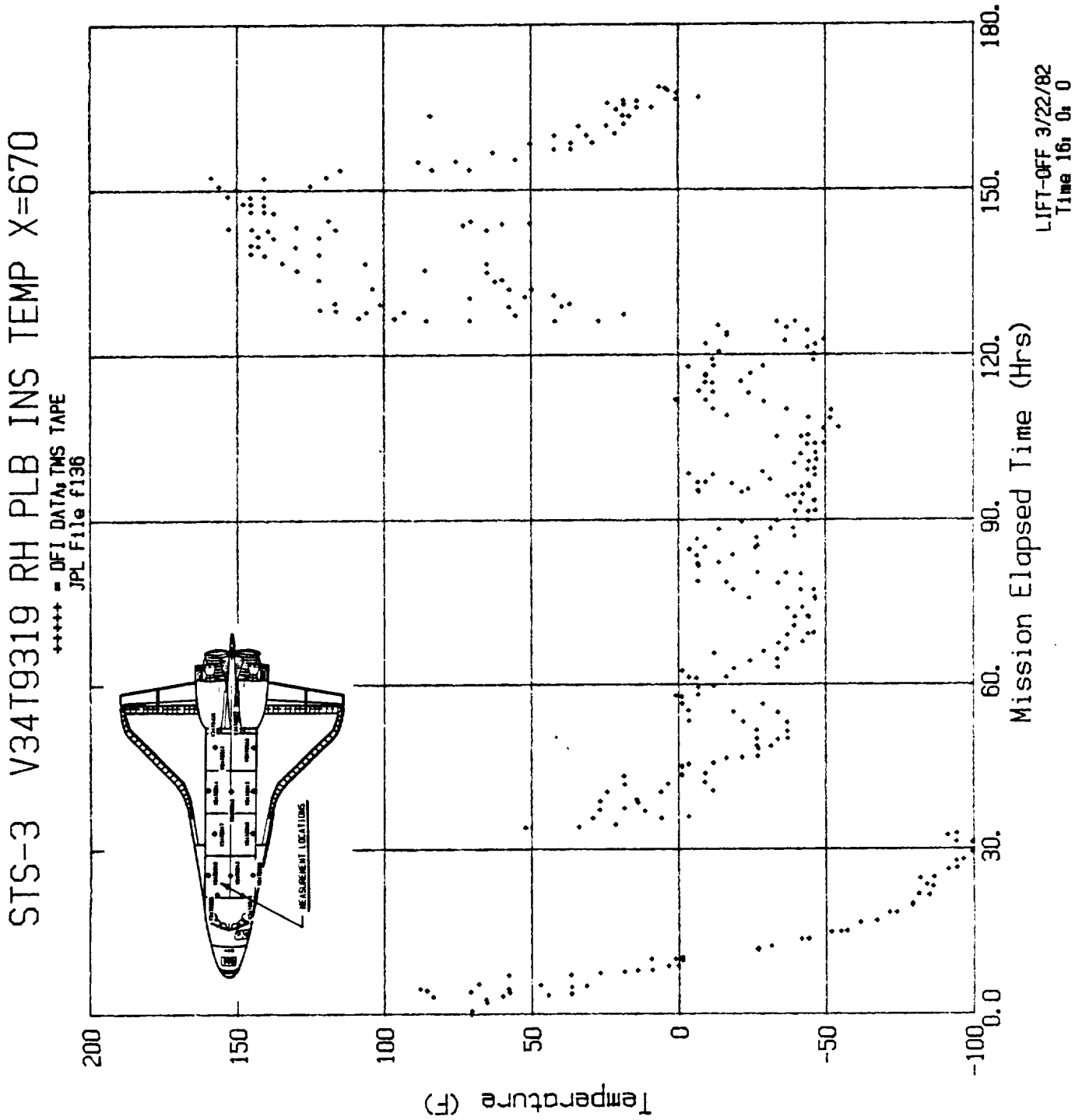
STS-3 V34T9319 RH PLB INS TEMP X=670
+++++ = DFI DATA, TMS TAPE
JPL File f136
MEASUREMENT LOCATIONS
Temperature (F)
200
150
100
50
0
-50
-100
0.0
30.
60.
90.
120.
150.
180.
Mission Elapsed Time (Hrs)
LIFT-OFF 3/22/82
Time 16: 0: 0

Figure A-136

A137
File No=f137

STS-3 V34T9320 LH PLB INS TEMP X=670

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	0.61	71.07	35	14.96	-121.67	69	33.65	62.27	103	51.80	-71.51
2	1.16	71.51	36	15.33	-123.65	70	33.84	55.67	104	53.20	-96.37
3	1.89	58.97	37	15.51	-126.29	71	34.14	73.49	105	53.44	-46.20
4	2.75	40.70	38	16.67	-126.51	72	35.55	47.74	106	53.69	6.60
5	2.93	55.67	39	16.86	-128.27	73	35.73	70.41	107	54.54	-91.09
6	3.12	97.91	40	16.92	-130.69	74	35.98	37.62	108	54.60	-33.44
7	3.36	29.70	41	18.20	-130.69	75	37.38	61.83	109	54.85	11.88
8	3.60	-13.20	42	18.38	-126.73	76	37.62	58.31	110	55.95	-71.07
9	3.79	-33.66	43	18.45	-133.55	77	38.54	52.59	111	56.13	-71.73
10	4.09	14.74	44	19.79	-136.41	78	38.66	40.26	112	56.25	6.82
11	4.34	69.09	45	20.10	-136.63	79	38.97	45.10	113	56.31	22.22
12	4.58	89.11	46	20.28	-128.71	80	40.01	41.14	114	58.15	17.38
13	4.89	95.05	47	21.50	-128.49	81	40.37	-29.26	115	58.33	24.86
14	4.95	38.50	48	21.62	-136.41	82	40.50	19.58	116	58.39	13.86
15	5.19	-17.82	49	21.68	-116.39	83	41.72	25.52	117	59.55	3.96
16	5.37	-33.22	50	22.97	-131.13	84	42.14	2.20	118	59.61	18.92
17	5.56	9.68	51	23.15	-126.29	85	42.45	-31.24	119	60.83	11.66
18	5.74	69.31	52	24.43	-99.01	86	43.37	27.06	120	60.96	24.42
19	6.96	79.43	53	24.68	-113.09	87	43.61	-17.82	121	61.14	1.54
20	7.27	4.62	54	26.33	-123.87	88	43.67	-33.44	122	62.54	29.26
21	7.27	-26.40	55	26.51	-128.27	89	45.08	-26.40	123	62.85	-56.55
22	7.63	-44.44	56	26.51	-135.31	90	45.08	-29.48	124	62.91	-9.02
23	7.76	-53.69	57	27.67	-129.81	91	45.32	-49.28	125	64.32	-26.40
24	8.00	-64.25	58	27.67	-136.19	92	46.60	-51.05	126	64.62	-69.09
25	8.55	-61.83	59	27.91	-141.03	93	46.91	-76.79	127	65.54	6.82
26	8.92	-62.05	60	28.89	-130.03	94	47.15	-88.45	128	65.78	-44.00
27	8.92	-47.08	61	29.07	-139.05	95	48.25	-86.91	129	65.84	-76.57
28	10.26	-26.18	62	29.44	-141.91	96	48.56	-96.37	130	67.37	-56.11
29	10.38	-15.18	63	30.60	-141.03	97	48.68	-86.47	131	67.68	-84.27
30	10.69	-31.02	64	31.15	-130.03	98	49.78	-101.65	132	69.08	-61.39
31	11.91	-106.27	65	31.21	-116.17	99	49.84	-91.31	133	69.32	-88.89
32	12.15	-108.69	66	32.37	-113.31	100	50.27	-81.41	134	69.51	-101.43
33	13.38	-116.61	67	32.49	-123.87	101	51.25	-96.81	135	70.55	-73.71
34	13.86	-119.25	68	32.74	-128.27	102	51.61	-104.07	136	71.95	-81.19

A137(Cont)
File No=f137(Cont.) STS-3 V34T9320 LH PLB INS TEMP X=670

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
137	72.32	-96.59	171	91.44	-71.73	205	103.22	-84.71	239	121.12	-84.27
138	72.44	-101.65	172	91.44	-93.51	206	103.28	-98.79	240	121.61	-96.59
139	74.03	-58.53	173	91.68	-104.29	207	103.41	-104.29	241	122.28	19.36
140	74.27	-76.79	174	92.72	-76.57	208	104.93	-62.49	242	122.71	-44.22
141	74.27	-71.07	175	92.84	-96.81	209	105.06	-86.69	243	122.95	-103.85
142	75.55	-104.07	176	93.08	-104.73	210	105.24	-96.81	244	123.44	-6.82
143	75.55	-101.43	177	94.24	-57.21	211	106.64	-108.47	245	123.75	6.38
144	75.74	-41.58	178	94.43	-67.11	212	106.89	-101.65	246	124.11	-83.83
145	76.59	-104.51	179	94.73	-82.07	213	108.17	-86.69	247	124.66	-41.80
146	76.78	-91.53	180	95.04	16.72	214	108.17	-106.71	248	125.03	16.28
147	77.02	-21.56	181	95.10	-29.48	215	108.35	-9.24	249	125.70	-62.27
148	78.49	-71.29	182	95.59	29.26	216	109.45	-104.29	250	125.82	-33.66
149	78.55	-9.02	183	95.71	-13.42	217	109.76	-69.09	251	125.88	-21.56
150	78.98	18.70	184	96.02	-79.21	218	109.88	6.38	252	125.95	44.66
151	80.26	-86.69	185	96.32	-96.81	219	111.22	-51.71	253	126.01	28.82
152	80.26	-71.29	186	96.50	-99.23	220	111.59	11.66	254	126.19	83.39
153	80.50	-46.86	187	96.63	-35.64	221	111.84	34.10	255	126.43	96.37
154	81.42	9.02	188	96.69	16.28	222	112.87	-36.30	256	126.80	122.33
155	81.91	21.34	189	97.05	22.00	223	113.00	10.78	257	127.04	69.97
156	81.97	9.24	190	97.24	-44.44	224	113.06	26.84	258	127.17	13.42
157	82.33	9.02	191	97.24	-79.43	225	114.34	9.02	259	127.90	94.17
158	83.25	21.56	192	97.54	-104.29	226	114.58	24.42	260	127.96	78.99
159	85.08	22.22	193	97.79	-104.29	227	114.65	-3.30	261	128.20	111.77
160	85.14	18.92	194	98.03	22.00	228	115.87	18.70	262	128.39	129.81
161	85.14	-15.84	195	98.03	-6.60	229	116.23	24.42	263	128.57	54.35
162	86.30	18.92	196	98.70	-33.66	230	116.36	-6.38	264	128.69	29.26
163	86.55	-29.04	197	98.89	-86.69	231	117.70	33.66	265	129.00	102.09
164	86.85	-71.73	198	99.01	-101.43	232	117.70	22.00	266	129.00	65.35
165	88.01	3.96	199	100.23	-67.11	233	118.07	-29.48	267	129.37	102.53
166	88.20	-47.08	200	100.48	-91.09	234	118.68	-101.65	268	129.73	63.15
167	88.26	-82.73	201	100.84	-104.29	235	118.86	13.42	269	129.98	29.26
168	89.60	-9.46	202	101.82	-76.79	236	119.90	-99.23	270	130.22	6.60
169	89.79	-59.41	203	102.00	-96.59	237	120.20	-29.70	271	131.56	27.28
170	89.85	-86.91	204	102.12	-104.07	238	120.63	16.72	272	131.63	3.96

A137(Cont)
File No=f137(Cont.) STS-3 V34T9320 LH PLB INS TEMP. X=670

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
273	132.05	63.15	307	147.32	108.91	341	165.04	-41.58	375	0.00	0.00
274	133.34	22.66	308	147.44	122.33	342	165.10	-66.89	376	0.00	0.00
275	133.52	4.40	309	148.91	122.77	343	165.16	-49.28	377	0.00	0.00
276	133.76	78.77	310	149.03	114.63	344	165.71	1.32	378	0.00	0.00
277	134.80	16.50	311	149.28	130.03	345	165.77	-35.64	379	0.00	0.00
278	134.98	27.28	312	150.19	114.19	346	165.95	4.40	380	0.00	0.00
279	135.05	86.25	313	150.44	117.71	347	166.20	-6.38	381	0.00	0.00
280	136.15	9.02	314	150.62	135.31	348	166.50	-44.22	382	0.00	0.00
281	136.45	96.81	315	150.87	114.63	349	166.81	-79.21	383	0.00	0.00
282	136.45	49.50	316	151.78	122.11	350	167.05	-24.20	384	0.00	0.00
283	137.98	70.41	317	152.21	138.39	351	167.11	-29.70	385	0.00	0.00
284	138.41	101.87	318	152.27	96.15	352	167.36	-19.14	386	0.00	0.00
285	138.41	106.93	319	153.61	106.71	353	167.48	-11.66	387	0.00	0.00
286	139.57	84.05	320	153.86	69.97	354	167.72	-9.24	388	0.00	0.00
287	139.75	104.29	321	153.86	29.26	355	167.85	-6.16	389	0.00	0.00
288	139.87	108.91	322	155.26	78.77	356	168.15	-4.18	390	0.00	0.00
289	140.97	96.37	323	155.32	75.25	357	168.33	-1.10	391	0.00	0.00
290	141.03	63.37	324	155.57	9.02	358	0.00	0.00	392	0.00	0.00
291	141.28	106.49	325	156.67	55.23	359	0.00	0.00	393	0.00	0.00
292	142.31	57.65	326	156.85	1.54	360	0.00	0.00	394	0.00	0.00
293	142.50	94.83	327	157.03	-23.76	361	0.00	0.00	395	0.00	0.00
294	142.56	57.65	328	158.44	33.88	362	0.00	0.00	396	0.00	0.00
295	142.80	106.05	329	158.56	-6.38	363	0.00	0.00	397	0.00	0.00
296	143.05	126.95	330	158.93	-34.10	364	0.00	0.00	398	0.00	0.00
297	143.23	122.11	331	160.15	16.50	365	0.00	0.00	399	0.00	0.00
298	143.72	1.76	332	160.21	-13.42	366	0.00	0.00	400	0.00	0.00
299	143.96	-28.60	333	160.45	-36.30	367	0.00	0.00	401	0.00	0.00
300	144.15	-48.84	334	161.49	3.74	368	0.00	0.00	402	0.00	0.00
301	144.33	63.37	335	161.62	-23.76	369	0.00	0.00	403	0.00	0.00
302	144.33	-20.90	336	161.86	-27.06	370	0.00	0.00	404	0.00	0.00
303	145.67	96.37	337	163.08	-23.98	371	0.00	0.00	405	0.00	0.00
304	145.80	104.07	338	163.20	-3.96	372	0.00	0.00	406	0.00	0.00
305	145.92	117.49	339	163.33	2.64	373	0.00	0.00	407	0.00	0.00
306	147.08	100.99	340	163.45	88.23	374	0.00	0.00	408	0.00	0.00

Max Temp= 138.39 F; Min Temp=-141.91 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

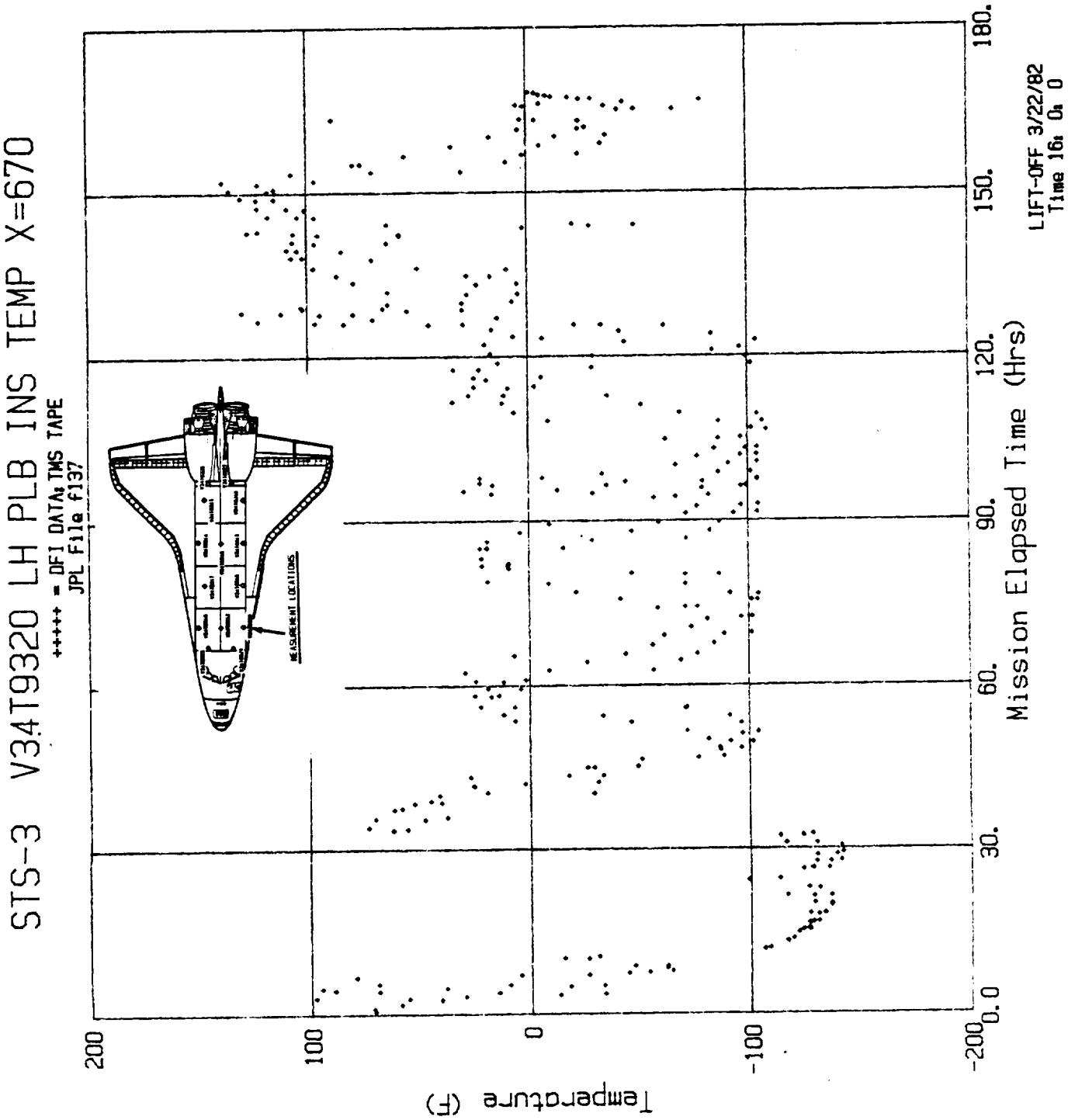
STS-3 V34T9320 LH PLB INS TEMP X=670
+++++ = DFI DATA, TMS TAPE
JPL File F137
MEASUREMENT LOCATIONS
LIFT-OFF 3/22/82
Time 16: 0: 0
Mission Elapsed Time (Hrs)
Temperature (F)
0.0
30.
60.
90.
120.
150.
180.
200
100
0
-100
-200

Figure A-137

A138
File No=f138

STS-3 V34T9324 LH FWD BLKHD TEMPS X=576

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	0.37	64.03	35	12.16	-82.67	69	31.34	-121.95	103	48.94	-75.08
2	0.55	66.67	36	12.28	-85.48	70	31.41	-100.33	104	49.98	-74.92
3	0.92	66.34	37	13.69	-92.57	71	32.63	-105.12	105	50.22	-47.52
4	1.10	66.34	38	13.75	-94.88	72	32.63	-114.85	106	50.29	-79.70
5	1.77	69.97	39	13.81	-97.85	73	32.81	-114.69	107	51.63	-77.56
6	1.96	58.75	40	15.34	-102.48	74	33.73	68.98	108	51.87	-79.70
7	2.32	69.14	41	15.52	-104.95	75	33.97	45.87	109	51.93	-39.93
8	2.69	40.43	42	15.76	-107.26	76	33.97	27.72	110	53.28	-72.11
9	2.99	58.91	43	16.74	-109.41	77	35.68	17.82	111	53.58	-22.28
10	3.42	68.81	44	16.99	-102.48	78	35.93	30.20	112	53.71	18.15
11	3.48	27.56	45	17.05	-115.18	79	36.17	-4.95	113	54.75	-62.21
12	3.60	-5.28	46	18.27	-117.49	80	37.27	18.65	114	54.81	-12.54
13	4.09	-22.44	47	18.39	-114.85	81	37.39	27.89	115	55.05	21.12
14	4.40	10.40	48	18.57	-92.74	82	37.64	10.23	116	56.21	-42.41
15	4.52	51.16	49	19.80	-119.97	83	38.55	18.15	117	56.46	22.77
16	4.70	71.45	50	20.04	-114.85	84	38.80	23.10	118	56.64	27.56
17	4.77	64.19	51	20.29	-94.06	85	38.80	5.78	119	58.17	25.74
18	5.19	30.53	52	21.69	-92.24	86	40.26	17.99	120	58.29	23.10
19	5.50	-15.35	53	21.87	-82.84	87	40.69	-4.79	121	58.47	8.25
20	5.50	-22.44	54	22.91	-97.85	88	40.75	-30.03	122	59.51	15.51
21	5.68	6.11	55	23.03	-87.46	89	41.98	8.42	123	59.69	21.29
22	5.80	46.04	56	23.16	-94.39	90	42.34	-12.21	124	59.76	0.33
23	7.03	53.47	57	24.56	-100.00	91	42.34	-27.39	125	60.92	23.10
24	7.03	2.31	58	25.05	-102.48	92	43.26	2.48	126	60.98	20.96
25	7.45	-18.32	59	26.46	-92.08	93	43.75	-27.72	127	61.34	-7.26
26	7.76	-27.72	60	26.64	-104.95	94	43.81	-22.44	128	62.38	23.43
27	8.07	-37.46	61	26.76	-117.16	95	45.21	-27.72	129	62.63	23.60
28	8.25	-47.85	62	27.80	-109.41	96	45.27	-19.97	130	63.05	-22.11
29	9.16	-33.66	63	27.86	-97.52	97	45.76	-40.10	131	63.24	-52.15
30	9.23	-27.89	64	28.23	-121.78	98	46.92	-45.54	132	64.52	-32.67
31	9.23	-12.71	65	29.14	-100.33	99	47.23	-59.90	133	64.70	-60.40
32	10.39	58.58	66	29.57	-115.02	100	47.35	-67.16	134	65.74	-2.48
33	10.51	-2.48	67	29.76	-124.42	101	48.64	-67.00	135	65.99	-64.85
34	12.04	-79.87	68	31.28	-114.19	102	48.82	-60.23	136	66.05	-45.21

A138(Cont)
File No=f138(Cont.) STS-3 V34T9324 LH FWD BLKHD TEMPS X=576

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
137	67.70	-52.48	171	86.82	-34.65	205	98.98	-72.44	239	117.74	33.66
138	67.88	-70.30	172	87.01	-60.40	206	99.35	-79.37	240	117.92	15.68
139	69.29	-57.59	173	87.92	-2.48	207	100.69	-60.23	241	118.17	-32.18
140	69.47	-75.08	174	88.35	-45.05	208	100.88	-74.59	242	118.90	17.99
141	69.65	-82.34	175	88.41	-67.16	209	101.18	-82.18	243	118.96	-77.56
142	70.63	-62.21	176	90.06	-17.49	210	101.98	-62.05	244	120.18	-79.70
143	72.34	-67.16	177	90.24	-52.64	211	102.22	-76.90	245	120.55	-12.21
144	72.46	-77.56	178	90.24	-69.97	212	102.46	-81.68	246	120.86	10.56
145	72.83	-77.39	179	91.59	-62.05	213	103.44	-69.31	247	121.47	-69.80
146	73.99	-64.69	180	91.71	-74.75	214	103.81	-78.88	248	121.96	-74.59
147	74.18	-64.69	181	91.96	-82.18	215	103.99	-82.01	249	122.26	21.78
148	74.30	-57.59	182	93.18	-67.16	216	105.09	-62.21	250	122.81	-45.21
149	75.64	-82.18	183	93.18	-77.39	217	105.21	-37.13	251	123.24	-81.85
150	75.76	-75.08	184	93.36	-82.01	218	105.52	-77.23	252	123.42	0.00
151	75.82	-17.66	185	94.52	-55.12	219	107.05	-77.06	253	124.09	0.33
152	76.86	-62.38	186	94.95	-70.79	220	107.23	-89.93	254	124.40	-66.83
153	76.99	-82.34	187	95.01	-66.83	221	108.33	-84.82	255	124.64	-32.51
154	77.11	-4.79	188	95.38	23.60	222	108.45	2.48	256	125.07	12.87
155	78.70	-42.90	189	95.38	-12.05	223	108.45	-62.05	257	125.99	-60.07
156	78.88	2.48	190	95.68	23.60	224	109.74	-81.85	258	126.11	-42.90
157	79.06	23.43	191	95.87	-19.64	225	109.98	15.68	259	126.17	-34.49
158	80.29	-54.95	192	96.29	-64.36	226	110.16	-44.88	260	126.23	13.53
159	80.53	-12.71	193	96.48	-77.23	227	111.51	-27.39	261	126.29	59.08
160	80.53	-30.36	194	96.66	-74.92	228	111.75	17.99	262	126.35	77.06
161	81.38	17.99	195	96.72	-14.85	229	112.00	38.78	263	126.54	17.82
162	81.63	18.15	196	96.90	21.29	230	113.03	-14.36	264	126.60	84.65
163	81.87	20.96	197	97.09	18.32	231	113.16	19.14	265	126.90	113.20
164	82.00	0.17	198	97.27	-66.83	232	113.34	25.91	266	127.15	66.83
165	83.40	21.12	199	97.33	-42.41	233	114.56	15.51	267	127.58	23.60
166	83.77	-12.71	200	97.88	-82.18	234	114.75	23.27	268	127.88	89.93
167	84.93	23.60	201	97.88	-79.04	235	115.05	-12.38	269	127.94	74.75
168	85.11	13.20	202	98.19	27.89	236	116.27	20.79	270	128.25	102.97
169	85.54	-27.39	203	98.25	5.78	237	116.46	20.79	271	128.31	124.26
170	86.58	13.04	204	98.68	-37.13	238	116.82	-19.64	272	128.68	59.41

A138(Cont)
File No=f138(Cont.) STS-3 V34T9324 LH FWD BLKHD TEMPS X=576

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
273	128.86	38.45	307	143.89	28.55	341	160.45	-29.87	375	0.00	0.00
274	129.04	23.76	308	144.07	-2.15	342	161.67	-6.93	376	0.00	0.00
275	129.16	82.51	309	144.38	69.47	343	161.73	-21.78	377	0.00	0.00
276	129.35	100.17	310	144.38	-12.05	344	161.98	-24.42	378	0.00	0.00
277	129.71	69.64	311	144.44	8.58	345	163.38	-27.23	379	0.00	0.00
278	130.08	43.40	312	145.72	95.54	346	163.50	-9.08	380	0.00	0.00
279	130.26	26.07	313	145.85	102.97	347	163.56	69.97	381	0.00	0.00
280	131.73	46.53	314	146.03	111.06	348	164.97	-24.09	382	0.00	0.00
281	131.91	23.76	315	147.19	102.97	349	165.15	-24.09	383	0.00	0.00
282	132.10	69.47	316	147.37	108.91	350	165.52	-44.55	384	0.00	0.00
283	133.44	41.25	317	147.43	121.95	351	165.70	-31.68	385	0.00	0.00
284	133.56	23.76	318	149.02	111.22	352	166.07	-6.77	386	0.00	0.00
285	133.75	82.34	319	149.27	126.57	353	166.07	1.16	387	0.00	0.00
286	134.97	36.47	320	150.49	131.68	354	166.37	-2.15	388	0.00	0.00
287	135.03	40.92	321	150.49	113.20	355	166.74	-24.09	389	0.00	0.00
288	135.15	93.07	322	150.79	116.17	356	167.05	-57.59	390	0.00	0.00
289	136.44	31.19	323	151.83	112.87	357	167.54	-17.49	391	0.00	0.00
290	136.56	98.35	324	152.08	137.95	358	167.90	-12.38	392	0.00	0.00
291	136.68	59.08	325	152.32	100.33	359	168.02	-9.41	393	0.00	0.00
292	138.15	77.89	326	153.67	82.34	360	168.21	-6.77	394	0.00	0.00
293	138.39	103.30	327	154.15	46.70	361	168.45	-4.13	395	0.00	0.00
294	138.51	108.91	328	154.28	21.62	362	168.70	-1.82	396	0.00	0.00
295	139.61	87.62	329	155.13	59.57	363	0.00	0.00	397	0.00	0.00
296	139.80	106.27	330	155.50	39.11	364	0.00	0.00	398	0.00	0.00
297	139.98	111.55	331	155.62	0.33	365	0.00	0.00	399	0.00	0.00
298	141.14	98.35	332	156.60	28.71	366	0.00	0.00	400	0.00	0.00
299	141.20	69.47	333	156.78	28.71	367	0.00	0.00	401	0.00	0.00
300	141.45	105.94	334	156.97	-6.44	368	0.00	0.00	402	0.00	0.00
301	142.61	58.91	335	157.33	-19.47	369	0.00	0.00	403	0.00	0.00
302	142.73	90.76	336	158.55	13.20	370	0.00	0.00	404	0.00	0.00
303	142.85	67.16	337	158.55	-11.88	371	0.00	0.00	405	0.00	0.00
304	142.85	105.78	338	159.10	-27.39	372	0.00	0.00	406	0.00	0.00
305	142.85	108.42	339	160.26	3.14	373	0.00	0.00	407	0.00	0.00
306	143.46	122.28	340	160.26	-17.00	374	0.00	0.00	408	0.00	0.00

Max Temp= 137.95 F; Min Temp=-124.42 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

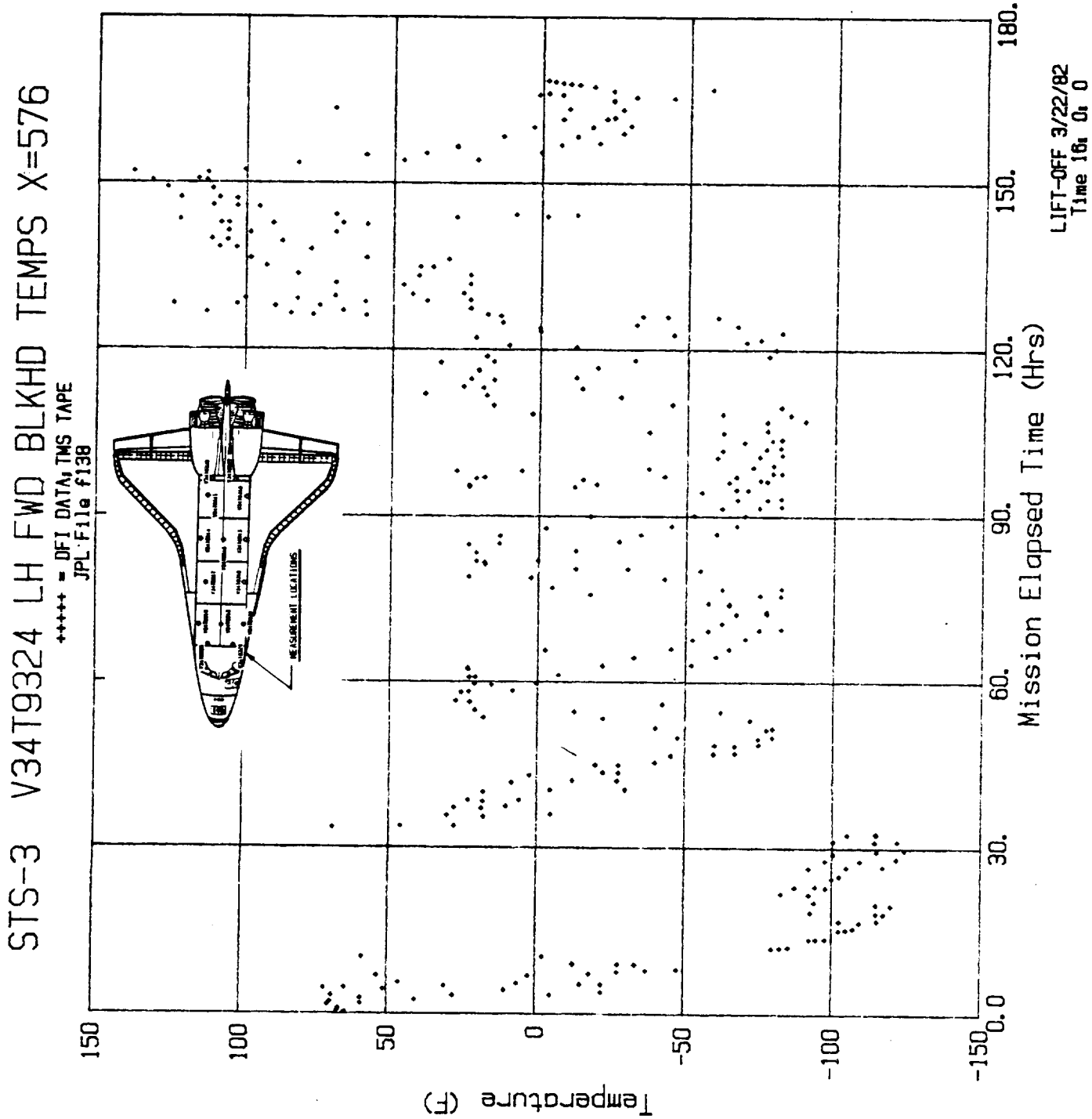
STS-3 V34T9324 LH FWD BLKHD TEMPS X=576
+++++ = DFI DATA, TMS TAPE
JPL File f138
MEASUREMENT LOCATIONS
LIFT-OFF 3/22/82
Time 16: 0: 0
Mission Elapsed Time (Hrs)
Temperature (F)
0.0
30.
60.
90.
120.
150.
180.
150
100
50
0
-50
-100
-150

Figure A-138

A139
File No=f139 STS-3 V34T9325 RH FWD BLKHD TEMPS X=576

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	0.12	63.06	35	10.58	71.98	69	29.65	-127.02	103	48.49	-87.02
2	0.12	63.06	36	11.92	-105.21	70	30.20	-136.45	104	48.79	-94.46
3	0.37	69.17	37	12.04	-107.36	71	31.55	-126.86	105	48.85	-59.75
4	0.79	69.83	38	12.29	-112.15	72	31.61	-116.94	106	49.77	-92.15
5	1.04	69.83	39	13.76	-117.77	73	32.65	-114.13	107	50.14	-97.11
6	1.71	77.77	40	13.76	-120.08	74	33.08	-124.05	108	50.38	-40.08
7	1.90	62.40	41	14.00	-124.21	75	33.08	-126.53	109	51.48	-94.63
8	1.96	56.61	42	15.41	-123.72	76	34.06	79.92	110	51.66	-27.36
9	2.38	69.67	43	15.59	-126.53	77	34.12	41.07	111	51.85	-92.31
10	2.63	38.60	44	15.77	-129.83	78	34.36	28.35	112	53.44	-75.12
11	3.24	62.23	45	16.69	-131.98	79	35.77	10.50	113	53.56	-9.17
12	3.36	70.17	46	17.00	-132.15	80	35.83	20.91	114	53.68	33.80
13	3.55	18.60	47	17.18	-117.11	81	36.32	-14.63	115	54.66	-2.07
14	3.79	-24.55	48	18.46	-102.56	82	37.42	8.84	116	54.72	-57.60
15	3.91	-45.54	49	18.53	-136.78	83	37.48	13.14	117	55.03	33.97
16	4.34	-7.02	50	18.65	-131.98	84	37.79	-4.55	118	56.19	-27.36
17	4.59	41.24	51	19.99	-138.76	85	38.82	8.51	119	56.68	43.88
18	4.65	56.61	52	20.18	-102.23	86	39.13	8.18	120	58.21	38.93
19	4.89	64.71	53	20.42	-129.67	87	39.13	-14.46	121	58.33	38.93
20	5.01	21.24	54	21.64	-119.26	88	40.72	0.58	122	58.51	5.21
21	5.32	-32.64	55	21.83	-94.63	89	40.72	-24.21	123	59.55	28.68
22	5.63	-44.55	56	21.95	-79.42	90	40.96	-47.85	124	59.67	31.16
23	5.75	-9.17	57	23.05	-101.90	91	42.25	-6.53	125	59.74	-6.69
24	5.93	33.80	58	23.11	-99.75	92	42.31	-29.67	126	61.08	33.97
25	7.15	34.13	59	23.23	-87.36	93	42.43	-45.04	127	61.14	31.16
26	7.28	-14.96	60	25.01	-111.82	94	43.47	-14.30	128	61.32	-17.60
27	7.46	-37.11	61	25.13	-116.94	95	43.72	-39.26	129	62.49	25.87
28	7.83	-39.92	62	26.41	-99.75	96	43.90	-37.44	130	62.61	25.87
29	7.95	-57.77	63	26.72	-116.94	97	45.12	-39.42	131	63.16	-32.64
30	8.32	-70.33	64	26.90	-132.15	98	45.31	-27.69	132	63.40	-66.86
31	9.23	-58.10	65	27.82	-102.23	99	45.61	-52.31	133	64.38	-42.56
32	9.23	5.04	66	27.94	-121.90	100	47.08	-62.07	134	64.57	-72.31
33	9.42	-34.46	67	28.43	-134.63	101	47.20	-79.59	135	65.79	-7.02
34	10.52	-6.86	68	29.59	-107.19	102	47.45	-92.48	136	65.97	-54.79

A139(Cont)
File No=f139(Cont.) STS-3 V34T9325 RH FWD BLKHD TEMPS X=576

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
137	66.03	-79.75	171	85.60	-37.27	205	97.95	23.39	239	116.29	34.13
138	67.68	-65.21	172	86.64	8.35	206	98.19	41.24	240	116.66	23.55
139	67.87	-84.88	173	86.82	-44.55	207	98.80	-47.52	241	116.96	-29.34
140	69.27	-72.48	174	87.13	-75.12	208	98.99	-87.02	242	117.88	47.52
141	69.40	-89.67	175	88.29	-6.69	209	99.05	-99.92	243	118.19	10.50
142	69.52	-99.92	176	88.41	-54.63	210	100.70	-99.75	244	118.37	-44.71
143	70.74	-77.44	177	88.59	-79.92	211	100.70	-89.67	245	118.98	-77.11
144	72.15	-79.42	178	89.94	-26.69	212	100.76	-71.98	246	119.23	28.51
145	72.45	-92.31	179	90.18	-64.38	213	102.04	-77.27	247	120.20	-97.27
146	72.64	-89.34	180	90.24	-84.38	214	102.17	-91.98	248	120.63	0.41
147	74.23	-79.92	181	91.59	-74.79	215	102.29	-96.94	249	121.00	10.83
148	74.41	-74.96	182	91.65	-92.15	216	103.33	-84.71	250	121.67	-84.55
149	74.41	-67.19	183	91.83	-102.23	217	103.57	-97.11	251	122.10	-77.11
150	75.39	-102.23	184	93.00	-82.07	218	103.88	-97.11	252	122.96	-57.27
151	75.75	-79.42	185	93.06	-94.13	219	105.04	-42.40	253	123.51	-99.59
152	75.82	0.25	186	93.24	-99.59	220	105.29	-94.30	254	123.69	13.14
153	76.85	-96.94	187	94.65	-77.93	221	105.35	-77.44	255	124.06	-4.21
154	77.10	-54.13	188	94.71	-67.36	222	107.06	-74.30	256	124.48	-81.74
155	77.16	8.35	189	94.89	-85.04	223	107.12	-109.01	257	124.91	-38.76
156	78.81	-32.31	190	95.26	-75.12	224	108.40	-101.90	258	124.97	-38.93
157	78.81	13.14	191	95.38	36.61	225	108.53	-51.98	259	125.10	21.40
158	79.18	38.76	192	95.44	0.91	226	108.59	18.76	260	125.28	10.83
159	80.46	-47.85	193	95.75	23.55	227	110.05	-96.94	261	125.95	-59.92
160	80.46	-11.82	194	95.99	-32.81	228	110.12	31.32	262	126.07	-72.64
161	80.65	8.51	195	96.30	-79.59	229	110.12	-32.15	263	126.13	-49.17
162	81.44	28.35	196	96.42	-94.13	230	111.58	-14.46	264	126.20	-54.30
163	81.68	28.35	197	96.54	-77.44	231	111.83	34.13	265	126.26	39.09
164	81.93	30.83	198	96.73	0.74	232	112.01	54.63	266	126.26	54.30
165	81.99	-7.02	199	96.85	34.30	233	113.17	36.45	267	126.38	33.97
166	83.46	33.97	200	96.97	23.55	234	113.17	-1.74	268	126.44	62.23
167	83.58	26.03	201	97.40	-52.31	235	113.29	39.09	269	126.50	64.88
168	83.89	-22.07	202	97.52	-99.92	236	114.82	31.49	270	126.68	71.82
169	85.05	36.45	203	97.58	-81.90	237	115.01	31.49	271	126.99	100.74
170	85.29	15.62	204	97.76	-87.36	238	115.19	-22.07	272	127.36	62.73

A139(Cont)
File No=f139(Cont.) STS-3 V34T9325 RH FWD BLKHD TEMPS X=576

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
273	127.72	23.39	307	142.70	57.27	341	158.72	-32.48	375	0.00	0.00
274	127.97	75.29	308	142.76	80.08	342	159.03	-47.69	376	0.00	0.00
275	128.03	64.88	309	142.83	54.30	343	160.07	-17.60	377	0.00	0.00
276	128.27	87.69	310	142.95	87.52	344	160.31	-34.63	378	0.00	0.00
277	128.58	111.32	311	143.38	103.72	345	160.43	-52.15	379	0.00	0.00
278	128.76	54.30	312	143.93	19.09	346	161.41	-27.36	380	0.00	0.00
279	128.89	28.35	313	144.29	-24.05	347	161.78	-42.07	381	0.00	0.00
280	129.19	3.22	314	144.48	-29.50	348	161.96	-44.88	382	0.00	0.00
281	129.25	62.73	315	144.54	51.98	349	163.31	62.89	383	0.00	0.00
282	129.44	80.25	316	144.60	-4.21	350	163.37	-44.88	384	0.00	0.00
283	130.17	59.75	317	145.82	78.10	351	163.49	-27.36	385	0.00	0.00
284	130.17	36.45	318	145.88	85.21	352	165.08	-49.34	386	0.00	0.00
285	130.48	18.76	319	146.07	93.31	353	165.14	-44.55	387	0.00	0.00
286	132.07	36.45	320	147.04	82.89	354	165.39	-70.00	388	0.00	0.00
287	132.07	15.79	321	147.35	88.02	355	165.88	-49.34	389	0.00	0.00
288	132.25	56.61	322	147.66	100.58	356	165.94	-16.94	390	0.00	0.00
289	133.59	33.97	323	148.94	90.83	357	166.06	-4.21	391	0.00	0.00
290	133.59	15.95	324	149.25	109.34	358	166.37	-6.20	392	0.00	0.00
291	133.90	67.19	325	150.29	93.31	359	166.37	-44.55	393	0.00	0.00
292	134.88	28.68	326	150.71	111.65	360	166.98	-79.26	394	0.00	0.00
293	135.06	75.12	327	150.71	101.07	361	167.28	-34.63	395	0.00	0.00
294	135.24	32.15	328	151.94	101.07	362	167.40	-30.00	396	0.00	0.00
295	136.47	19.09	329	152.00	119.59	363	167.53	-21.40	397	0.00	0.00
296	136.65	50.33	330	152.30	85.21	364	167.77	-14.13	398	0.00	0.00
297	136.77	77.93	331	153.40	72.64	365	167.96	-11.49	399	0.00	0.00
298	138.36	82.89	332	153.89	31.32	366	168.32	-6.69	400	0.00	0.00
299	138.36	63.22	333	154.08	-2.07	367	168.51	-4.05	401	0.00	0.00
300	138.67	88.18	334	155.12	44.21	368	168.69	-1.74	402	0.00	0.00
301	139.52	69.83	335	155.42	21.40	369	0.00	0.00	403	0.00	0.00
302	139.95	85.21	336	155.67	-19.75	370	0.00	0.00	404	0.00	0.00
303	140.07	88.18	337	156.77	8.35	371	0.00	0.00	405	0.00	0.00
304	141.11	75.29	338	156.89	-27.36	372	0.00	0.00	406	0.00	0.00
305	141.30	51.98	339	157.26	-39.09	373	0.00	0.00	407	0.00	0.00
306	141.48	85.04	340	158.36	-6.86	374	0.00	0.00	408	0.00	0.00

Max Temp= 119.59 F; Min Temp=-138.76 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

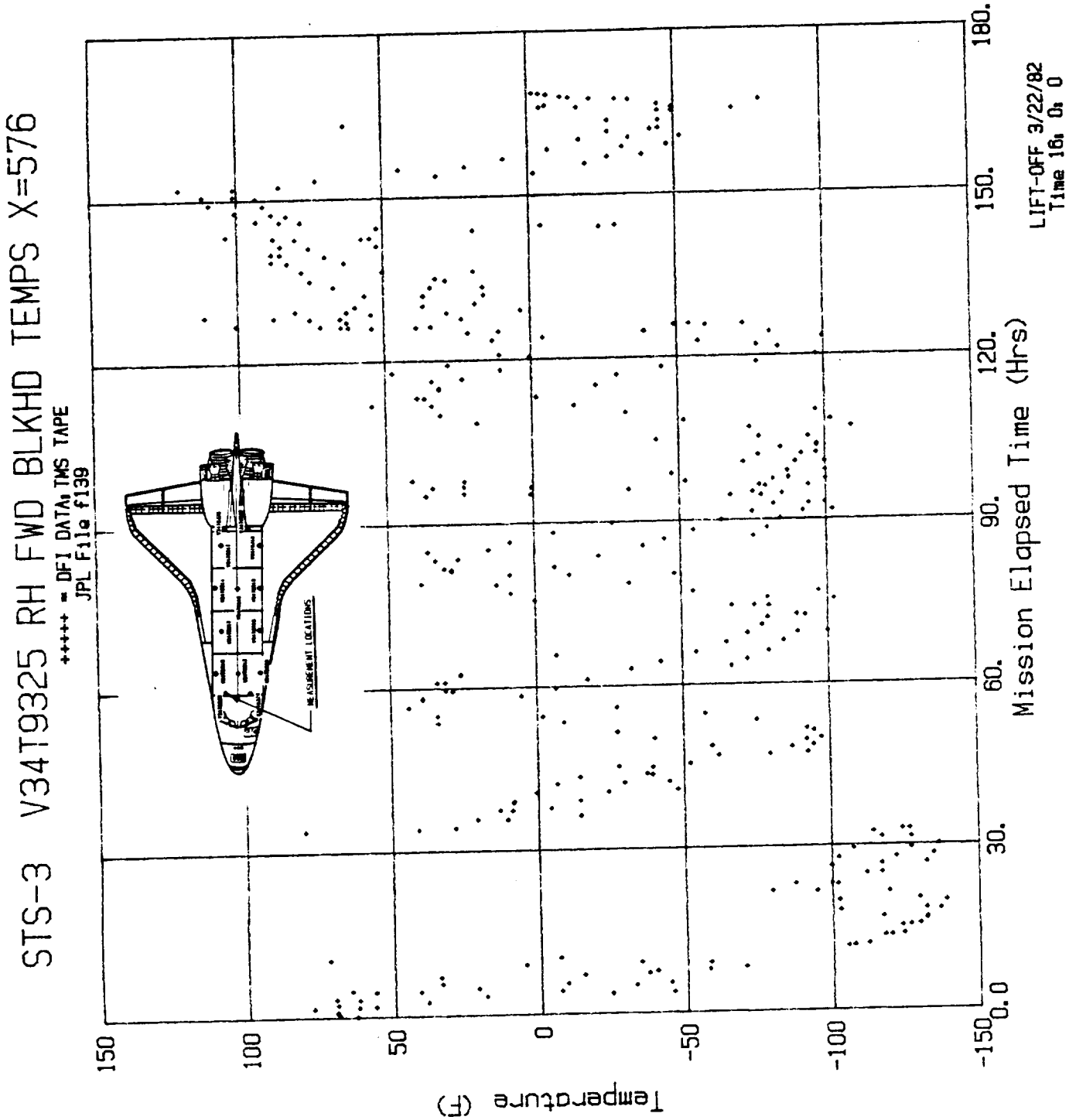
STS-3 V34T9325 RH FWD BLKHD TEMPS X=576
+++++ = DFI DATA, TMS TAPE
JPL File f139
MEASUREMENT LOCATIONS
LIFT-OFF 3/22/82
Time 16: 0: 0
Mission Elapsed Time (Hrs)
Temperature (F)
0.0
30.
60.
90.
120.
150.
180.
150
100
50
0
-50
-100
-150

Figure A-139

A140
File No=f140

STS-3 V34T9326 LH AFT BLKHD TEMPS X=1307

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	0.00	60.79	35	12.48	-48.24	69	32.88	-87.39	103	50.42	-50.22
2	0.30	66.41	36	13.94	-34.86	70	33.13	-69.55	104	50.60	-42.46
3	0.67	66.74	37	13.94	-45.10	71	33.19	-62.44	105	51.82	-47.74
4	1.83	77.31	38	14.31	-60.13	72	34.16	-22.30	106	51.88	-52.37
5	2.07	74.50	39	15.16	-42.62	73	34.28	-4.63	107	51.94	-45.10
6	2.50	69.38	40	15.35	-54.68	74	34.71	19.00	108	53.10	-50.06
7	2.62	74.50	41	15.71	-69.55	75	35.93	0.50	109	53.59	-37.17
8	3.23	51.38	42	16.81	-65.25	76	36.11	26.10	110	53.65	-42.46
9	3.41	33.54	43	17.17	-79.79	77	36.54	13.38	111	54.93	-39.32
10	3.59	40.80	44	17.42	-84.75	78	37.27	16.52	112	54.93	-47.91
11	3.78	28.58	45	18.63	-75.00	79	37.51	33.70	113	55.17	-37.33
12	3.96	13.22	46	18.94	-87.06	80	37.69	26.10	114	56.51	-42.29
13	4.14	10.41	47	19.24	-92.18	81	38.97	28.74	115	56.81	-32.54
14	4.20	30.89	48	19.97	-82.27	82	39.09	38.66	116	58.40	-32.54
15	4.57	38.49	49	20.40	-92.51	83	39.40	23.79	117	58.46	-29.74
16	4.87	40.97	50	20.52	-97.30	84	40.68	38.16	118	58.52	-17.35
17	5.05	28.25	51	21.56	-97.30	85	41.10	-12.22	119	59.74	-39.32
18	5.18	13.55	52	21.92	-100.11	86	41.22	13.55	120	60.04	-29.57
19	5.54	10.24	53	21.92	-101.76	87	41.83	30.89	121	60.10	-19.49
20	5.78	20.98	54	23.20	-100.11	88	42.08	15.69	122	61.68	-22.14
21	5.97	36.18	55	23.50	-105.23	89	42.44	-12.39	123	61.68	-36.84
22	7.25	38.66	56	23.69	-105.07	90	43.54	23.46	124	61.93	-22.14
23	7.55	35.85	57	25.09	-72.36	91	43.84	-12.39	125	63.09	-14.37
24	7.61	38.49	58	25.39	-92.68	92	44.03	2.97	126	63.15	-27.26
25	8.22	33.87	59	26.61	-109.69	93	45.61	3.47	127	63.33	-37.17
26	8.53	21.15	60	26.73	-107.54	94	45.85	-11.56	128	64.79	-37.17
27	8.53	8.43	61	28.25	-111.84	95	46.10	-17.51	129	64.91	-45.10
28	9.32	33.70	62	28.38	-107.54	96	47.01	-17.68	130	66.07	-24.12
29	9.44	31.22	63	28.38	-114.81	97	47.07	-23.95	131	66.43	-39.48
30	10.41	-30.07	64	29.90	-102.09	98	47.37	-37.17	132	66.50	-45.26
31	10.72	8.43	65	29.96	-114.32	99	48.59	-35.02	133	68.02	-44.93
32	10.78	-9.25	66	31.24	-116.96	100	48.65	-44.93	134	68.26	-47.58
33	12.06	-24.61	67	31.48	-79.46	101	48.96	-39.32	135	69.42	-42.13
34	12.36	-29.90	68	31.54	-49.89	102	50.24	-42.79	136	69.42	-47.91

A140(Cont)
File No=f140(Cont.) STS-3 V34T9326 LH AFT BLKHD TEMPS X=1307

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
137	69.84	-54.68	171	90.06	-52.20	205	102.06	-57.32	239	121.48	-52.53
138	70.88	-47.74	172	90.12	-47.25	206	102.24	-60.30	240	121.79	-42.29
139	72.46	-49.56	173	91.46	-52.20	207	103.70	-57.65	241	122.03	-27.26
140	72.71	-54.68	174	91.71	-54.19	208	103.70	-51.71	242	123.00	-52.20
141	72.95	-52.20	175	91.89	-57.32	209	103.94	-57.65	243	123.43	-29.74
142	74.23	-22.30	176	93.17	-52.20	210	105.28	-66.91	244	123.98	-32.21
143	74.41	-36.84	177	93.35	-54.35	211	105.47	-74.83	245	124.34	-45.10
144	74.53	-57.65	178	93.65	-54.35	212	105.65	-59.80	246	124.89	-2.15
145	75.75	-60.13	179	94.69	-24.28	213	106.81	-59.80	247	125.50	-2.15
146	75.81	-54.19	180	94.93	-27.09	214	106.99	-52.20	248	125.99	-23.95
147	75.99	-42.29	181	95.12	-29.74	215	108.15	-57.65	249	126.17	-19.33
148	77.15	-59.80	182	95.42	-32.54	216	108.57	-47.74	250	126.35	6.11
149	77.27	-52.04	183	95.42	-37.17	217	108.76	-32.54	251	126.41	19.00
150	77.76	-41.96	184	95.66	-21.97	218	109.91	-52.04	252	126.41	38.82
151	79.10	-41.96	185	95.78	-37.17	219	110.09	-42.29	253	126.54	43.94
152	80.44	-64.59	186	96.03	-52.20	220	110.16	-32.38	254	126.72	47.25
153	80.62	-66.91	187	96.39	-52.04	221	111.43	-39.65	255	127.08	56.83
154	80.81	-66.91	188	96.39	-54.52	222	111.74	-32.54	256	127.14	29.07
155	82.27	-39.48	189	96.94	-37.00	223	111.86	-32.54	257	127.45	0.83
156	82.39	-32.54	190	96.94	-42.62	224	113.02	-37.17	258	127.81	56.99
157	82.45	-24.12	191	97.06	-32.21	225	113.38	-33.87	259	127.88	67.24
158	83.73	-38.82	192	97.37	-47.58	226	114.97	-39.15	260	128.06	69.88
159	83.85	-26.93	193	97.67	-54.52	227	115.09	-32.38	261	128.18	75.50
160	84.15	-29.57	194	97.92	-59.97	228	116.31	-39.15	262	128.48	33.87
161	85.01	-36.67	195	98.10	-57.65	229	116.49	-27.59	263	128.91	21.48
162	85.07	-24.45	196	98.28	-36.67	230	116.61	-31.88	264	129.03	69.88
163	85.25	-36.84	197	98.46	-39.81	231	117.71	-34.20	265	129.03	33.70
164	86.53	-24.12	198	98.95	-44.93	232	117.95	-27.09	266	129.40	77.81
165	86.89	-39.32	199	99.32	-57.49	233	118.07	-44.77	267	130.07	49.89
166	87.26	-49.56	200	99.44	-51.71	234	118.74	-14.54	268	130.31	34.20
167	88.42	-26.93	201	100.60	-49.39	235	119.17	-1.82	269	130.55	28.58
168	88.66	-47.58	202	100.72	-52.04	236	120.08	-50.06	270	131.83	38.99
169	88.90	-52.20	203	100.84	-59.80	237	120.81	-29.74	271	132.08	38.99
170	89.82	-34.20	204	101.94	-53.52	238	121.18	-32.38	272	132.08	67.24

A140(Cont)
File No=f140(Cont.) STS-3 V34T9326 LH AFT BLKHD TEMPS X=1307

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
273	133.23	44.11	307	150.65	103.25	341	167.46	11.23	375	0.00	0.00
274	133.48	80.45	308	150.77	113.66	342	167.64	23.29	376	0.00	0.00
275	134.76	47.25	309	150.77	106.22	343	167.88	26.27	377	0.00	0.00
276	135.00	88.05	310	152.05	116.63	344	168.25	29.07	378	0.00	0.00
277	135.12	54.19	311	152.42	93.67	345	168.80	36.67	379	0.00	0.00
278	136.52	47.58	312	153.63	88.38	346	0.00	0.00	380	0.00	0.00
279	136.71	95.98	313	153.88	80.45	347	0.00	0.00	381	0.00	0.00
280	136.71	67.40	314	153.94	62.61	348	0.00	0.00	382	0.00	0.00
281	137.98	98.13	315	155.03	56.66	349	0.00	0.00	383	0.00	0.00
282	138.11	80.29	316	155.16	62.61	350	0.00	0.00	384	0.00	0.00
283	138.29	100.44	317	155.52	38.82	351	0.00	0.00	385	0.00	0.00
284	139.38	91.02	318	156.86	49.89	352	0.00	0.00	386	0.00	0.00
285	139.81	100.61	319	157.10	34.03	353	0.00	0.00	387	0.00	0.00
286	141.27	121.92	320	157.53	24.12	354	0.00	0.00	388	0.00	0.00
287	141.52	104.24	321	158.57	34.20	355	0.00	0.00	389	0.00	0.00
288	142.73	103.41	322	158.69	29.07	356	0.00	0.00	390	0.00	0.00
289	142.73	70.04	323	158.87	13.55	357	0.00	0.00	391	0.00	0.00
290	142.79	79.96	324	159.84	26.27	358	0.00	0.00	392	0.00	0.00
291	142.98	100.94	325	160.15	23.79	359	0.00	0.00	393	0.00	0.00
292	143.28	106.39	326	160.33	8.59	360	0.00	0.00	394	0.00	0.00
293	143.34	85.24	327	161.49	21.31	361	0.00	0.00	395	0.00	0.00
294	143.71	47.58	328	161.61	13.55	362	0.00	0.00	396	0.00	0.00
295	143.83	36.84	329	163.32	19.33	363	0.00	0.00	397	0.00	0.00
296	144.01	75.33	330	163.74	47.25	364	0.00	0.00	398	0.00	0.00
297	144.13	21.31	331	164.84	-1.65	365	0.00	0.00	399	0.00	0.00
298	144.26	82.43	332	165.02	-14.21	366	0.00	0.00	400	0.00	0.00
299	145.72	92.84	333	165.14	-19.16	367	0.00	0.00	401	0.00	0.00
300	145.96	95.48	334	165.57	38.99	368	0.00	0.00	402	0.00	0.00
301	146.20	98.29	335	165.81	34.36	369	0.00	0.00	403	0.00	0.00
302	147.60	100.77	336	165.93	3.96	370	0.00	0.00	404	0.00	0.00
303	147.79	104.24	337	166.18	-11.56	371	0.00	0.00	405	0.00	0.00
304	148.58	100.94	338	166.36	-29.41	372	0.00	0.00	406	0.00	0.00
305	148.88	100.77	339	166.66	-14.04	373	0.00	0.00	407	0.00	0.00
306	148.94	98.13	340	167.46	8.59	374	0.00	0.00	408	0.00	0.00

Max Temp= 121.92 F; Min Temp=-116.96 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

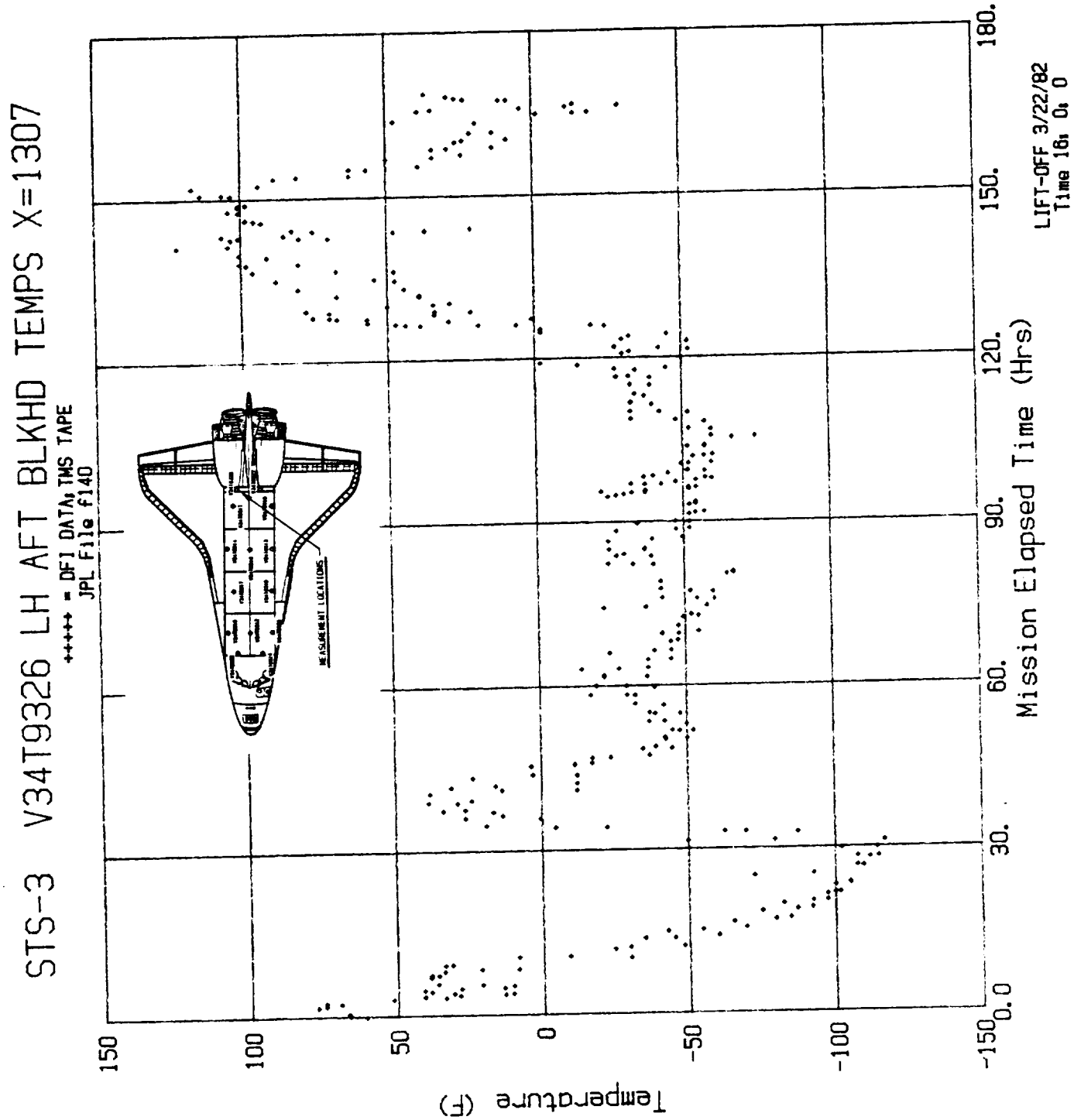
STS-3 V34T9326 LH AFT BLKHD TEMPS X=1307
+++++ = DFI DATA, TMS TAPE
JPL File F140
MEASUREMENT LOCATIONS
LIFT-OFF 3/22/82
Time 16: 0: 0
Mission Elapsed Time (Hrs)
Temperature (F)
150
100
50
0
-50
-100
-150
0.0
30.
60.
90.
120.
150.
180.

Figure A-140

A141
File No=f141

STS-3 V34T9327 RH AFT BLKHD TEMPS X=1307

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	0.43	72.15	35	11.69	-17.93	69	29.50	-105.70	103	48.53	-37.44
2	0.67	72.31	36	11.93	-20.58	70	30.97	-128.02	104	48.60	-33.14
3	1.10	71.98	37	11.93	-52.64	71	31.03	-85.04	105	48.78	-48.18
4	1.29	71.98	38	13.16	-22.89	72	31.15	-45.21	106	49.76	-42.40
5	1.41	77.11	39	13.34	-65.54	73	32.68	-97.60	107	50.00	-33.14
6	1.65	87.02	40	13.46	-35.79	74	32.68	-65.04	108	50.06	-50.33
7	1.77	69.17	41	14.69	-27.69	75	32.74	-42.73	109	51.17	-48.18
8	1.96	67.02	42	14.87	-50.50	76	33.78	-25.21	110	51.72	-35.45
9	2.20	81.57	43	15.12	-78.10	77	33.85	-0.58	111	51.72	-50.50
10	2.63	47.19	44	16.52	-60.41	78	34.15	29.50	112	53.06	-42.73
11	2.88	19.59	45	16.77	-84.88	79	35.44	2.40	113	53.43	-35.29
12	3.06	22.07	46	17.14	-97.60	80	35.62	34.63	114	53.68	-45.54
13	3.37	14.30	47	18.06	-72.98	81	35.68	17.27	115	54.59	-37.44
14	3.49	-5.87	48	18.06	-92.64	82	37.09	17.44	116	54.84	-45.21
15	3.73	2.56	49	18.42	-103.22	83	37.40	45.04	117	55.82	-32.81
16	3.92	26.69	50	19.65	-82.73	84	37.46	24.88	118	56.18	-42.73
17	4.10	29.50	51	19.83	-100.08	85	38.56	32.98	119	57.90	-37.77
18	4.28	24.55	52	20.07	-107.85	86	38.68	50.00	120	58.20	-37.60
19	4.71	32.48	53	21.60	-107.85	87	38.80	22.40	121	58.33	-23.22
20	5.08	17.27	54	21.79	-112.64	88	40.15	47.52	122	59.67	-45.37
21	5.26	4.88	55	21.97	-112.64	89	40.33	9.34	123	59.73	-37.44
22	5.32	-0.58	56	22.95	-110.17	90	40.52	-22.89	124	59.86	-22.56
23	5.69	20.08	57	23.07	-115.62	91	41.68	36.94	125	60.96	-48.02
24	5.81	27.02	58	23.26	-118.26	92	41.99	14.63	126	61.08	-30.66
25	6.98	37.11	59	24.42	-67.69	93	42.29	-20.41	127	61.08	-25.04
26	7.16	47.52	60	24.85	-97.60	94	43.45	25.04	128	62.67	-22.73
27	7.16	42.07	61	26.13	-120.74	95	43.64	-22.89	129	62.92	-30.66
28	7.53	37.11	62	26.81	-118.43	96	43.76	2.23	130	62.92	-42.73
29	7.59	24.38	63	26.81	-123.22	97	45.05	2.40	131	64.63	-45.54
30	7.77	7.19	64	27.91	-125.21	98	45.17	-20.41	132	64.81	-52.48
31	8.75	36.94	65	27.97	-128.02	99	45.35	-23.06	133	65.73	-30.50
32	10.10	-43.22	66	28.09	-115.29	100	46.58	-25.04	134	65.92	-45.54
33	10.28	2.40	67	29.38	-125.04	101	46.76	-30.50	135	66.10	-48.18
34	10.28	-18.43	68	29.38	-127.69	102	47.07	-40.25	136	67.51	-52.64

A141(Cont)
File No=f141(Cont.) STS-3 V34T9327 RH AFT BLKHD TEMPS X=1307

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
137	67.63	-48.35	171	88.26	-55.12	205	105.39	-67.36	239	123.57	-30.00
138	69.04	-45.54	172	88.32	-52.31	206	107.05	-52.31	240	124.12	-42.56
139	69.22	-45.37	173	89.72	-40.25	207	107.29	-39.92	241	124.43	-49.67
140	69.47	-50.17	174	89.79	-52.48	208	108.45	-49.83	242	124.73	7.36
141	70.57	-50.33	175	90.21	-49.50	209	108.58	-35.45	243	125.10	-9.67
142	72.10	-52.64	176	91.56	-58.60	210	108.64	-30.83	244	125.83	-20.41
143	72.47	-50.17	177	91.62	-52.64	211	109.62	-45.37	245	125.83	-17.77
144	73.81	-18.26	178	92.85	-52.81	212	109.98	-30.50	246	126.02	20.25
145	73.87	-30.33	179	93.09	-47.85	213	110.04	-32.81	247	126.14	5.04
146	74.18	-62.89	180	94.25	-18.60	214	111.51	-30.50	248	126.14	46.86
147	75.53	-54.30	181	94.44	-12.31	215	111.64	-37.44	249	126.20	54.63
148	75.71	-32.81	182	94.74	-17.77	216	112.06	-40.25	250	126.39	51.98
149	76.81	-52.48	183	94.93	-20.74	217	113.04	-32.64	251	126.57	44.55
150	76.93	-39.92	184	95.05	-45.37	218	113.29	-43.22	252	126.94	47.69
151	76.93	-36.94	185	95.11	-28.02	219	113.47	-43.06	253	127.00	14.63
152	78.52	-32.64	186	95.60	-35.62	220	114.63	-45.54	254	127.30	-7.69
153	78.83	-42.73	187	95.78	-42.73	221	114.82	-39.92	255	127.79	62.40
154	78.83	-50.17	188	96.27	-52.64	222	114.94	-37.11	256	127.85	69.83
155	80.24	-52.31	189	96.58	-45.21	223	116.29	-45.70	257	128.10	62.40
156	80.61	-67.52	190	96.76	-30.00	224	116.29	-35.95	258	128.28	62.56
157	80.79	-70.00	191	97.07	-42.40	225	116.53	-32.31	259	128.96	2.56
158	81.71	-45.54	192	97.25	-52.64	226	117.94	-45.37	260	128.96	17.27
159	81.95	-42.56	193	97.50	-57.93	227	118.12	-36.94	261	129.20	22.23
160	82.07	-27.85	194	98.17	-37.44	228	118.18	-50.00	262	129.32	67.36
161	83.18	-48.18	195	98.17	-48.02	229	118.86	-5.54	263	129.45	75.12
162	83.36	-37.60	196	98.60	-47.85	230	119.16	24.88	264	130.06	29.67
163	83.48	-32.81	197	98.78	-52.64	231	119.78	-45.70	265	130.49	17.44
164	84.95	-45.54	198	100.37	-52.81	232	120.27	-27.52	266	130.49	20.41
165	85.07	-32.64	199	100.74	-52.98	233	121.06	-45.37	267	131.71	27.19
166	85.26	-37.44	200	102.09	-57.60	234	121.31	-52.81	268	131.96	30.00
167	86.48	-30.50	201	102.45	-52.64	235	121.80	-35.62	269	132.02	64.88
168	86.79	-45.37	202	103.56	-52.64	236	122.10	-32.64	270	133.36	32.81
169	87.09	-52.98	203	105.15	-82.40	237	123.02	-52.64	271	133.79	77.77
170	88.01	-32.31	204	105.21	-90.50	238	123.20	-42.56	272	133.85	37.27

A141(Cont)
File No=f141(Cont.) STS-3 V34T9327 RH AFT BLKHD TEMPS X=1307

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
273	135.02	34.96	307	148.85	94.79	341	166.60	-48.02	375	0.00	0.00
274	135.14	42.40	308	149.15	87.36	342	166.90	-0.08	376	0.00	0.00
275	135.20	87.36	309	150.50	90.50	343	167.45	14.79	377	0.00	0.00
276	136.42	37.11	310	150.87	90.66	344	167.45	20.08	378	0.00	0.00
277	136.61	59.42	311	151.97	129.67	345	167.70	32.48	379	0.00	0.00
278	136.67	92.64	312	152.15	97.44	346	167.82	38.10	380	0.00	0.00
279	138.20	77.44	313	152.27	72.15	347	168.55	48.02	381	0.00	0.00
280	138.32	97.11	314	153.56	72.31	348	0.00	0.00	382	0.00	0.00
281	138.57	92.31	315	153.93	64.55	349	0.00	0.00	383	0.00	0.00
282	139.73	87.52	316	154.05	47.85	350	0.00	0.00	384	0.00	0.00
283	139.85	97.27	317	155.27	47.85	351	0.00	0.00	385	0.00	0.00
284	140.16	92.64	318	155.52	50.17	352	0.00	0.00	386	0.00	0.00
285	140.28	92.48	319	155.82	24.55	353	0.00	0.00	387	0.00	0.00
286	141.20	117.60	320	156.99	40.25	354	0.00	0.00	388	0.00	0.00
287	141.32	97.44	321	156.99	22.40	355	0.00	0.00	389	0.00	0.00
288	141.50	90.33	322	157.42	17.77	356	0.00	0.00	390	0.00	0.00
289	142.67	72.31	323	158.52	22.56	357	0.00	0.00	391	0.00	0.00
290	142.73	67.02	324	158.95	4.88	358	0.00	0.00	392	0.00	0.00
291	142.85	93.64	325	160.23	17.77	359	0.00	0.00	393	0.00	0.00
292	142.85	101.74	326	160.29	20.74	360	0.00	0.00	394	0.00	0.00
293	143.16	92.64	327	160.35	-0.58	361	0.00	0.00	395	0.00	0.00
294	143.28	72.64	328	161.58	9.83	362	0.00	0.00	396	0.00	0.00
295	143.34	90.17	329	161.76	9.83	363	0.00	0.00	397	0.00	0.00
296	143.83	26.86	330	162.13	4.88	364	0.00	0.00	398	0.00	0.00
297	144.20	17.60	331	163.41	20.25	365	0.00	0.00	399	0.00	0.00
298	144.50	-0.08	332	163.60	44.88	366	0.00	0.00	400	0.00	0.00
299	144.69	64.88	333	163.60	20.25	367	0.00	0.00	401	0.00	0.00
300	144.69	78.10	334	164.94	-17.77	368	0.00	0.00	402	0.00	0.00
301	145.97	94.79	335	165.13	-32.98	369	0.00	0.00	403	0.00	0.00
302	146.09	92.48	336	165.37	-37.44	370	0.00	0.00	404	0.00	0.00
303	146.15	87.02	337	165.62	54.63	371	0.00	0.00	405	0.00	0.00
304	147.19	99.75	338	166.05	42.56	372	0.00	0.00	406	0.00	0.00
305	147.50	92.48	339	166.23	-7.36	373	0.00	0.00	407	0.00	0.00
306	147.56	87.02	340	166.41	-27.02	374	0.00	0.00	408	0.00	0.00

Max Temp= 129.67 F; Min Temp=-128.02 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

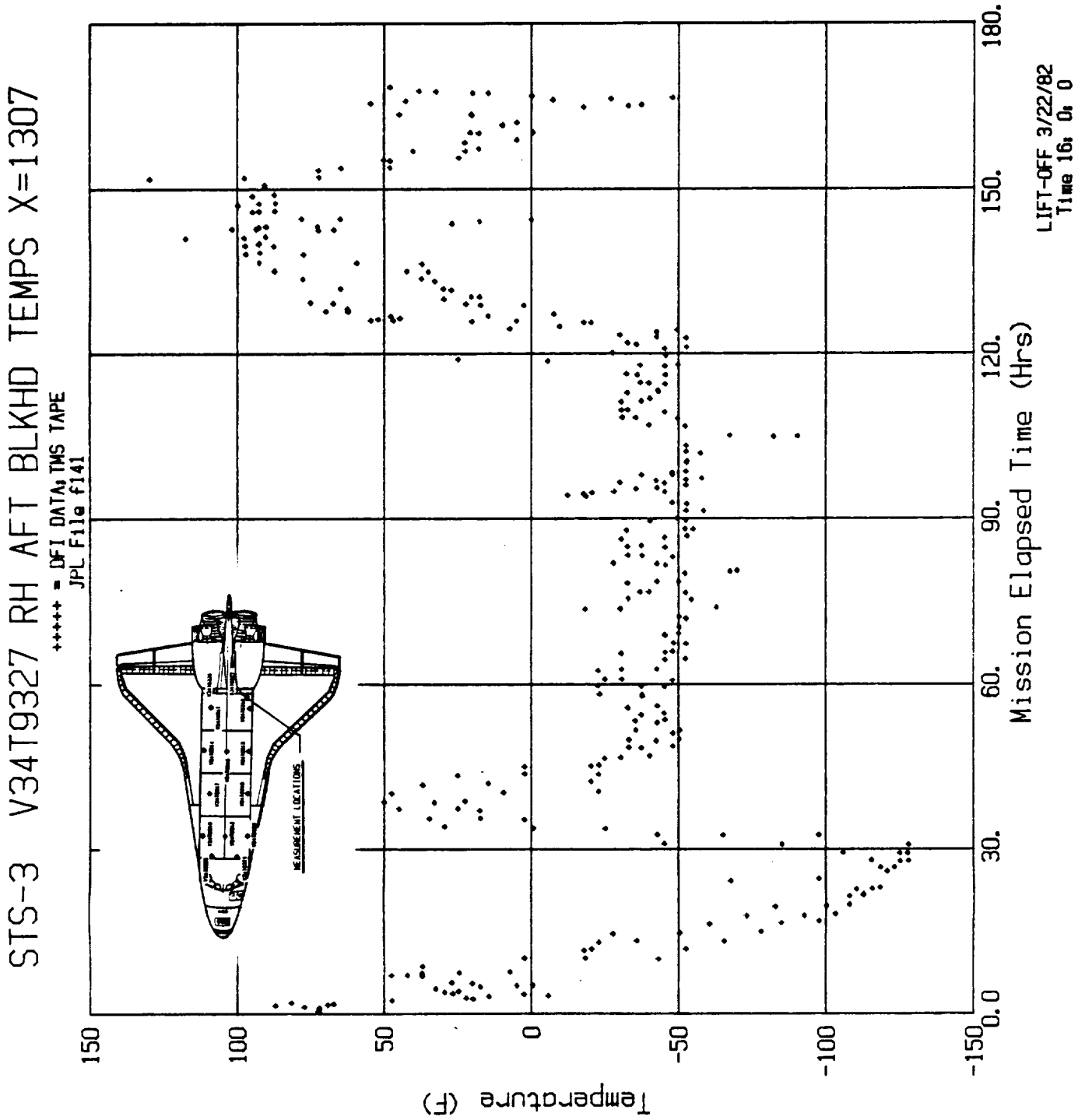
STS-3 V34T9327 RH AFT BLKHD TEMPS X=1307
+++++ = DFI DATA, TMS TAPE
JPL File f141
MEASUREMENT LOCATIONS
Temperature (F)
150
100
50
0
-50
-100
-150
0.0
30.
60.
90.
120.
150.
180.
Mission Elapsed Time (Hrs)
LIFT-OFF 3/22/82
Time 16: 0: 0

Figure A-141

A144
File No=f144

STS-4 V34T9312 PLB BOT LINER TEMP X=670

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	0.43	67.26	35	23.98	134.08	69	43.30	-24.82	103	55.56	-20.19
2	0.67	70.56	36	24.06	40.87	70	43.47	38.68	104	55.59	-67.32
3	1.96	82.66	37	24.31	169.08	71	43.54	126.36	105	56.02	2.39
4	2.33	77.60	38	24.31	147.97	72	43.59	150.60	106	56.12	-0.36
5	3.31	53.64	39	24.61	184.69	73	44.16	118.87	107	56.39	-19.38
6	3.43	61.32	40	25.65	-37.19	74	44.45	85.29	108	57.24	-24.22
7	3.80	53.64	41	25.71	-39.61	75	44.83	173.31	109	57.28	-45.10
8	3.92	50.33	42	26.69	-52.14	76	45.24	200.74	110	57.31	16.03
9	4.78	40.65	43	27.00	-60.06	77	45.87	48.57	111	57.47	5.81
10	4.84	33.36	44	27.11	-55.01	78	46.04	44.17	112	57.77	-20.41
11	5.20	200.08	45	27.12	-53.90	79	46.47	155.44	113	57.80	-36.97
12	6.43	-26.64	46	28.41	-62.04	80	46.55	69.50	114	58.04	-74.57
13	7.65	-59.40	47	28.58	-52.81	81	46.59	202.94	115	58.08	-61.18
14	8.08	-29.93	48	28.65	-53.02	82	46.67	184.33	116	59.49	-70.66
15	8.40	-52.15	49	28.78	-44.45	83	47.78	-7.85	117	59.63	-82.05
16	8.51	52.31	50	30.05	-72.20	84	47.82	-14.98	118	60.10	15.07
17	9.18	8.33	51	30.37	-64.68	85	48.02	13.09	119	60.49	33.62
18	9.37	21.30	52	31.41	-83.59	86	48.12	5.25	120	62.82	-87.11
19	9.92	-73.25	53	31.65	-62.04	87	49.19	-12.26	121	64.46	-87.41
20	11.47	-75.07	54	31.71	-77.27	88	49.31	15.29	122	64.47	-81.61
21	11.69	-79.63	55	33.37	46.37	89	49.47	5.25	123	65.27	2.83
22	13.41	-79.63	56	34.29	14.05	90	49.55	5.59	124	65.94	-75.23
23	14.69	-77.43	57	35.69	16.25	91	49.59	23.28	125	66.73	-17.55
24	15.43	16.47	58	37.16	18.44	92	49.84	-6.40	126	66.98	-29.49
25	17.97	-24.60	59	37.78	64.44	93	49.86	-43.33	127	67.52	-80.58
26	18.37	0.19	60	37.90	58.91	94	50.08	-52.36	128	67.71	-69.74
27	19.59	-84.25	61	40.29	36.23	95	52.29	-29.71	129	67.77	-45.10
28	19.75	-57.00	62	40.59	40.65	96	52.37	-51.71	130	67.90	13.83
29	19.78	-12.56	63	41.88	31.20	97	52.47	2.61	131	68.51	-39.39
30	20.27	20.64	64	41.95	41.52	98	52.65	-5.96	132	69.18	-82.34
31	21.80	23.28	65	41.95	26.75	99	54.03	5.15	133	69.24	-59.84
32	22.45	152.37	66	42.00	52.09	100	54.06	-3.99	134	69.31	2.61
33	22.78	166.22	67	42.68	41.07	101	54.18	1.29	135	69.98	-44.23
34	23.86	13.31	68	42.73	36.26	102	54.67	-67.10	136	70.47	-85.43

A144(Cont)
File No=f144(Cont.) STS-4 V34T9312 PLB BOT LINER TEMP X=670

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
137	70.53	-79.41	171	87.24	38.89	205	105.43	6.13	239	116.75	-86.82
138	70.77	-5.21	172	87.49	38.68	206	105.67	-25.98	240	117.73	-26.20
139	70.84	-79.41	173	88.90	18.66	207	105.73	-57.42	241	117.86	-72.37
140	71.08	13.83	174	88.96	28.56	208	106.84	5.91	242	118.04	-6.18
141	72.18	-84.03	175	89.08	3.27	209	107.27	-26.20	243	118.53	-16.96
142	72.31	-40.69	176	90.31	-3.77	210	107.33	-59.18	244	118.84	5.69
143	72.55	-12.34	177	90.43	14.05	211	108.73	-34.77	245	119.02	-17.18
144	72.98	-9.26	178	90.55	-12.12	212	108.86	-61.38	246	120.25	3.00
145	73.29	-44.01	179	91.71	-3.77	213	109.22	-81.61	247	120.25	-29.36
146	74.08	-24.00	180	91.90	5.91	214	110.33	-39.17	248	121.53	-29.14
147	74.20	-24.00	181	92.08	10.97	215	110.51	-66.66	249	121.90	2.78
148	74.39	-51.92	182	93.61	-1.35	216	110.62	-84.40	250	121.96	0.58
149	76.04	14.05	183	93.80	-31.91	217	111.73	-41.37	251	123.06	-26.28
150	76.04	-1.57	184	93.92	-57.20	218	111.85	-87.26	252	123.31	-1.40
151	76.29	-12.56	185	94.96	-3.99	219	111.86	-69.30	253	123.43	-6.47
152	77.57	-21.36	186	95.20	-34.33	220	113.45	-71.94	254	124.74	-62.95
153	77.69	-49.51	187	95.45	-61.16	221	113.75	-87.26	255	124.78	-22.54
154	77.94	-67.32	188	96.43	-6.40	222	113.76	-68.68	256	125.15	-24.30
155	79.10	3.05	189	96.67	-41.59	223	113.89	-94.68	257	125.21	-54.90
156	79.41	-21.58	190	96.73	-66.88	224	114.32	-12.26	258	125.58	-86.82
157	79.59	-21.80	191	98.39	-43.79	225	114.49	2.83	259	125.62	-99.37
158	80.63	2.83	192	98.69	-66.44	226	114.87	-51.71	260	126.19	-19.68
159	80.69	-24.00	193	98.76	-80.73	227	115.10	-73.91	261	126.19	-79.33
160	81.06	-19.60	194	99.49	-19.16	228	115.22	-84.18	262	126.25	-46.53
161	82.22	0.63	195	99.54	-32.31	229	115.42	-94.24	263	127.48	-39.27
162	82.65	-23.78	196	100.78	-25.98	230	115.59	-54.56	264	127.54	-12.19
163	82.65	-28.61	197	100.90	-16.96	231	115.59	-74.79	265	127.66	-77.35
164	84.00	-17.18	198	101.02	-3.99	232	115.91	-17.33	266	129.07	-39.71
165	84.12	-19.60	199	102.18	-23.78	233	115.97	-2.78	267	129.13	-3.82
166	84.37	50.33	200	102.49	-6.18	234	116.08	-3.99	268	129.38	0.58
167	85.41	-12.56	201	102.55	-23.78	235	116.14	-19.16	269	130.79	-34.87
168	85.65	20.86	202	104.02	-8.82	236	116.39	-51.70	270	130.85	-1.62
169	85.71	44.17	203	104.02	1.07	237	116.51	-83.96	271	131.03	2.78
170	86.94	-14.76	204	104.20	-23.56	238	116.57	-96.73	272	132.26	0.58

A144(Cont)
File No=f144(Cont.) STS-4 V34T9312 PLB BOT LINER TEMP X=670

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
273	132.26	-32.44	307	145.31	-92.76	341	157.57	18.41	375	169.63	42.19
274	132.44	-4.05	308	145.50	-81.98	342	157.69	-21.66	376	169.63	44.22
275	133.73	3.00	309	145.92	-39.71	343	158.92	13.79	377	169.63	49.29
276	133.91	-6.03	310	146.05	-4.71	344	159.16	14.23	378	169.69	17.85
277	134.16	-42.13	311	146.23	-12.85	345	159.16	-21.88	379	169.69	28.50
278	135.32	3.00	312	146.54	-44.33	346	160.45	5.42	380	169.69	30.53
279	135.57	-6.25	313	146.84	-79.33	347	160.51	-17.03	381	169.69	44.22
280	135.81	-44.33	314	146.97	-93.20	348	160.57	-24.30	382	169.69	45.99
281	136.85	-55.12	315	147.21	-81.54	349	161.86	-75.15	383	169.69	47.01
282	137.28	-23.86	316	147.46	-57.54	350	162.17	-57.98	384	169.86	53.85
283	137.53	-57.54	317	147.64	-6.03	351	162.23	-35.09	385	169.91	49.29
284	137.71	-79.55	318	147.82	-12.41	352	163.51	-64.58	386	169.91	50.30
285	138.82	-61.94	319	148.01	-57.76	353	163.76	-61.94	387	169.91	51.57
286	139.12	-81.98	320	148.07	-79.99	354	163.94	-37.29	388	169.91	53.35
287	139.31	-95.40	321	148.31	-94.96	355	164.00	-37.29	389	170.20	54.11
288	140.35	-67.67	322	148.50	-97.39	356	164.13	-21.88	390	170.20	55.63
289	140.72	-84.18	323	148.74	-64.36	357	165.47	-21.88	391	170.20	56.90
290	140.96	-97.39	324	149.11	28.32	358	166.52	-12.19	392	170.20	58.16
291	142.00	-66.57	325	149.30	43.95	359	167.13	-6.91	393	170.31	58.92
292	142.31	-81.54	326	149.60	52.09	360	167.56	-4.05	394	170.31	60.19
293	142.37	-72.51	327	149.85	11.36	361	169.17	6.69	395	170.31	61.21
294	142.65	-65.37	328	150.95	64.20	362	169.17	7.71	396	170.54	61.46
295	142.74	-24.08	329	151.01	46.81	363	169.17	8.47	397	170.54	62.98
296	142.80	-39.49	330	151.20	40.64	364	169.52	13.54	398	170.54	64.00
297	142.92	0.58	331	152.54	54.73	365	169.52	15.06	399	170.71	64.00
298	143.17	-14.61	332	152.73	77.85	366	169.52	17.60	400	170.77	64.00
299	143.29	-47.19	333	152.97	31.40	367	169.63	20.39	401	170.77	65.01
300	143.60	-82.20	334	153.89	46.37	368	169.63	23.94	402	170.77	65.77
301	143.78	-94.52	335	154.08	79.83	369	169.63	26.22	403	170.94	66.02
302	144.15	-69.65	336	154.20	28.54	370	169.63	33.06	404	171.11	66.78
303	144.33	8.06	337	155.61	70.14	371	169.63	34.33	405	171.17	69.07
304	144.45	34.04	338	155.61	21.05	372	169.63	36.11	406	171.68	69.32
305	144.76	-46.97	339	155.98	-17.91	373	169.63	38.13	407	171.79	72.36
306	145.01	-69.43	340	157.14	56.71	374	169.63	40.16	408	171.85	73.12

A144(Cont)
File No=f144(Cont.) STS-4 V34T9312 PLB BOT LINER TEMP X=670

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMI (F
409	172.19	73.12	443	0.00	0.00	477	0.00	0.00	511	0.00	0.0
410	172.59	73.12	444	0.00	0.00	478	0.00	0.00	512	0.00	0.0
411	172.65	74.14	445	0.00	0.00	479	0.00	0.00	513	0.00	0.0
412	172.76	75.41	446	0.00	0.00	480	0.00	0.00	514	0.00	0.0
413	173.05	75.66	447	0.00	0.00	481	0.00	0.00	515	0.00	0.0
414	173.50	75.91	448	0.00	0.00	482	0.00	0.00	516	0.00	0.0
415	174.87	75.66	449	0.00	0.00	483	0.00	0.00	517	0.00	0.0
416	0.00	0.00	450	0.00	0.00	484	0.00	0.00	518	0.00	0.0
417	0.00	0.00	451	0.00	0.00	485	0.00	0.00	519	0.00	0.0
418	0.00	0.00	452	0.00	0.00	486	0.00	0.00	520	0.00	0.0
419	0.00	0.00	453	0.00	0.00	487	0.00	0.00	521	0.00	0.0
420	0.00	0.00	454	0.00	0.00	488	0.00	0.00	522	0.00	0.0
421	0.00	0.00	455	0.00	0.00	489	0.00	0.00	523	0.00	0.0
422	0.00	0.00	456	0.00	0.00	490	0.00	0.00	524	0.00	0.0
423	0.00	0.00	457	0.00	0.00	491	0.00	0.00	525	0.00	0.0
424	0.00	0.00	458	0.00	0.00	492	0.00	0.00	526	0.00	0.0
425	0.00	0.00	459	0.00	0.00	493	0.00	0.00	527	0.00	0.0
426	0.00	0.00	460	0.00	0.00	494	0.00	0.00	528	0.00	0.0
427	0.00	0.00	461	0.00	0.00	495	0.00	0.00	529	0.00	0.0
428	0.00	0.00	462	0.00	0.00	496	0.00	0.00	530	0.00	0.0
429	0.00	0.00	463	0.00	0.00	497	0.00	0.00	531	0.00	0.0
430	0.00	0.00	464	0.00	0.00	498	0.00	0.00	532	0.00	0.0
431	0.00	0.00	465	0.00	0.00	499	0.00	0.00	533	0.00	0.0
432	0.00	0.00	466	0.00	0.00	500	0.00	0.00	534	0.00	0.0
433	0.00	0.00	467	0.00	0.00	501	0.00	0.00	535	0.00	0.0
434	0.00	0.00	468	0.00	0.00	502	0.00	0.00	536	0.00	0.0
435	0.00	0.00	469	0.00	0.00	503	0.00	0.00	537	0.00	0.0
436	0.00	0.00	470	0.00	0.00	504	0.00	0.00	538	0.00	0.0
437	0.00	0.00	471	0.00	0.00	505	0.00	0.00	539	0.00	0.0
438	0.00	0.00	472	0.00	0.00	506	0.00	0.00	540	0.00	0.0
439	0.00	0.00	473	0.00	0.00	507	0.00	0.00	541	0.00	0.0
440	0.00	0.00	474	0.00	0.00	508	0.00	0.00	542	0.00	0.0
441	0.00	0.00	475	0.00	0.00	509	0.00	0.00	543	0.00	0.0
442	0.00	0.00	476	0.00	0.00	510	0.00	0.00	544	0.00	0.0

Max Temp= 202.94 F; Min Temp= -99.37 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

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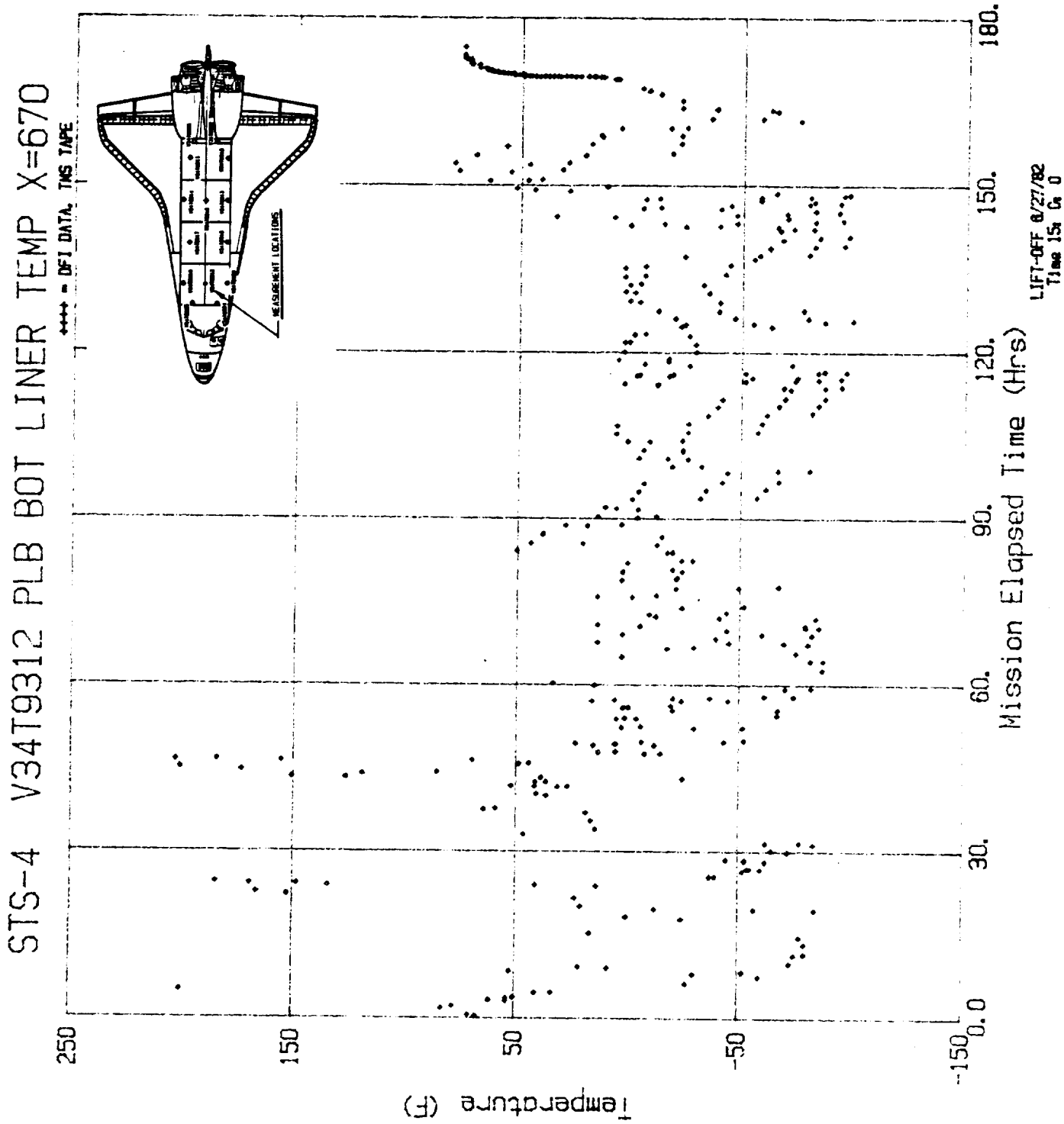

Figure A-144

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A158
File No=f158 STS-5 V34T9312 PLB BOT LINER TEMP X=670

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	0.05	62.90	35	19.49	24.06	69	35.75	-96.25	103	52.39	-16.68
2	0.77	72.13	36	20.65	23.52	70	36.91	-67.46	104	52.72	51.22
3	1.35	58.56	37	20.90	23.52	71	37.00	-88.92	105	53.16	25.69
4	1.45	72.13	38	21.09	25.96	72	37.34	-98.15	106	53.16	-27.00
5	2.42	24.88	39	22.06	12.93	73	38.45	-73.98	107	53.45	-76.97
6	2.71	17.82	40	22.25	17.82	74	38.45	-91.63	108	53.74	-94.62
7	2.71	12.93	41	22.30	174.80	75	38.75	-101.14	109	54.08	-88.92
8	4.11	30.31	42	22.88	156.60	76	39.62	-47.09	110	54.18	-44.38
9	4.40	25.69	43	23.40	217.80	77	39.81	-79.68	111	54.51	12.93
10	5.42	30.04	44	23.56	43.62	78	39.95	-94.08	112	54.85	-46.82
11	5.71	20.80	45	24.77	61.00	79	41.21	-55.24	113	55.24	-96.25
12	6.97	33.57	46	24.99	69.19	80	41.55	-81.86	114	55.63	-46.55
13	7.21	25.42	47	25.20	23.25	81	41.79	-81.86	115	55.87	0.71
14	7.26	7.50	48	25.35	17.54	82	42.81	-62.57	116	56.30	-62.30
15	8.08	37.37	49	25.49	-25.10	83	42.81	-98.42	117	56.30	-86.75
16	8.95	-39.76	50	26.36	48.23	84	43.97	-87.29	118	56.79	-89.73
17	9.09	9.40	51	26.51	-13.42	85	44.21	-25.10	119	56.98	-42.75
18	9.09	34.93	52	26.70	-24.28	86	44.50	-65.29	120	57.03	-7.17
19	10.35	156.33	53	28.01	43.62	87	45.86	-37.59	121	58.67	-34.06
20	10.40	206.84	54	28.20	32.48	88	46.00	-27.00	122	58.72	-84.85
21	10.64	204.13	55	28.35	23.79	89	46.15	-66.92	123	59.83	-106.57
22	12.09	32.48	56	29.60	37.37	90	46.97	-89.46	124	59.93	-31.88
23	13.30	23.52	57	29.70	27.59	91	47.06	-34.60	125	59.98	-79.68
24	13.35	32.48	58	30.76	55.57	92	48.56	-69.64	126	61.33	-104.40
25	13.59	50.68	59	30.96	37.64	93	48.71	-2.01	127	61.48	-76.97
26	14.80	17.00	60	31.15	21.08	94	48.85	-45.19	128	63.12	-66.92
27	15.04	30.04	61	32.12	12.66	95	50.26	-9.34	129	63.12	-104.13
28	15.14	52.85	62	32.31	35.47	96	50.26	-76.15	130	64.24	-106.84
29	16.45	15.10	63	32.70	17.82	97	50.35	-51.17	131	64.38	-101.14
30	16.64	30.58	64	32.80	-35.42	98	51.37	10.21	132	64.53	-59.86
31	17.61	17.82	65	33.96	-76.43	99	51.61	-19.93	133	65.78	-106.57
32	17.80	23.52	66	34.15	-89.19	100	51.66	0.05	134	65.98	-94.08
33	17.90	37.91	67	34.34	-91.36	101	51.80	21.28	135	66.22	-49.27
34	19.20	20.80	68	35.36	-84.03	102	51.81	-77.24	136	67.33	-96.25

A158(Cont
File No=f158(Cont.) STS-5 V34T9312 PLB BOT LINER TEMP X=670

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
137	67.43	-109.56	171	77.34	-50.62	205	90.65	-91.09	239	109.56	28.95
138	67.62	-115.81	172	77.42	-14.10	206	91.86	-91.63	240	109.71	-28.08
139	68.83	-98.15	173	77.56	-35.33	207	92.05	-98.15	241	109.90	-31.34
140	68.94	-85.14	174	77.83	-91.09	208	92.19	-86.20	242	110.91	22.43
141	69.22	-13.96	175	77.85	-72.35	209	93.26	-97.34	243	111.06	-34.06
142	69.51	18.09	176	78.81	-1.58	210	93.26	-106.84	244	111.20	-30.26
143	69.75	-22.11	177	78.86	-19.27	211	93.55	-108.75	245	112.41	6.14
144	70.04	-79.41	178	78.94	-50.62	212	94.66	-86.20	246	112.66	-31.07
145	70.14	-98.15	179	78.96	-39.41	213	94.95	-98.15	247	112.99	-39.76
146	70.48	-104.40	180	79.52	-59.32	214	96.26	-83.76	248	113.77	47.42
147	70.62	-62.30	181	79.91	-81.31	215	96.55	-94.62	249	114.01	-5.81
148	70.72	-84.59	182	80.25	-84.30	216	97.71	-68.01	250	114.01	41.99
149	71.06	15.92	183	80.30	-61.76	217	97.81	-85.93	251	114.30	-23.47
150	71.54	-60.95	184	80.54	-34.60	218	98.00	-95.44	252	115.27	16.73
151	72.41	-24.01	185	80.73	-39.76	219	99.02	-50.90	253	115.56	-25.64
152	72.60	24.33	186	80.83	-61.22	220	99.40	-50.90	254	115.70	-44.38
153	72.70	-12.06	187	81.12	-73.44	221	99.50	-61.76	255	117.06	-59.32
154	73.04	-71.27	188	81.36	-94.08	222	100.85	-78.33	256	117.25	-66.92
155	73.04	-93.81	189	81.41	-90.82	223	101.00	-90.82	257	118.17	31.67
156	73.43	-103.86	190	81.65	-70.72	224	102.11	-65.83	258	121.80	6.68
157	73.67	-68.28	191	82.96	-94.35	225	102.21	-81.31	259	122.09	13.74
158	73.91	-6.63	192	83.15	-91.09	226	102.50	-93.26	260	122.28	19.99
159	74.06	21.35	193	83.25	-71.27	227	103.47	-70.72	261	122.28	34.66
160	74.35	-29.44	194	84.70	-86.75	228	103.85	-93.26	262	122.33	27.32
161	74.73	-98.15	195	84.70	-97.88	229	103.90	-108.75	263	122.33	42.80
162	75.12	-46.28	196	85.76	-91.63	230	105.06	2.06	264	122.47	49.59
163	75.80	21.62	197	86.10	-86.75	231	105.16	-41.12	265	122.81	52.58
164	75.99	-41.12	198	87.31	-92.72	232	105.45	-41.12	266	122.96	56.38
165	76.23	-75.88	199	87.60	-95.98	233	106.42	-8.53	267	123.97	61.00
166	76.28	-103.86	200	87.60	-84.03	234	106.56	-31.07	268	124.70	61.27
167	76.57	-111.19	201	88.95	-93.54	235	106.71	-45.19	269	125.14	61.54
168	76.76	-86.75	202	89.15	-93.54	236	107.82	-25.91	270	126.15	63.17
169	76.96	-16.95	203	90.26	-86.47	237	108.16	-25.37	271	126.78	62.36
170	77.27	7.68	204	90.45	-95.44	238	108.30	-53.61	272	127.31	65.34

A158(Cont)
File No=f158(Cont.) STS-5 V34T9312 PLB BOT LINER TEMP X=670

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
273	127.75	65.89	307	0.00	0.00	341	0.00	0.00	375	0.00	0.00
274	128.28	65.34	308	0.00	0.00	342	0.00	0.00	376	0.00	0.00
275	0.00	0.00	309	0.00	0.00	343	0.00	0.00	377	0.00	0.00
276	0.00	0.00	310	0.00	0.00	344	0.00	0.00	378	0.00	0.00
277	0.00	0.00	311	0.00	0.00	345	0.00	0.00	379	0.00	0.00
278	0.00	0.00	312	0.00	0.00	346	0.00	0.00	380	0.00	0.00
279	0.00	0.00	313	0.00	0.00	347	0.00	0.00	381	0.00	0.00
280	0.00	0.00	314	0.00	0.00	348	0.00	0.00	382	0.00	0.00
281	0.00	0.00	315	0.00	0.00	349	0.00	0.00	383	0.00	0.00
282	0.00	0.00	316	0.00	0.00	350	0.00	0.00	384	0.00	0.00
283	0.00	0.00	317	0.00	0.00	351	0.00	0.00	385	0.00	0.00
284	0.00	0.00	318	0.00	0.00	352	0.00	0.00	386	0.00	0.00
285	0.00	0.00	319	0.00	0.00	353	0.00	0.00	387	0.00	0.00
286	0.00	0.00	320	0.00	0.00	354	0.00	0.00	388	0.00	0.00
287	0.00	0.00	321	0.00	0.00	355	0.00	0.00	389	0.00	0.00
288	0.00	0.00	322	0.00	0.00	356	0.00	0.00	390	0.00	0.00
289	0.00	0.00	323	0.00	0.00	357	0.00	0.00	391	0.00	0.00
290	0.00	0.00	324	0.00	0.00	358	0.00	0.00	392	0.00	0.00
291	0.00	0.00	325	0.00	0.00	359	0.00	0.00	393	0.00	0.00
292	0.00	0.00	326	0.00	0.00	360	0.00	0.00	394	0.00	0.00
293	0.00	0.00	327	0.00	0.00	361	0.00	0.00	395	0.00	0.00
294	0.00	0.00	328	0.00	0.00	362	0.00	0.00	396	0.00	0.00
295	0.00	0.00	329	0.00	0.00	363	0.00	0.00	397	0.00	0.00
296	0.00	0.00	330	0.00	0.00	364	0.00	0.00	398	0.00	0.00
297	0.00	0.00	331	0.00	0.00	365	0.00	0.00	399	0.00	0.00
298	0.00	0.00	332	0.00	0.00	366	0.00	0.00	400	0.00	0.00
299	0.00	0.00	333	0.00	0.00	367	0.00	0.00	401	0.00	0.00
300	0.00	0.00	334	0.00	0.00	368	0.00	0.00	402	0.00	0.00
301	0.00	0.00	335	0.00	0.00	369	0.00	0.00	403	0.00	0.00
302	0.00	0.00	336	0.00	0.00	370	0.00	0.00	404	0.00	0.00
303	0.00	0.00	337	0.00	0.00	371	0.00	0.00	405	0.00	0.00
304	0.00	0.00	338	0.00	0.00	372	0.00	0.00	406	0.00	0.00
305	0.00	0.00	339	0.00	0.00	373	0.00	0.00	407	0.00	0.00
306	0.00	0.00	340	0.00	0.00	374	0.00	0.00	408	0.00	0.00

Max Temp= 217.80 F; Min Temp=-115.81 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

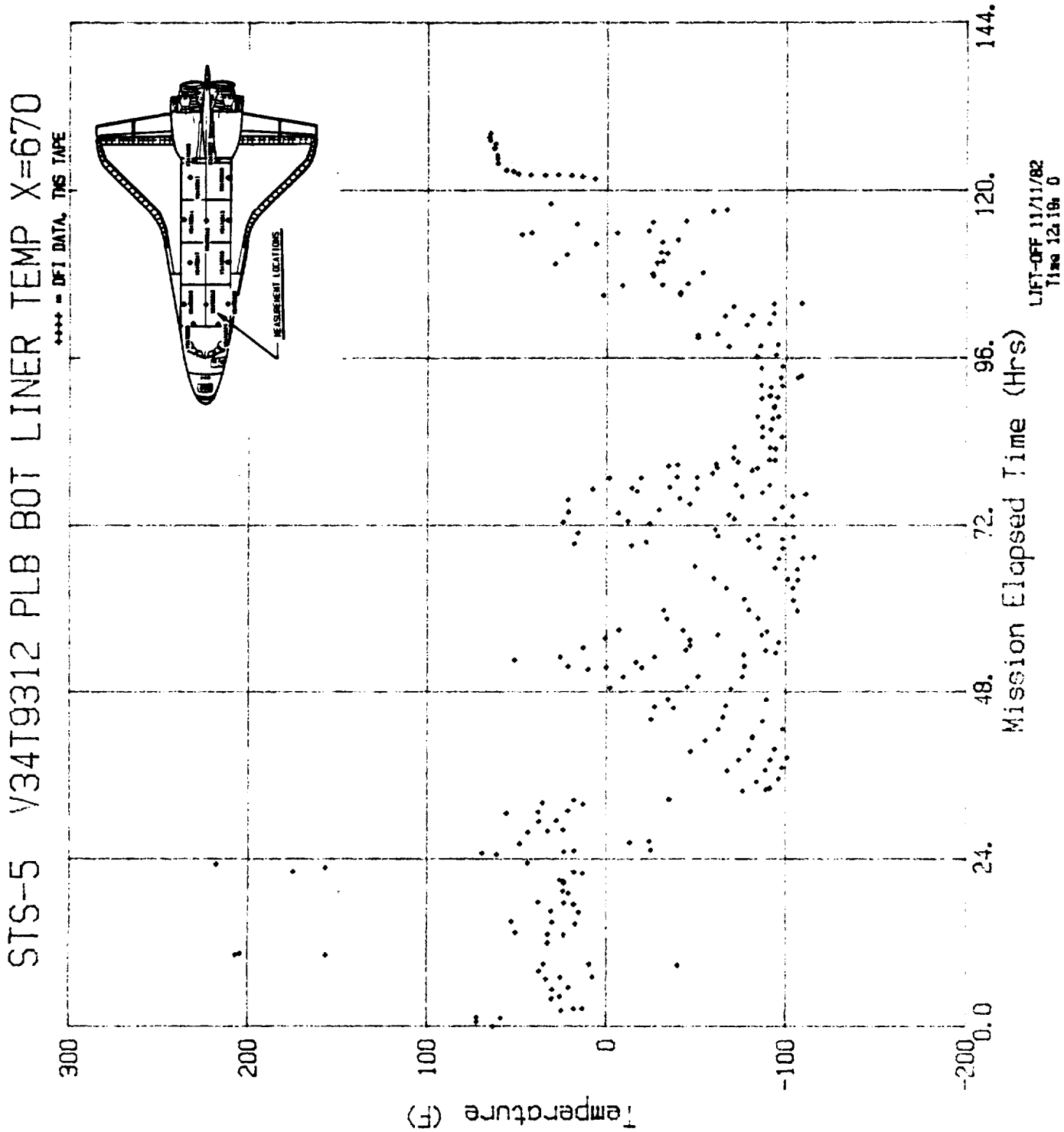
STS-5 V34T9312 PLB BOT LINER TEMP X=670
**** = DFI DATA, TMS TAPE
MEASUREMENT LOCATIONS
LIFT-OFF 11/11/82
Time 12:19: 0
Mission Elapsed Time (Hrs)
Temperature (F)
300
200
100
0
-100
-200
0.0
24.
48.
72.
96.
120.
144.

Figure A-158

File No=f202 STS-2 V34T9324 PRELAUNCH FLIGHT TEMPERATURES

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEM (F
1	0.05	67.50	35	2.14	70.10	69	8.95	67.51	103	0.00	0.0
2	0.17	67.49	36	2.16	67.49	70	9.07	67.51	104	0.00	0.0
3	0.24	70.10	37	2.24	70.10	71	9.09	64.92	105	0.00	0.0
4	0.26	67.49	38	2.26	67.49	72	9.12	67.51	106	0.00	0.0
5	0.33	70.09	39	2.36	70.09	73	9.18	64.91	107	0.00	0.0
6	0.34	67.50	40	2.37	67.50	74	9.24	67.51	108	0.00	0.0
7	0.54	67.50	41	2.50	67.50	75	9.27	67.51	109	0.00	0.0
8	0.62	70.09	42	2.58	70.09	76	9.33	64.90	110	0.00	0.0
9	0.62	67.50	43	2.65	67.50	77	9.38	67.50	111	0.00	0.0
10	0.72	67.50	44	2.73	67.50	78	9.52	67.51	112	0.00	0.0
11	0.80	70.09	45	2.85	70.10	79	9.55	64.91	113	0.00	0.0
12	0.82	67.49	46	2.87	67.50	80	9.61	67.51	114	0.00	0.0
13	0.92	70.09	47	2.94	67.51	81	9.66	64.93	115	0.00	0.0
14	0.93	67.50	48	2.95	70.11	82	9.70	67.51	116	0.00	0.0
15	0.99	67.50	49	3.01	70.10	83	9.73	64.91	117	0.00	0.0
16	1.10	70.09	50	3.01	67.51	84	9.77	67.51	118	0.00	0.0
17	1.11	67.50	51	3.12	67.50	85	9.81	64.91	119	0.00	0.0
18	1.22	67.50	52	3.19	70.10	86	9.85	67.51	120	0.00	0.0
19	1.31	70.11	53	3.22	67.50	87	9.88	64.92	121	0.00	0.0
20	1.31	67.49	54	3.38	67.51	88	9.98	64.93	122	0.00	0.0
21	1.42	70.09	55	3.46	70.10	89	10.03	67.50	123	0.00	0.0
22	1.42	67.49	56	3.47	67.50	90	10.08	64.92	124	0.00	0.0
23	1.50	70.10	57	3.86	67.51	91	10.14	67.51	125	0.00	0.0
24	1.50	67.50	58	3.94	70.10	92	10.17	64.92	126	0.00	0.0
25	1.56	70.10	59	3.95	67.50	93	10.21	67.51	127	0.00	0.0
26	1.56	67.50	60	4.49	67.51	94	10.31	67.52	128	0.00	0.0
27	1.65	67.50	61	4.55	70.11	95	10.36	64.93	129	0.00	0.0
28	1.73	70.11	62	4.57	67.50	96	10.41	67.51	130	0.00	0.0
29	1.73	67.49	63	4.65	70.10	97	10.43	64.93	131	0.00	0.0
30	1.80	70.09	64	4.67	67.50	98	10.48	67.51	132	0.00	0.0
31	1.81	67.50	65	4.76	70.11	99	13.11	67.52	133	0.00	0.0
32	1.90	70.09	66	4.77	67.51	100	0.00	0.00	134	0.00	0.0
33	1.92	67.51	67	8.88	67.51	101	0.00	0.00	135	0.00	0.0
34	2.08	67.50	68	8.92	64.91	102	0.00	0.00	136	0.00	0.0

Max Temp= 70.11 F; Min Temp= 64.90 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

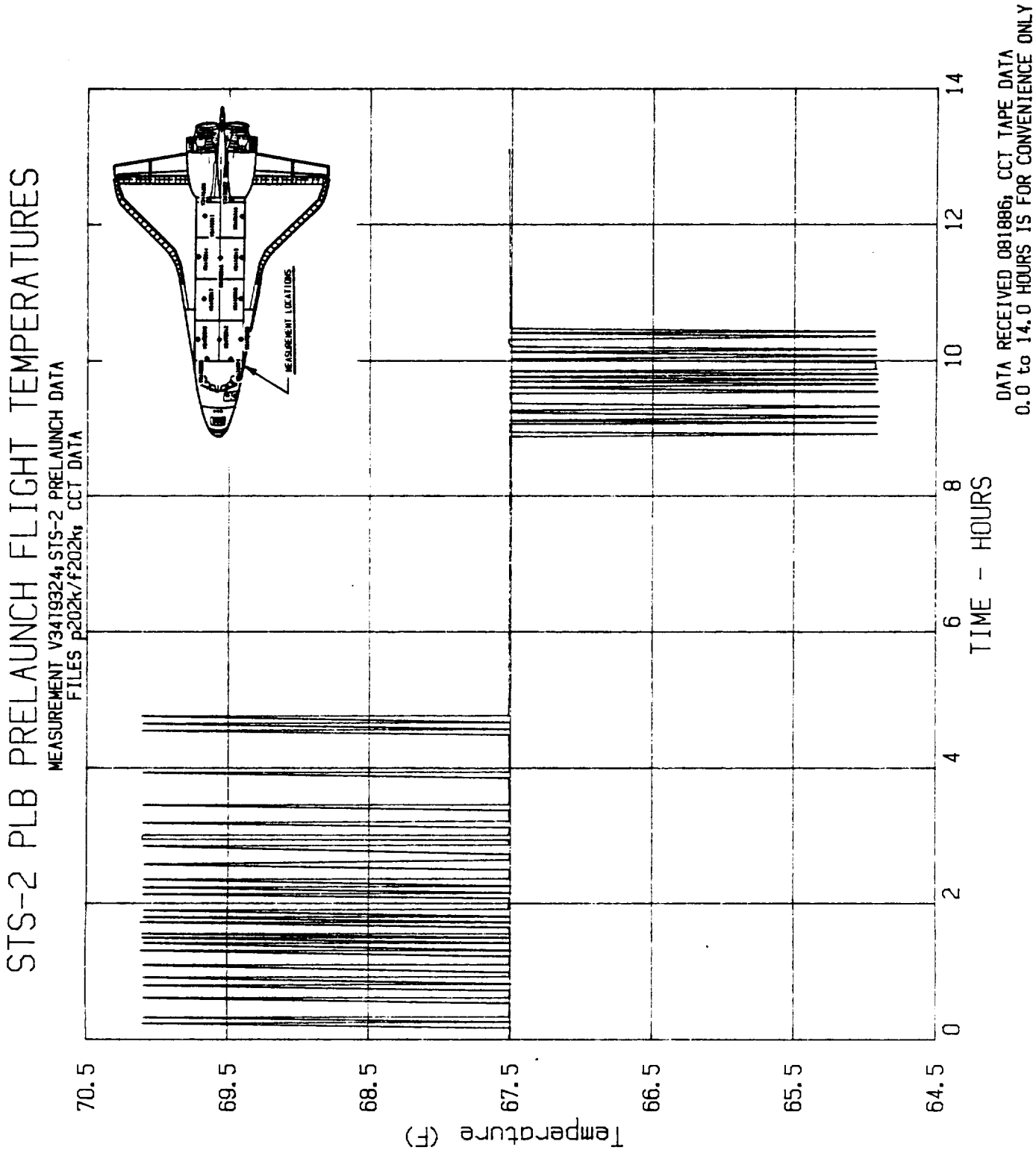
STS-2 PLB PRELAUNCH FLIGHT TEMPERATURES
MEASUREMENT V34T9324; STS-2 PRELAUNCH DATA
FILES p202k/f202k; CCT DATA
MEASUREMENT LOCATIONS
DATA RECEIVED 081886; CCT TAPE DATA
0.0 to 14.0 HOURS IS FOR CONVENIENCE ONLY
TIME - HOURS
0
2
4
6
8
10
12
14
Temperature (F)
70.5
69.5
68.5
67.5
66.5
65.5
64.5

Figure A-202

A205
File No=f205

STS-5 V34T9327 PRELAUNCH FLIGHT TEMPERATURES

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	1.09	83.17	35	0.00	0.00	69	0.00	0.00	103	0.00	0.00
2	1.33	83.04	36	0.00	0.00	70	0.00	0.00	104	0.00	0.00
3	1.35	80.70	37	0.00	0.00	71	0.00	0.00	105	0.00	0.00
4	1.38	82.97	38	0.00	0.00	72	0.00	0.00	106	0.00	0.00
5	1.45	83.04	39	0.00	0.00	73	0.00	0.00	107	0.00	0.00
6	1.50	80.70	40	0.00	0.00	74	0.00	0.00	108	0.00	0.00
7	1.54	82.97	41	0.00	0.00	75	0.00	0.00	109	0.00	0.00
8	1.61	83.04	42	0.00	0.00	76	0.00	0.00	110	0.00	0.00
9	1.66	80.50	43	0.00	0.00	77	0.00	0.00	111	0.00	0.00
10	1.72	80.63	44	0.00	0.00	78	0.00	0.00	112	0.00	0.00
11	1.74	83.11	45	0.00	0.00	79	0.00	0.00	113	0.00	0.00
12	1.80	80.70	46	0.00	0.00	80	0.00	0.00	114	0.00	0.00
13	1.83	82.91	47	0.00	0.00	81	0.00	0.00	115	0.00	0.00
14	1.86	82.91	48	0.00	0.00	82	0.00	0.00	116	0.00	0.00
15	1.92	80.70	49	0.00	0.00	83	0.00	0.00	117	0.00	0.00
16	2.18	80.63	50	0.00	0.00	84	0.00	0.00	118	0.00	0.00
17	2.20	82.84	51	0.00	0.00	85	0.00	0.00	119	0.00	0.00
18	2.26	80.56	52	0.00	0.00	86	0.00	0.00	120	0.00	0.00
19	7.32	80.70	53	0.00	0.00	87	0.00	0.00	121	0.00	0.00
20	7.38	62.96	54	0.00	0.00	88	0.00	0.00	122	0.00	0.00
21	7.42	62.96	55	0.00	0.00	89	0.00	0.00	123	0.00	0.00
22	7.44	65.30	56	0.00	0.00	90	0.00	0.00	124	0.00	0.00
23	7.48	65.37	57	0.00	0.00	91	0.00	0.00	125	0.00	0.00
24	7.53	68.18	58	0.00	0.00	92	0.00	0.00	126	0.00	0.00
25	7.87	68.11	59	0.00	0.00	93	0.00	0.00	127	0.00	0.00
26	7.92	73.27	60	0.00	0.00	94	0.00	0.00	128	0.00	0.00
27	8.72	73.27	61	0.00	0.00	95	0.00	0.00	129	0.00	0.00
28	8.80	82.91	62	0.00	0.00	96	0.00	0.00	130	0.00	0.00
29	9.27	82.84	63	0.00	0.00	97	0.00	0.00	131	0.00	0.00
30	0.00	0.00	64	0.00	0.00	98	0.00	0.00	132	0.00	0.00
31	0.00	0.00	65	0.00	0.00	99	0.00	0.00	133	0.00	0.00
32	0.00	0.00	66	0.00	0.00	100	0.00	0.00	134	0.00	0.00
33	0.00	0.00	67	0.00	0.00	101	0.00	0.00	135	0.00	0.00
34	0.00	0.00	68	0.00	0.00	102	0.00	0.00	136	0.00	0.00

Max Temp= 83.17 F; Min Temp= 62.96 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

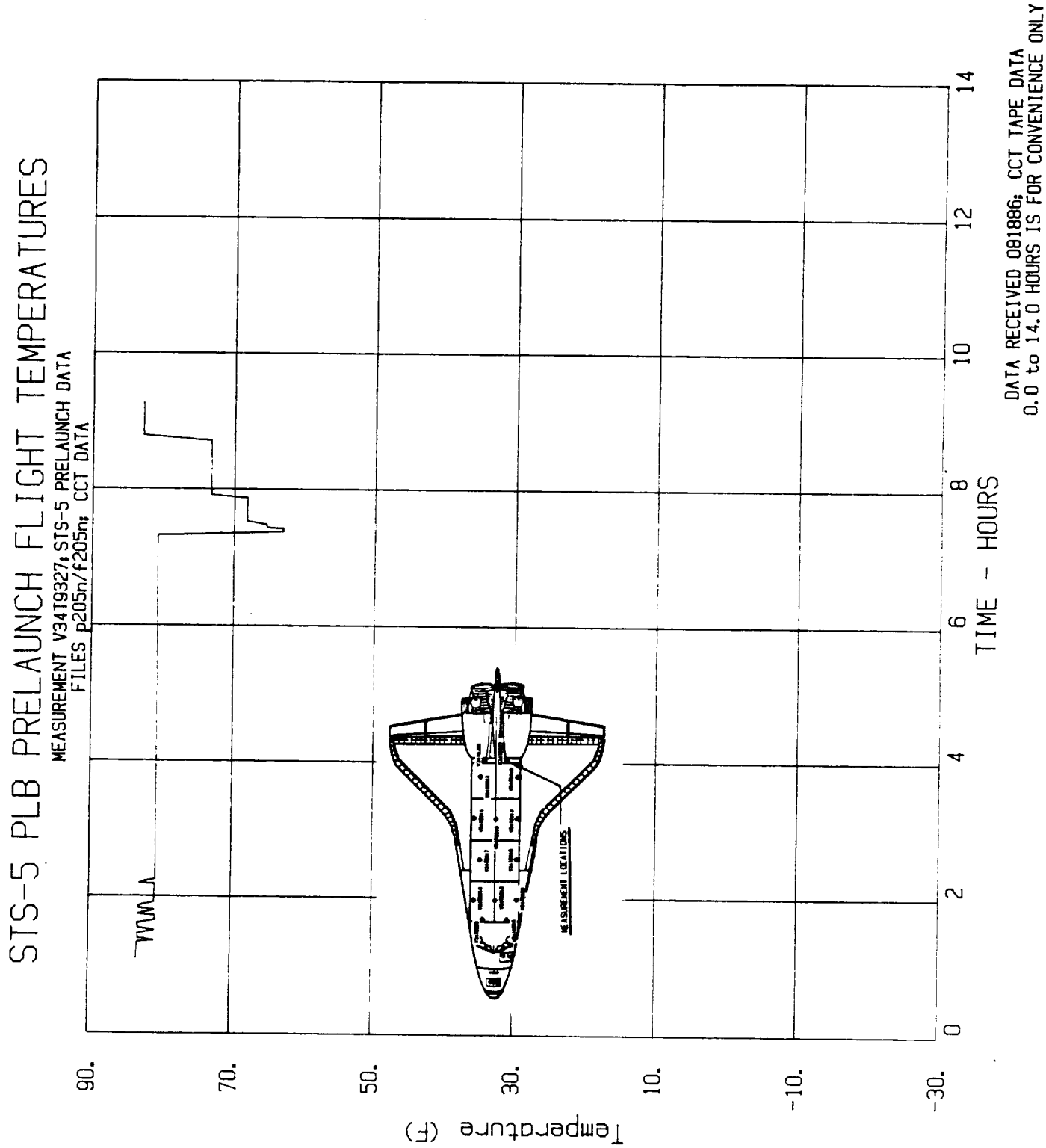
STS-5 PLB PRELAUNCH FLIGHT TEMPERATURES
MEASUREMENT V34T9327; STS-5 PRELAUNCH DATA
FILES p205n/f205n; CCT DATA
DATA RECEIVED 081886; CCT TAPE DATA
0.0 to 14.0 HOURS IS FOR CONVENIENCE ONLY
Temperature (F)
90.
70.
50.
30.
10.
-10.
-30.
TIME - HOURS
0
2
4
6
8
10
12
14
MEASUREMENT LOCATIONS

Figure A-205

A210
File No=f210 STS-1 V34T9311 ASCENT MID FUS LIN TEMP

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	0.00	77.97	35	0.00	0.00	69	0.00	0.00	103	0.00	0.00
2	0.02	59.84	36	0.00	0.00	70	0.00	0.00	104	0.00	0.00
3	0.05	64.94	37	0.00	0.00	71	0.00	0.00	105	0.00	0.00
4	0.08	67.37	38	0.00	0.00	72	0.00	0.00	106	0.00	0.00
5	0.12	67.37	39	0.00	0.00	73	0.00	0.00	107	0.00	0.00
6	0.15	70.15	40	0.00	0.00	74	0.00	0.00	108	0.00	0.00
7	0.42	70.15	41	0.00	0.00	75	0.00	0.00	109	0.00	0.00
8	0.62	70.21	42	0.00	0.00	76	0.00	0.00	110	0.00	0.00
9	0.69	70.26	43	0.00	0.00	77	0.00	0.00	111	0.00	0.00
10	1.03	70.15	44	0.00	0.00	78	0.00	0.00	112	0.00	0.00
11	1.06	70.21	45	0.00	0.00	79	0.00	0.00	113	0.00	0.00
12	1.53	80.58	46	0.00	0.00	80	0.00	0.00	114	0.00	0.00
13	1.56	77.80	47	0.00	0.00	81	0.00	0.00	115	0.00	0.00
14	1.67	80.63	48	0.00	0.00	82	0.00	0.00	116	0.00	0.00
15	1.76	80.52	49	0.00	0.00	83	0.00	0.00	117	0.00	0.00
16	1.91	72.64	50	0.00	0.00	84	0.00	0.00	118	0.00	0.00
17	1.94	70.32	51	0.00	0.00	85	0.00	0.00	119	0.00	0.00
18	2.21	62.16	52	0.00	0.00	86	0.00	0.00	120	0.00	0.00
19	2.24	59.95	53	0.00	0.00	87	0.00	0.00	121	0.00	0.00
20	2.62	31.33	54	0.00	0.00	88	0.00	0.00	122	0.00	0.00
21	2.65	28.90	55	0.00	0.00	89	0.00	0.00	123	0.00	0.00
22	2.95	5.78	56	0.00	0.00	90	0.00	0.00	124	0.00	0.00
23	0.00	0.00	57	0.00	0.00	91	0.00	0.00	125	0.00	0.00
24	0.00	0.00	58	0.00	0.00	92	0.00	0.00	126	0.00	0.00
25	0.00	0.00	59	0.00	0.00	93	0.00	0.00	127	0.00	0.00
26	0.00	0.00	60	0.00	0.00	94	0.00	0.00	128	0.00	0.00
27	0.00	0.00	61	0.00	0.00	95	0.00	0.00	129	0.00	0.00
28	0.00	0.00	62	0.00	0.00	96	0.00	0.00	130	0.00	0.00
29	0.00	0.00	63	0.00	0.00	97	0.00	0.00	131	0.00	0.00
30	0.00	0.00	64	0.00	0.00	98	0.00	0.00	132	0.00	0.00
31	0.00	0.00	65	0.00	0.00	99	0.00	0.00	133	0.00	0.00
32	0.00	0.00	66	0.00	0.00	100	0.00	0.00	134	0.00	0.00
33	0.00	0.00	67	0.00	0.00	101	0.00	0.00	135	0.00	0.00
34	0.00	0.00	68	0.00	0.00	102	0.00	0.00	136	0.00	0.00

Max Temp= 80.63 F; Min Temp= 5.78 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

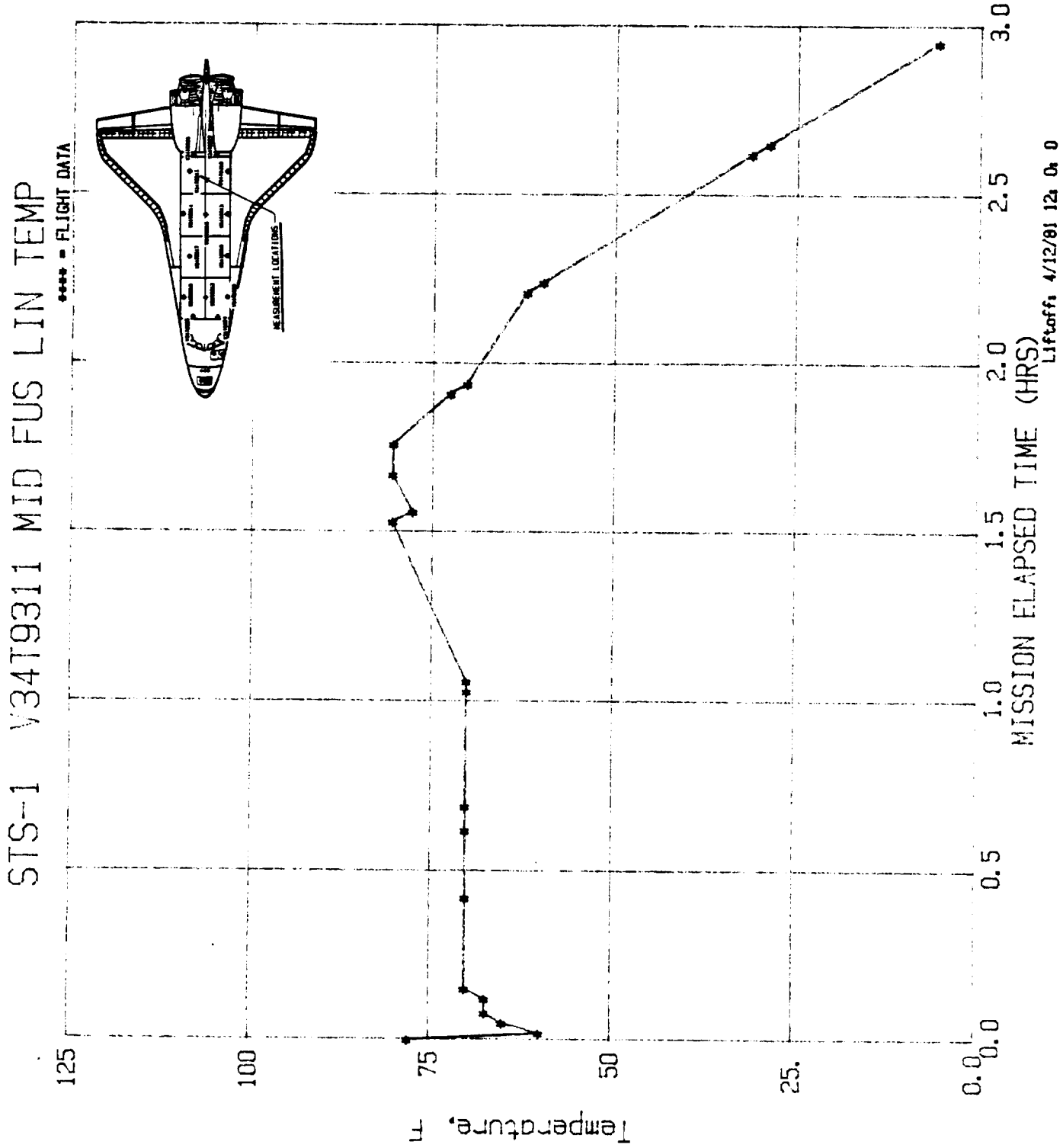
STS-1 V34T9311 MID FUS LIN TEMP
**** = FLIGHT DATA
MEASUREMENT LOCATIONS
Temperature, °F
125
100
75
50
25.
0.0
0.0
0.5
1.0
1.5
2.0
2.5
3.0
MISSION ELAPSED TIME (HRS)
Liftoff: 4/12/81 12: 0: 0

Figure A-210

A211
File No=f211 STS-1 V34T9317 ASCENT MID FUS LIN TEMP

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	0.00	80.07	35	0.00	0.00	69	0.00	0.00	103	0.00	0.00
2	0.03	60.06	36	0.00	0.00	70	0.00	0.00	104	0.00	0.00
3	0.05	67.54	37	0.00	0.00	71	0.00	0.00	105	0.00	0.00
4	0.09	70.26	38	0.00	0.00	72	0.00	0.00	106	0.00	0.00
5	0.15	70.21	39	0.00	0.00	73	0.00	0.00	107	0.00	0.00
6	0.19	72.70	40	0.00	0.00	74	0.00	0.00	108	0.00	0.00
7	0.43	72.70	41	0.00	0.00	75	0.00	0.00	109	0.00	0.00
8	0.63	72.70	42	0.00	0.00	76	0.00	0.00	110	0.00	0.00
9	0.69	72.76	43	0.00	0.00	77	0.00	0.00	111	0.00	0.00
10	1.02	72.64	44	0.00	0.00	78	0.00	0.00	112	0.00	0.00
11	1.06	72.70	45	0.00	0.00	79	0.00	0.00	113	0.00	0.00
12	1.53	77.80	46	0.00	0.00	80	0.00	0.00	114	0.00	0.00
13	1.56	75.14	47	0.00	0.00	81	0.00	0.00	115	0.00	0.00
14	1.66	77.86	48	0.00	0.00	82	0.00	0.00	116	0.00	0.00
15	1.70	80.35	49	0.00	0.00	83	0.00	0.00	117	0.00	0.00
16	1.73	77.69	50	0.00	0.00	84	0.00	0.00	118	0.00	0.00
17	1.76	77.80	51	0.00	0.00	85	0.00	0.00	119	0.00	0.00
18	1.90	67.37	52	0.00	0.00	86	0.00	0.00	120	0.00	0.00
19	1.93	67.37	53	0.00	0.00	87	0.00	0.00	121	0.00	0.00
20	2.21	54.62	54	0.00	0.00	88	0.00	0.00	122	0.00	0.00
21	2.24	49.81	55	0.00	0.00	89	0.00	0.00	123	0.00	0.00
22	2.61	26.12	56	0.00	0.00	90	0.00	0.00	124	0.00	0.00
23	2.65	23.63	57	0.00	0.00	91	0.00	0.00	125	0.00	0.00
24	2.94	3.12	58	0.00	0.00	92	0.00	0.00	126	0.00	0.00
25	0.00	0.00	59	0.00	0.00	93	0.00	0.00	127	0.00	0.00
26	0.00	0.00	60	0.00	0.00	94	0.00	0.00	128	0.00	0.00
27	0.00	0.00	61	0.00	0.00	95	0.00	0.00	129	0.00	0.00
28	0.00	0.00	62	0.00	0.00	96	0.00	0.00	130	0.00	0.00
29	0.00	0.00	63	0.00	0.00	97	0.00	0.00	131	0.00	0.00
30	0.00	0.00	64	0.00	0.00	98	0.00	0.00	132	0.00	0.00
31	0.00	0.00	65	0.00	0.00	99	0.00	0.00	133	0.00	0.00
32	0.00	0.00	66	0.00	0.00	100	0.00	0.00	134	0.00	0.00
33	0.00	0.00	67	0.00	0.00	101	0.00	0.00	135	0.00	0.00
34	0.00	0.00	68	0.00	0.00	102	0.00	0.00	136	0.00	0.00

Max Temp= 80.35 F; Min Temp= 3.12 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

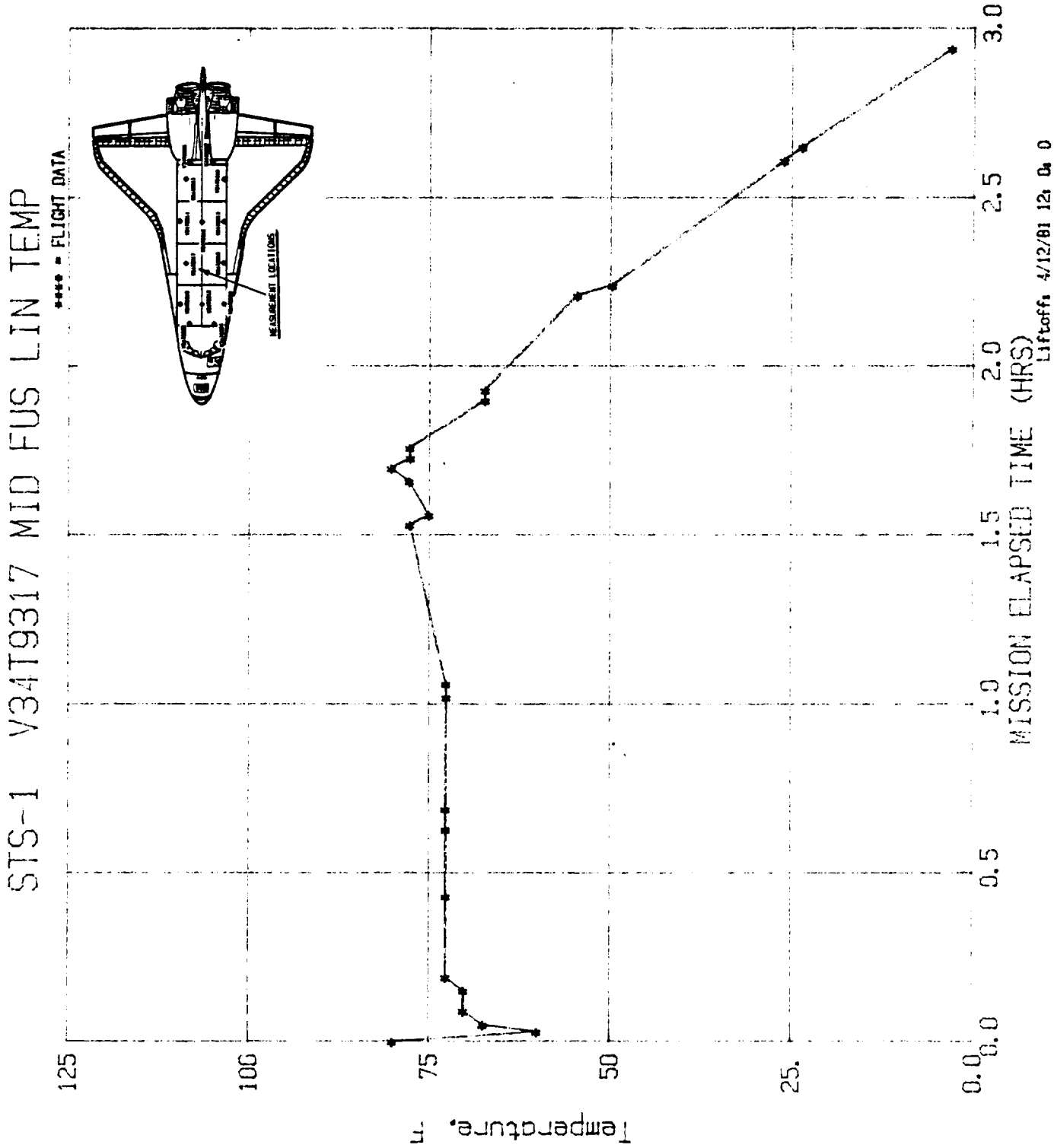
STS-1 V34T9317 MID FUS LIN TEMP
**** = FLIGHT DATA
MEASUREMENT LOCATIONS
Temperature, °F
125
100
75
50
25.
0.0
0.0
0.5
1.0
1.5
2.0
2.5
3.0
MISSION ELAPSED TIME (HRS)
Liftoff: 4/12/81 12: 0: 0

Figure A-211

A212
File No=f212

STS-1 V34T9320 ASCENT MID FUS LIN TEMP

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	0.00	76.72	35	3.34	41.39	69	0.00	0.00	103	0.00	0.00
2	0.01	62.23	36	4.18	11.50	70	0.00	0.00	104	0.00	0.00
3	0.05	59.51	37	4.45	35.28	71	0.00	0.00	105	0.00	0.00
4	0.07	59.28	38	4.48	72.64	72	0.00	0.00	106	0.00	0.00
5	0.11	62.23	39	4.52	54.53	73	0.00	0.00	107	0.00	0.00
6	0.14	62.23	40	4.54	52.72	74	0.00	0.00	108	0.00	0.00
7	0.18	65.63	41	4.61	47.28	75	0.00	0.00	109	0.00	0.00
8	0.21	65.17	42	4.65	47.28	76	0.00	0.00	110	0.00	0.00
9	0.24	67.89	43	4.69	45.02	77	0.00	0.00	111	0.00	0.00
10	0.27	67.66	44	4.72	45.47	78	0.00	0.00	112	0.00	0.00
11	0.31	69.93	45	4.79	52.04	79	0.00	0.00	113	0.00	0.00
12	0.41	70.38	46	4.82	54.53	80	0.00	0.00	114	0.00	0.00
13	0.63	70.15	47	4.90	54.76	81	0.00	0.00	115	0.00	0.00
14	0.68	69.93	48	4.92	52.72	82	0.00	0.00	116	0.00	0.00
15	1.03	72.87	49	5.10	52.04	83	0.00	0.00	117	0.00	0.00
16	1.05	72.64	50	5.18	45.47	84	0.00	0.00	118	0.00	0.00
17	1.53	77.63	51	0.00	0.00	85	0.00	0.00	119	0.00	0.00
18	1.55	77.17	52	0.00	0.00	86	0.00	0.00	120	0.00	0.00
19	1.67	77.85	53	0.00	0.00	87	0.00	0.00	121	0.00	0.00
20	1.72	82.61	54	0.00	0.00	88	0.00	0.00	122	0.00	0.00
21	1.75	83.06	55	0.00	0.00	89	0.00	0.00	123	0.00	0.00
22	1.89	72.64	56	0.00	0.00	90	0.00	0.00	124	0.00	0.00
23	1.92	72.64	57	0.00	0.00	91	0.00	0.00	125	0.00	0.00
24	2.20	51.36	58	0.00	0.00	92	0.00	0.00	126	0.00	0.00
25	2.22	49.77	59	0.00	0.00	93	0.00	0.00	127	0.00	0.00
26	2.60	13.77	60	0.00	0.00	94	0.00	0.00	128	0.00	0.00
27	2.63	13.32	61	0.00	0.00	95	0.00	0.00	129	0.00	0.00
28	2.95	-30.84	62	0.00	0.00	96	0.00	0.00	130	0.00	0.00
29	3.05	-41.94	63	0.00	0.00	97	0.00	0.00	131	0.00	0.00
30	3.08	-36.50	64	0.00	0.00	98	0.00	0.00	132	0.00	0.00
31	3.15	-18.84	65	0.00	0.00	99	0.00	0.00	133	0.00	0.00
32	3.18	-9.33	66	0.00	0.00	100	0.00	0.00	134	0.00	0.00
33	3.24	20.11	67	0.00	0.00	101	0.00	0.00	135	0.00	0.00
34	3.30	39.13	68	0.00	0.00	102	0.00	0.00	136	0.00	0.00

Max Temp= 83.06 F; Min Temp= -41.94 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

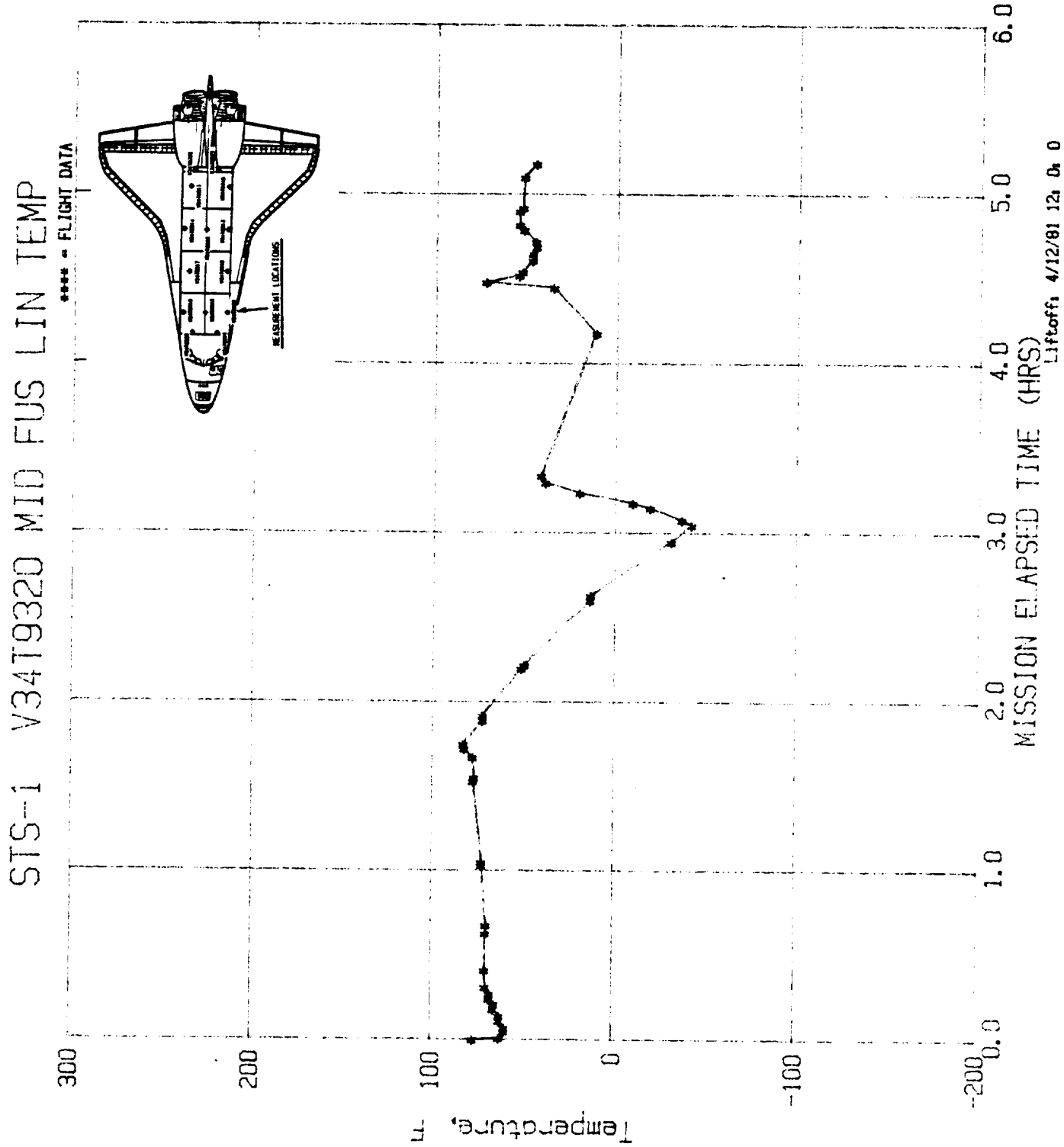
STS-1 V34T9320 MID FUS LIN TEMP
**** = FLIGHT DATA
MEASUREMENT LOCATIONS
Temperature, °F
300
200
100
0
-100
-200
0.0
1.0
2.0
3.0
4.0
5.0
6.0
MISSION ELAPSED TIME (HRS)
Liftoff: 4/12/81 12: 0: 0

Figure A-212

A213
File No=f213 STS-2 V34T9310 ASCENT MID FUS LIN TEMP

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	0.00	69.81	35	0.00	0.00	69	0.00	0.00	103	0.00	0.00
2	0.04	54.52	36	0.00	0.00	70	0.00	0.00	104	0.00	0.00
3	0.07	49.51	37	0.00	0.00	71	0.00	0.00	105	0.00	0.00
4	0.13	54.48	38	0.00	0.00	72	0.00	0.00	106	0.00	0.00
5	0.17	54.57	39	0.00	0.00	73	0.00	0.00	107	0.00	0.00
6	0.20	57.29	40	0.00	0.00	74	0.00	0.00	108	0.00	0.00
7	0.24	57.34	41	0.00	0.00	75	0.00	0.00	109	0.00	0.00
8	0.27	59.73	42	0.00	0.00	76	0.00	0.00	110	0.00	0.00
9	0.33	59.73	43	0.00	0.00	77	0.00	0.00	111	0.00	0.00
10	0.37	62.40	44	0.00	0.00	78	0.00	0.00	112	0.00	0.00
11	0.47	62.35	45	0.00	0.00	79	0.00	0.00	113	0.00	0.00
12	0.70	64.93	46	0.00	0.00	80	0.00	0.00	114	0.00	0.00
13	0.90	65.17	47	0.00	0.00	81	0.00	0.00	115	0.00	0.00
14	1.33	64.79	48	0.00	0.00	82	0.00	0.00	116	0.00	0.00
15	1.34	64.79	49	0.00	0.00	83	0.00	0.00	117	0.00	0.00
16	1.76	75.39	50	0.00	0.00	84	0.00	0.00	118	0.00	0.00
17	1.77	75.39	51	0.00	0.00	85	0.00	0.00	119	0.00	0.00
18	2.19	77.87	52	0.00	0.00	86	0.00	0.00	120	0.00	0.00
19	2.20	77.92	53	0.00	0.00	87	0.00	0.00	121	0.00	0.00
20	2.62	36.66	54	0.00	0.00	88	0.00	0.00	122	0.00	0.00
21	2.64	36.66	55	0.00	0.00	89	0.00	0.00	123	0.00	0.00
22	0.00	0.00	56	0.00	0.00	90	0.00	0.00	124	0.00	0.00
23	0.00	0.00	57	0.00	0.00	91	0.00	0.00	125	0.00	0.00
24	0.00	0.00	58	0.00	0.00	92	0.00	0.00	126	0.00	0.00
25	0.00	0.00	59	0.00	0.00	93	0.00	0.00	127	0.00	0.00
26	0.00	0.00	60	0.00	0.00	94	0.00	0.00	128	0.00	0.00
27	0.00	0.00	61	0.00	0.00	95	0.00	0.00	129	0.00	0.00
28	0.00	0.00	62	0.00	0.00	96	0.00	0.00	130	0.00	0.00
29	0.00	0.00	63	0.00	0.00	97	0.00	0.00	131	0.00	0.00
30	0.00	0.00	64	0.00	0.00	98	0.00	0.00	132	0.00	0.00
31	0.00	0.00	65	0.00	0.00	99	0.00	0.00	133	0.00	0.00
32	0.00	0.00	66	0.00	0.00	100	0.00	0.00	134	0.00	0.00
33	0.00	0.00	67	0.00	0.00	101	0.00	0.00	135	0.00	0.00
34	0.00	0.00	68	0.00	0.00	102	0.00	0.00	136	0.00	0.00

Max Temp= 77.92 F; Min Temp= 36.66 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

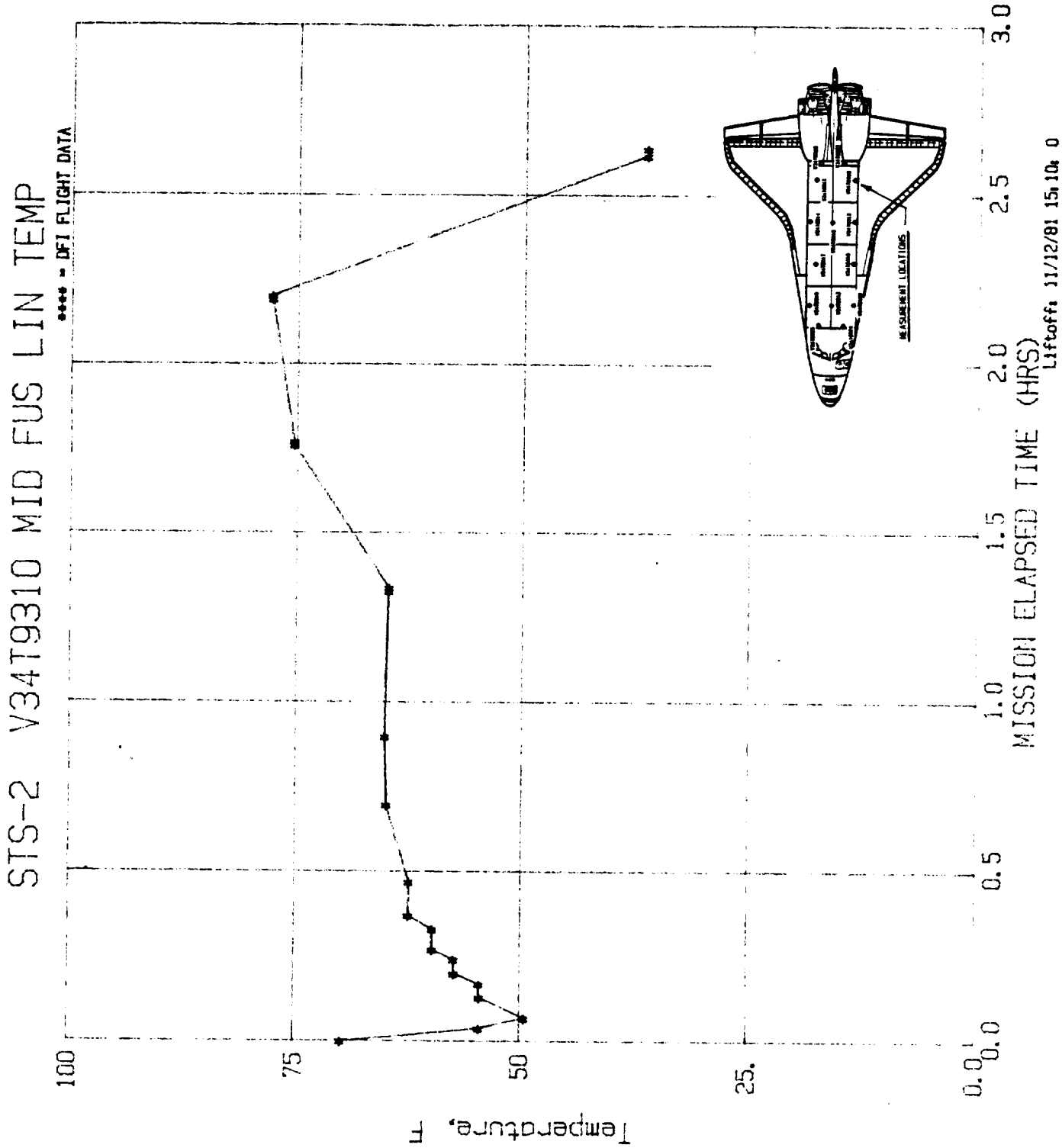
STS-2 V34T9310 MID FUS LIN TEMP
**** - DFI FLIGHT DATA
Temperature, F
100
75
50
25.
0.0
0.0
0.5
1.0
1.5
2.0
2.5
3.0
MISSION ELAPSED TIME (HRS)
Liftoff: 11/12/81 15:10: 0
MEASUREMENT LOCATIONS

Figure A-213

A214
File No=f214 STS-2 V34T9320 ASCENT MID FUS LIN TEMP

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	0.01	70.97	35	0.37	62.98	69	0.00	0.00	103	0.00	0.00
2	0.01	70.82	36	0.39	63.03	70	0.00	0.00	104	0.00	0.00
3	0.02	60.45	37	0.40	62.93	71	0.00	0.00	105	0.00	0.00
4	0.03	55.09	38	0.42	62.88	72	0.00	0.00	106	0.00	0.00
5	0.03	55.14	39	0.44	62.83	73	0.00	0.00	107	0.00	0.00
6	0.03	52.51	40	0.45	62.83	74	0.00	0.00	108	0.00	0.00
7	0.04	52.51	41	0.47	62.64	75	0.00	0.00	109	0.00	0.00
8	0.04	50.32	42	0.57	62.45	76	0.00	0.00	110	0.00	0.00
9	0.05	50.27	43	0.66	64.98	77	0.00	0.00	111	0.00	0.00
10	0.07	50.22	44	0.68	65.12	78	0.00	0.00	112	0.00	0.00
11	0.09	50.27	45	0.70	65.03	79	0.00	0.00	113	0.00	0.00
12	0.09	50.22	46	0.72	64.98	80	0.00	0.00	114	0.00	0.00
13	0.10	52.56	47	0.81	64.93	81	0.00	0.00	115	0.00	0.00
14	0.12	52.61	48	0.90	64.98	82	0.00	0.00	116	0.00	0.00
15	0.13	52.46	49	0.99	64.88	83	0.00	0.00	117	0.00	0.00
16	0.14	55.33	50	0.00	0.00	84	0.00	0.00	118	0.00	0.00
17	0.15	55.28	51	0.00	0.00	85	0.00	0.00	119	0.00	0.00
18	0.17	55.28	52	0.00	0.00	86	0.00	0.00	120	0.00	0.00
19	0.18	55.14	53	0.00	0.00	87	0.00	0.00	121	0.00	0.00
20	0.20	55.19	54	0.00	0.00	88	0.00	0.00	122	0.00	0.00
21	0.20	57.77	55	0.00	0.00	89	0.00	0.00	123	0.00	0.00
22	0.20	57.82	56	0.00	0.00	90	0.00	0.00	124	0.00	0.00
23	0.22	57.77	57	0.00	0.00	91	0.00	0.00	125	0.00	0.00
24	0.23	57.77	58	0.00	0.00	92	0.00	0.00	126	0.00	0.00
25	0.25	57.77	59	0.00	0.00	93	0.00	0.00	127	0.00	0.00
26	0.26	57.72	60	0.00	0.00	94	0.00	0.00	128	0.00	0.00
27	0.26	60.25	61	0.00	0.00	95	0.00	0.00	129	0.00	0.00
28	0.27	60.40	62	0.00	0.00	96	0.00	0.00	130	0.00	0.00
29	0.28	60.25	63	0.00	0.00	97	0.00	0.00	131	0.00	0.00
30	0.30	60.35	64	0.00	0.00	98	0.00	0.00	132	0.00	0.00
31	0.32	60.40	65	0.00	0.00	99	0.00	0.00	133	0.00	0.00
32	0.33	60.45	66	0.00	0.00	100	0.00	0.00	134	0.00	0.00
33	0.35	60.35	67	0.00	0.00	101	0.00	0.00	135	0.00	0.00
34	0.37	60.20	68	0.00	0.00	102	0.00	0.00	136	0.00	0.00

Max Temp= 70.97 F; Min Temp= 50.22 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

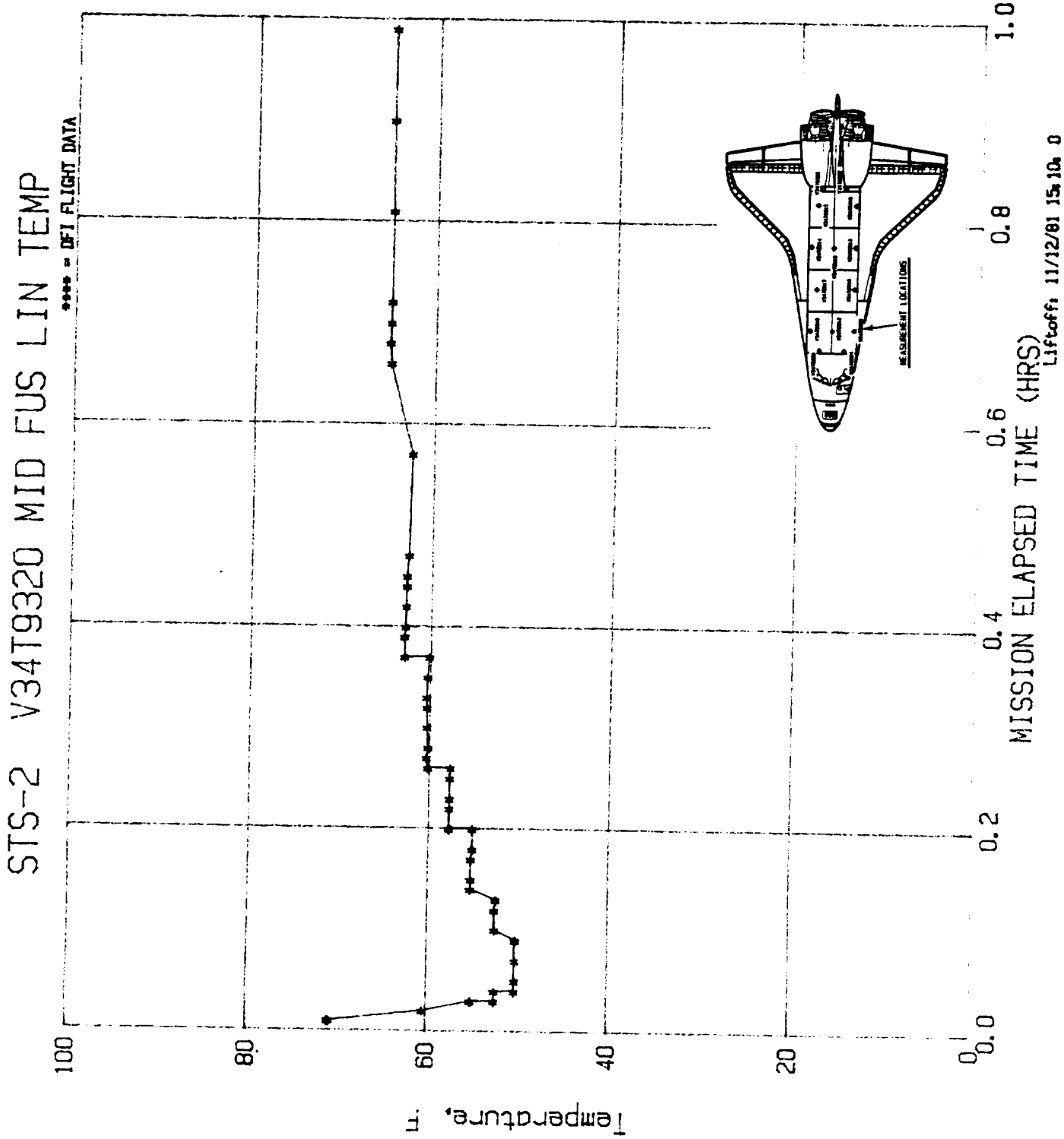
STS-2 V34T9320 MID FUS LIN TEMP
**** = DFI FLIGHT DATA
Temperature, °F
100
80
60
40
20
0
0.0
0.2
0.4
0.6
0.8
1.0
MISSION ELAPSED TIME (HRS)
Liftoff: 11/12/81 15:10:0
MEASUREMENT LOCATIONS

Figure A-214

A215
File No=f215 STS-2 V34T9325A ASCENT FWD BHD TCS TEMP

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	0.01	70.74	35	0.45	65.45	69	0.00	0.00	103	0.00	0.00
2	0.01	70.30	36	0.47	65.31	70	0.00	0.00	104	0.00	0.00
3	0.02	67.71	37	0.57	65.31	71	0.00	0.00	105	0.00	0.00
4	0.02	65.35	38	0.68	65.35	72	0.00	0.00	106	0.00	0.00
5	0.02	62.90	39	0.70	65.31	73	0.00	0.00	107	0.00	0.00
6	0.03	62.90	40	0.72	65.31	74	0.00	0.00	108	0.00	0.00
7	0.05	62.85	41	0.81	65.26	75	0.00	0.00	109	0.00	0.00
8	0.05	59.97	42	0.90	67.66	76	0.00	0.00	110	0.00	0.00
9	0.07	60.21	43	0.90	65.35	77	0.00	0.00	111	0.00	0.00
10	0.08	60.07	44	0.99	65.26	78	0.00	0.00	112	0.00	0.00
11	0.10	60.16	45	0.99	67.80	79	0.00	0.00	113	0.00	0.00
12	0.12	60.16	46	0.00	0.00	80	0.00	0.00	114	0.00	0.00
13	0.13	60.31	47	0.00	0.00	81	0.00	0.00	115	0.00	0.00
14	0.15	60.16	48	0.00	0.00	82	0.00	0.00	116	0.00	0.00
15	0.16	60.16	49	0.00	0.00	83	0.00	0.00	117	0.00	0.00
16	0.16	62.71	50	0.00	0.00	84	0.00	0.00	118	0.00	0.00
17	0.17	62.81	51	0.00	0.00	85	0.00	0.00	119	0.00	0.00
18	0.19	62.95	52	0.00	0.00	86	0.00	0.00	120	0.00	0.00
19	0.20	62.85	53	0.00	0.00	87	0.00	0.00	121	0.00	0.00
20	0.21	62.95	54	0.00	0.00	88	0.00	0.00	122	0.00	0.00
21	0.23	62.90	55	0.00	0.00	89	0.00	0.00	123	0.00	0.00
22	0.25	62.95	56	0.00	0.00	90	0.00	0.00	124	0.00	0.00
23	0.26	62.90	57	0.00	0.00	91	0.00	0.00	125	0.00	0.00
24	0.28	62.90	58	0.00	0.00	92	0.00	0.00	126	0.00	0.00
25	0.30	63.00	59	0.00	0.00	93	0.00	0.00	127	0.00	0.00
26	0.32	62.90	60	0.00	0.00	94	0.00	0.00	128	0.00	0.00
27	0.33	62.95	61	0.00	0.00	95	0.00	0.00	129	0.00	0.00
28	0.35	62.95	62	0.00	0.00	96	0.00	0.00	130	0.00	0.00
29	0.37	62.95	63	0.00	0.00	97	0.00	0.00	131	0.00	0.00
30	0.38	62.81	64	0.00	0.00	98	0.00	0.00	132	0.00	0.00
31	0.39	62.76	65	0.00	0.00	99	0.00	0.00	133	0.00	0.00
32	0.39	65.50	66	0.00	0.00	100	0.00	0.00	134	0.00	0.00
33	0.42	65.50	67	0.00	0.00	101	0.00	0.00	135	0.00	0.00
34	0.44	65.50	68	0.00	0.00	102	0.00	0.00	136	0.00	0.00

Max Temp= 70.74 F; Min Temp= 59.97 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

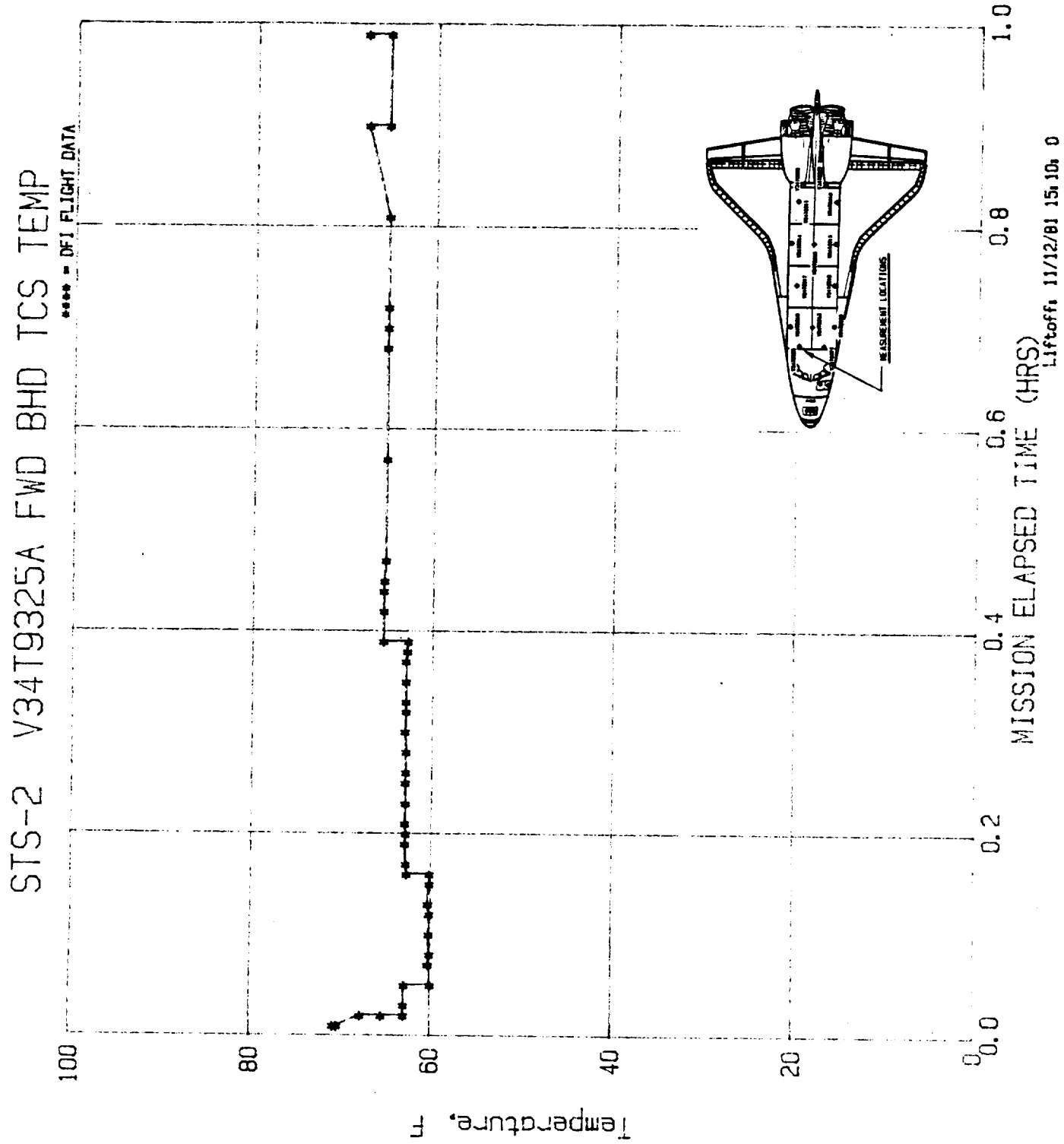
STS-2 V34T9325A FWD BHD TCS TEMP
**** = DFI FLIGHT DATA
Temperature, F
100
80
60
40
20
0
0.0
0.2
0.4
0.6
0.8
1.0
MISSION ELAPSED TIME (HRS)
Liftoff: 11/12/81 15:10:0
MEASUREMENT LOCATIONS

Figure A-215

A216
File No=f216 STS-2 V34T9326A ASCENT AFT BHD TCS TEMP

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	0.00	71.30	35	0.00	0.00	69	0.00	0.00	103	0.00	0.00
2	0.01	70.67	36	0.00	0.00	70	0.00	0.00	104	0.00	0.00
3	0.01	68.25	37	0.00	0.00	71	0.00	0.00	105	0.00	0.00
4	0.02	68.20	38	0.00	0.00	72	0.00	0.00	106	0.00	0.00
5	0.02	58.36	39	0.00	0.00	73	0.00	0.00	107	0.00	0.00
6	0.03	45.23	40	0.00	0.00	74	0.00	0.00	108	0.00	0.00
7	0.03	45.27	41	0.00	0.00	75	0.00	0.00	109	0.00	0.00
8	0.03	43.19	42	0.00	0.00	76	0.00	0.00	110	0.00	0.00
9	0.05	43.09	43	0.00	0.00	77	0.00	0.00	111	0.00	0.00
10	0.06	43.14	44	0.00	0.00	78	0.00	0.00	112	0.00	0.00
11	0.06	45.42	45	0.00	0.00	79	0.00	0.00	113	0.00	0.00
12	0.08	45.42	46	0.00	0.00	80	0.00	0.00	114	0.00	0.00
13	0.08	48.09	47	0.00	0.00	81	0.00	0.00	115	0.00	0.00
14	0.10	48.04	48	0.00	0.00	82	0.00	0.00	116	0.00	0.00
15	0.10	50.80	49	0.00	0.00	83	0.00	0.00	117	0.00	0.00
16	0.12	50.70	50	0.00	0.00	84	0.00	0.00	118	0.00	0.00
17	0.13	53.27	51	0.00	0.00	85	0.00	0.00	119	0.00	0.00
18	0.15	53.32	52	0.00	0.00	86	0.00	0.00	120	0.00	0.00
19	0.15	55.79	53	0.00	0.00	87	0.00	0.00	121	0.00	0.00
20	0.19	55.74	54	0.00	0.00	88	0.00	0.00	122	0.00	0.00
21	0.19	58.07	55	0.00	0.00	89	0.00	0.00	123	0.00	0.00
22	0.25	57.83	56	0.00	0.00	90	0.00	0.00	124	0.00	0.00
23	0.25	61.03	57	0.00	0.00	91	0.00	0.00	125	0.00	0.00
24	0.38	60.74	58	0.00	0.00	92	0.00	0.00	126	0.00	0.00
25	0.38	63.16	59	0.00	0.00	93	0.00	0.00	127	0.00	0.00
26	0.72	62.43	60	0.00	0.00	94	0.00	0.00	128	0.00	0.00
27	0.81	65.20	61	0.00	0.00	95	0.00	0.00	129	0.00	0.00
28	0.98	65.24	62	0.00	0.00	96	0.00	0.00	130	0.00	0.00
29	0.00	0.00	63	0.00	0.00	97	0.00	0.00	131	0.00	0.00
30	0.00	0.00	64	0.00	0.00	98	0.00	0.00	132	0.00	0.00
31	0.00	0.00	65	0.00	0.00	99	0.00	0.00	133	0.00	0.00
32	0.00	0.00	66	0.00	0.00	100	0.00	0.00	134	0.00	0.00
33	0.00	0.00	67	0.00	0.00	101	0.00	0.00	135	0.00	0.00
34	0.00	0.00	68	0.00	0.00	102	0.00	0.00	136	0.00	0.00

Max Temp= 71.30 F; Min Temp= 43.09 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

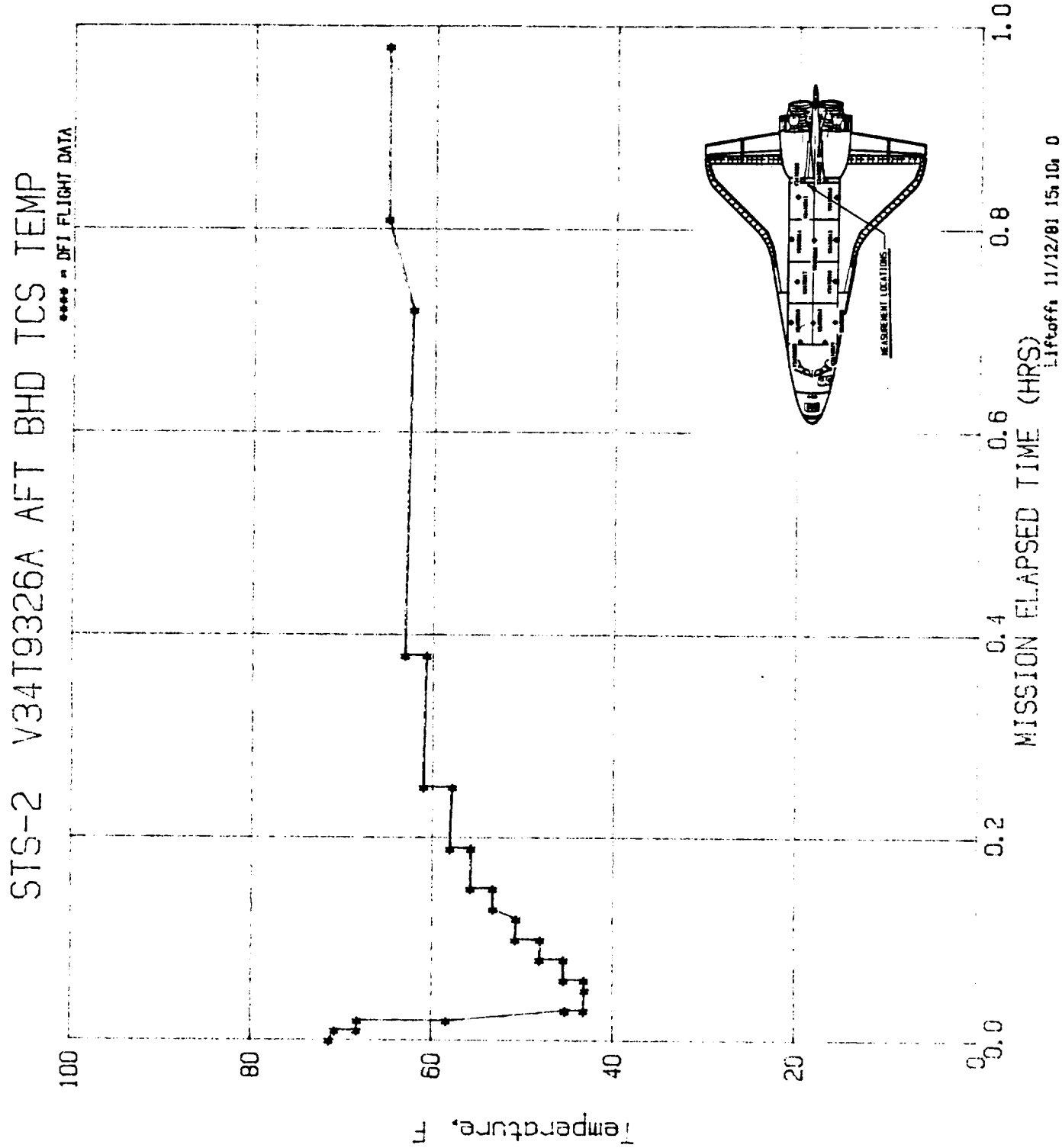
STS-2 V34T9326A AFT BHD TCS TEMP
**** = DFI FLIGHT DATA
Temperature, F
100
80
60
40
20
0
0.0
0.2
0.4
0.6
0.8
1.0
MISSION ELAPSED TIME (HRS)
Liftoff: 11/12/81 15:10: 0
MEASUREMENT LOCATIONS

Figure A-216

A217
File No=f217 STS-2 V34T9312 ASCENT MID FUS LIN TEMP

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	0.00	74.41	35	0.00	0.00	69	0.00	0.00	103	0.00	0.00
2	0.03	57.45	36	0.00	0.00	70	0.00	0.00	104	0.00	0.00
3	0.12	57.50	37	0.00	0.00	71	0.00	0.00	105	0.00	0.00
4	0.17	60.22	38	0.00	0.00	72	0.00	0.00	106	0.00	0.00
5	0.19	60.17	39	0.00	0.00	73	0.00	0.00	107	0.00	0.00
6	0.23	62.56	40	0.00	0.00	74	0.00	0.00	108	0.00	0.00
7	0.29	62.61	41	0.00	0.00	75	0.00	0.00	109	0.00	0.00
8	0.32	65.18	42	0.00	0.00	76	0.00	0.00	110	0.00	0.00
9	0.46	65.23	43	0.00	0.00	77	0.00	0.00	111	0.00	0.00
10	0.70	67.76	44	0.00	0.00	78	0.00	0.00	112	0.00	0.00
11	0.90	67.71	45	0.00	0.00	79	0.00	0.00	113	0.00	0.00
12	1.33	67.71	46	0.00	0.00	80	0.00	0.00	114	0.00	0.00
13	1.33	67.71	47	0.00	0.00	81	0.00	0.00	115	0.00	0.00
14	1.75	78.12	48	0.00	0.00	82	0.00	0.00	116	0.00	0.00
15	1.76	78.16	49	0.00	0.00	83	0.00	0.00	117	0.00	0.00
16	2.19	83.13	50	0.00	0.00	84	0.00	0.00	118	0.00	0.00
17	2.20	83.18	51	0.00	0.00	85	0.00	0.00	119	0.00	0.00
18	2.63	0.33	52	0.00	0.00	86	0.00	0.00	120	0.00	0.00
19	2.64	0.28	53	0.00	0.00	87	0.00	0.00	121	0.00	0.00
20	0.00	0.00	54	0.00	0.00	88	0.00	0.00	122	0.00	0.00
21	0.00	0.00	55	0.00	0.00	89	0.00	0.00	123	0.00	0.00
22	0.00	0.00	56	0.00	0.00	90	0.00	0.00	124	0.00	0.00
23	0.00	0.00	57	0.00	0.00	91	0.00	0.00	125	0.00	0.00
24	0.00	0.00	58	0.00	0.00	92	0.00	0.00	126	0.00	0.00
25	0.00	0.00	59	0.00	0.00	93	0.00	0.00	127	0.00	0.00
26	0.00	0.00	60	0.00	0.00	94	0.00	0.00	128	0.00	0.00
27	0.00	0.00	61	0.00	0.00	95	0.00	0.00	129	0.00	0.00
28	0.00	0.00	62	0.00	0.00	96	0.00	0.00	130	0.00	0.00
29	0.00	0.00	63	0.00	0.00	97	0.00	0.00	131	0.00	0.00
30	0.00	0.00	64	0.00	0.00	98	0.00	0.00	132	0.00	0.00
31	0.00	0.00	65	0.00	0.00	99	0.00	0.00	133	0.00	0.00
32	0.00	0.00	66	0.00	0.00	100	0.00	0.00	134	0.00	0.00
33	0.00	0.00	67	0.00	0.00	101	0.00	0.00	135	0.00	0.00
34	0.00	0.00	68	0.00	0.00	102	0.00	0.00	136	0.00	0.00

Max Temp= 83.18 F; Min Temp= 0.28 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

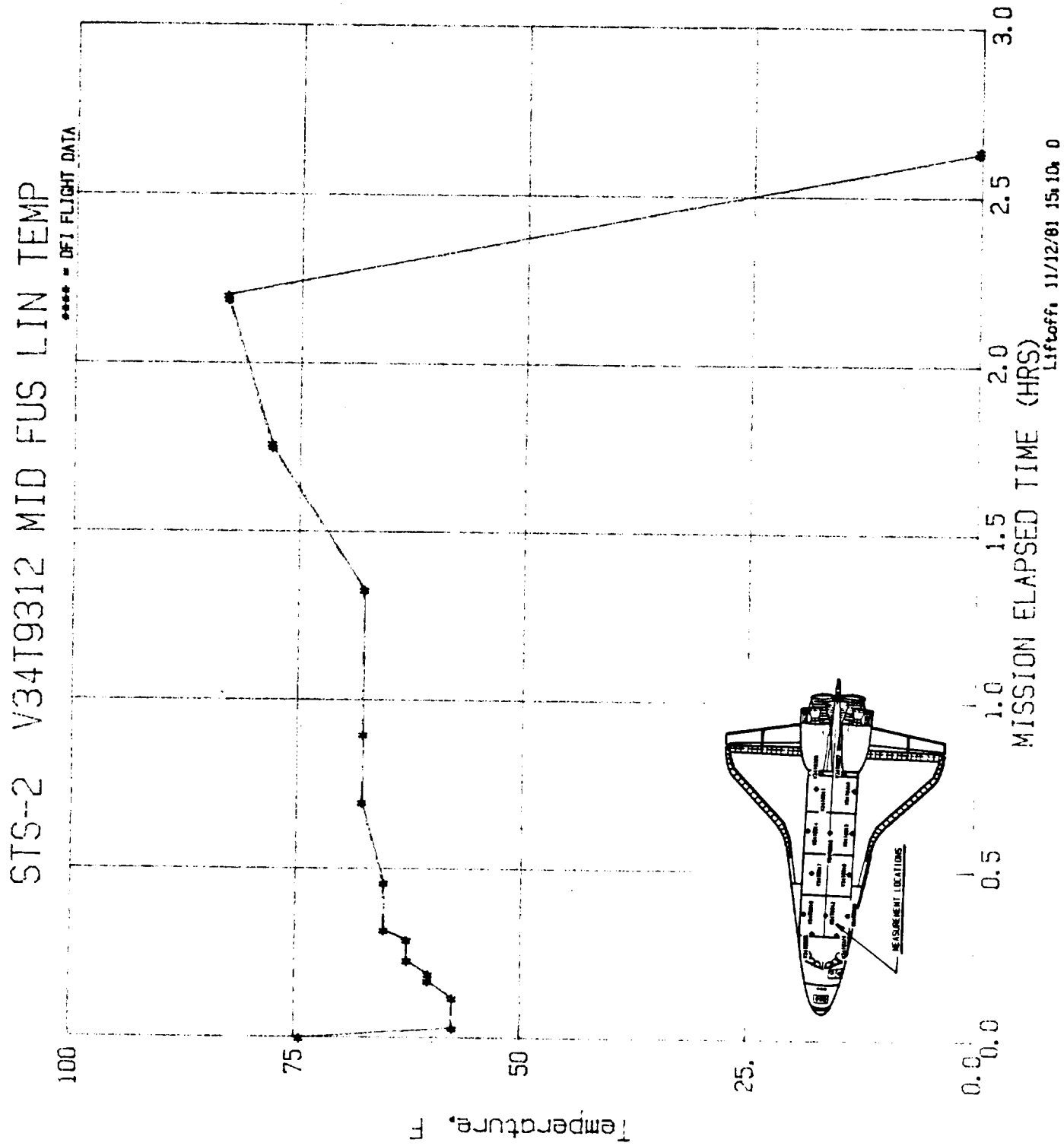
STS-2 V34T9312 MID FUS LIN TEMP
**** = DFI FLIGHT DATA
Liftoff: 11/12/81 15:10: 0
MISSION ELAPSED TIME (HRS)
Temperature, F
100
75
50
25.
0.0
0.5
1.0
1.5
2.0
2.5
3.0
MEASUREMENT LOCATIONS

Figure A-217

A218
File No=f218 STS-3 V34T9312A ASCENT MID FUS LIN TEMP

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	0.00	80.87	35	0.00	0.00	69	0.00	0.00	103	0.00	0.00
2	0.01	80.03	36	0.00	0.00	70	0.00	0.00	104	0.00	0.00
3	0.02	76.17	37	0.00	0.00	71	0.00	0.00	105	0.00	0.00
4	0.02	73.09	38	0.00	0.00	72	0.00	0.00	106	0.00	0.00
5	0.02	70.15	39	0.00	0.00	73	0.00	0.00	107	0.00	0.00
6	0.02	67.73	40	0.00	0.00	74	0.00	0.00	108	0.00	0.00
7	0.03	67.69	41	0.00	0.00	75	0.00	0.00	109	0.00	0.00
8	0.03	65.31	42	0.00	0.00	76	0.00	0.00	110	0.00	0.00
9	0.04	65.35	43	0.00	0.00	77	0.00	0.00	111	0.00	0.00
10	0.04	62.85	44	0.00	0.00	78	0.00	0.00	112	0.00	0.00
11	0.17	62.85	45	0.00	0.00	79	0.00	0.00	113	0.00	0.00
12	0.17	65.01	46	0.00	0.00	80	0.00	0.00	114	0.00	0.00
13	0.25	65.12	47	0.00	0.00	81	0.00	0.00	115	0.00	0.00
14	0.25	68.25	48	0.00	0.00	82	0.00	0.00	116	0.00	0.00
15	0.31	67.91	49	0.00	0.00	83	0.00	0.00	117	0.00	0.00
16	0.00	0.00	50	0.00	0.00	84	0.00	0.00	118	0.00	0.00
17	0.00	0.00	51	0.00	0.00	85	0.00	0.00	119	0.00	0.00
18	0.00	0.00	52	0.00	0.00	86	0.00	0.00	120	0.00	0.00
19	0.00	0.00	53	0.00	0.00	87	0.00	0.00	121	0.00	0.00
20	0.00	0.00	54	0.00	0.00	88	0.00	0.00	122	0.00	0.00
21	0.00	0.00	55	0.00	0.00	89	0.00	0.00	123	0.00	0.00
22	0.00	0.00	56	0.00	0.00	90	0.00	0.00	124	0.00	0.00
23	0.00	0.00	57	0.00	0.00	91	0.00	0.00	125	0.00	0.00
24	0.00	0.00	58	0.00	0.00	92	0.00	0.00	126	0.00	0.00
25	0.00	0.00	59	0.00	0.00	93	0.00	0.00	127	0.00	0.00
26	0.00	0.00	60	0.00	0.00	94	0.00	0.00	128	0.00	0.00
27	0.00	0.00	61	0.00	0.00	95	0.00	0.00	129	0.00	0.00
28	0.00	0.00	62	0.00	0.00	96	0.00	0.00	130	0.00	0.00
29	0.00	0.00	63	0.00	0.00	97	0.00	0.00	131	0.00	0.00
30	0.00	0.00	64	0.00	0.00	98	0.00	0.00	132	0.00	0.00
31	0.00	0.00	65	0.00	0.00	99	0.00	0.00	133	0.00	0.00
32	0.00	0.00	66	0.00	0.00	100	0.00	0.00	134	0.00	0.00
33	0.00	0.00	67	0.00	0.00	101	0.00	0.00	135	0.00	0.00
34	0.00	0.00	68	0.00	0.00	102	0.00	0.00	136	0.00	0.00

Max Temp= 80.87 F; Min Temp= 62.85 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

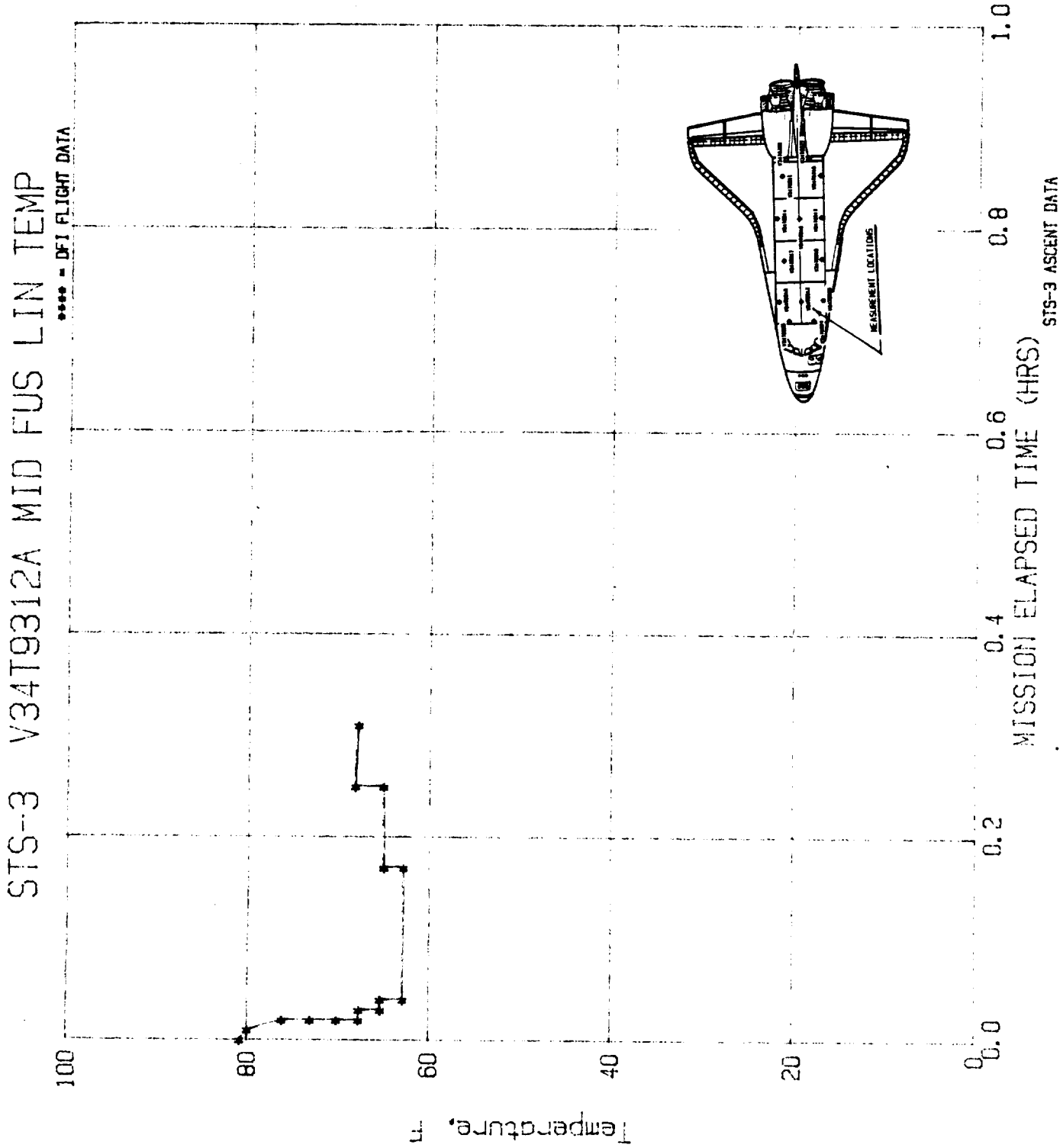
STS-3 V34T9312A MID FUS LIN TEMP
**** = DFI FLIGHT DATA
Temperature, F
100
80
60
40
20
0
0.0
0.2
0.4
0.6
0.8
1.0
MISSION ELAPSED TIME (HRS)
STS-3 ASCENT DATA
MEASUREMENT LOCATIONS

Figure A-218

A219
File No=f219 STS-3 V34T9318A MID FUS LIN TEMP

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	0.01	73.02	35	0.00	0.00	69	0.00	0.00	103	0.00	0.00
2	0.01	72.69	36	0.00	0.00	70	0.00	0.00	104	0.00	0.00
3	0.03	65.47	37	0.00	0.00	71	0.00	0.00	105	0.00	0.00
4	0.03	57.26	38	0.00	0.00	72	0.00	0.00	106	0.00	0.00
5	0.03	57.29	39	0.00	0.00	73	0.00	0.00	107	0.00	0.00
6	0.03	54.66	40	0.00	0.00	74	0.00	0.00	108	0.00	0.00
7	0.03	54.69	41	0.00	0.00	75	0.00	0.00	109	0.00	0.00
8	0.03	52.16	42	0.00	0.00	76	0.00	0.00	110	0.00	0.00
9	0.03	50.07	43	0.00	0.00	77	0.00	0.00	111	0.00	0.00
10	0.04	50.07	44	0.00	0.00	78	0.00	0.00	112	0.00	0.00
11	0.04	47.36	45	0.00	0.00	79	0.00	0.00	113	0.00	0.00
12	0.05	47.25	46	0.00	0.00	80	0.00	0.00	114	0.00	0.00
13	0.07	47.21	47	0.00	0.00	81	0.00	0.00	115	0.00	0.00
14	0.09	47.29	48	0.00	0.00	82	0.00	0.00	116	0.00	0.00
15	0.10	47.18	49	0.00	0.00	83	0.00	0.00	117	0.00	0.00
16	0.10	50.07	50	0.00	0.00	84	0.00	0.00	118	0.00	0.00
17	0.12	50.04	51	0.00	0.00	85	0.00	0.00	119	0.00	0.00
18	0.12	52.71	52	0.00	0.00	86	0.00	0.00	120	0.00	0.00
19	0.14	52.57	53	0.00	0.00	87	0.00	0.00	121	0.00	0.00
20	0.14	55.13	54	0.00	0.00	88	0.00	0.00	122	0.00	0.00
21	0.17	55.28	55	0.00	0.00	89	0.00	0.00	123	0.00	0.00
22	0.17	57.51	56	0.00	0.00	90	0.00	0.00	124	0.00	0.00
23	0.20	57.55	57	0.00	0.00	91	0.00	0.00	125	0.00	0.00
24	0.20	60.15	58	0.00	0.00	92	0.00	0.00	126	0.00	0.00
25	0.25	60.08	59	0.00	0.00	93	0.00	0.00	127	0.00	0.00
26	0.25	62.90	60	0.00	0.00	94	0.00	0.00	128	0.00	0.00
27	0.31	62.83	61	0.00	0.00	95	0.00	0.00	129	0.00	0.00
28	0.00	0.00	62	0.00	0.00	96	0.00	0.00	130	0.00	0.00
29	0.00	0.00	63	0.00	0.00	97	0.00	0.00	131	0.00	0.00
30	0.00	0.00	64	0.00	0.00	98	0.00	0.00	132	0.00	0.00
31	0.00	0.00	65	0.00	0.00	99	0.00	0.00	133	0.00	0.00
32	0.00	0.00	66	0.00	0.00	100	0.00	0.00	134	0.00	0.00
33	0.00	0.00	67	0.00	0.00	101	0.00	0.00	135	0.00	0.00
34	0.00	0.00	68	0.00	0.00	102	0.00	0.00	136	0.00	0.00

Max Temp= 73.02 F; Min Temp= 47.18 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

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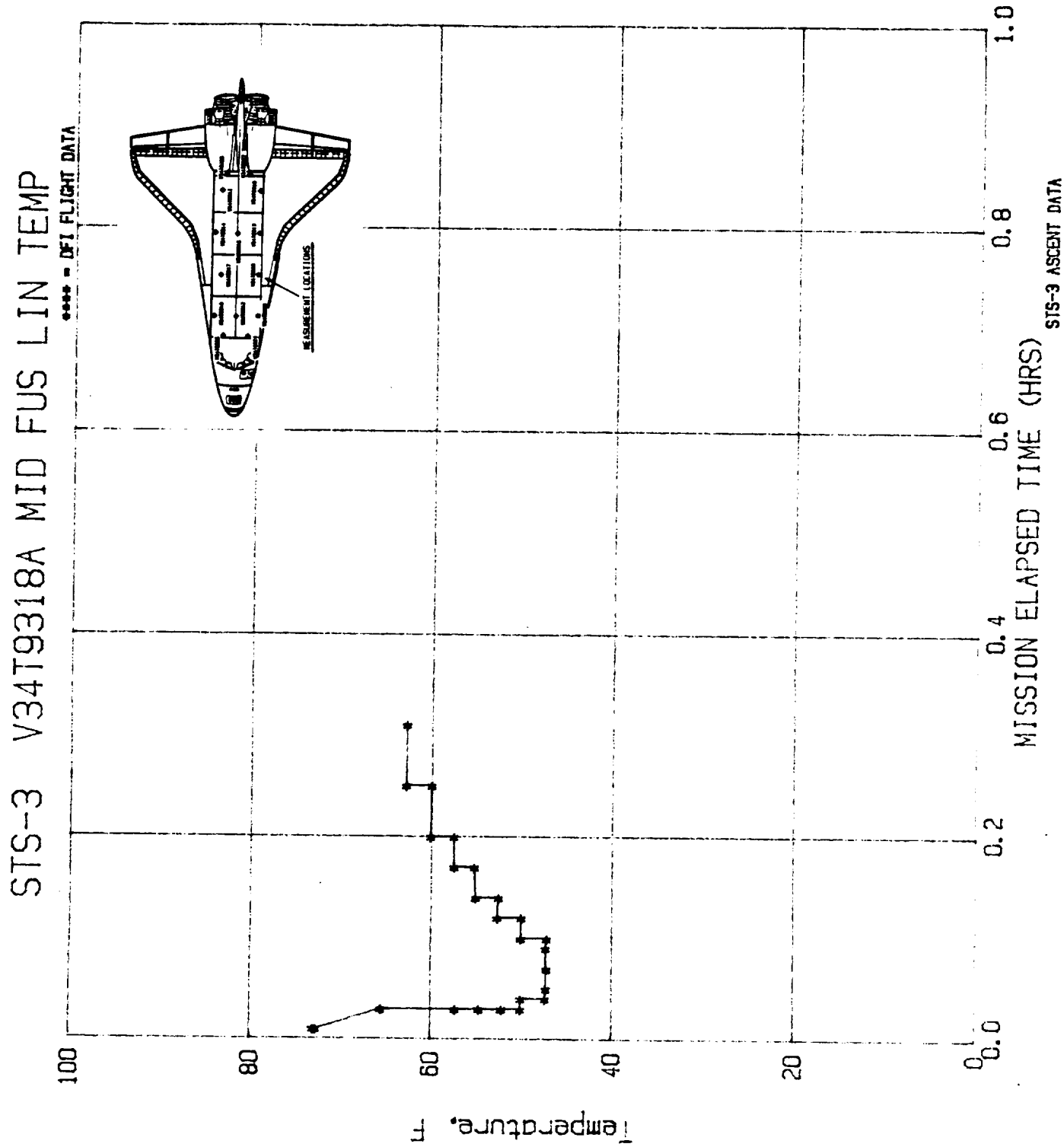
STS-3 V34T9318A MID FUS LIN TEMP
**** = DFI FLIGHT DATA
MEASUREMENT LOCATIONS
Temperature, F
100
80
60
40
20
0
0.0
0.2
0.4
0.6
0.8
1.0
MISSION ELAPSED TIME (HRS)
STS-3 ASCENT DATA

Figure A-219

A220
File No=f220 STS-3 V34T9324A ASCENT FWD BHD TCS TEMP

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	0.01	70.33	35	0.00	0.00	69	0.00	0.00	103	0.00	0.00
2	0.02	70.29	36	0.00	0.00	70	0.00	0.00	104	0.00	0.00
3	0.02	67.50	37	0.00	0.00	71	0.00	0.00	105	0.00	0.00
4	0.02	67.46	38	0.00	0.00	72	0.00	0.00	106	0.00	0.00
5	0.02	65.00	39	0.00	0.00	73	0.00	0.00	107	0.00	0.00
6	0.03	64.96	40	0.00	0.00	74	0.00	0.00	108	0.00	0.00
7	0.03	62.72	41	0.00	0.00	75	0.00	0.00	109	0.00	0.00
8	0.05	62.72	42	0.00	0.00	76	0.00	0.00	110	0.00	0.00
9	0.05	59.93	43	0.00	0.00	77	0.00	0.00	111	0.00	0.00
10	0.13	59.82	44	0.00	0.00	78	0.00	0.00	112	0.00	0.00
11	0.13	62.68	45	0.00	0.00	79	0.00	0.00	113	0.00	0.00
12	0.25	62.43	46	0.00	0.00	80	0.00	0.00	114	0.00	0.00
13	0.25	65.15	47	0.00	0.00	81	0.00	0.00	115	0.00	0.00
14	0.31	65.04	48	0.00	0.00	82	0.00	0.00	116	0.00	0.00
15	0.00	0.00	49	0.00	0.00	83	0.00	0.00	117	0.00	0.00
16	0.00	0.00	50	0.00	0.00	84	0.00	0.00	118	0.00	0.00
17	0.00	0.00	51	0.00	0.00	85	0.00	0.00	119	0.00	0.00
18	0.00	0.00	52	0.00	0.00	86	0.00	0.00	120	0.00	0.00
19	0.00	0.00	53	0.00	0.00	87	0.00	0.00	121	0.00	0.00
20	0.00	0.00	54	0.00	0.00	88	0.00	0.00	122	0.00	0.00
21	0.00	0.00	55	0.00	0.00	89	0.00	0.00	123	0.00	0.00
22	0.00	0.00	56	0.00	0.00	90	0.00	0.00	124	0.00	0.00
23	0.00	0.00	57	0.00	0.00	91	0.00	0.00	125	0.00	0.00
24	0.00	0.00	58	0.00	0.00	92	0.00	0.00	126	0.00	0.00
25	0.00	0.00	59	0.00	0.00	93	0.00	0.00	127	0.00	0.00
26	0.00	0.00	60	0.00	0.00	94	0.00	0.00	128	0.00	0.00
27	0.00	0.00	61	0.00	0.00	95	0.00	0.00	129	0.00	0.00
28	0.00	0.00	62	0.00	0.00	96	0.00	0.00	130	0.00	0.00
29	0.00	0.00	63	0.00	0.00	97	0.00	0.00	131	0.00	0.00
30	0.00	0.00	64	0.00	0.00	98	0.00	0.00	132	0.00	0.00
31	0.00	0.00	65	0.00	0.00	99	0.00	0.00	133	0.00	0.C
32	0.00	0.00	66	0.00	0.00	100	0.00	0.00	134	0.00	0.00
33	0.00	0.00	67	0.00	0.00	101	0.00	0.00	135	0.00	0.00
34	0.00	0.00	68	0.00	0.00	102	0.00	0.00	136	0.00	0.00

Max Temp= 70.33 F; Min Temp= 59.82 F
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

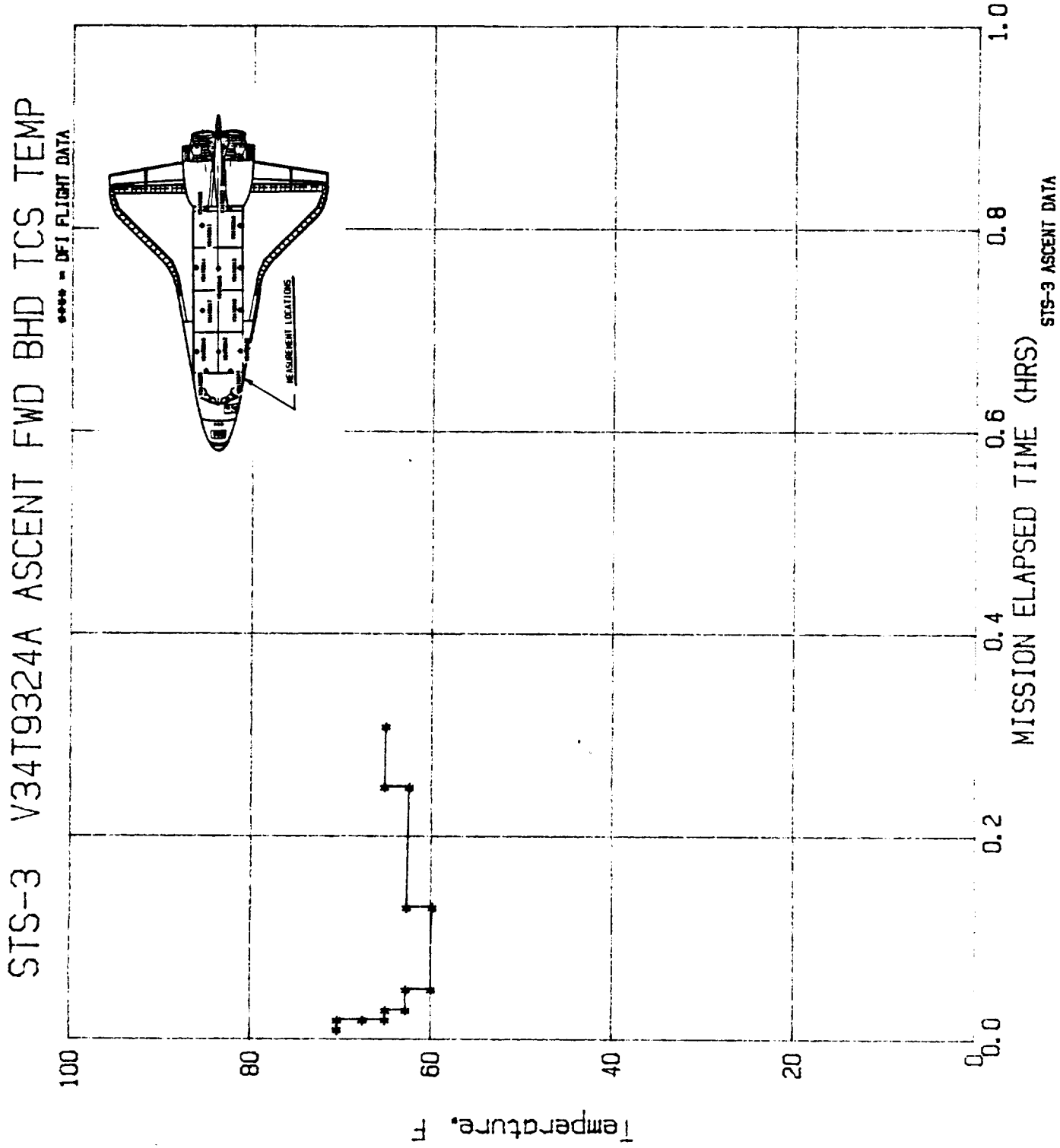
STS-3 V34T9324A ASCENT FWD BHD TCS TEMP
**** = DFI FLIGHT DATA
MEASUREMENT LOCATIONS
Temperature, F
100
80
60
40
20
0
0.0
0.2
0.4
0.6
0.8
1.0
MISSION ELAPSED TIME (HRS)
STS-3 ASCENT DATA

Figure A-220

A221
File No=f221

STS-3 V34T9326A ASCENT AFT BHD TCS TEMP

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	0.01	72.97	35	0.00	0.00	69	0.00	0.00	103	0.00	0.00
2	0.01	72.94	36	0.00	0.00	70	0.00	0.00	104	0.00	0.00
3	0.01	69.99	37	0.00	0.00	71	0.00	0.00	105	0.00	0.00
4	0.02	69.92	38	0.00	0.00	72	0.00	0.00	106	0.00	0.00
5	0.02	67.56	39	0.00	0.00	73	0.00	0.00	107	0.00	0.00
6	0.02	65.02	40	0.00	0.00	74	0.00	0.00	108	0.00	0.00
7	0.02	62.63	41	0.00	0.00	75	0.00	0.00	109	0.00	0.00
8	0.02	57.22	42	0.00	0.00	76	0.00	0.00	110	0.00	0.00
9	0.02	54.46	43	0.00	0.00	77	0.00	0.00	111	0.00	0.00
10	0.03	54.46	44	0.00	0.00	78	0.00	0.00	112	0.00	0.00
11	0.03	51.95	45	0.00	0.00	79	0.00	0.00	113	0.00	0.00
12	0.03	51.95	46	0.00	0.00	80	0.00	0.00	114	0.00	0.00
13	0.03	49.78	47	0.00	0.00	81	0.00	0.00	115	0.00	0.00
14	0.07	49.78	48	0.00	0.00	82	0.00	0.00	116	0.00	0.00
15	0.07	52.36	49	0.00	0.00	83	0.00	0.00	117	0.00	0.00
16	0.10	52.28	50	0.00	0.00	84	0.00	0.00	118	0.00	0.00
17	0.10	54.93	51	0.00	0.00	85	0.00	0.00	119	0.00	0.00
18	0.13	54.75	52	0.00	0.00	86	0.00	0.00	120	0.00	0.00
19	0.13	57.40	53	0.00	0.00	87	0.00	0.00	121	0.00	0.00
20	0.16	57.40	54	0.00	0.00	88	0.00	0.00	122	0.00	0.00
21	0.16	60.01	55	0.00	0.00	89	0.00	0.00	123	0.00	0.00
22	0.21	59.87	56	0.00	0.00	90	0.00	0.00	124	0.00	0.00
23	0.21	62.41	57	0.00	0.00	91	0.00	0.00	125	0.00	0.00
24	0.31	62.63	58	0.00	0.00	92	0.00	0.00	126	0.00	0.00
25	0.00	0.00	59	0.00	0.00	93	0.00	0.00	127	0.00	0.00
26	0.00	0.00	60	0.00	0.00	94	0.00	0.00	128	0.00	0.00
27	0.00	0.00	61	0.00	0.00	95	0.00	0.00	129	0.00	0.00
28	0.00	0.00	62	0.00	0.00	96	0.00	0.00	130	0.00	0.00
29	0.00	0.00	63	0.00	0.00	97	0.00	0.00	131	0.00	0.00
30	0.00	0.00	64	0.00	0.00	98	0.00	0.00	132	0.00	0.00
31	0.00	0.00	65	0.00	0.00	99	0.00	0.00	133	0.00	0.00
32	0.00	0.00	66	0.00	0.00	100	0.00	0.00	134	0.00	0.00
33	0.00	0.00	67	0.00	0.00	101	0.00	0.00	135	0.00	0.00
34	0.00	0.00	68	0.00	0.00	102	0.00	0.00	136	0.00	0.00

Max Temp= 72.97 F; Min Temp= 49.78 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

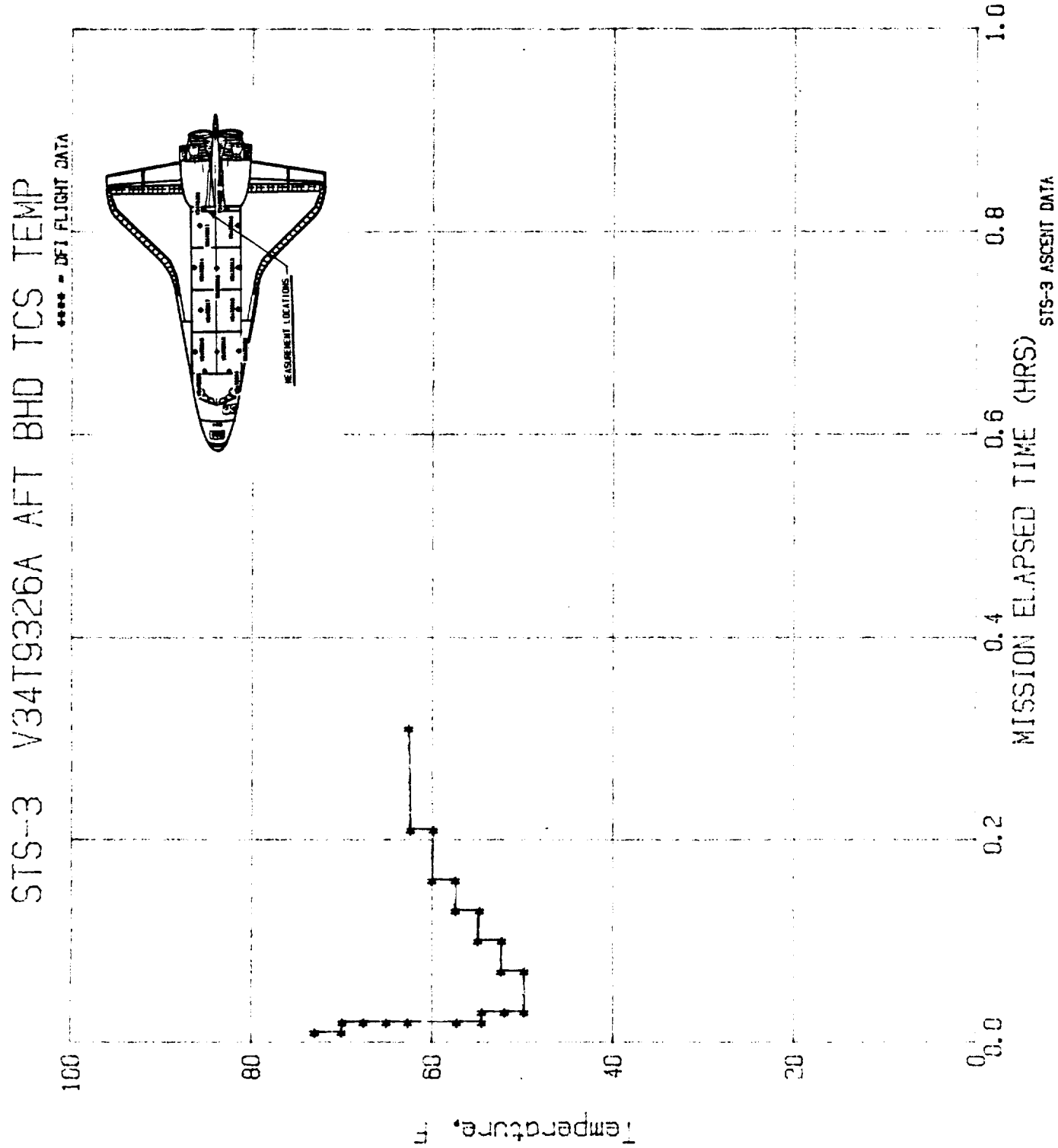
STS-3 V34T9326A AFT BHD TCS TEMP
**** - DFI FLIGHT DATA
MEASUREMENT LOCATIONS
Temperature, °F
100
80
60
40
20
0
0.0
0.2
0.4
0.6
0.8
1.0
MISSION ELAPSED TIME (HRS)
STS-3 ASCENT DATA

Figure A-221

A230
File No=f230

STS-3 V34T9318 TAIL SUN MID FUS PLB LIN TEMP

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	12.03	-22.49	35	0.00	0.00	69	0.00	0.00	103	0.00	0.00
2	12.06	-25.60	36	0.00	0.00	70	0.00	0.00	104	0.00	0.00
3	12.08	-28.33	37	0.00	0.00	71	0.00	0.00	105	0.00	0.00
4	12.14	-36.05	38	0.00	0.00	72	0.00	0.00	106	0.00	0.00
5	12.17	-44.43	39	0.00	0.00	73	0.00	0.00	107	0.00	0.00
6	12.22	-52.06	40	0.00	0.00	74	0.00	0.00	108	0.00	0.00
7	12.26	-58.84	41	0.00	0.00	75	0.00	0.00	109	0.00	0.00
8	12.35	-67.32	42	0.00	0.00	76	0.00	0.00	110	0.00	0.00
9	12.49	-74.85	43	0.00	0.00	77	0.00	0.00	111	0.00	0.00
10	12.69	-82.85	44	0.00	0.00	78	0.00	0.00	112	0.00	0.00
11	12.90	-89.26	45	0.00	0.00	79	0.00	0.00	113	0.00	0.00
12	13.16	-96.04	46	0.00	0.00	80	0.00	0.00	114	0.00	0.00
13	13.30	-100.75	47	0.00	0.00	81	0.00	0.00	115	0.00	0.00
14	13.57	-105.83	48	0.00	0.00	82	0.00	0.00	116	0.00	0.00
15	13.79	-108.84	49	0.00	0.00	83	0.00	0.00	117	0.00	0.00
16	14.12	-112.99	50	0.00	0.00	84	0.00	0.00	118	0.00	0.00
17	14.35	-116.10	51	0.00	0.00	85	0.00	0.00	119	0.00	0.00
18	14.71	-118.36	52	0.00	0.00	86	0.00	0.00	120	0.00	0.00
19	15.17	-121.09	53	0.00	0.00	87	0.00	0.00	121	0.00	0.00
20	15.48	-123.35	54	0.00	0.00	88	0.00	0.00	122	0.00	0.00
21	15.74	-125.98	55	0.00	0.00	89	0.00	0.00	123	0.00	0.00
22	16.10	-128.53	56	0.00	0.00	90	0.00	0.00	124	0.00	0.00
23	16.59	-131.73	57	0.00	0.00	91	0.00	0.00	125	0.00	0.00
24	16.89	-133.33	58	0.00	0.00	92	0.00	0.00	126	0.00	0.00
25	17.19	-135.02	59	0.00	0.00	93	0.00	0.00	127	0.00	0.00
26	17.53	-136.72	60	0.00	0.00	94	0.00	0.00	128	0.00	0.00
27	17.74	-137.66	61	0.00	0.00	95	0.00	0.00	129	0.00	0.00
28	17.94	-138.79	62	0.00	0.00	96	0.00	0.00	130	0.00	0.00
29	0.00	0.00	63	0.00	0.00	97	0.00	0.00	131	0.00	0.00
30	0.00	0.00	64	0.00	0.00	98	0.00	0.00	132	0.00	0.00
31	0.00	0.00	65	0.00	0.00	99	0.00	0.00	133	0.00	0.00
32	0.00	0.00	66	0.00	0.00	100	0.00	0.00	134	0.00	0.00
33	0.00	0.00	67	0.00	0.00	101	0.00	0.00	135	0.00	0.00
34	0.00	0.00	68	0.00	0.00	102	0.00	0.00	136	0.00	0.00

Max Temp= -22.49 F; Min Temp=-138.79 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

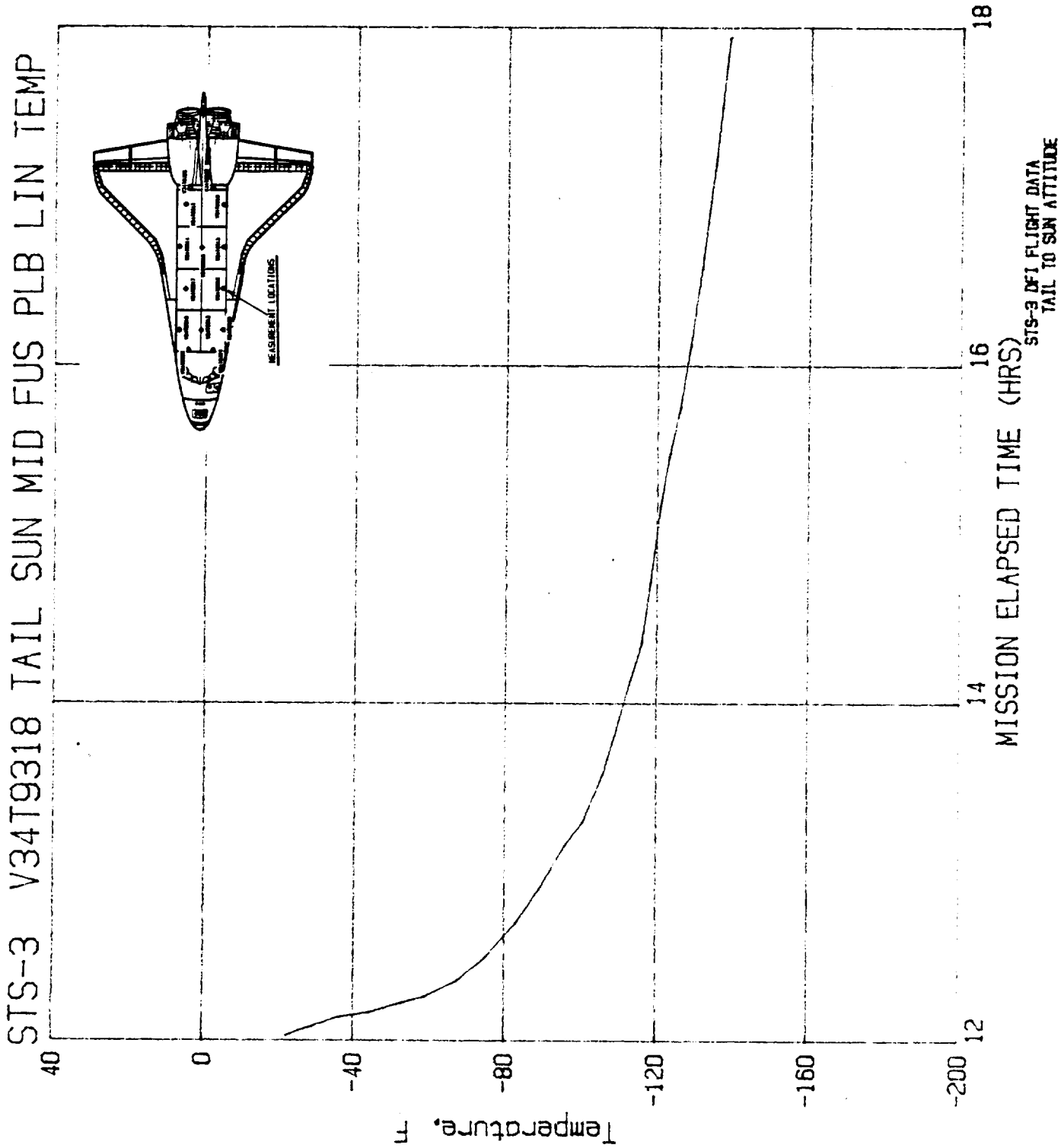
STS-3 V34T9318 TAIL SUN MID FUS PLB LIN TEMP
MEASUREMENT LOCATIONS
Temperature, F
40
0
-40
-80
-120
-160
-200
12
14
16
18
MISSION ELAPSED TIME (HRS)
STS-3 DFI FLIGHT DATA
TAIL TO SUN ATTITUDE

Figure A-230

A231
File No=f231

STS-3 V34T9312A MID FUS PLB LIN TEMP

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	28.08	-138.98	35	33.34	-142.34	69	0.00	0.00	103	0.00	0.00
2	28.08	-142.13	36	33.50	-142.44	70	0.00	0.00	104	0.00	0.00
3	28.59	-142.44	37	33.64	-137.77	71	0.00	0.00	105	0.00	0.00
4	28.93	-146.70	38	33.85	-135.33	72	0.00	0.00	106	0.00	0.00
5	29.12	-144.57	39	34.75	39.70	73	0.00	0.00	107	0.00	0.00
6	29.27	-137.36	40	34.90	39.49	74	0.00	0.00	108	0.00	0.00
7	29.44	-137.46	41	34.91	42.03	75	0.00	0.00	109	0.00	0.00
8	29.45	-142.23	42	35.07	-19.70	76	0.00	0.00	110	0.00	0.00
9	29.61	-142.44	43	35.23	-40.30	77	0.00	0.00	111	0.00	0.00
10	29.98	-147.21	44	35.40	-42.44	78	0.00	0.00	112	0.00	0.00
11	30.31	-147.31	45	35.77	42.03	79	0.00	0.00	113	0.00	0.00
12	30.47	-149.75	46	0.00	0.00	80	0.00	0.00	114	0.00	0.00
13	30.65	-147.51	47	0.00	0.00	81	0.00	0.00	115	0.00	0.00
14	30.67	-140.41	48	0.00	0.00	82	0.00	0.00	116	0.00	0.00
15	30.84	-140.41	49	0.00	0.00	83	0.00	0.00	117	0.00	0.00
16	31.15	-144.47	50	0.00	0.00	84	0.00	0.00	118	0.00	0.00
17	31.41	-121.02	51	0.00	0.00	85	0.00	0.00	119	0.00	0.00
18	31.66	-92.28	52	0.00	0.00	86	0.00	0.00	120	0.00	0.00
19	31.85	-85.89	53	0.00	0.00	87	0.00	0.00	121	0.00	0.00
20	31.86	-80.81	54	0.00	0.00	88	0.00	0.00	122	0.00	0.00
21	32.02	-74.42	55	0.00	0.00	89	0.00	0.00	123	0.00	0.00
22	32.19	-52.08	56	0.00	0.00	90	0.00	0.00	124	0.00	0.00
23	32.20	-47.41	57	0.00	0.00	91	0.00	0.00	125	0.00	0.00
24	32.36	-47.21	58	0.00	0.00	92	0.00	0.00	126	0.00	0.00
25	32.51	-84.67	59	0.00	0.00	93	0.00	0.00	127	0.00	0.00
26	32.51	-87.11	60	0.00	0.00	94	0.00	0.00	128	0.00	0.00
27	32.68	-112.18	61	0.00	0.00	95	0.00	0.00	129	0.00	0.00
28	32.69	-125.18	62	0.00	0.00	96	0.00	0.00	130	0.00	0.00
29	32.82	-125.48	63	0.00	0.00	97	0.00	0.00	131	0.00	0.00
30	32.84	-132.79	64	0.00	0.00	98	0.00	0.00	132	0.00	0.00
31	33.00	-132.89	65	0.00	0.00	99	0.00	0.00	133	0.00	0.00
32	33.02	-137.46	66	0.00	0.00	100	0.00	0.00	134	0.00	0.00
33	33.17	-137.87	67	0.00	0.00	101	0.00	0.00	135	0.00	0.00
34	33.33	-140.71	68	0.00	0.00	102	0.00	0.00	136	0.00	0.00

Max Temp= 42.03 F; Min Temp=-149.75 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

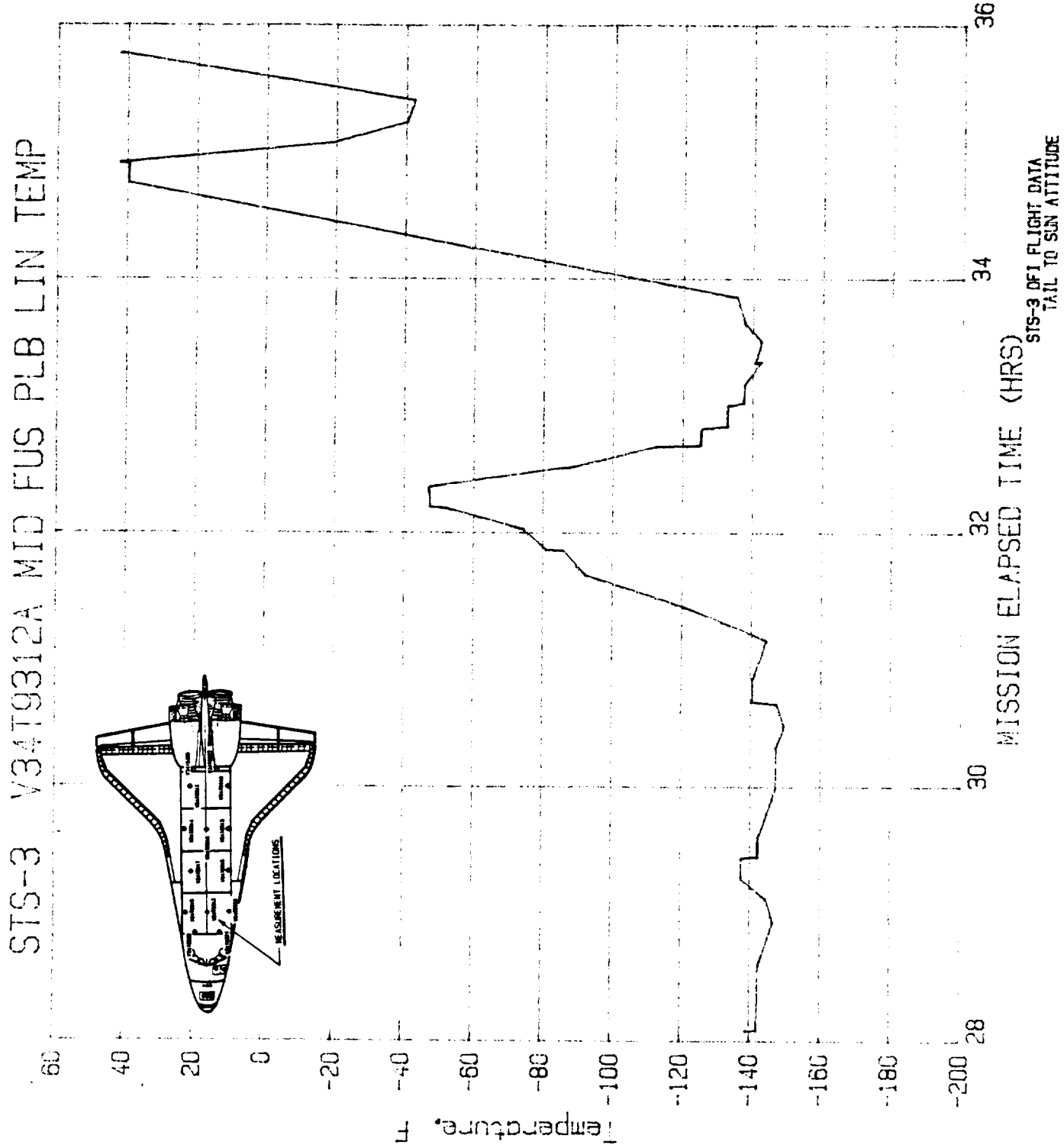
STS-3 V34T9312A MID FUS PLB LIN TEMP
MEASUREMENT LOCATIONS
Temperature, F
60
40
20
0
-20
-40
-60
-80
-100
-120
-140
-160
-180
-200
28
30
32
34
36
MISSION ELAPSED TIME (HRS)
STS-3 DFI FLIGHT DATA
TAIL TO SUN ATTITUDE

Figure A-231

A232
File No=f232 STS-3 V34T9318A MID FUS PLB LIN TEMP

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	27.99	-153.51	35	32.66	-127.57	69	0.00	0.00	103	0.00	0.00
2	28.07	-153.41	36	32.99	-127.57	70	0.00	0.00	104	0.00	0.00
3	28.08	-156.56	37	32.99	-137.14	71	0.00	0.00	105	0.00	0.00
4	28.26	-156.56	38	33.14	-137.34	72	0.00	0.00	106	0.00	0.00
5	28.41	-144.36	39	33.32	-144.66	73	0.00	0.00	107	0.00	0.00
6	28.60	-139.48	40	33.46	-149.95	74	0.00	0.00	108	0.00	0.00
7	28.76	-142.22	41	33.81	-149.95	75	0.00	0.00	109	0.00	0.00
8	28.91	-151.58	42	33.88	-113.23	76	0.00	0.00	110	0.00	0.00
9	29.09	-153.82	43	33.96	-81.60	77	0.00	0.00	111	0.00	0.00
10	29.25	-152.09	44	34.01	-60.64	78	0.00	0.00	112	0.00	0.00
11	29.27	-154.12	45	34.03	-47.72	79	0.00	0.00	113	0.00	0.00
12	29.43	-154.02	46	34.88	33.45	80	0.00	0.00	114	0.00	0.00
13	29.45	-152.29	47	35.19	-54.54	81	0.00	0.00	115	0.00	0.00
14	29.45	-156.67	48	35.35	-63.59	82	0.00	0.00	116	0.00	0.00
15	29.77	-156.67	49	35.58	41.49	83	0.00	0.00	117	0.00	0.00
16	29.77	-154.33	50	35.72	39.35	84	0.00	0.00	118	0.00	0.00
17	29.83	-154.02	51	35.73	44.23	85	0.00	0.00	119	0.00	0.00
18	29.95	-143.85	52	35.89	46.27	86	0.00	0.00	120	0.00	0.00
19	30.11	-142.53	53	0.00	0.00	87	0.00	0.00	121	0.00	0.00
20	30.28	-149.44	54	0.00	0.00	88	0.00	0.00	122	0.00	0.00
21	30.43	-154.33	55	0.00	0.00	89	0.00	0.00	123	0.00	0.00
22	30.78	-154.43	56	0.00	0.00	90	0.00	0.00	124	0.00	0.00
23	31.11	-159.41	57	0.00	0.00	91	0.00	0.00	125	0.00	0.00
24	31.45	-120.86	58	0.00	0.00	92	0.00	0.00	126	0.00	0.00
25	31.54	-113.84	59	0.00	0.00	93	0.00	0.00	127	0.00	0.00
26	31.64	-107.74	60	0.00	0.00	94	0.00	0.00	128	0.00	0.00
27	31.80	-103.36	61	0.00	0.00	95	0.00	0.00	129	0.00	0.00
28	31.94	-93.09	62	0.00	0.00	96	0.00	0.00	130	0.00	0.00
29	32.00	-83.83	63	0.00	0.00	97	0.00	0.00	131	0.00	0.00
30	32.17	-56.06	64	0.00	0.00	98	0.00	0.00	132	0.00	0.00
31	32.18	-60.95	65	0.00	0.00	99	0.00	0.00	133	0.00	0.00
32	32.32	-61.05	66	0.00	0.00	100	0.00	0.00	134	0.00	0.00
33	32.41	-81.09	67	0.00	0.00	101	0.00	0.00	135	0.00	0.00
34	32.50	-100.72	68	0.00	0.00	102	0.00	0.00	136	0.00	0.00

Max Temp= 46.27 F; Min Temp=-159.41 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

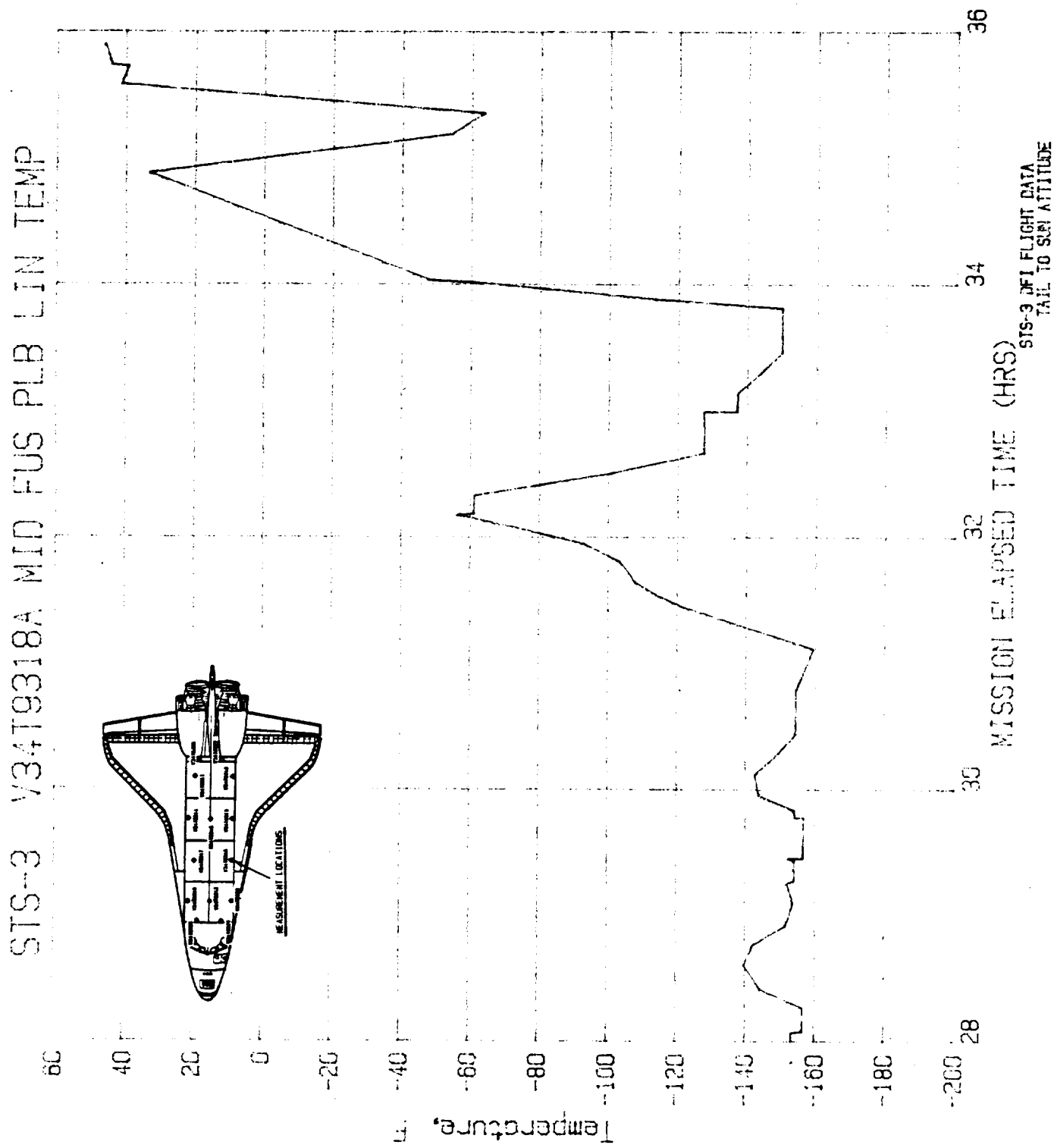
STS-3 V34T9318A MID FUS PLB LIN TEMP
MEASUREMENT LOCATIONS
Temperature, F
60
40
20
0
-20
-40
-60
-80
-100
-120
-140
-160
-180
-200
28
30
32
34
36
MISSION ELAPSED TIME (HRS)
STS-3 DFI FLIGHT DATA
TAIL TO SUN ATTITUDE

Figure A-232

A233
File No=f233 STS-3 V34T9317A WIRE TRAY COVER TEMP

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	28.05	-119.77	35	34.02	-35.57	69	0.00	0.00	103	0.00	0.00
2	28.15	-119.66	36	34.08	-16.98	70	0.00	0.00	104	0.00	0.00
3	28.29	-121.39	37	34.19	13.48	71	0.00	0.00	105	0.00	0.00
4	28.44	-116.82	38	34.37	-13.94	72	0.00	0.00	106	0.00	0.00
5	28.64	-116.92	39	34.54	5.87	73	0.00	0.00	107	0.00	0.00
6	28.97	-121.70	40	34.69	-28.56	74	0.00	0.00	108	0.00	0.00
7	29.12	-121.59	41	34.88	-14.45	75	0.00	0.00	109	0.00	0.00
8	29.29	-119.46	42	35.02	-38.62	76	0.00	0.00	110	0.00	0.00
9	29.47	-121.59	43	35.23	-52.02	77	0.00	0.00	111	0.00	0.00
10	29.81	-121.59	44	35.37	-51.82	78	0.00	0.00	112	0.00	0.00
11	29.95	-119.26	45	35.55	11.55	79	0.00	0.00	113	0.00	0.00
12	30.14	-119.46	46	35.73	-14.04	80	0.00	0.00	114	0.00	0.00
13	30.47	-124.03	47	35.86	-14.14	81	0.00	0.00	115	0.00	0.00
14	30.47	-121.80	48	0.00	0.00	82	0.00	0.00	116	0.00	0.00
15	30.81	-121.80	49	0.00	0.00	83	0.00	0.00	117	0.00	0.00
16	31.01	-124.34	50	0.00	0.00	84	0.00	0.00	118	0.00	0.00
17	31.15	-124.23	51	0.00	0.00	85	0.00	0.00	119	0.00	0.00
18	31.49	-102.60	52	0.00	0.00	86	0.00	0.00	120	0.00	0.00
19	31.49	-103.92	53	0.00	0.00	87	0.00	0.00	121	0.00	0.00
20	31.84	-93.87	54	0.00	0.00	88	0.00	0.00	122	0.00	0.00
21	31.98	-86.15	55	0.00	0.00	89	0.00	0.00	123	0.00	0.00
22	32.18	-72.84	56	0.00	0.00	90	0.00	0.00	124	0.00	0.00
23	32.32	-81.38	57	0.00	0.00	91	0.00	0.00	125	0.00	0.00
24	32.51	-99.15	58	0.00	0.00	92	0.00	0.00	126	0.00	0.00
25	32.67	-104.23	59	0.00	0.00	93	0.00	0.00	127	0.00	0.00
26	33.00	-104.33	60	0.00	0.00	94	0.00	0.00	128	0.00	0.00
27	33.17	-109.51	61	0.00	0.00	95	0.00	0.00	129	0.00	0.0
28	33.17	-107.17	62	0.00	0.00	96	0.00	0.00	130	0.00	0.00
29	33.34	-111.95	63	0.00	0.00	97	0.00	0.00	131	0.00	0.00
30	33.68	-111.84	64	0.00	0.00	98	0.00	0.00	132	0.00	0.00
31	33.68	-111.84	65	0.00	0.00	99	0.00	0.00	133	0.00	0.00
32	33.68	-111.84	66	0.00	0.00	100	0.00	0.00	134	0.00	0.00
33	33.84	-114.18	67	0.00	0.00	101	0.00	0.00	135	0.00	0.00
34	33.91	-80.05	68	0.00	0.00	102	0.00	0.00	136	0.00	0.00

Max Temp= 13.48 F; Min Temp=-124.34 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

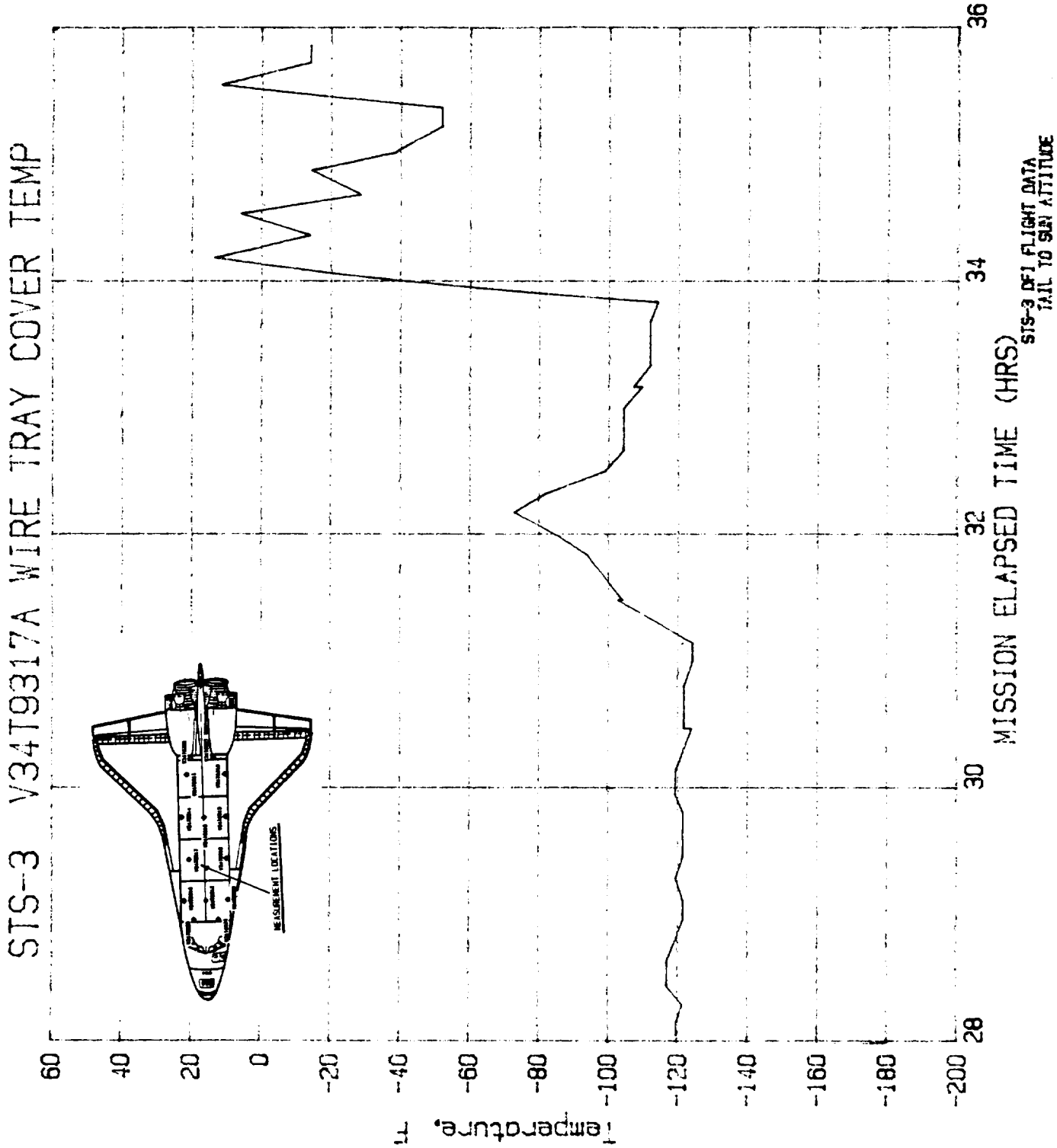
STS-3 V34T9317A WIRE TRAY COVER TEMP
MEASUREMENT LOCATIONS
Temperature, °F
60
40
20
0
-20
-40
-60
-80
-100
-120
-140
-160
-180
-200
28
30
32
34
36
MISSION ELAPSED TIME (HRS)
STS-3 DFI FLIGHT DATA
TAIL TO SUN ATTITUDE

Figure A-233

A234
File No=f234

STS-3 V34T9325A FWD BHD TCS TEMP

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	28.11	-121.65	35	32.34	-62.69	69	0.00	0.00	103	0.00	0.00
2	28.11	-135.15	36	32.66	-125.51	70	0.00	0.00	104	0.00	0.00
3	28.28	-135.36	37	32.67	-115.67	71	0.00	0.00	105	0.00	0.00
4	28.45	-137.79	38	32.82	-125.31	72	0.00	0.00	106	0.00	0.00
5	28.60	-137.89	39	32.83	-128.15	73	0.00	0.00	107	0.00	0.00
6	28.78	-140.63	40	32.98	-128.05	74	0.00	0.00	108	0.00	0.00
7	28.79	-142.36	41	33.01	-132.82	75	0.00	0.00	109	0.00	0.00
8	28.94	-142.26	42	33.18	-133.02	76	0.00	0.00	110	0.00	0.00
9	28.96	-115.36	43	33.32	-140.23	77	0.00	0.00	111	0.00	0.00
10	29.12	-115.36	44	33.66	-96.18	78	0.00	0.00	112	0.00	0.00
11	29.14	-97.81	45	33.67	-93.34	79	0.00	0.00	113	0.00	0.00
12	29.29	-97.81	46	33.69	-95.78	80	0.00	0.00	114	0.00	0.00
13	29.31	-107.75	47	33.84	-100.34	81	0.00	0.00	115	0.00	0.00
14	29.46	-128.05	48	34.08	-40.37	82	0.00	0.00	116	0.00	0.00
15	29.47	-107.75	49	34.39	41.33	83	0.00	0.00	117	0.00	0.00
16	29.63	-128.05	50	34.40	28.95	84	0.00	0.00	118	0.00	0.00
17	29.79	-138.20	51	34.56	28.44	85	0.00	0.00	119	0.00	0.00
18	30.30	-145.00	52	34.73	-11.95	86	0.00	0.00	120	0.00	0.00
19	30.31	-142.56	53	34.87	-9.62	87	0.00	0.00	121	0.00	0.00
20	30.47	-142.26	54	35.03	-32.45	88	0.00	0.00	122	0.00	0.00
21	30.48	-118.00	55	35.06	-37.12	89	0.00	0.00	123	0.00	0.00
22	30.65	-118.20	56	35.19	-41.28	90	0.00	0.00	124	0.00	0.00
23	30.66	-100.65	57	35.40	-26.77	91	0.00	0.00	125	0.00	0.00
24	30.82	-100.55	58	35.58	28.74	92	0.00	0.00	126	0.00	0.00
25	31.18	-132.62	59	35.75	28.74	93	0.00	0.00	127	0.00	0.00
26	31.31	-127.85	60	35.92	11.49	94	0.00	0.00	128	0.00	0.00
27	31.47	-118.20	61	0.00	0.00	95	0.00	0.00	129	0.00	0.00
28	31.49	-115.06	62	0.00	0.00	96	0.00	0.00	130	0.00	0.00
29	31.65	-110.80	63	0.00	0.00	97	0.00	0.00	131	0.00	0.00
30	31.65	-105.52	64	0.00	0.00	98	0.00	0.00	132	0.00	0.00
31	31.82	-105.32	65	0.00	0.00	99	0.00	0.00	133	0.00	0.00
32	31.83	-90.20	66	0.00	0.00	100	0.00	0.00	134	0.00	0.00
33	31.99	-90.09	67	0.00	0.00	101	0.00	0.00	135	0.00	0.00
34	32.16	-62.59	68	0.00	0.00	102	0.00	0.00	136	0.00	0.00

Max Temp= 41.33 F; Min Temp=-145.00 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

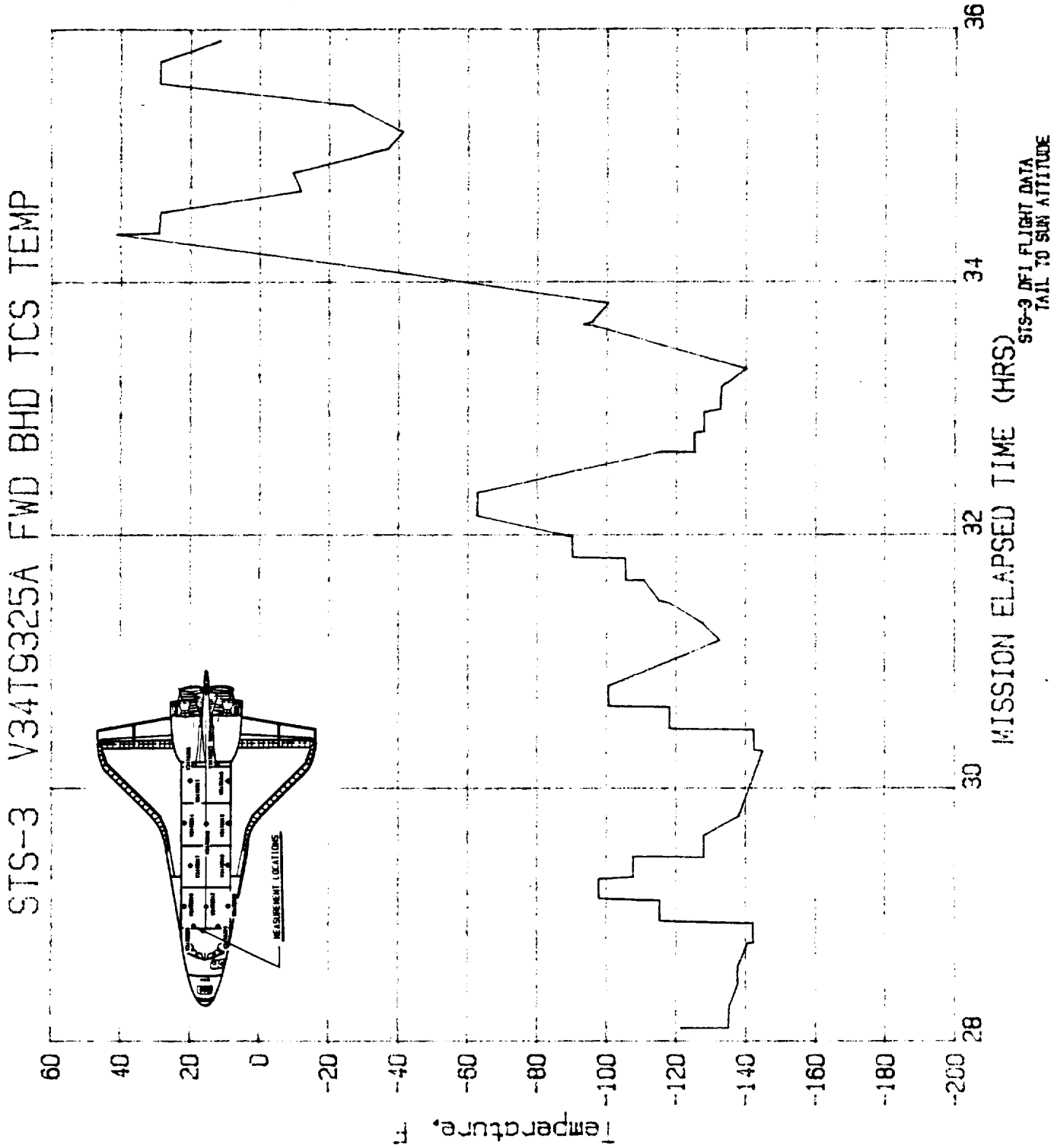
STS-3 V34T9325A FWD BHD TCS TEMP
MEASUREMENT LOCATIONS
Temperature, F
60
40
20
0
-20
-40
-60
-80
-100
-120
-140
-160
-180
-200
28
30
32
34
36
MISSION ELAPSED TIME (HRS)
STS-3 DFI FLIGHT DATA
TAIL TO SUN ATTITUDE

Figure A-234

A235
File No=f235

STS-1 V34T9312 MID FUS PLB LIN TEMP

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	12.32	125.10	35	20.27	42.86	69	0.00	0.00	103	0.00	0.00
2	12.39	97.46	36	20.30	40.82	70	0.00	0.00	104	0.00	0.00
3	12.43	97.92	37	20.83	19.08	71	0.00	0.00	105	0.00	0.00
4	12.77	39.92	38	20.89	9.11	72	0.00	0.00	106	0.00	0.00
5	12.88	30.40	39	20.99	44.68	73	0.00	0.00	107	0.00	0.00
6	13.35	15.00	40	21.15	49.43	74	0.00	0.00	108	0.00	0.00
7	13.38	31.99	41	21.17	60.31	75	0.00	0.00	109	0.00	0.00
8	13.93	65.97	42	21.21	60.53	76	0.00	0.00	110	0.00	0.00
9	13.99	75.26	43	21.90	-67.24	77	0.00	0.00	111	0.00	0.00
10	14.38	21.79	44	21.94	-74.26	78	0.00	0.00	112	0.00	0.00
11	14.42	22.02	45	22.44	143.00	79	0.00	0.00	113	0.00	0.00
12	14.46	19.76	46	22.52	271.00	80	0.00	0.00	114	0.00	0.00
13	14.67	12.05	47	22.57	265.34	81	0.00	0.00	115	0.00	0.00
14	14.71	19.53	48	22.63	178.57	82	0.00	0.00	116	0.00	0.00
15	15.40	74.13	49	22.73	81.15	83	0.00	0.00	117	0.00	0.00
16	15.43	69.14	50	22.79	71.41	84	0.00	0.00	118	0.00	0.00
17	15.99	17.04	51	22.81	76.17	85	0.00	0.00	119	0.00	0.00
18	16.02	14.77	52	22.99	239.51	86	0.00	0.00	120	0.00	0.00
19	16.94	70.96	53	23.09	278.93	87	0.00	0.00	121	0.00	0.00
20	17.01	70.73	54	23.47	55.32	88	0.00	0.00	122	0.00	0.00
21	17.04	76.39	55	23.50	34.93	89	0.00	0.00	123	0.00	0.00
22	17.57	14.09	56	0.00	0.00	90	0.00	0.00	124	0.00	0.00
23	17.60	17.49	57	0.00	0.00	91	0.00	0.00	125	0.00	0.00
24	17.64	17.49	58	0.00	0.00	92	0.00	0.00	126	0.00	0.00
25	17.67	8.88	59	0.00	0.00	93	0.00	0.00	127	0.00	0.00
26	18.00	49.66	60	0.00	0.00	94	0.00	0.00	128	0.00	0.00
27	18.04	47.17	61	0.00	0.00	95	0.00	0.00	129	0.00	0.00
28	18.56	73.22	62	0.00	0.00	96	0.00	0.00	130	0.00	0.00
29	18.60	77.07	63	0.00	0.00	97	0.00	0.00	131	0.00	0.00
30	19.53	34.93	64	0.00	0.00	98	0.00	0.00	132	0.00	0.00
31	19.59	39.24	65	0.00	0.00	99	0.00	0.00	133	0.00	0.00
32	19.61	52.61	66	0.00	0.00	100	0.00	0.00	134	0.00	0.00
33	19.65	53.06	67	0.00	0.00	101	0.00	0.00	135	0.00	0.00
34	20.23	47.17	68	0.00	0.00	102	0.00	0.00	136	0.00	0.00

Max Temp= 278.93 F; Min Temp= -74.26 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

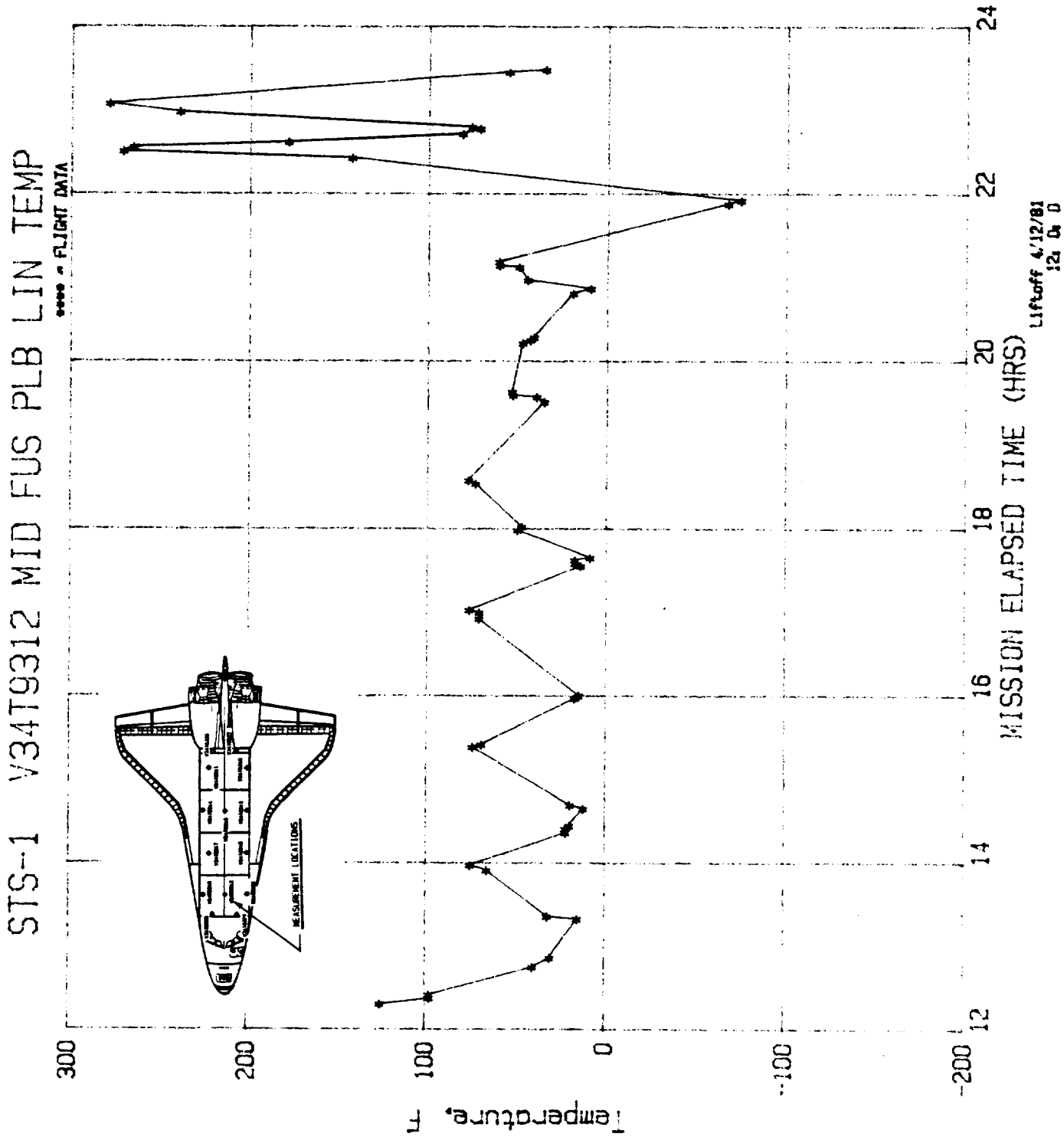
STS-1 V34T9312 MID FUS PLB LIN TEMP
**** = FLIGHT DATA
MEASUREMENT LOCATIONS
Temperature, F
300
200
100
0
-100
-200
12
14
16
18
20
22
24
MISSION ELAPSED TIME (HRS)
Liftoff 4/12/81
12:00

Figure A-235

A236
File No=f236 STS-2 V34T9312 MID FUS PLB LIN TEMP

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	12.94	26.13	35	0.00	0.00	69	0.00	0.00	103	0.00	0.00
2	12.97	26.13	36	0.00	0.00	70	0.00	0.00	104	0.00	0.00
3	13.11	31.39	37	0.00	0.00	71	0.00	0.00	105	0.00	0.00
4	13.25	36.51	38	0.00	0.00	72	0.00	0.00	106	0.00	0.00
5	14.47	21.08	39	0.00	0.00	73	0.00	0.00	107	0.00	0.00
6	14.60	29.02	40	0.00	0.00	74	0.00	0.00	108	0.00	0.00
7	14.76	39.20	41	0.00	0.00	75	0.00	0.00	109	0.00	0.00
8	16.17	29.09	42	0.00	0.00	76	0.00	0.00	110	0.00	0.00
9	16.32	41.96	43	0.00	0.00	77	0.00	0.00	111	0.00	0.00
10	17.68	31.52	44	0.00	0.00	78	0.00	0.00	112	0.00	0.00
11	17.82	42.02	45	0.00	0.00	79	0.00	0.00	113	0.00	0.00
12	18.01	54.56	46	0.00	0.00	80	0.00	0.00	114	0.00	0.00
13	19.18	31.45	47	0.00	0.00	81	0.00	0.00	115	0.00	0.00
14	19.37	39.33	48	0.00	0.00	82	0.00	0.00	116	0.00	0.00
15	19.52	49.44	49	0.00	0.00	83	0.00	0.00	117	0.00	0.00
16	20.75	39.13	50	0.00	0.00	84	0.00	0.00	118	0.00	0.00
17	20.90	44.52	51	0.00	0.00	85	0.00	0.00	119	0.00	0.00
18	22.25	51.87	52	0.00	0.00	86	0.00	0.00	120	0.00	0.00
19	22.61	41.89	53	0.00	0.00	87	0.00	0.00	121	0.00	0.00
20	22.75	52.27	54	0.00	0.00	88	0.00	0.00	122	0.00	0.00
21	23.94	49.31	55	0.00	0.00	89	0.00	0.00	123	0.00	0.00
22	24.09	57.12	56	0.00	0.00	90	0.00	0.00	124	0.00	0.00
23	24.30	54.43	57	0.00	0.00	91	0.00	0.00	125	0.00	0.00
24	25.47	49.44	58	0.00	0.00	92	0.00	0.00	126	0.00	0.00
25	25.66	49.31	59	0.00	0.00	93	0.00	0.00	127	0.00	0.00
26	25.83	54.76	60	0.00	0.00	94	0.00	0.00	128	0.00	0.00
27	27.05	49.51	61	0.00	0.00	95	0.00	0.00	129	0.00	0.00
28	27.20	47.08	62	0.00	0.00	96	0.00	0.00	130	0.00	0.00
29	27.37	47.08	63	0.00	0.00	97	0.00	0.00	131	0.00	0.00
30	28.56	42.02	64	0.00	0.00	98	0.00	0.00	132	0.00	0.00
31	28.74	54.56	65	0.00	0.00	99	0.00	0.00	133	0.00	0.00
32	28.94	47.14	66	0.00	0.00	100	0.00	0.00	134	0.00	0.00
33	0.00	0.00	67	0.00	0.00	101	0.00	0.00	135	0.00	0.00
34	0.00	0.00	68	0.00	0.00	102	0.00	0.00	136	0.00	0.00

Max Temp= 57.12 F; Min Temp= 21.08 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

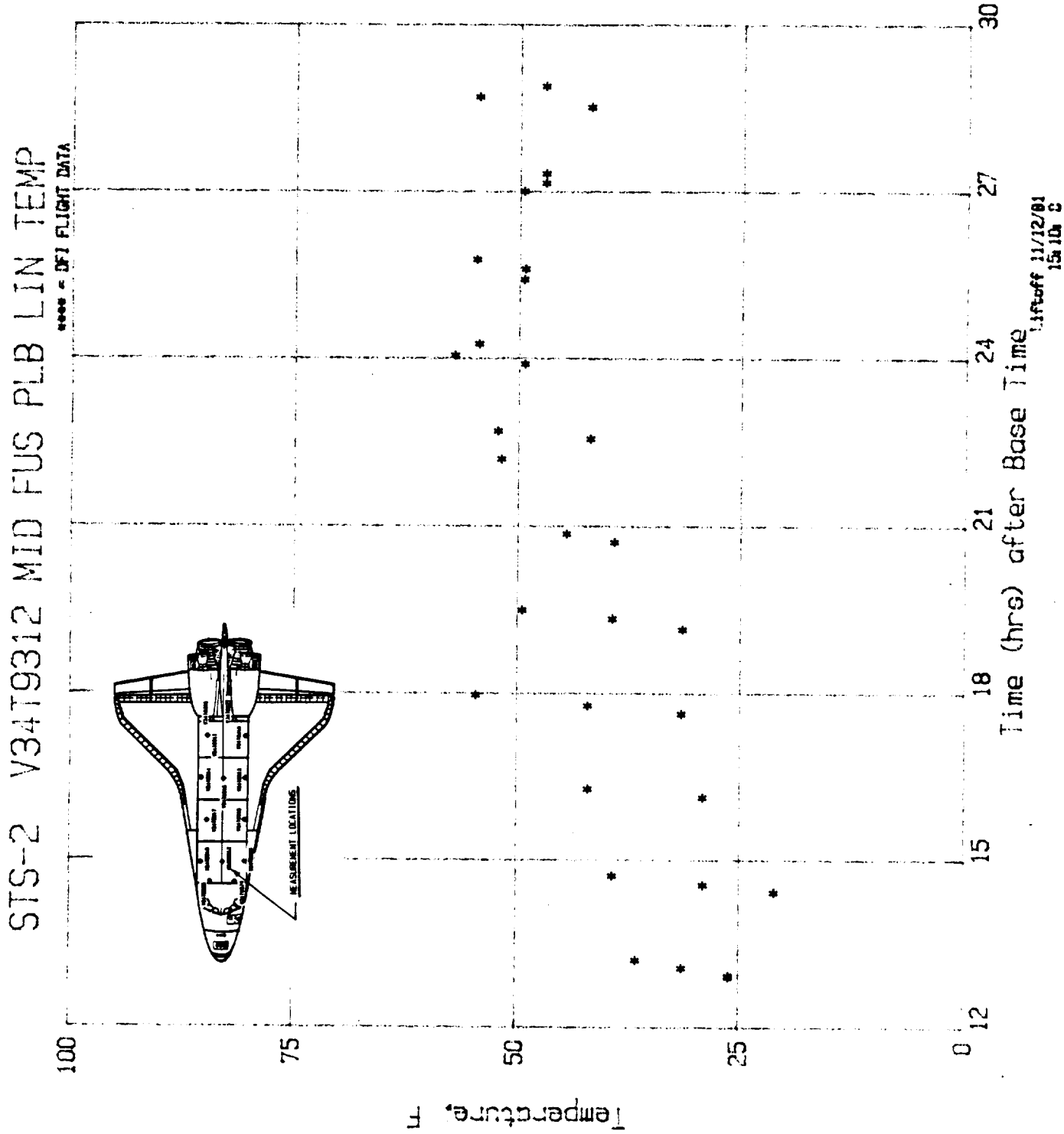
STS-2 V34T9312 MID FUS PLB LIN TEMP
**** = DFI FLIGHT DATA
MEASUREMENT LOCATIONS
Temperature, F
100
75
50
25
0
12
15
18
21
24
27
30
Time (hrs) after Base Time
Liftoff 11/12/81
15:10:0

Figure A-236

A237
File No=f237 STS-2 V34T9320A MID FUS LIN TEMP

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	12.08	73.62	35	17.91	39.42	69	0.00	0.00	103	0.00	0.00
2	12.30	67.78	36	18.03	47.05	70	0.00	0.00	104	0.00	0.00
3	12.60	39.28	37	18.18	47.00	71	0.00	0.00	105	0.00	0.00
4	12.91	24.06	38	18.34	41.98	72	0.00	0.00	106	0.00	0.00
5	13.06	31.50	39	18.54	39.71	73	0.00	0.00	107	0.00	0.00
6	13.29	35.02	40	18.67	24.01	74	0.00	0.00	108	0.00	0.00
7	13.63	52.17	41	18.84	16.18	75	0.00	0.00	109	0.00	0.00
8	13.79	47.05	42	19.20	29.57	76	0.00	0.00	110	0.00	0.00
9	14.05	47.10	43	19.38	35.41	77	0.00	0.00	111	0.00	0.00
10	14.12	44.49	44	19.55	41.74	78	0.00	0.00	112	0.00	0.00
11	14.29	26.23	45	19.70	44.20	79	0.00	0.00	113	0.00	0.00
12	14.42	19.81	46	19.88	39.52	80	0.00	0.00	114	0.00	0.00
13	14.61	28.94	47	0.00	0.00	81	0.00	0.00	115	0.00	0.00
14	14.80	34.20	48	0.00	0.00	82	0.00	0.00	116	0.00	0.00
15	14.98	47.25	49	0.00	0.00	83	0.00	0.00	117	0.00	0.00
16	15.16	49.47	50	0.00	0.00	84	0.00	0.00	118	0.00	0.00
17	15.31	44.73	51	0.00	0.00	85	0.00	0.00	119	0.00	0.00
18	15.48	46.76	52	0.00	0.00	86	0.00	0.00	120	0.00	0.00
19	15.67	33.19	53	0.00	0.00	87	0.00	0.00	121	0.00	0.00
20	15.81	21.26	54	0.00	0.00	88	0.00	0.00	122	0.00	0.00
21	15.98	18.99	55	0.00	0.00	89	0.00	0.00	123	0.00	0.00
22	16.08	26.57	56	0.00	0.00	90	0.00	0.00	124	0.00	0.00
23	16.17	32.56	57	0.00	0.00	91	0.00	0.00	125	0.00	0.00
24	16.31	36.71	58	0.00	0.00	92	0.00	0.00	126	0.00	0.00
25	16.50	49.52	59	0.00	0.00	93	0.00	0.00	127	0.00	0.00
26	16.68	49.61	60	0.00	0.00	94	0.00	0.00	128	0.00	0.00
27	16.82	44.88	61	0.00	0.00	95	0.00	0.00	129	0.00	0.00
28	16.99	48.79	62	0.00	0.00	96	0.00	0.00	130	0.00	0.00
29	17.14	35.17	63	0.00	0.00	97	0.00	0.00	131	0.00	0.00
30	17.19	28.60	64	0.00	0.00	98	0.00	0.00	132	0.00	0.00
31	17.30	18.94	65	0.00	0.00	99	0.00	0.00	133	0.00	0.00
32	17.48	18.84	66	0.00	0.00	100	0.00	0.00	134	0.00	0.00
33	17.68	29.57	67	0.00	0.00	101	0.00	0.00	135	0.00	0.00
34	17.84	34.54	68	0.00	0.00	102	0.00	0.00	136	0.00	0.00

Max Temp= 73.62 F; Min Temp= 16.18 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

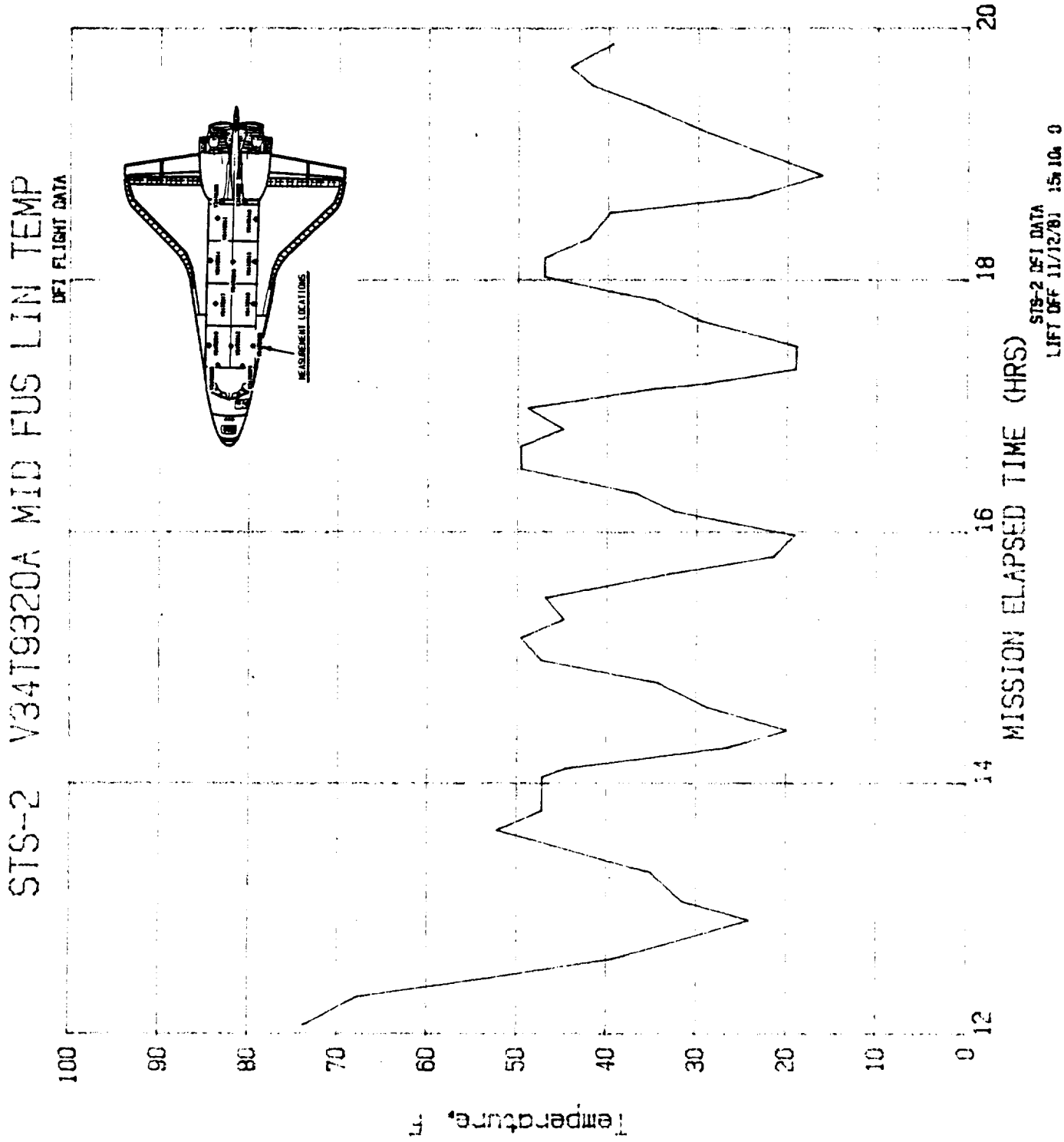
STS-2 V34T9320A MID FUS LIN TEMP
DFI FLIGHT DATA
MEASUREMENT LOCATIONS
Temperature, F
100
90
80
70
60
50
40
30
20
10
0
12
14
16
18
20
MISSION ELAPSED TIME (HRS)
STS-2 DFI DATA
LIFT OFF 11/12/81 15:10:0

Figure A-237

A238
File No=f238

STS-2 V34T9312A MID FUS PLB CTR BTM TEMP X=670

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	20.21	45.14	35	28.43	-16.86	69	38.04	52.47	103	0.00	0.00
2	21.58	35.67	36	28.72	40.26	70	38.22	54.61	104	0.00	0.00
3	21.72	49.73	37	28.91	43.62	71	38.46	45.14	105	0.00	0.00
4	21.90	51.56	38	29.16	39.95	72	38.60	20.71	106	0.00	0.00
5	23.10	30.79	39	29.32	35.06	73	38.91	16.43	107	0.00	0.00
6	23.27	50.34	40	29.61	17.65	74	38.99	109.29	108	0.00	0.00
7	23.44	38.73	41	29.74	13.99	75	39.01	41.48	109	0.00	0.00
8	24.05	-21.44	42	30.03	37.20	76	39.03	26.21	110	0.00	0.00
9	24.64	16.74	43	30.22	49.11	77	39.40	16.43	111	0.00	0.00
10	24.80	45.45	44	30.45	50.95	78	39.82	73.55	112	0.00	0.00
11	24.96	45.14	45	30.61	39.95	79	0.00	0.00	113	0.00	0.00
12	25.31	25.90	46	30.88	24.98	80	0.00	0.00	114	0.00	0.00
13	26.44	26.21	47	31.03	13.68	81	0.00	0.00	115	0.00	0.00
14	26.46	23.46	48	31.29	19.79	82	0.00	0.00	116	0.00	0.00
15	26.51	21.62	49	31.45	35.06	83	0.00	0.00	117	0.00	0.00
16	26.60	21.62	50	31.73	53.39	84	0.00	0.00	118	0.00	0.00
17	26.61	16.43	51	31.89	55.53	85	0.00	0.00	119	0.00	0.00
18	26.84	-27.55	52	32.19	48.81	86	0.00	0.00	120	0.00	0.00
19	27.08	-22.36	53	32.57	13.68	87	0.00	0.00	121	0.00	0.00
20	27.24	5.74	54	33.01	37.81	88	0.00	0.00	122	0.00	0.00
21	27.27	-1.89	55	33.47	51.56	89	0.00	0.00	123	0.00	0.00
22	27.32	-9.22	56	33.86	20.10	90	0.00	0.00	124	0.00	0.00
23	27.35	-18.08	57	34.32	24.68	91	0.00	0.00	125	0.00	0.00
24	27.38	-25.72	58	34.74	51.56	92	0.00	0.00	126	0.00	0.00
25	27.43	-29.99	59	35.19	40.87	93	0.00	0.00	127	0.00	0.00
26	27.44	-37.02	60	35.64	41.48	94	0.00	0.00	128	0.00	0.00
27	27.50	-40.99	61	36.07	14.91	95	0.00	0.00	129	0.00	0.00
28	27.53	-45.27	62	36.48	44.84	96	0.00	0.00	130	0.00	0.00
29	27.57	-49.54	63	36.76	54.00	97	0.00	0.00	131	0.00	0.00
30	27.62	-52.60	64	36.92	44.53	98	0.00	0.00	132	0.00	0.00
31	27.64	-55.35	65	37.17	24.98	99	0.00	0.00	133	0.00	0.00
32	27.84	-75.81	66	37.32	-30.91	100	0.00	0.00	134	0.00	0.00
33	28.00	-80.39	67	37.61	7.57	101	0.00	0.00	135	0.00	0.00
34	28.31	-47.71	68	37.75	45.45	102	0.00	0.00	136	0.00	0.00

Max Temp= 109.29 F; Min Temp= -80.39 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

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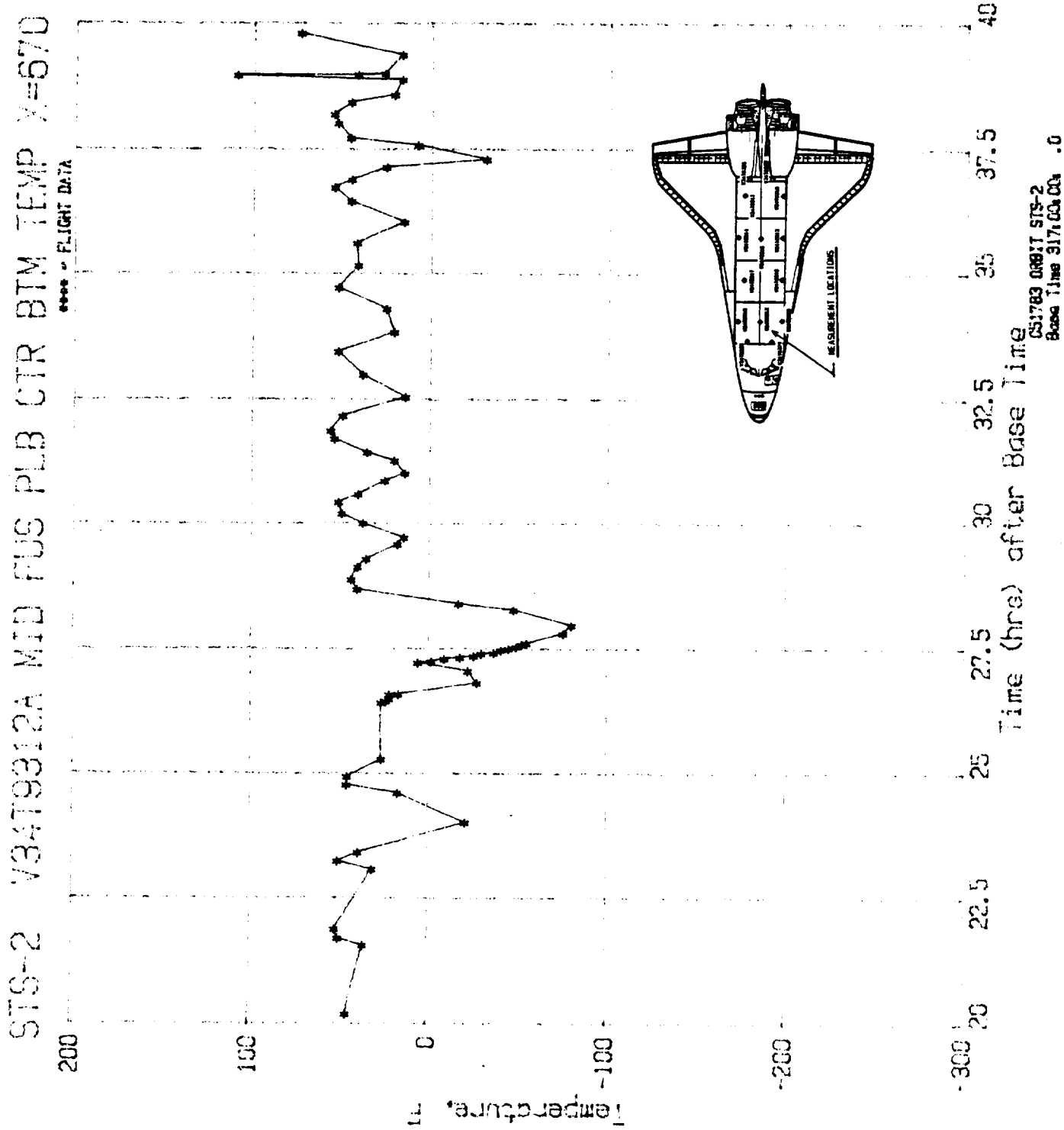

Figure A-238

A239
File No=f239 STS-3 V34T9312A MID FUS CTR BTM LIN TEMP

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	113.06	-14.06	35	117.21	-64.49	69	120.13	-100.91	103	0.00	0.00
2	113.25	28.99	36	117.22	-67.57	70	120.23	-105.30	104	0.00	0.00
3	113.44	38.99	37	117.36	-67.39	71	120.34	-105.21	105	0.00	0.00
4	113.68	-22.84	38	117.46	-39.46	72	120.38	-97.92	106	0.00	0.00
5	113.75	-47.31	39	117.54	-14.06	73	120.44	-80.27	107	0.00	0.00
6	113.75	-82.61	40	117.72	30.21	74	120.52	-39.55	108	0.00	0.00
7	113.94	-82.79	41	117.87	41.60	75	120.60	0.70	109	0.00	0.00
8	114.27	-109.97	42	117.96	33.10	76	120.75	34.22	110	0.00	0.00
9	114.49	-56.74	43	118.07	20.40	77	120.83	29.55	111	0.00	0.00
10	114.62	1.26	44	118.12	2.56	78	120.84	26.75	112	0.00	0.00
11	114.79	26.29	45	118.19	-19.66	79	120.92	26.57	113	0.00	0.00
12	114.97	36.84	46	118.25	-39.65	80	120.99	14.33	114	0.00	0.00
13	115.08	2.38	47	118.33	-60.01	81	0.00	0.00	115	0.00	0.00
14	115.18	-25.45	48	118.41	-77.38	82	0.00	0.00	116	0.00	0.00
15	115.29	-51.60	49	118.41	-98.30	83	0.00	0.00	117	0.00	0.00
16	115.33	-61.22	50	118.58	-98.11	84	0.00	0.00	118	0.00	0.00
17	115.47	-87.46	51	118.59	-105.30	85	0.00	0.00	119	0.00	0.00
18	115.47	-103.06	52	118.60	-95.40	86	0.00	0.00	120	0.00	0.00
19	115.64	-102.97	53	118.74	-105.30	87	0.00	0.00	121	0.00	0.00
20	115.65	-108.01	54	118.83	-100.82	88	0.00	0.00	122	0.00	0.00
21	115.82	-107.73	55	118.92	-80.27	89	0.00	0.00	123	0.00	0.00
22	115.87	-94.75	56	118.98	-60.10	90	0.00	0.00	124	0.00	0.00
23	115.91	-81.49	57	119.06	-19.76	91	0.00	0.00	125	0.00	0.00
24	116.02	-44.13	58	119.10	0.42	92	0.00	0.00	126	0.00	0.00
25	116.08	-19.76	59	119.17	23.86	93	0.00	0.00	127	0.00	0.00
26	116.15	0.79	60	119.26	21.43	94	0.00	0.00	128	0.00	0.00
27	116.25	20.68	61	119.36	21.43	95	0.00	0.00	129	0.00	0.00
28	116.35	36.84	62	119.45	31.33	96	0.00	0.00	130	0.00	0.00
29	116.36	34.69	63	119.51	20.31	97	0.00	0.00	131	0.00	0.00
30	116.51	-16.49	64	119.58	0.42	98	0.00	0.00	132	0.00	0.00
31	116.52	34.50	65	119.68	-19.85	99	0.00	0.00	133	0.00	0.00
32	116.69	-16.67	66	119.77	-39.74	100	0.00	0.00	134	0.00	0.00
33	116.86	-62.25	67	119.88	-60.19	101	0.00	0.00	135	0.00	0.00
34	117.02	-62.25	68	120.05	-97.64	102	0.00	0.00	136	0.00	0.00

Max Temp= 41.60 F; Min Temp=-109.97 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

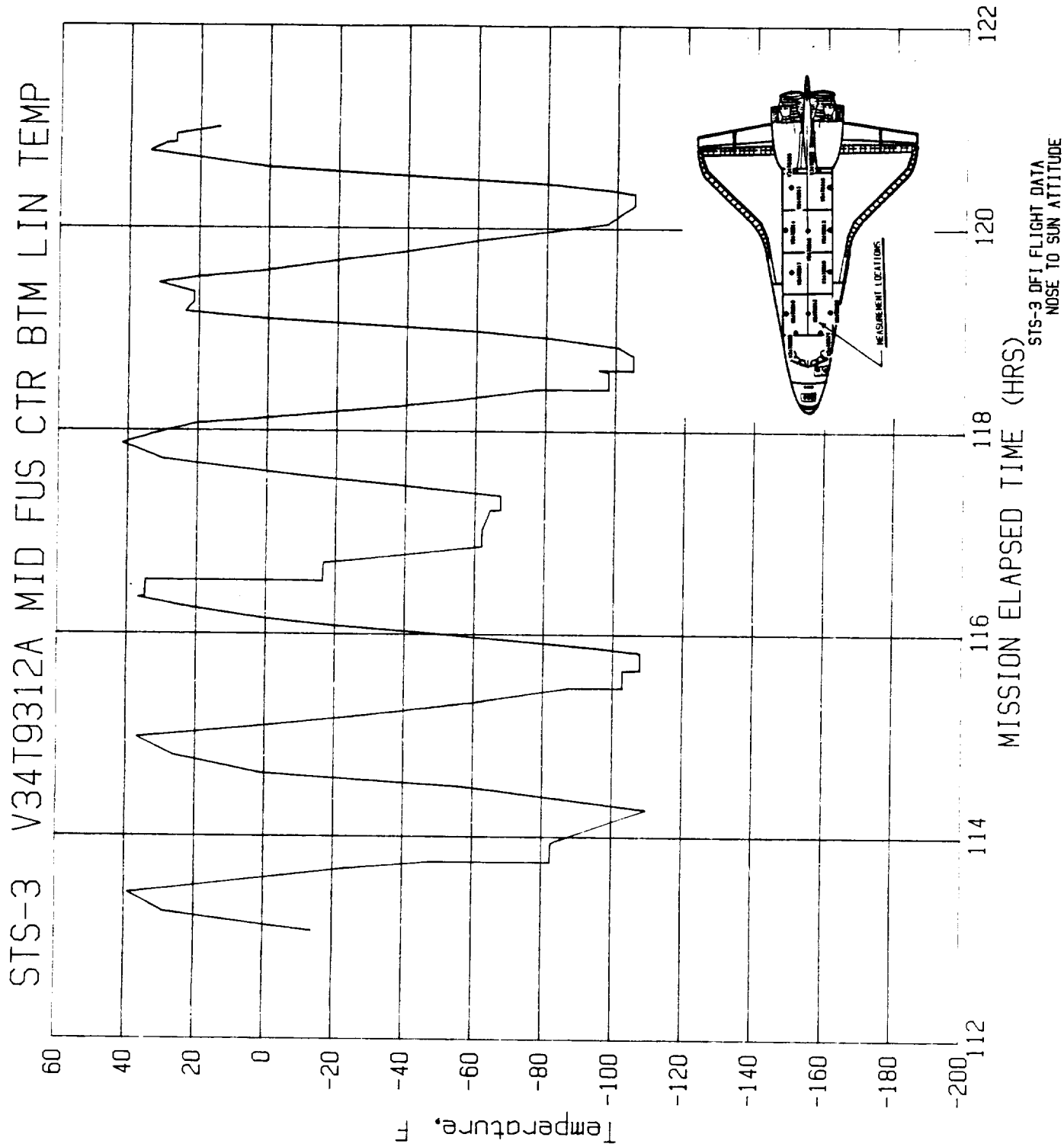
STS-3 V34T9312A MID FUS CTR BTM LIN TEMP
Temperature, F
60
40
20
0
-20
-40
-60
-80
-100
-120
-140
-160
-180
-200
112
114
116
118
120
122
MISSION ELAPSED TIME (HRS)
MEASUREMENT LOCATIONS
STS-3 OFI FLIGHT DATA
NOSE TO SUN ATTITUDE

Figure A-239

A240
File No=f240 STS-3 V34T9312A MID FUS CTR BTM LIN TEMP

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	120.98	13.88	35	123.90	44.29	69	0.00	0.00	103	0.00	0.00
2	121.03	-0.41	36	123.98	23.47	70	0.00	0.00	104	0.00	0.00
3	121.11	-20.31	37	0.00	0.00	71	0.00	0.00	105	0.00	0.00
4	121.24	-59.90	38	0.00	0.00	72	0.00	0.00	106	0.00	0.00
5	121.34	-80.41	39	0.00	0.00	73	0.00	0.00	107	0.00	0.00
6	121.45	-95.10	40	0.00	0.00	74	0.00	0.00	108	0.00	0.00
7	121.57	-95.00	41	0.00	0.00	75	0.00	0.00	109	0.00	0.00
8	121.72	-99.90	42	0.00	0.00	76	0.00	0.00	110	0.00	0.00
9	121.83	-80.31	43	0.00	0.00	77	0.00	0.00	111	0.00	0.00
10	121.89	-59.69	44	0.00	0.00	78	0.00	0.00	112	0.00	0.00
11	121.99	-29.59	45	0.00	0.00	79	0.00	0.00	113	0.00	0.00
12	122.06	2.96	46	0.00	0.00	80	0.00	0.00	114	0.00	0.00
13	122.11	19.49	47	0.00	0.00	81	0.00	0.00	115	0.00	0.00
14	122.19	28.47	48	0.00	0.00	82	0.00	0.00	116	0.00	0.00
15	122.37	23.98	49	0.00	0.00	83	0.00	0.00	117	0.00	0.00
16	122.38	16.43	50	0.00	0.00	84	0.00	0.00	118	0.00	0.00
17	122.44	16.33	51	0.00	0.00	85	0.00	0.00	119	0.00	0.00
18	122.51	-0.41	52	0.00	0.00	86	0.00	0.00	120	0.00	0.00
19	122.57	-20.41	53	0.00	0.00	87	0.00	0.00	121	0.00	0.00
20	122.65	-39.90	54	0.00	0.00	88	0.00	0.00	122	0.00	0.00
21	122.74	-60.00	55	0.00	0.00	89	0.00	0.00	123	0.00	0.00
22	122.82	-80.41	56	0.00	0.00	90	0.00	0.00	124	0.00	0.00
23	122.91	-96.94	57	0.00	0.00	91	0.00	0.00	125	0.00	0.00
24	123.03	-100.31	58	0.00	0.00	92	0.00	0.00	126	0.00	0.00
25	123.12	-104.29	59	0.00	0.00	93	0.00	0.00	127	0.00	0.00
26	123.20	-107.14	60	0.00	0.00	94	0.00	0.00	128	0.00	0.00
27	123.24	-100.92	61	0.00	0.00	95	0.00	0.00	129	0.00	0.00
28	123.30	-91.53	62	0.00	0.00	96	0.00	0.00	130	0.00	0.00
29	123.34	-80.51	63	0.00	0.00	97	0.00	0.00	131	0.00	0.00
30	123.39	-59.80	64	0.00	0.00	98	0.00	0.00	132	0.00	0.00
31	123.50	15.92	65	0.00	0.00	99	0.00	0.00	133	0.00	0.00
32	123.51	-20.41	66	0.00	0.00	100	0.00	0.00	134	0.00	0.00
33	123.59	16.12	67	0.00	0.00	101	0.00	0.00	135	0.00	0.00
34	123.75	45.00	68	0.00	0.00	102	0.00	0.00	136	0.00	0.00

Max Temp= 45.00 F; Min Temp=-107.14 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

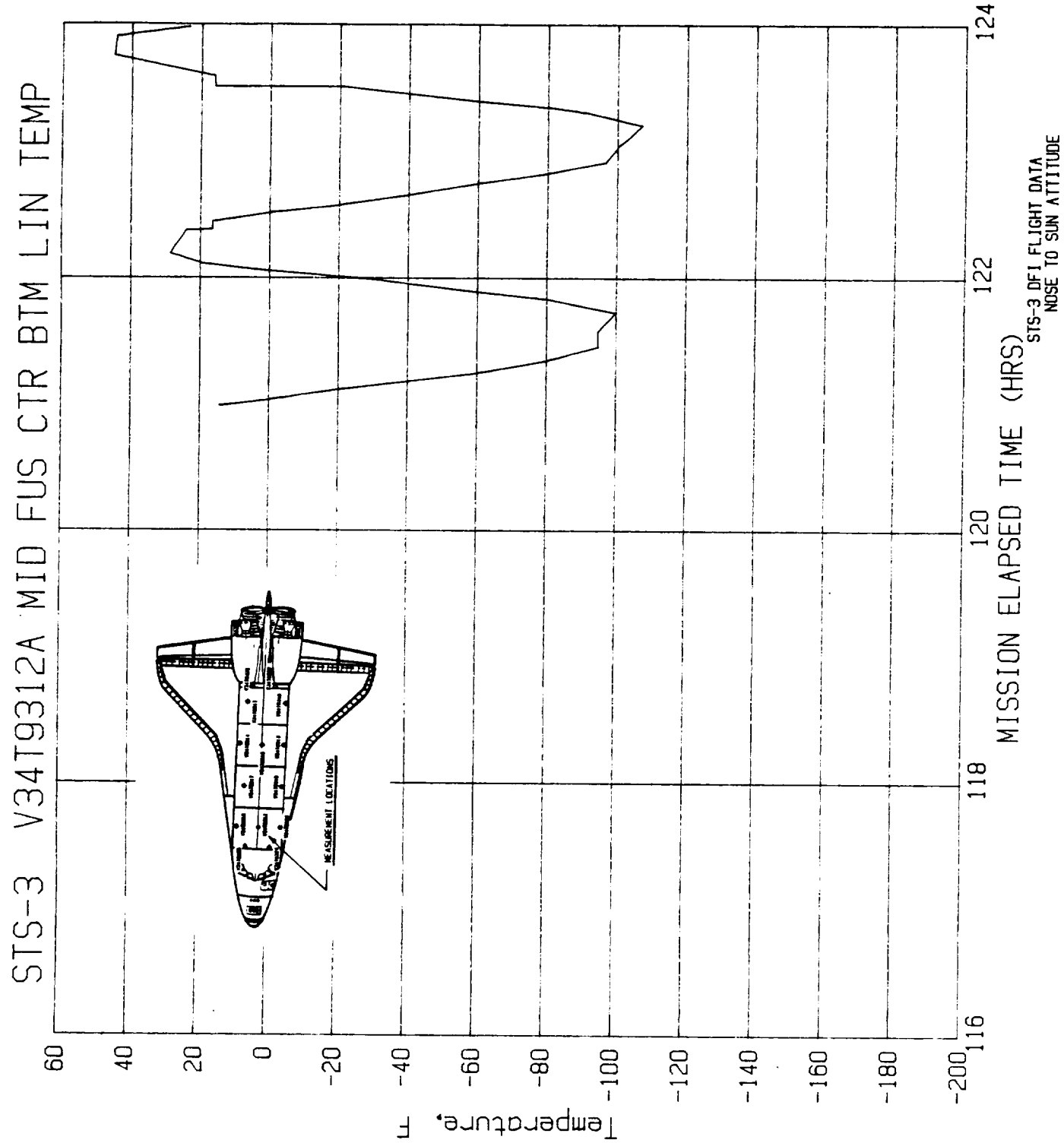
STS-3 V34T9312A MID FUS CTR BTM LIN TEMP
MEASUREMENT LOCATIONS
Temperature, F
60
40
20
0
-20
-40
-60
-80
-100
-120
-140
-160
-180
-200
116
118
120
122
124
MISSION ELAPSED TIME (HRS)
STS-3 DFI FLIGHT DATA
NOSE TO SUN ATTITUDE

Figure A-240

A241
File No=f241 STS-3 V34T9318A MID FUS LIN TEMP

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	121.03	1.36	35	123.75	13.27	69	0.00	0.00	103	0.00	0.00
2	121.11	-20.22	36	123.84	10.73	70	0.00	0.00	104	0.00	0.00
3	121.14	-40.68	37	123.92	5.43	71	0.00	0.00	105	0.00	0.00
4	121.20	-60.94	38	0.00	0.00	72	0.00	0.00	106	0.00	0.00
5	121.28	-80.69	39	0.00	0.00	73	0.00	0.00	107	0.00	0.00
6	121.31	-87.61	40	0.00	0.00	74	0.00	0.00	108	0.00	0.00
7	121.39	-97.69	41	0.00	0.00	75	0.00	0.00	109	0.00	0.00
8	121.48	-105.53	42	0.00	0.00	76	0.00	0.00	110	0.00	0.00
9	121.49	-102.37	43	0.00	0.00	77	0.00	0.00	111	0.00	0.00
10	121.57	-105.73	44	0.00	0.00	78	0.00	0.00	112	0.00	0.00
11	121.62	-103.39	45	0.00	0.00	79	0.00	0.00	113	0.00	0.00
12	121.74	-103.59	46	0.00	0.00	80	0.00	0.00	114	0.00	0.00
13	121.83	-97.38	47	0.00	0.00	81	0.00	0.00	115	0.00	0.00
14	121.89	-81.10	48	0.00	0.00	82	0.00	0.00	116	0.00	0.00
15	121.96	-61.04	49	0.00	0.00	83	0.00	0.00	117	0.00	0.00
16	122.10	-7.90	50	0.00	0.00	84	0.00	0.00	118	0.00	0.00
17	122.21	2.99	51	0.00	0.00	85	0.00	0.00	119	0.00	0.00
18	122.23	0.55	52	0.00	0.00	86	0.00	0.00	120	0.00	0.00
19	122.45	0.24	53	0.00	0.00	87	0.00	0.00	121	0.00	0.00
20	122.59	-20.22	54	0.00	0.00	88	0.00	0.00	122	0.00	0.00
21	122.65	-40.68	55	0.00	0.00	89	0.00	0.00	123	0.00	0.00
22	122.71	-61.25	56	0.00	0.00	90	0.00	0.00	124	0.00	0.00
23	122.76	-80.79	57	0.00	0.00	91	0.00	0.00	125	0.00	0.00
24	122.84	-93.52	58	0.00	0.00	92	0.00	0.00	126	0.00	0.00
25	122.85	-95.35	59	0.00	0.00	93	0.00	0.00	127	0.00	0.00
26	122.85	-98.20	60	0.00	0.00	94	0.00	0.00	128	0.00	0.00
27	122.91	-105.22	61	0.00	0.00	95	0.00	0.00	129	0.00	0.00
28	123.18	-113.06	62	0.00	0.00	96	0.00	0.00	130	0.00	0.00
29	123.28	-107.67	63	0.00	0.00	97	0.00	0.00	131	0.00	0.00
30	123.30	-101.05	64	0.00	0.00	98	0.00	0.00	132	0.00	0.00
31	123.40	-80.79	65	0.00	0.00	99	0.00	0.00	133	0.00	0.00
32	123.48	-40.88	66	0.00	0.00	100	0.00	0.00	134	0.00	0.00
33	123.48	-9.63	67	0.00	0.00	101	0.00	0.00	135	0.00	0.00
34	123.56	-9.63	68	0.00	0.00	102	0.00	0.00	136	0.00	0.00

Max Temp= 13.27 F; Min Temp=-113.06 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

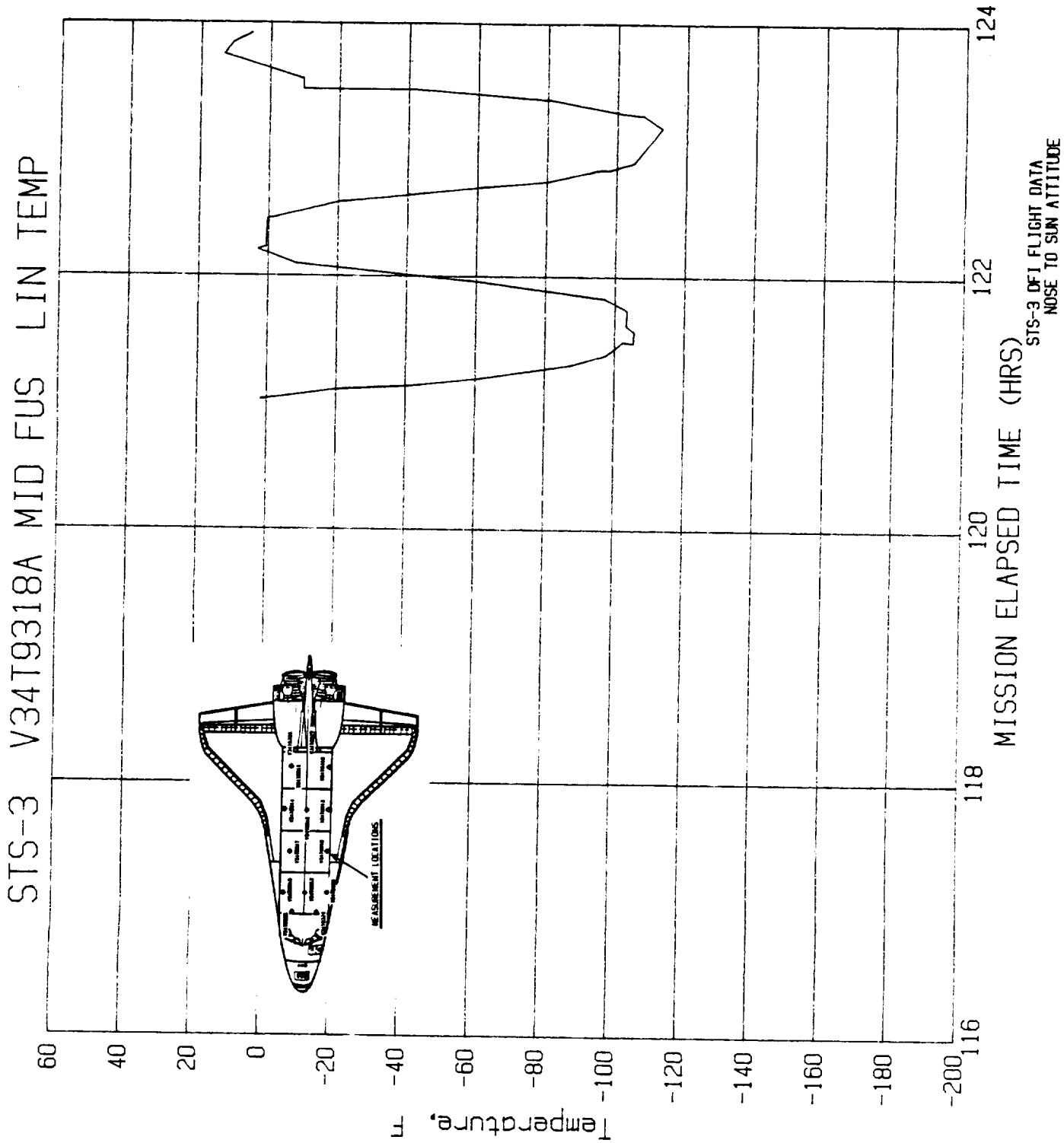
STS-3 V34T9318A MID FUS LIN TEMP
MEASUREMENT LOCATIONS
Temperature, F
60
40
20
0
-20
-40
-60
-80
-100
-120
-140
-160
-180
-200
116
118
120
122
124
MISSION ELAPSED TIME (HRS)
STS-3 OFI FLIGHT DATA
NOSE TO SUN ATTITUDE

Figure A-241

A242
File No=f242

STS-3 V34T9317A WIRE TRAY COVER TEMP

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	120.99	-47.02	35	123.72	-31.97	69	0.00	0.00	103	0.00	0.00
2	121.04	-53.23	36	123.81	-36.77	70	0.00	0.00	104	0.00	0.00
3	121.11	-58.78	37	123.91	-44.76	71	0.00	0.00	105	0.00	0.00
4	121.13	-62.16	38	0.00	0.00	72	0.00	0.00	106	0.00	0.00
5	121.23	-65.17	39	0.00	0.00	73	0.00	0.00	107	0.00	0.00
6	121.28	-67.52	40	0.00	0.00	74	0.00	0.00	108	0.00	0.00
7	121.39	-67.52	41	0.00	0.00	75	0.00	0.00	109	0.00	0.00
8	121.46	-62.92	42	0.00	0.00	76	0.00	0.00	110	0.00	0.00
9	121.54	-60.19	43	0.00	0.00	77	0.00	0.00	111	0.00	0.00
10	121.55	-57.93	44	0.00	0.00	78	0.00	0.00	112	0.00	0.00
11	121.57	-60.09	45	0.00	0.00	79	0.00	0.00	113	0.00	0.00
12	121.67	-59.81	46	0.00	0.00	80	0.00	0.00	114	0.00	0.00
13	121.75	-57.46	47	0.00	0.00	81	0.00	0.00	115	0.00	0.00
14	121.78	-51.54	48	0.00	0.00	82	0.00	0.00	116	0.00	0.00
15	121.84	-44.48	49	0.00	0.00	83	0.00	0.00	117	0.00	0.00
16	121.91	-37.34	50	0.00	0.00	84	0.00	0.00	118	0.00	0.00
17	122.00	-32.54	51	0.00	0.00	85	0.00	0.00	119	0.00	0.00
18	122.09	-32.35	52	0.00	0.00	86	0.00	0.00	120	0.00	0.00
19	122.17	-36.49	53	0.00	0.00	87	0.00	0.00	121	0.00	0.00
20	122.25	-42.13	54	0.00	0.00	88	0.00	0.00	122	0.00	0.00
21	122.33	-39.87	55	0.00	0.00	89	0.00	0.00	123	0.00	0.00
22	122.40	-44.20	56	0.00	0.00	90	0.00	0.00	124	0.00	0.00
23	122.51	-52.66	57	0.00	0.00	91	0.00	0.00	125	0.00	0.00
24	122.58	-58.21	58	0.00	0.00	92	0.00	0.00	126	0.00	0.00
25	122.69	-65.17	59	0.00	0.00	93	0.00	0.00	127	0.00	0.00
26	122.86	-69.87	60	0.00	0.00	94	0.00	0.00	128	0.00	0.00
27	123.02	-64.98	61	0.00	0.00	95	0.00	0.00	129	0.00	0.00
28	123.20	-65.17	62	0.00	0.00	96	0.00	0.00	130	0.00	0.00
29	123.24	-59.06	63	0.00	0.00	97	0.00	0.00	131	0.00	0.00
30	123.30	-50.13	64	0.00	0.00	98	0.00	0.00	132	0.00	0.00
31	123.38	-41.38	65	0.00	0.00	99	0.00	0.00	133	0.00	0.00
32	123.47	-32.26	66	0.00	0.00	100	0.00	0.00	134	0.00	0.00
33	123.57	-32.35	67	0.00	0.00	101	0.00	0.00	135	0.00	0.00
34	123.67	-34.42	68	0.00	0.00	102	0.00	0.00	136	0.00	0.00

Max Temp= -31.97 F; Min Temp= -69.87 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

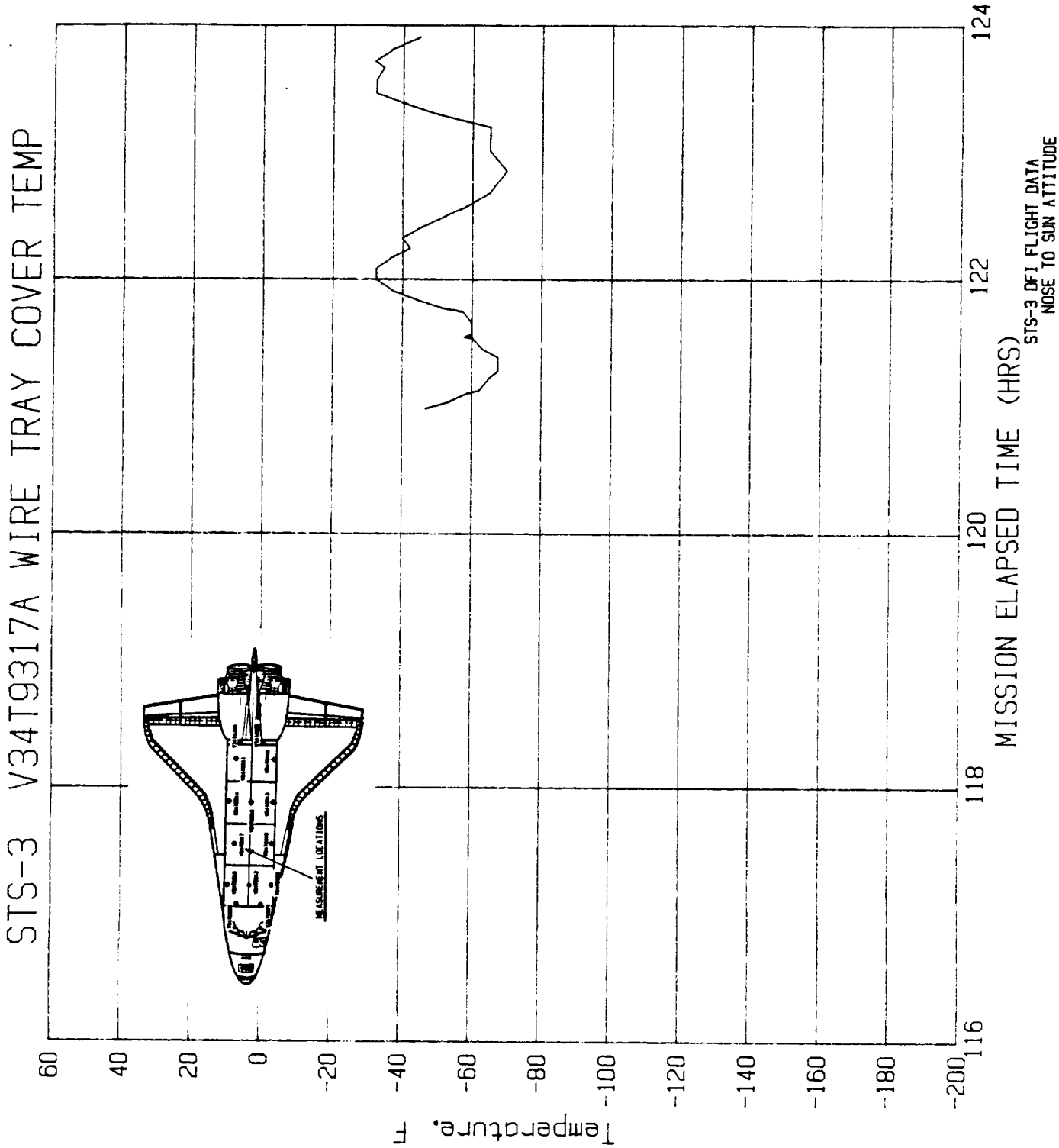
STS-3 V34T9317A WIRE TRAY COVER TEMP
MEASUREMENT LOCATIONS
Temperature, F
60
40
20
0
-20
-40
-60
-80
-100
-120
-140
-160
-180
-200
116
118
120
122
124
MISSION ELAPSED TIME (HRS)
STS-3 DFI FLIGHT DATA
NOSE TO SUN ATTITUDE

Figure A-242

A243
File No=f243 STS-3 V34T9312 MID FUS PLB LIN TEMP X=670

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	128.32	245.87	35	129.85	251.59	69	132.95	259.31	103	136.22	49.62
2	128.32	251.30	36	129.87	248.16	70	132.96	150.03	104	136.36	49.90
3	128.38	251.59	37	130.04	248.16	71	133.12	148.60	105	136.38	29.02
4	128.39	256.45	38	130.06	97.97	72	133.14	70.79	106	136.54	169.77
5	128.47	256.74	39	130.19	97.11	73	133.31	68.21	107	136.55	29.02
6	128.48	226.13	40	130.23	53.62	74	133.32	42.47	108	136.71	239.57
7	128.56	221.84	41	130.39	53.05	75	133.46	42.47	109	136.71	170.06
8	128.58	132.87	42	130.55	31.02	76	133.47	40.18	110	136.87	239.57
9	128.68	132.01	43	130.67	126.29	77	133.64	223.55	111	137.05	247.58
10	128.70	85.66	44	130.73	178.64	78	133.65	144.60	112	137.21	250.16
11	128.78	84.81	45	130.86	227.56	79	133.66	40.75	113	137.22	255.88
12	128.79	61.92	46	130.88	244.72	80	133.81	224.70	114	137.39	255.02
13	128.87	61.35	47	131.04	245.01	81	133.82	244.72	115	137.40	189.80
14	128.88	38.18	48	131.05	247.87	82	133.99	245.01	116	137.57	189.22
15	128.95	39.89	49	131.22	248.16	83	134.31	250.45	117	137.59	81.95
16	128.97	17.01	50	131.23	253.31	84	134.47	261.03	118	137.74	79.94
17	129.04	16.72	51	131.39	253.02	85	134.49	189.51	119	137.77	47.33
18	129.07	-1.02	52	131.40	192.66	86	134.50	113.41	120	137.94	46.47
19	129.15	-1.02	53	131.57	191.51	87	134.66	113.13	121	137.95	29.02
20	129.17	9.28	54	131.59	134.30	88	134.69	58.77	122	138.09	28.73
21	129.21	134.01	55	131.60	82.52	89	134.83	58.20	123	138.18	125.14
22	129.23	9.85	56	131.76	82.23	90	134.86	37.89	124	138.27	209.25
23	129.27	137.44	57	131.77	47.62	91	135.02	107.69	125	138.42	244.44
24	129.27	213.83	58	131.92	47.33	92	135.03	37.89	126	138.60	247.01
25	129.34	212.68	59	131.93	30.17	93	135.15	235.00	127	138.60	249.87
26	129.35	235.00	60	132.10	204.96	94	135.17	107.98	128	138.77	250.16
27	129.43	240.15	61	132.11	29.88	95	135.35	235.28	129	138.78	261.60
28	129.44	235.57	62	132.11	116.56	96	135.52	247.01	130	138.93	261.32
29	129.52	244.72	63	132.23	205.82	97	135.72	251.30	131	138.96	146.03
30	129.53	240.15	64	132.43	242.72	98	135.85	252.16	132	139.14	145.74
31	129.68	245.01	65	132.58	247.30	99	135.86	245.30	133	139.15	100.25
32	129.69	248.44	66	132.60	251.02	100	136.01	245.01	134	139.16	68.21
33	129.75	247.58	67	132.71	250.73	101	136.04	94.25	135	139.30	65.07
34	129.77	250.73	68	132.78	259.31	102	136.21	93.96	136	139.50	40.18

A243(Cont)
File No=f243(Cont.) STS-3 V34T9312 MID FUS PLB LIN TEMP X=670

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
137	139.64	46.19	171	142.72	178.93	205	0.00	0.00	239	0.00	0.00
138	139.71	126.00	172	142.75	233.28	206	0.00	0.00	240	0.00	0.00
139	139.77	201.81	173	142.85	238.14	207	0.00	0.00	241	0.00	0.00
140	139.80	246.44	174	142.86	232.99	208	0.00	0.00	242	0.00	0.00
141	139.81	226.99	175	142.90	240.72	209	0.00	0.00	243	0.00	0.00
142	139.98	247.01	176	142.92	238.14	210	0.00	0.00	244	0.00	0.00
143	140.01	251.02	177	142.94	240.72	211	0.00	0.00	245	0.00	0.00
144	140.03	249.87	178	142.94	243.87	212	0.00	0.00	246	0.00	0.00
145	140.12	249.59	179	142.99	244.15	213	0.00	0.00	247	0.00	0.00
146	140.16	251.59	180	142.99	245.58	214	0.00	0.00	248	0.00	0.00
147	140.33	252.16	181	143.05	245.87	215	0.00	0.00	249	0.00	0.00
148	140.33	263.03	182	143.06	249.59	216	0.00	0.00	250	0.00	0.00
149	140.49	263.03	183	0.00	0.00	217	0.00	0.00	251	0.00	0.00
150	140.52	116.85	184	0.00	0.00	218	0.00	0.00	252	0.00	0.00
151	140.68	116.85	185	0.00	0.00	219	0.00	0.00	253	0.00	0.00
152	140.69	57.63	186	0.00	0.00	220	0.00	0.00	254	0.00	0.00
153	140.87	57.06	187	0.00	0.00	221	0.00	0.00	255	0.00	0.00
154	140.88	25.02	188	0.00	0.00	222	0.00	0.00	256	0.00	0.00
155	141.02	21.87	189	0.00	0.00	223	0.00	0.00	257	0.00	0.00
156	141.21	-15.03	190	0.00	0.00	224	0.00	0.00	258	0.00	0.00
157	141.27	75.08	191	0.00	0.00	225	0.00	0.00	259	0.00	0.00
158	141.34	149.75	192	0.00	0.00	226	0.00	0.00	260	0.00	0.00
159	141.35	183.79	193	0.00	0.00	227	0.00	0.00	261	0.00	0.00
160	141.50	239.00	194	0.00	0.00	228	0.00	0.00	262	0.00	0.00
161	141.66	245.87	195	0.00	0.00	229	0.00	0.00	263	0.00	0.00
162	141.83	250.16	196	0.00	0.00	230	0.00	0.00	264	0.00	0.00
163	142.03	233.28	197	0.00	0.00	231	0.00	0.00	265	0.00	0.00
164	142.05	90.53	198	0.00	0.00	232	0.00	0.00	266	0.00	0.00
165	142.20	89.96	199	0.00	0.00	233	0.00	0.00	267	0.00	0.00
166	142.21	50.48	200	0.00	0.00	234	0.00	0.00	268	0.00	0.00
167	142.38	49.33	201	0.00	0.00	235	0.00	0.00	269	0.00	0.00
168	142.40	30.74	202	0.00	0.00	236	0.00	0.00	270	0.00	0.00
169	142.56	175.78	203	0.00	0.00	237	0.00	0.00	271	0.00	0.00
170	142.56	30.45	204	0.00	0.00	238	0.00	0.00	272	0.00	0.00

Max Temp= 263.03 F; Min Temp= -15.03 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

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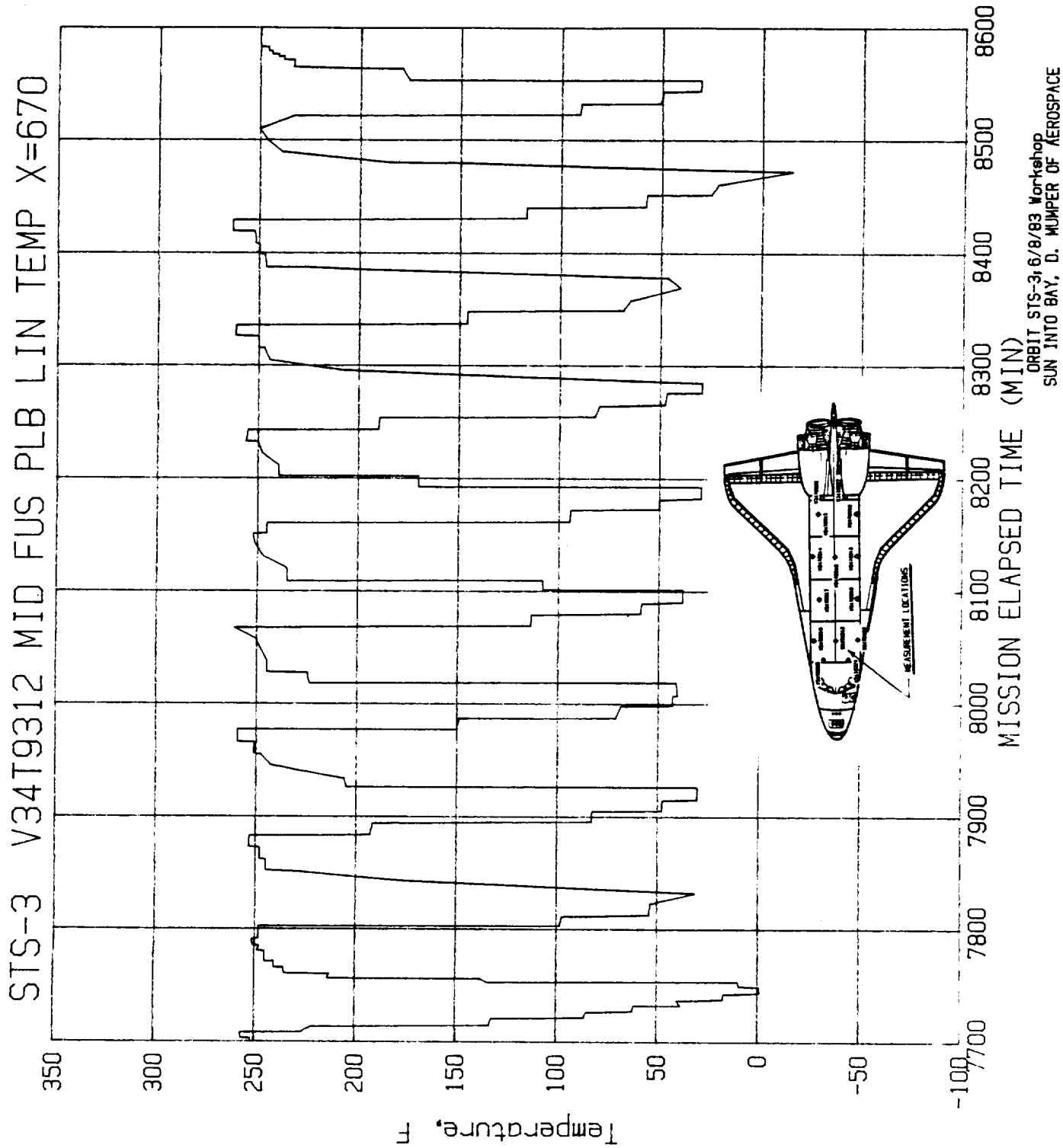

Figure A-243

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A260
File No=f260 STS-1 V34T9311A MID FUS PLB LIN TEMP

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	50.44	18.62	35	55.63	70.32	69	0.00	0.00	103	0.00	0.00
2	50.46	18.62	36	55.65	72.57	70	0.00	0.00	104	0.00	0.00
3	50.75	23.81	37	56.02	72.69	71	0.00	0.00	105	0.00	0.00
4	50.77	26.52	38	56.05	74.94	72	0.00	0.00	106	0.00	0.00
5	50.81	26.52	39	56.09	72.91	73	0.00	0.00	107	0.00	0.00
6	50.83	29.12	40	56.13	75.62	74	0.00	0.00	108	0.00	0.00
7	50.90	28.78	41	56.31	75.51	75	0.00	0.00	109	0.00	0.00
8	50.99	28.78	42	0.00	0.00	76	0.00	0.00	110	0.00	0.00
9	51.09	28.89	43	0.00	0.00	77	0.00	0.00	111	0.00	0.00
10	51.20	28.89	44	0.00	0.00	78	0.00	0.00	112	0.00	0.00
11	51.39	29.01	45	0.00	0.00	79	0.00	0.00	113	0.00	0.00
12	51.43	31.04	46	0.00	0.00	80	0.00	0.00	114	0.00	0.00
13	51.47	29.12	47	0.00	0.00	81	0.00	0.00	115	0.00	0.00
14	52.32	31.26	48	0.00	0.00	82	0.00	0.00	116	0.00	0.00
15	52.40	31.60	49	0.00	0.00	83	0.00	0.00	117	0.00	0.00
16	52.48	31.15	50	0.00	0.00	84	0.00	0.00	118	0.00	0.00
17	52.53	31.26	51	0.00	0.00	85	0.00	0.00	119	0.00	0.00
18	52.64	31.15	52	0.00	0.00	86	0.00	0.00	120	0.00	0.00
19	52.78	31.26	53	0.00	0.00	87	0.00	0.00	121	0.00	0.00
20	52.93	31.60	54	0.00	0.00	88	0.00	0.00	122	0.00	0.00
21	53.01	31.60	55	0.00	0.00	89	0.00	0.00	123	0.00	0.00
22	54.12	31.49	56	0.00	0.00	90	0.00	0.00	124	0.00	0.00
23	54.16	31.49	57	0.00	0.00	91	0.00	0.00	125	0.00	0.00
24	54.18	34.09	58	0.00	0.00	92	0.00	0.00	126	0.00	0.00
25	54.21	33.97	59	0.00	0.00	93	0.00	0.00	127	0.00	0.00
26	54.27	39.50	60	0.00	0.00	94	0.00	0.00	128	0.00	0.00
27	54.33	49.55	61	0.00	0.00	95	0.00	0.00	129	0.00	0.00
28	54.90	65.12	62	0.00	0.00	96	0.00	0.00	130	0.00	0.00
29	54.97	65.46	63	0.00	0.00	97	0.00	0.00	131	0.00	0.00
30	55.00	68.06	64	0.00	0.00	98	0.00	0.00	132	0.00	0.00
31	55.15	68.06	65	0.00	0.00	99	0.00	0.00	133	0.00	0.00
32	55.20	70.20	66	0.00	0.00	100	0.00	0.00	134	0.00	0.00
33	55.32	70.32	67	0.00	0.00	101	0.00	0.00	135	0.00	0.00
34	55.42	70.20	68	0.00	0.00	102	0.00	0.00	136	0.00	0.00

Max Temp= 75.62 F; Min Temp= 18.62 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

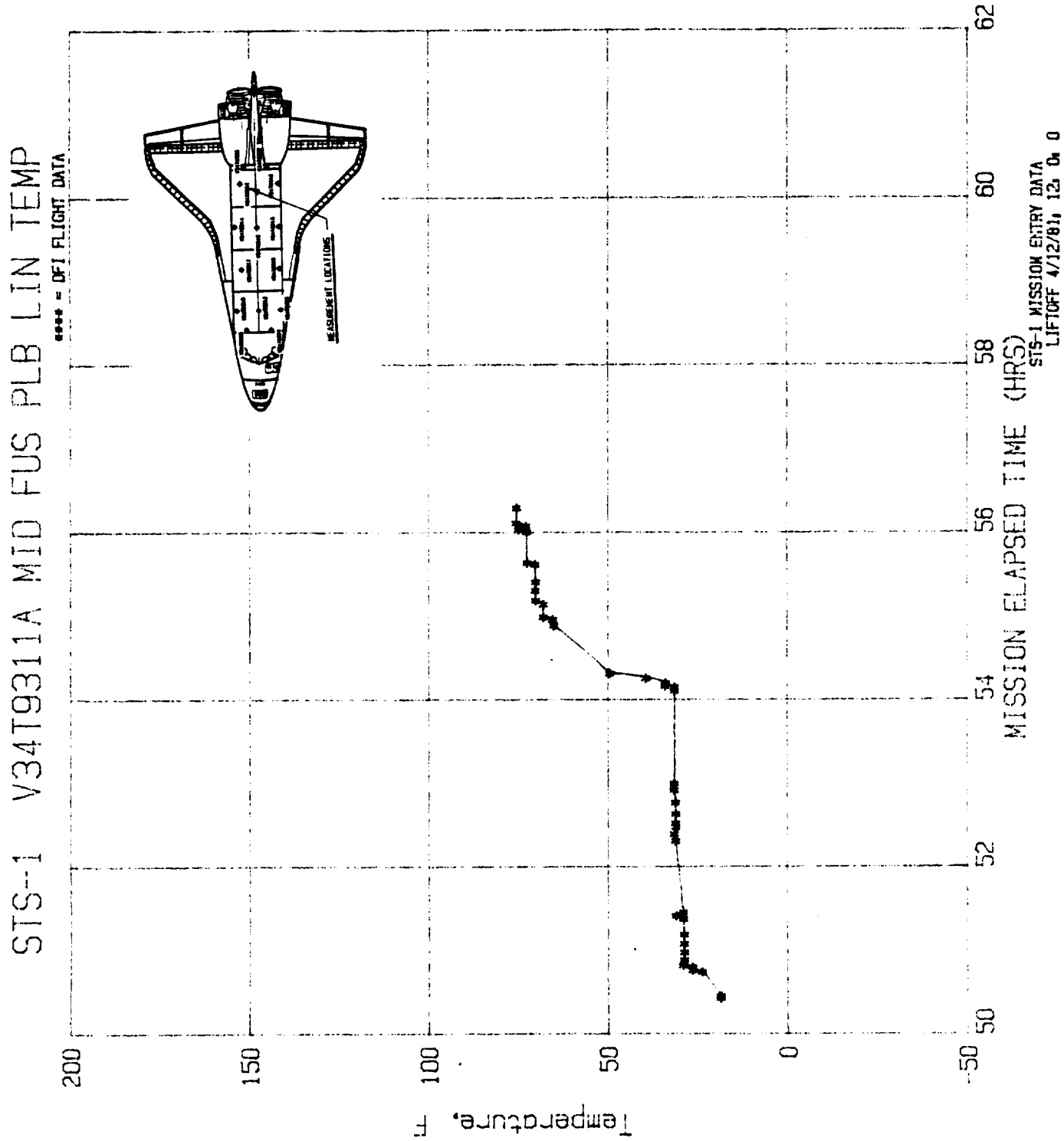
STS-1 V34T9311A MID FUS PLB LIN TEMP
**** = DFI FLIGHT DATA
MEASUREMENT LOCATIONS
STS-1 MISSION ENTRY DATA
LIFTOFF 4/12/81, 12: 0: 0
MISSION ELAPSED TIME (HRS)
Temperature, F
200
150
100
50
0
-50
50
52
54
56
58
60
62

Figure A-260

A261
File No=f261

STS-1 V34T9312A ENTRY MID FUS PLB LIN TEMP

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	48.38	0.55	35	78.40	67.13	69	0.00	0.00	103	0.00	0.00
2	49.50	10.98	36	0.00	0.00	70	0.00	0.00	104	0.00	0.00
3	50.69	15.96	37	0.00	0.00	71	0.00	0.00	105	0.00	0.00
4	50.94	15.91	38	0.00	0.00	72	0.00	0.00	106	0.00	0.00
5	52.17	18.51	39	0.00	0.00	73	0.00	0.00	107	0.00	0.00
6	52.40	20.90	40	0.00	0.00	74	0.00	0.00	108	0.00	0.00
7	53.22	20.84	41	0.00	0.00	75	0.00	0.00	109	0.00	0.00
8	54.11	28.71	42	0.00	0.00	76	0.00	0.00	110	0.00	0.00
9	54.30	49.72	43	0.00	0.00	77	0.00	0.00	111	0.00	0.00
10	54.87	69.62	44	0.00	0.00	78	0.00	0.00	112	0.00	0.00
11	56.07	69.68	45	0.00	0.00	79	0.00	0.00	113	0.00	0.00
12	56.18	72.56	46	0.00	0.00	80	0.00	0.00	114	0.00	0.00
13	57.12	72.34	47	0.00	0.00	81	0.00	0.00	115	0.00	0.00
14	57.29	75.00	48	0.00	0.00	82	0.00	0.00	116	0.00	0.00
15	57.37	75.00	49	0.00	0.00	83	0.00	0.00	117	0.00	0.00
16	59.14	75.11	50	0.00	0.00	84	0.00	0.00	118	0.00	0.00
17	59.25	74.50	51	0.00	0.00	85	0.00	0.00	119	0.00	0.00
18	60.39	72.56	52	0.00	0.00	86	0.00	0.00	120	0.00	0.00
19	62.06	72.56	53	0.00	0.00	87	0.00	0.00	121	0.00	0.00
20	62.19	69.68	54	0.00	0.00	88	0.00	0.00	122	0.00	0.00
21	64.11	69.90	55	0.00	0.00	89	0.00	0.00	123	0.00	0.00
22	64.17	67.46	56	0.00	0.00	90	0.00	0.00	124	0.00	0.00
23	65.92	67.46	57	0.00	0.00	91	0.00	0.00	125	0.00	0.00
24	66.01	64.69	58	0.00	0.00	92	0.00	0.00	126	0.00	0.00
25	68.55	64.63	59	0.00	0.00	93	0.00	0.00	127	0.00	0.00
26	68.82	62.25	60	0.00	0.00	94	0.00	0.00	128	0.00	0.00
27	75.96	62.31	61	0.00	0.00	95	0.00	0.00	129	0.00	0.00
28	76.06	64.58	62	0.00	0.00	96	0.00	0.00	130	0.00	0.00
29	76.23	64.63	63	0.00	0.00	97	0.00	0.00	131	0.00	0.00
30	76.40	62.58	64	0.00	0.00	98	0.00	0.00	132	0.00	0.00
31	76.48	64.58	65	0.00	0.00	99	0.00	0.00	133	0.00	0.00
32	77.75	64.63	66	0.00	0.00	100	0.00	0.00	134	0.00	0.00
33	77.88	67.24	67	0.00	0.00	101	0.00	0.00	135	0.00	0.00
34	78.38	68.51	68	0.00	0.00	102	0.00	0.00	136	0.00	0.00

Max Temp= 75.11 F; Min Temp= 0.55 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

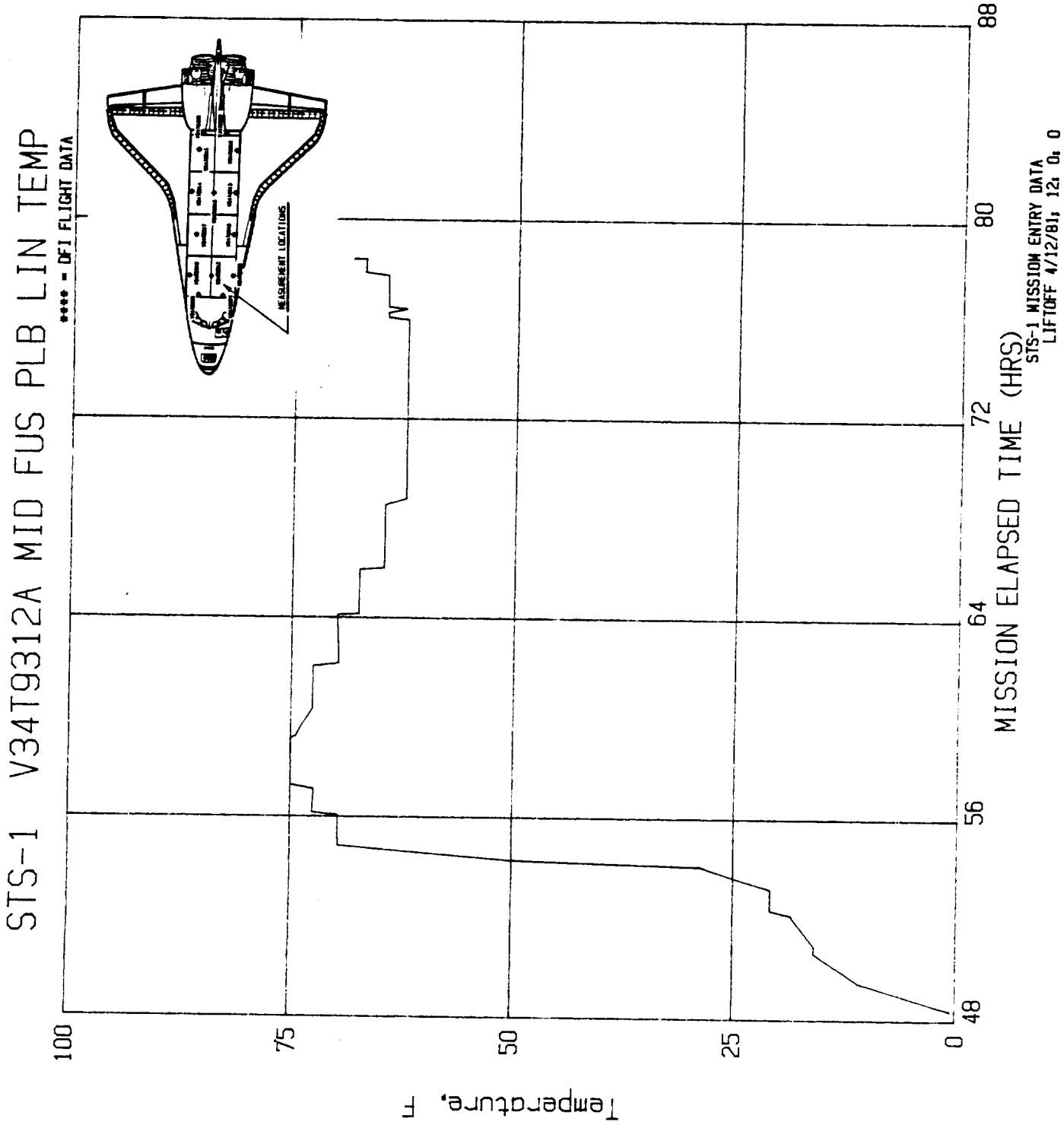
STS-1 V34T9312A MID FUS PLB LIN TEMP
**** - DFI FLIGHT DATA
MEASUREMENT LOCATIONS
Temperature, F
100
75
50
25
0
48
56
64
72
80
88
MISSION ELAPSED TIME (HRS)
STS-1 MISSION ENTRY DATA
LIFTOFF 4/12/81, 12: 0: 0

Figure A-261

A262
File No=f262

STS-1 V34T9313A ENTRY MID FUS PLB LIN TEMP

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	48.31	83.57	35	54.21	57.59	69	68.47	62.73	103	0.00	0.00
2	48.35	81.03	36	54.94	83.46	70	68.53	60.14	104	0.00	0.00
3	48.54	60.36	37	55.37	83.51	71	72.28	60.25	105	0.00	0.00
4	48.60	55.51	38	55.77	83.51	72	72.36	57.54	106	0.00	0.00
5	48.79	29.31	39	55.81	86.11	73	72.88	57.54	107	0.00	0.00
6	48.83	31.90	40	56.12	86.22	74	75.34	57.48	108	0.00	0.00
7	49.12	16.60	41	56.12	88.54	75	75.36	59.97	109	0.00	0.00
8	49.12	13.83	42	56.53	88.82	76	76.28	60.02	110	0.00	0.00
9	49.35	13.83	43	56.53	89.72	77	76.28	62.62	111	0.00	0.00
10	49.37	16.60	44	56.55	91.53	78	76.88	62.62	112	0.00	0.00
11	49.43	18.80	45	56.99	91.42	79	76.88	64.88	113	0.00	0.00
12	49.47	16.66	46	57.42	91.47	80	77.35	65.10	114	0.00	0.00
13	50.36	37.21	47	57.67	91.36	81	77.37	67.65	115	0.00	0.00
14	50.36	34.56	48	57.67	88.65	82	77.68	67.76	116	0.00	0.00
15	50.63	24.05	49	58.40	88.59	83	77.70	70.13	117	0.00	0.00
16	50.65	26.76	50	58.44	91.47	84	78.18	70.24	118	0.00	0.00
17	50.75	21.80	51	59.33	91.30	85	78.22	72.84	119	0.00	0.00
18	50.78	24.17	52	60.32	83.68	86	0.00	0.00	120	0.00	0.00
19	51.00	21.85	53	60.53	83.63	87	0.00	0.00	121	0.00	0.00
20	51.25	19.03	54	60.55	81.20	88	0.00	0.00	122	0.00	0.00
21	52.14	13.89	55	60.86	81.03	89	0.00	0.00	123	0.00	0.00
22	52.18	16.54	56	60.86	78.20	90	0.00	0.00	124	0.00	0.00
23	53.05	13.83	57	61.07	78.15	91	0.00	0.00	125	0.00	0.00
24	53.43	16.54	58	61.17	75.83	92	0.00	0.00	126	0.00	0.00
25	53.88	18.80	59	61.86	75.72	93	0.00	0.00	127	0.00	0.00
26	53.94	16.71	60	61.90	73.07	94	0.00	0.00	128	0.00	0.00
27	53.95	21.68	61	62.27	72.95	95	0.00	0.00	129	0.00	0.00
28	53.97	19.03	62	62.31	70.64	96	0.00	0.00	130	0.00	0.00
29	54.01	29.14	63	63.33	70.41	97	0.00	0.00	131	0.00	0.00
30	54.03	25.13	64	63.41	67.93	98	0.00	0.00	132	0.00	0.00
31	54.05	21.91	65	64.30	67.87	99	0.00	0.00	133	0.00	0.00
32	54.07	29.19	66	64.32	65.33	100	0.00	0.00	134	0.00	0.00
33	54.09	42.24	67	66.13	65.50	101	0.00	0.00	135	0.00	0.00
34	54.17	42.24	68	66.29	62.79	102	0.00	0.00	136	0.00	0.00

Max Temp= 91.53 F; Min Temp= 13.83 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

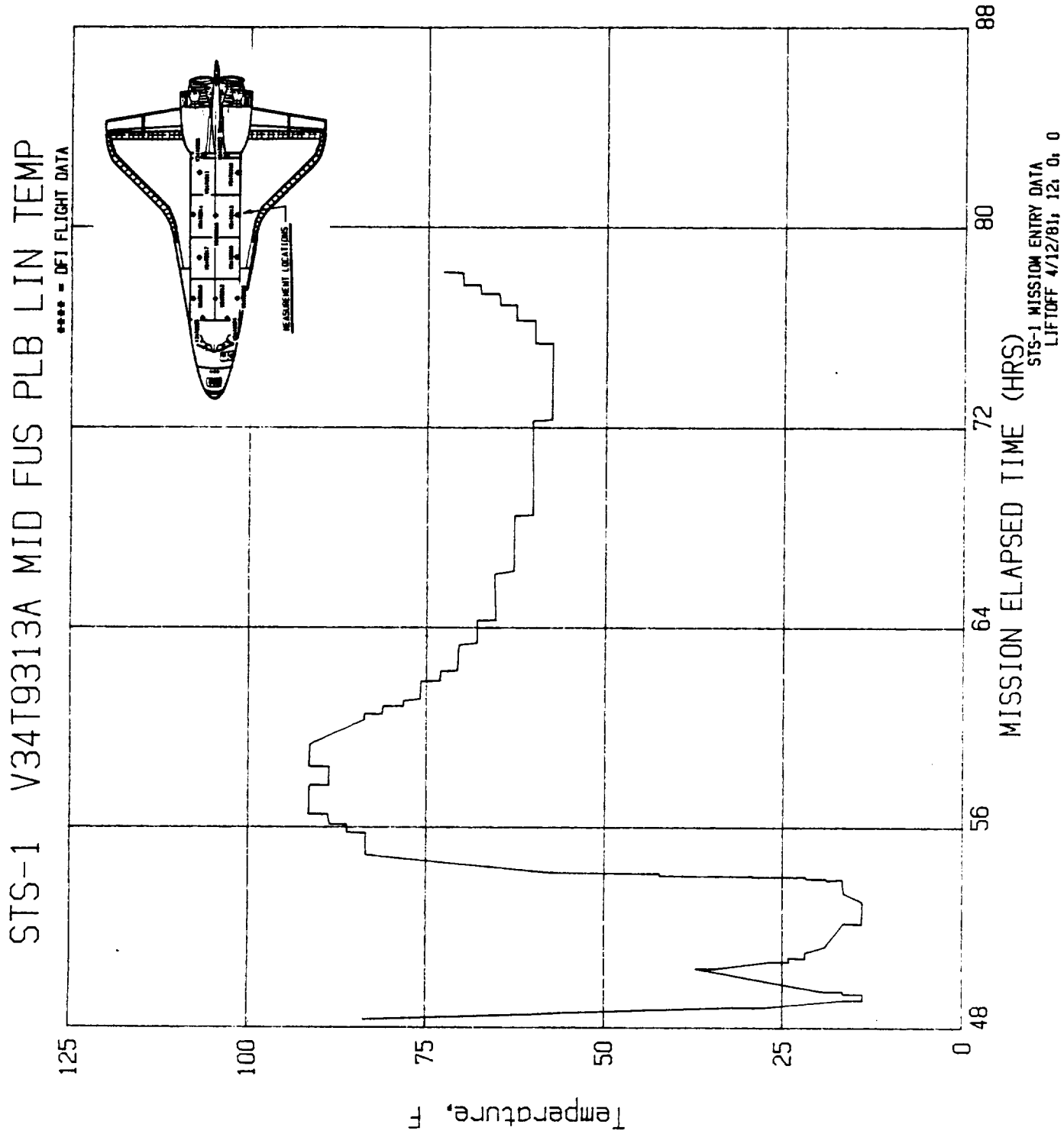
STS-1 V34T9313A MID FUS PLB LIN TEMP
**** = OFI FLIGHT DATA
MEASUREMENT LOCATIONS
Temperature, F
125
100
75
50
25
0
48
56
64
72
80
88
MISSION ELAPSED TIME (HRS)
STS-1 MISSION ENTRY DATA
LIFTOFF 4/12/81; 12: 0: 0

Figure A-262

A263
File No=f263 STS-2 V34T9312 ENTRY MID FUS PLB LIN TEMP

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	49.90	-22.10	35	53.87	50.15	69	62.34	62.32	103	0.00	0.00
2	49.92	-19.30	36	53.87	56.67	70	62.40	64.87	104	0.00	0.00
3	49.94	-16.75	37	53.89	59.73	71	62.43	62.42	105	0.00	0.00
4	49.98	-14.61	38	53.96	56.52	72	62.46	64.77	106	0.00	0.00
5	49.99	-14.56	39	53.98	54.48	73	62.50	62.32	107	0.00	0.00
6	50.03	-11.86	40	54.08	54.63	74	62.69	62.27	108	0.00	0.00
7	50.06	-11.86	41	54.10	56.92	75	64.17	62.27	109	0.00	0.00
8	50.11	-6.82	42	54.22	57.03	76	0.00	0.00	110	0.00	0.00
9	50.19	-6.77	43	54.27	59.73	77	0.00	0.00	111	0.00	0.00
10	50.21	-4.63	44	54.38	59.73	78	0.00	0.00	112	0.00	0.00
11	50.41	-1.78	45	54.46	64.87	79	0.00	0.00	113	0.00	0.00
12	50.57	3.31	46	55.09	64.77	80	0.00	0.00	114	0.00	0.00
13	50.84	5.80	47	55.11	67.57	81	0.00	0.00	115	0.00	0.00
14	50.92	5.91	48	57.64	67.46	82	0.00	0.00	116	0.00	0.00
15	51.01	8.40	49	57.67	64.87	83	0.00	0.00	117	0.00	0.00
16	51.27	10.95	50	57.75	64.82	84	0.00	0.00	118	0.00	0.00
17	51.51	13.44	51	57.77	67.46	85	0.00	0.00	119	0.00	0.00
18	51.67	13.39	52	57.89	67.57	86	0.00	0.00	120	0.00	0.00
19	52.12	16.09	53	57.93	64.87	87	0.00	0.00	121	0.00	0.00
20	52.34	18.58	54	58.10	64.92	88	0.00	0.00	122	0.00	0.00
21	52.49	18.58	55	58.11	67.52	89	0.00	0.00	123	0.00	0.00
22	52.77	18.58	56	58.17	64.82	90	0.00	0.00	124	0.00	0.00
23	52.90	18.58	57	58.25	64.82	91	0.00	0.00	125	0.00	0.00
24	52.93	21.08	58	58.32	65.07	92	0.00	0.00	126	0.00	0.00
25	53.32	21.08	59	58.36	64.97	93	0.00	0.00	127	0.00	0.00
26	53.45	21.18	60	58.44	64.92	94	0.00	0.00	128	0.00	0.00
27	53.48	23.83	61	59.29	64.97	95	0.00	0.00	129	0.00	0.00
28	53.56	23.88	62	59.50	64.87	96	0.00	0.00	130	0.00	0.00
29	53.59	26.12	63	62.08	64.97	97	0.00	0.00	131	0.00	0.00
30	53.70	26.22	64	62.12	62.32	98	0.00	0.00	132	0.00	0.00
31	53.73	28.87	65	62.15	62.32	99	0.00	0.00	133	0.00	0.00
32	53.78	28.92	66	62.17	64.82	100	0.00	0.00	134	0.00	0.00
33	53.83	35.54	67	62.23	64.92	101	0.00	0.00	135	0.00	0.00
34	53.83	42.87	68	62.27	62.37	102	0.00	0.00	136	0.00	0.00

Max Temp= 67.57 F; Min Temp= -22.10 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

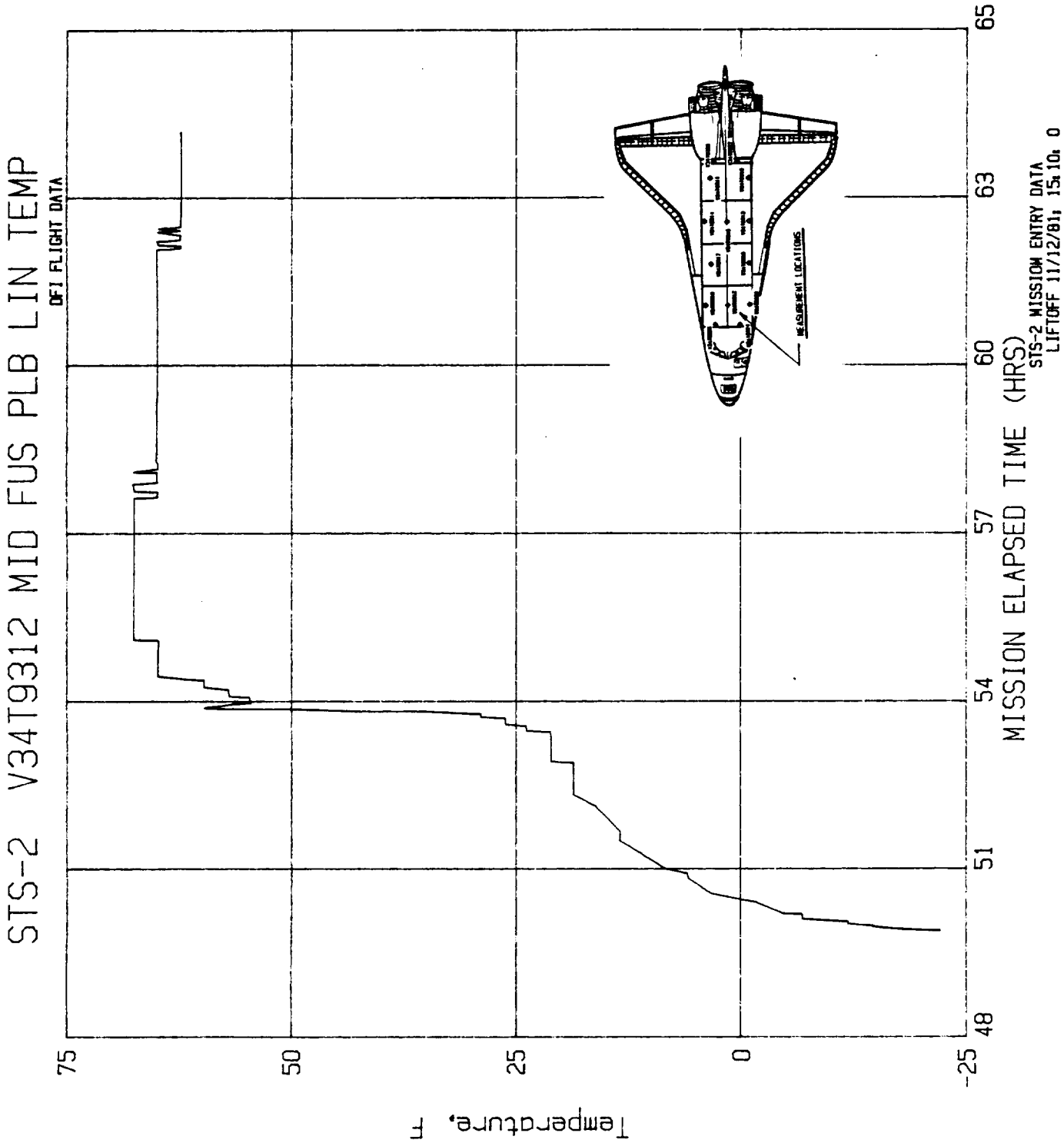
STS-2 V34T9312 MID FUS PLB LIN TEMP
OFI FLIGHT DATA
MEASUREMENT LOCATIONS
STS-2 MISSION ENTRY DATA
LIFTOFF 11/12/81; 15:10: 0
MISSION ELAPSED TIME (HRS)
48
51
54
57
60
63
65
Temperature, F
75
50
25
0
-25

Figure A-263

A264
File No=f264

STS-2 V34T9312 MID FUS PLB LIN TEMP

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	53.65	21.93	35	55.50	66.60	69	0.00	0.00	103	0.00	0.00
2	53.78	21.88	36	55.64	66.60	70	0.00	0.00	104	0.00	0.00
3	53.78	24.62	37	0.00	0.00	71	0.00	0.00	105	0.00	0.00
4	53.86	24.66	38	0.00	0.00	72	0.00	0.00	106	0.00	0.00
5	53.86	27.11	39	0.00	0.00	73	0.00	0.00	107	0.00	0.00
6	54.00	27.11	40	0.00	0.00	74	0.00	0.00	108	0.00	0.00
7	54.01	29.61	41	0.00	0.00	75	0.00	0.00	109	0.00	0.00
8	54.12	29.65	42	0.00	0.00	76	0.00	0.00	110	0.00	0.00
9	54.12	31.96	43	0.00	0.00	77	0.00	0.00	111	0.00	0.00
10	54.13	32.01	44	0.00	0.00	78	0.00	0.00	112	0.00	0.00
11	54.14	34.60	45	0.00	0.00	79	0.00	0.00	113	0.00	0.00
12	54.14	36.76	46	0.00	0.00	80	0.00	0.00	114	0.00	0.00
13	54.15	34.64	47	0.00	0.00	81	0.00	0.00	115	0.00	0.00
14	54.15	39.40	48	0.00	0.00	82	0.00	0.00	116	0.00	0.00
15	54.16	36.80	49	0.00	0.00	83	0.00	0.00	117	0.00	0.00
16	54.16	39.44	50	0.00	0.00	84	0.00	0.00	118	0.00	0.00
17	54.17	44.96	51	0.00	0.00	85	0.00	0.00	119	0.00	0.00
18	54.18	44.96	52	0.00	0.00	86	0.00	0.00	120	0.00	0.00
19	54.20	55.13	53	0.00	0.00	87	0.00	0.00	121	0.00	0.00
20	54.21	55.18	54	0.00	0.00	88	0.00	0.00	122	0.00	0.00
21	54.21	57.49	55	0.00	0.00	89	0.00	0.00	123	0.00	0.00
22	54.22	57.49	56	0.00	0.00	90	0.00	0.00	124	0.00	0.00
23	54.23	60.17	57	0.00	0.00	91	0.00	0.00	125	0.00	0.00
24	54.26	60.08	58	0.00	0.00	92	0.00	0.00	126	0.00	0.00
25	54.26	57.87	59	0.00	0.00	93	0.00	0.00	127	0.00	0.00
26	54.28	57.87	60	0.00	0.00	94	0.00	0.00	128	0.00	0.00
27	54.29	55.09	61	0.00	0.00	95	0.00	0.00	129	0.00	0.00
28	54.45	55.04	62	0.00	0.00	96	0.00	0.00	130	0.00	0.00
29	54.45	57.68	63	0.00	0.00	97	0.00	0.00	131	0.00	0.00
30	54.70	57.68	64	0.00	0.00	98	0.00	0.00	132	0.00	0.00
31	54.70	60.12	65	0.00	0.00	99	0.00	0.00	133	0.00	0.00
32	54.79	60.22	66	0.00	0.00	100	0.00	0.00	134	0.00	0.00
33	54.80	65.64	67	0.00	0.00	101	0.00	0.00	135	0.00	0.00
34	55.50	65.50	68	0.00	0.00	102	0.00	0.00	136	0.00	0.00

Max Temp= 66.60 F; Min Temp= 21.88 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

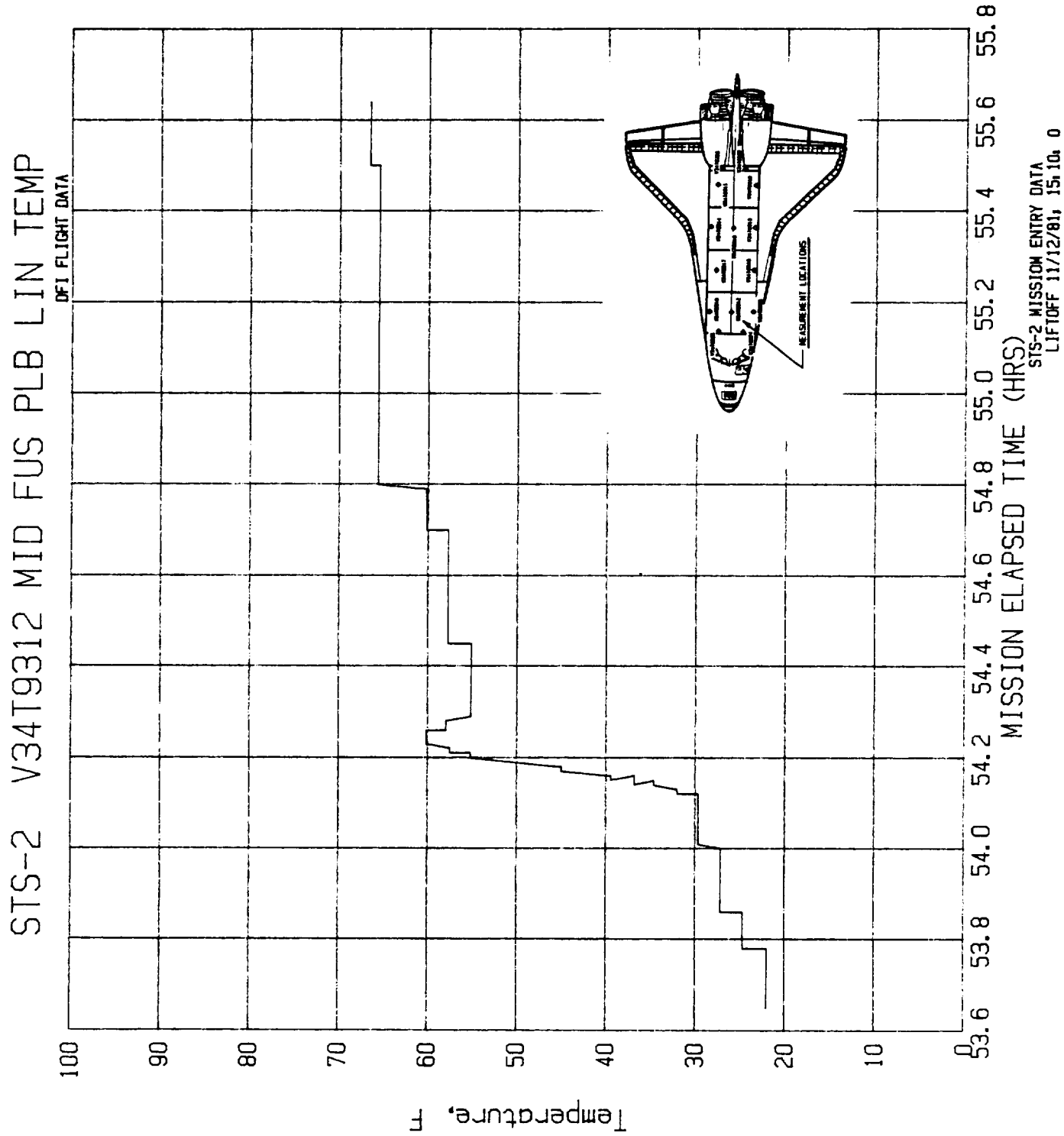
STS-2 V34T9312 MID FUS PLB LIN TEMP
DFI FLIGHT DATA
Temperature, F
100
90
80
70
60
50
40
30
20
10
0
53.6
53.8
54.0
54.2
54.4
54.6
54.8
55.0
55.2
55.4
55.6
55.8
MISSION ELAPSED TIME (HRS)
MEASUREMENT LOCATIONS
STS-2 MISSION ENTRY DATA
LIFTOFF 11/12/81, 15:10:0

Figure A-264

A265
File No=f265

STS-2 V34T9310 MID FUS PLB LIN TEMP

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	53.65	29.88	35	0.00	0.00	69	0.00	0.00	103	0.00	0.00
2	54.04	29.64	36	0.00	0.00	70	0.00	0.00	104	0.00	0.00
3	54.04	32.33	37	0.00	0.00	71	0.00	0.00	105	0.00	0.00
4	54.11	32.52	38	0.00	0.00	72	0.00	0.00	106	0.00	0.00
5	54.12	34.58	39	0.00	0.00	73	0.00	0.00	107	0.00	0.00
6	54.12	37.03	40	0.00	0.00	74	0.00	0.00	108	0.00	0.00
7	54.13	37.07	41	0.00	0.00	75	0.00	0.00	109	0.00	0.00
8	54.13	40.24	42	0.00	0.00	76	0.00	0.00	110	0.00	0.00
9	54.14	40.24	43	0.00	0.00	77	0.00	0.00	111	0.00	0.00
10	54.14	42.06	44	0.00	0.00	78	0.00	0.00	112	0.00	0.00
11	54.15	42.11	45	0.00	0.00	79	0.00	0.00	113	0.00	0.00
12	54.16	49.98	46	0.00	0.00	80	0.00	0.00	114	0.00	0.00
13	54.18	50.12	47	0.00	0.00	81	0.00	0.00	115	0.00	0.00
14	54.18	57.31	48	0.00	0.00	82	0.00	0.00	116	0.00	0.00
15	54.20	57.51	49	0.00	0.00	83	0.00	0.00	117	0.00	0.00
16	54.21	62.45	50	0.00	0.00	84	0.00	0.00	118	0.00	0.00
17	54.22	62.49	51	0.00	0.00	85	0.00	0.00	119	0.00	0.00
18	54.23	65.04	52	0.00	0.00	86	0.00	0.00	120	0.00	0.00
19	54.23	65.66	53	0.00	0.00	87	0.00	0.00	121	0.00	0.00
20	54.25	65.66	54	0.00	0.00	88	0.00	0.00	122	0.00	0.00
21	54.25	62.83	55	0.00	0.00	89	0.00	0.00	123	0.00	0.00
22	54.28	62.78	56	0.00	0.00	90	0.00	0.00	124	0.00	0.00
23	54.28	60.34	57	0.00	0.00	91	0.00	0.00	125	0.00	0.00
24	54.50	60.24	58	0.00	0.00	92	0.00	0.00	126	0.00	0.00
25	54.50	62.78	59	0.00	0.00	93	0.00	0.00	127	0.00	0.00
26	55.64	62.54	60	0.00	0.00	94	0.00	0.00	128	0.00	0.00
27	0.00	0.00	61	0.00	0.00	95	0.00	0.00	129	0.00	0.00
28	0.00	0.00	62	0.00	0.00	96	0.00	0.00	130	0.00	0.00
29	0.00	0.00	63	0.00	0.00	97	0.00	0.00	131	0.00	0.00
30	0.00	0.00	64	0.00	0.00	98	0.00	0.00	132	0.00	0.00
31	0.00	0.00	65	0.00	0.00	99	0.00	0.00	133	0.00	0.00
32	0.00	0.00	66	0.00	0.00	100	0.00	0.00	134	0.00	0.00
33	0.00	0.00	67	0.00	0.00	101	0.00	0.00	135	0.00	0.00
34	0.00	0.00	68	0.00	0.00	102	0.00	0.00	136	0.00	0.00

Max Temp= 65.66 F; Min Temp= 29.64 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

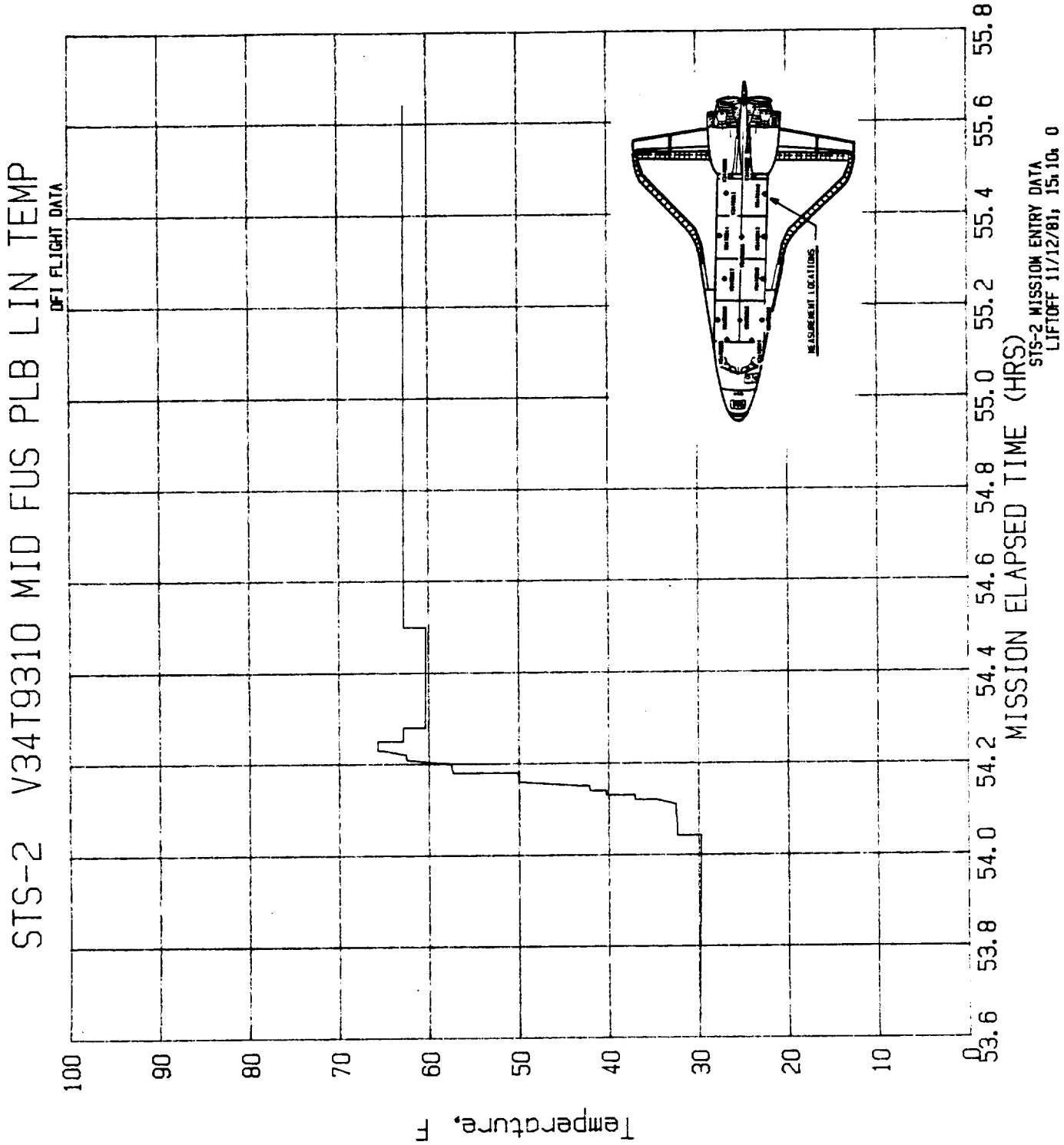
STS-2 V34T9310 MID FUS PLB LIN TEMP
DFI FLIGHT DATA
Temperature, F
100
90
80
70
60
50
40
30
20
10
0
53.6
53.8
54.0
54.2
54.4
54.6
54.8
55.0
55.2
55.4
55.6
55.8
MISSION ELAPSED TIME (HRS)
MEASUREMENT LOCATIONS
STS-2 MISSION ENTRY DATA
LIFTOFF 11/12/81; 15:10: 0

Figure A-265

A266
File No=f266

STS-3 V34T9312 MID FUS STS-3 DFI EXPANDED ENTRY

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	191.32	16.00	35	196.48	70.01	69	0.00	0.00	103	0.00	0.00
2	191.55	16.06	36	196.51	72.80	70	0.00	0.00	104	0.00	0.00
3	191.58	18.79	37	196.53	72.80	71	0.00	0.00	105	0.00	0.00
4	191.71	18.85	38	196.57	70.13	72	0.00	0.00	106	0.00	0.00
5	191.72	21.10	39	196.78	70.01	73	0.00	0.00	107	0.00	0.00
6	191.76	21.17	40	196.82	72.80	74	0.00	0.00	108	0.00	0.00
7	191.81	23.84	41	197.07	72.74	75	0.00	0.00	109	0.00	0.00
8	191.87	23.84	42	197.11	70.19	76	0.00	0.00	110	0.00	0.00
9	191.91	26.27	43	197.16	70.19	77	0.00	0.00	111	0.00	0.00
10	191.95	26.34	44	197.20	72.80	78	0.00	0.00	112	0.00	0.00
11	192.00	30.90	45	197.23	70.43	79	0.00	0.00	113	0.00	0.00
12	192.03	40.02	46	197.26	72.74	80	0.00	0.00	114	0.00	0.00
13	192.05	49.33	47	198.15	72.80	81	0.00	0.00	115	0.00	0.00
14	192.06	54.62	48	0.00	0.00	82	0.00	0.00	116	0.00	0.00
15	192.11	56.99	49	0.00	0.00	83	0.00	0.00	117	0.00	0.00
16	192.21	57.11	50	0.00	0.00	84	0.00	0.00	118	0.00	0.00
17	192.24	59.73	51	0.00	0.00	85	0.00	0.00	119	0.00	0.00
18	192.30	59.85	52	0.00	0.00	86	0.00	0.00	120	0.00	0.00
19	192.33	62.34	53	0.00	0.00	87	0.00	0.00	121	0.00	0.00
20	192.50	62.34	54	0.00	0.00	88	0.00	0.00	122	0.00	0.00
21	192.53	64.77	55	0.00	0.00	89	0.00	0.00	123	0.00	0.00
22	192.69	64.71	56	0.00	0.00	90	0.00	0.00	124	0.00	0.00
23	192.73	69.88	57	0.00	0.00	91	0.00	0.00	125	0.00	0.00
24	193.09	69.94	58	0.00	0.00	92	0.00	0.00	126	0.00	0.00
25	193.14	67.75	59	0.00	0.00	93	0.00	0.00	127	0.00	0.00
26	193.17	70.01	60	0.00	0.00	94	0.00	0.00	128	0.00	0.00
27	194.71	70.07	61	0.00	0.00	95	0.00	0.00	129	0.00	0.00
28	195.54	70.07	62	0.00	0.00	96	0.00	0.00	130	0.00	0.00
29	195.57	72.68	63	0.00	0.00	97	0.00	0.00	131	0.00	0.00
30	195.59	70.13	64	0.00	0.00	98	0.00	0.00	132	0.00	0.00
31	195.81	70.01	65	0.00	0.00	99	0.00	0.00	133	0.00	0.00
32	195.84	72.80	66	0.00	0.00	100	0.00	0.00	134	0.00	0.00
33	195.87	72.86	67	0.00	0.00	101	0.00	0.00	135	0.00	0.00
34	195.91	70.07	68	0.00	0.00	102	0.00	0.00	136	0.00	0.00

Max Temp= 72.86 F; Min Temp= 16.00 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

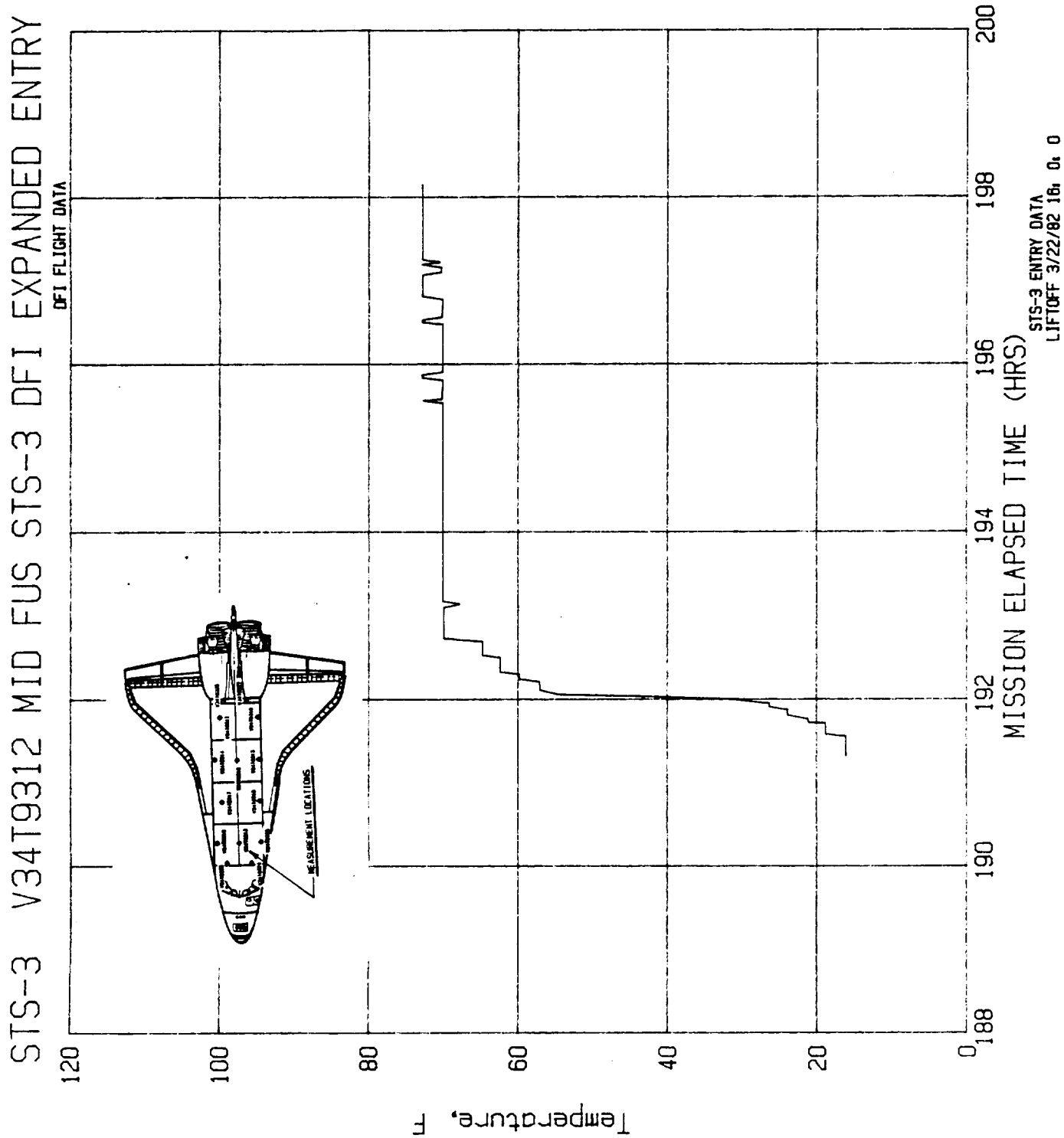
STS-3 V34T9312 MID FUS STS-3 DFI EXPANDED ENTRY
DFI FLIGHT DATA
MEASUREMENT LOCATIONS
Temperature, F
120
100
80
60
40
20
0
188
190
192
194
196
198
200
MISSION ELAPSED TIME (HRS)
STS-3 ENTRY DATA
LIFTOFF 3/22/82 16: 0: 0

Figure A-266

A267
File No=f267 STS-3 V34T9318 MID FUS LIN TEMP

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	191.58	11.25	35	192.58	65.05	69	0.00	0.00	103	0.00	0.00
2	191.65	13.83	36	192.98	65.09	70	0.00	0.00	104	0.00	0.00
3	191.95	13.71	37	0.00	0.00	71	0.00	0.00	105	0.00	0.00
4	191.95	16.18	38	0.00	0.00	72	0.00	0.00	106	0.00	0.00
5	191.98	16.30	39	0.00	0.00	73	0.00	0.00	107	0.00	0.00
6	191.98	18.77	40	0.00	0.00	74	0.00	0.00	108	0.00	0.00
7	191.99	18.85	41	0.00	0.00	75	0.00	0.00	109	0.00	0.00
8	191.99	21.43	42	0.00	0.00	76	0.00	0.00	110	0.00	0.00
9	192.00	24.06	43	0.00	0.00	77	0.00	0.00	111	0.00	0.00
10	192.01	21.47	44	0.00	0.00	78	0.00	0.00	112	0.00	0.00
11	192.01	24.10	45	0.00	0.00	79	0.00	0.00	113	0.00	0.00
12	192.01	26.53	46	0.00	0.00	80	0.00	0.00	114	0.00	0.00
13	192.02	26.53	47	0.00	0.00	81	0.00	0.00	115	0.00	0.00
14	192.02	31.62	48	0.00	0.00	82	0.00	0.00	116	0.00	0.00
15	192.04	31.86	49	0.00	0.00	83	0.00	0.00	117	0.00	0.00
16	192.04	34.29	50	0.00	0.00	84	0.00	0.00	118	0.00	0.00
17	192.05	34.33	51	0.00	0.00	85	0.00	0.00	119	0.00	0.00
18	192.05	36.91	52	0.00	0.00	86	0.00	0.00	120	0.00	0.00
19	192.05	36.99	53	0.00	0.00	87	0.00	0.00	121	0.00	0.00
20	192.06	44.55	54	0.00	0.00	88	0.00	0.00	122	0.00	0.00
21	192.06	46.98	55	0.00	0.00	89	0.00	0.00	123	0.00	0.00
22	192.07	49.49	56	0.00	0.00	90	0.00	0.00	124	0.00	0.00
23	192.07	52.43	57	0.00	0.00	91	0.00	0.00	125	0.00	0.00
24	192.07	54.82	58	0.00	0.00	92	0.00	0.00	126	0.00	0.00
25	192.08	57.60	59	0.00	0.00	93	0.00	0.00	127	0.00	0.00
26	192.09	57.68	60	0.00	0.00	94	0.00	0.00	128	0.00	0.00
27	192.10	60.11	61	0.00	0.00	95	0.00	0.00	129	0.00	0.00
28	192.11	60.15	62	0.00	0.00	96	0.00	0.00	130	0.00	0.00
29	192.12	57.41	63	0.00	0.00	97	0.00	0.00	131	0.00	0.00
30	192.29	57.41	64	0.00	0.00	98	0.00	0.00	132	0.00	0.00
31	192.29	59.99	65	0.00	0.00	99	0.00	0.00	133	0.00	0.00
32	192.41	59.87	66	0.00	0.00	100	0.00	0.00	134	0.00	0.00
33	192.41	62.50	67	0.00	0.00	101	0.00	0.00	135	0.00	0.00
34	192.58	62.46	68	0.00	0.00	102	0.00	0.00	136	0.00	0.00

Max Temp= 65.09 F; Min Temp= 11.25 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

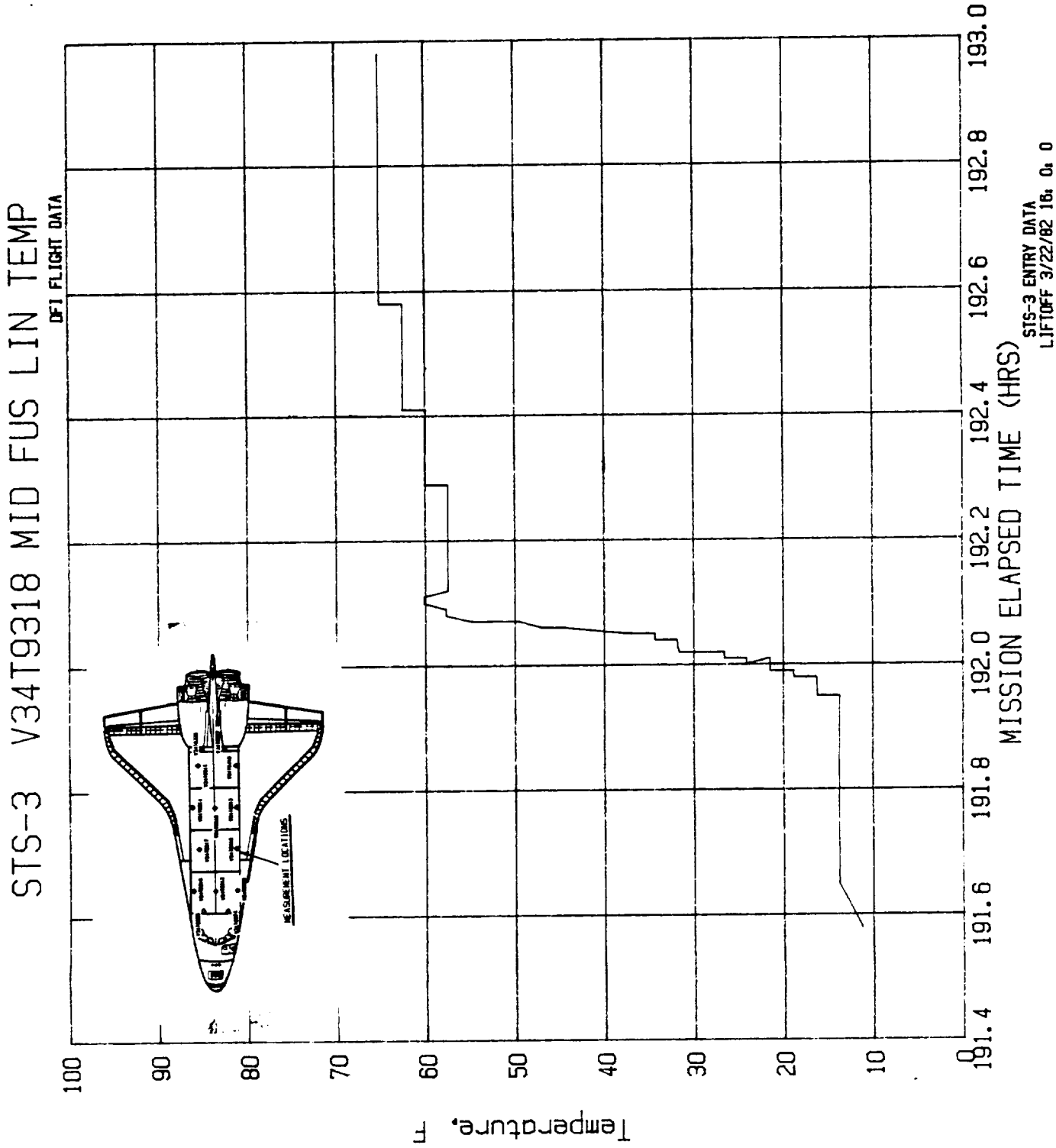
STS-3 V34T9318 MID FUS LIN TEMP
DFI FLIGHT DATA
MEASUREMENT LOCATIONS
Temperature, F
100
90
80
70
60
50
40
30
20
10
0
191.4
191.6
191.8
192.0
192.2
192.4
192.6
192.8
193.0
MISSION ELAPSED TIME (HRS)
STS-3 ENTRY DATA
LIFTOFF 3/22/82 16: 0: 0

Figure A-267

A268
File No=f268

STS-3 V34T9312A MID FUS LIN TEMP

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	191.57	16.61	35	192.26	59.90	69	0.00	0.00	103	0.00	0.00
2	191.61	16.65	36	192.35	62.18	70	0.00	0.00	104	0.00	0.00
3	191.61	18.74	37	192.36	59.66	71	0.00	0.00	105	0.00	0.00
4	191.74	18.77	38	192.54	62.14	72	0.00	0.00	106	0.00	0.00
5	191.74	21.29	39	192.54	64.89	73	0.00	0.00	107	0.00	0.00
6	191.80	21.25	40	192.73	64.81	74	0.00	0.00	108	0.00	0.00
7	191.80	23.80	41	192.73	67.28	75	0.00	0.00	109	0.00	0.00
8	191.89	23.84	42	192.75	67.28	76	0.00	0.00	110	0.00	0.00
9	191.89	26.24	43	192.75	69.87	77	0.00	0.00	111	0.00	0.00
10	191.97	28.83	44	192.99	69.87	78	0.00	0.00	112	0.00	0.00
11	191.98	26.28	45	0.00	0.00	79	0.00	0.00	113	0.00	0.00
12	192.01	28.75	46	0.00	0.00	80	0.00	0.00	114	0.00	0.00
13	192.01	31.26	47	0.00	0.00	81	0.00	0.00	115	0.00	0.00
14	192.02	31.30	48	0.00	0.00	82	0.00	0.00	116	0.00	0.00
15	192.02	34.13	49	0.00	0.00	83	0.00	0.00	117	0.00	0.00
16	192.03	34.13	50	0.00	0.00	84	0.00	0.00	118	0.00	0.00
17	192.03	36.45	51	0.00	0.00	85	0.00	0.00	119	0.00	0.00
18	192.04	36.45	52	0.00	0.00	86	0.00	0.00	120	0.00	0.00
19	192.04	38.88	53	0.00	0.00	87	0.00	0.00	121	0.00	0.00
20	192.05	38.92	54	0.00	0.00	88	0.00	0.00	122	0.00	0.00
21	192.05	41.56	55	0.00	0.00	89	0.00	0.00	123	0.00	0.00
22	192.06	41.83	56	0.00	0.00	90	0.00	0.00	124	0.00	0.00
23	192.06	43.99	57	0.00	0.00	91	0.00	0.00	125	0.00	0.00
24	192.06	46.66	58	0.00	0.00	92	0.00	0.00	126	0.00	0.00
25	192.07	44.34	59	0.00	0.00	93	0.00	0.00	127	0.00	0.00
26	192.07	46.78	60	0.00	0.00	94	0.00	0.00	128	0.00	0.00
27	192.07	49.65	61	0.00	0.00	95	0.00	0.00	129	0.00	0.00
28	192.08	49.88	62	0.00	0.00	96	0.00	0.00	130	0.00	0.00
29	192.08	51.77	63	0.00	0.00	97	0.00	0.00	131	0.00	0.00
30	192.08	52.12	64	0.00	0.00	98	0.00	0.00	132	0.00	0.00
31	192.09	54.63	65	0.00	0.00	99	0.00	0.00	133	0.00	0.00
32	192.11	54.63	66	0.00	0.00	100	0.00	0.00	134	0.00	0.00
33	192.12	57.07	67	0.00	0.00	101	0.00	0.00	135	0.00	0.00
34	192.26	56.95	68	0.00	0.00	102	0.00	0.00	136	0.00	0.00

Max Temp= 69.87 F; Min Temp= 16.61 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

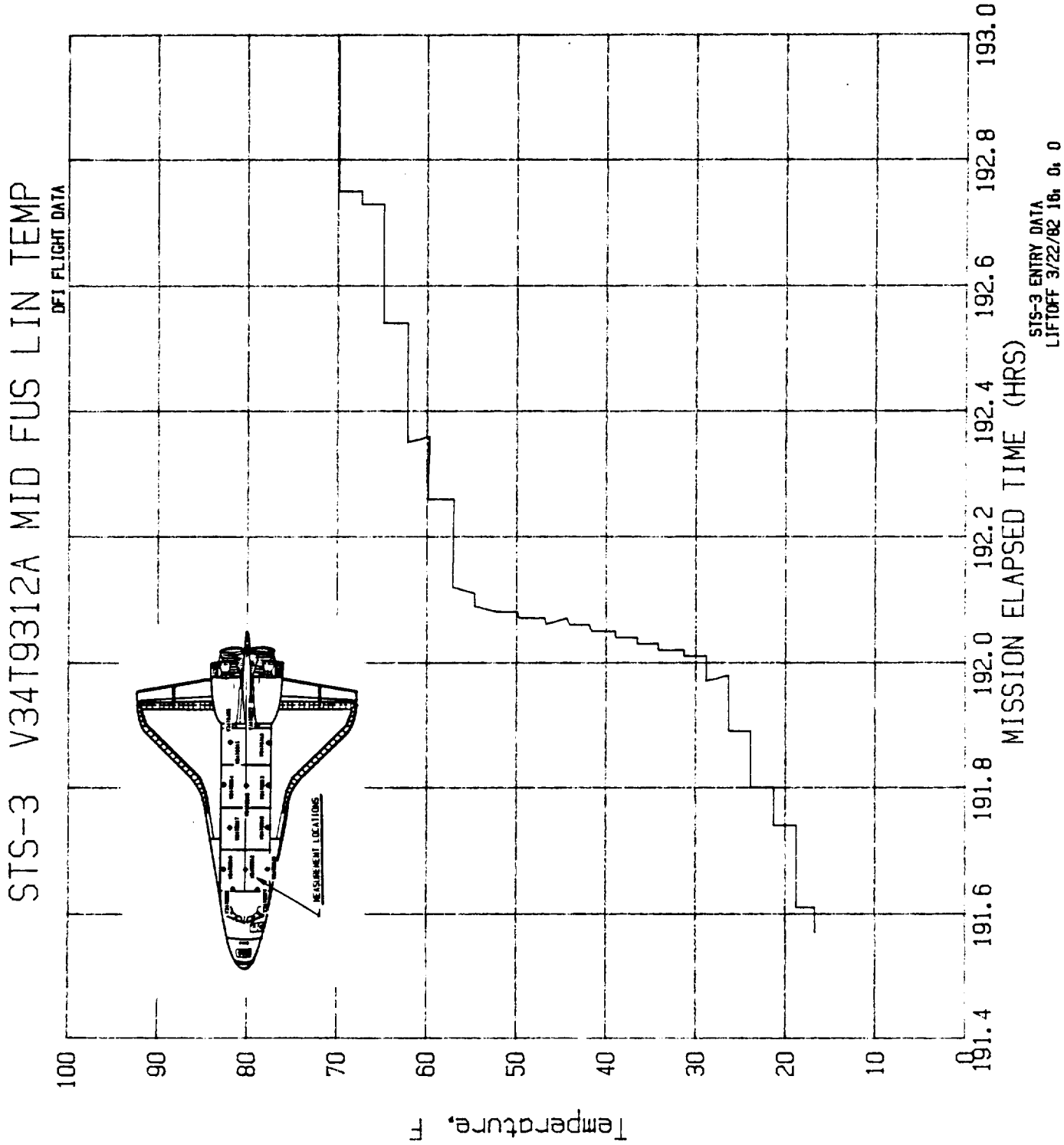
STS-3 V34T9312A MID FUS LIN TEMP
DFI FLIGHT DATA
MEASUREMENT LOCATIONS
Temperature, F
100
90
80
70
60
50
40
30
20
10
0
191.4
191.6
191.8
192.0
192.2
192.4
192.6
192.8
193.0
MISSION ELAPSED TIME (HRS)
STS-3 ENTRY DATA
LIFTOFF 3/22/82 16: 0: 0

Figure A-268

A269
File No=f269

STS-3 V34T9325A FWD BHD TCS TEMP

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	191.57	13.56	35	192.23	57.09	69	0.00	0.00	103	0.00	0.00
2	191.72	13.64	36	192.24	60.02	70	0.00	0.00	104	0.00	0.00
3	191.72	16.13	37	192.32	59.86	71	0.00	0.00	105	0.00	0.00
4	191.77	18.71	38	192.32	62.24	72	0.00	0.00	106	0.00	0.00
5	191.78	16.13	39	192.44	62.28	73	0.00	0.00	107	0.00	0.00
6	191.85	18.78	40	192.45	64.81	74	0.00	0.00	108	0.00	0.00
7	191.85	20.97	41	192.62	64.85	75	0.00	0.00	109	0.00	0.00
8	191.93	21.01	42	192.62	67.42	76	0.00	0.00	110	0.00	0.00
9	191.93	23.62	43	192.79	67.38	77	0.00	0.00	111	0.00	0.00
10	191.98	23.66	44	192.79	64.81	78	0.00	0.00	112	0.00	0.00
11	191.98	26.58	45	192.98	64.77	79	0.00	0.00	113	0.00	0.00
12	192.00	26.58	46	0.00	0.00	80	0.00	0.00	114	0.00	0.00
13	192.00	28.84	47	0.00	0.00	81	0.00	0.00	115	0.00	0.00
14	192.01	28.80	48	0.00	0.00	82	0.00	0.00	116	0.00	0.00
15	192.01	31.25	49	0.00	0.00	83	0.00	0.00	117	0.00	0.00
16	192.02	31.33	50	0.00	0.00	84	0.00	0.00	118	0.00	0.00
17	192.02	34.29	51	0.00	0.00	85	0.00	0.00	119	0.00	0.00
18	192.03	34.22	52	0.00	0.00	86	0.00	0.00	120	0.00	0.00
19	192.04	36.44	53	0.00	0.00	87	0.00	0.00	121	0.00	0.00
20	192.04	36.67	54	0.00	0.00	88	0.00	0.00	122	0.00	0.00
21	192.05	39.09	55	0.00	0.00	89	0.00	0.00	123	0.00	0.00
22	192.05	41.62	56	0.00	0.00	90	0.00	0.00	124	0.00	0.00
23	192.06	39.28	57	0.00	0.00	91	0.00	0.00	125	0.00	0.00
24	192.06	41.86	58	0.00	0.00	92	0.00	0.00	126	0.00	0.00
25	192.06	44.12	59	0.00	0.00	93	0.00	0.00	127	0.00	0.00
26	192.07	44.31	60	0.00	0.00	94	0.00	0.00	128	0.00	0.00
27	192.07	46.88	61	0.00	0.00	95	0.00	0.00	129	0.00	0.00
28	192.08	47.00	62	0.00	0.00	96	0.00	0.00	130	0.00	0.00
29	192.08	49.49	63	0.00	0.00	97	0.00	0.00	131	0.00	0.00
30	192.08	49.65	64	0.00	0.00	98	0.00	0.00	132	0.00	0.00
31	192.08	52.34	65	0.00	0.00	99	0.00	0.00	133	0.00	0.00
32	192.09	54.52	66	0.00	0.00	100	0.00	0.00	134	0.00	0.00
33	192.16	54.52	67	0.00	0.00	101	0.00	0.00	135	0.00	0.00
34	192.16	57.09	68	0.00	0.00	102	0.00	0.00	136	0.00	0.00

Max Temp= 67.42 F; Min Temp= 13.56 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

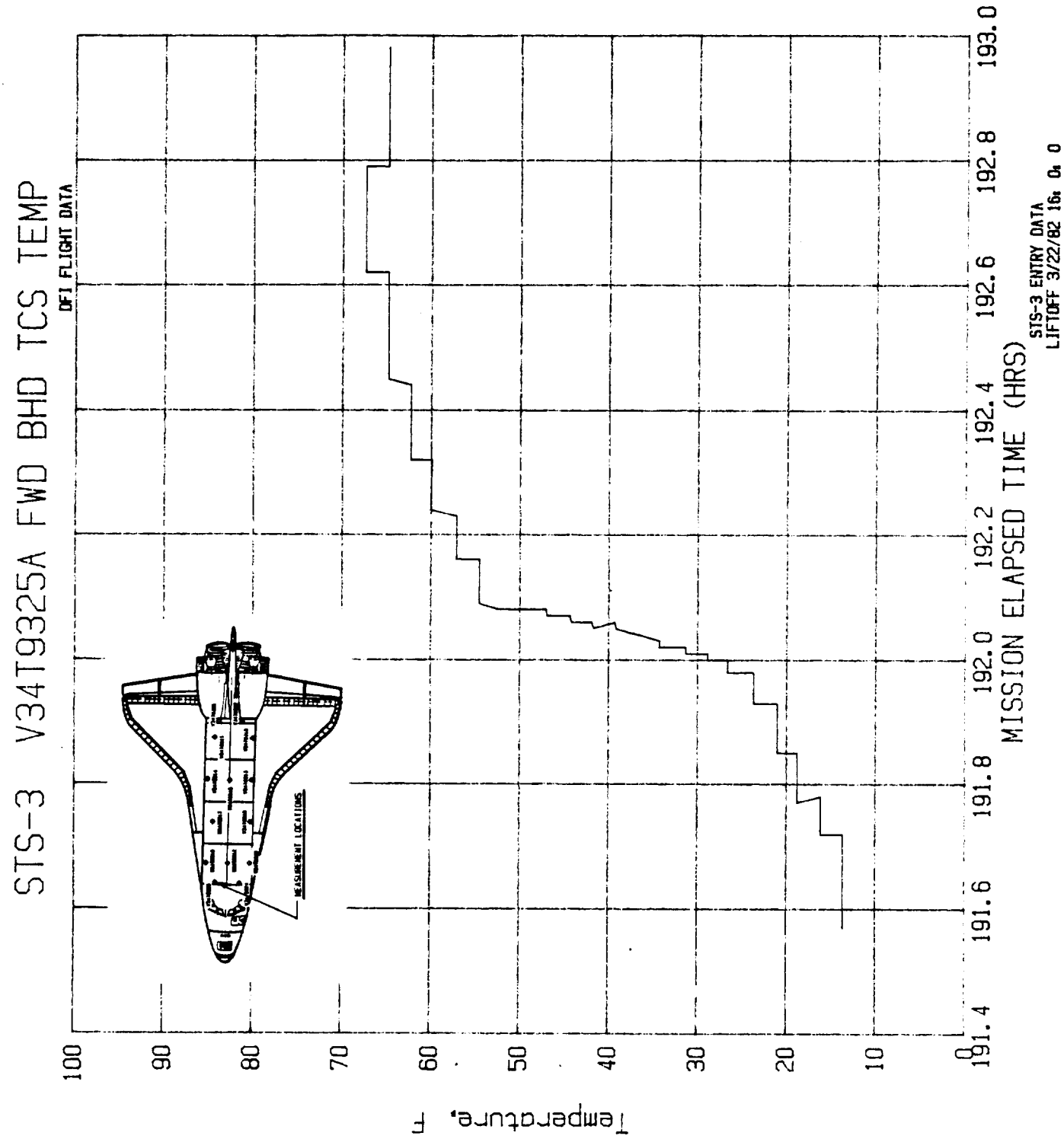
STS-3 V34T9325A FWD BHD TCS TEMP
DFI FLIGHT DATA
MEASUREMENT LOCATIONS
Temperature, F
100
90
80
70
60
50
40
30
20
10
0
191.4
191.6
191.8
192.0
192.2
192.4
192.6
192.8
193.0
MISSION ELAPSED TIME (HRS)
STS-3 ENTRY DATA
LIFTOFF 3/22/82 16: 0: 0

Figure A-269

A270
File No=f270

STS-3 V34T9327A AFT BHD TCS TEMP

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	191.58	39.91	35	192.16	77.53	69	0.00	0.00	103	0.00	0.00
2	191.71	39.98	36	192.17	75.17	70	0.00	0.00	104	0.00	0.00
3	191.72	42.46	37	192.19	75.10	71	0.00	0.00	105	0.00	0.00
4	191.83	42.42	38	192.20	72.66	72	0.00	0.00	106	0.00	0.00
5	191.83	44.82	39	192.34	72.74	73	0.00	0.00	107	0.00	0.00
6	191.88	47.25	40	192.34	75.14	74	0.00	0.00	108	0.00	0.00
7	191.89	44.90	41	192.48	75.06	75	0.00	0.00	109	0.00	0.00
8	191.94	47.37	42	192.48	77.61	76	0.00	0.00	110	0.00	0.00
9	191.94	49.88	43	192.85	75.21	77	0.00	0.00	111	0.00	0.00
10	191.96	49.77	44	192.86	77.49	78	0.00	0.00	112	0.00	0.00
11	191.97	52.40	45	192.99	74.98	79	0.00	0.00	113	0.00	0.00
12	191.98	52.47	46	192.99	73.01	80	0.00	0.00	114	0.00	0.00
13	191.98	55.10	47	0.00	0.00	81	0.00	0.00	115	0.00	0.00
14	191.98	55.10	48	0.00	0.00	82	0.00	0.00	116	0.00	0.00
15	191.99	57.27	49	0.00	0.00	83	0.00	0.00	117	0.00	0.00
16	192.00	57.39	50	0.00	0.00	84	0.00	0.00	118	0.00	0.00
17	192.00	60.02	51	0.00	0.00	85	0.00	0.00	119	0.00	0.00
18	192.01	60.05	52	0.00	0.00	86	0.00	0.00	120	0.00	0.00
19	192.01	62.53	53	0.00	0.00	87	0.00	0.00	121	0.00	0.00
20	192.02	62.53	54	0.00	0.00	88	0.00	0.00	122	0.00	0.00
21	192.02	65.51	55	0.00	0.00	89	0.00	0.00	123	0.00	0.00
22	192.03	65.43	56	0.00	0.00	90	0.00	0.00	124	0.00	0.00
23	192.04	70.88	57	0.00	0.00	91	0.00	0.00	125	0.00	0.00
24	192.06	75.06	58	0.00	0.00	92	0.00	0.00	126	0.00	0.00
25	192.08	79.97	59	0.00	0.00	93	0.00	0.00	127	0.00	0.00
26	192.08	82.75	60	0.00	0.00	94	0.00	0.00	128	0.00	0.00
27	192.09	82.95	61	0.00	0.00	95	0.00	0.00	129	0.00	0.00
28	192.09	85.11	62	0.00	0.00	96	0.00	0.00	130	0.00	0.00
29	192.10	85.19	63	0.00	0.00	97	0.00	0.00	131	0.00	0.00
30	192.11	82.87	64	0.00	0.00	98	0.00	0.00	132	0.00	0.00
31	192.13	82.71	65	0.00	0.00	99	0.00	0.00	133	0.00	0.00
32	192.13	80.12	66	0.00	0.00	100	0.00	0.00	134	0.00	0.00
33	192.14	80.12	67	0.00	0.00	101	0.00	0.00	135	0.00	0.00
34	192.15	77.57	68	0.00	0.00	102	0.00	0.00	136	0.00	0.00

Max Temp= 85.19 F; Min Temp= 39.91 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

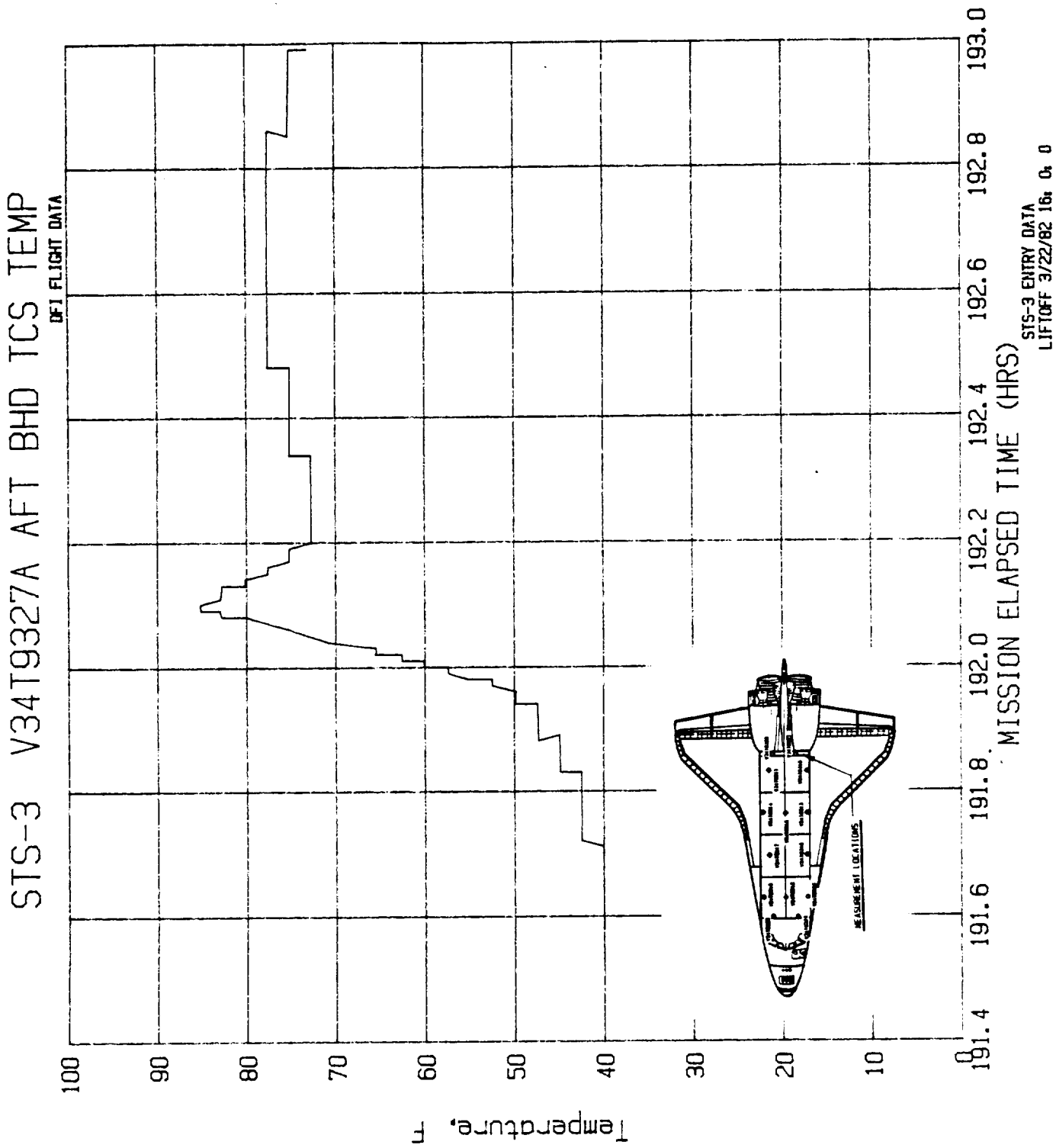
STS-3 V34T9327A AFT BHD TCS TEMP
DFI FLIGHT DATA
Temperature, F
100
90
80
70
60
50
40
30
20
10
0
191.4
191.6
191.8
192.0
192.2
192.4
192.6
192.8
193.0
MISSION ELAPSED TIME (HRS)
STS-3 ENTRY DATA
LIFTOFF 3/22/82 16: 0: 0
MEASUREMENT LOCATIONS

Figure A-270

A280
File No=f280

STS-1 V34T9312A PLB BOT LINER TEMP X=670

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	0.18	56.95	35	5.82	74.91	69	11.55	66.18	103	17.56	62.23
2	0.35	61.91	36	6.01	75.05	70	11.72	65.77	104	17.77	62.23
3	0.50	67.18	37	6.17	72.41	71	11.87	64.82	105	17.92	62.23
4	0.65	69.73	38	6.30	72.45	72	12.03	67.32	106	18.07	62.18
5	0.79	69.73	39	6.49	72.45	73	12.24	64.82	107	18.25	62.23
6	0.98	69.73	40	6.69	72.50	74	12.39	64.77	108	18.42	62.18
7	1.17	69.77	41	6.85	72.50	75	12.55	64.77	109	18.61	62.18
8	1.31	69.77	42	7.00	72.45	76	12.70	64.77	110	18.74	62.14
9	1.48	69.73	43	7.15	72.45	77	12.90	64.86	111	18.89	62.14
10	1.62	69.73	44	7.34	72.41	78	13.07	64.82	112	19.08	62.18
11	1.81	72.05	45	7.55	72.55	79	13.22	64.82	113	19.27	62.18
12	1.99	72.45	46	7.69	72.55	80	13.38	64.82	114	19.44	62.23
13	2.14	72.36	47	7.84	71.36	81	13.55	64.86	115	19.60	62.18
14	2.29	72.36	48	8.00	69.82	82	13.73	64.77	116	19.74	62.14
15	2.47	72.36	49	8.20	69.86	83	14.21	62.14	117	19.92	62.14
16	2.70	72.41	50	8.37	69.82	84	14.39	62.14	118	20.13	62.32
17	2.83	73.23	51	8.51	69.91	85	14.57	62.18	119	20.27	62.23
18	2.98	74.41	52	8.66	69.82	86	14.73	62.14	120	20.44	62.32
19	3.14	74.91	53	8.84	69.86	87	14.88	62.18	121	20.58	62.18
20	3.32	74.91	54	9.04	69.82	88	15.04	62.09	122	20.76	62.18
21	3.49	74.95	55	9.20	69.82	89	15.22	62.23	123	20.96	62.32
22	3.67	75.00	56	9.34	69.86	90	15.44	62.18	124	21.08	62.27
23	3.81	75.00	57	9.50	69.91	91	15.59	62.14	125	21.24	62.36
24	3.98	74.95	58	9.70	69.82	92	15.73	62.14	126	21.39	62.27
25	4.16	75.00	59	9.88	69.95	93	15.90	62.09	127	21.59	62.23
26	4.36	75.09	60	10.04	67.32	94	16.08	62.18	128	21.76	62.27
27	4.50	74.95	61	10.19	68.64	95	16.26	62.14	129	21.92	62.73
28	4.65	75.09	62	10.36	67.32	96	16.43	62.18	130	22.07	64.86
29	4.81	75.00	63	10.53	67.27	97	16.58	62.09	131	22.25	64.82
30	5.01	75.00	64	10.71	67.32	98	16.72	62.09	132	22.43	64.86
31	5.17	74.95	65	10.87	67.36	99	16.95	62.18	133	22.60	64.86
32	5.32	75.05	66	11.01	67.32	100	17.09	62.14	134	22.74	64.91
33	5.46	74.95	67	11.19	67.27	101	17.23	62.18	135	22.88	64.91
34	5.64	75.00	68	11.37	67.32	102	17.39	62.14	136	23.06	64.95

A280(Cont)
File No=f280(Cont.) STS-1 V34T9312A PLB BOT LINER TEMP X=670

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
137	23.26	65.00	171	0.00	0.00	205	0.00	0.00	239	0.00	0.00
138	23.42	64.86	172	0.00	0.00	206	0.00	0.00	240	0.00	0.00
139	23.55	66.68	173	0.00	0.00	207	0.00	0.00	241	0.00	0.00
140	23.70	67.45	174	0.00	0.00	208	0.00	0.00	242	0.00	0.00
141	23.90	67.64	175	0.00	0.00	209	0.00	0.00	243	0.00	0.00
142	24.08	67.59	176	0.00	0.00	210	0.00	0.00	244	0.00	0.00
143	24.23	67.55	177	0.00	0.00	211	0.00	0.00	245	0.00	0.00
144	24.38	67.50	178	0.00	0.00	212	0.00	0.00	246	0.00	0.00
145	24.56	68.50	179	0.00	0.00	213	0.00	0.00	247	0.00	0.00
146	24.73	70.05	180	0.00	0.00	214	0.00	0.00	248	0.00	0.00
147	24.92	70.00	181	0.00	0.00	215	0.00	0.00	249	0.00	0.00
148	0.00	0.00	182	0.00	0.00	216	0.00	0.00	250	0.00	0.00
149	0.00	0.00	183	0.00	0.00	217	0.00	0.00	251	0.00	0.00
150	0.00	0.00	184	0.00	0.00	218	0.00	0.00	252	0.00	0.00
151	0.00	0.00	185	0.00	0.00	219	0.00	0.00	253	0.00	0.00
152	0.00	0.00	186	0.00	0.00	220	0.00	0.00	254	0.00	0.00
153	0.00	0.00	187	0.00	0.00	221	0.00	0.00	255	0.00	0.00
154	0.00	0.00	188	0.00	0.00	222	0.00	0.00	256	0.00	0.00
155	0.00	0.00	189	0.00	0.00	223	0.00	0.00	257	0.00	0.00
156	0.00	0.00	190	0.00	0.00	224	0.00	0.00	258	0.00	0.00
157	0.00	0.00	191	0.00	0.00	225	0.00	0.00	259	0.00	0.00
158	0.00	0.00	192	0.00	0.00	226	0.00	0.00	260	0.00	0.00
159	0.00	0.00	193	0.00	0.00	227	0.00	0.00	261	0.00	0.00
160	0.00	0.00	194	0.00	0.00	228	0.00	0.00	262	0.00	0.00
161	0.00	0.00	195	0.00	0.00	229	0.00	0.00	263	0.00	0.00
162	0.00	0.00	196	0.00	0.00	230	0.00	0.00	264	0.00	0.00
163	0.00	0.00	197	0.00	0.00	231	0.00	0.00	265	0.00	0.00
164	0.00	0.00	198	0.00	0.00	232	0.00	0.00	266	0.00	0.00
165	0.00	0.00	199	0.00	0.00	233	0.00	0.00	267	0.00	0.00
166	0.00	0.00	200	0.00	0.00	234	0.00	0.00	268	0.00	0.00
167	0.00	0.00	201	0.00	0.00	235	0.00	0.00	269	0.00	0.00
168	0.00	0.00	202	0.00	0.00	236	0.00	0.00	270	0.00	0.00
169	0.00	0.00	203	0.00	0.00	237	0.00	0.00	271	0.00	0.00
170	0.00	0.00	204	0.00	0.00	238	0.00	0.00	272	0.00	0.00

Max Temp= 75.09 F; Min Temp= 56.95 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

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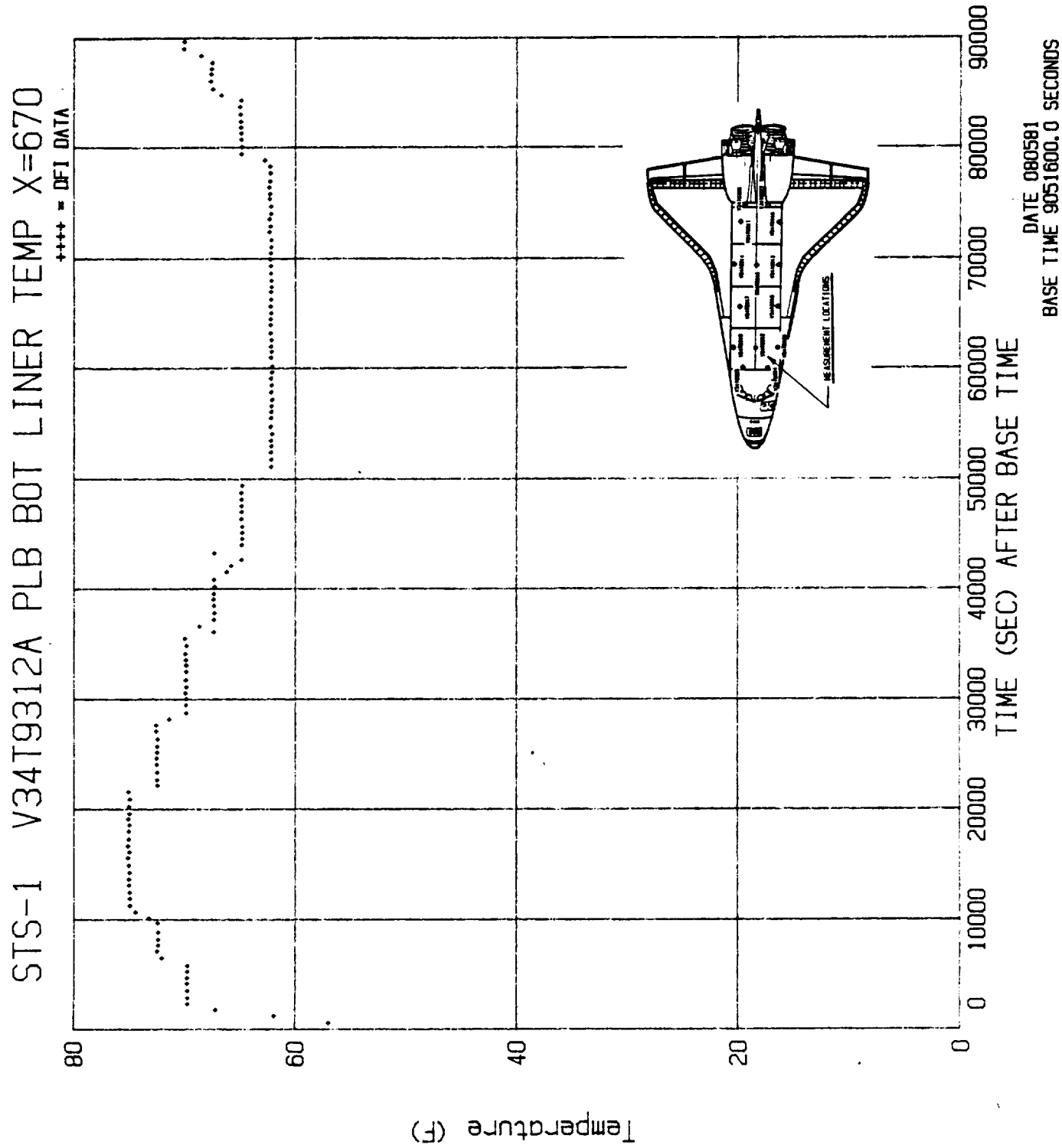

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Figure A-280

A281
File No=f281

STS-1 V34T9312A LINER POSTLANDING TEMP

NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)	NO	TIME (HR)	TEMP (F)
1	55.94	72.53	35	77.57	69.55	69	0.00	0.00	103	0.00	0.00
2	56.42	73.54	36	77.97	70.45	70	0.00	0.00	104	0.00	0.00
3	56.86	74.21	37	0.00	0.00	71	0.00	0.00	105	0.00	0.00
4	57.27	74.89	38	0.00	0.00	72	0.00	0.00	106	0.00	0.00
5	57.70	75.39	39	0.00	0.00	73	0.00	0.00	107	0.00	0.00
6	57.86	75.56	40	0.00	0.00	74	0.00	0.00	108	0.00	0.00
7	58.33	75.06	41	0.00	0.00	75	0.00	0.00	109	0.00	0.00
8	58.80	74.55	42	0.00	0.00	76	0.00	0.00	110	0.00	0.00
9	59.25	74.10	43	0.00	0.00	77	0.00	0.00	111	0.00	0.00
10	59.97	73.54	44	0.00	0.00	78	0.00	0.00	112	0.00	0.00
11	60.59	73.03	45	0.00	0.00	79	0.00	0.00	113	0.00	0.00
12	61.51	72.13	46	0.00	0.00	80	0.00	0.00	114	0.00	0.00
13	62.17	71.46	47	0.00	0.00	81	0.00	0.00	115	0.00	0.00
14	62.72	70.79	48	0.00	0.00	82	0.00	0.00	116	0.00	0.00
15	63.29	69.94	49	0.00	0.00	83	0.00	0.00	117	0.00	0.00
16	64.02	69.38	50	0.00	0.00	84	0.00	0.00	118	0.00	0.00
17	64.75	68.65	51	0.00	0.00	85	0.00	0.00	119	0.00	0.00
18	65.43	67.92	52	0.00	0.00	86	0.00	0.00	120	0.00	0.00
19	66.24	67.02	53	0.00	0.00	87	0.00	0.00	121	0.00	0.00
20	67.01	66.01	54	0.00	0.00	88	0.00	0.00	122	0.00	0.00
21	67.78	65.34	55	0.00	0.00	89	0.00	0.00	123	0.00	0.00
22	68.58	64.55	56	0.00	0.00	90	0.00	0.00	124	0.00	0.00
23	69.39	64.27	57	0.00	0.00	91	0.00	0.00	125	0.00	0.00
24	70.06	63.93	58	0.00	0.00	92	0.00	0.00	126	0.00	0.00
25	70.91	63.65	59	0.00	0.00	93	0.00	0.00	127	0.00	0.00
26	71.62	63.48	60	0.00	0.00	94	0.00	0.00	128	0.00	0.00
27	72.23	63.31	61	0.00	0.00	95	0.00	0.00	129	0.00	0.00
28	72.88	63.37	62	0.00	0.00	96	0.00	0.00	130	0.00	0.00
29	73.41	63.48	63	0.00	0.00	97	0.00	0.00	131	0.00	0.00
30	74.16	64.10	64	0.00	0.00	98	0.00	0.00	132	0.00	0.00
31	74.93	64.94	65	0.00	0.00	99	0.00	0.00	133	0.00	0.00
32	75.77	66.07	66	0.00	0.00	100	0.00	0.00	134	0.00	0.00
33	76.45	67.53	67	0.00	0.00	101	0.00	0.00	135	0.00	0.00
34	76.93	68.54	68	0.00	0.00	102	0.00	0.00	136	0.00	0.00

Max Temp= 75.56 F; Min Temp= 63.31 F.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

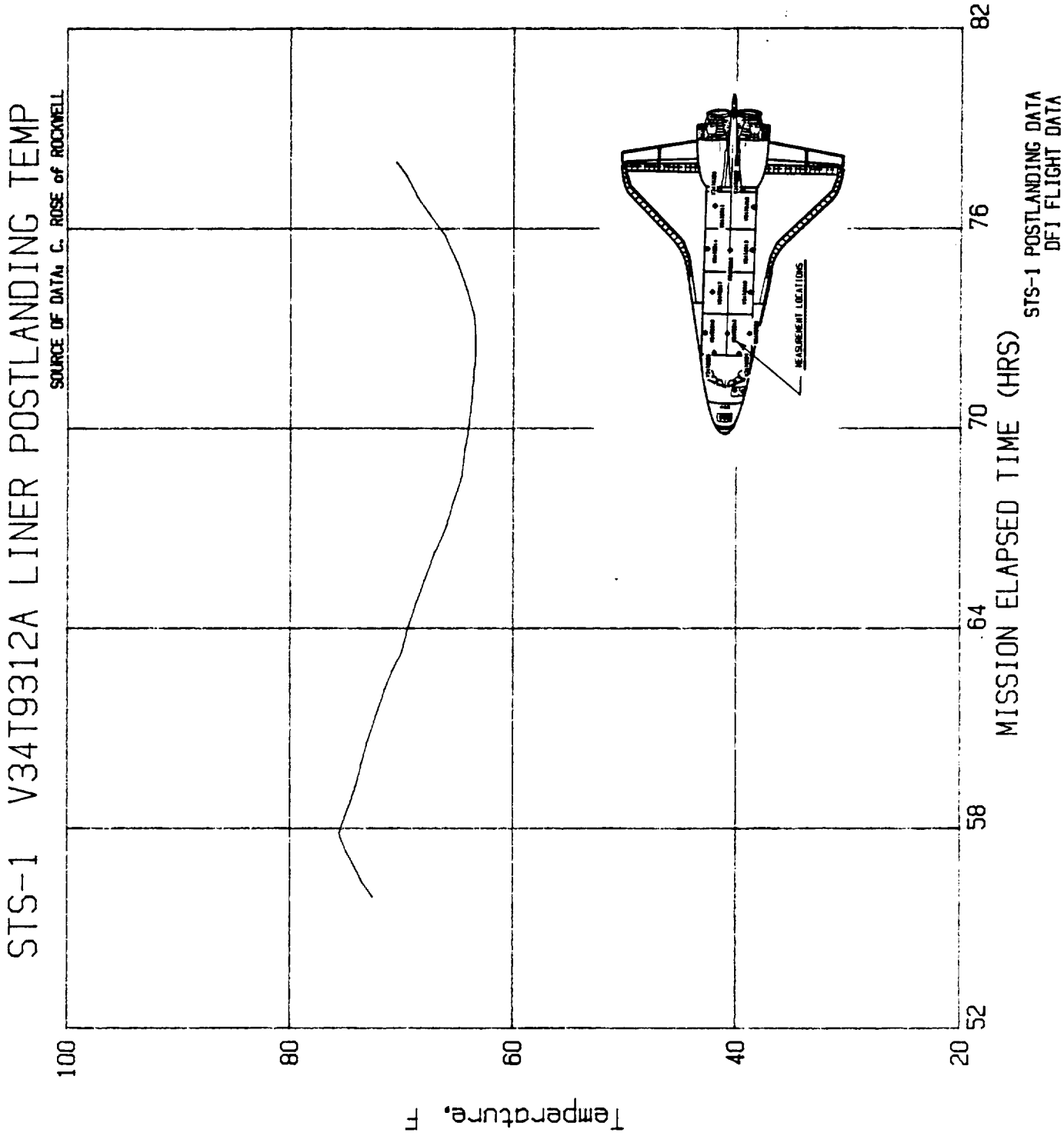
STS-1 V34T9312A LINER POSTLANDING TEMP
SOURCE OF DATA: C. ROSE of ROCKWELL
Temperature, F
100
80
60
40
20
52
58
64
70
76
82
MISSION ELAPSED TIME (HRS)
STS-1 POSTLANDING DATA
DFI FLIGHT DATA
MEASUREMENT LOCATIONS

Figure A-281

A290
File No=f290

STS-1 PAYLOAD BAY INTERNAL PRESSURE

NO	TIME (Se)	PRES PSIA	NO	TIME (Se)	PRES PSIA	NO	TIME (Se)	PRES PSIA	NO	TIME (Se)	PRES PSIA
1	0.51	15.05	35	84.49	0.47	69	0.00	0.00	103	0.00	0.00
2	3.00	15.05	36	86.92	0.40	70	0.00	0.00	104	0.00	0.00
3	5.54	14.99	37	89.52	0.36	71	0.00	0.00	105	0.00	0.00
4	7.97	14.90	38	92.35	0.30	72	0.00	0.00	106	0.00	0.00
5	10.52	14.71	39	94.44	0.26	73	0.00	0.00	107	0.00	0.00
6	13.06	14.45	40	97.04	0.24	74	0.00	0.00	108	0.00	0.00
7	15.38	14.14	41	99.25	0.22	75	0.00	0.00	109	0.00	0.00
8	17.87	13.83	42	102.13	0.19	76	0.00	0.00	110	0.00	0.00
9	20.53	13.42	43	104.45	0.16	77	0.00	0.00	111	0.00	0.00
10	23.13	13.02	44	106.60	0.14	78	0.00	0.00	112	0.00	0.00
11	25.28	12.62	45	109.31	0.10	79	0.00	0.00	113	0.00	0.00
12	27.65	12.08	46	112.20	0.09	80	0.00	0.00	114	0.00	0.00
13	30.14	11.38	47	114.46	0.09	81	0.00	0.00	115	0.00	0.00
14	32.86	10.87	48	116.89	0.08	82	0.00	0.00	116	0.00	0.00
15	34.95	10.30	49	119.26	0.07	83	0.00	0.00	117	0.00	0.00
16	37.49	9.82	50	0.00	0.00	84	0.00	0.00	118	0.00	0.00
17	39.87	9.17	51	0.00	0.00	85	0.00	0.00	119	0.00	0.00
18	42.41	8.37	52	0.00	0.00	86	0.00	0.00	120	0.00	0.00
19	44.96	7.57	53	0.00	0.00	87	0.00	0.00	121	0.00	0.00
20	47.45	6.81	54	0.00	0.00	88	0.00	0.00	122	0.00	0.00
21	49.93	6.19	55	0.00	0.00	89	0.00	0.00	123	0.00	0.00
22	52.48	5.63	56	0.00	0.00	90	0.00	0.00	124	0.00	0.00
23	54.68	5.16	57	0.00	0.00	91	0.00	0.00	125	0.00	0.00
24	57.40	4.53	58	0.00	0.00	92	0.00	0.00	126	0.00	0.00
25	59.72	4.05	59	0.00	0.00	93	0.00	0.00	127	0.00	0.00
26	62.43	3.47	60	0.00	0.00	94	0.00	0.00	128	0.00	0.00
27	64.58	3.14	61	0.00	0.00	95	0.00	0.00	129	0.00	0.00
28	67.07	2.71	62	0.00	0.00	96	0.00	0.00	130	0.00	0.00
29	69.50	2.35	63	0.00	0.00	97	0.00	0.00	131	0.00	0.00
30	72.33	2.00	64	0.00	0.00	98	0.00	0.00	132	0.00	0.00
31	74.42	1.58	65	0.00	0.00	99	0.00	0.00	133	0.00	0.00
32	77.19	1.20	66	0.00	0.00	100	0.00	0.00	134	0.00	0.00
33	79.28	0.86	67	0.00	0.00	101	0.00	0.00	135	0.00	0.00
34	82.34	0.57	68	0.00	0.00	102	0.00	0.00	136	0.00	0.00

Max Pres= 15.05 PSIA; Min Pres= 0.07 PSIA.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

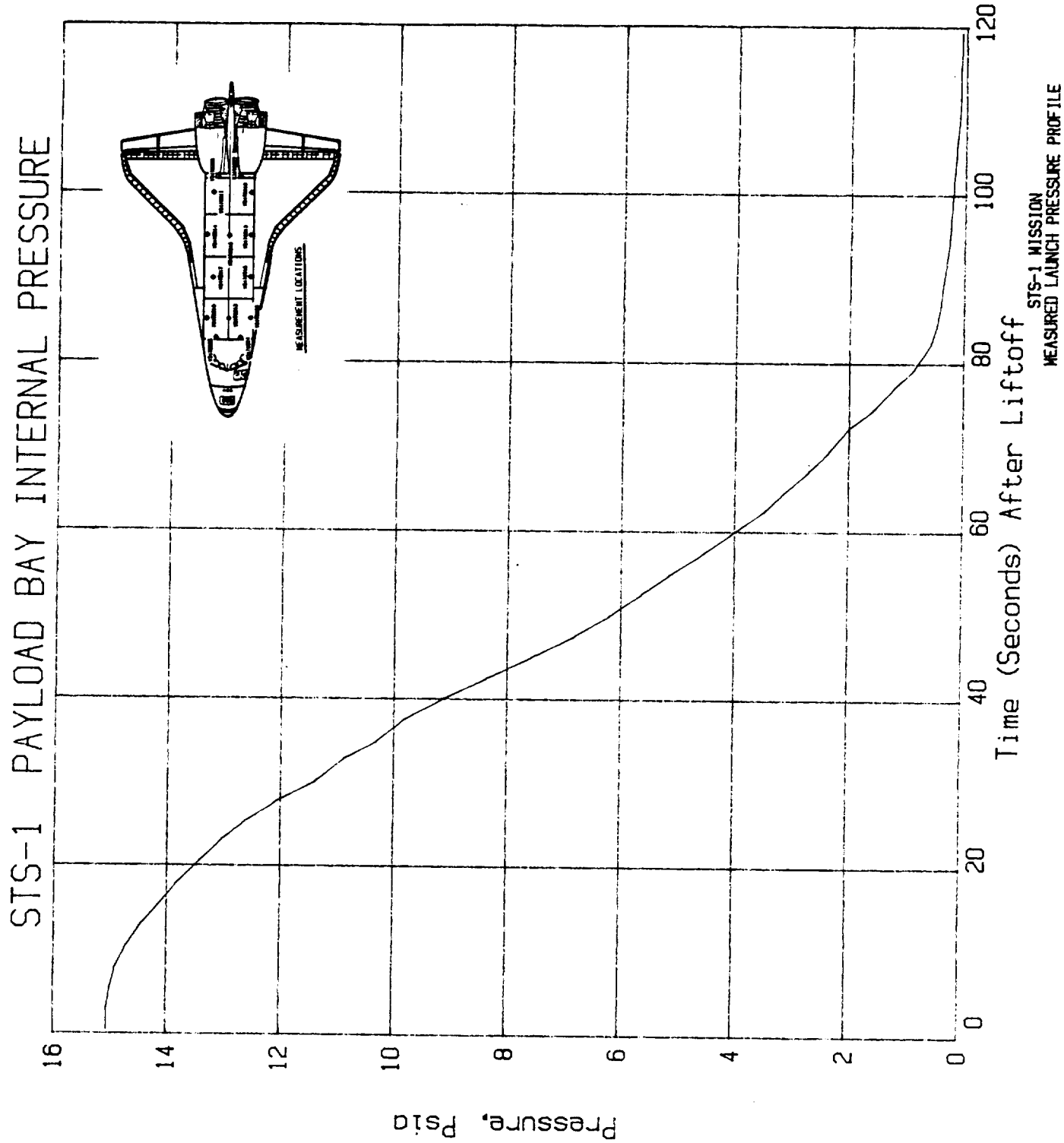
STS-1 PAYLOAD BAY INTERNAL PRESSURE
MEASUREMENT LOCATIONS
Pressure, Psia
0
2
4
6
8
10
12
14
16
Time (Seconds) After Liftoff
0
20
40
60
80
100
120
STS-1 MISSION
MEASURED LAUNCH PRESSURE PROFILE

Figure A-290

A291
File No=f291 V07P9085A CARGO BAY COMT PRESS 2 NO 83

NO	TIME (Se)	PRES PSIA	NO	TIME (Se)	PRES PSIA	NO	TIME (Se)	PRES PSIA	NO	TIME (Se)	PRES PSIA
1	1563.49	0.17	35	1740.80	3.58	69	1799.40	7.27	103	1909.84	11.45
2	1568.75	0.23	36	1743.80	3.66	70	1801.65	7.39	104	1912.10	11.65
3	1574.00	0.27	37	1744.55	3.77	71	1804.66	7.51	105	1917.36	11.86
4	1579.26	0.30	38	1746.81	3.87	72	1806.91	7.57	106	1920.36	12.06
5	1586.78	0.34	39	1748.31	3.98	73	1808.41	7.69	107	1922.61	12.27
6	1593.54	0.38	40	1749.81	4.11	74	1809.17	7.83	108	1926.37	12.46
7	1597.30	0.39	41	1752.82	4.29	75	1810.67	7.93	109	1929.38	12.60
8	1607.06	0.43	42	1754.32	4.41	76	1812.92	8.02	110	1930.13	12.75
9	1615.33	0.48	43	1756.57	4.61	77	1815.18	8.11	111	1933.88	12.94
10	1625.09	0.52	44	1759.58	4.77	78	1818.18	8.18	112	1937.64	13.12
11	1633.36	0.60	45	1761.08	4.97	79	1821.19	8.28	113	1940.65	13.25
12	1639.37	0.67	46	1761.83	4.87	80	1824.19	8.43	114	1945.91	13.38
13	1649.14	0.81	47	1764.09	5.07	81	1827.95	8.61	115	1954.92	13.47
14	1652.89	0.87	48	1767.09	5.23	82	1831.71	8.73	116	1963.19	13.55
15	1658.90	0.96	49	1769.35	5.36	83	1833.96	8.86	117	1969.20	13.61
16	1665.66	1.05	50	1769.36	5.46	84	1836.21	8.95	118	1972.95	13.65
17	1669.42	1.13	51	1770.85	5.58	85	1838.47	9.04	119	1984.97	13.66
18	1673.93	1.22	52	1770.85	5.63	86	1839.22	9.16	120	1998.50	13.65
19	1679.94	1.38	53	1772.35	5.69	87	1845.23	9.30	121	0.00	0.00
20	1682.95	1.51	54	1775.36	5.85	88	1849.74	9.41	122	0.00	0.00
21	1685.95	1.62	55	1776.11	5.87	89	1854.24	9.54	123	0.00	0.00
22	1691.96	1.71	56	1776.86	6.00	90	1858.75	9.61	124	0.00	0.00
23	1697.97	1.86	57	1776.86	6.08	91	1864.01	9.70	125	0.00	0.00
24	1704.73	1.99	58	1779.11	6.20	92	1866.27	9.86	126	0.00	0.00
25	1708.49	2.12	59	1780.62	6.31	93	1870.77	10.02	127	0.00	0.00
26	1715.25	2.33	60	1783.62	6.43	94	1874.53	10.17	128	0.00	0.00
27	1718.26	2.45	61	1785.12	6.53	95	1878.29	10.25	129	0.00	0.00
28	1720.51	2.57	62	1785.88	6.65	96	1885.05	10.37	130	0.00	0.00
29	1722.01	2.68	63	1788.88	6.75	97	1886.55	10.46	131	0.00	0.00
30	1725.02	2.81	64	1789.63	6.87	98	1889.56	10.54	132	0.00	0.00
31	1728.02	2.93	65	1793.39	7.00	99	1892.56	10.67	133	0.00	0.00
32	1731.78	3.13	66	1795.64	7.06	100	1897.82	10.89	134	0.00	0.00
33	1735.54	3.30	67	1797.90	7.15	101	1901.58	11.03	135	0.00	0.00
34	1738.54	3.41	68	1798.65	7.34	102	1905.33	11.17	136	0.00	0.00

Max Pres= 13.66 PSIA; Min Pres= 0.17 PSIA.
Note: (0 Hrs,0 F)s are not data points and are entered for convenience only

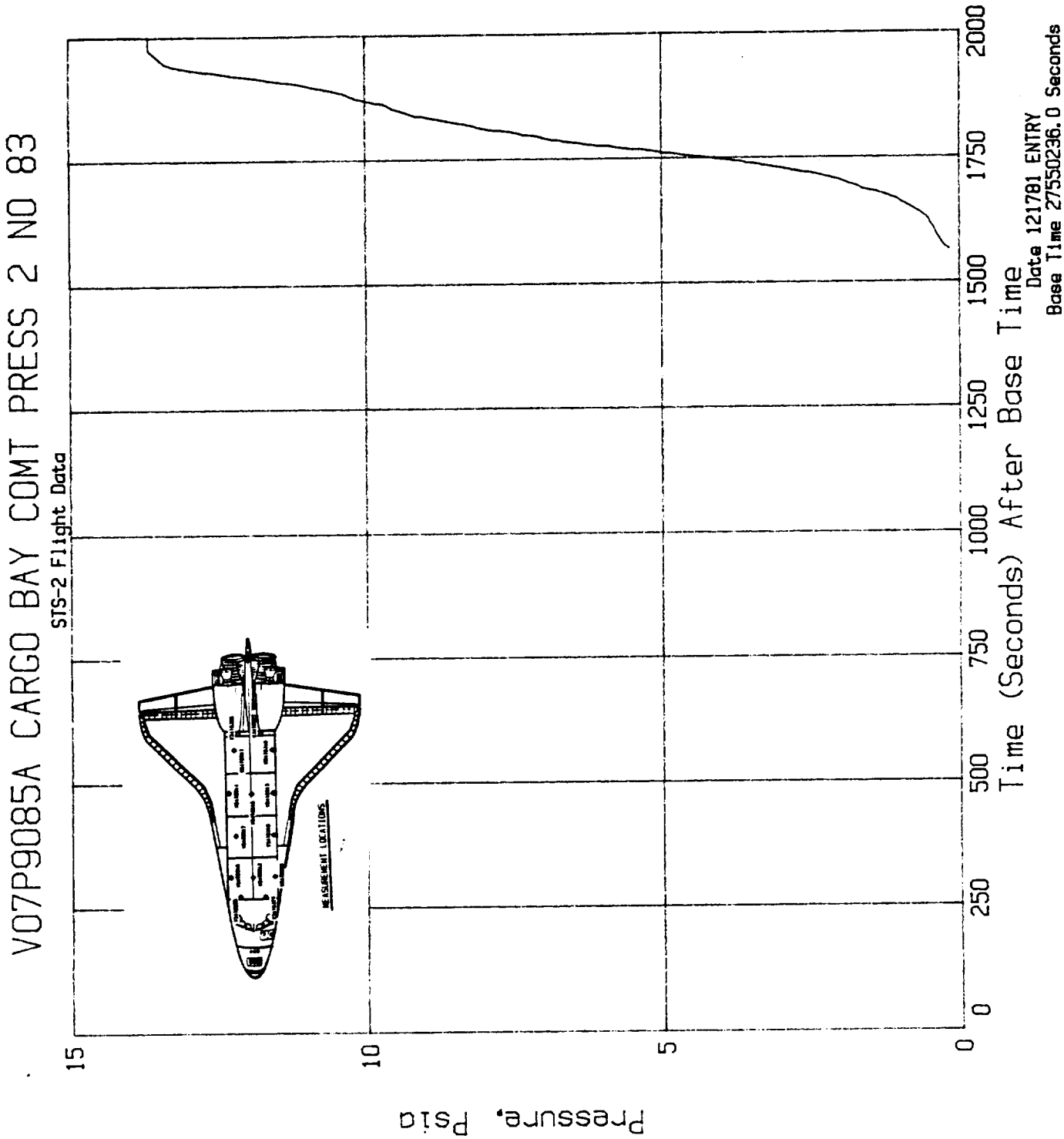
V07P9085A CARGO BAY COMT PRESS 2 NO 83
STS-2 Flight Data
MEASUREMENT LOCATIONS
Pressure, Psia
15
10
5
0
0
250
500
750
1000
1250
1500
1750
2000
Time (Seconds) After Base Time
Data 121781 ENTRY
Base Time 27550236.0 Seconds

Figure A-291

APPENDIX B

Space Shuttle Flights 1-5
General Description

Mission	Orbiter	Mission Duration	Time in Space	Orbits	Orbital Altitude/ Inclination	Launch/Landing	Crew	Payloads/Mission Objectives		Comments
STS-1	Columbia	April 12-14, 1981	54 hrs 21 min 57 sec	36	237 Kilometers 148 nautical miles (n.mi.) / 40°	4/12/81 Kennedy Space Center 4/14/81 Dry lakebed, Edwards AFB	Cmdr: John Young Pilot: Robert Crippen	Checks of feasibility of Space Shuttle system Development of flight instrumentation and monitoring equipment TOT. Payload WT=4870 KG	Deve Flight instrumentation (DFI), Passive Optical Sample Assembly; Aerodynamic Coefficient Identification Package (ACIP)	Thermal Protection System tile damage
STS-2	Columbia	Nov 12-14, 1981	54 hrs 24 min 4 sec	36	222 x 230 km. (139 x 144 n.mi.) / 38°	11/21/81 Kennedy Space Center 11/14/81 Dry lakebed, Edwards AFB	Cmdr: Joe Engle Pilot: Richard Truly	Test remote manipulator system (mechanical arm) Test recording instruments for performance characteristics 5 scientific experiments exploring Earth's natural resources TOT Payload WT=8900 KG	DFI ACIP; Induced Environmental Contamination Monitor (IECM) Tile Gap Heating Experiment; (Tile) Catalytic Surface Equipment; Dynamic, Acoustic and Thermal Experiment (DATE). OSTA-1 Payload (for Office of Space & Terrestrial Applications) • Shuttle Imaging Radar-A • Shuttle Multispectral Infrared Radiometer • Feature Identification & Location Experiement • Measurement of Air Pollution From Satellites • Ocean Color Experiment • Night/Day Optical Survey of Lightning • Heflex Bioengineering Test	First reused Spacecraft
STS-3	Columbia	Mar 22-30, 1982	192 hrs 6 min	130	208 km. (130 n.mi.) / 38°	3/22/82 Kennedy Space Center 3/30/82 Northrup Strip White Sands, New Mexico	Cmdr: Jack Lousma Pilot: Gordon Fullerton	Thermal testing of spacecraft Gathering information about spacecraft's interaction with space environment OSS experiments re space orientel instruments (Solar Flare, Contamination Monitor Package) TOT. Payload WT=10,220 KG	DFI; ACIP; IECM; Tile Gap Heating; Catalytic Surface; DATE, Getaway Special Canister; Monodisperse Latex Reactor; Electrophoresis Test; Heflex Bioengineering Test; Shuttle Student Involvement Project (Insects in Flight); OSS-1 Payload (for Office of Space Science) • Contamination Monitor • Microabrasion Foil Experiment • Vehicle Charging & Potential Experiment • Shuttle-Spacelab induced Atmosphere • Solar Flare X-Ray Polarimeter • Solar Ultraviolet Spectral Irradiance Monitor • Plant Growth Unit • Thermal Canister Experiment • Plasma Diagnostics Package	All experiments nearly 100% completed NASA-NSTA Shuttle Student Involvement Project Experiment (secondary schools) "Getaway Special" canister evaluation.
STS-4	Columbia	Jun 27 - Jul 4, 1982	169 hrs 10 min 43 sec	112	258 km. (161 n.mi.) / 28.5°	6/27/82 Kennedy Space Center 7/4/82 Runway 22, Edwards AFB	Cmdr: Ken Mattingly Pilot: Henery Hartsfield	Further testing of manipulator arm Observation of flight debris First experiment of commercial firm-Continuous Flow Electrophoresis System first private sector "Getaway Special" experiment First DoD Payload TOT, Payload WT=11,021KG	Thermal testing of S/C DFI; ACIP; IECM; Tile Gap Heating Experiment; Catalytic Surface Experiment; DATE; Getaway Special (9 Experiments); Shuttle Student Involvement Project (2 experiments); Monodisperse Latex Reactor; Continuous Flow Electrophoresis System; Night/Day Optical Survey of Lightning; Department of Defense Payload DoD-82-1	Due to thunderstorms before launch, wet tiles were dried by turning spacecraft to Sun - ensuring proper function at landing.
STS-5	Columbia	Nov 11-16, 1982	122 hrs 15 min 29 sec	81			Cmdr: Vance Brand Pilot: Robert Overmeyer	First deployment of two commercial communications satellites Telesat-E and SBS-C	Thermal testing of S/C Last Flight with DFI	

(1) SOURCES OF DATA: TRW SPACE LOG 1982-1983 AND NASA FACTS NF-137-83, "ORBITAL FLIGHT TEST PROGRAM"

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