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SPACE SHUTTLE AEROTHERMODYNAMIC DATA REPORT

(NASA-CR-151069) RESULTS OF AN INVESTIGATION OF THE SPACE SHUTTLE INTEGRATED VEHICLE AERODYNAMIC HEATING CHARACTERISTICS OBTAINED USING THE 0.0175-SCALE MODEL 60-OTS IN AEDC TUNNEL A

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PUBLICATION CHANGE

THE FOLLOWING CHANGES APPLY TO PUBLICATION: Space Shuttle Data Report

TITLE: RESULTS OF AN INVESTIGATION OF THE SPACE SHUTTLE INTEGRATED VEHICLE AERODYNAMIC HEATING CHARACTERISTICS OBTAINED USING THE 0.0175-SCALE MODEL 60-OTS IN AEDC TUNNEL A DURING TESTS IH41B

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Reason for Change:

Thermocouples 2087, 2088, 2089, and 2137 were plotted and tabulated at incorrect X/L locations.

Correction:

Thermocouple No.	ϕ	Incorrectly Displayed X/L	Correct X/L
2087	250.57	0.929	0.937
2088	289.43	0.929	0.937
2089	352.2	0.929	0.937
2137	292.0	0.900	0.910

Data users are cautioned to apply the correct X/L shift when analyzing these four thermocouple locations.

This page is an errata sheet and is to remain a permanent part of DR-2295. Replace pages 61 and 62 in volumes 1, 2, and 3.

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PAGE 1 OF 1

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MICHOUD DEFENSE SPACE DIVISION CHRYSLER CORPORATION

July 1977

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NASA CR-151,069

VOLUME 1 OF 5

RESULTS OF AN INVESTIGATION OF THE SPACE SHUTTLE INTEGRATED VEHICLE AERODYNAMIC HEATING CHARACTERISTICS OBTAINED USING THE 0.0175-SCALE MODEL 60-OTS IN AEDC TUNNEL A DURING TESTS IH41B

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by

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for

Engineering Analysis Division

Johnson Space Center
National Aeronautics and Space Administration
Houston, Texas

WIND TUNNEL TEST SPECIFICS:

Test Number:	AEDC VKF A - V41A-A4A
NASA Series Number:	IH41B
Model Number:	60-OTS
Test Dates:	December 11 through 18, 1975 and January 6 through 8, 1976
Occupancy Hours:	80

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Chrysler Corporation Michoud Defense-Space Division assumes no responsibility for the data presented other than display characteristics.

RESULTS OF AN INVESTIGATION OF THE SPACE SHUTTLE INTEGRATED VEHICLE AERODYNAMIC HEATING CHARACTERISTICS OBTAINED USING THE 0.0175-SCALE MODEL 60-OTS IN AEDC TUNNEL A DURING TESTS IH41B

by

W. H. Dye
Rockwell International Space Division

ABSTRACT

A thin-skin thermocouple test was conducted to obtain heat-transfer data on the Space Shuttle Integrated Vehicle during the ascent phase of its flight profile. The test model was a 0.0175-scale thin-skin thermocouple model (60-OTS) of the Rockwell International Vehicle 5 configuration. The test was conducted in Tunnel A at nominal Mach numbers of 3 and 4, and freestream unit Reynolds numbers of 3.7 and 4.1 million per ft., respectively. Heat-transfer data were obtained for angles-of-attack of 0, ±5, and 10 deg. and yaw angles of 0, ±3, ±6, and -9 deg. The Integrated Vehicle model was tested with the external tank configured with a spike nose. Isolated external tank and orbiter were also tested. The testing utilized 80 hours of tunnel occupancy time from December 11 through 18, 1975 and January 6 through 8, 1976.

Results of the test are presented in this report which consists of 5 volumes as follows:

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ABSTRACT (Concluded)

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	D. ON CANOPY WINDSHIELD	CONFIG., MACH, Z	E	2381-2402
	E. ALONG FUSELAGE LOWER SURFACE	CONFIG., MACH, 2Y/BW	C	2403-2408
	F. ALONG E.T. UMBILICAL DOOR	MACH, 2Y/BW	H	2409-2422
	G. ALONG WING LOWER SURFACE	CONFIG., MACH, 2Y/BW	F	2423-2444
	H. ALONG WING UPPER SURFACE	CONFIG., MACH, 2Y/BW	I	2445-2452

INDEX OF DATA FIGURES (Concluded)

FIGURE NUMBER	TITLE	CONDITIONS VARYING	PLOTTED COEFFICIENTS SCHEDULE	PAGE
	I. ALONG VERTICAL TAIL SURFACE	CONFIG., MACH, Z/BV	G	2453-2462

PLOTTED COEFFICIENTS SCHEDULE: *

A) h_u/h_{ref} vs. x/ℓ

B) h_i/h_{ref}, h_u/h_{ref}, h_i/h_u vs. x/ℓ

C) h_i/h_{ref}, h_u/h_{ref}, h_i/h_u vs. x/ℓ_B

D) h_i/h_{ref}, h_u/h_{ref}, h_i/h_u vs. ϕ

E) h_i/h_{ref}, h_u/h_{ref}, h_i/h_u vs. Y

F) h_i/h_{ref}, h_u/h_{ref}, h_i/h_u vs. x/c_w

G) h_i/h_{ref}, h_u/h_{ref}, h_i/h_u vs. x/c_v

H) h_i/h_{ref} vs. x/ℓ_B

I) h_i/h_{ref}, h_i/h_u vs. x/c_w

* All data plotted is variable recovery factor.

INTRODUCTION

The present tests were conducted to obtain heat-transfer-rate data on the Space Shuttle Integrated Vehicle at simulated ascent flight conditions. The components of the vehicle produce a complex flow field with many shock interactions. Although progress has been made in analyzing shock interference heating, experimental data are still relied upon to provide vehicle design information. One technique resulting from analytical studies is the ratioing of interference heating to undisturbed values. During the present tests, the external tank was tested alone so that these heating ratios could be constructed and so data quality could be confirmed.

Much of the information presented in this report was derived from Reference 1.

NOMENCLATURE

PLOT SYMBOL	MNEMONIC	DEFINITION
a_1, a_2, a_3		constants used to calculate R, defined in context
ALPHA-PREBEND		sting prebend angle, deg.
ALPHA-SECTOR		tunnel sector angle, deg.
b		model wall thickness, in.
C_p		model wall specific heat, BTU/lbm-^{o}R
C.R.		center of rotation
$\frac{dTw}{dt}$	DTWDT	derivative of model wall temperature with respect to time, ^{o}R/sec.
FIT LENGTH		time span over which a linear least squares curve fit of $\left[\ln\left(\frac{T_o - Tw_i}{T_o - Tw}\right) \text{ vs. } t\right]$ was applied, sec.
GRIT	GRIT	code indicating boundary layer transition configuration on model
h_i	HI	heat transfer coefficient in an interference flow field, BTU/ft^2-sec-^{o}R
h_{REF}	HREF	reference heat transfer coefficient, based on 1-foot full scale radius sphere, based on Fay-Riddell theory, $8.139\sqrt{P_{o_1}}\ \mu_o^{.4}[1 - P_\infty/P_{o_1}]^{.25}/\sqrt{R_N}\ T_o^{.15}$ BTU/ft^2-sec-^{o}R
h_u	HU	heat transfer coefficient in an undisturbed flow field, BTU/ft^2-sec-^{o}R
$h(T_o)$	H	heat transfer coefficient, $\dot{q}/[T_o - Tw]$, BTU/ft^2-sec-^{o}R

NOMENCLATURE (Continued)

PLOT SYMBOL	MNEMONIC	DEFINITION
$h(.95T_o)$	H(.95 TO)	heat transfer coefficient, $\dot{q}/[.95T_o - Tw]$, BTU/ft^2-sec-^{o}R
$h(RT_o)$	H	heat transfer coefficient, $\dot{q}/[RT_o - Tw]$, BTU/ft^2-sec-^{o}R
M_∞	MACH	freestream Mach number
M_e		Mach number at the edge of boundary layer
L_O	L	orbiter reference length, in.
L_S	L	SRB reference length, in.
L_T	L	ET reference length, in.
OTS		mated space shuttle vehicle, orbiter, tank, and SRB
P_o	PO	stagnation pressure, psia
P_{o1}		stagnation pressure downstream of a normal shock, psia
P_∞	PS	freestream static pressure, psia
$\dot{q}$	QDOT	heat transfer rate, BTU/ft^2-sec
q_∞	Q(PSI)	freestream dynamic pressure, psi
r	R	recovery factor
R		analytical temperature ratio, TAW/T_o
R_N		reference nose radius, scaled from 1-foot full scale, ft
RE/FT	RN/L	unit Reynolds number, million per foot
SFR	STN NO	theoretical stagnation point Stanton number for a scaled 1-foot full scale radius sphere from Fay-Riddell theory, h_{REF} $\left[32.174\ P_\infty V_\infty (0.2235 + 0.0000135\{T_o + 560\})\right]$

NOMENCLATURE (Continued)

PLOT SYMBOL	MNEMONIC	DEFINITION
SRB		solid rocket booster
t		time, sec
t_i		initial time, sec
T	T	temperature, ^{o}R
T_e		temperature at edge of boundary layer, ^{o}R
T_o	TO	tunnel stilling chamber temperature, ^{o}R
T_w	TW	model wall temperature, ^{o}R
T_{w_i}		initial model wall temperature
T_∞		freestream static temperature, ^{o}R
T_{aw}	TAW	adiabatic wall temperature, ^{o}R
T/C NO.	T/C NO.	thermocouple number
V_∞	V	freestream velocity, ft/sec
w		model wall density, lbm/ft^3
X_o	XO	orbiter longitudinal coordinate, in.
X_s	XS	SRB longitudinal coordinate, in.
X_T	XT	ET longitudinal coordinate, in.
X/L	X/L	longitudinal position as a fraction of fuselage reference length
Y		lateral coordinate, in.
Z		vertical coordinate, in.
α	ALPHA	model angle-of-attack, deg.
β	BETA	model angle-of-sideslip, deg.

NOMENCLATURE (Concluded)

PLOT SYMBOL	MNEMONIC	DEFINITION
γ		ratio of specific heat of air
δ		local model surface angle to freestream flow, deg.
δ_{BF}	BDFLAP	body flap deflection angle, deg.
δ_e	ELEVON	elevon deflection angle, deg.
δ_{SB}	SPDBRK	speedbrake deflection angle, deg.
θ	THETA	local model deflection angle, deg.
μ	MU	viscosity, lb-sec/ft^2
ρ	RHO	density of air, slug/ft^2
ϕ	PHI	model roll angle, angular location coordinate on model surface, deg.
ψ		yaw angle, deg.

SUBSCRIPTS

i	initial condition
e	local condition at edge of boundary layer
O	orbiter
S	SRB
T	ET
∞	freestream condition

CONFIGURATIONS INVESTIGATED

The test model was a 0.0175-scale, thin skin, thermocouple-equipped representation of the Rockwell International Vehicle 5 configuration of the Space Shuttle. Sketches of the model are presented in Figure 2. Figure 3 shows photographs of the model. The integrated model was composed of the orbiter vehicle, external tank, and two solid rocket boosters.

The external tank was designed with a spike shaped nose tip configuration. The nose tip profile is shown in Figure 2b.

The model was constructed of 17-4 PH stainless steel. The nominal skin thickness was 0.030 in. at the instrumented areas. All thermocouples were spot-welded to the inner surface of the model and the skin thickness was measured at each thermocouple location.

Boundary-layer trips were designed to be form-fitted to the orbiter and the solid rocket boosters. The orbiter and solid rocket booster trips consisted of 0.020-in.-dia. stainless steel balls spot-welded to a thin, stainless steel band. The trips attached to the orbiter at an X_o/L_o of 0.04 and on the solid rocket boosters at an X_s/L_s of 0.019. No boundary-layer tripping devices were installed on the external tank.

Model configurations were the isolated external tank with all protuberances removed (Figure 3c), isolated orbiter (Figure 3d), and the integrated model (Figures 3a, b, and e).

Model components were denoted as follows:

CONFIGURATIONS INVESTIGATED (Concluded)

NOTATION ON TABLE II AND IN DATA	MODEL COMPONENT DESIGNATION USED IN TABLE III	DESCRIPTION
ET Alone	T_{34}	Tank alone with spike nose and with no boundary-layer tripping devices and no protuberances
Orbiter Alone	B_{62} C_{12} E_{52} F_{10} M_{16} R_{18} V_8 W_{116}	Orbiter alone with 0.020 in. dia. trip (balls) located at $X/\ell = 0.04$
OTS	B_{62} C_{12} E_{52} F_{10} M_{16} R_{18} S_{23} T_{34} V_8 W_{116}	Mated vehicle with no boundary-layer transition device on the ET, 0.020 in. balls on the orbiter at $X/\ell = 0.04$ and SRB at $X/\ell = 0.019$

INSTRUMENTATION

Tunnel A stilling chamber pressure was measured with a 15-, 60-, 150-, or 300-psid transducer referenced to a near vacuum. Based on periodic comparisons with secondary standards, the uncertainty (a band-width which includes 95 percent of the residuals) of these transducers was estimated to be within ±0.2 percent of reading or ±0.015 psia, whichever was greater. Stilling chamber temperature was measured with a copper-constantan thermocouple with an uncertainty of ±3°F based on repeat calibrations.

The model temperatures were measured with iron-constantan thermocouples with an estimated uncertainty of ±0.5 percent. There were 1105 thermocouples available on the model. A Beckman® 210 analog-to-digital converter was used in conjunction with a CDC 160-A computer to record the temperature data. Tables IV, V, and VI show the thermocouples available. Locations of thermocouples actually used during this test are listed in the tabulated data of this report.

The standard Tunnel A instrumentation system is designed to record a maximum of 97 thermocouples. To more efficiently accommodate the 865 thermocouples on this test required the installation of additional equipment. A new terminal board was fabricated that allowed 291 thermocouples to be connected at one time. An existing three-position switch was incorporated that was used to select a group of 97 thermocouples to be recorded during each model injection. All the model thermocouple leads were terminated at quick-disconnect plugs. These plugs were easily interchanged with mating plugs that attached to the terminal board. In

this manner, a preselected group of 291 thermocouples could be rapidly connected, and by varying this hookup it was possible to record data from all 865 thermocouples utilized.

TEST FACILITY DESCRIPTION

The AEDC von Karman Facility (VKF) Tunnel A is a continuous, closed-circuit, variable density wind tunnel with an automatically driven flexible-plate-type nozzle and a 40- by 40- in. test section (see Figure 2c). The tunnel can be operated at Mach numbers from 1.5 to 6 at maximum stagnation pressures from 29 to 200 psia, respectively and stagnation temperatures up to 750° (M = 6). Minimum operating pressures range from about one-tenth to one-twentieth of the maximum at each Mach number. A description of the tunnel and airflow calibration information may be found in the Test Facilities Handbook (Reference 3).

TEST PROCEDURE

The desired model attitude was established prior to injecting the model into the flow. When the model reached tunnel centerline, it was immediately translated forward into the undisturbed tunnel flow. The thermocouple outputs were scanned approximately 20 times per second starting prior to model injection into the airstream and continuing about 4 sec. after the model reached the tunnel centerline. After each injection, the model was cooled to an isothermal state using high-pressure air.

Data were obtained at angles of attack of 0, ±5, and 10 deg. and yaw angles of 0, -3, ±6, and -9 deg. Table I summarizes nominal free-stream test conditions.

Uncertainties of the basic tunnel parameters were estimated from repeat calibrations of the P_o and T_o instruments and from the repeatability and uniformity of the tunnel flow during calibrations. The parameters, P_o, T_o, and M_∞ with their uncertainties, were then used to compute the uncertainties in the other parameters dependent on these by means of the Taylor series method of error propagation. Table I summarizes uncertainties of these parameters.

DATA REDUCTION

The reduction of thin skin thermocouple data normally involves only the calorimetric heat balance which in coefficient form is:

$$h(T_o) = wbc_p \frac{dTw/dt}{T_o - Tw} \tag{1}$$

Radiation and conduction losses are neglected in this heat balance, and data reduction simply requires evaluation of dTw/dt from the temperature-time data and determination of model material properties. For the present tests, radiation effects were negligible; however, conduction effects can be significant in several regions of the models. To permit identification of these regions, and to improve evaluation of the data, the following procedure was used.

Separation of variables and integration of Eq. (1) assuming constant w, b, c_p, and T_o yields:

$$\frac{h(T_o)}{w\ b\ c_p}(t - t_i) = \ell n \left[\frac{T_o - Tw_i}{T_o - Tw}\right] \tag{2}$$

Differentiation of Eq. (2) with respect to time gives:

$$\frac{h(T_o)}{w\ b\ c_p} = \frac{d}{dt}\ \ell n \left[\frac{T_o - Tw_i}{T_o - Tw}\right] \tag{3}$$

Since the left side of Eq. (3) is a constant, plotting versus time will give a straight line if conduction is negligible. Thus, deviation from a straight line can be interpreted as a conduction effect.

The data were evaluated in this manner, and generally a linear portion of the curve was used for all thermocouples. A linear least-squares curve fit of $\ell n[(T_o - Tw_i)/(T_o - Tw)]$ versus time was applied to the data.

The value of the initial slope is high when the model is located on the tunnel centerline in the rear test section. As the model is translated forward out of this region into the undisturbed tunnel flow a new linear slope is established that is the desired value of $d/dt\ \ln[(T_o - Tw_i)/(T_o - Tw)]$. Generally, for all thermocouples with a value of X_T/L_T less than or equal to 0.05 the curve fit was started at the time the model reached the tunnel centerline. The curve fit for thermocouples with a value of X_T/L_T greater than 0.05 and less than or equal to 0.1 started 1.0 sec. after the model reached centerline. The curve fit for the remaining thermocouples started 2.0 sec. after centerline to ensure that the model was clear of any disturbance in the aft part of the test section. The curve fit extended for a time span, which was a function of the heating rate, as shown below:

Range	Number of Points
$dTw/dt > 32$	5
$16 < dTw/dt \leqq 32$	7
$8 < dTw/dt \leqq 16$	9
$4 < dTw/dt \leq 8$	13
$2 < dTw/dt \leqq 4$	17
$1 < dTw/dt \leqq 2$	25
$dTw/dt < 1$	41

The above time spans were adequate to keep the evaluation of the right side of Eq. (3) within the linear region. The linearity of the fit

was substantiated by visual inspection of the cases in question. Strictly speaking, the value of C_p for the material was not constant, as assumed, and the following relation:

$$C_p = 0.0797 + (5.556 \times 10^{-5})T, \text{ (17-4 PH stainless steel)} \qquad (4)$$

was used with the value of Tw at the midpoint of the curve fit. The maximum variation of C_p over the curve fit was less than 1.2 percent. The value of density used for 17-4 PH stainless steel was

$$w = 480.0 \text{ lbm/ft}^3$$

The maximum available tunnel stagnation temperature for each Mach number tested is listed in Table I. With these relatively low stagnation temperatures, the difference between the model wall temperature and recovery temperature was generally small in regions of peak heating. This small temperature difference causes the calculation of the heat-transfer coefficient to be very sensitive to deviations from the actual adiabatic wall temperature. Two values of the heat-transfer coefficient have been calculated based on an assumed constant recovery temperature, namely $h(T_o)$ and $h(0.95T_o)$. To account for changes in the recovery temperature a third value of the heat-transfer coefficient has been tabulated based on an analytical temperature ratio, $R = \frac{T_{aw}}{T_o}$

The analytical method for determining R was developed by Rockwell International and has been used to calculate $h(RT_o)$. In this method, the following relationships were assumed:

$$R = \frac{T_{aw}}{T_o} \qquad (5)$$

and

$$T_{aw} = T_e \left(1 + \frac{\gamma - 1}{2} r M_e^2\right) \tag{6}$$

$$r = 0.898 \text{ for turbulent flow}$$

with r being the recovery factor and the subscript e identifying local properties at the boundary-layer edge. From these relationships, the temperature ratio can be defined as

$$R = \frac{1 + 0.2\, r\, M_e^2}{1 + 0.2\, M_e^2} \tag{7}$$

which is a function of the recovery factor and the local Mach number. The local Mach number can be written

$$M_e = M_e\,(M_\infty, \delta) \tag{8}$$

where ∞ identifies the freestream property and δ is the local surface angle-of-attack. Standard matrix techniques (see Reference 4) were used to derive the following relationship for δ.

$$\delta = \arcsin\,(\sin\theta \cos\alpha + \cos\theta \cos\phi \sin\alpha)$$

where

α = alpha-sector, deg.

ϕ = roll model + phi, deg.

θ = local model deflection angle, deg.

The edge conditions were computed from M_∞ and δ using the tangent cone flow theory. The following relationship was used to calculate the temperature ratio:

$$R(M_\infty, \delta) = a_1\,(M_\infty) + a_2\,(M_\infty) \cdot (\sin\delta)^{a_3(M_\infty)} \tag{9}$$

The values of the constants used for this test are:

M_∞	a_1	a_2	a_3
3.0	0.9345	0.1004	2.165
4.0	0.9220	0.1004	1.965

The method used to calculate the analytical temperature ratio, R, has been applied to all of the tabulated data. The method represents a simplified approach to a more realistic evaluation of T_{aw}. However, in regions of separated flow or complex interaction, the values calculated for R may no longer apply and should be used with extreme care.

Data obtained using the Rockwell analytical method for determining R were used to calculate interference to undisturbed ratios of thin film coefficient as follows:

$$\frac{h_i}{h_u} = \frac{\left[\begin{array}{l}\text{h calculated at a given thermocouple location on the} \\ \text{tank in the mated configuration during a test run at} \\ \text{a given } \alpha,\ \beta, \text{ and } M_\infty\end{array}\right]}{\left[\begin{array}{l}\text{h calculated at the same thermocouple location on the} \\ \text{isolated tank during a test run at the same } \alpha,\ \beta, \\ \text{and } M_\infty \text{ for windward surfaces and at } \alpha = 0,\ \beta = 0 \\ \text{and matching } M_\infty \text{ for leeward surfaces}\end{array}\right]}$$

Table VII defines data associated with each data set identifier. Table VIII defines windward and leeward surfaces. These data are presented in plotted format in the Data Figures. In some instances the Hu data which created the Hi/Hu data is not the same as that which is plotted, due to the treatment of leeward calculations. The corresponding alpha beta condition is plotted rather than the alpha = beta = 0 case.

DATA REDUCTION (Concluded)

Due to differences in geometry of the undisturbed data and the interfered data, there may be variations in the phi's plotted for the Hu, Hi, and Hi/Hu.

Since no external tank data were tested at +5° alpha, data were generated from the -5° alpha data. The phi's for the -5° data were rotated 180° and alpha was changed to +5°.

Estimated uncertainties for the individual terms in Eq. (2) were used in the Taylor series method of error propagation to obtain uncertainty in values of heat-transfer coefficient as given below:

$h(T_o)$	Uncertainty, percent
10^{-4}	12
10^{-3}	11
10^{-2}	9.5

REFERENCES

1. K. W. Nutt, "Test Results From The NASA/Rockwell International Space Shuttle Integrated Vehicle Heating Test (IH41B) Conducted in the AEDC VKF Tunnel A," AEDC-DR-76-27, April, 1976.

2. W. H. Dye, "Pretest Information For Testing the 0.0175-Scale Thin Skin Thermocouple Model 60-OTS in the AEDC Hypersonic Tunnel 'A' Test IH41B," SD75-SH-0151, July 11, 1975.

3. Test Facilities Handbook (Ninth Edition). "von Karman Gas Dynamics Facility, Vol. 3," Arnold Engineering Development Center, July, 1971.

4. L. L. Trimmer and E. L. Clark, "Transformation of Axes Systems by Matrix Methods and Application to Wind Tunnel Data Reduction." AEDC-TDR-63-224, October, 1963.

TEST: IH41B

TABLE I.

DATE: 12/11/75 through 1/8/76

TEST CONDITIONS

NOMINAL CONDITIONS				
MACH NUMBER	STAGNATION PRESSURE (psia)	STAGNATION TEMPERATURE (^oR)	h_{ref} (BTU/Sec-ft^2-^oR)	UNIT REYNOLDS NUMBER (million per foot)
3.01	37	730	0.055	3.7
4.01	73	750	0.051	4.1

	UNCERTAINTY, ± PERCENT			
MACH NUMBER	MACH NUMBER	STAGNATION PRESSURE	STAGNATION TEMPERATURE	UNIT REYNOLDS NUMBER
3.01	0.7	0.2	0.5	1.3
4.01	0.5	0.2	0.5	1.3

COMMENTS: The model was instrumented with 865 iron constantan thermocouples. See Instrumentation, Test Procedure, and Data Reduction sections for discussion of uncertainties.

Table II.

TEST: IH41B (V41A-A4A)

DATA SET/RUN NUMBER COLLATION SUMMARY

DATE: POST TEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES P_o				NO. OF RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE) 3.01			4.01						
RVFT01	E.T. ALONE	0	0	LΦ					351	-		320	-					
02			0	HI					353	354		322	323					
03			-3						-	-		324	325					
04			-6						355	356		326	327					
05			-9						357	358		-	329					
06			6						359	360		330	331					
07		-5	0						361	362		332	333					
08			-3						-	-		334	335					
09			-6						363	364		336	337					
10			-9						365	366		345	339					
11			6						375	368		340	341					
12		10	0						369	370		342	343					
13			-3						-	-		344	-					
14			-6						371	372		347	348					
15			-6	LΦ					352	-		-	321					
16			6	HI					373	374		349	350					

TEST RUN NUMBERS

TYPE OF DATA

α OR β SCHEDULES

COEFFICIENT SCHEDULES

IDVAR (1) IDVAR (2) NDV

Table II. Continued

TEST: IH41B (V41A-A4A)

DATA SET/RUN NUMBER COLLATION SUMMARY

DATE: POST TEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES P_o	PARAMETERS/VALUES φ			NO. OF RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE) 3.01			4.01							TEST RUN NUMBERS
RVFφ01	ORBITER ALONE	0	0	LO	0				376	–		–	–						
02		0	0	HI					378	379		401	402						
03		0	-6						380	381		417	418						
04		0	-9						382	383		403	404						
05		-5	0						384	385		405	406						
06		-5	-6						386	387		419	420						
07		-5	-9						388	389		407	408						
08		5	0						390	391		413	414						
09		5	-6						392	393		421	422						
10		5	-9						394	395		415	416						
11		10	0						396	397		409	410						
12		10	-6	LO					377	–		400	–						
13		10	-6	HI					398	399		411	412						
14		0	0		180				749	750		683	684						
15		-5	0						751	752		685	686						
16		5	0						753	754		687	688						
17		10	0						755	–		689	690						

TYPE OF DATA α OR β SCHEDULES

COEFFICIENT SCHEDULES

IDVAR (1) IDVAR (2) NDV

All plotted datasets contain VARIABLE RECOVERY FACTOR.

Table II. Continued

TEST: IH41B (V41A -A4A)

DATA SET/RUN NUMBER COLLATION SUMMARY

DATE: POST TEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES P_0	NO. OF RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE) 3.01	4.01
RVF* 21	ØRB + ET + SRB	0	0	LØ		546	423
22		0	0	HI		691 → 693 548, 549, 600 603 → 605	644 → 646 425 → 427, 486 → 488
23		0	-3			724 → 726 736 → 738	428 → 430 489, 513, 491
24		0	-6			694 → 696 551, 552, 599, 606 → 608	647 → 649 431 → 433, 492 → 494
25		0	-9			697 → 699 554, 555, 598 609 → 611	650 → 652 482 - 484, 495, 514, 497
26		0	6			581 → 583 636 → 638	437 → 439 498 → 500
27		-5	0			700 → 702 557 558 596 612 → 614	653, 654, 655 440 → 442 515, 502, 503
28		-5	-3			727 → 729 739 → 741	443 → 445 504 → 506
29		-5	-6			703 → 705 560, 561, 595, 615 → 617	675 657 676 446 → 448, 507 → 509
30		-5	-9			706 → 708 563, 564, 594, 618 → 620	677 449 → 451, 510 → 512
31		-5	6			584 → 586 640 → 642	452 → 454 537 → 539
32		5	0			709 → 711 566 567 591 621 → 623	659 → 661 455 → 457 525 → 527
33		5	-3			730 → 732 742 → 744	458 → 460 528 → 530
34		5	-6		**	712 → 714 597 601 624 → 626	662 → 664 461 → 463 531 → 533
35		5	-9			715 → 717 572 573 602 627 → 629	665 → 667 464 → 466 534 → 536
36		5	6			587 → 589 680 → 682	467 → 469 543 → 545
Y 37	Y	10	0	Y		718 → 720 575 → 577 630 → 632	668 → 670 470 → 472 546 → 518

TEST RUN NUMBERS

TYPE OF DATA

α OR β

SCHEDULES

COEFFICIENT SCHEDULES

IDVAR (1) IDVAR (2) NDV

* Ø ORBITER
T EXTERNAL TANK

** 570 LOST AT TUNNEL

Table II. Concluded

TEST: IH41B (V41A - A4A)

DATA SET/RUN NUMBER COLLATION SUMMARY

DATE: POST TEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES P_o				NO. OF RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE) 3.01			4.01							TEST RUN NUMBERS
RVF* 38	ORB + ET + SRB	10	-3	HI					733→7	735 745	748 747	473→4	75 519→	521					
39		10	-6	LO					547			424							
40		10	-6	HI					721→7 578→5	23 80 633	-635	671→ 476→4	673 73 522→	524					
41		10	6	HI					590 592	593 678	643 679	479→ 340→	481 542						

TYPE OF DATA α OR β SCHEDULES

COEFFICIENT SCHEDULES

IDVAR (1) IDVAR (2) NDV

* Φ ORBITER
T EXTERNAL TANK

TABLE III. MODEL DIMENSIONAL DATA

MODEL COMPONENT: BODY - B_{62}

GENERAL DESCRIPTION: Configuration 140C orbiter fuselage, MCR 200-R4. Similar to 140A/B fuselage except aft body revised and improved midbody-wing-boot fairing, X_o = 940 to X_o = 1040.

MODEL SCALE: 0.0175

DRAWING NUMBER VL70-000140C, -000202C, -000205A, VL70-000200B, -000203

DIMENSIONS:	FULL SCALE	MODEL SCALE
Length (IML: Fwd Sta X_o = 238), in.	1290.3	22.58
Length (OML: Fwd Sta X_o = 235), in.	1293.3	22.63
Max Width (At X_o = 1528.3), in.	264.0	4.62
Max Depth (At X_o = 1464), in.	250.0	4.38
Fineness Ratio	4.899	4.899
Area, Ft^2		
Max. Cross-Sectional	340.885	0.104

TABLE III. MODEL DIMENSIONAL DATA (Continued)

MODEL COMPONENT: CANOPY - C_{12}

GENERAL DESCRIPTION: Configuration 140C orbiter canopy. Vehicle cabin No. 31 updated to MCR 200-R4. Used with fuselage B_{62}.

MODEL SCALE: 0.0175

DRAWING NUMBER: VL70-000140C, -000202B, -000204

DIMENSIONS:

	FULL SCALE	MODEL SCALE
Length (X_o = 434.643 to 578), in.	143.357	2.508
Max Width (At X_o = 513.127), in.	152.412	2.667
Max Depth (Z_o = 501 to 449.39), in.	51.61	0.903

TABLE III. MODEL DIMENSIONAL DATA (Continued)

MODEL COMPONENT: ELEVON - E_{52}

GENERAL DESCRIPTION: Elevon for configuration 140C. Hingeline at X_o = 1387, elevon split line X_w = 312.5, 6.0", beveled edges, and centerbodies.

MODEL SCALE: 0.0175

DRAWING NUMBER: VL70-000140C, -006089, -006092

DIMENSIONS:

	FULL SCALE	MODEL SCALE
Area - Ft^2	210.0	0.064
Span (equivalent), in.	349.2	6.111
Inb'd equivalent chord, in.	118.0	2.065
Outb'd equivalent chord	55.19	0.966
Ratio movable surface chord/ total surface chord		
At Inb'd equiv. chord	0.2096	0.2096
At Outb'd equiv. chord	0.4004	0.4004
Sweep Back Angles, degrees		
Leading Edge	0.0	0.0
Trailing Edge	- 10.056	- 10.056
Hingeline	0.0	0.0
Area Moment (Product of area & $\bar{c}$), Ft^3	1587.25	0.008
Mean Aerodynamic Chord., in.	90.7	1.587
Hingeline dihedral (origin at Z_o = 261.3509), deg.	5.229	5.229

TABLE III. MODEL DIMENSIONAL DATA (Continued)

MODEL COMPONENT: BODY FLAP - F_{10}

GENERAL DESCRIPTION: Configuration 140C body flap. Hingeline located at $X_o = 1532$, $Z_o = 287$.

MODEL SCALE: 0.0175

DRAWING NUMBER: VL70-000140C, -355114

DIMENSIONS:

	FULL SCALE	MODEL SCALE
Length ($X_o = 1525.5$ to $X_o = 1613$), in.	87.50	1.531
Max Width (At L.E., $X_o = 1525.5$), in.	256.00	4.480
Max Depth ($X_o = 1532$), in.	19.798	0.346
Fineness Ratio		
Area - Ft^2		
Max. Cross-Sectional (At H.L.)	35.196	0.011
Planform	135.00	0.041
Wetted		
Base ($X_o = 1613$)	4.89	0.0015

TABLE III. MODEL DIMENSIONAL DATA (Continued)

MODEL COMPONENT: OMS POD - M_{16}

GENERAL DESCRIPTION: Configuration 140C orbiter OMS pod - short pod.

MODEL SCALE: 0.0175

DRAWING NUMBER: VL70-008401, -008410

DIMENSIONS:	FULL SCALE	MODEL SCALE
Length (OMS Fwd Sta X_o = 1310.5), in.	258.50	4.524
Max Width (At X_o = 1511), in.	136.8	2.394
Max Depth (At X_o = 1511), in.	74.70	1.307
Fineness Ratio	2.484	2.484
Area - Ft^2		
Max. Cross-Sectional	58.864	0.018

TABLE III. MODEL DIMENSIONAL DATA (Continued)

MODEL COMPONENT: **RUDDER - R_{18}**

GENERAL DESCRIPTION: **The rudder is a secondary movable airfoil at the** trailing edge of the vertical fin that imparts yaw forces. This dimensional data was calculated from the OML master dimensions.

MODEL SCALE: 0.0175

DRAWING NUMBER: **Vehicle 5 Configuration MCR 200, Rev. 7**

DIMENSIONS:	FULL SCALE	MODEL SCALE
Area, Ft^2	97.84	0.030
Span (equivalent), In.	198.614	3.476
Inb'd equivalent chord, In.	91.07	1.594
Outb'd equivalent chord, In.	50.80	0.889
Ratio movable surface chord/ total surface chord		
At Inb'd equiv. chord	0.400	0.400
At Outb'd equiv. chord	0.400	0.400
Sweep Back Angles, degrees		
Leading Edge	34.833	34.833
Trailing Edge	26.249	26.249
Hingeline	34.833	34.833
Area Moment (Product of Area & $\bar{c}$), Ft^3	593.889	0.003
Mean Aerodynamic Chord, In.	72.840	1.275

TABLE III. MODEL DIMENSIONAL DATA (Continued)

MODEL COMPONENT: BOOSTER SOLID ROCKET MOTOR - S_{23}

GENERAL DESCRIPTION: The BSRM is an external propulsion system which is jettisoned and recoverable after burnout. The BSRM's can be refurbished and reused after recovery.

MODEL SCALE: 0.0175

DRAWING NUMBER: VC77-000002F, VC72-000002E

DIMENSIONS:	FULL SCALE	MODEL SCALE
Length	1725.2	30.191
Max. Width tank dia., In.	146.00	2.555
Max. Depth, aft shroud dia., In.	208.20	3.643
Fineness Ratio	8.596	8.596
W.P. of BSRM centerline	400.0	
F.S. of BSRM nose	743.0	
B.P. of BSRM centerline	250.5	

TABLE III. MODEL DIMENSIONAL DATA (Continued)

MODEL COMPONENT: EXTERNAL TANK - T_{34}

GENERAL DESCRIPTION: Spike nose configuration.

MODEL SCALE: 0.0175
(Dimensions are to tank structural OML, TPS not included.)
DRAWING NUMBER: VC78-000002D, VC72-000002E

DIMENSIONS:	FULL SCALE	MODEL SCALE
Length	1845.43	32.295
Max. Width	331.00	5.792
Max. Depth		
Fineness Ratio	5.687	5.687
Area - Ft^2		
Max. Cross-Sectional	594.678	0.1821

TABLE III. MODEL DIMENSIONAL DATA (Continued)

MODEL COMPONENT: VERTICAL - V_8

GENERAL DESCRIPTION: Configuration 140C orbiter vertical tail (identical to configuration 140A/B vertical tail).

MODEL SCALE: 0.0175

DRAWING NUMBER: VL70-000140C, -000146B

DIMENSIONS:	FULL SCALE	MODEL SCALE
TOTAL DATA		
Area (Theo) - Ft^2		
Planform	413.253	0.127
Span (Theo) - In.	315.72	5.350
Aspect Ratio	1.675	1.675
Rate of Taper	0.507	0.507
Taper Ratio	0.404	0.404
Sweep Back Angles, Degrees		
Leading Edge	45.000	45.000
Trailing Edge	26.25	26.25
0.25 Element Line	41.13	41.13
Chords:		
Root (Theo) WP	268.50	4.699
Tip (Theo) WP	108.47	1.898
MAC	199.81	3.497
Fus. Sta. of .25 MAC	1463.35	25.609
W.P. of .25 MAC	635.52	11.122
B.L. of .25 MAC	0.0	0.0
Airfoil Section		
Leading Wedge Angle, deg.	10.00	10.00
Trailing Wedge Angle, deg.	14.92	14.92
Leading Edge Radius	2.00	2.00
Void Area	13.17	0.0040
Blanketed Area	0.0	0.0

TABLE III. MODEL DIMENSIONAL DATA (Concluded)

MODEL COMPONENT: WING - W_{116}

GENERAL DESCRIPTION: Configuration 5 NOTE: Identical to W_{114} except airfoil thickness. Dihedral angle is along trailing edge of wing. Geometric twist = 0.

MODEL SCALE: 0.0175 DRAWING NO.: VL70-000140A, -000200

DIMENSIONS:	FULL SCALE	MODEL SCALE
TOTAL DATA		
Area (Theo.), ft^2		
Planform	2690.0	0.824
Span (Theo.), in.	936.68	16.392
Aspect Ratio	2.265	2.265
Rate of Taper	1.177	1.177
Taper Ratio	0.200	0.200
Dihedral Angle, degrees	3.500	3.500
Incidence Angle, degrees	0.500	0.500
Aerodynamic Twist, degrees		
Sweep Back Angles, degrees		
Leading Edge	45.000	45.000
Trailing Edge	- 10.056	- 10.056
0.25 Element Line	35.209	35.209
Chords:		
Root (Theo.) B.P.0.0.	689.24	12.062
Tip, (Theo.) B.P.	137.85	2.412
MAC	474.81	8.309
Fus. Sta. of .25 MAC	1136.83	19.895
W.P. of .25 MAC	290.58	5.085
B.L. of .25 MAC	182.13	3.187
EXPOSED DATA		
Area (Theo.), ft^2	1751.50	0.536
Span, (Theo.), in. BP108	720.68	12.612
Aspect Ratio	2.059	2.059
Taper Ratio	0.245	0.245
Chords		
Root BP108	562.09	9.837
Tip 1.00 b/2	137.85	2.412
MAC	392.83	6.875
Fus. Sta. of .25 MAC	1185.98	20.755
W.P. of .25 MAC	294.30	5.150
B.L. of .25 MAC	251.77	4.406
Airfoil Section (Rockwell Mod NASA) XXXX-64		
Root b/2 =	0.113	0.113
Tip b/2 =	0.120	0.120
Data for (1) of (2) Sides		
Leading Edge Cuff		
Planform Area, ft^2	113.18	0.035
Leading Edge Intersects Fus M.L. @ Sta	500.00	8.750
Leading Edge Intersects Wing @ Sta	1024.00	17.920

TABLE IV. EXTERNAL TANK THERMOCOUPLE LOCATIONS

T/C NO.	X/L	MODEL SCALE $X_{FROM\ NOSE}$ (INCHES)	ϕ (DEGREES)	SKIN THICKNESS (INCHES)
600	.04	1.2918	0.0	.0346
601	.05	1.6147	↓	.0345
602	.06	1.9377		.0334
603	.07	2.2606		.0326
604	.08	2.5836		.0342
605	.10	3.2295		.0310
606	.15	4.8442		.0306
607	.20	6.459		.0341
608	.21	6.7819		.0322
609	.22	7.104		.0299
610	.30	9.6885		.0325
611	.35	11.3032		.0334
612	.36	11.6262		.0331
613	.37	11.9491		.0331
614	.375	12.1106		.0331
615	.38	12.2721		.0331
616	.385	12.4335		.0331
617	.39	12.595		.0332
618	.395	12.7565		.033
619	.40	12.918		.0332
620	.405	13.0794		.0331
621	.41	13.2409		.0331
622	.415	13.4024		.0332
623	.42	13.5639		.0329
624	.425	13.7253		.0332
625	.43	13.8868		.0331
626	.44	14.2098		.0331
627	.445	14.3712		.0328
628	.45	14.5327		.0328
629	.455	14.6942		.0323
630	.46	14.8557		.0331
631	.47	15.1786		.0331
632	.48	15.5015		.0329
633	.49	15.8245		.0326
634	.50	16.1475		.0318
635	.55	17.7622		.0335
636	.60	19.377		.0345
637	.65	20.9917		.0344
638	.70	22.6065		.0325
639	.75	24.2212		.0345
640	.80	25.836		.0355
641	.85	27.4507		.0352

TABLE IV. EXTERNAL TANK THERMOCOUPLE LOCATIONS
(Continued)

T/C NO.	X/L	MODEL SCALE $X_{FROM\ NOSE}$ (INCHES)	ϕ (DEGREES)	SKIN THICKNESS (INCHES)
642	.86	27.7737	0.0	.0347
643	.87	28.0966		.0345
644	.88	28.4195		.0342
645	.89	28.7425		.0338
646	.90	29.0655		.0331
648	.926	29.9114		.0305
649	.95	30.6802		.0308
650	.35	11.3032	11.25	.0331
651	.36	11.6262		.0330
652	.37	11.9491		.0331
653	.375	12.1106		.0330
654	.38	12.2721		.0330
655	.385	12.4335		.0330
656	.39	12.5950		.0330
657	.395	12.7565		.0330
658	.40	12.918		.0329
659	.405	13.0794		.0329
660	.41	13.2409		.0330
661	.415	13.4024		.0331
662	.42	13.5639		.0330
663	.425	13.7253		.0329
664	.43	13.8868		.0326
665	.44	14.2098		.0328
666	.45	14.5327		.0328
667	.455	14.6942		.0328
668	.46	14.8557		.0327
669	.47	15.1786		.0326
670	.48	15.5015		.0326
671	.49	15.8245		.0327
672	.50	16.1475		.0320
673	.60	19.377		.0347
674	.70	22.6065		.0327
675	.80	25.836		.0360
676	.85	27.4507		.0352
677	.86	27.7737		.0348
678	.87	28.0966		.0345
679	.88	28.4195		.0341
680	.89	28.7425		.0336
681	.90	29.0655		.0330
682	.91	29.3884		.0305
683	.926	29.9114		.0304
684	.95	30.6802		.0308

TABLE IV. EXTERNAL TANK THERMOCOUPLE LOCATIONS
(Continued)

T/C NO.	X/L	MODEL SCALE $X_{FROM\ NOSE}$ (INCHES)	ϕ (DEGREES)	SKIN THICKNESS (INCHES)
685	.33	10.6573	17.0	.0331
686	.34	10.9803		.0331
687	.35	11.3032		.0331
688	.36	11.6262		.0331
689	.37	11.9491		.0331
690	.375	12.1106		.0330
691	.50	16.1475		.0331
692	.60	19.3770		.0345
693	.70	22.6065		.0328
694	.80	25.836		.0354
695	.87	28.0966		.0349
696	.926	29.9114		.0304
697	.015	.4844	29.8	.0324
698	.030	.9688		.0327
699	.05	1.6147		.0350
700	.07	2.2606		.0329
701	.10	3.2295		.0349
702	.15	4.8442		.0311
703	.20	6.459		.0334
704	.30	9.6885		.0314
705	.35	11.3032		.0325
706	.375	12.1106		.0324
707	.50	16.1475		.0325
708	.60	19.377		.0349
709	.70	22.6065		.0349
710	.80	25.836		.0357
711	.87	28.0966		.0352
712	.926	29.9114		.0306
713	.015	.4844	37.7	.0323
714	.03	.9688		.0327
715	.05	1.6147		.0341
716	.07	2.2606		.0326
717	.10	3.2295		.0343
718	.15	4.8442		.0304
719	.20	6.459		.0330
720	.30	9.6885		.0311
721	.35	11.3032		.0321
722	.375	12.1106		.0321
723	.50	16.1475		.0322
724	.60	19.377		.0348
725	.70	22.6065		.0350
726	.80	25.836		.0354

TABLE IV. EXTERNAL TANK THERMOCOUPLE LOCATIONS
(Continued)

T/C NO.	X/L	MODEL SCALE $X_{FROM\ NOSE}$ (INCHES)	ϕ (DEGREES)	SKIN THICKNESS (INCHES)
727	.87	28.0966	37.7	.0348
728	.926	29.9114		.0306
729	0.0	0.0	180.0	.0321
730	.003	45°		.0324
731	.0103			.0323
732	.015	.4844		.0327
733	.02	.6459		.0324
734	.025	.8073		.0327
735	.03	.9688		.0325
737	.04	1.2918		.0341
738	.045	1.4532		.0336
739	.06	1.9377		.0331
740	.07	2.2606		.0329
741	.08	2.5836		.0306
742	.10	3.2295		.0333
743	.125	4.0368		.0306
744	.15	4.8442		.0320
745	.175	5.6516		.0296
746	.20	6.459		.0311
747	.215	6.9434		.0321
748	.23	7.4278		.0301
749	.24	7.7508		.0295
750	.25	8.0737		.0275
751	.30	9.6885		.0339
752	.35	11.3032		.0352
753	.40	12.918		.0346
754	.50	16.1475		.0340
755	.60	19.377		.0347
756	.70	22.6065		.0337
757	.80	25.836		.0355
758	.90	29.0655		.0344
759	.22	7.1049	235.0	.0299
760	.25	8.0737		.0284
761	.27	8.7196		.0299
762	.30	9.6885		.0370
763	.32	10,3344		.0376
764	.34	10.9803		.0375
765	.36	11.6262		.0370
766	.38	12.2721		.0366
767	.40	12.918		.0356
768	.23	7.4278	247.5	.0299
769	.25	8.0737		.0286

TABLE IV. EXTERNAL TANK THERMOCOUPLE LOCATIONS
(Continued)

T/C NO.	X/L	MODEL SCALE $X_{FROM\ NOSE}$ (INCHES)	ϕ (DEGREES)	SKIN THICKNESS (INCHES)
770	.27	8.7196	247.5	.0305
771	.29	9.3655		.0359
772	.30	9.6885		.0364
773	.31	10.0114		.0367
774	.32	10.3344		.0370
775	.325	10.4958		.0369
776	.33	10.6573		.0368
777	.335	10.8188		.0368
778	.34	10.9803		.0368
779	.345	11.1417		.0367
780	.35	11.3032		.0366
781	.355	11.4647		.0365
782	.36	11.6262		.0365
783	.365	11.7876		.0366
784	.37	11.9491		.0364
785	.375	12.1106		.0361
786	.38	12.2721		.0360
787	.39	12.595		.0359
788	.40	12.918		.0356
789	.50	16.1475		.0347
790	.60	19.377		.0329
791	.70	22.6065		.0315
792	.80	25.836		.0354
793	.90	29.0655		.0345
794	.27	8.7196	258.0	.0312
795	.29	9.3655		.0361
796	.30	9.6885		.0367
797	.31	10.0114		.0367
798	.32	10.3344		.0369
799	.325	10.4958		.0368
800	.33	10.6573		.0368
801	.335	10.8188		.0368
802	.34	10.9803		.0368
803	.345	11.1417		.0367
804	.35	11.3032		.0367
805	.355	11.4647		.0367
806	.36	11.6262		.0366
807	.365	11.7876		.0365
808	.37	11.9491		.0364
809	.375	12.1106		.0364
810	.38	12.2721		.0362
811	.39	12.595		.0361

TABLE IV. EXTERNAL TANK THERMOCOUPLE LOCATIONS
(Continued)

T/C NO.	X/L	MODEL SCALE $X_{FROM\ NOSE}$ (INCHES)	ϕ (DEGREES)	SKIN THICKNESS (INCHES)
812	.40	12.918	258.0	.0361
813	.23	7.4278	270.0	.0306
814	.24	7.7508		.0275
815	.25	8.0737		.0282
816	.27	8.7196		.0313
817	.29	9.3655		.0358
818	.30	9.6885		.0364
819	.31	10.0114		.0367
820	.32	10.3344		.0368
821	.325	10.4958		.0369
822	.33	.0.6573		.0368
823	.335	10.8189		.0367
824	.34	10.9803		.0369
825	.345	11.1417		.0368
826	.35	11.3032		.0368
828	.36	11.6262		.0369
829	.365	11.7876		.0368
830	.37	11.9491		.0367
831	.375	12.1106		.0365
832	.38	12.2721		.0365
833	.39	12.595		.0361
834	.40	12.918		.0360
835	.50	16.1475		.0352
836	.60	19.377		.0334
837	.70	22.6065		.0316
838	.80	25.836		.0358
839	.90	29.0655		.0348
840	.23	7.4278	292.5	.0276
841	.25	8.0737		.0287
842	.27	8.7196		.0318
843	.30	9.6885		.0374
844	.33	10.6573		.0369
845	.35	11.3032		.0363
846	.37	11.9491		.0361
847	.40	12.918		.0357
848	.45	14.4327		.0354
849	.50	16.1475		.0346
850	.55	17.7622		.0333
851	.60	19.377		.0332
852	.65	20.9917		.0327
853	.70	22.6065		.0317
854	.75	24.2212		.0343

TABLE IV. EXTERNAL TANK THERMOCOUPLE LOCATIONS
(Continued)

T/C NO.	X/L	MODEL SCALE $X_{FROM\ NOSE}$ (INCHES)	ϕ (DEGREES)	SKIN THICKNESS (INCHES)
855	.80	25.836	292.5	.0342
856	.90	29.0655	↓	.0343
857	.84	27.1278	305.4	.0360
858	.85	27.4507		.0358
859	.86	27.7737		.0355
860	.87	28.0966		.0354
861	.88	28.4195		.0354
862	.89	28.7425		.0352
863	.90	29.0655		.0350
864	.91	29.3884		.0306
865	.926	29.9114	↓	.0307
866	.80	25.8360	309.3	.0354
867	.81	26.1580		.0356
868	.82	26.4819		.0356
869	.83	26.8048	↓	.0355
870	.04	1.2918	315.0	.0346
871	.05	1.6147		.0348
872	.06	1.9377		.0335
873	.07	2.2606		.0327
874	.08	2.5836		.0315
875	.10	3.2295		.0339
876	.15	4.8442		.0304
877	.20	6.459		.0330
878	.35	11.3032		.0358
879	.40	12.918		.0351
880	.50	16.1475		.0324
881	.55	17.7622		.0334
882	.60	19.377		.0331
883	.65	20.9917		.0326
884	.70	22.6065		.0313
885	.75	24.2212		.0353
886	.80	25.836		.0354
887	.84	27.1278		.0354
888	.85	27.4507		.0351
889	.86	27.7737		.0352
890	.87	28.0966		.0350
891	.88	28.4195		.0348
892	.89	28.7425		.0342
893	.90	29.0655		.0338
894	.91	29.3884		.0305
895	.926	29.9114		.0306
896	.95	30.6802	↓	.0308

TABLE IV. EXTERNAL TANK THERMOCOUPLE LOCATIONS
(Continued)

T/C NO.	X/L	MODEL SCALE $X_{FROM\ NOSE}$ (INCHES)	ϕ (DEGREES)	SKIN THICKNESS (INCHES)
897	.42	13.5639	322.3	.0346
898	.435	14.0483		.0356
899	.45	14.5327		.0340
900	.50	16.1475		.0334
901	.60	19.377		.0335
902	.70	22.6065		.0326
903	.80	25.8360		.0350
904	.87	28.0966		.0352
905	.42	13.5639	330.2	.0345
906	.435	14.0483		.0343
907	.45	14.5327		.0341
908	.50	16.1475		.0311
909	.60	19.377		.0340
910	.70	22.6065		.0330
911	.80	25.836		.0347
912	.87	28.0966		.0348
913	.935	30.1958		.0306
914	.945	30.4187		.0309
915	.04	1.2918	337.5	.0351
916	.05	1.6147		.0345
917	.06	1.9377		.0331
918	.07	2.2606		.0320
919	.08	2.5836		.0326
920	.10	3.2295		.0333
921	.15	4.8442		.0307
922	.20	6.459		.0334
923	.42	13.5939		.0341
924	.435	14.0483		.0340
925	.45	14.5327		.0337
926	.85	27.4507		.0344
927	.86	27.7737		.0343
928	.87	28.0966		.0342
929	.88	28.4195		.0340
930	.89	28.7425		.0338
931	.90	29.0655		.0330
932	.91	29.3884		.0304
933	.926	29.9114		.0305
934	.415	13.4024	343.12	.0343
935	.42	13.5639		.0340
936	.425	13.7253		.0339
937	.43	13.8868		.0339
938	.44	14.2098		.0340

TABLE IV. EXTERNAL TANK THERMOCOUPLE LOCATIONS
(Continued)

T/C NO.	X/L	MODEL SCALE $X_{FROM\ NOSE}$ (INCHES)	ϕ (DEGREES)	SKIN THICKNESS (INCHES)
939	.445	14.3712	343.12	.0335
940	.45	14.5327	↓	.0335
941	.50	16.1475	↓	.0328
942	.60	19.3770	↓	.0345
943	.70	22.6065	↓	.0324
944	.80	25.836	↓	.0341
945	.35	11.3032	348.0	.0351
946	.36	11.6262	↓	.0350
947	.37	11.9491	↓	.0349
948	.375	12.1106	↓	.0349
949	.38	12.2721	↓	.0346
950	.385	12.4335	↓	.0345
951	.39	12.595	↓	.0343
952	.395	12.7565	↓	.0348
953	.40	12.918	↓	.0342
954	.405	13.0794	↓	.0341
955	.41	13.2409	↓	.0341
956	.415	13.4024	↓	.0340
957	.42	13.5639	↓	.0339
958	.425	13.7253	↓	.0339
959	.43	13.8868	↓	.0340
960	.44	14.2098	↓	.0339
961	.445	14.3712	↓	.0339
962	.45	14.5327	↓	.0337
963	.455	14.6942	↓	.0337
964	.46	14.8557	↓	.0335
965	.47	15.1786	↓	.0334
966	.48	15.5015	↓	.0331
967	.49	15.8245	↓	.0331
968	.85	27.4507	↓	.0343
969	.86	27.7737	↓	.0342
970	.87	28.0966	↓	.0341
971	.88	28.4195	↓	.0340
972	.89	28.7425	↓	.0335
973	.90	29.0655	↓	.0327
974	.91	29.3884	↓	.0305
975	.926	29.9114	↓	.0307
976	.95	30.6802	↓	.0309
977	.012		180.0	.0351
978	.015		↓	.0325
979	.018		↓	.0322
980	.024		↓	.0332

TABLE IV. EXTERNAL TANK THERMOCOUPLE LOCATIONS
(Continued)

T/C NO.	X/L	MODEL SCALE $X_{FROM\ NOSE}$ (INCHES)	ϕ (DEGREES)	SKIN THICKNESS (INCHES)
981	.031		180.0	.0347
982	.020		0.0	.0320
983	.025			.0322
984	.030			.0324
985	.040		270.0	.0342
986	.050			.0344
987	.060			.0338
988	.070			.0331
989	.080			.0314
990	.100			.0341
991	.150			.0303
992	.200			.0329
993	0.010	0.3333	39	0.0306
994	0.025	0.8070		0.0327
995	0.030	0.9688		0.0320
996	OMITTED			
997	OMITTED			
998	OMITTED			
999	OMITTED			
2000	.4347	14.0400	23.07	.0347
2001	.5689	18.3726		.0325
2002	.7027	22.6937		.0312
2003	.8363	27.0083		.0350
2004	.8990	29.0332		.0331
2005	.4758	15.3660	31.43	.0335
2006	.5108	16.4963		.0325
2007	.5457	17.6234		.0317
2008	.5807	18.7537		.0319
2009	.6156	19.8808		.0325
2010	.6506	21.0111		.0320
2014	.6855	22.1382		.0319
2015	.7205	23.2685		.0300
2016	.7557	24.4052		.0353
2017	.7904	25.5260		.0352
2018	.8253	26.6531		.0350
2019	.8603	27.7834		.0345
2020	.8952	28.9105		.0342
2021	.4409	14.2387	326.85	.0350
2022	.4761	15.3756		.0345
2023	.5113	16.5124		.0325
2024	.5465	17.6492		.0332
2025	.5818	18.7892		.0318

TABLE IV. EXTERNAL TANK THERMOCOUPLE LOCATIONS
(Continued)

T/C NO.	X/L	MODEL SCALE $X_{FROM\ NOSE}$ (INCHES)	ϕ (DEGREES)	SKIN THICKNESS (INCHES)
2026	.6170	19.9260	326.85	.0320
2027	.6520	21.0563		.0320
2028	.6874	22.1996		.0317
2029	0.7226	23.364		.0319
2030	0.7579	24.4764		.0348
2031	0.7931	25.6132		.0355
2032	0.8283	26.7499		.0352
2033	0.8635	27.8867		.0355
2034	0.8987	29.0235		.0358
2035	0.9339	30.1603		.0332
2036	0.250	8.0737	45	.0275
2037	0.300	9.6885		.0320
2038	0.325	10.4950		.0325
2039	0.350	11.3032		.0330
2040	0.375	12.1100		.0330
2041	0.400	12.9180		.0330
2042	0.420	13.5630		.0330
2043	0.425	13.725		.0330
2044	0.430	13.8860		.0330
2045	0.435	14.0480		.0330
2046	0.440	14.2090		.0330
2047	0.450	14.5327		.0328
2048	0.470	15.1786		.0325
2049	0.550	17.7620		.0324
2050	0.600	19.3770		.0330
2051	0.650	20.9910		.0334
2052	0.750	24.2210		.0350
2053	0.800	25.8360		.0354
2054	0.830	26.8040		.0355
2055	0.840	27.1270		.0355
2056	0.850	27.4500		.0350
2057	0.860	27.7730		.0342
2058	0.870	28.0960		.0334
2059	0.880	28.4190		.0334
2060	0.890	28.7420		.0333
2061	0.900	29.0650		.0332
2062	0.910	29.3880		.0272
2063	0.926	29.9052		.0315
2064	0.935	30.1950		.0298
2065	0.945	30.5180		.0335
2066	0.250	8.0737	36.32	.0335
2067	0.300	9.6885	36.32	.0338

TABLE IV. EXTERNAL TANK THERMOCOUPLE LOCATIONS
(Continued)

T/C NO.	X/L	MODEL SCALE $X_{FROM\ NOSE}$ (INCHES)	ϕ (DEGREES)	SKIN THICKNESS (INCHES)
2068	0.325	10.4950	36.32	.0337
2069	0.350	11.3032	↓	.0335
2070	0.375	12.1100	↓	.0335
2071	0.400	12.9180	↓	.0335
2072	0.420	13.5630	↓	.0335
2073	0.425	13.7250	↓	.0335
2074	0.430	13.8860	↓	.0335
2075	0.435	14.0480	↓	.0335
2076	0.450	14.5327	↓	.0335
2077	0.600	19.3770	↓	.0332
2078	0.650	20.9910	↓	.0325
2079	0.250	8.0737	33.75	.0271
2080	0.300	9.6885	↓	.0338
2081	0.375	12.1100	↓	.0335
2082	0.400	12.9180	↓	.0335
2083	0.430	13.8860	↓	.0335
2084	0.450	14.5327	↓	.0335
2085	0.600	19.3770	↓	.0335
2086	0.650	20.9910	↓	.0332
2087 *	0.937	30.282	250.57	.0312
2088 *	0.937	30.282	289.43	.0315
2089 *	0.937	30.282	352.2	.0318
2090	0.355	11.4647	29.8	.0338
2091	0.360	11.6262	↓	.0338
2092	0.365	11.7876	↓	.0339
2093	0.370	11.9492	↓	.0338
2094	0.355	11.4647	23.08	.0338
2095	0.360	11.6262	23.08	.0338
2096	0.365	11.9491	↓	.0338
2097	0.370	11.9491	↓	.0338
2098	0.355	11.4647	20.98	.0338
2099	0.360	11.6262	↓	.0338
2100	0.365	11.7876	↓	.0338
2101	0.370	11.9491	↓	.0338
2102	0.355	11.4647	17.0	.0340
2103	0.360	11.6262	17.0	.0340
2104	0.400	12.918	330.2	.0353
2105	0.405	13.0795	↓	.0353
2106	0.410	13.2409	↓	.0354
2107	0.400	12.9180	326.86	.0353
2108	0.405	13.0794	326.86	.0353
2109	0.405	13.0794	324.45	.0353

*These T/Cs are plotted and tabulated at incorrect X/L values of 0.929

TABLE IV. EXTERNAL TANK THERMOCOUPLE LOCATIONS
(Continued)

T/C NO.	X/L	MODEL SCALE $X_{FROM\ NOSE}$ (INCHES)	ϕ (DEGREES)	SKIN THICKNESS (INCHES)
2110	0.410	13.2409	324.45	.0353
2111	0.410	13.2409	315.0	.0352
2112	0.835	26.9663	309.3	.0364
2113	0.820	26.4819	305.4	.0365
2114	0.830	26.8049	305.4	.0365
2115	0.835	26.9663	305.4	.0362
2116	0.820	26.4819	301.5	.0363
2117	0.830	26.8049		.0365
2118	0.835	26.9663		.0368
2119	0.840	27.1728		.0365
2120	0.850	27.4508		.0364
2121	0.860	27.7737		.0362
2122	0.870	28.0967		.0363
2123	0.880	28.4196		.0361
2124	0.890	31.6491		.0358
2125	0.900	29.0655		.0355
2126	0.910	29.3885		.030
2127	0.925	29.8729		.0355
2128	0.935	30.1958		.0330
2129	0.820	26.4819	292.0	.0363
2130	0.830	26.8048		.0360
2131	0.840	27.1278		.0360
2132	0.850	27.4507		.0358
2133	0.860	27.7737		.0360
2134	0.870	28.0966		.0358
2135	0.880	28.4196		.0358
2136	0.890	28.7425		.0357
2137 *	0.910	29.3884		.030
2138	0.926	29.9052		.0318
2139	0.930	30.0344		.0310
2140	0.926	29.9052	289.43	.0318
2141	0.926	29.9052	270.0	.0325
2142	0.926	29.9052	258.0	.0315
2143	0.926	29.9052	250.57	.0318
2144	0.926	29.9052	247.5	.0318
2145	0.930	30.0344	289.43	.0312
2146	0.930	30.0344	270	.0315
2147	0.930	30.0344	258.0	.0305
2148	0.930	30.0344	250.57	.0315
2149	0.930	30.0344	247.5	.0308
2150	0.935	30.1958	270	.0315
2151	0.935	30.1958	258.0	.0315

*This T/C is plotted and tabulated an an incorrect X/L value of 0.900.

TABLE IV. EXTERNAL TANK THERMOCOUPLE LOCATIONS
(Concluded)

T/C NO.	X/L	MODEL SCALE $X_{FROM\ NOSE}$ (INCHES)	ϕ (DEGREES)	SKIN THICKNESS (INCHES)
2152	0.926	29.683	33.75	.0305
2153	0.926	29.683	31.75	.0305
2154	0.926	29.683	23.07	.0312
2155	0.926	29.683	17.25	.0295
2156	0.926	29.683	11.25	.0312
2157	0.926	29.683	0.0	.0302
2158	0.926	29.683	355.16	.0310
2159	0.926	29.683	348.0	.0315
2160	0.926	29.683	343.15	.0315
2161	0.926	29.683	334.98	0.0315
2162	0.926	29.683	330.2	0.0314
2163	0.926	29.683	326.86	0.0313
2164	0.926	29.683	324.45	0.0313
2165	0.926	29.683	315.0	0.0312
2166	0.4409	14.2389	315.0	0.0335
2167	0.425	13.7253	337.5	0.0345
2168	0.425	13.7253	345.56	0.0345
2169	0.425	13.7253	354.0	0.0345
2170	0.425	13.7253	5.63	0.0342
2171	0.425	13.7253	17.0	0.0347
2172	0.430	13.8868	337.5	0.0345
2173	0.430	13.8868	345.56	0.0345
2174	0.430	13.8868	354.0	0.0345
2175	0.430	13.8868	5.63	0.0342
2176	0.430	13.8868	17.0	0.0342
2177	0.435	14.0483	354.0	0.0345
2178	0.435	14.0483	5.63	0.0342
2179	0.440	14.2098	354.0	0.0345
2180	0.440	14.2098	5.63	0.0342
2181	0.010	0.333	180.0	0.0304
2182	0.015	0.4850	180.0	0.0296
2183	0.020	0.6460	180.0	0.0293
2184	0.0250	0.8070	180.0	0.0305
2185	0.030	0.9688	180.0	0.0307
2186	0.020	0.6460	0.0	0.0312
2187	0.025	0.8070	0.0	0.0313
2188	0.030	0.9688	0.0	0.0313

TABLE V. SOLID ROCKET BOOSTER THERMOCOUPLE LOCATIONS

T/C NO.	X/L	FULL SCALE X_o (INCHES)	MODEL SCALE $X_{FROM\ NOSE}$ (INCHES	ϕ (DEGREES)	SKIN THICKNESS (INCHES)
1000	.115	399.19	6.986	180	.030
1001	.20	545.04	9.538		.030
1002	.225	588.17	10.293		.030
1003	.25	631.30	11.048		.030
1004	.30	717.56	12.557		.030
1005	.40	890.08	15.576		.031
1006	.5	1062.60	18.596		.0304
1007	.55	1148.86	20.105		.0304
1008	.60	1235.12	21.615		.030
1009	.65	1321.38	23.124		.0302
1010	.7	1407.64	24.634		.029
1011	.750	1493.90	26.143		.028
1012	.80	1580.16	27.653		.029
1013	.875	1790.55	29.917		.030
1014	.925	1795.81	31.427		.0299
1015	.939	1899.963	31.849		.0292
1016	.953	1844.58	32.279	175	.0285
1017	.967	1867.89	32.688		.0299
1018	.980	1891.09	33.094		.0301
1019	.994	1914.37	33.502		.0305
1020	.115	399.19	6.986	225	.030
1021	.143	446.70	7.817		.030
1022	.171	495.01	8.663		.030
1023	.2	545.04	9.538		.030
1024	.3	717.56	12.557		.030
1025	.4	890.08	15.576		.031
1026	.5	1062.60	18.596		.0303
1027	.55	1148.86	20.105		.0302
1028	.6	1235.12	21.615		.030
1029	.65	1321.38	23.124		.0302
1030	.7	1407.64	24.634		.0295
1031	.8	1580.16	27.653		.0295
1032	.875	1709.55	29.917		.0294
1033	.925	795.81	31.428		.0299
1034	.953	1844.53	32.279	230	.0295
1035	.967	1867.81	32.688		.0296
1036	.980	1891.09	33.094		.030
1037	.994	1914.37	33.502		.030
1038	0	200.0	3.50	270	.0303

TABLE V. SOLID ROCKET BOOSTER THERMOCOUPLE LOCATIONS
(Continued)

T/C NO.	X/L	FULL SCALE X_o (INCHES)	MODEL SCALE $X_{FROM\ NOSE}$ (INCHES	ϕ (DEGREES)	SKIN THICKNESS (INCHES)
1039	.002	203.89	3.568	270	.0305
1040	.008	213.27	3.732		.030
1041	.05	286.26	5.010		.030
1042	.1	372.52	6.519		.030
1043	.12	407.024	7.123		.030
1044	.127	419.10	7.334		.030
1045	.134	431.178	7.546		.030
1046	.173	498.46	8.723		.030
1047	.180	510.536	8.934		.030
1048	.186	520.887	9.116		.030
1049	.193	532.964	9.327		.030
1050	.2	545.04	9.538		.030
1051	.25	631.30	11.048		.030
1052	.3	717.56	12.557		.030
1053	.4	890.08	15.576		.0314
1054	.5	1062.6	18.596		.0305
1055	.6	1235.12	21.615		.0302
1056	.7	1407.64	24.634		.0302
1057	.75	1493.9	26.143		.0285
1058	.8	1580.16	27.653		.030
1059	.875	1709.55	29.197		.030
1060	.925	1795.81	31.427		.0301
1061	.953	1844.53	32.279		.028
1062	.967	1867.81	32.688		.028
1063	.980	1891.09	33.094		.0287
1064	.994	1914.37	33.502		.029
1065	.115	399.19	6.986	315	.030
1066	.143	446.7	7.817		.030
1067	.171	495.01	8.663		.030
1068	.2	545.04	9.538		.030
1069	.3	717.56	12.557		.030
1070	.5	1062.6	18.595		.0305
1071	.6	1235.12	21.615		.030
1072	.7	1407.64	24.634		.0295
1073	.8	1580.16	27.653		.0295
1074	.953	1844.53	32.279		.029
1075	.967	1867.81	32.688		.0295
1076	.980	1891.09	33.094		.0298
1077	.994	1914.37	33.502		.0295

TABLE V. SOLID ROCKET BOOSTER THERMOCOUPLE LOCATIONS
(Continued)

T/C NO.	X/L	FULL SCALE X_o (INCHES)	MODEL SCALE $X_{FROM\ NOSE}$ (INCHES	ϕ (DEGREES)	SKIN THICKNESS (INCHES)
1078	.2	545.04	9.538	0	.030
1079	.4	890.08	15.576		.0311
1080	.6	1235.12	21.615		.030
1081	.7	1407.64	24.634		.0292
1082	.75	1493.9	26.143		.028
1083	.8	1580.16	27.653		.0295
1084	.953	1844.53	32.279		.0291
1085	.967	1867.81	32.688		.0291
1086	.98	1891.09	33.094		.0285
1087	.994	1914.37	33.502		.030
1088	.115	399.19	6.986	45	.030
1089	.146	451.88	7.908		.030
1090	.177	505.36	8.844		.030
1091	.6	1235.12	21.615		.030
1092	.7	1407.64	24.634		.0297
1093	.8	1580.16	27.652		.030
1094	.115	399.19	6.986	76	.030
1095	.128	420.83	7.364		.030
1096	.146	451.88	7.098		.030
1097	.2	545.04	9.538		.030
1098	.4	890.08	15.576		.0315
1099	.6	1235.12	21.615	76	.0302
1100	.8	1580.16	27.653		.030
1101	.875	1709.55	29.917		.030
1102	.05	286.26	5.01		.030
1103	.1	372.52	6.519		.030
1104	.115	399.19	6.986		.030
1105	.146	451.88	7.908		.030
1110	.953	1844.53	32.279		.030
1111	.967	1867.81	32.688		.030
1112	.980	1891.09	33.094		.030
1113	.994	1914.37	33.502		.030
1114	.115	399.19	6.986	104	.030
1115	.128	420.83	7.364		.030
1116	.146	451.88	7.908		.030
1117	.2	545.04	9.538		.030
1118	.4	590.08	15.576		.0314
1119	.6	1235.12	21.615		.0302
1120	.8	1580.16	27.653		.0295

TABLE V. SOLID ROCKET BOOSTER THERMOCOUPLE LOCATIONS
(Continued)

T/C NO.	X/L	FULL SCALE X_o (INCHES)	MODEL SCALE $X_{FROM\ NOSE}$ (INCHES	ϕ (DEGREES)	SKIN THICKNESS (INCHES)
1121	.875	1709.55	29.917	104	.0299
1122	.115	399.19	6.986	135	.030
1123	.146	451.88	7.908		.030
1124	.177	505.36	8.844		.030
1125	.2	545.04	9.538		.030
1126	.3	717.56	12.557		.030
1127	.5	1062.60	18.595		.0305
1128	.6	1235.12	21.615		.0302
1129	.7	1407.64	24.634		.0298
1130	.8	1580.16	27.653		.0295
1131	.875	1709.55	29.917		.030
1132	.925	1795.81	31.427		.030
1133	.953	1844.53	32.279		.0295
1134	.967	1867.31	32.688		.0295
1135	.980	1891.09	33.094		.030
1136	.994	1914.37	33.502		.0299
1200	.043	274.8	4.809	155	.030
1201	.05	286.23	5.009		.030
1202	.057	297.65	5.209		.030
1203	.063	309.09	5.409		.030
1204	.090	355.26	6.217		.030
1205	.10	372.51	6.519		.030
1206	.05	286.23	5.009	185	.0298
1207	.09	355.26	6.217		.030
1208	.100	372.51	6.519		.030
1209	.05	286.23	5.009	215	.0298
1210	.09	355.26	6.217		.030
1211	.10	372.51	6.519		.030
1212	.043	274.8	4.809	225	.030
1213	.05	286.23	5.009		.030
1214	.057	297.66	5.209		.030
1215	.063	309.09	5.409		.030
1216	.09	355.26	6.217		.030
1217	.10	372.51	6.519		.030
1220	.965	1644.82	29.134	184.25	.0295
1221	.975	1682.07	29.436		.0296
1222	.985	1699.32	29.738		.0299
1223	.995	1716.57	30.040		.030
1224	.965	1664.82	29.134	200	.030

TABLE V. SOLID ROCKET BOOSTER THERMOCOUPLE LOCATIONS
(Concluded)

T/C NO.	X/L	FULL SCALE X_o (INCHES)	MODEL SCALE $X_{FROM\ NOSE}$ (INCHES	ϕ (DEGREES)	SKIN THICKNESS (INCHES)
1225	.975	1682.07	29.436	200	.030
1226	.985	1699.32	29.738	↓	.0298
1227	.995	1716.57	30.040	↓	.0299
1228	.965	1664.82	29.134	220	.0298
1229	.975	1682.07	29.436	↓	.0298
1230	.985	1699.32	29.738	↓	.0297
1231	.995	1716.57	30.04	↓	.030

TABLE VI. ORBITER THERMOCOUPLE LOCATIONS

T/C NO.	INCHES FULL SCALE			INCHES MODEL SCALE			X/L	ϕ (DEGREES)	MODEL SKIN THICKNESS (INCHES)	DESCRIPTION OF LOCATION
	X_o	Y_o	Z_o	$X_{FROM\ L.E.}$	Y_o	$Z_{FROM\ FRL}$				
1	235.0	0	-	0	0	-	0	0	.040	Bottom ℄
2	241.47			.113			.005		.032	
3	247.93			.226			.01		.033	
4	260.87			.453			.02		.040	
5	273.80			.679			.03		.040	
6	286.73			.905			.04		.040	
7	299.67			1.132			.05		.033	
8	312.60			1.358			.06		.035	
9	325.53			1.584			.07		.032	
10	338.46			1.811			.08		.032	
11	351.40			2.037			.09		.035	
12	364.33			2.263			.10		.037	
13	390.20			2.716			.12		.040	
14	403.13			2.942			.13		.038	
15	416.06			3.169			.14		.035	
16	429.00			3.395			.15		.036	
17	441.93			3.621			.16		.036	
18	454.86			3.848			.17		.035	
19	467.79			4.074			.18		.035	
20	480.73			4.300			.19		.035	
21	493.66			4.527			.20		.035	
22	525.99			5.092			.225		.035	
23	558.33			5.658			.25		.035	
24	622.99			6.790			.30		.035	
25	687.66			7.922			.35		.035	

TABLE VI. ORBITER THERMOCOUPLE LOCATIONS (Continued)

T/C NO.	INCHES FULL SCALE			INCHES MODEL SCALE			X/L	ϕ (DEGREES)	MODEL SKIN THICKNESS (INCHES)	DESCRIPTION OF LOCATION
	X_o	Y_o	Z_o	$X_{FROM\ L.E.}$	Y_o	$Z_{FROM\ FRL}$				
26	752.32	0	-	9.053	0	-	.40	0	.034	Bottom ℄
27	816.99			10.185			.45		.033	
28	881.65			11.316			.50		.032	
29	946.32			12.448			.55		.030	
30	1010.9			13.580			.60		.030	
31	1075.6			14.711			.65		.030	
32	1140.3			15.843			.70		.029	
33	1204.9			16.975			.75		.030	
34	1269.6			18.106			.80		.030	
35	1324.3			19.063			.85		.029	
36	1398.9			20.369			.90		.031	
37	1431.3			20.935			.925		.027	
38	1463.6			21.501			.950		.027	
39	1495.9			22.067			.975		.023	
40	1547.7			22.972			1.015		.030	
41	1567.1			23.312			1.03		.030	
42	1586.5			23.651			1.045		.028	
43	1605.0			23.977			1.06		.0265	
44	299.67	25.0		1.132	.438		.05	14	.032	Fuselage Bottom Surface
45	364.33	20.0		2.263	.350		.10	10	.036	
46	429.0	24.0		3.395	.420		.15	10	.035	
47	493.66	25.0		4.527	.438		.20	11.5	.034	
48	493.66	50.0		4.527	.875		.20	24	.025	
49	752.32	46.8		9.053	.819		.40	-	.028	
50	881.65	46.8		11.316	.819		.50	-	.028	

TABLE VI. ORBITER THERMOCOUPLE LOCATIONS (Continued)

T/C NO.	INCHES FULL SCALE			INCHES MODEL SCALE			X/L	ϕ (DEGREES)	MODEL SKIN THICKNESS (INCHES)	DESCRIPTION OF LOCATION
	X_o	Y_o	Z_o	$X_{FROM\ L.E.}$	Y_o	$Z_{FROM\ FRL}$				
51	1010.9	46.8	-	13.580	.819	-	.60	-	.025	Fuselage Bottom Surface
52	1140.3			15.843			.70		.030	
53	1269.6			18.106			.80		.030	
54	1398.6			20.369			.90		.028	
55	1463.6			21.501			.95		.025	
56	1495.9			22.067			.975		.028	
57	1547.7			22.972			1.015		.030	
58	1567.1			23.312			1.03		.030	
59	1586.5			23.651			1.045		.030	
60	1605.0			23.977			1.060		.031	
61	752.32	93.60		9.053	1.638		.40		.032	
62	881.65			11.316			.50		.031	
63	1010.9			13.580			.60		.033	
64	1140.3			15.843			.70		.029	
65	1269.6			18.106			.80		.031	
66	1398.6			20.369			.90		.030	
67	1463.6			21.501			.95		.029	
68	1495.9			22.067			.975		.028	
69	1547.7			22.972			1.015		.0275	
70	1567.1			23.312			1.03		.0285	
71	1586.5			23.651			1.045		.029	
72	1605.0			23.977			1.06		.027	
169	247.93	0		.226	0		.01	180	.033	Top ℄
170	267.33			.565			.025		.031	
171	299.67			1.129			.050		.035	

TABLE VI. ORBITER THERMOCOUPLE LOCATIONS (Continued)

T/C NO.	INCHES FULL SCALE			INCHES MODEL SCALE			X/L	ϕ (DEGREES)	MODEL SKIN THICKNESS (INCHES)	DESCRIPTION OF LOCATION
	X_o	Y_o	Z_o	$X_{FROM\ L.E.}$	Y_o	$Z_{FROM\ FRL}$				
172	332.0	0	-	1.694	0	-	.075	180	.035	Top ℄
173	364.33			2.258			.100		.034	
174	396.66			2.283			.125		.032	
175	429.0			3.387			.150		.032	
176	441.93			3.613			.160		.040	
177	459.86			3.839			.170		.040	
178	467.79			4.064			.180		.033	
179	493.66			4.516			.200		.036	
182	752.32			9.053			.40		.026	
183	816.99			10.185			.45		.026	
184	881.65			11.316			.50		.025	
185	946.32			12.448			.55		.026	
186	1010.9			13.580			.60		.025	
187	1075.6			14.711			.65		.024	
188	1140.3			15.843			.70		.025	
189	1204.9			16.975			.75		.0255	
190	1269.6			18.106			.80		.023	
191	-	6.00	452.0	-	.105	.910	-	-	.031	Window #1 Bottom, R.
192		12.80	478.0		.224	1.365			.031	Top Right
193		21.20	464.9		.371	1.136			.030	Center
194		29.60	478.0		.518	1.365			.028	Top Left
195		34.30	452.0		.602	.910			.030	Bottom Right
196		40.40	452.0		.707	.910			.030	Window #2 Bottom, R.
197		34.80	478.0		.609	1.365			.030	Top Right
198		44.80	464.9		.784	1.136			.030	Center

TABLE VI. ORBITER THERMOCOUPLE LOCATIONS (Continued)

T/C NO.	INCHES FULL SCALE			INCHES MODEL SCALE			X/L	ϕ (DEGREES)	MODEL SKIN THICKNESS (INCHES)	DESCRIPTION OF LOCATION
	X_o	Y_o	Z_o	$X_{FROM\ L.E.}$	Y_o	$Z_{FROM\ FRL}$				
199	-	43.20	478.0	-	.756	1.365	-	-	.030	Window #2 Top LT
200	↓	59.20	452.0	↓	1.036	.910	↓	↓	.029	Bottom Left
201	↓	62.40	464.9	↓	1.092	1.136	↓	↓	.029	Window #3 Center
202	299.6	-	303.6	1.132	-		.05	22	.040	Fus. Side CCL
203	↓	↓	325.6	↓	↓		↓	35	.035	MHB
204	↓	↓	342.4	↓	↓		↓	42.5	.033	UT
205	↓	↓	378.4	↓	↓		↓	60	.033	45T
206	332.2	↓	350.0	1.720	↓		.076	-	.035	RCS
207	364.3	39.20	-	2.263	.686	-	.10	20	.038	
208	↓	52.00	-	↓	.910	-	↓	24.5	.035	CCL
209	↓	-	317.6	↓	-		↓	39	.035	MHB
210	↓	-	410.0	↓	-		↓	119	.037	
211	429.0	40.80	-	3.395	.714	-	.15	20	.035	
212	↓	62.00	-	↓	1.085	-	↓	25.5	.025	CCL
213	↓	79.20	304.8	↓	1.386		↓	40	.030	CCL
214	↓	83.60	314.4	↓	1.463		↓	45.5	.038	MHB
215	493.6	65.80	287.20	4.527	1.148		.20	31.5	.022	CCL
216	↓	75.60	292.0	↓	1.323		↓	35	.022	CCL
217	↓	85.20	298.8	↓	1.491		↓	40	.020	CCL
218	↓	-	320.0	↓	-		↓	51	.035	MHB
219	↓	↓	360.0	↓	↓		↓	67.5	.030	UT
223	752.32	↓	-	9.053	↓	-	.40	157.5	.034	Upper Fuselage
224	816.99	↓	↓	10.185	↓	↓	.45	↓	.034	↓
225	881.65	↓	↓	11.316	↓	↓	.50	↓	.034	↓
226	946.32	↓	↓	12.448	↓	↓	.55	↓	.035	↓

TABLE VI. ORBITER THERMOCOUPLE LOCATIONS (Continued)

T/C NO.	INCHES FULL SCALE			INCHES MODEL SCALE			X/L	ϕ (DEGREES)	MODEL SKIN THICKNESS (INCHES)	DESCRIPTION OF LOCATION
	X_o	Y_o	Z_o	$X_{FROM\ L.E.}$	Y_o	$Z_{FROM\ FRL}$				
227	1010.9	-	-	13.580	-	-	.60	157.5	.034	Upper Fuselage
228	1075.6			14.711			.65		.0325	
229	1140.3			15.843			.70		.030	
230	1204.9			16.975			.75		.030	
231	1269.6			18.106			.80		.032	
234	752.32			9.053			.40		.030	Upper Fuselage
235	816.99			10.185			.45		.030	
236	881.65			11.316			.50		.036	
237	946.32			12.448			.55		.035	
238	1010.9			13.580			.60		.031	
239	1075.6			14.711			.65		.032	
240	1140.3			15.843			.70		.030	
241	1204.9			16.975			.75		.032	
242	1269.6			18.106			.80		.032	
281	1431.5		300	20.939			.925	-	.030	Aft Fuselage Side
282			280						.030	
283			271.6							
285	1463.7		308	21.504			.950			
286			284							
287			275.6							
288	1496.0		381.2	22.068			.975			
289			336.8							
290			308							
291			290							
292			230.8						.030	

TABLE VI. ORBITER THERMOCOUPLE LOCATIONS (Continued)

T/C NO.	INCHES FULL SCALE			INCHES MODEL SCALE			X/L	ϕ (DEGREES)	MODEL SKIN THICKNESS (INCHES)	DESCRIPTION OF LOCATION
	X_o	Y_o	Z_o	$X_{FROM\ L.E.}$	Y_o	$Z_{FROM\ FRL}$				
388	752.32	-	445.0	9.053	-		.40	-	.031	Upper Fuselage Side
389	816.99	↓	↓	10.185	↓		.45	↓	.033	↓
390	881.65			11.316			.50		.036	
391	946.32			12.448			.55		.0345	
392	1010.9			13.580			.60		.0335	
393	1075.6			14.711			.65		.0345	
394	1140.3			15.843			.70		.034	
395	1204.9			16.975			.75		.036	
396	1269.6			18.106			.80		.034	

TABLE VI. ORBITER THERMOCOUPLE LOCATIONS (Continued)

T/C NO.	INCHES FULL SCALE			INCHES MODEL SCALE			X/C	$\frac{2Y}{b}$	MODEL SKIN THICKNESS (INCHES)	DESCRIPTION OF LOCATION
	X_o	Y_o	Z_o	$X_{FROM\ L.E.}$	Y_o	$Z_{FROM\ FRL}$				
73		140.5		0	2.459		0	.30	.020	Wing Lower Surface
74				.670			.05		.020	
75				1.340			.10		.026	
76				2.680			.20		.031	
77				4.020			.30		.030	
78				5.360			.40		.031	
79				6.700			.50		.030	
80				8.040			.60		.030	
81				9.380			.70		.031	
82				10.720			.80		.030	
83				12.060			.90		.0305	
84				12.730			.95		.031	
85		163.9		0	2.869		0	.35	.026	
86		187.3		0	3.287		0	.40	.022	
87				.438			.05		.031	
89				1.753			.20		.030	
90				2.629			.30		.031	
91				3.506			.40		.029	
92				5.258			.60		.033	
93				6.135			.70		.033	
94				6.573			.75		.030	
95				7.449			.85		.0295	
96				7.888			.90		.026	
97				8.326			.95		.0275	
99		234.1		0	4.098		0	.50	.027	

TABLE VI. ORBITER THERMOCOUPLE LOCATIONS (Continued)

T/C NO.	INCHES FULL SCALE			INCHES MODEL SCALE			X/C	$\frac{2Y}{b}$	MODEL SKIN THICKNESS (INCHES)	DESCRIPTION OF LOCATION
	X_o	Y_o	Z_o	$X_{FROM\ L.E.}$	Y_o	$Z_{FROM\ FRL}$				
100		234.1		.364	4.098		.05	.50	.029	Wing Lower Surface
101				.727			.10		.030	
102				1.454			.20		.031	
103				2.181			.30		.031	
104				2.098			.40		.031	
105				4.362			.60		.032	
106				5.089			.70		.031	
107				6.543			.90		.0285	
108		257.6		0	4.508		0	.55	.026	
109		281.0		0	4.918		0	.60	.024	
110				.157			.025		.029	
111				.314			.05		.028	
112				.470			.075		.030	
113				.627			.10		.031	
114				1.254			.20		.031	
115				1.882			.30		.033	
116				2.059			.40		.032	
117				3.136			.50		.032	
118				3.763			.60		.032	
119				4.390			.70		.031	
120				5.018			.80		.030	
121				5.331			.85		.0305	
122				5.695			.90		.0295	
123				5.958			.95		.0295	
124		309.4		0	5.327		0	.65	.026	

TABLE VI. ORBITER THERMOCOUPLE LOCATIONS (Continued)

T/C NO.	INCHES FULL SCALE			INCHES MODEL SCALE			X/C	$\frac{2Y}{b}$	MODEL SKIN THICKNESS (INCHES)	DESCRIPTION OF LOCATION
	X_o	Y_o	Z_o	$X_{FROM\ L.E.}$	Y_o	$Z_{FROM\ FRL}$				
125		327.8		0	5.737		0	.70	.017	Wing Lower Surface
126				.133			.025		.024	
127				.531			.10		.032	
128				1.061			.20		.036	
129				1.592			.30		.036	
130				2.123			.40		.035	
131				3.840			.60		.035	
132				4.776			.90		.031	
133		352.8		0	6.174		0	.75	.028	
134				.121			.025		.028	
135				.241			.05		.030	
136				.483			.10		.032	
137				.965			.20		.032	
138				1.448			.30		.035	
139				1.930			.40		.034	
140				2.895			.60		.033	
141				3.378			.70		.031	
142				3.860			.80		.027	
143				4.343			.90		.0305	
144				4.584			.95		.0295	
145		374.6		0	6.557		0	.80	.024	
146				.868			.20		.032	
147				1.737			.40		.031	
148				3.908			.90		.0305	
149		398.1		0	6.967		0	.85	.028	

TABLE VI. ORBITER THERMOCOUPLE LOCATIONS (Continued)

T/C NO.	INCHES FULL SCALE			INCHES MODEL SCALE			X/C	$\frac{2Y}{b}$	MODEL SKIN THICKNESS (INCHES)	DESCRIPTION OF LOCATION
	X_o	Y_o	Z_o	$X_{FROM\ L.E.}$	Y_o	$Z_{FROM\ FRL}$				
150		398.1		.772	6.967		.20	.85	.031	Wing Lower Surface
151		398.1		1.544	6.967		.40	.85	.030	
152		421.4		0	7.376		0	.90	.028	
153				.338			.10		.030	
154				.675			.20		.031	
155				1.013			.30		.031	
156				1.689			.50		.031	
157				2.026			.60		.032	
158				2.702			.80		.0285	
159				3.039			.90		.028	
160		444.9		0	7.786		0	.95	.030	
161				.138			.05		.031	
162				.276			.10		.030	
163				.552			.20		.032	
164				.827			.30		.031	
165				1.379			.50		.030	
166				1.931			.70		.0295	
167				2.206			.80		.030	
168				2.482			.90		.0295	
243		117.0		1.357	2.049		.085	.250	.030	Wing Upper Surface
244				2.156			.135		.050	
245				3.593			.225		.080	
246		187.3		.483	3.278		.05	.400	.025	
247				1.753			.20		.030	
248				3.506			.40		.027	

TABLE VI. ORBITER THERMOCOUPLE LOCATIONS (Continued)

T/C NO.	INCHES FULL SCALE			INCHES MODEL SCALE			X/C	$\frac{2Y}{b}$	MODEL SKIN THICKNESS (INCHES)	DESCRIPTION OF LOCATION
	X_o	Y_o	Z_o	$X_{FROM\ L.E.}$	Y_o	$Z_{FROM\ FRL}$				
249		187.3		5.258	3.278		.60	.40	.022	Wing Upper Surface
250				6.573			.75		.031	
251				7.011			.80		.031	
252				8.326			.95		.025	
253		281.0		.157	4.918		.025	.60	.011	
254				.314			.05		.018	
255				.627			.10		.025	
256				1.254			.20		.029	
257				2.509			.40		.026	
258				3.763			.60		.025	
259				4.703			.75		.028	
260				5.331			.85		.028	
261				5.958			.95		.019	
262		327.83		1.061	5.737		.20	.70	.027	
263				2.123			.40		.027	
264				4.776			.90		.027	
265		352.25		.483	6.147		.10	.75	.027	
266				.965			.40		.025	
267				1.930			.40		.025	
268				2.895			.60		.026	
269				5.860			.80		.023	
270				4.430			.90		.027	
271		374.69		3.908	6.557		.90	.80	.0285	
272		421.99		.675	7.376		.20	.90	.025	
273		421.99		1.351	7.376		.40	.90	.025	

TABLE VI. ORBITER THERMOCOUPLE LOCATIONS (Continued)

T/C NO.	INCHES FULL SCALE			INCHES MODEL SCALE			X/C	$\frac{2Y}{b}$	MODEL SKIN THICKNESS (INCHES)	DESCRIPTION OF LOCATION
	X_o	Y_o	Z_o	$X_{FROM\ L.E.}$	Y_o	$Z_{FROM\ FRL}$				
274		421.99		2.026	7.576		.60	.90	.031	Wing Upper Surface
275		444.91		.552	7.786		.20	.95	.029	
276		↓		1.103	↓		.40	↓	.030	↓
277				1.379			.50		.023	
278				1.930			.70		.030	
279				2.206			.80		.029	
280				2.481			.90		.030	

TABLE VI. ORBITER THERMOCOUPLE LOCATIONS (Continued)

T/C NO.	INCHES FULL SCALE			INCHES MODEL SCALE			X/L	ϕ (DEGREES)	MODEL SKIN THICKNESS (INCHES)	DESCRIPTION OF LOCATION
	X_o	Y_o	Z_o	$X_{FROM\ L.E.}$	Y_o	$Z_{FROM\ FRL}$				
298	1325	106.9	428.6						.030	OMS Pod
299		98.77	489.2						.033	
300		67.73	511.3						.030	
301		48.78	506.7						.028	
302	1350	123.6	440.4						.024	
303		132.0	458.6						.030	
304		108.9	498.5						.032	
305		69.5	524.4						.029	
306		47.3	515.5						.031	
308	1375	111.6	421.6						.016	
309		130.0	440.0						.023	
310		139.6	460.0						.035	
311		113.8	503.4						.028	
312		72.4	531.0						.031	
313	1400	48.28	523.4						.027	
315	1425	115.0	415.1						.031	
316		133.7	437.7						.030	
317		147.7	466.3						.038	
318		119.7	508.6						.027	
319		77.34	536.5						.030	
320	1450	117.48	418.20						.023	
321		134.5	436.0						.029	
322		149.8	468.2						.033	
323		122.2	511.1						.025	
325		48.3	526.6						.027	

TABLE VI. ORBITER THERMOCOUPLE LOCATIONS (Continued)

T/C NO.	INCHES FULL SCALE			INCHES MODEL SCALE			X/L	ϕ (DEGREES)	MODEL SKIN THICKNESS (INCHES)	DESCRIPTION OF LOCATION
	X_o	Y_o	Z_o	$X_{FROM\ L.E.}$	Y_o	$Z_{FROM\ FRL}$				
327	1500	136.7	437.0						.029	OMS Pod
328	↓	151.2	470.4						.036	↓
329		125.6	514.0						.031	
330		89.5	539.4						.031	
331		55.7	532.3						.034	
332	1525	-	424.0						.029	
333	↓	-	431.0						.034	
334		-	440.0						.035	
335		-	493.0						.029	
336		133.0	-						.030	
337	1545	-	428.0						.022	
338	1545	-	434.0						.027	
339	1545	-	443.0						.039	

TABLE VI. ORBITER THERMOCOUPLE LOCATIONS (Continued)

T/C NO.	INCHES FULL SCALE			INCHES MODEL SCALE			X/C	Z/b	MODEL SKIN THICKNESS (INCHES)	DESCRIPTION OF LOCATION
	X_o	Y_o	Z_o	$X_{FROM\ L.E.}$	Y_o	$Z_{FROM\ FRL}$				
340							.10	.10	.0315	External Surface of Vertical Tail
341							.30	.10	.0305	
342							.50	.10	.0295	
343							.10	.20	.031	
344							.20	.20	.0302	
345							.40	.20	.0313	
346							.60	.20	.031	
347							.80	.20	.0315	
348							.05	.30	.0297	
349							.20	.30	.031	
350							.40	.30	.031	
351							.50	.30	.0318	
352							.90	.30	.030	
353							.10	.40	.0305	
354							.20	.40	.0315	
355							.40	.40	.0315	
356							.50	.40	.0308	
357							.70	.40	.029	
358							.90	.40	.0298	
359							.05	.50	.0285	
360							.70	.50	.028	
361							.90	.50	.0315	
362							.05	.60	.029	
363							.10	.60	.0295	
364							.20	.60	.0303	

TABLE VI. ORBITER THERMOCOUPLE LOCATIONS (Continued)

T/C NO.	INCHES FULL SCALE			INCHES MODEL SCALE			X/C	Z/b	MODEL SKIN THICKNESS (INCHES)	DESCRIPTION OF LOCATION
	X_o	Y_o	Z_o	$X_{FROM\ L.E.}$	Y_o	$Z_{FROM\ FRL}$				
365							.40	.60	.0318	External Surface of Vertical Tail
366							.50	.60	.0315	
367							.70	.60	.028	
368							.90	.60	.030	
369							.05	.70	.0275	
370							.70	.70	.0275	
371							.90	.70	.029	
372							.05	.80	.029	
373							.10	.80	.0243	
374							.40	.80	.031	
375							.50	.80	.0325	
376							.70	.80	.028	
377							.90	.80	.029	
378							.10	.90	.031	
379							.30	.90	.0305	
380							.50	.90	.032	
381							.70	.90	.0308	
382							.90	.90	.0298	
383							.30	.95	.0313	
384							.50	.95	.0315	
385							.90	.95	.033	
397										Speed Brake Cavity
398										
399										
400										

TABLE VI. ORBITER THERMOCOUPLE LOCATIONS (Continued)

T/C NO.	INCHES FULL SCALE			INCHES MODEL SCALE			X/L	ϕ (DEGREES)	MODEL SKIN THICKNESS (INCHES)	DESCRIPTION OF LOCATION
	X_o	Y_o	Z_o	$X_{FROM\ L.E.}$	Y_o	$Z_{FROM\ FRL}$				
501	1271	137							0.024	Orbiter/ET Umbilical Attach Region on Orbiter Lower Fuselage
502	1282	137							0.023	
503	1295	137							0.023	
504	1303.5	137							0.022	
505	1331	52							0.032	
506	1358	57							0.030	
507	1365	57							0.024	
508	1391	57							0.024	
509	1331	60							0.0305	
510	1225	70							0.027	
511	1256								0.027	
512	1282								0.027	
513	1295								0.027	
514	1307								0.028	
515	1320								0.031	
516	1364								0.024	
517	1391								0.022	
518	1416								0.023	
519	1466								0.022	
520	1491								0.025	
521	1344	72							0.030	
522	1360	72							0.029	
523	1317	81							0.031	
525	1331	81							0.0305	
527	1349	86							0.030	

TABLE VI. ORBITER THERMOCOUPLE LOCATIONS (Concluded)

T/C NO.	INCHES FULL SCALE			INCHES MODEL SCALE			X/L	ϕ (DEGREES)	MODEL SKIN THICKNESS (INCHES)	DESCRIPTION OF LOCATION
	X_o	Y_o	Z_o	$X_{FROM\ L.E.}$	Y_o	$Z_{FROM\ FRL}$				
528	1359	86							0.029	Orbiter/ET Umbilical Attach Region on Orbiter Lower Fuselage
529	1364	86							0.023	
530	1391	86							0.023	
531	1410	86							0.023	
532	1312	89							0.0406	
533	1325	97							0.0305	
534	1309	98							0.0305	
535	1302	100							0.026	
536	1331	100							0.030	
537	1344	100							0.0295	
538	1358	100							0.029	
539	1364	100							0.024	
540	1391	100							0.024	
541	1287	102							0.024	
542	1312	105							0.027	
543	1271	106							0.024	
544	1255	108							0.024	
545	1312	123							0.023	
546	1358	123							0.020	
548	1312	137							0.021	

TABLE VII. DEFINITION OF DATA SET IDENTIFIERS

Data Set Identifiers have six characters. For IH41B they are:

_ VF _ XX

VF: Uniquely identifies data as coming from Test IH41B

XX: Identifies test runs from which data were obtained as described by Table II

First character identifies operations performed on data as follows:

Identifies model component on which data were measured as follows:

CHARACTER	OPERATIONS
Tank	
L, S	NONE
A, K	Interpolation
[illegible], [illegible]	Ratio
Orbiter	
S	NONE
A	Ratio

CHARACTER	COMPONENT
T	External tank
B	Orbiter fuselage top nose and OMS pods
C	Canopy windshield
F	Fuselage lower surface and umbilical door
L	Wing lower surface
U	Wing upper surface
V	Vertical tail

Table VIII.

DEFINITION OF WINDWARD - LEEWARD CONDITIONS
(EXTERNAL TANK)

	α	-5	-5	-5	-5	-5	0	0	0	0	0	5	5	5	5	5	10	10	10	10	10
	φ \ β	-9	-6	-3	0	6	-9	-6	-3	0	6	-9	-6	-3	0	6	-9	-6	-3	0	6
TOP ℄	0.0	W	W	W	W	W	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
	5.625										W										
	11.25																				
	11.8																				
	17.0																				
	20.98	W																			
	23.07	L																			
	29.8																				
	31.43																				
	33.75																				
	36.32																				
	37.7																				
	39.0		W																		
	45.0		L	W	W	W					W	L	L	L	L	L	L	L	L	L	L
	180.0	L	L	L	L	L	L	L	L		L	W	W	W	W	W	W	W	W	W	W
	235.0	W	W	L			W	W	W							L					W
	247.0			W																	L
	247.5																				
	250.57																				
	258.0																				
	270.0				L										W					W	
	289.42				W										L				W	L	
	292.0																		L		
	292.5																				
	299.4																				
	301.5													W				W			
	305.4													L				L			
	309.3																				
	315.0					L							W				W				
	322.3					W							L				L				
	324.45																				
	326.86																				
	330.2											W									
	334.98											L									
	337.5																				
	343.12																				
	345.56																				
	348.0																				
	352.2																				
	354.0																				
	355.16	W	W	W	W	W	W	W	W	L	L	L	L	L	L	L	L	L	L	L	L

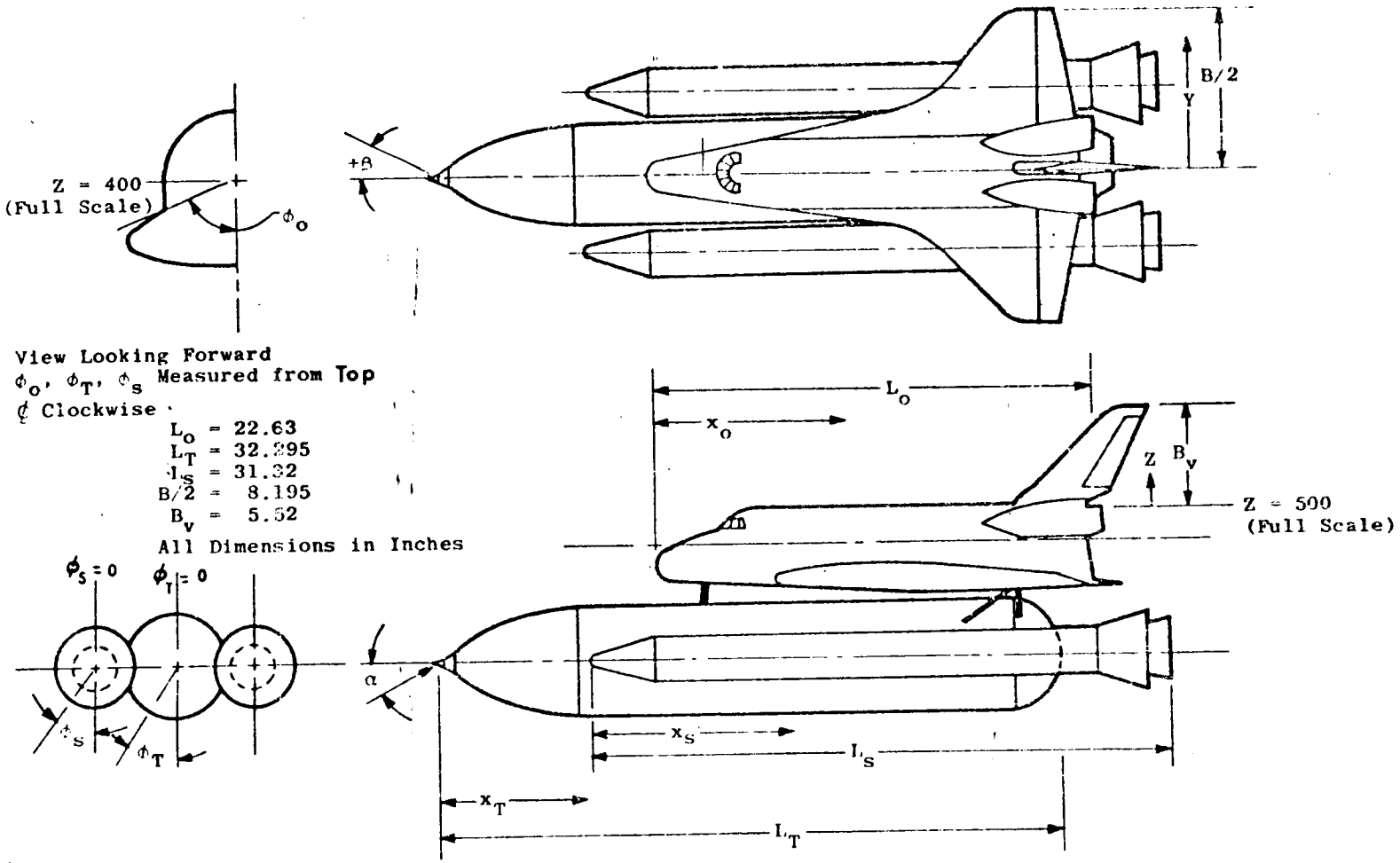
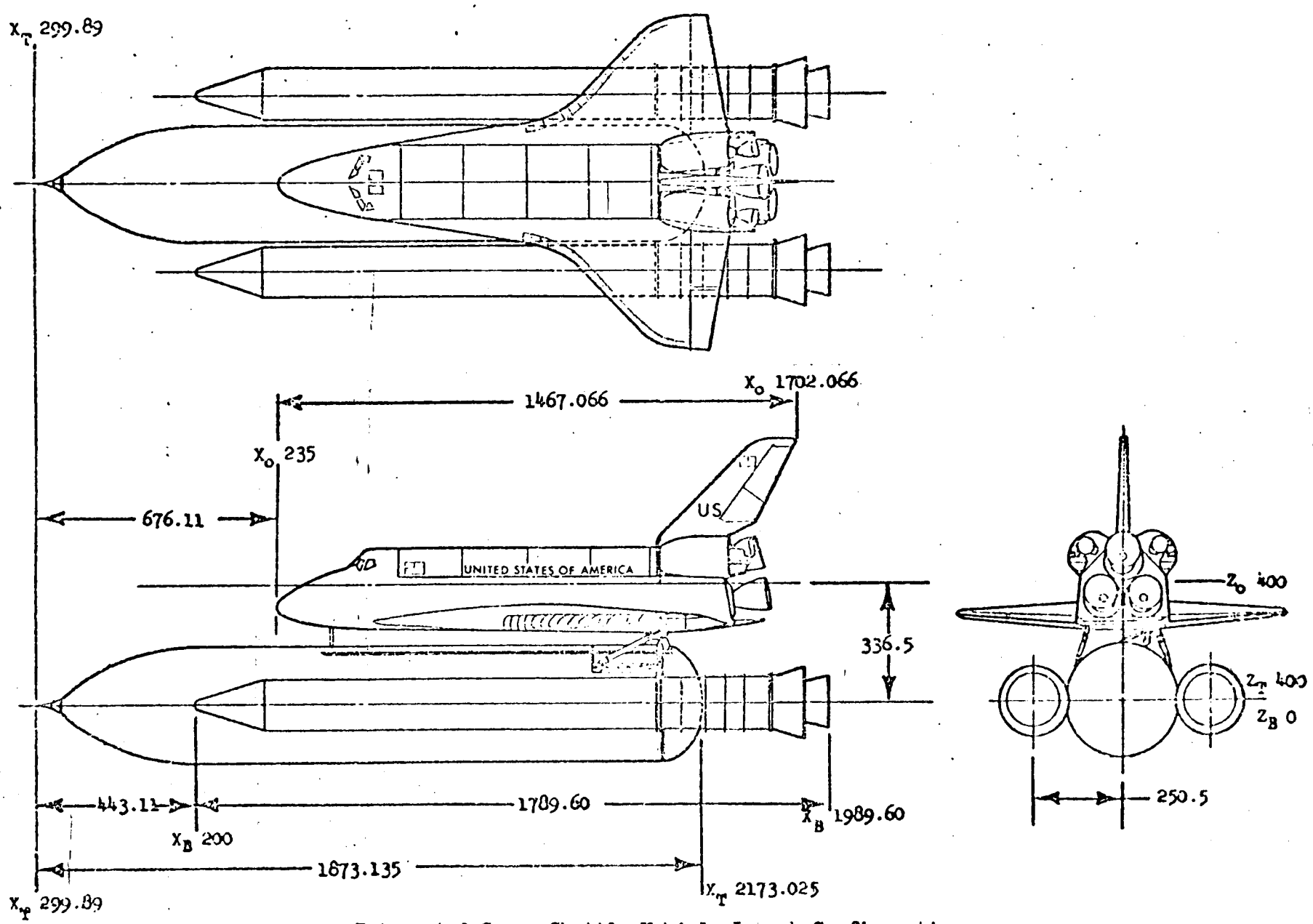
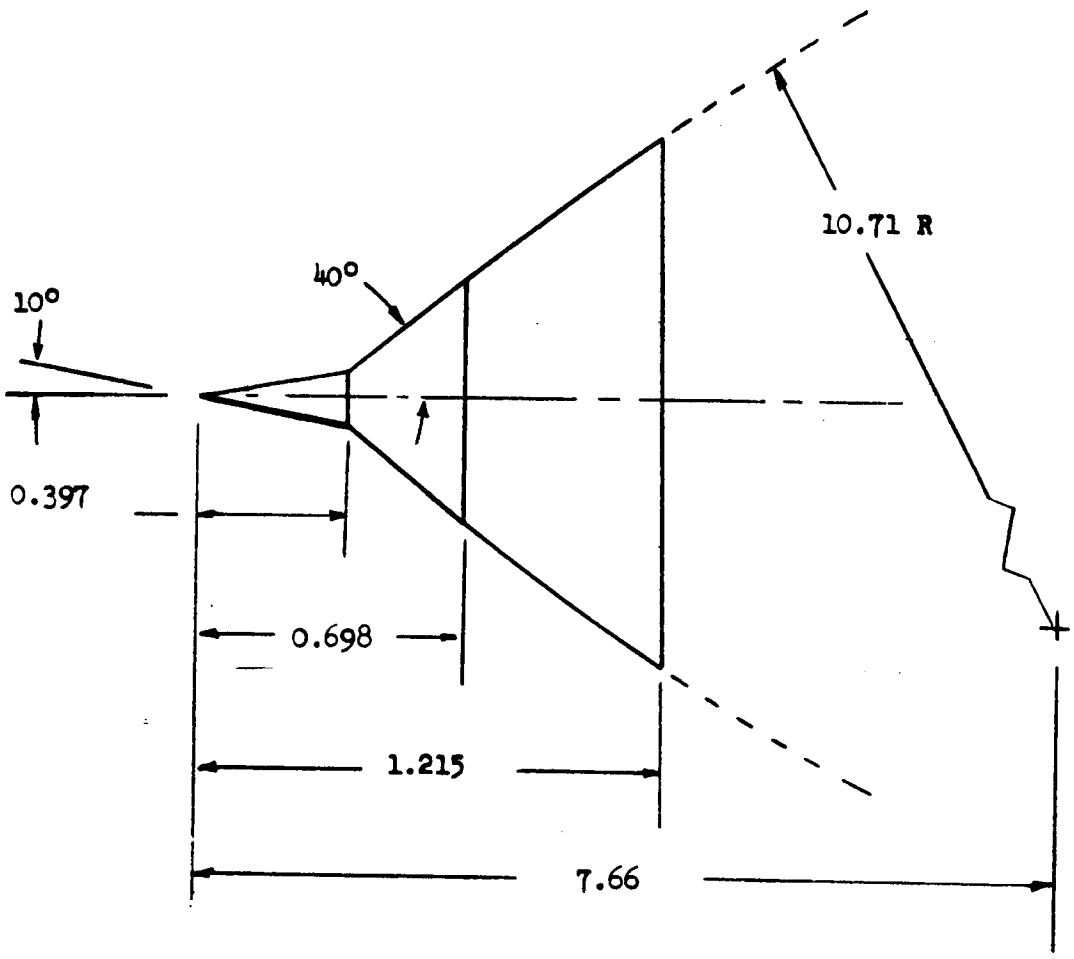


Figure 1. Axis systems.



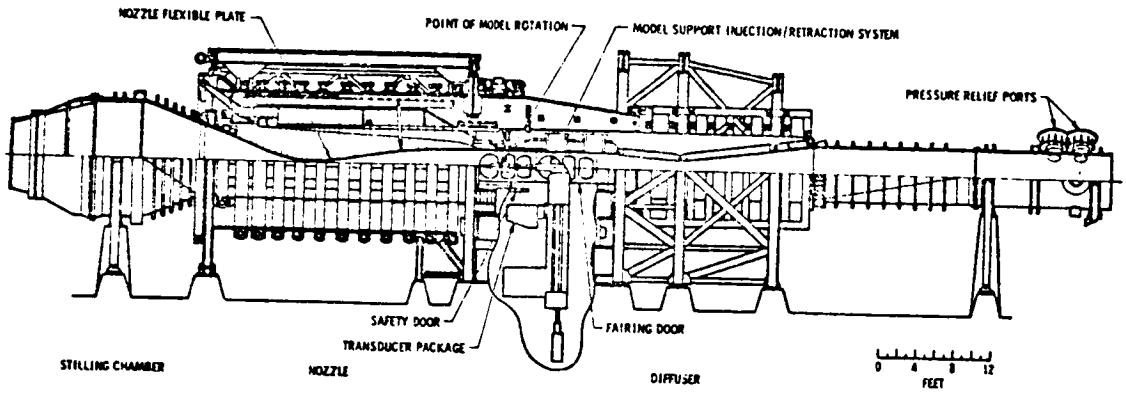
a. Integrated Space Shuttle Vehicle Launch Configuration

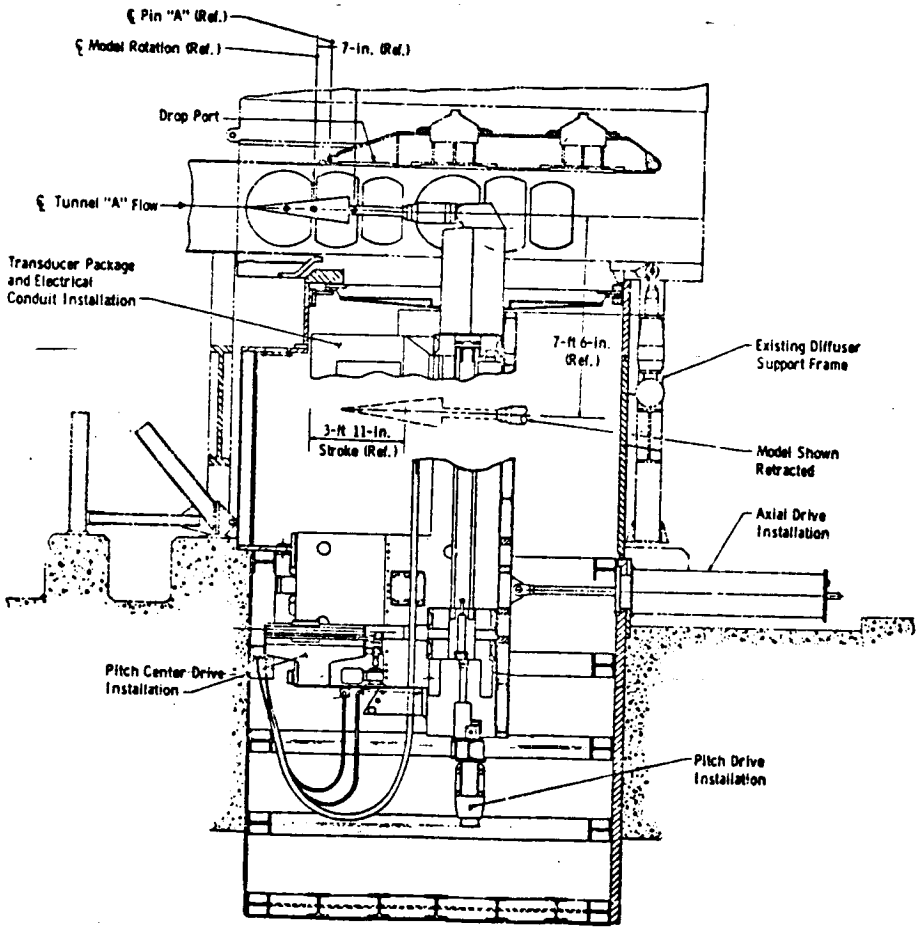
Figure 2. Model sketches.



*All Linear Dimensions in Inches.

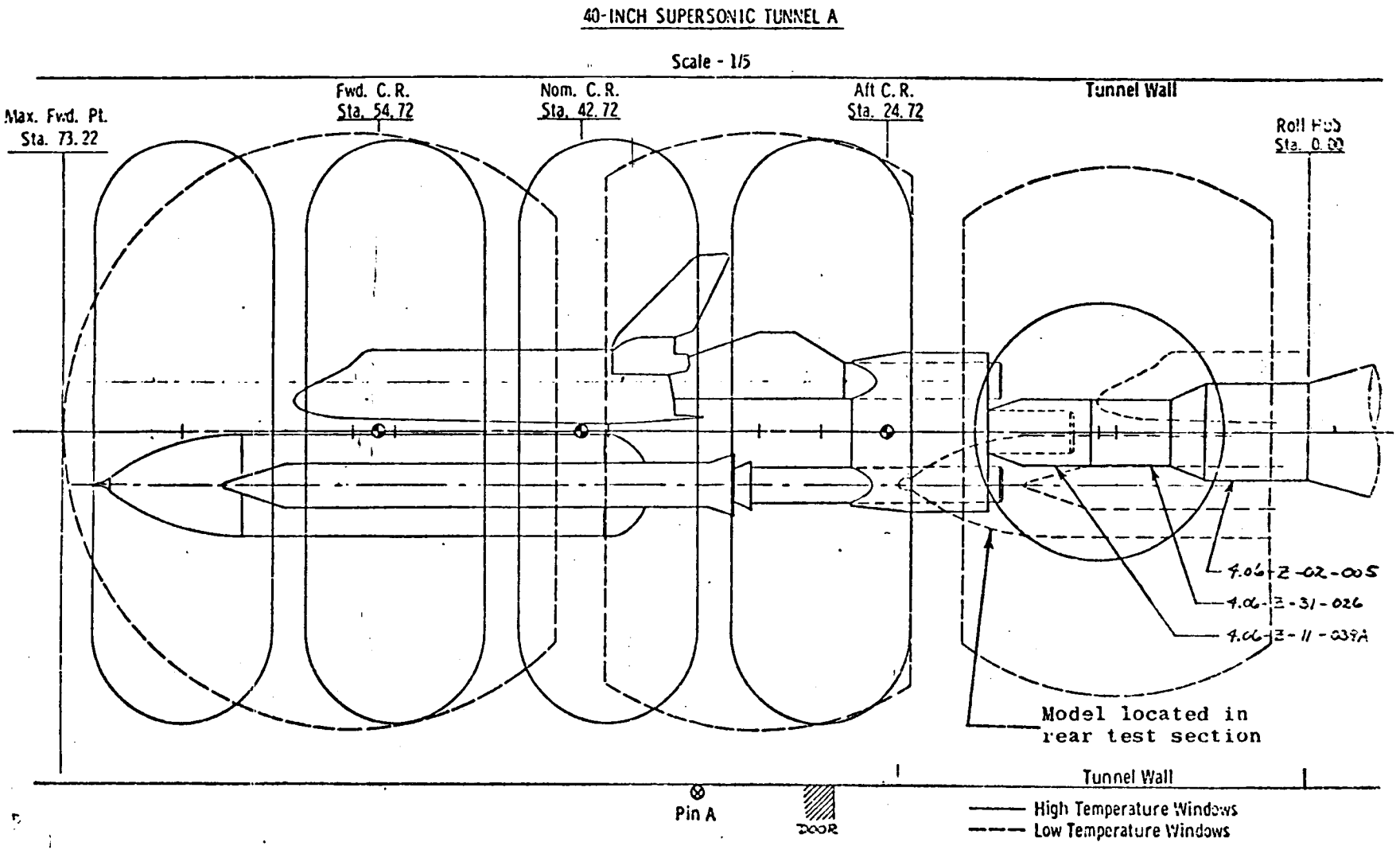
b. External Tank Spike Nose Configuration
Figure 2. Continued.



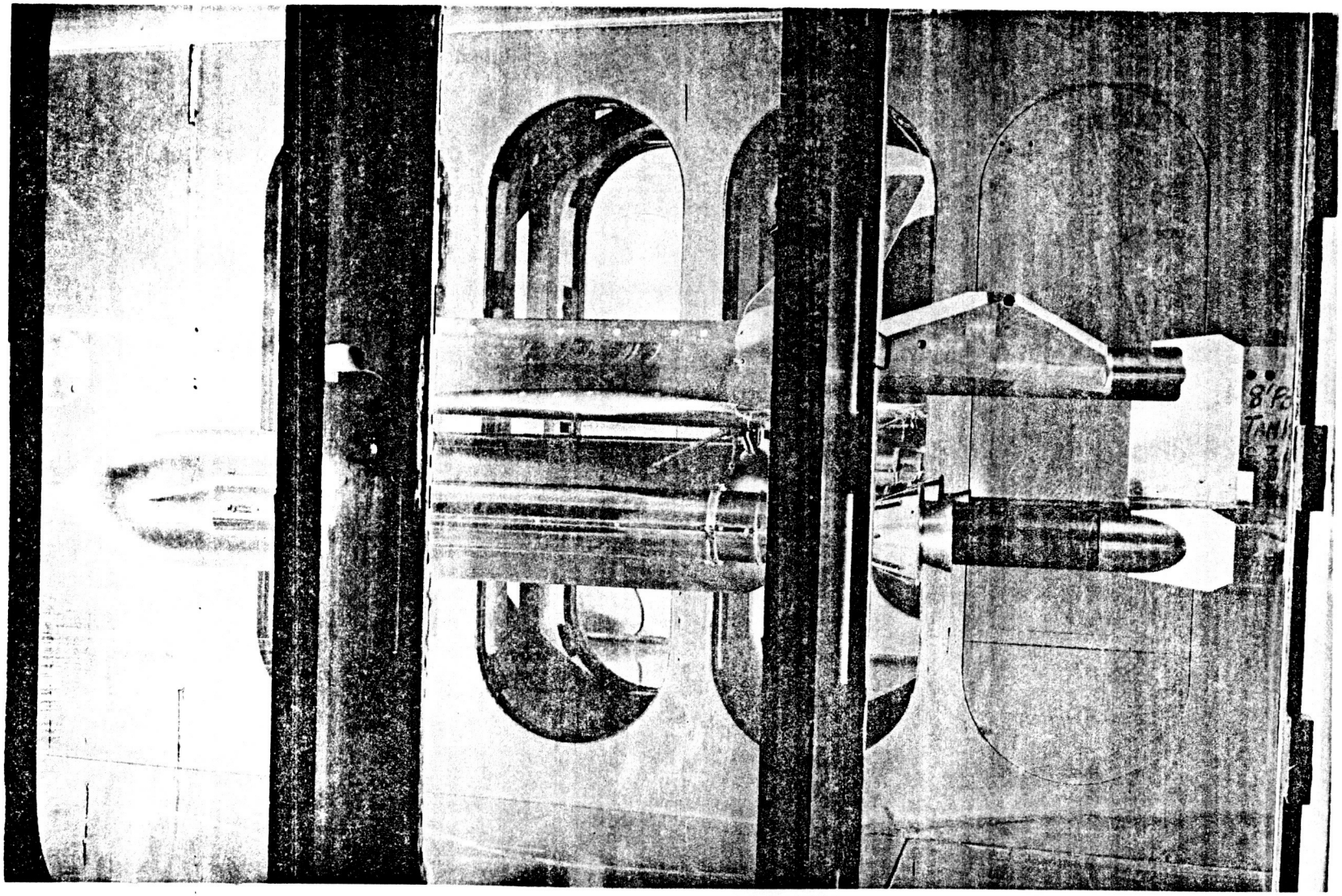


Schematic view of Tunnel A.

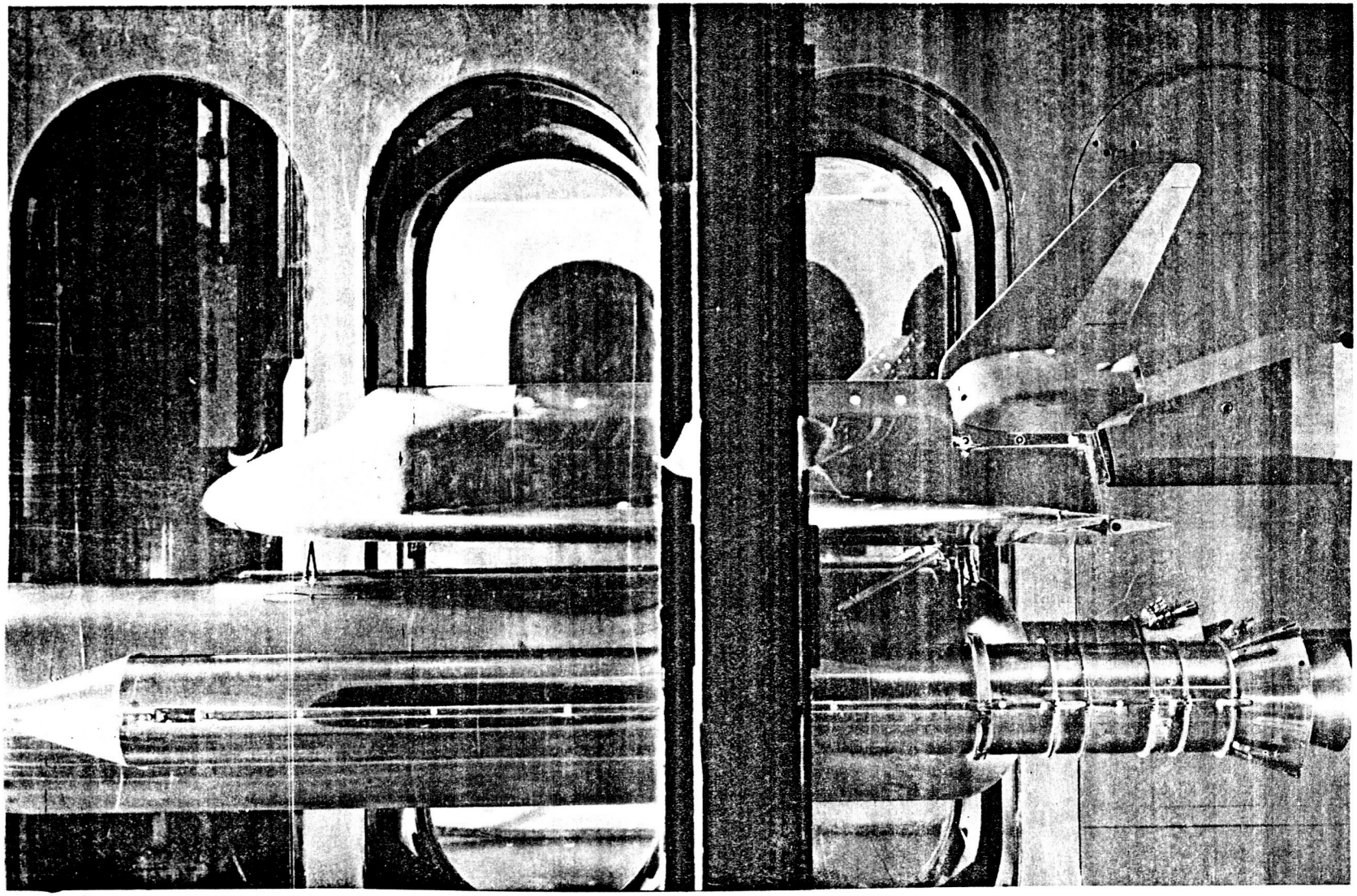
c. Schematic View of Tunnel A
Figure 2. Continued.



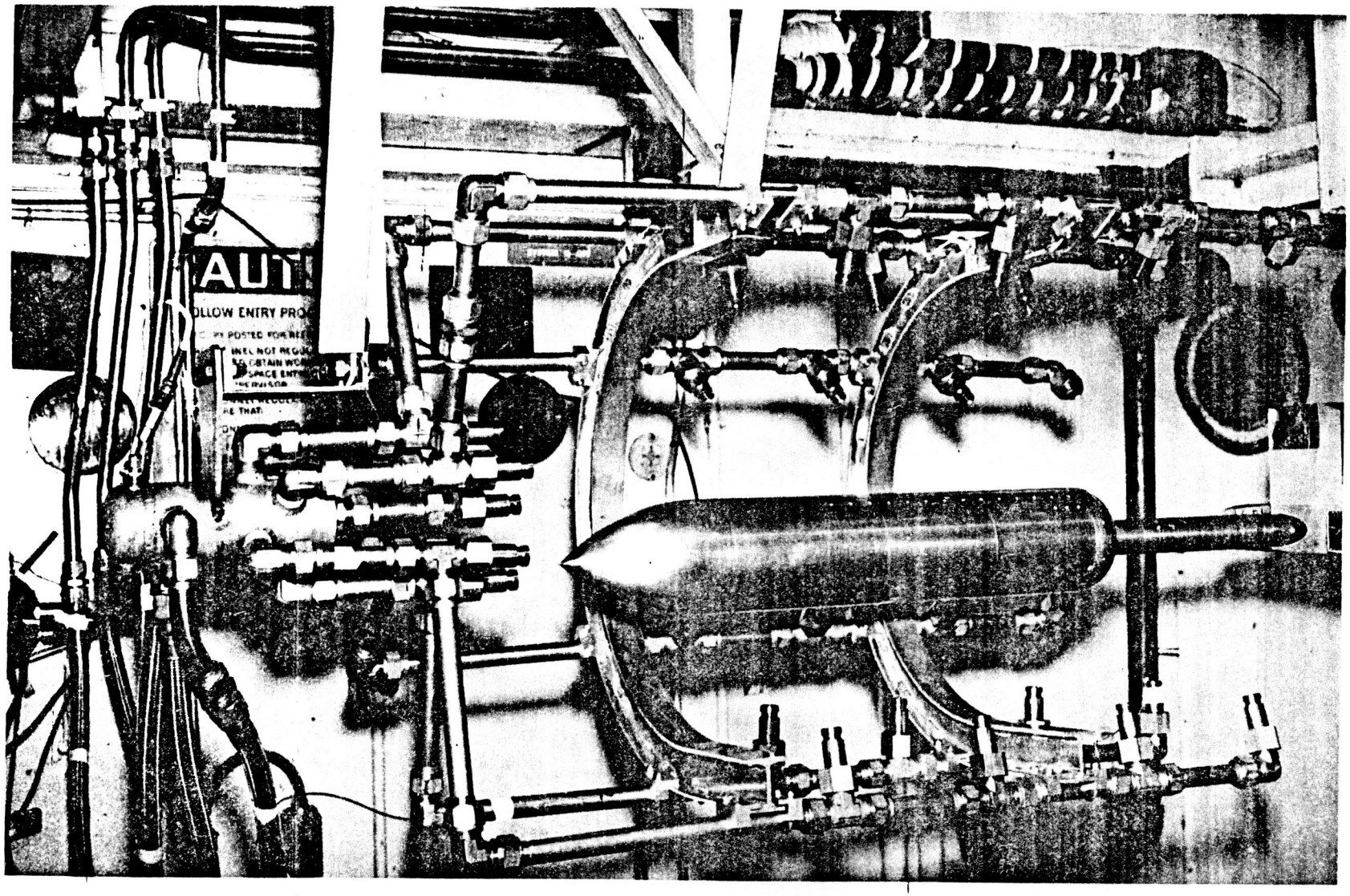
d. Model Installation
Figure 2. Concluded.



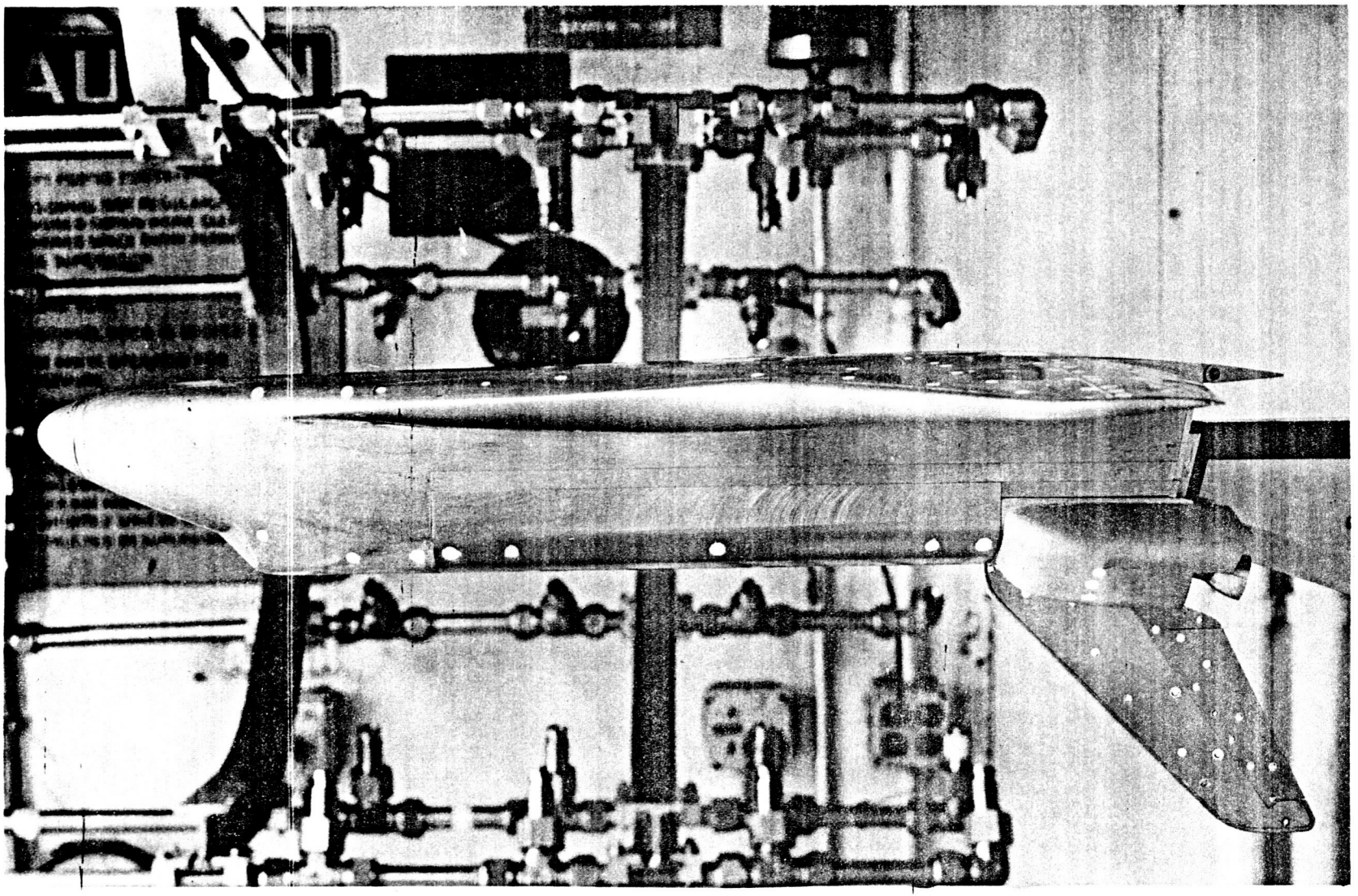
a. Integrated Vehicle Installed in Tunnel A
Figure 3. Model photographs.



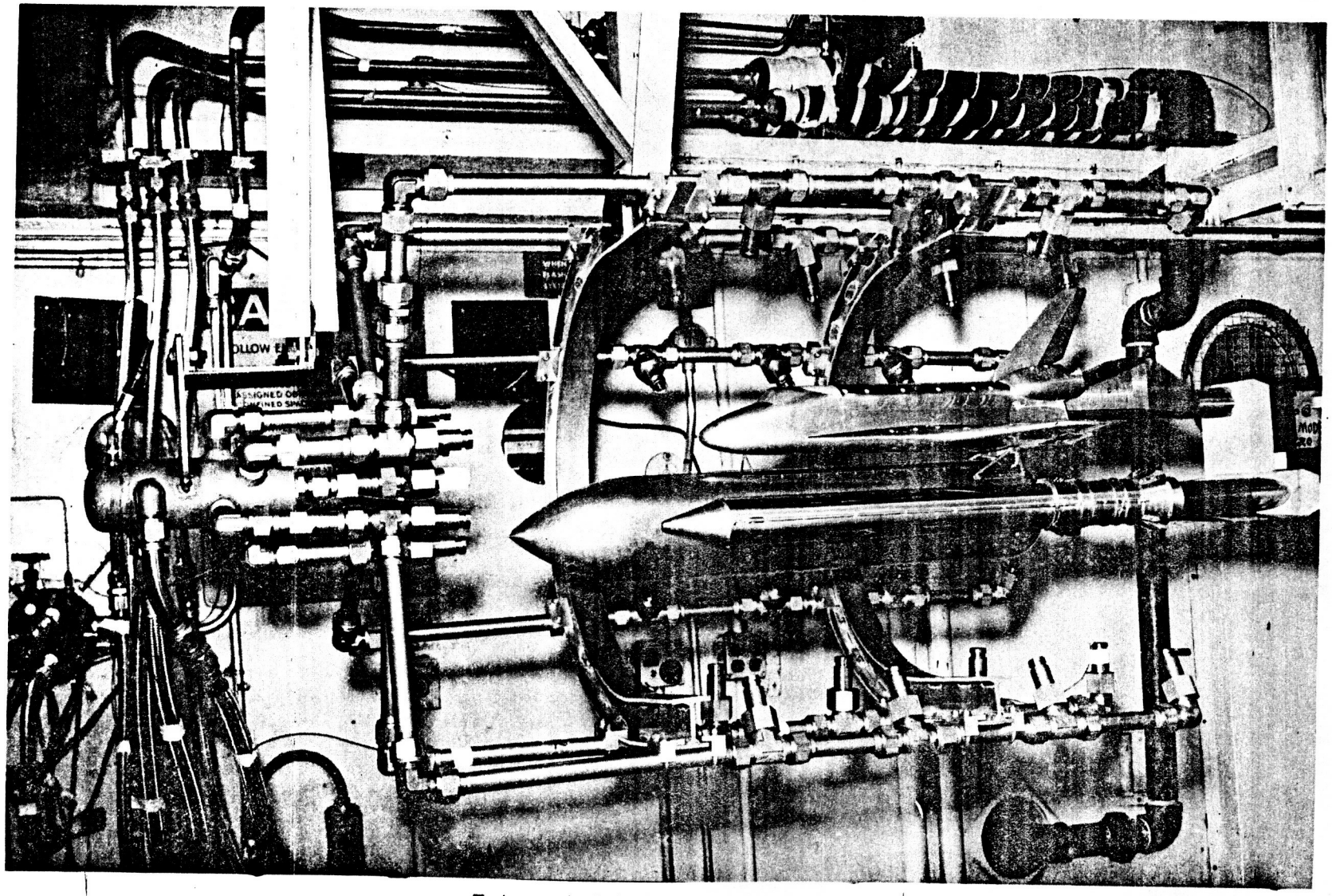
b. Integrated Vehicle Installed in Tunnel A - Close-up
Figure 3. Continued.



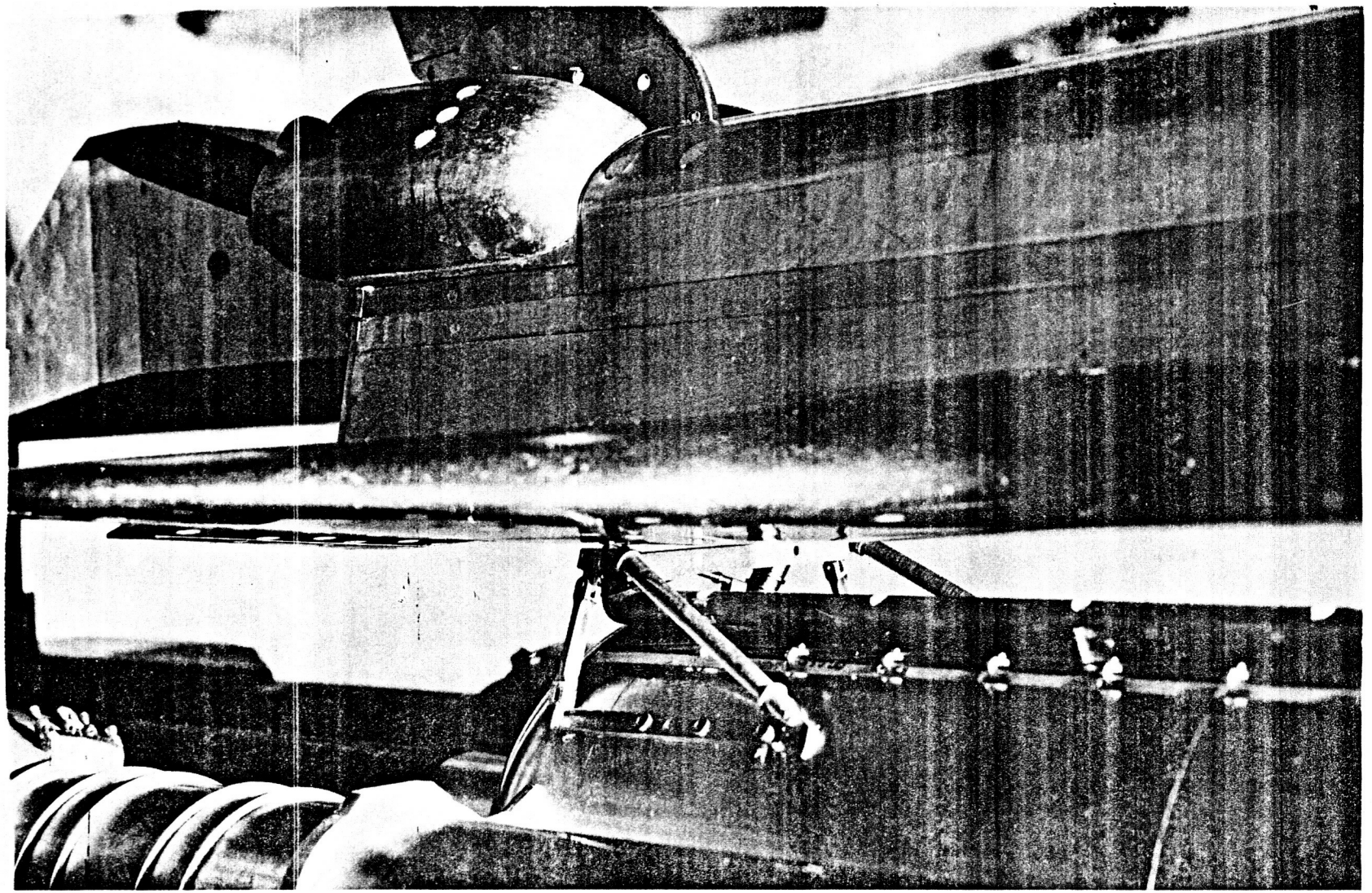
c. External Tank Model
Figure 3. Continued.



d. Orbiter Model
Figure 3. Continued.



e. Integrated Vehicle Model
Figure 3. Continued.



f. Aft Attach Hardware
Figure 3. Concluded.

DATA FIGURES

(SVFT01) IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE

SYMBOL	PHI	ALPHA	MACH
○	.000	.000	3.010
□	17.000		
◇	29.800		
△	37.700		

PARAMETRIC VALUES

ALPHA .000 BETA .000

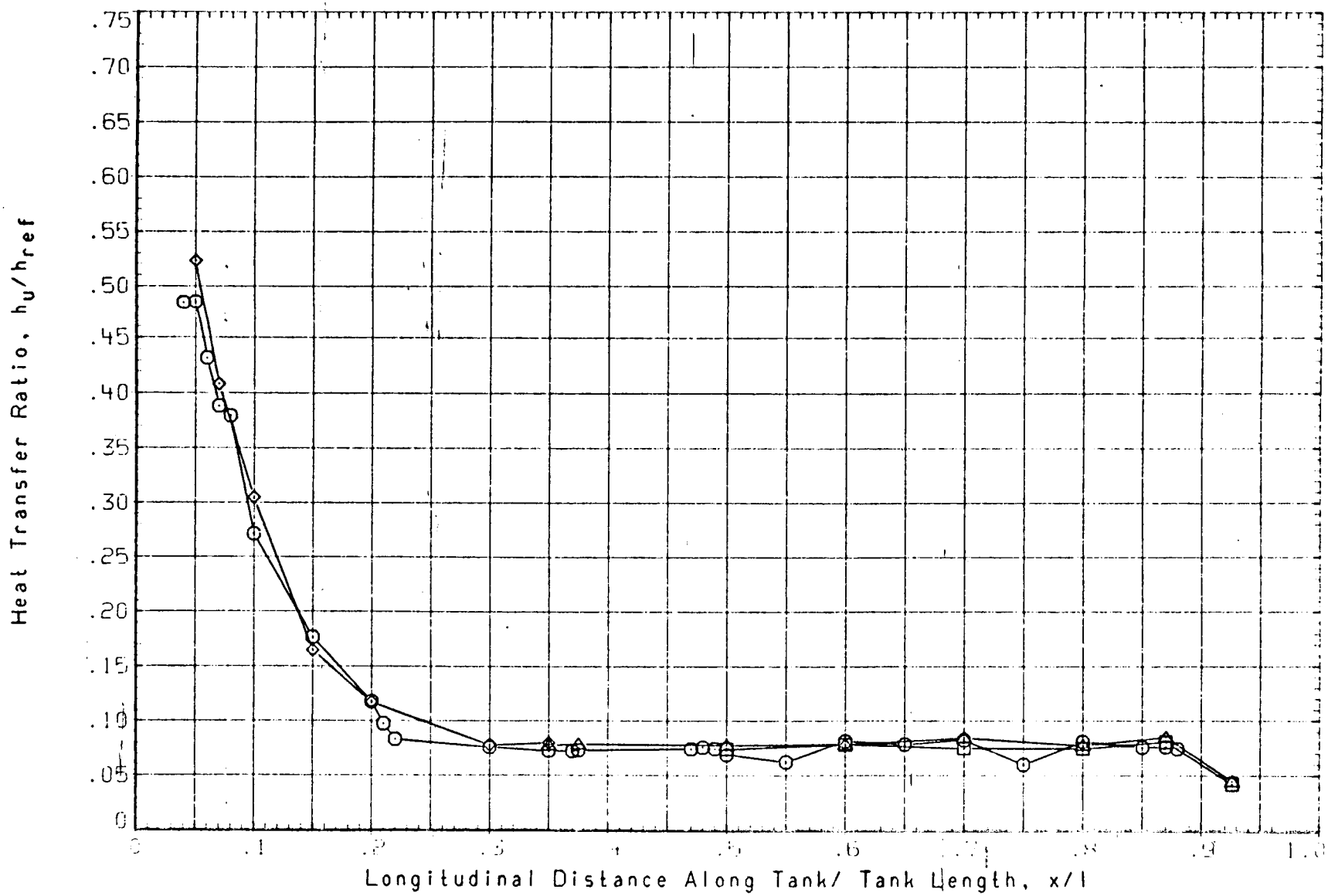


FIGURE 4 EXTERNAL TANK ALONE - HEAT TRANSFER DATA, ALPHA = 0.,

(SVFT01) IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE

SYMBOL	PHI	ALPHA	MACH
○	180.000	.000	3.010
□	235.000		
◇	247.500		
△	360.000		

PARAMETRIC VALUES

ALPHA .000 BETA .000

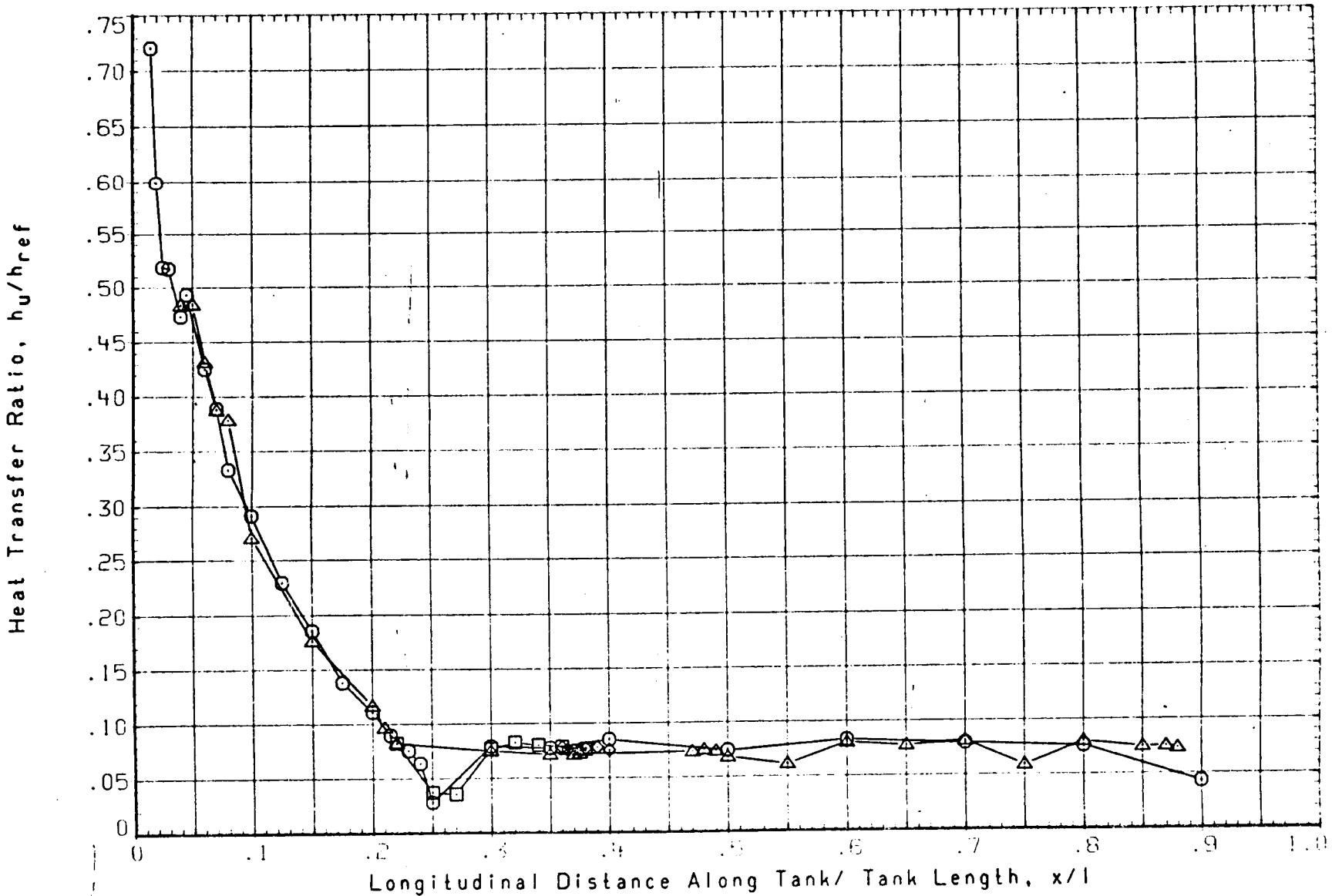


FIGURE 4 EXTERNAL TANK ALONE - HEAT TRANSFER DATA, ALPHA = 0.,

(SVFT01) IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE

SYMBOL	PHI	ALPHA	MACH
○	.000	.000	4.020
□	17.000		
◇	29.800		
△	37.700		

PARAMETRIC VALUES

ALPHA .000 BETA .000

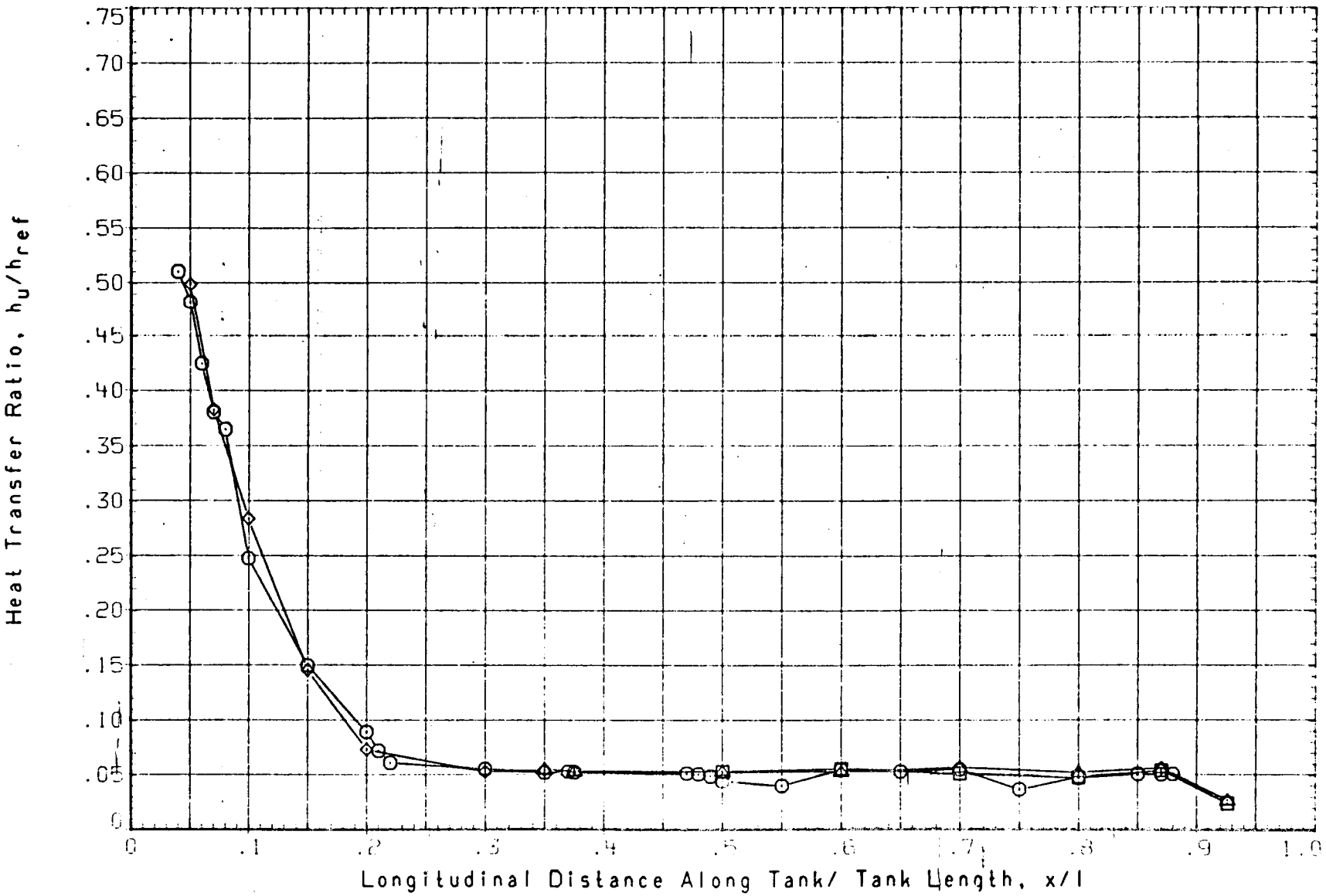


FIGURE 4 EXTERNAL TANK ALONE - HEAT TRANSFER DATA, ALPHA = 0.,

(SVFT01) IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE

SYMBOL	PHI	ALPHA	MACH
○	180.000	.000	4.020
□	235.000		
◇	247.500		
△	360.000		

PARAMETRIC VALUES

ALPHA .000 BETA .000

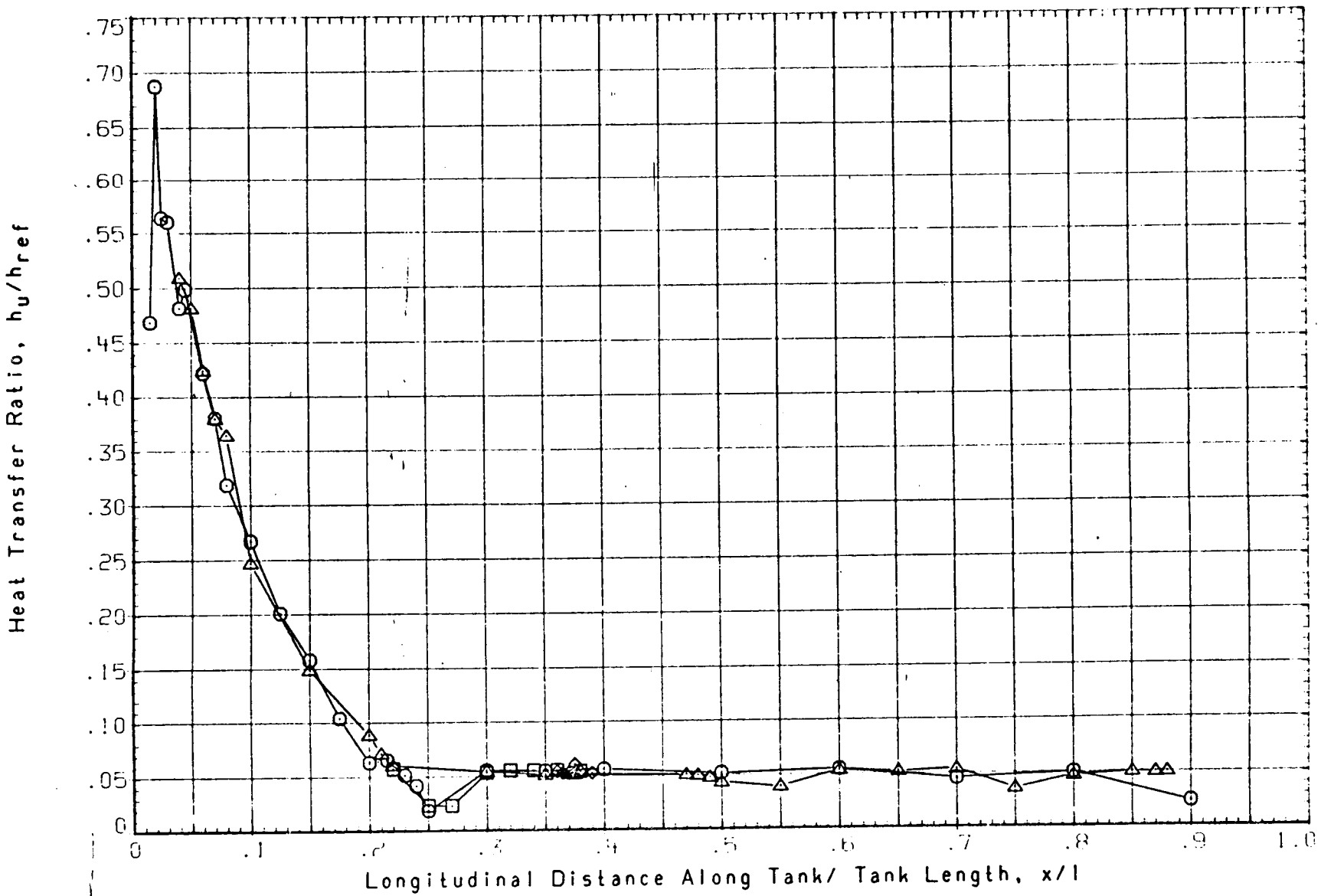


FIGURE 4 EXTERNAL TANK ALONE - HEAT TRANSFER DATA, ALPHA = 0.,

(SVFT02) IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE

SYMBOL	PHI	ALPHA	MACH
○	.000	.005	3.010
□	17.000		
◇	29.800		
△	37.700		
◸	39.000		
D	180.000		

PARAMETRIC VALUES

ALPHA .000 BETA .000

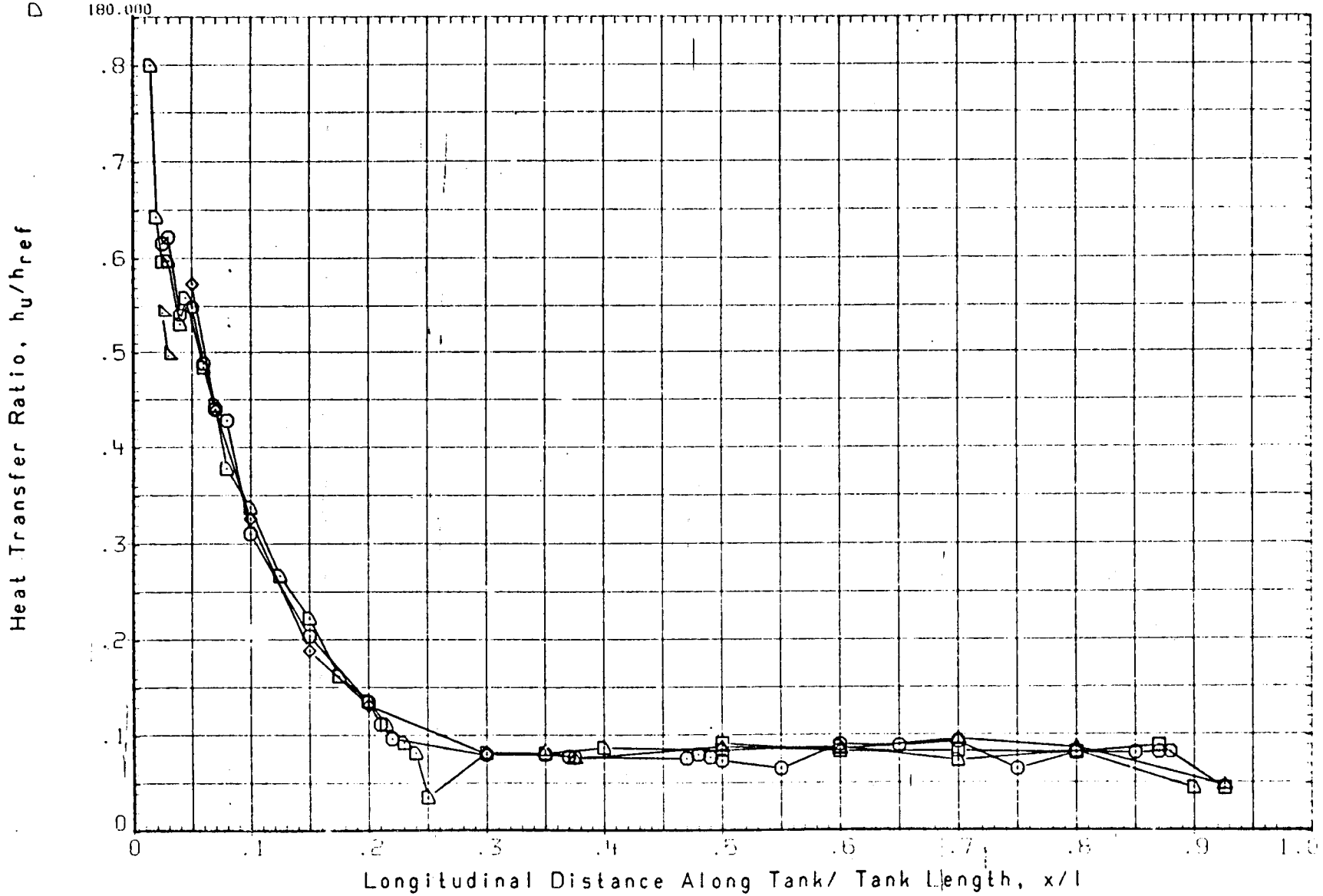


FIGURE 4 EXTERNAL TANK ALONE - HEAT TRANSFER DATA, ALPHA = 0.,

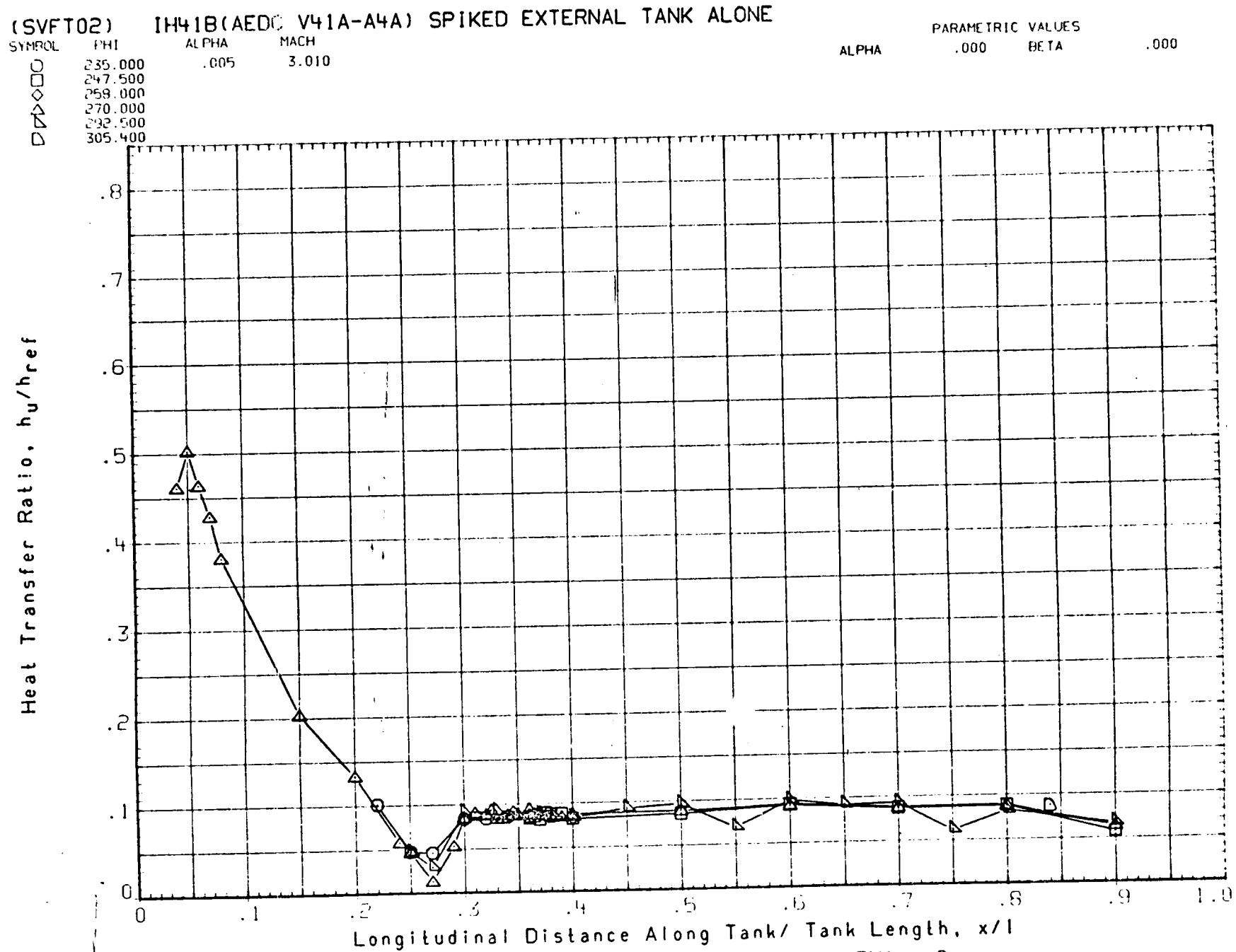


FIGURE 4 EXTERNAL TANK ALONE - HEAT TRANSFER DATA, ALPHA = 0.,

(SVFT02) IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE

SYMBOL	PHI	ALPHA	MACH
○	315.000	.005	3.010
□	337.500		
◇	343.120		
△	348.000		
◺	360.000		

PARAMETRIC VALUES

ALPHA .000 BETA .000

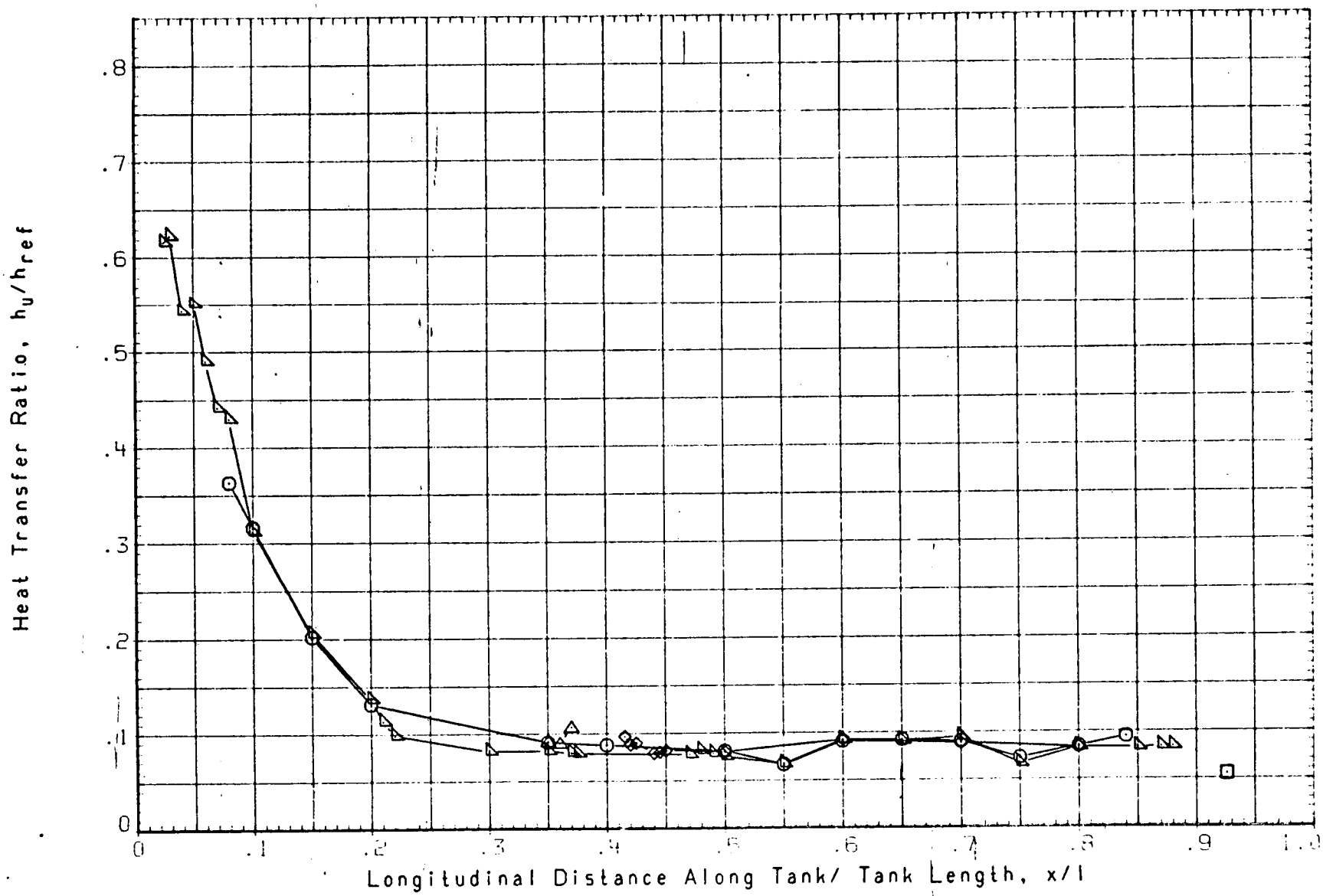


FIGURE 4 EXTERNAL TANK ALONE - HEAT TRANSFER DATA, ALPHA = 0.,

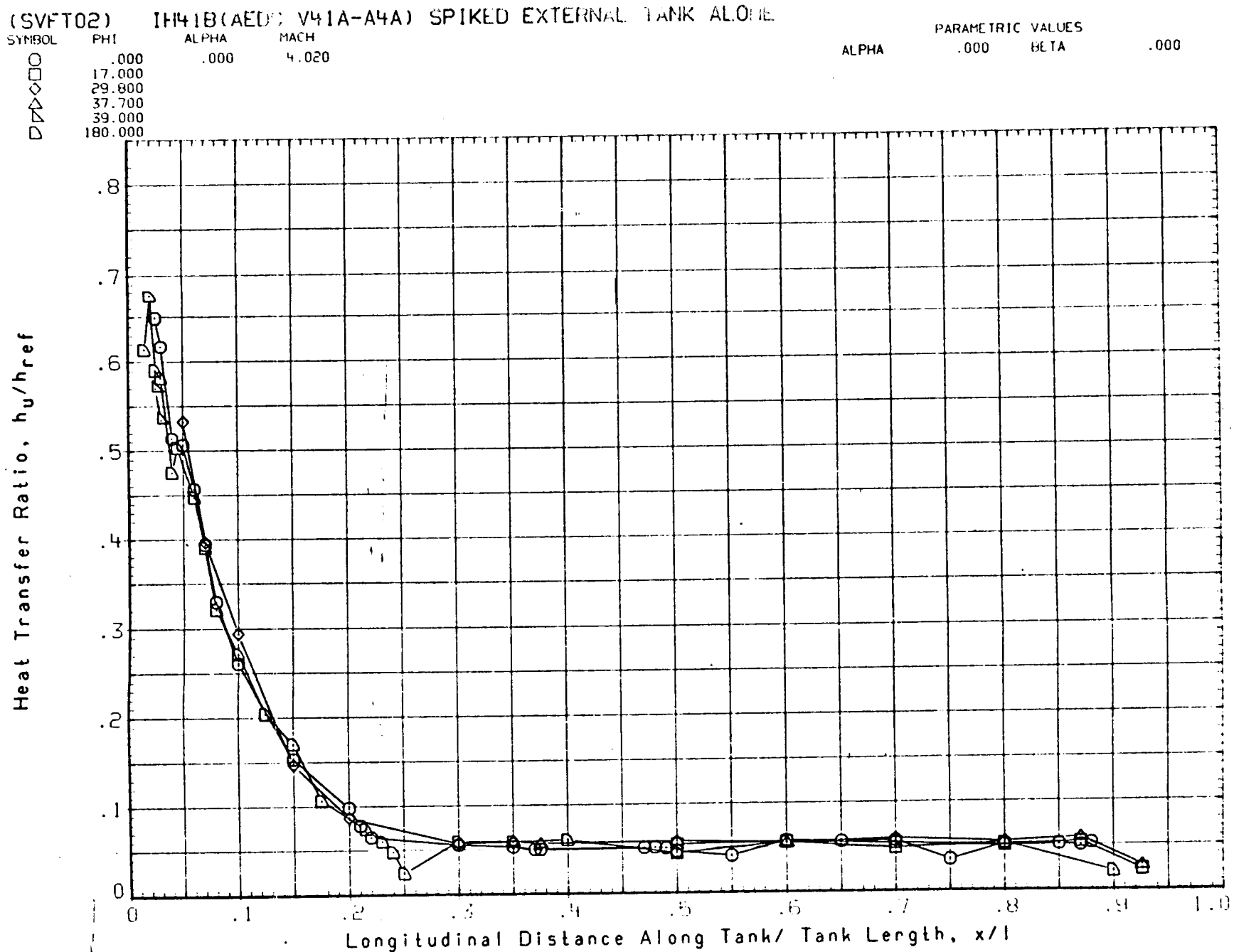


FIGURE 4 EXTERNAL TANK ALONE - HEAT TRANSFER DATA, (ALPHA = 0.,

(SVFT02) IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE

SYMBOL	PHI	ALPHA	MACH
○	235.000	.000	4.020
□	247.500		
◇	258.000		
△	270.000		
▷	292.500		
D	305.400		

PARAMETRIC VALUES

ALPHA .000 BETA .000

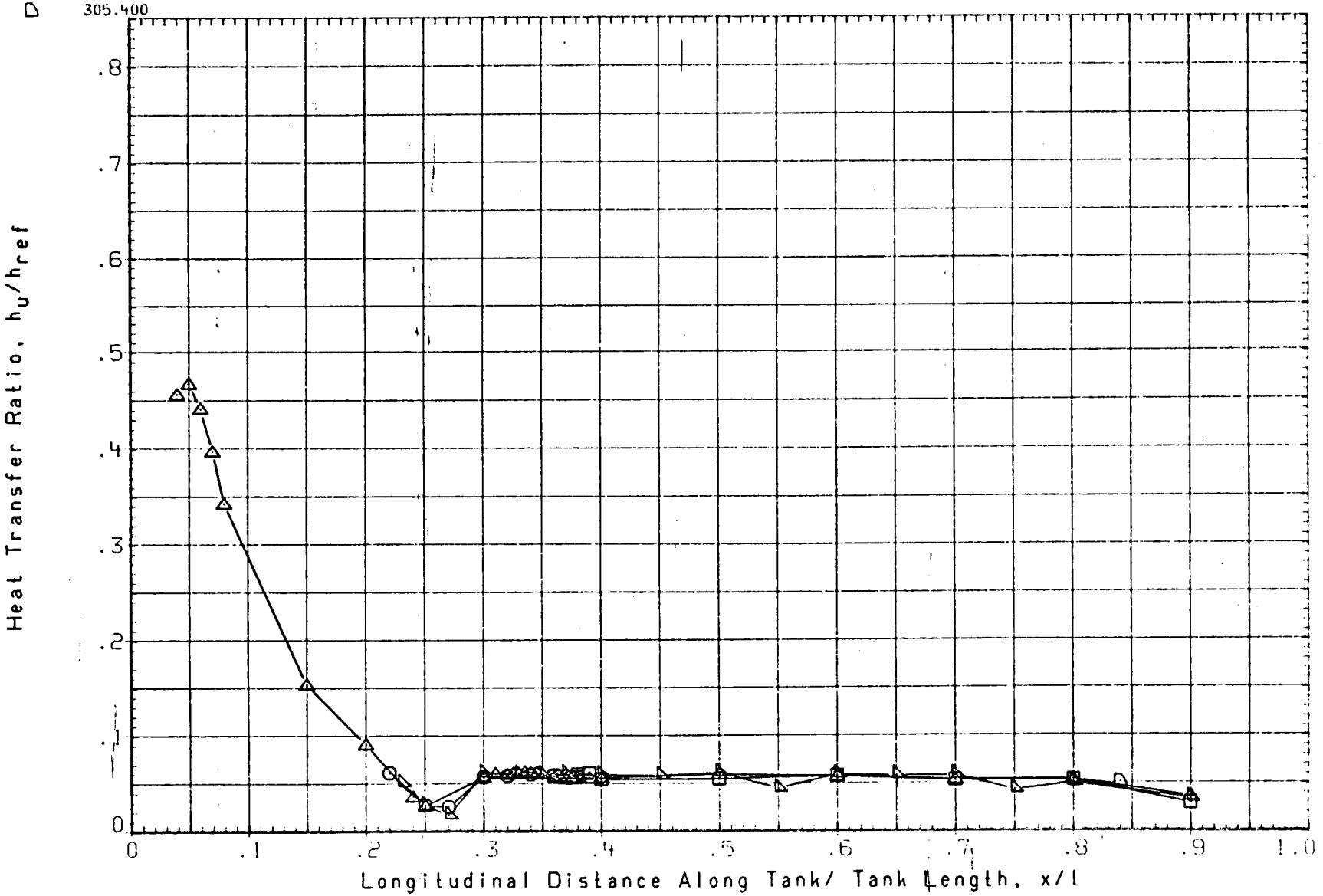


FIGURE 4 EXTERNAL TANK ALONE - HEAT TRANSFER DATA, ALPHA = 0.,

(SVFT02) IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE

SYMBOL	PHI	ALPHA	MACH
○	315.000	.000	4.020
□	337.500		
◇	343.120		
△	348.000		
◺	360.000		

PARAMETRIC VALUES

ALPHA .000 BETA .000

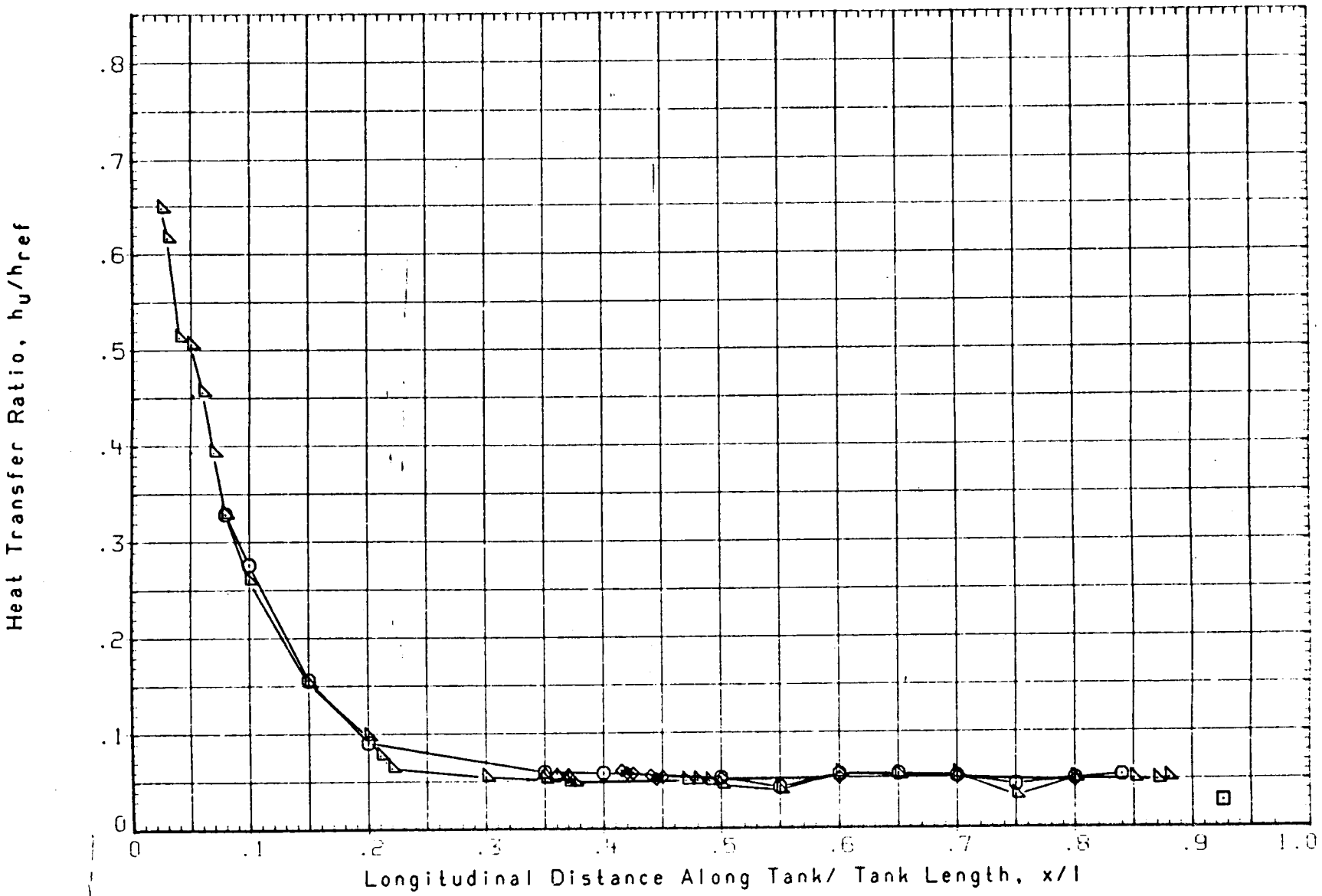


FIGURE 4 EXTERNAL TANK ALONE - HEAT TRANSFER DATA, ALPHA = 0.,

(SVFT03) IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE

SYMBOL	PHI	ALPHA	MACH
○	.000	.005	4.020
□	17.000		
◇	29.800		
△	37.700		
◸	39.000		
D	180.000		

PARAMETP	VALUES		
ALPHA	.000	BETA	-3.000

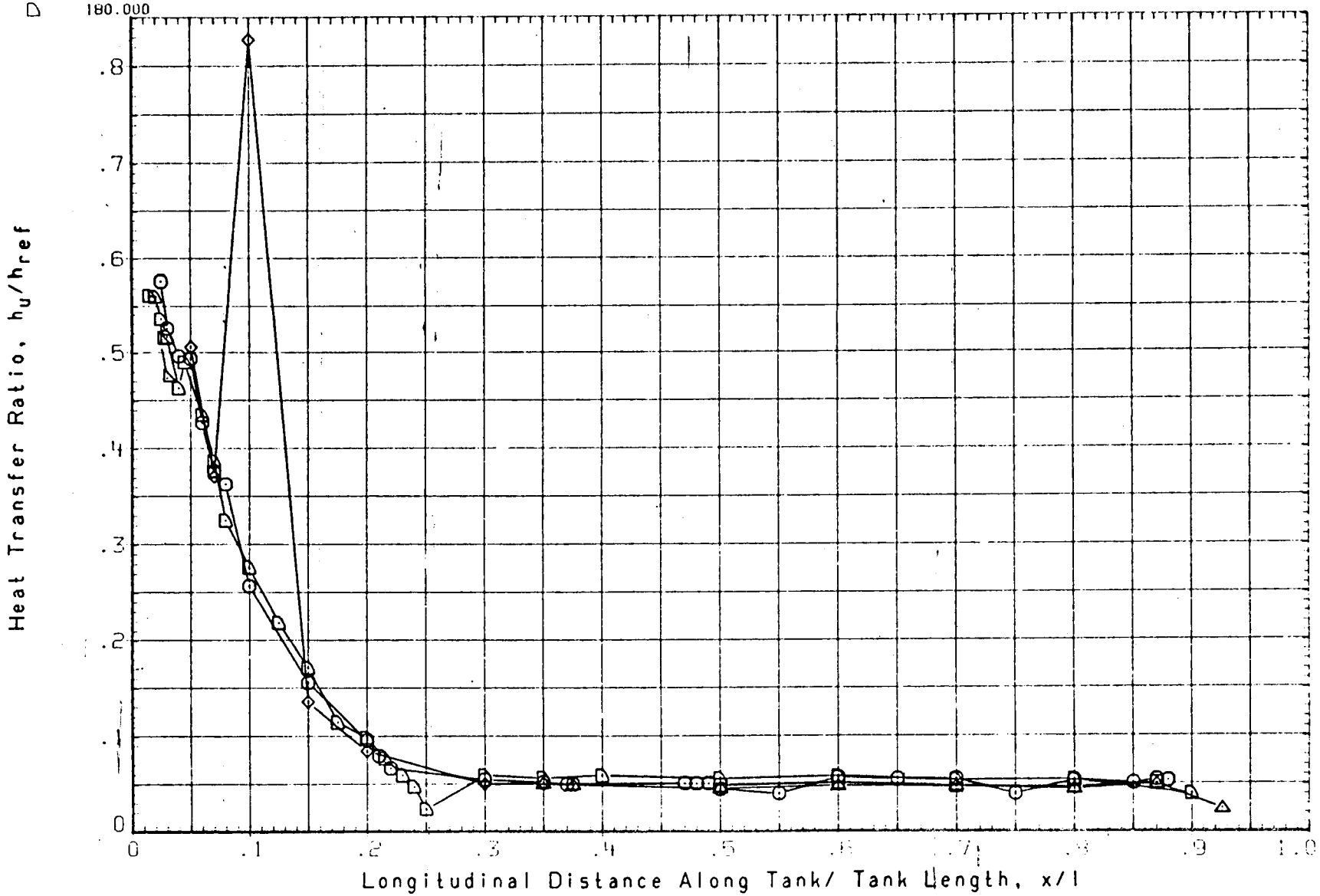


FIGURE 4 EXTERNAL TANK ALONE - HEAT TRANSFER DATA, ALPHA = 0.,

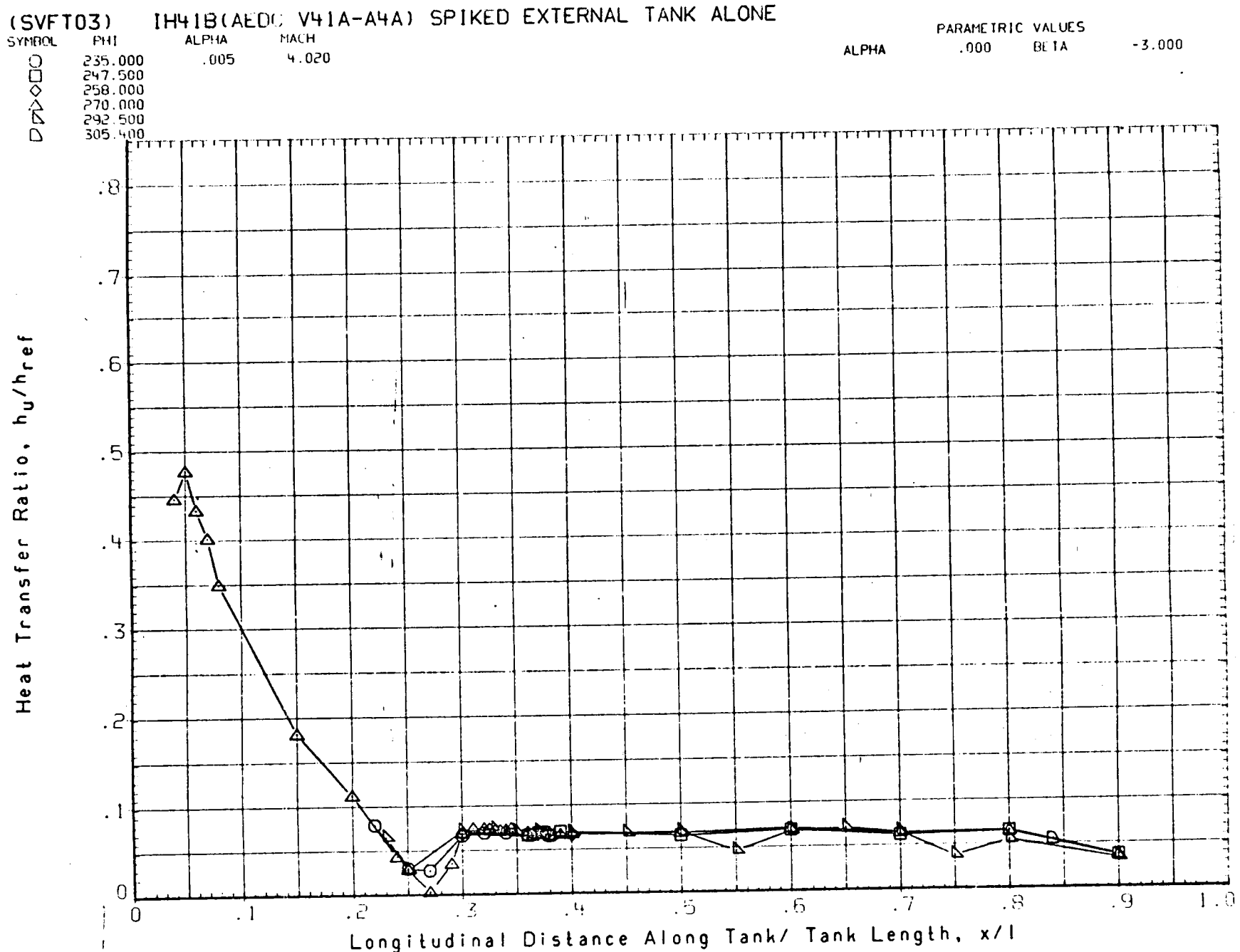


FIGURE 4 EXTERNAL TANK ALONE - HEAT TRANSFER DATA, ALPHA = 0.,

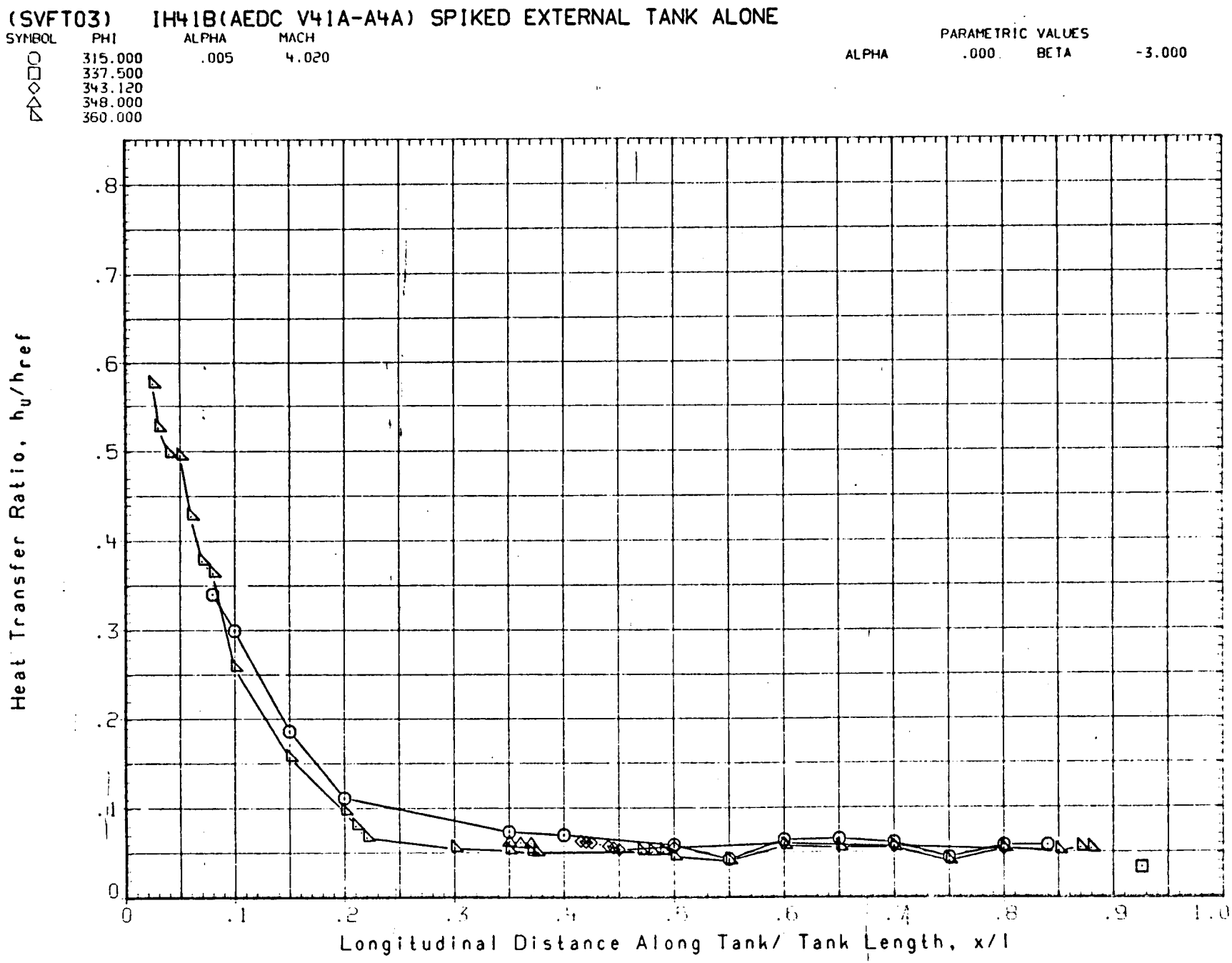


FIGURE 4 EXTERNAL TANK ALONE - HEAT TRANSFER DATA, ALPHA = 0.,

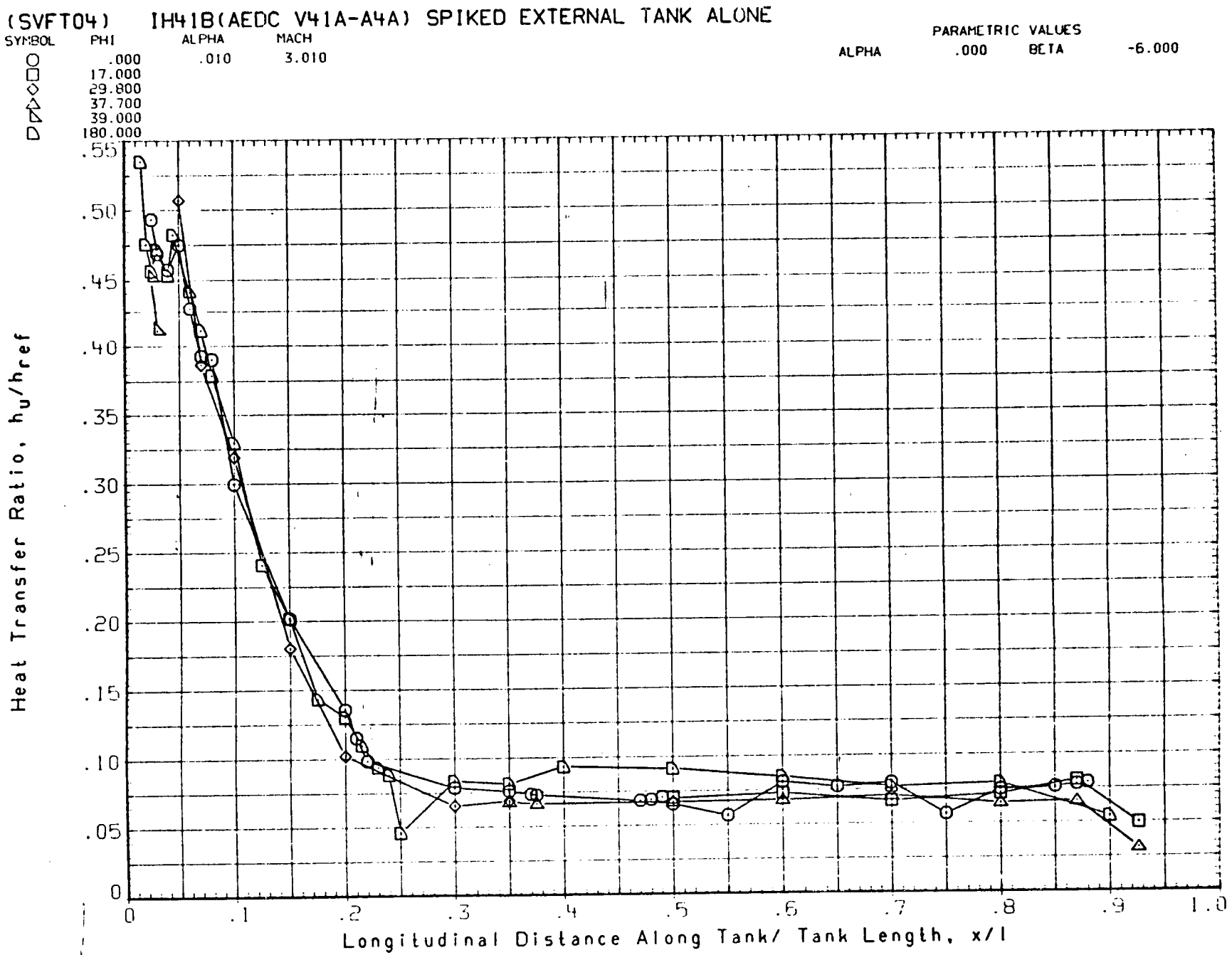


FIGURE 4 EXTERNAL TANK ALONE - HEAT TRANSFER DATA, ALPHA = 0.,

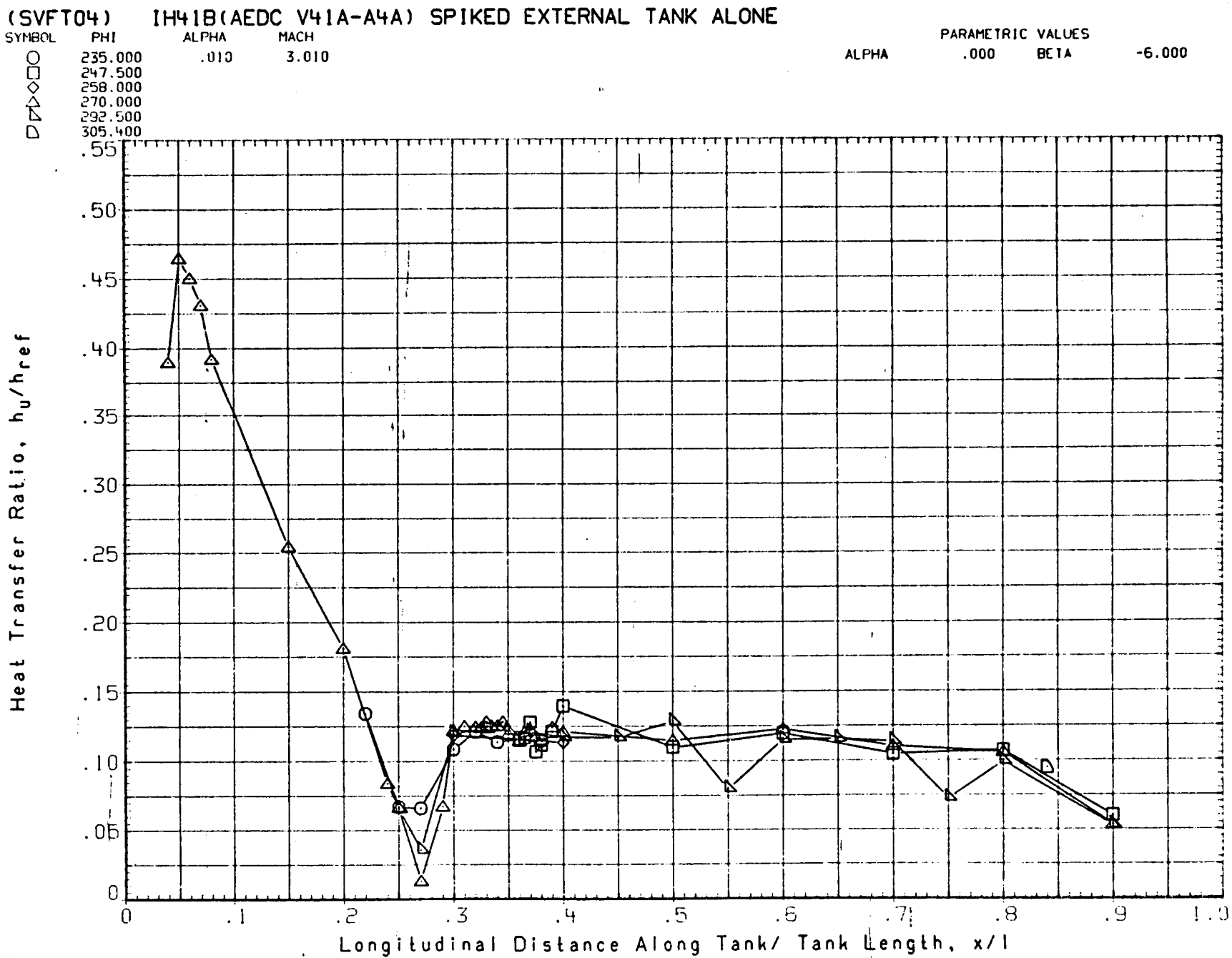


FIGURE 4 EXTERNAL TANK ALONE - HEAT TRANSFER DATA, ALPHA = 0.,

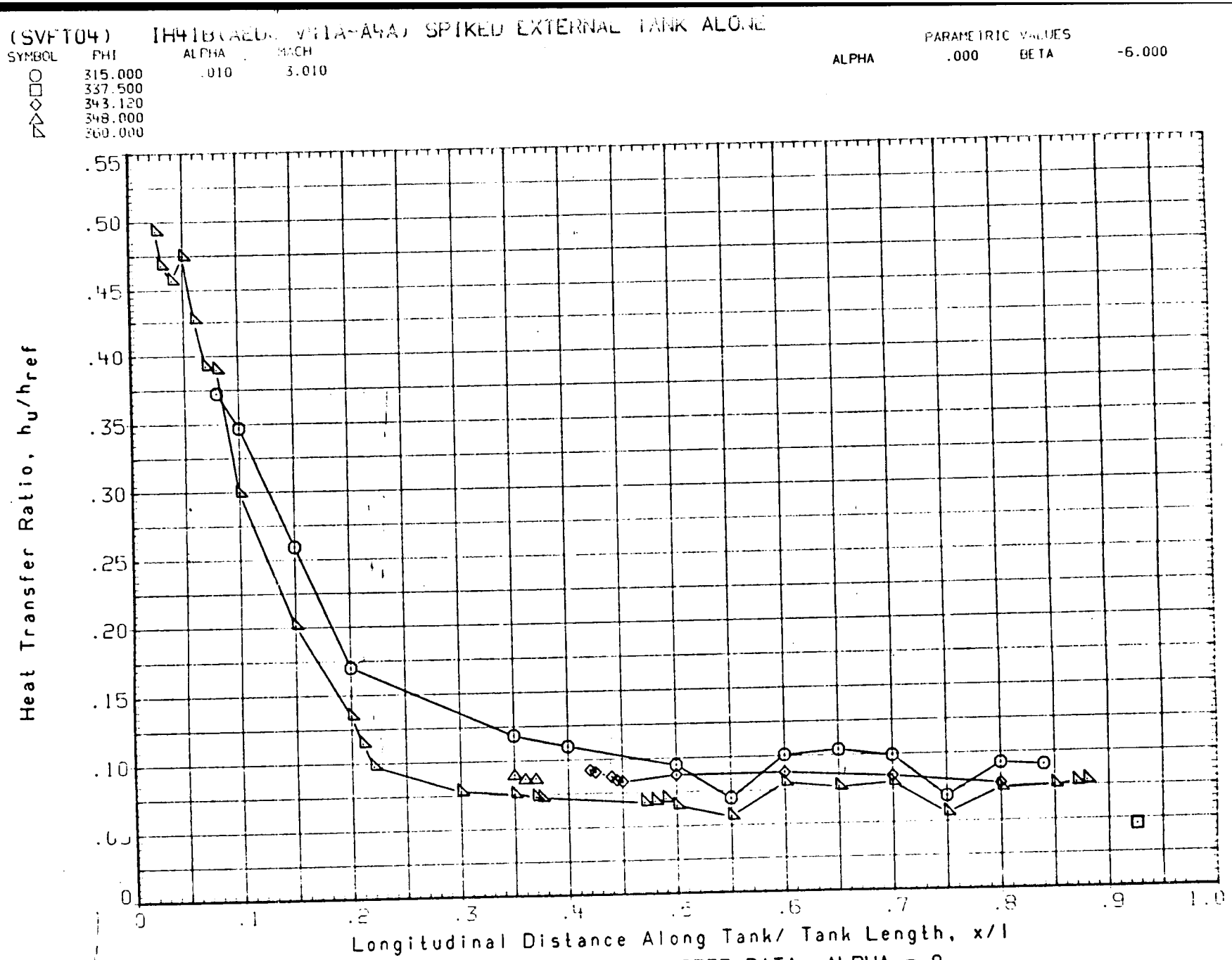


FIGURE 4 EXTERNAL TANK ALONE - HEAT TRANSFER DATA, ALPHA = 0.,

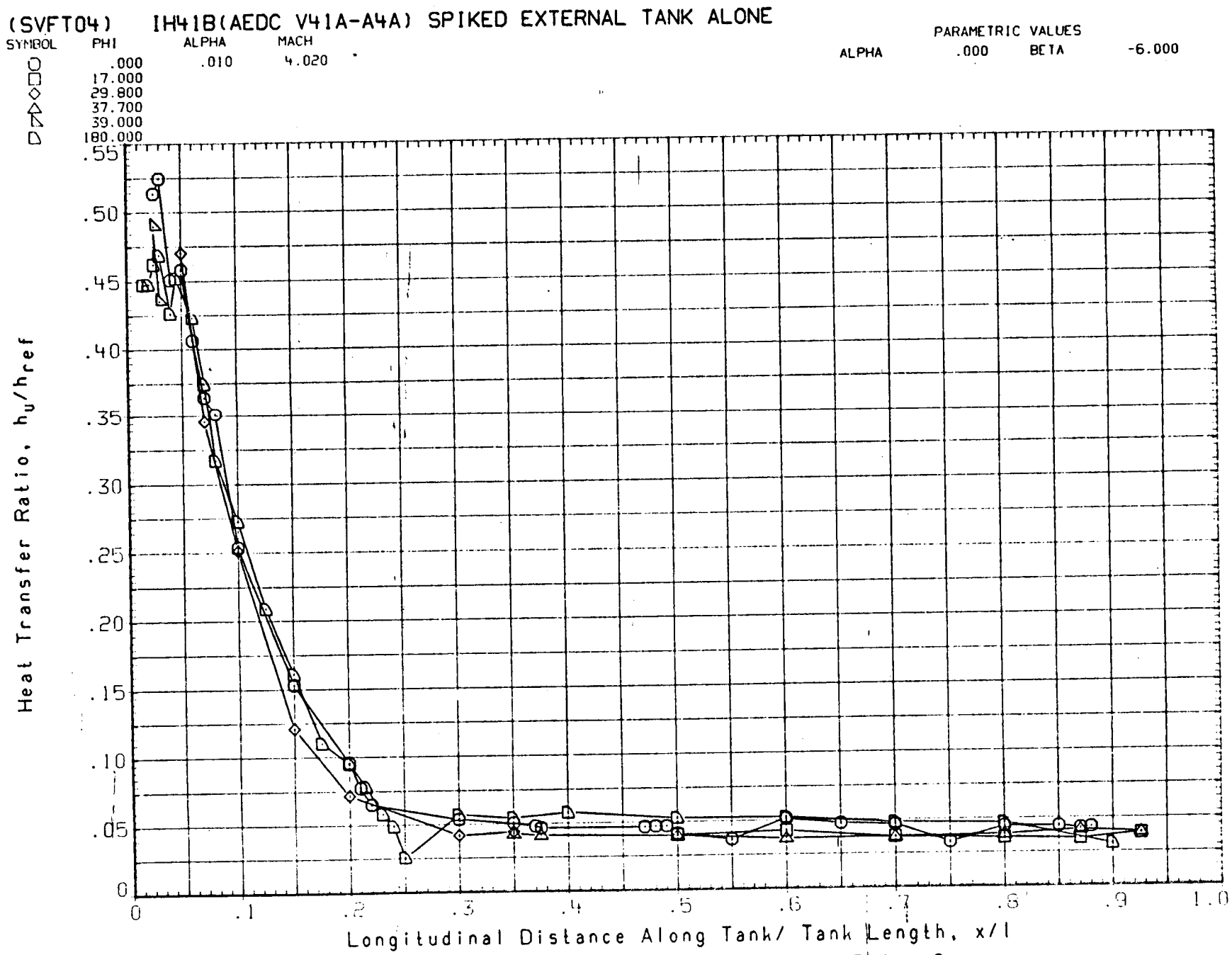


FIGURE 4 EXTERNAL TANK ALONE - HEAT TRANSFER DATA, ALPHA = 0.,

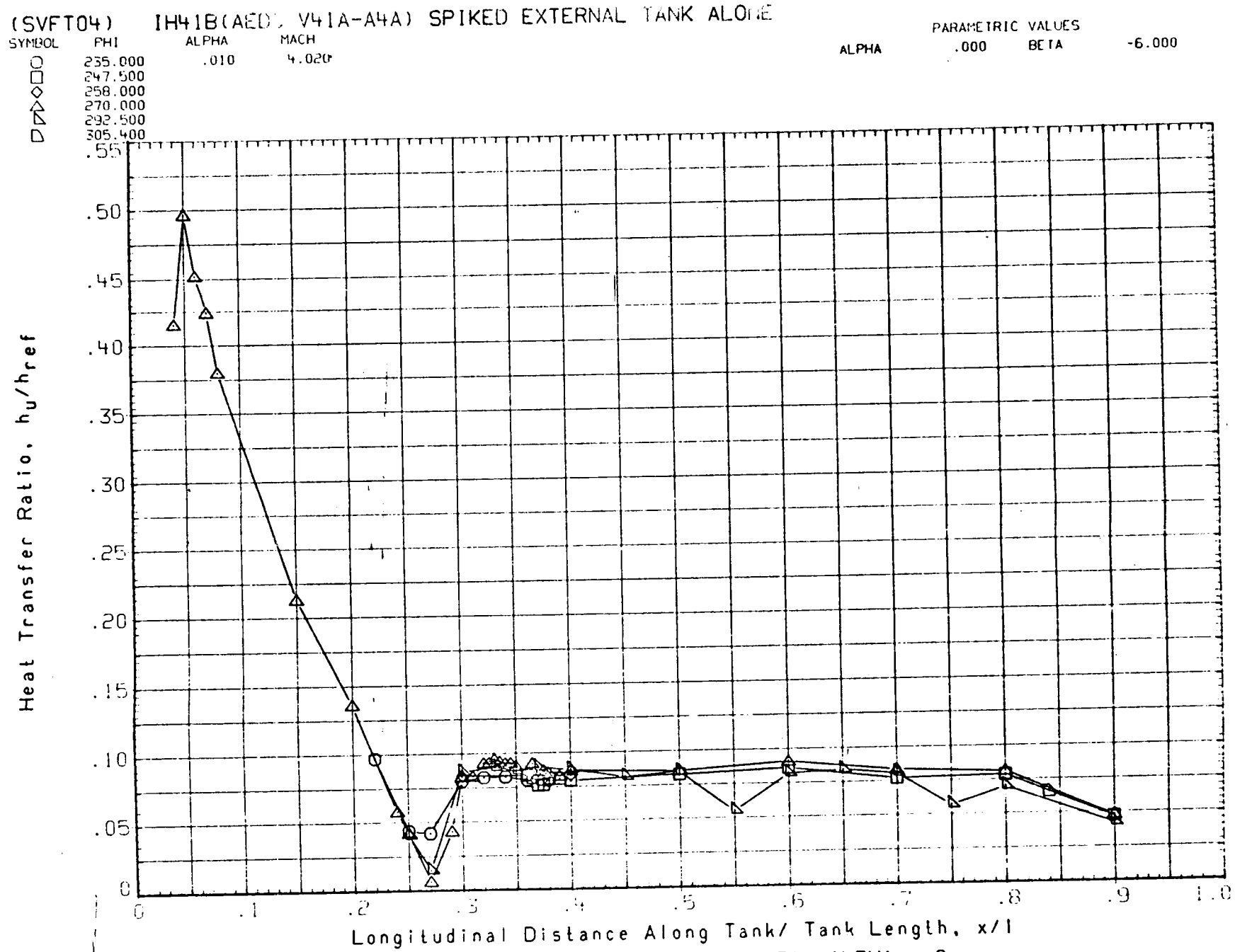


FIGURE 4 EXTERNAL TANK ALONE - HEAT TRANSFER DATA, ALPHA = 0.,

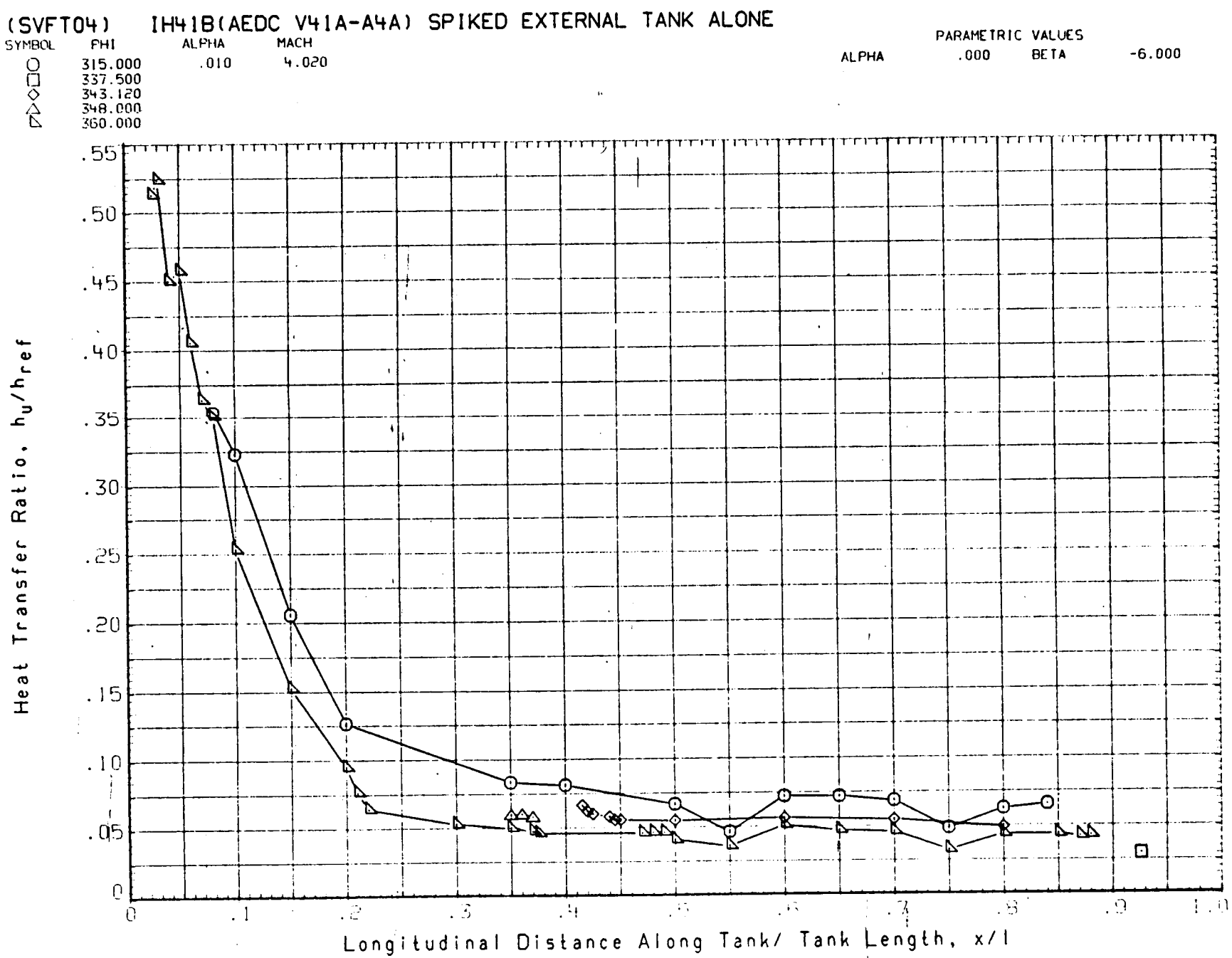


FIGURE 4 EXTERNAL TANK ALONE - HEAT TRANSFER DATA, ALPHA = 0.,

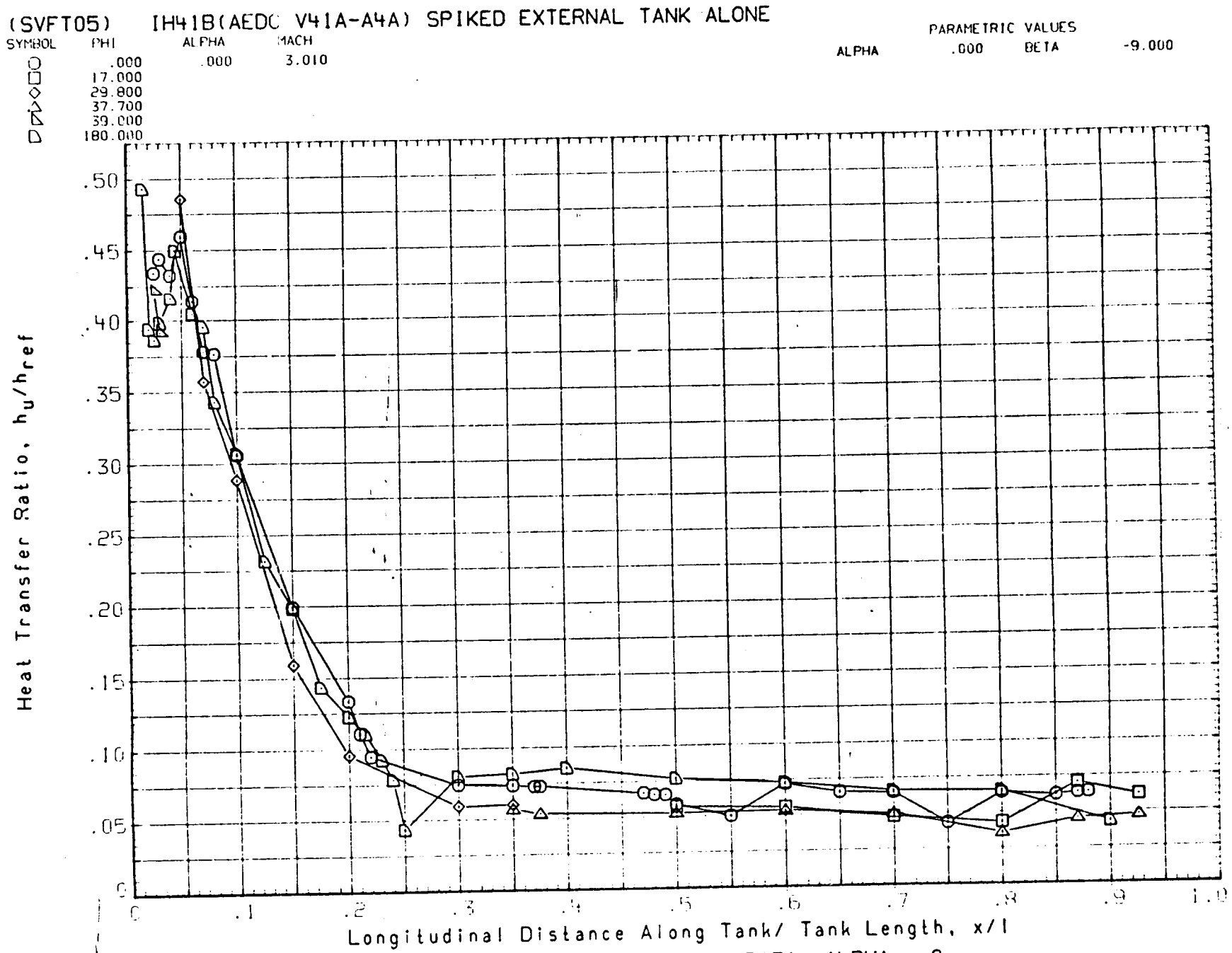


FIGURE 4 EXTERNAL TANK ALONE - HEAT TRANSFER DATA, ALPHA = 0.,

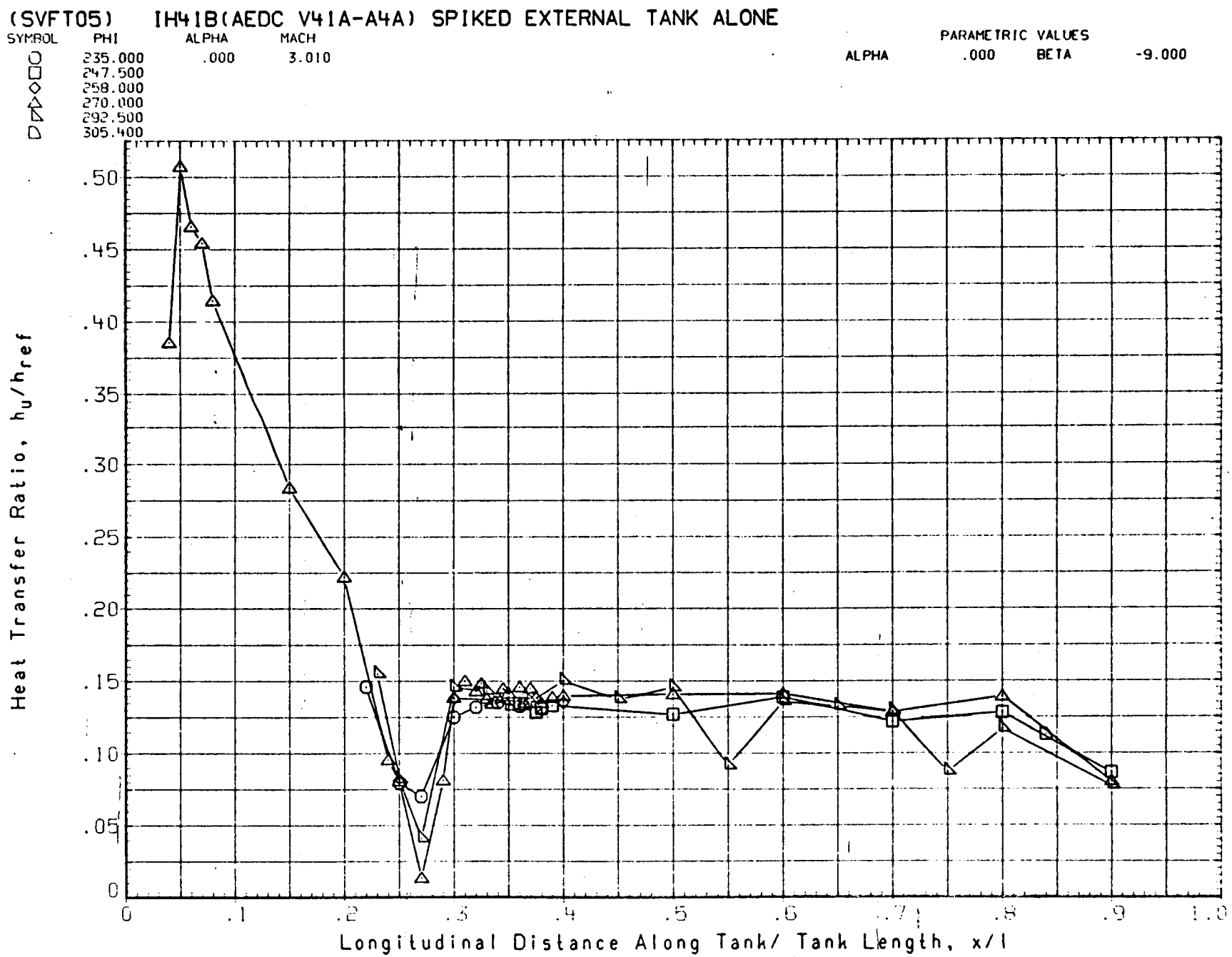


FIGURE 4 EXTERNAL TANK ALONE - HEAT TRANSFER DATA, ALPHA = 0.,

(SVFT05) IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE

SYMBOL	PHI	ALPHA	MACH
○	315.000	.000	3.010
□	337.500		
◇	343.120		
△	348.000		
◺	360.000		

PARAMETRIC VALUES

ALPHA .000 BETA -9.000

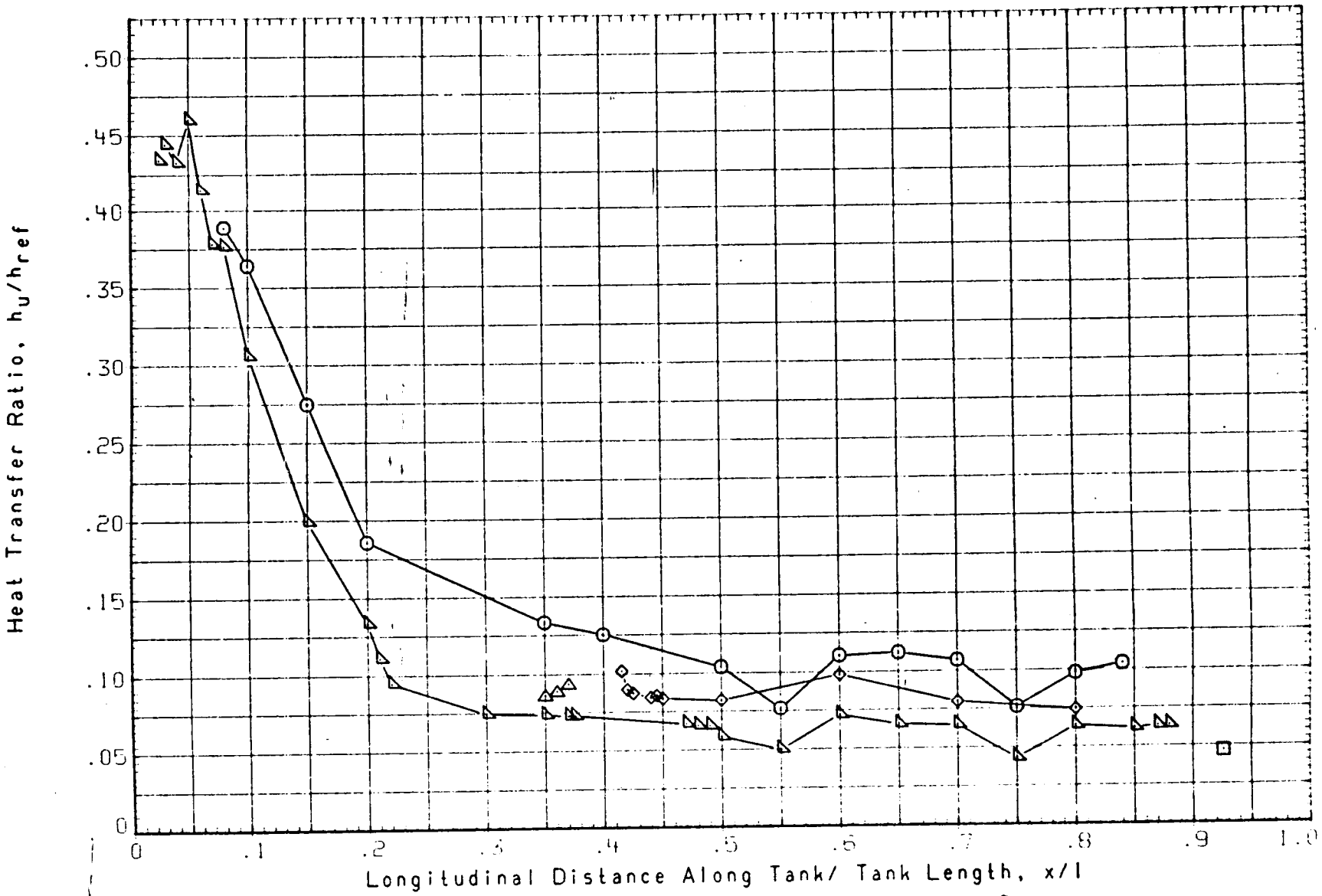


FIGURE 4 EXTERNAL TANK ALONE - HEAT TRANSFER DATA, ALPHA = 0.,

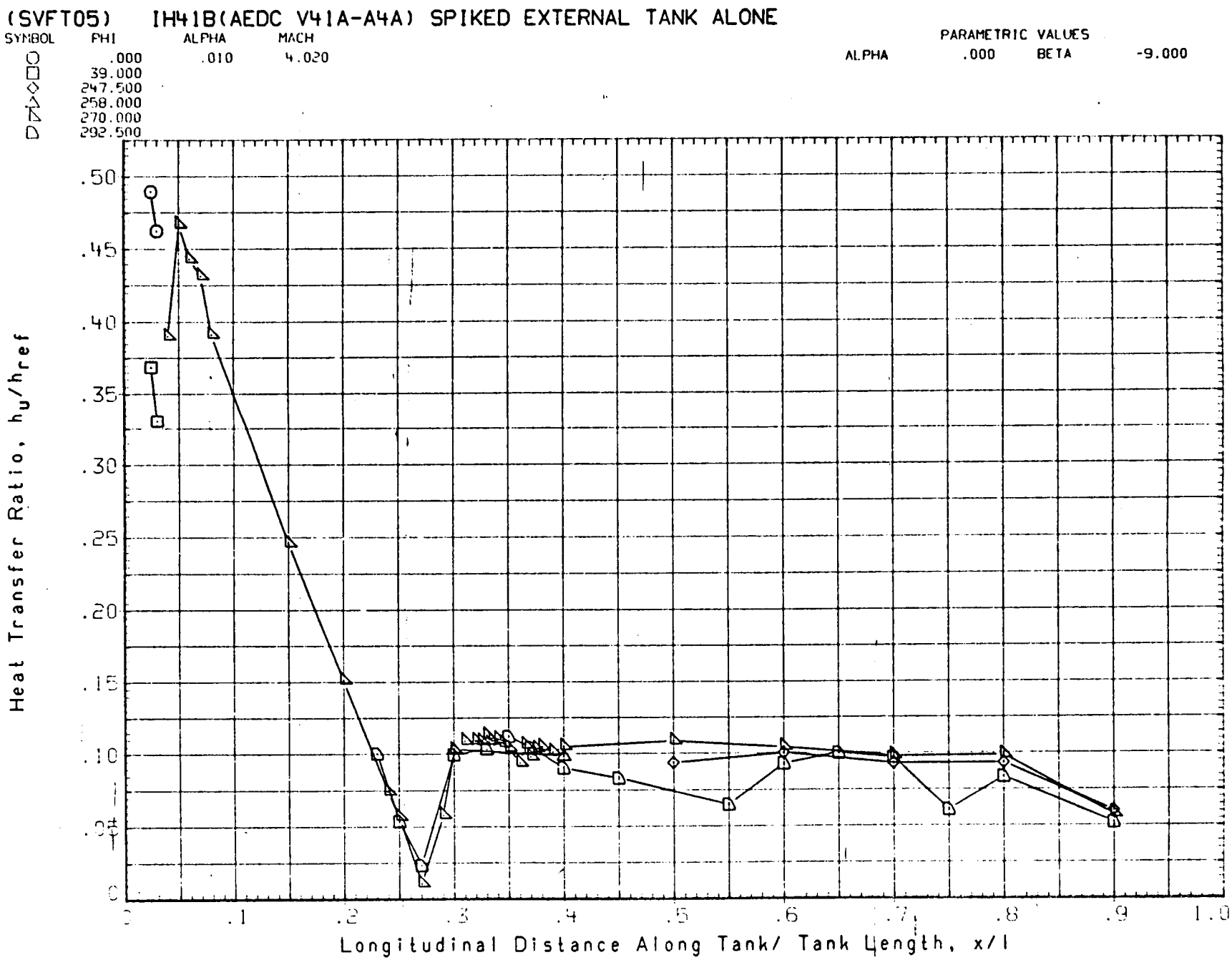


FIGURE 4 EXTERNAL TANK ALONE - HEAT TRANSFER DATA, ALPHA = 0.,

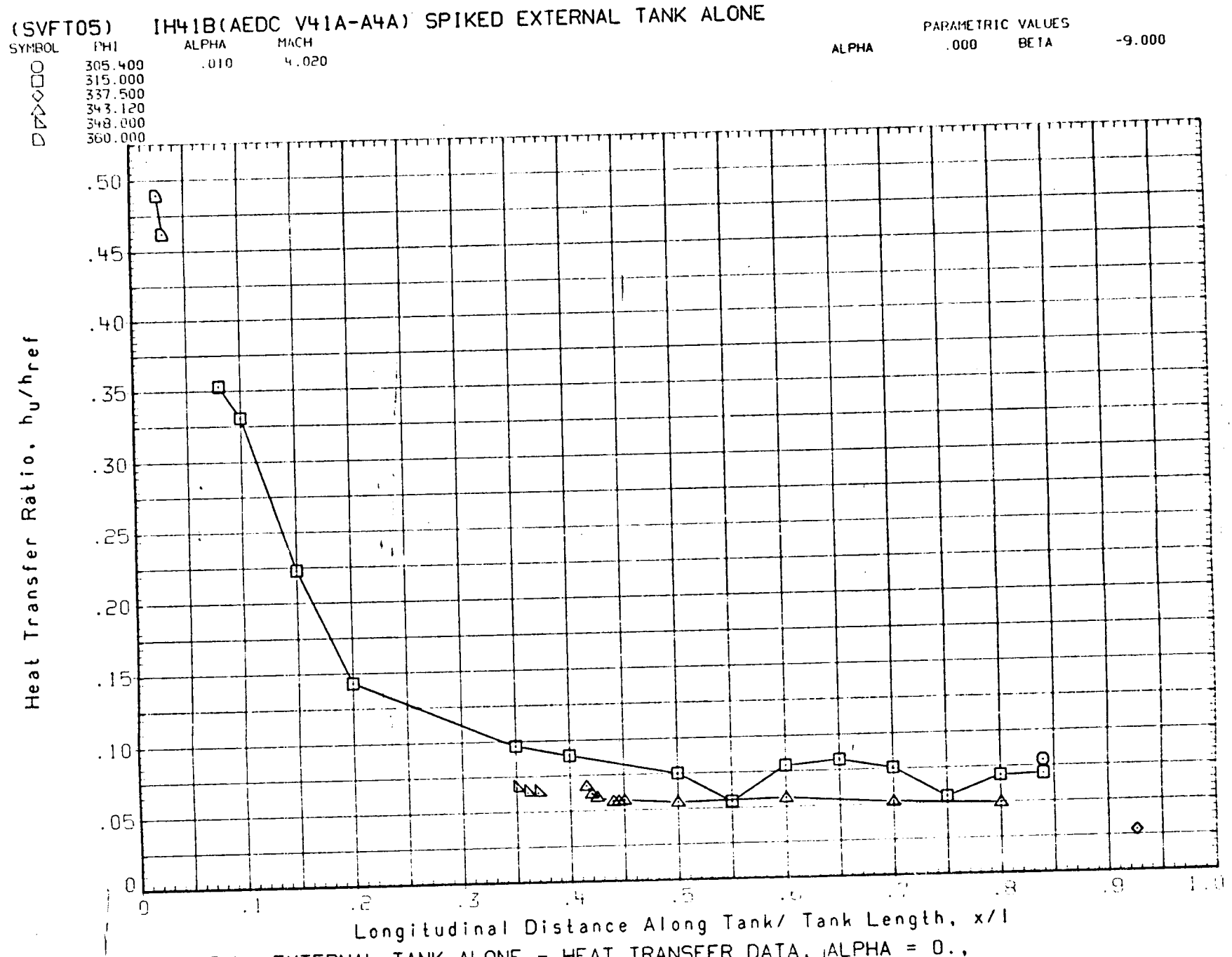


FIGURE 4 EXTERNAL TANK ALONE - HEAT TRANSFER DATA, ALPHA = 0.,

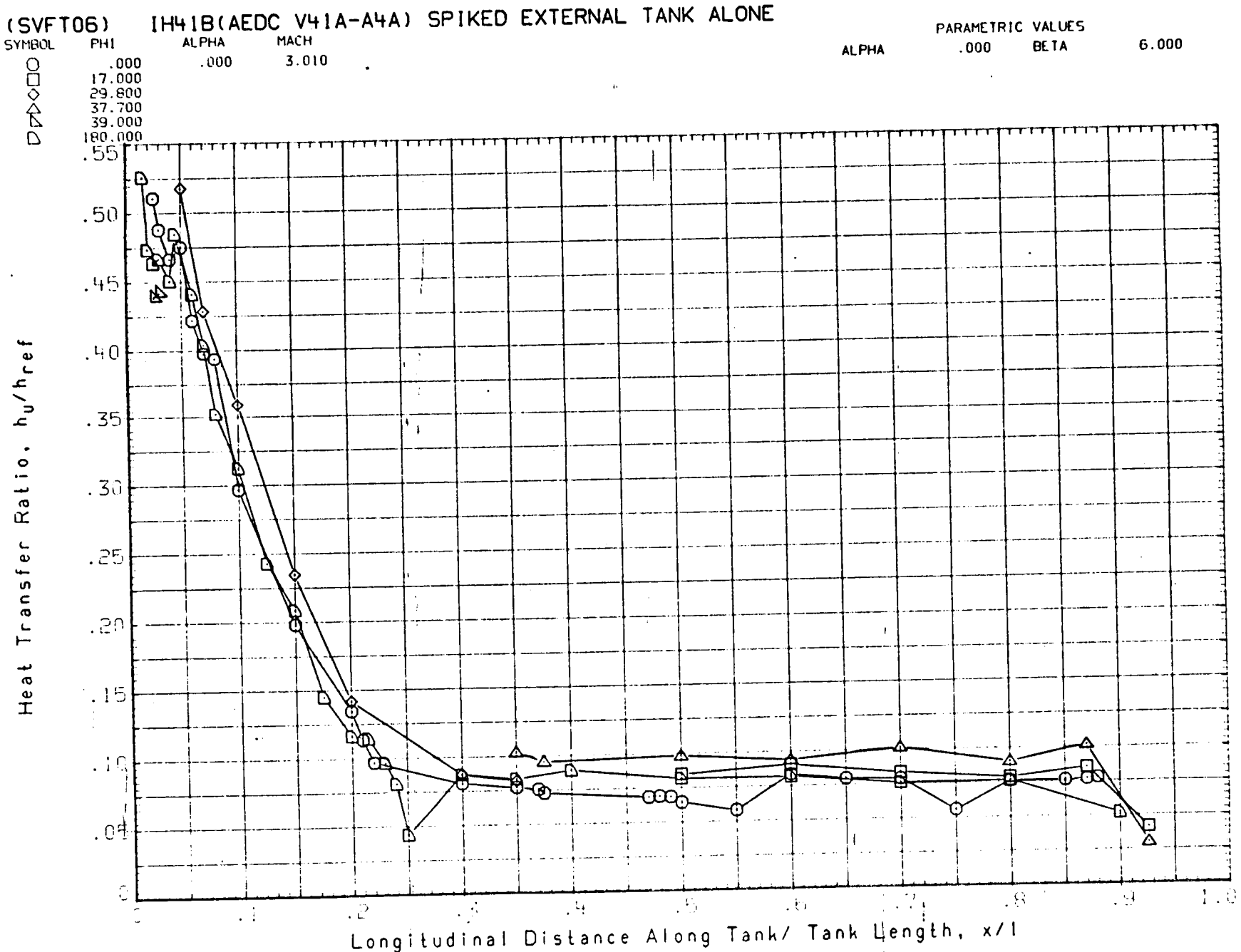


FIGURE 4 EXTERNAL TANK ALONE - HEAT TRANSFER DATA, ALPHA = 0.,

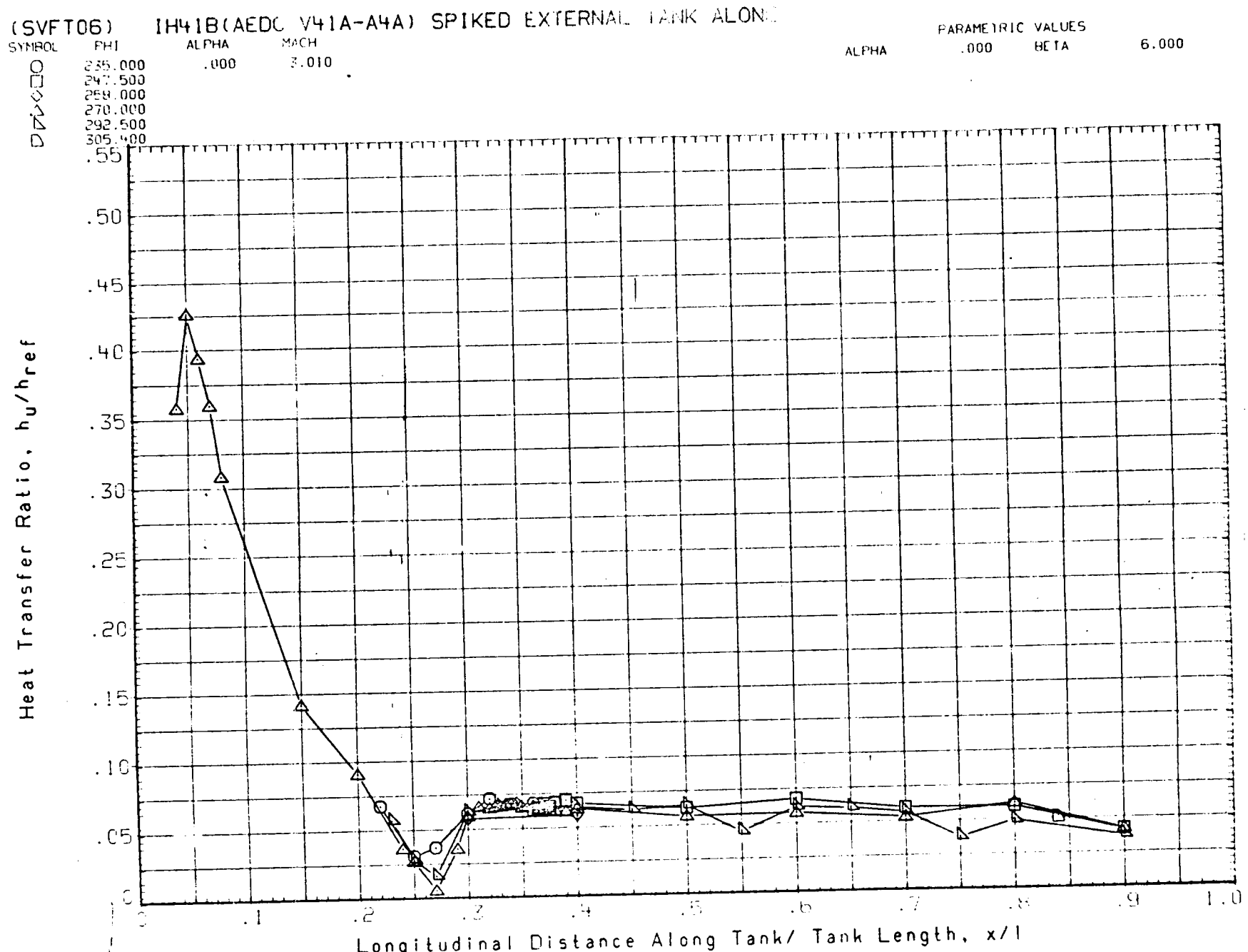


FIGURE 4 EXTERNAL TANK ALONE - HEAT TRANSFER DATA, ALPHA = 0.,

(SVFT06) IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE

SYMBOL	PHI	ALPHA	MACH
○	315.000	.000	3.010
□	337.500		
◇	343.120		
△	348.000		
◺	360.000		

PARAMETRIC VALUES

ALPHA .000 BETA 6.000

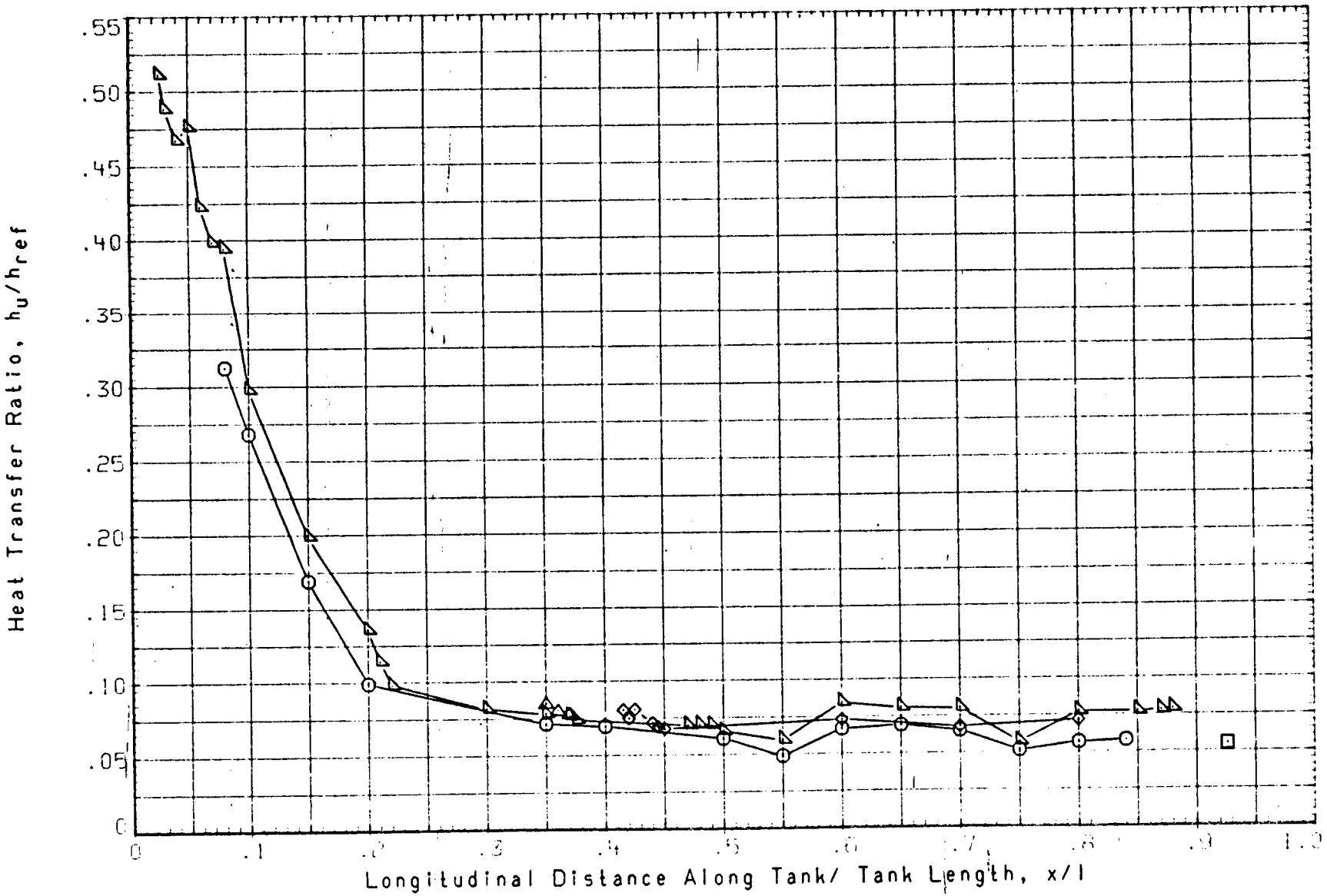


FIGURE 4 EXTERNAL TANK ALONE - HEAT TRANSFER DATA, ALPHA = 0.,

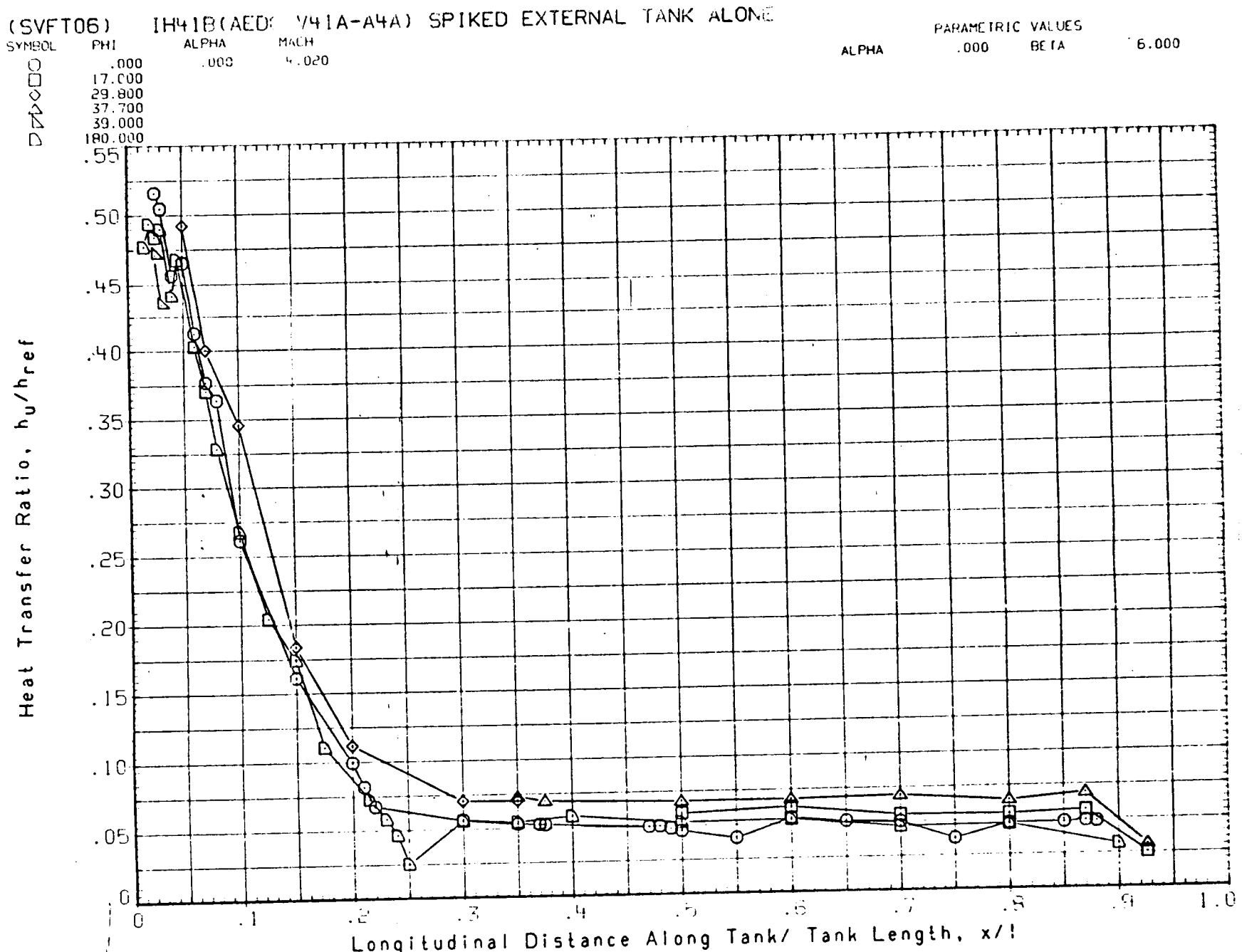


FIGURE 4 EXTERNAL TANK ALONE - HEAT TRANSFER DATA, ALPHA = 0.,

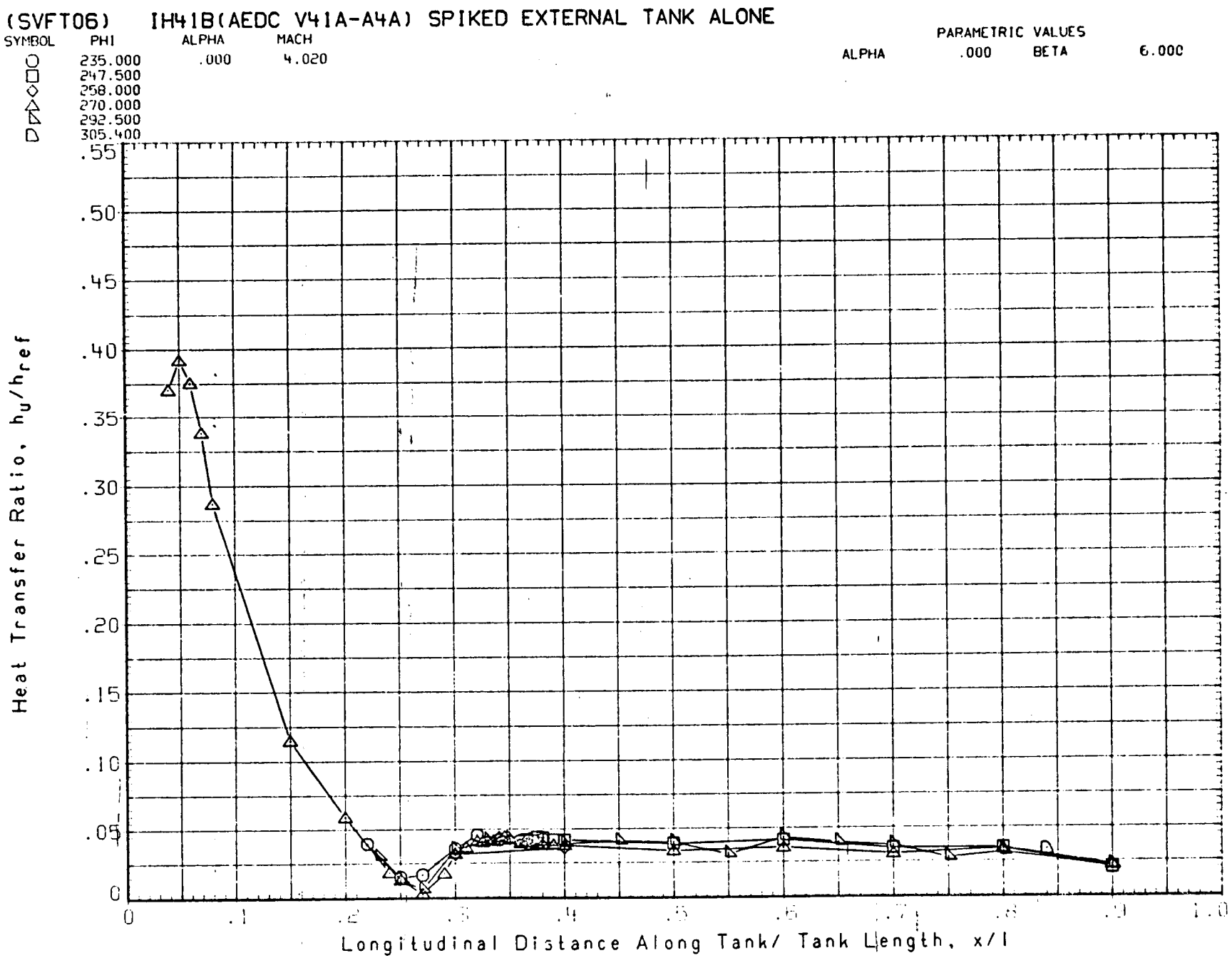


FIGURE 4 EXTERNAL TANK ALONE - HEAT TRANSFER DATA, ALPHA = 0.,

(SVFT06) IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE

SYMBOL	PHI	ALPHA	MACH
○	315.000	.000	4.020
□	337.500		
◇	343.120		
△	348.000		
◺	360.000		

PARAMETRIC VALUES

ALPHA .000 BETA 6.000

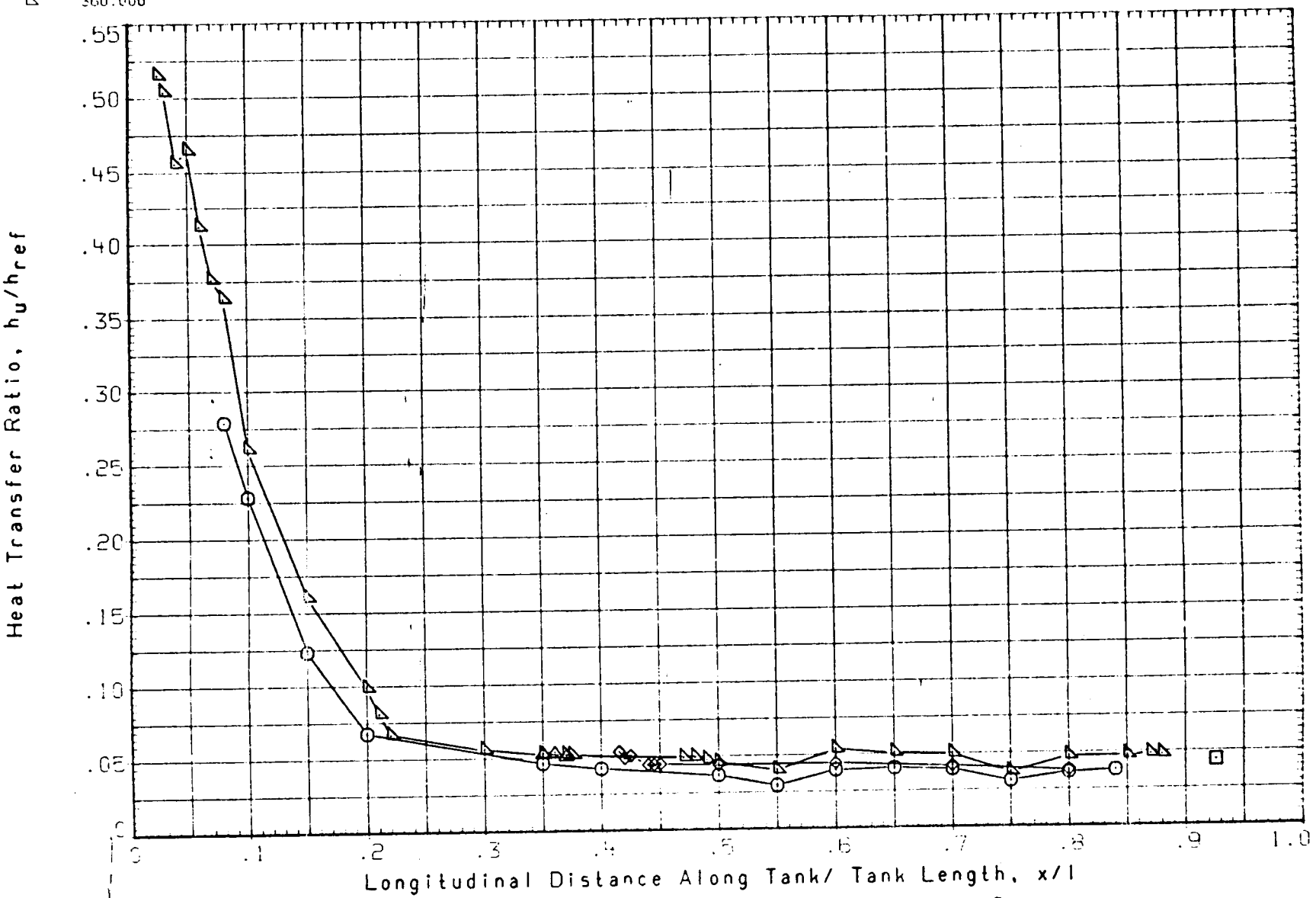


FIGURE 4 EXTERNAL TANK ALONE - HEAT TRANSFER DATA, ALPHA = 0.,

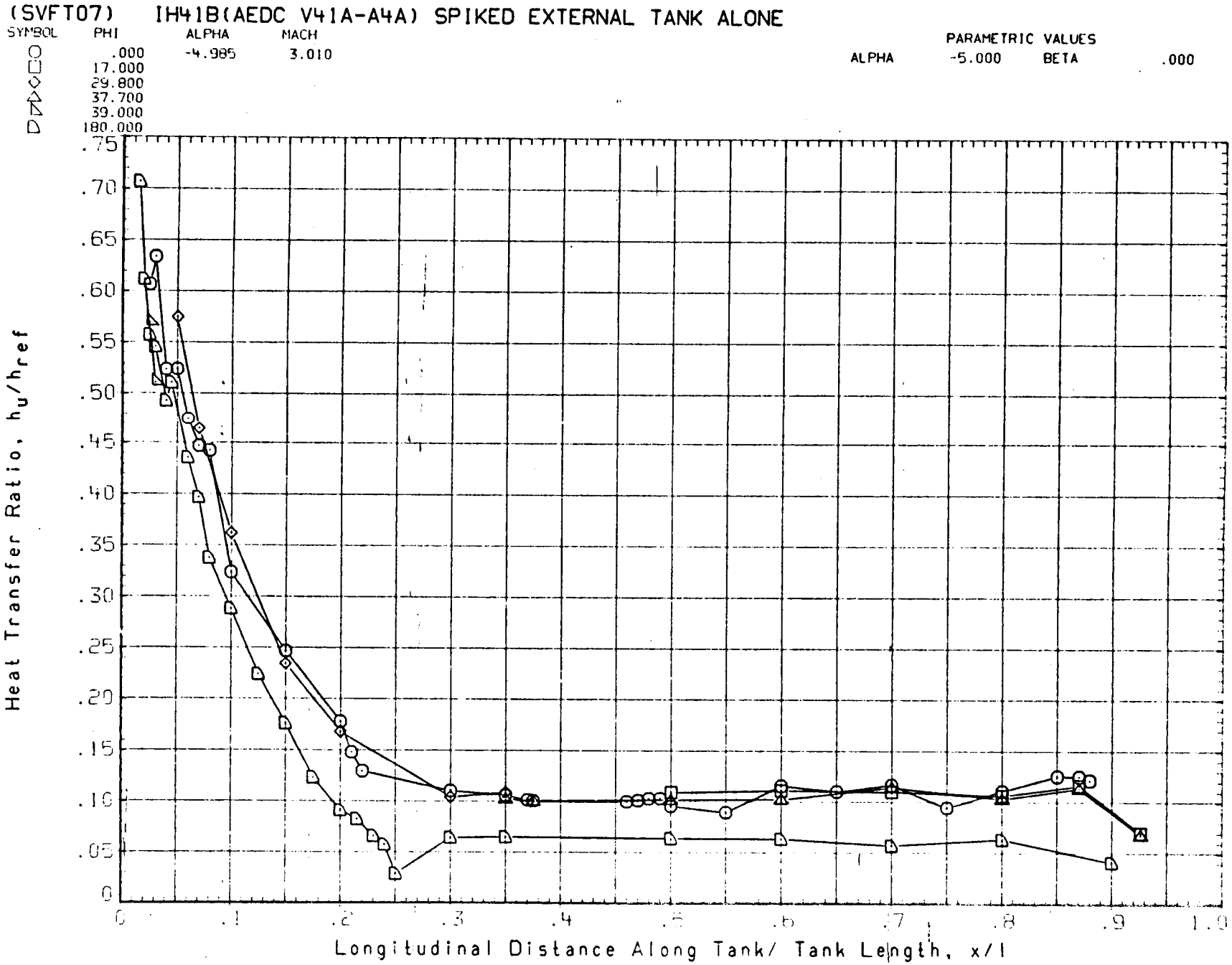


FIGURE 5 EXTERNAL TANK ALONE - HEAT TRANSFER DATA, ALPHA = -5.,

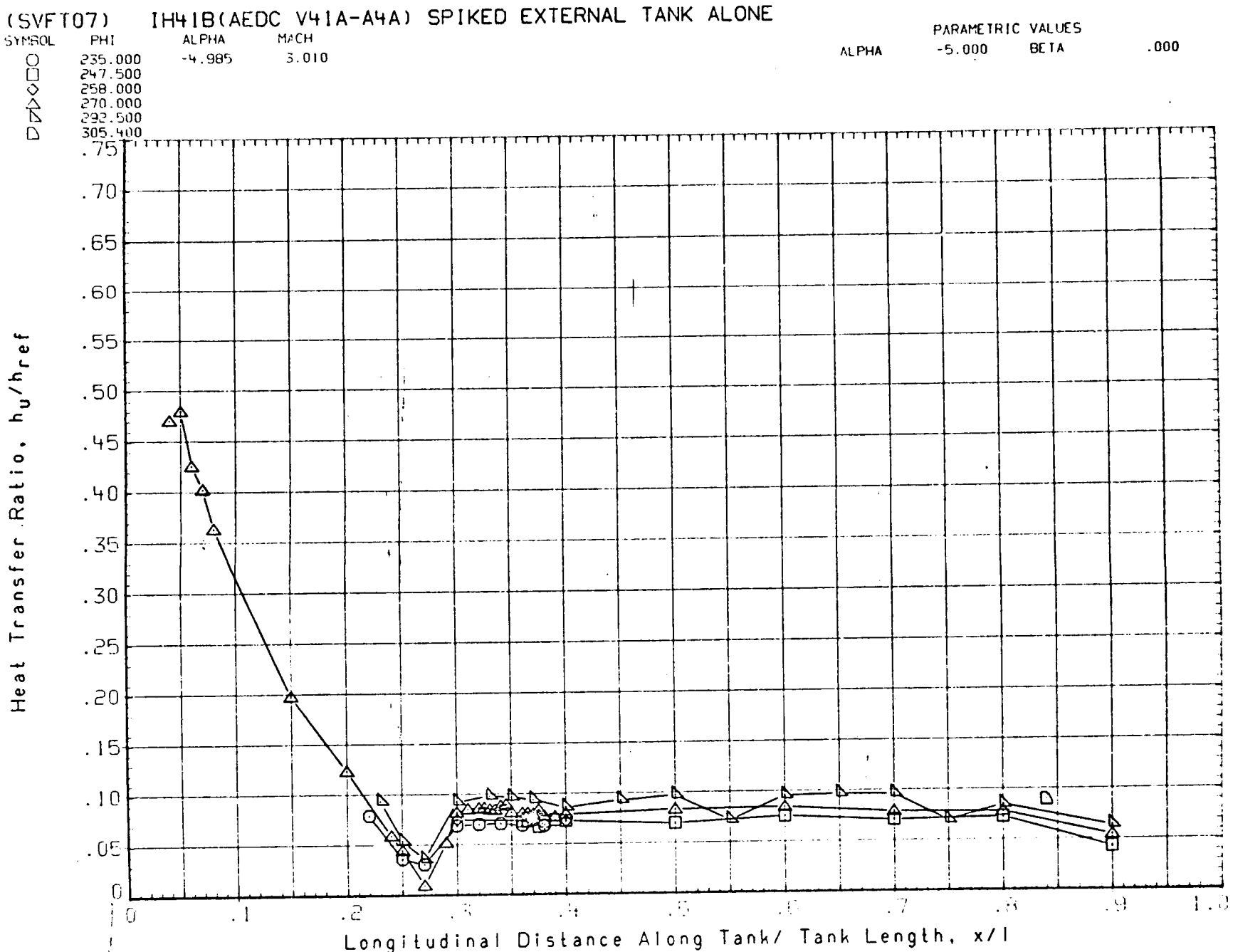


FIGURE 5 EXTERNAL TANK ALONE - HEAT TRANSFER DATA, ALPHA = -5.,

(SVFT07) IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE

SYMBOL	PHI	ALPHA	MACH
○	315.000	-4.985	3.010
□	337.500		
◇	343.120		
△	348.000		
◺	360.000		

PARAMETRIC VALUES

ALPHA -5.000 BETA .000

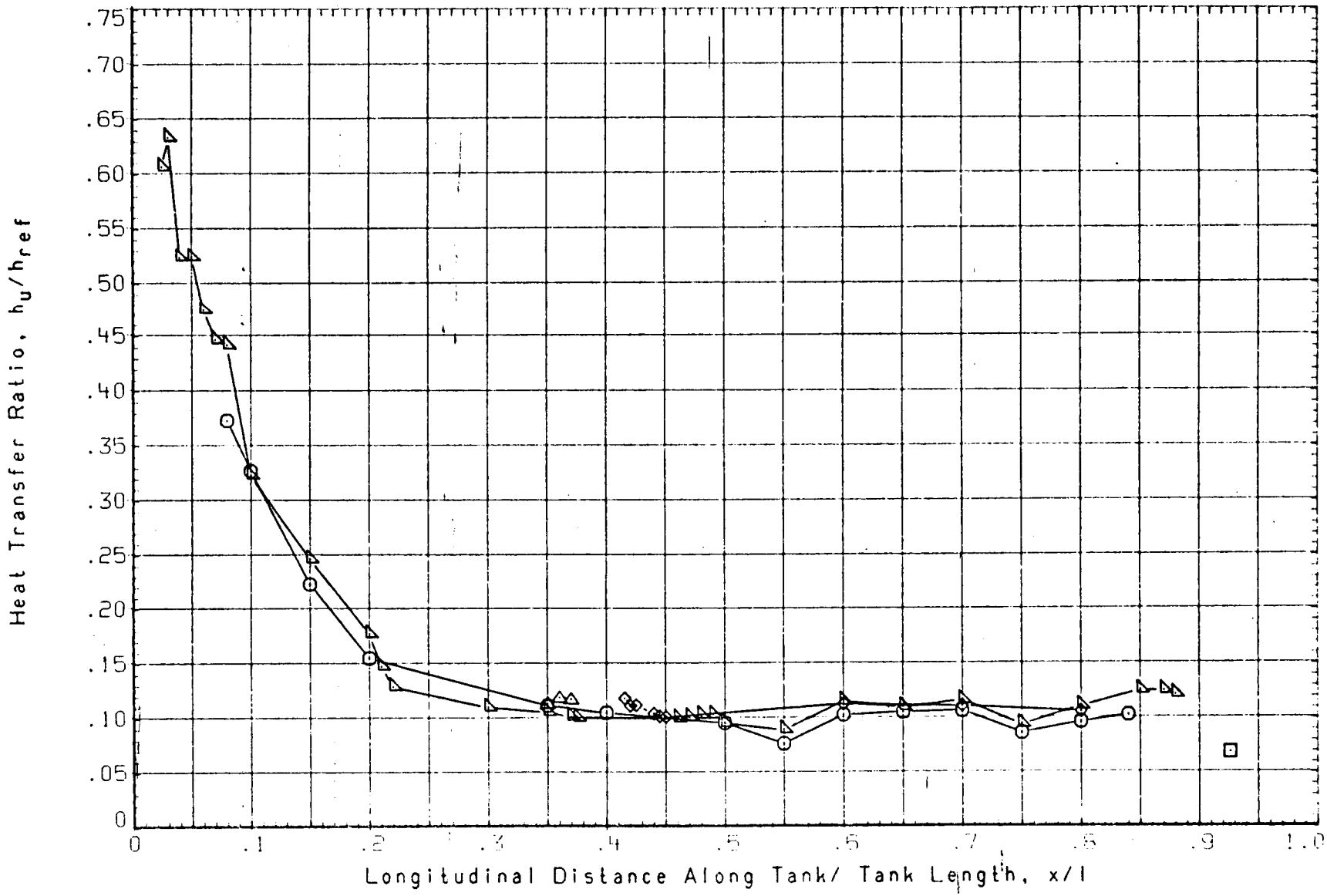


FIGURE 5 EXTERNAL TANK ALONE - HEAT TRANSFER DATA, ALPHA = -5.,

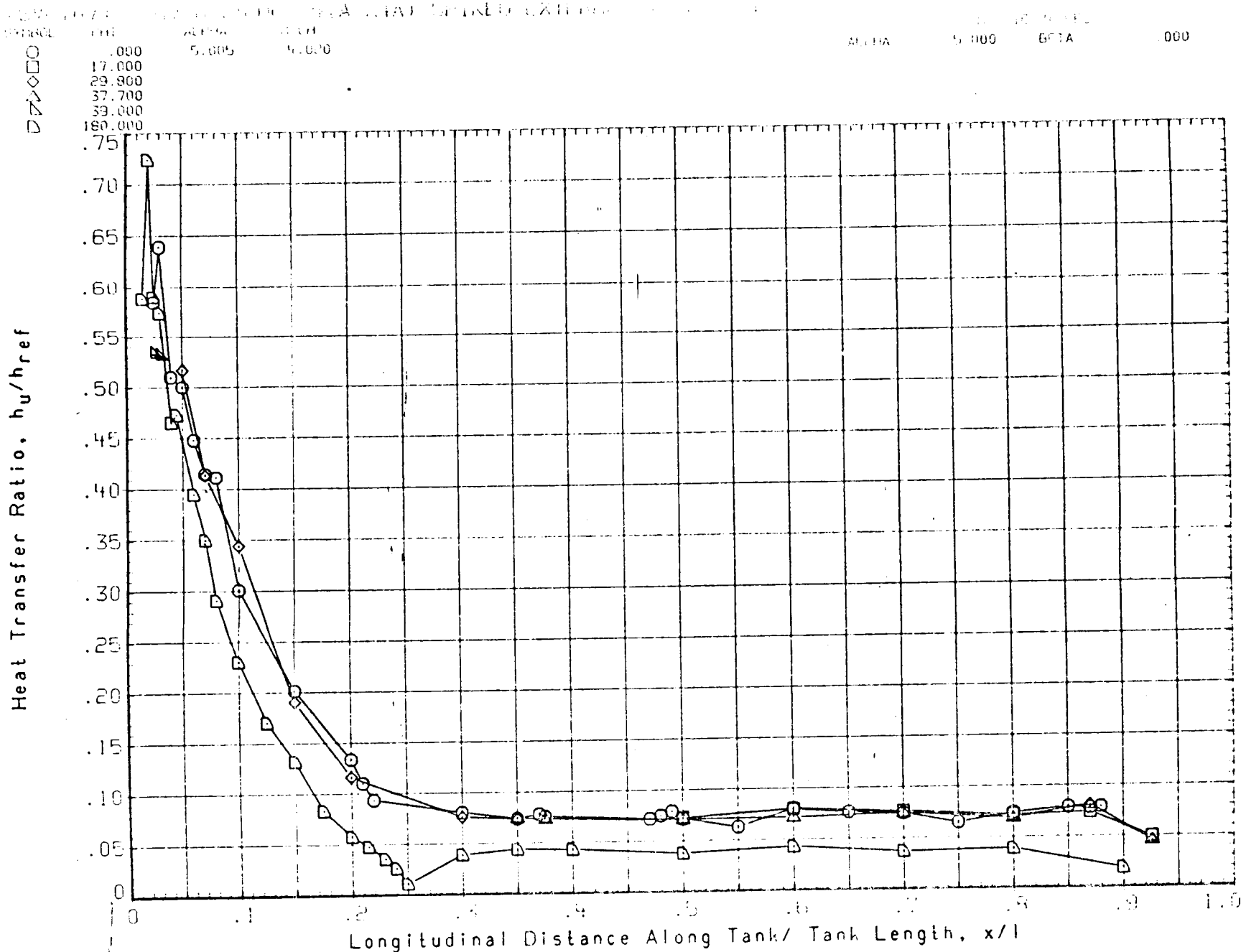


FIGURE 5 EXTERNAL TANK ALONE - HEAT TRANSFER DATA, ALPHA = -5.,

(SVFT07) IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE

SYMBOL	PHI	ALPHA	MACH
○	235.000	-5.005	4.020
□	247.500		
◇	258.000		
△	270.000		
◺	292.500		
D	305.400		

PARAMETRIC VALUES

ALPHA -5.000 BETA .000

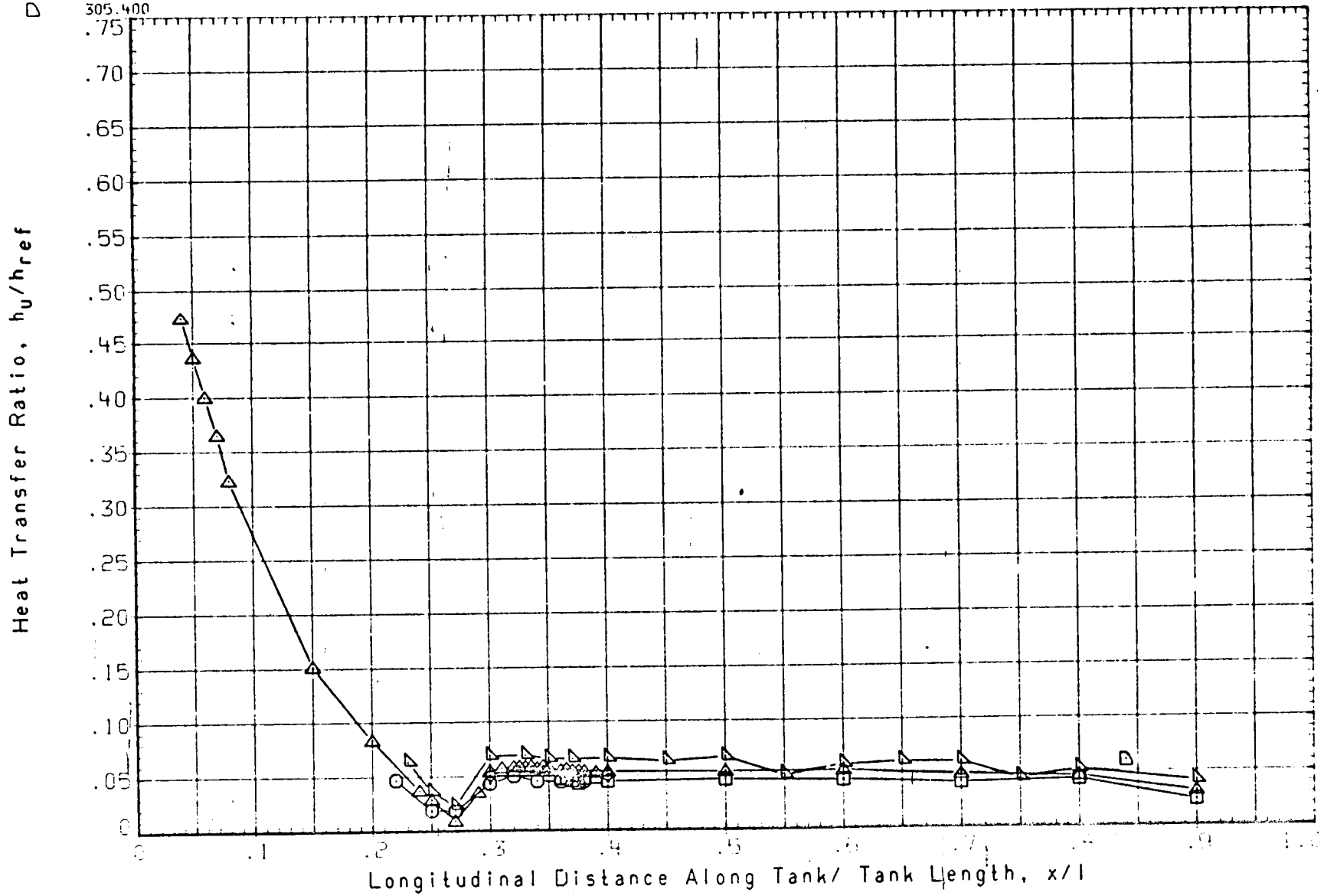


FIGURE 5 EXTERNAL TANK ALONE - HEAT TRANSFER DATA, ALPHA = -5.,

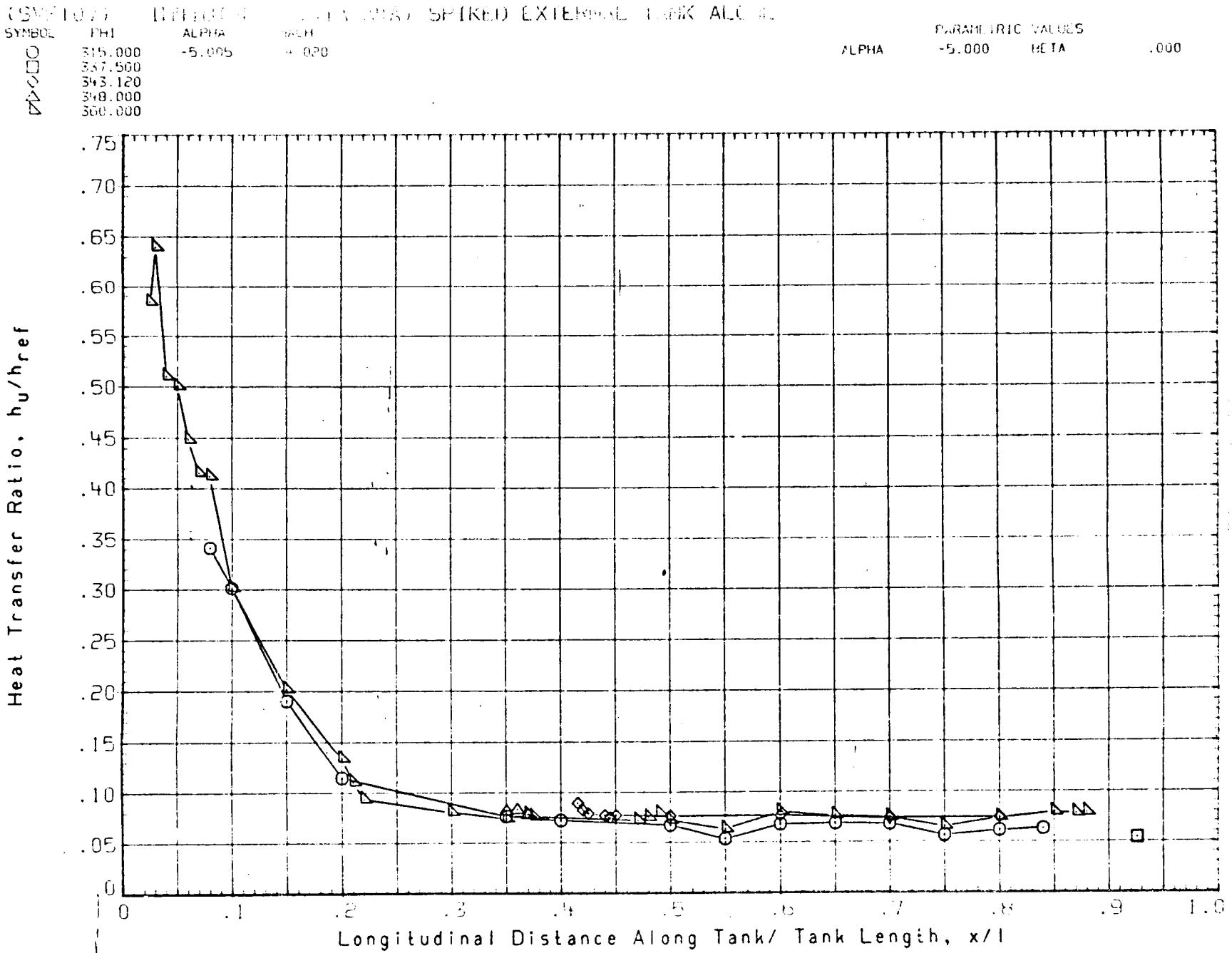


FIGURE 5 EXTERNAL TANK ALONE - HEAT TRANSFER DATA, ALPHA = -5.,

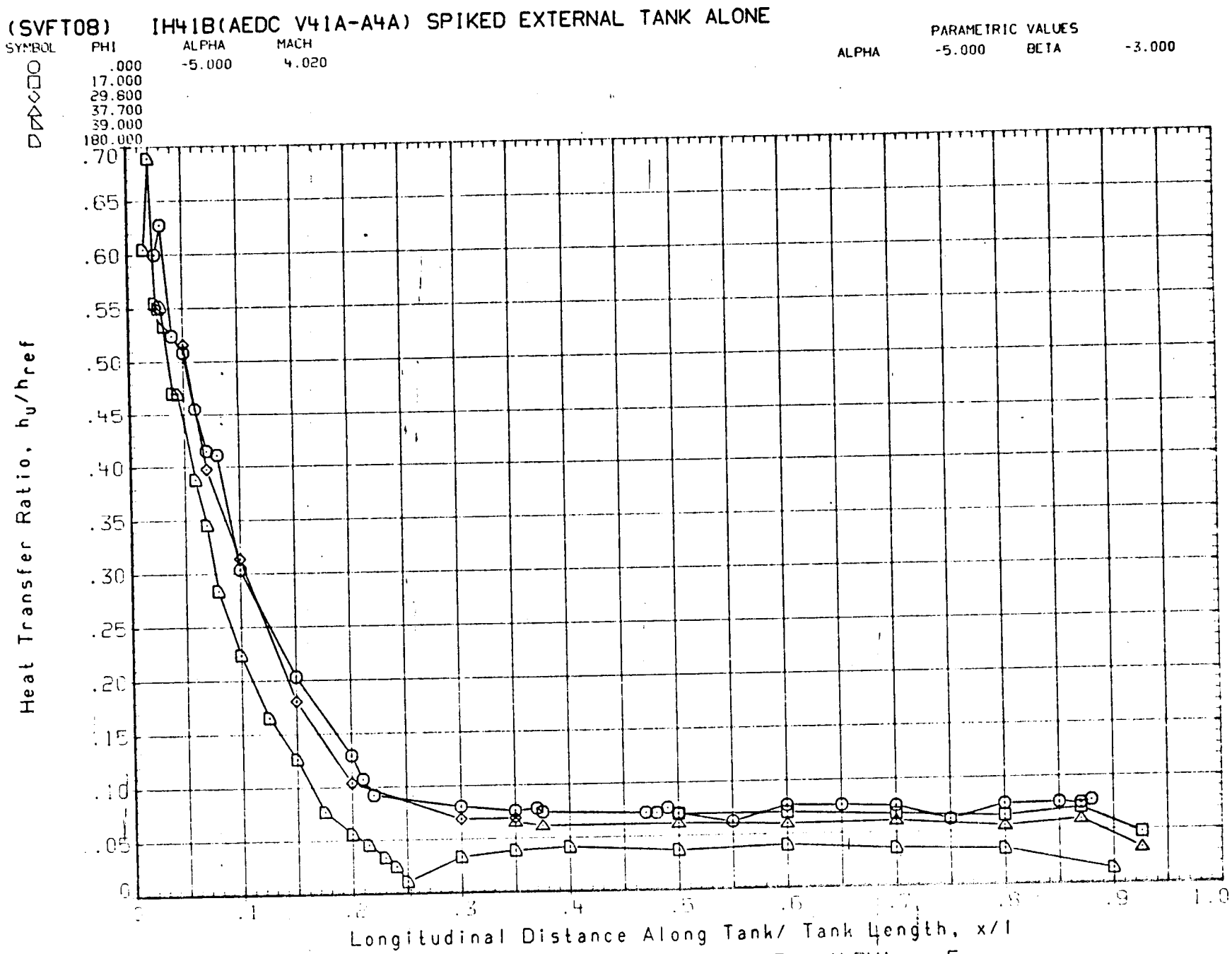


FIGURE 5 EXTERNAL TANK ALONE - HEAT TRANSFER DATA, ALPHA = -5.

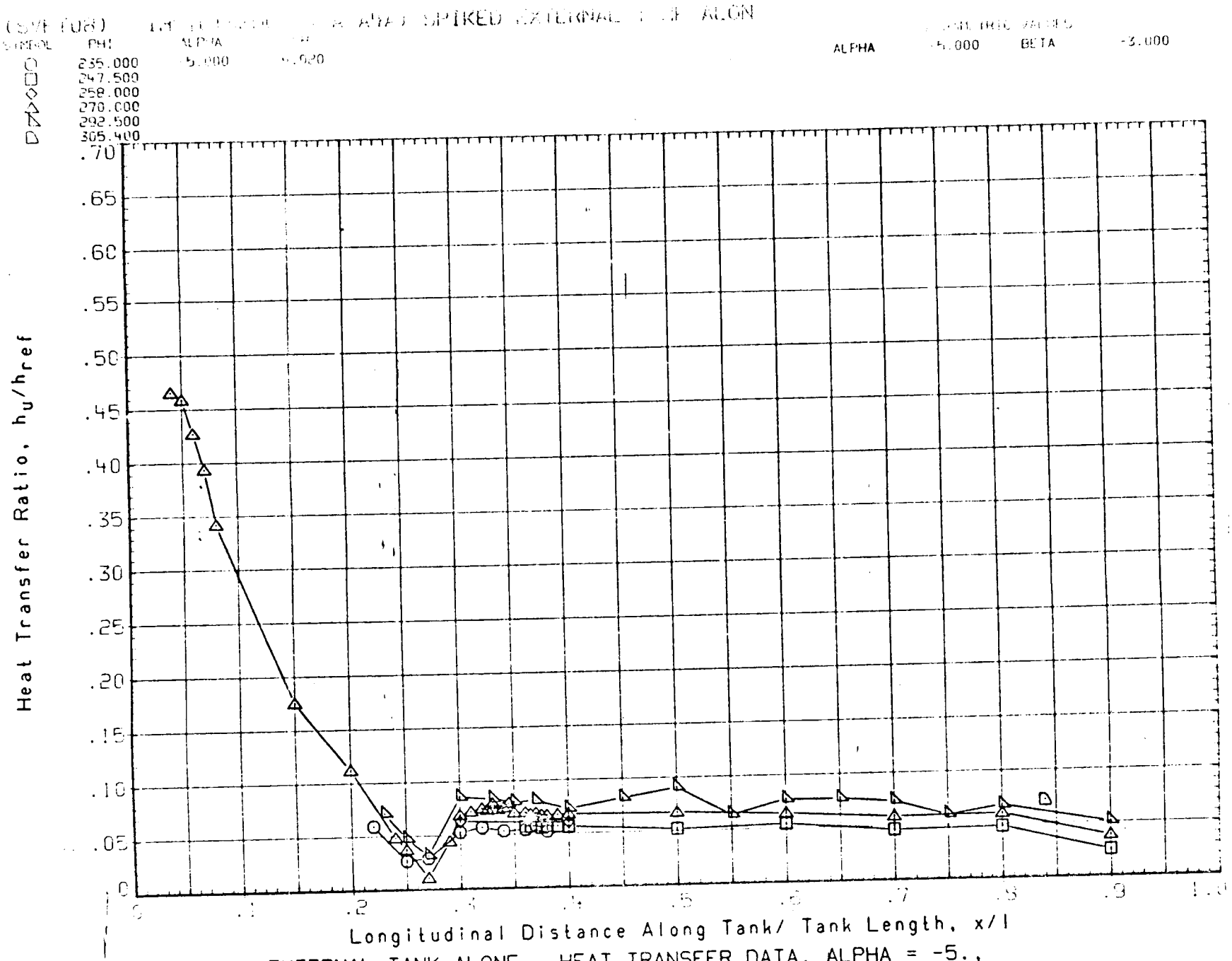


FIGURE 5 EXTERNAL TANK ALONE - HEAT TRANSFER DATA, ALPHA = -5.,

(SVFT08) IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE

SYMBOL	PHI	ALPHA	MACH
○	315.000	-5.000	4.020
□	337.500		
◇	343.120		
△	348.000		
◺	360.000		

PARAMETRIC VALUES

ALPHA -5.000 BETA -3.000

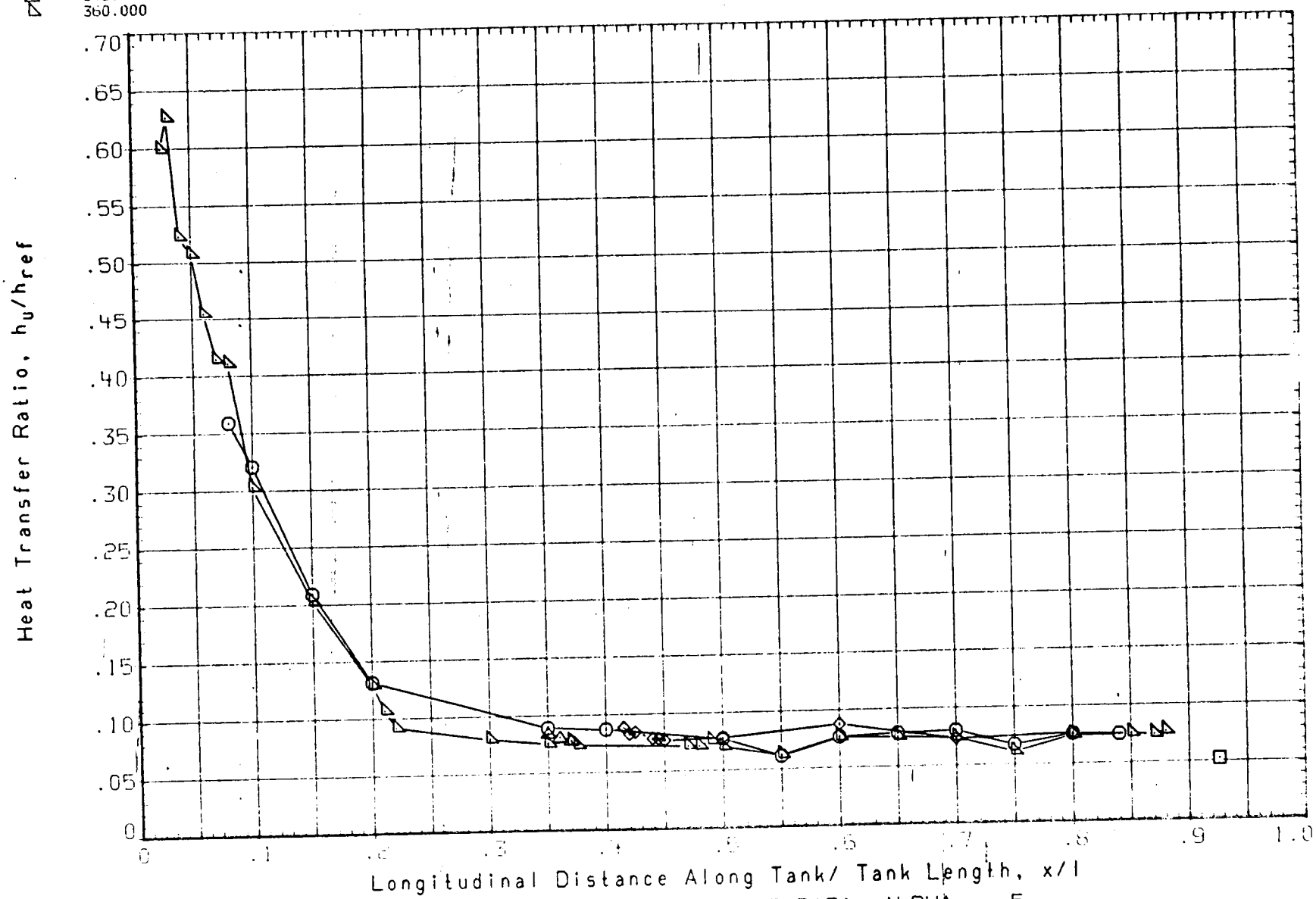


FIGURE 5 EXTERNAL TANK ALONE - HEAT TRANSFER DATA, ALPHA = -5.,

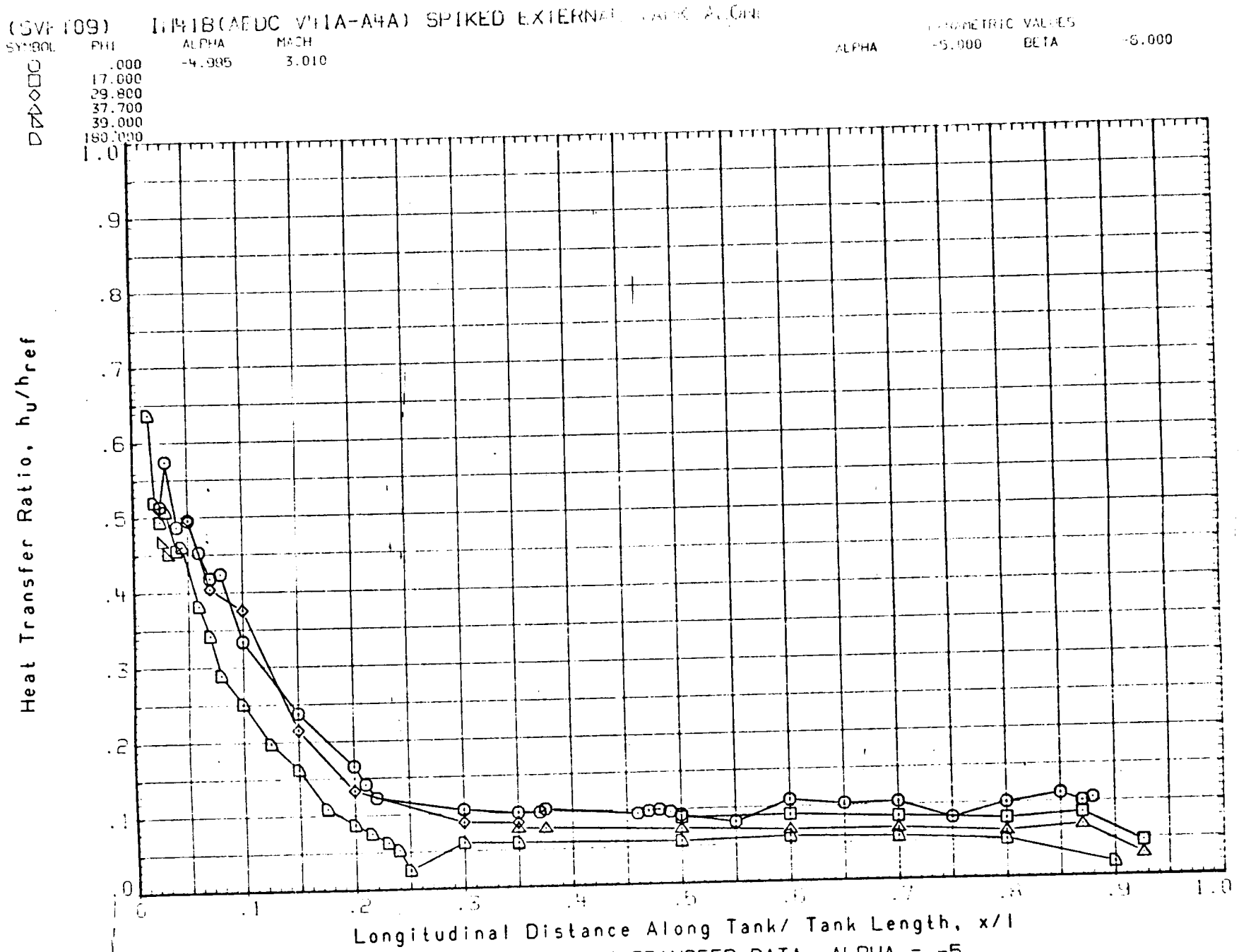


FIGURE 5 EXTERNAL TANK ALONE - HEAT TRANSFER DATA, ALPHA = -5.,

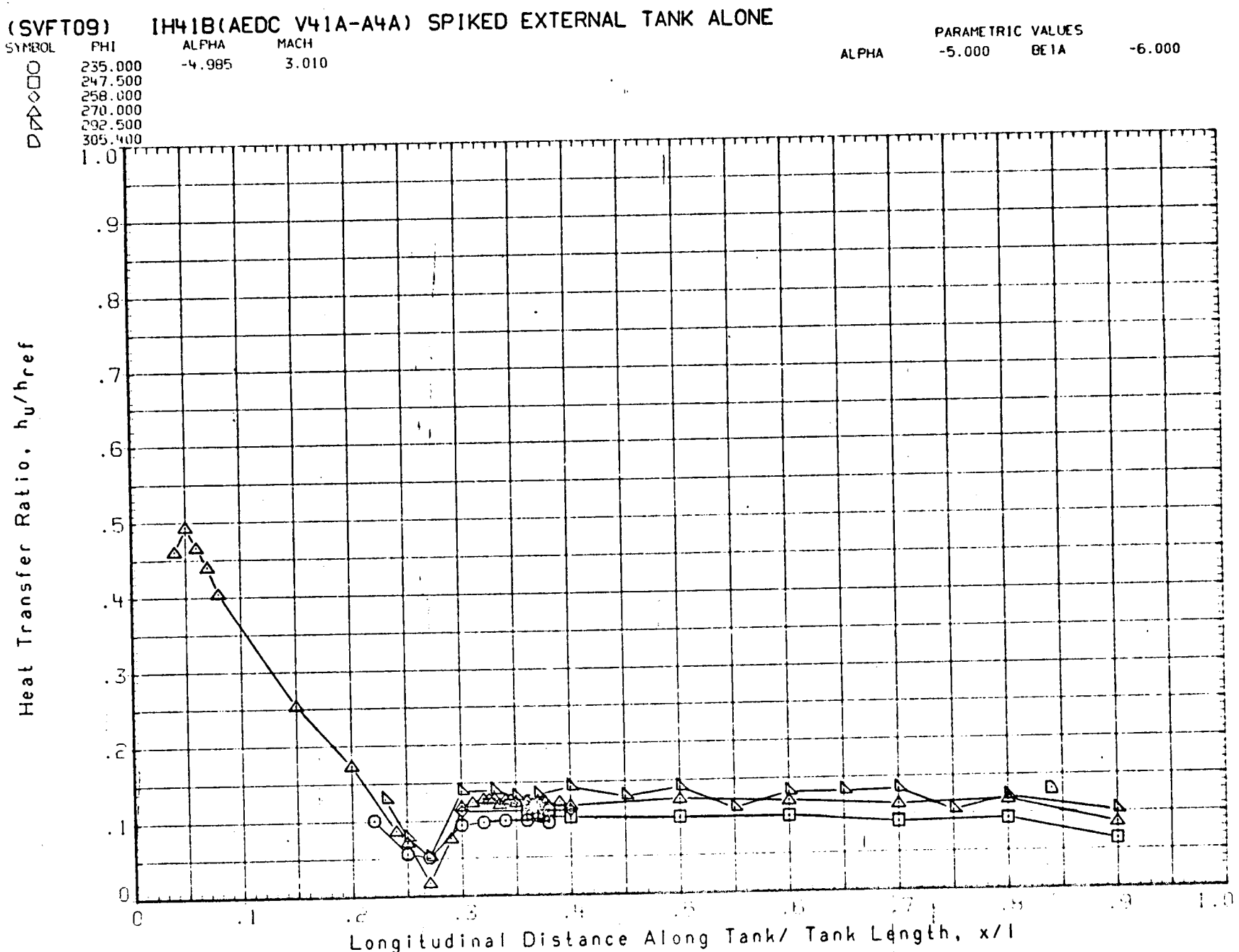


FIGURE 5 EXTERNAL TANK ALONE - HEAT TRANSFER DATA, ALPHA = -5.,

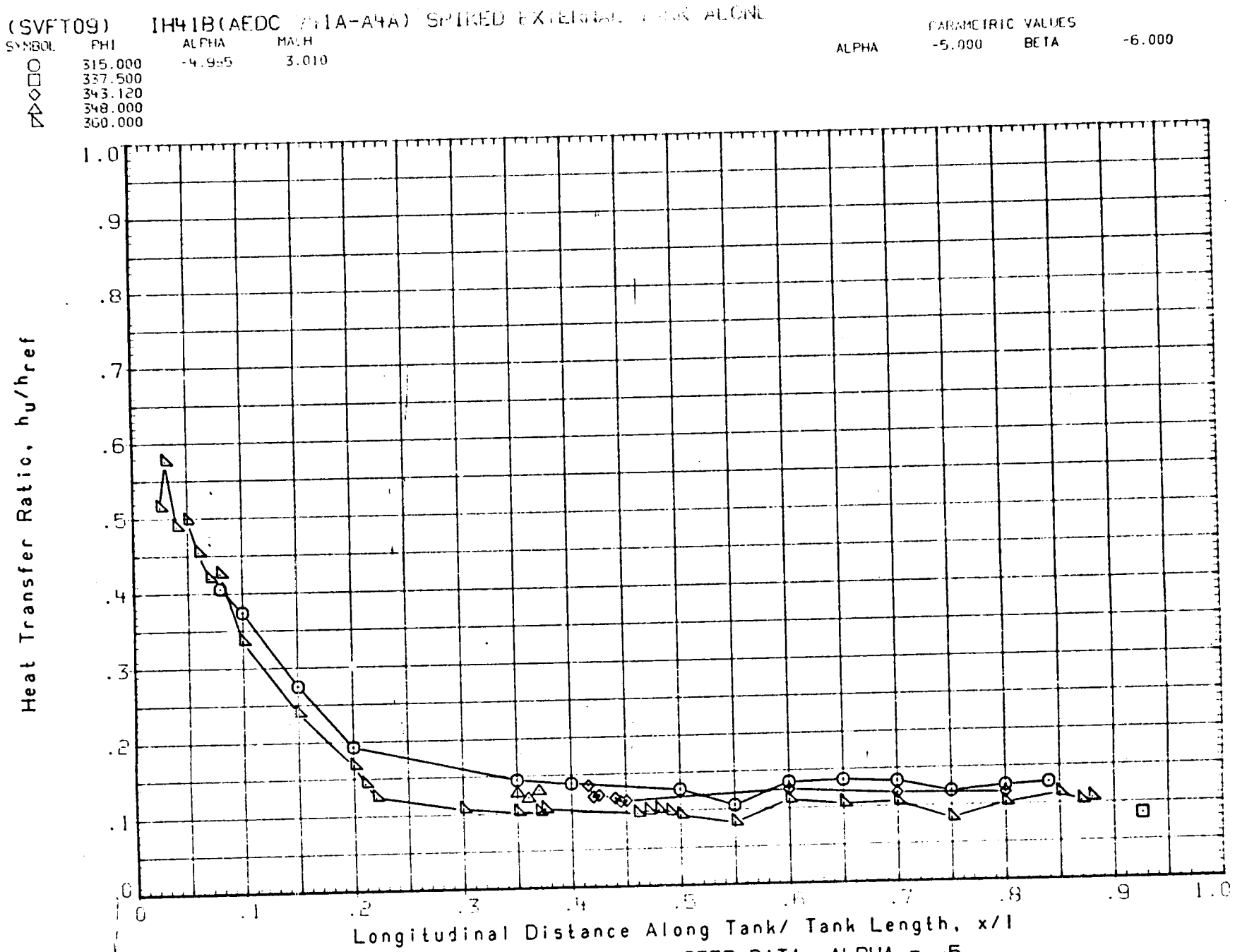


FIGURE 5 EXTERNAL TANK ALONE - HEAT TRANSFER DATA, ALPHA = -5.,

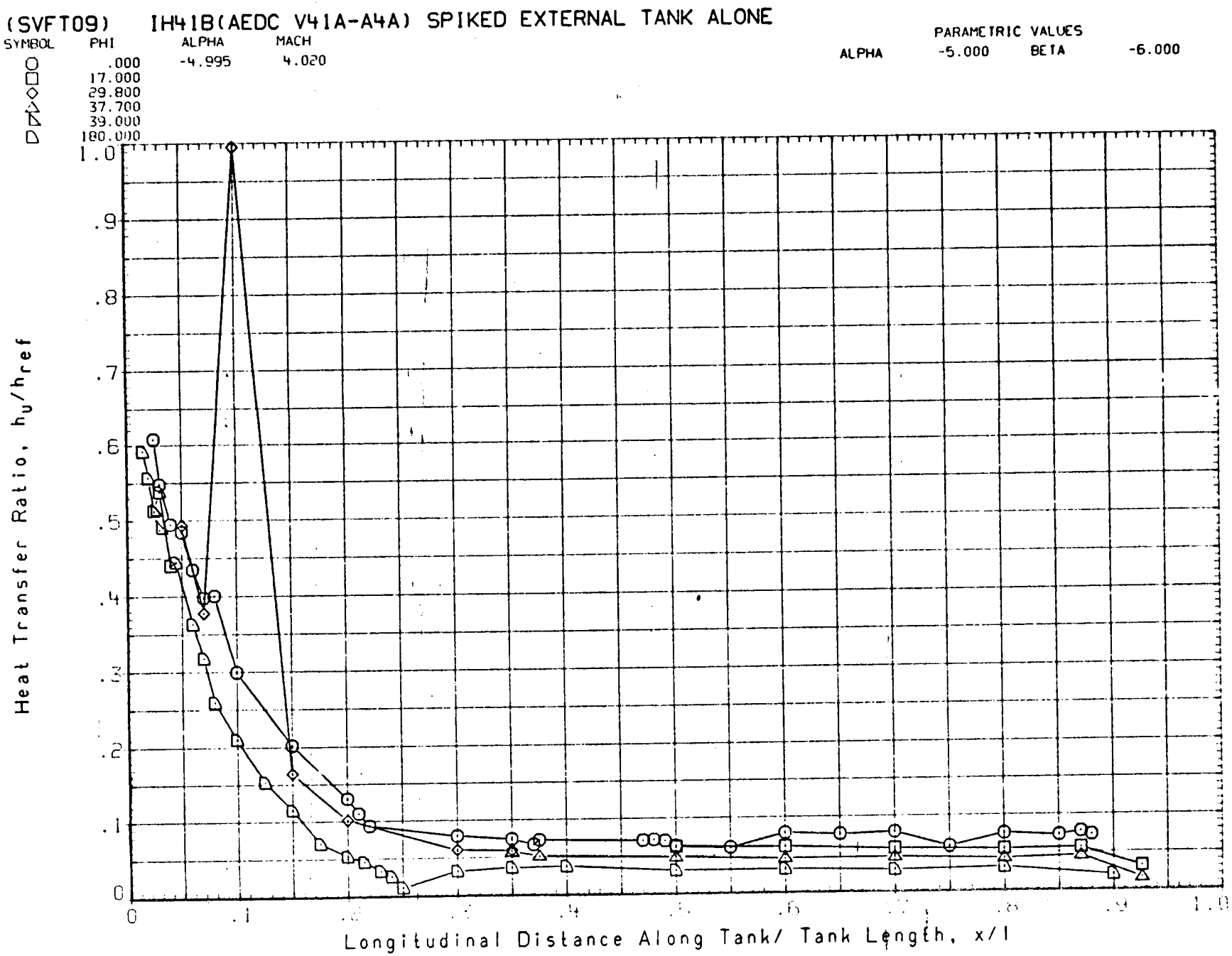


FIGURE 5 EXTERNAL TANK ALONE - HEAT TRANSFER DATA, ALPHA = -5.,

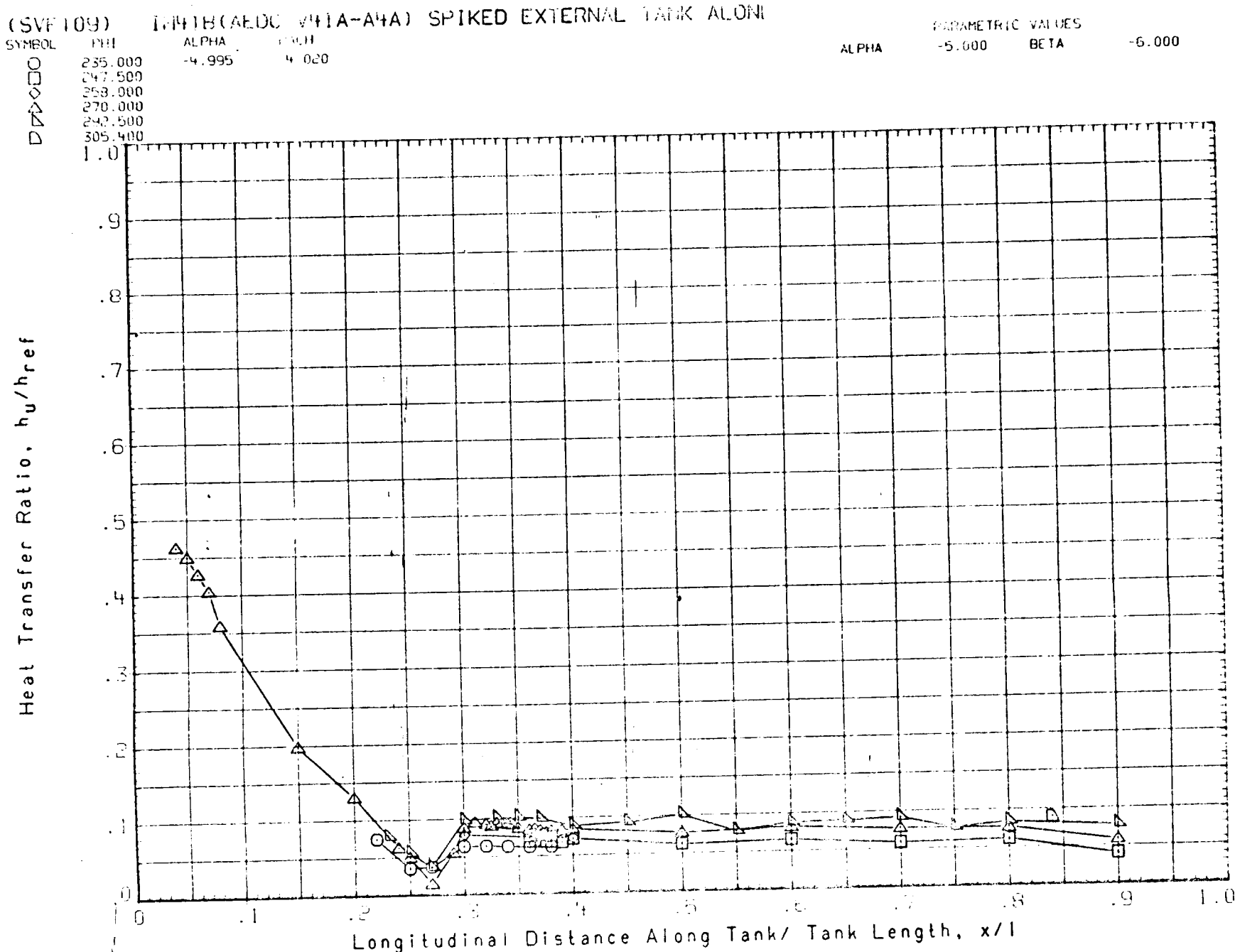


FIGURE 5 EXTERNAL TANK ALONE - HEAT TRANSFER DATA, ALPHA = -5.,

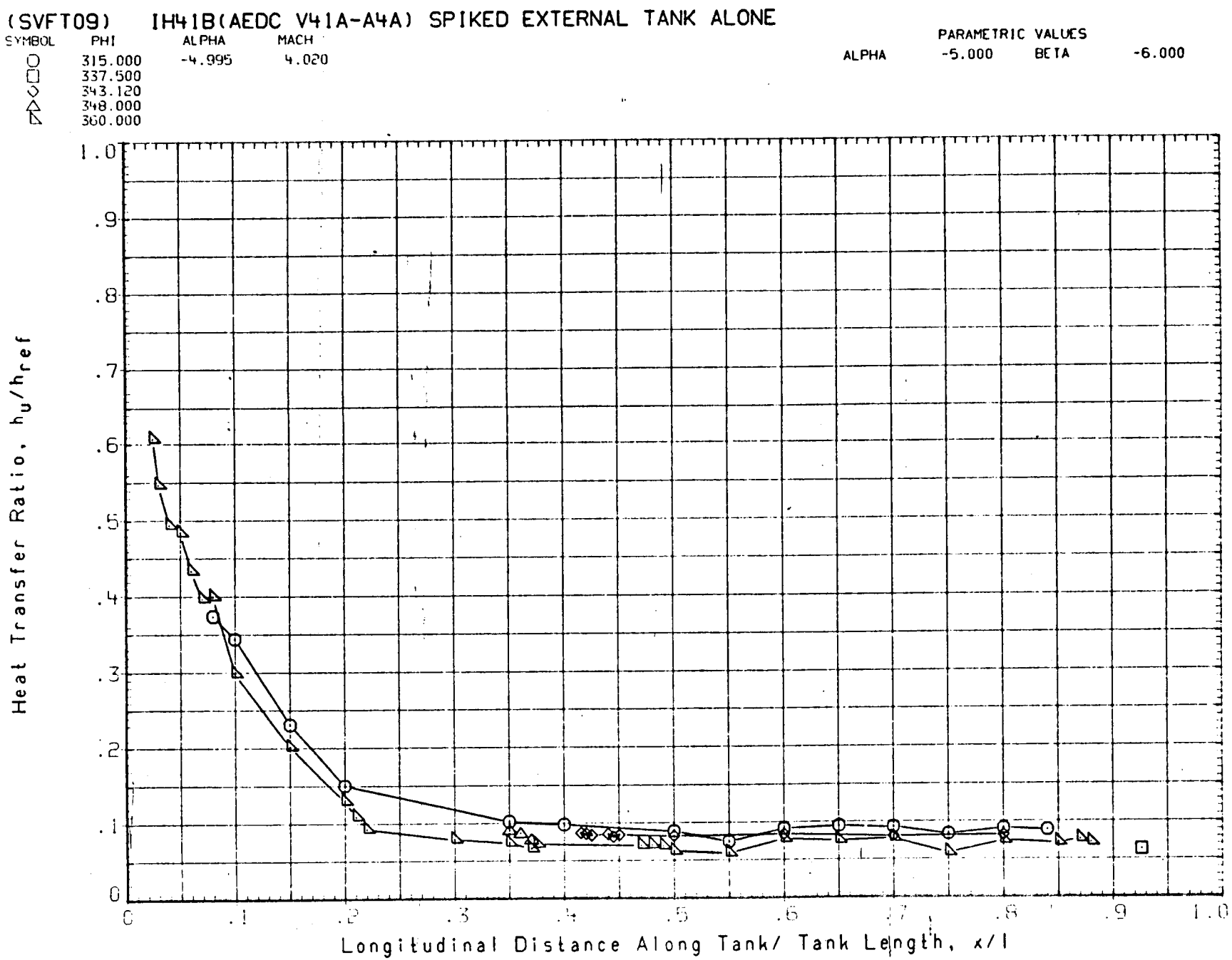


FIGURE 5 EXTERNAL TANK ALONE - HEAT TRANSFER DATA, ALPHA = -5.,

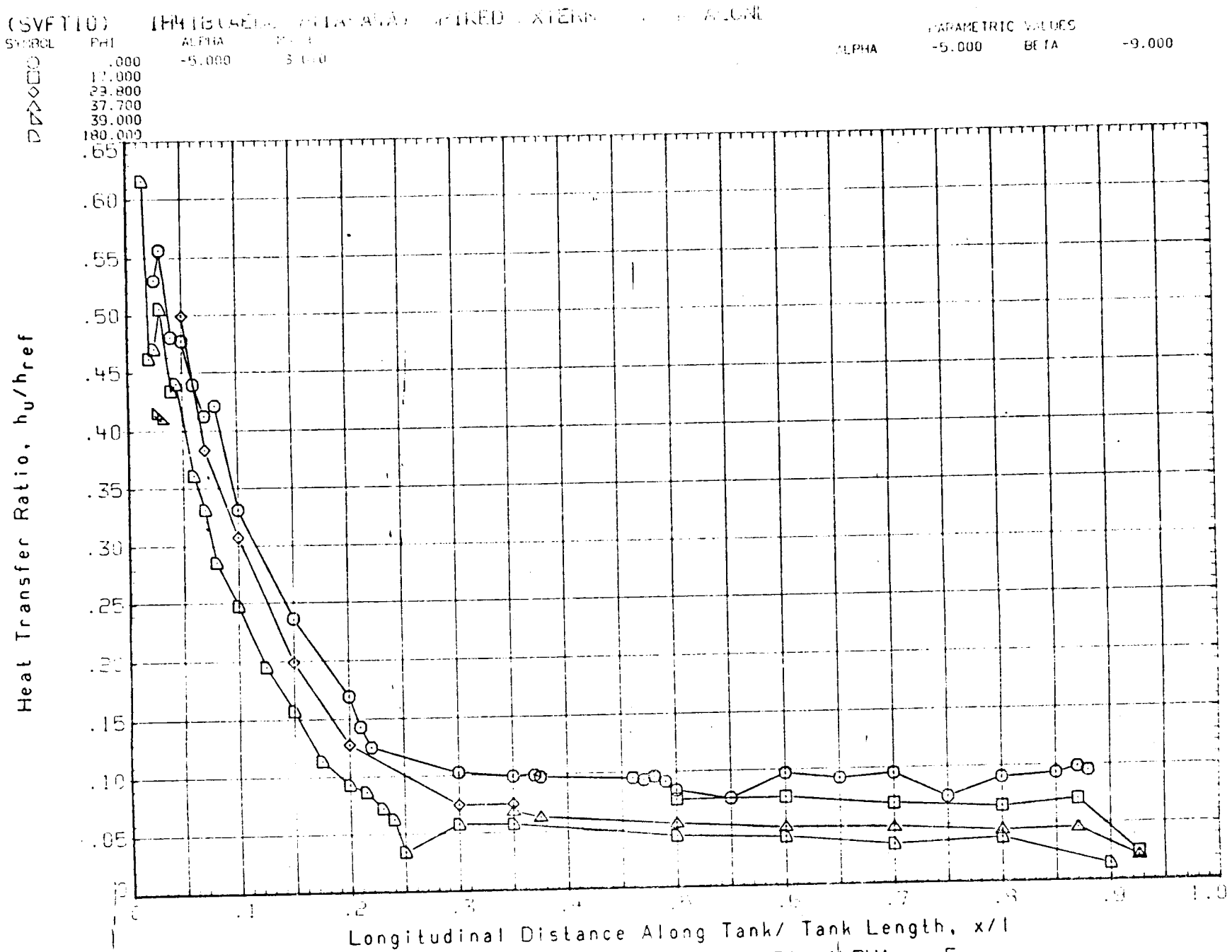


FIGURE 5 EXTERNAL TANK ALONE - HEAT TRANSFER DATA, ALPHA = -5.,

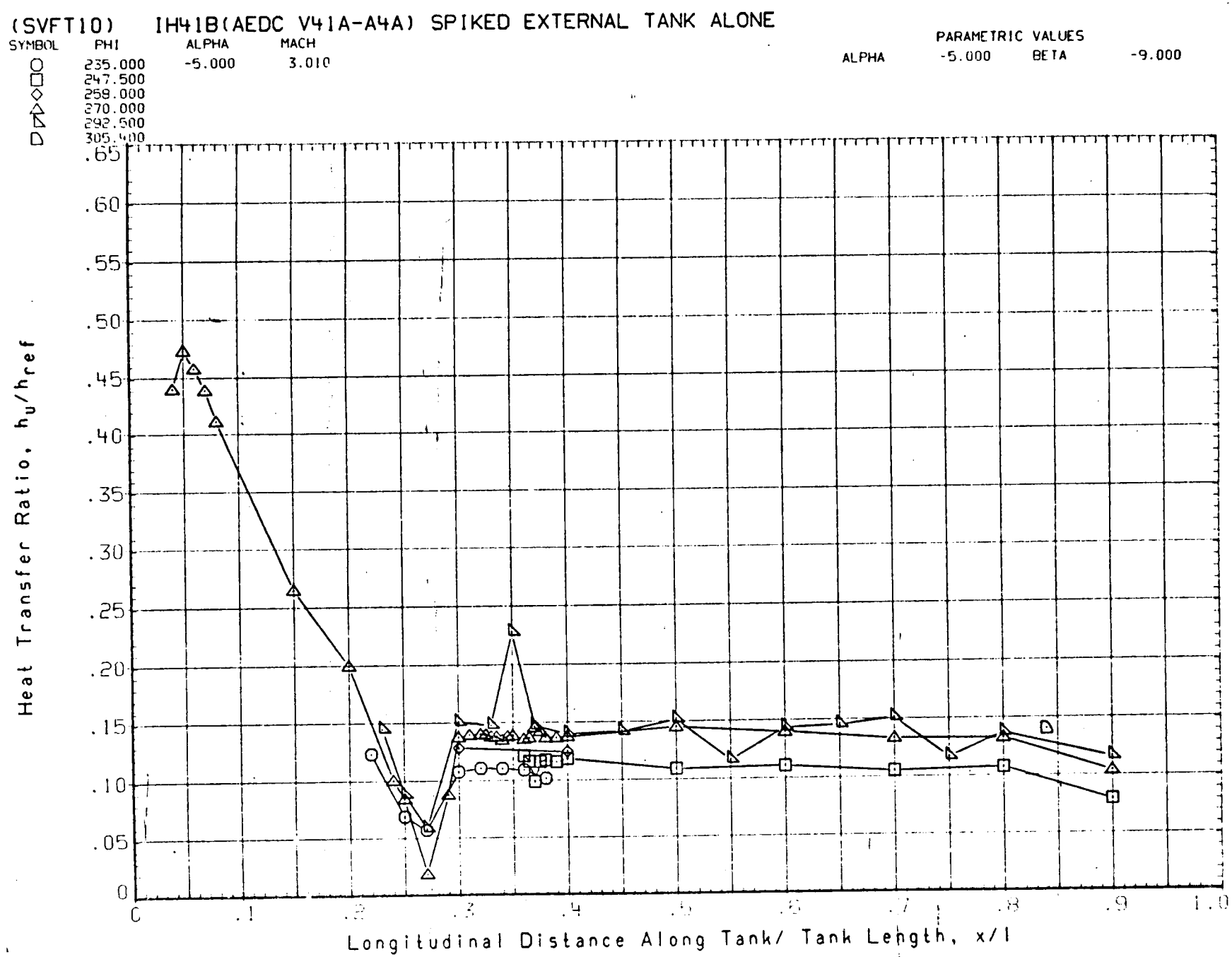


FIGURE 5 EXTERNAL TANK ALONE - HEAT TRANSFER DATA, ALPHA = -5.,

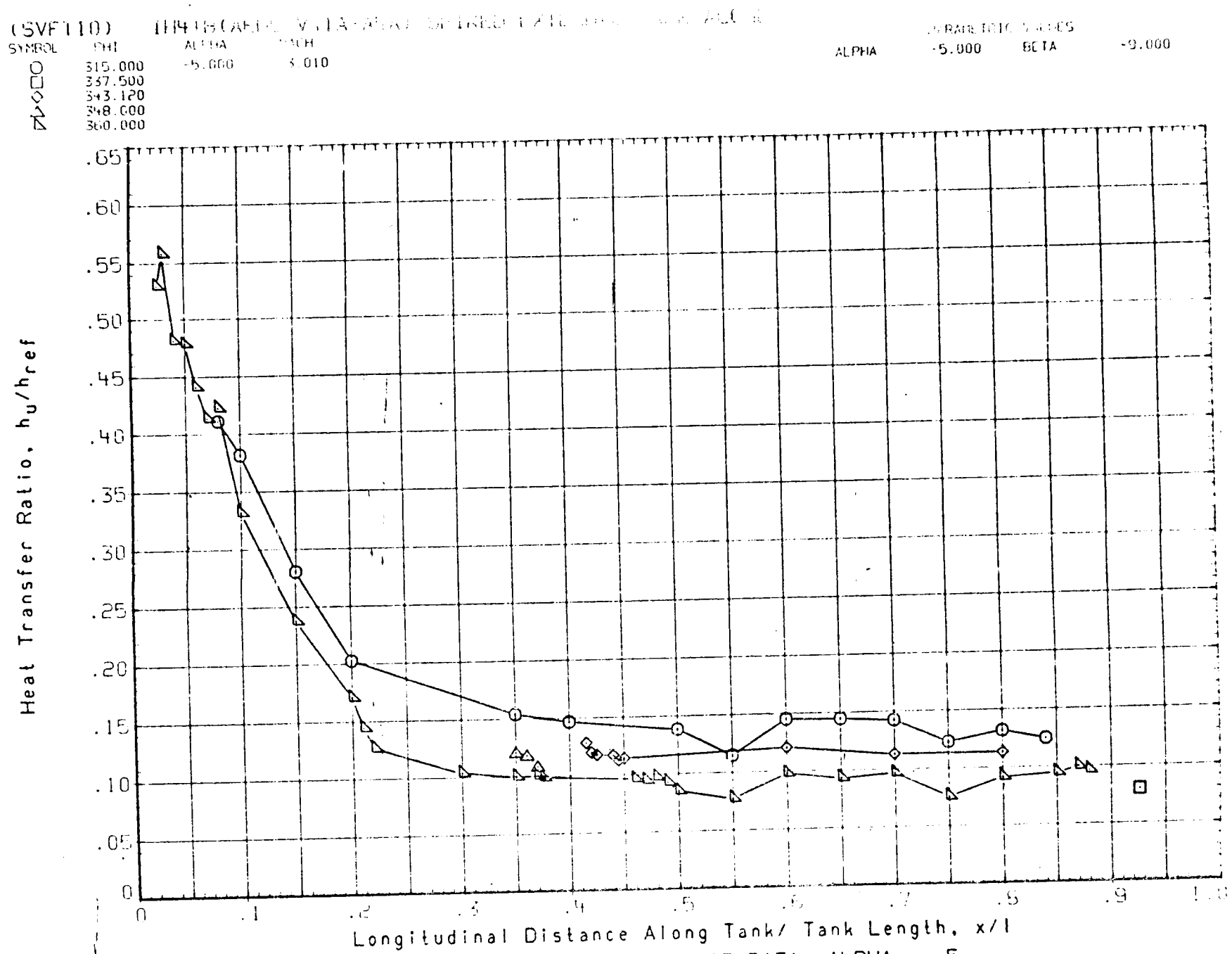


FIGURE 5 EXTERNAL TANK ALONE - HEAT TRANSFER DATA, ALPHA = -5.,

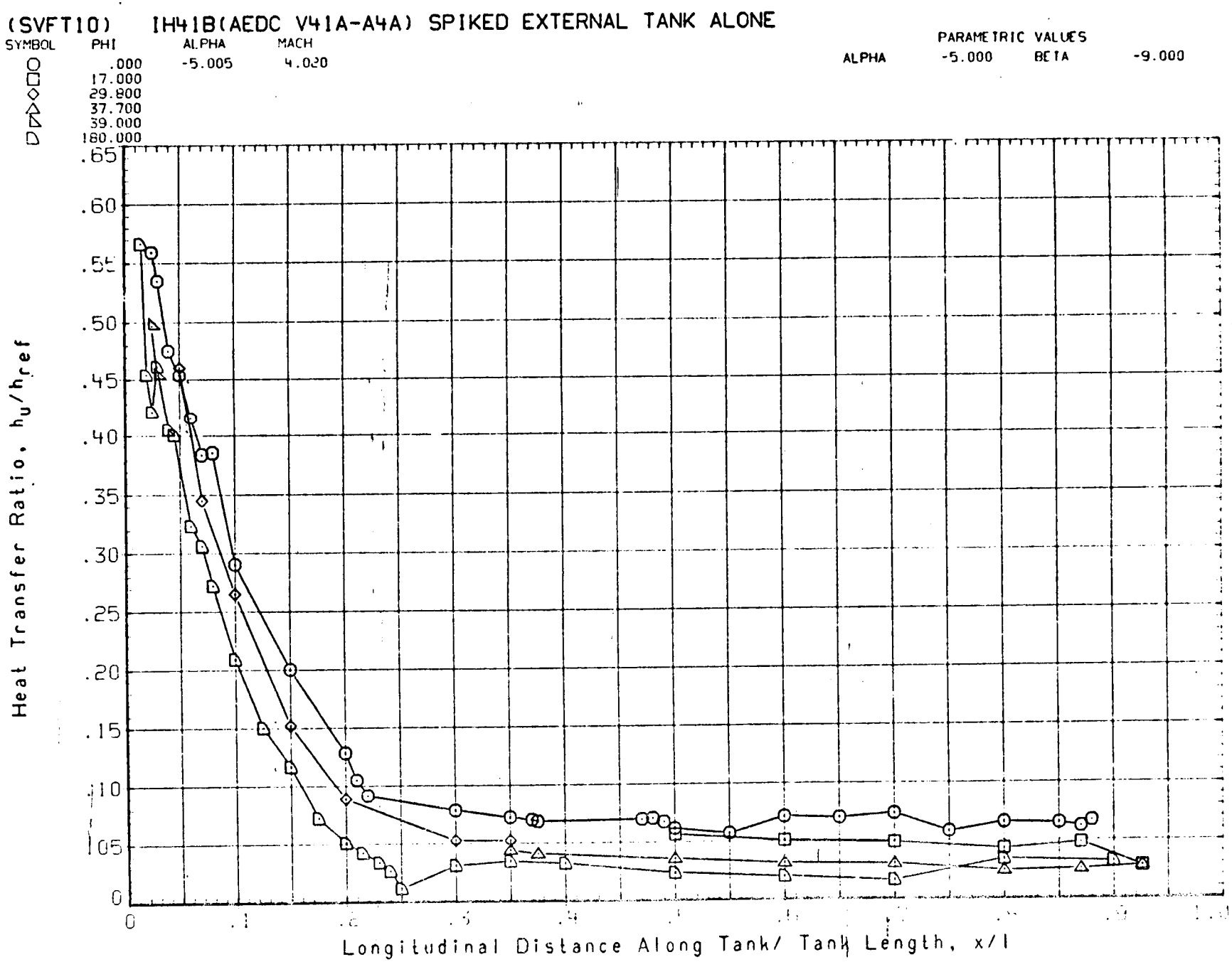


FIGURE 5 EXTERNAL TANK ALONE - HEAT TRANSFER DATA, ALPHA = -5.,

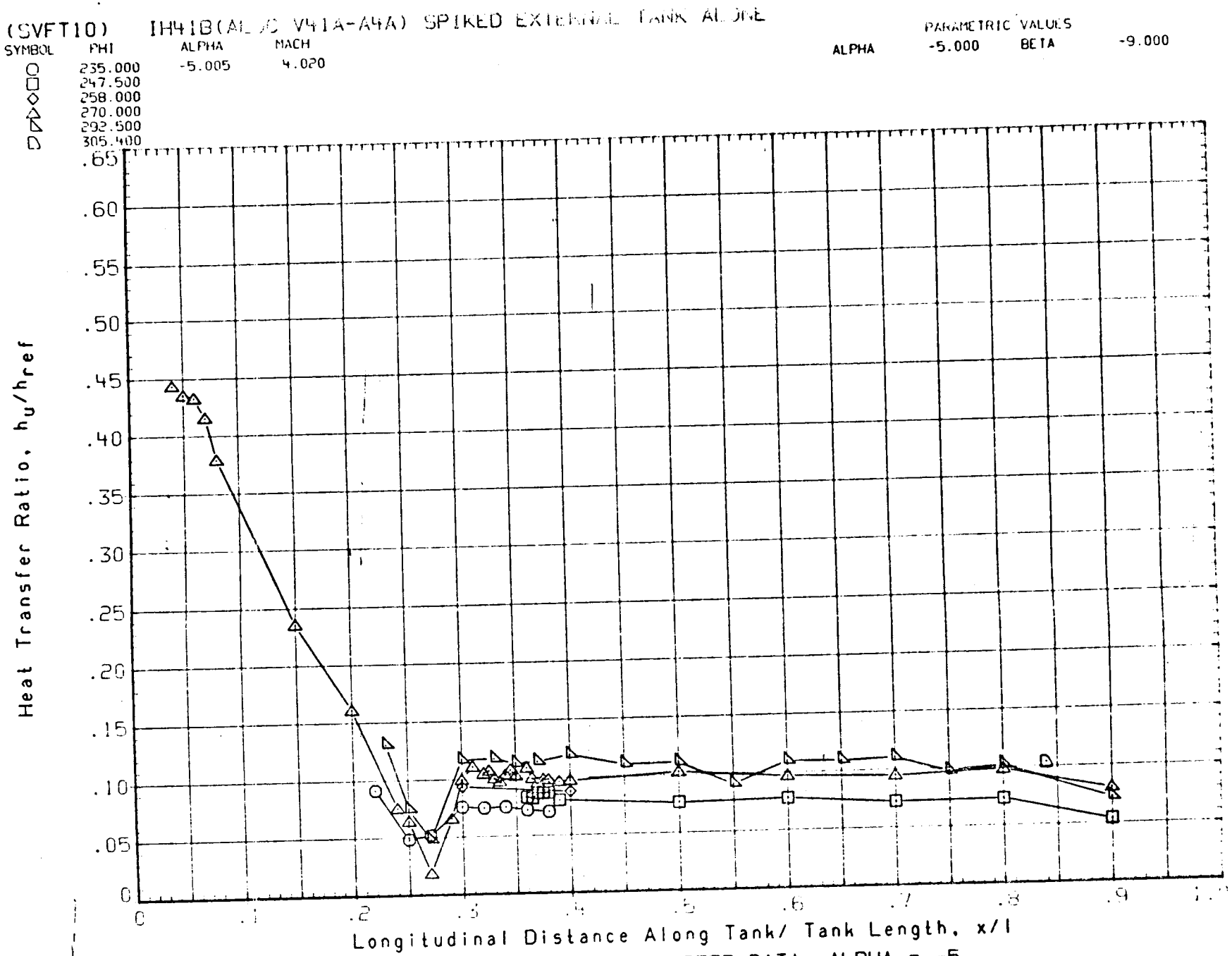


FIGURE 5 EXTERNAL TANK ALONE - HEAT TRANSFER DATA, ALPHA = -5.,

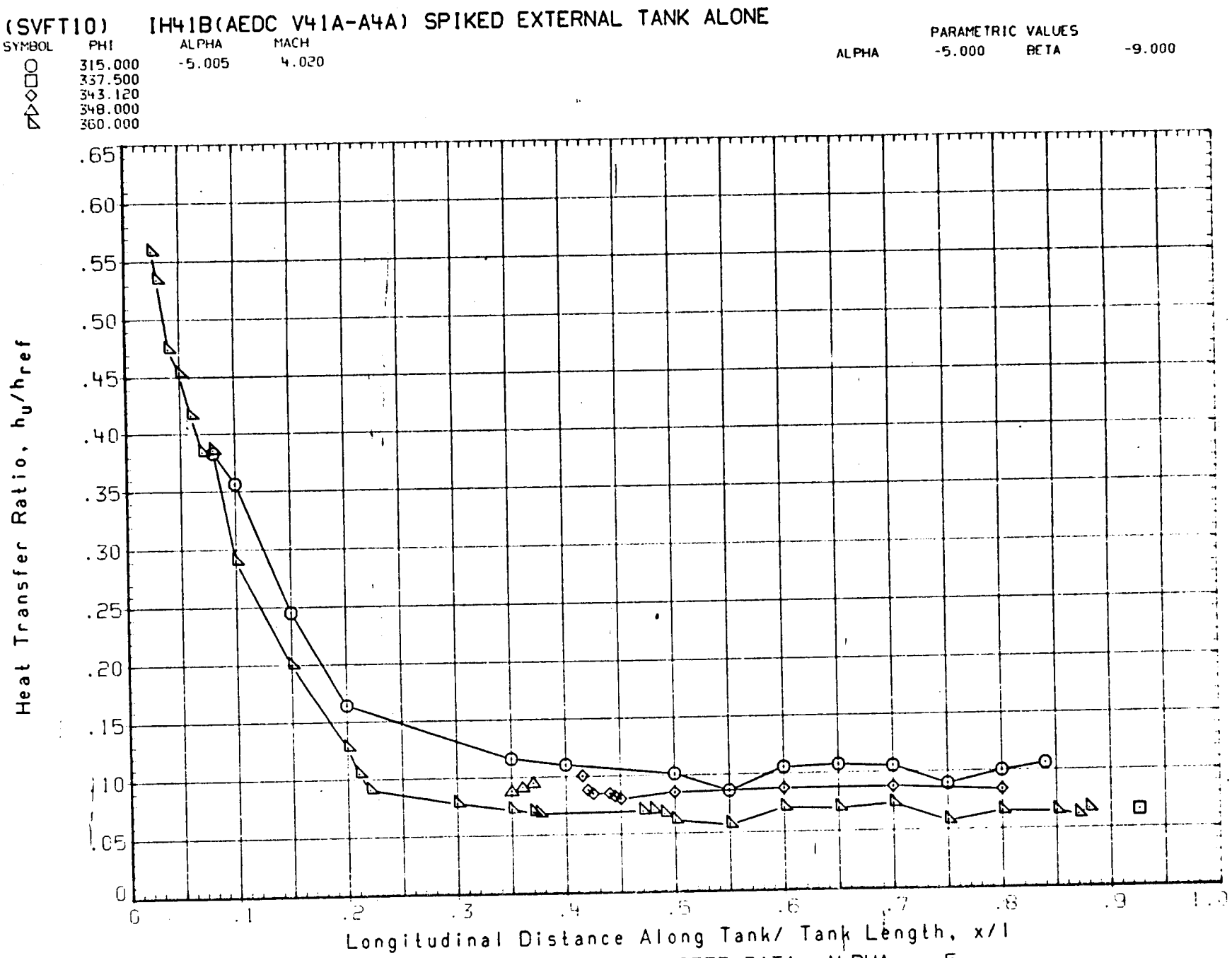


FIGURE 5 EXTERNAL TANK ALONE - HEAT TRANSFER DATA, ALPHA = -5.,

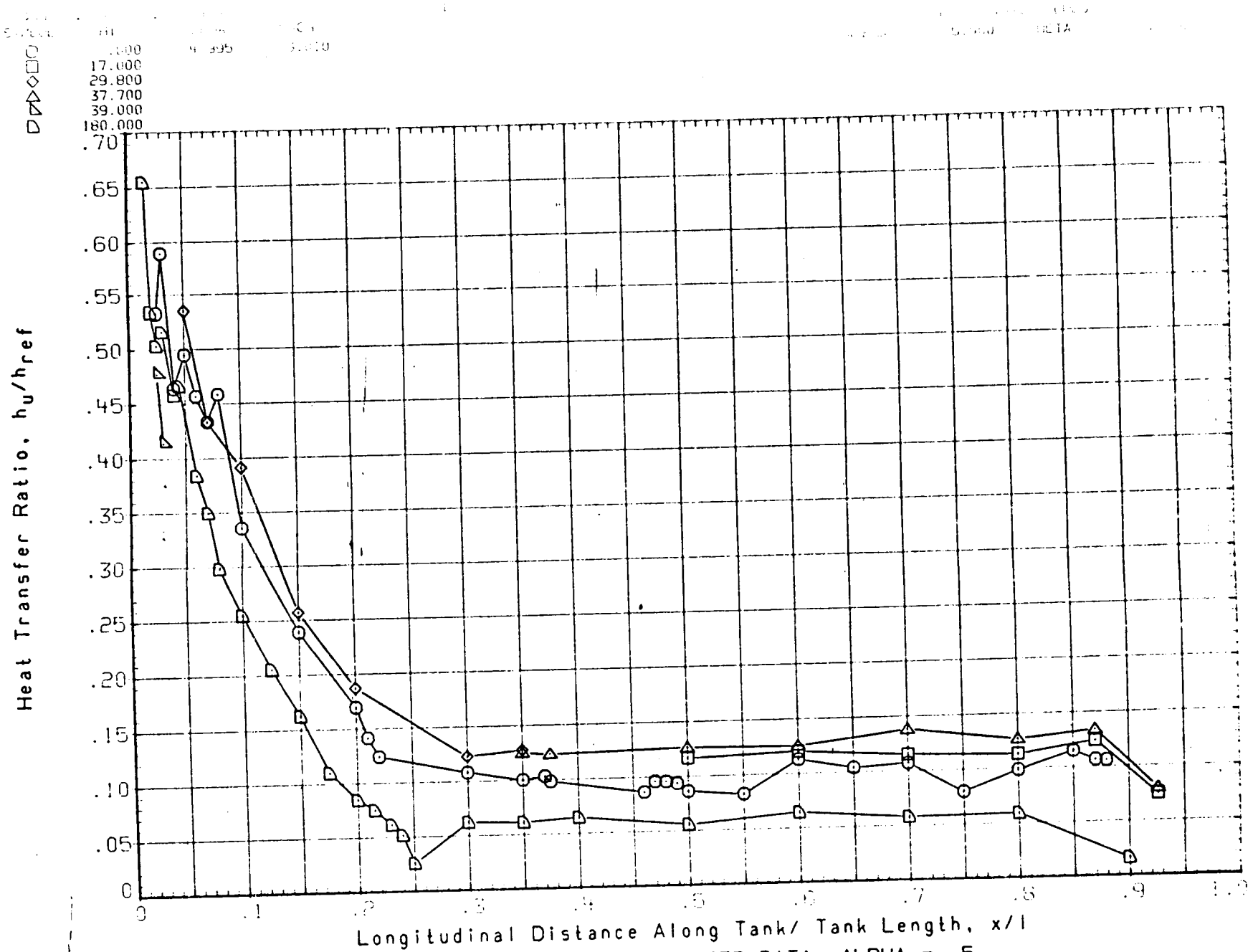


FIGURE 5 EXTERNAL TANK ALONE - HEAT TRANSFER DATA, ALPHA = -5.,

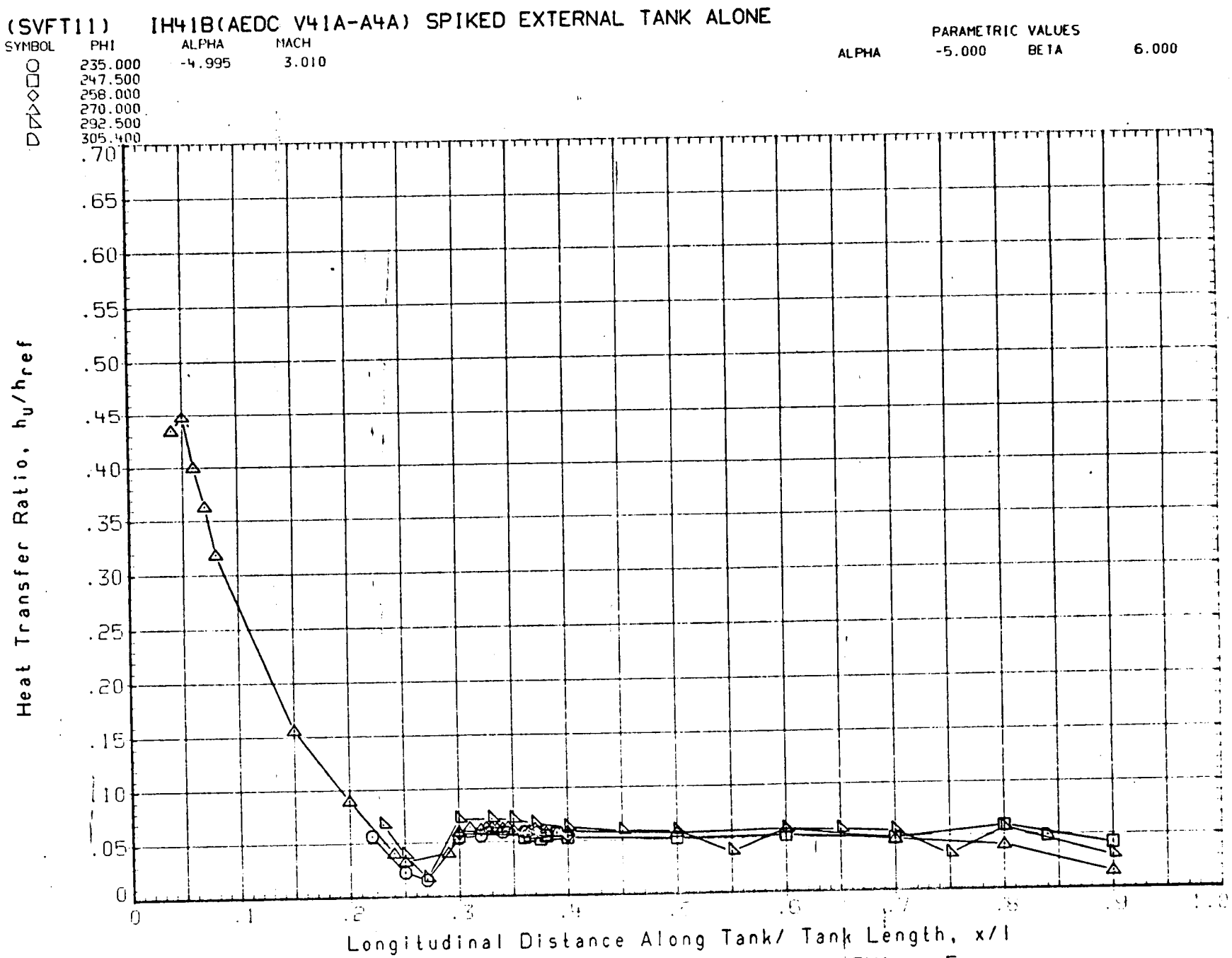


FIGURE 5 EXTERNAL TANK ALONE - HEAT TRANSFER DATA, ALPHA = -5.,

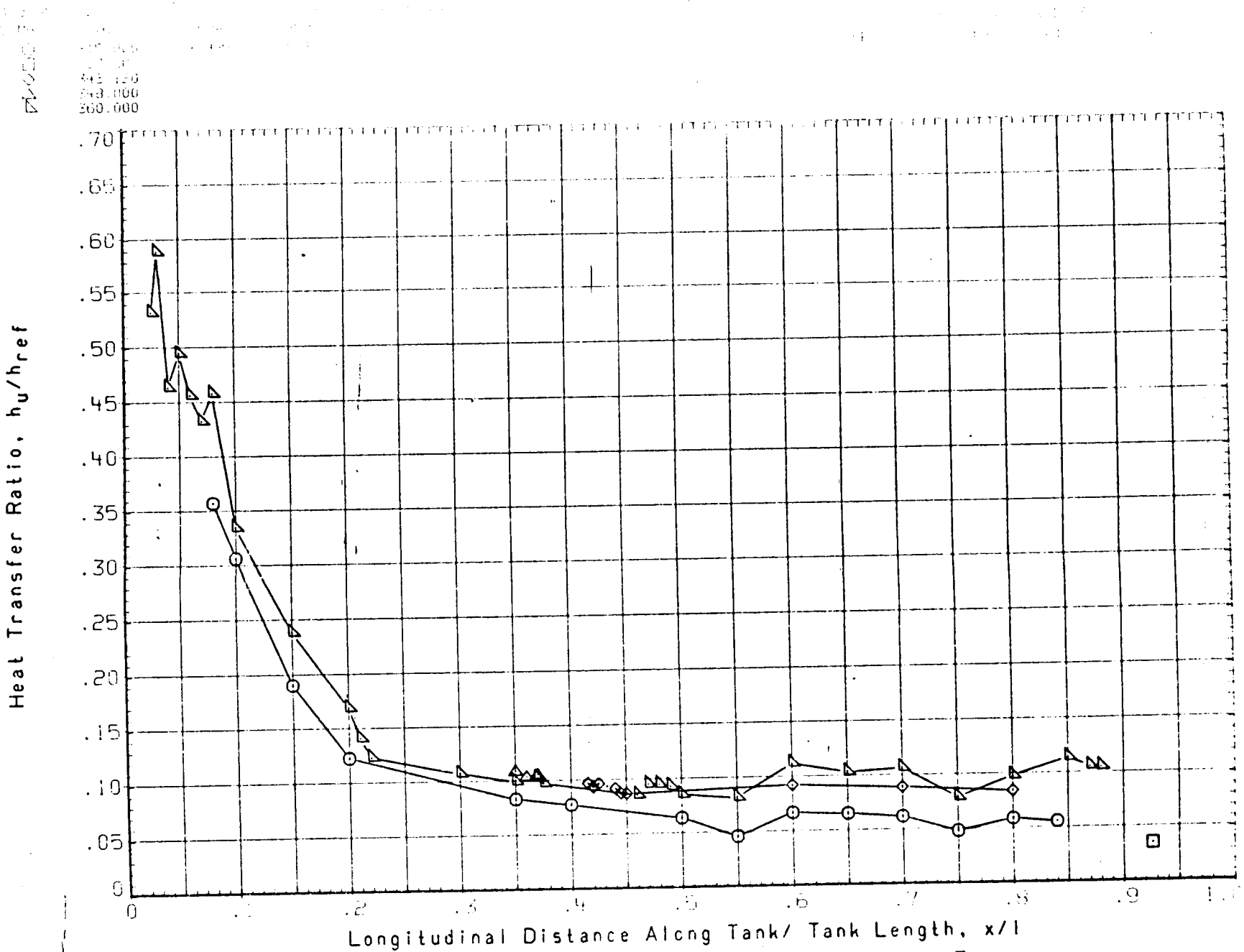


FIGURE 5 EXTERNAL TANK ALONE - HEAT TRANSFER DATA, ALPHA = -5.,

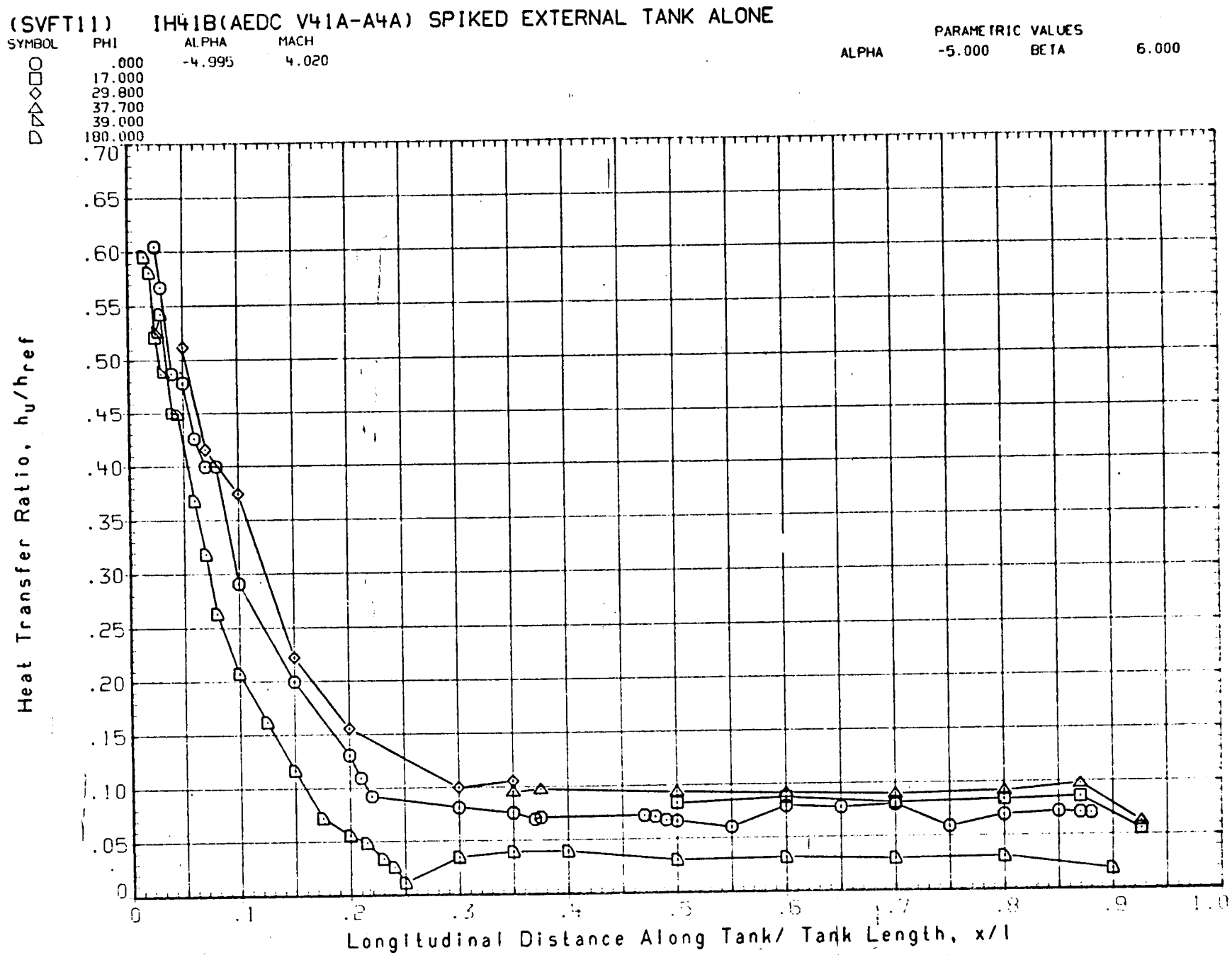


FIGURE 5 EXTERNAL TANK ALONE - HEAT TRANSFER DATA, ALPHA = -5.,

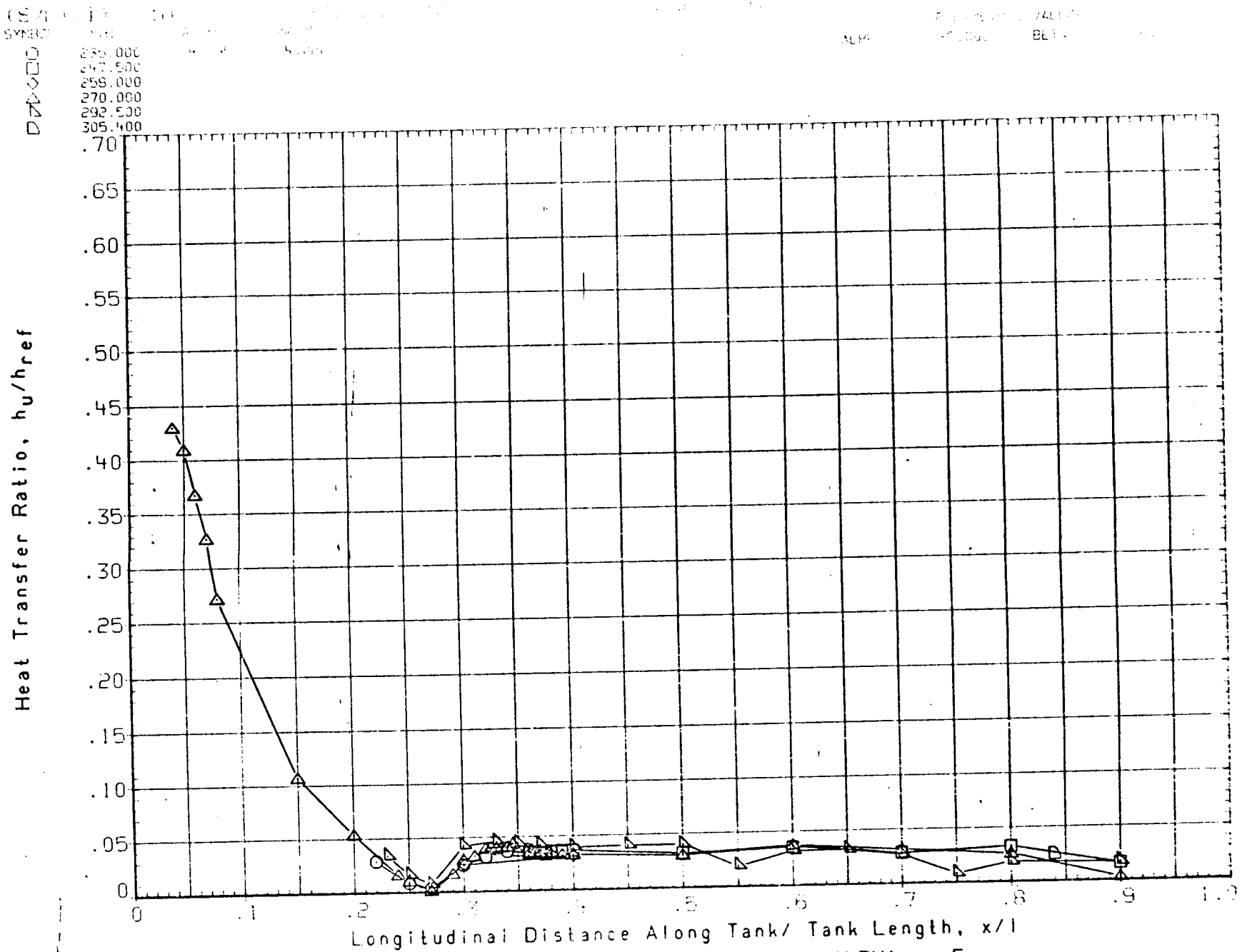


FIGURE 5 EXTERNAL TANK ALONE - HEAT TRANSFER DATA, ALPHA = -5.,

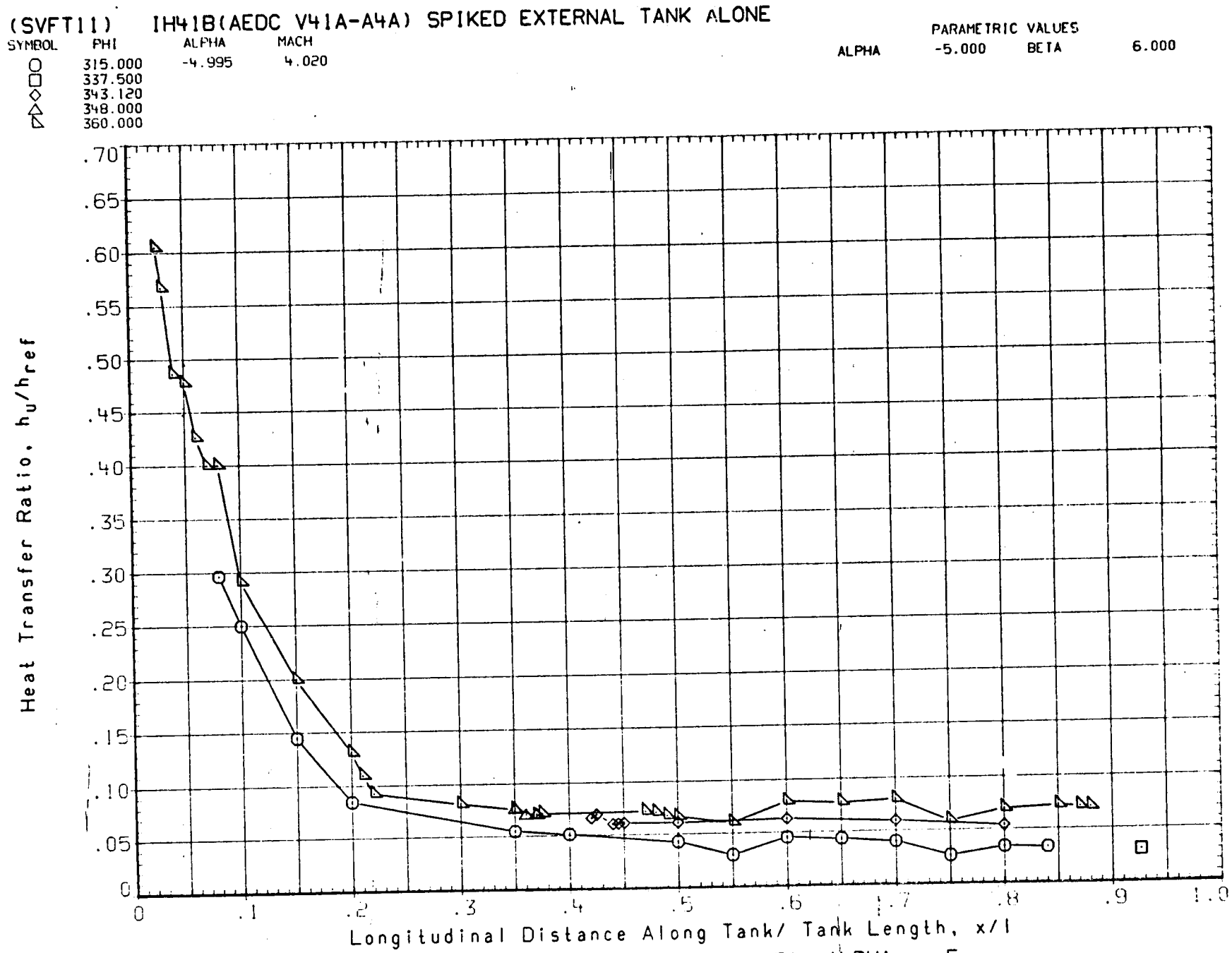


FIGURE 5 EXTERNAL TANK ALONE - HEAT TRANSFER DATA, ALPHA = -5.,

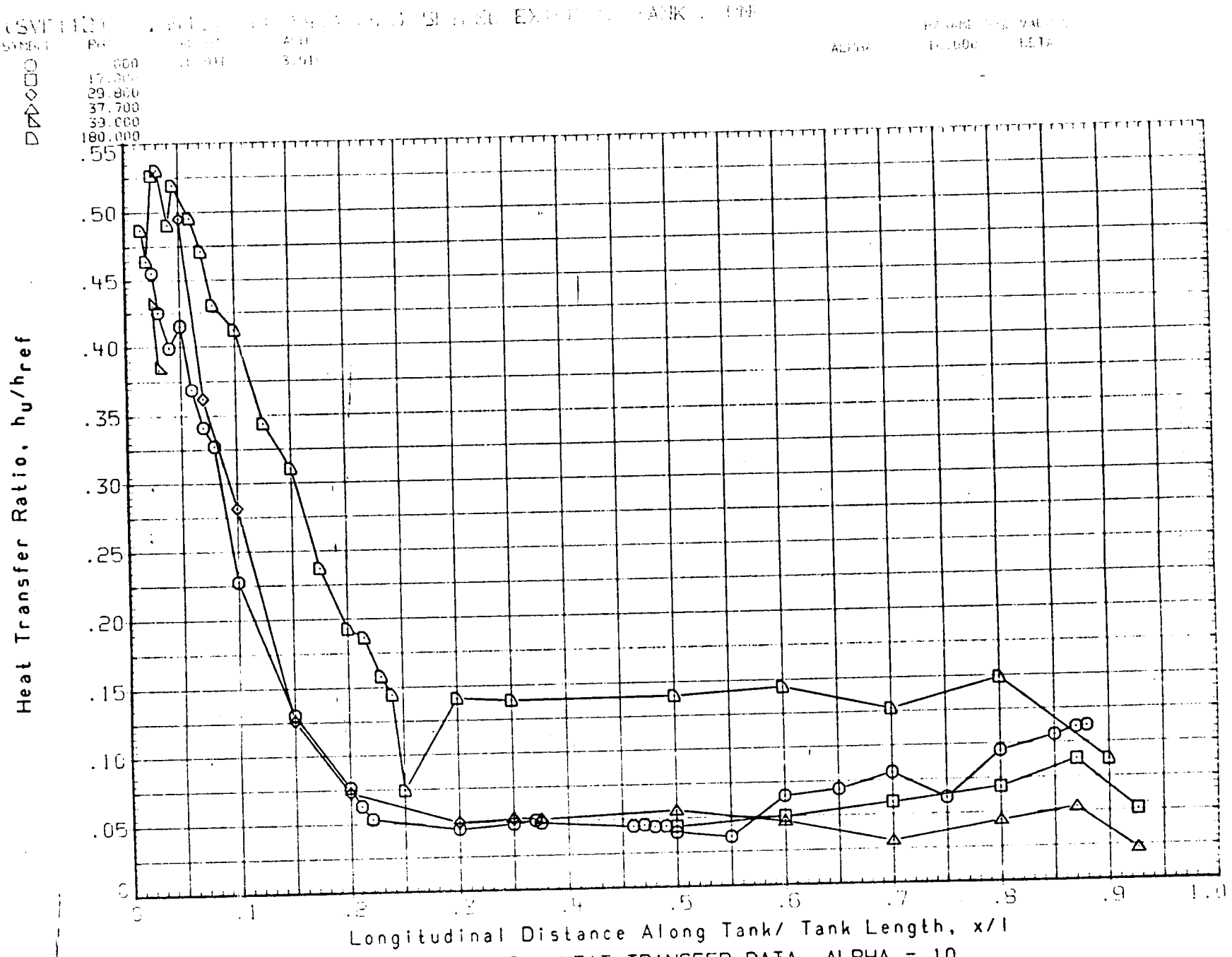


FIGURE 6 EXTERNAL TANK ALONE - HEAT TRANSFER DATA, ALPHA = 10.,

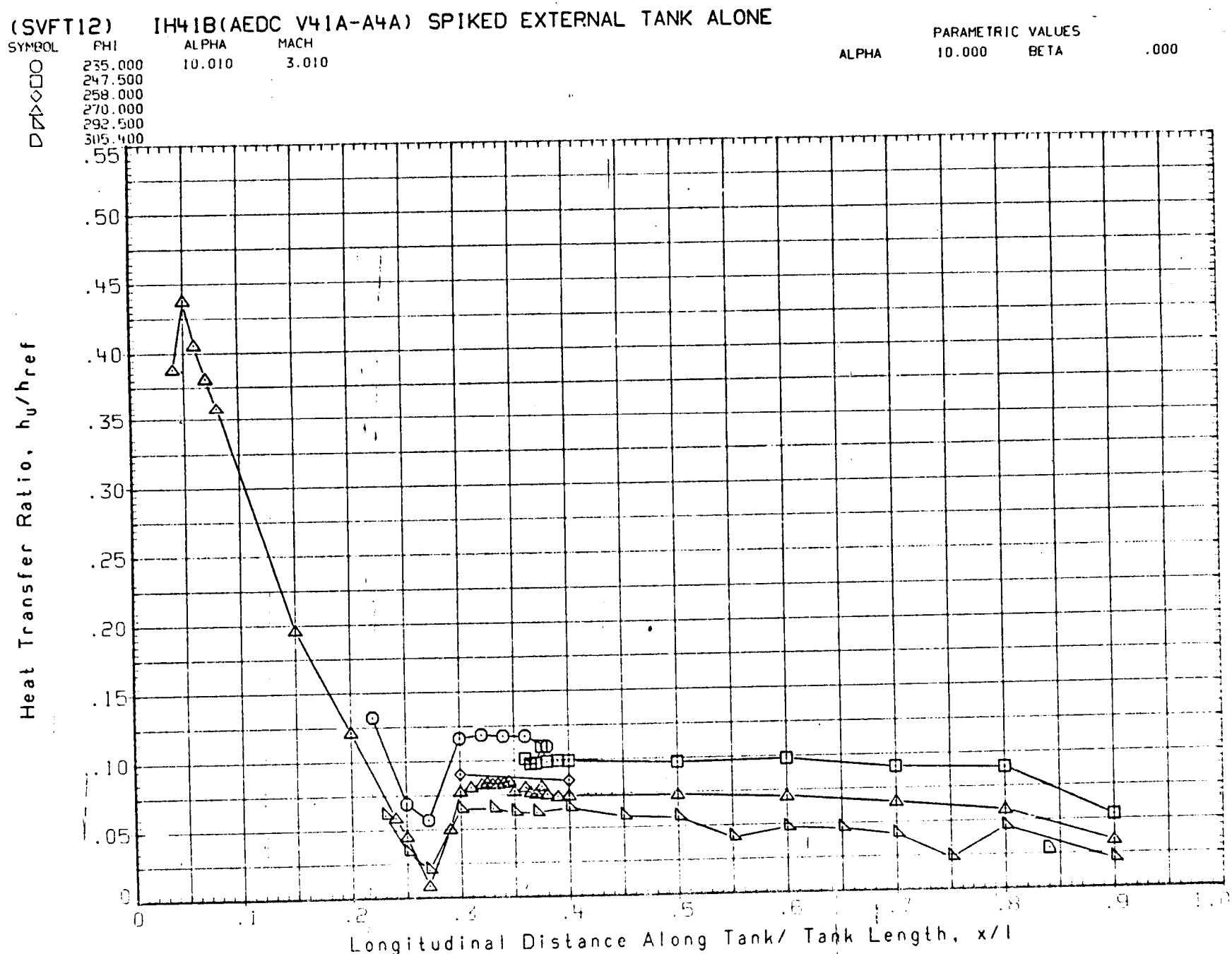


FIGURE 6 EXTERNAL TANK ALONE - HEAT TRANSFER DATA, ALPHA = 10.,

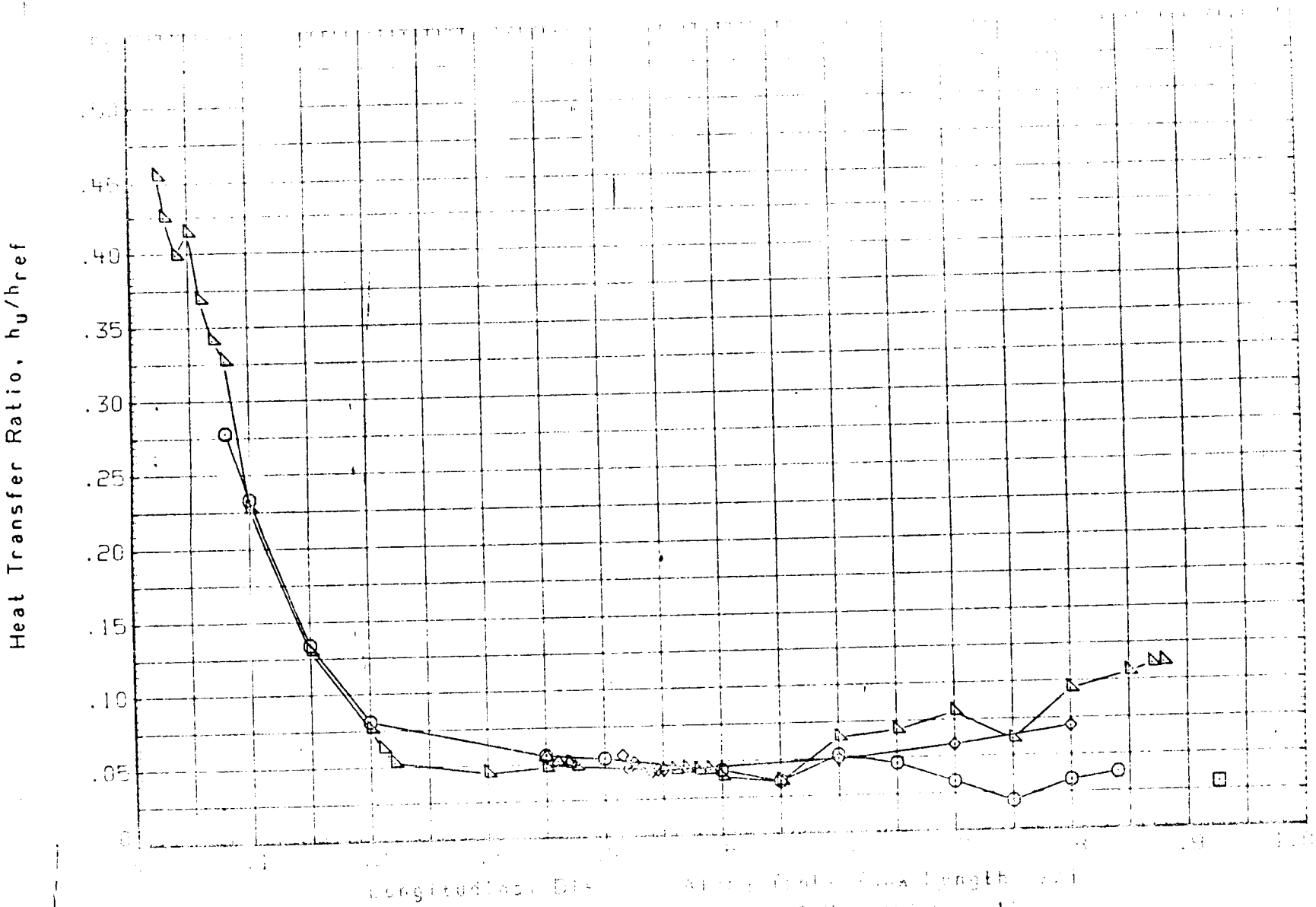


FIGURE 6 EXTERNAL TANK [illegible]

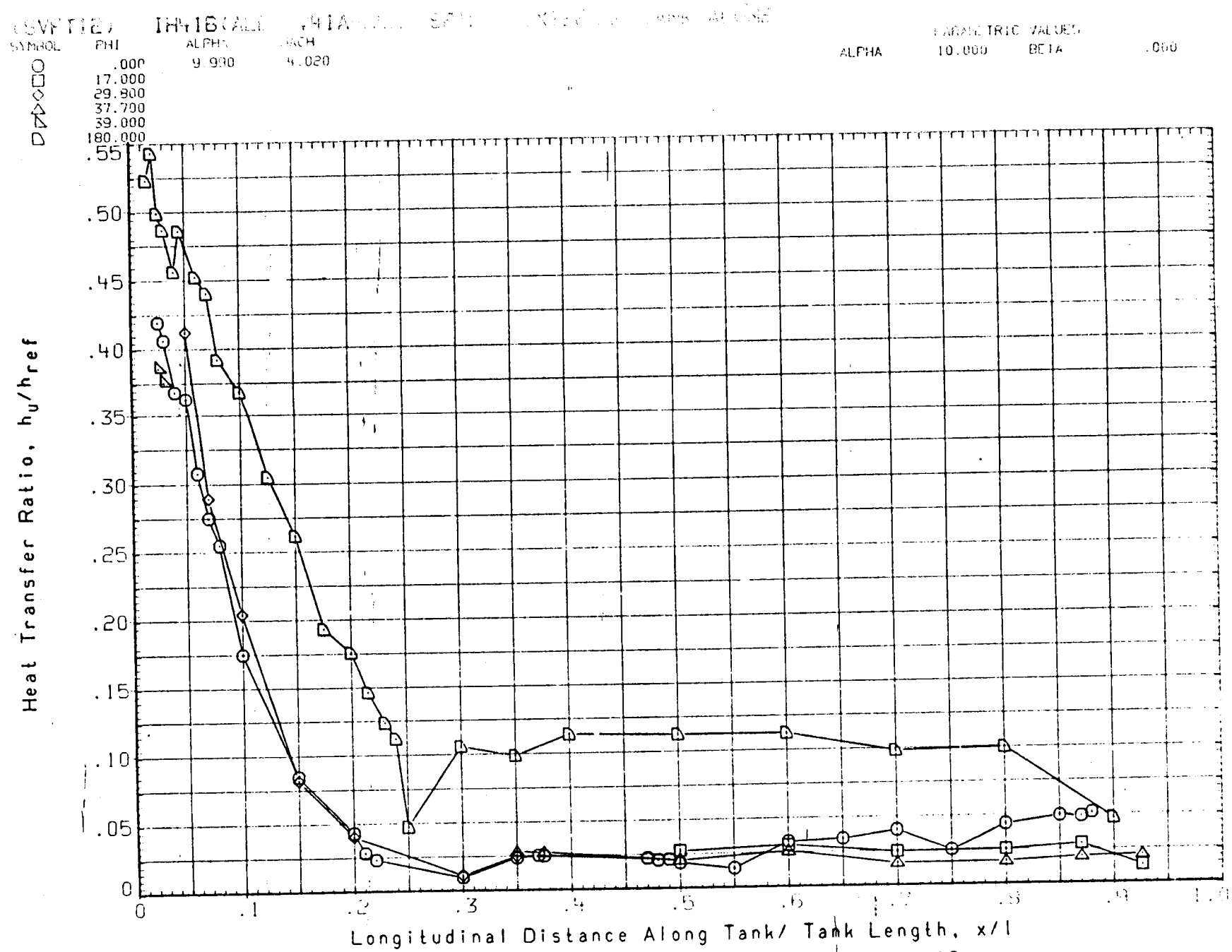


FIGURE 6 EXTERNAL TANK ALONE - HEAT TRANSFER DATA, ALPHA = 10.,

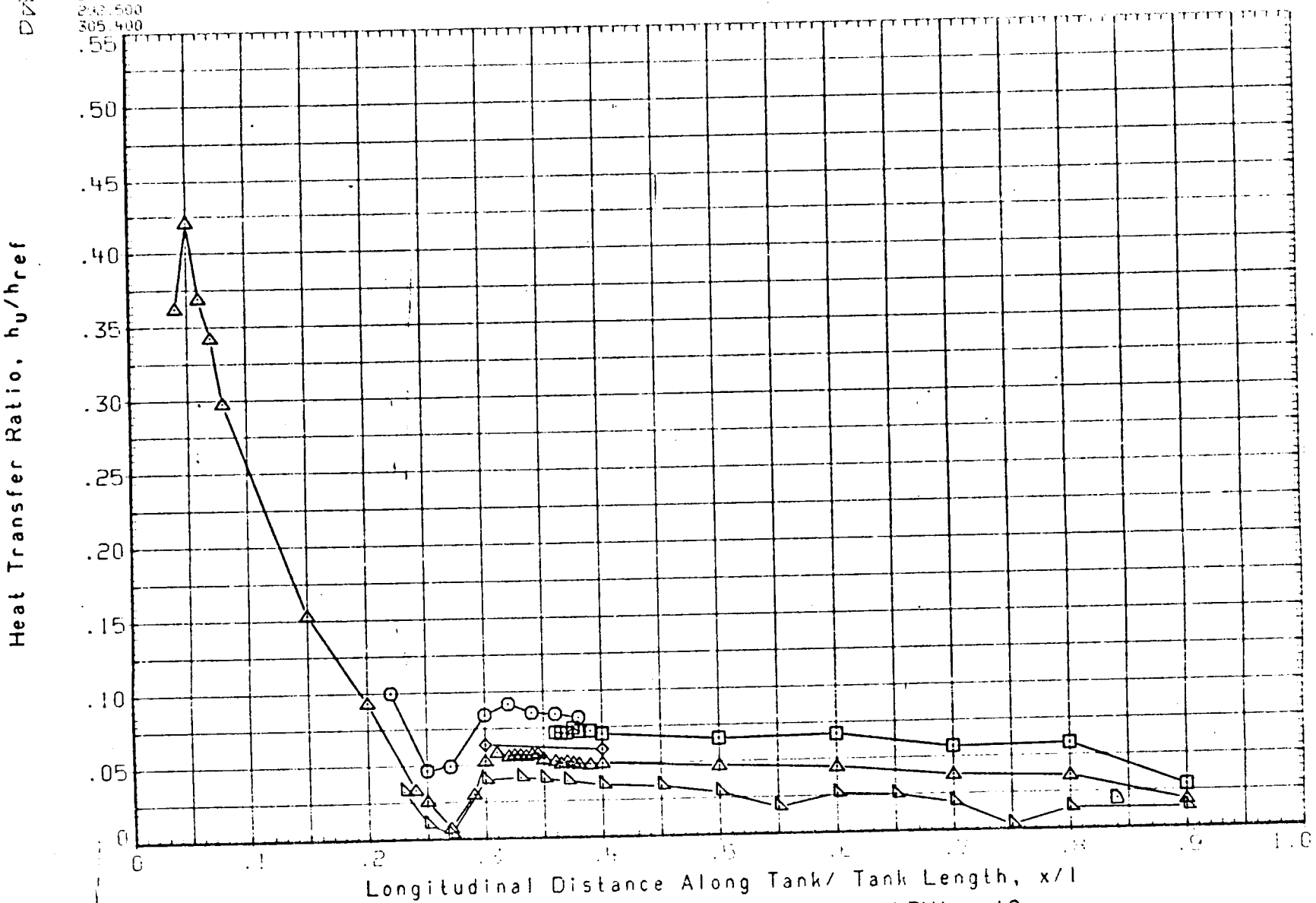


FIGURE 6 EXTERNAL TANK ALONE - HEAT TRANSFER DATA, IALPHA = 10.,

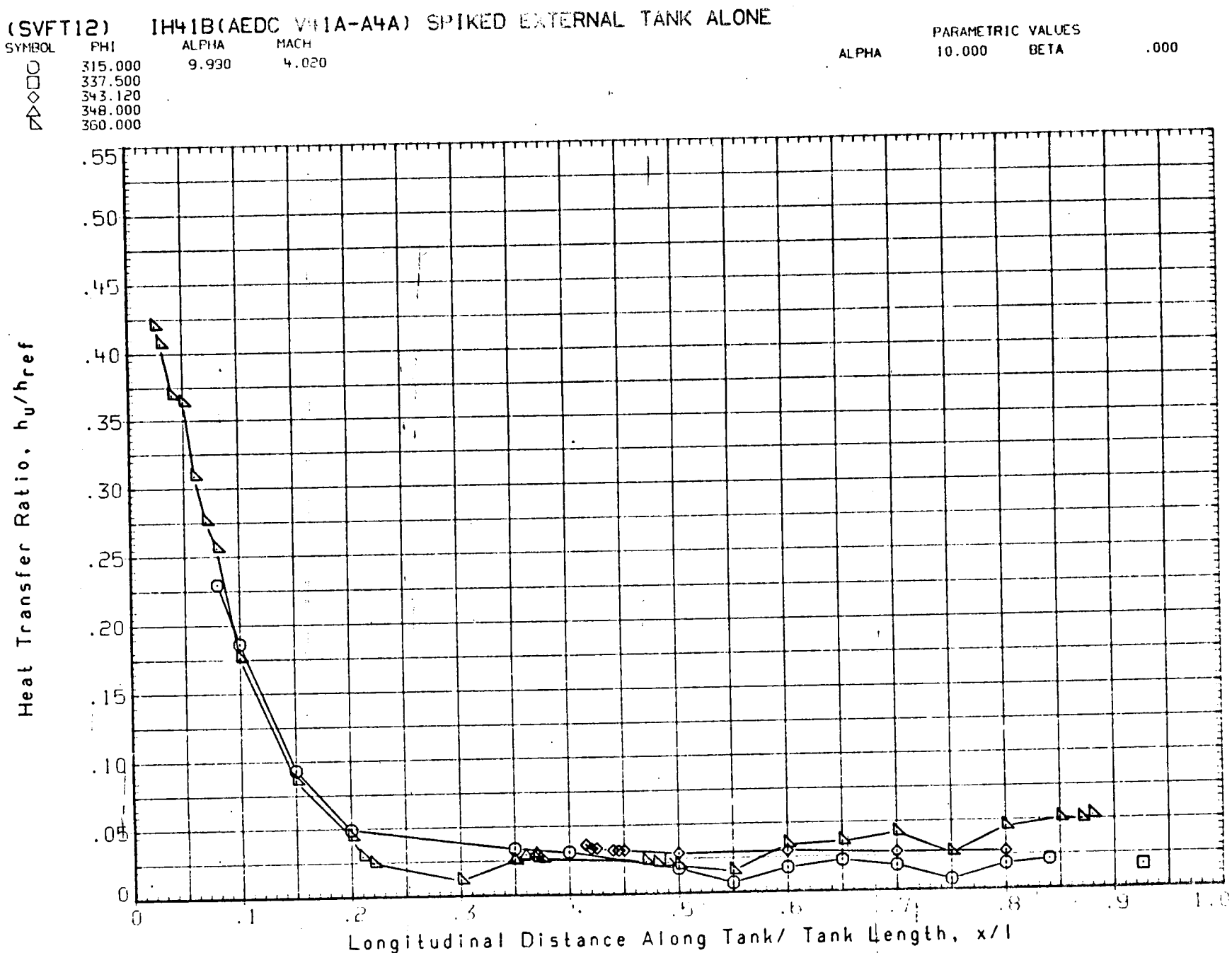


FIGURE 6 EXTERNAL TANK ALONE - HEAT TRANSFER DATA, ALPHA = 10.,

(SVFT13) IH41B(AEDC V41A-A4A) SPIKED EXTERNAL [illegible] ALOI

SYMBOL	PHI	ALPHA	MACH
○	.000	10.000	[illegible].020
□	17.000		
◇	29.800		
△	37.700		

PARAMETRIC VALUES

ALPHA [illegible]0.000 BETA -3.000

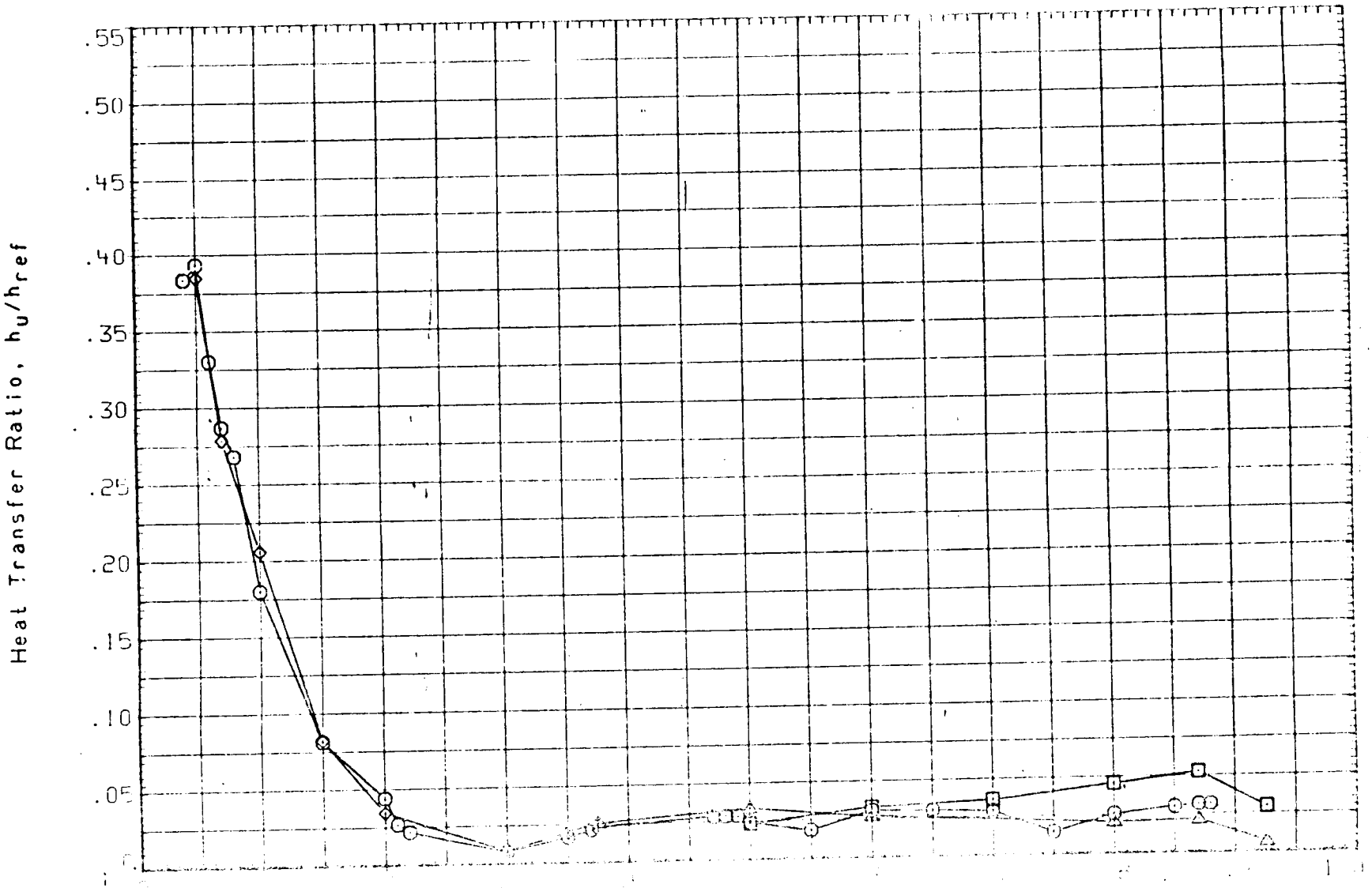


FIGURE [illegible] EXTERNAL [illegible]

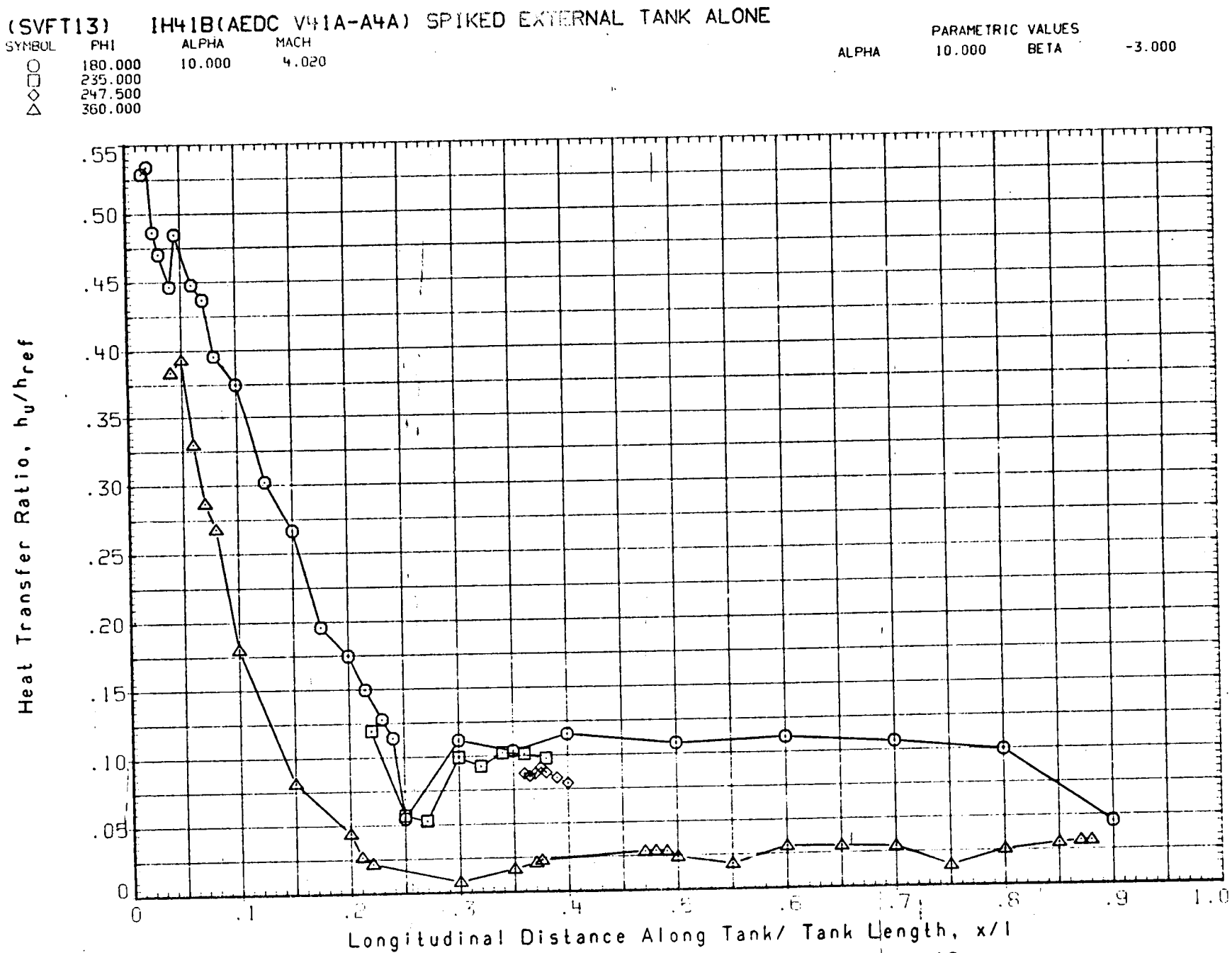


FIGURE 6 EXTERNAL TANK ALONE - HEAT TRANSFER DATA, ALPHA = 10.,

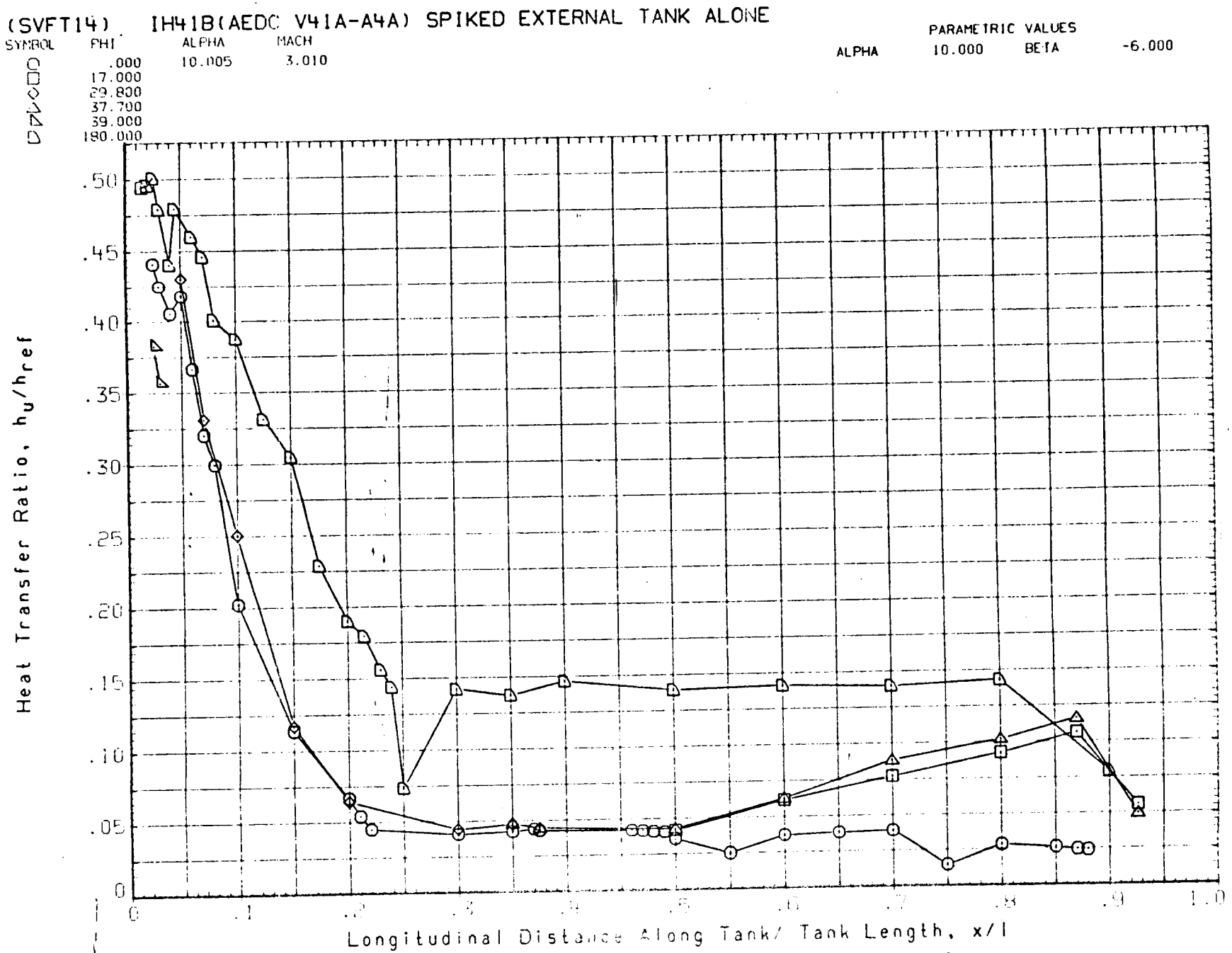


FIGURE 6 EXTERNAL TANK ALONE - HEAT TRANSFER DATA, ALPHA = 10.,

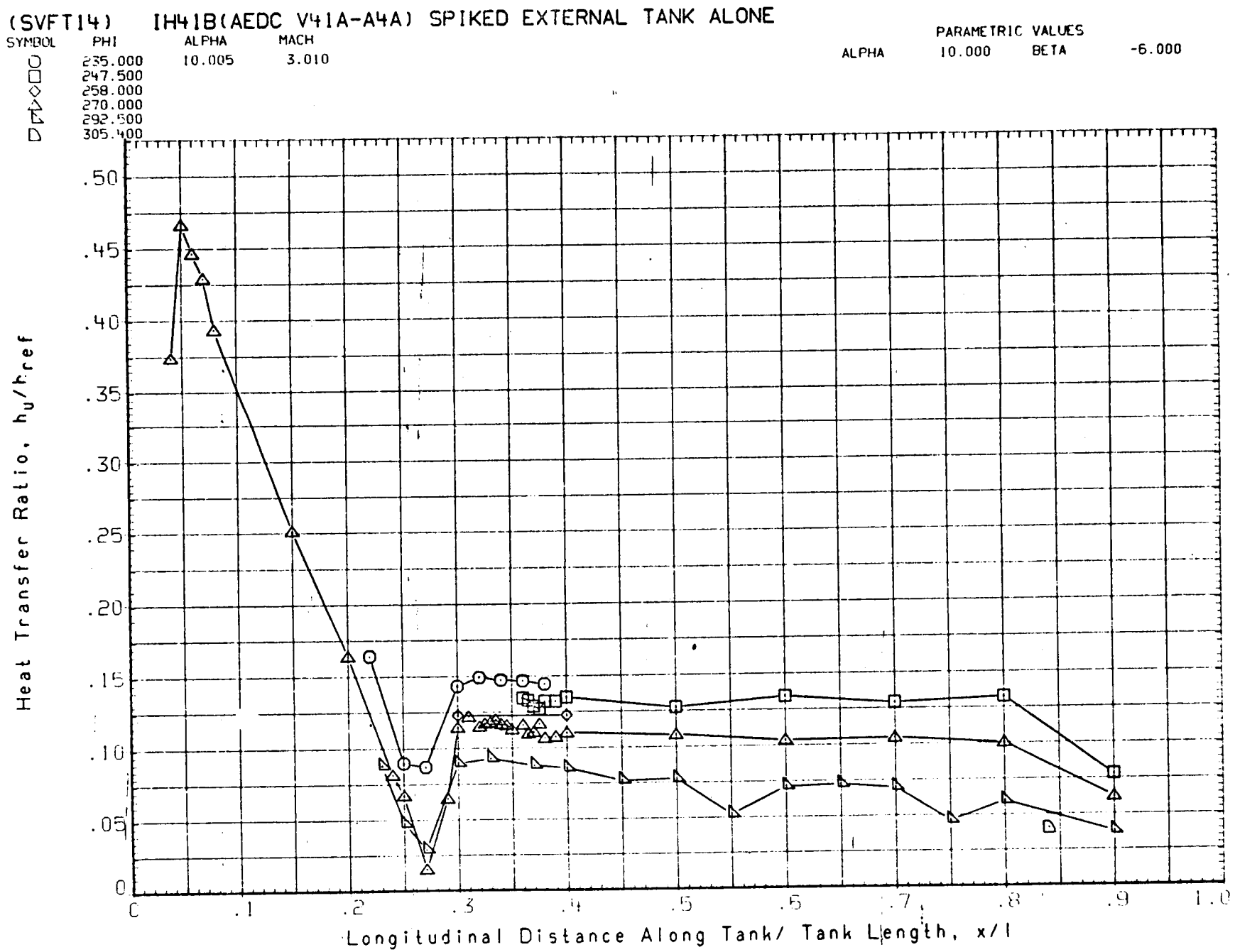


FIGURE 6 EXTERNAL TANK ALONE - HEAT TRANSFER DATA, ALPHA = 10.,

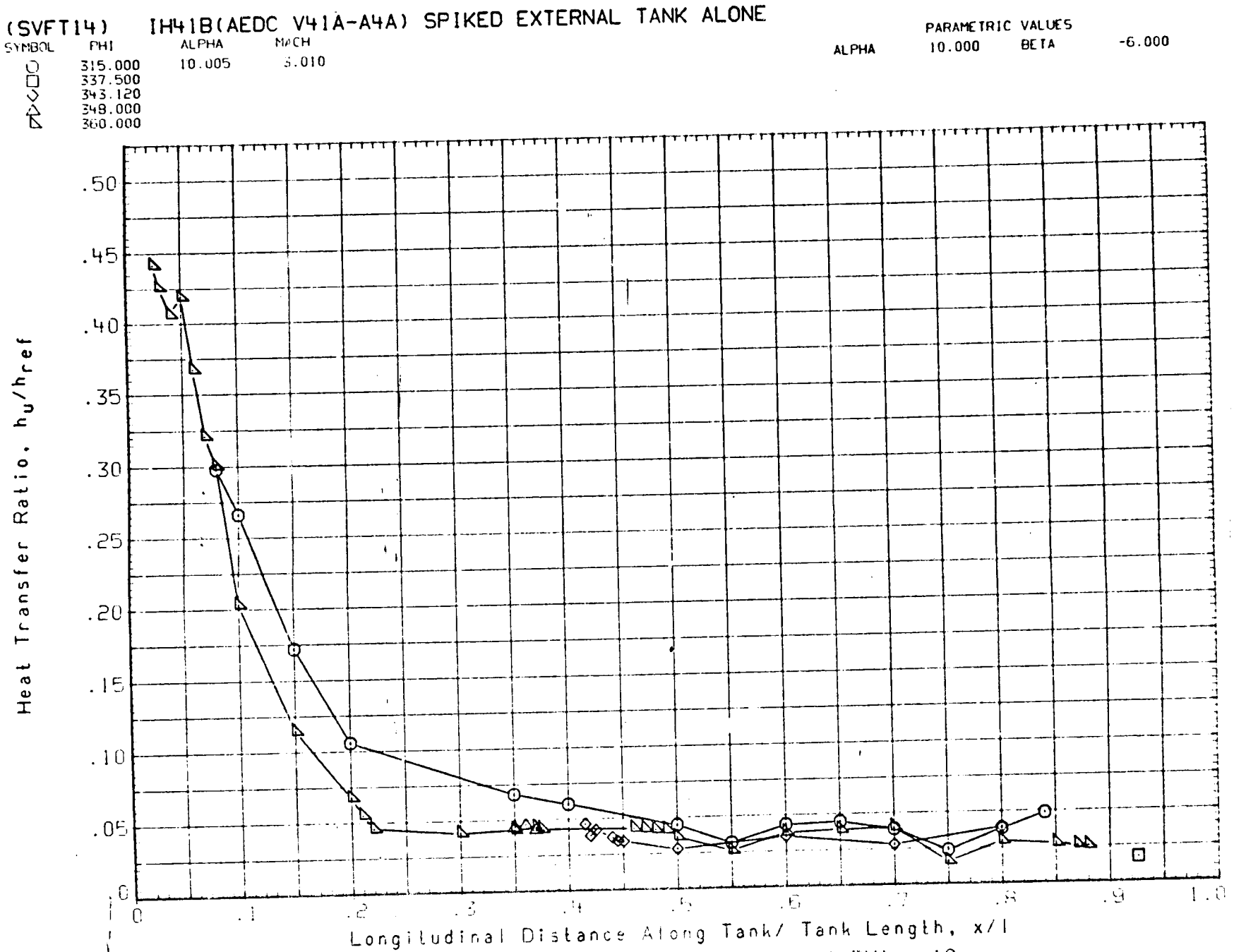


FIGURE 6 EXTERNAL TANK ALONE - HEAT TRANSFER DATA, ALPHA = 10.,

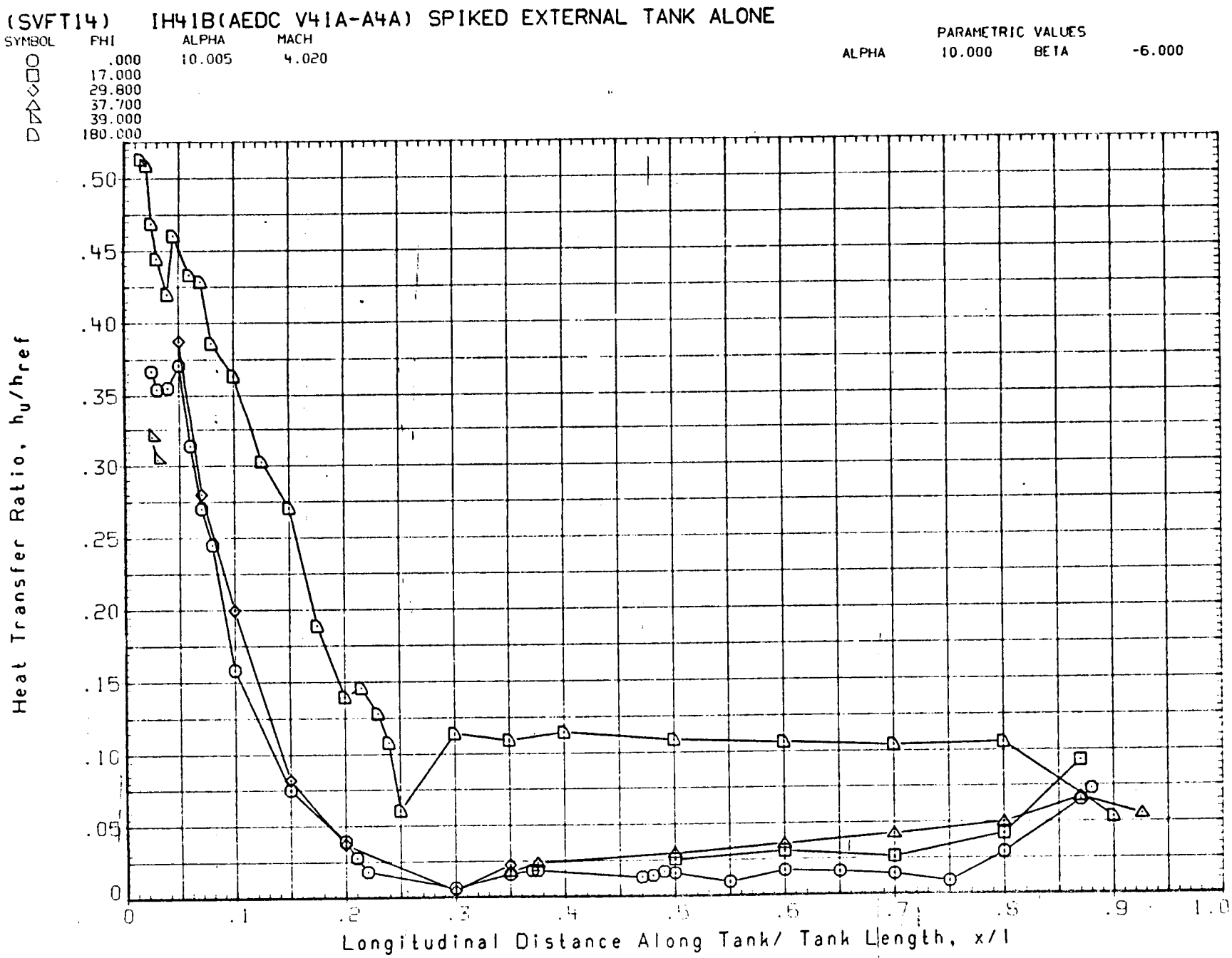


FIGURE 6 EXTERNAL TANK ALONE - HEAT TRANSFER DATA, ALPHA = 10.,

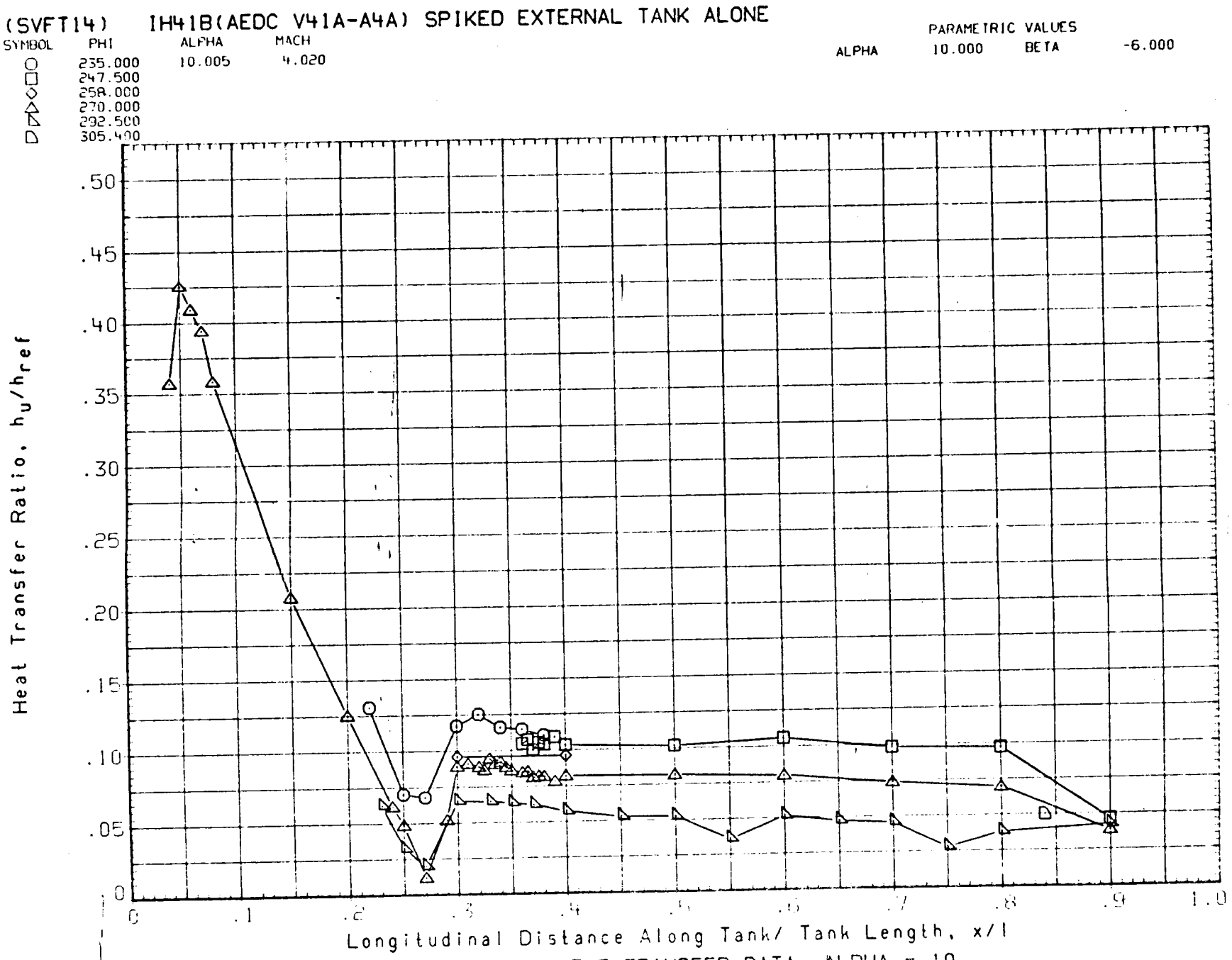


FIGURE 6 EXTERNAL TANK ALONE - HEAT TRANSFER DATA, ALPHA = 10.,

(SVFT14) IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE

SYMBOL	PHI	ALPHA	MACH
○	315.000	10.005	4.020
□	337.500		
◇	343.120		
△	348.000		
◺	360.000		

PARAMETRIC VALUES

ALPHA 10.000 BETA -6.000

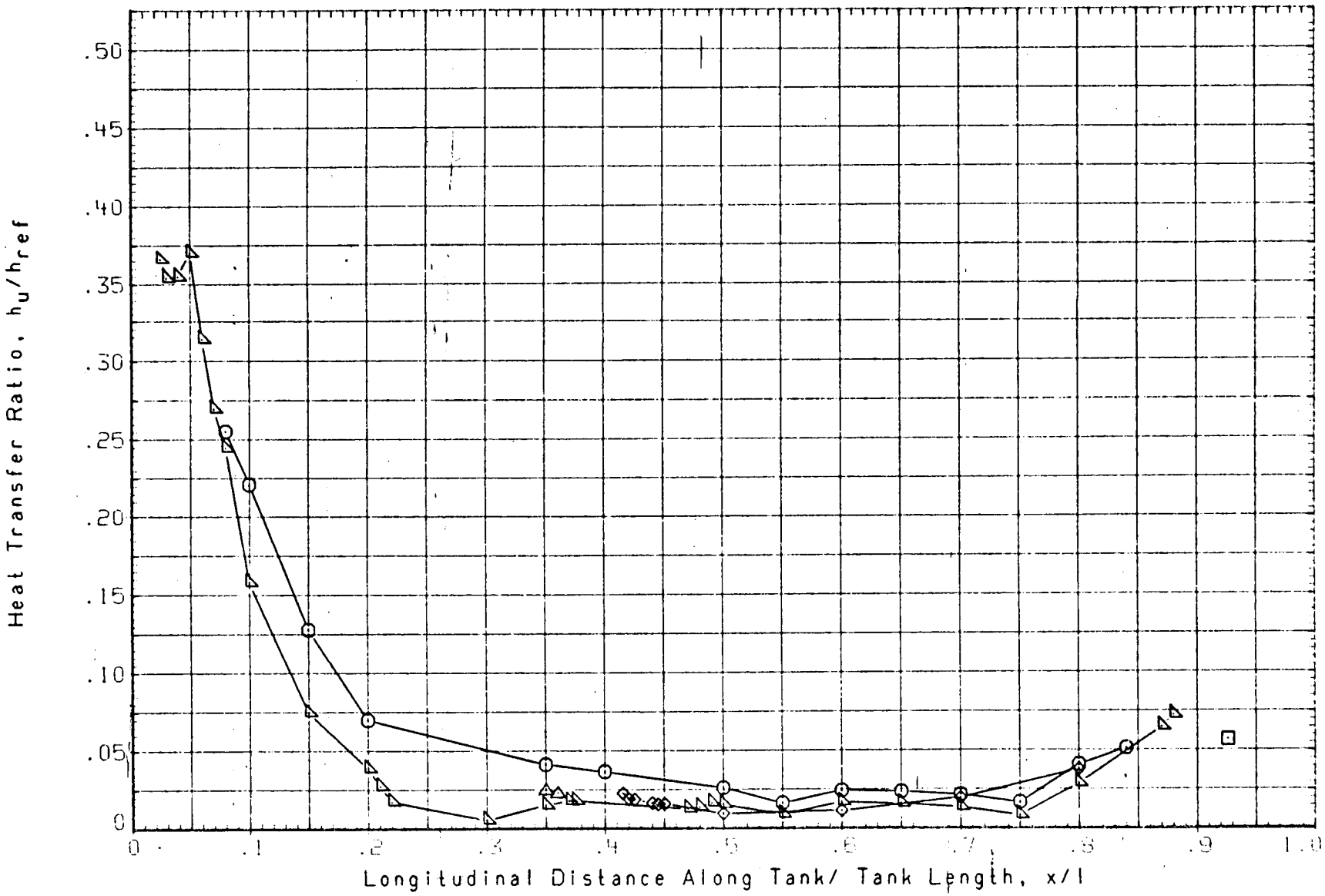


FIGURE 6 EXTERNAL TANK ALONE - HEAT TRANSFER DATA, ALPHA = 10.,

(SVFT15) IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE

SYMBOL	PHI	ALPHA	MACH
○	.000	10.020	3.010
□	17.000		
◇	29.600		
△	37.700		

PARAMETRIC VALUES

ALPHA 10.000 BETA -6.000

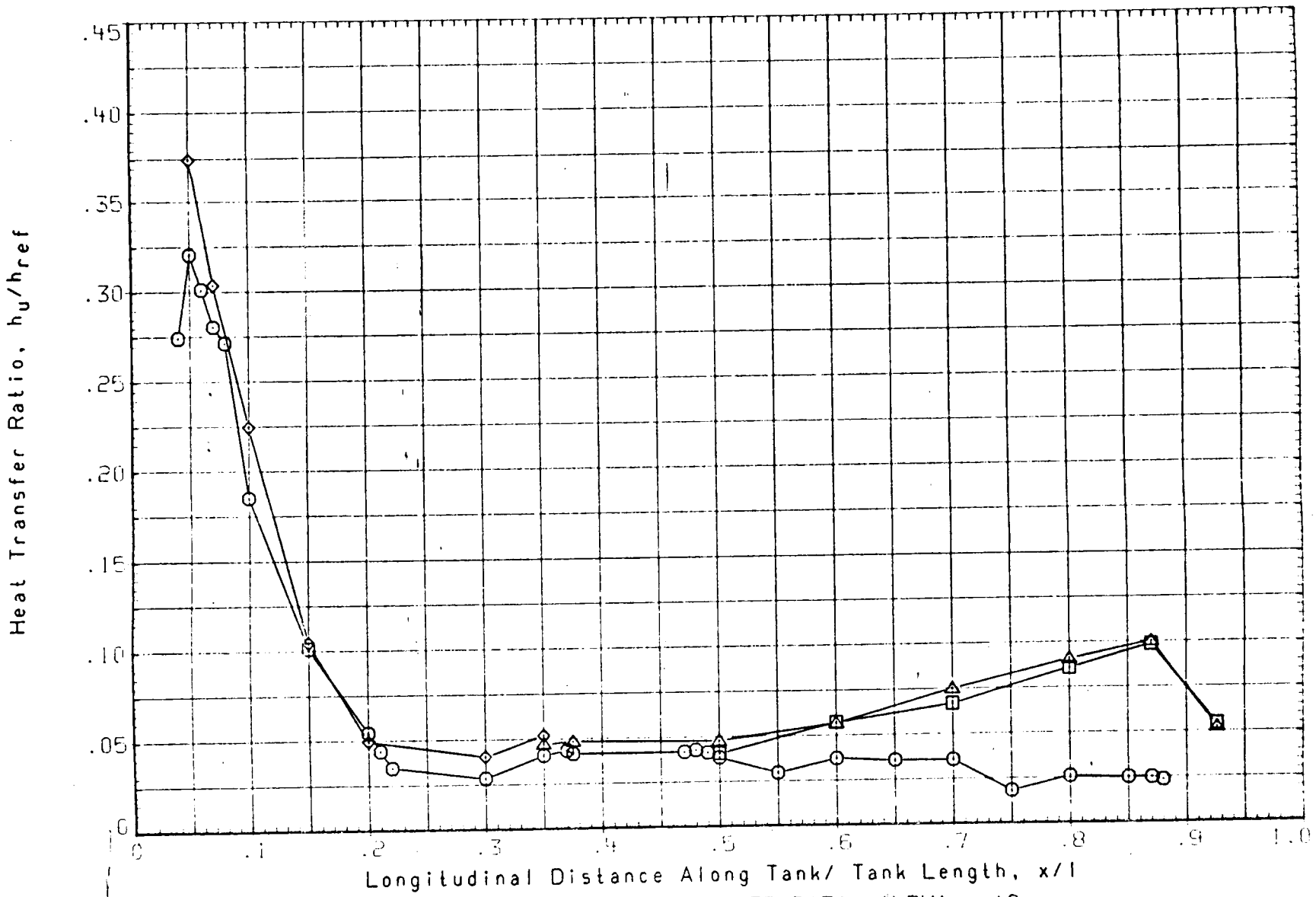


FIGURE 6 EXTERNAL TANK ALONE - HEAT TRANSFER DATA, ALPHA = 10.,

(SVFT15) IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE

SYMBOL	PHI	ALPHA	MACH
○	180.000	10.020	3.010
□	235.000		
◇	247.500		
△	360.000		

PARAMETRIC VALUES

ALPHA 10.000 BETA -6.000

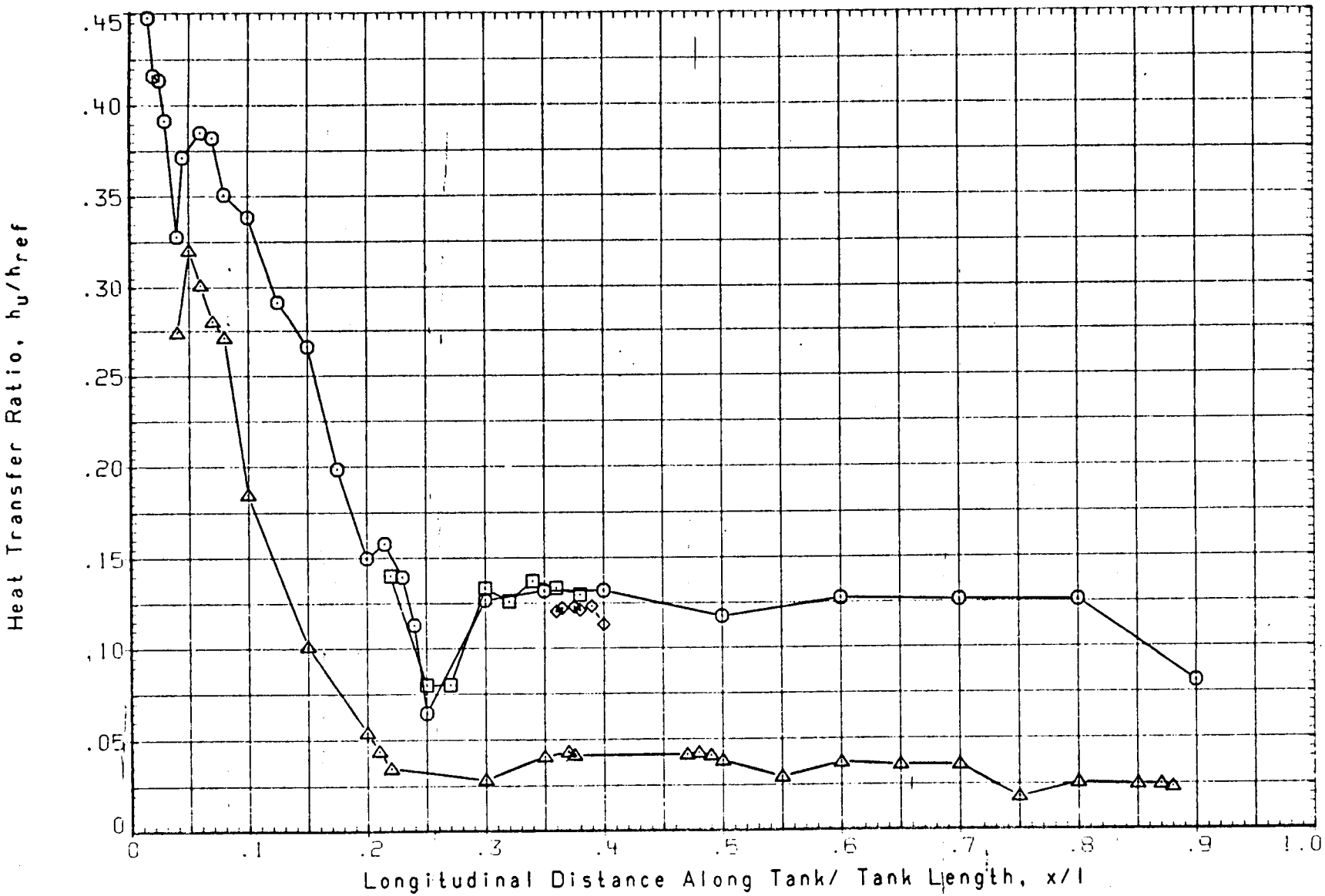


FIGURE 6 EXTERNAL TANK ALONE - HEAT TRANSFER DATA, ALPHA = 10.,

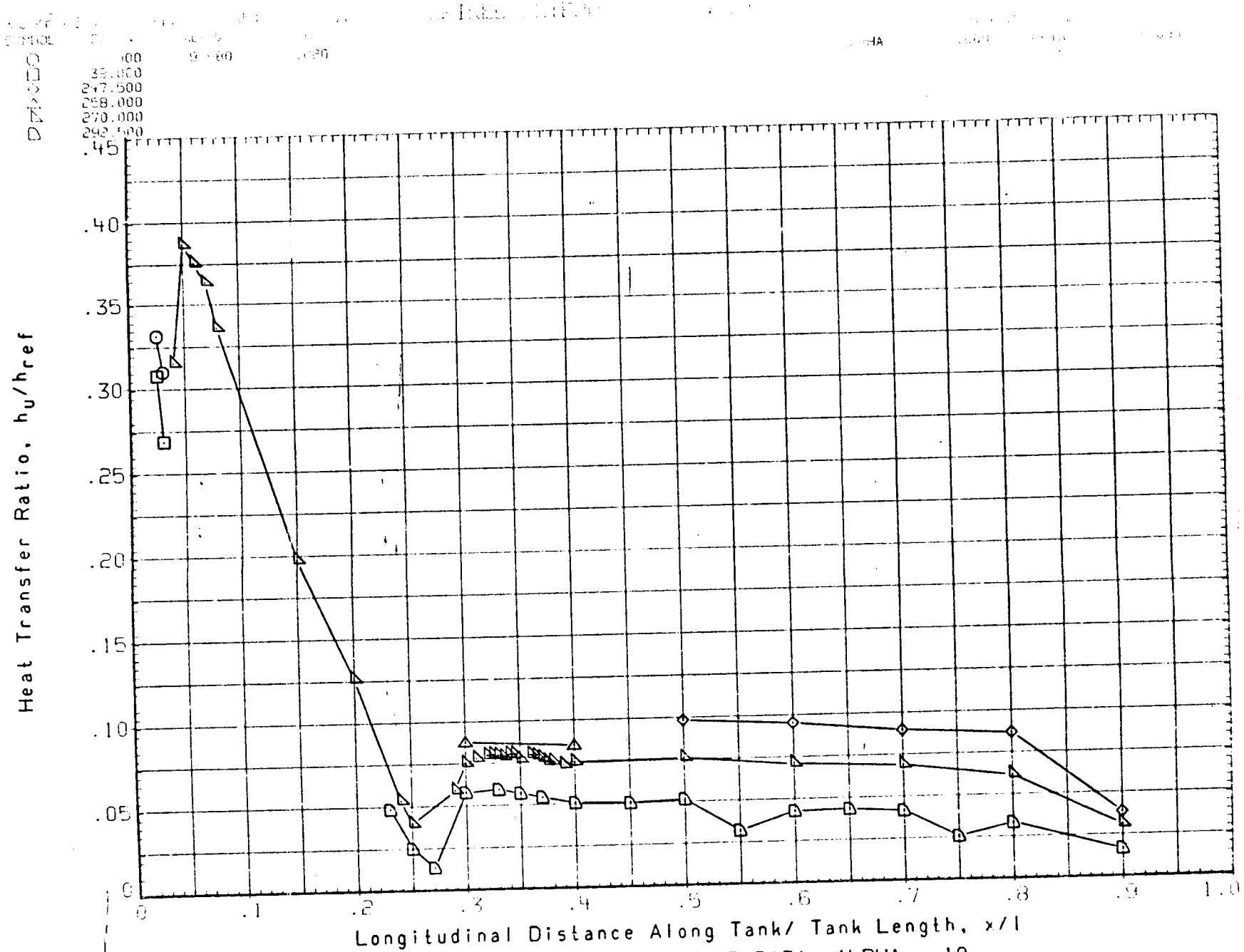


FIGURE 6 EXTERNAL TANK ALONE - HEAT TRANSFER DATA, ALPHA = 10.,

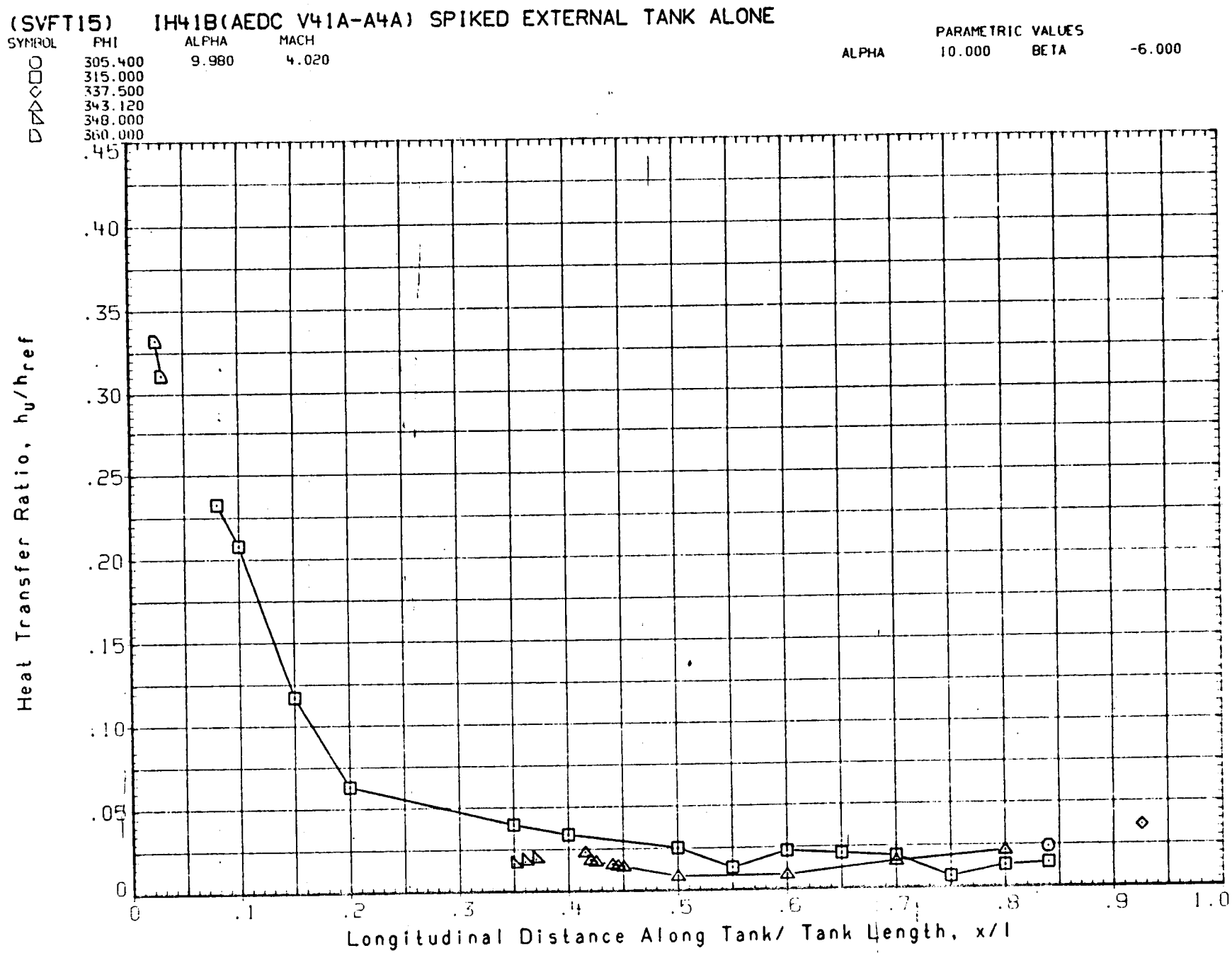


FIGURE 6 EXTERNAL TANK ALONE - HEAT TRANSFER DATA, ALPHA = 10.,

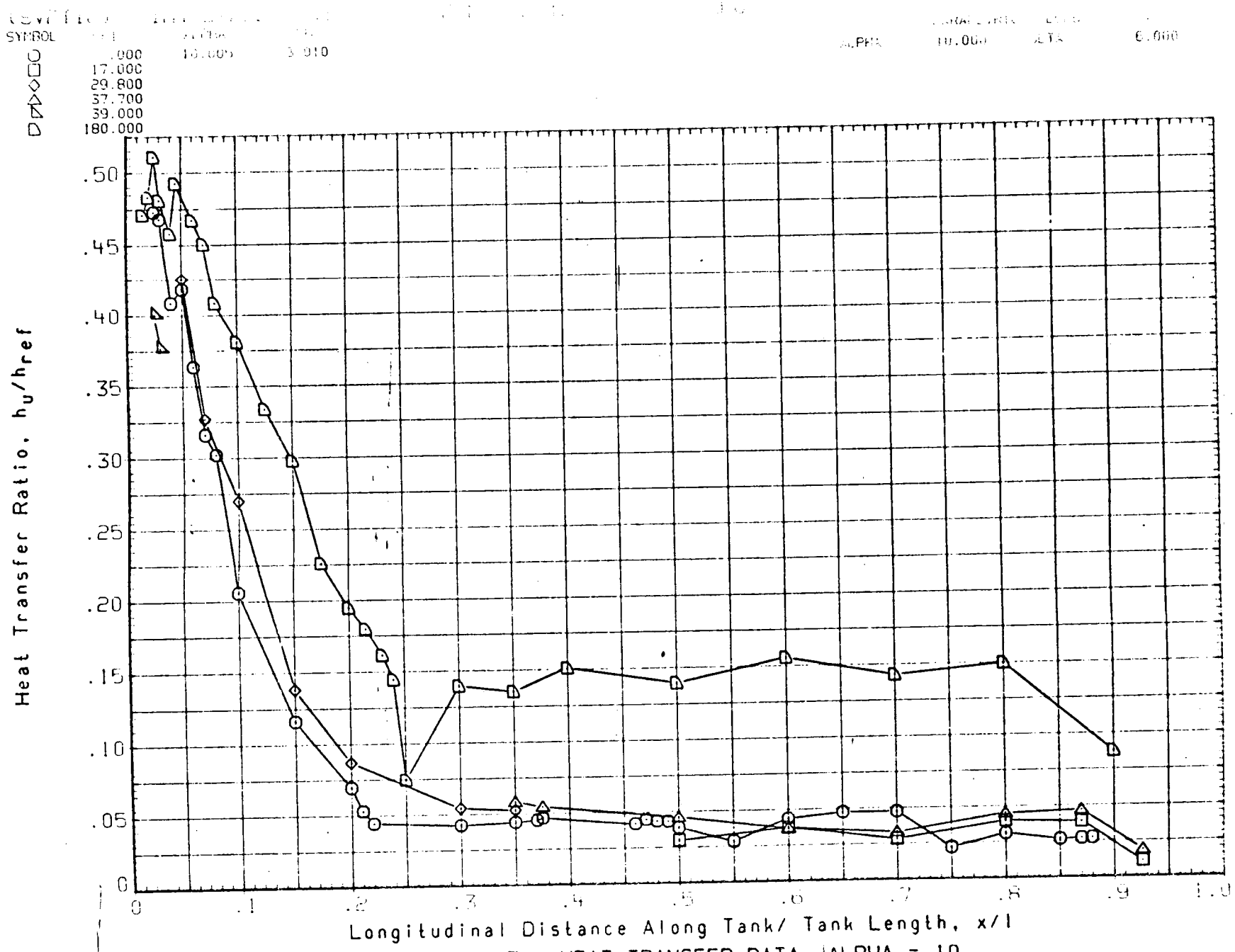


FIGURE 6 EXTERNAL TANK ALONE - HEAT TRANSFER DATA, ALPHA = 10.,

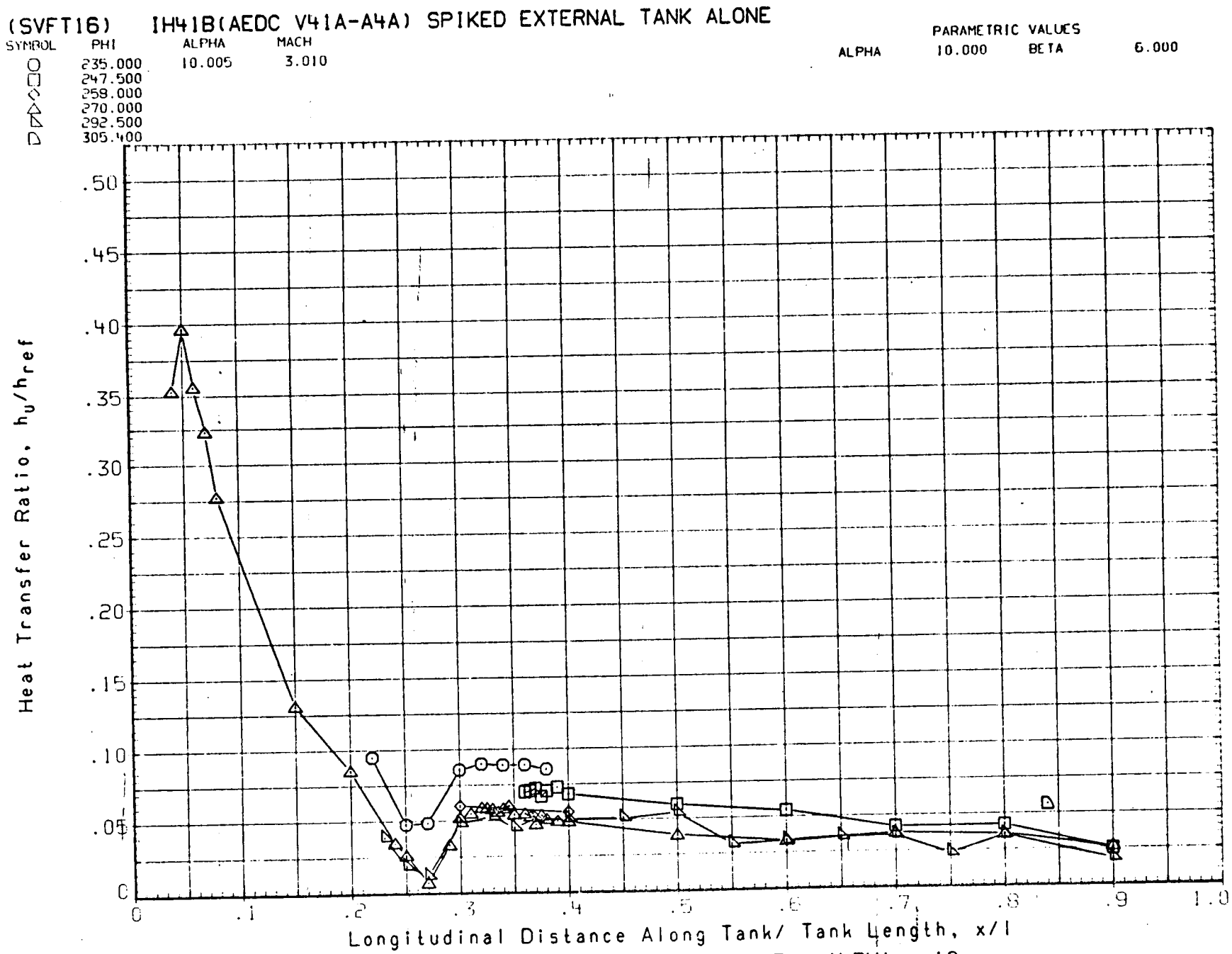


FIGURE 6 EXTERNAL TANK ALONE - HEAT TRANSFER DATA, ALPHA = 10.,

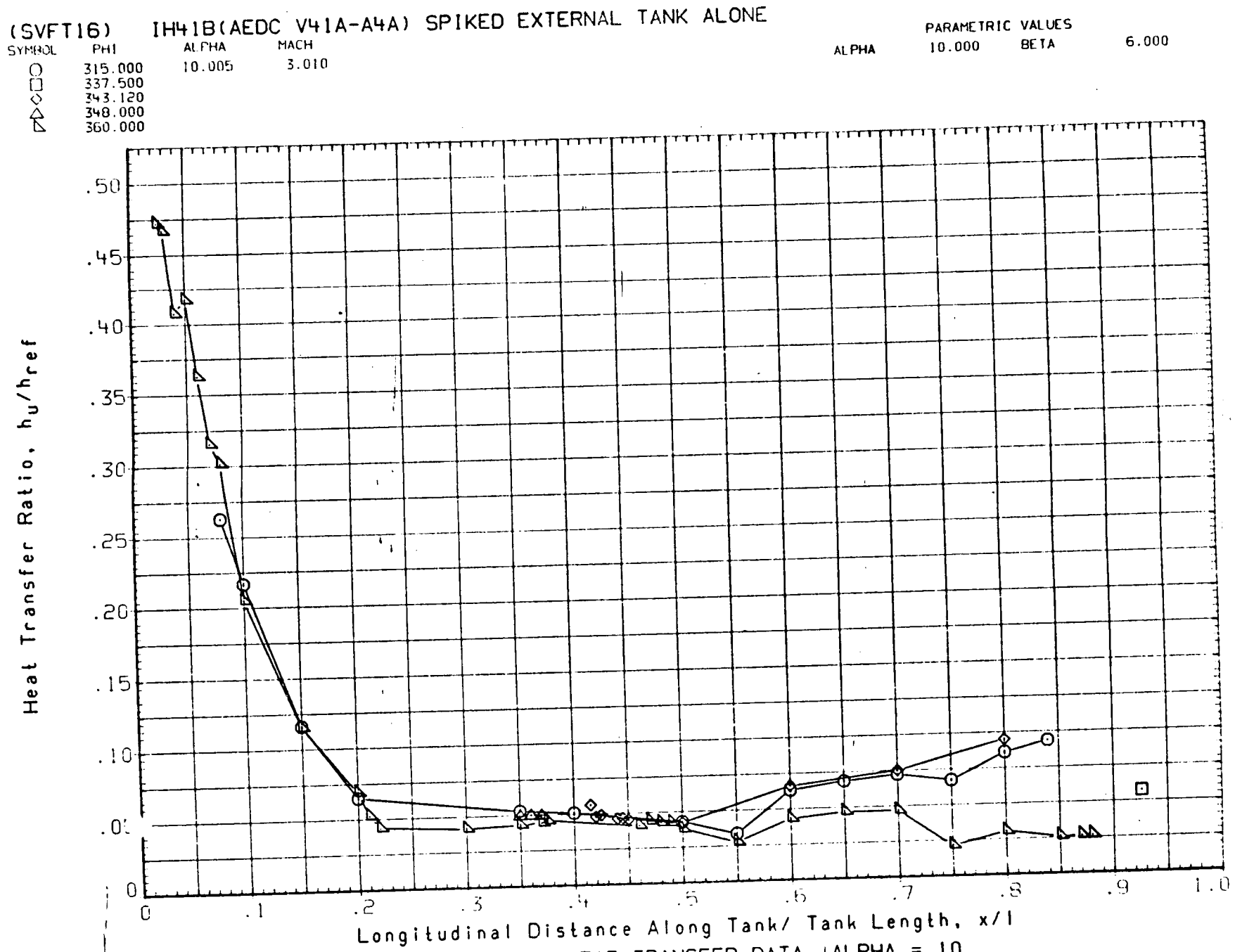


FIGURE 6 EXTERNAL TANK ALONE - HEAT TRANSFER DATA, ALPHA = 10.,

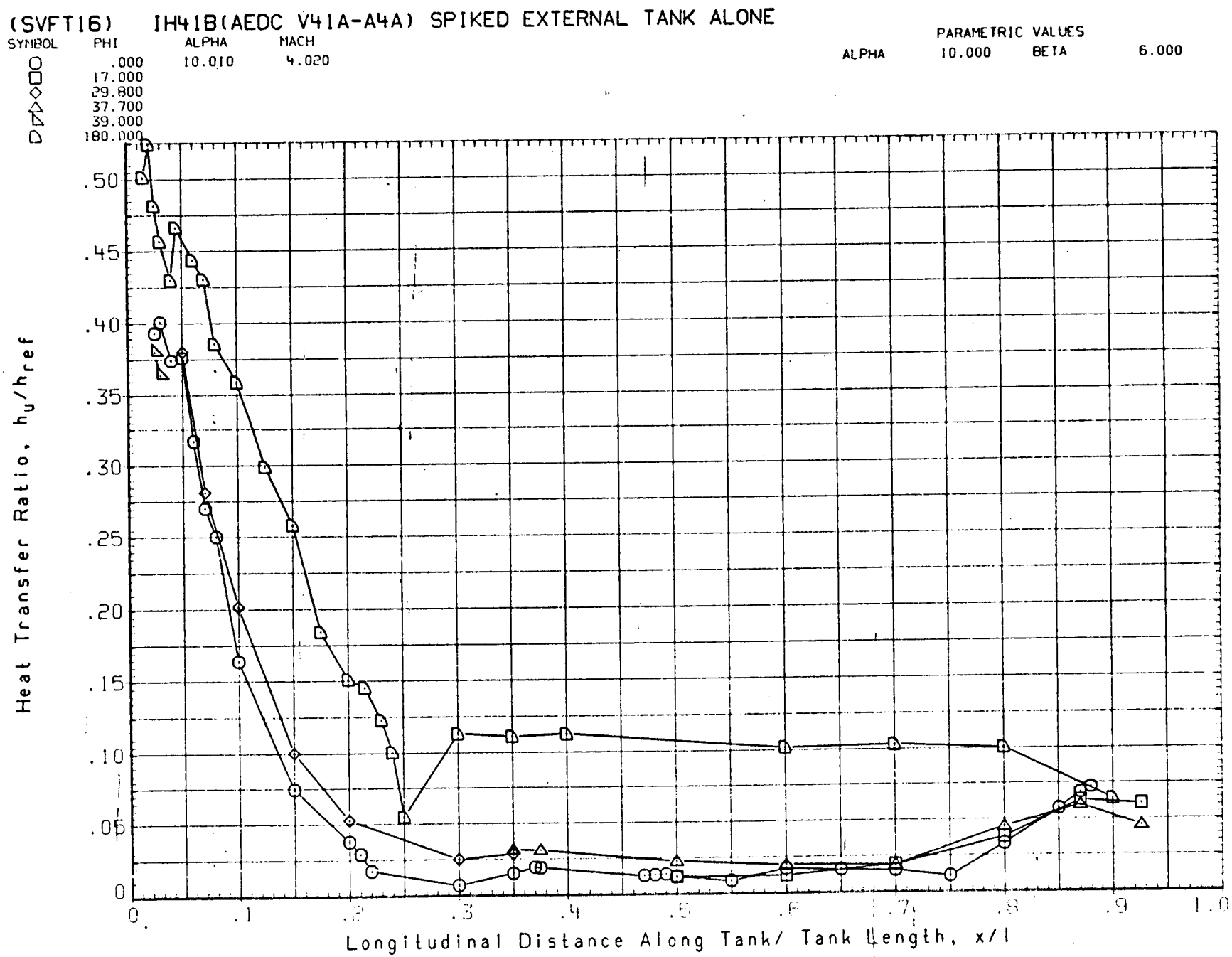


FIGURE 6 EXTERNAL TANK ALONE - HEAT TRANSFER DATA, ALPHA = 10.,

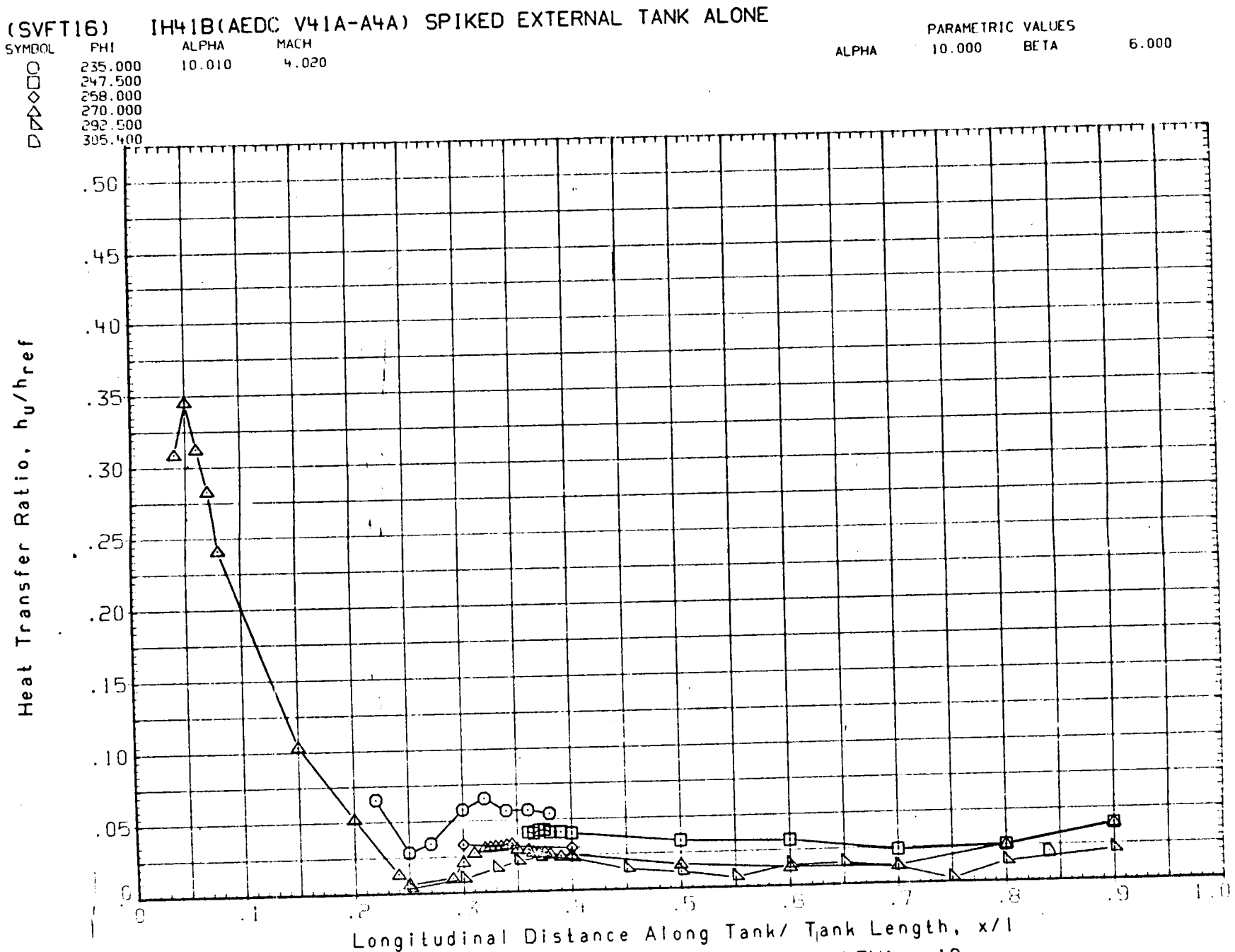


FIGURE 6 EXTERNAL TANK ALONE - HEAT TRANSFER DATA, ALPHA = 10.,

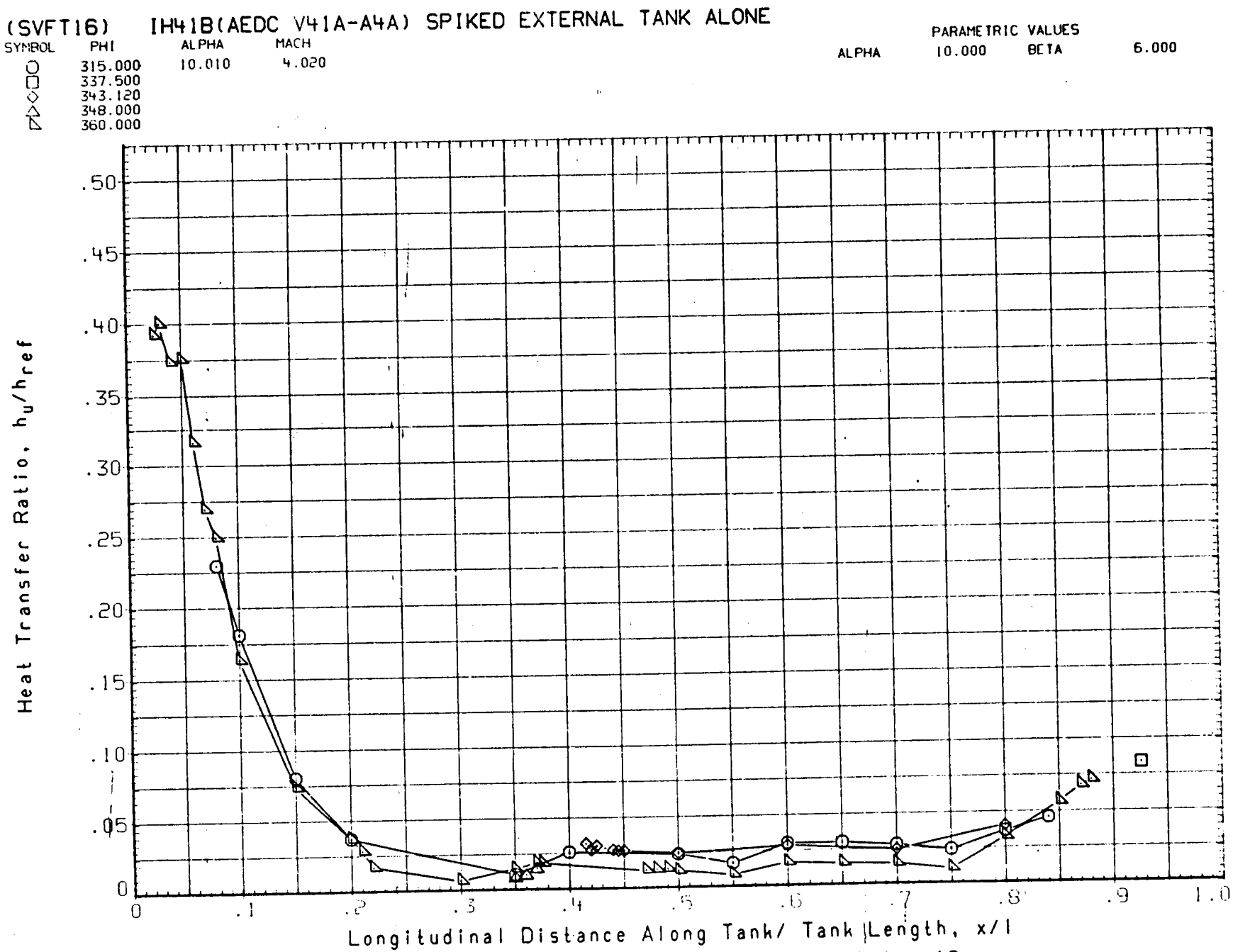


FIGURE 6 EXTERNAL TANK ALONE - HEAT TRANSFER DATA, ALPHA = 10.,

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(LVF102)	○	IH41B(AEDC V41A-A44) SPIKED EXTERNAL TANK ALONE	.000	.000
(LVF122)	□	IH41B(V41A-A44) O T S (SPIKED ET DATA) HI/HREF	.000	.000
(GVF122)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	.000

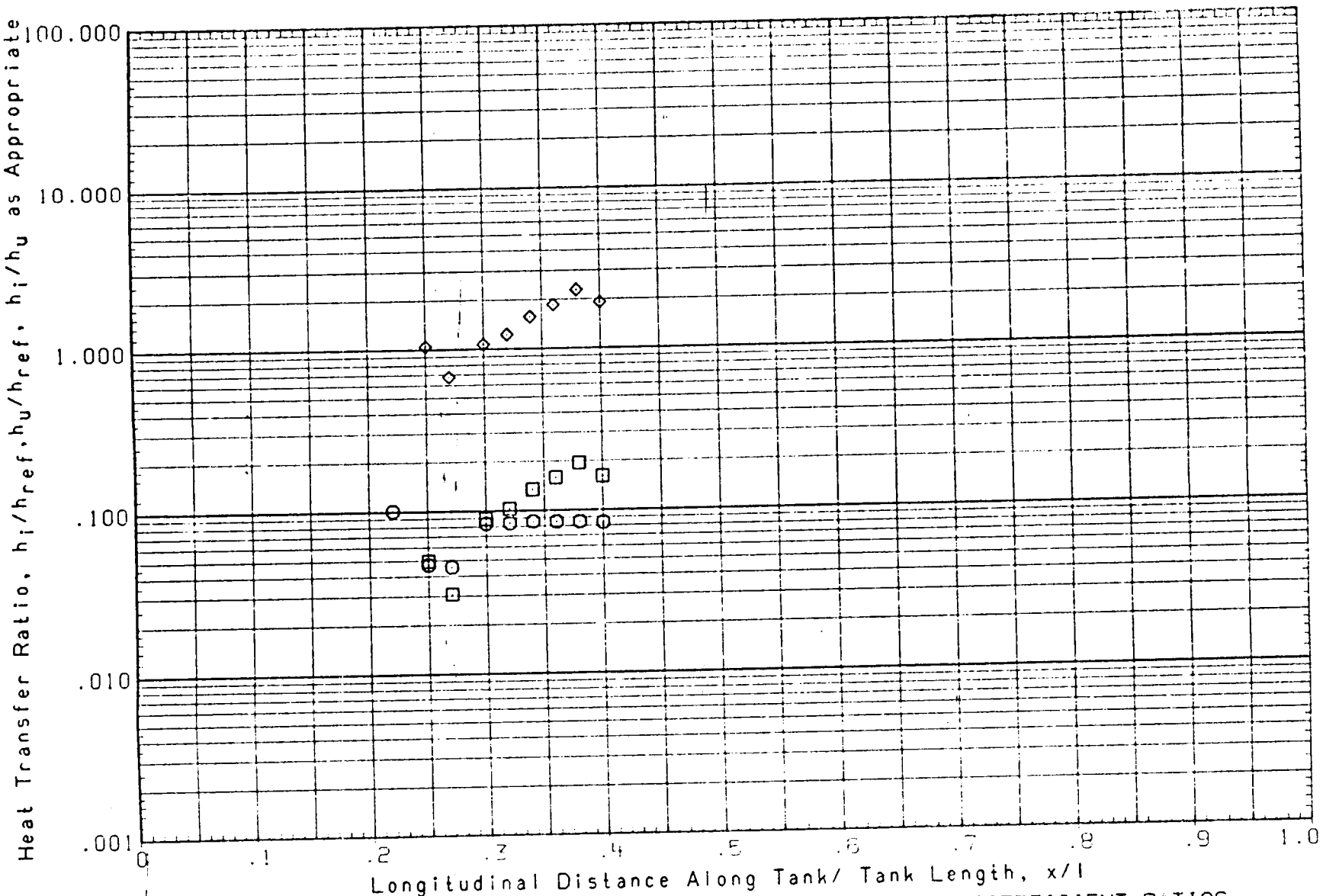


FIG. 7 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = 0

MACH = 3.010 ALPHA = .005 PHI = 235.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT02)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	.000
(LVFT22)	□	IH41B(V41A-A4A) O T S SPIKED ET DATA) HI/HREF	.000	.000
(BVFT22)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	.000

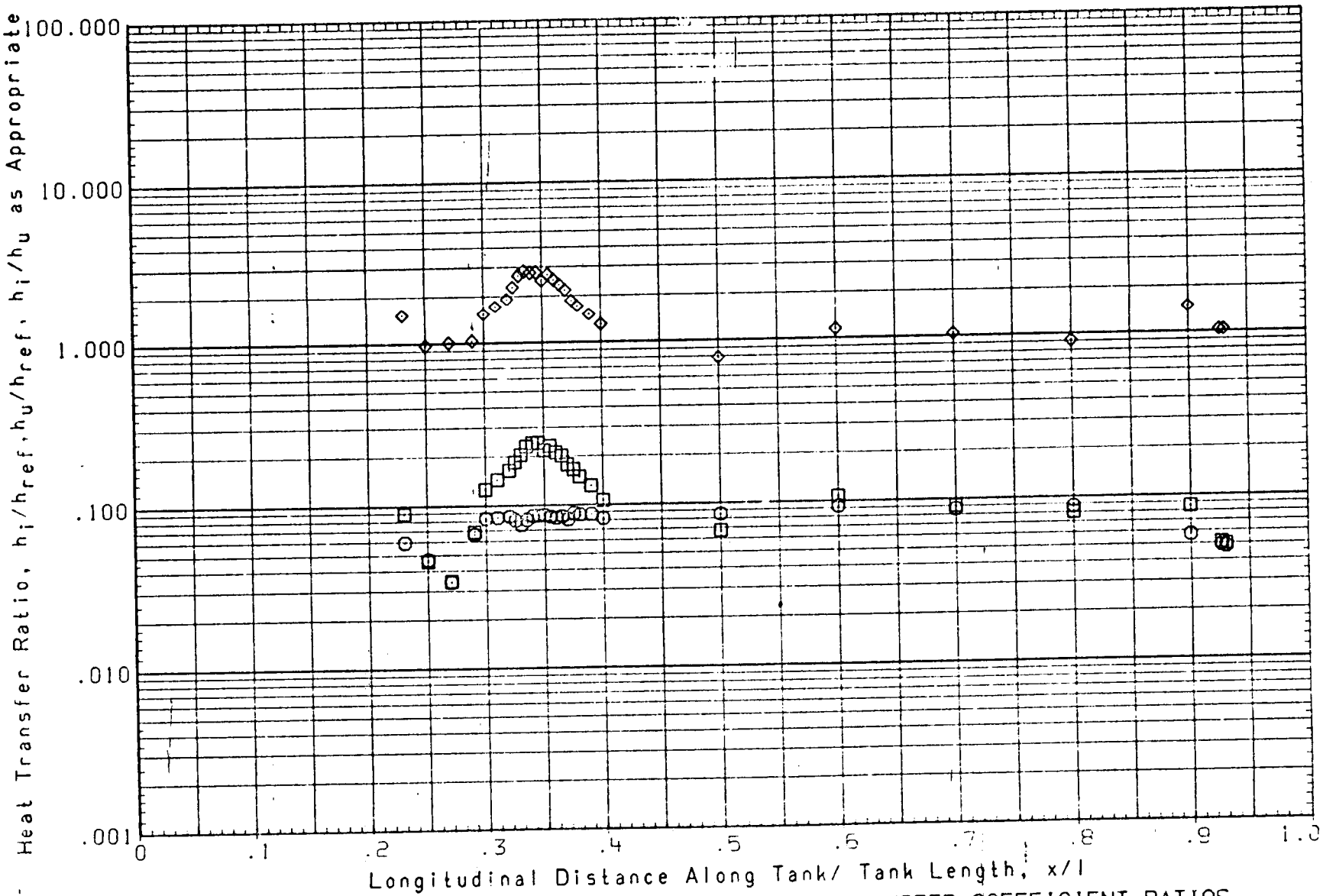


FIG. 7 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = 0

MACH = 3.010 ALPHA = .005 PHI = 247.500

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT02)	○	IH41B(AEDC V41A-A44) SPIKED EXTERNAL TANK ALONE	.000	.000
(LVFT22)	□	IH41B(V41A-A44) O S (SPIKED ET DATA) HI/HREF	.000	.000
(BVFT22)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	.000

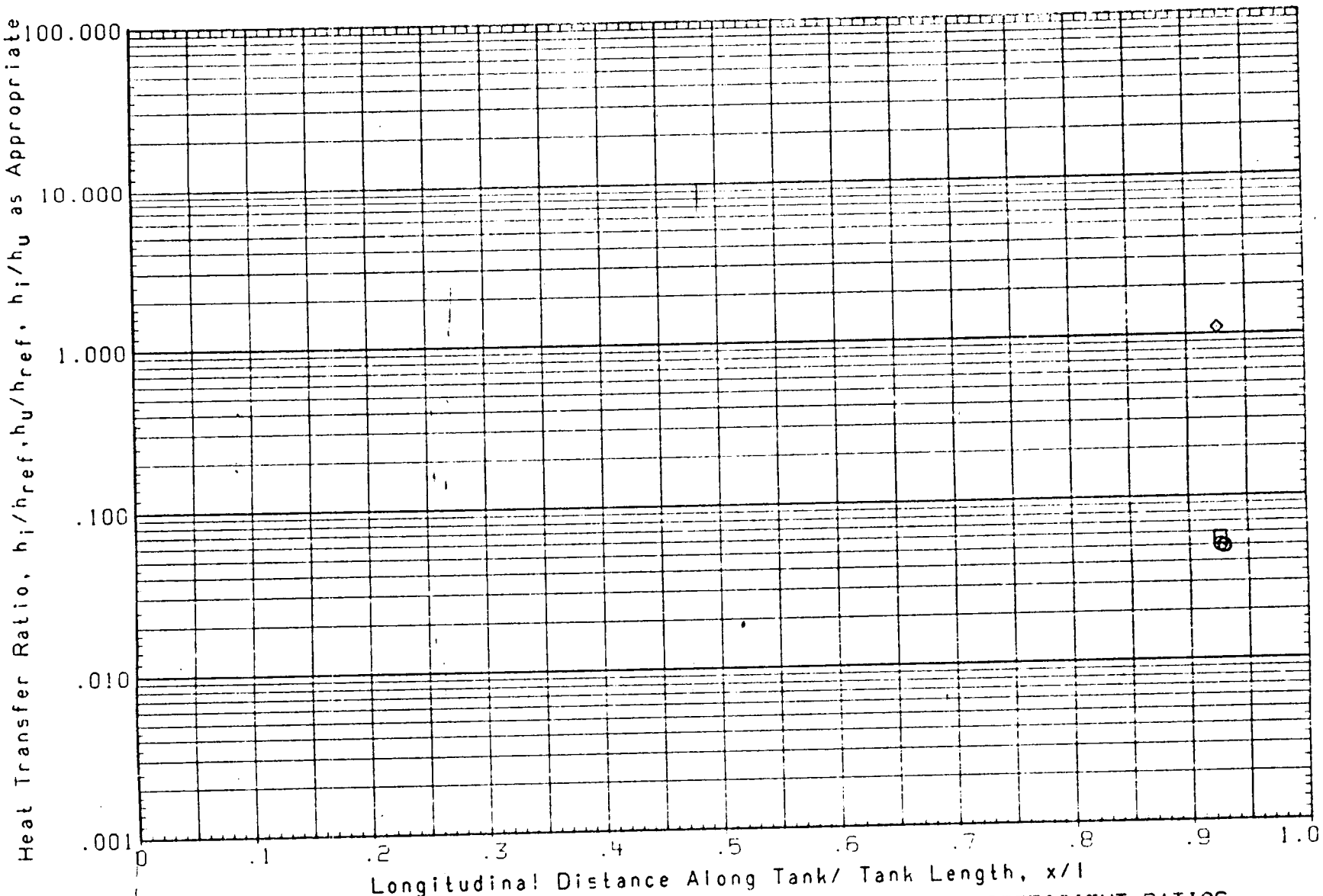


FIG. 7 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = 0

MACH = 3.010 ALPHA = .005 PHI = 250.570

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT02)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	.000
(LVFT22)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	.000
(BVFT22)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	.000

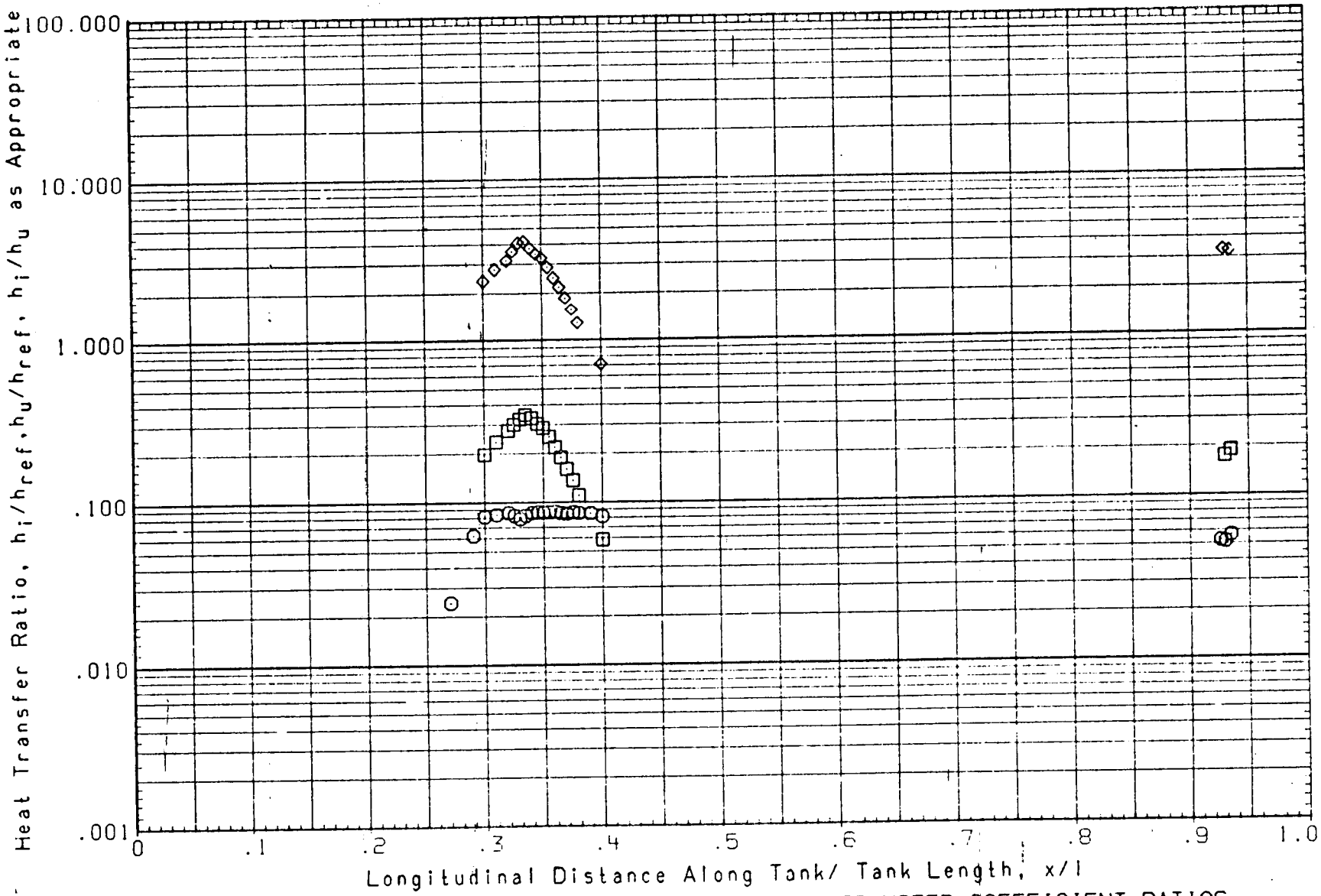


FIG. 7 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = 0

MACH = 3.010 ALPHA = .005 PHI = 2[illegible].000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	PHI
(RVFT02)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	.000
(LVFT22)	□	IH41B(V41A-A4A) O + S (SPIKED ET DATA) HI/HREF	.000	.000
(BVFT22)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	.000

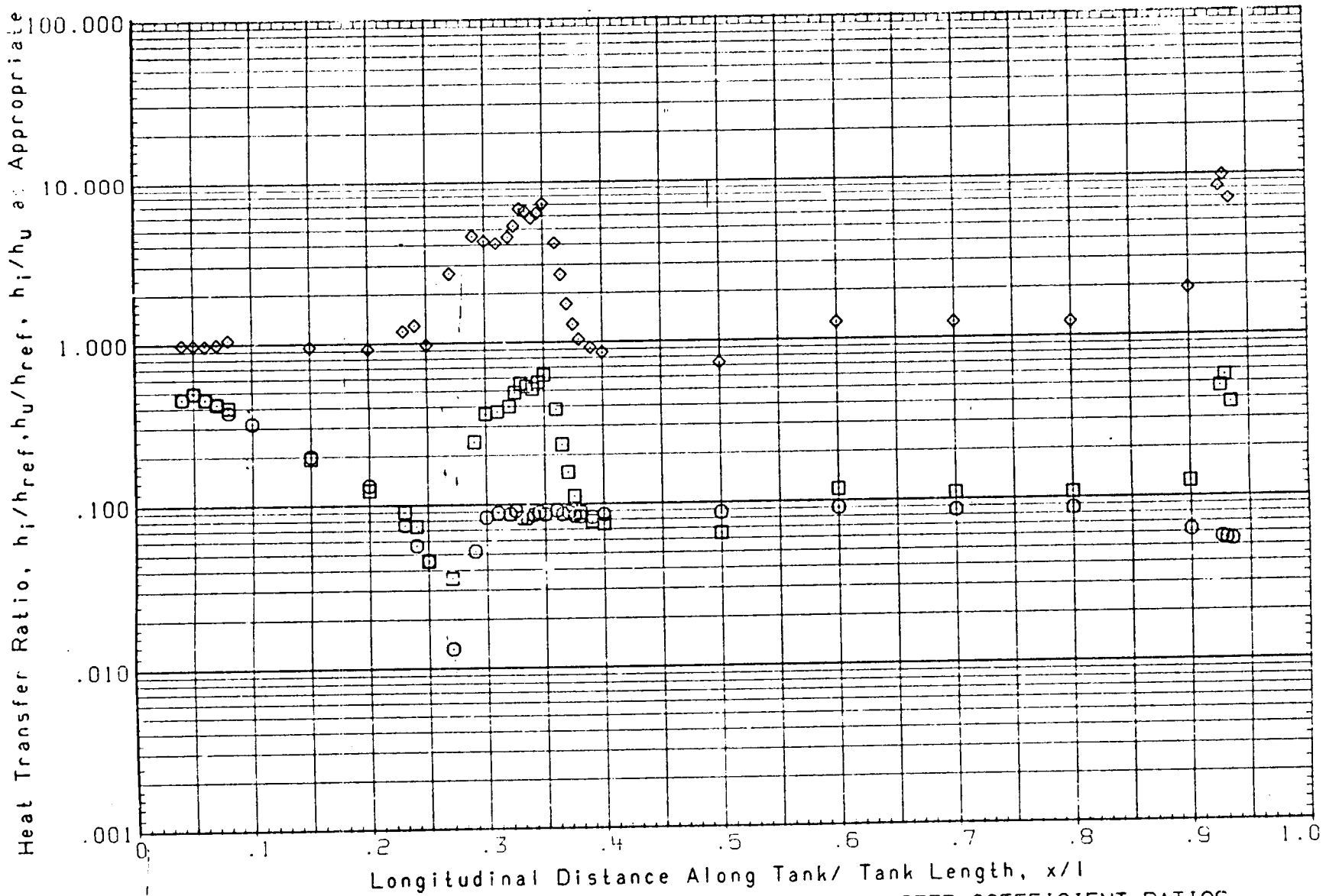


FIG. 7 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = 0

MACH = 3.010 ALPHA = .005 PHI = 270.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT02)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	.000
(LVFT22)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	.000
(BVFT22)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	.000

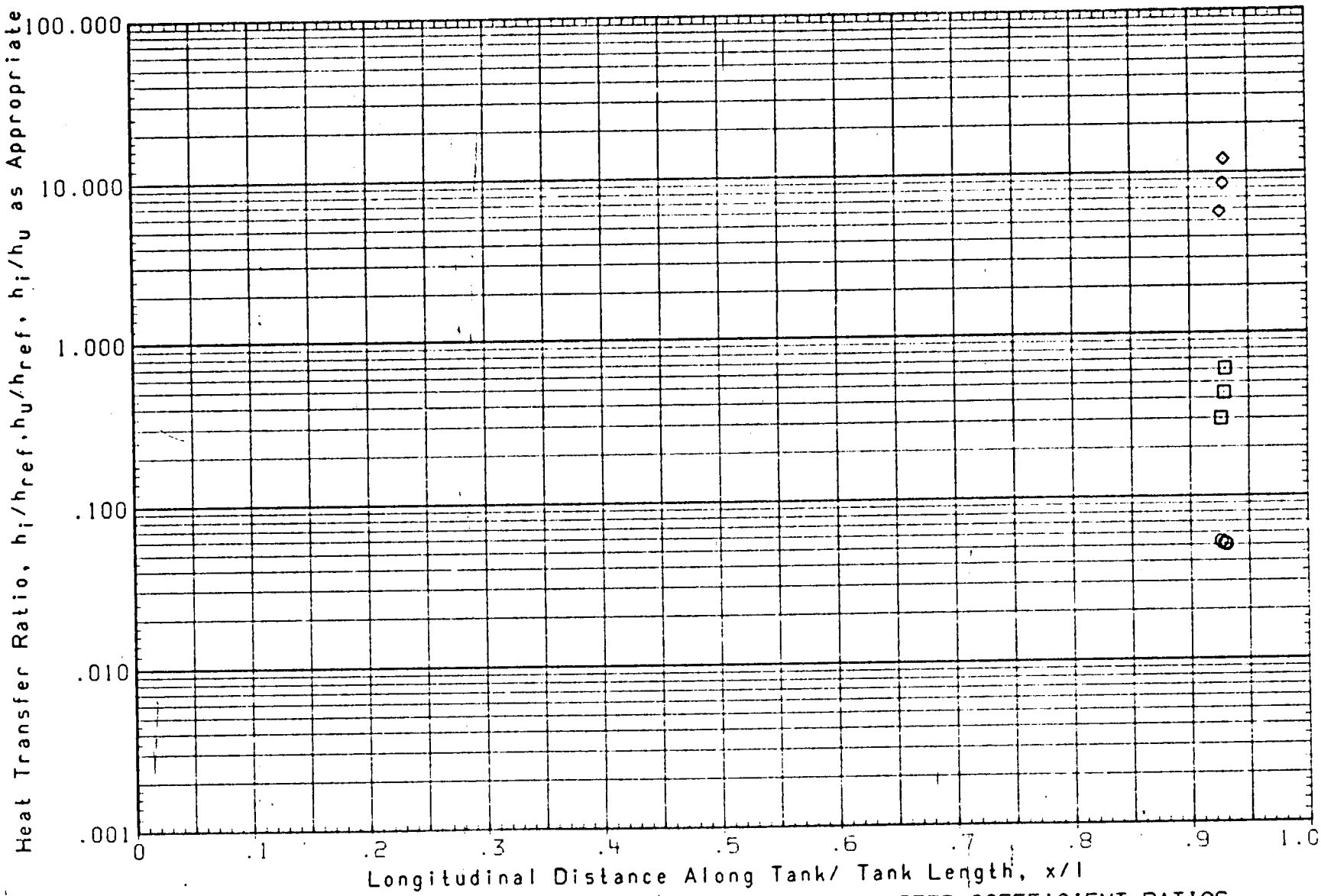


FIG. 7 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = 0

MACH = 3.010 ALPHA = .000 PHI = 280.430

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT02)	○	IH41B(AEDS V41A [illegible]) SPIKED EXTERNAL TANK ALONE	.000	.000
(LVFT22)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	.000
(BVFT22)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	.000

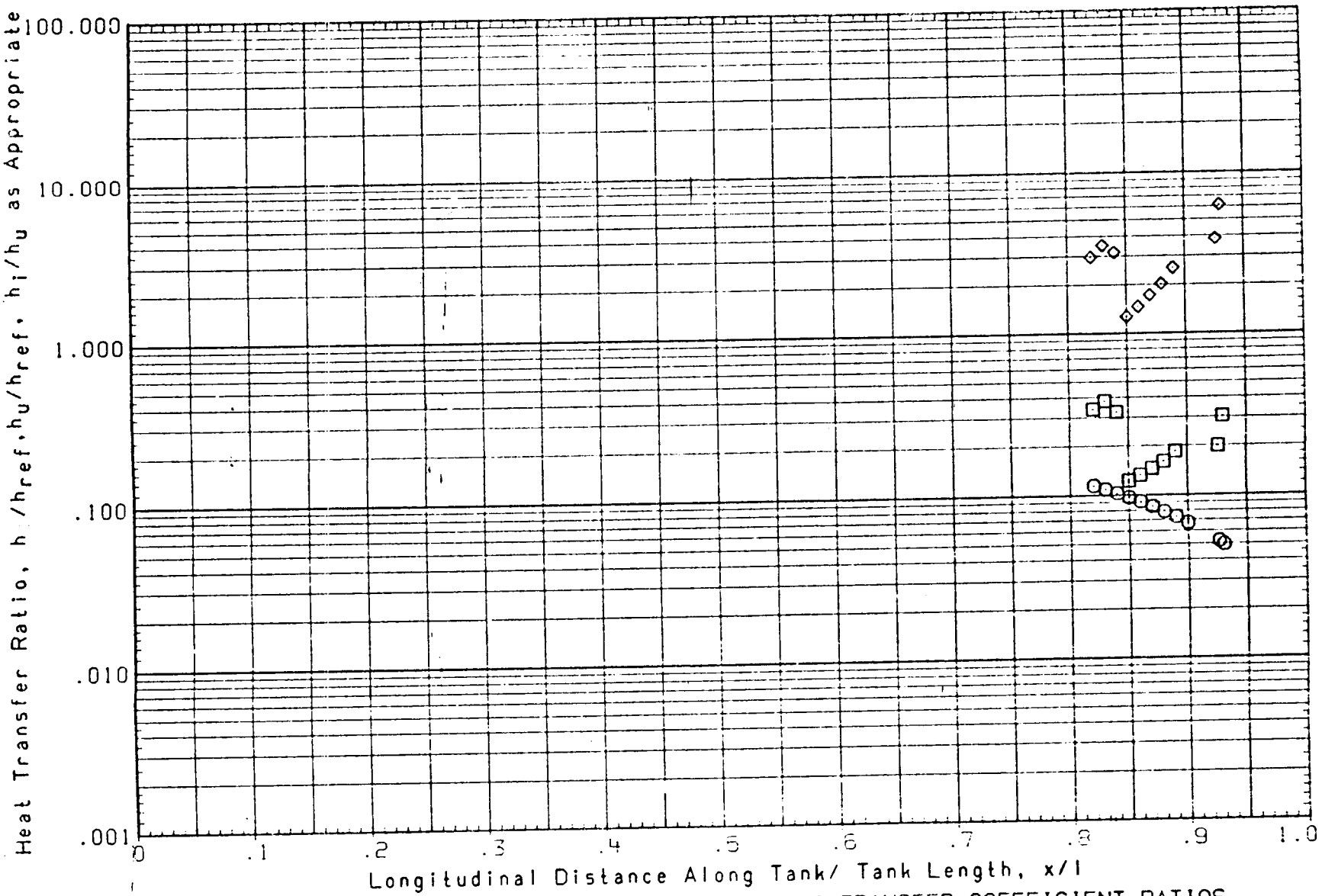


FIG. 7 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS WINDWARD SIDE, ALPHA = 0, BETA = 0

MACH = 3.010 ALPHA = .005 PHI = [illegible]

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT02)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	.000
(LVFT22)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	.000
(BVFT22)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	.000

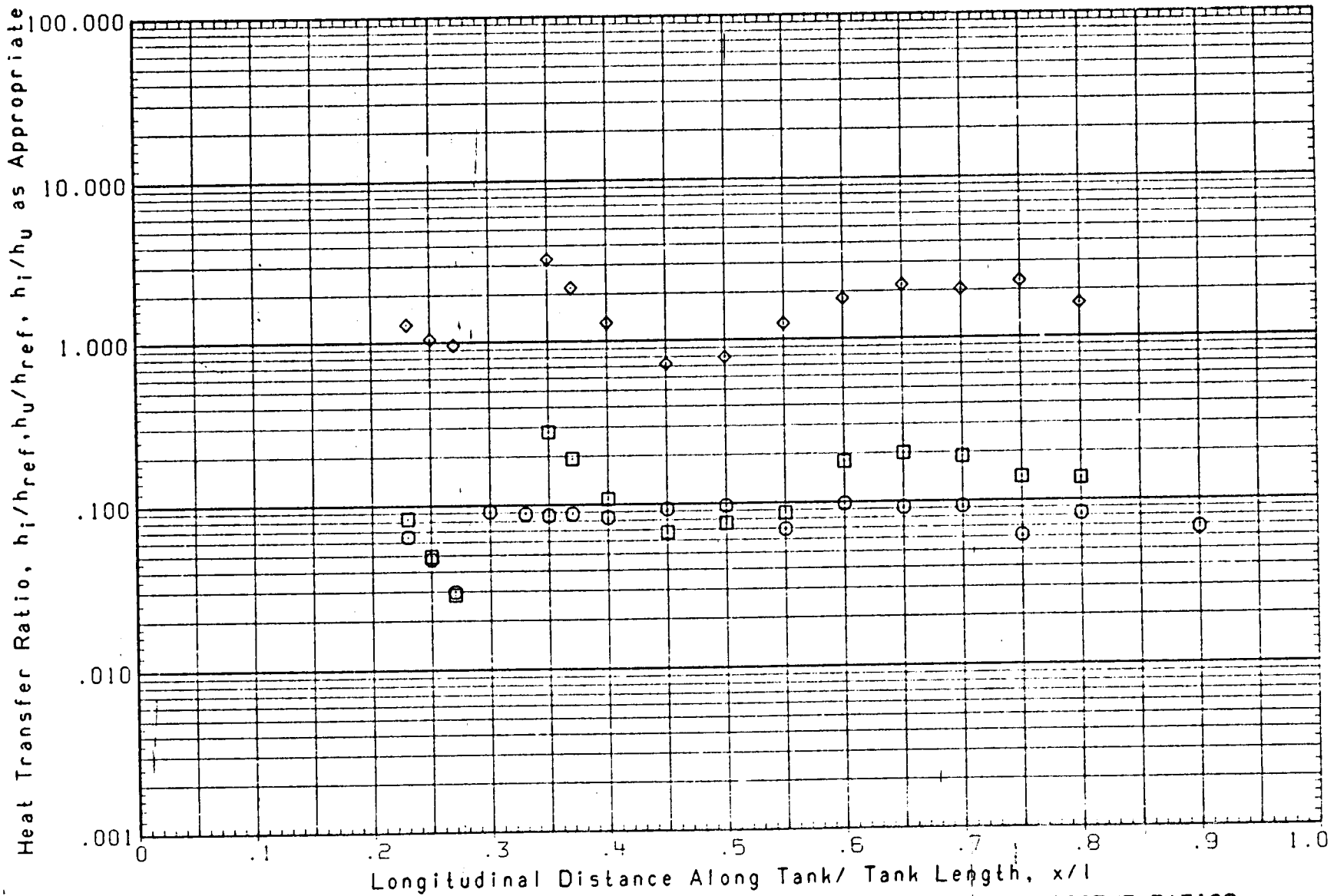


FIG. 7. EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = 0

MACH = 3.010 ALPHA = .000 PHI = 222.500

DATA SET	SYMBOL	DESCRIPTION	ALPHA	BETA
(RVFT02)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	.000
(LVFT22)	□	IH41B(V41A-A4A) T S (SPIKED ET DATA) HI/HREF	.000	.000
(BVFT22)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	.000

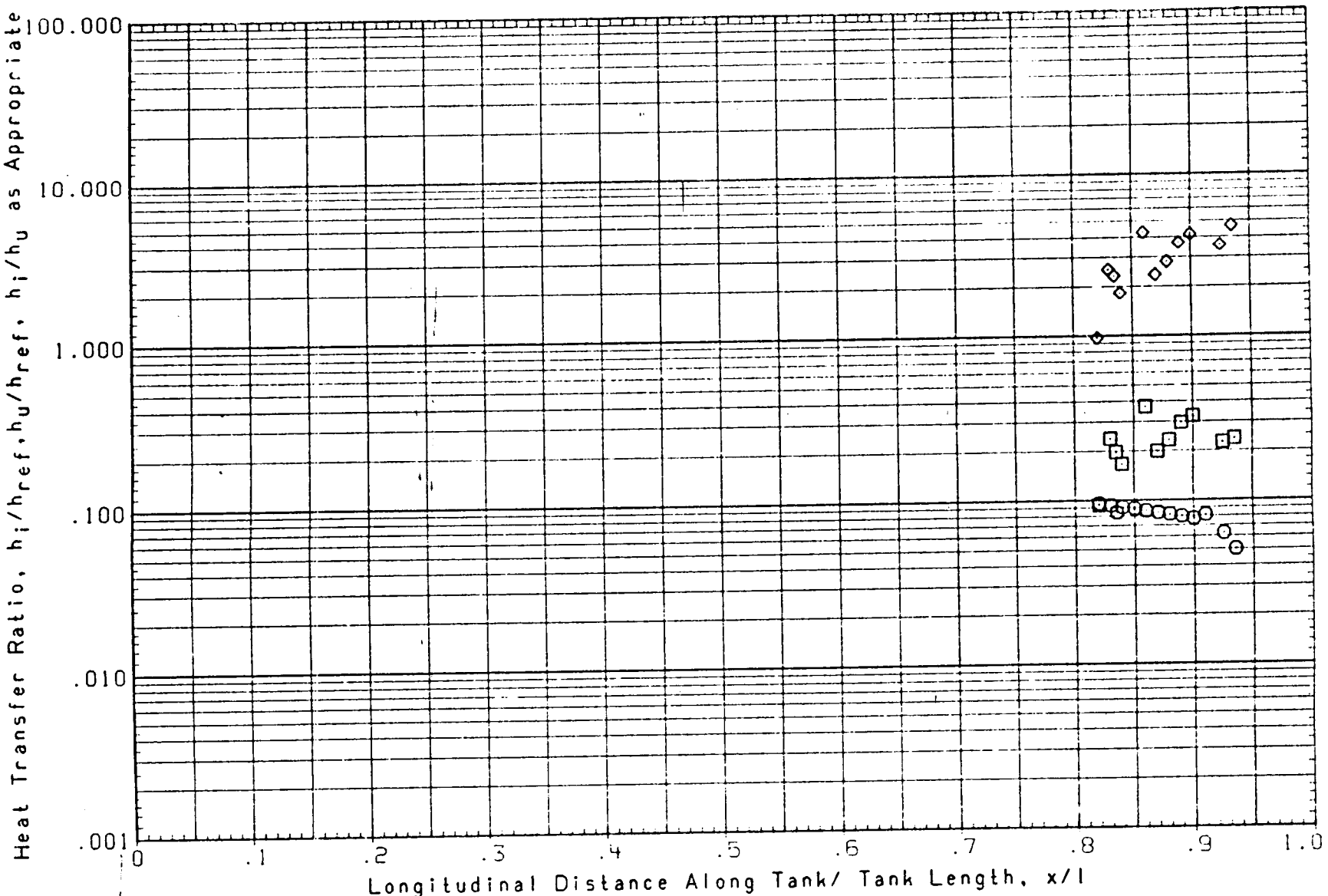


FIG. 7 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = 0

MACH = 3.010 ALPHA = .005 PHI = 301.500

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT02)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	.000
(LVFT22)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	.000
(BVFT22)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	.000

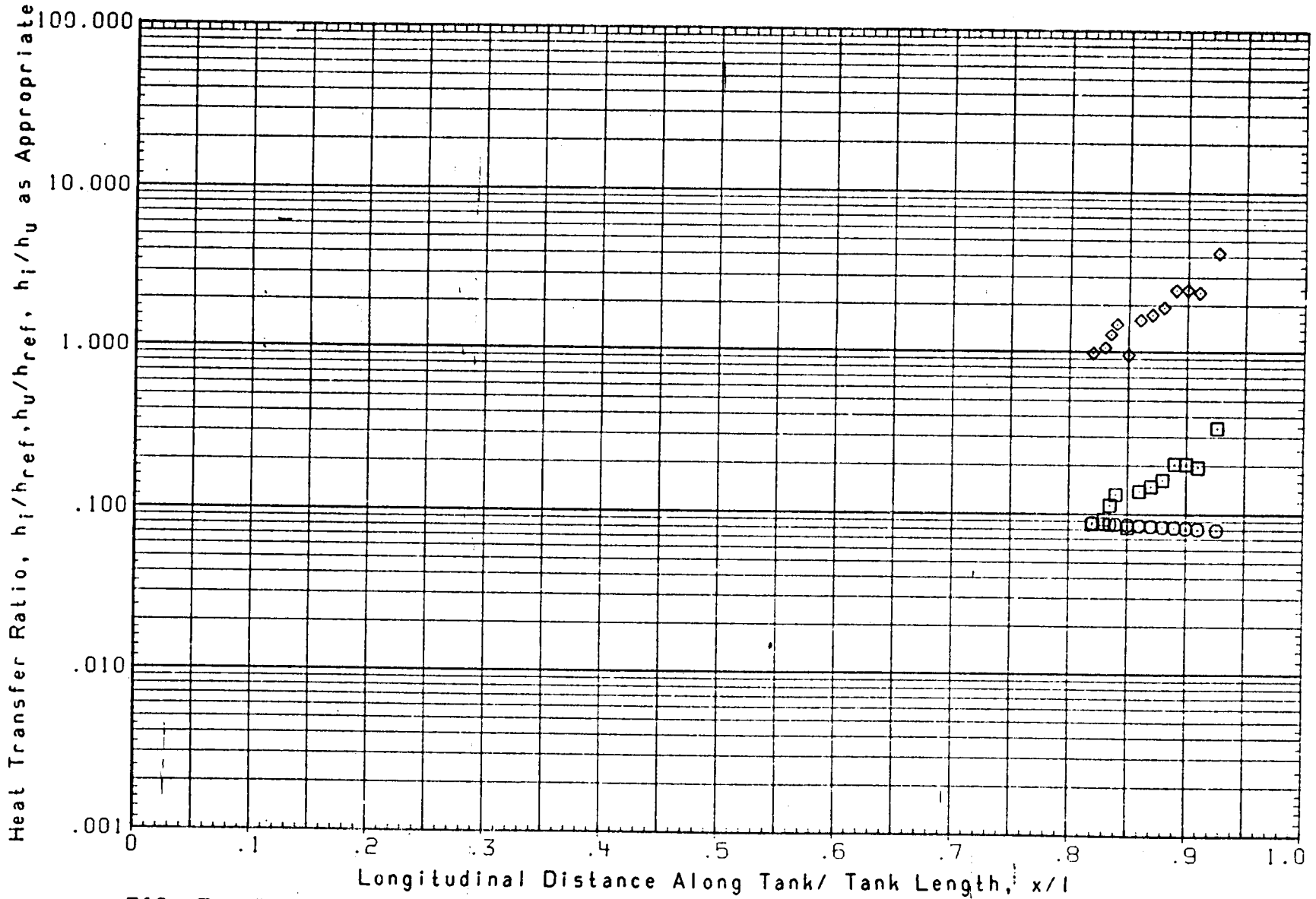


FIG. 7 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = 0

MACH = 3.010 ALPHA = .005 PHI = 305.400

(KVFT02)	○	IH41B(AEDC V41A-7 ...) SPIKED EXTERNAL TANK ALONE	.000	.000
(LVFT22)	□	IH41B(V41A-A4A) 0 1 S (SPIKED ET DATA) HI/HREF	.000	.000
(BVFT22)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	.000

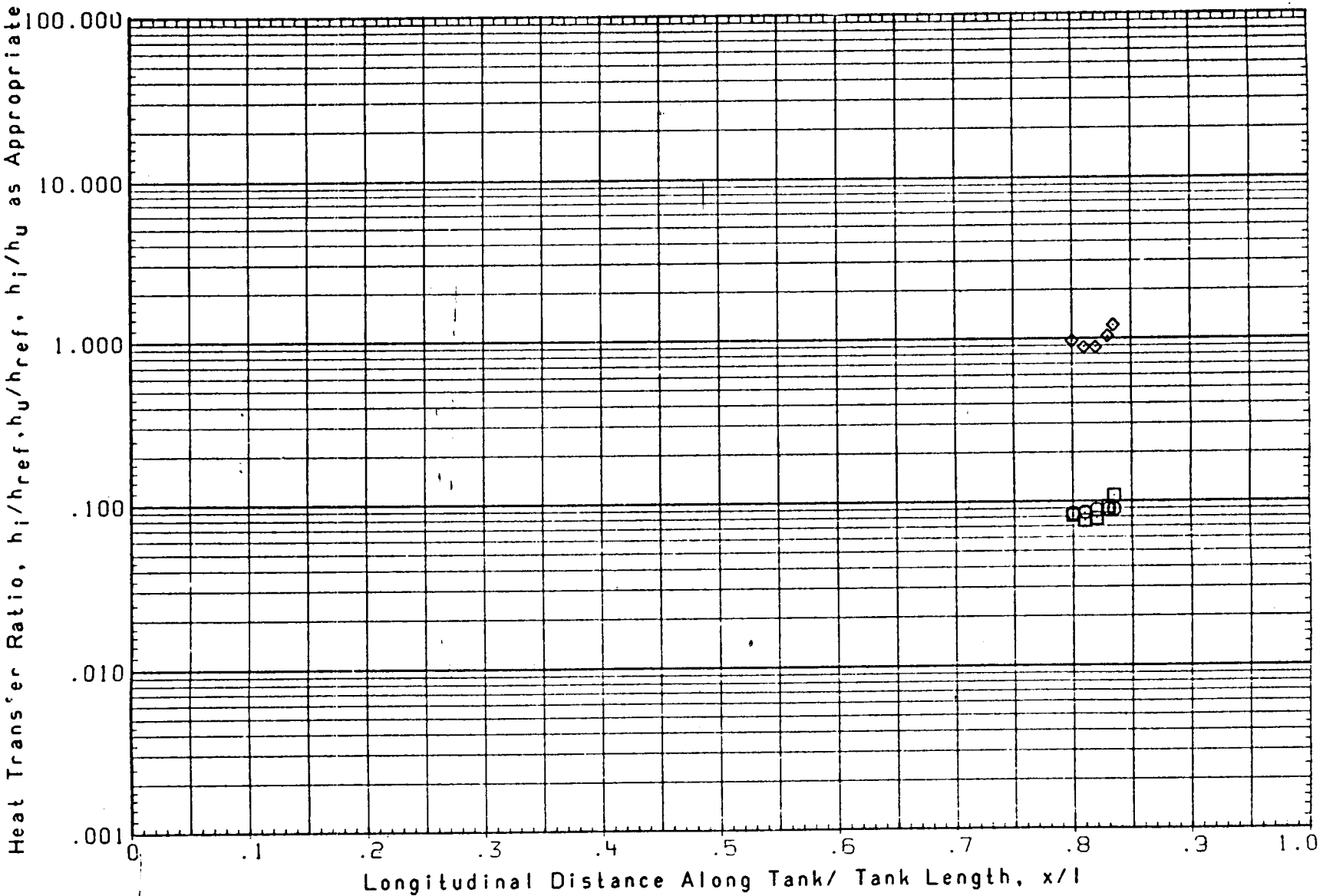


FIG. 7 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = 0

MACH = 3.010 ALPHA = .005 PHI = 309.300

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT02)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	.000
(LVFT22)	□	IP41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	.000
(BVFT22)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	.000

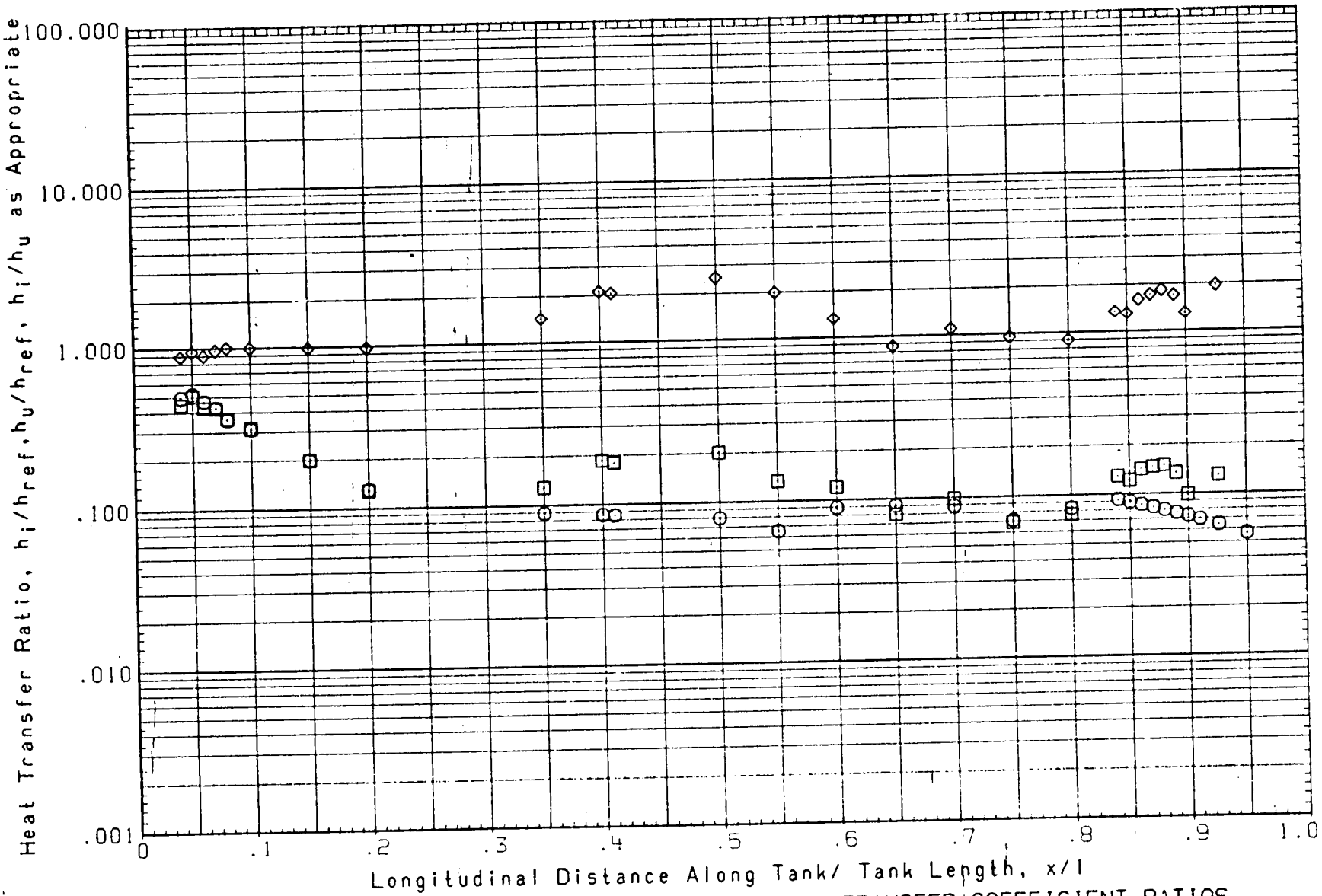


FIG. 7. EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = 0

MACH = 3.010 ALPHA = .005 PHI = 315.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT02)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	.000
(LVFT22)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	.000
(BVFT22)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	.000

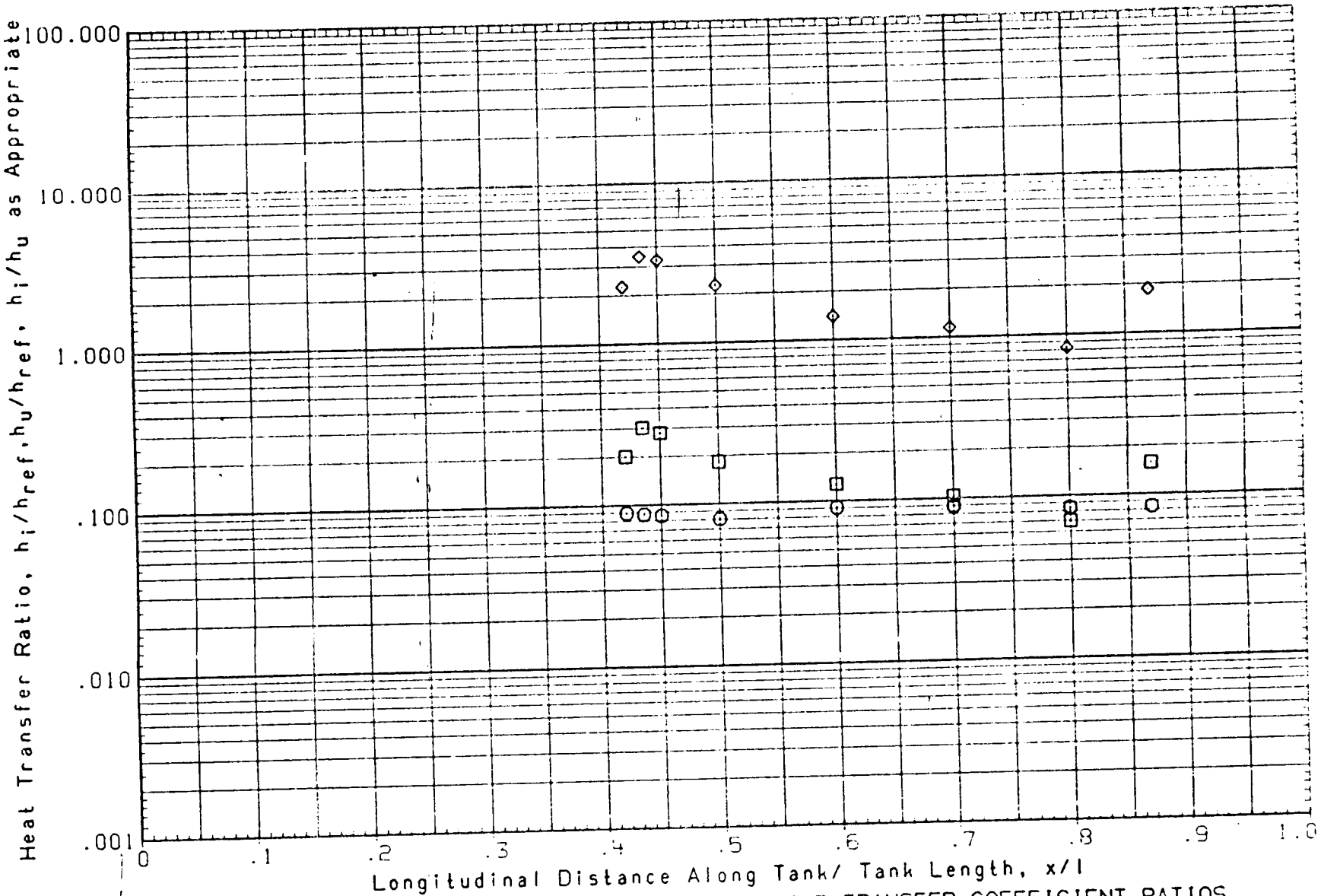


FIG. 7 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = 0

MACH = 3.010 ALPHA = .005 PHI = [illegible]

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT02)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	.000
(LVFT22)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	.000
(BVFT22)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	.000

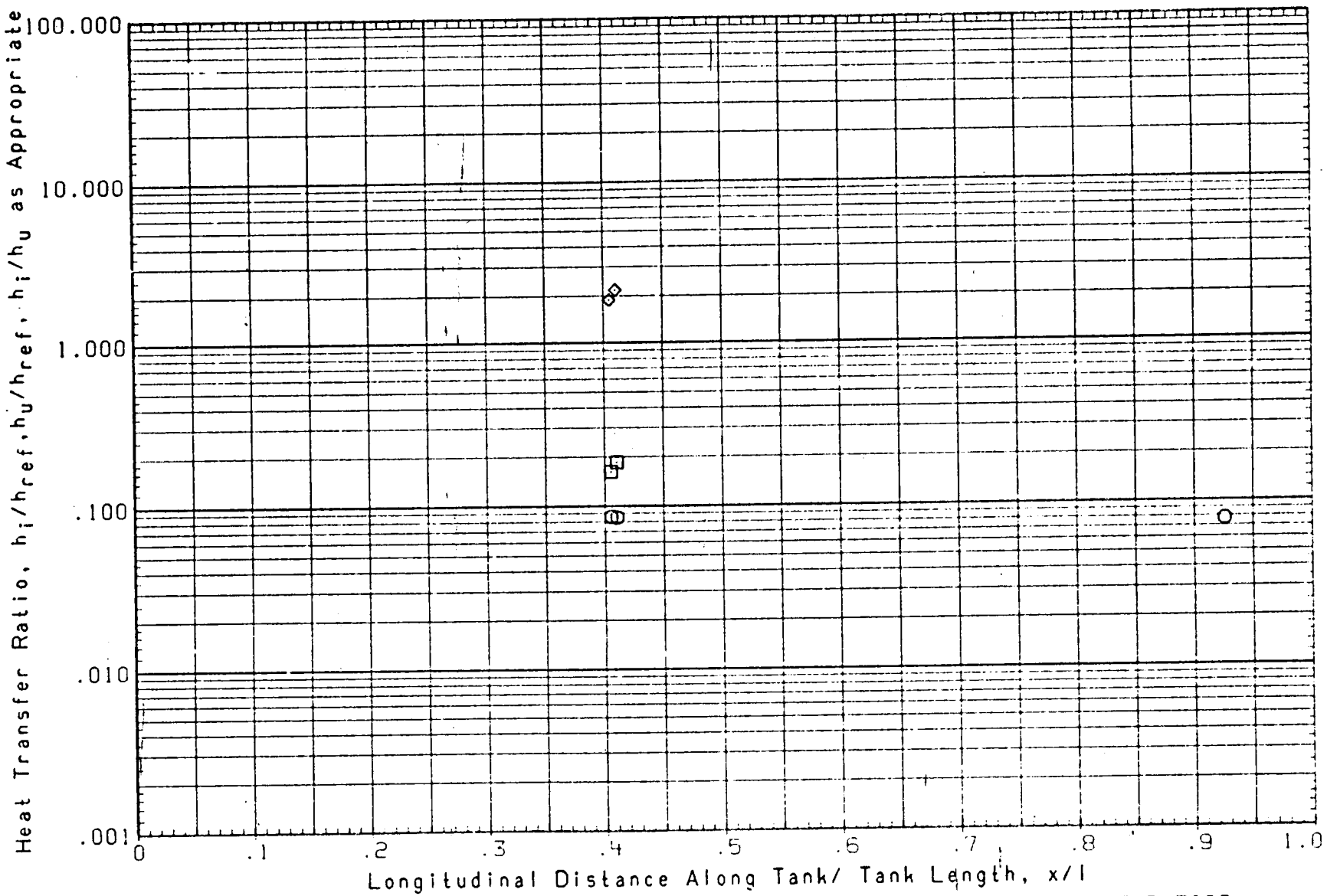


FIG. 7 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS WINDWARD SIDE, ALPHA = 0, BETA = 0

MACH = 3.010 ALPHA = .005 PHI = 324.450

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT02)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	.000
(LVFT22)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	.000
(BVFT22)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	.000

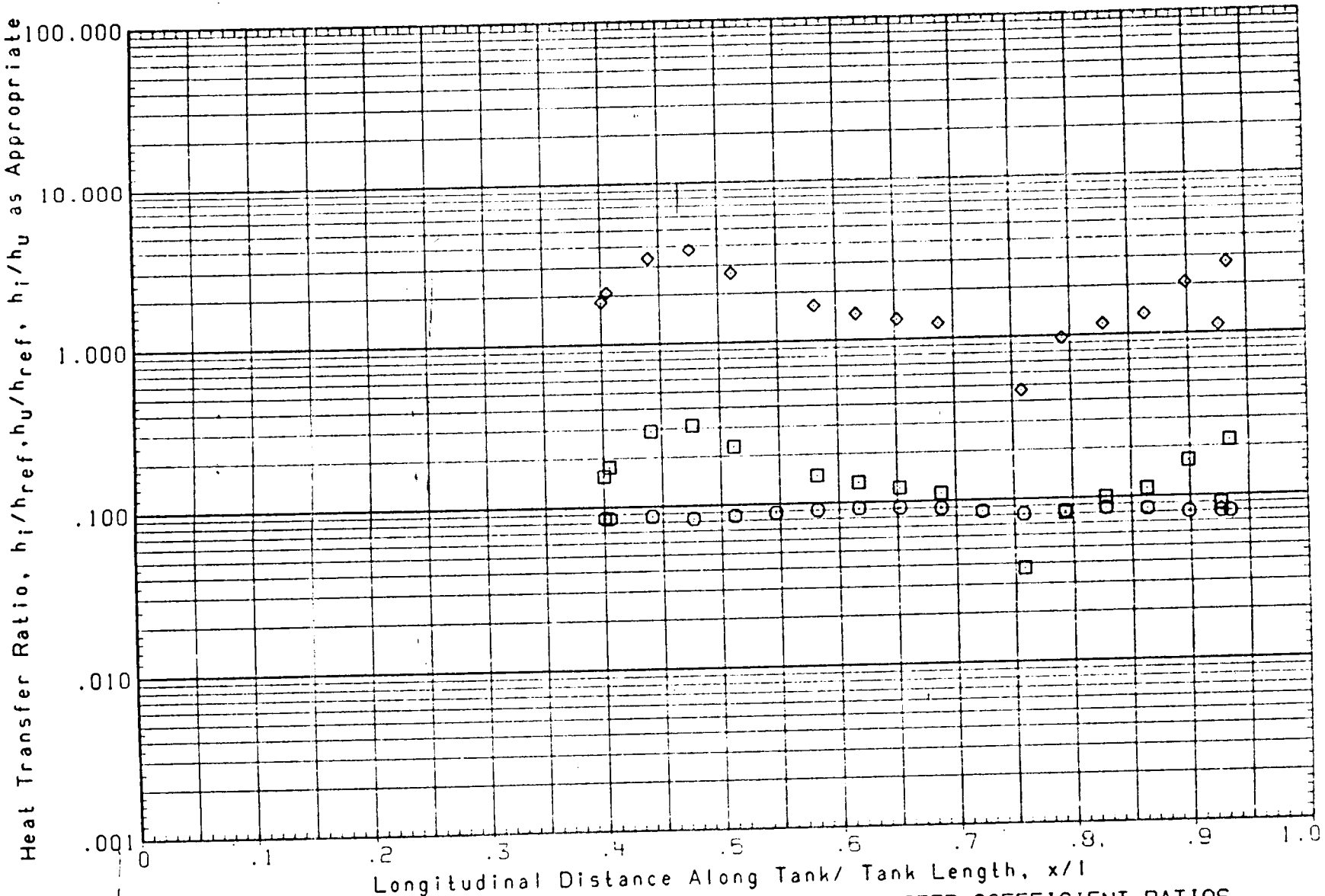


FIG. 7 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = 0

MACH = 3.010 ALPHA = .005 PHI = [illegible]

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT02)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	.000
(LVFT22)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	.000
(BVFT22)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO. HI/HU	.000	.000

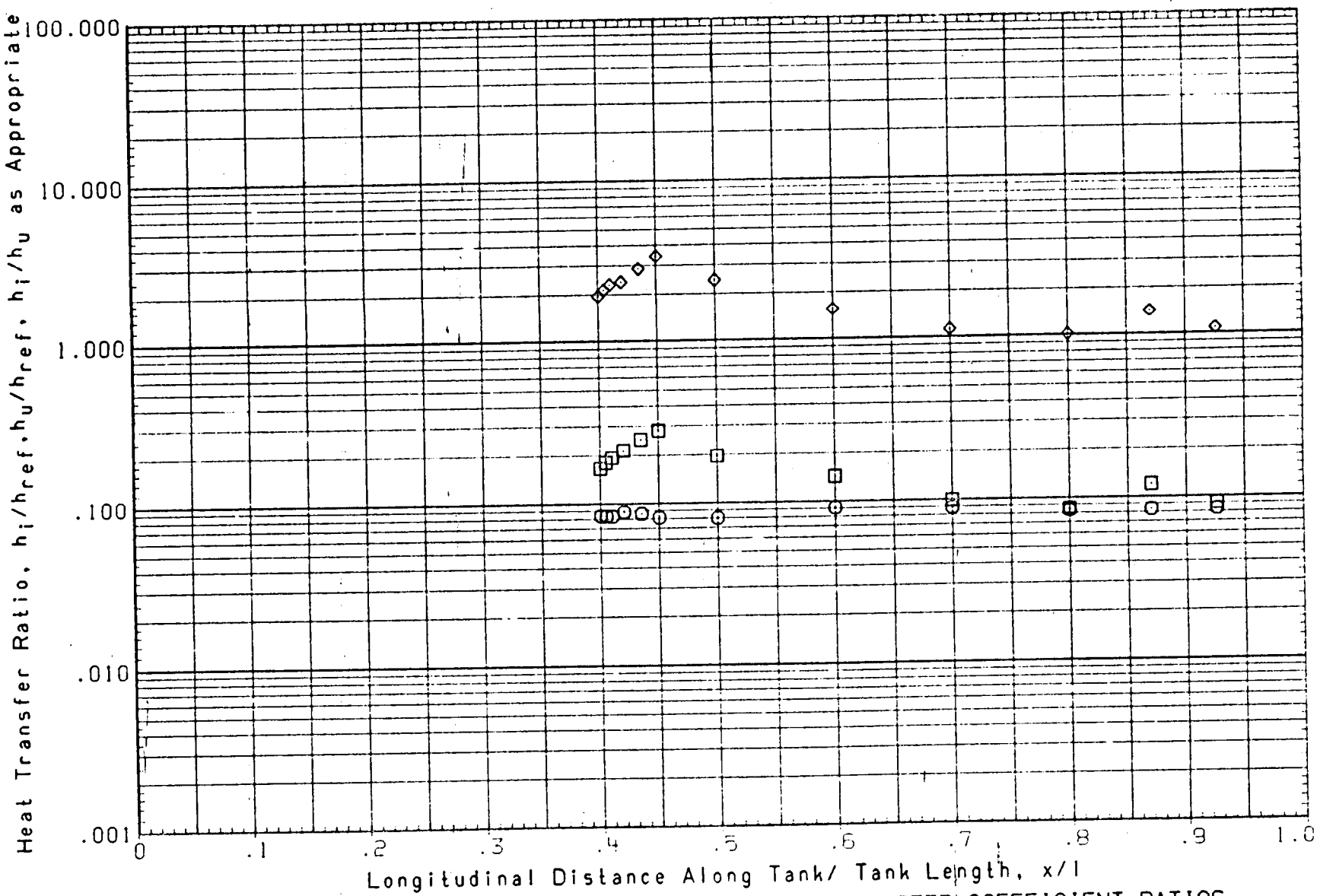


FIG. 7 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = 0

MACH = 3.010 ALPHA = .005 PHI = 330.200

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVF102)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	.000
(LVF122)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	.000
(BVF122)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	.000

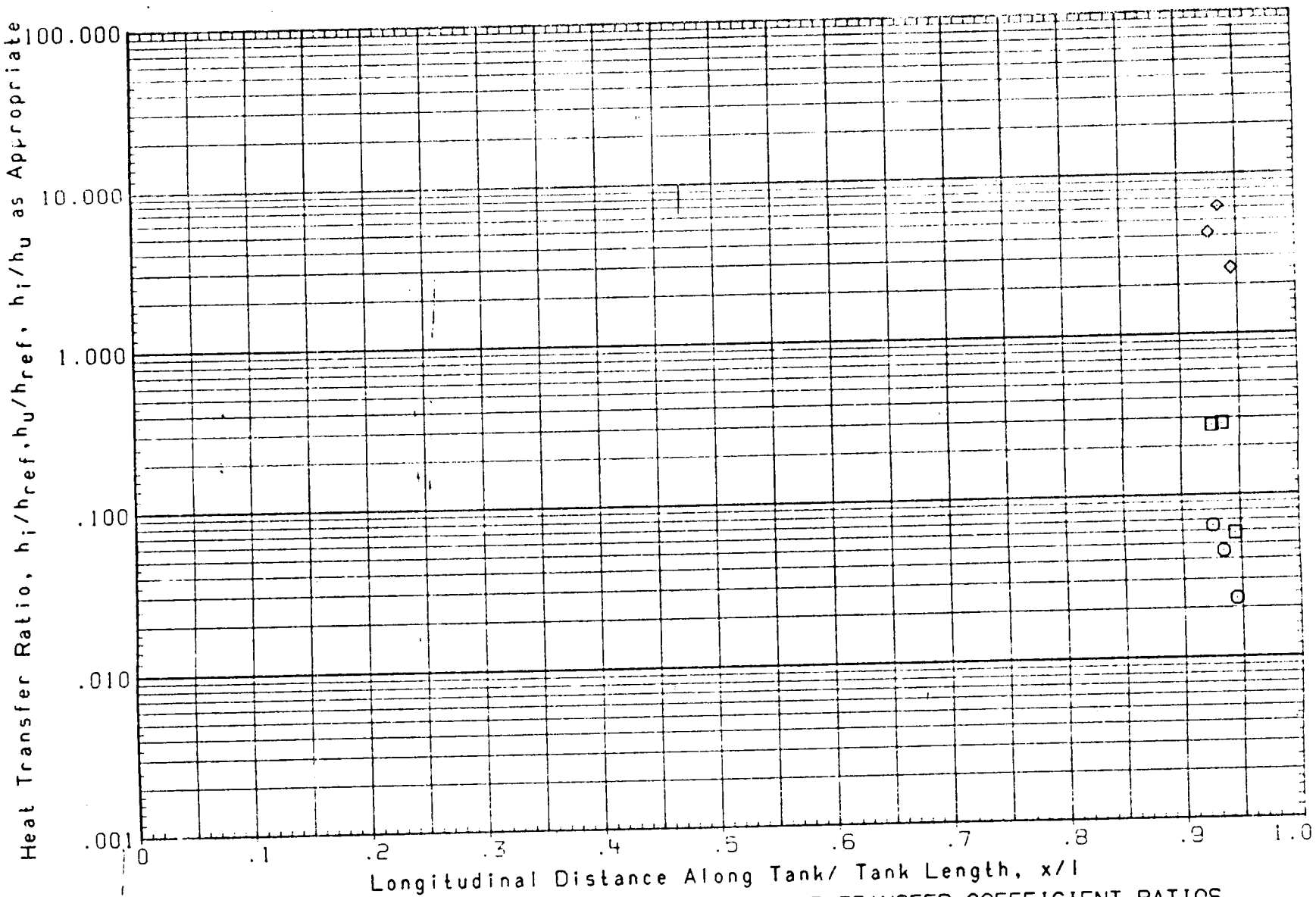


FIG. 7 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = 0

MACH = 3.010 ALPHA = .005 PHI = 374.980

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT02)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	.000
(LVFT22)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	.000
(BVFT22)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	.000

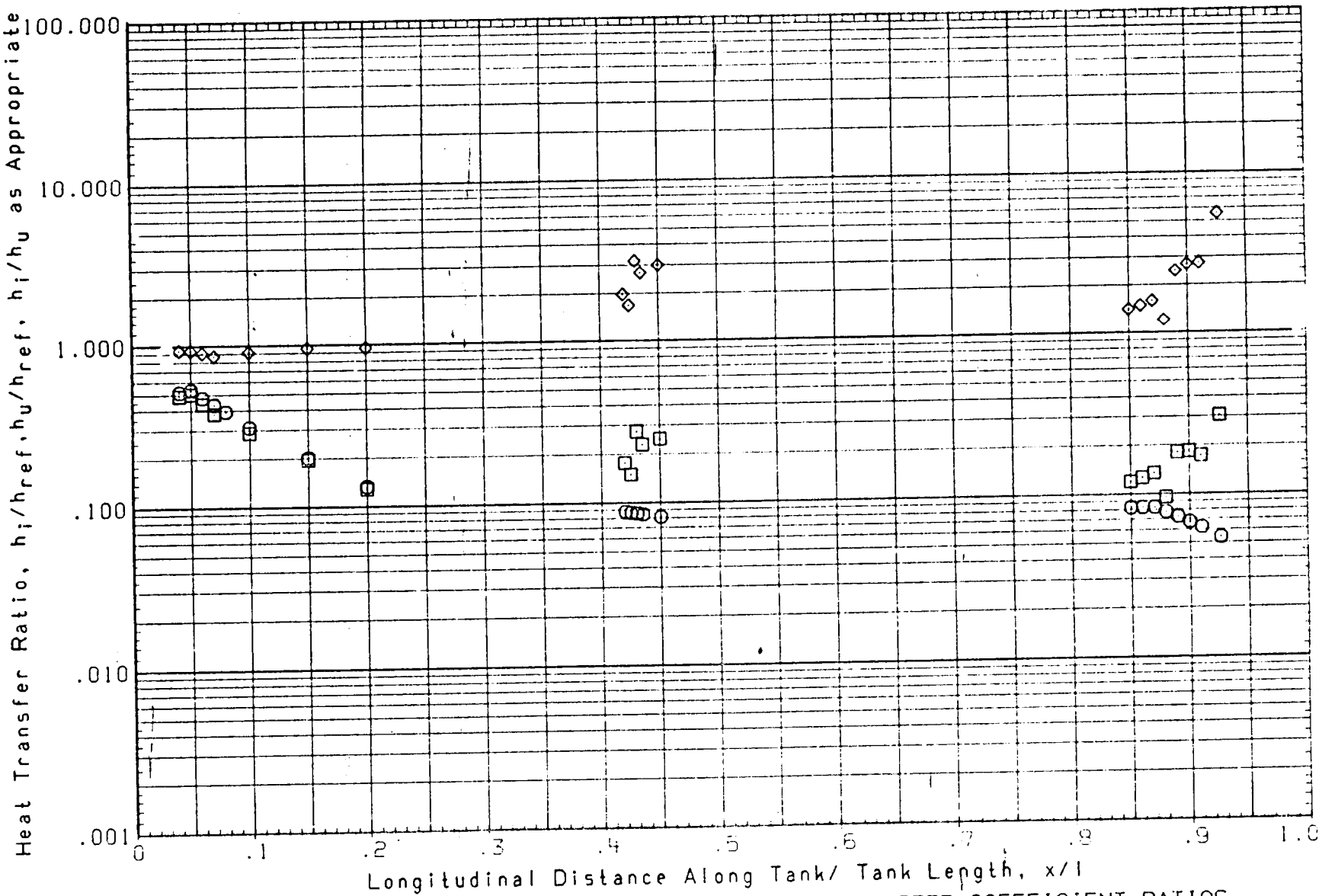


FIG. 7 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = 0

MACH = 3.010 ALPHA = .025 PHI = [illegible]

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT02)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	.000
(LVFT22)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	.000
(BVFT22)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	.000

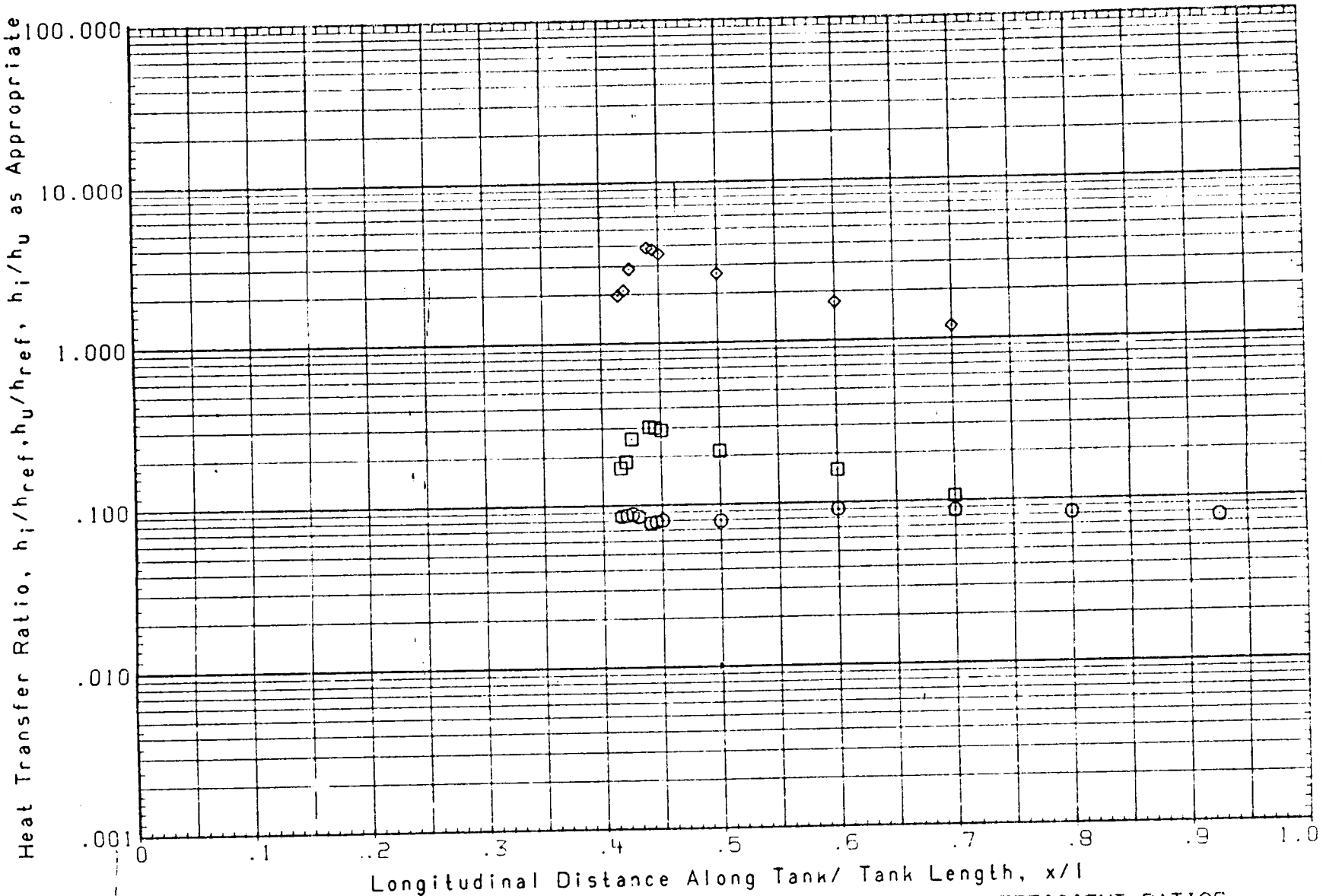


FIG. 7 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = 0

MACH = 3.010 ALPHA = .005 PHI = 343.120

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT02)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	.000
(LVFT22)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	.000
(BVFT22)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	.000

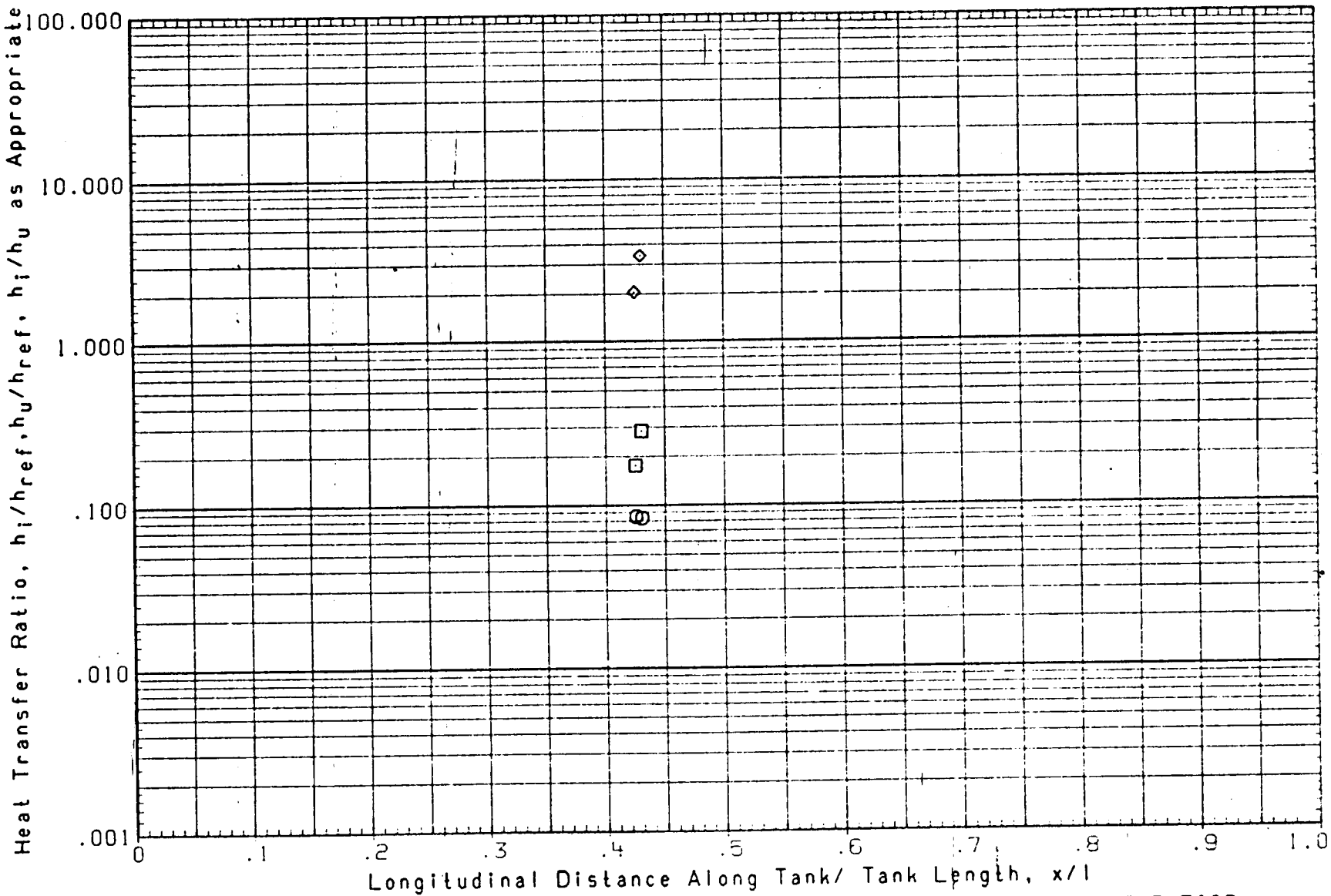


FIG. 7 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS WINDWARD SIDE, ALPHA = 0, BETA = 0

MACH = 3.010 ALPHA = .005 PHI = 345.560

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT02)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	.000
(LVFT22)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	.000
(BVFT22)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	.000

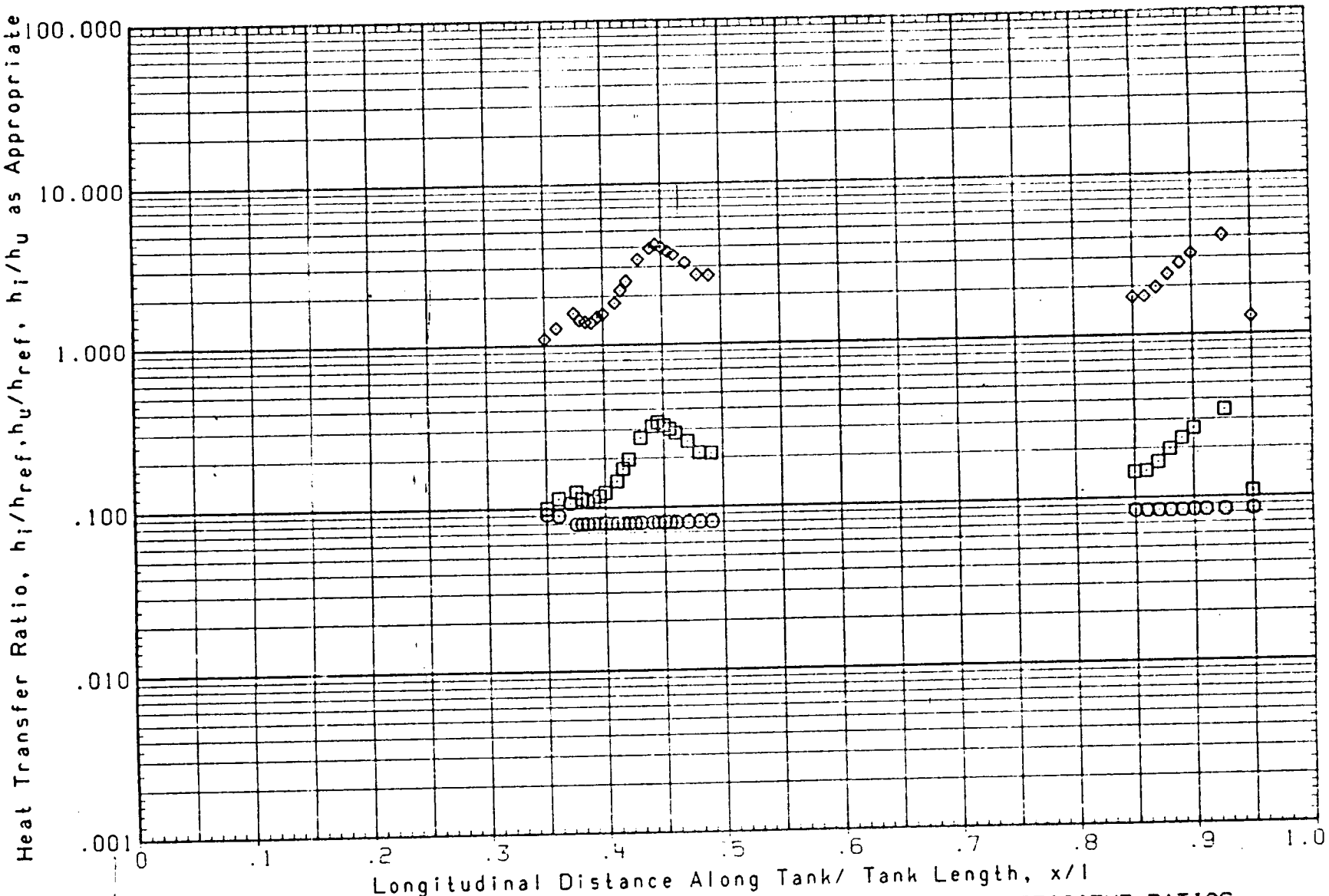


FIG. 7 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = 0

MACH = 3.010 ALPHA = .005 PHI = 345.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT02)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	.000
(LVFT22)	□	DATA NOT AVAILABLE	.000	.000
(BVFT22)	◇	DATA NOT AVAILABLE	.000	.000

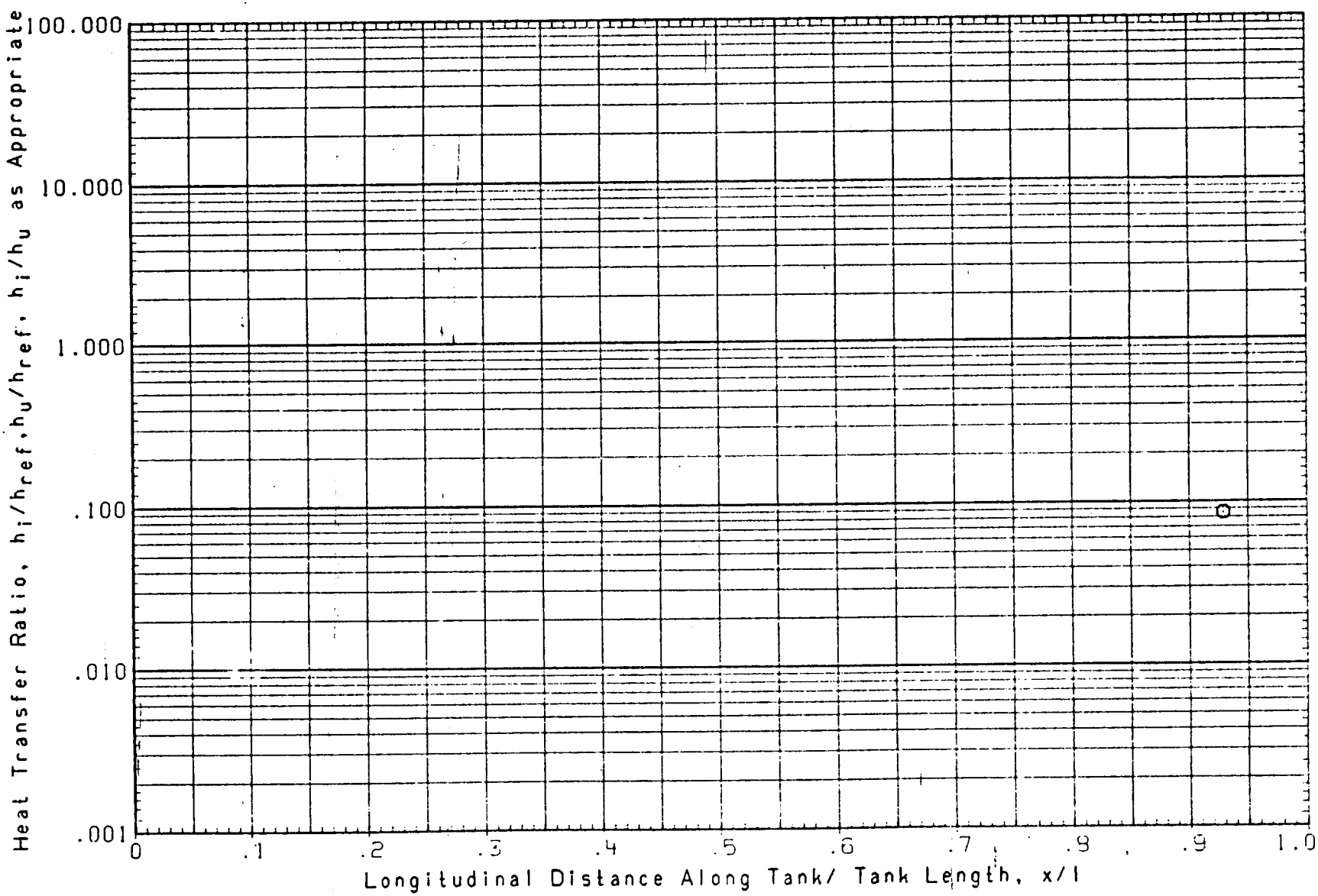


FIG. 7 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = 0

MACH = 3.010 ALPHA = .005 PHI = 353.200

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT02)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	.000
(LVFT22)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	.000
(BVFT22)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	.000

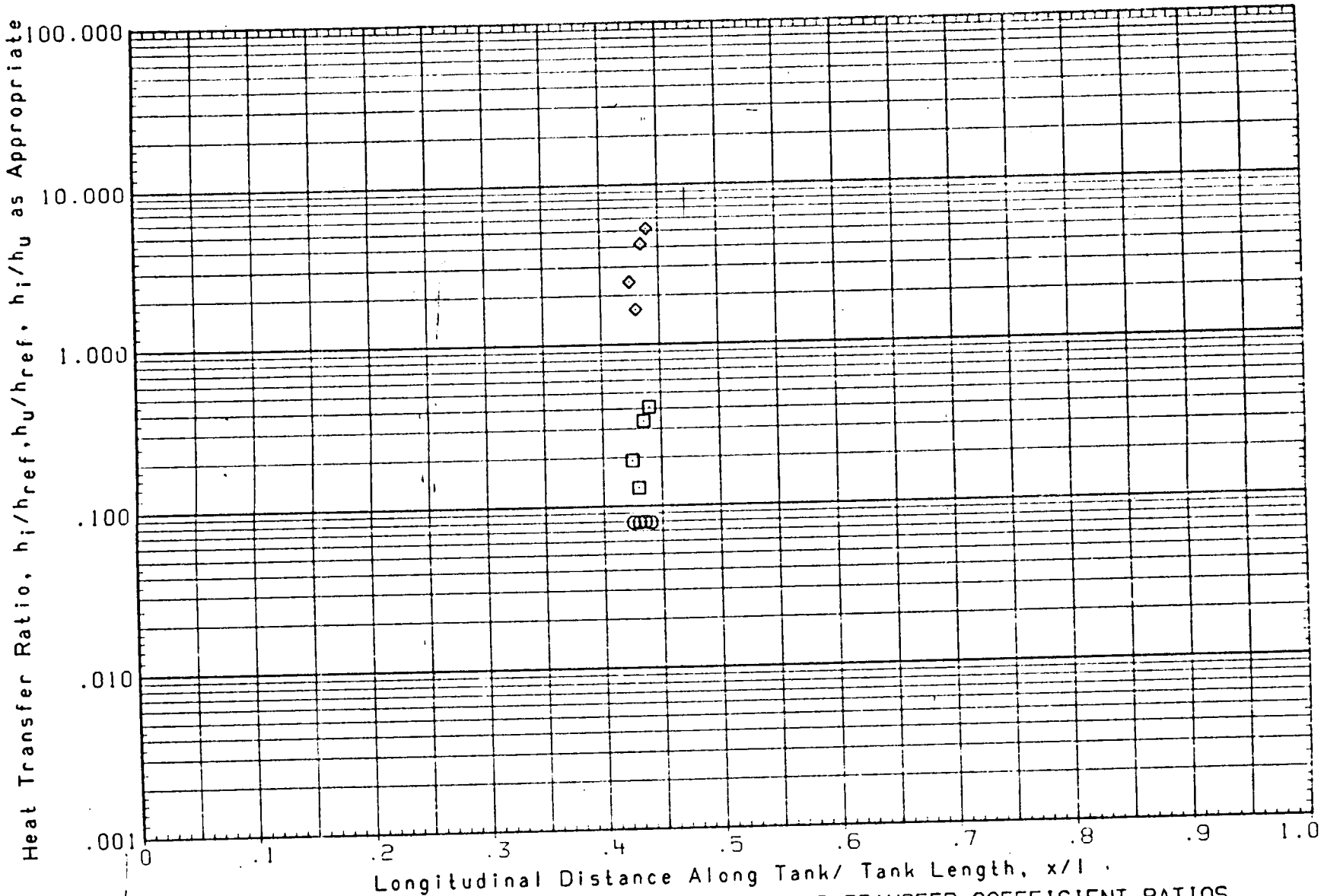


FIG. 7 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = 0

MACH = 3.010 ALPHA = .005 PHI = 354.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT02)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	.000
(LVFT22)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	.000
(BVFT22)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	.000

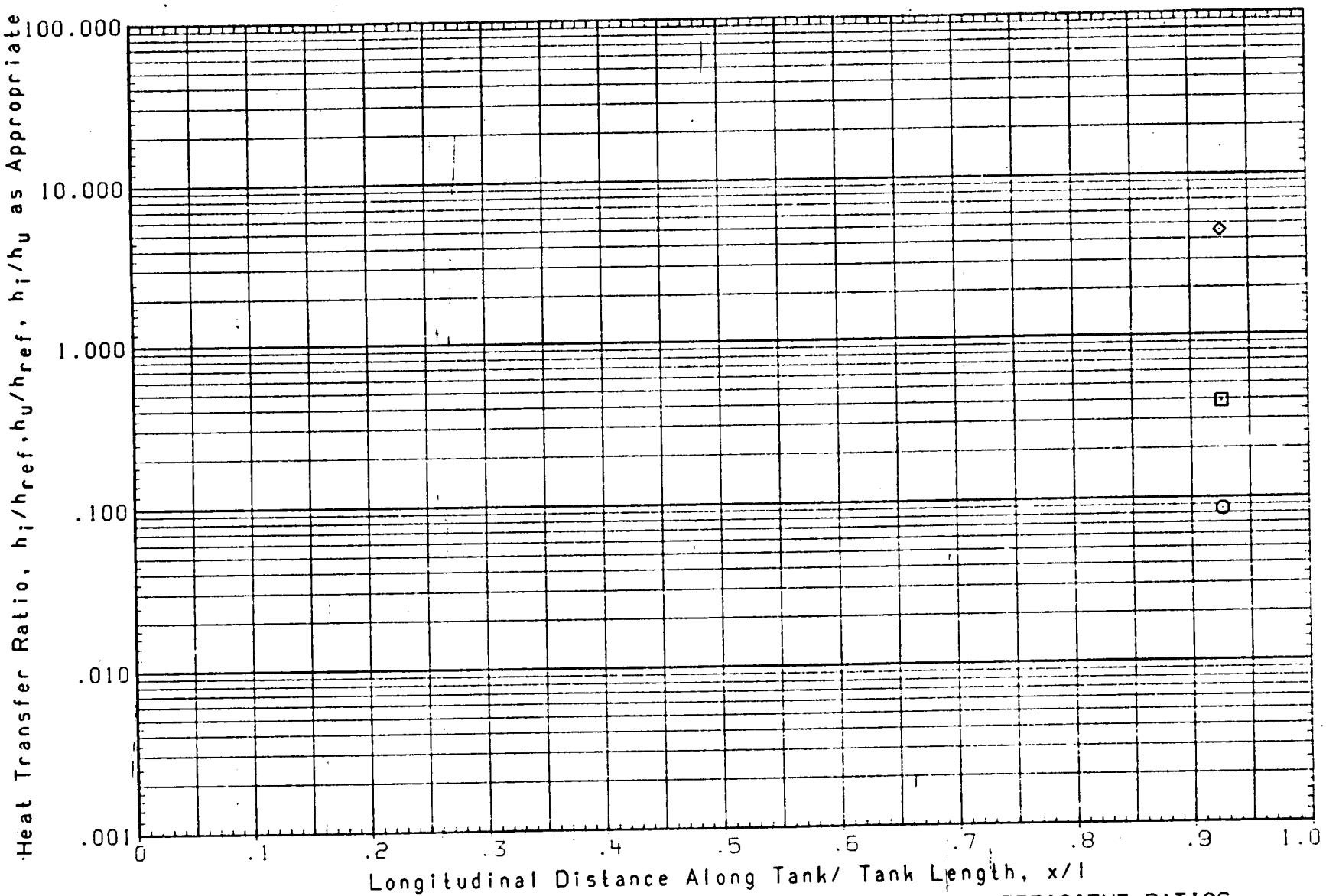


FIG. 7 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS WINDWARD SIDE, ALPHA = 0, BETA = 0

MACH = 3.010 ALPHA = .005 PHI = 355.180

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT02)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	.000
(LVFT22)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	.000
(BVFT22)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	.000

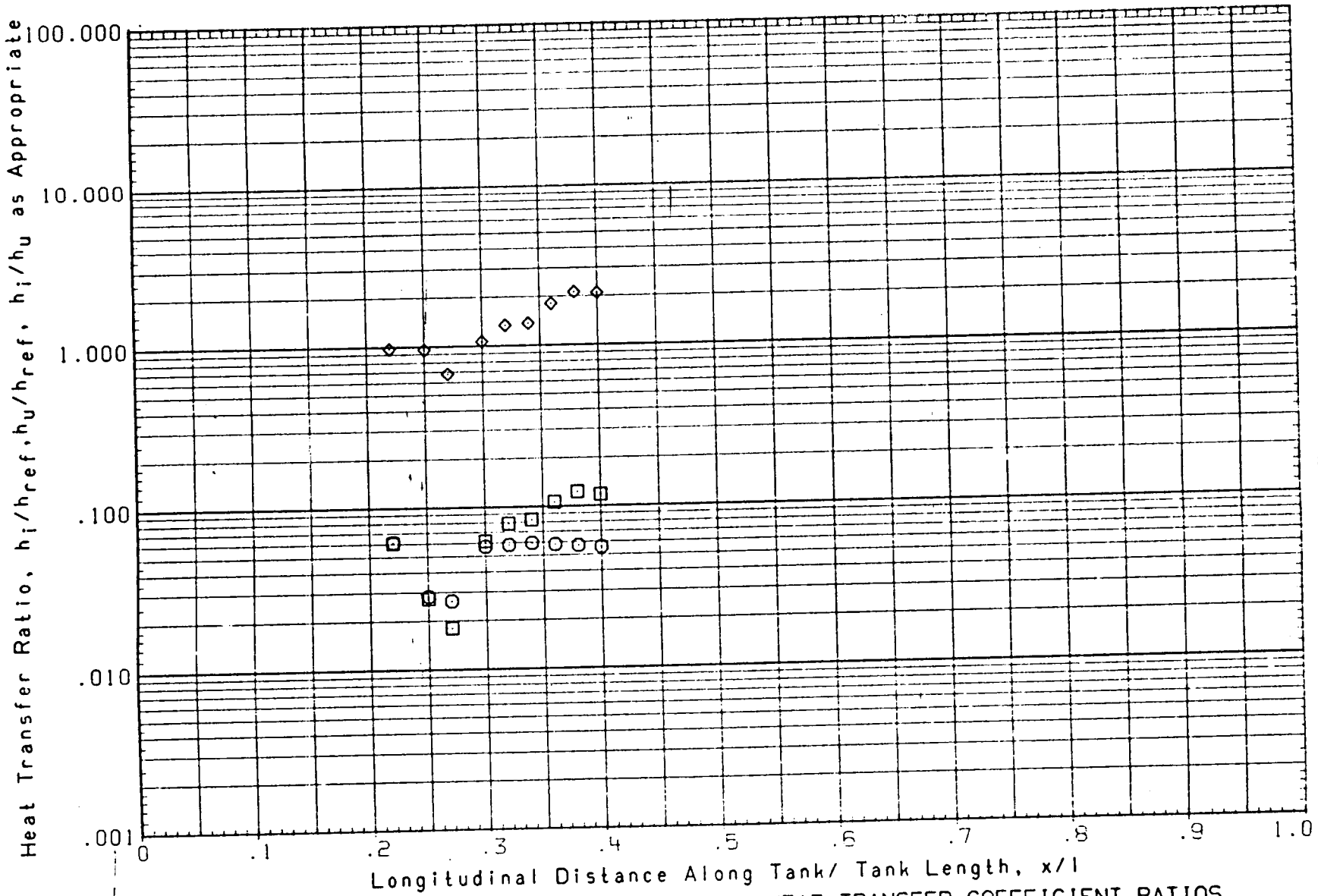


FIG. 7 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = 0

MACH = 4.020 ALPHA = .000 PHI = 255.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT02)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	.000
(LVFT22)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	.000
(BVFT22)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	.000

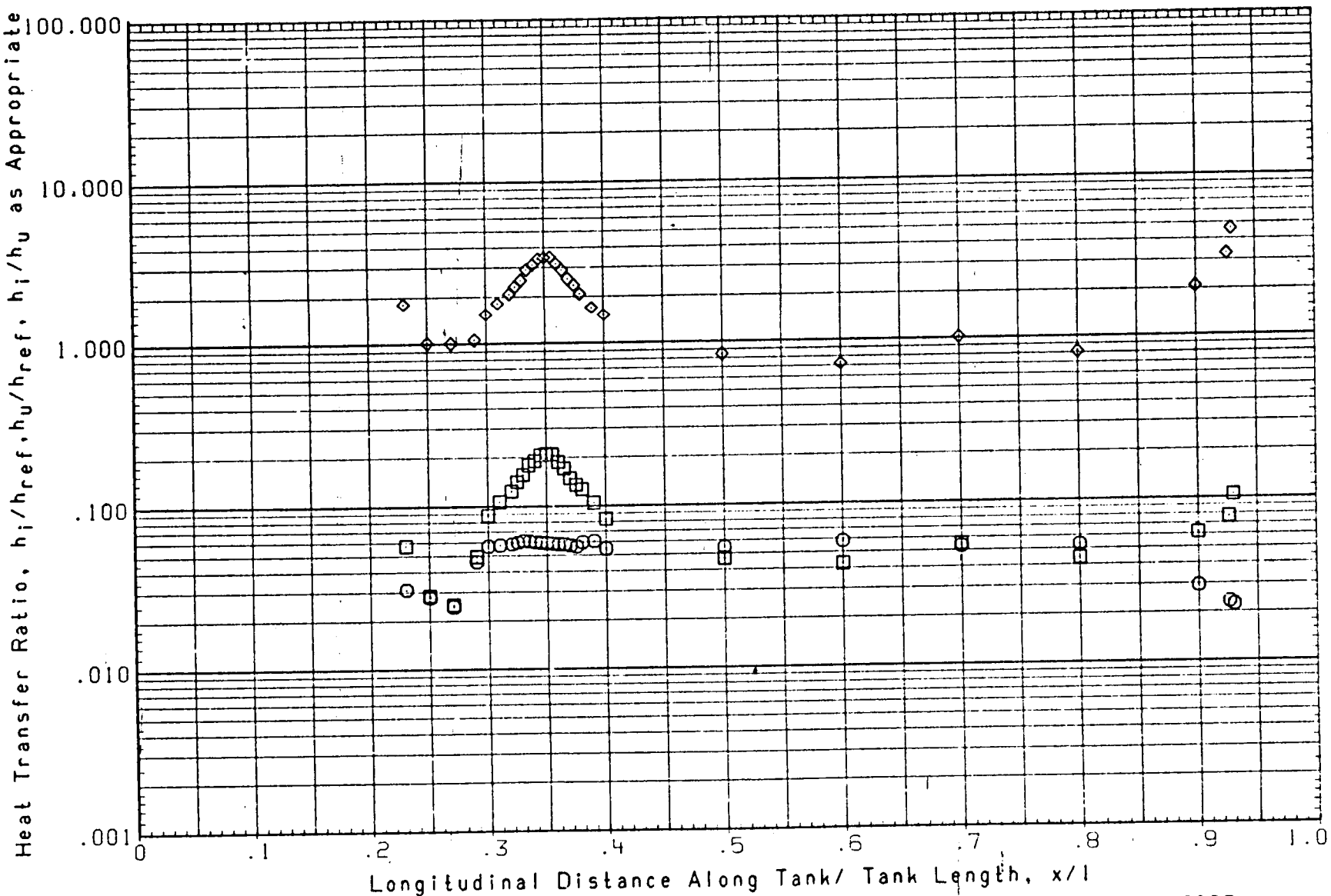


FIG. 7 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = 0

MACH = 4.020 ALPHA = .000 PHI = 247.500

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT02)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	.000
(LVFT22)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	.000
(BVFT22)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	.000

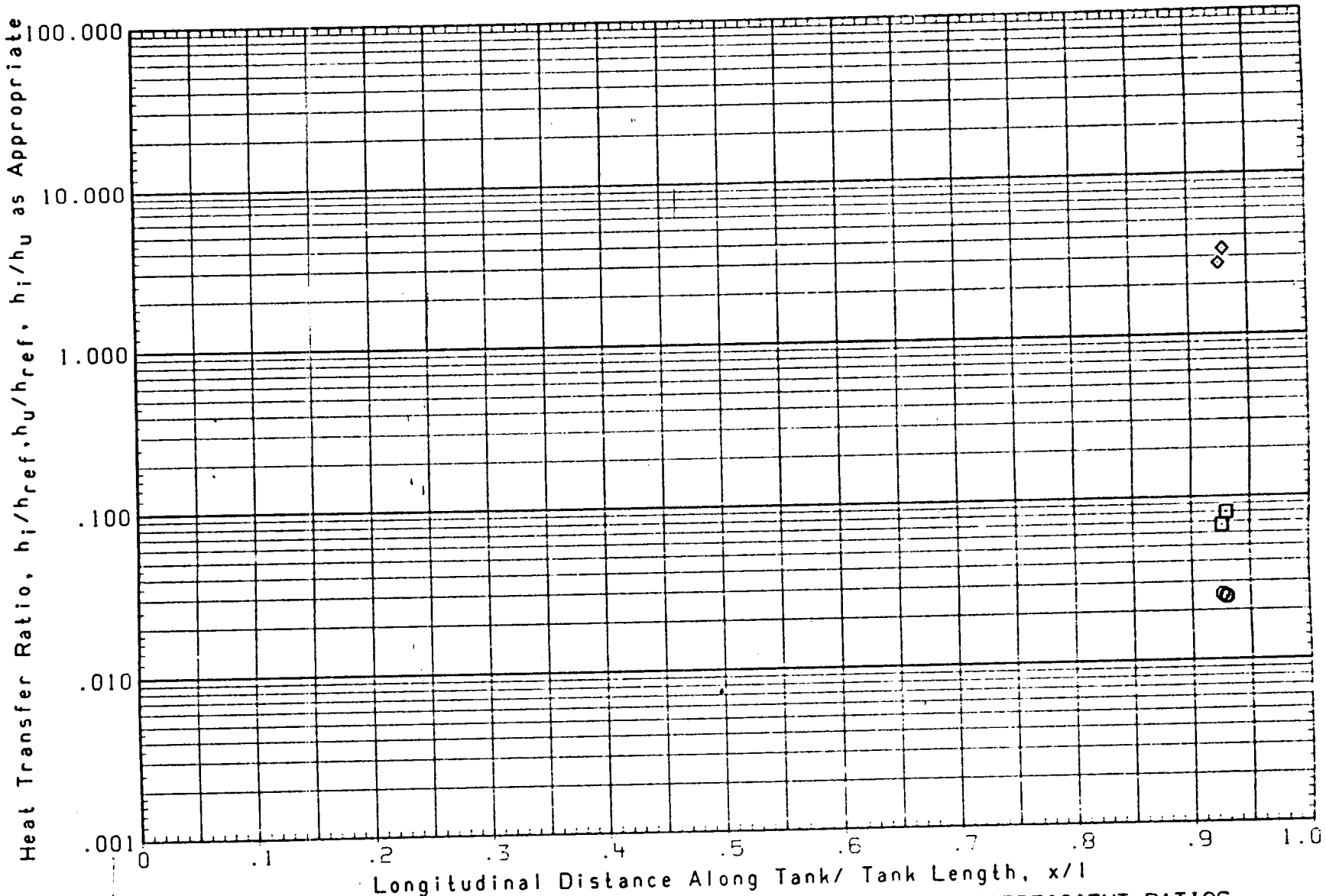


FIG. 7 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = 0

MACH = 4.020 ALPHA = .000 PHI = 250.570

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT02)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	.000
(LVFT22)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	.000
(BVFT22)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	.000

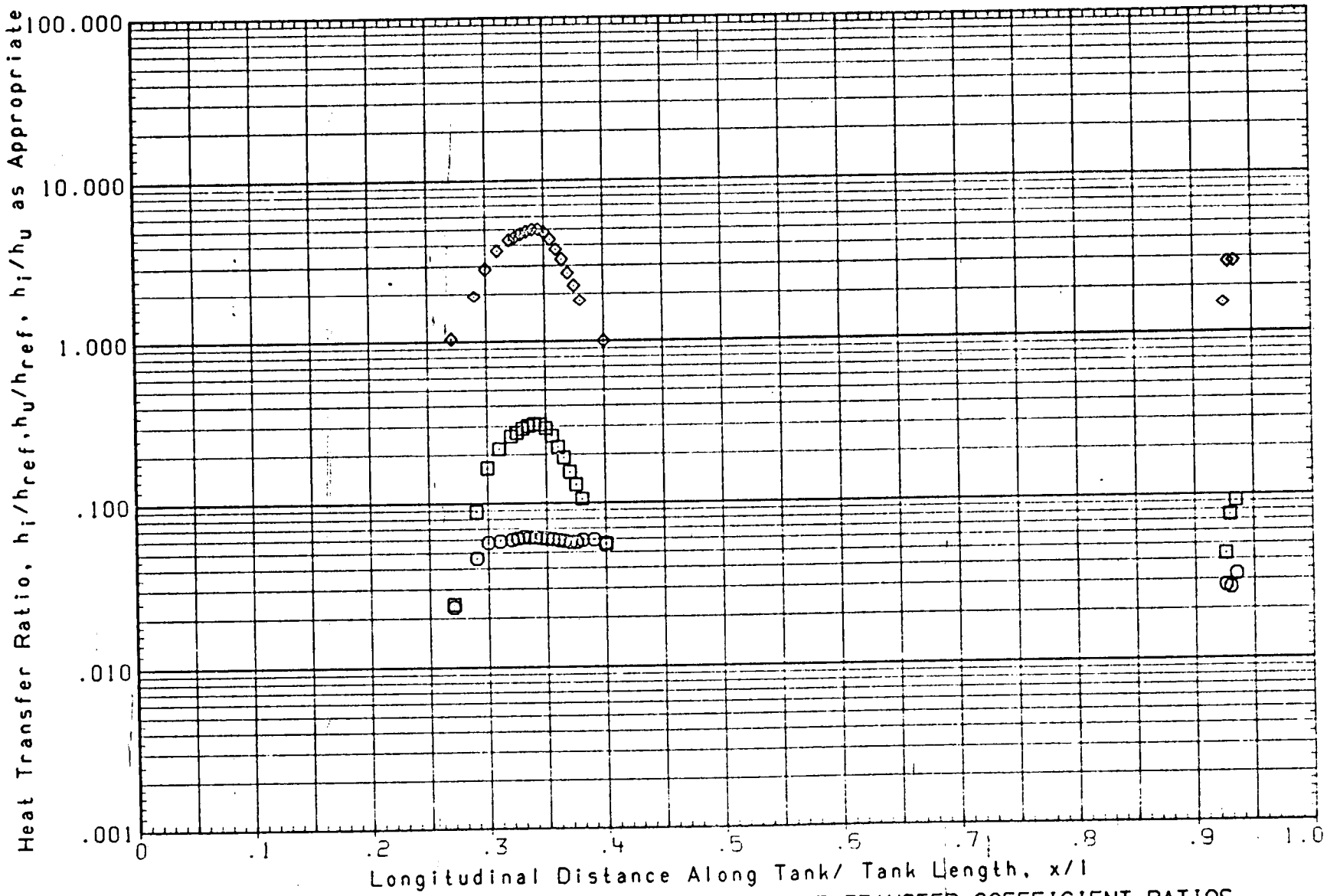


FIG. 7 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = 0

MACH = 4.020 ALPHA = .000 PHI = 259.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT02)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	.000
(LVFT22)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	.000
(BVFT22)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	.000

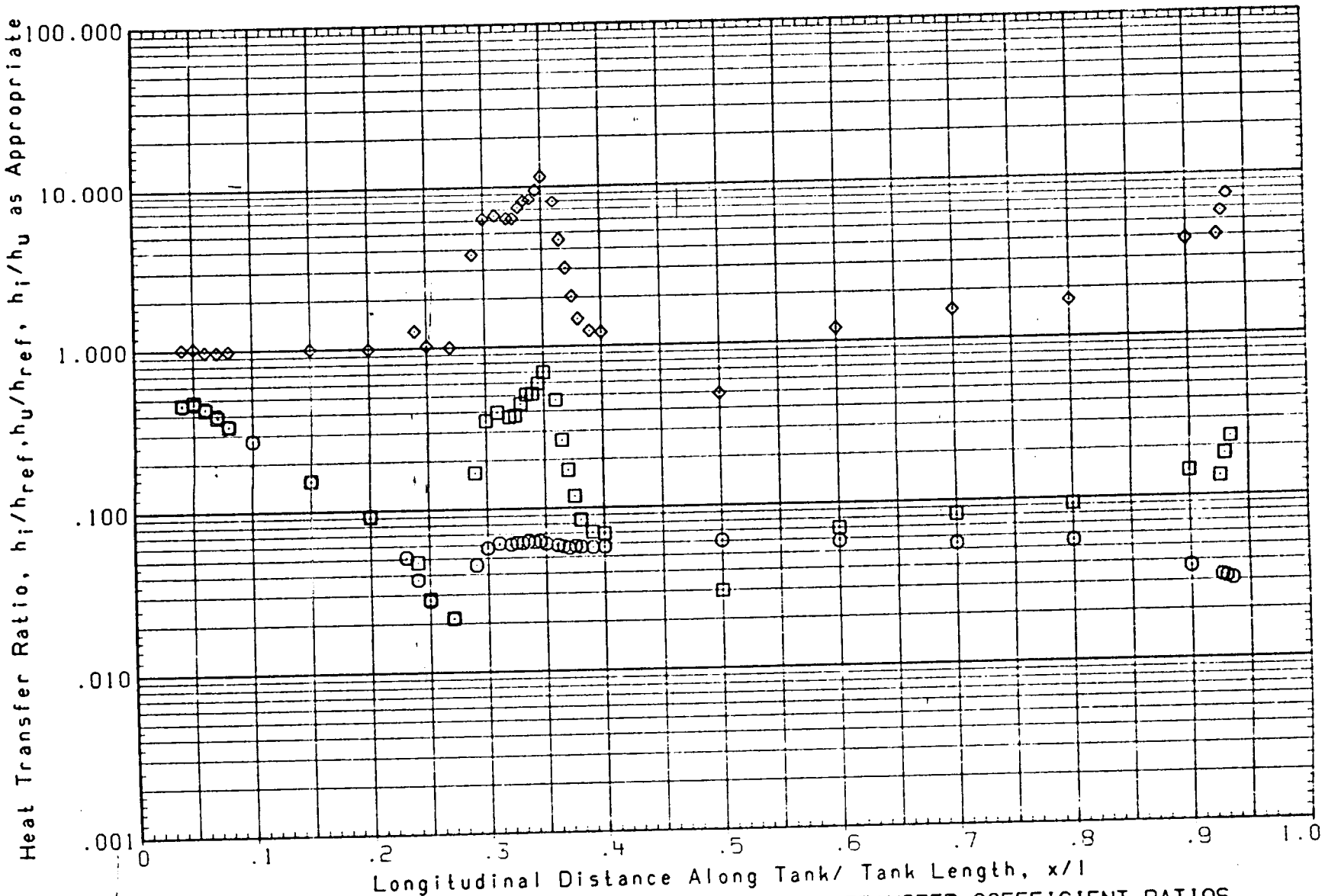


FIG. 7 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = 0

MACH = 4.020 ALPHA = .000 PHI = 270.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT02)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	.000
(LVFT22)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	.000
(BVFT22)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	.000

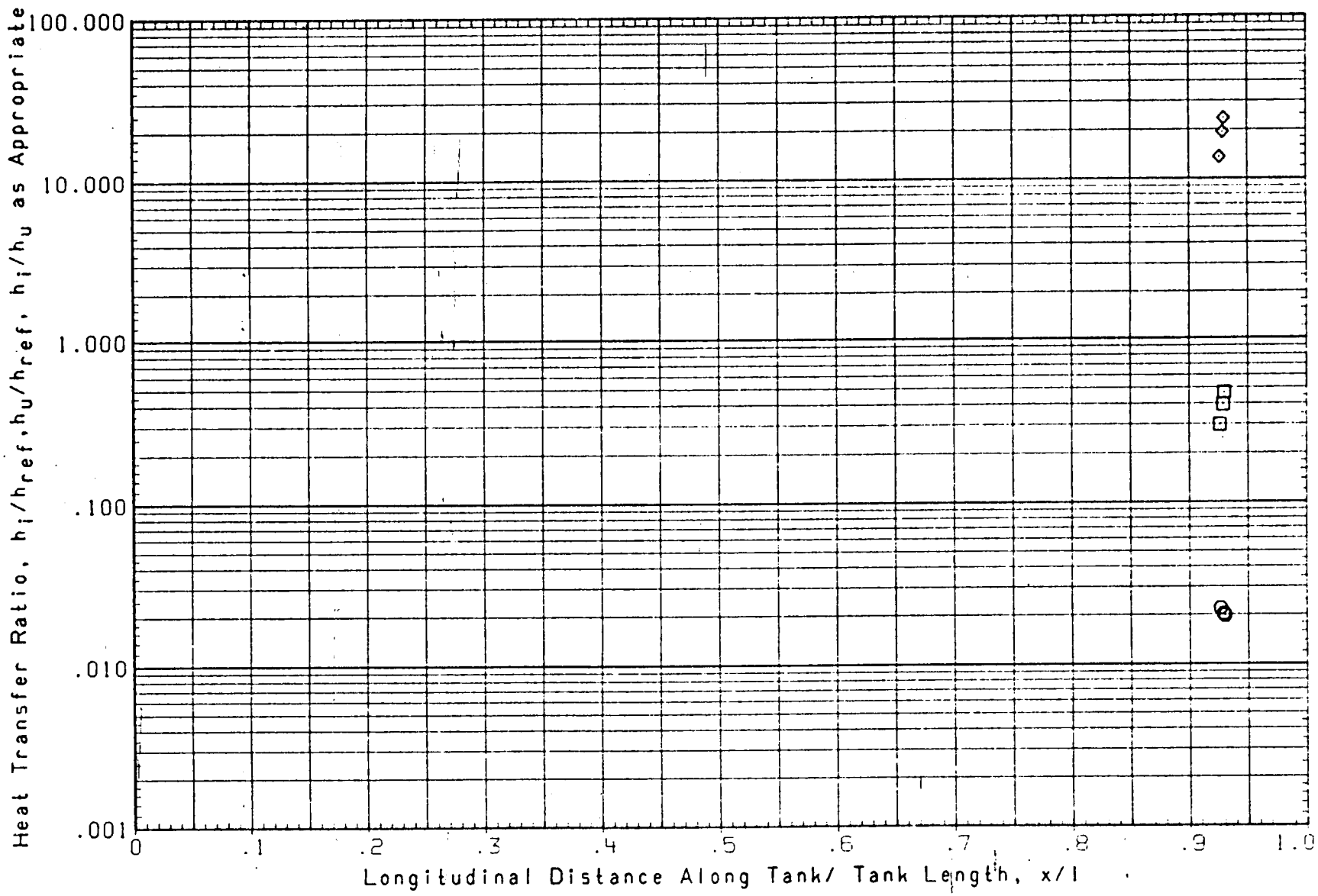


FIG. 7 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = 0

MACH = 4.020 ALPHA = .000 PHI = 289.430

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT02)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	.000
(LVFT22)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	.000
(BVFT22)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	.000

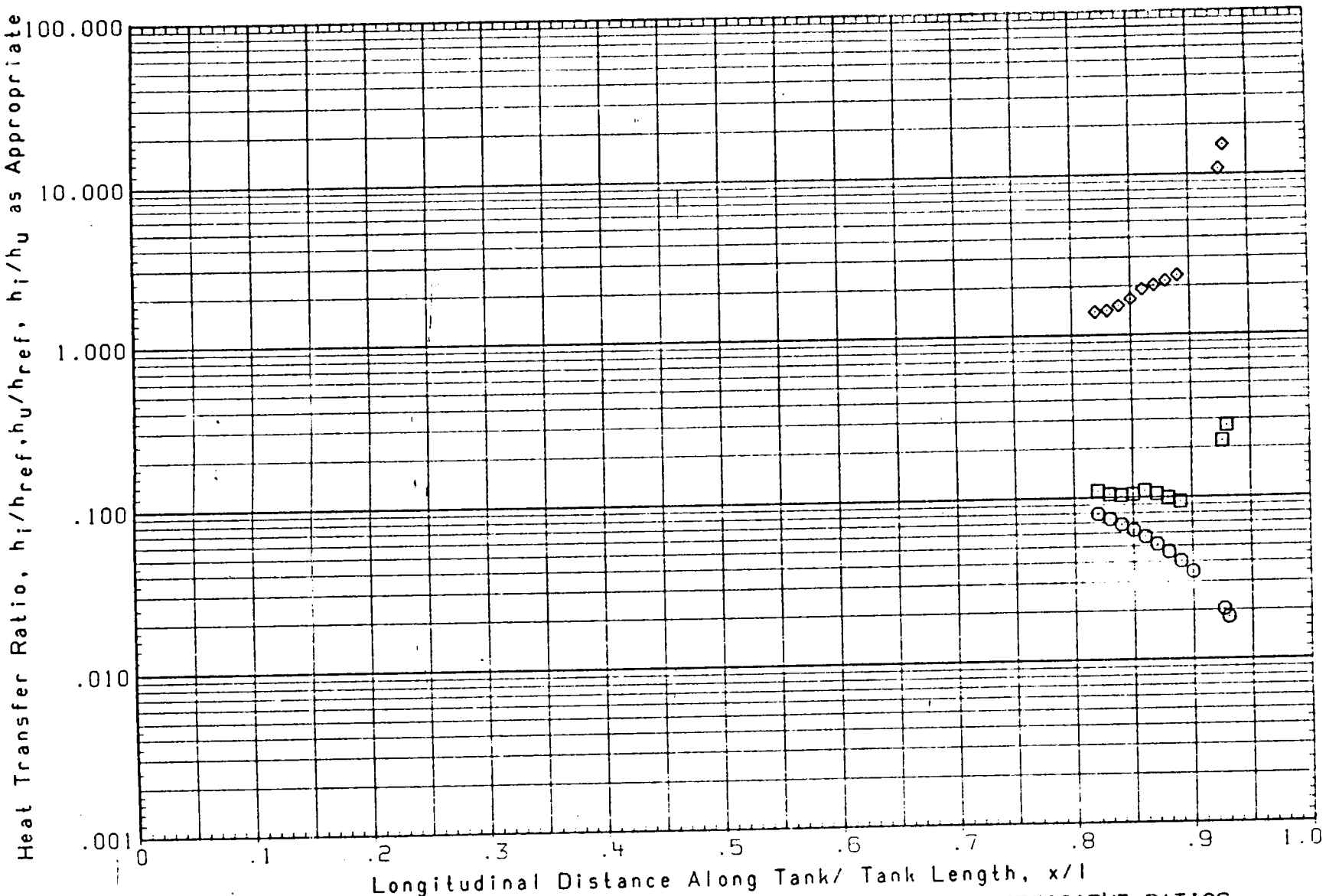


FIG. 7 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = 0

MACH = 4.020 ALPHA = .000 PHI = 293.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT02)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	.000
(LVFT22)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	.000
(BVFT22)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	.000

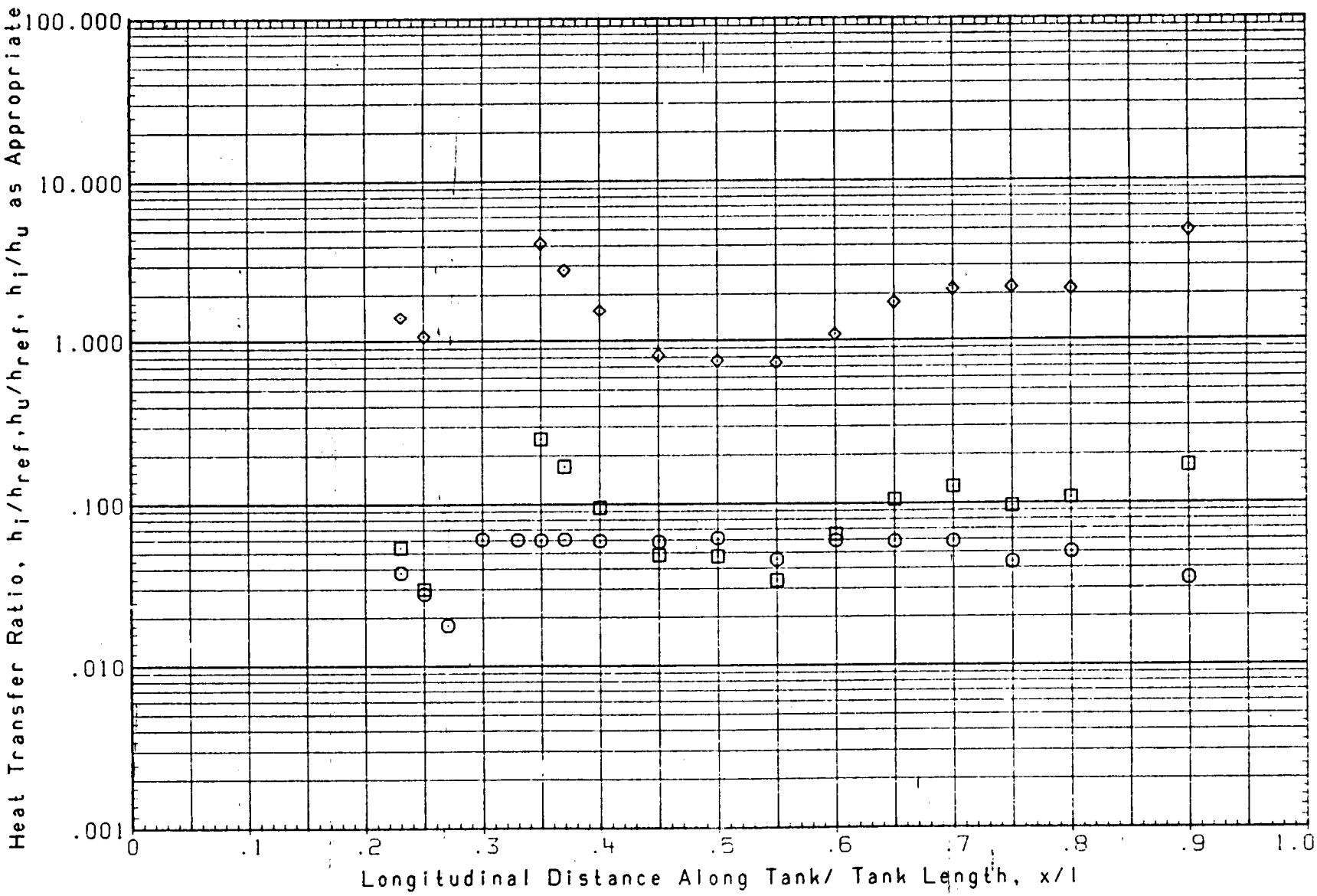


FIG. 7 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = 0

MACH = 4.020 ALPHA = .000 PHI = 292.500

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT02)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	.000
(LVFT22)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	.000
(BVFT22)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	.000

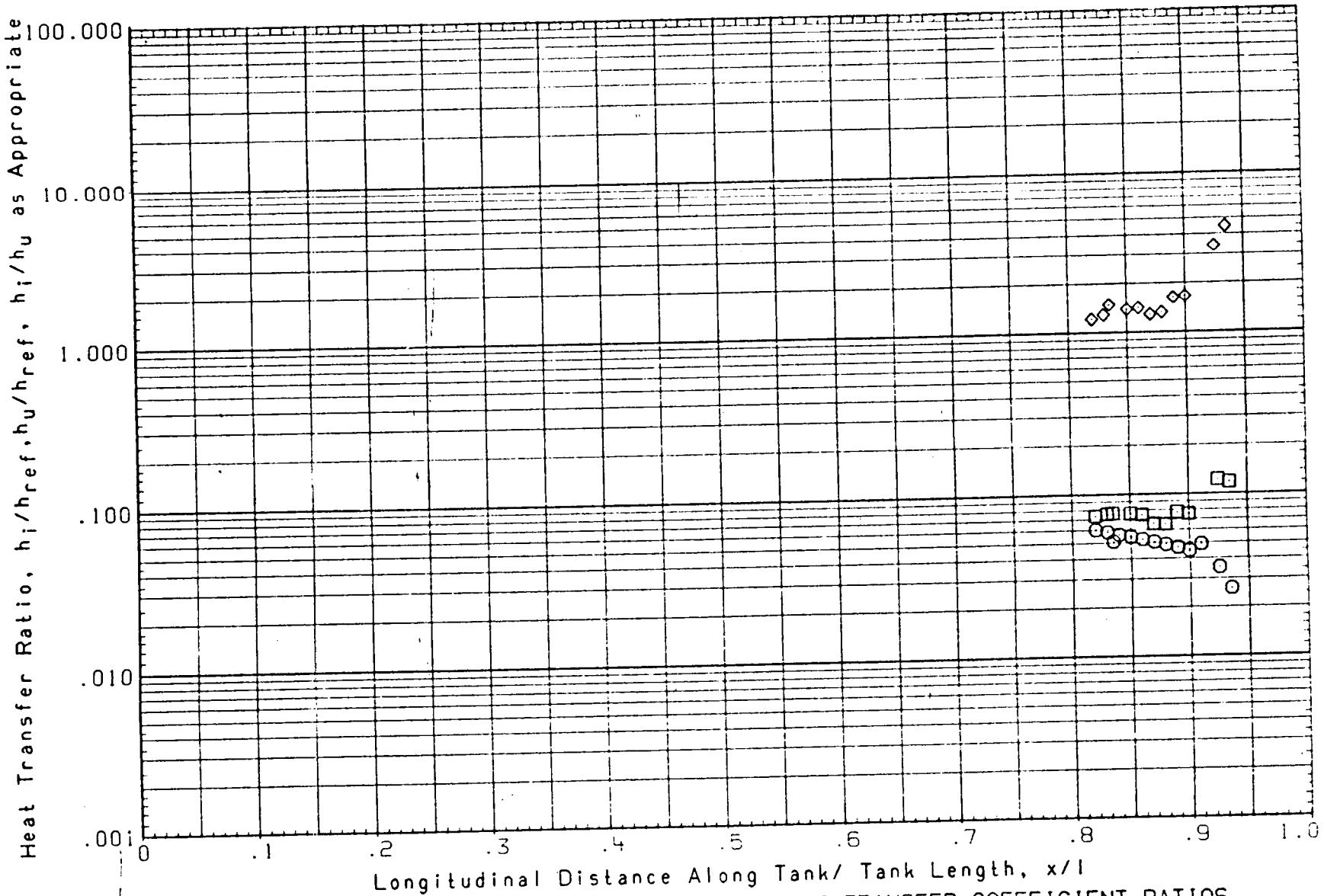


FIG. 7 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = 0

MACH = 4.020 ALPHA = .000 PHI = 301.500

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT02)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	.000
(LVFT22)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	.000
(BVFT22)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	.000

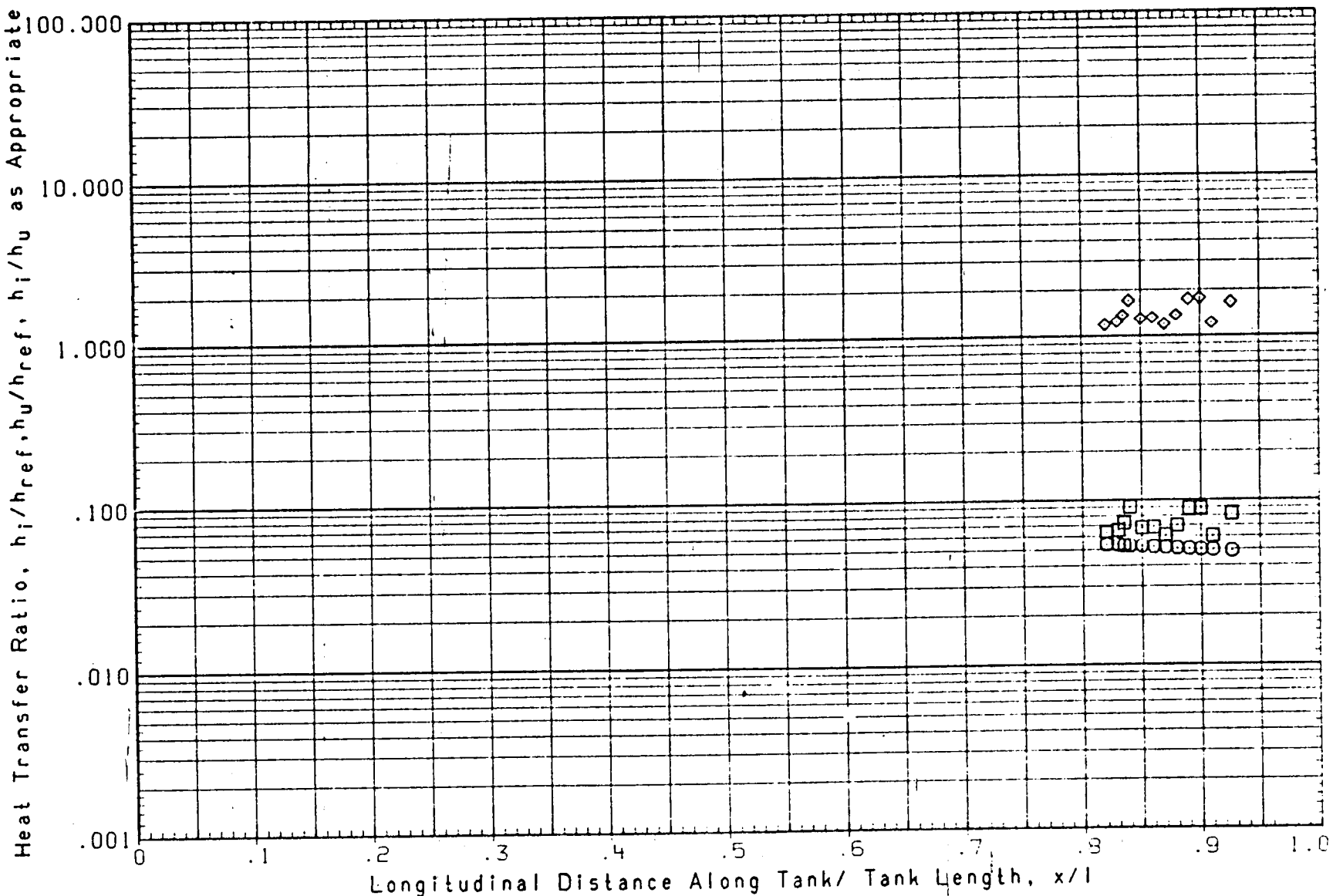


FIG. 7 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS WINDWARD SIDE, ALPHA = 0, BETA = 0

MACH = 4.020 ALPHA = .000 PHI = 305.400

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT02)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	.000
(LVFT22)	□	IH41B(V41A-A4A: O T S (SPIKED ET DATA) HI/HREF	.000	.000
(BVFT22)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	.000

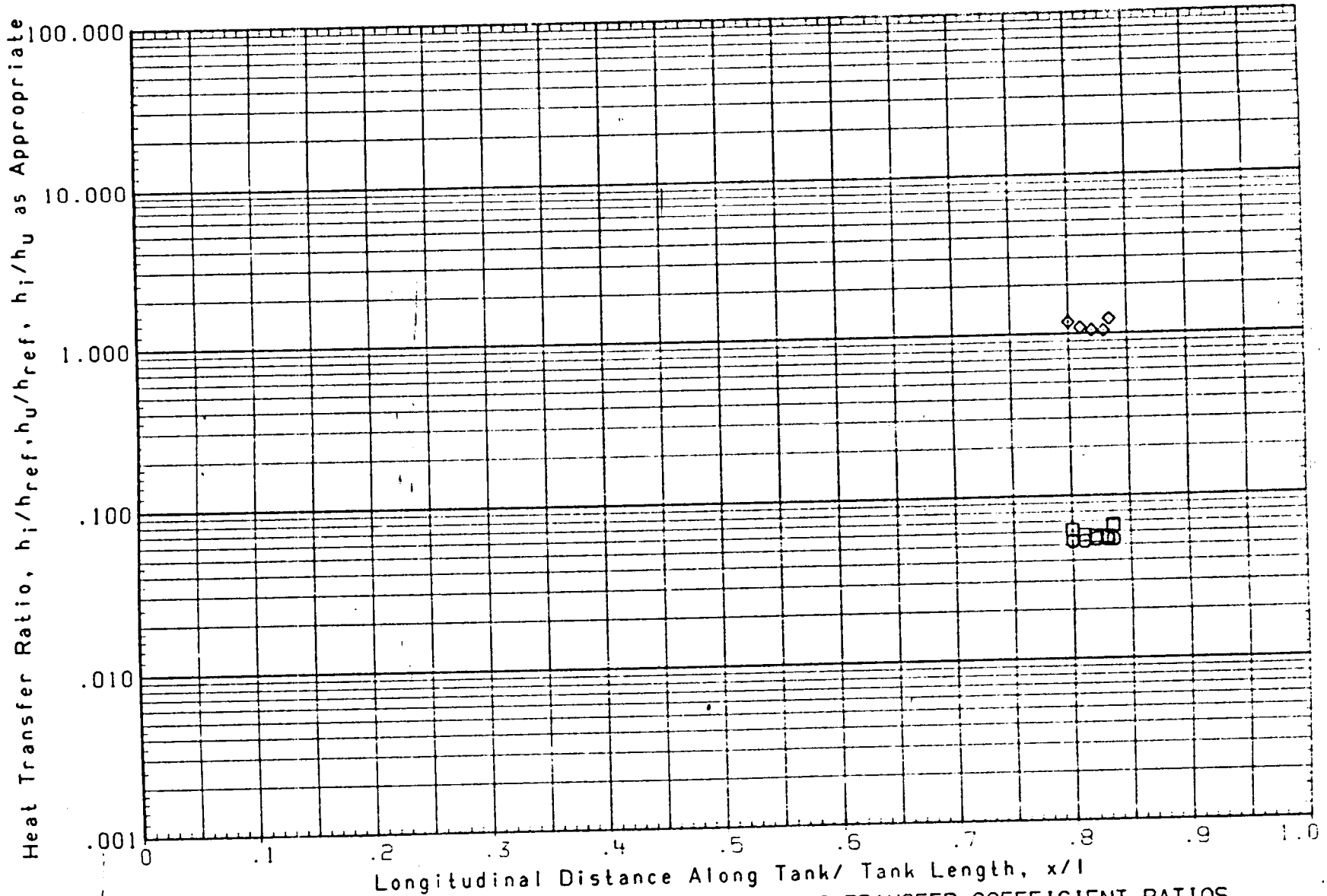


FIG. 7 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = 0

MACH = 4.020 ALPHA = .000 PHI = 309.300

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT02)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	.000
(LVFT22)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	.000
(BVFT22)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	.000

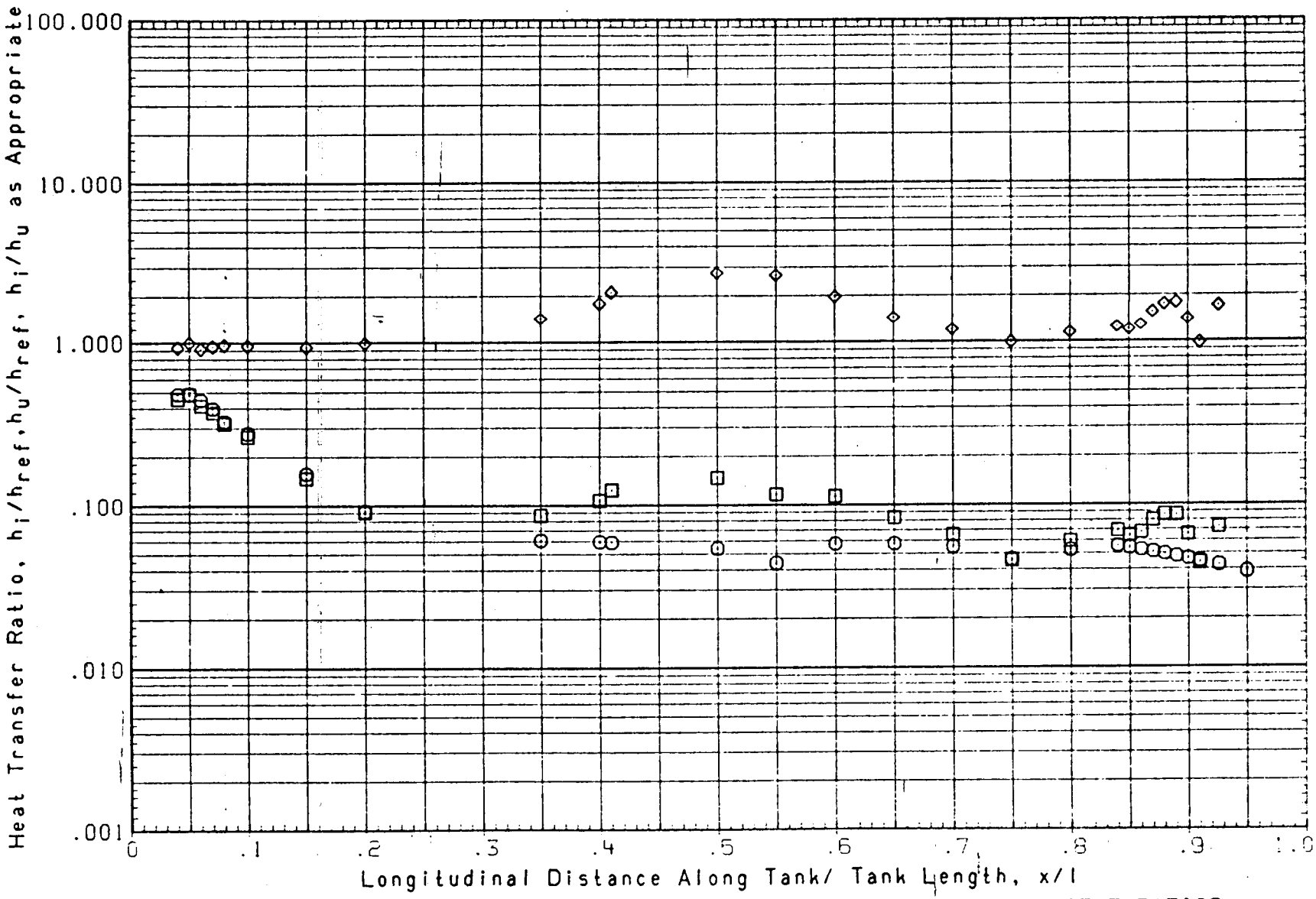


FIG. 7 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = 0

MACH = 4.020 ALPHA = .000 PHI = 315.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT02)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	.000
(LVFT22)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	.000
(BVFT22)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	.000

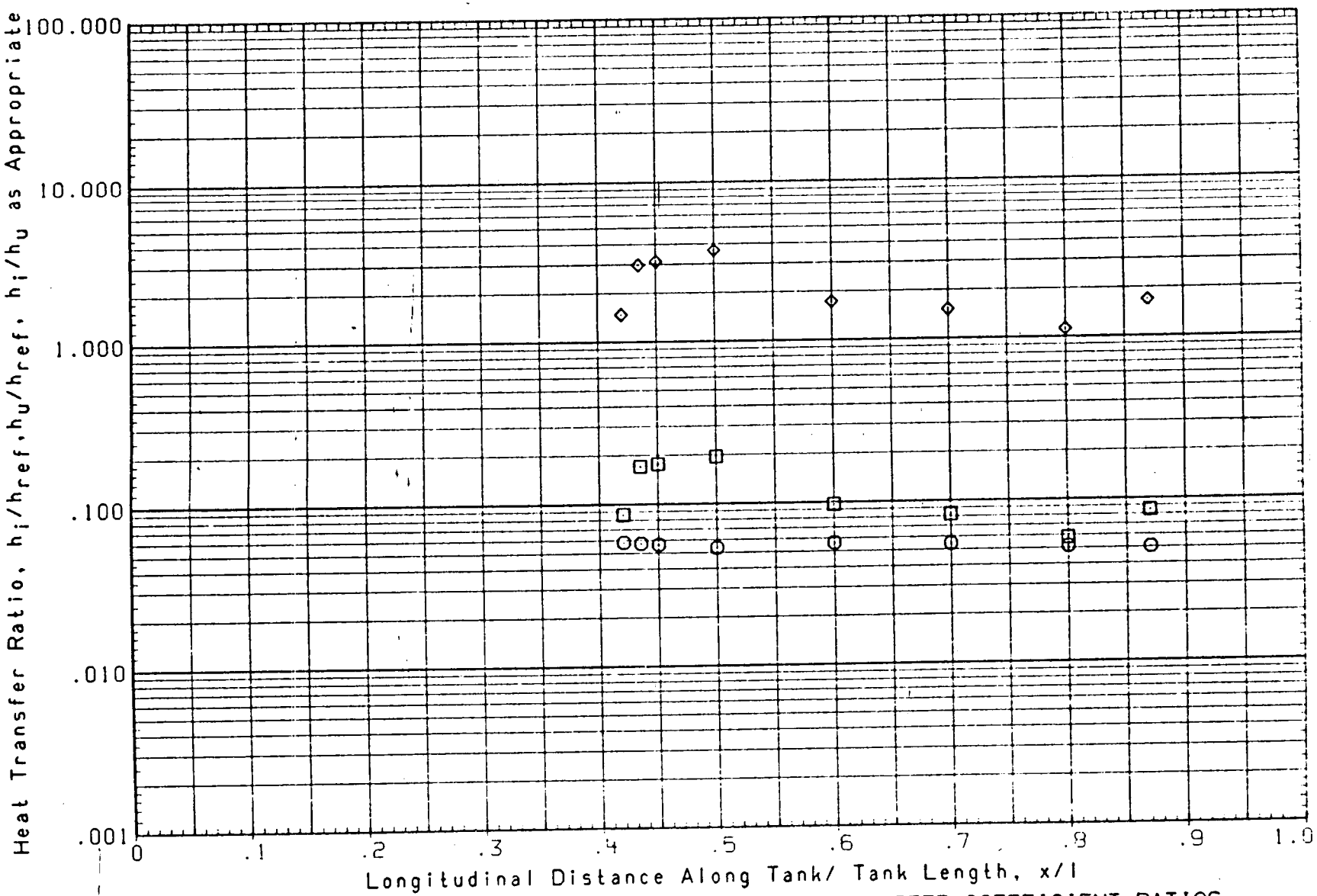


FIG. 7 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = 0

MACH = 4.020 ALPHA = .000 PHI = 322.200

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT02)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	.000
(LVFT22)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	.000
(BVFT22)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	.000

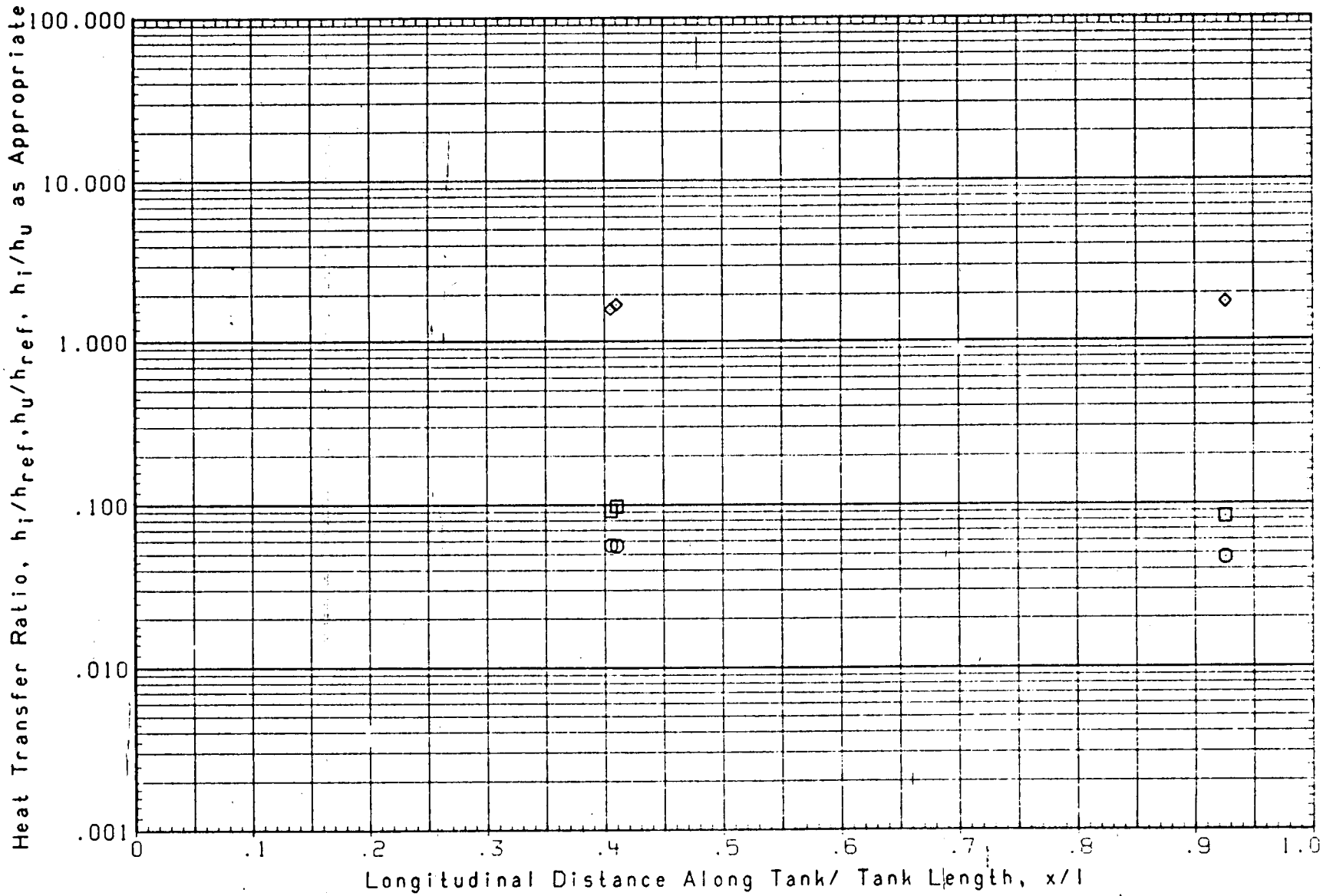


FIG. 7 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = 0

MACH = 4.020 ALPHA = .000 PHI = 324.450

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT02)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	.000
(LVFT22)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	.000
(BVFT22)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	.000

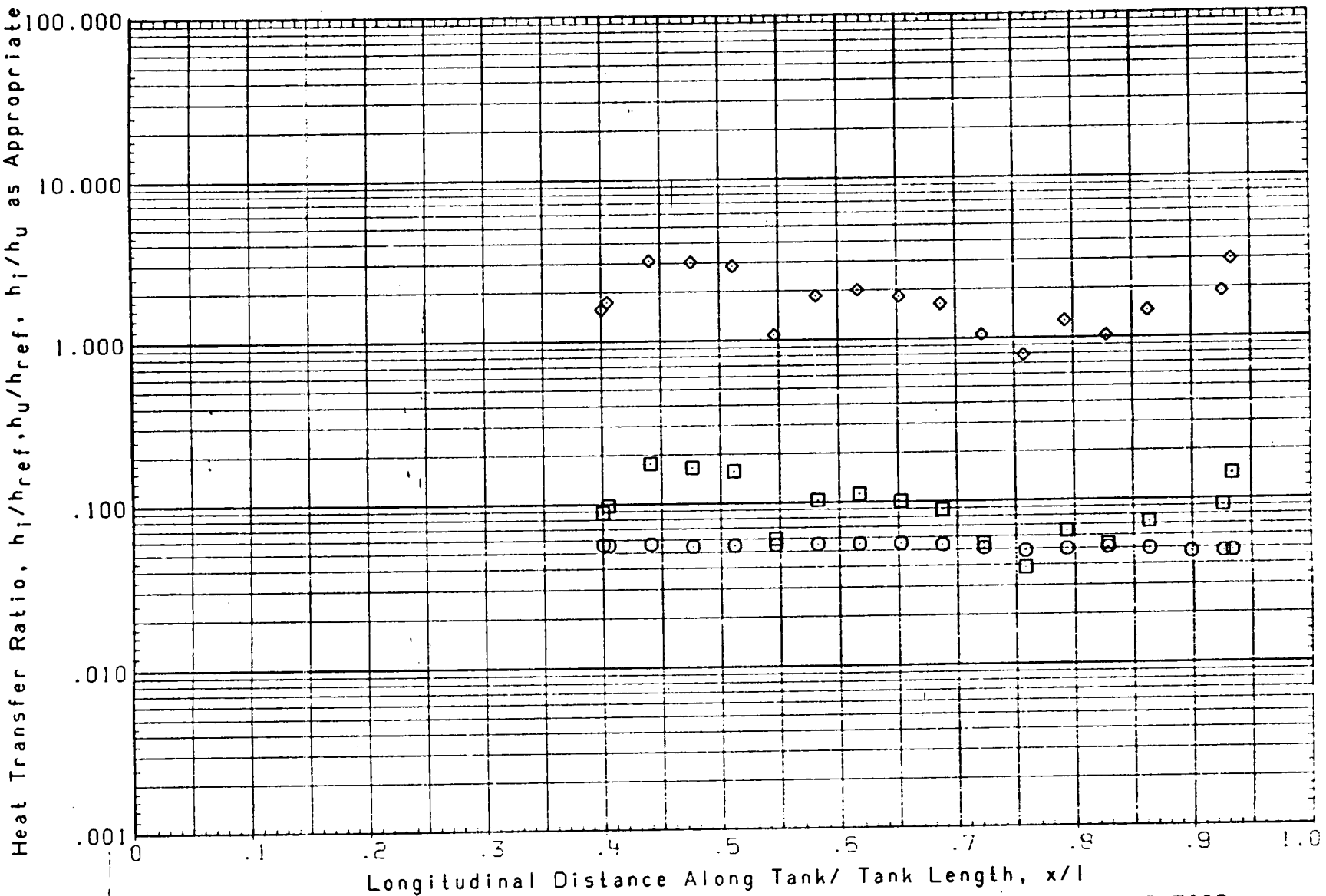


FIG. 7 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = 0

MACH = 4.020 ALPHA = .000 PHI = [illegible]

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT02)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	.000
(LVFT22)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	.000
(BVFT22)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	.000

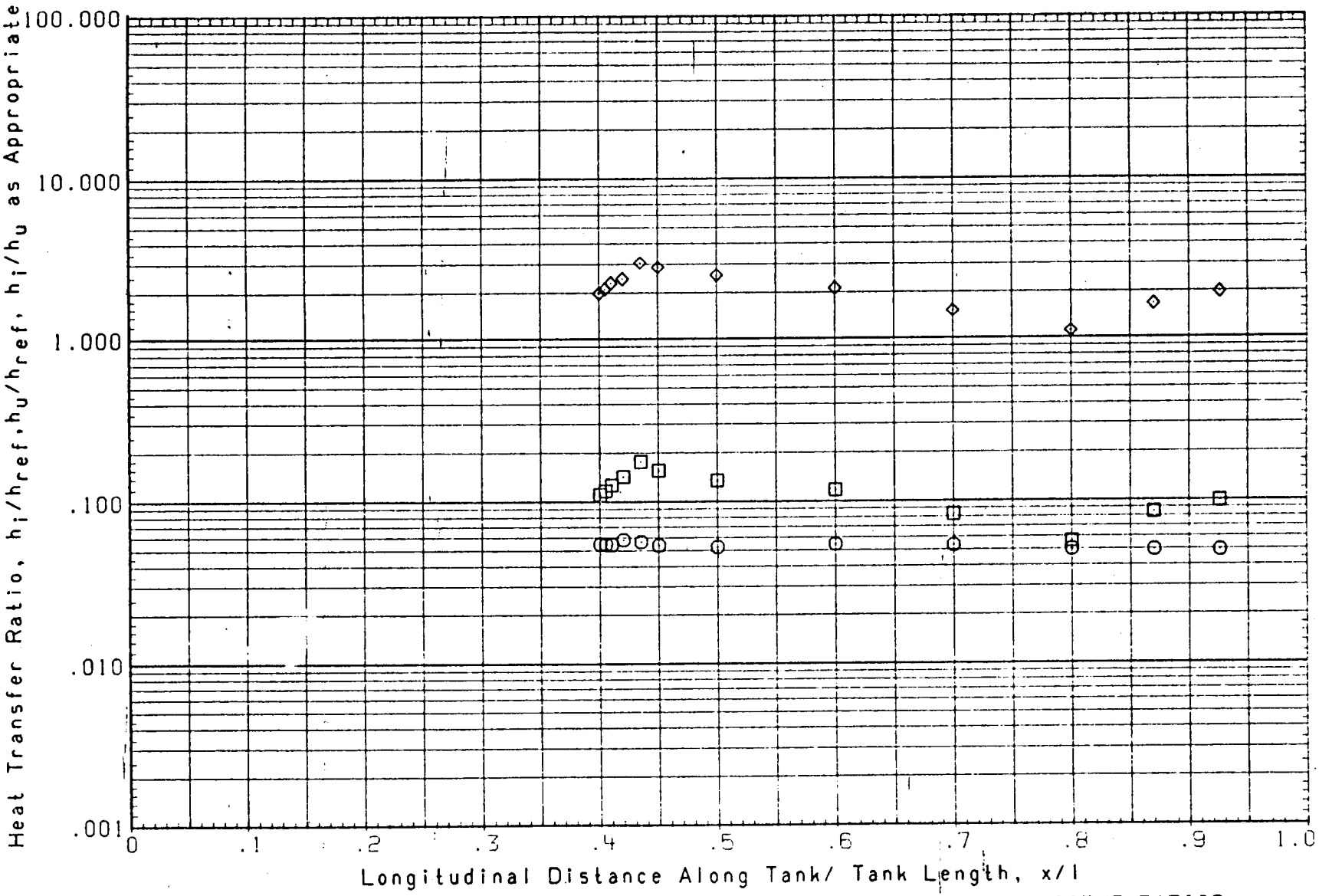


FIG. 7 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = 0

MACH = 4.020 ALPHA = .000 PHI = 330.200

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT02)	○	IH41B(AEDC V4 A-A4A) SPIKED EXTERNAL TANK ALONE	.000	.000
(LVFT22)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	.000
(BVFT22)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	.000

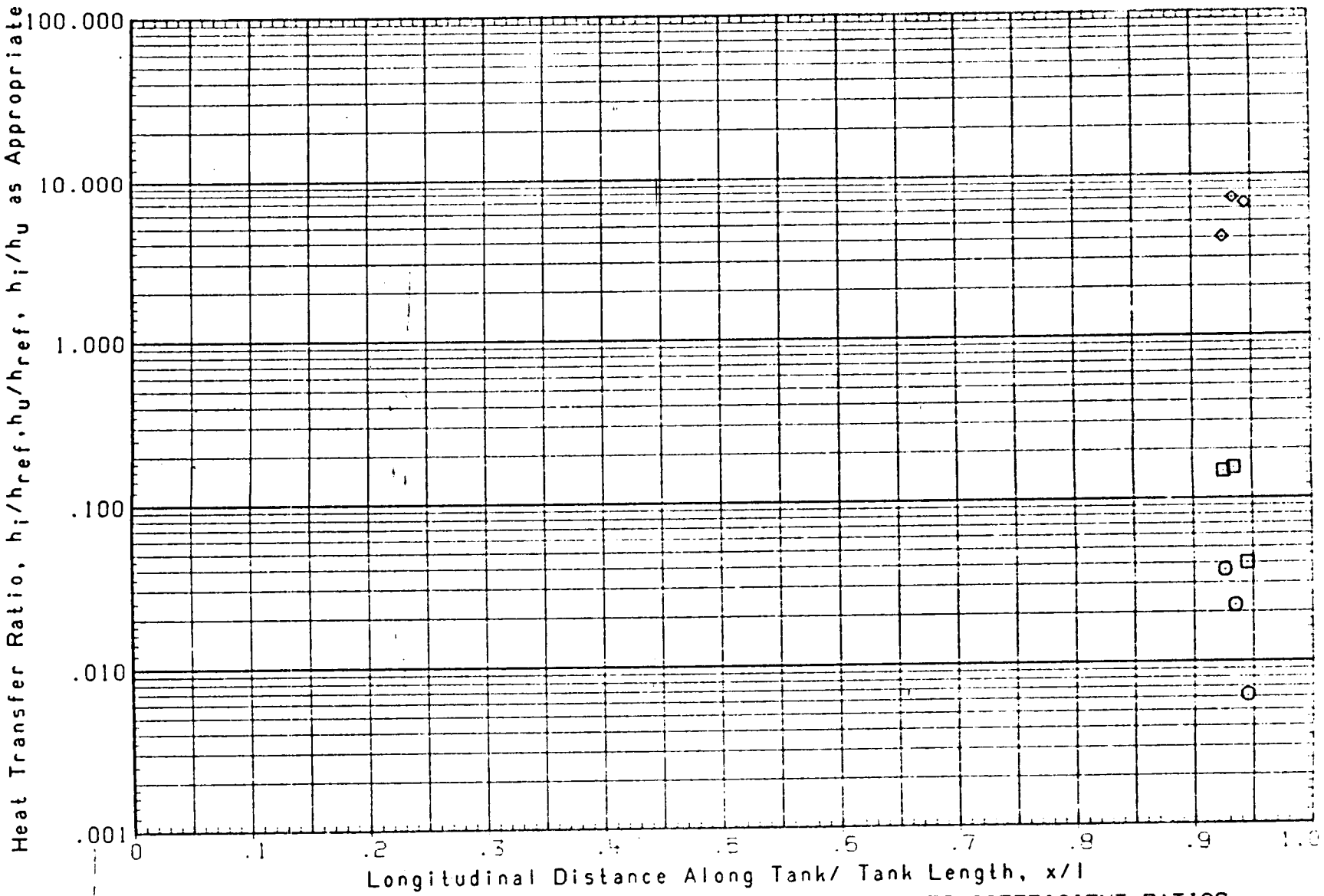


FIG. 7 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = 0

MACH = 4.020 ALPHA = .000 PHI = [illegible]

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT02)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	.000
(LVFT22)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	.000
(BVFT22)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	.000

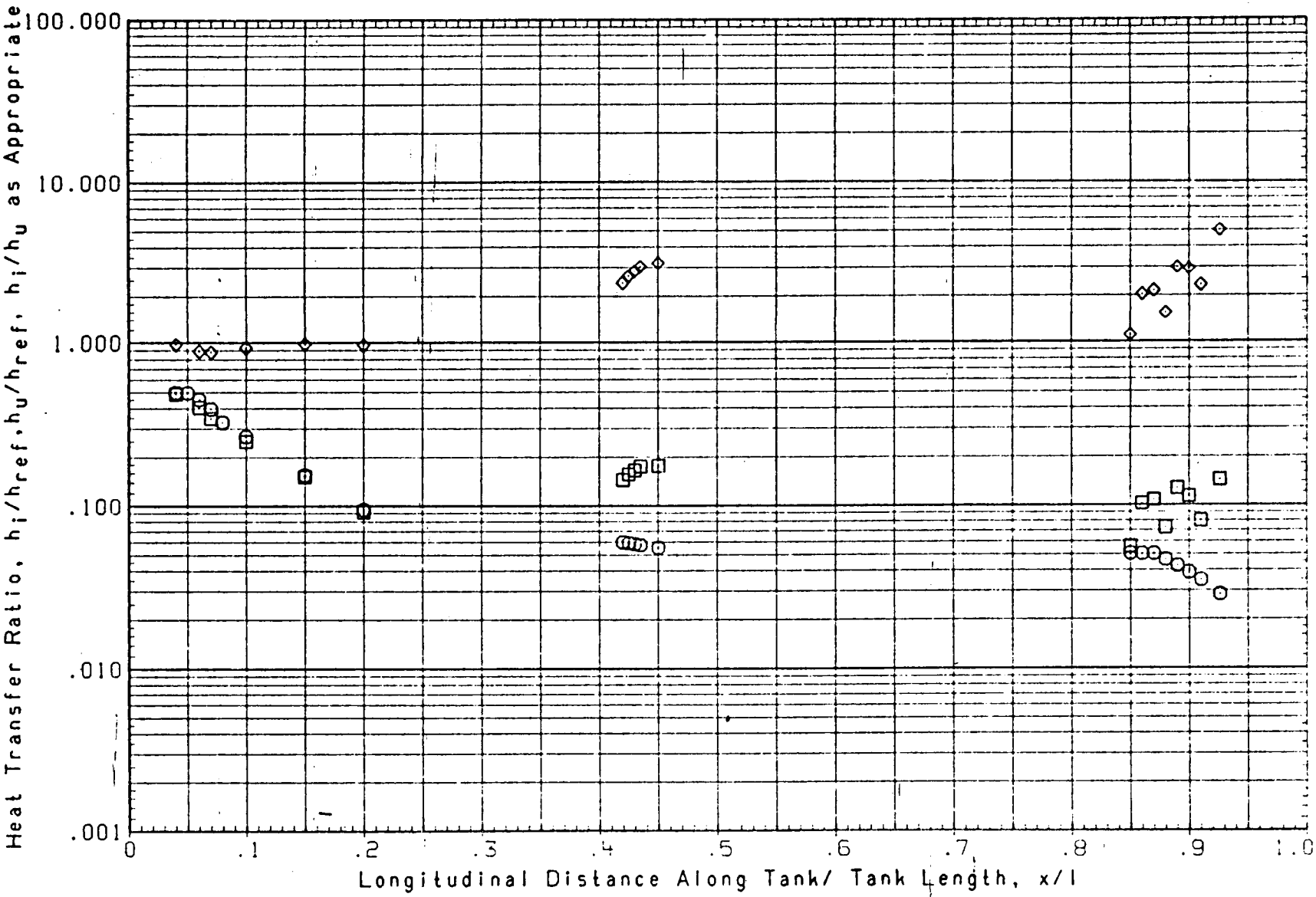


FIG. 7 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = 0

MACH = 4.020 ALPHA = .000 PHI = 337.500

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT02)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	.000
(LVFT22)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	.000
(BVFT22)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	.000

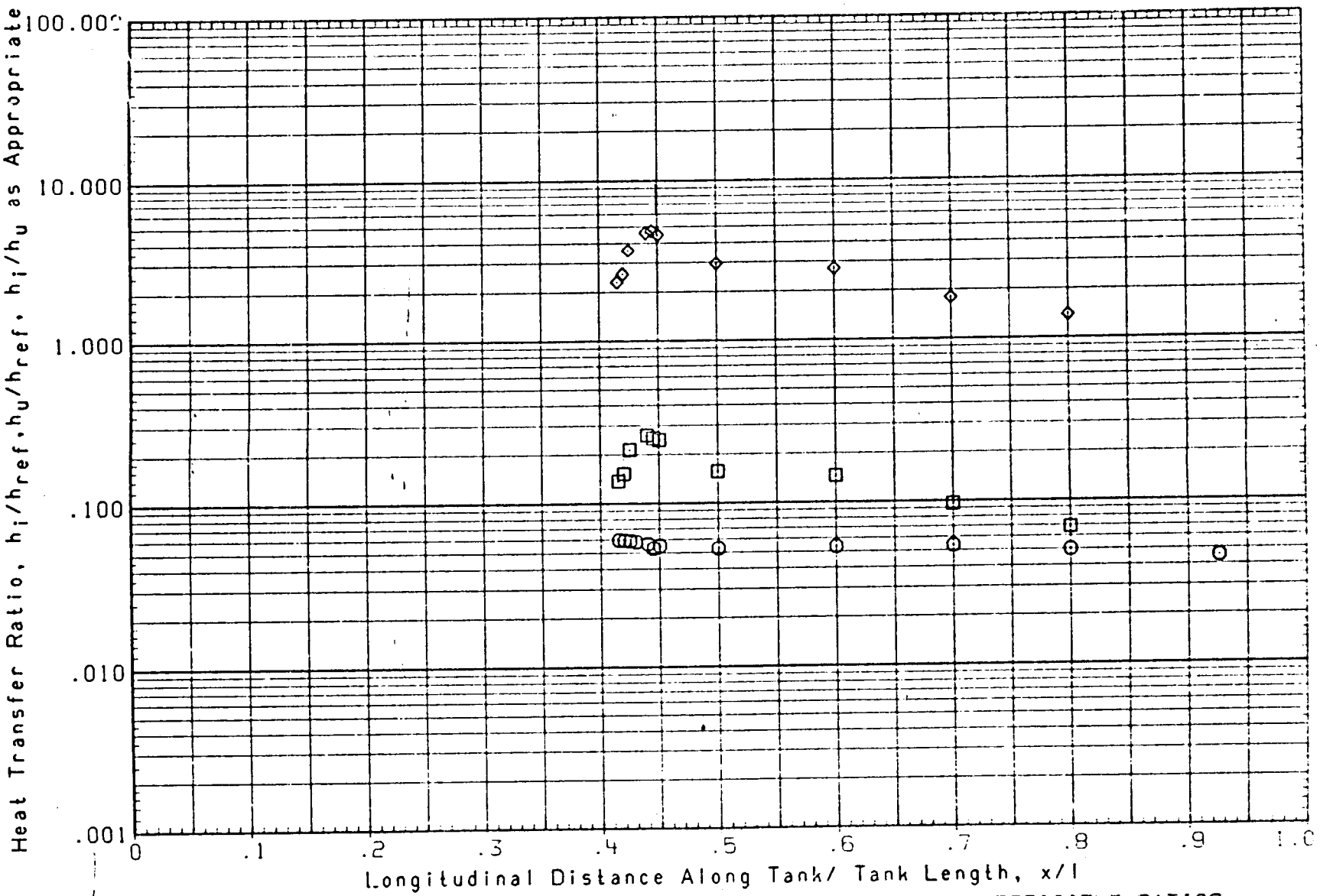


FIG. 7 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = 0

MACH = 4.020 ALPHA = .000 PHI = 343.120

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT02)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	.000
(LVFT22)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	.000
(BVFT22)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	.000

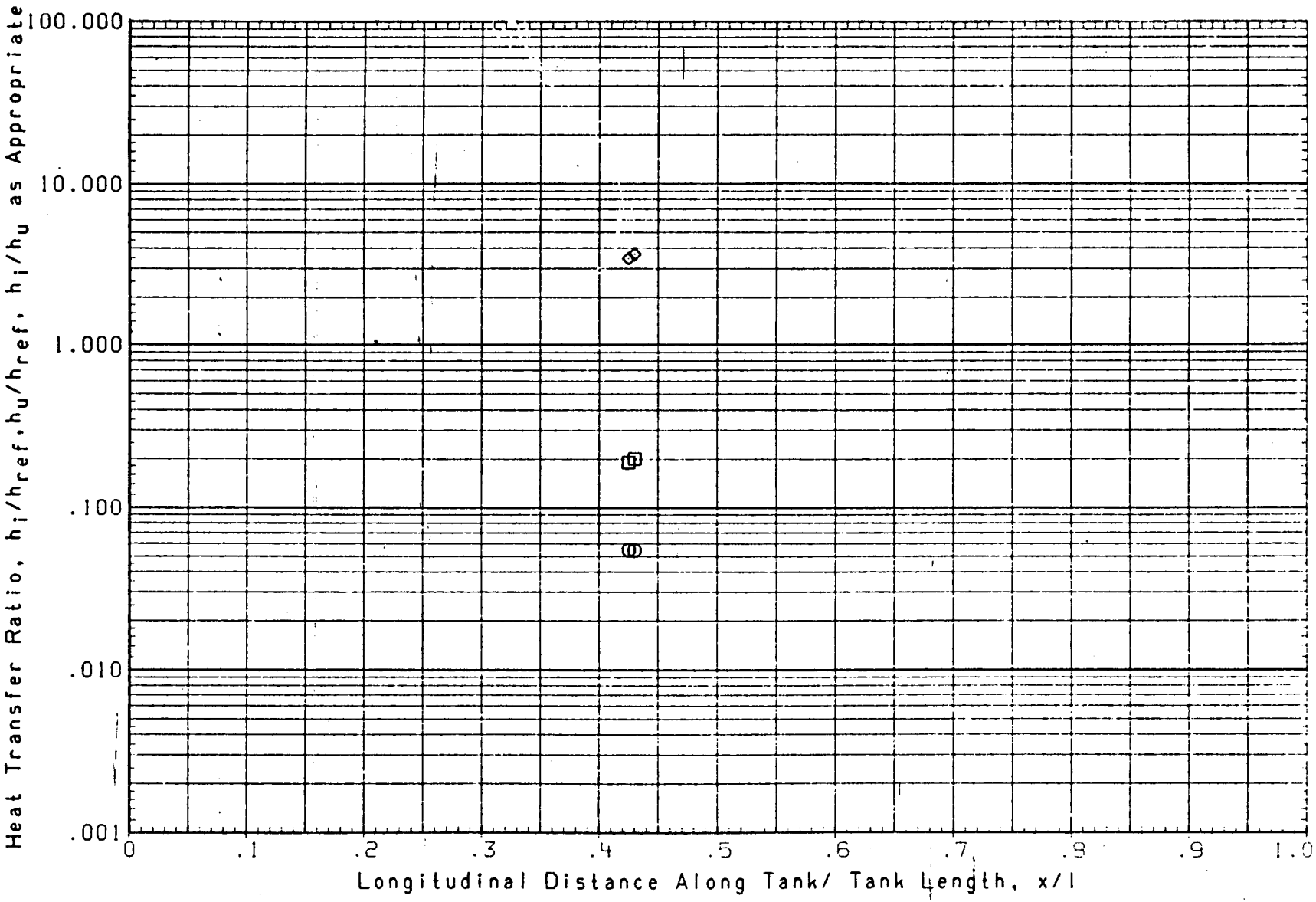


FIG. 7 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = 0

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT02)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	.000
(LVFT22)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	.000
(BVFT22)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	.000

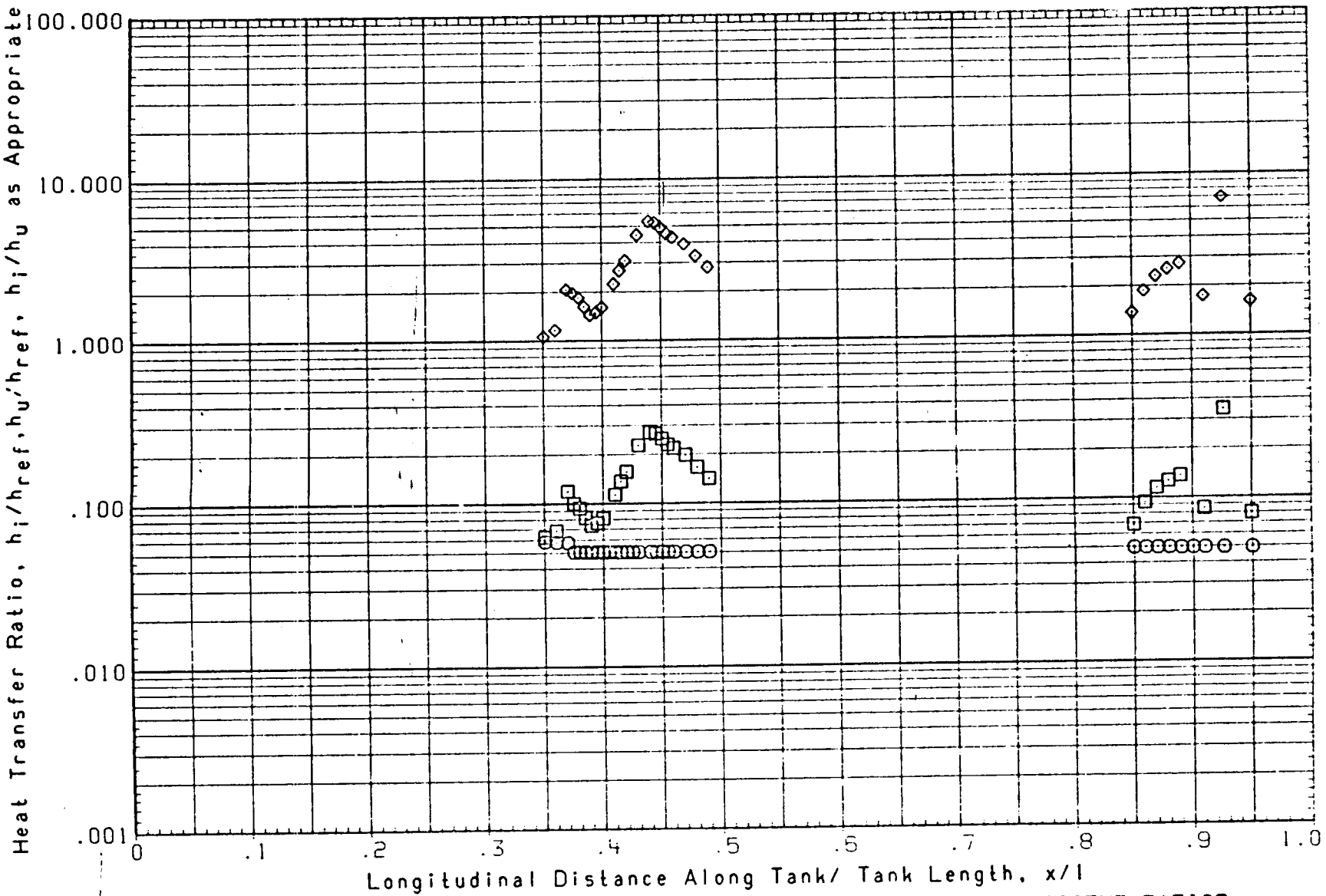


FIG. 7 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = 0

MACH = 4.020 ALPHA = .000 PHI = 349.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT02)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	.000
(LVFT22)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	.000
(BVFT22)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	.000

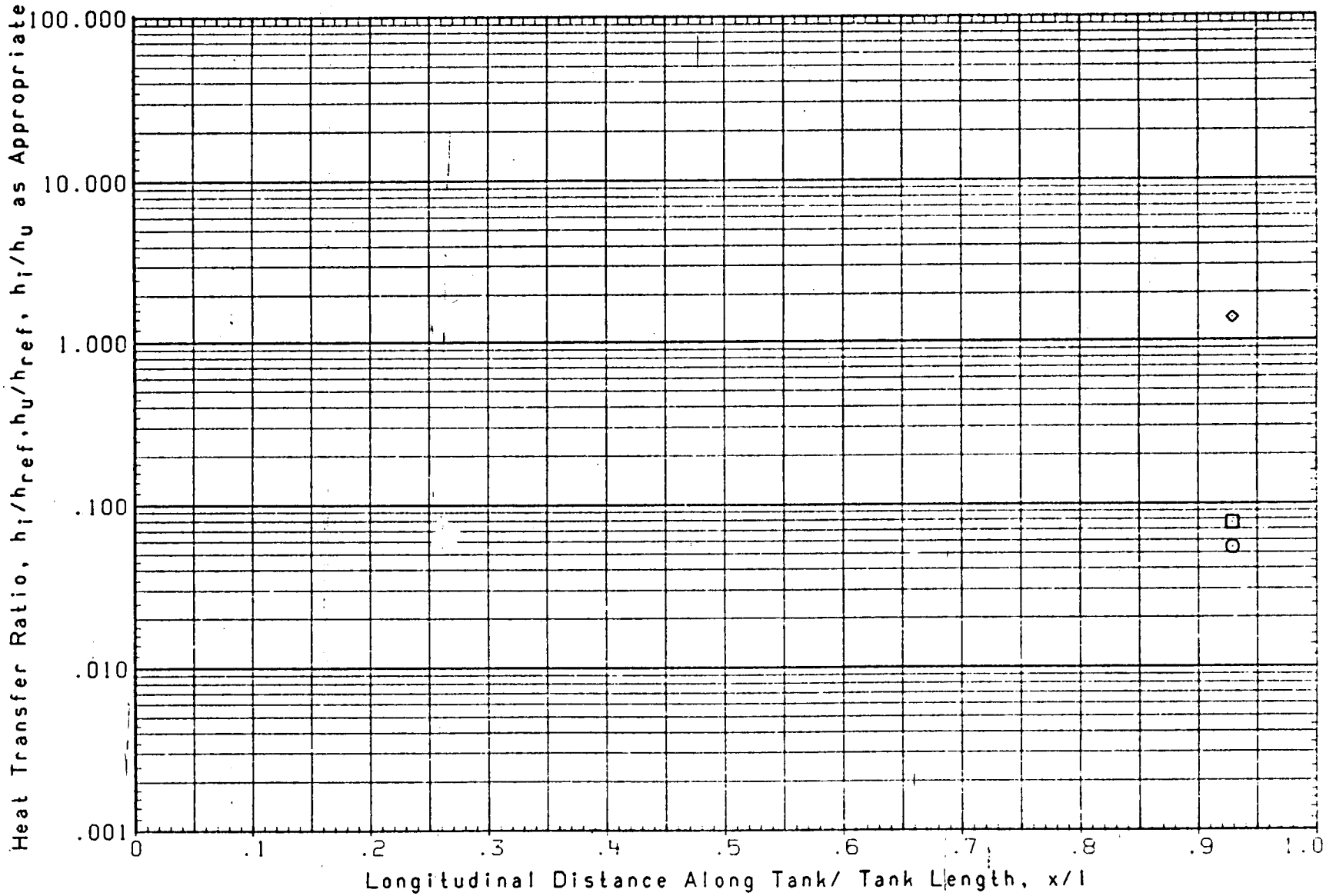


FIG. 7 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = 0

MACH = 4.020 ALPHA = .000 PHI = 352.200

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT02)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	.000
(LVFT22)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	.000
(BVFT22)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	.000

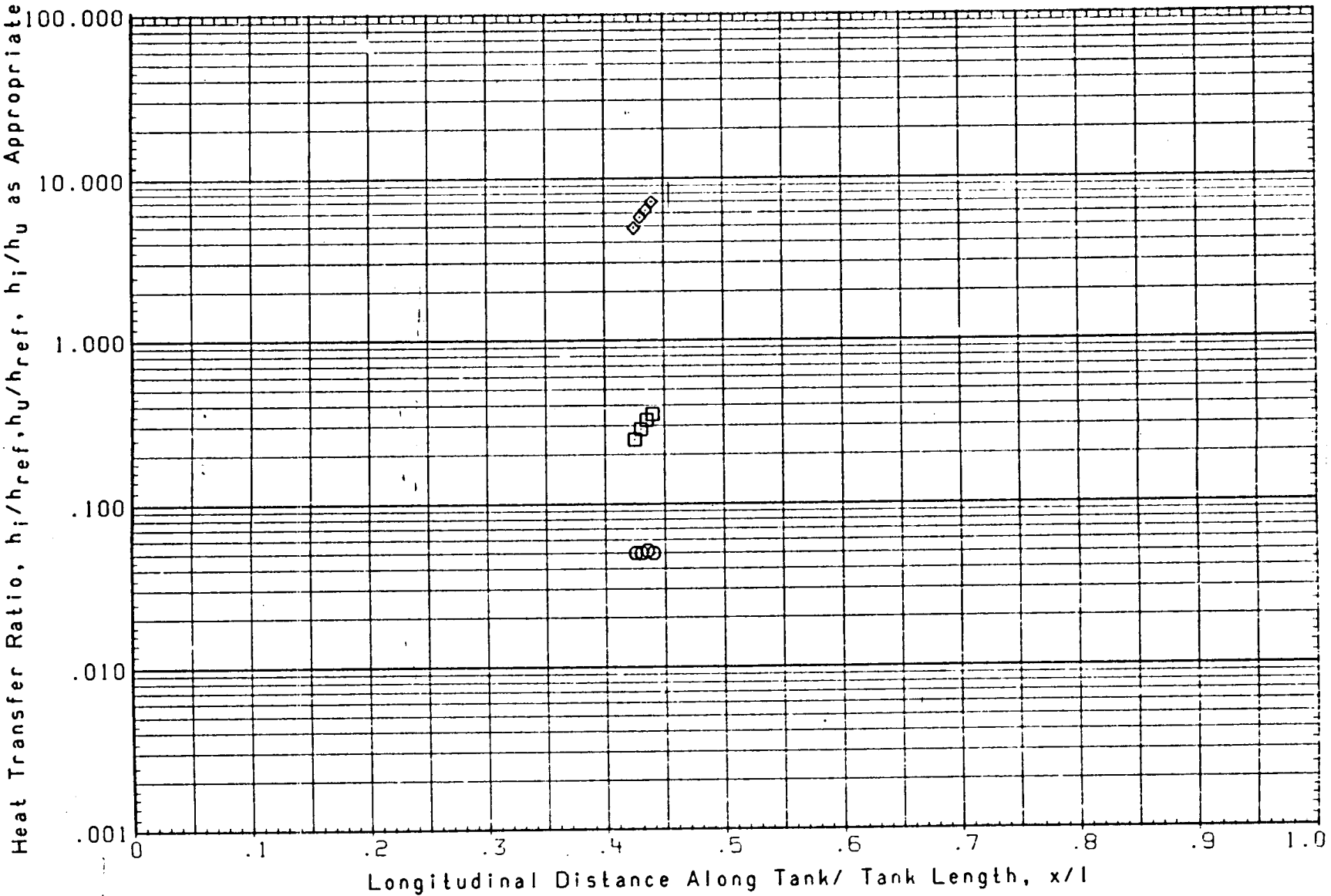


FIG. 7 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS WINDWARD SIDE, ALPHA = 0, BETA = 0

MACH = 4.020 ALPHA = .000 PHI = 354.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT02)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	.000
(LVFT22)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	.000
(BVFT22)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	.000

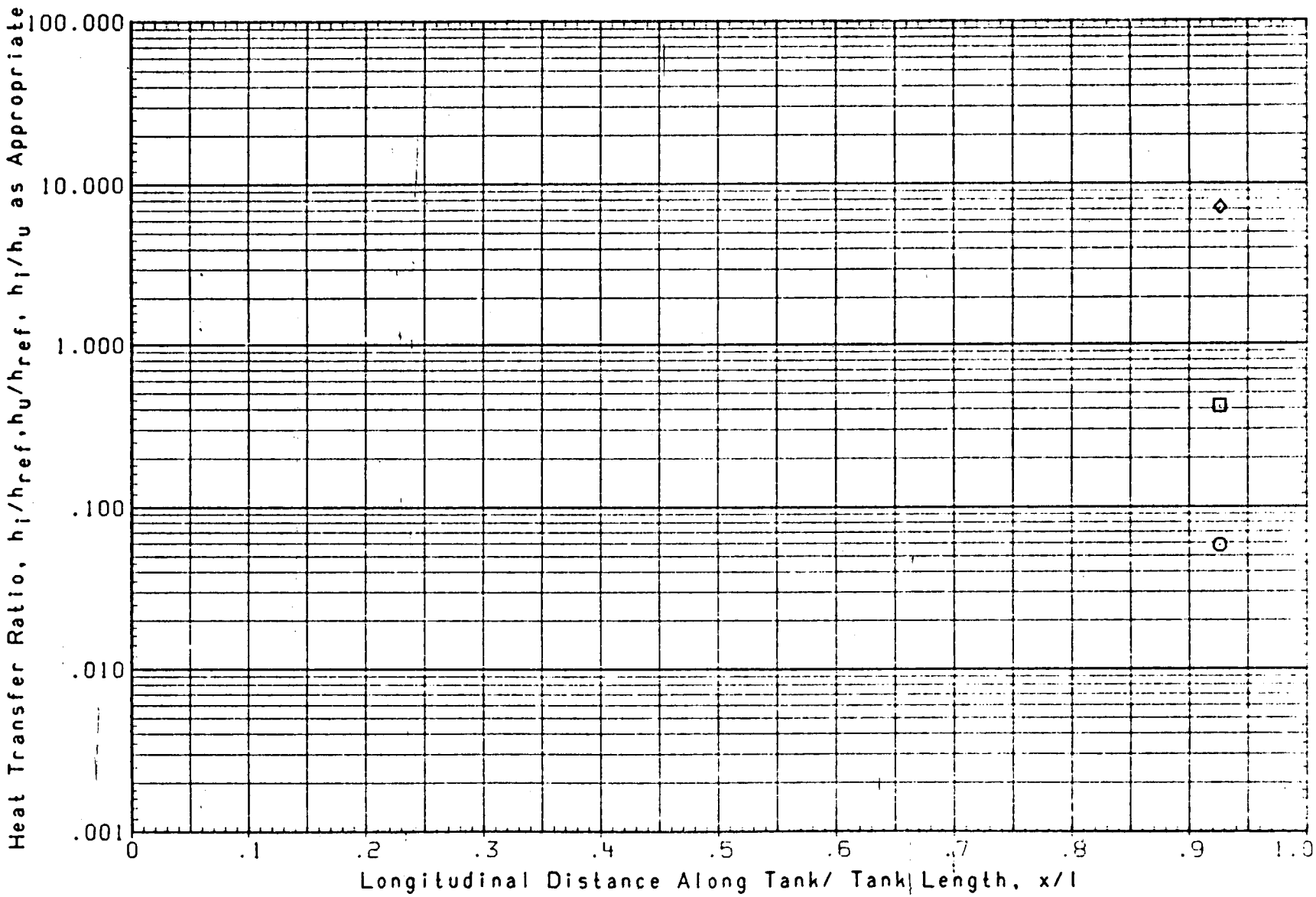


FIG. 7 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = 0

MACH = 4.020 ALPHA = .000 PHI = 355.160

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT02)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	.000
(LVFT22)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	.000
(CVFT22)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	.000

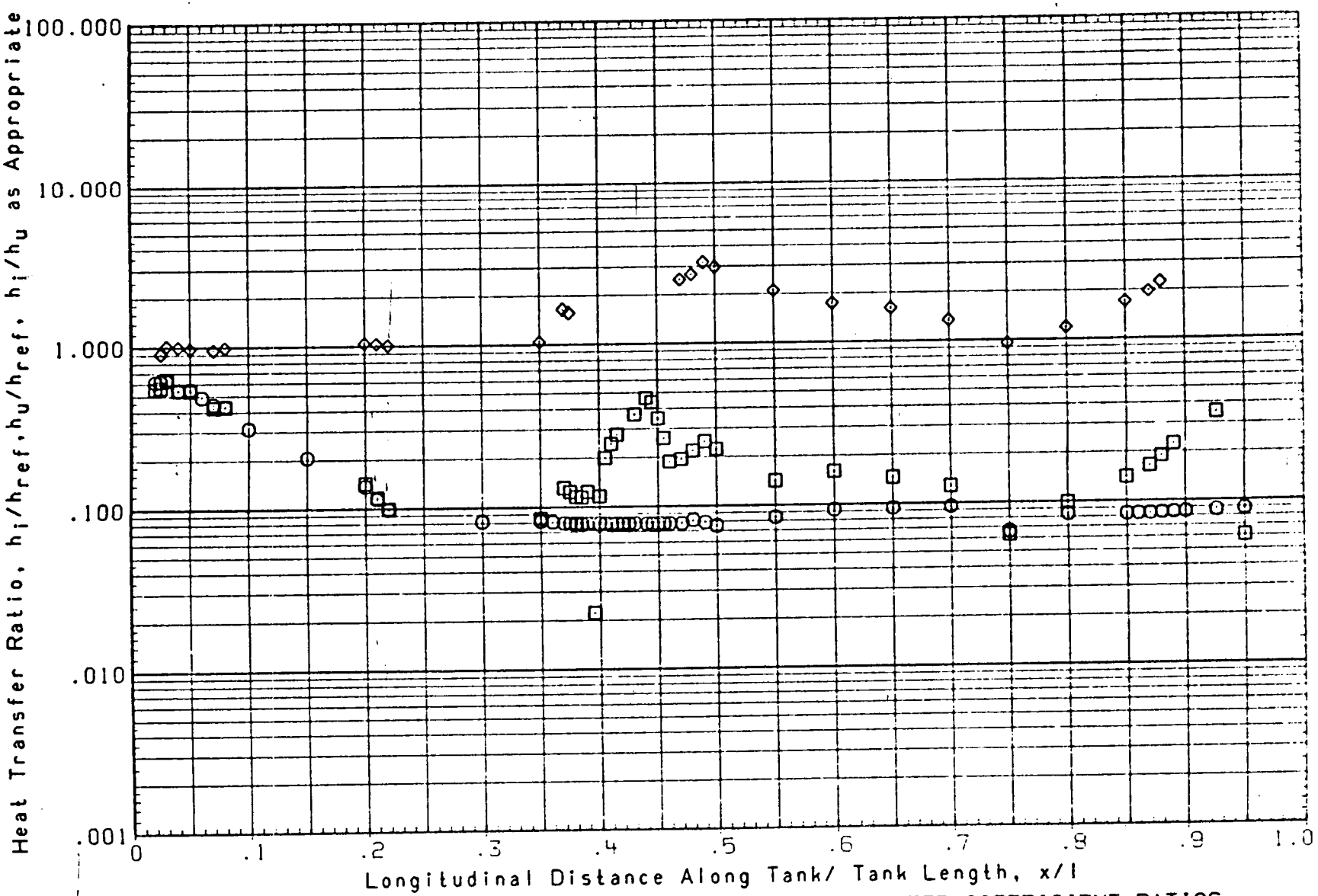


FIG. 8 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = 0

MACH = 3.010 ALPHA = .005 PHI = .000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT02)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	.000
(LVFT22)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	.000
(CVFT22)	◇	DATA NOT AVAILABLE	.000	.000

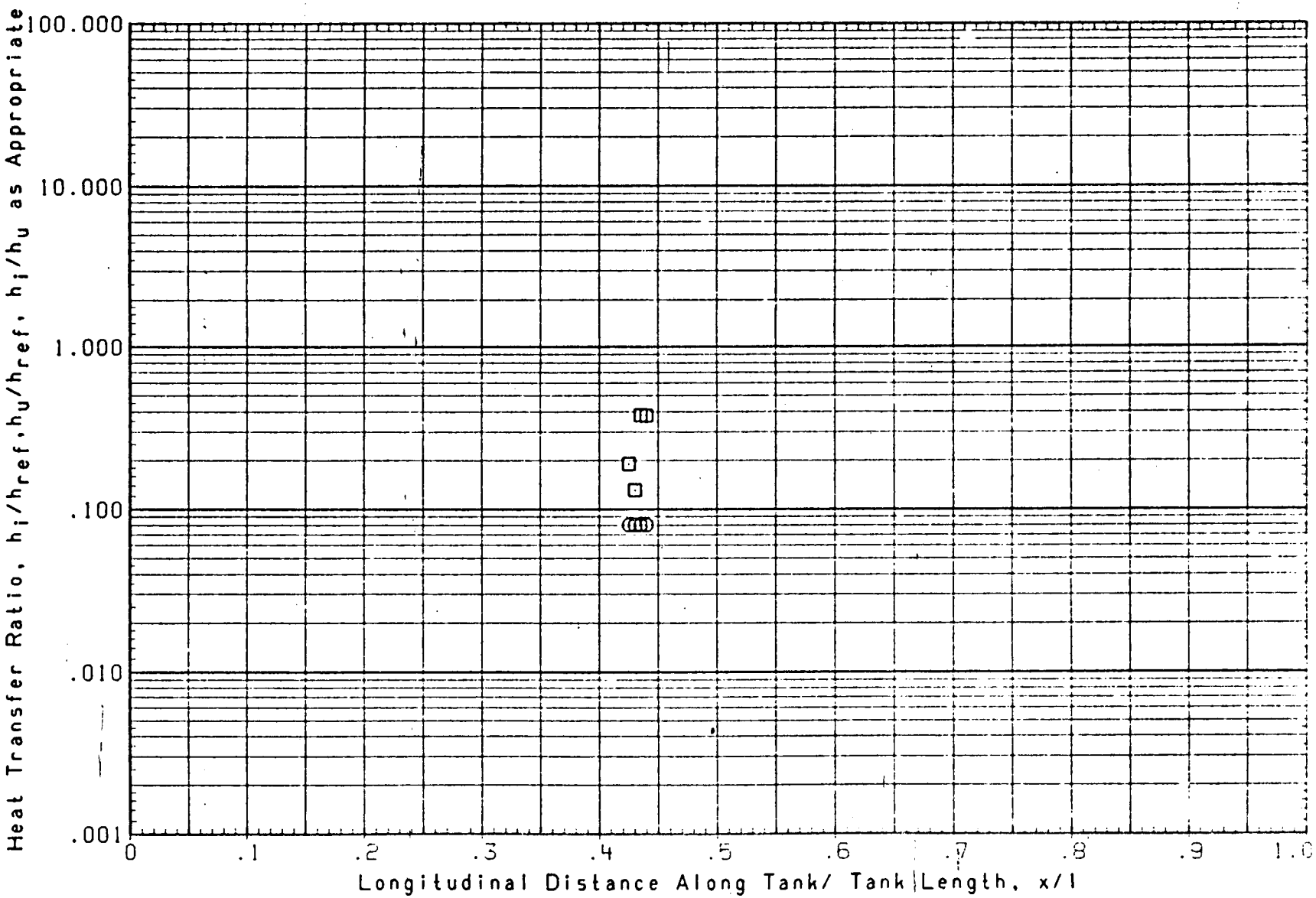


FIG. 8 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = 0

MACH = 3.010 ALPHA = .005 PHI = 5.630

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT02)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	.000
(LVFT22)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	.000
(CVFT22)	◇	DATA NOT AVAILABLE	.000	.000

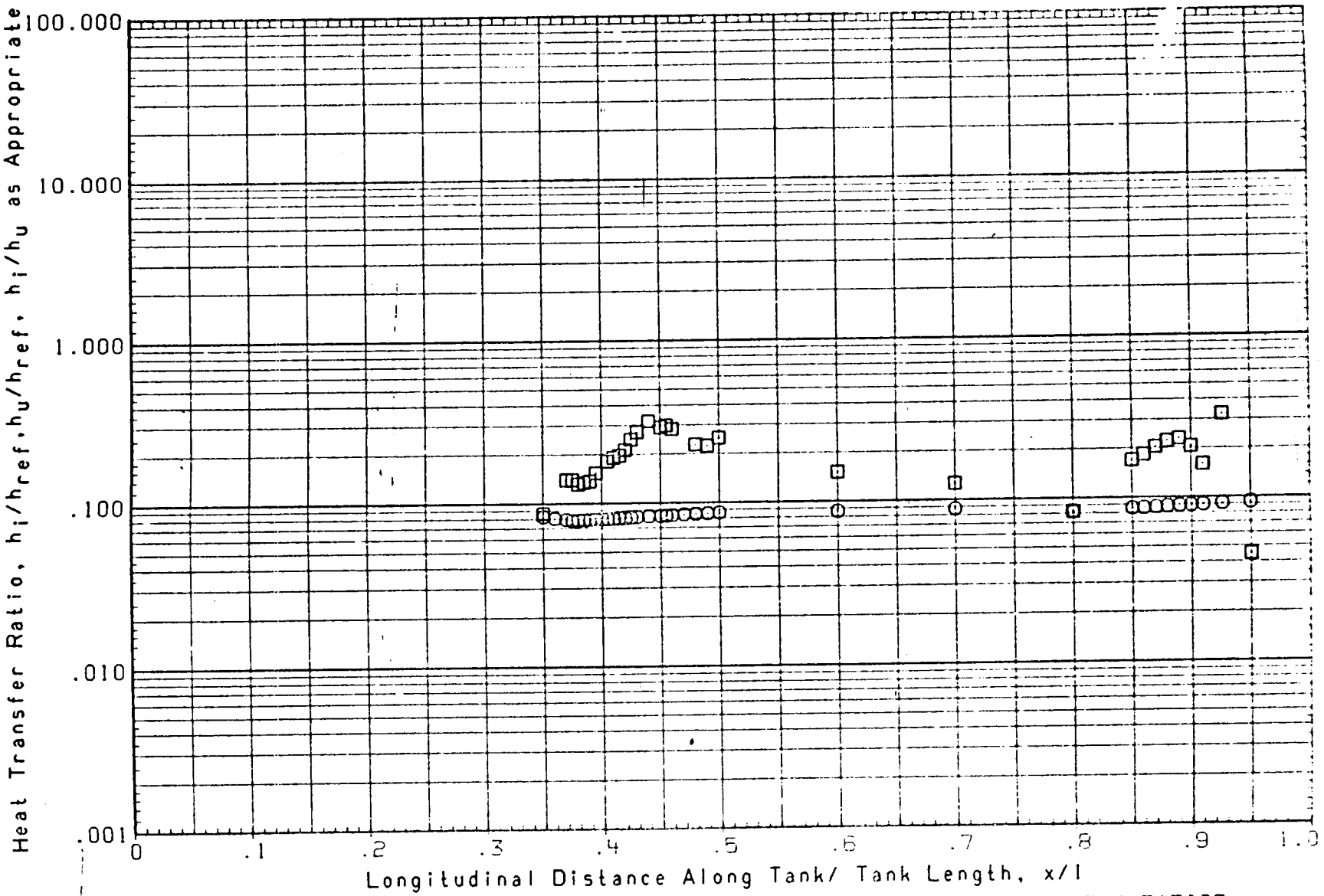


FIG. 8 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = 0

MACH = 3.010 ALPHA = .005 PHI = 11.850

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT02)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	.000
(LVFT22)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	.000
(CVFT22)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	.000

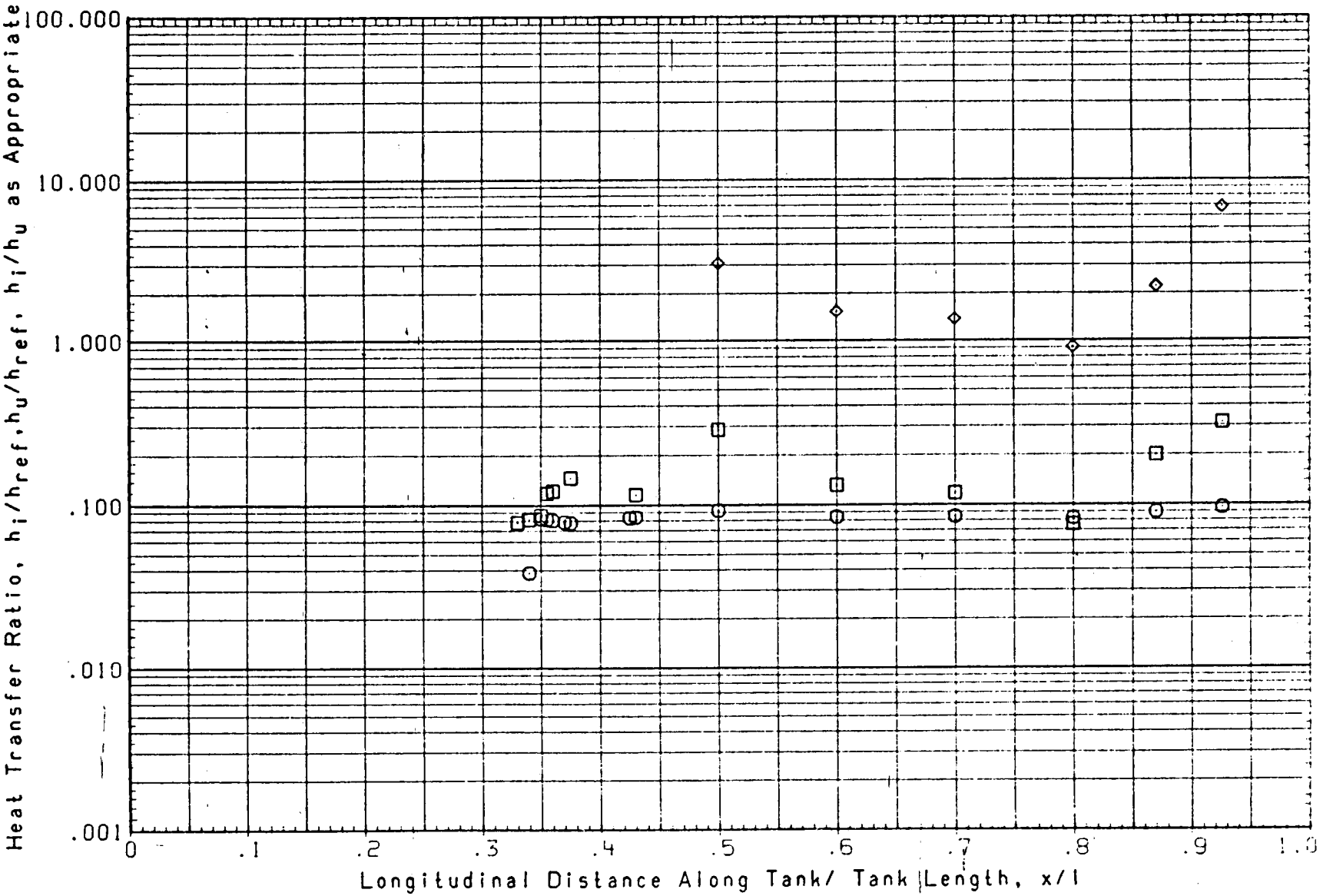


FIG. 8 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS LEEWARD SIDE, ALPHA = 0, BETA = 0

MACH = 3.010 ALPHA = .005 PHI = 17.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT02)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	.000
(LVFT22)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	.000
(CVFT22)	◇	DATA NOT AVAILABLE	.000	.000

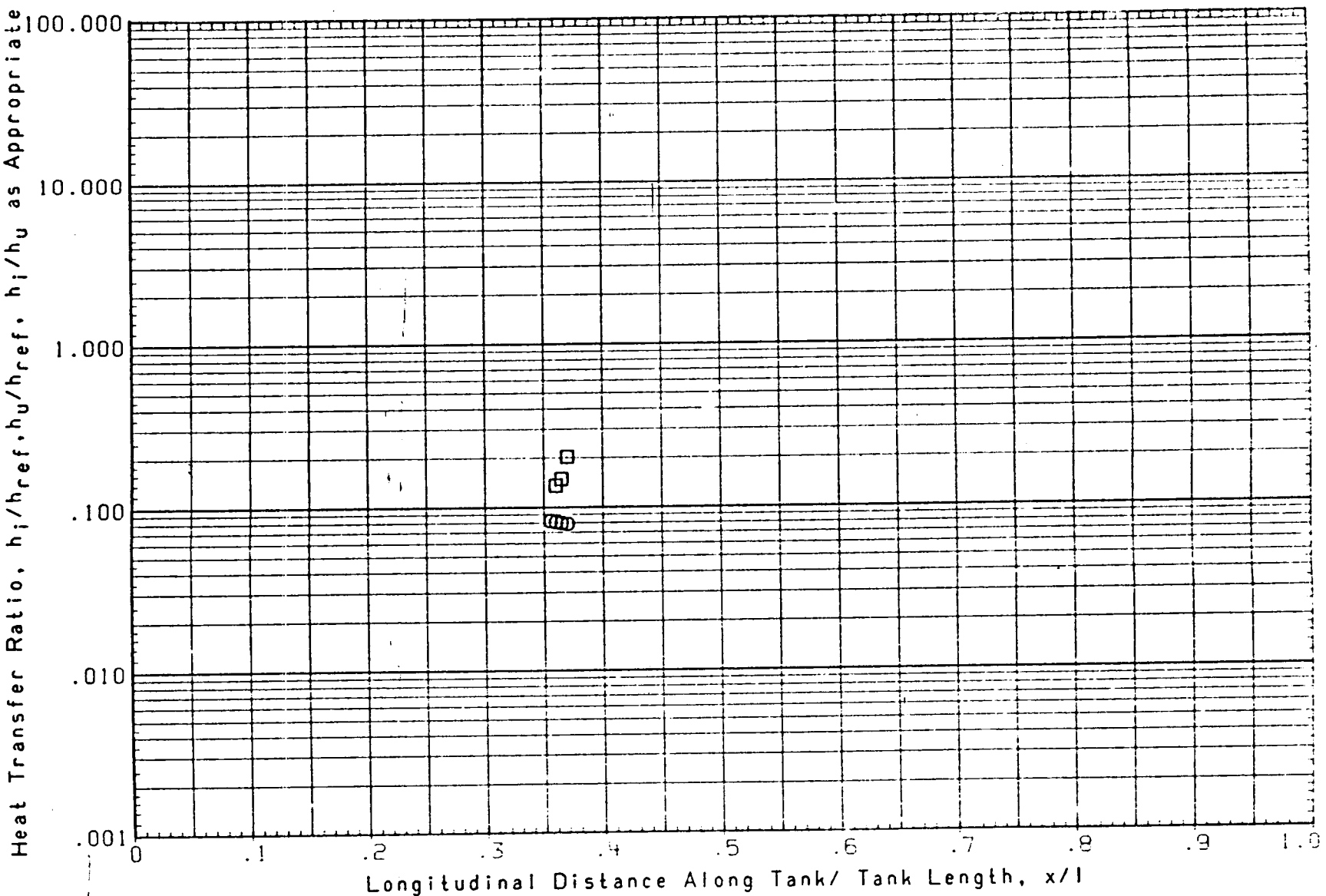


FIG. 8 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = 0

MACH = 3.010 ALPHA = .005 PHI = 20.990

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT02)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	.000
(LVFT22)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	.000
(CVFT22)	◇	DATA NOT AVAILABLE	.000	.000

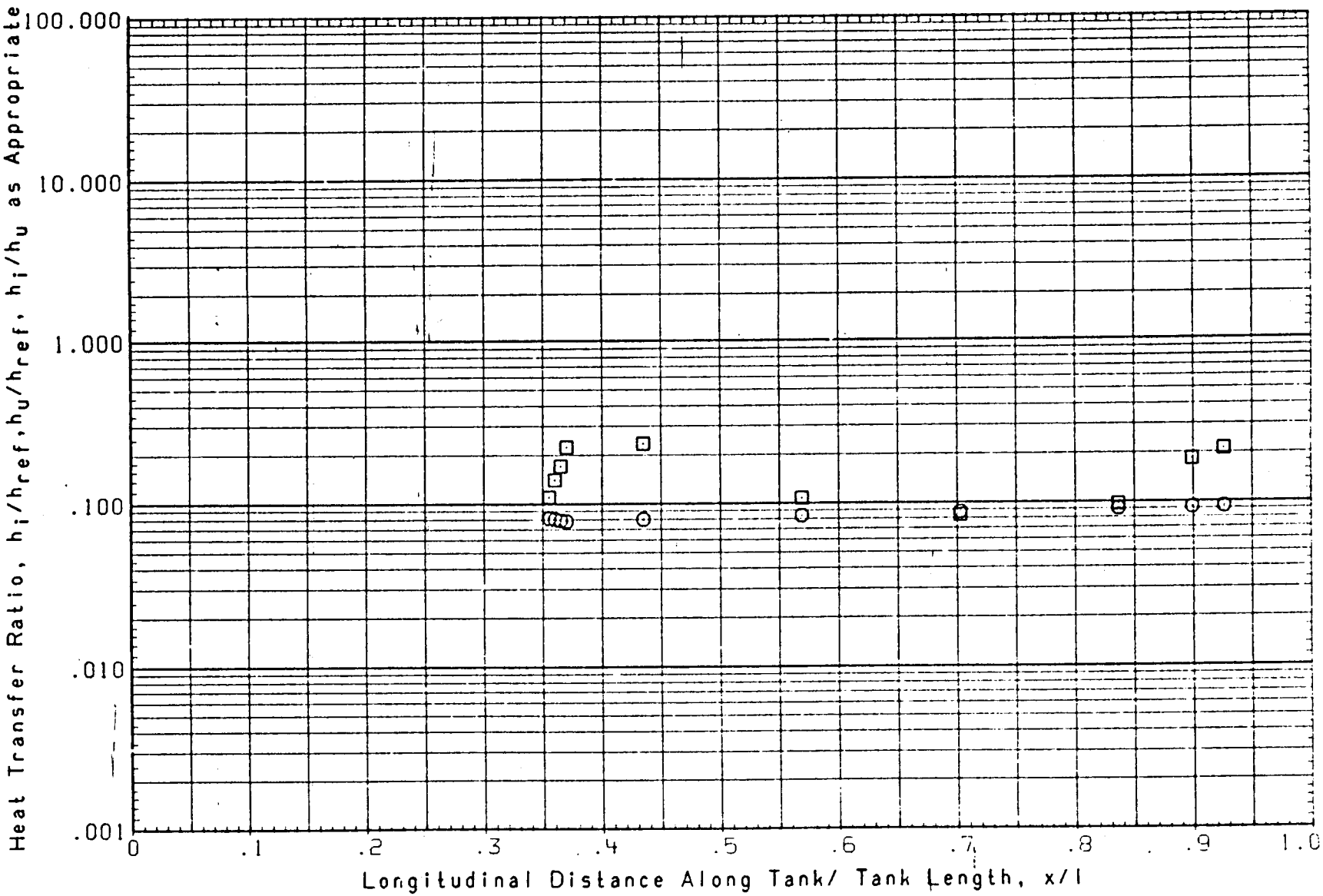


FIG. 8 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = 0

MACH = 3.010 ALPHA = .005 PHI = 23.075

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT02)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	.000
(LVFT22)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	.000
(CVFT22)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	.000

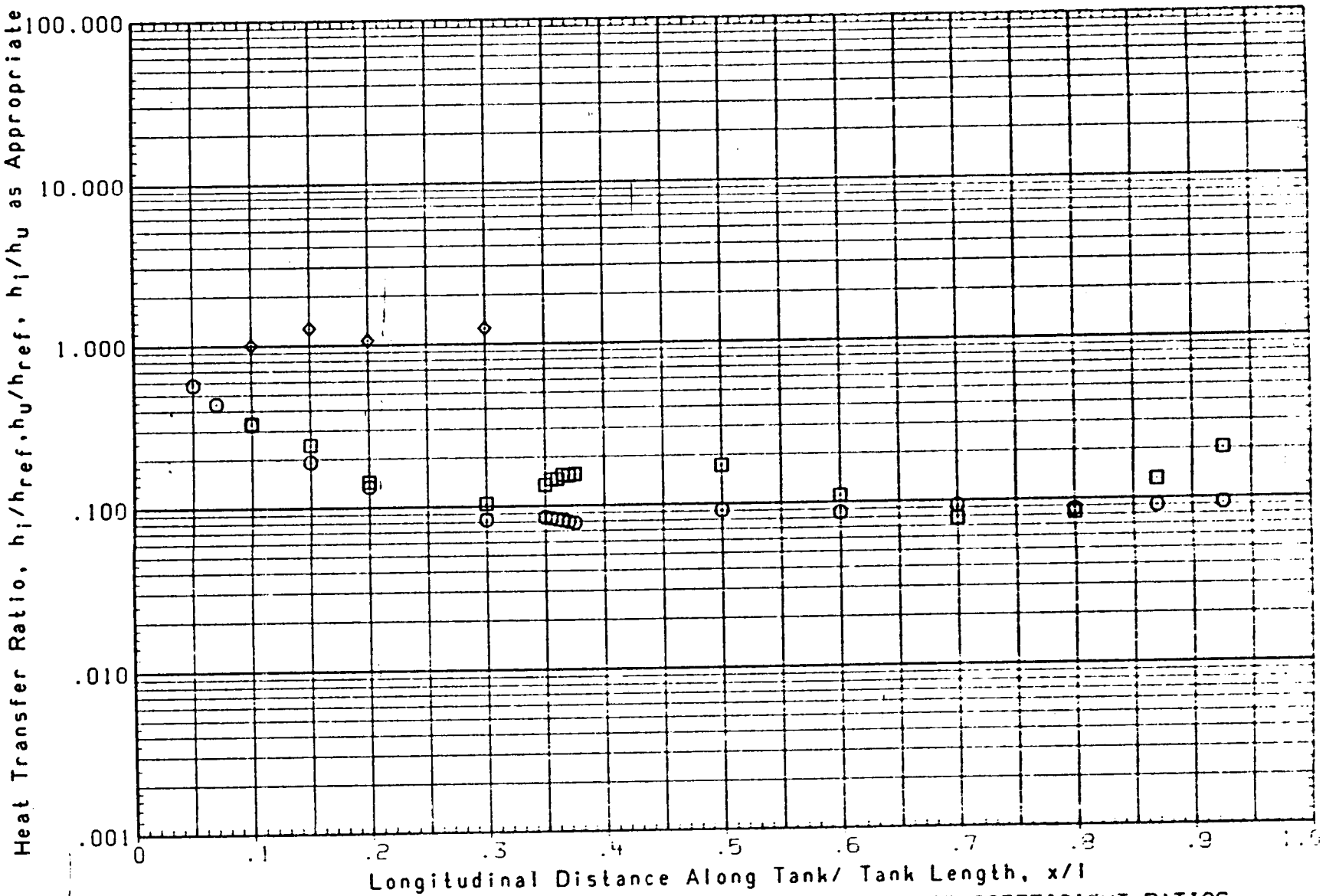


FIG. 8 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = 0

MACH = 3.010 ALPHA = .000 PHI = 29.800

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT02)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	.000
(LVFT22)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	.000
(CVFT22)	◇	DATA NOT AVAILABLE	.000	.000

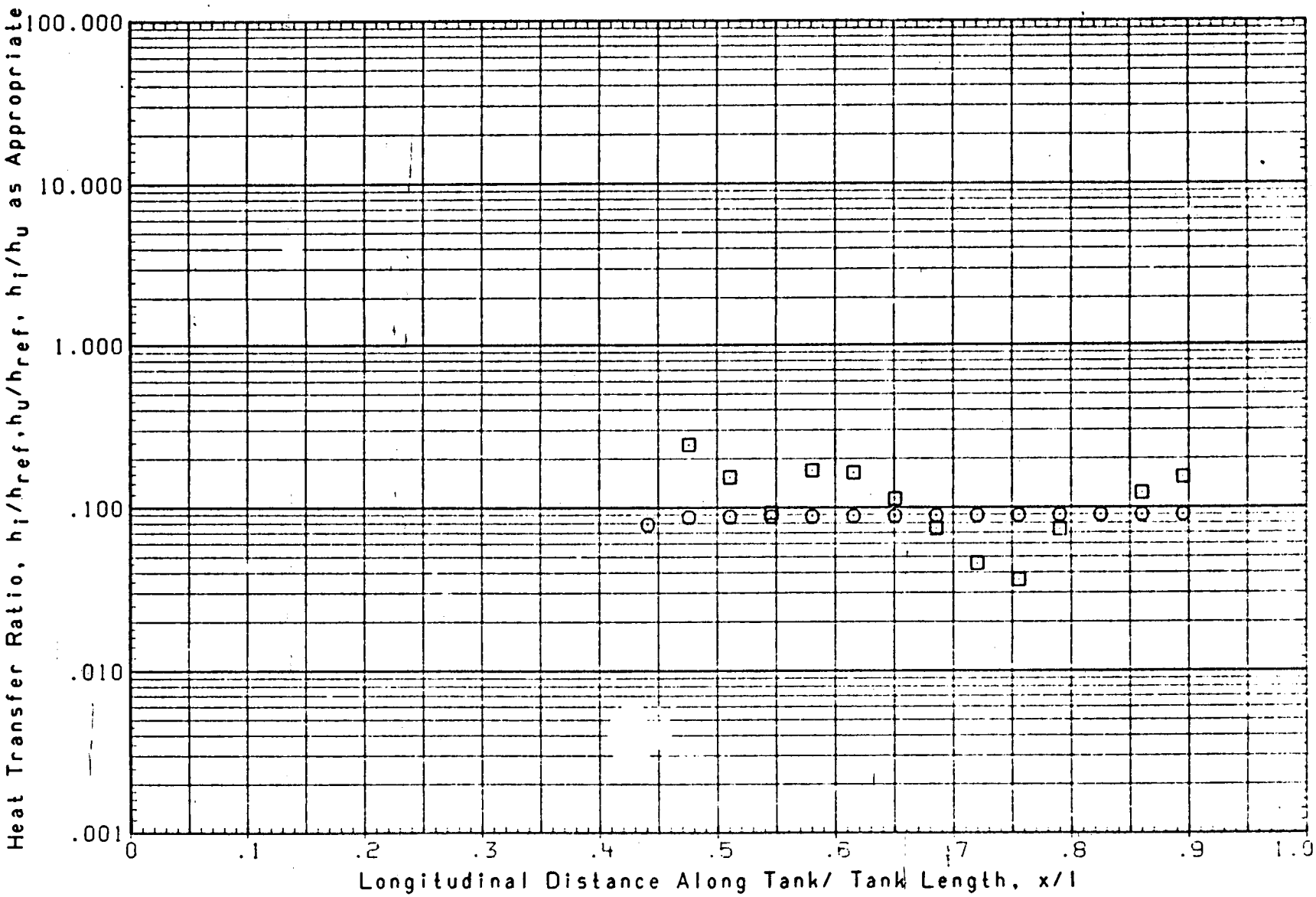


FIG. 8 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = 0

MACH = 3.010 ALPHA = .005 PHI = 31.430

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT02)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	.000
(LVFT22)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	.000
(CVFT22)	◇	DATA NOT AVAILABLE	.000	.000

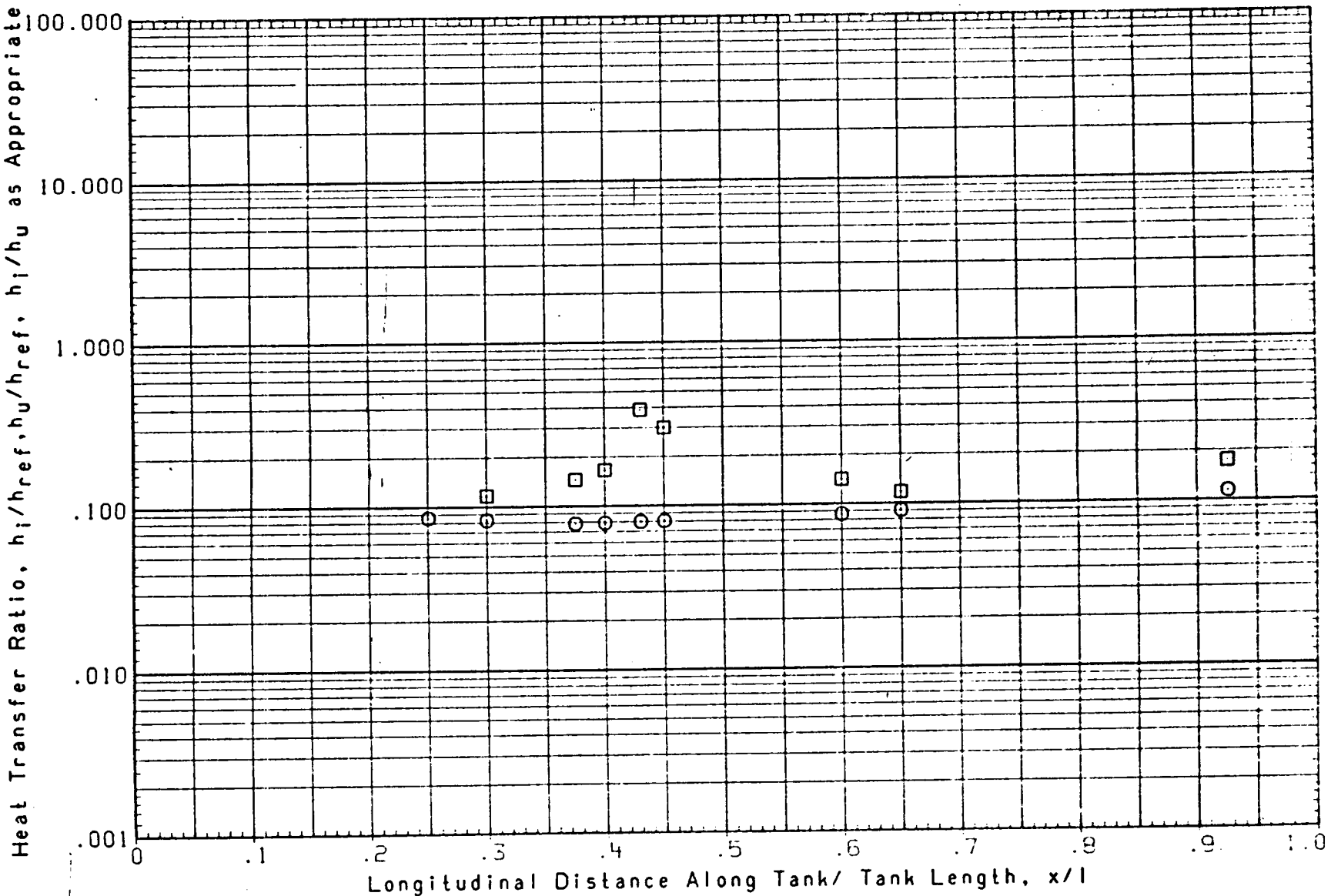


FIG. 8 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = 0

MACH = 3.010 ALPHA = .005 PHI = 33.750

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT02)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	.000
(LVFT22)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	.000
(CVFT22)	◇	DATA NOT AVAILABLE	.000	.000

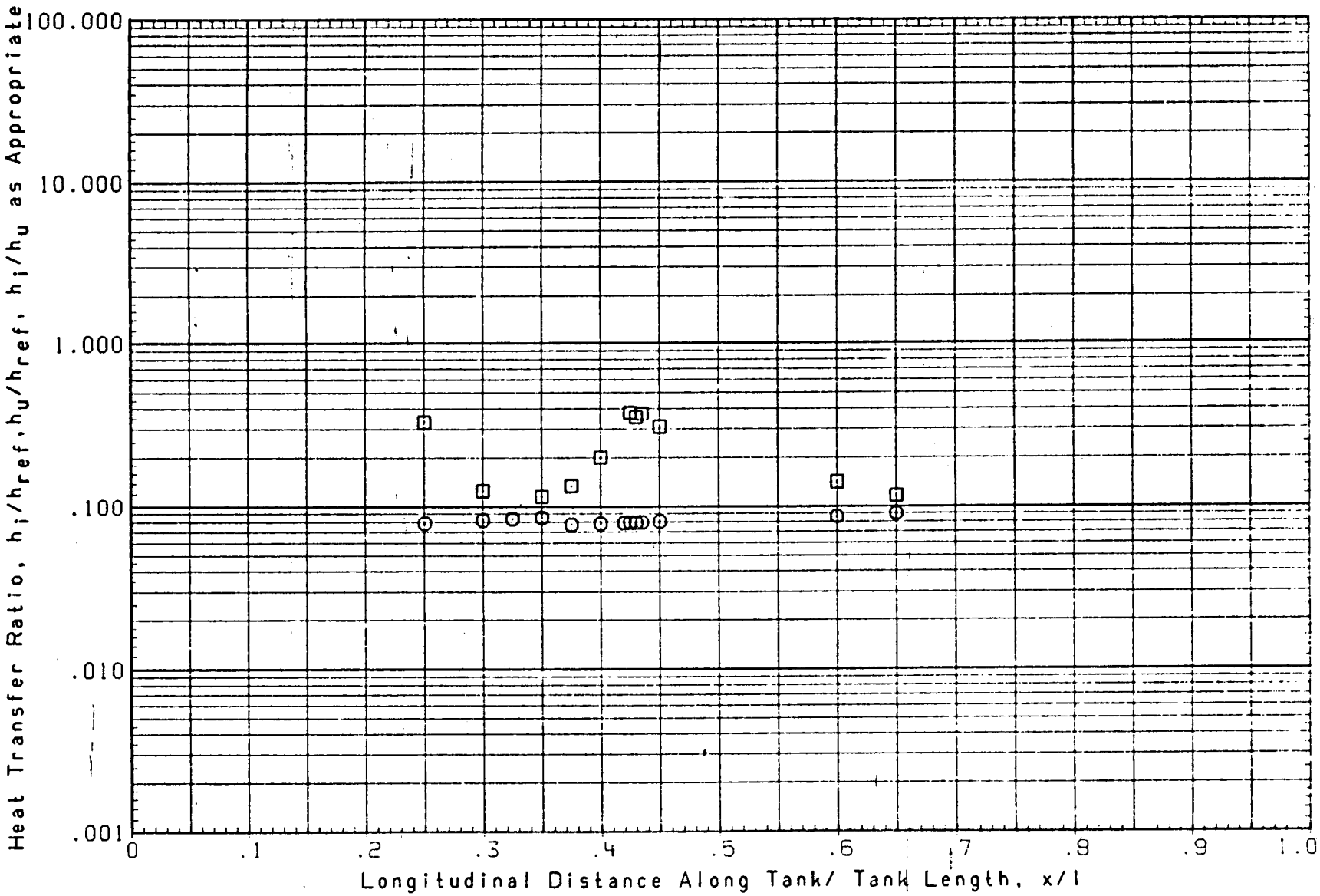


FIG. 8 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS LEEWARD SIDE, ALPHA = 0, BETA = 0

MACH = 3.010 ALPHA = .005 PHI = 36.320

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT02)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	.000
(LVFT22)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	.000
(CVFT22)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	.000

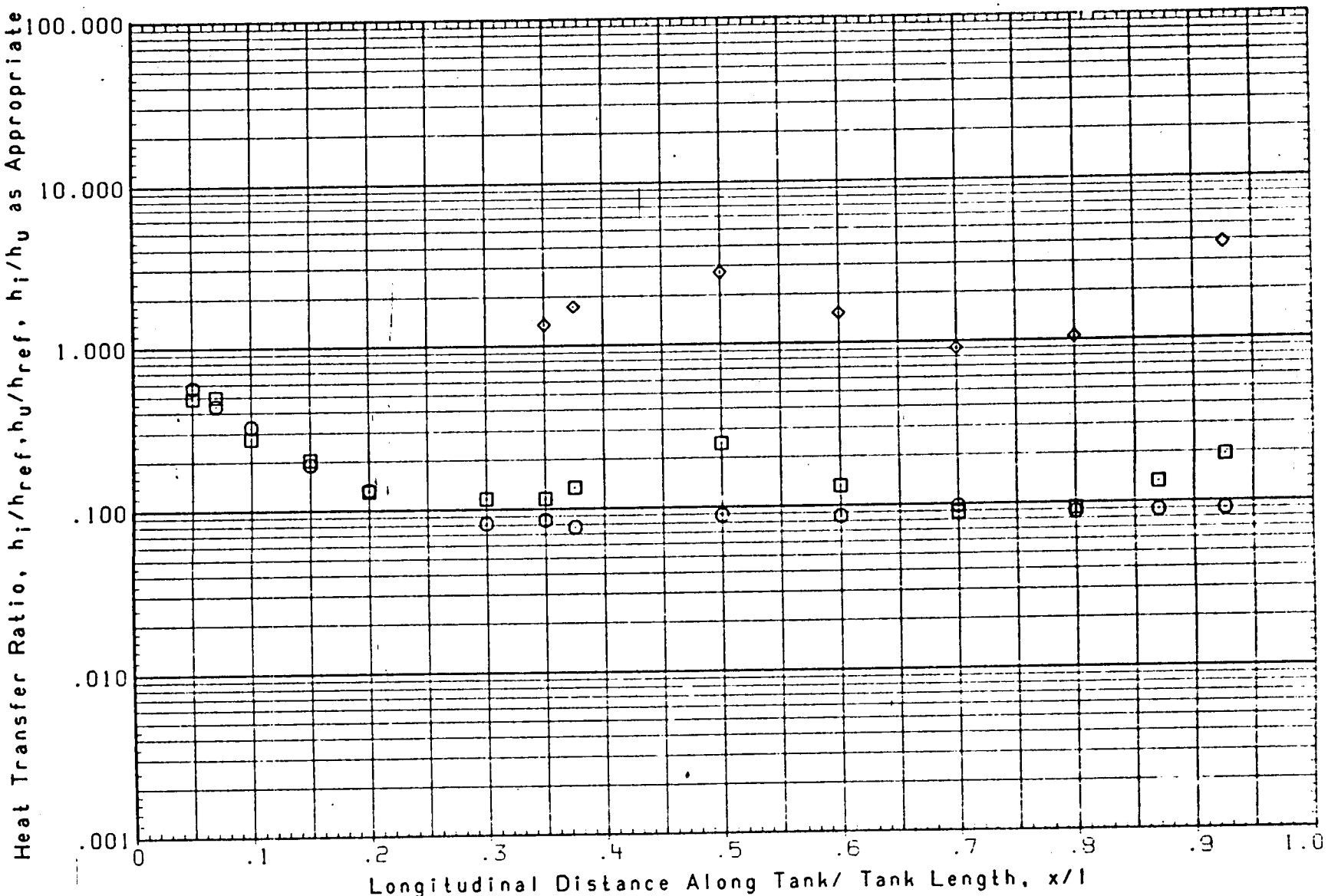


FIG. 8 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = 0

MACH = 3.010 ALPHA = .005 PHI = 37.700

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT02)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	.000
(LVFT22)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	.000
(CVFT22)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	.000

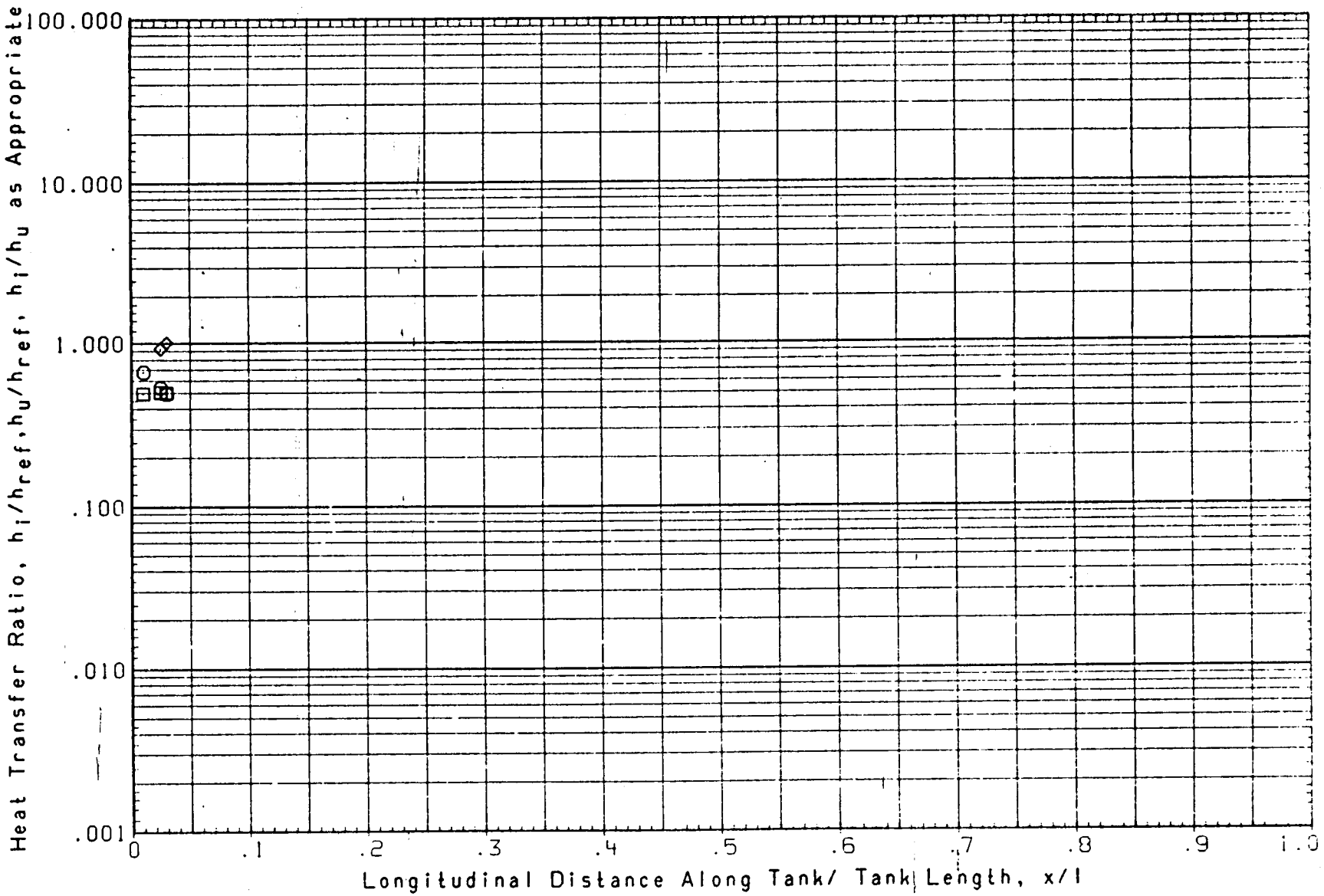


FIG. 8 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = 0

MACH = 3.010 ALPHA = .005 PHI = 39.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT02)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	.000
(LVFT22)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	.000
(CVFT22)	◇	DATA NOT AVAILABLE	.000	.000

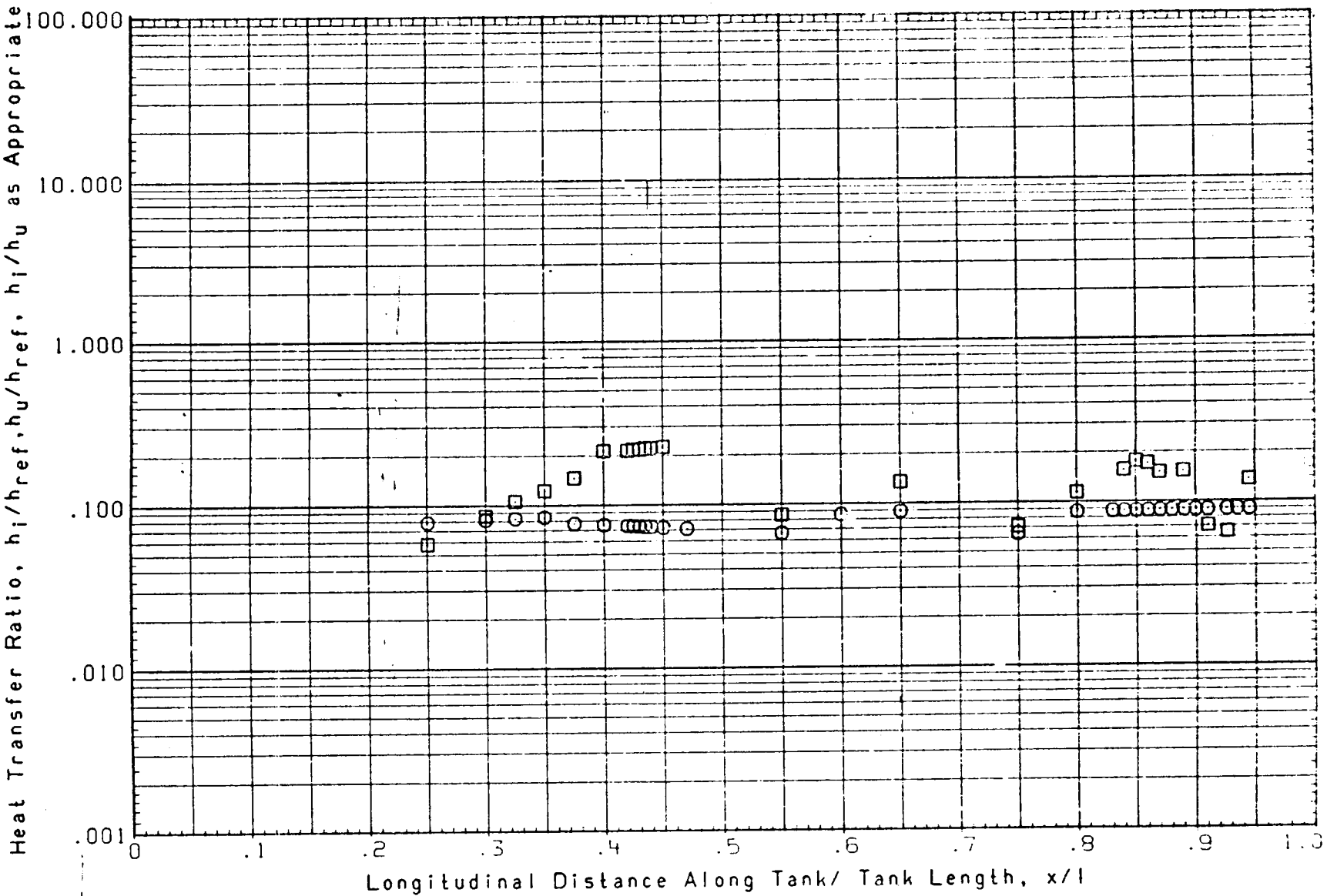


FIG. 8 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = 0

MACH = 3.010 ALPHA = .005 PHI = 45.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT02)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	.000
(LVFT22)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	.000
(CVFT22)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	.000

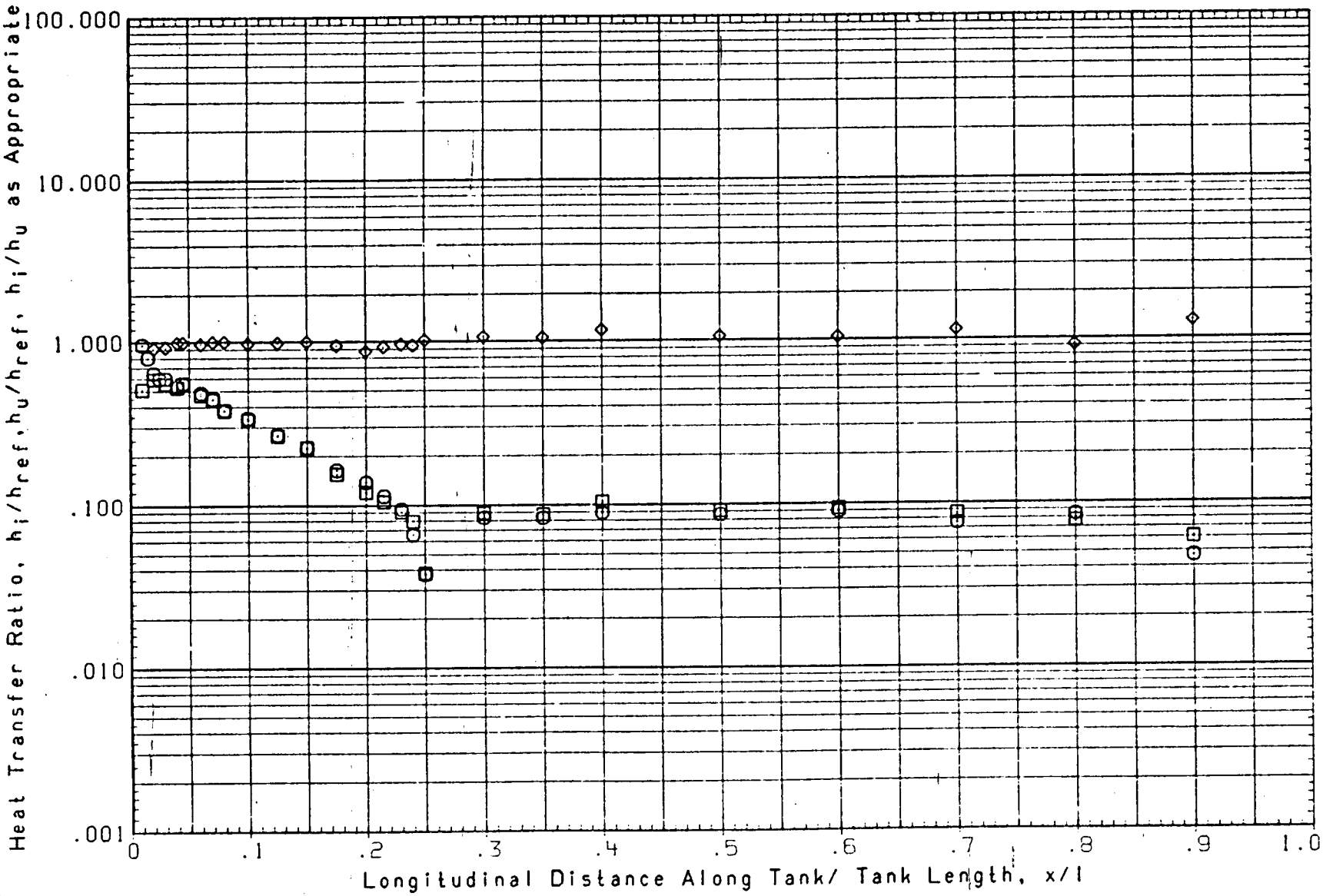


FIG. 8 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = 0

MACH = 3.010 ALPHA = .005 PHI = 180.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT02)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	.000
(LVFT22)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	.000
(CVFT22)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	.000

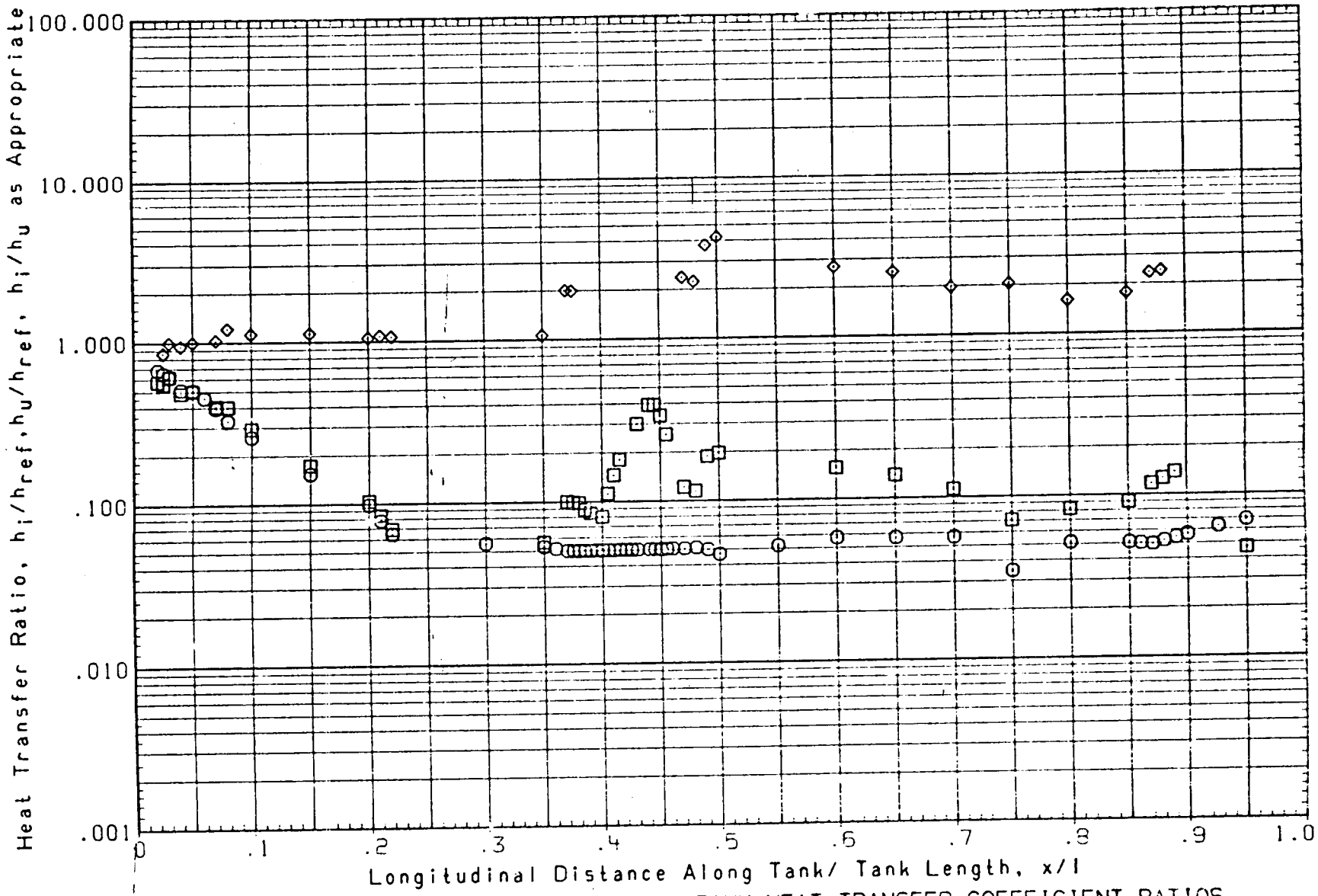


FIG. 8 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = 0

MACH = 4.020 ALPHA = .000 PHI = .000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT02)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	.000
(LVFT22)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	.000
(CVFT22)	◇	DATA NOT AVAILABLE	.000	.000

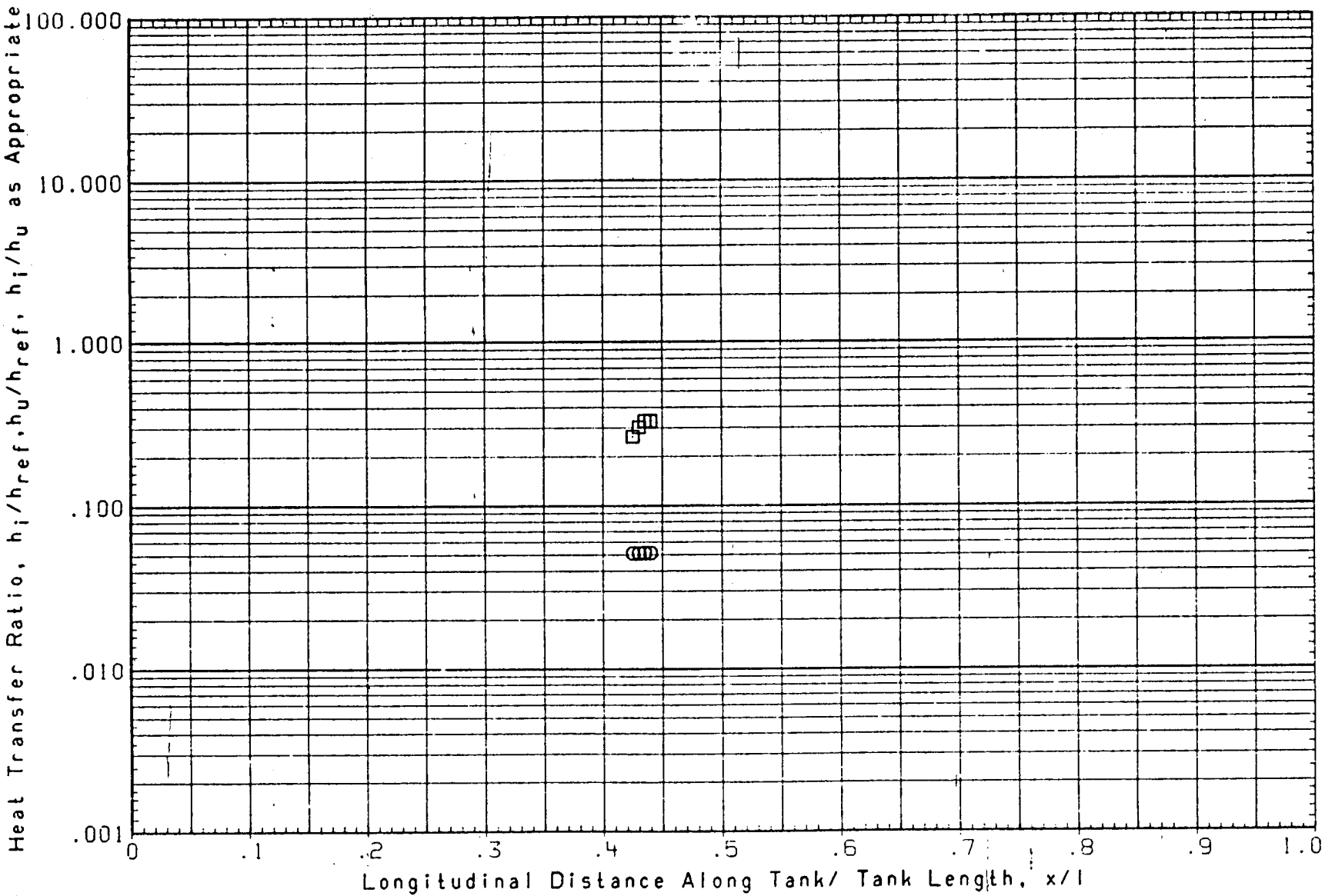


FIG. 8 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS LEEWARD SIDE, ALPHA = 0, BETA = 0

MACH = 4.020 ALPHA = .000 PHI = 5.630

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(RVFT02)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	.000
(LVFT22)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	.000
(CVFT22)	◇	DATA NOT AVAILABLE	.000	.000

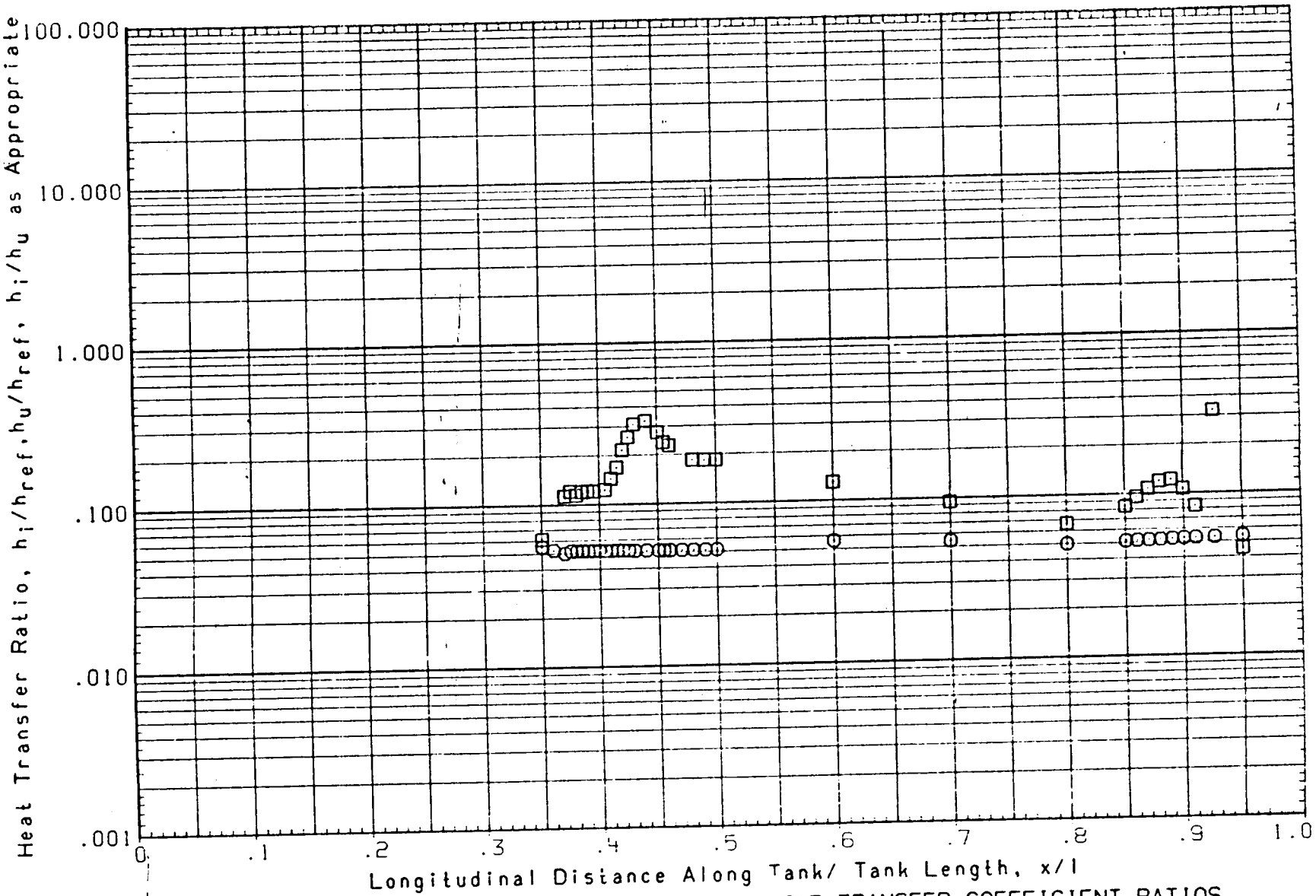


FIG. 8 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = 0

MACH = 4.020 ALPHA = .000 PHI = 11.250

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT02)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	.000
(LVFT22)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	.000
(CVFT22)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	.000

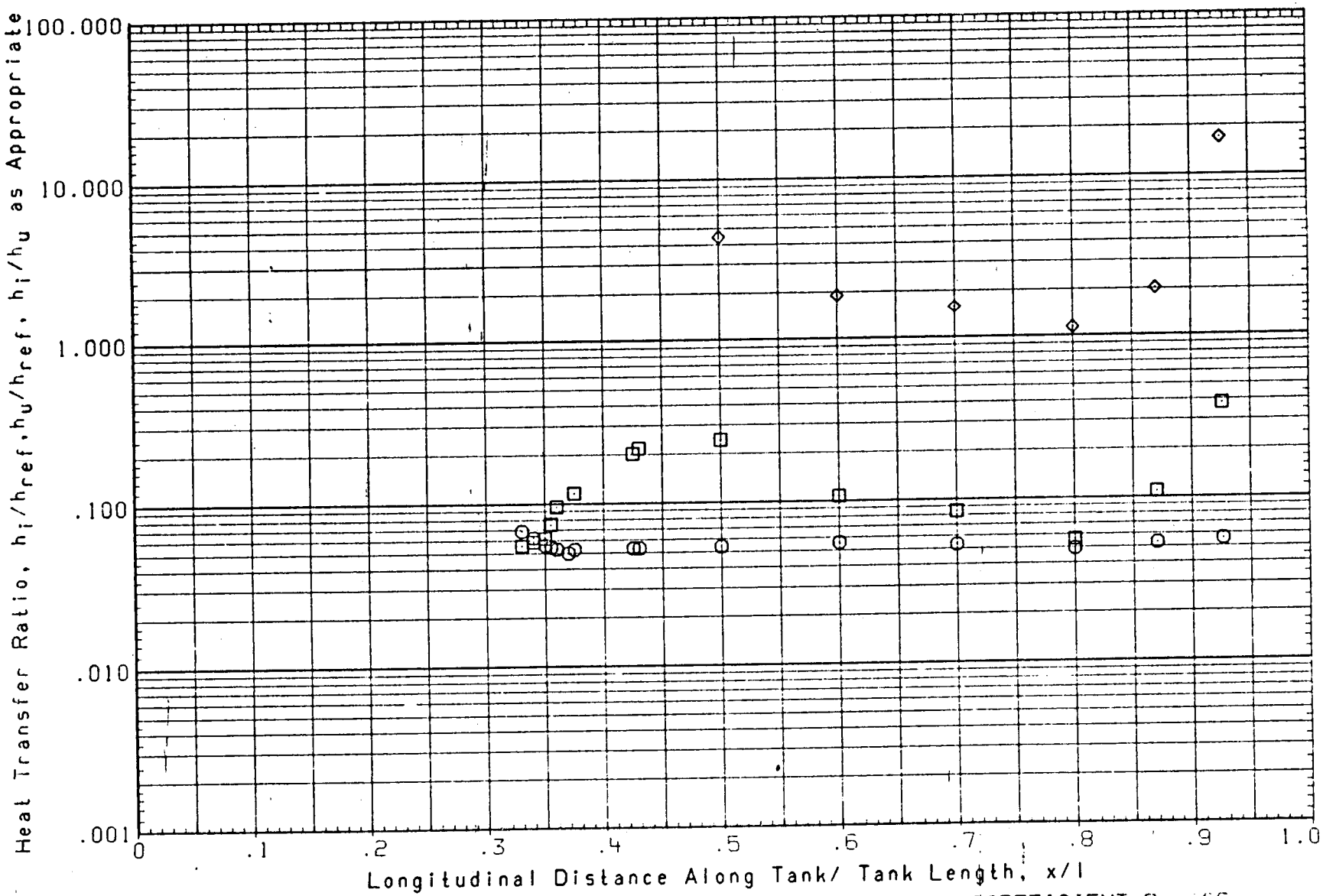


FIG. 8 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT R 1CS
LEEWARD SIDE, ALPHA = 0, BETA = 0

MACH = 4.020 ALPHA = .000 PHI = 17.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT02)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	.000
(LVFT22)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	.000
(CVFT22)	◇	DATA NOT AVAILABLE	.000	.000

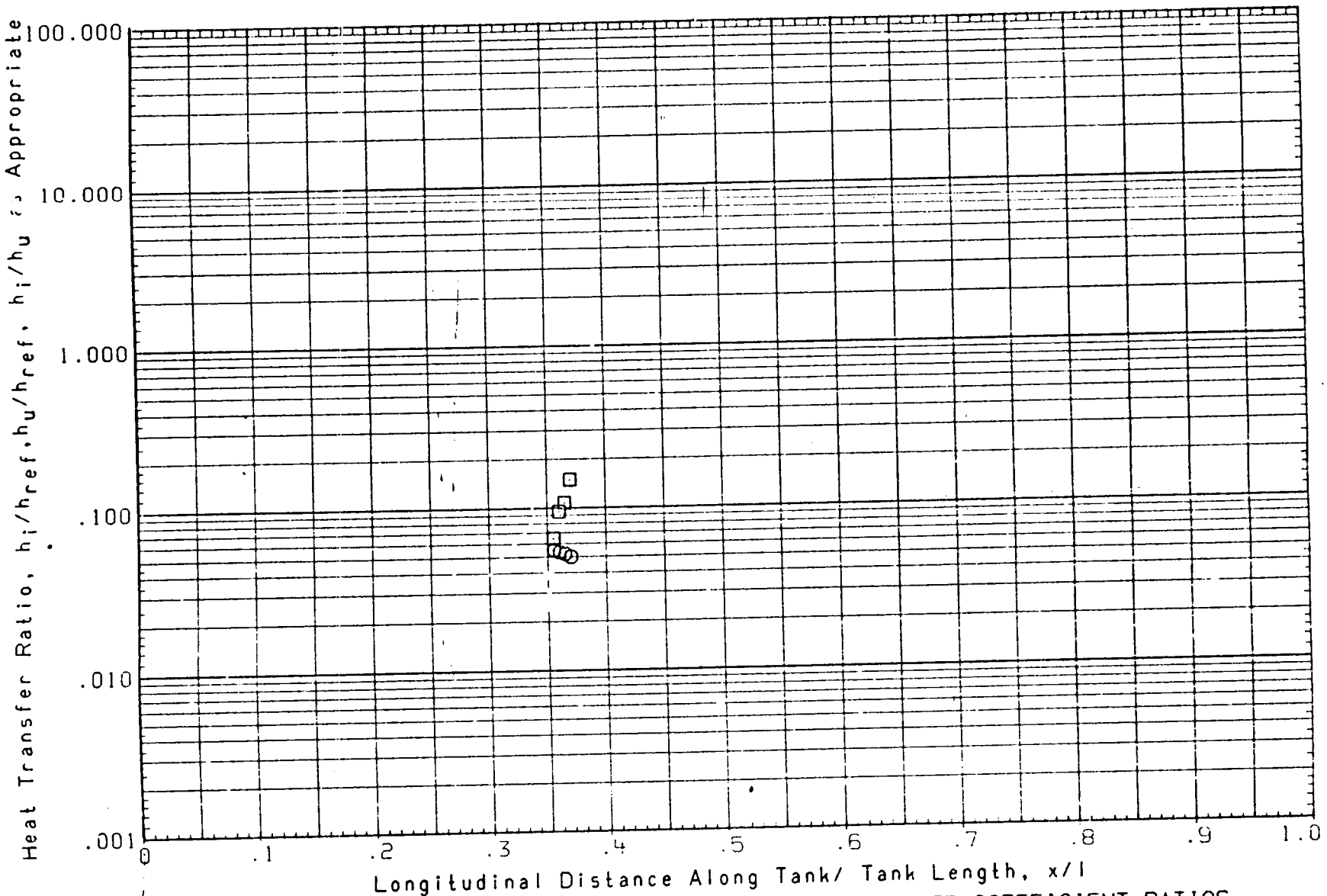


FIG. 8 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = 0

MACH = 4.020 ALPHA = .000 PHI = 20.980

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT02)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	.000
(LVFT22)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	.000
(CVFT22)	◇	DATA NOT AVAILABLE	.000	.000

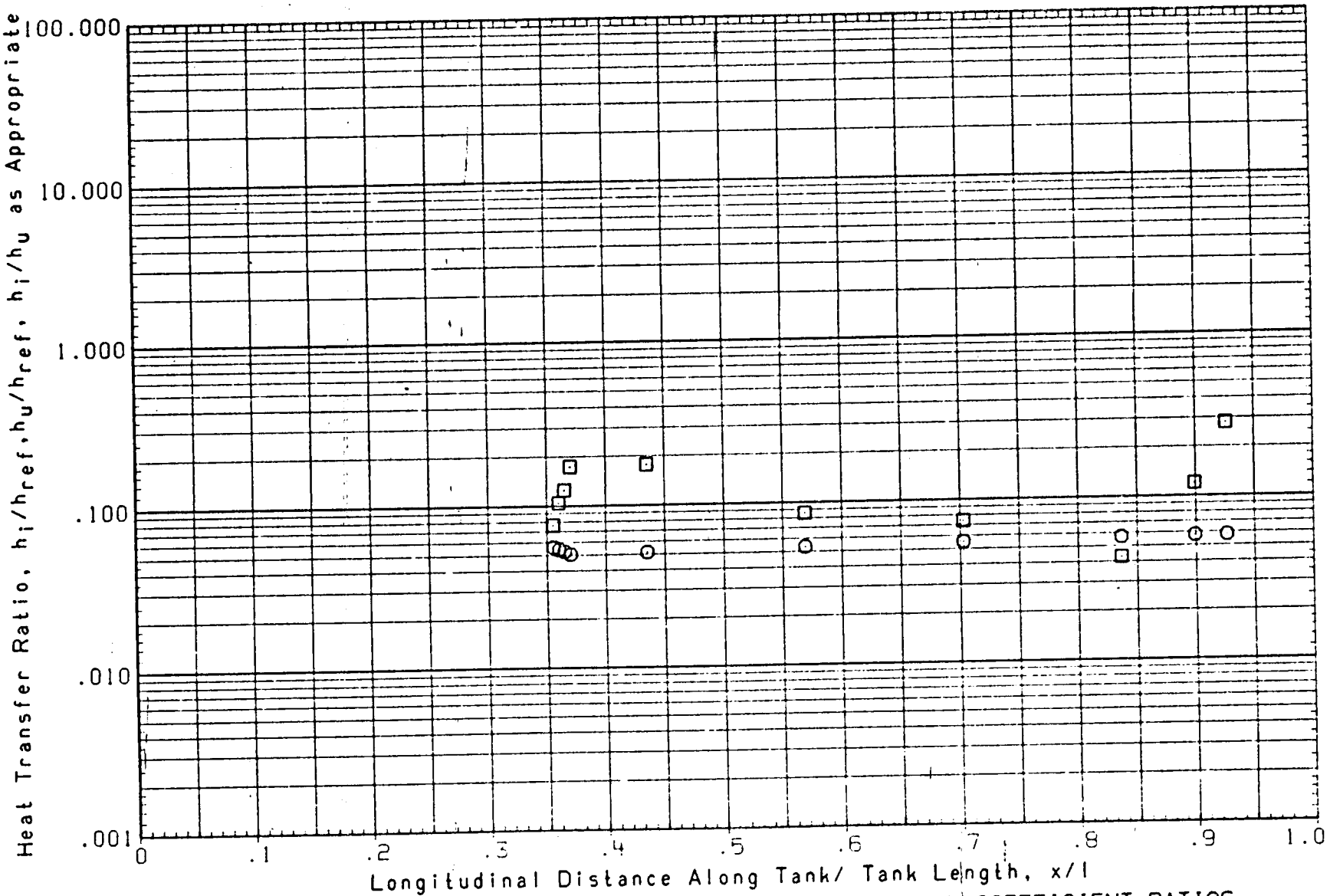


FIG. 8 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = 0

MACH = 4.020 ALPHA = .000 PHI = 25.075

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT02)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	.000
(LVFT22)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	.000
(CVFT22)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	.000

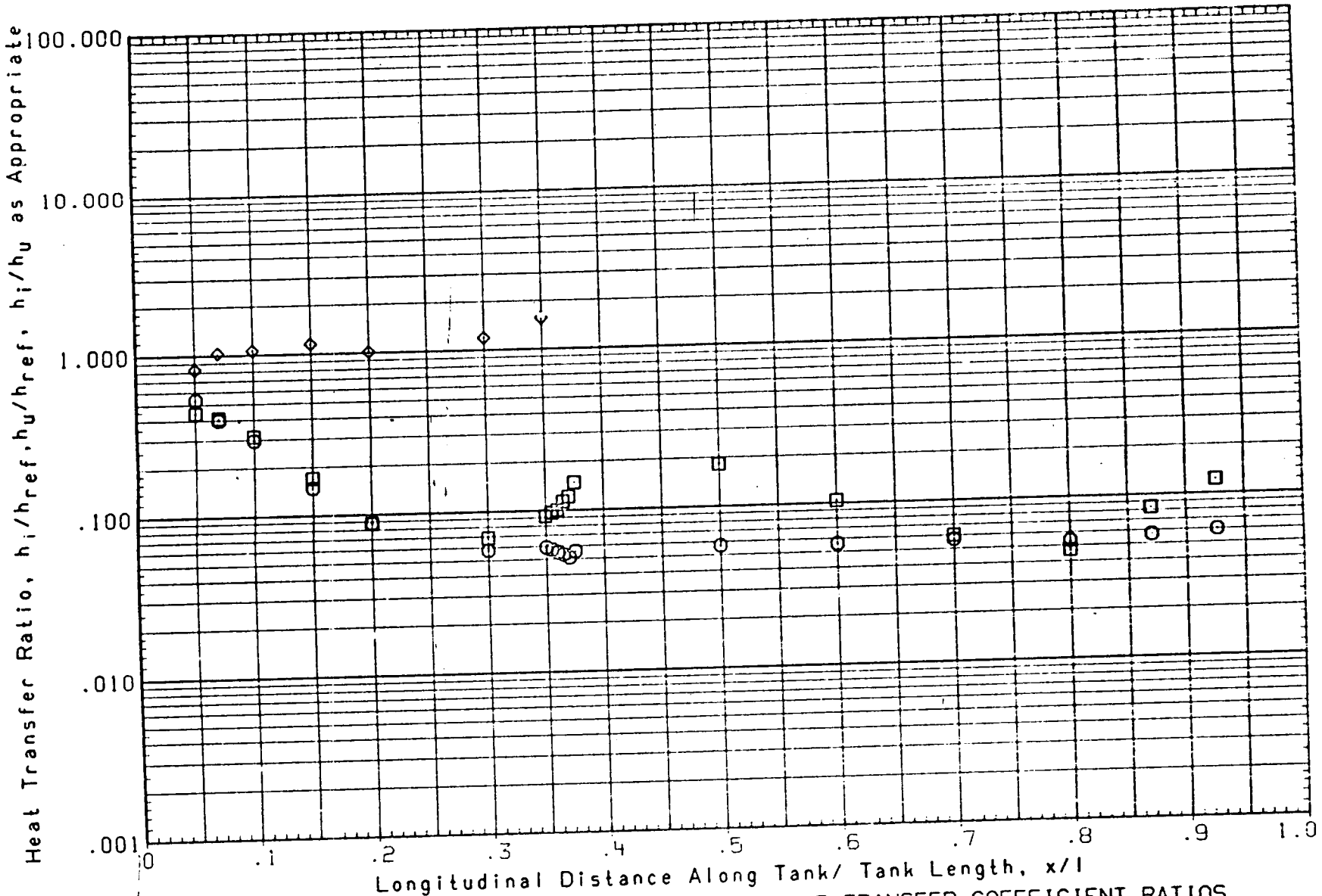


FIG. 8 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = 0

MACH = 4.020 ALPHA = .000 PHI = 23.800

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT02)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	.000
(LVFT22)	□	IH41B(V41A-A4A) O T S (SPIKED LT DATA) HI/HREF	.000	.000
(CVFT22)	◇	DATA NOT AVAILABLE	.000	.000

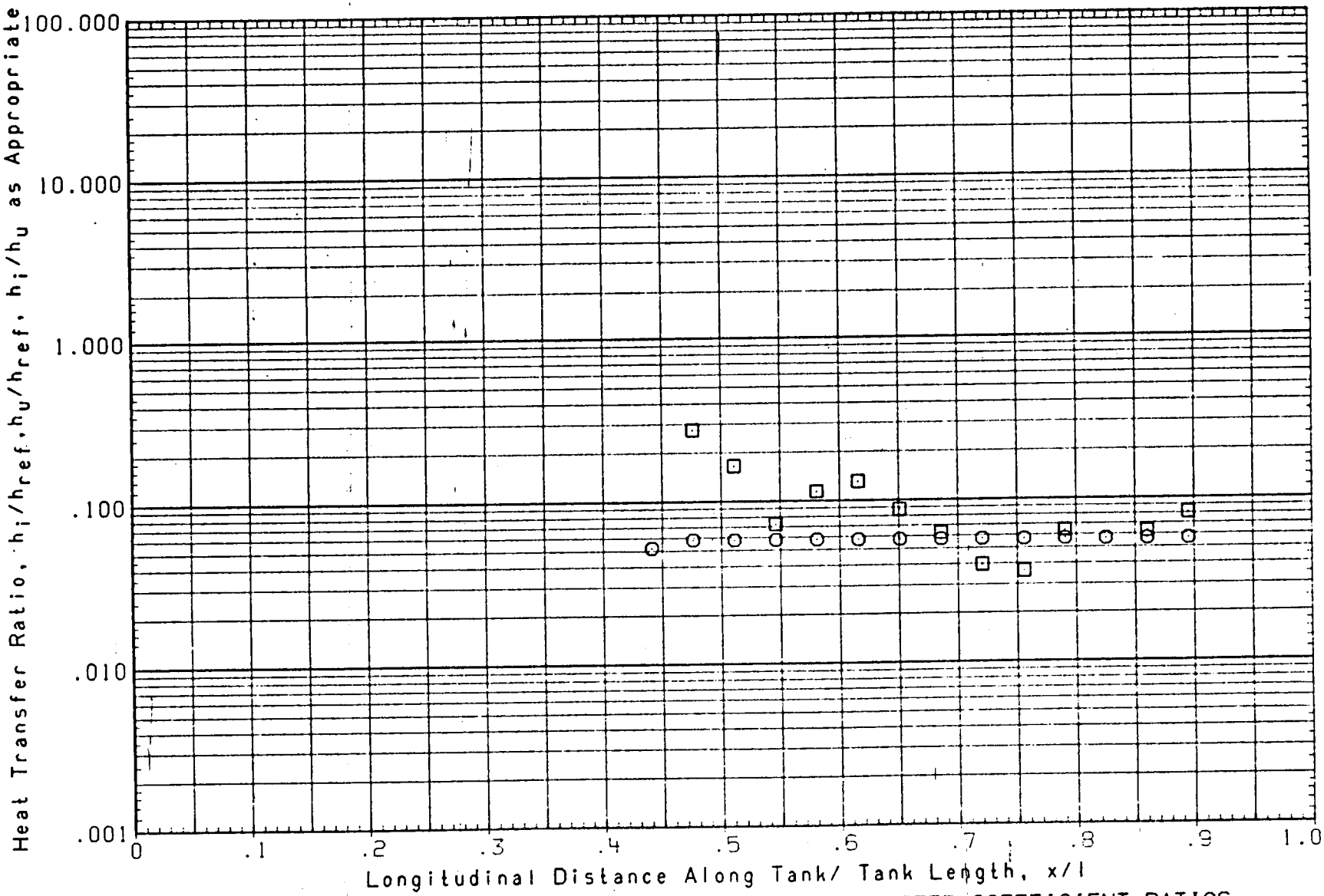


FIG. 8 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = 0

MACH = 4.020 ALPHA = .000 PHI = 31.430

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT02)	○	IH41B(AEDC V41A-A1A) SPIKED EXTERNAL TANK ALONE	.000	.000
(LVFT22)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	.000
(CVFT22)	◇	DATA NOT AVAILABLE	.000	.000

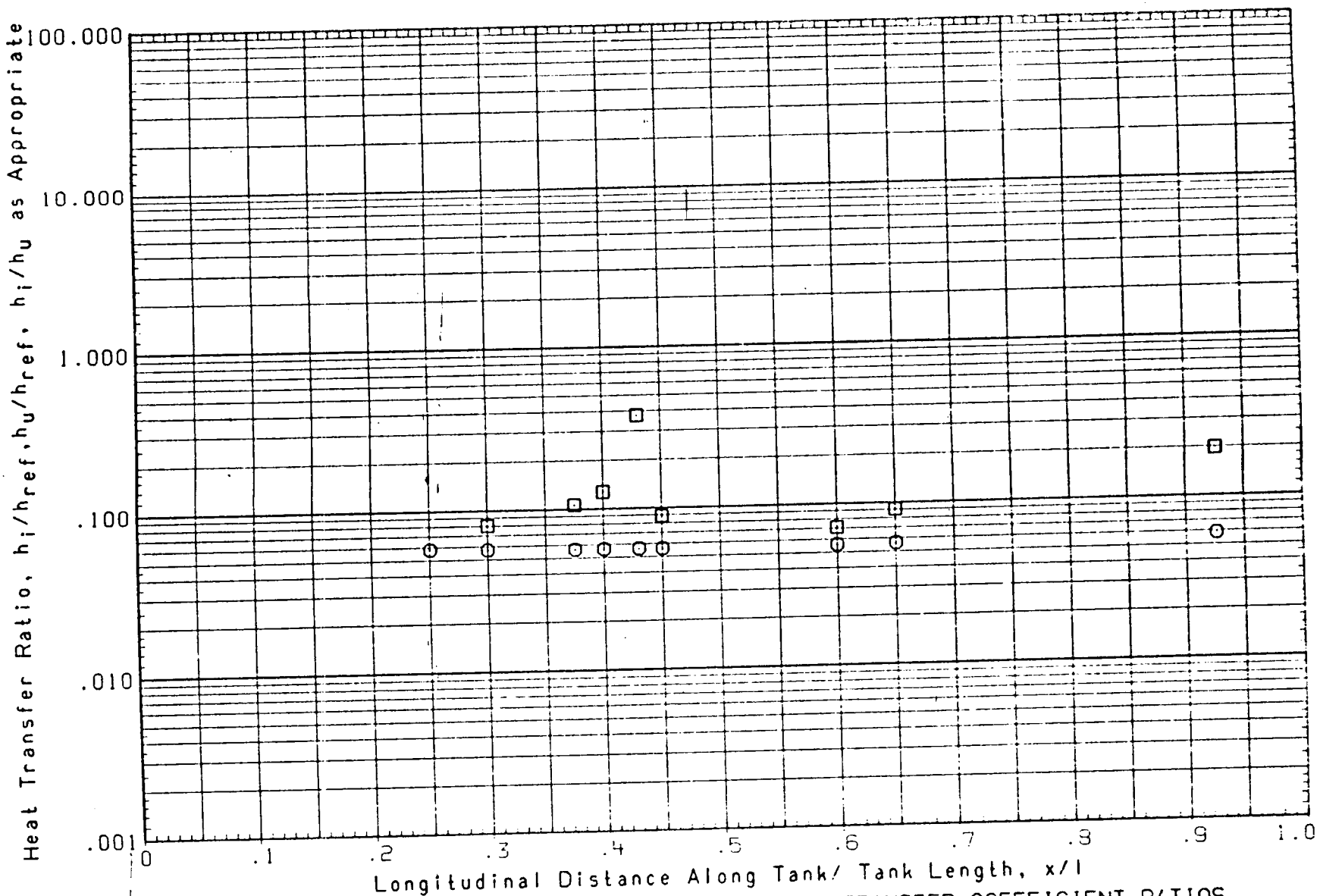


FIG. 8 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = 0

MACH = 4.020 ALPHA = .000 PHI = 33.750

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT02)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	.000
(LVFT22)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	.000
(CVFT22)	◇	DATA NOT AVAILABLE	.000	.000

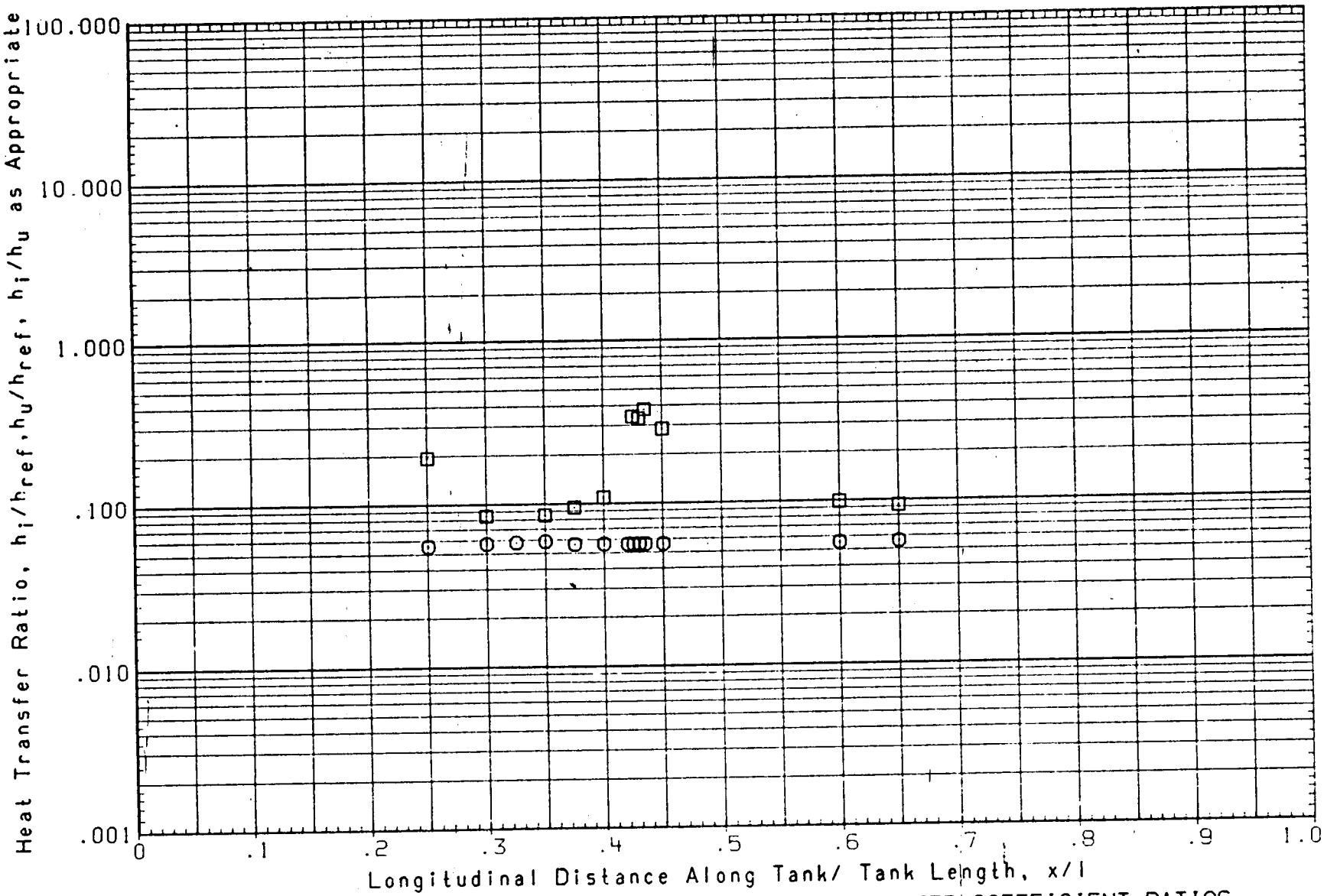


FIG. 8 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = 0

MACH = 4.020 ALPHA = .000 PHI = 36.320

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT02)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	.000
(LVFT22)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	.000
(CVFT22)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	.000

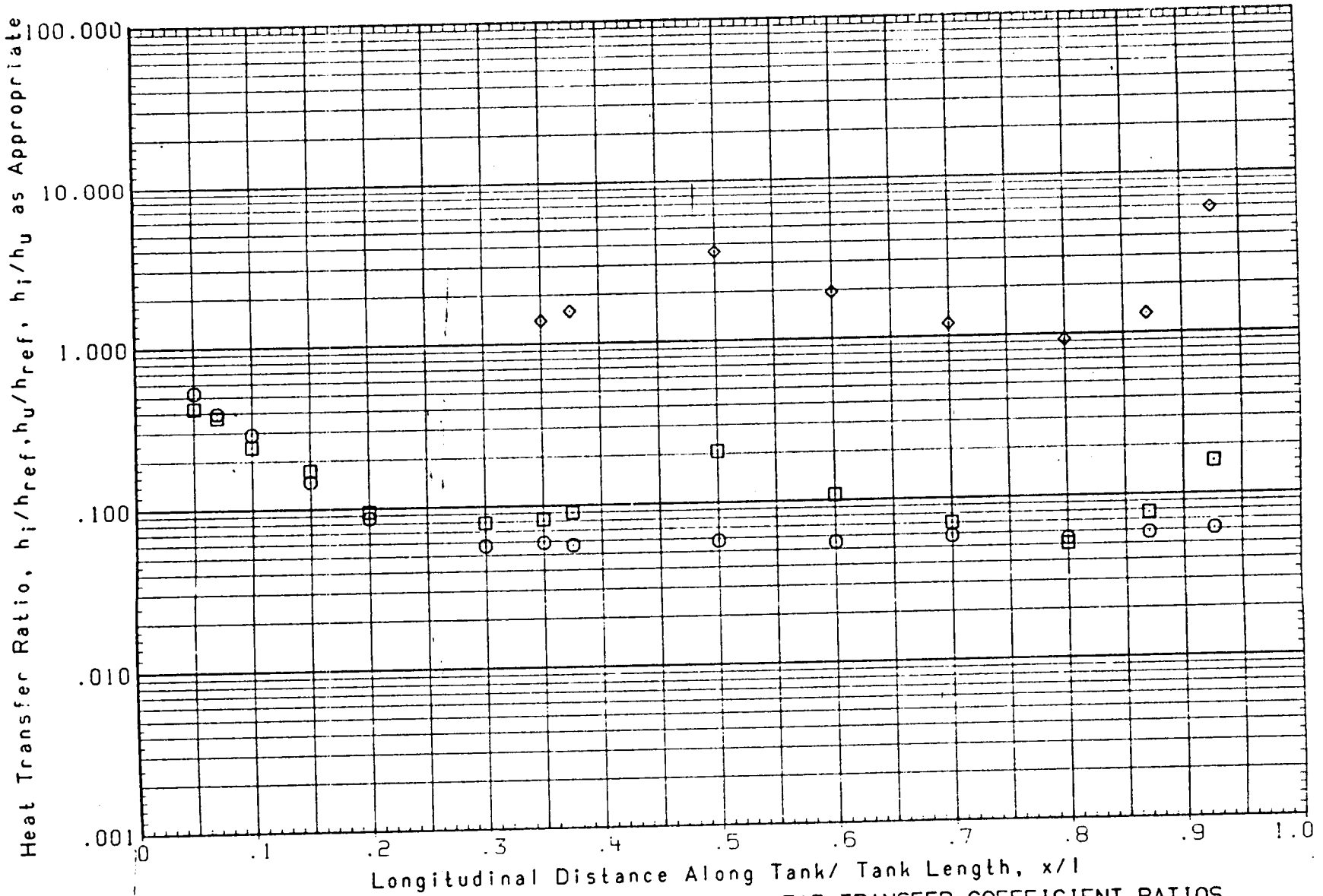


FIG. 8 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = 0

MACH = 4.020 ALPHA = .000 PHI = 37.700

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT02)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	.000
(LVFT22)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	.000
(CVFT22)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	.000

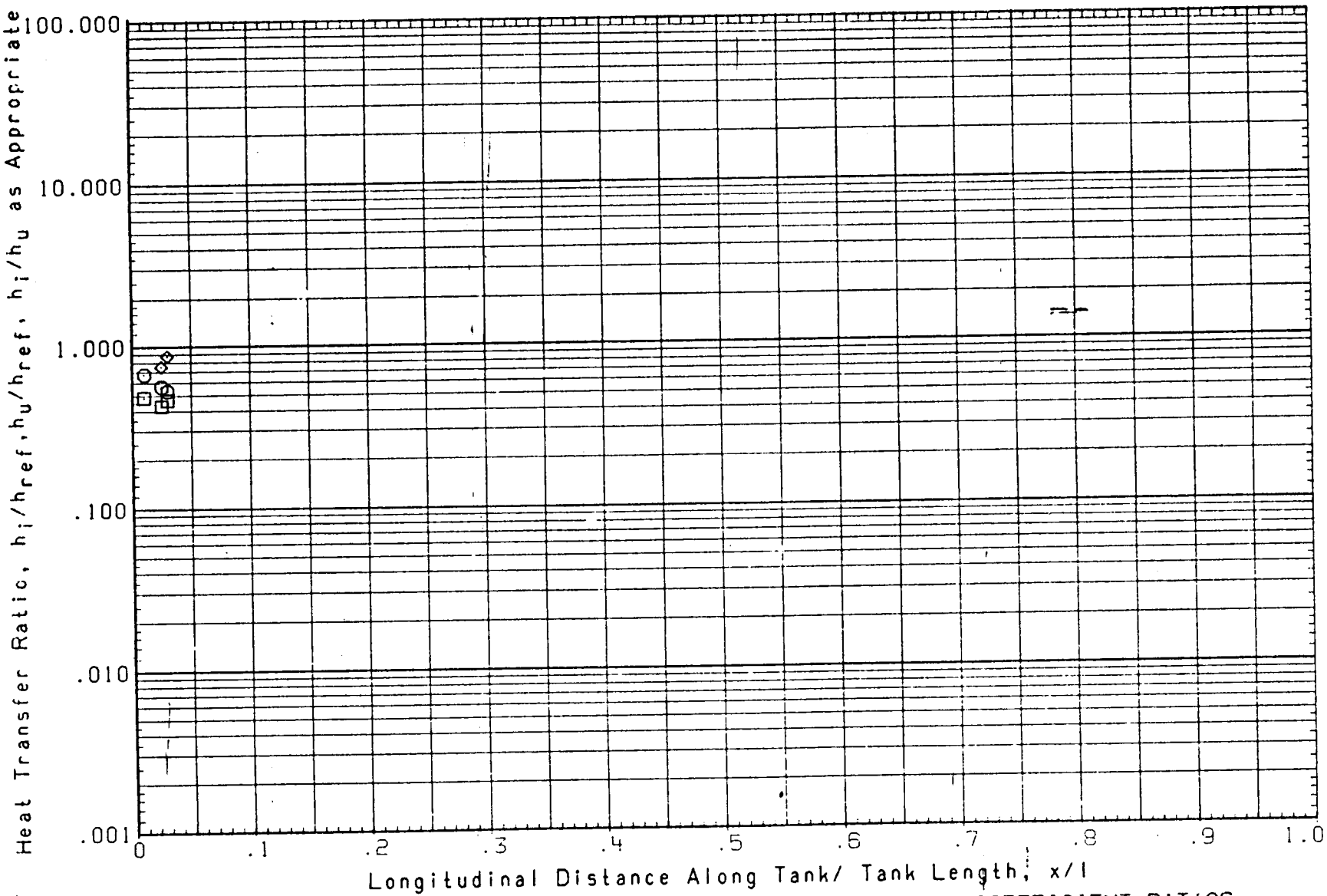


FIG. 8 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS LEEWARD SIDE, ALPHA = 0, BETA = 0

MACH = 4.020 ALPHA = .000 PHI = 33.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT02)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	.000
(LVFT22)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	.000
(CVFT22)	◇	DATA NOT AVAILABLE	.000	.000

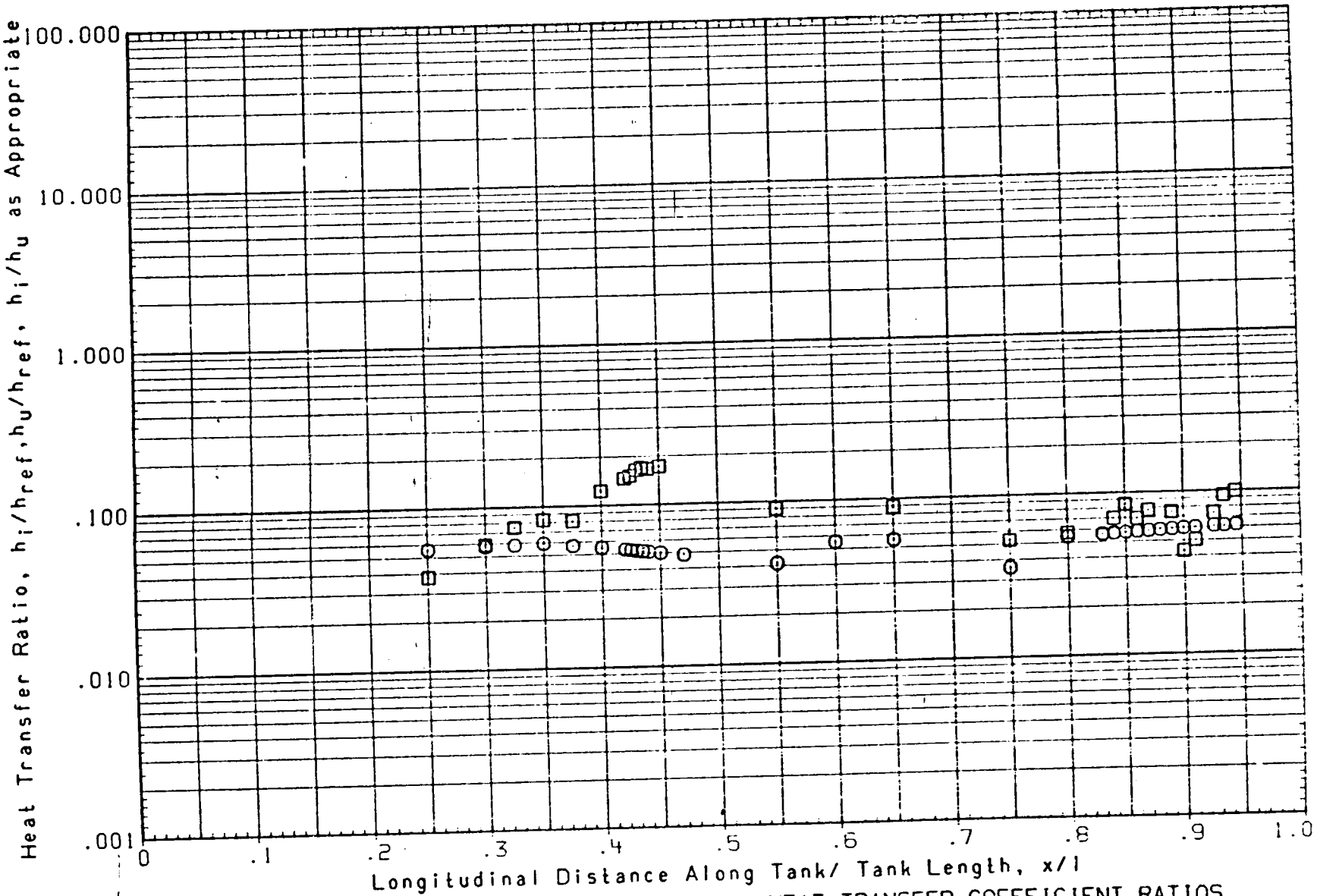


FIG. 8 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = 0

MACH = 4.020 ALPHA = .000 PHI = 45.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT02)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	.000
(LVFT22)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	.000
(CVFT22)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	.000

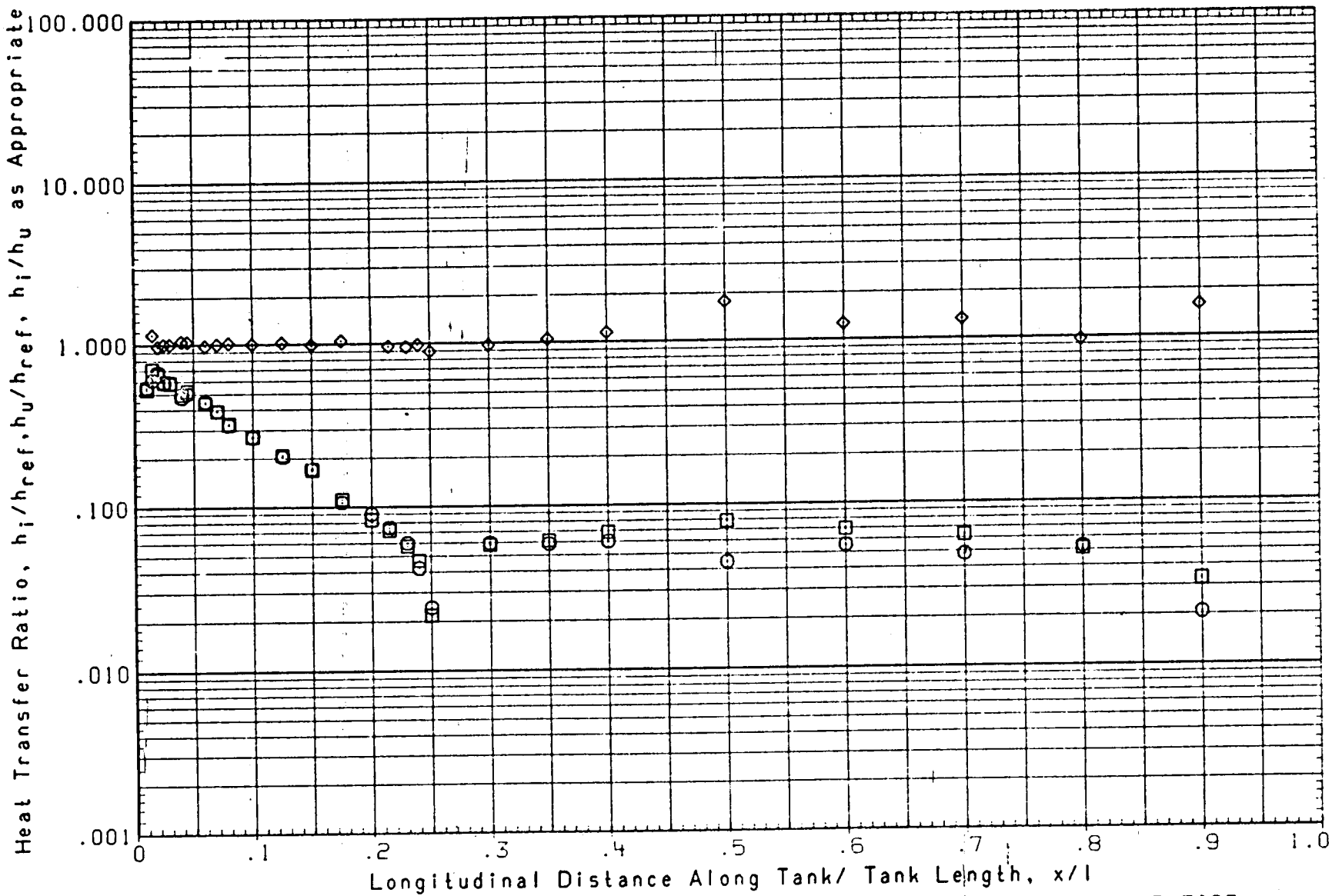


FIG. 8 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = 0

MACH = 4.020 ALPHA = .000 PHI = 180.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT03)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-3.000
(LVFT23)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-3.000
(BVFT23)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-3.000

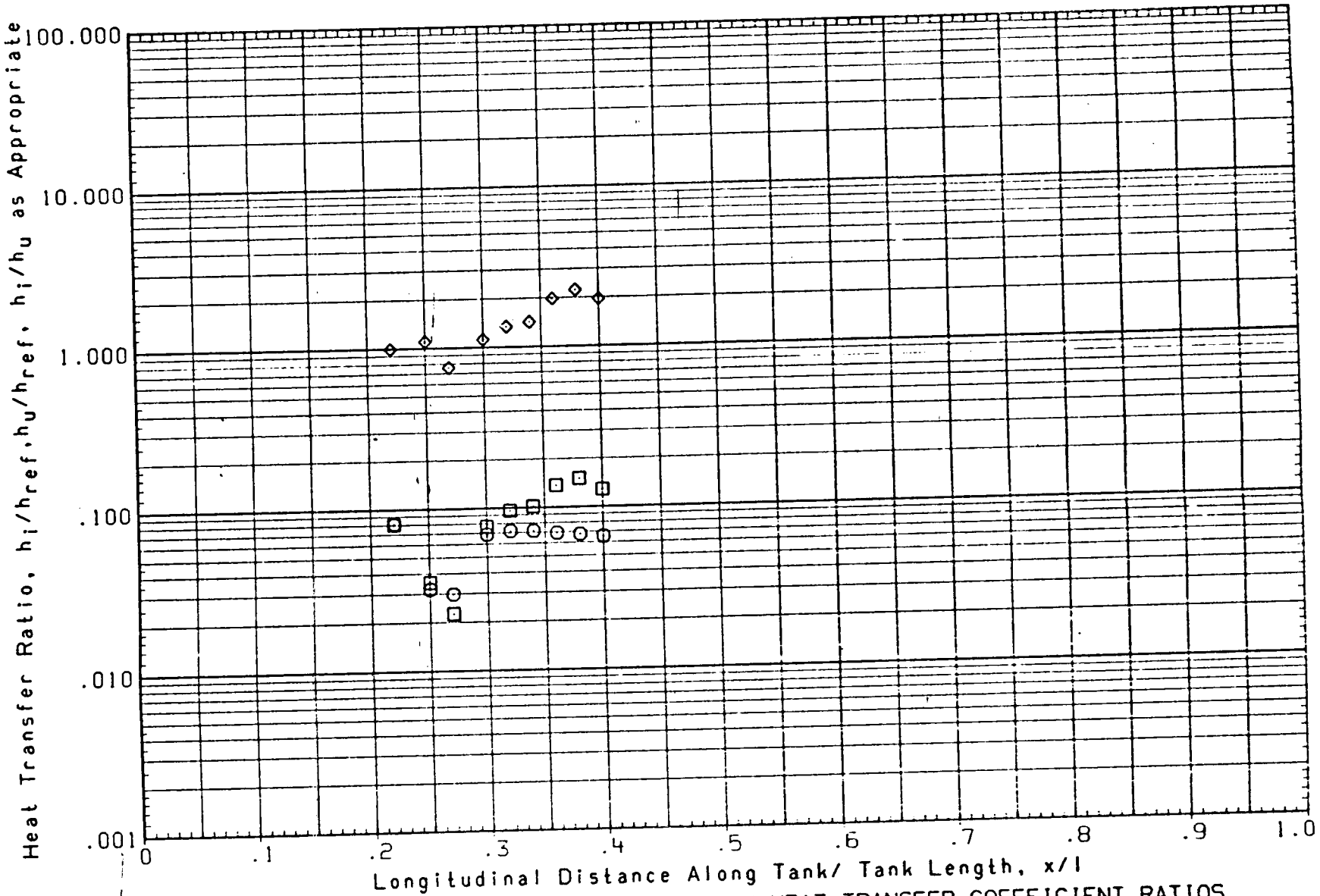


FIG. 9 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -3

MACH = 4.020 ALPHA = .000 PHI = 235.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT03)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-3.000
(LVFT23)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-3.000
(BVFT23)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-3.000

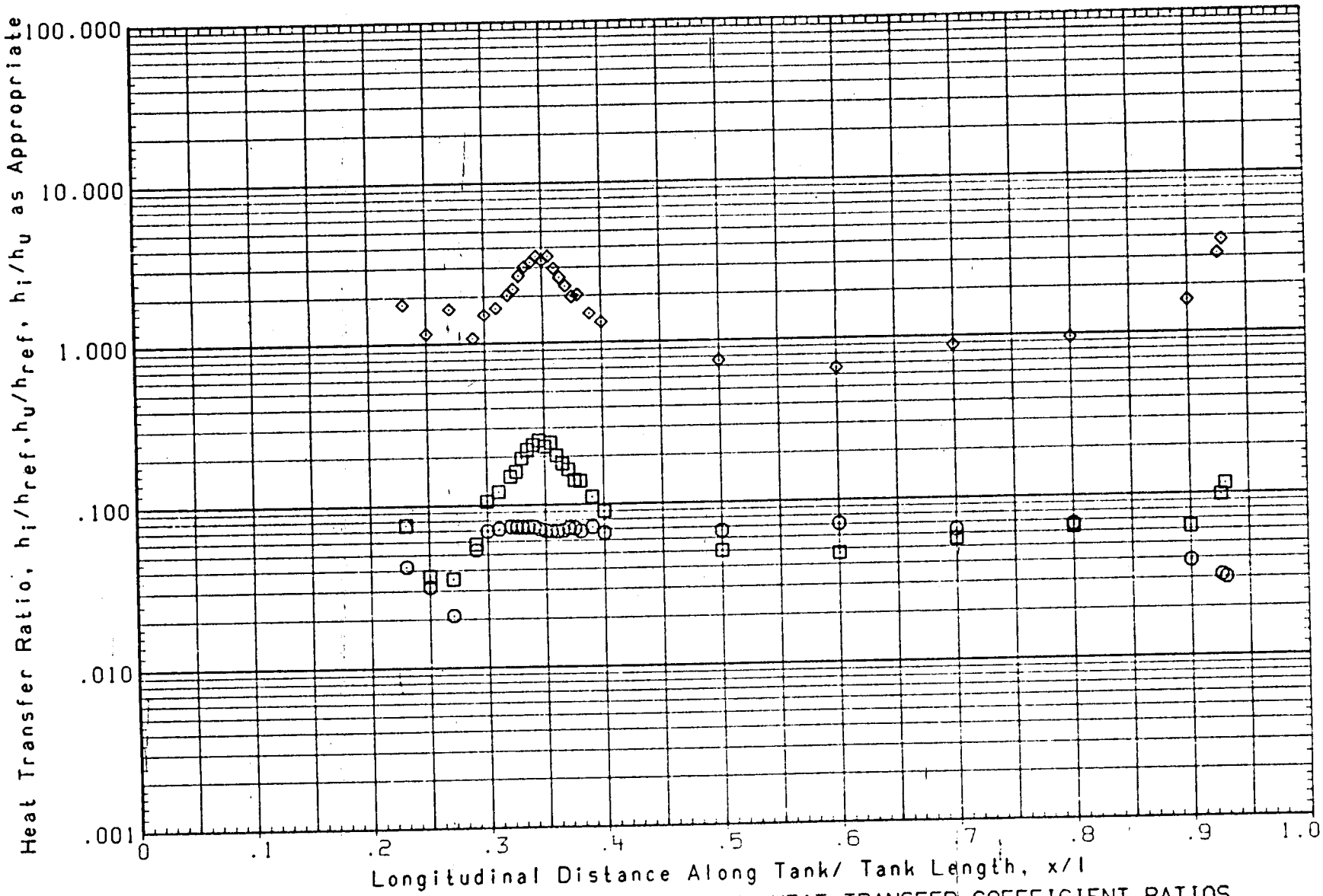


FIG. 9 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -3

MACH = 4.020 ALPHA = .000 PHI = 247.500

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT03)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-3.000
(LVFT23)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-3.000
(BVFT23)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-3.000

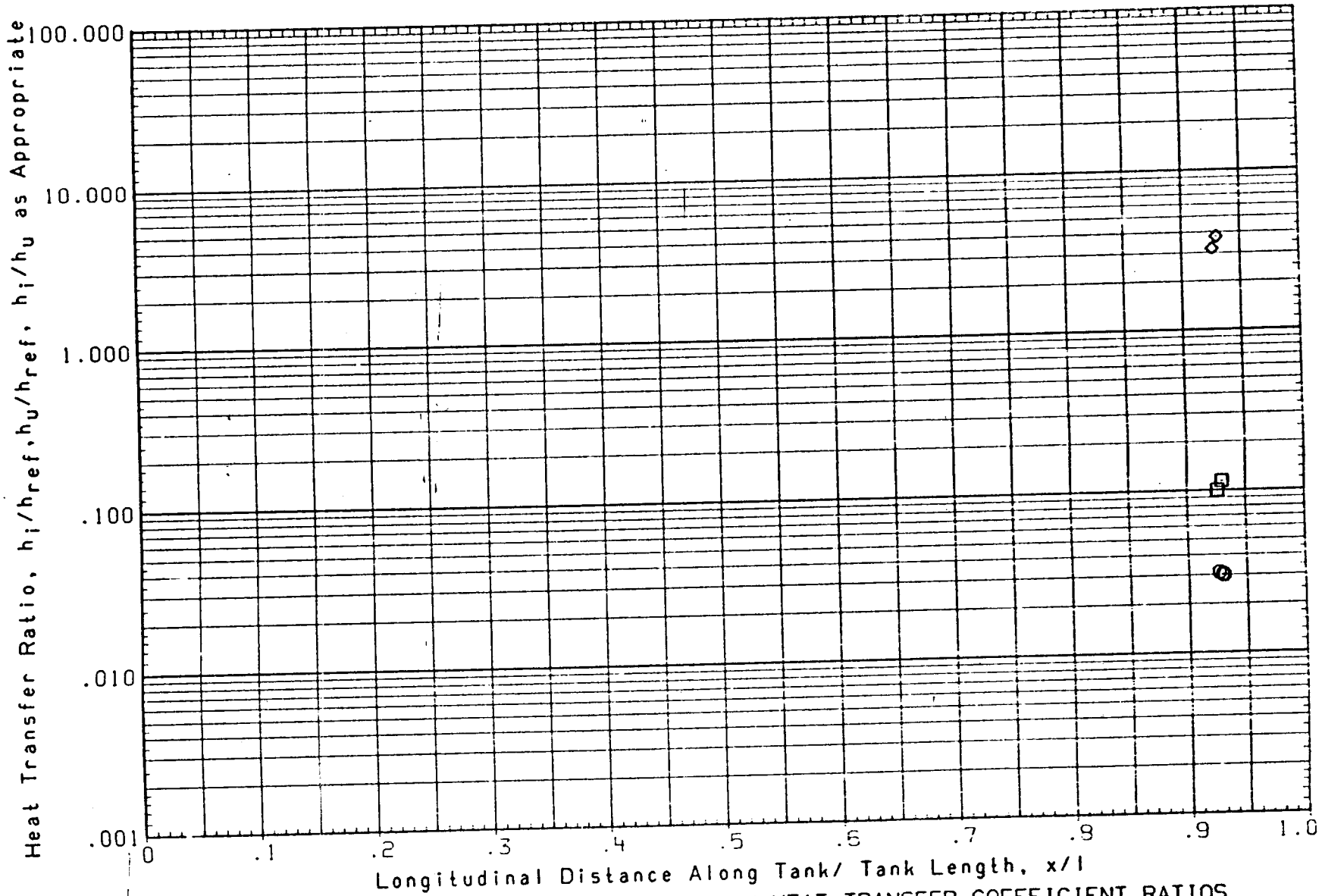


FIG. 9 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -3

MACH = 4.020 ALPHA = .000 PHI = 250.570

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT03)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-3.000
(LVFT23)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-3.000
(BVFT23)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-3.000

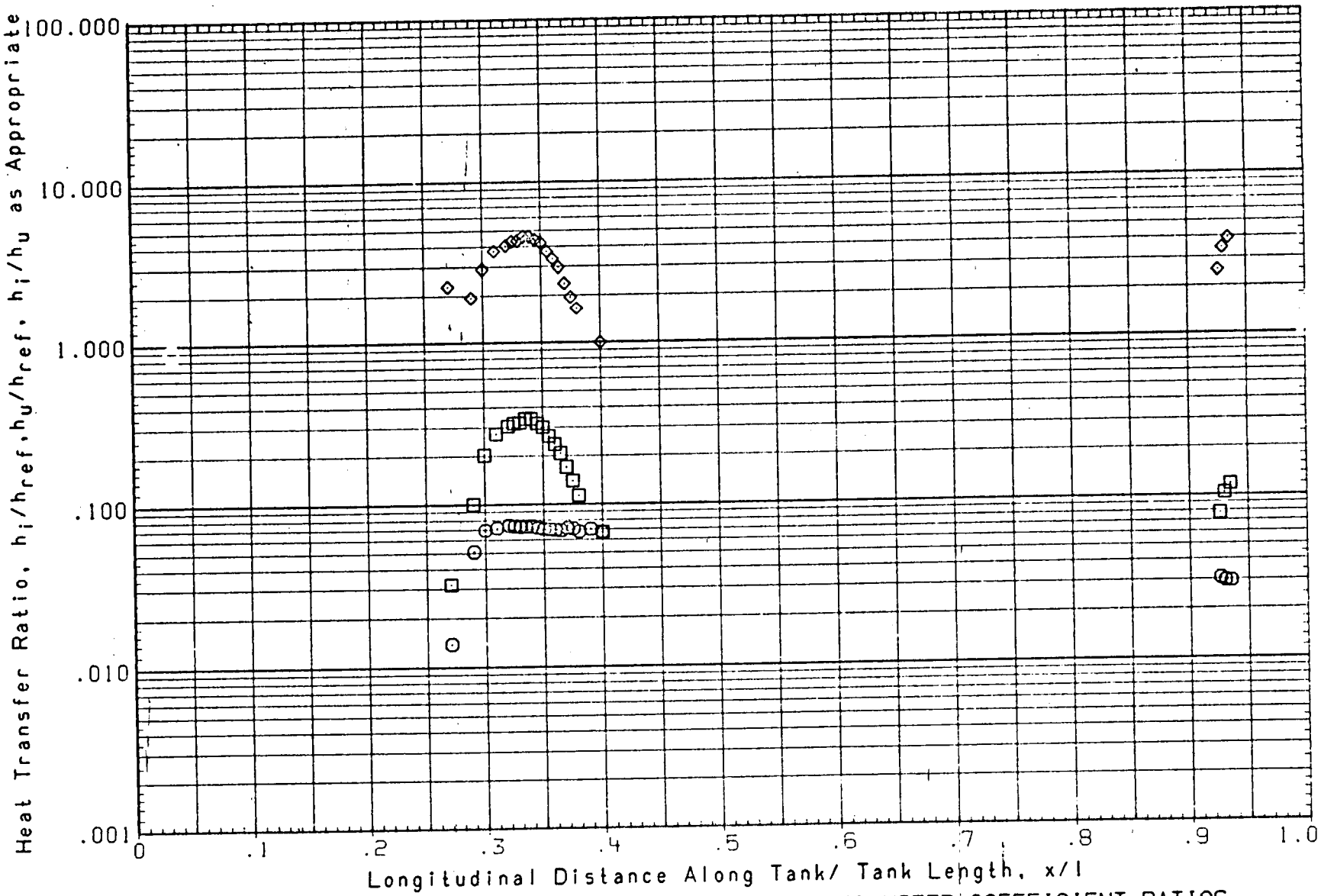


FIG. 9. EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -3

MACH = 4.020 ALPHA = .000 PHI = 258.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		BETA
(KVFT03)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-3.000
(LVFT23)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-3.000
(BVFT23)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-3.000

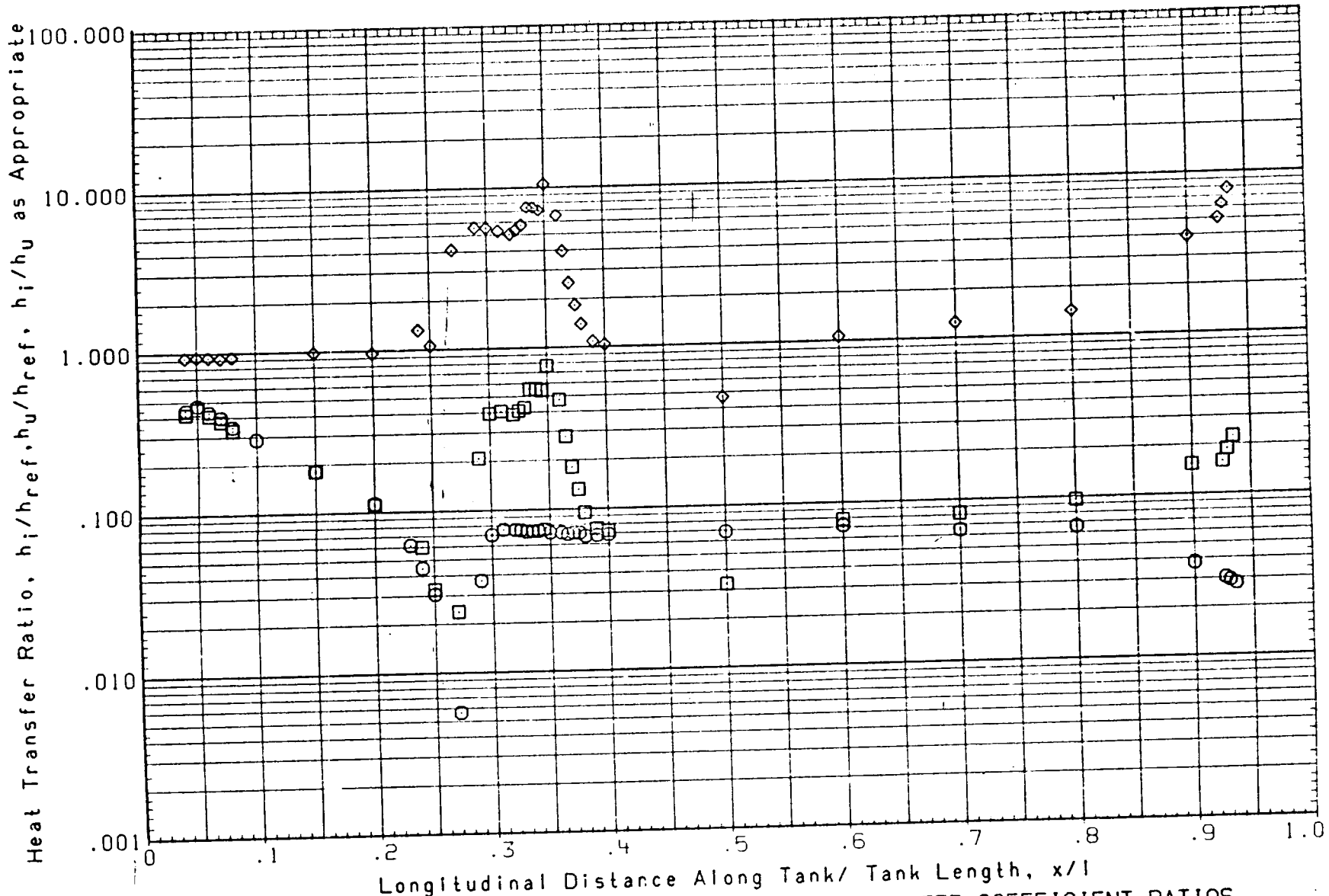


FIG. 9 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -3

MACH = 4.020 ALPHA = .000 PHI = 270.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT03)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-3.000
(LVFT23)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-3.000
(BVFT23)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-3.000

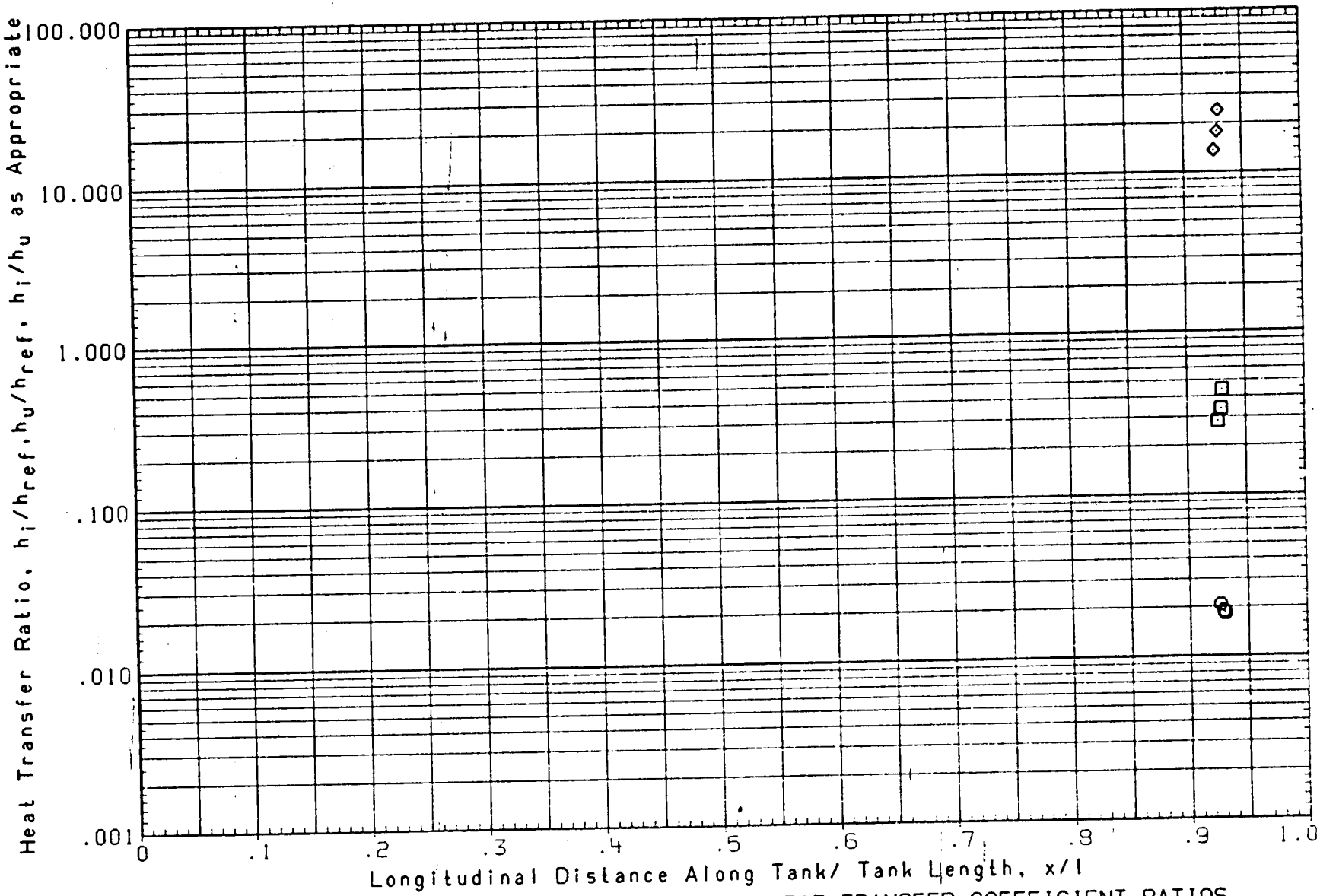


FIG. 9 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -3

MACH = 4.020 ALPHA = .000 PHI = 289.430

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT03)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-3.000
(LVFT23)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-3.000
(BVFT23)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO. HI/HU	.000	-3.000

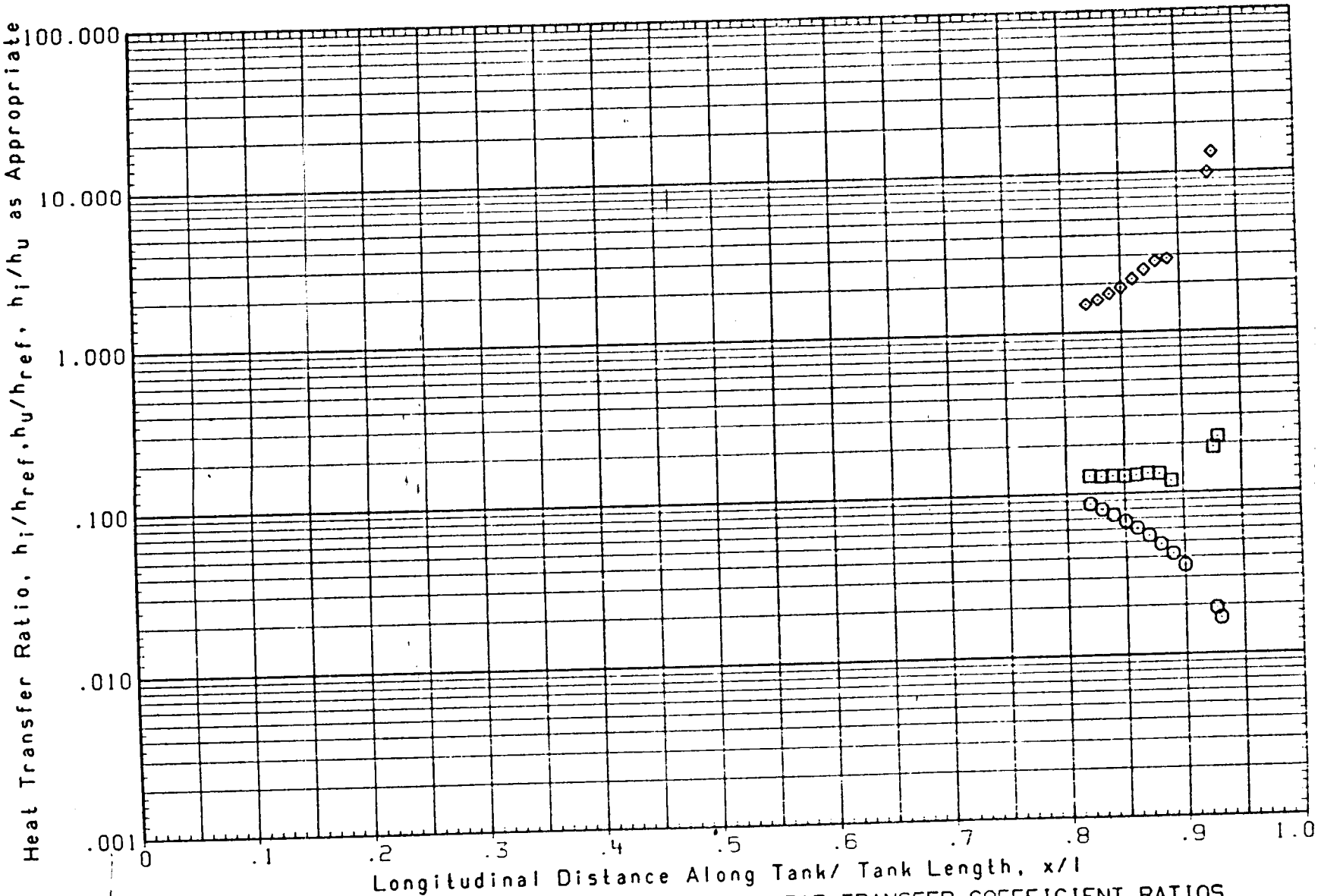


FIG. 9 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -3

MACH = 4.020 ALPHA = .000 PHI = 292.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT03)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-3.000
(LVFT23)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-3.000
(BVFT23)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-3.000

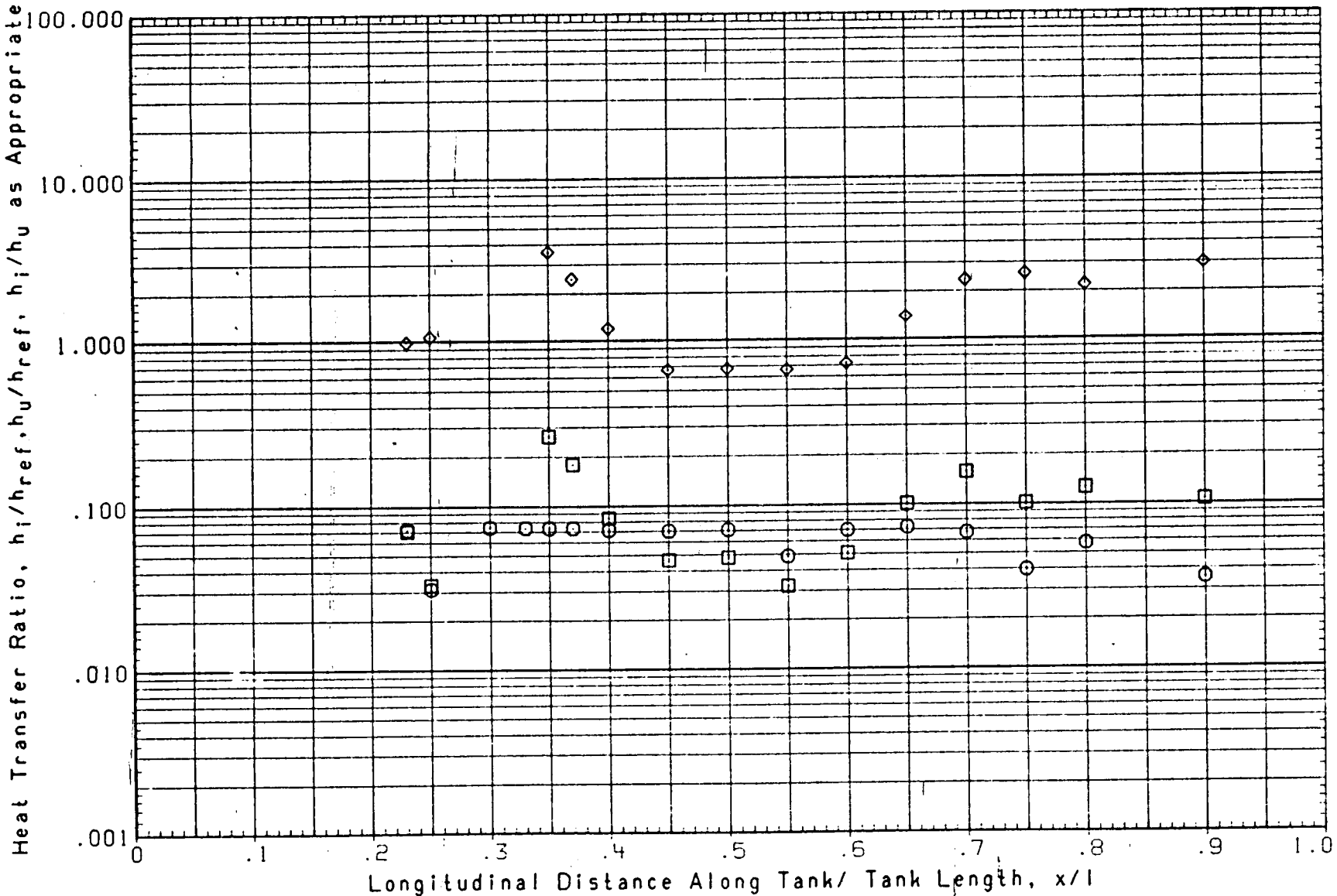


FIG. 9 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS WINDWARD SIDE, ALPHA = 0, BETA = -3

MACH = 4.020 ALPHA = .000 PHI = 292.500

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT03)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-3.000
(LVFT23)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-3.000
(BVFT23)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-3 000

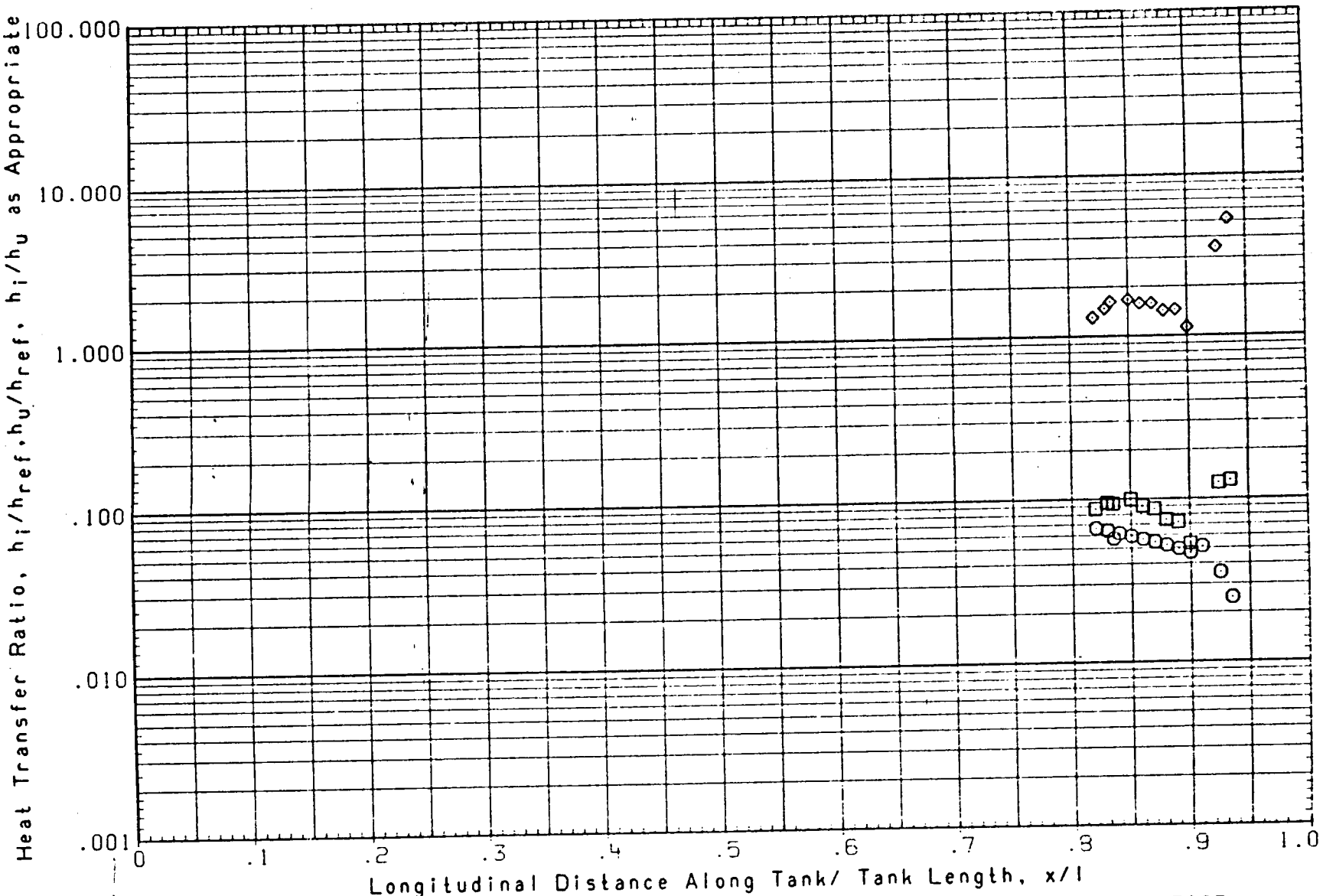


FIG. 9 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -3

MACH = 4.020 ALPHA = .000 PHI = 301.500

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT03)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-3.000
(LVFT23)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-3.000
(BVFT23)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-3.000

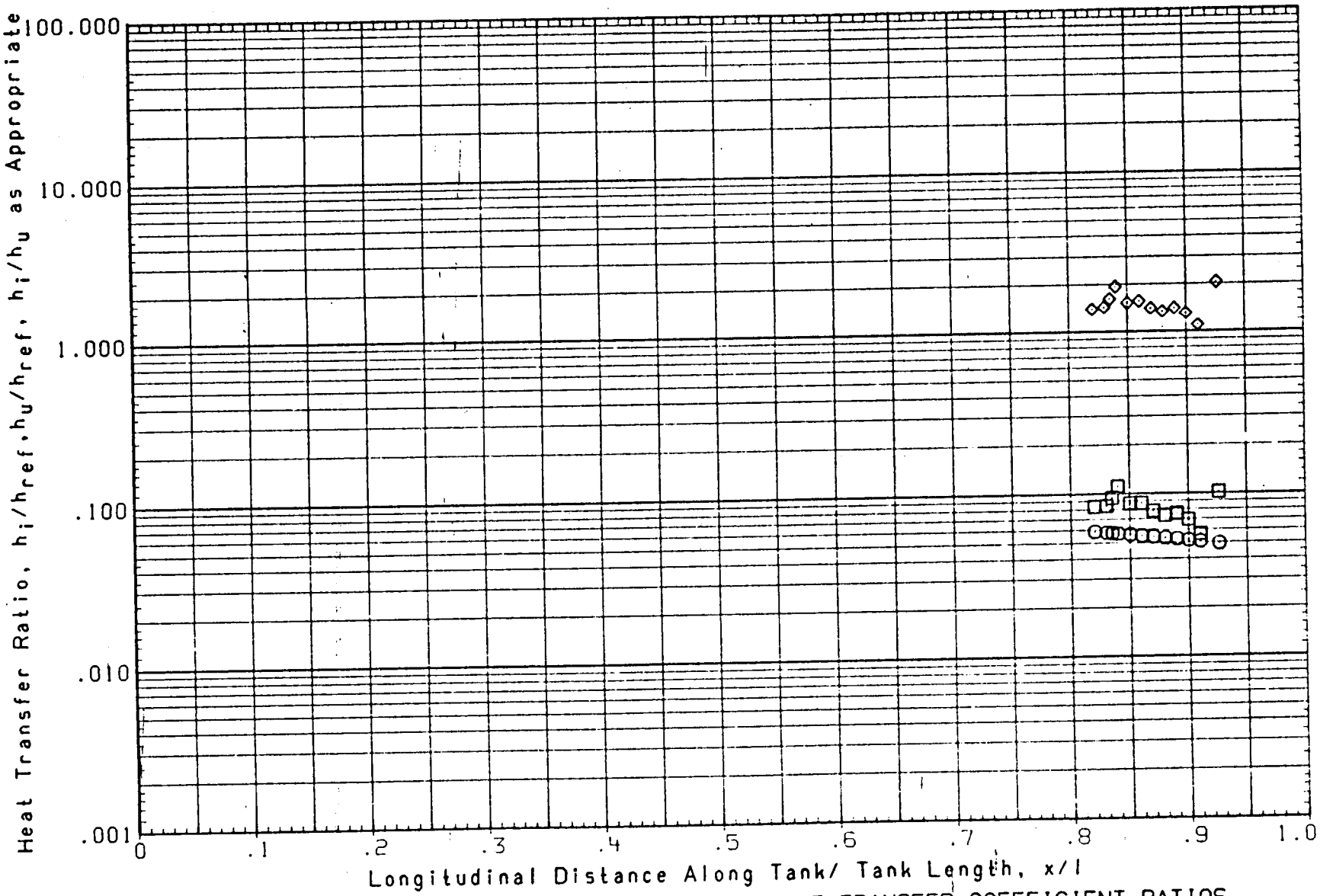


FIG. 9 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -3

MACH = 4.020 ALPHA = .000 PHI = 305.400

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT03)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-3.000
(LVFT23)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-3.000
(BVFT23)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-3.000

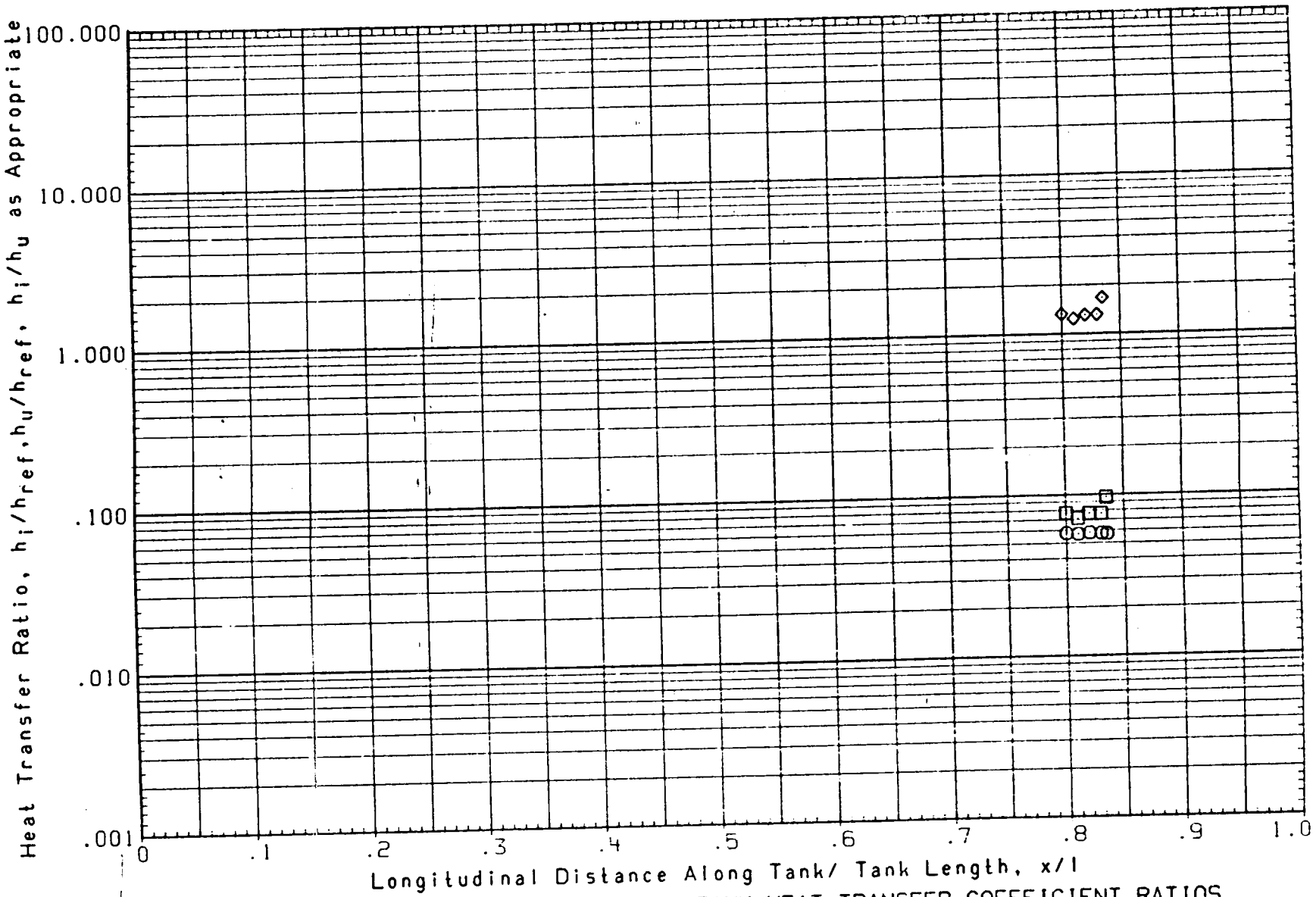


FIG. 9 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -3

MACH = 4.020 ALPHA = .000 PHI = 309.300

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT03)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-3.000
(LVFT23)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-3.000
(BVFT23)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-3.000

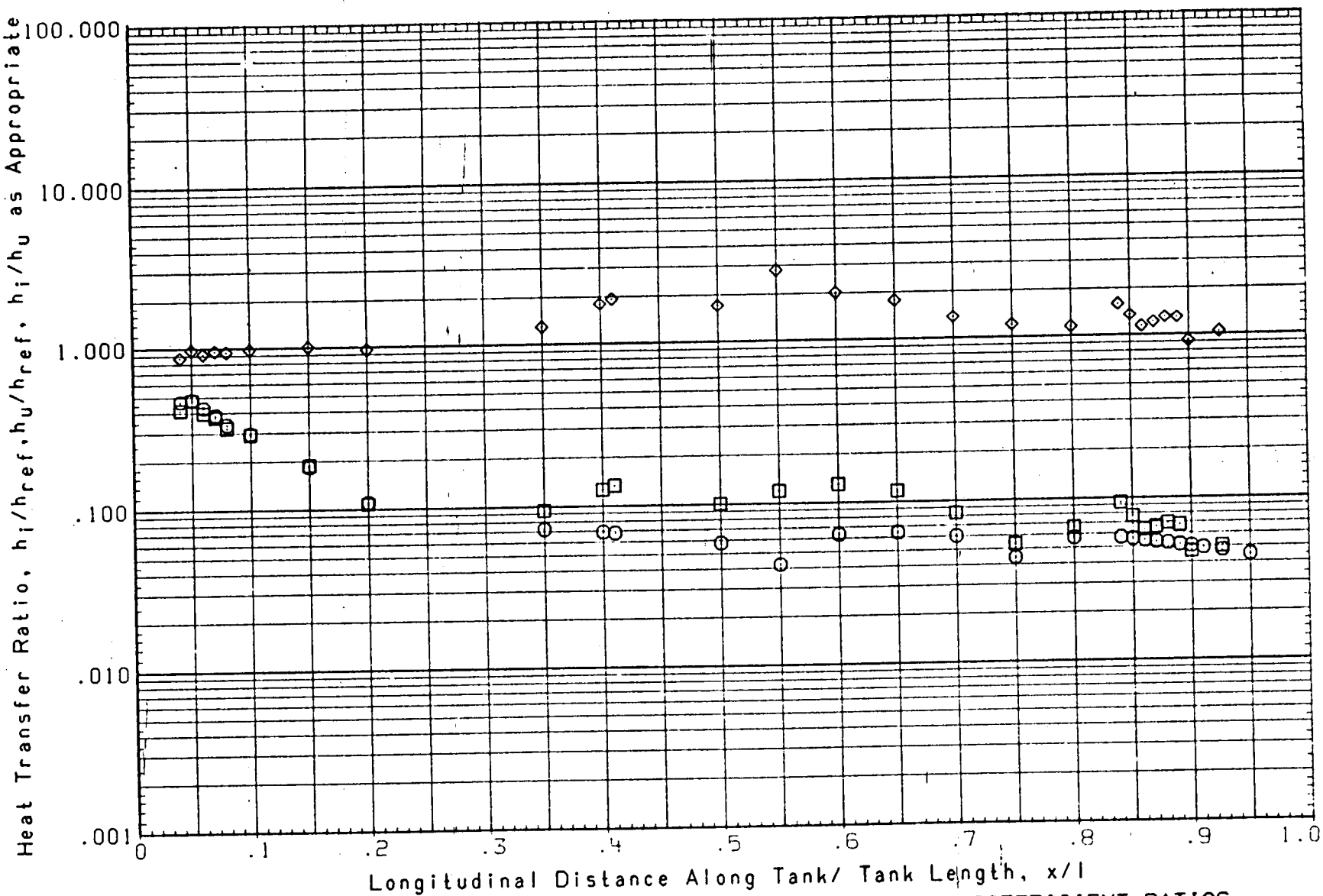


FIG. 9 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -3

MACH = 4.020 ALPHA = .000 PHI = 315.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT03)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-3.000
(LVFT23)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-3.000
(BVFT23)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-3.000

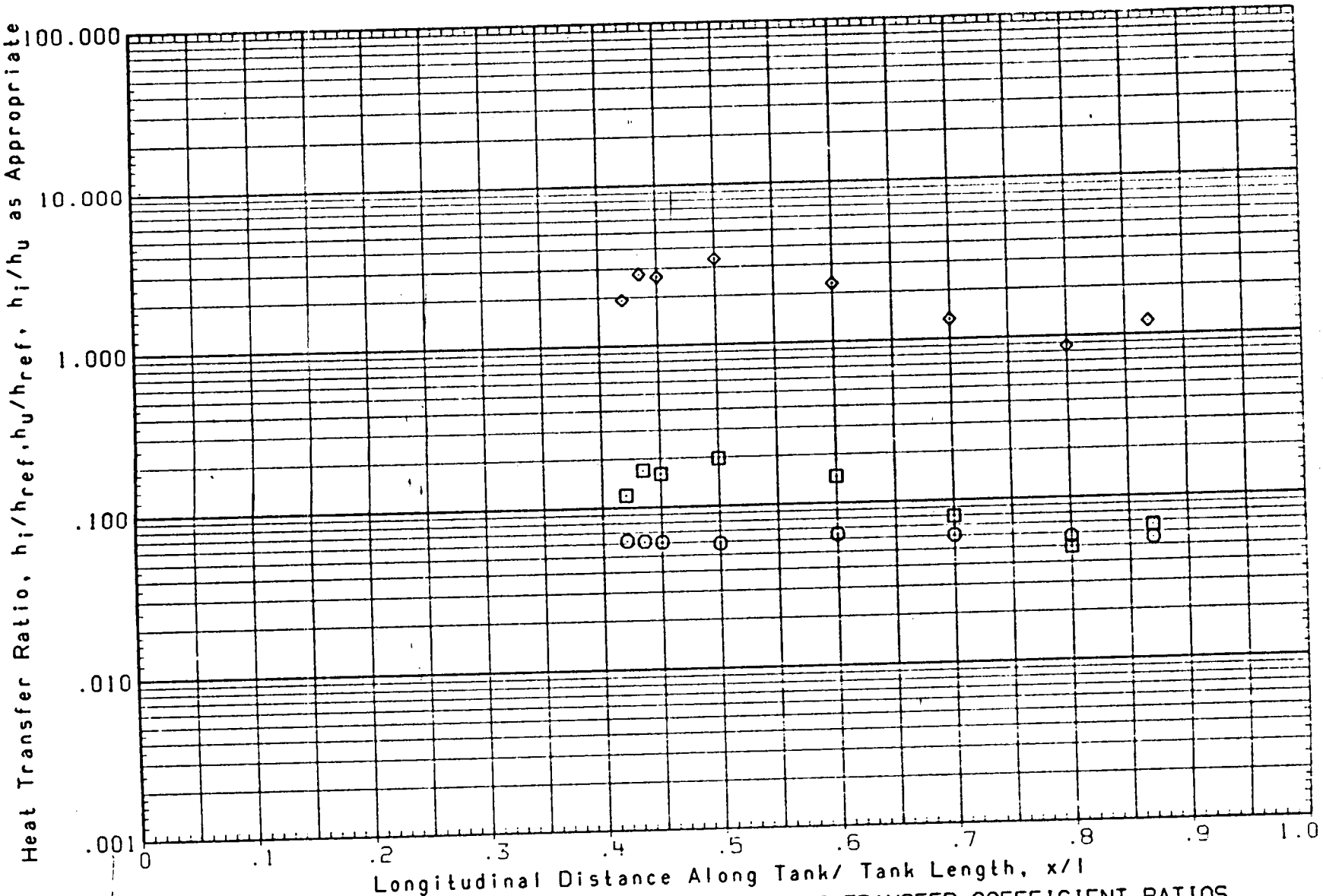


FIG. 9 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS WINDWARD SIDE, ALPHA = 0, BETA = -3

MACH = 4.020 ALPHA = .000 PHI = 322.300

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT03)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-3.000
(LVFT23)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-3.000
(BVFT23)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-3.000

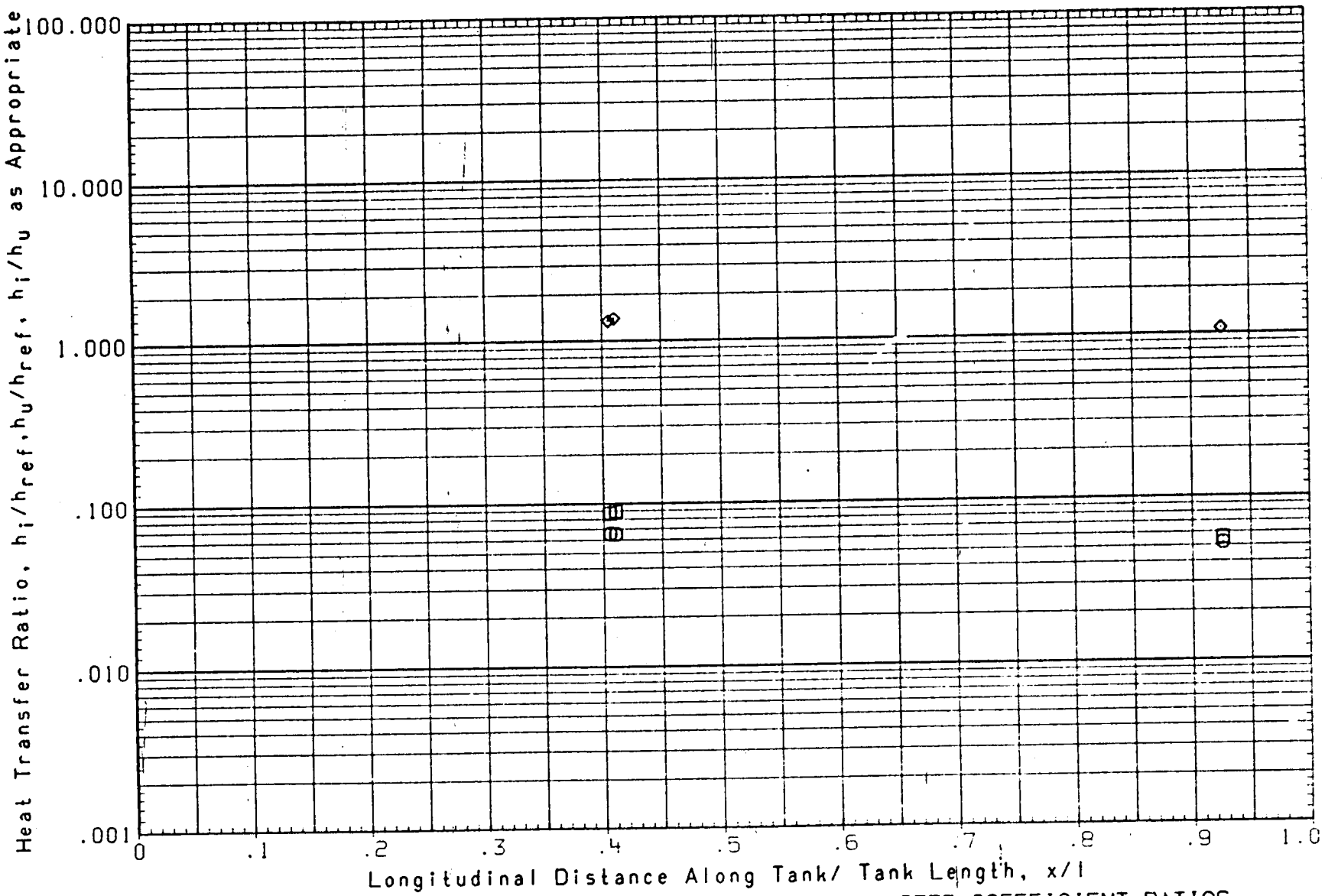


FIG. 9 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS WINDWARD SIDE, ALPHA = 0, BETA = -3

MACH = 4.020 ALPHA = .000 PHI = 324.450

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT03)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-3.000
(LVFT23)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-3.000
(BVFT23)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-3.000

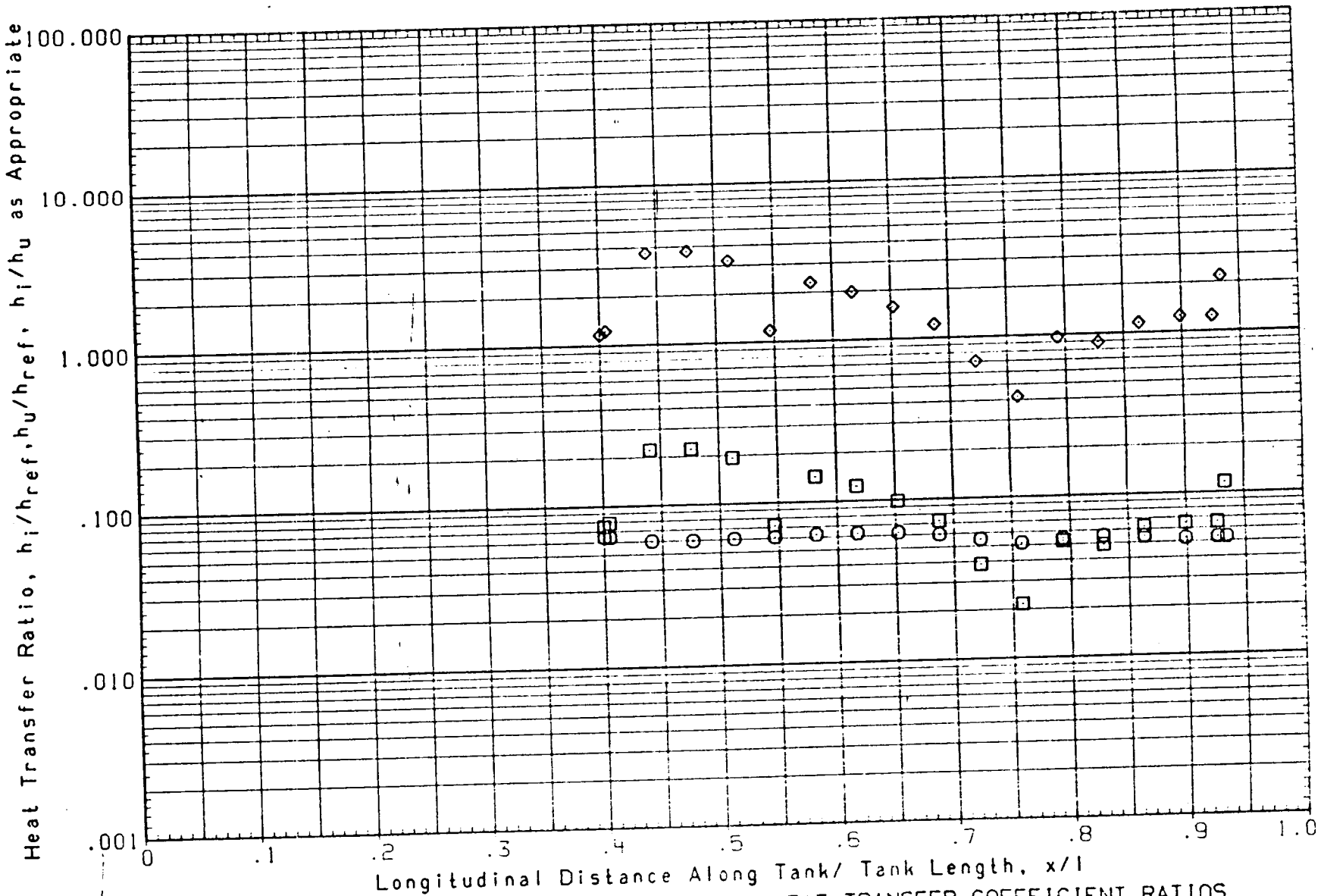


FIG. 9 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -3

MACH = 4.020 ALPHA = .000 PHI = 326.850

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT03)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-3.000
(LVFT23)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-3.000
(BVFT23)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-3.000

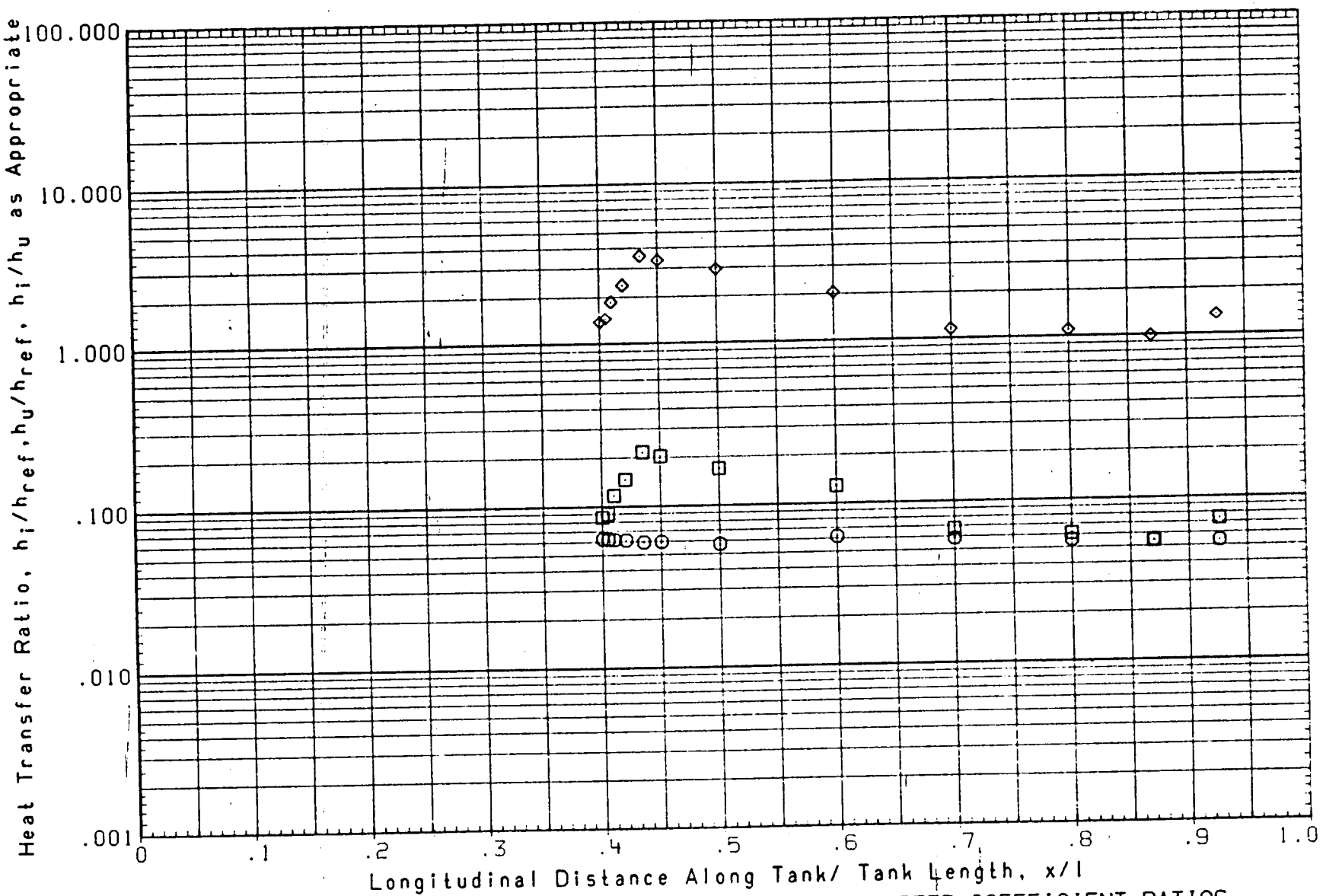


FIG. 9 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -3

MACH = 4.020 ALPHA = .000 PHI = 330.200

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		BETA
(KVFT03)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-3.000
(LVFT23)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-3.000
(BVFT23)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-3.000

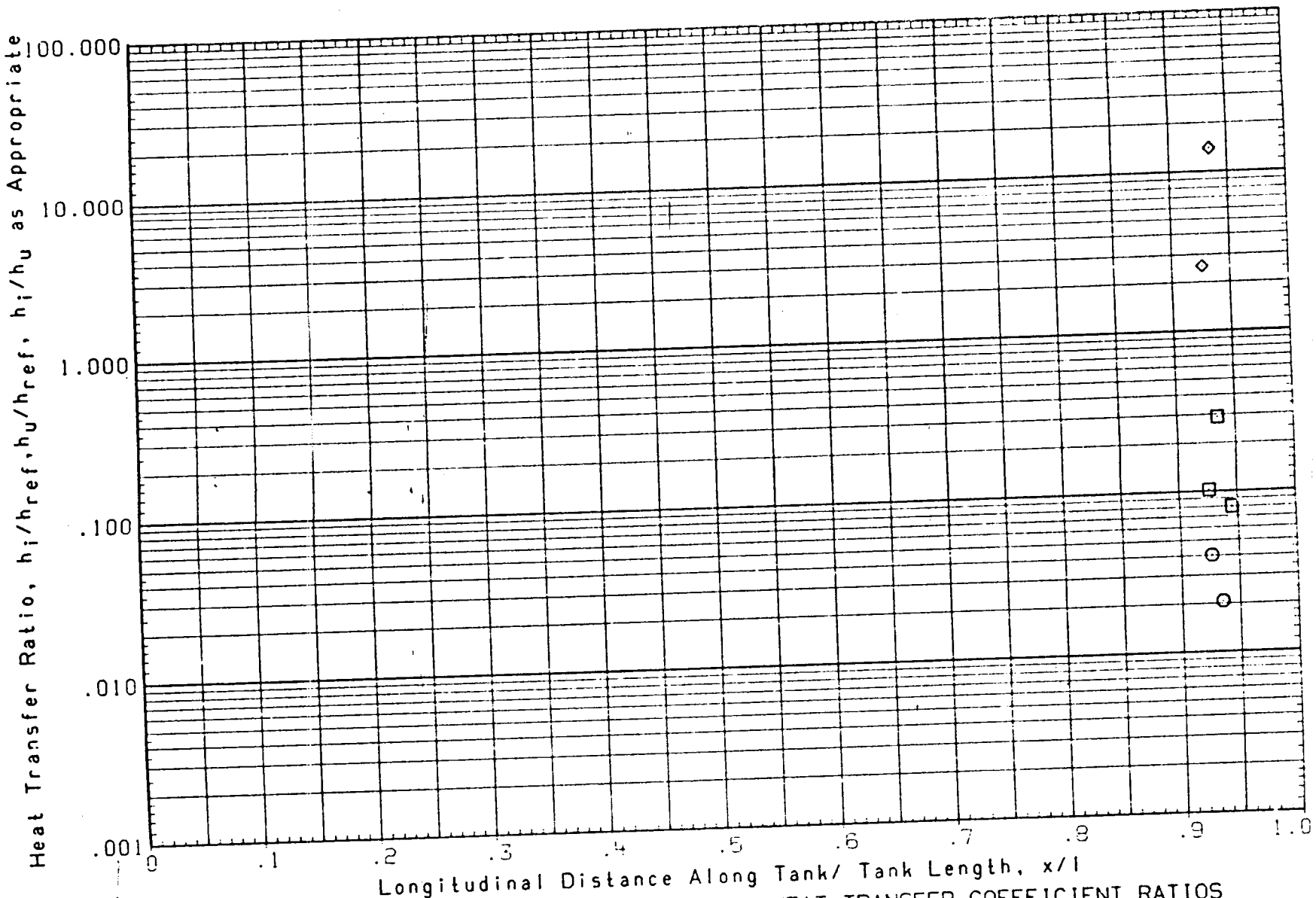


FIG. 9 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS WINDWARD SIDE, ALPHA = 0, BETA = -3

MACH = 4.020 ALPHA = .000 PHI = 334.980

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT03)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-3.000
(LVFT23)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-3.000
(BVFT23)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-3.000

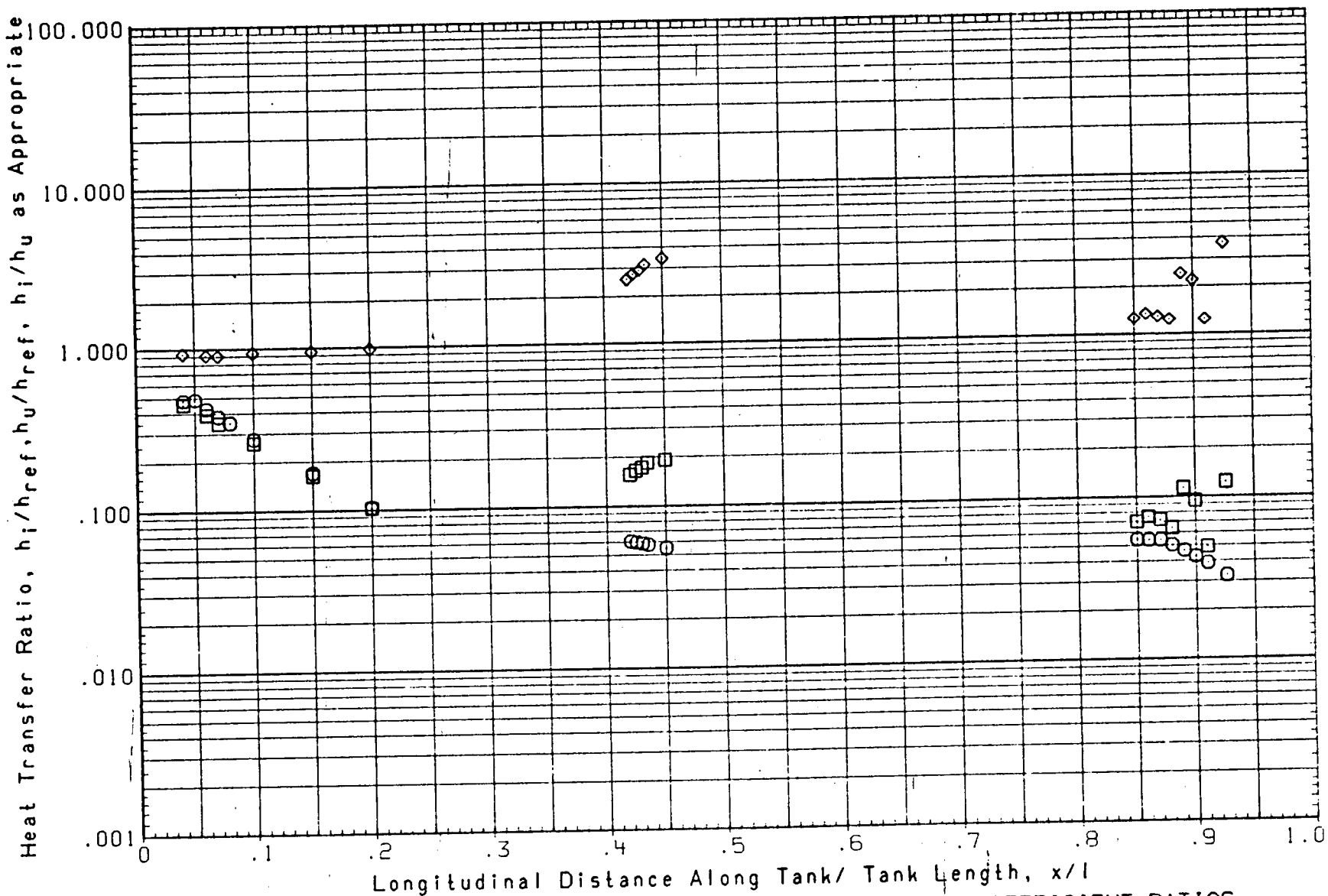


FIG. 9 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS WINDWARD SIDE, ALPHA = 0, BETA = -3

MACH = 4.020 ALPHA = .000 PHI = 337.500

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT03)	○	IH41B(AEDC V41A-44A) SPIKED EXTERNAL TANK ALONE	.000	-3.000
(LVFT23)	□	IH41B(V41A-44A) O T S (SPIKED ET DATA) HI/HREF	.000	-3.000
(BVFT23)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-3.000

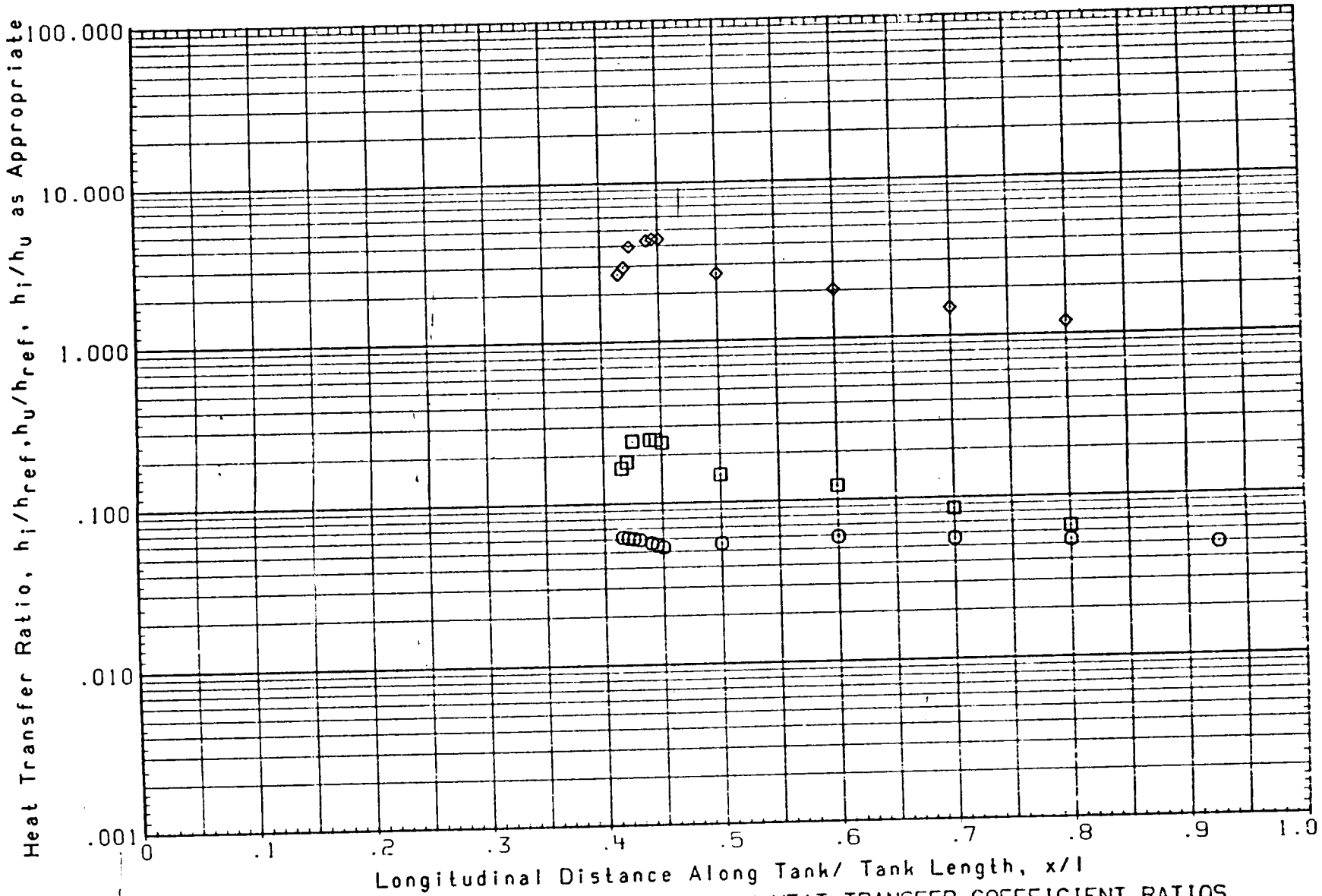


FIG. 9 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -3

MACH = 4.020 ALPHA = .000 PHI = 343.120

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT03)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-3.000
(LVFT23)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-3.000
(BVFT23)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-3.000

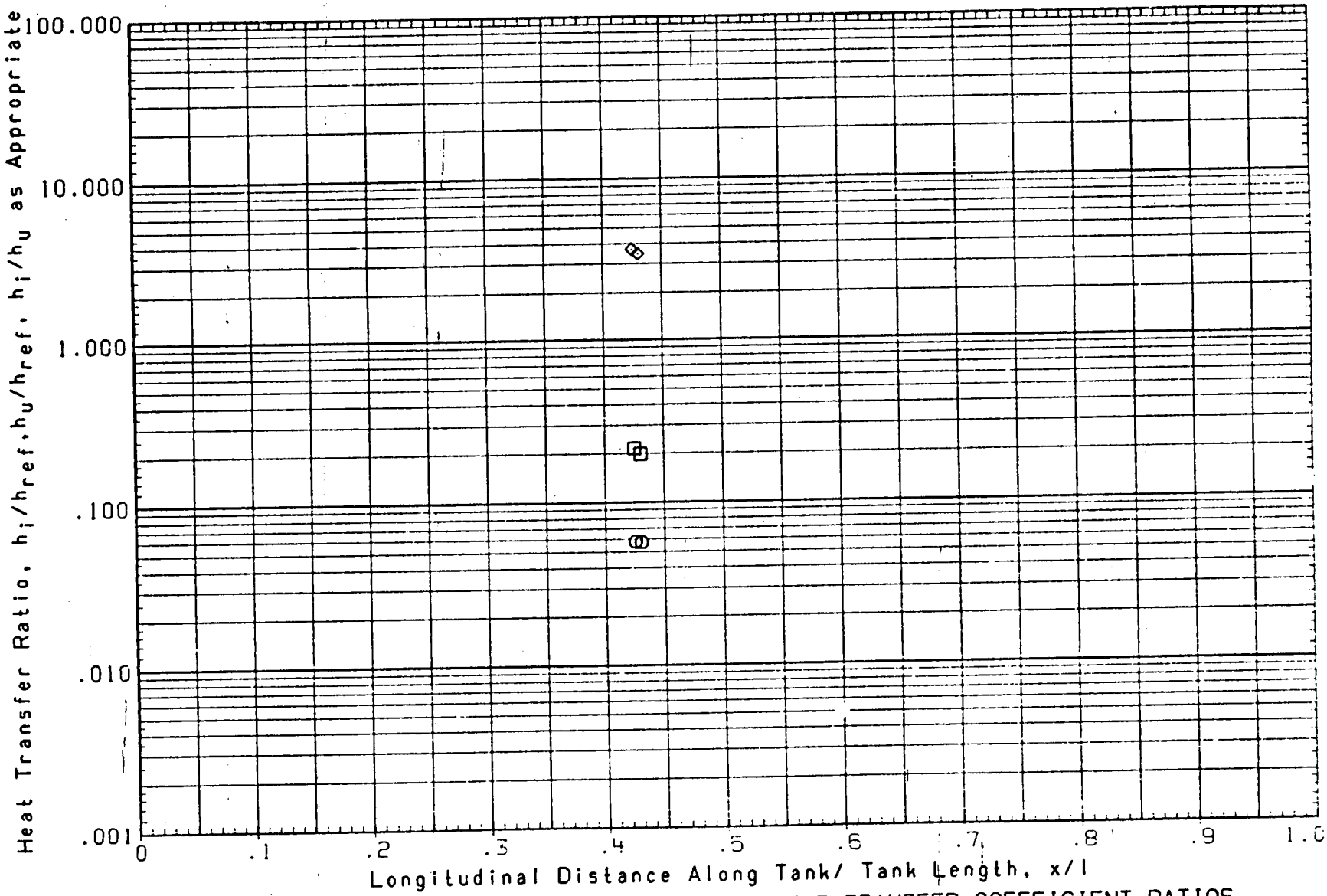


FIG. 9 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS WINDWARD SIDE, ALPHA = 0, BETA = -3

MACH = 4.020 ALPHA = .000 PHI = 345.560

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT03)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-3.000
(LVFT23)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-3.000
(BVFT23)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-3.000

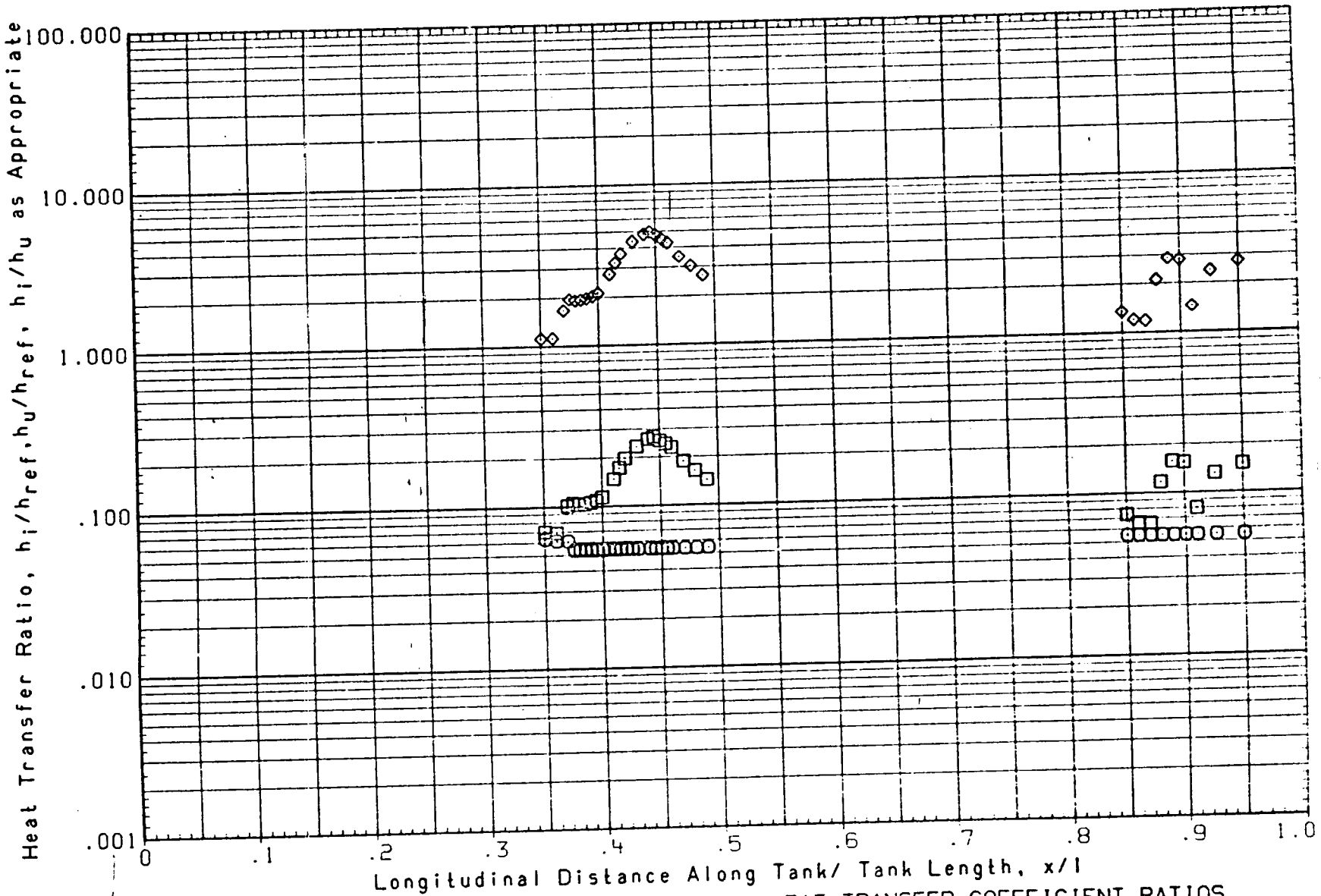


FIG. 9 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -3

MACH = 4.020 ALPHA = .000 PHI = 349.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT03)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-3.000
(LVFT23)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-3.000
(BVFT23)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	000	-3.000

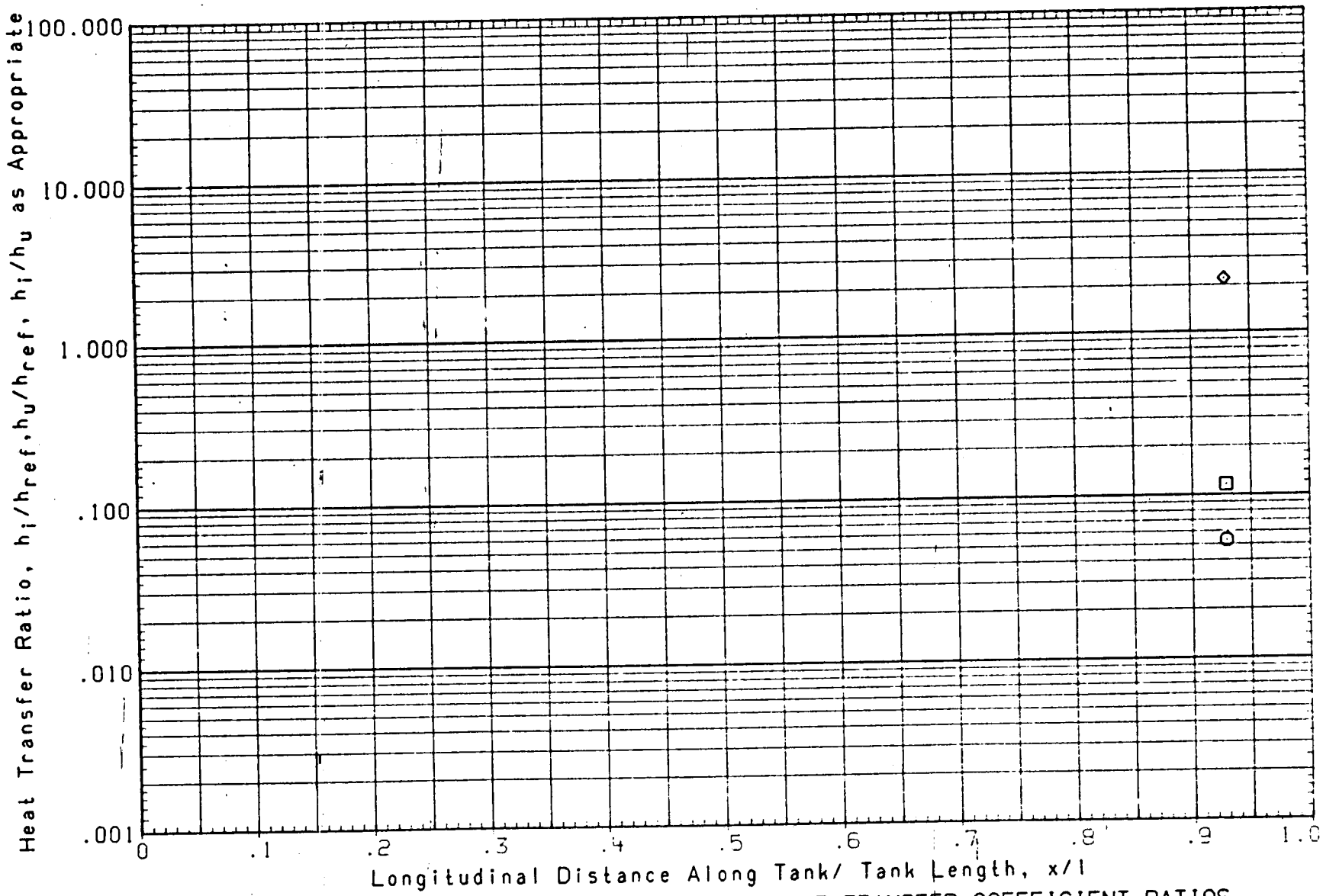


FIG. 9 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -3

MACH = 4.020 ALPHA = .000 PHI = 382.200

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT03)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-3.000
(LVFT23)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-3.000
(BVFT23)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-3.000

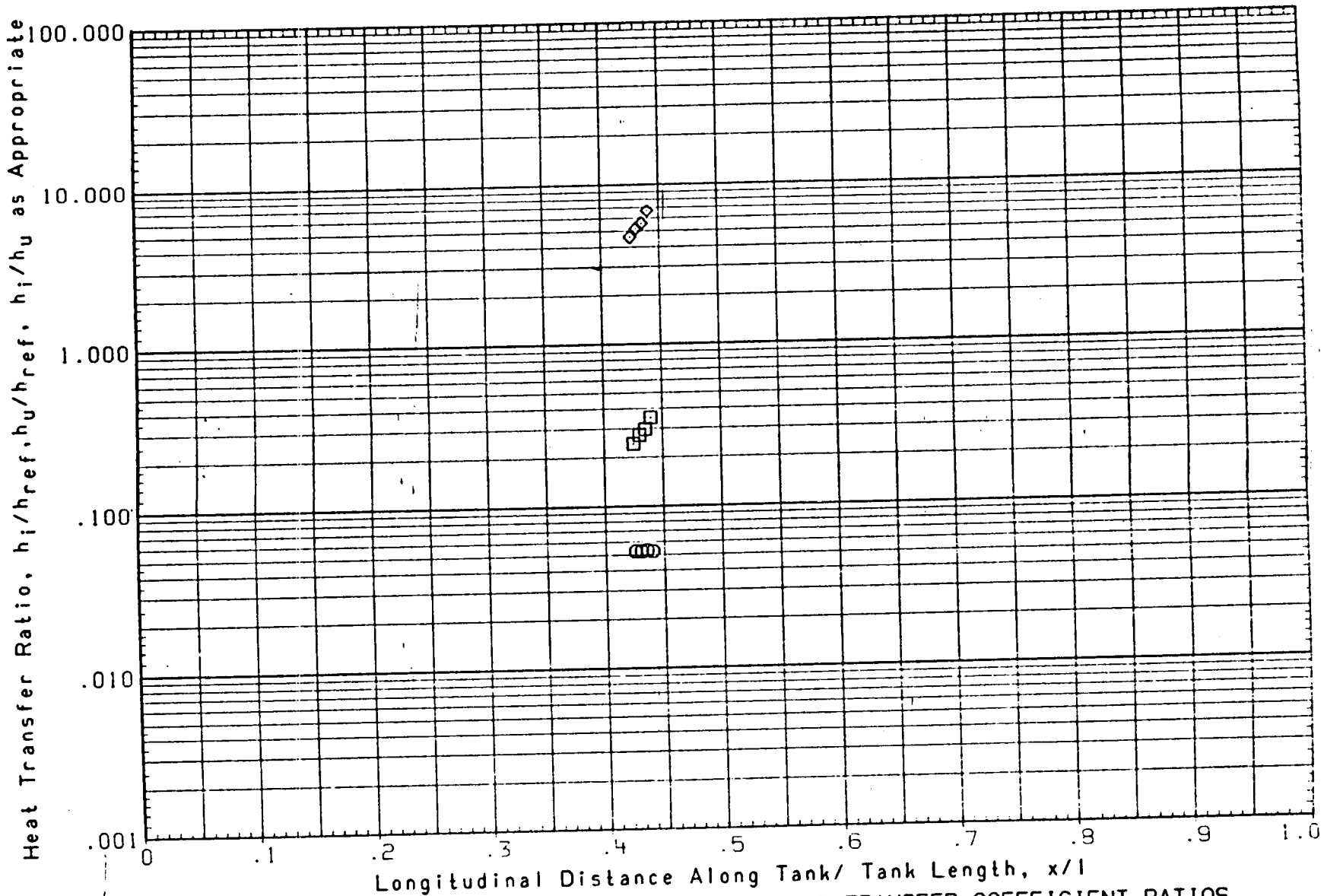


FIG. 9 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -3

MACH = 4.020 ALPHA = .000 PHI = 354.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT03)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-3.000
(LVFT23)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-3.000
(BVFT23)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-3.000

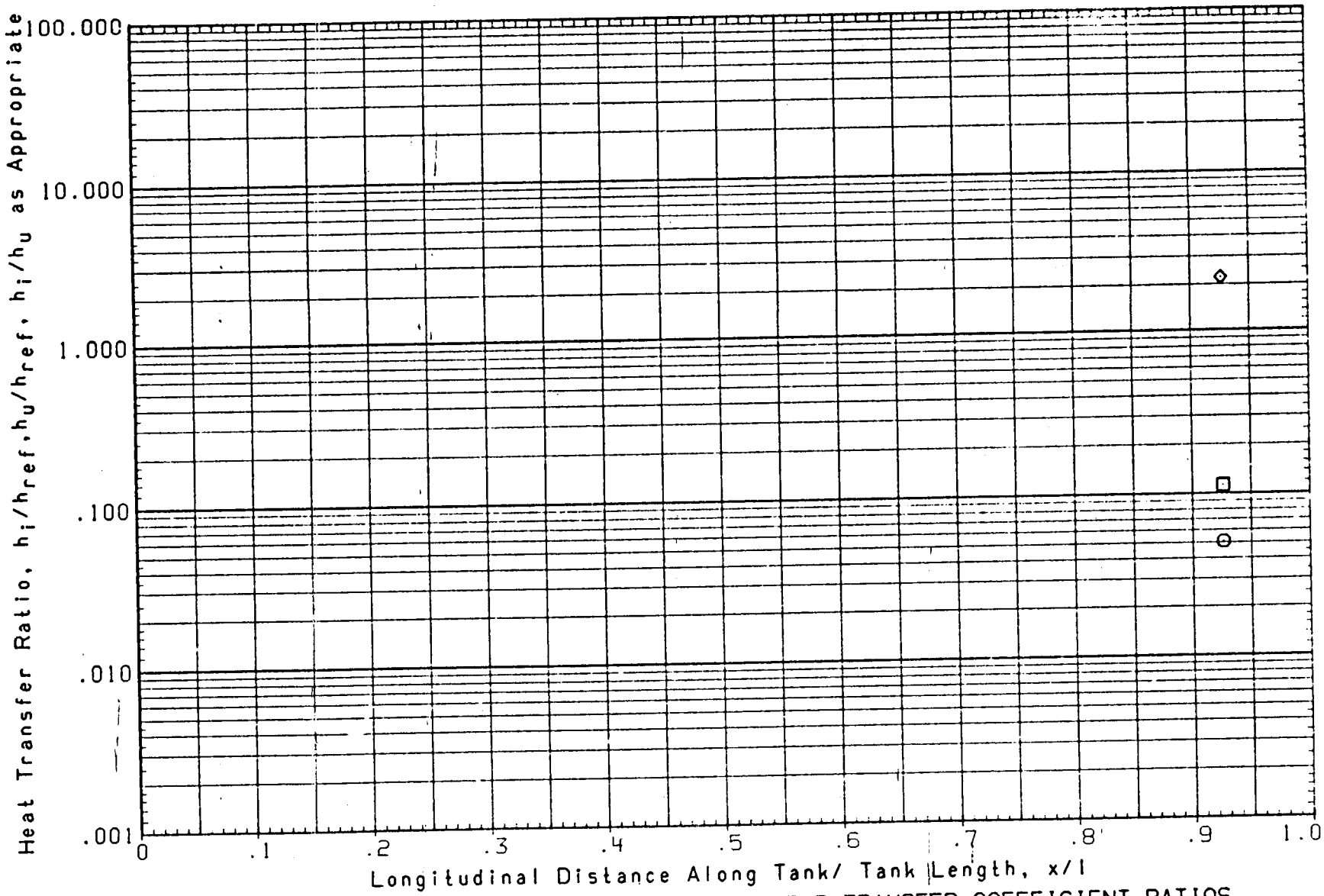


FIG. 9 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -3

MACH = 4.020 ALPHA = .000 PHI = 355.160

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT03)	○	DATA NOT AVAILABLE	.000	-3.000
(LVFT23)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-3.000
(CVFT23)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-3.000

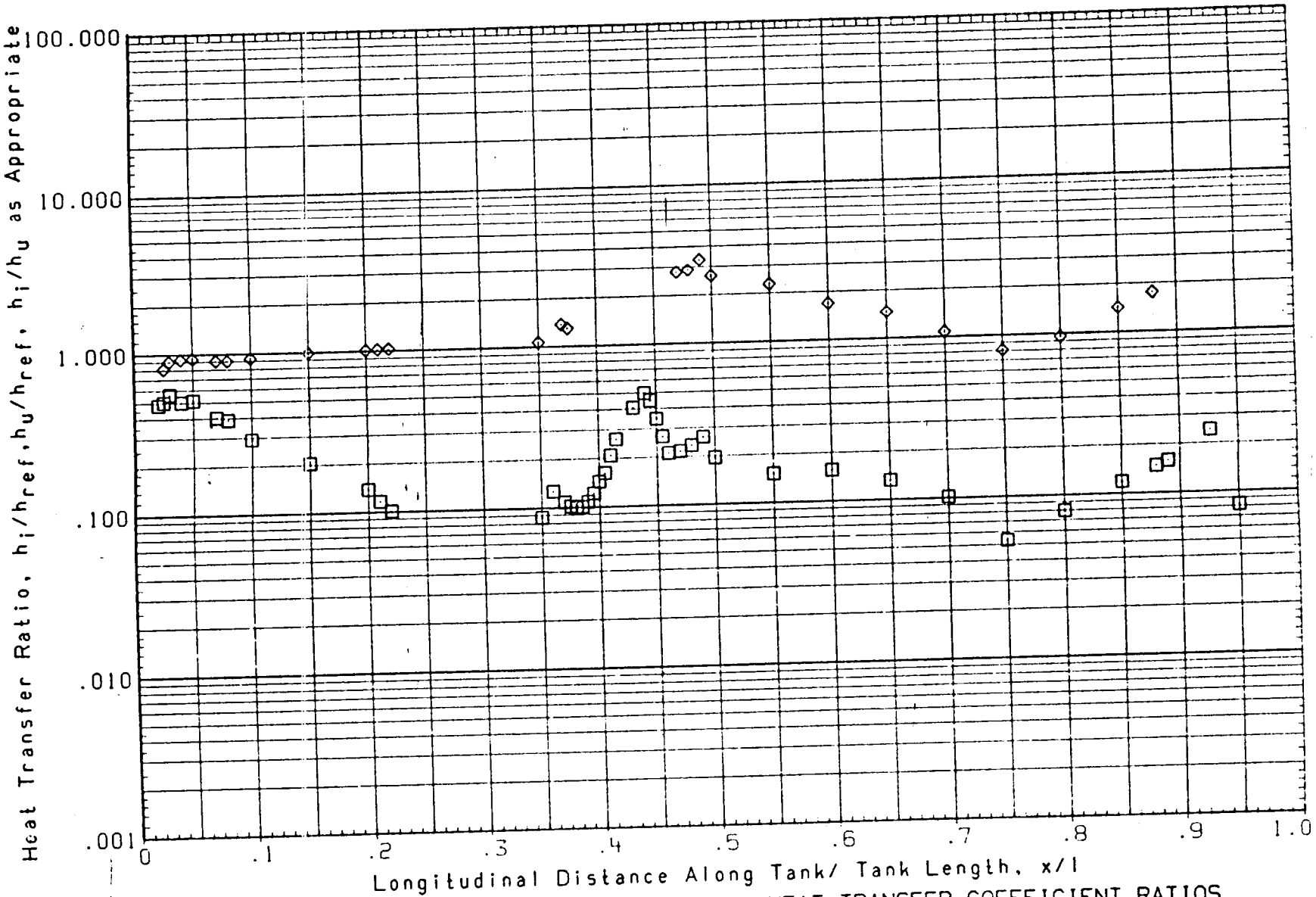


FIG. 10 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = -3

MACH = 3.010 ALPHA = .000 PHI = .000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT03)	○	DATA NOT AVAILABLE	.000	-3.000
(LVFT23)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-3.000
(CVFT23)	◇	DATA NOT AVAILABLE	.000	-3.000

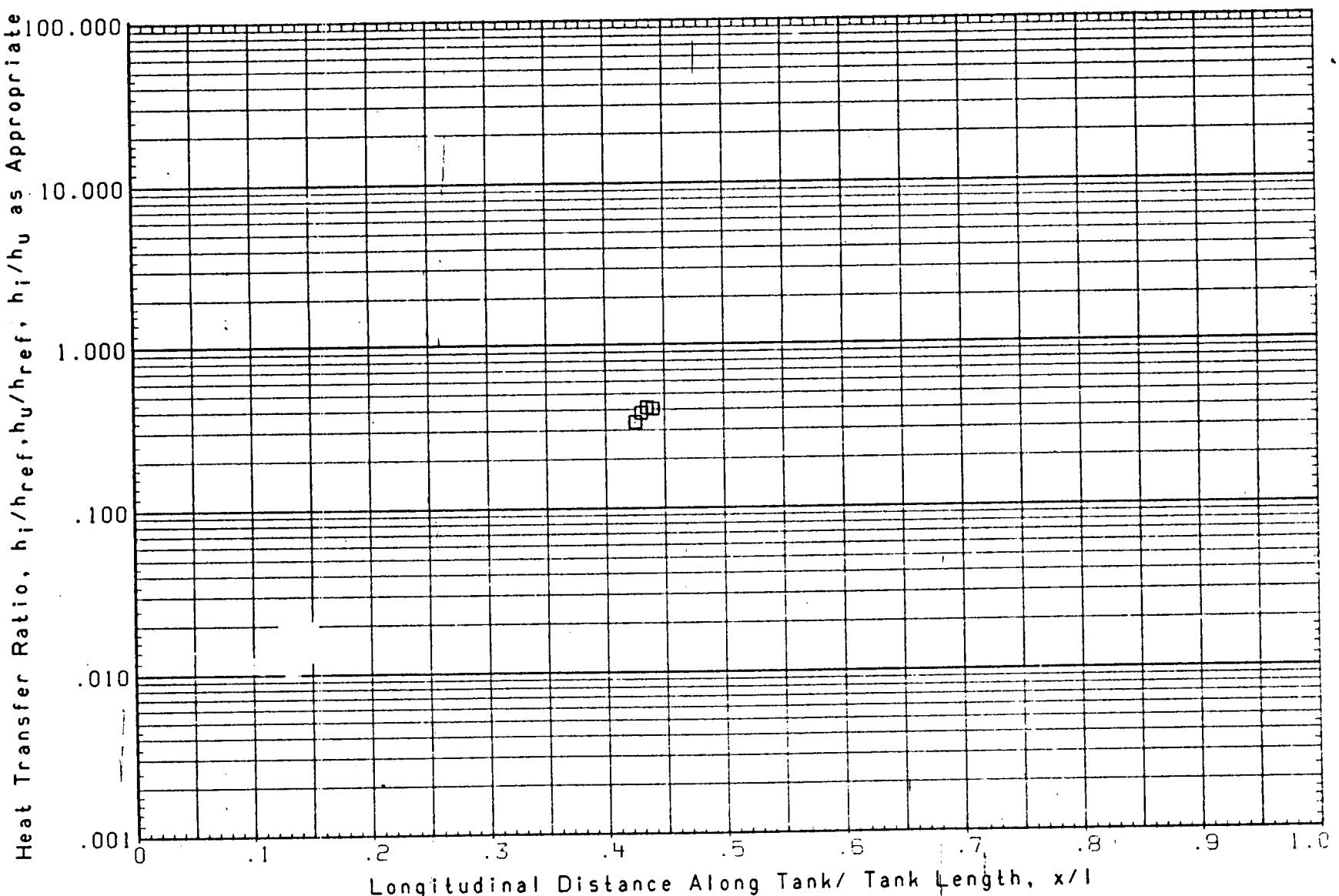


FIG. 10 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = -3

MACH = 3.010 ALPHA = .000 PHI = 5.630

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT03)	○	DATA NOT AVAILABLE	.000	-3.000
(LVFT23)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-3.000
(CVFT23)	◇	DATA NOT AVAILABLE	.000	-3.000

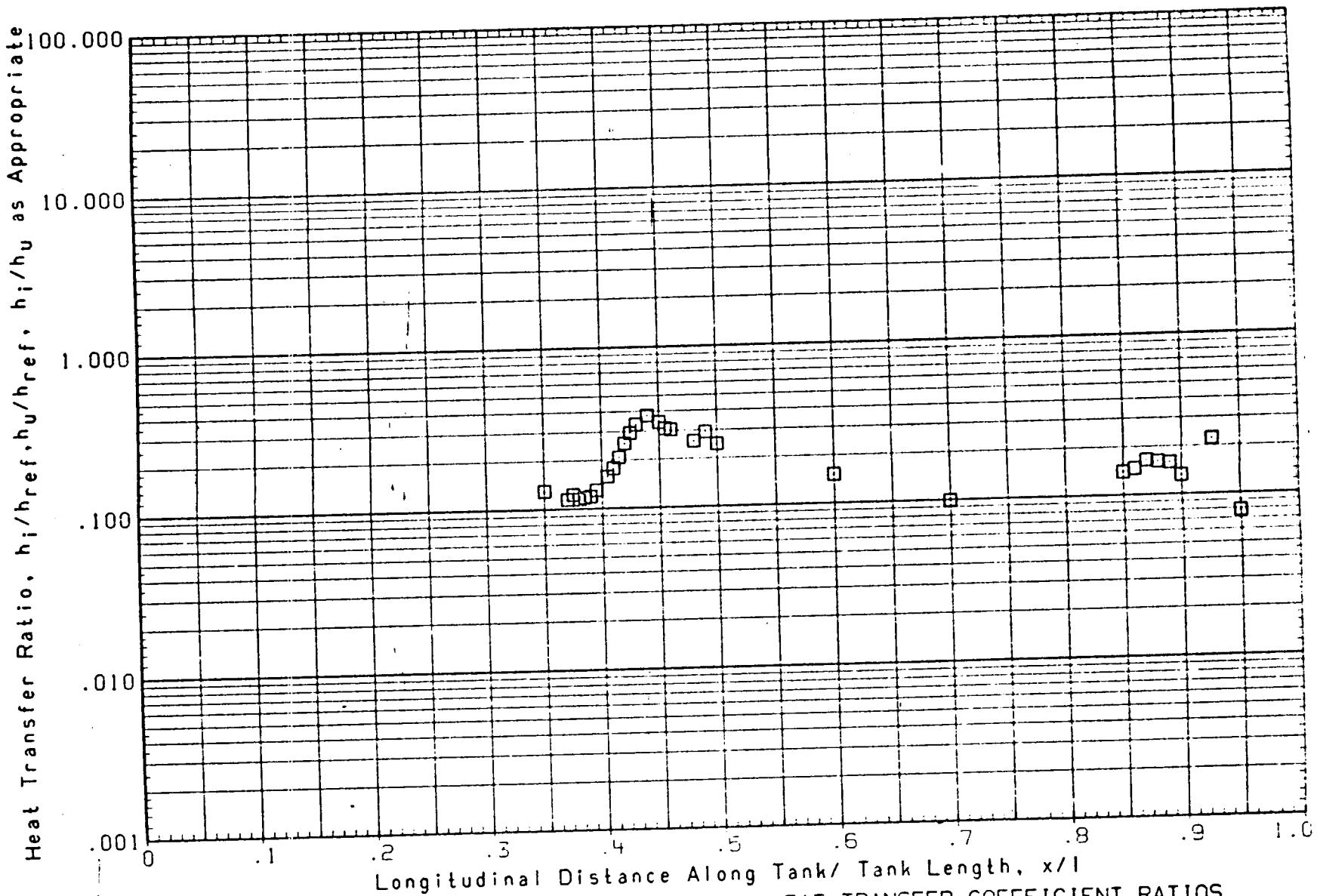


FIG. 10 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = -3

MACH = 3.010 ALPHA = .000 PHI = 11.250

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT03)	○	DATA NOT AVAILABLE	.000	-3.000
(LVFT23)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-3.000
(CVFT23)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-3.000

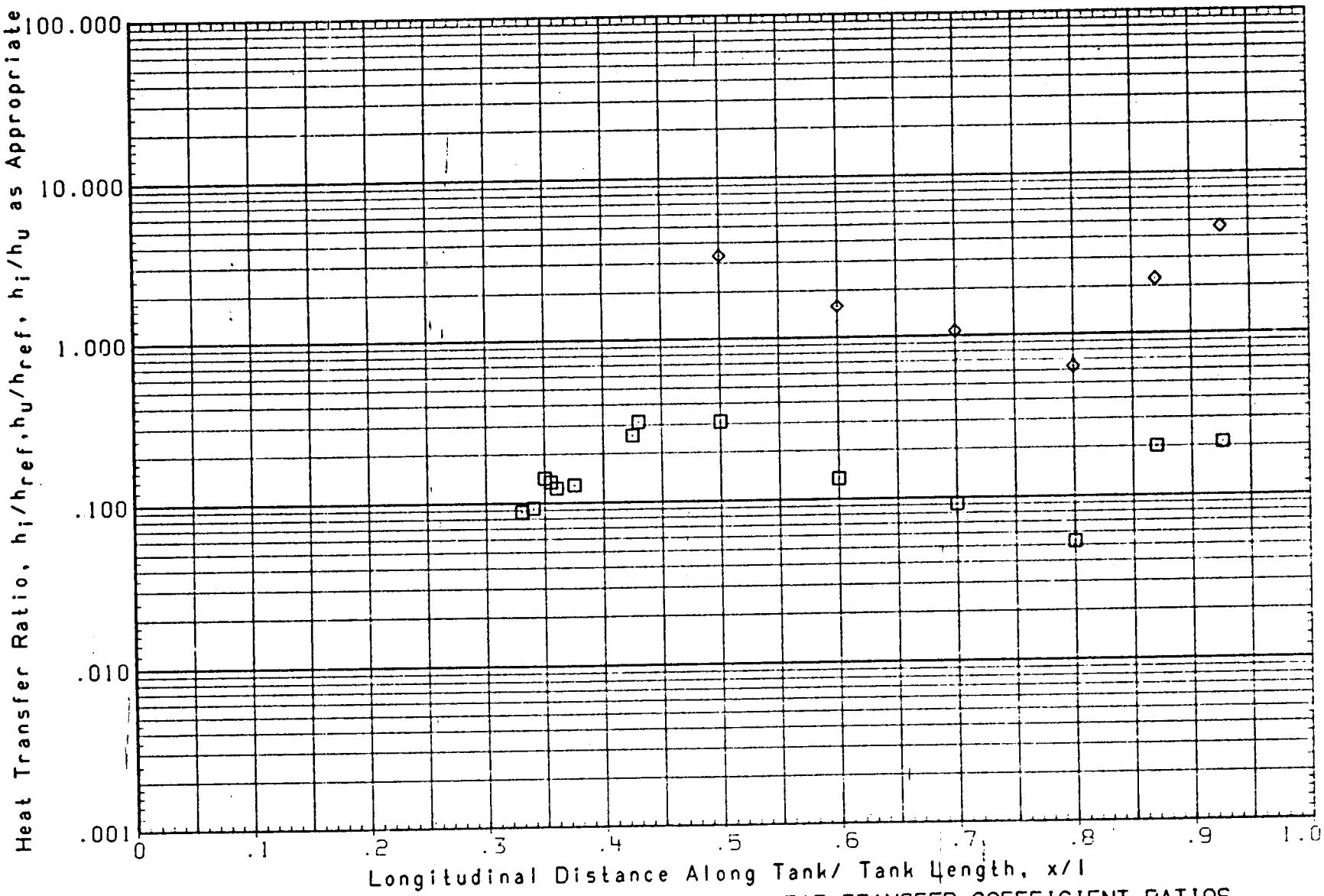


FIG. 10 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = -3

MACH = 3.010 ALPHA = .000 PHI = 17.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT03)	○	DATA NOT AVAILABLE	.000	-3.000
(LVFT23)	□	IH41B(V41A-A4A: O T S (SPIKED ET DATA) HI/HREF	.000	-3.000
(CVFT23)	◇	DATA NOT AVAILABLE	.000	-3.000

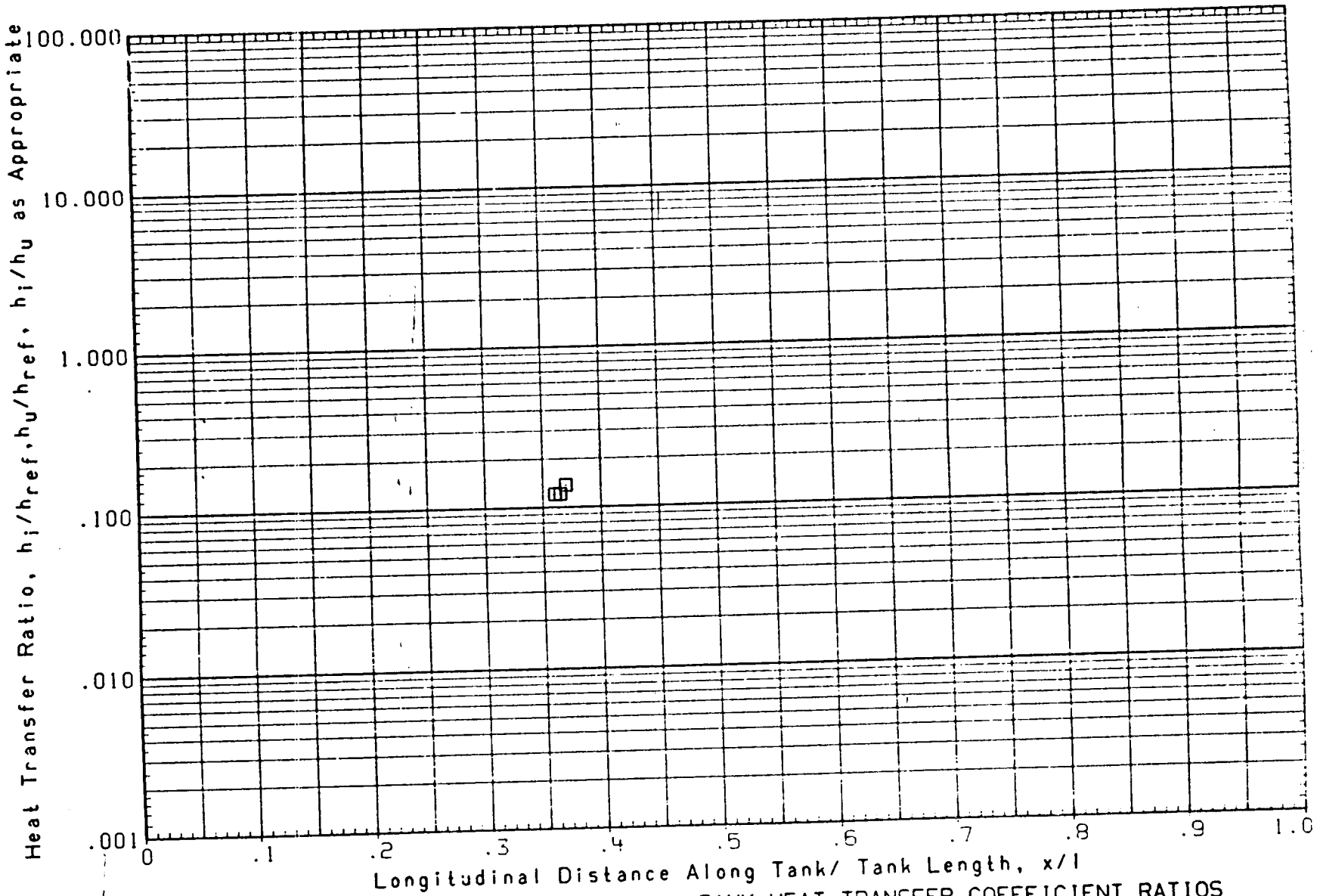


FIG. 10 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = -3

MACH = 3.010 ALPHA = .000 PHI = 20.980

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT03)	○	DATA NOT AVAILABLE	.000	-3.000
(LVFT23)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-3.000
(CVFT23)	◇	DATA NOT AVAILABLE	.000	-3.000

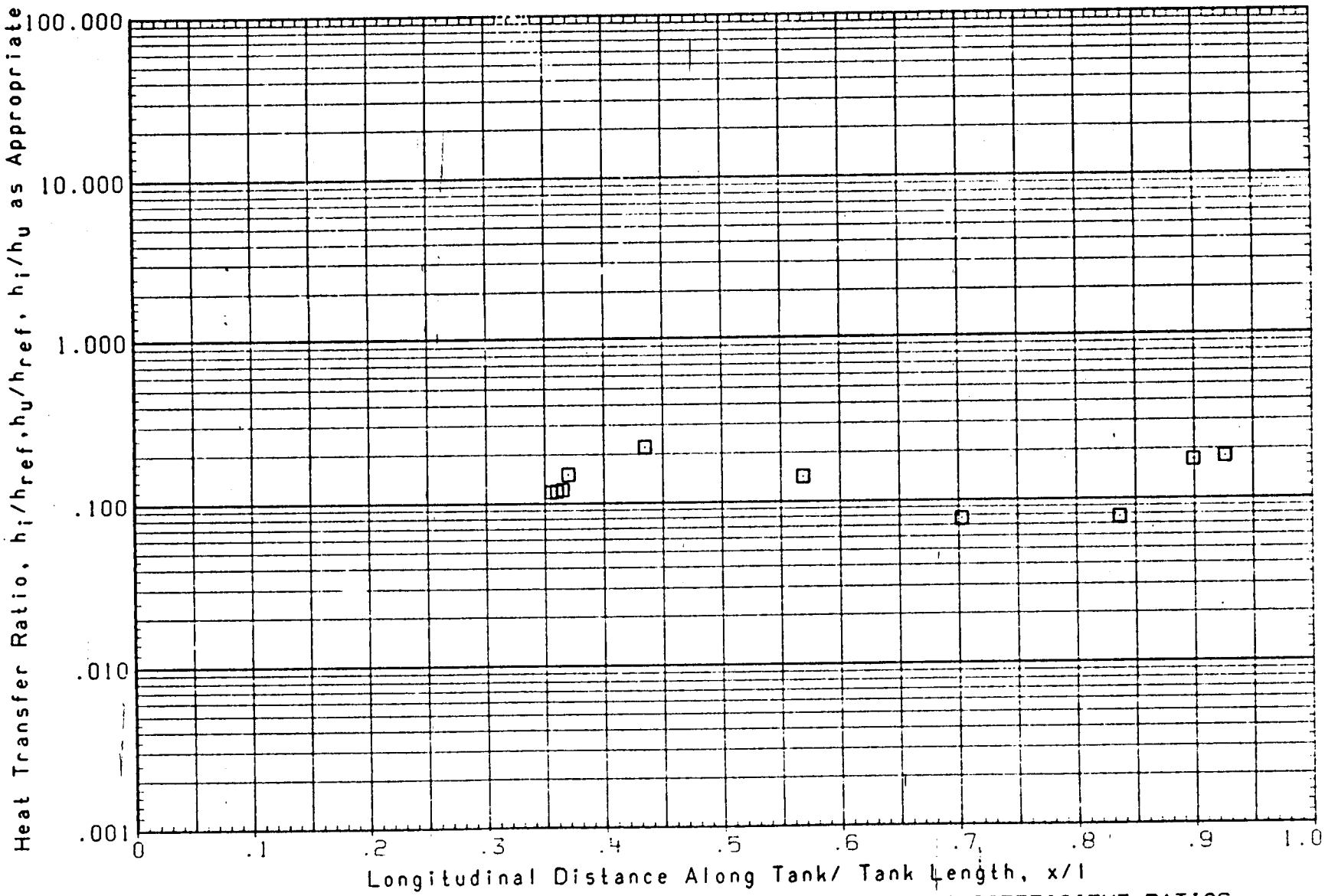


FIG. 10 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = -3

MACH = 3.010 ALPHA = .000 PHI = 23.075

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT03)	○	DATA NOT AVAILABLE	.000	-3.000
(LVFT23)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-3.000
(CVFT23)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-3.000

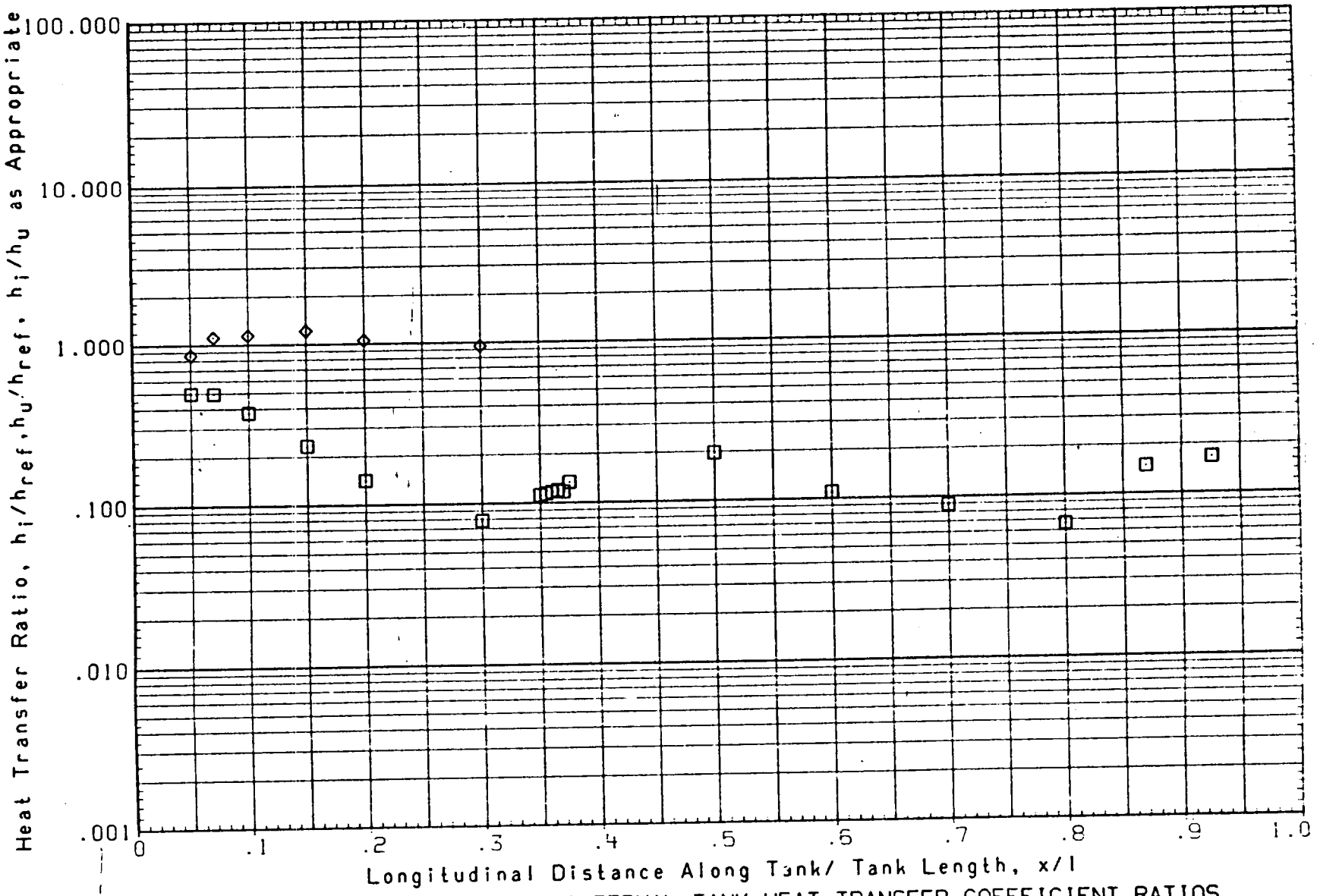


FIG. 10 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = -3

MACH = 3.010 ALPHA = .000 PHI = 29.800

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT03)	○	DATA NOT AVAILABLE	.000	-3.000
(LVFT23)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-3.000
(CVFT23)	◇	DATA NOT AVAILABLE	.000	-3.000

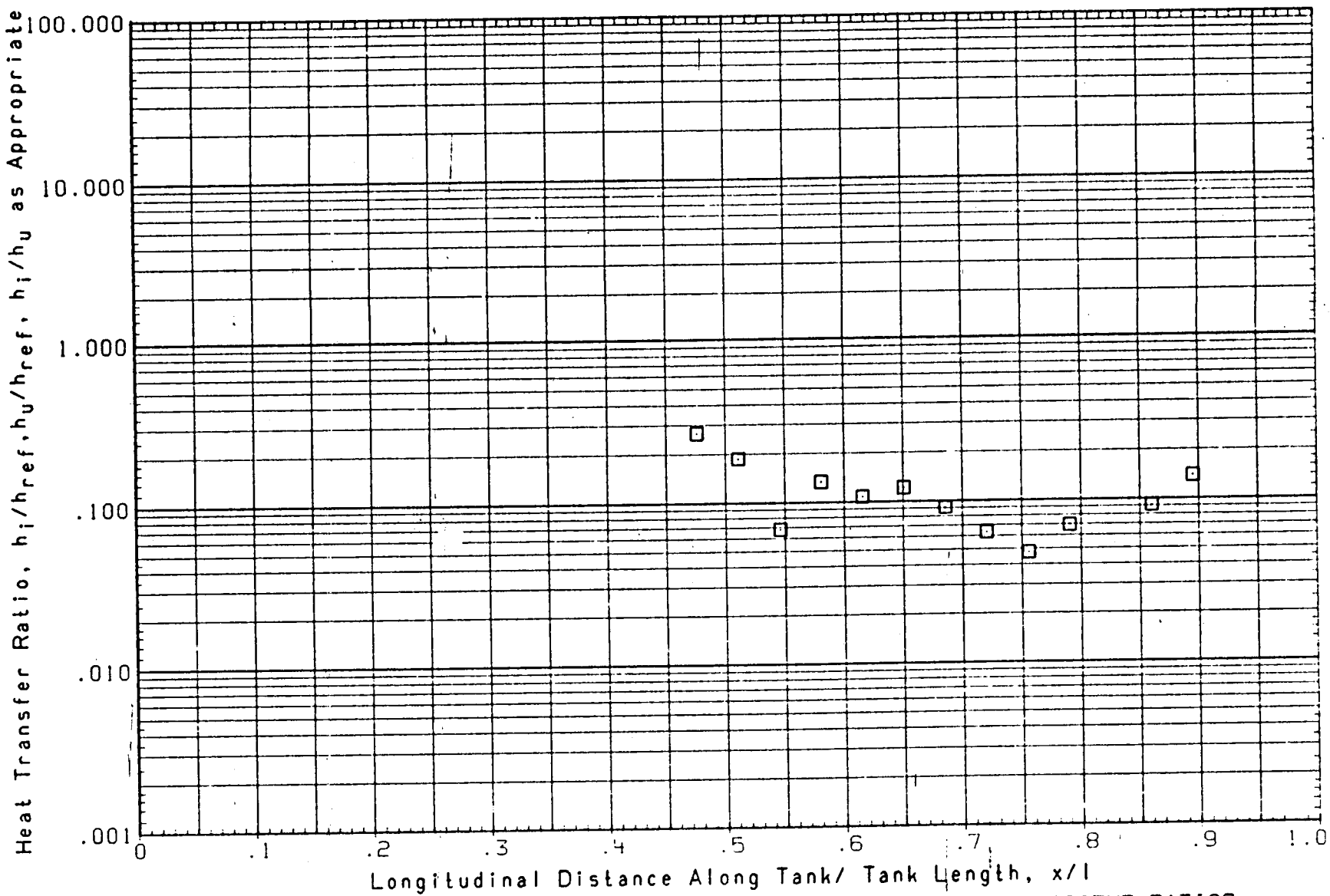


FIG. 10 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = -3

MACH = 3.010 ALPHA = .000 PHI = 31.430

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT03)	○	DATA NOT AVAILABLE	.000	-3.000
(LVFT23)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-3.000
(CVFT23)	◇	DATA NOT AVAILABLE	.000	-3.000

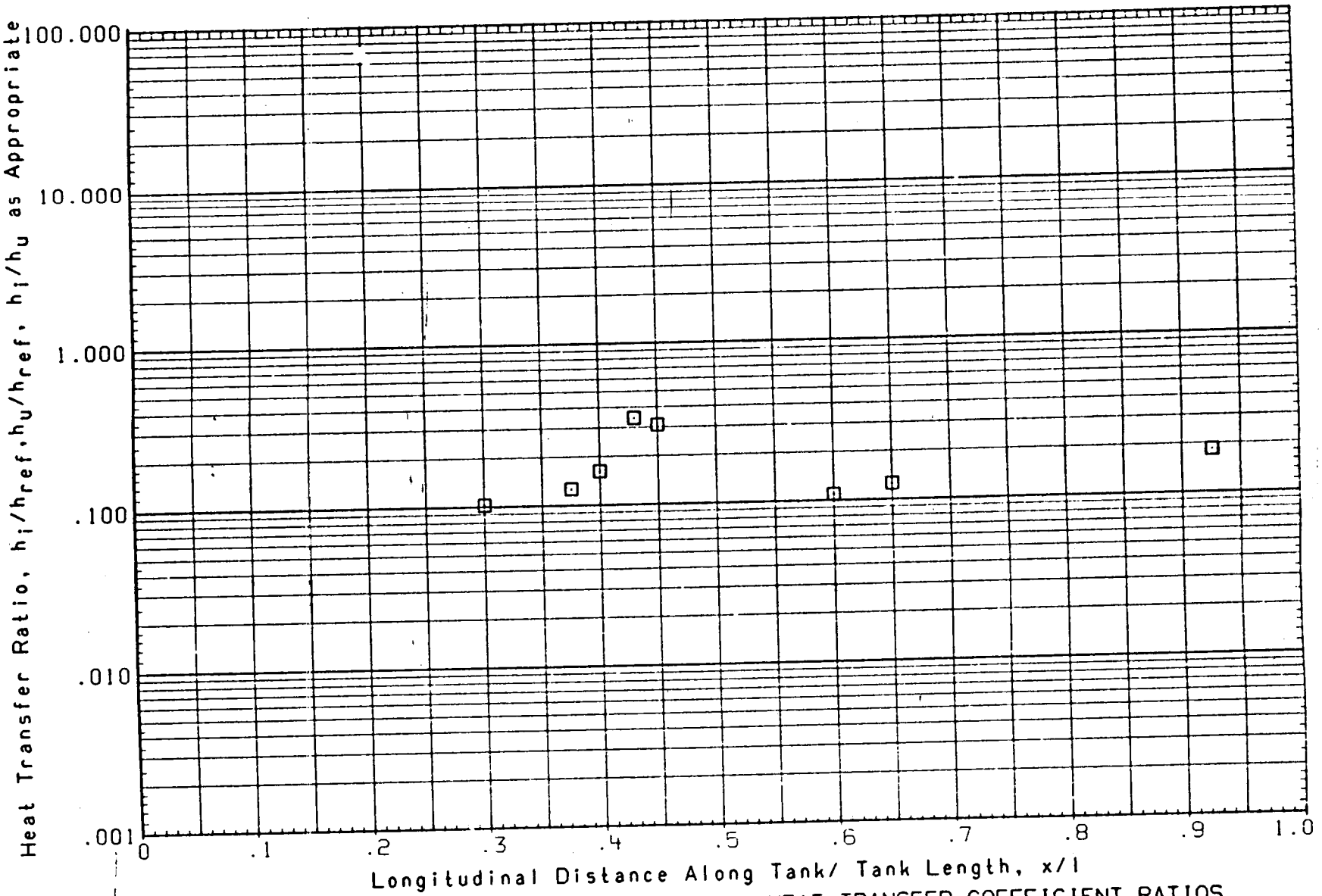


FIG. 10 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = -3

MACH = 3.010 ALPHA = .000 PHI = 33.750

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT03)	○	DATA NOT AVAILABLE	.000	-3.000
(LVFT23)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-3.000
(CVFT23)	◇	DATA NOT AVAILABLE	.000	-3.000

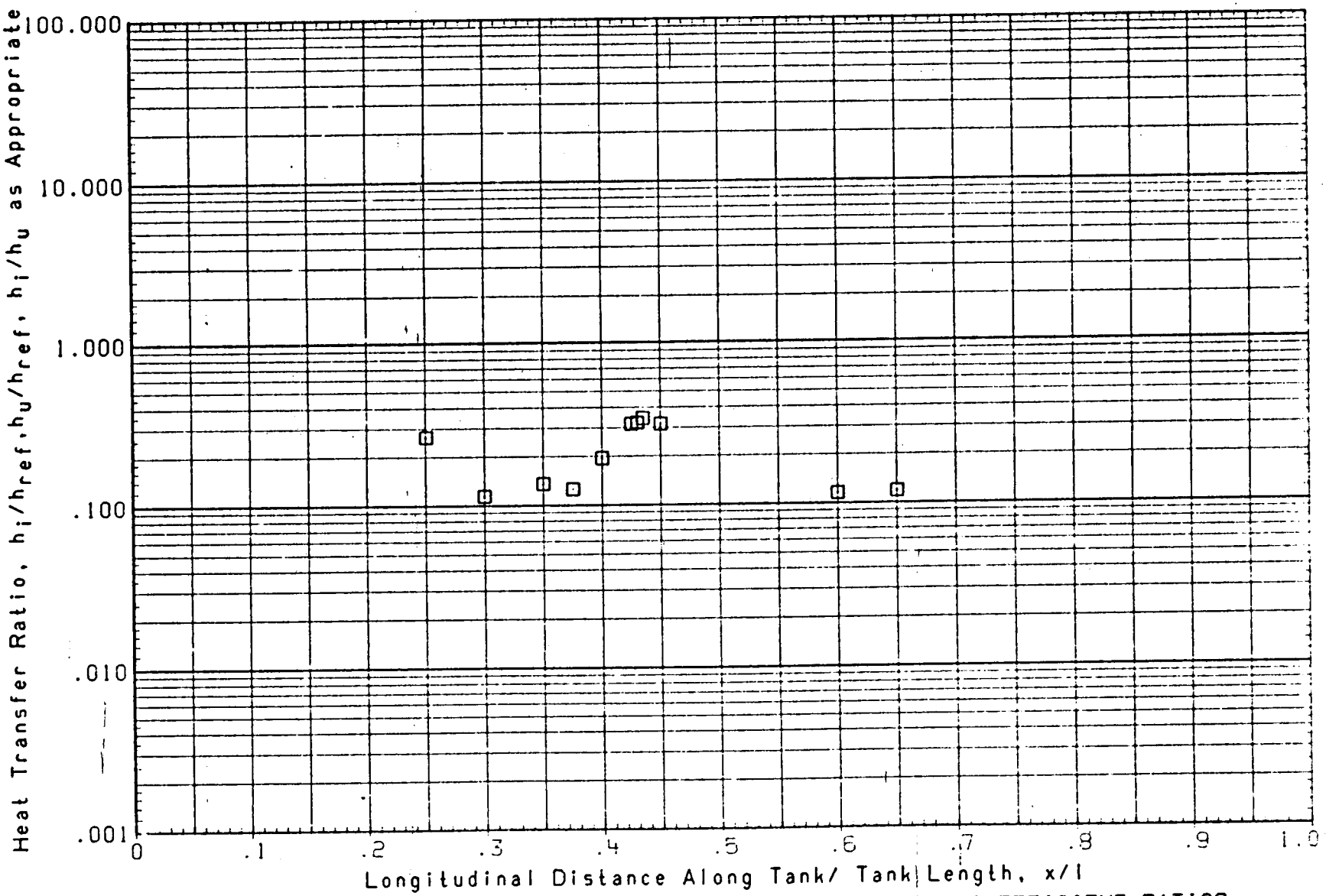


FIG. 10 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = -3

MACH = 3.010 ALPHA = .000 PHI = 35.320

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT03)	○	DATA NOT AVAILABLE	.000	-3.000
(LVFT23)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-3.000
(CVFT23)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-3.000

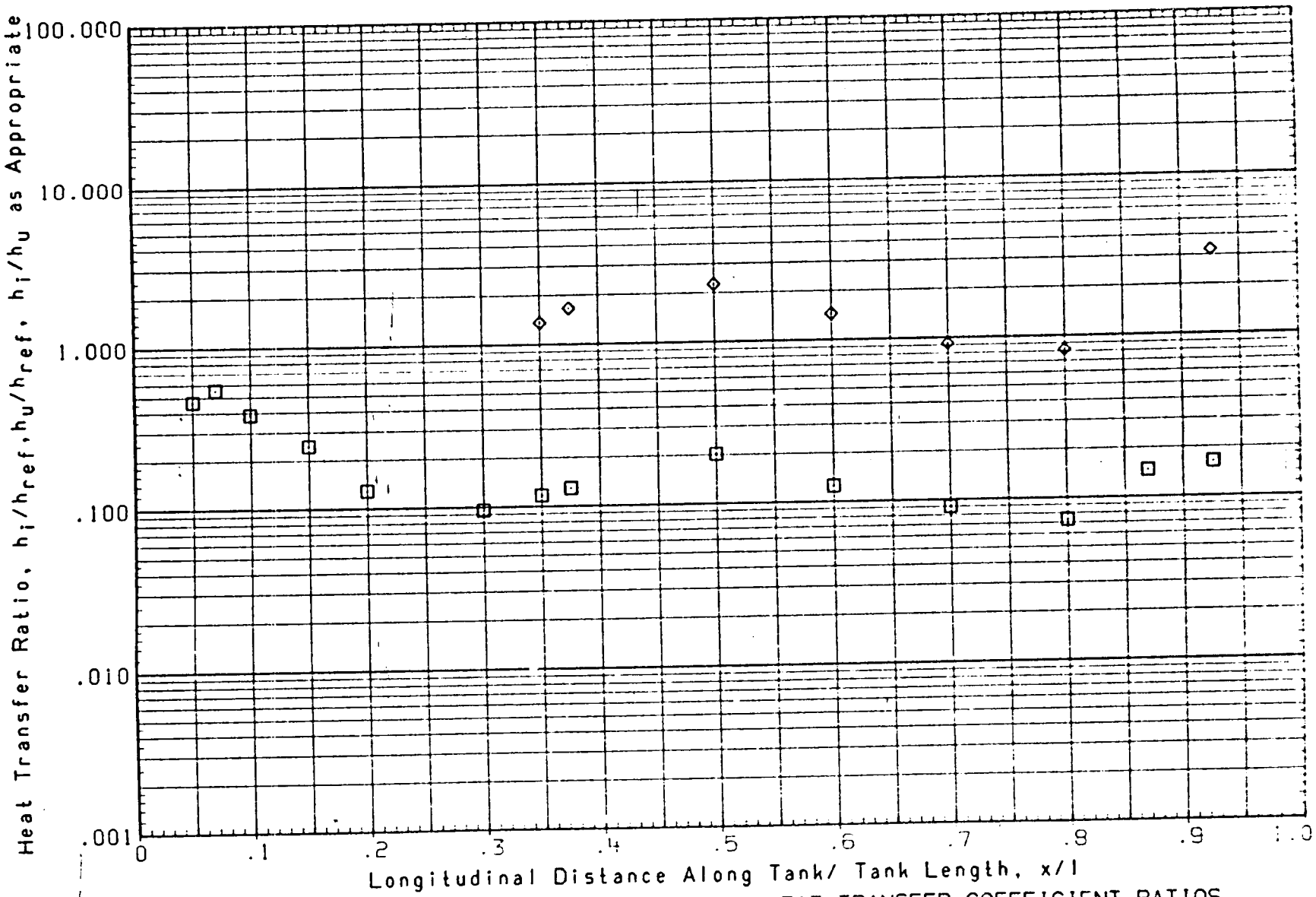


FIG. 10 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = -3

MACH = 3.010 ALPHA = .000 PHI = 37.700

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT03)	○	DATA NOT AVAILABLE	.000	-3.000
(LVFT23)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-3.000
(CVFT23)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-3.000

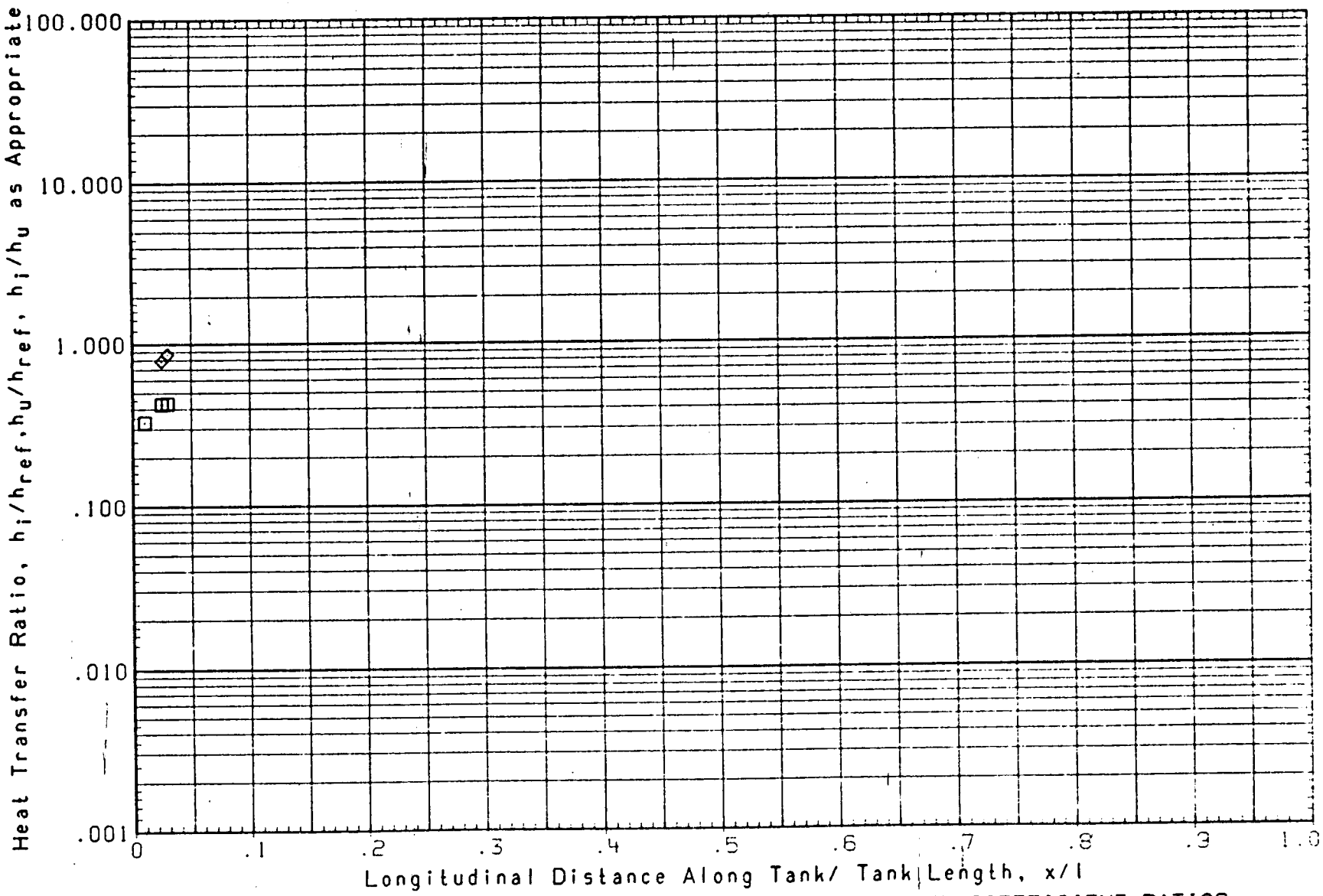


FIG. 10 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = -3

MACH = 3.010 ALPHA = .000 PHI = 39.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT03)	○	DATA NOT AVAILABLE	.000	-3.000
(LVFT23)	□	1H41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-3.000
(CVFT23)	◇	DATA NOT AVAILABLE	.000	-3.000

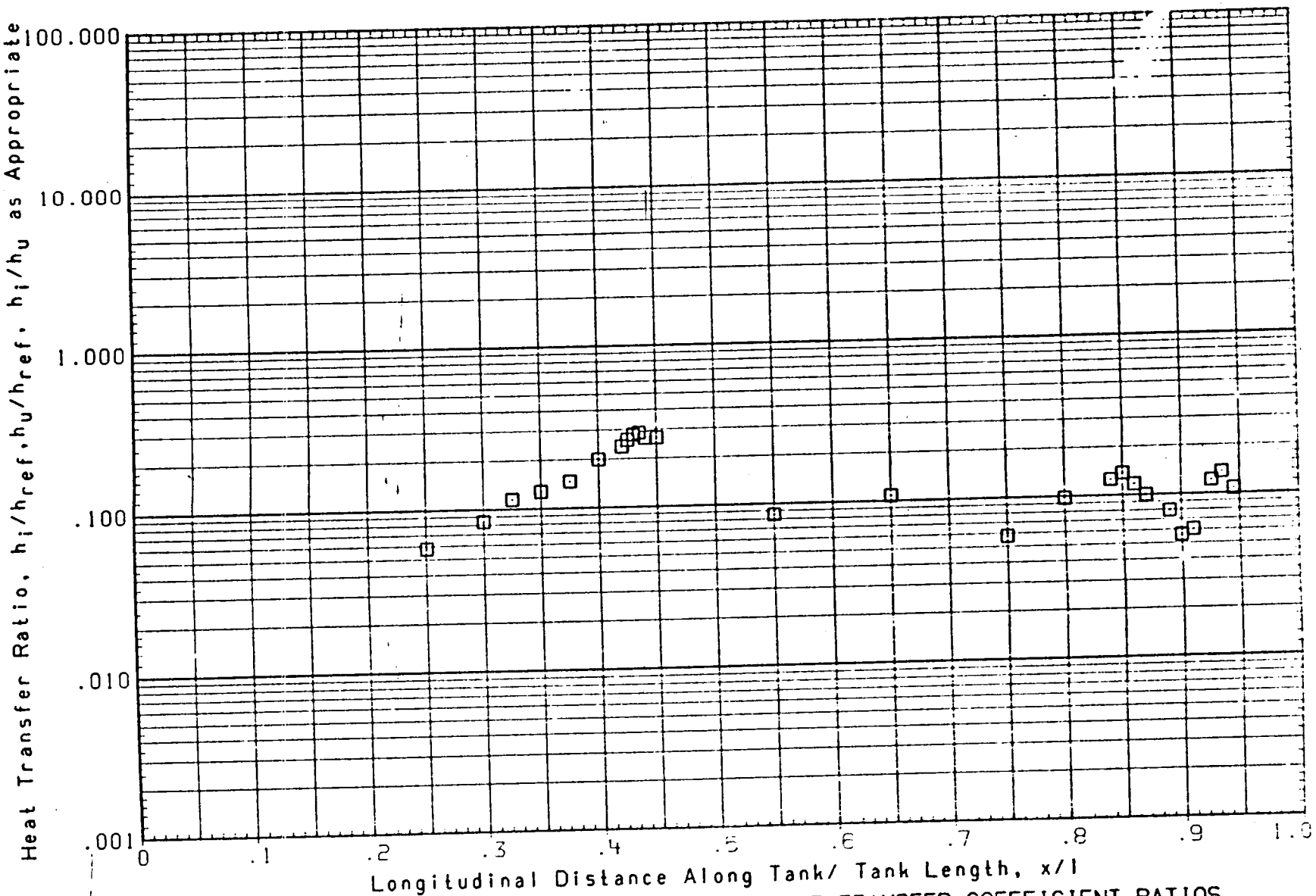


FIG. 10 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = -3

MACH = 3.010 ALPHA = .000 PHI = 45.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT03)	○	DATA NOT AVAILABLE	.000	-3.000
(LVFT23)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-3.000
(CVFT23)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-3.000

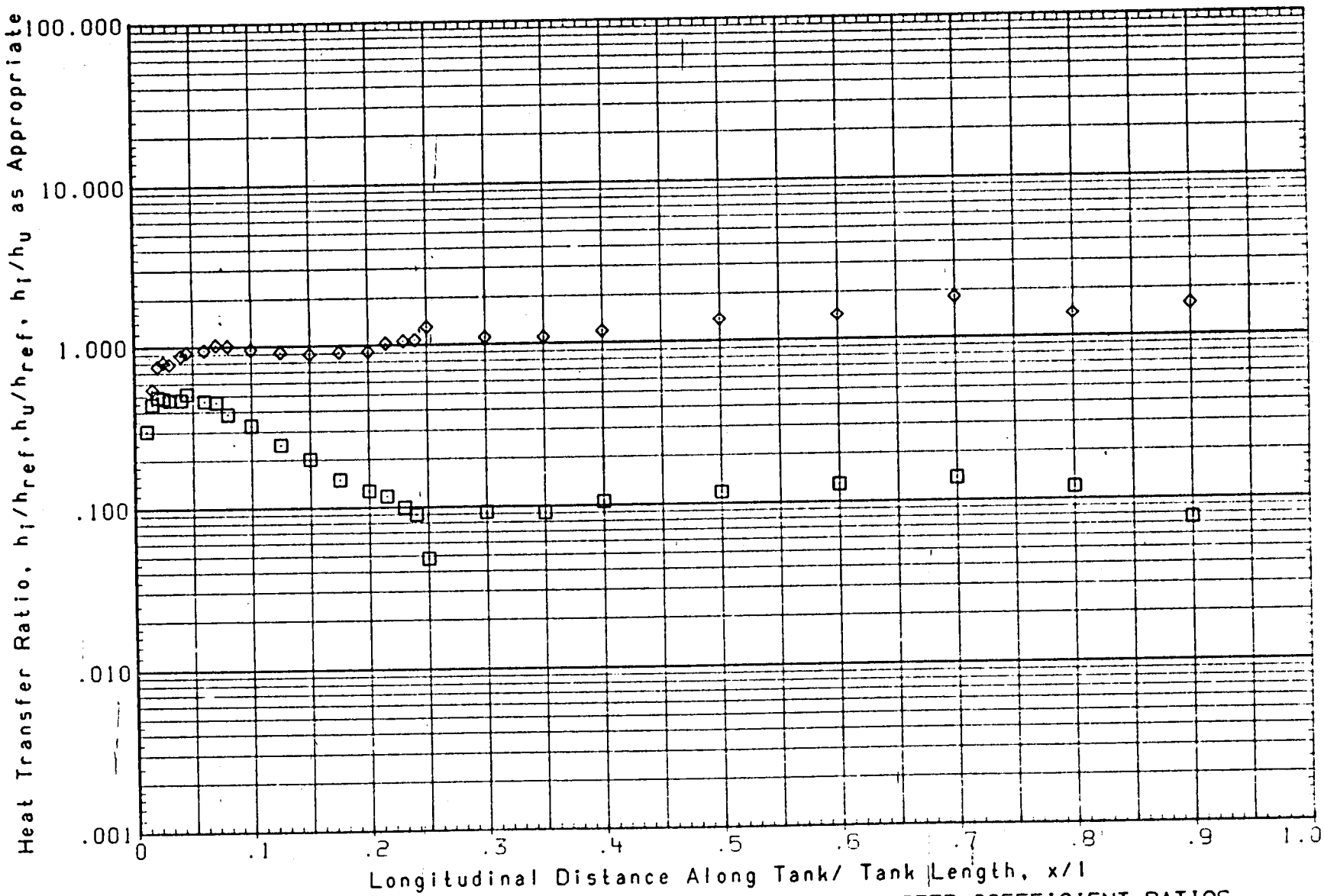


FIG. 10 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = -3

MACH = 3.010 ALPHA = .000 PHI = 180.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT03)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-3.000
(LVFT23)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-3.000
(CVFT23)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-3.000

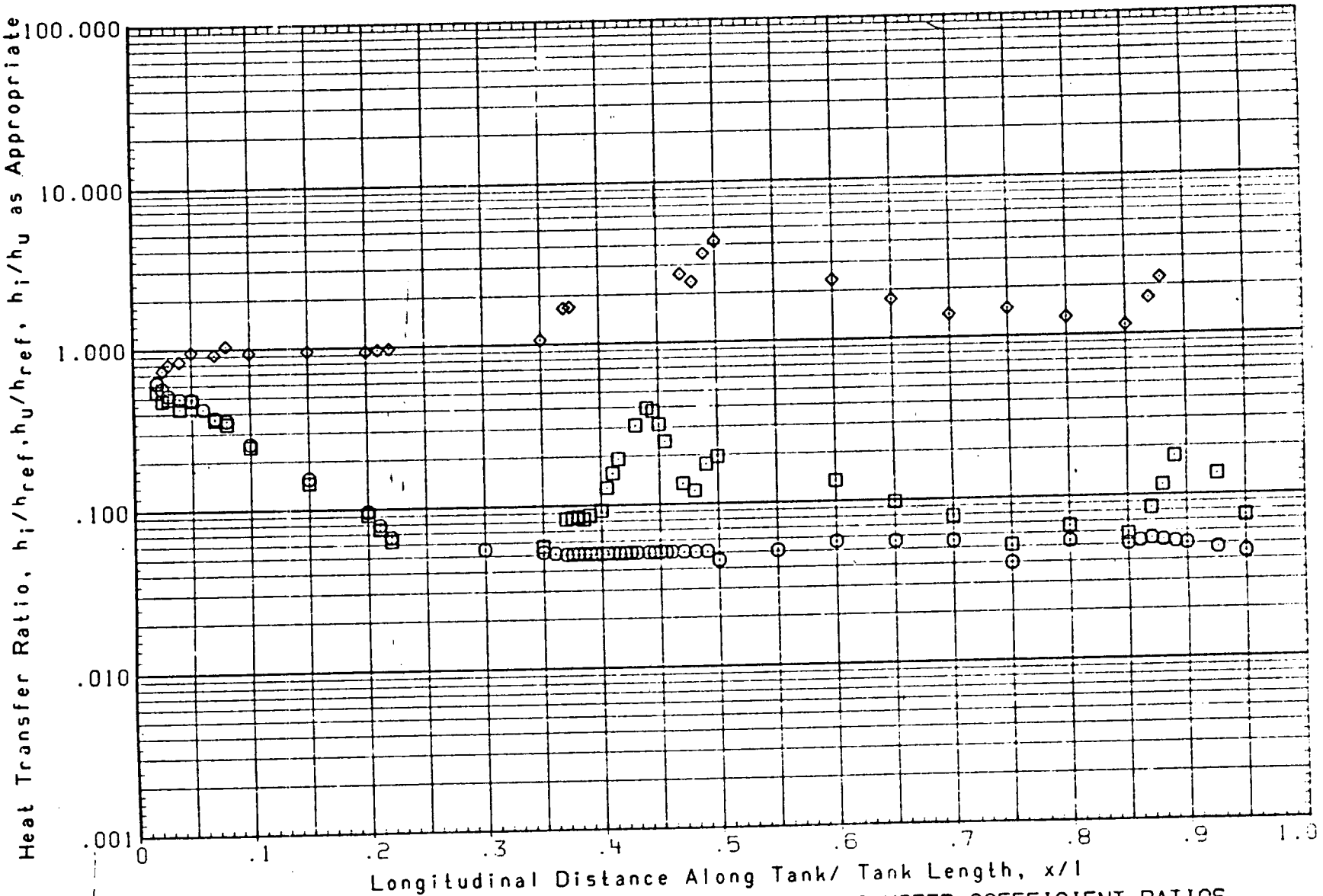


FIG. 10 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = -3

MACH = 4.020 ALPHA = .005 PHI = .000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT03)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-3.000
(LVFT23)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-3.000
(CVFT23)	◇	DATA NOT AVAILABLE	.000	-3.000

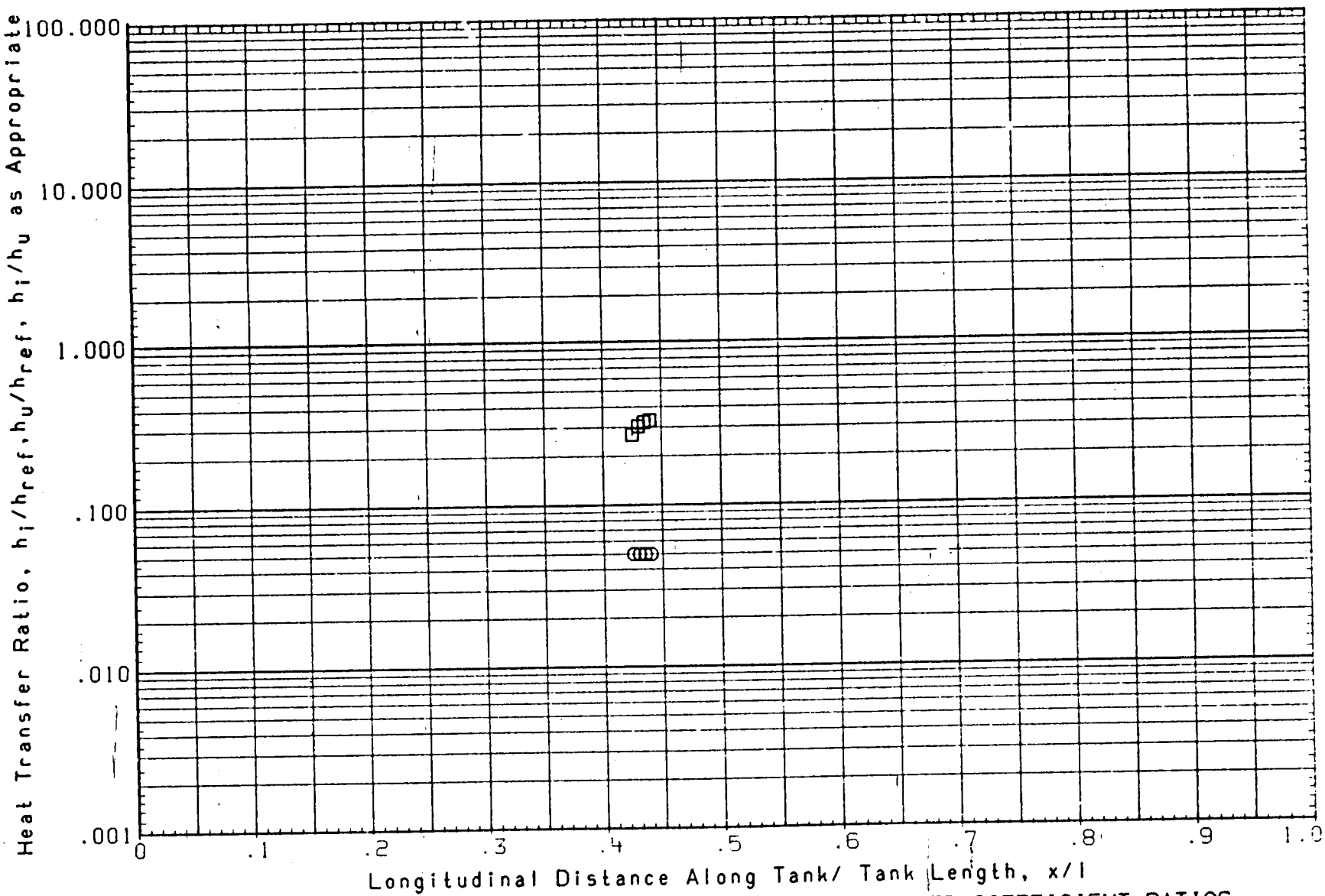


FIG. 10 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = -3

MACH = 4.020 ALPHA = .005 PHI = 5.630

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT03)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-3.000
(LVFT23)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-3.000
(CVFT23)	◇	DATA NOT AVAILABLE	.000	-3.000

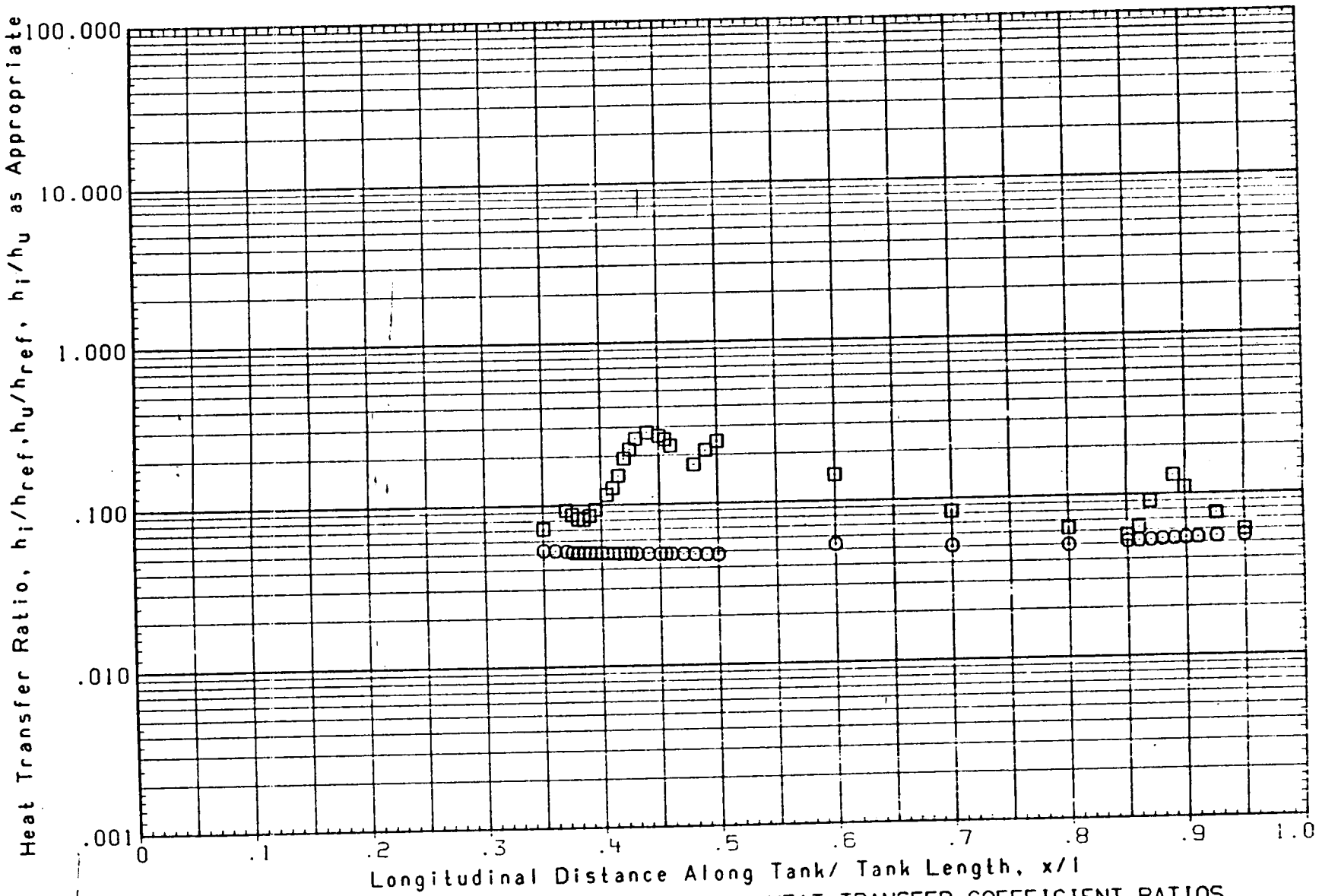


FIG. 10 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = -3

MACH = 4.020 ALPHA = .005 PHI = 11.250

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT03)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-3.000
(LVFT23)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-3.000
(CVFT23)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-3.000

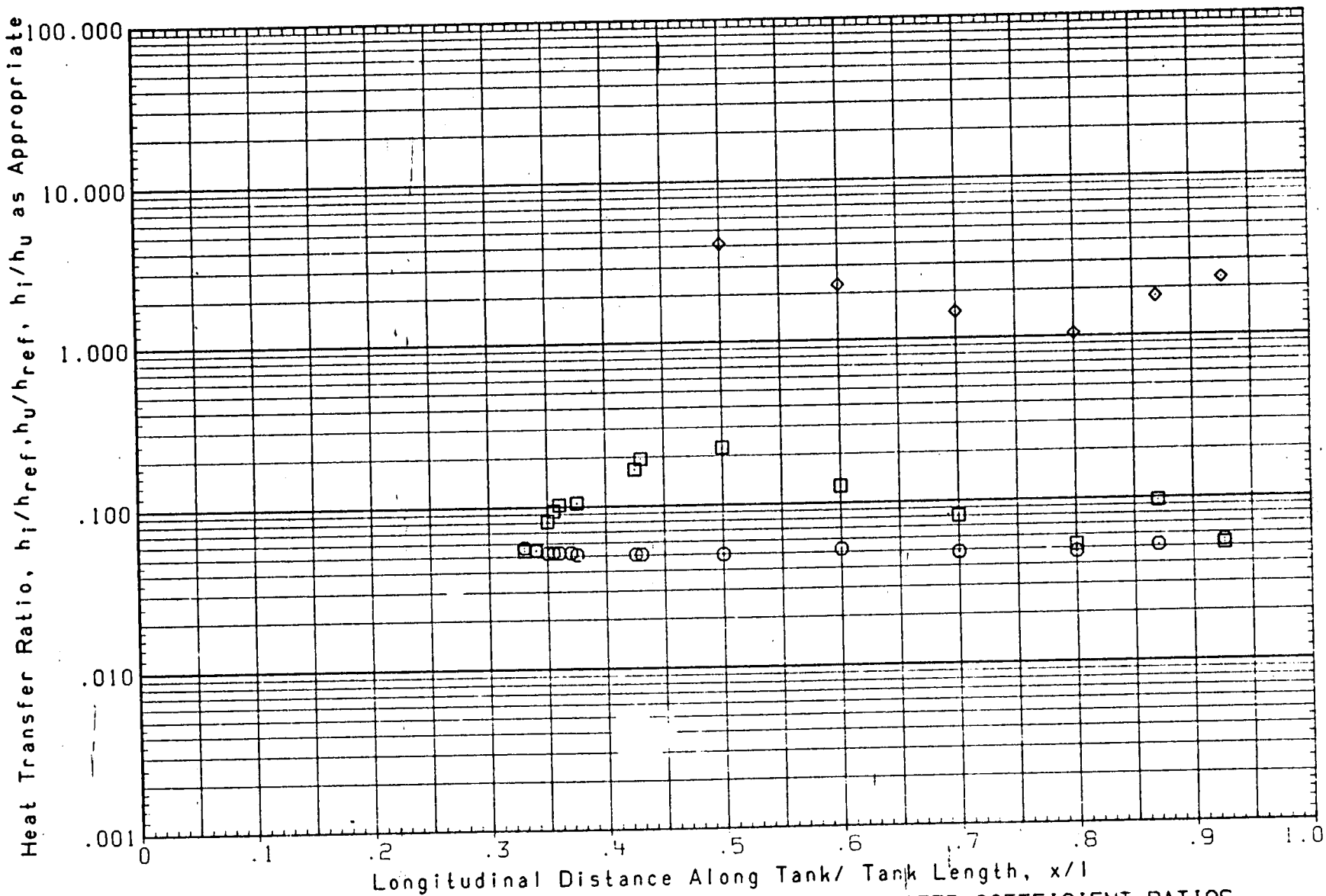


FIG. 10 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = -3

MACH = 4.020 ALPHA = .005 PHI = 17.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT03)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-3.000
(LVFT23)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-3.000
(CVFT23)	◇	DATA NOT AVAILABLE	.000	-3.000

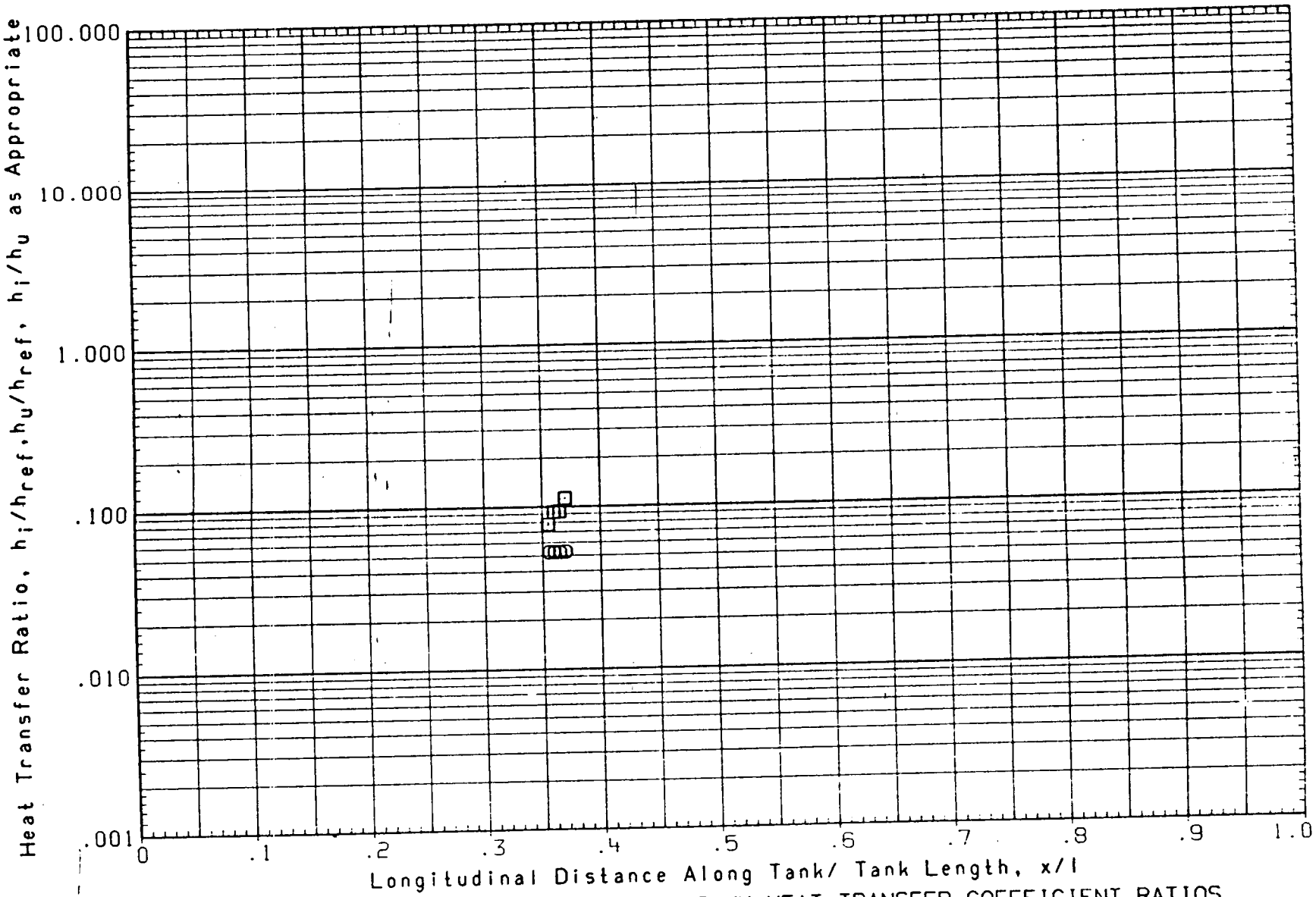


FIG. 10 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = -3

MACH = 4.020 ALPHA = .005 PHI = 20.380

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT03)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-3.000
(LVFT23)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-3.000
(CVFT23)	◇	DATA NOT AVAILABLE	.000	-3.000

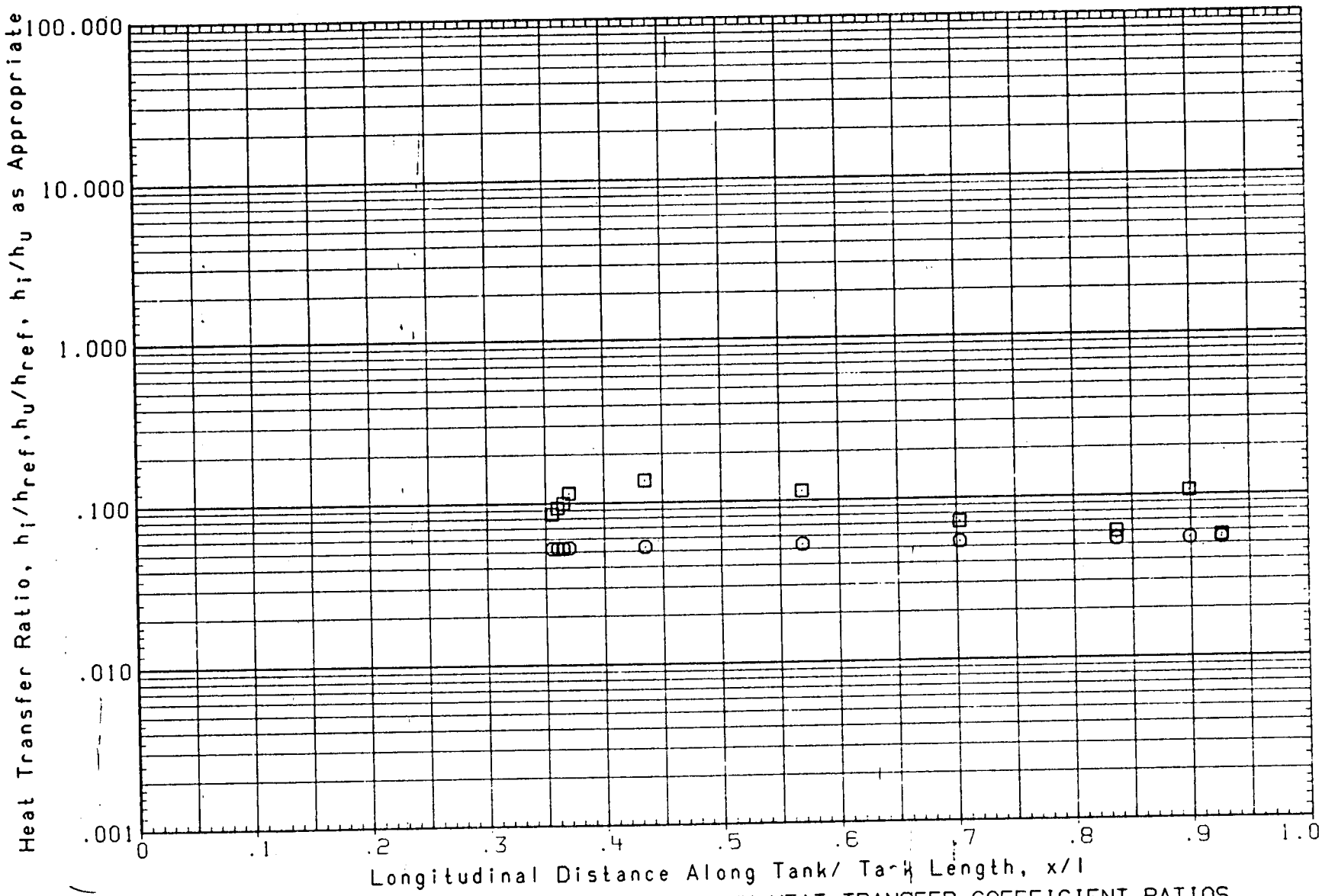


FIG. 10 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = -3

MACH = 4.020 ALPHA = .005 PHI = 23.075

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT03)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-3.000
(LVFT23)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-3.000
(CVFT23)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-3.000

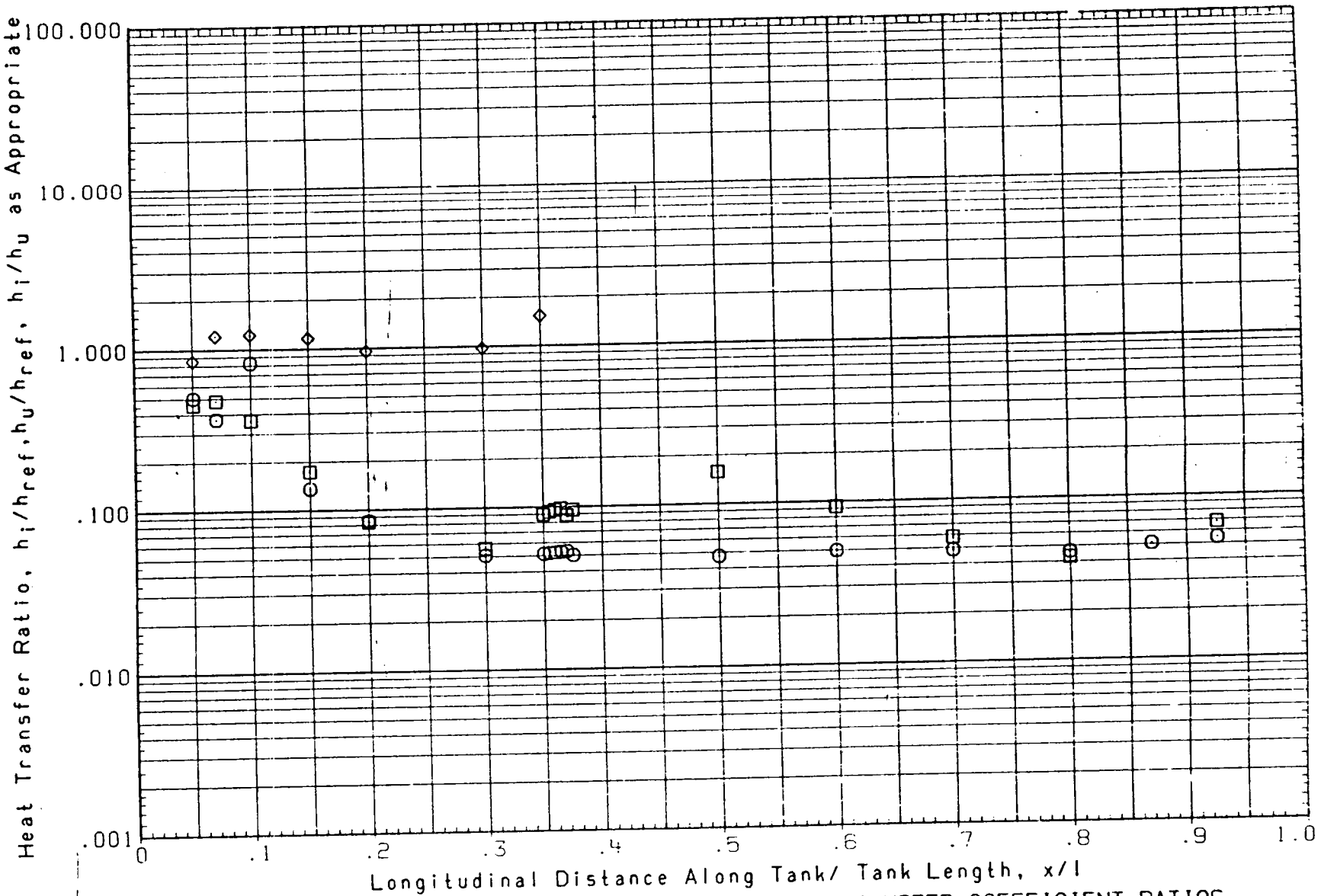


FIG. 10 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = -3

MACH = 4.020 ALPHA = .005 PHI = 29.800

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT03)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-3.000
(LVFT23)	□	IH41B(V41A-A4A) O T S (SPIKED CT DATA) HI/HREF	.000	-3.000
(CVFT23)	◇	DATA NOT AVAILABLE	.000	-3.000

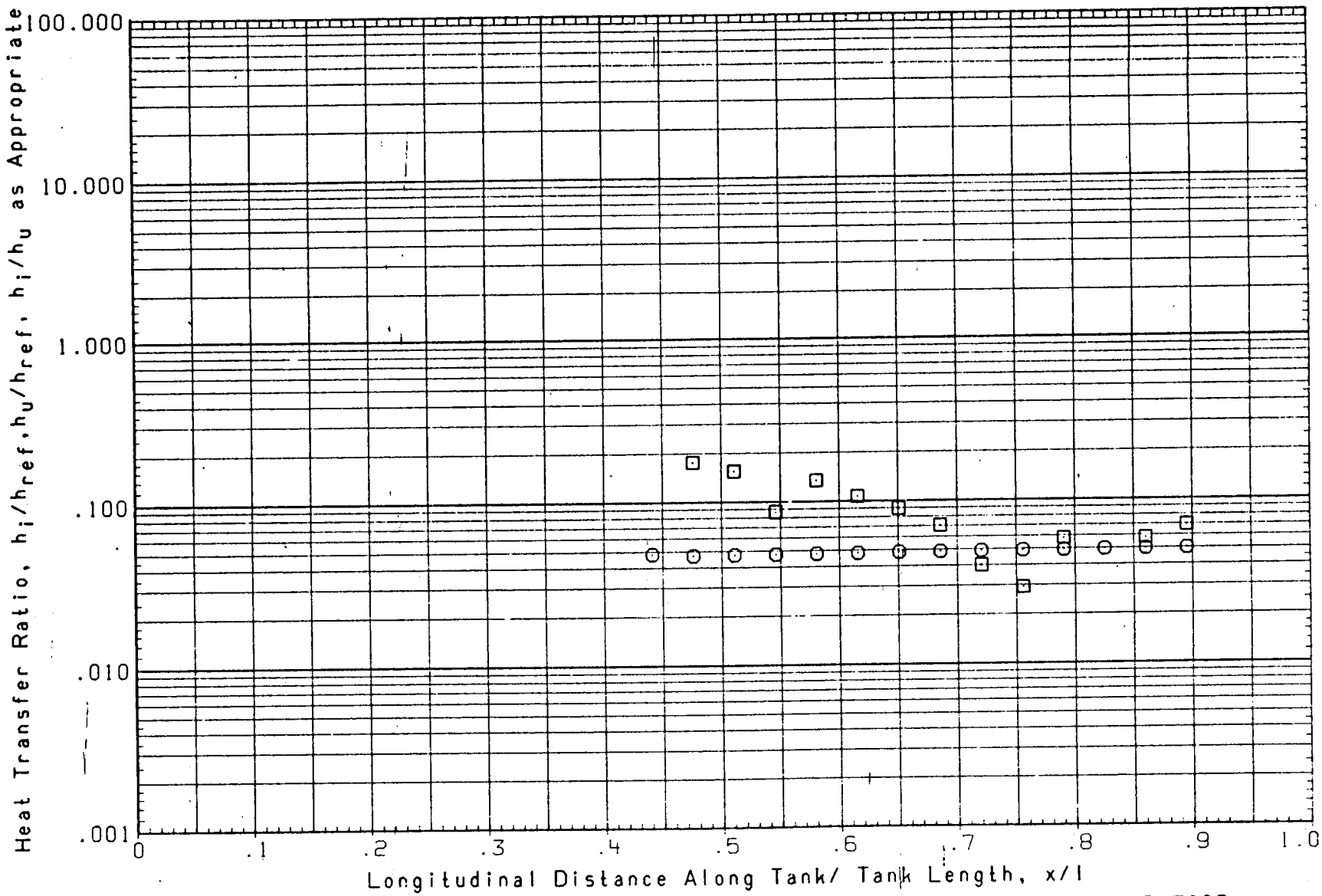


FIG. 10 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = -3

MACH = 4.020 ALPHA = .005 PHI = 31.430

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT03)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-3.000
(LVFT23)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-3.000
(CVFT23)	◇	DATA NOT AVAILABLE	.000	-3.000

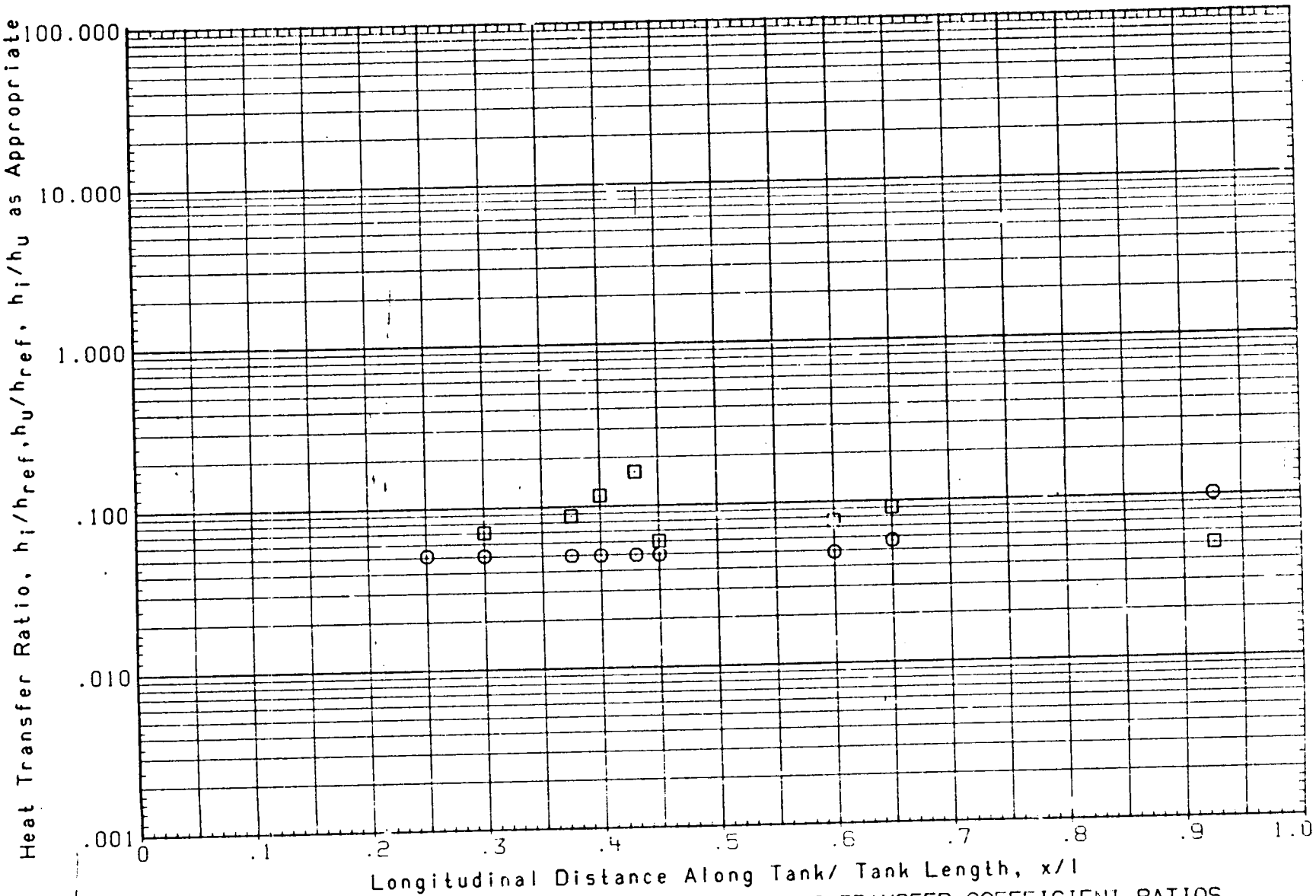


FIG. 10 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = -3

MACH = 4.020 ALPHA = .005 PHI = 33.750

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT03)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-3.000
(LVFT23)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-3.000
(CVFT23)	◇	DATA NOT AVAILABLE	.000	-3.000

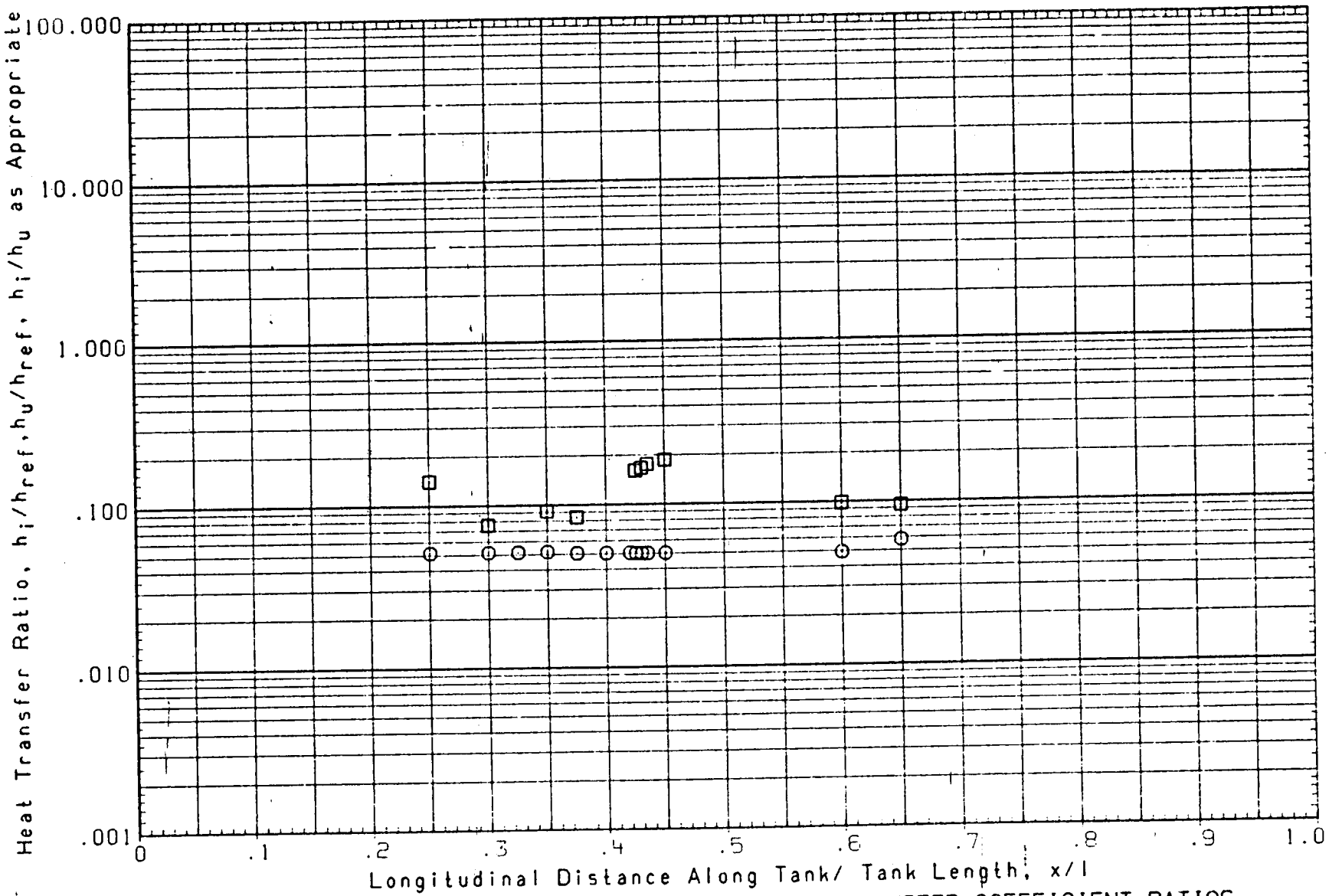


FIG. 10 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = -3

MACH = 4.020 ALPHA = .000 PHI = 35.320

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT03)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-3.000
(LVFT23)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-3.000
(CVFT23)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-3.000

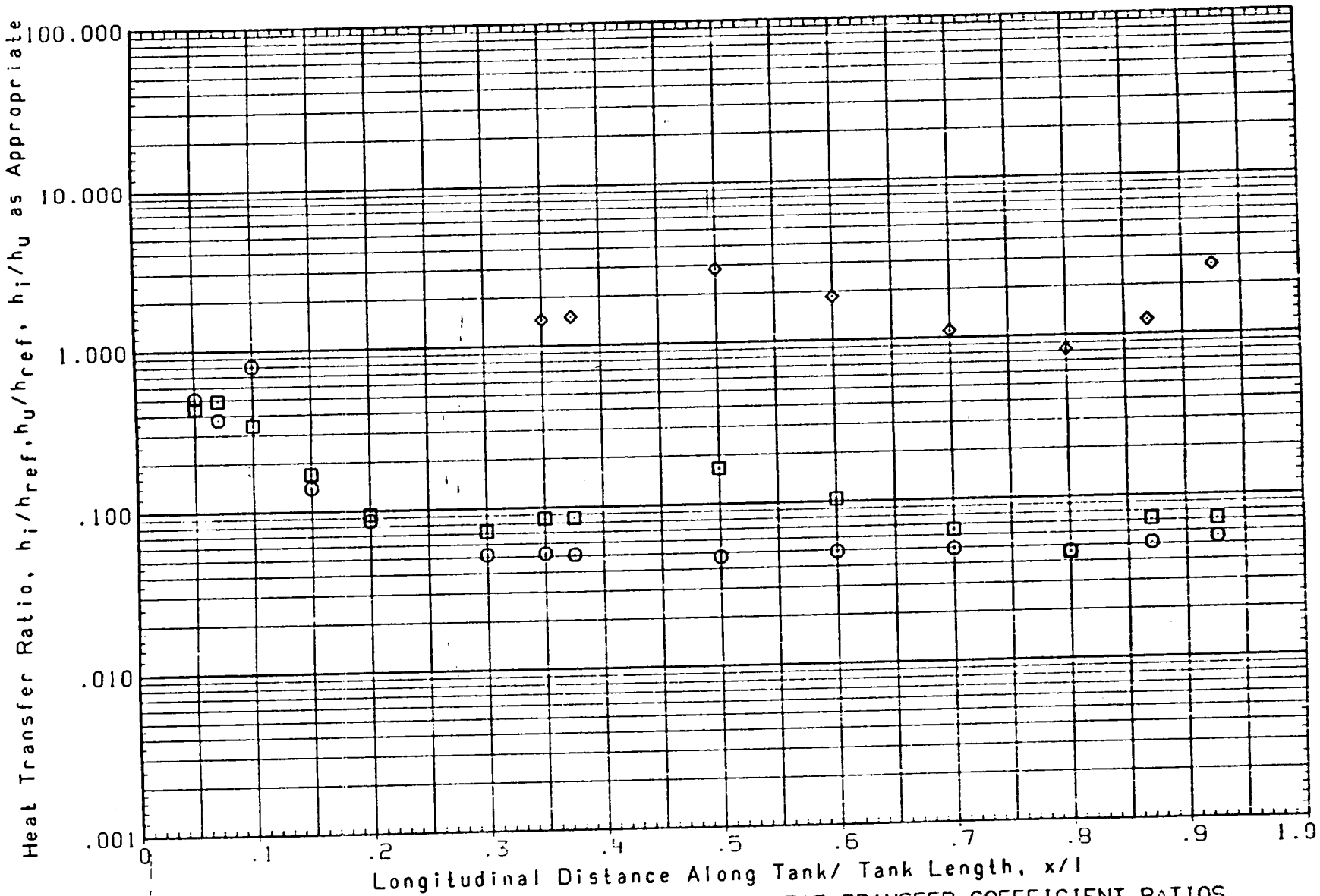


FIG. 10 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = -3

MACH = 4.020 ALPHA = .005 PHI = 57.700

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT03)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-3.000
(LVFT23)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-3.000
(CVFT23)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-3.000

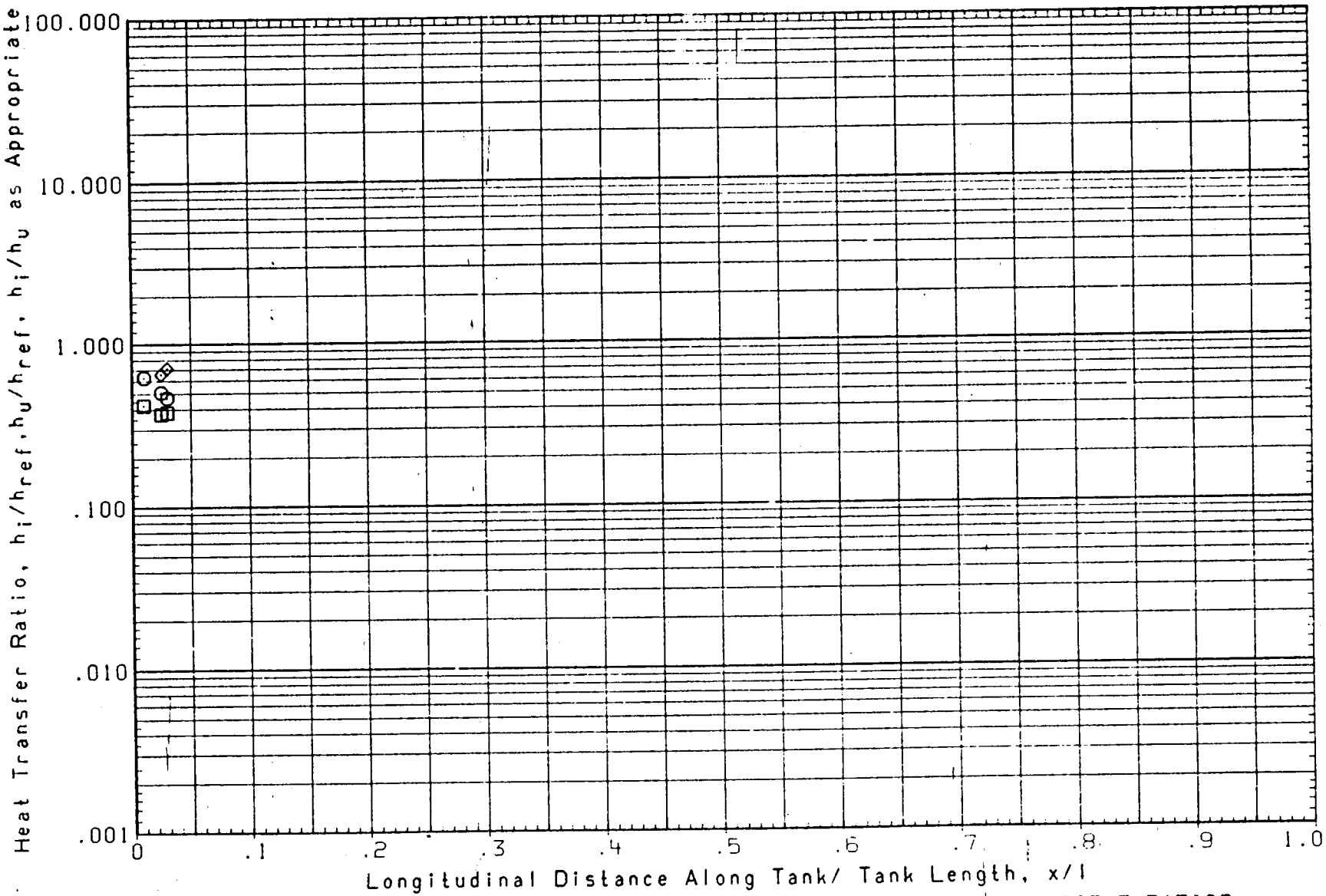


FIG. 10 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = -3

MACH = 4.020 ALPHA = .005 PHI = 39.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT03)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-3.000
(LVFT23)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-3.000
(CVFT23)	◇	DATA NOT AVAILABLE	.000	-3.000

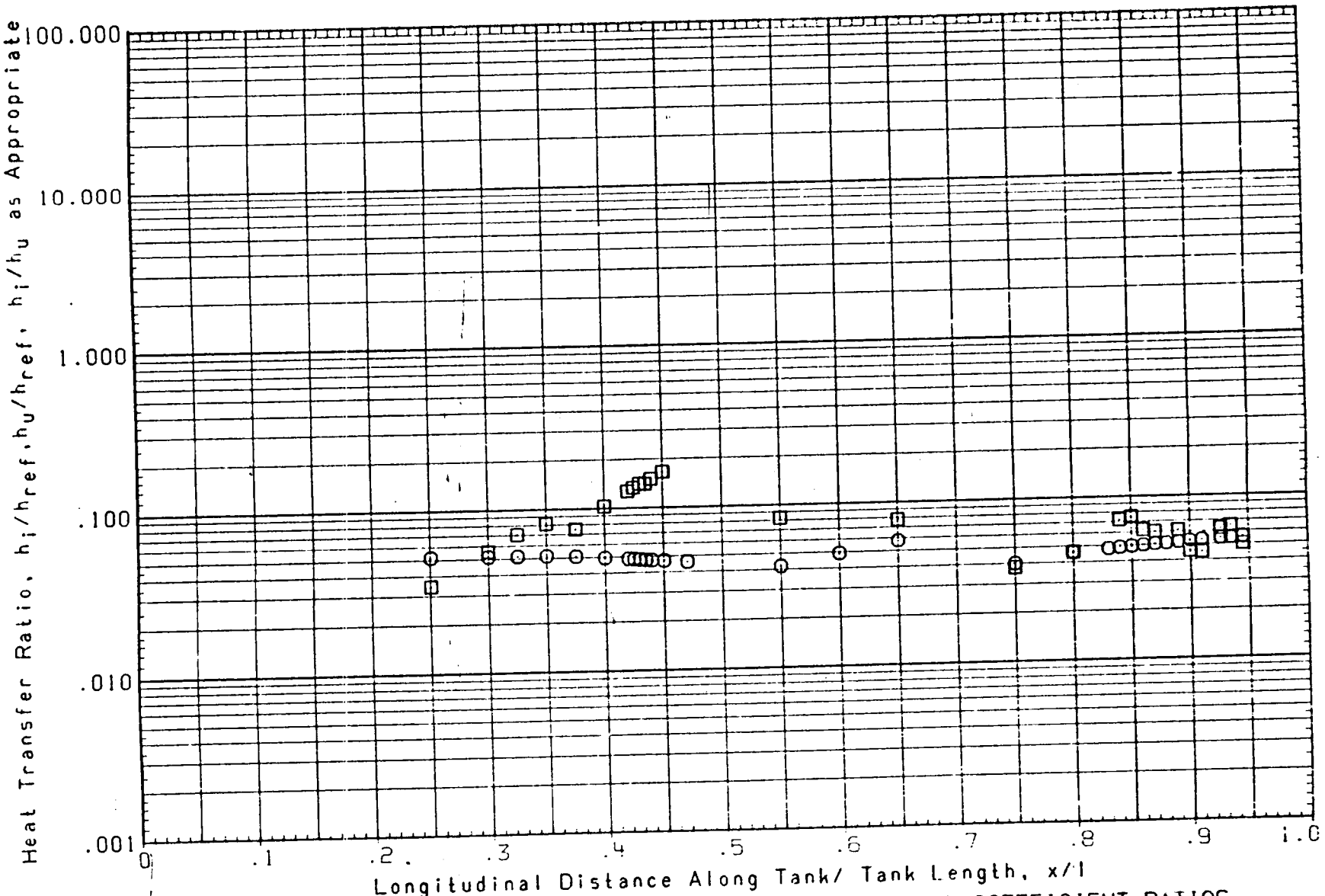


FIG. 10 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = -3

MACH = 4.020 ALPHA = .005 PHI = 45.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT03)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-3.000
(LVFT23)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-3.000
(CVFT23)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-3.000

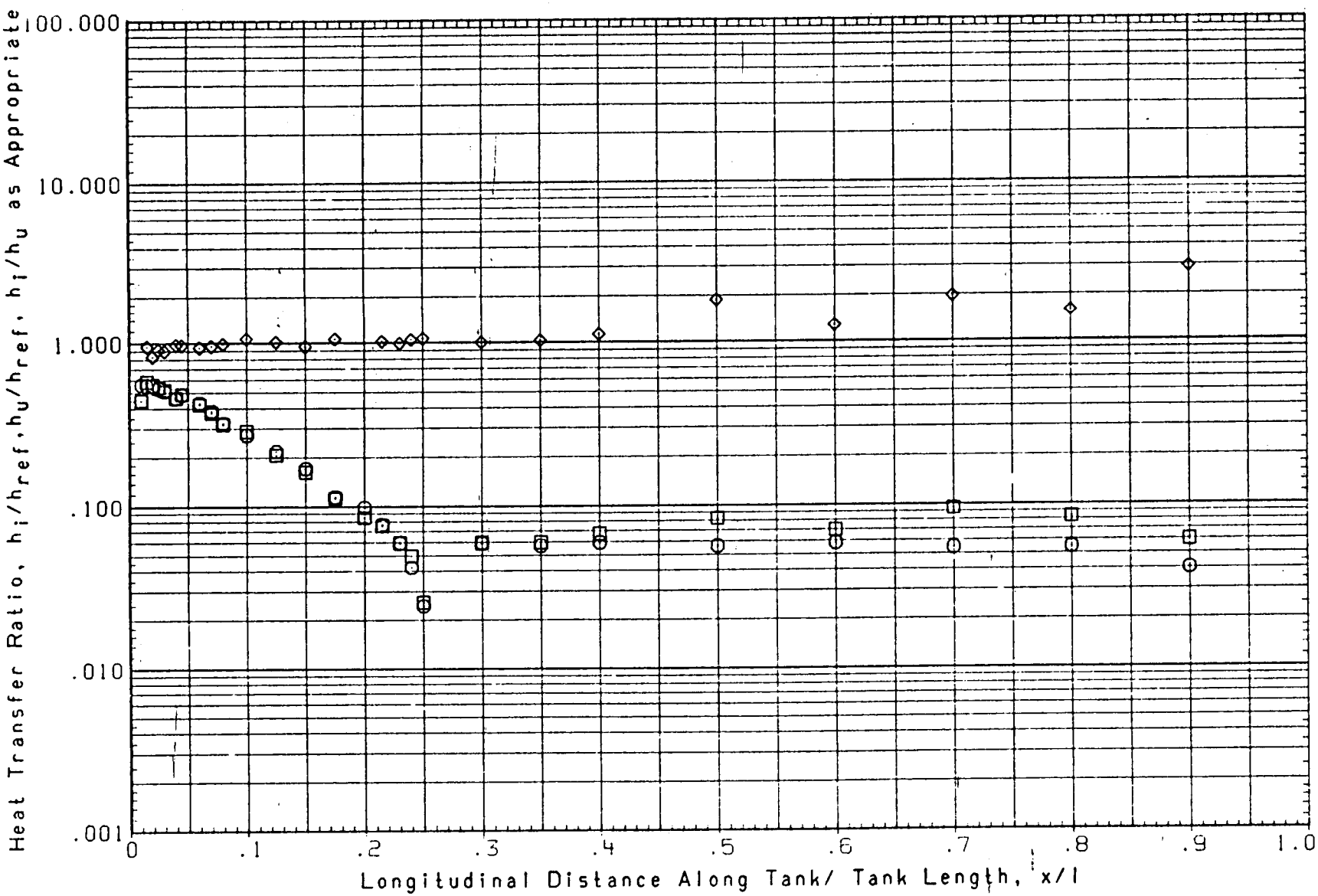


FIG. 10 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = -3

MACH = 4.020 ALPHA = .005 PHI = 180.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT04)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-6.000
(LVFT24)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-6.000
(BVFT24)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-6.000

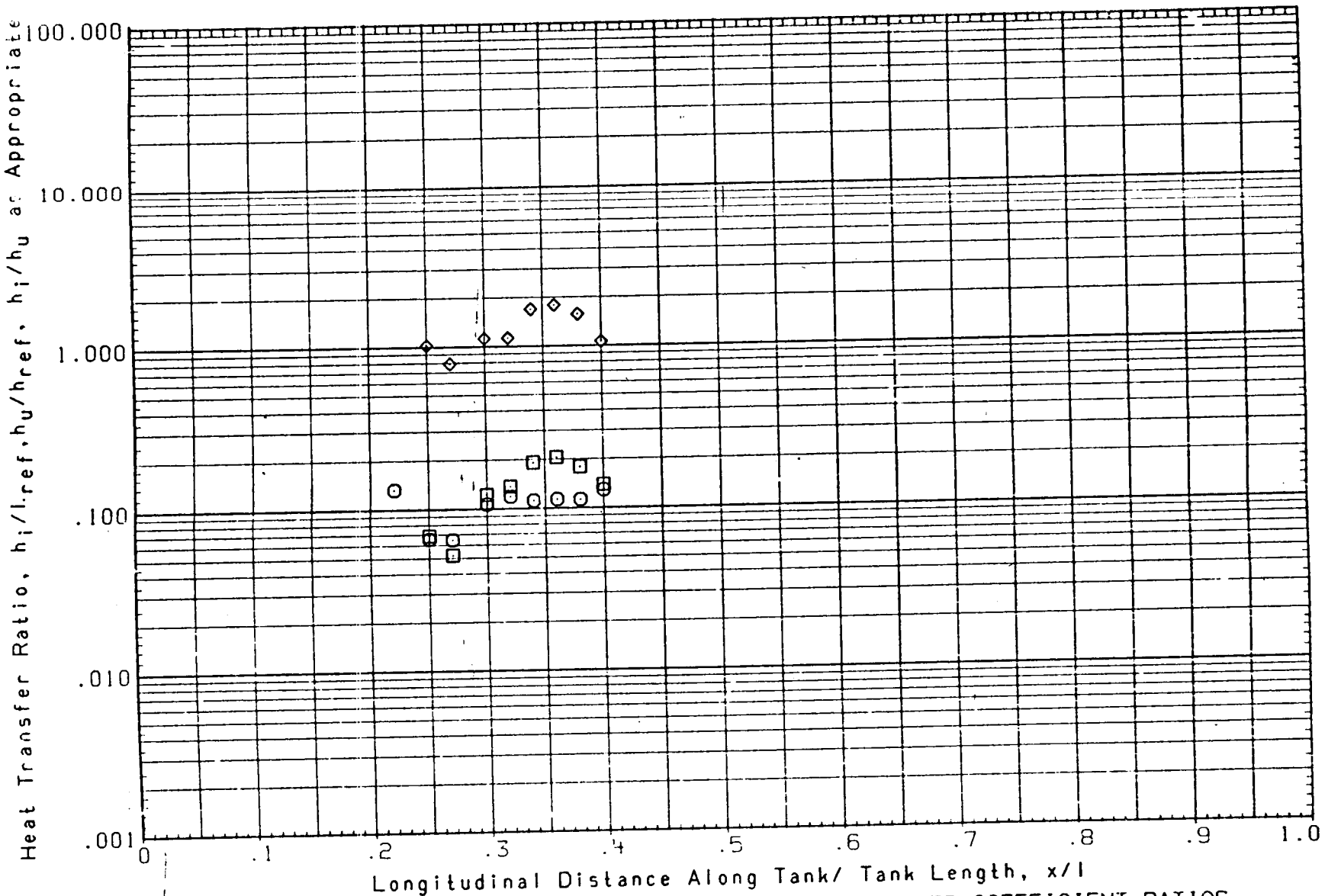


FIG. 11 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -6

MACH = 3.010 ALPHA = .010 PHI = 235.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT04:	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-6.000
(LVFT24)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-6.000
(BVFT24)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-6.000

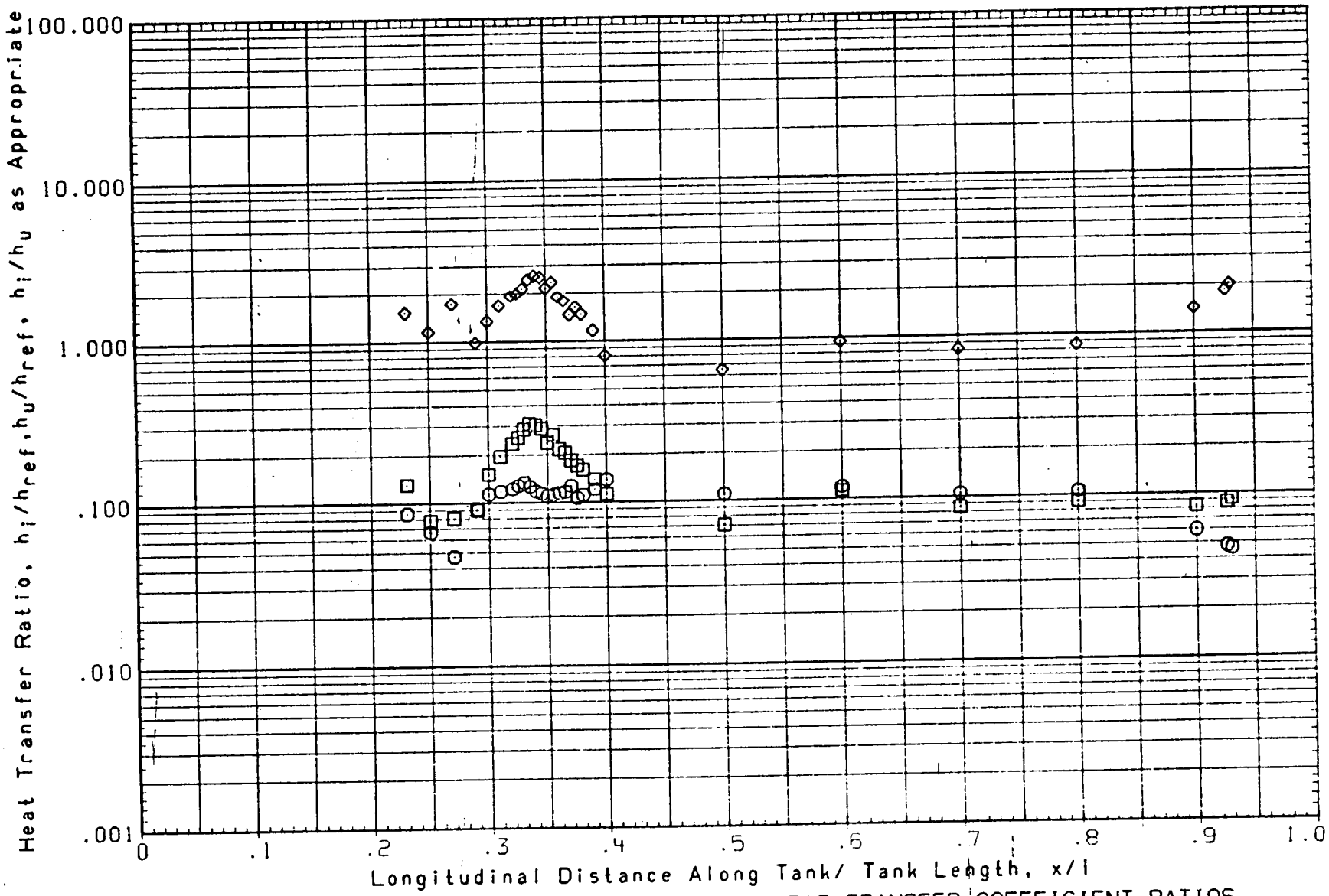


FIG. 11 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -6

MACH = 3.010 ALPHA = 0.10 PHI = 247.500

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT04)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-6.000
(LVFT24)	□	IH41B(V41A-A4A) O " S (SPIKED ET DATA) HI/HREF	.000	-6.000
(BVFT24)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-6.000

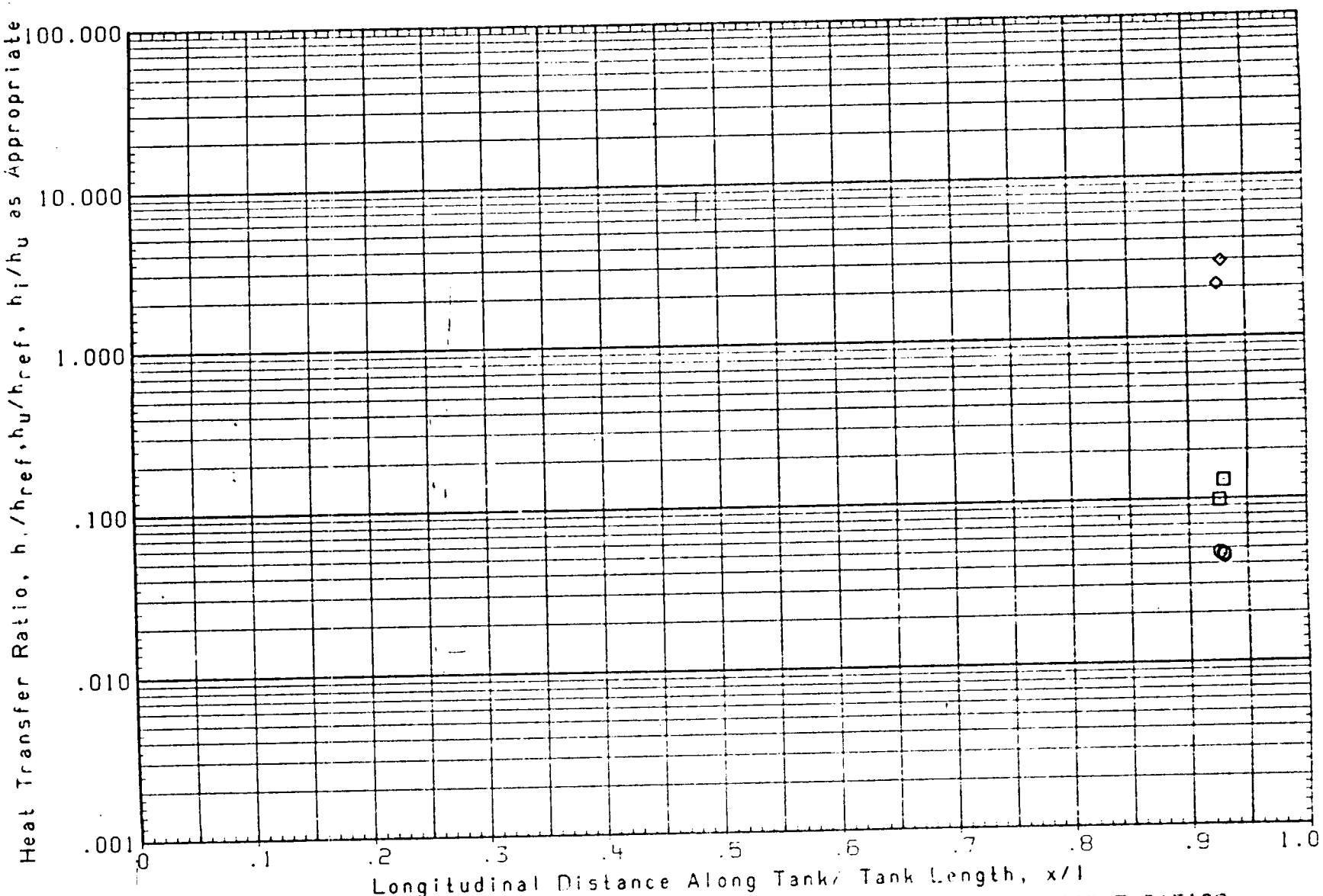


FIG. 11 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -6

MACH = 3.010 ALPHA = .010

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT04)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-6.000
(LVFT24)	□	IH41B(V41A-A4A) O T S (SPIKED E' DATA) HI/HREF	.000	-6.000
(BVFT24)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-6.000

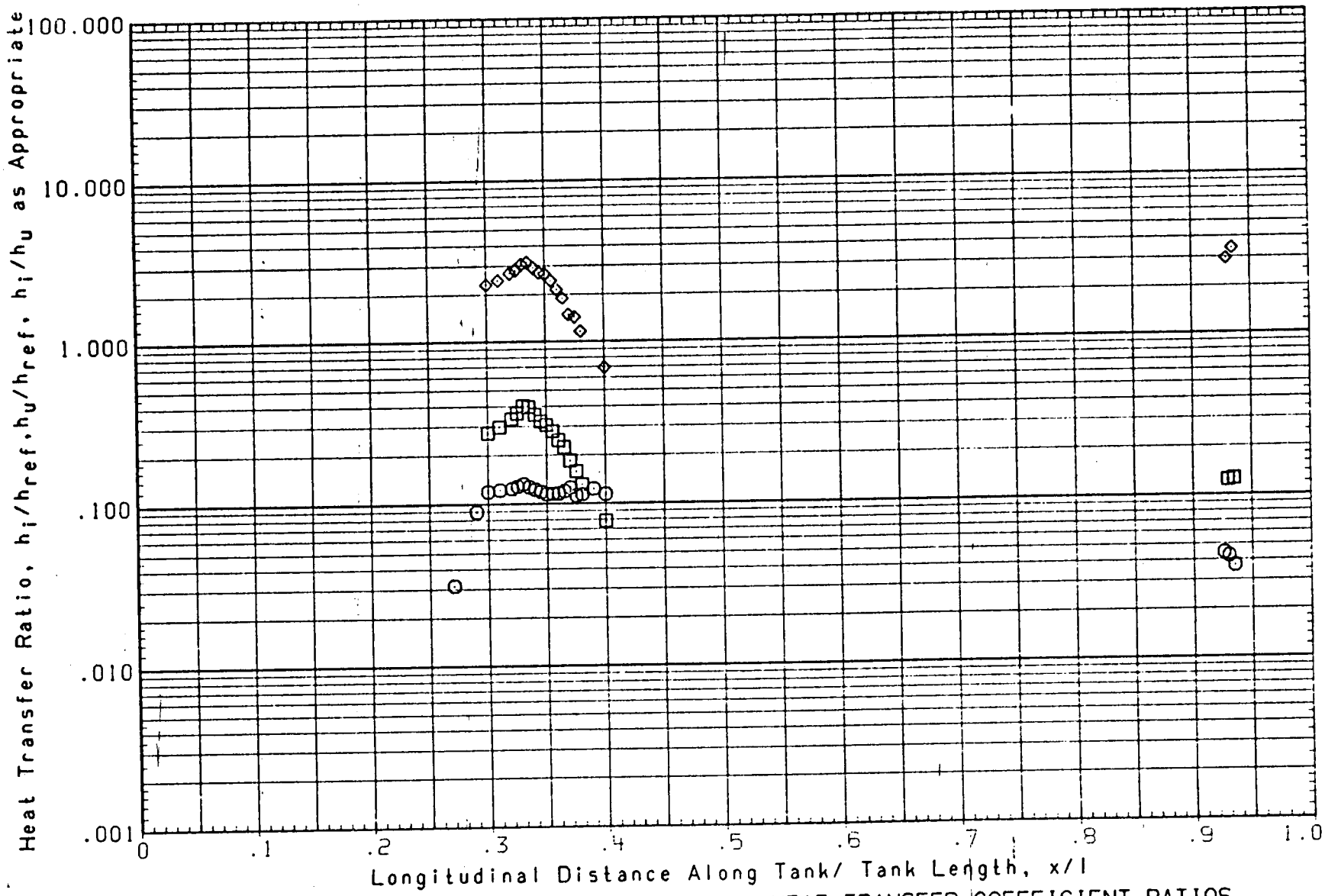


FIG. 11 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -6

MACH = 3.010 ALPHA = .010 PHI = 258.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT04)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-6.000
(LVFT24)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-6.000
(BVFT24)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-6.000

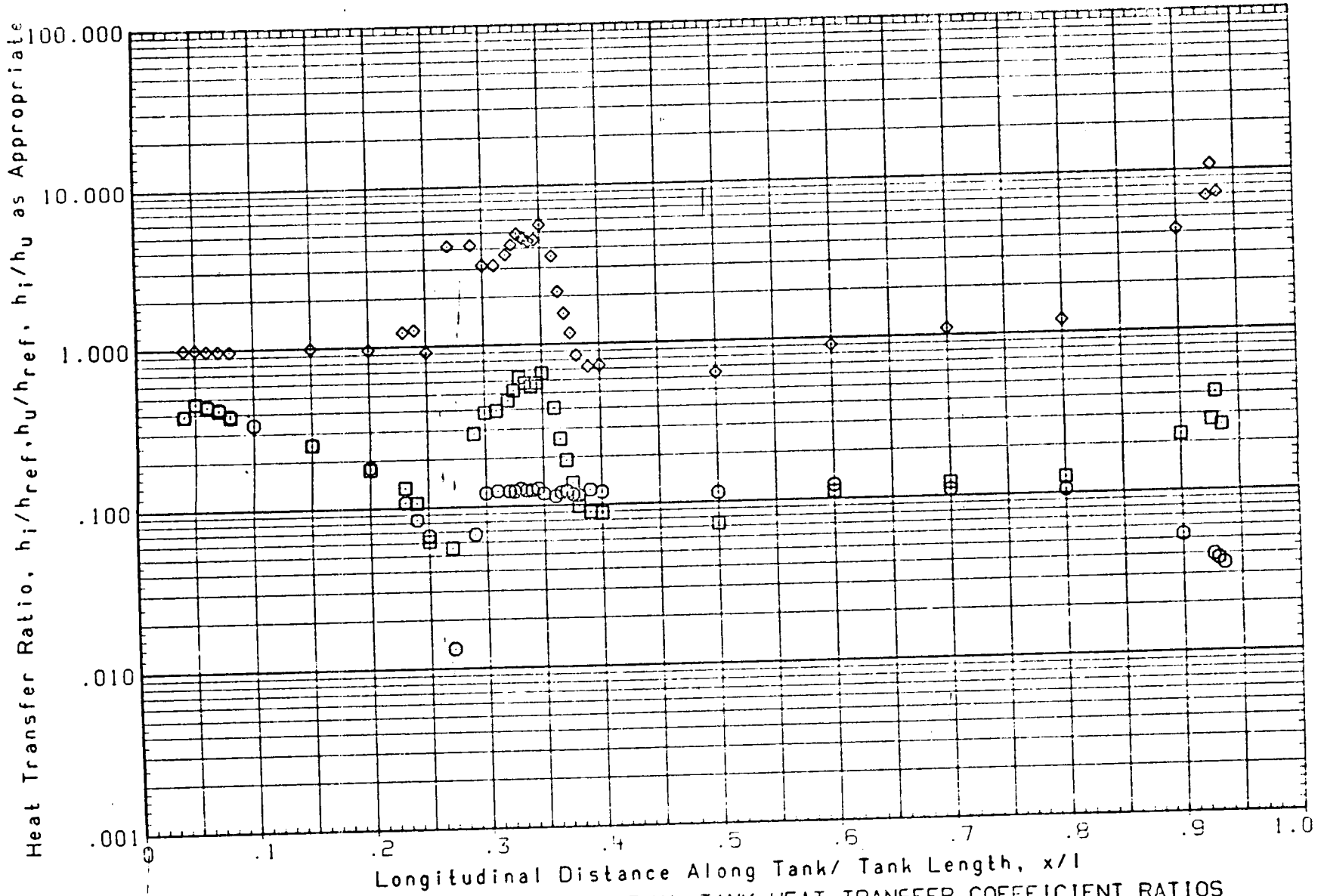


FIG. 11 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -6

MACH = 3.010 ALPHA = .010

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT04)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-6.000
(LVFT24)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-6.000
(BVFT24)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-6.000

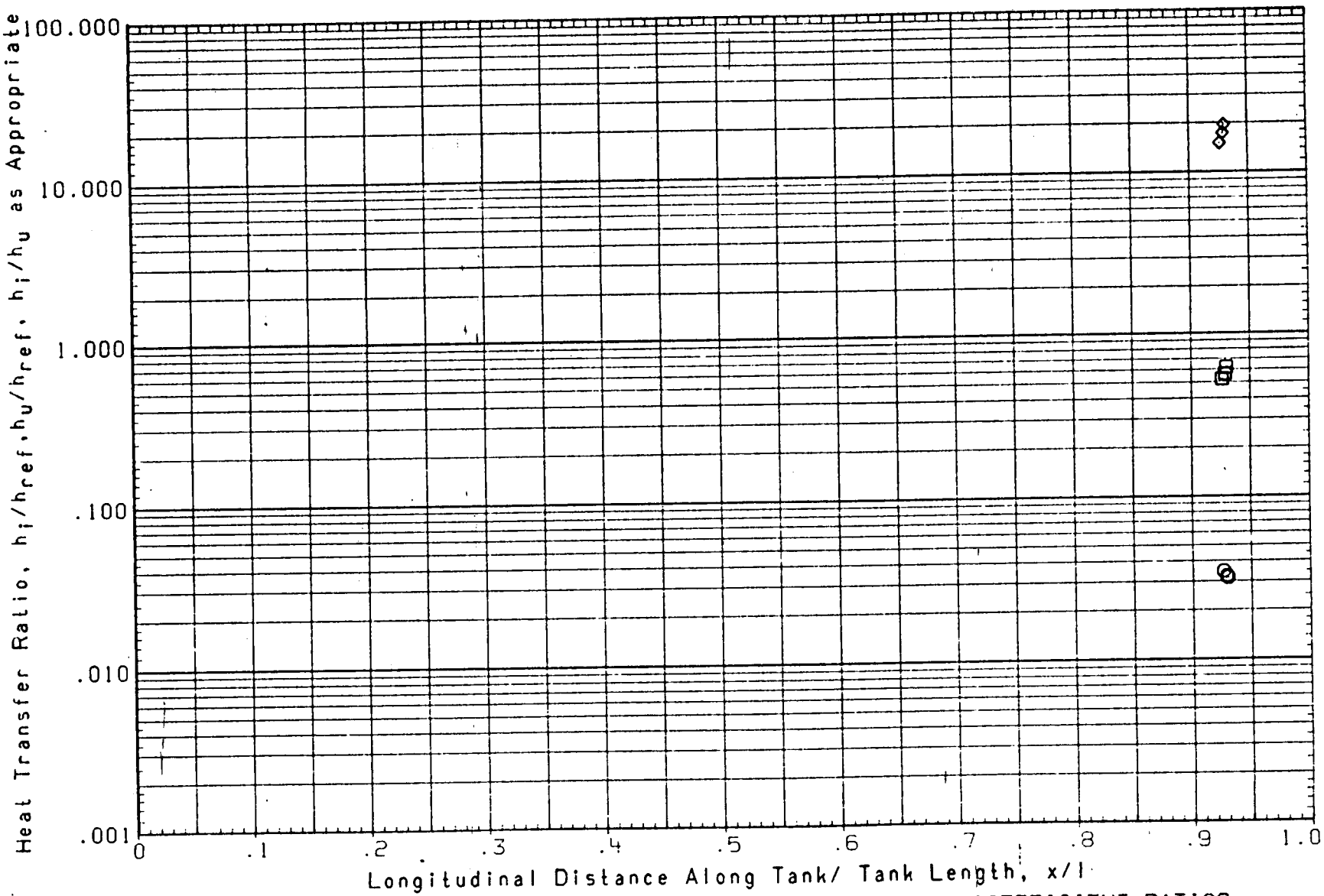


FIG. 11 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -6

MACH = 3.010 ALPHA = .010 PHI = 289.430

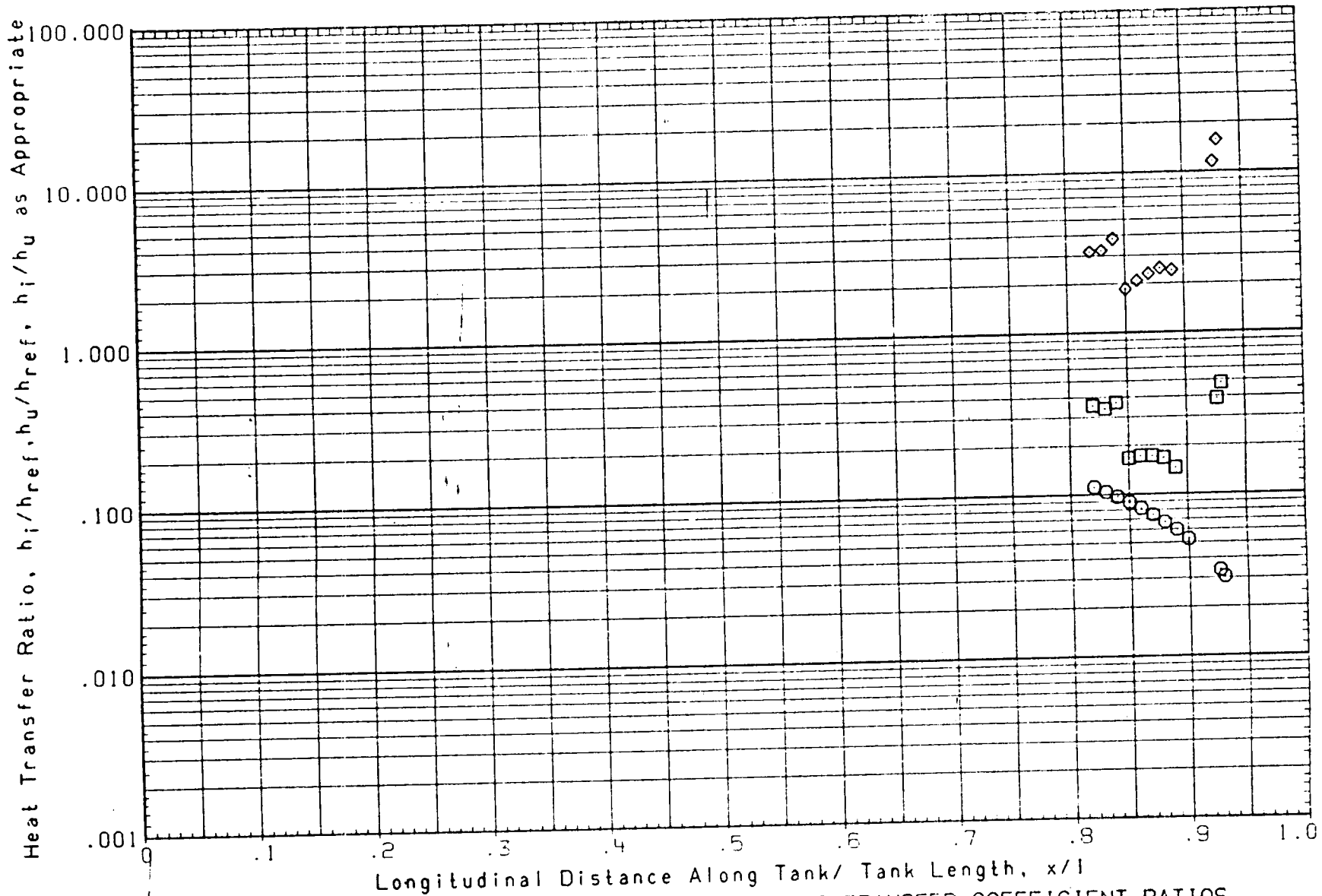


FIG. 11 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -6

MACH = 3.010 ALPHA = .010 PHI = 292.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT04)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-6.000
(LVFT24)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-6.000
(BVFT24)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-6.000

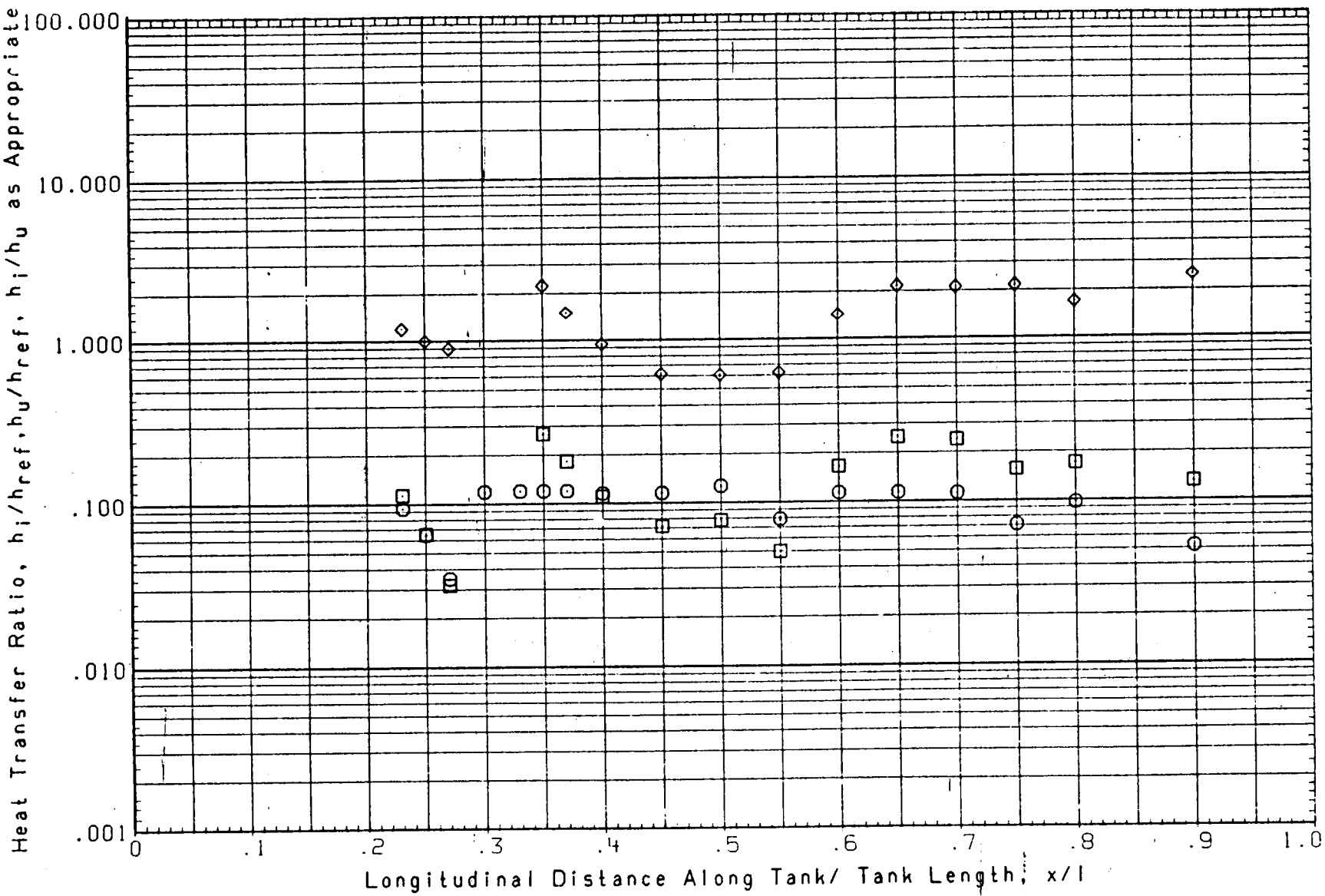


FIG. 11 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -6

MACH = 3.010 ALPHA = .010 PHI = 292.500

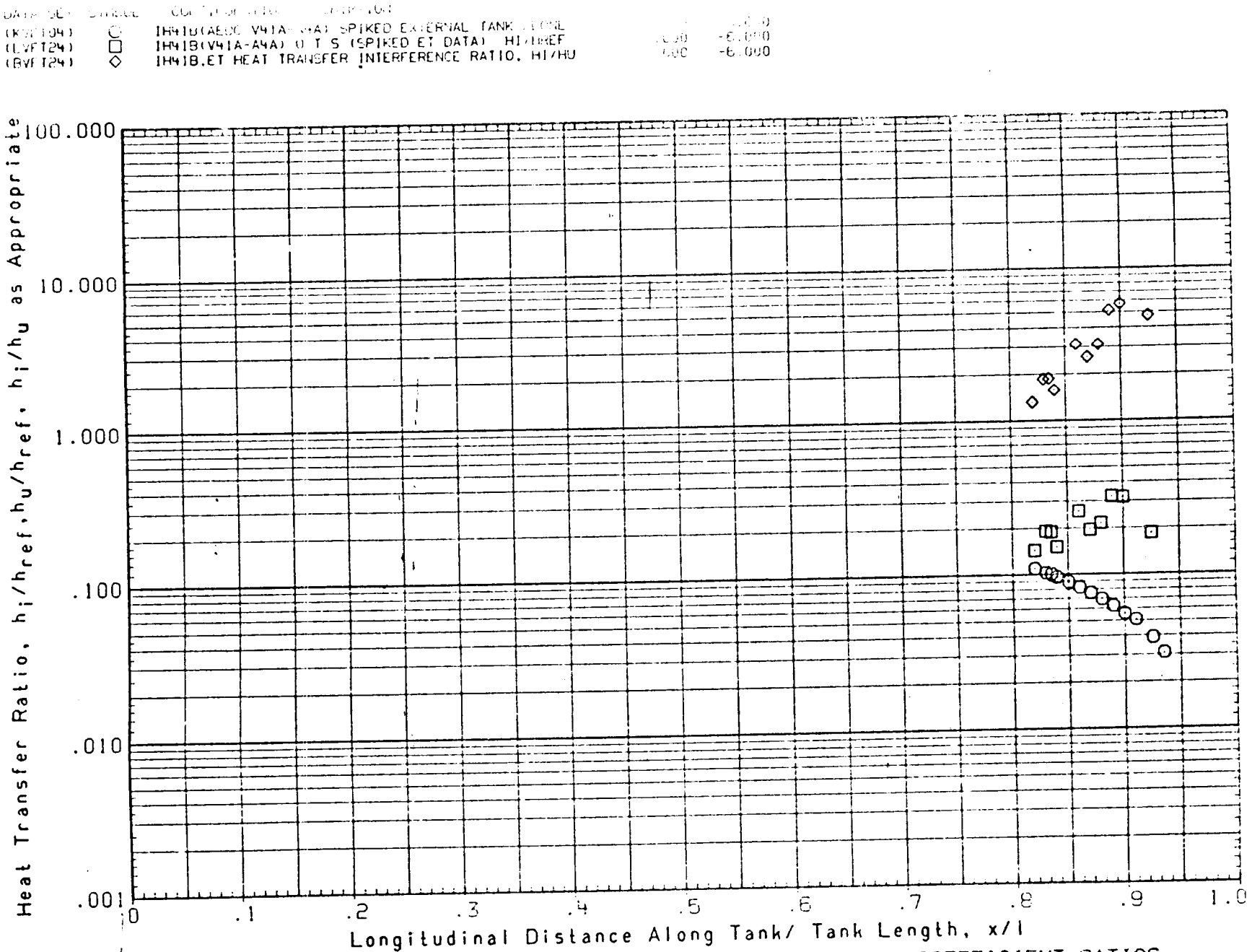


FIG. 11 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -6

MACH = 3.010 ALPHA = .010 RN = 301.500

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT04)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-6.000
(LVFT24)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-6.000
(BVFT24)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-6.000

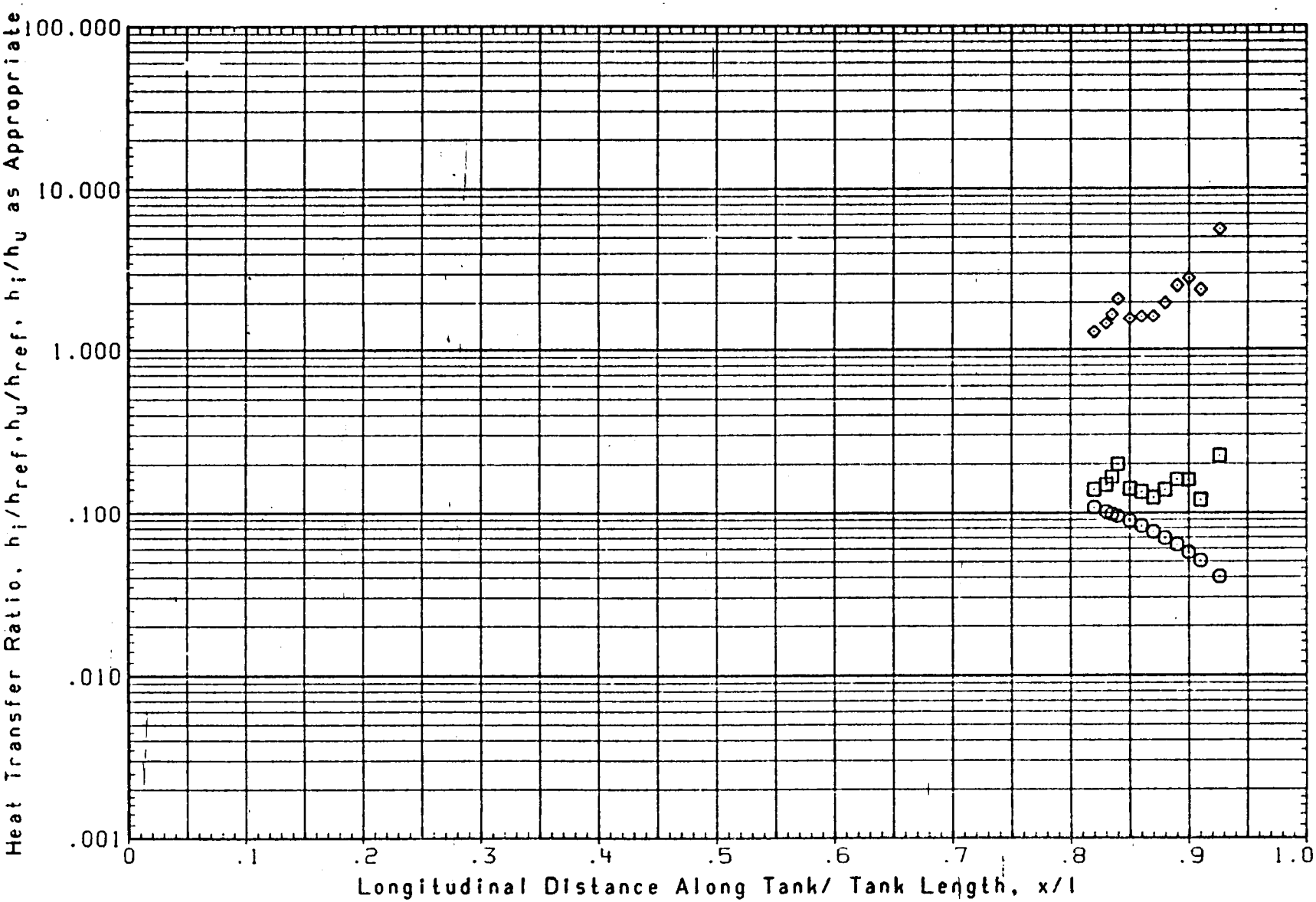


FIG. 11 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -6

MACH = 3.010 ALPHA = .010 PHI = 305.400

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT04)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-6.000
(LVFT24)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-6.000
(BVFT24)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-6.000

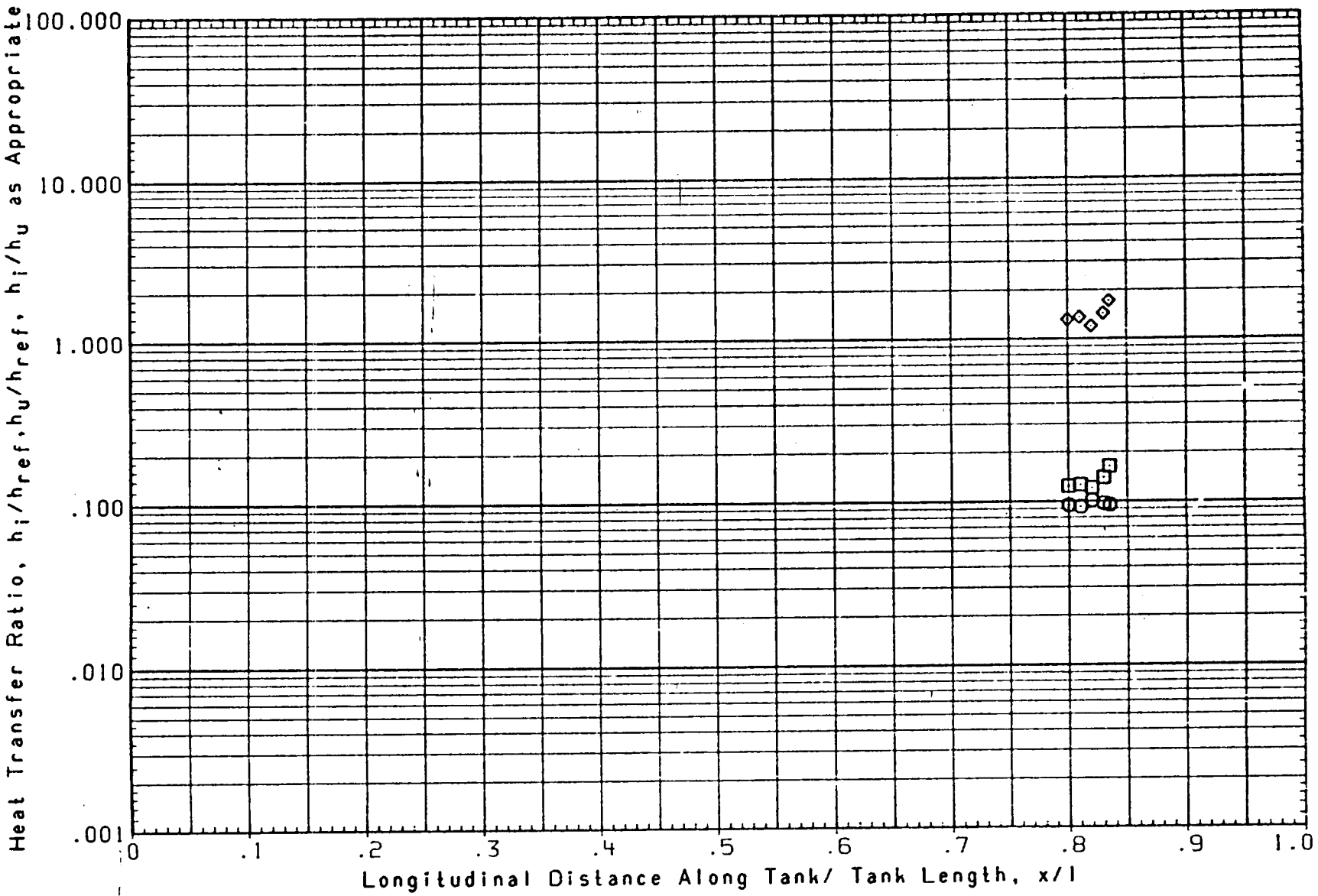


FIG. 11 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -6

MACH = 3.010 ALPHA = .010 PHI = 309.300

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT04)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-6.000
(LVFT24)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-6.000
(BVFT24)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-6.000

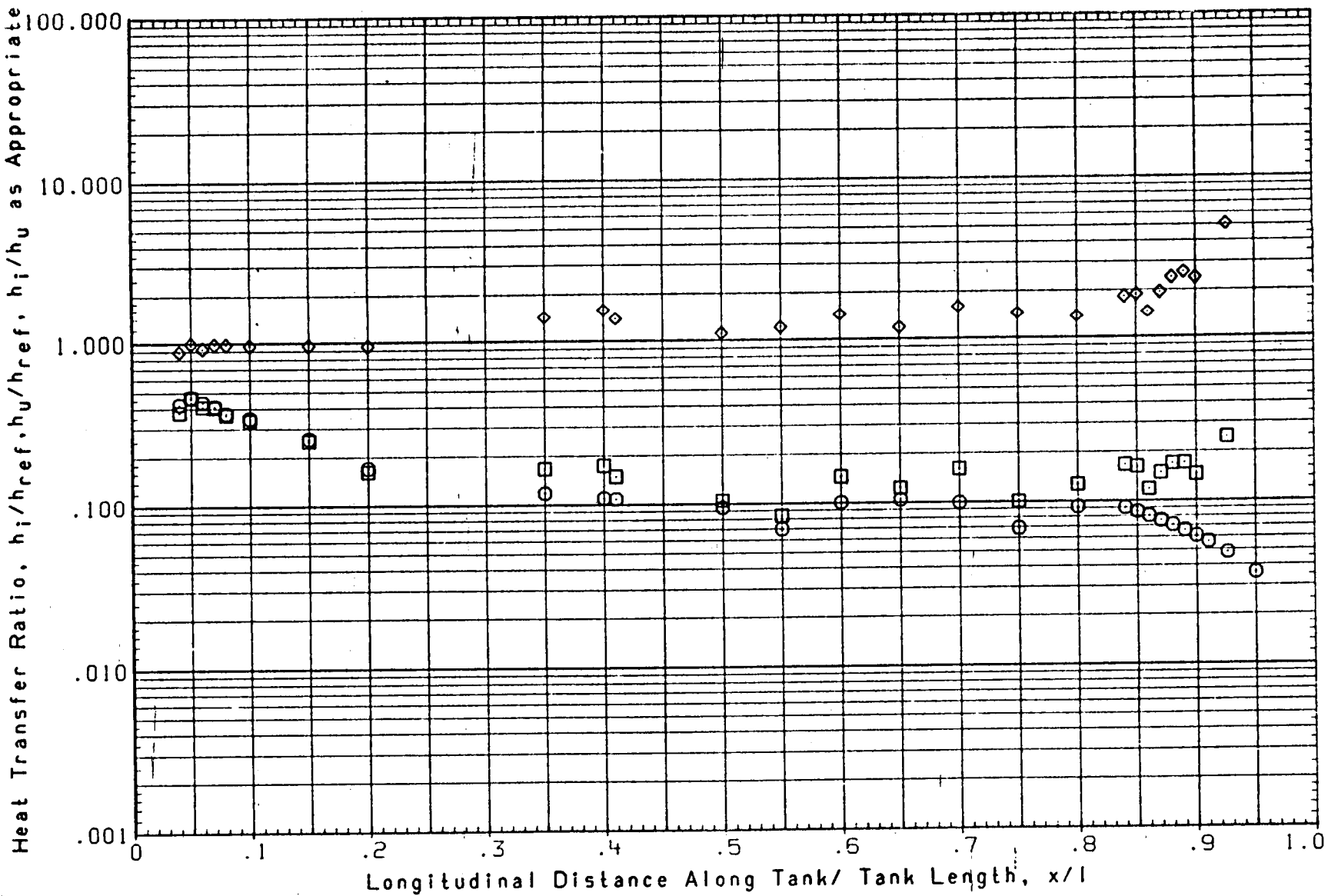


FIG. 11 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -6

MACH = 3.010 ALPHA = .010 PHI = 315.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(RVFT04)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-6.000
(LVFT24)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-6.000
(BVFT24)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-6.000

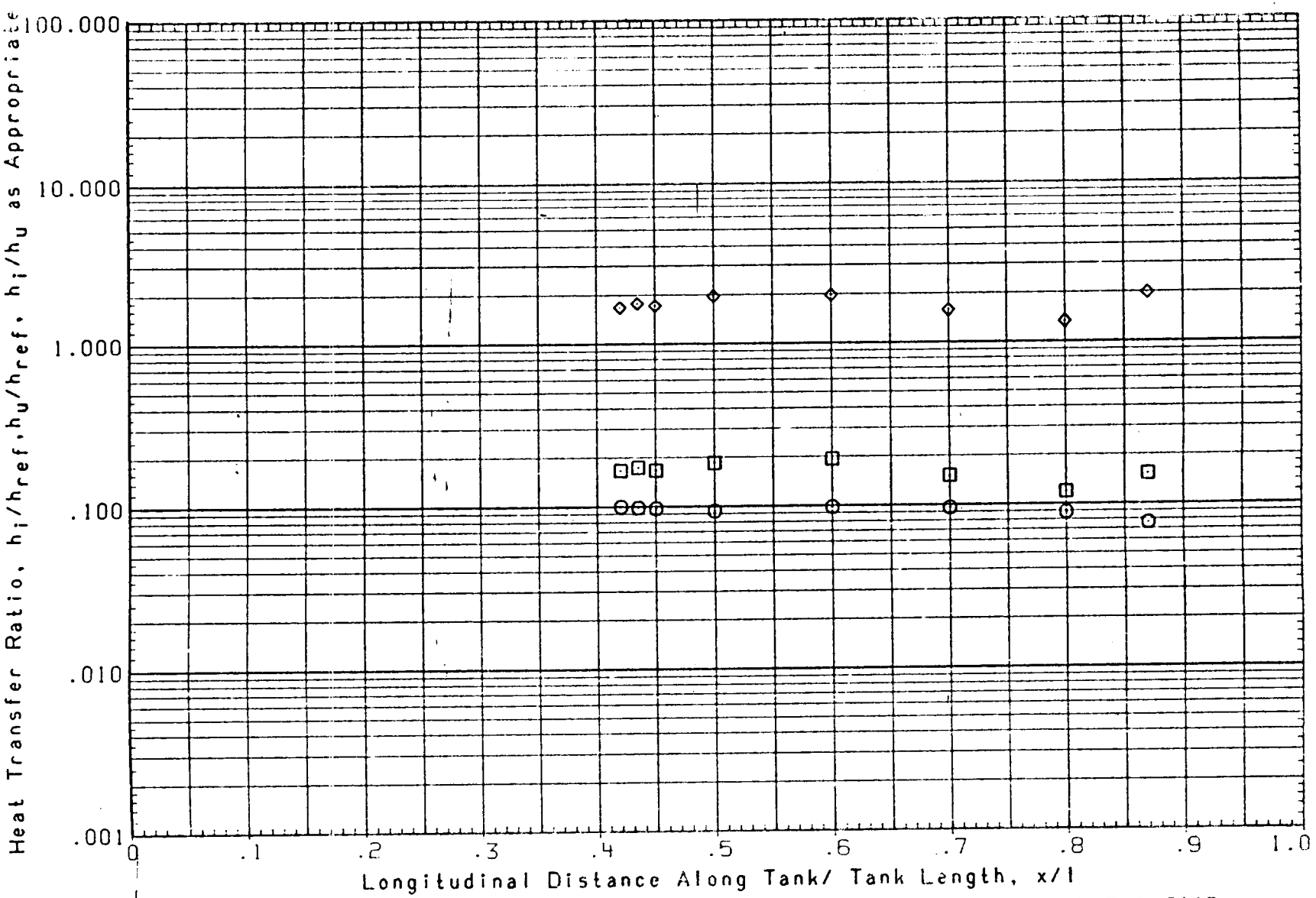


FIG. 11 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -6

MACH = 3.010 ALPHA = .010 PHI = 322.500

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT04)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-6.000
(LVFT24)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-6.000
(BVFT24)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-6.000

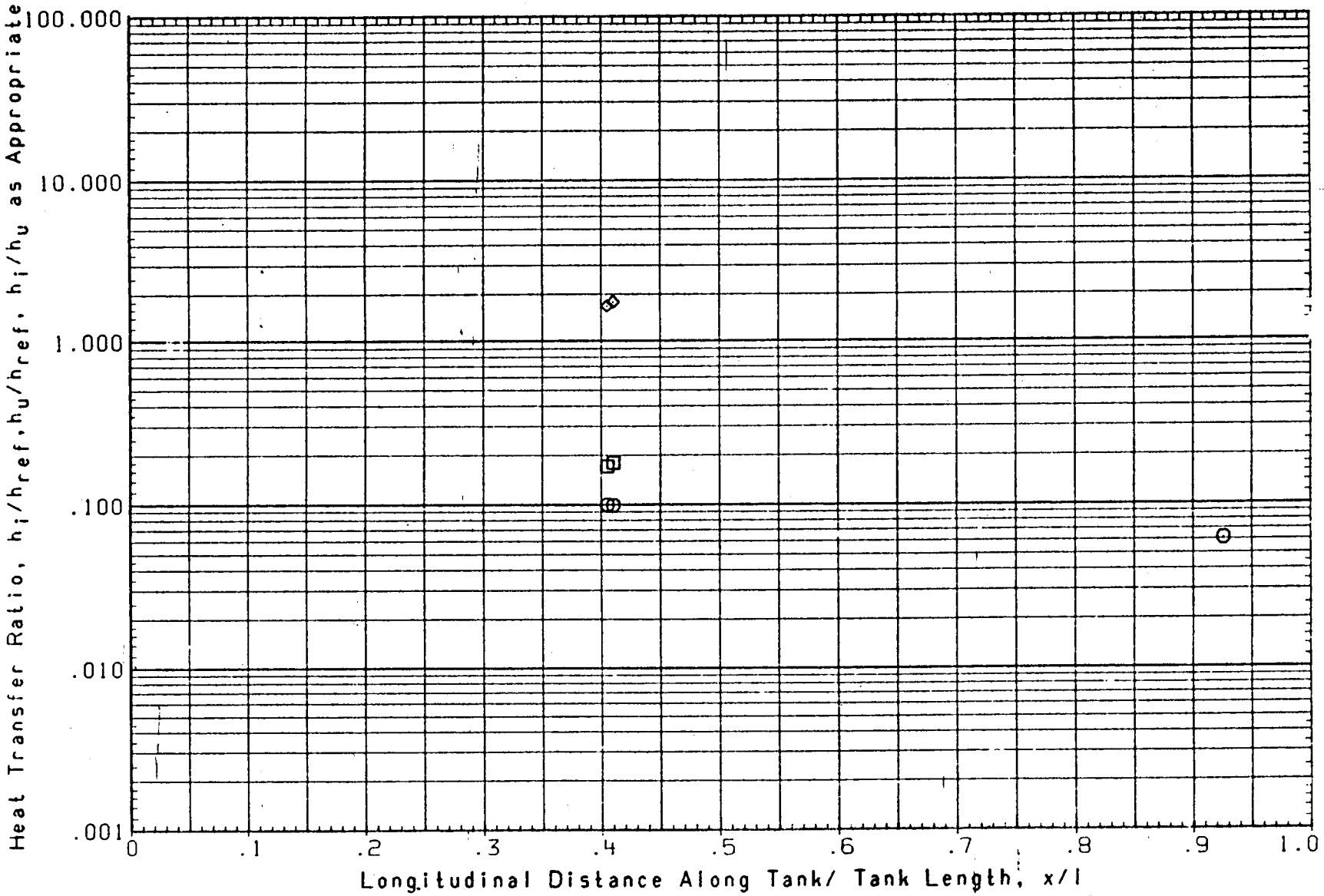


FIG. 11 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -6

MACH = 3.010 ALPHA = .010 PHI = 324.450

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT04)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-6.000
(LVFT24)	□	IH41B(V41A-A4A) O[illegible]S (SPIKED ET DATA) HI/HREF	.000	-6.000
(BVFT24)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-6.000

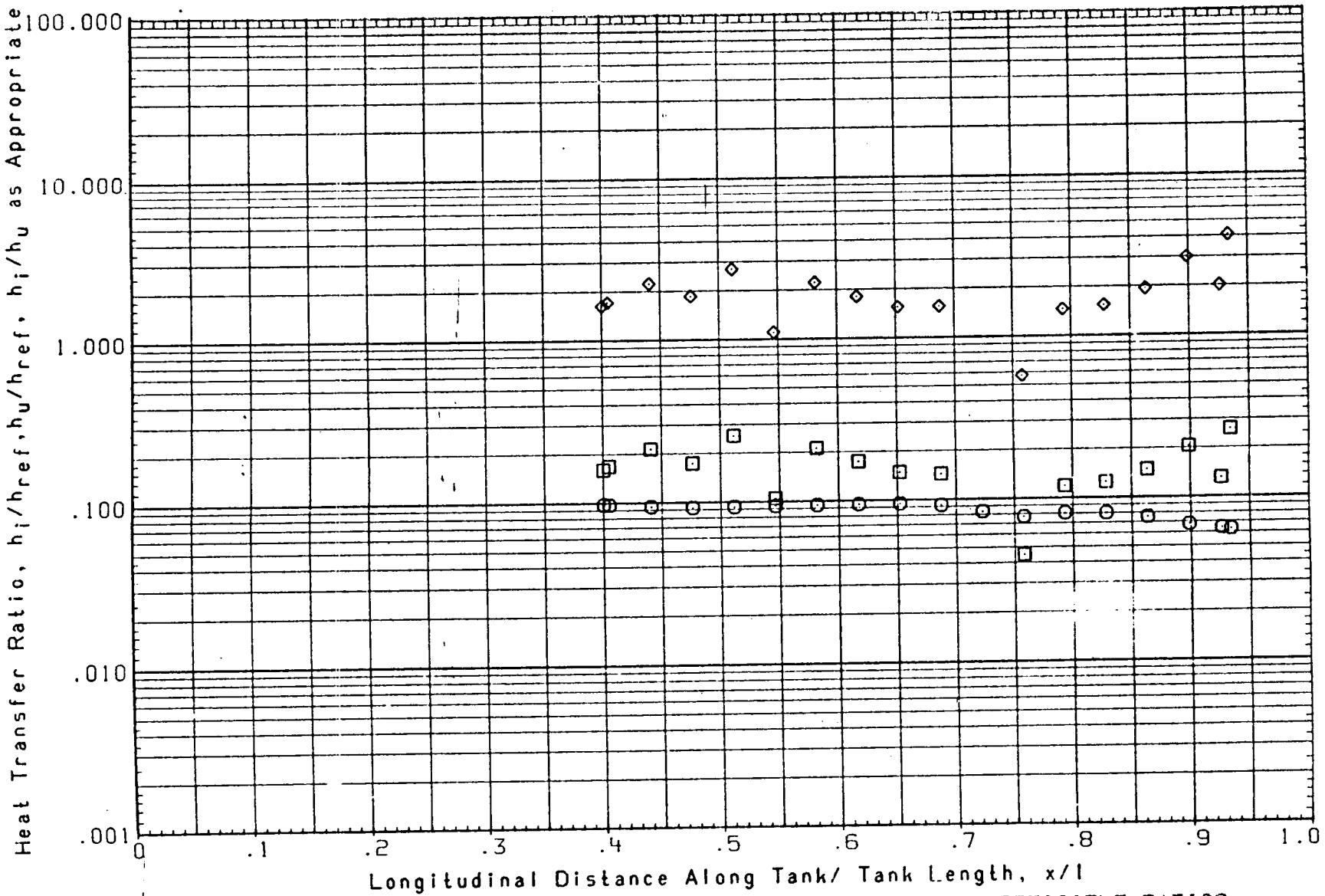


FIG. 11 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -6

MACH = 3.010 ALPHA = .010 PHI = 326.850

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT04)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-6.000
(LVFT24)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-6.000
(BVFT24)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-6.000

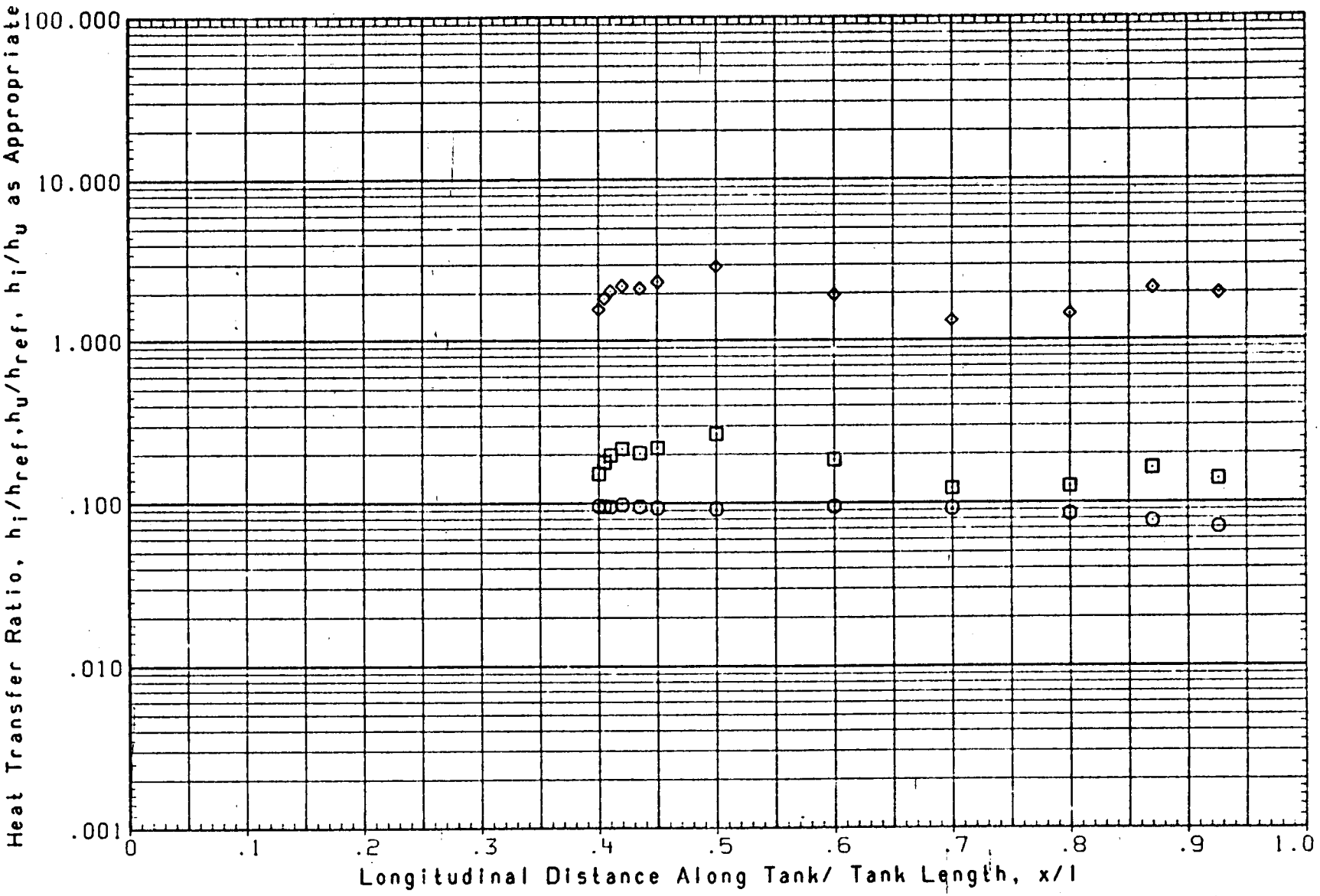


FIG. 11 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -6

MACH = 3.010 ALPHA = .010 PHI = 330.200

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT04)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-6.000
(LVFT24)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-6.000
(BVFT24)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-6.000

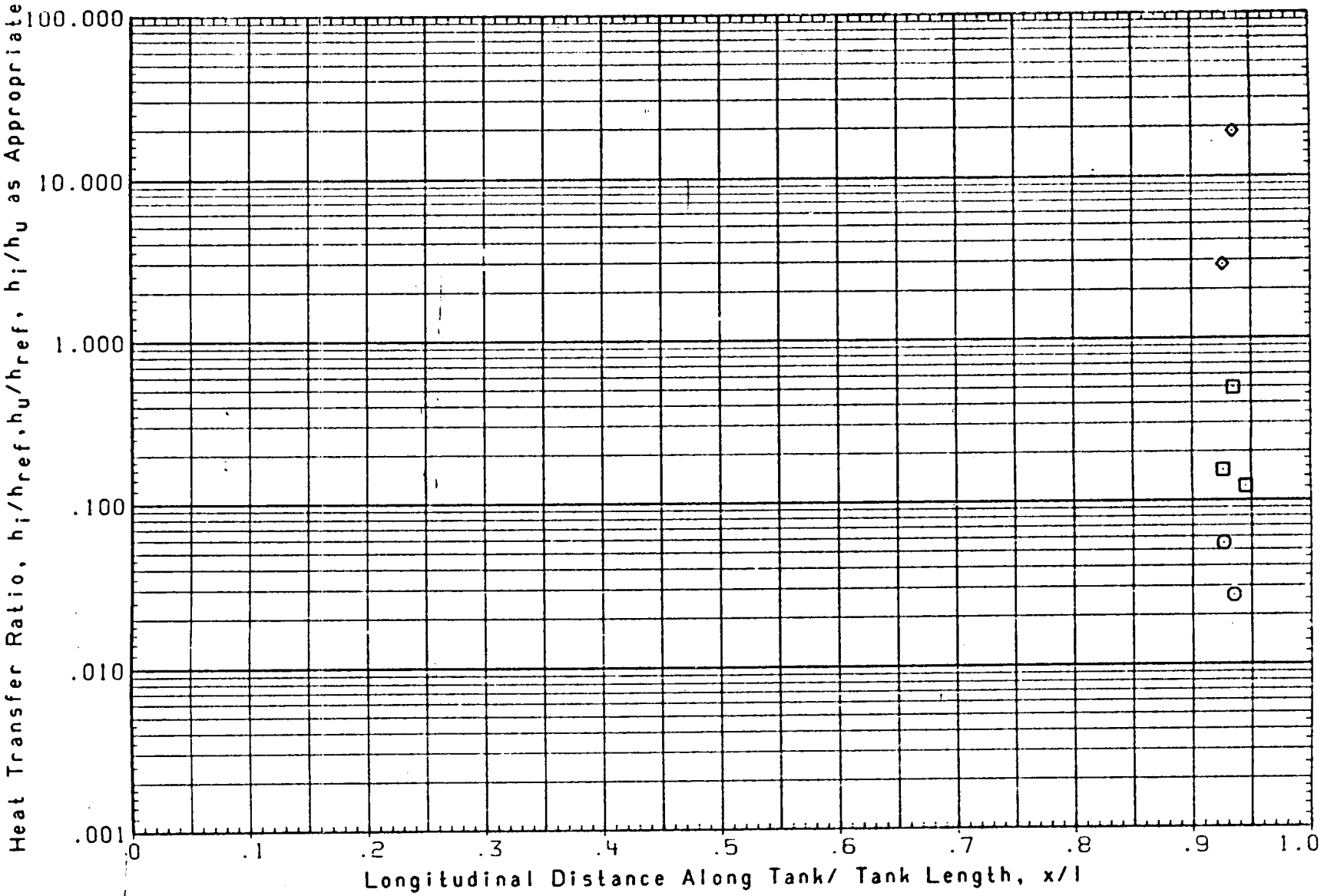


FIG. 11 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -6

MACH = 3.010 ALPHA = .010 PHI = 334.980

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT04)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-6.000
(LVFT24)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-6.000
(BVFT24)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-6.000

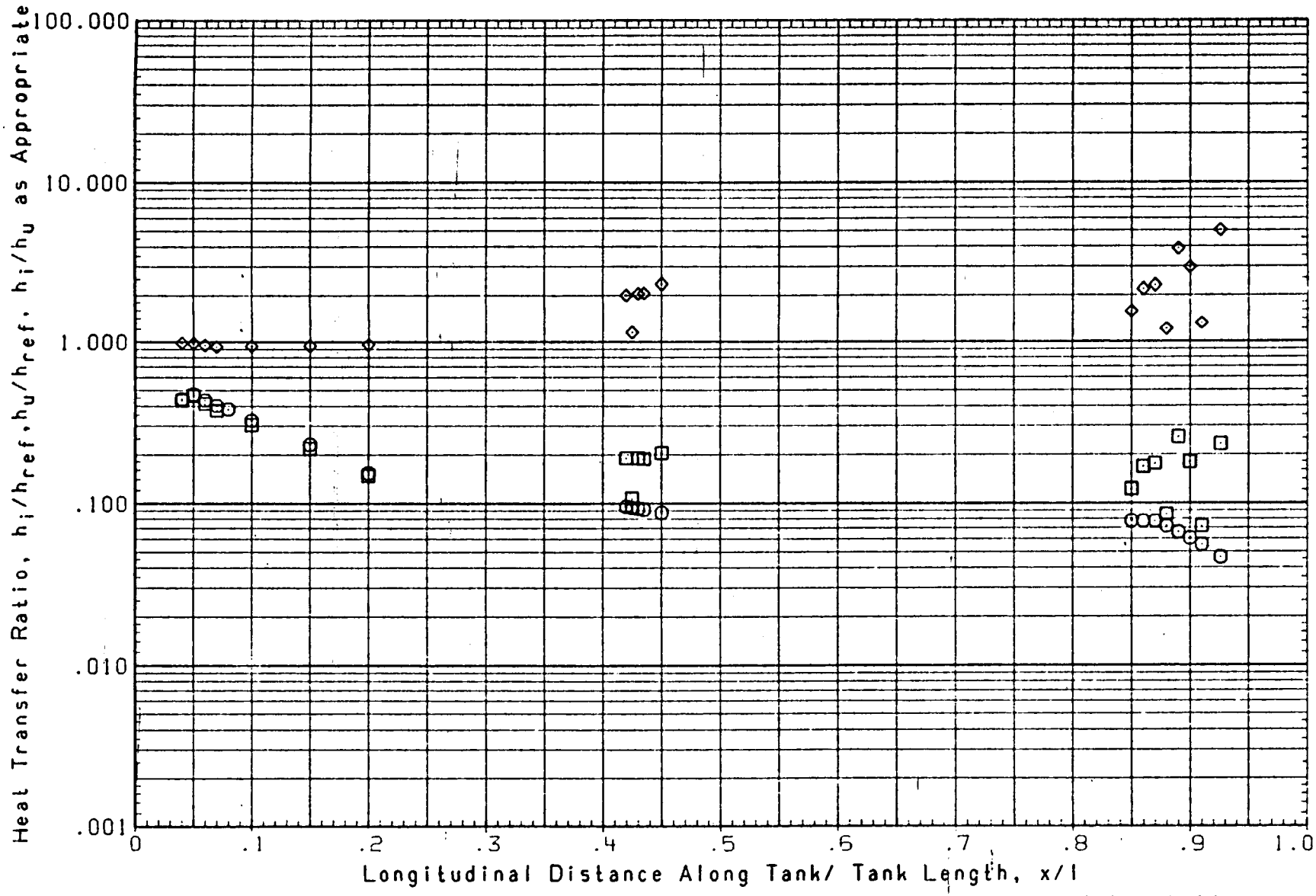


FIG. 11 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -6

MACH = 3.010 ALPHA = .010 PHI = 337.500

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT04)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-6.000
(LVFT24)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-6.000
(BVFT24)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-6.000

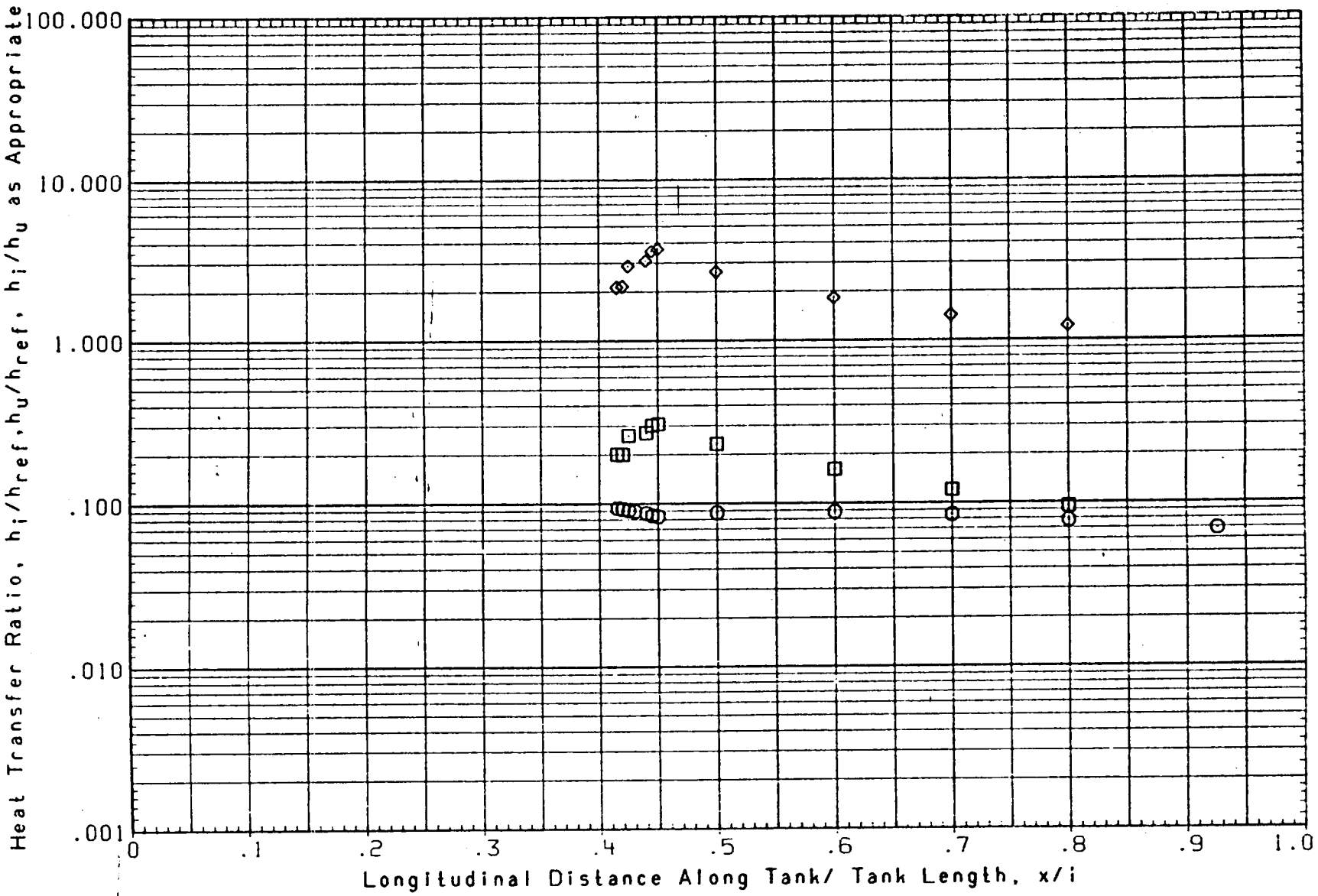


FIG. 11 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -6

MACH = 3.010 ALPHA = .010 PHI = 343.120

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT04)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-6.000
(LVFT24)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-6.000
(BVFT24)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-6.000

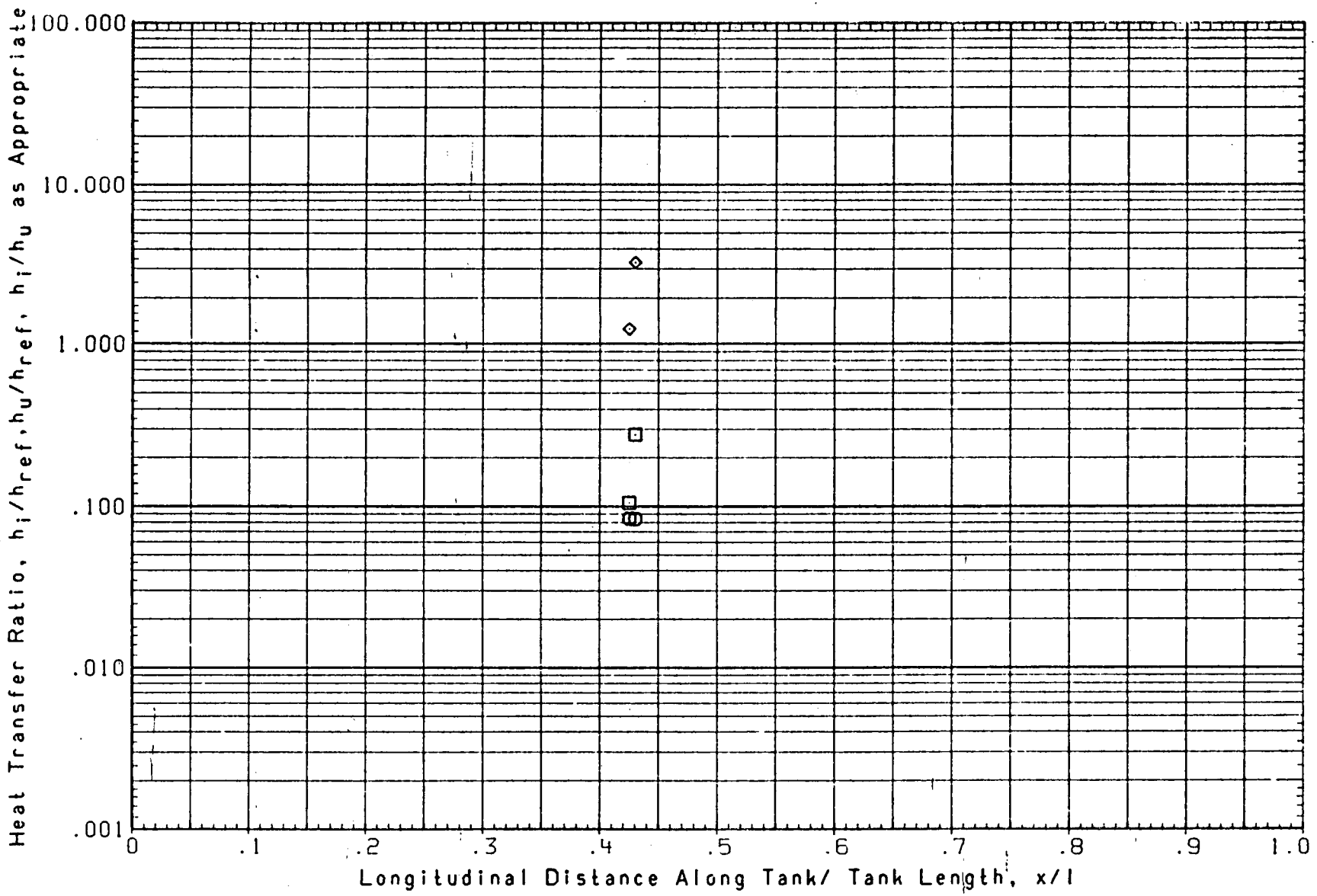


FIG. 11 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -6

MACH = 3.010 ALPHA = .010 PHI = 345.560

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT04)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-6.000
(LVFT24)	□	IH41B(V41A-A4A) C T S (SPIKED ET DATA) HI/HREF	.000	-6.000
(BVFT24)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-6.000

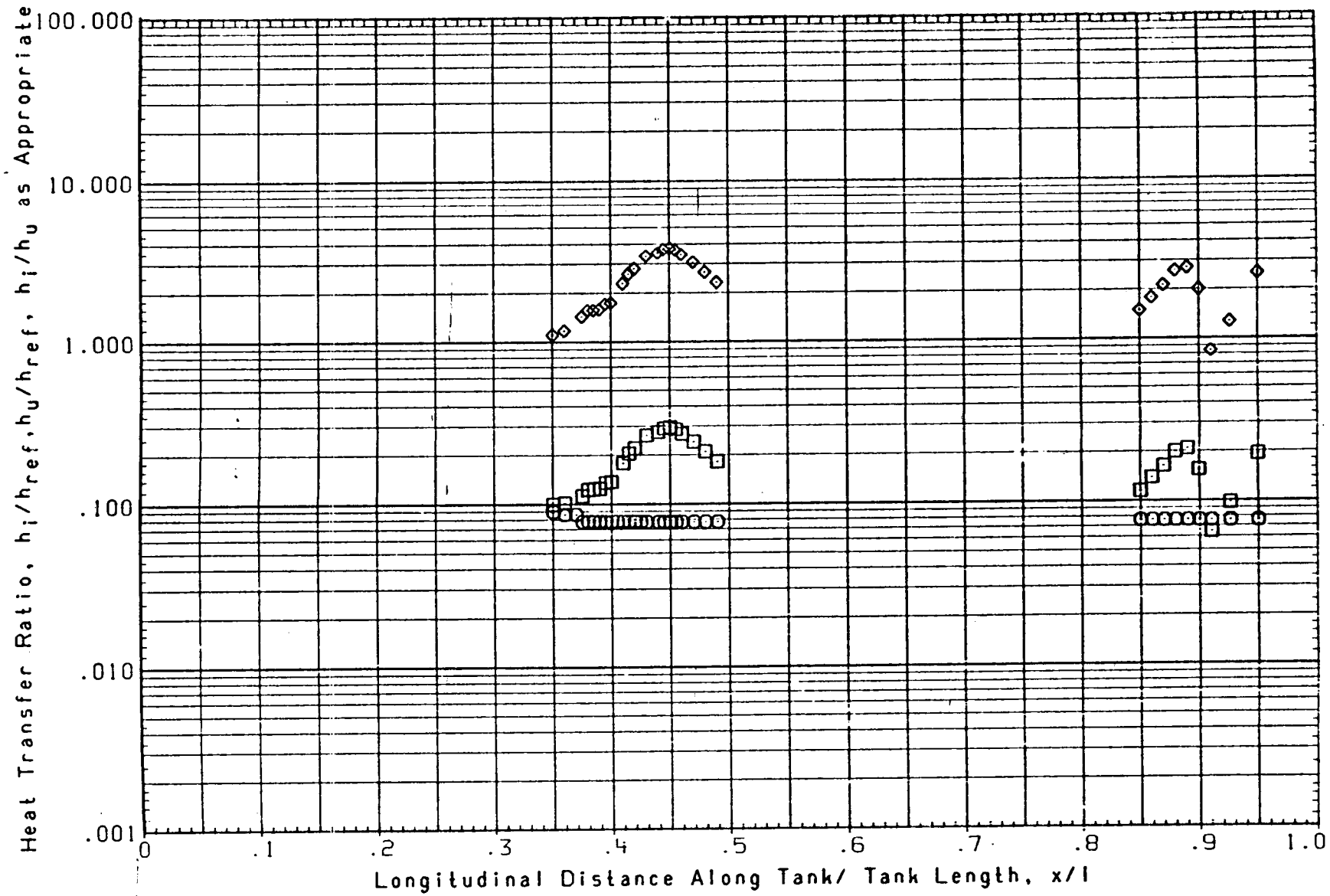


FIG. 11 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -6

MACH = 3.010 ALPHA = .010 PHI = 348.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT04)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-6.000
(LVFT24)	□	DATA NOT AVAILABLE	.000	-6.000
(BVFT24)	◇	DATA NOT AVAILABLE	.000	-6.000

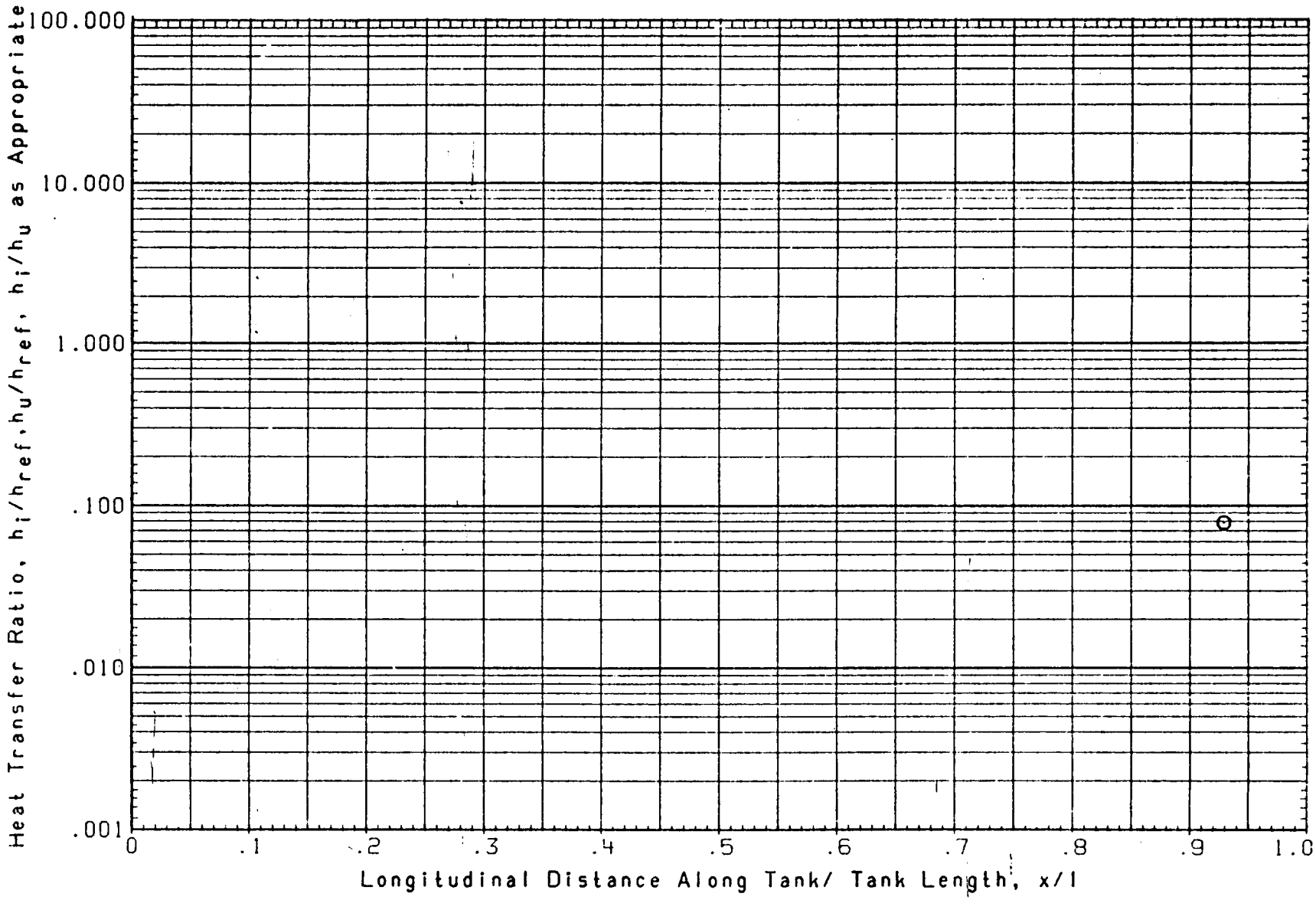


FIG. 11 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -6

MACH = 3.010 ALPHA = .010 PHI = 352.200

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT04)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-6.000
(LVFT24)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-6.000
(BVFT24)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-6.000

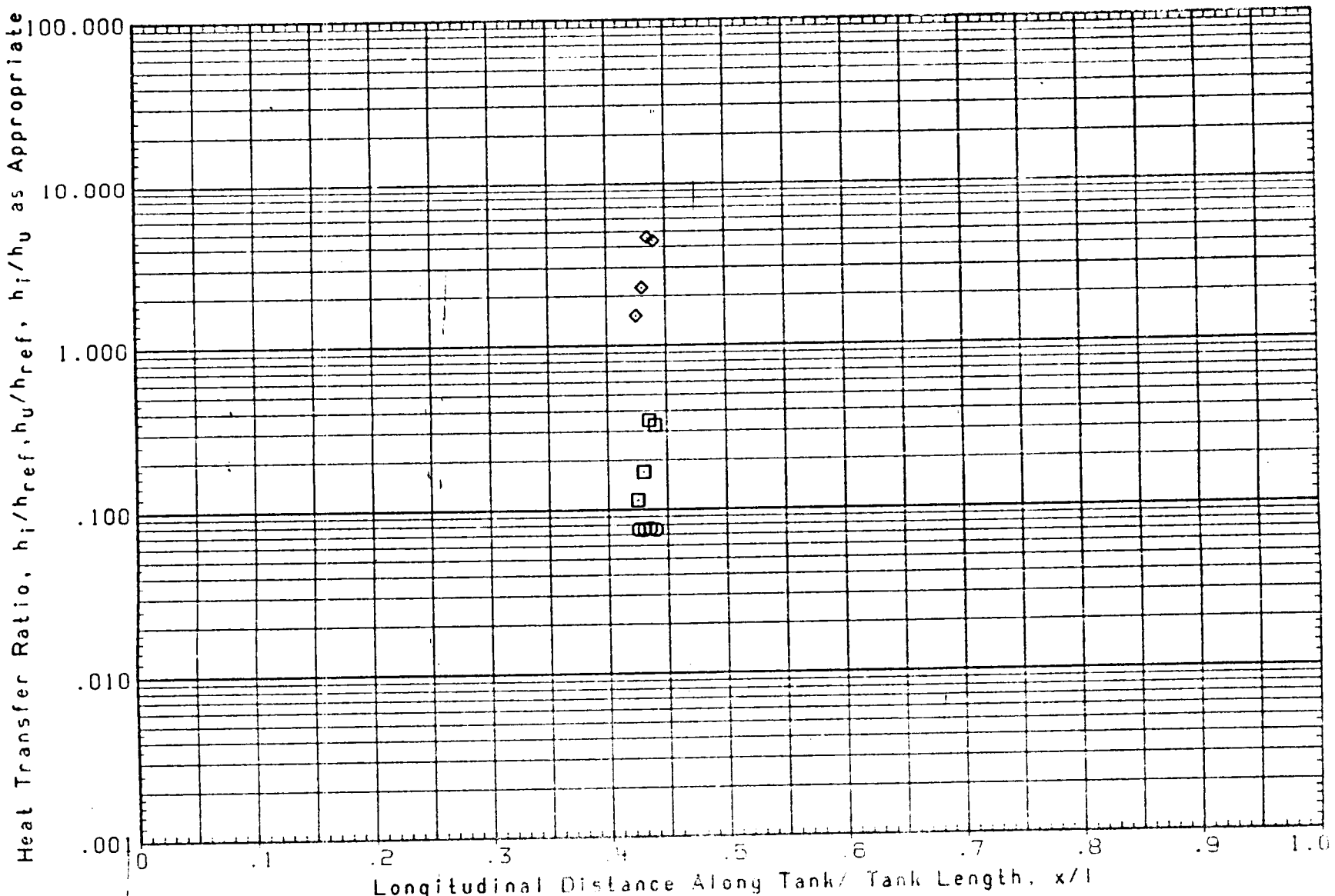


FIG. 11 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -6

MACH = 3.010 ALPHA = .010 PHI = 354.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT04)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-6.000
(LVFT24)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-6.000
(BVFT24)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-6.000

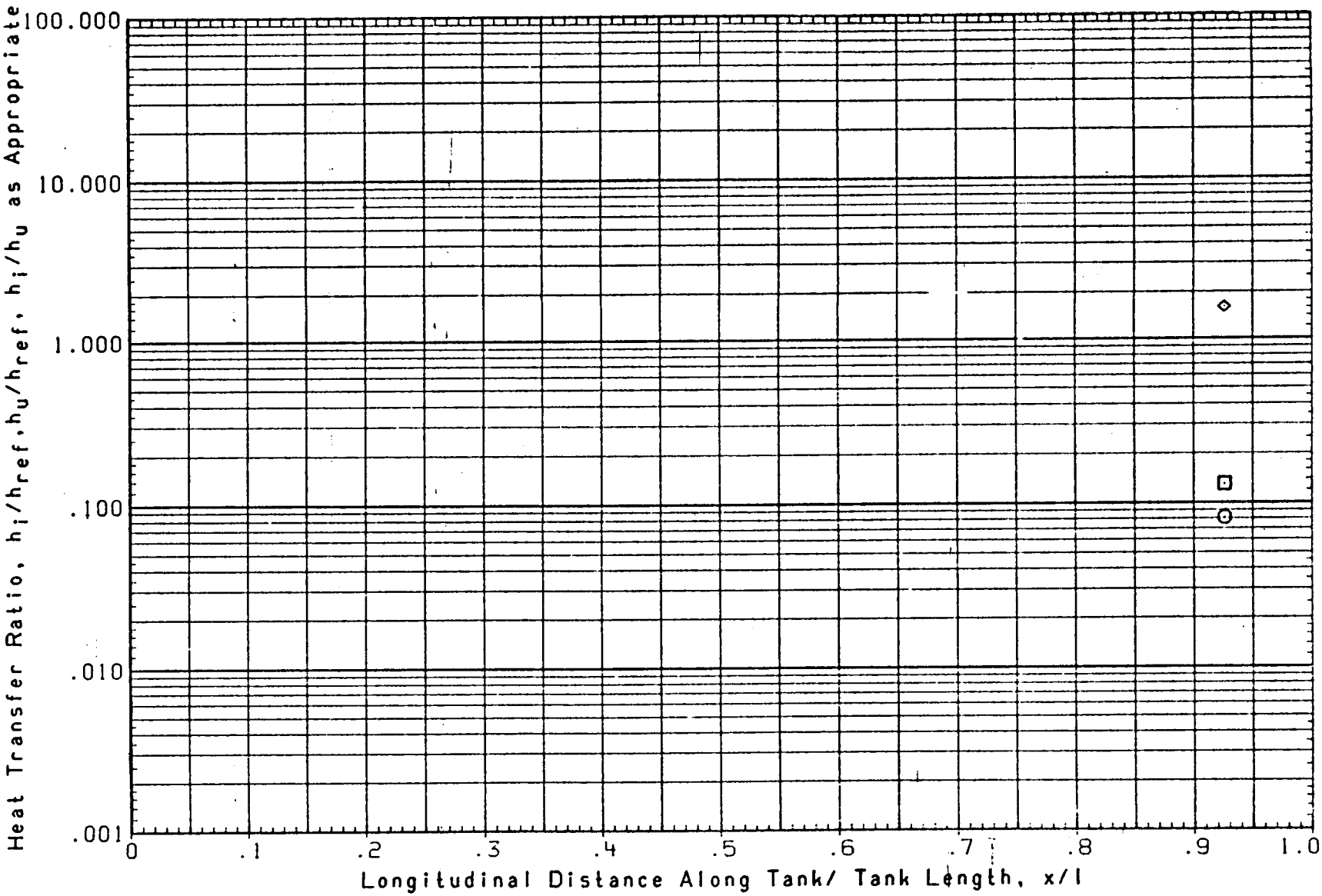


FIG. 11 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -6

MACH = 3.010 ALPHA = .010 PHI = 355.160

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT04)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-6.000
(LVFT24)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-6.000
(BVFT24)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-6.000

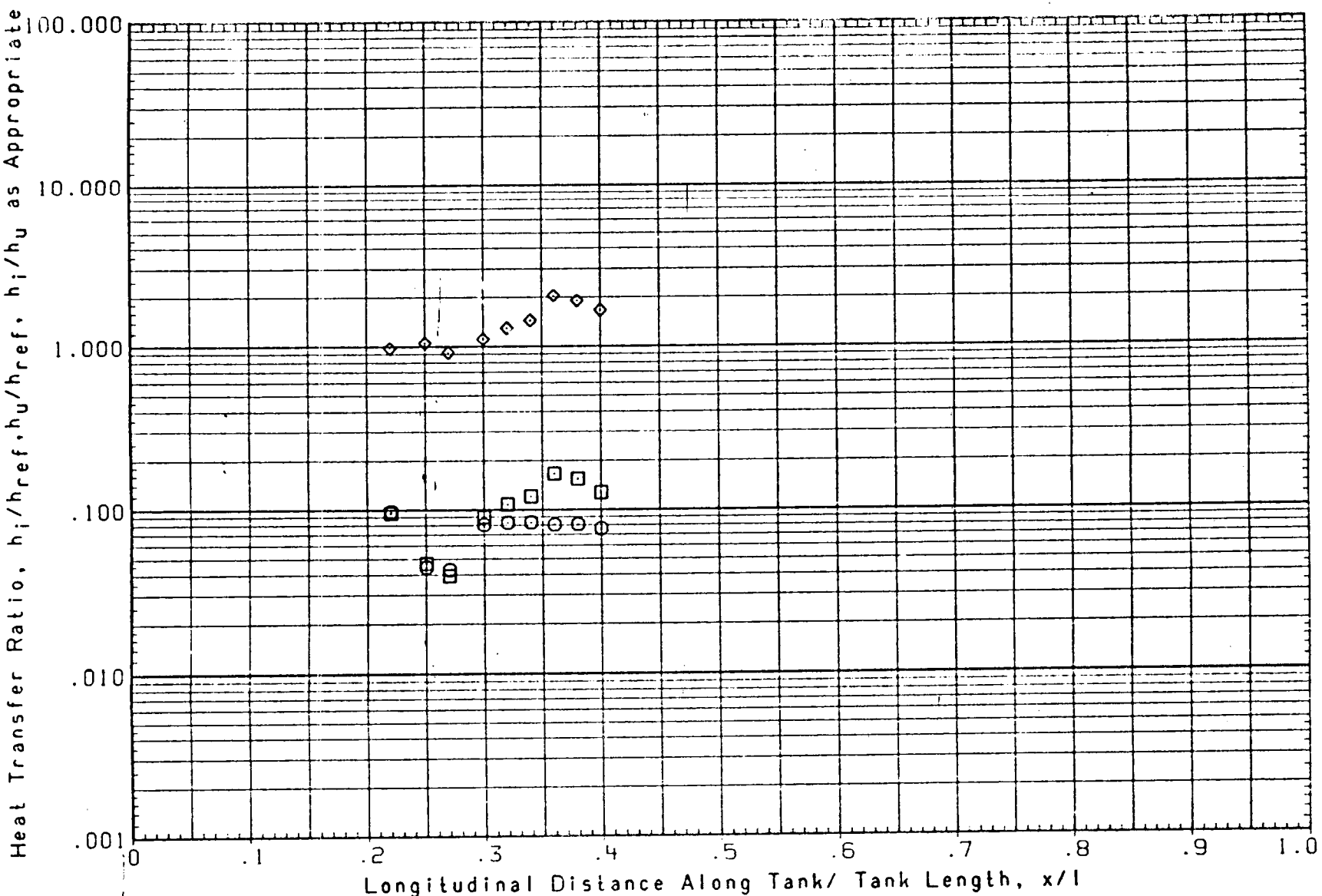


FIG. 11 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -6

MACH = 4.020 ALPHA = .010 PHI = 235.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT04)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-6.000
(LVFT24)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-6.000
(BVFT24)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-6.000

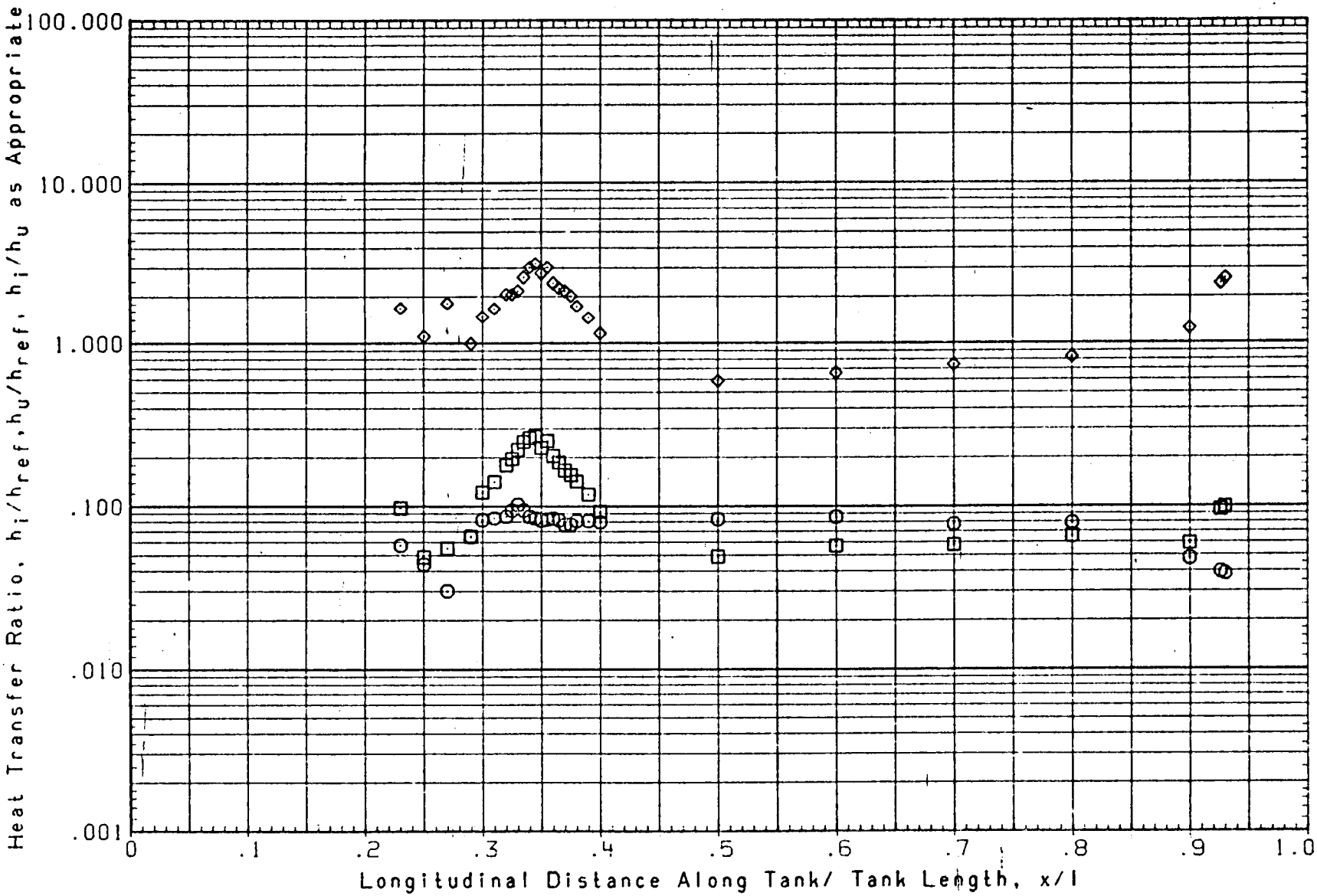


FIG. 11 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -6

MACH = 4.020 ALPHA = .010 PHI = 247.500

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT04)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-6.000
(LVFT24)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-6.000
(BVFT24)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-6.000

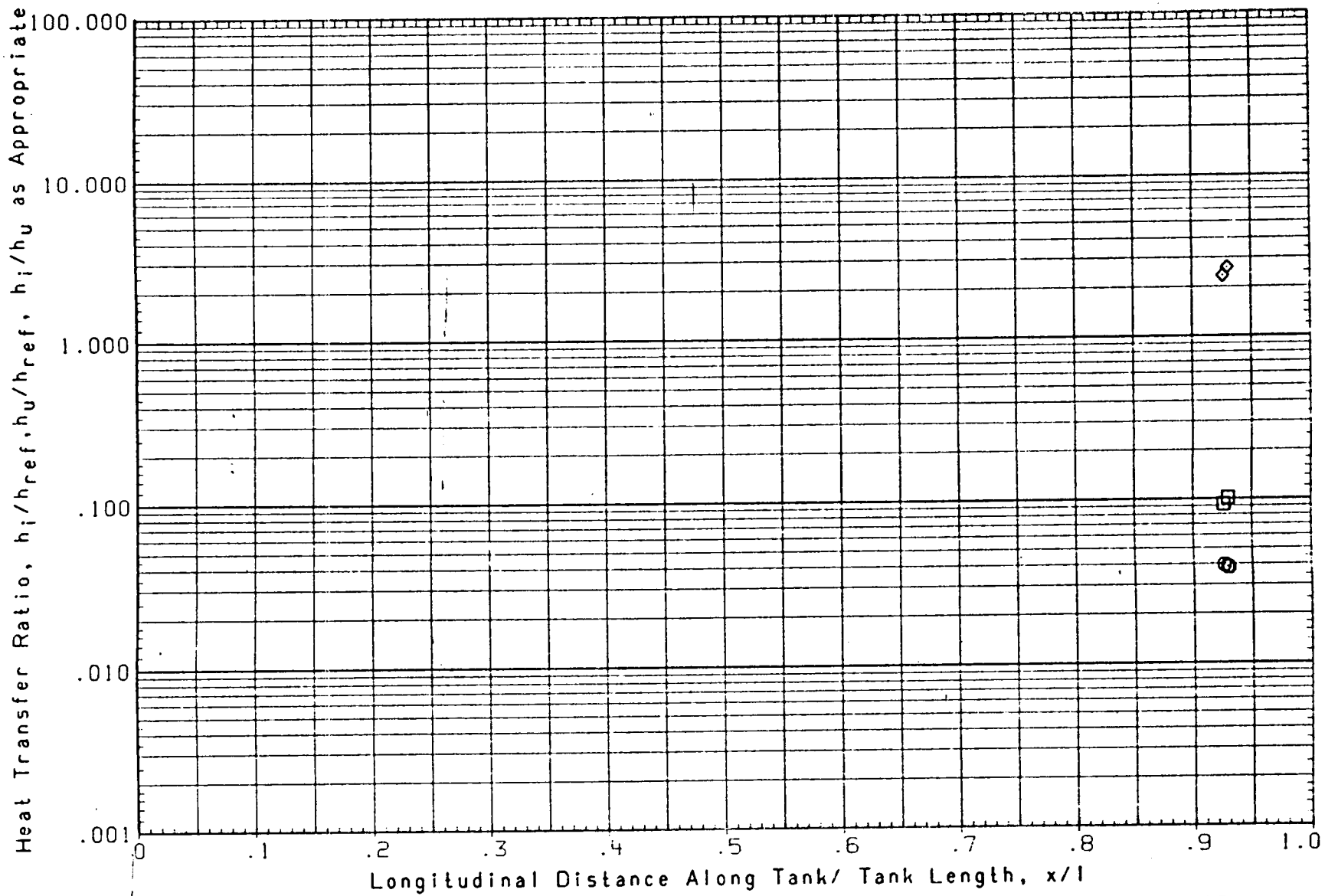


FIG. 11 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -6

MACH = 4.020 ALPHA = .010 PHI = 250.570

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT04)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-6.000
(LVFT24)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-6.000
(BVFT24)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-6.000

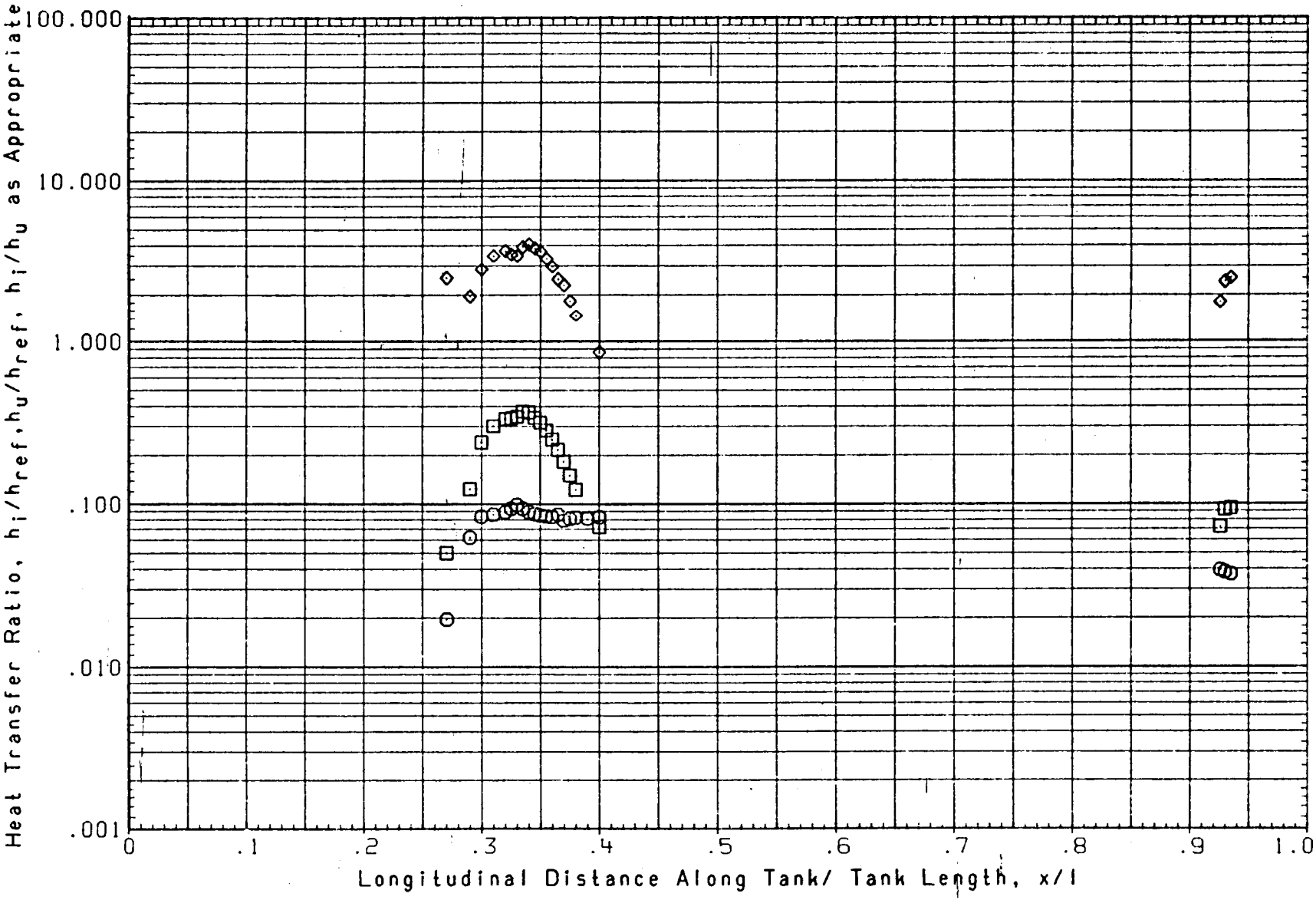


FIG. 11 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -6

MACH = 4.020 ALPHA = .010 PHI = 258.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT04)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-6.000
(LVFT24)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-6.000
(BVFT24)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-6.000

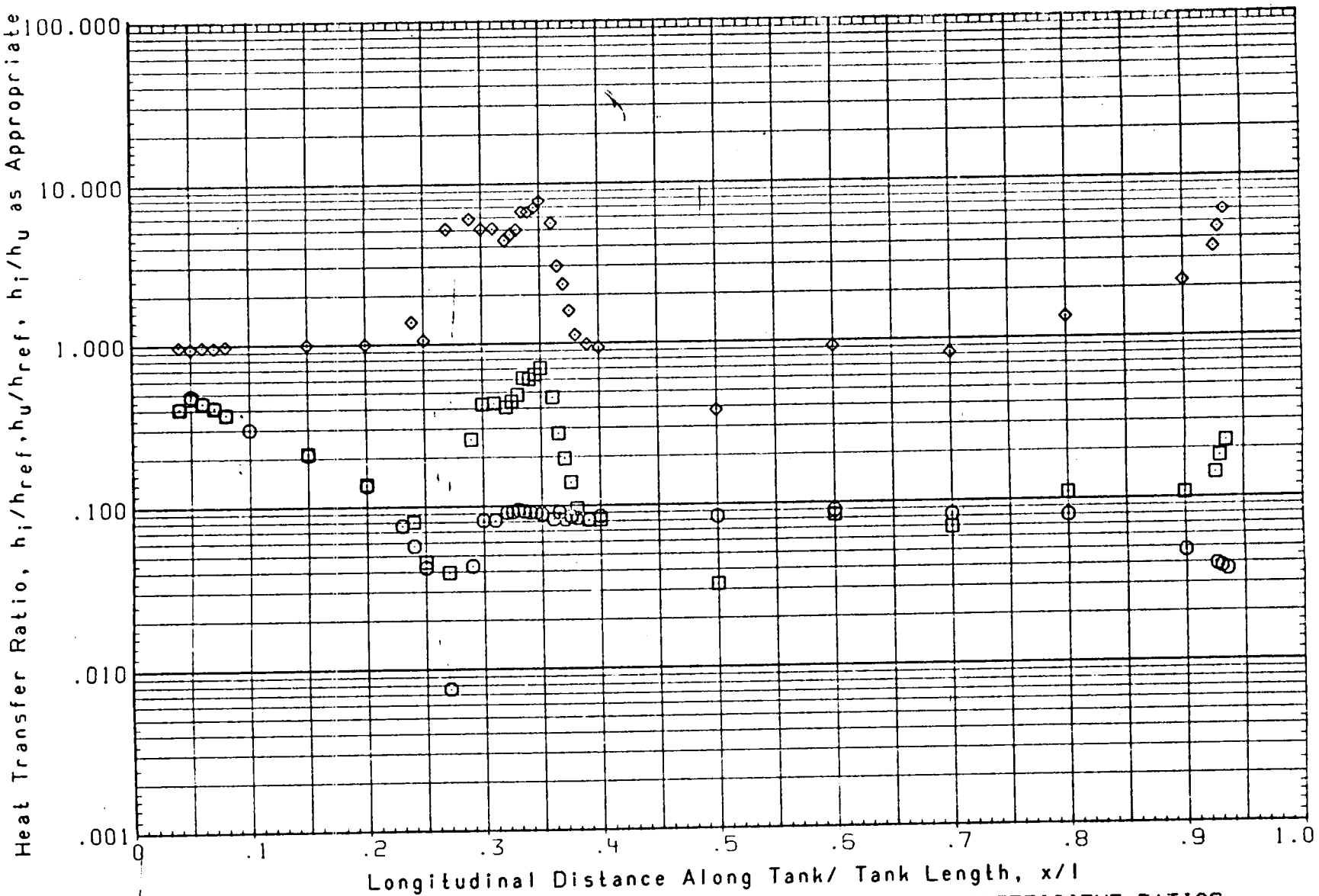


FIG. 11 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -6

MACH = 4.020 ALPHA = .010 PHI = 270.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT04)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-6.000
(LVFT24)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-6.000
(BVFT24)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-6.000

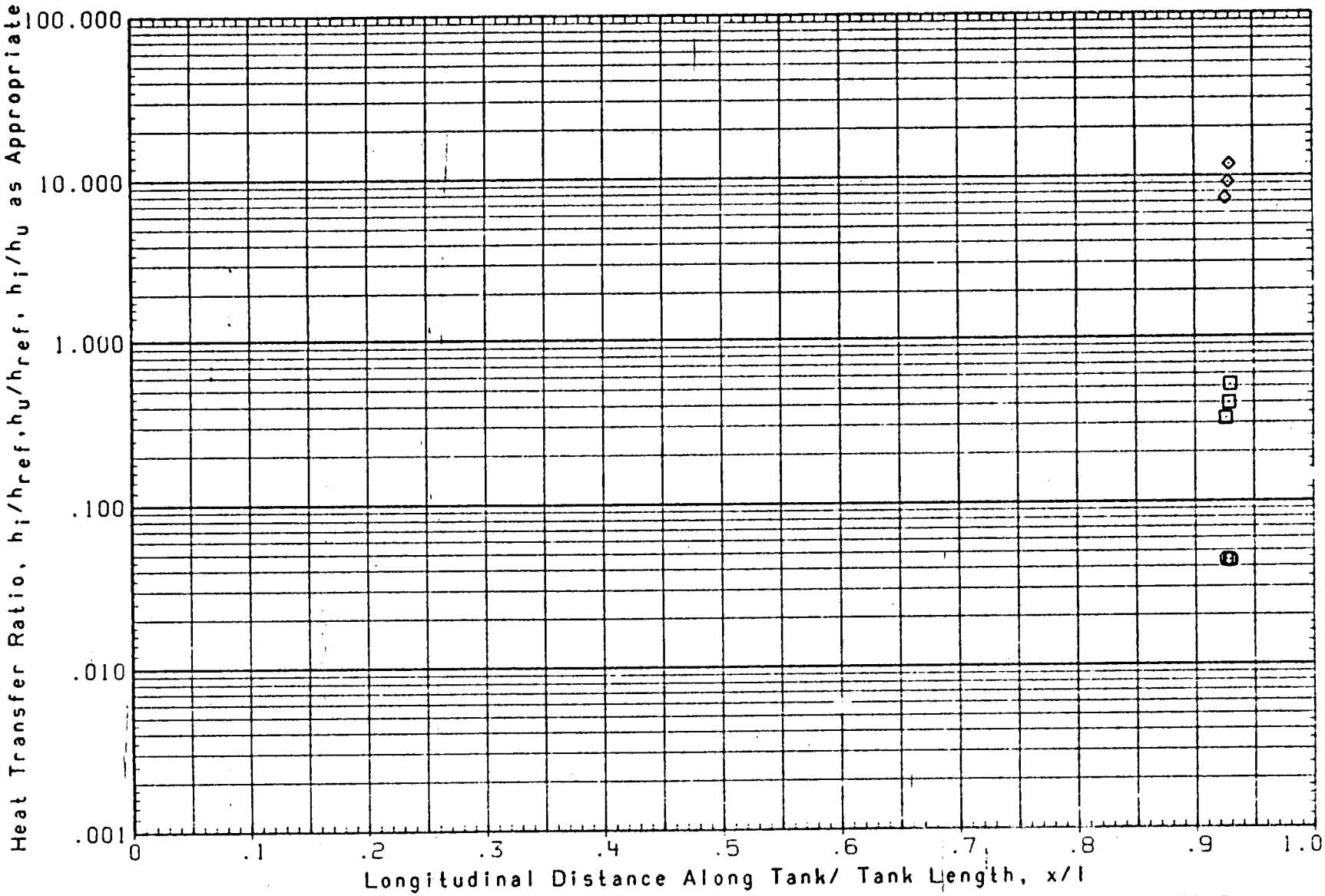


FIG. 11 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -6

MACH = 4.020 ALPHA = .010 PHI = 289.430

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT04)	○	IH41B(AEDC V41A A4A) SPIKED EXTERNAL TANK ALONE	.000	-6.000
(LVFT24)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-6.000
(BVFT24)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-6.000

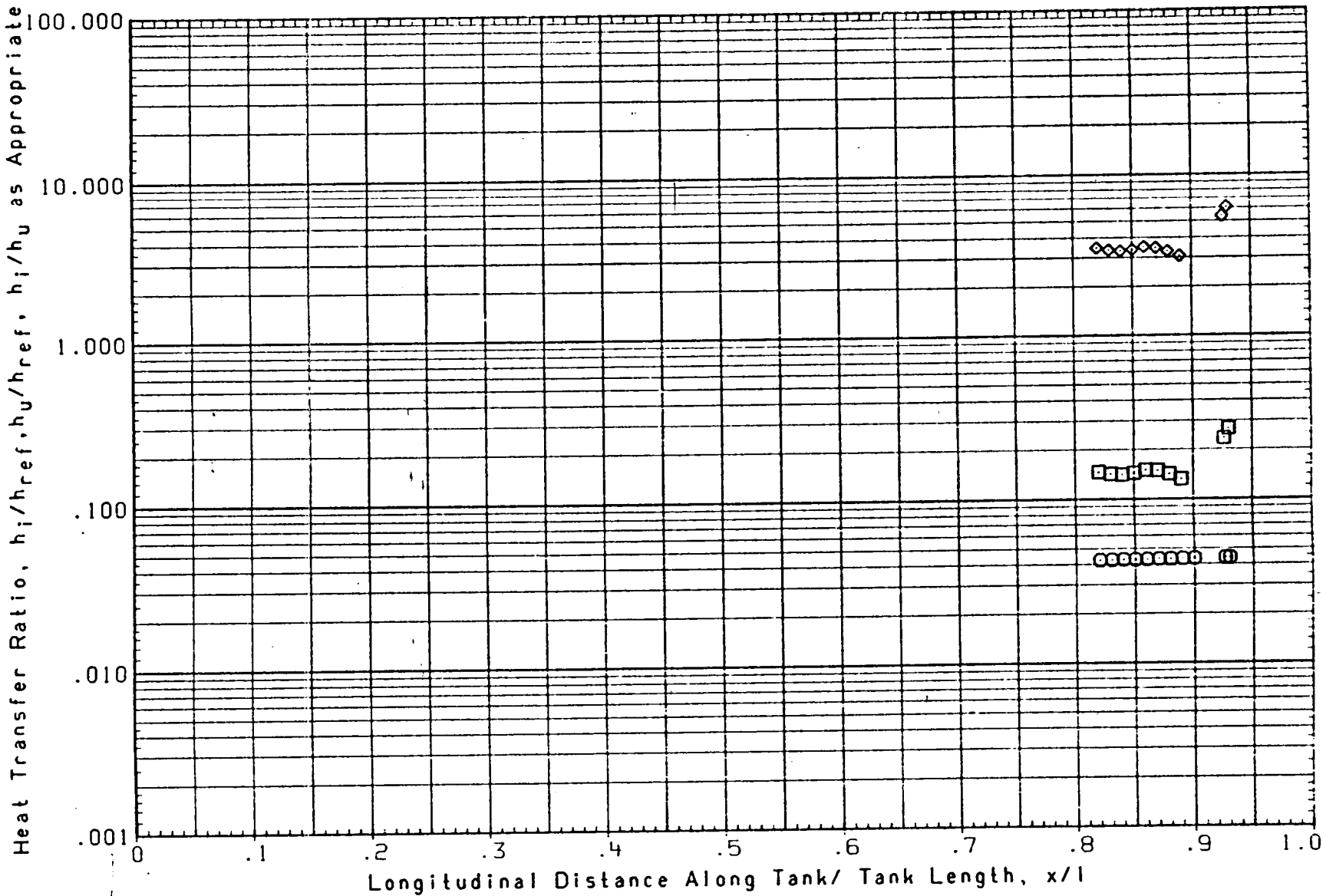


FIG. 11 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -6

MACH = 4.020 ALPHA = .010 PHI = 292.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT04)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-6.000
(LVFT24)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-6.000
(BVFT24)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-6.000

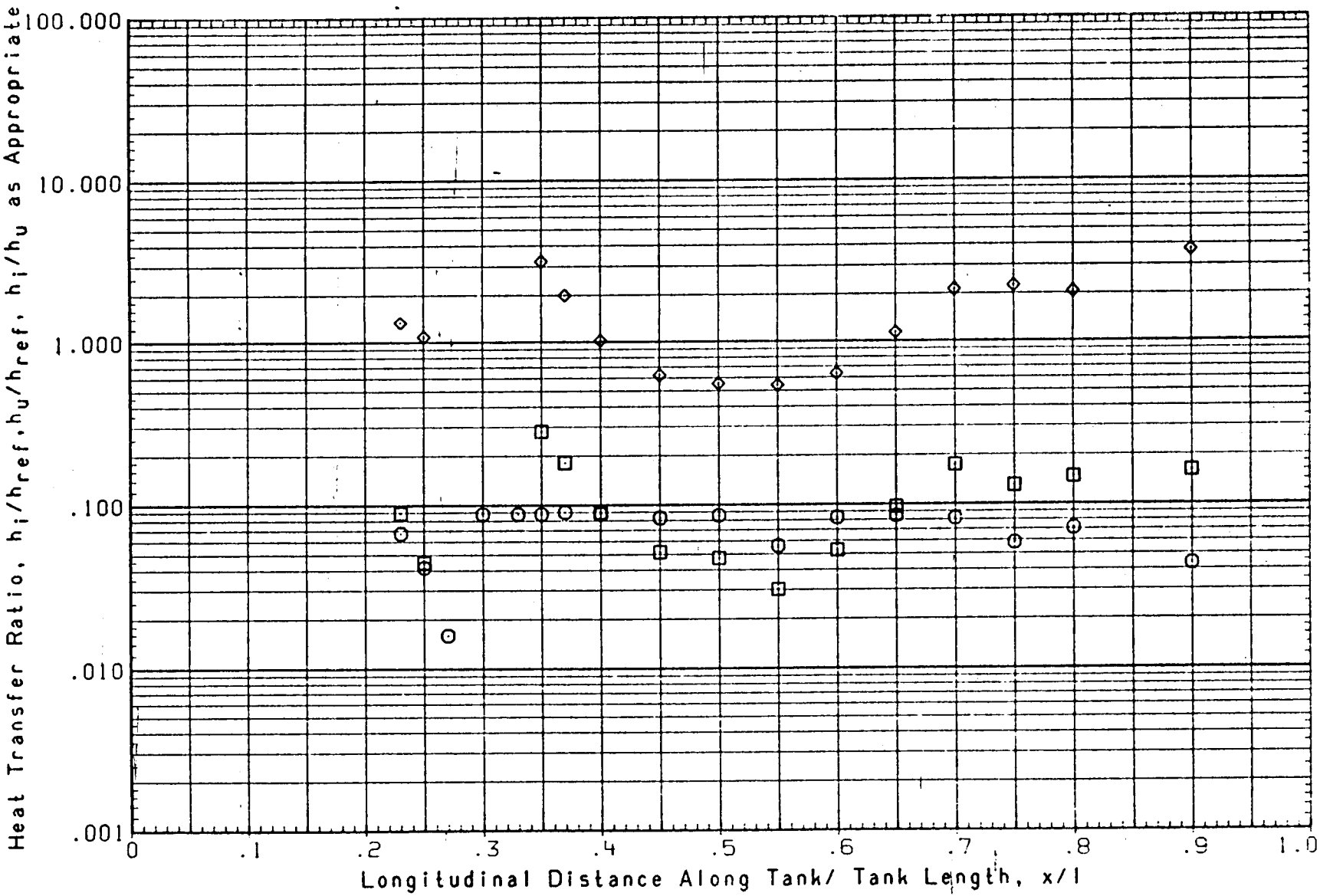


FIG. 11 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -6

MACH = 4.020 ALPHA = .010 PHI = 292.500

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT04)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-6.000
(LVFT24)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-6.000
(BVFT24)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-6.000

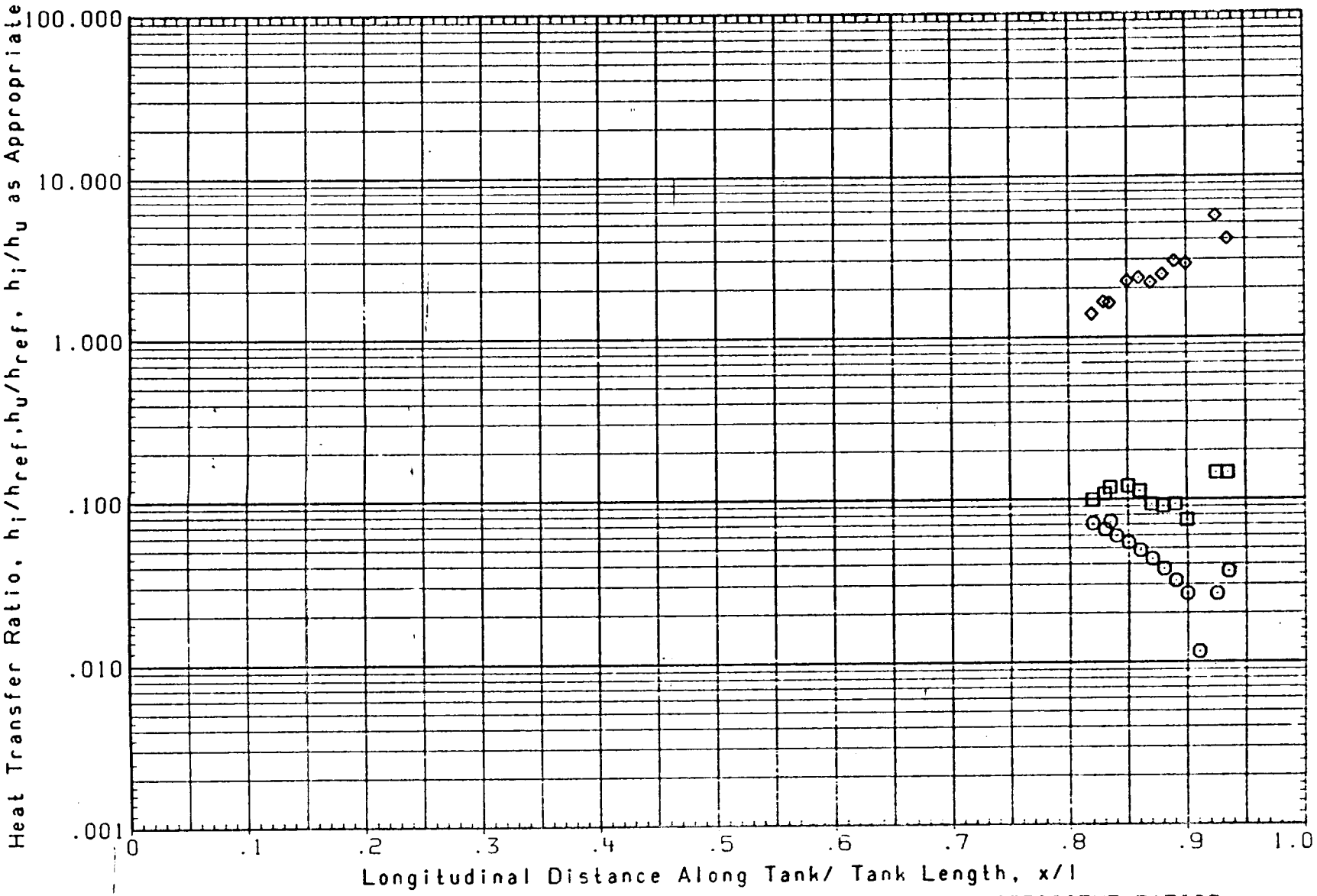


FIG. 11 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -6

MACH = 4.020 ALPHA = .010 PHI = 301.500

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT04)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-6.000
(LVFT24)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-6.000
(BVFT24)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-6.000

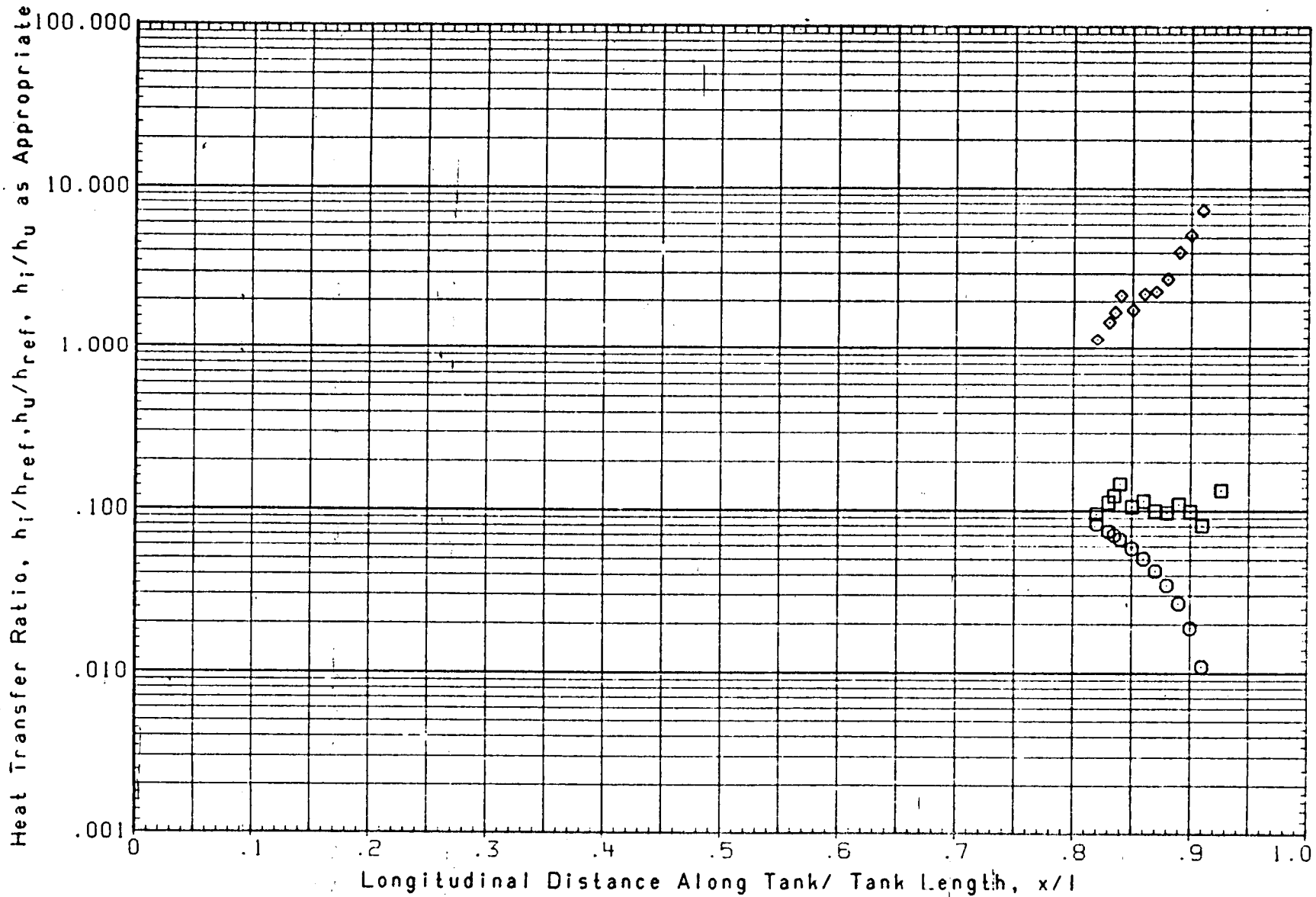


FIG. 11 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -6

MACH = 4.020 ALPHA = .010 PHI = 305.400

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT04)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-6.000
(LVFT24)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-6.000
(BVFT24)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-6.000

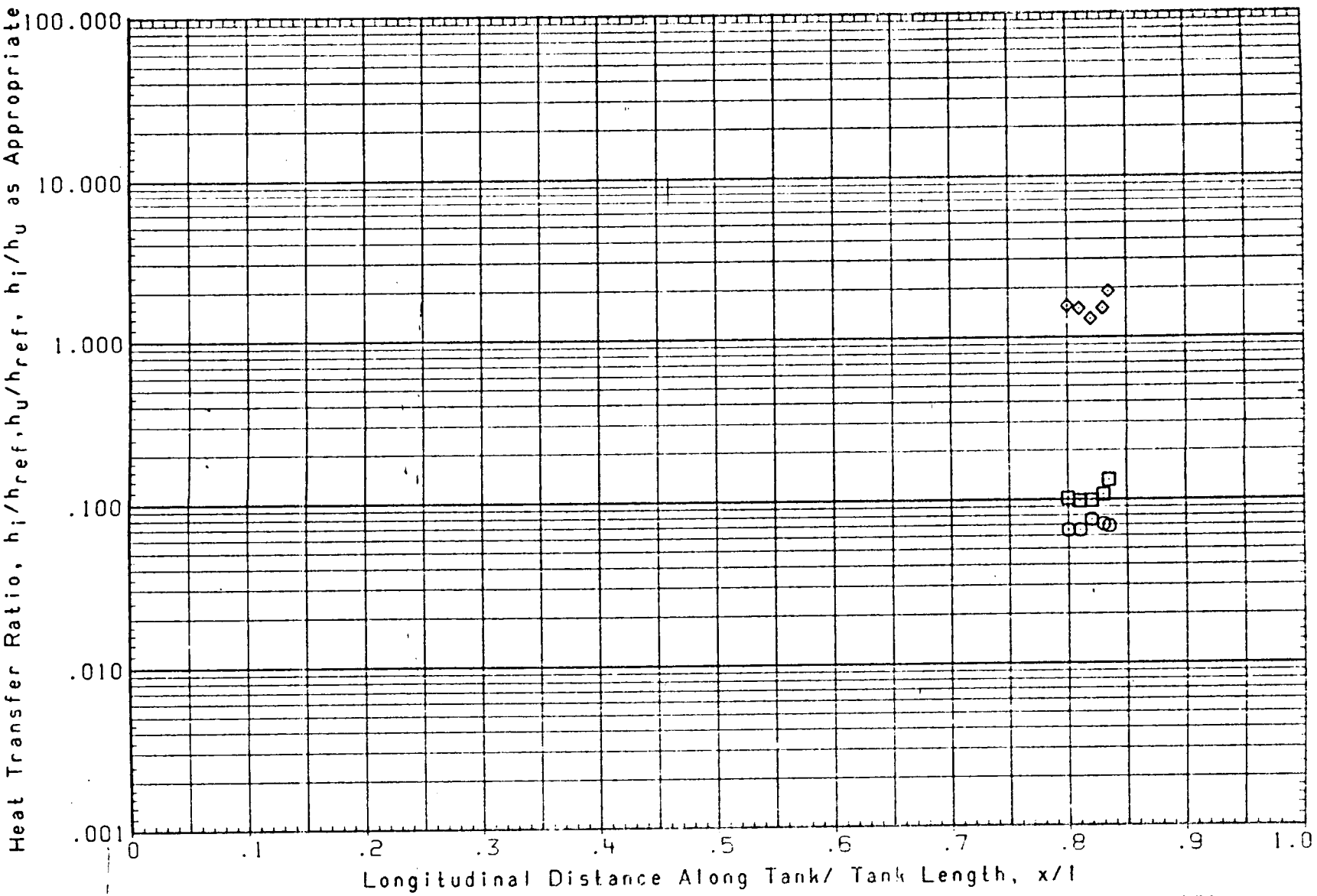


FIG. 11 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -6

MACH = 4.020 ALPHA = .010 PHI = 309.300

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT04)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-6.000
(LVFT24)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-6.000
(BVFT24)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-6.000

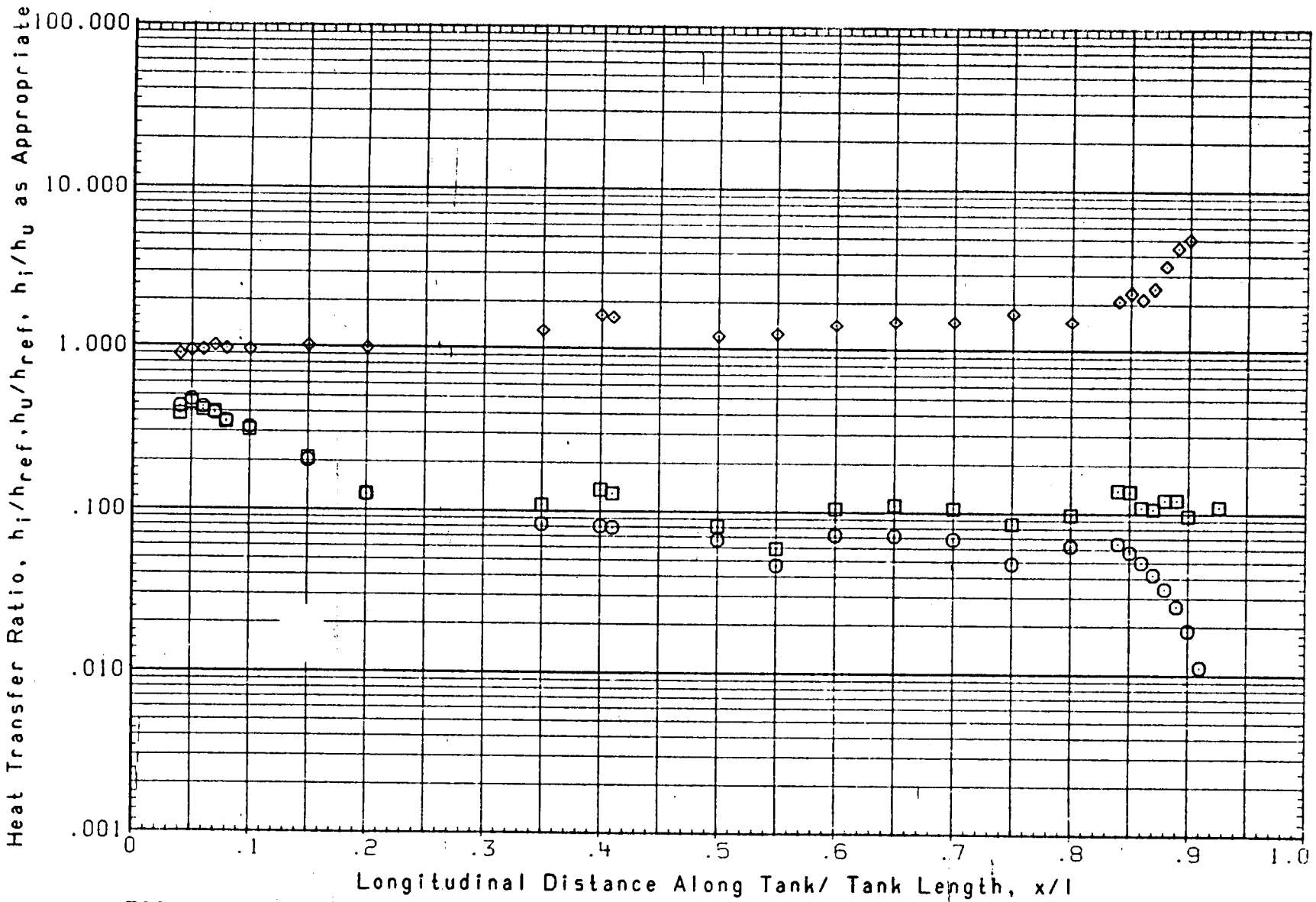


FIG. 11 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -6

MACH = 4.020 ALPHA = .010 PHI = 315.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT04)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-6.000
(LVFT24)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-6.000
(BVFT24)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-6.000

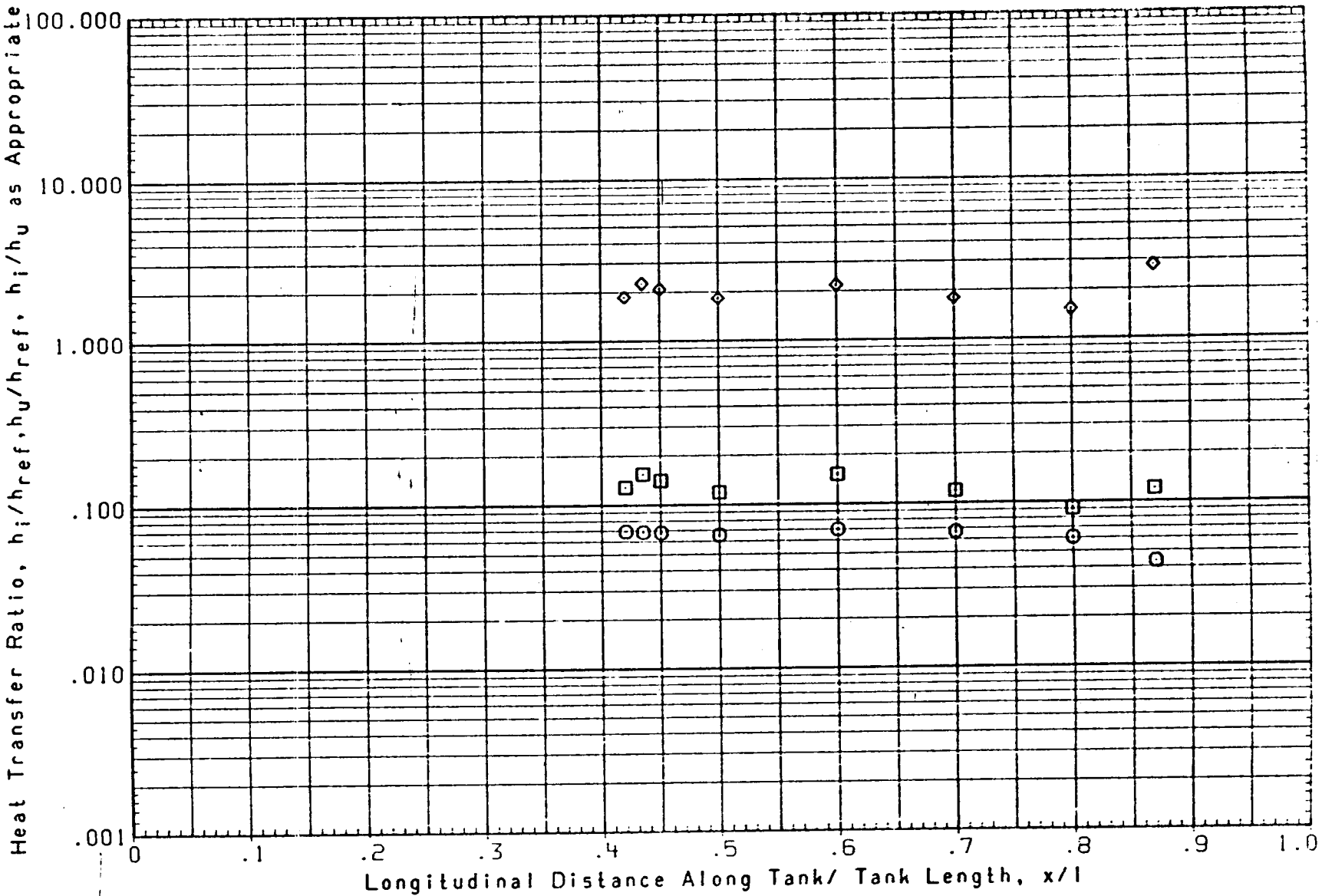


FIG. 11 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -6

MACH = 4.020 ALPHA = .010 PHI = 322.300

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT04)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-6.000
(LVFT24)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-6.000
(BVFT24)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-6.000

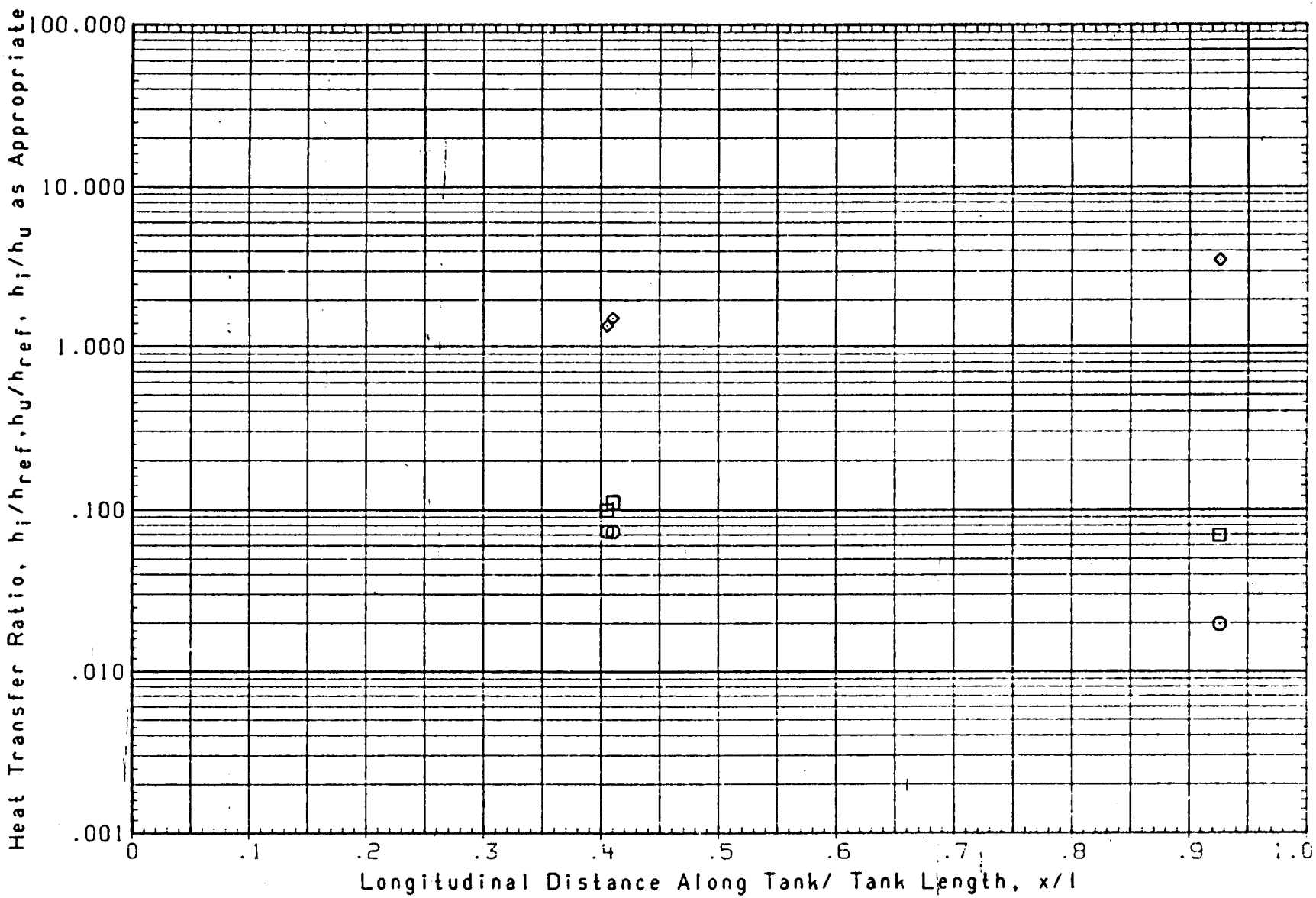


FIG. 11 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -6

MACH = 4.020 ALPHA = .010 PHI = 324.450

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT04)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-6.000
(LVFT24)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-6.000
(BVFT24)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-6.000

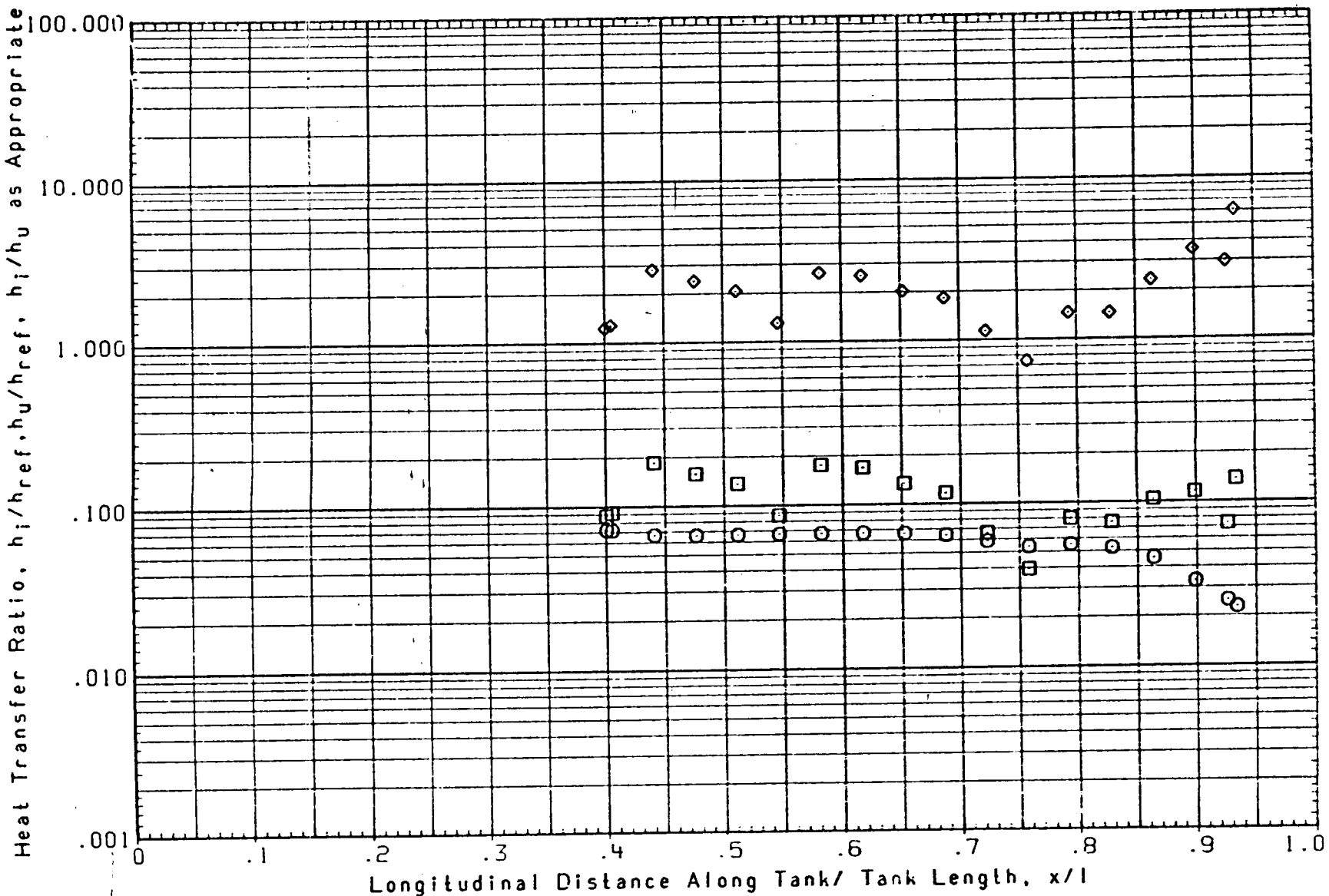


FIG. 11 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -6

MACH = 4.020 ALPHA = .010 PHI = 328.850

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT04)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-6.000
(LVFT24)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-6.000
(BVFT24)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-6.000

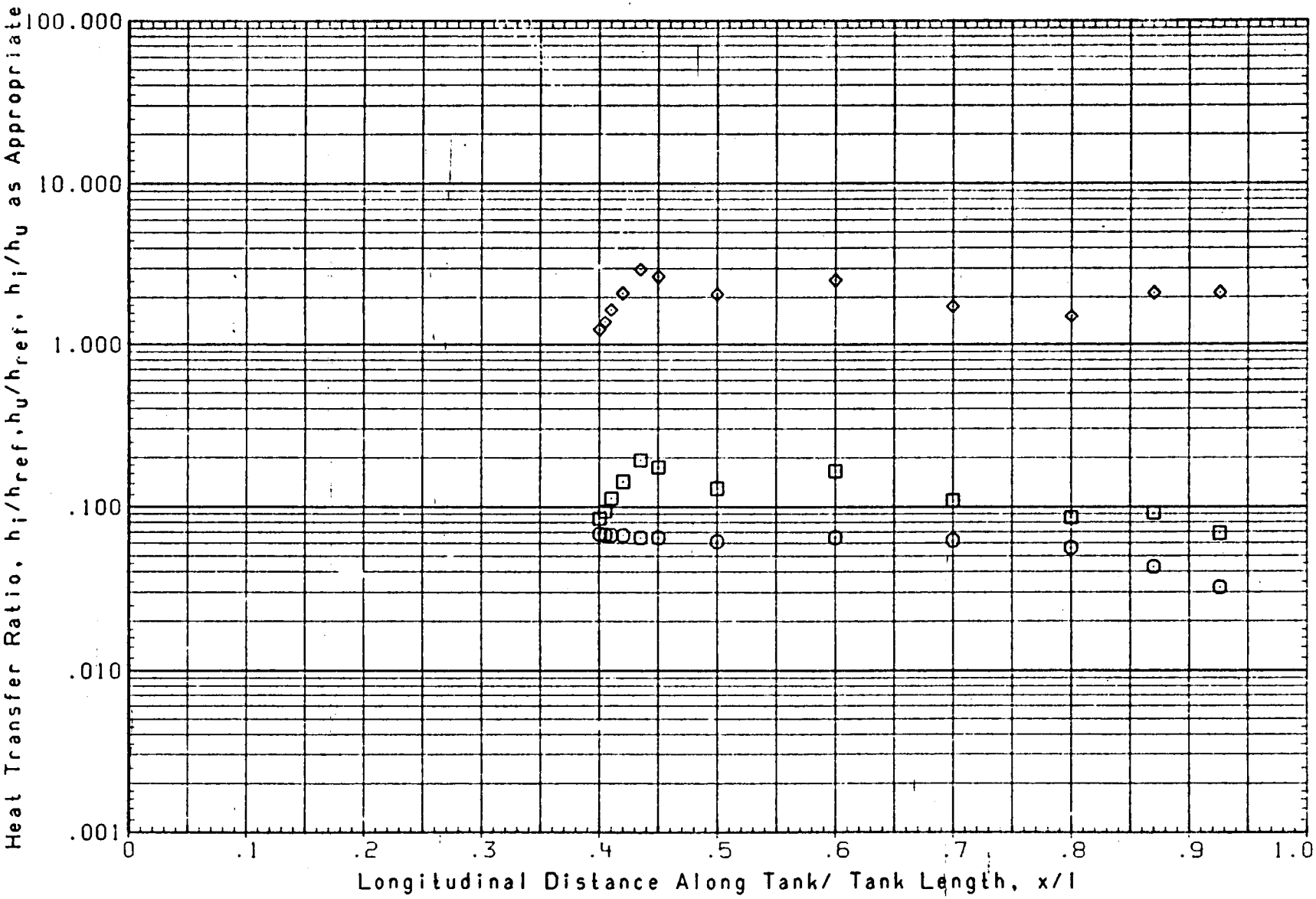


FIG. 11 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -6

MACH = 4.020 ALPHA = .010 PHI = 330.200

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT04)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-6.000
(LVFT24)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-6.000
(BVFT24)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-6.000

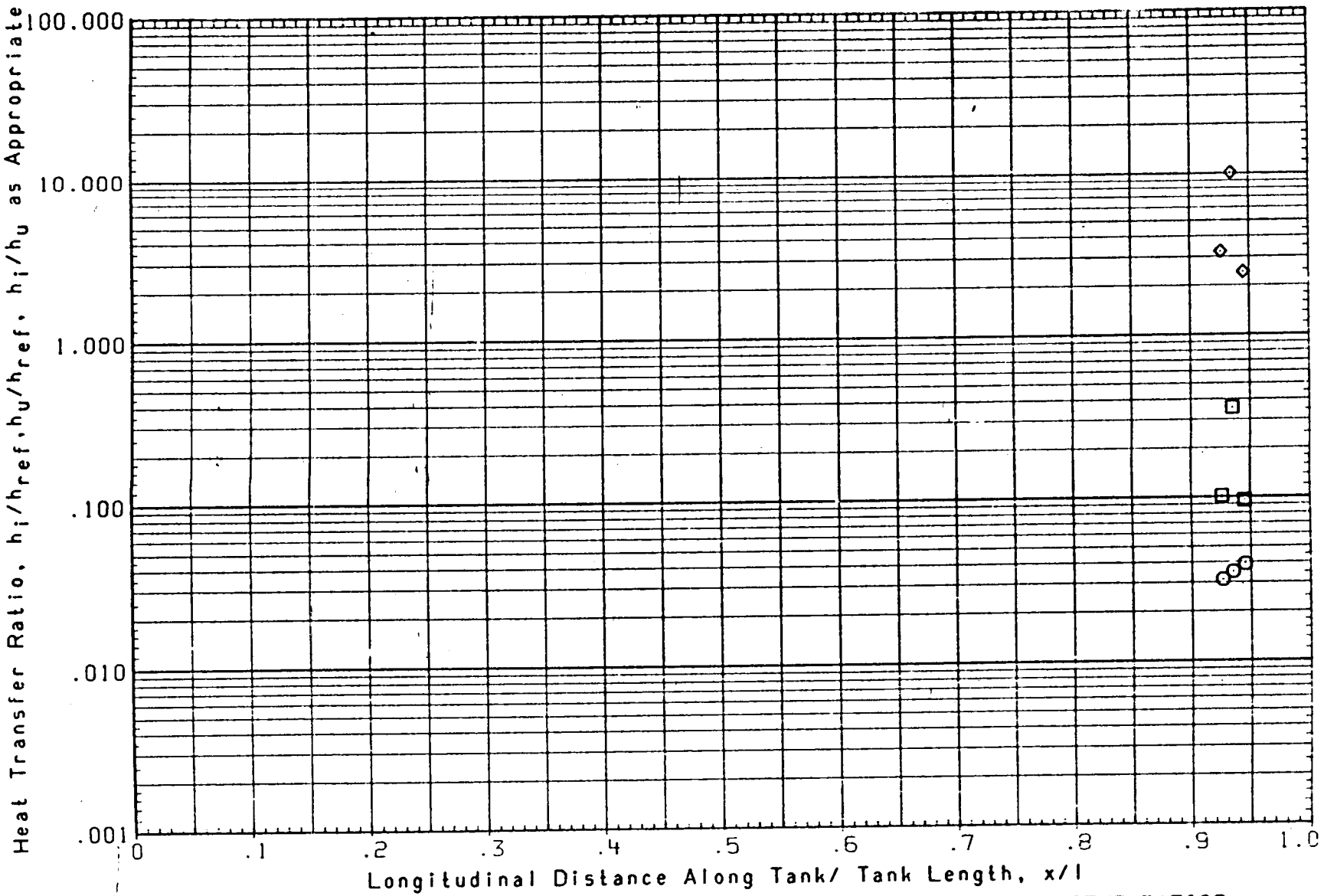


FIG. 11 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -6

MACH = 4.020 ALPHA = .010 PHI = 334.930

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT04)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-6.000
(LVFT24)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-6.000
(BVFT24)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-6.000

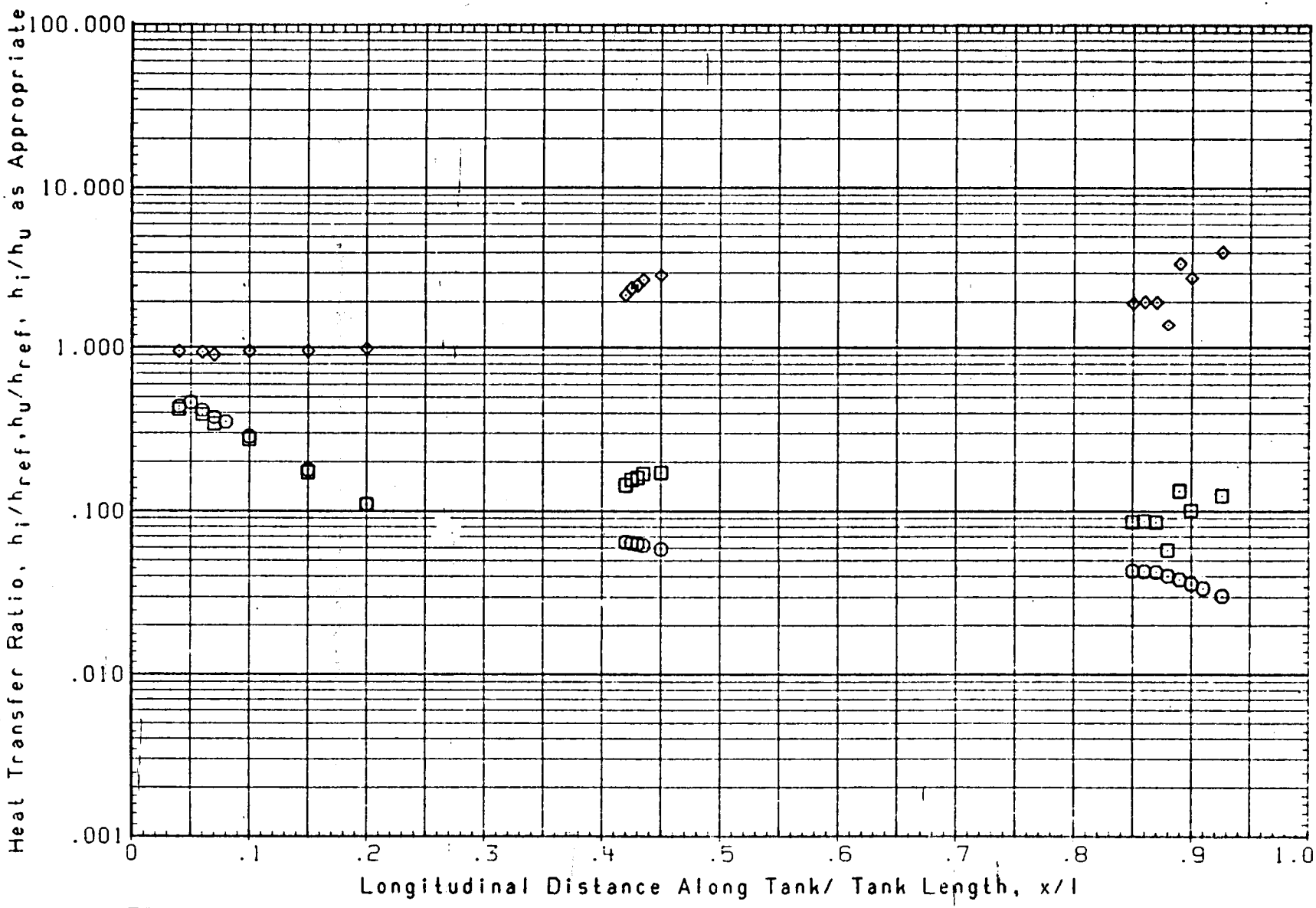


FIG. 11 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -6

MACH = 4.020 ALPHA = .010 PHI = 337.500

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT04)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-6.000
(LVFT24)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-6.000
(BVFT24)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-6.000

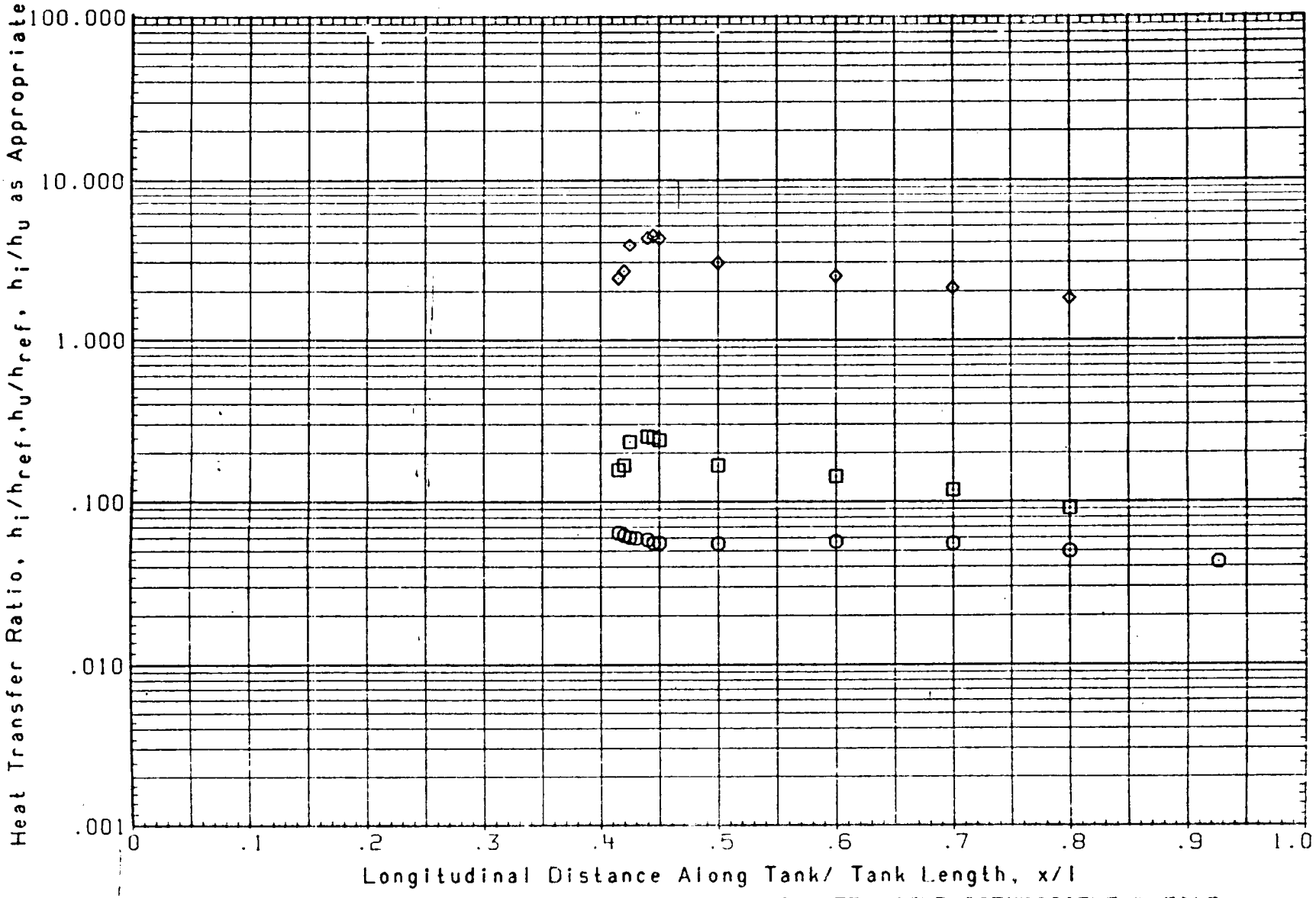


FIG. 11 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -6

MACH = 4.020 ALPHA = .010 PHI = 343.120

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT04)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-6.000
(LVFT24)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-6.000
(BVFT24)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-6.000

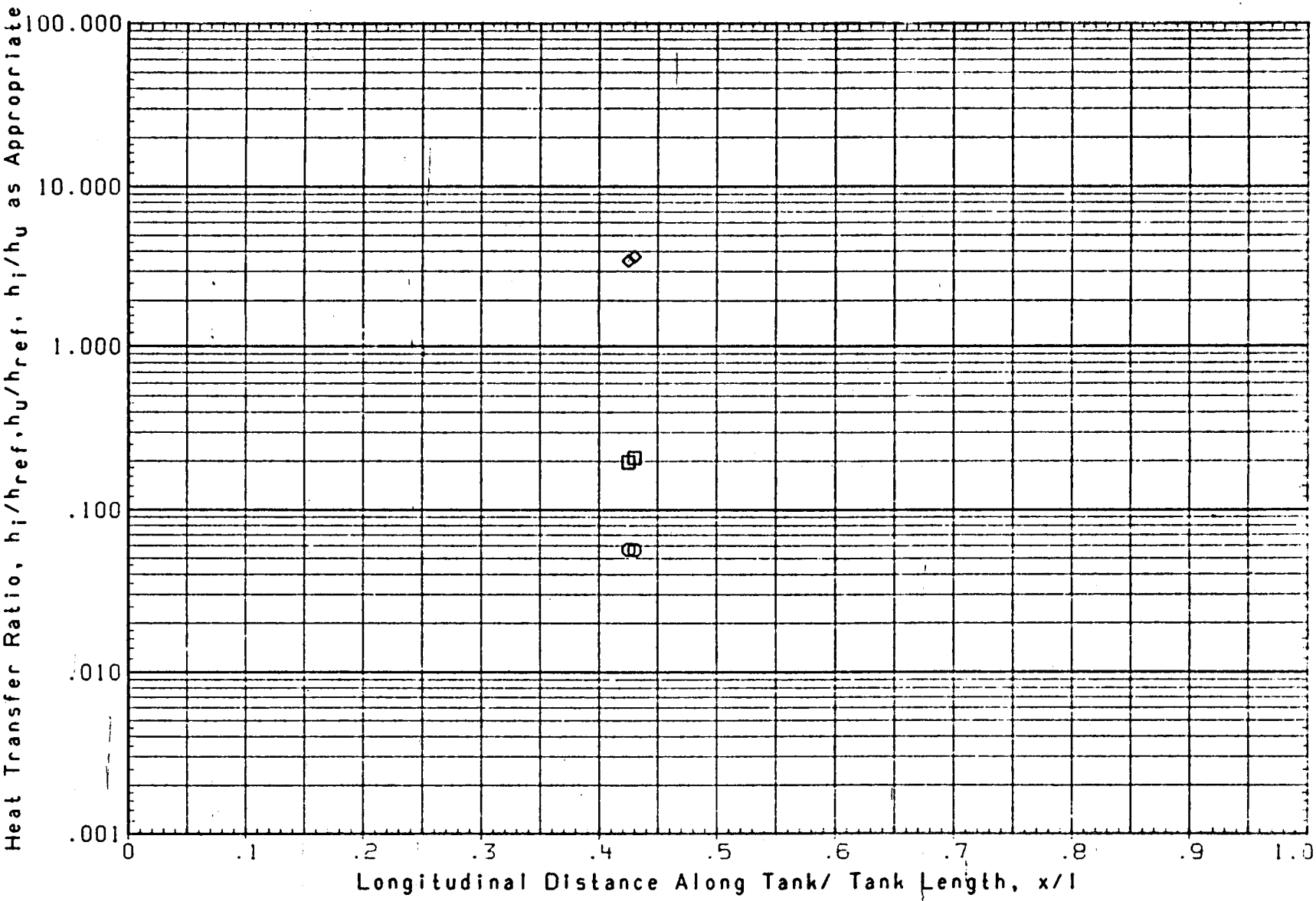


FIG. 11 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -6

MACH = 4.020 ALPHA = .010 PHI = 345.560

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT04)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-6.000
(LVFT24)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-6.000
(BVFT24)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-6.000

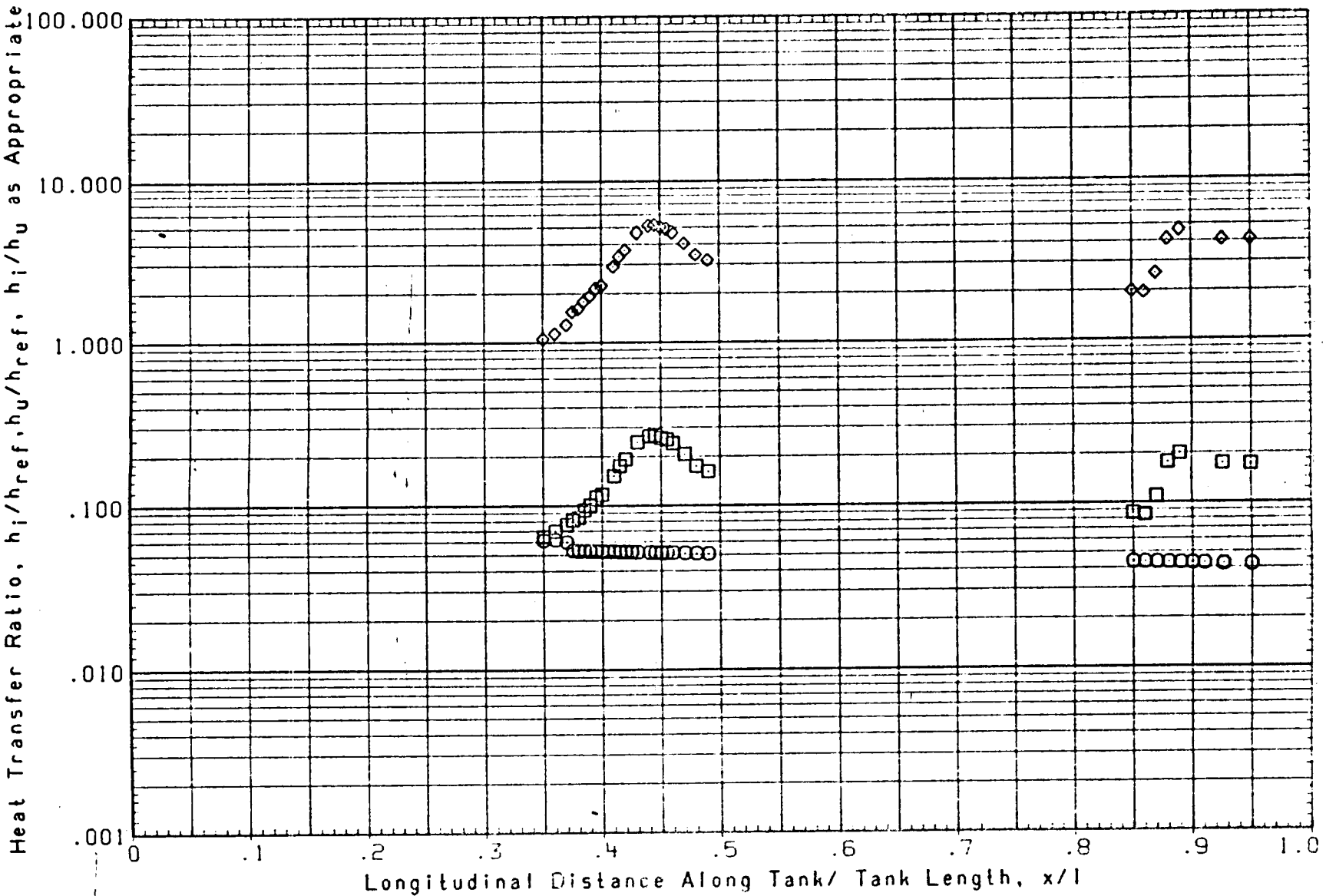


FIG. 11 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -6

MACH = 4.020 ALPHA = .010 PHI = 145.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT04)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-6.000
(LVFT24)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-6.000
(BVFT24)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-6.000

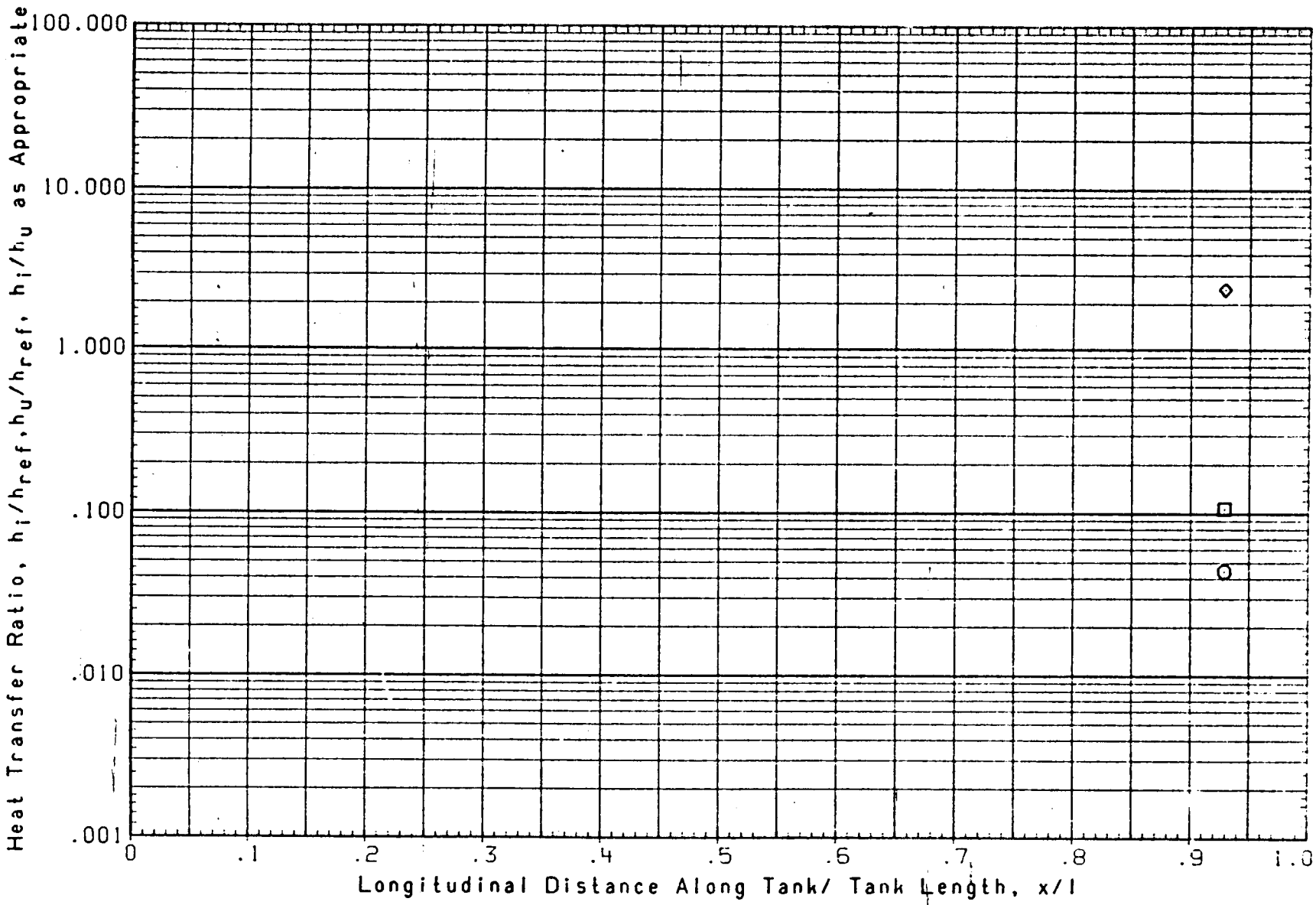


FIG. 11 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -6

MACH = 4.020 ALPHA = .010 PHI = 352.200

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT04)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-6.000
(LVFT24)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-6.000
(BVFT24)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-6.000

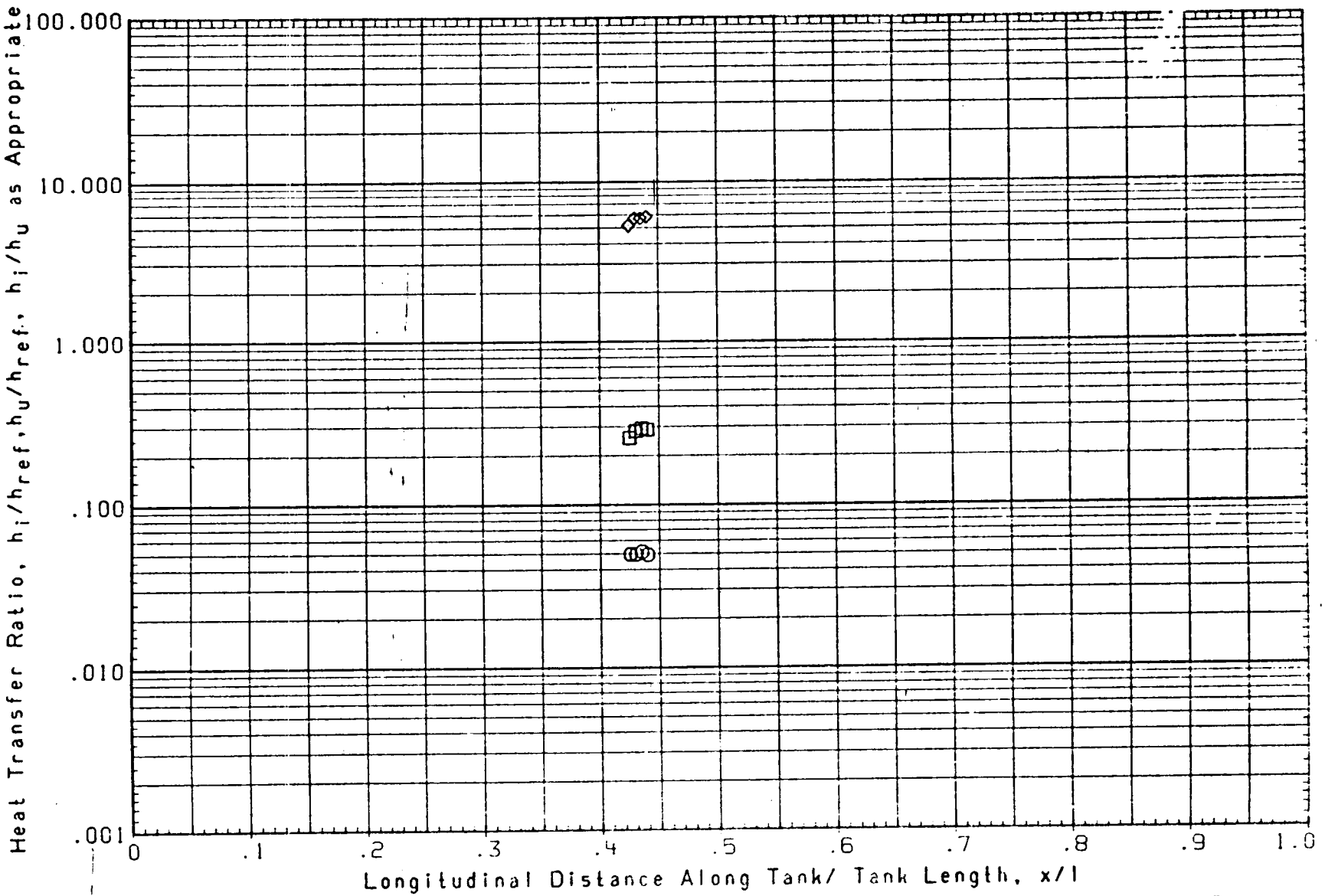


FIG. 11 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -6

MACH = 4.020 ALPHA = .010 PHI = [illegible].000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT04)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-6.000
(LVFT24)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-6.000
(BVFT24)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-6.000

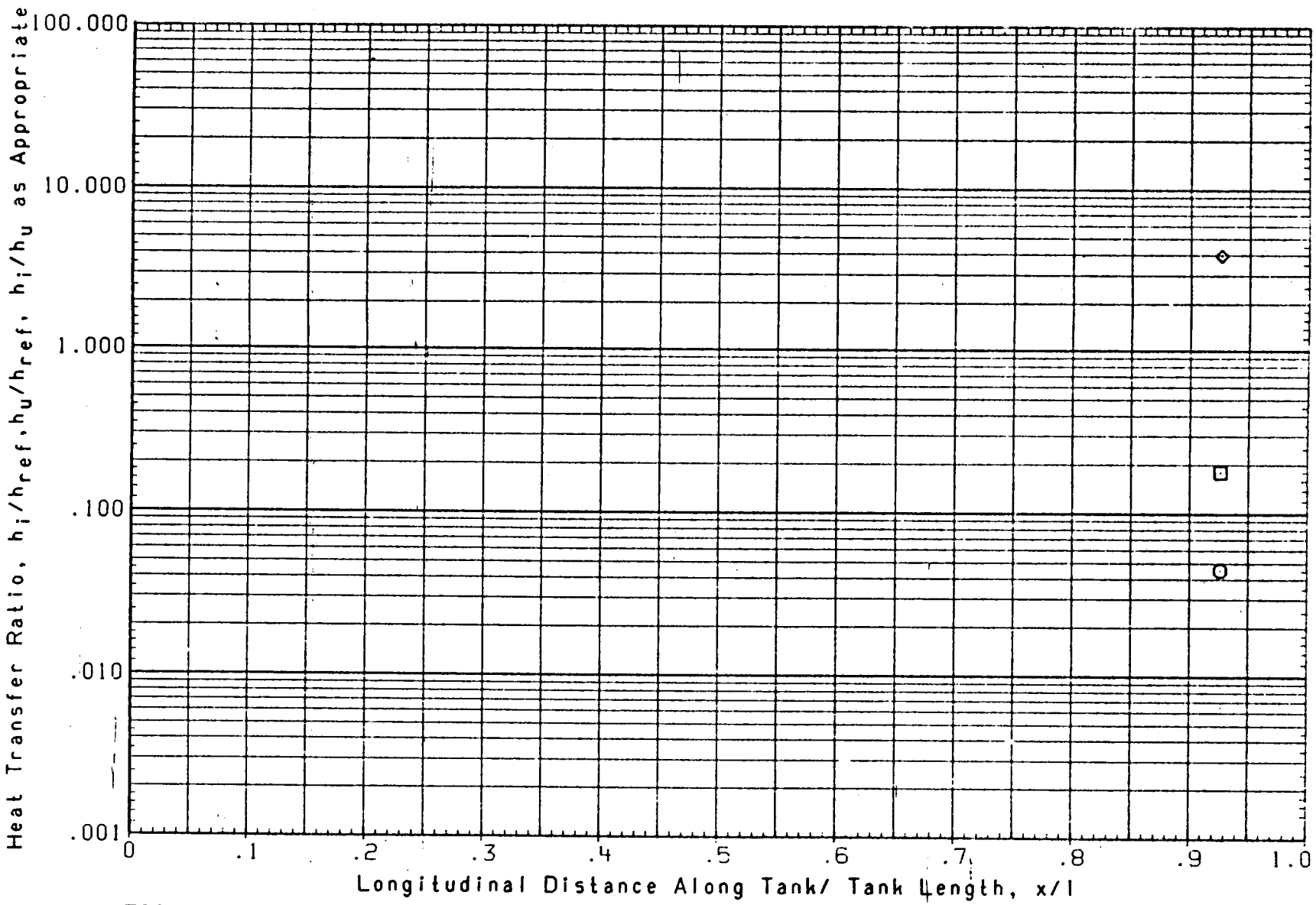


FIG. 11 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -6

MACH = 4.020 ALPHA = .010 PHI = 355.160

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT04)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-6.000
(LVFT24)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-6.000
(CVFT24)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-6.000

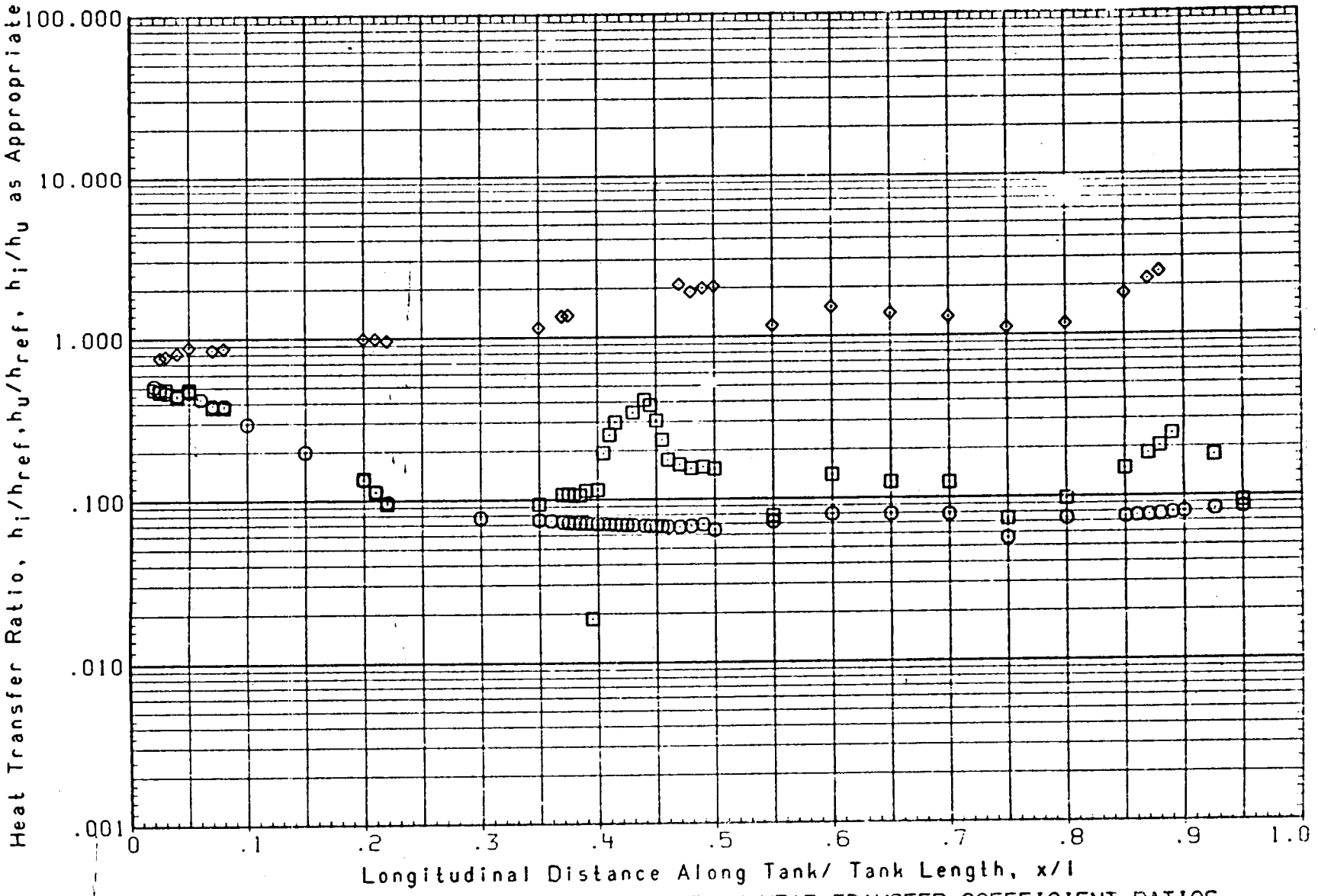


FIG. 12 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = -6

MACH = 3.010 ALPHA = .010 PHI = .000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT04)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-6.000
(LVFT24)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-6.000
(CVFT24)	◇	DATA NOT AVAILABLE	.000	-6.000

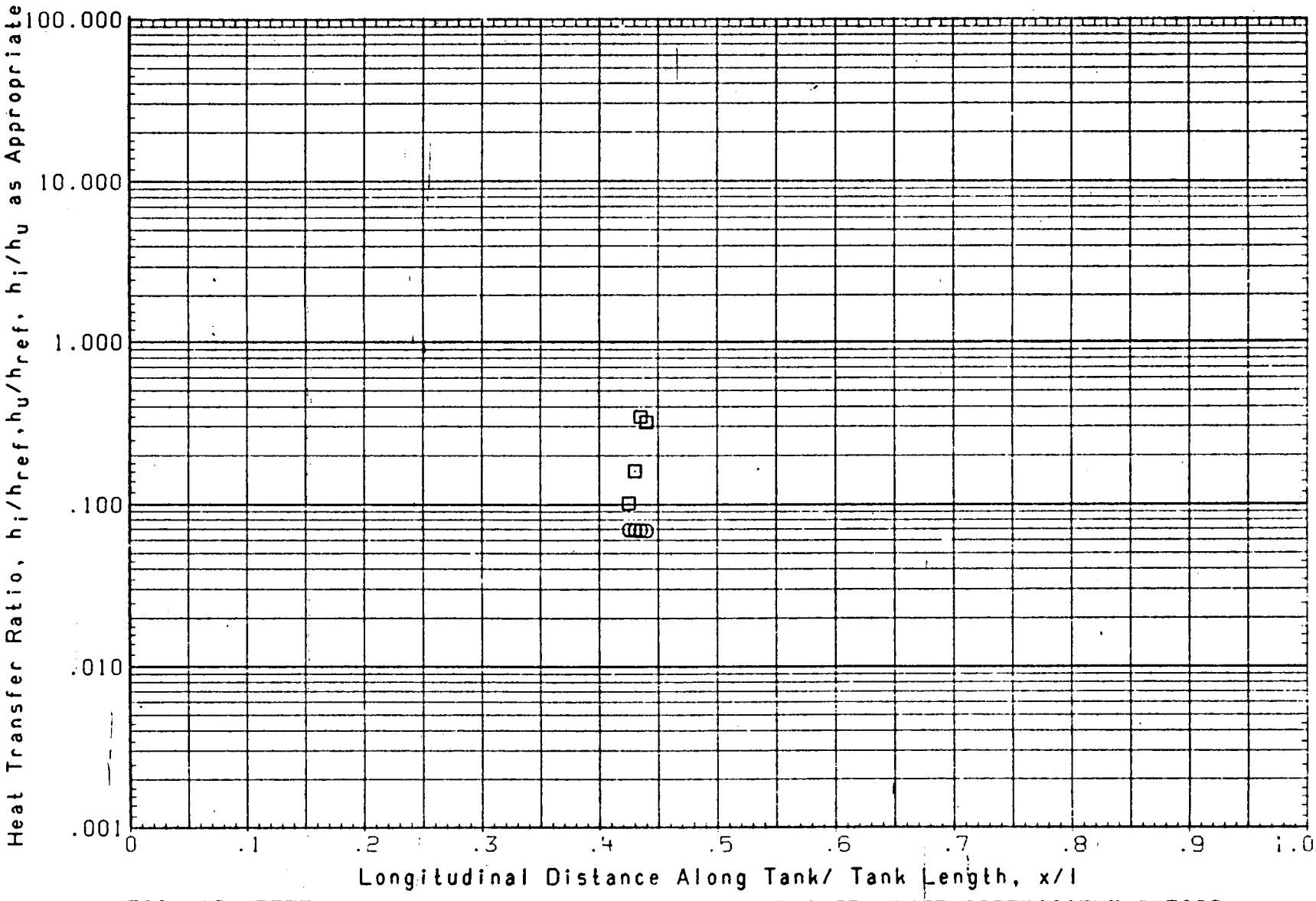


FIG. 12 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = -6

MACH = 3.010 ALPHA = .010 PHI = 5.630

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT04)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-6.000
(LVFT24)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-6.000
(CVFT24)	◇	DATA NOT AVAILABLE	.000	-6.000

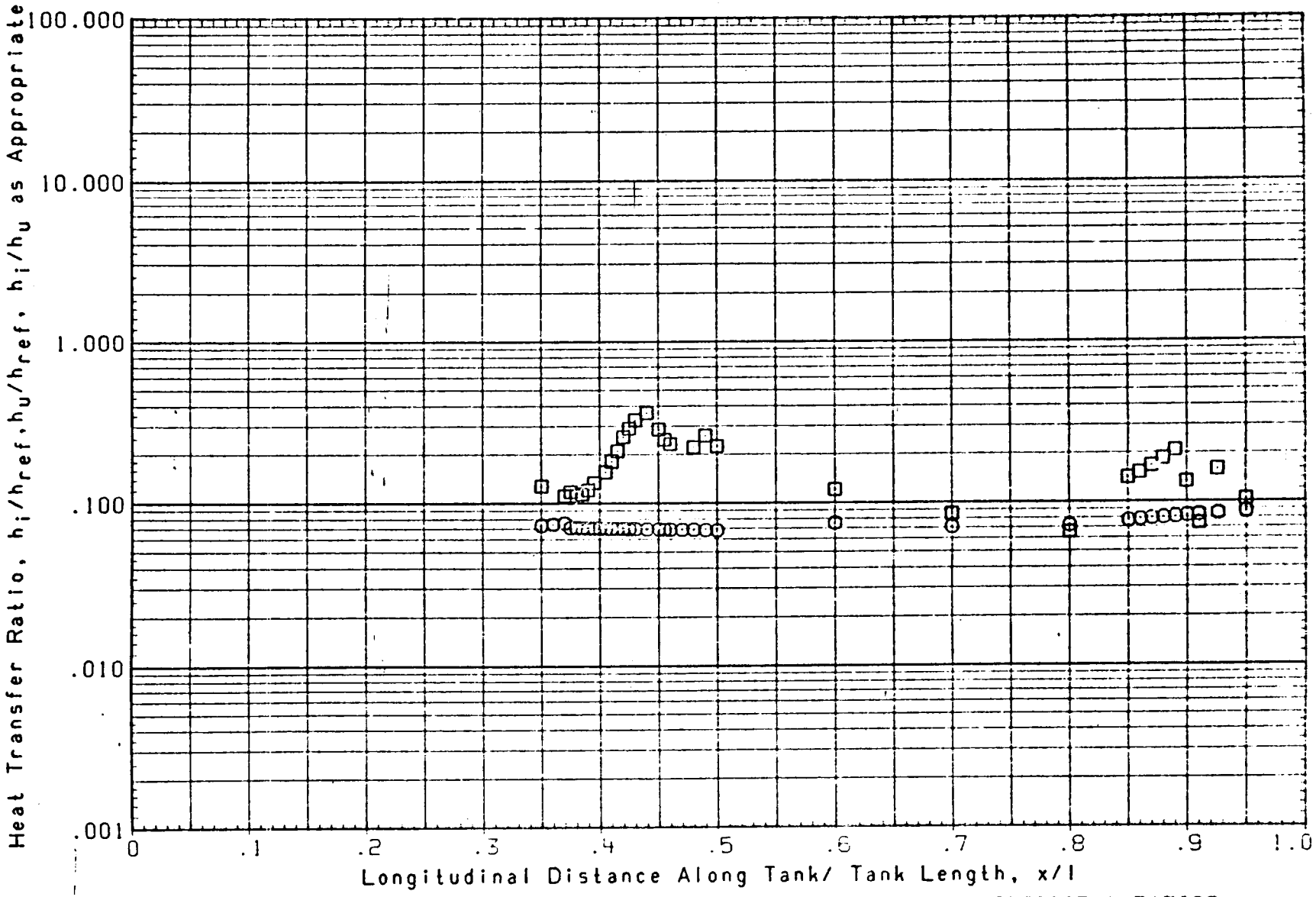


FIG. 12 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = -6

MACH = 3.010 ALPHA = .010 PHI = 11.250

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT04)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-6.000
(LVFT24)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-6.000
(CVFT24)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-6.000

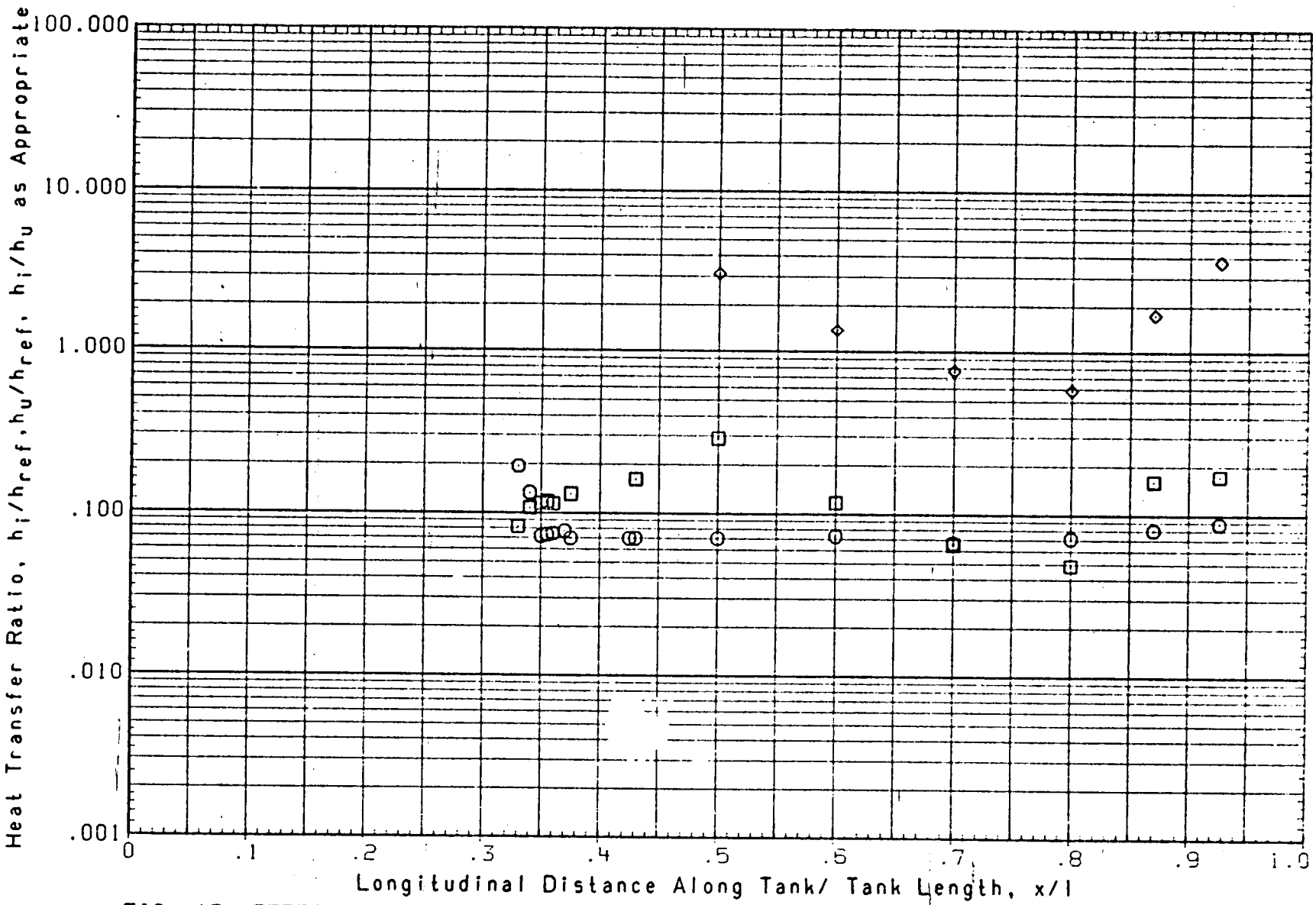


FIG. 12 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = -6

MACH = 3.010 ALPHA = .010 PHI = 17.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT04)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-6.000
(LVFT24)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-6.000
(CVFT24)	◇	DATA NOT AVAILABLE	.000	-6.000

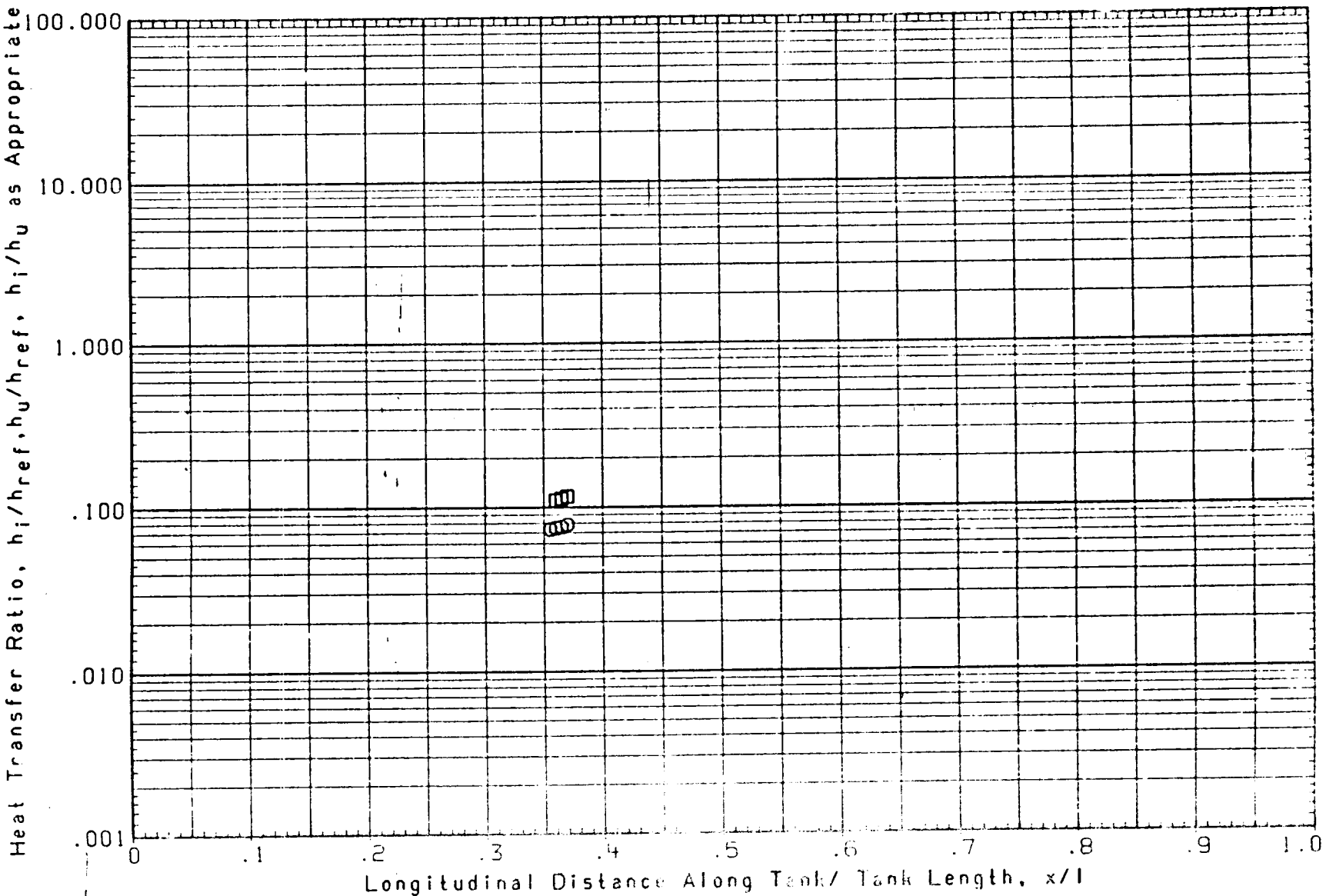


FIG. 12 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = -6

MACH = 3.010 ALPHA = .010 PHI = 20.943

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT04)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-6.000
(LVFT24)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-6.000
(CVFT24)	◇	DATA NOT AVAILABLE	.000	-6.000

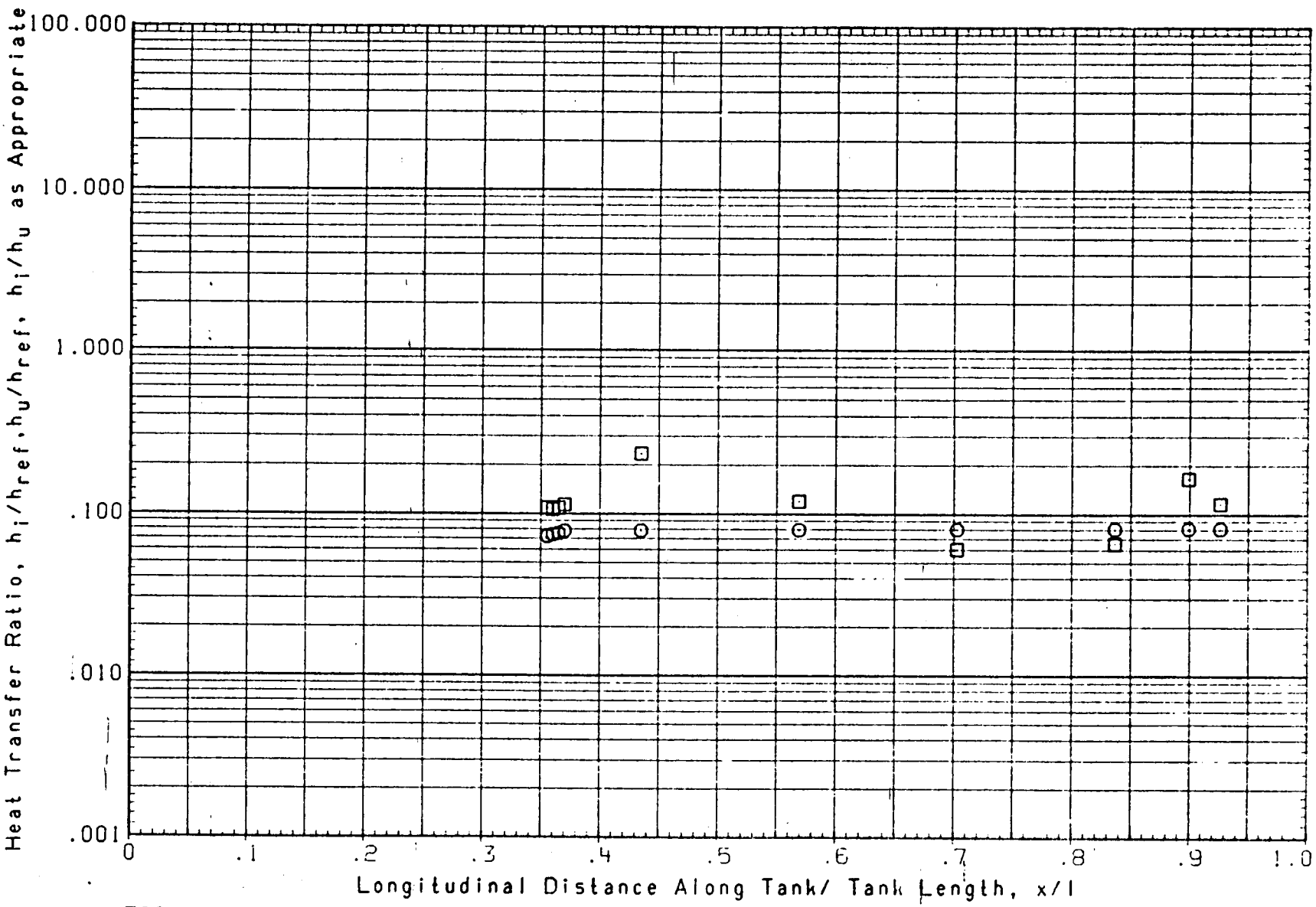


FIG. 12 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = -6

MACH = 3.010 ALPHA = .010 PHI = 23.075

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT04)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-6.000
(LVFT24)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-6.000
(CVFT24)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-6.000

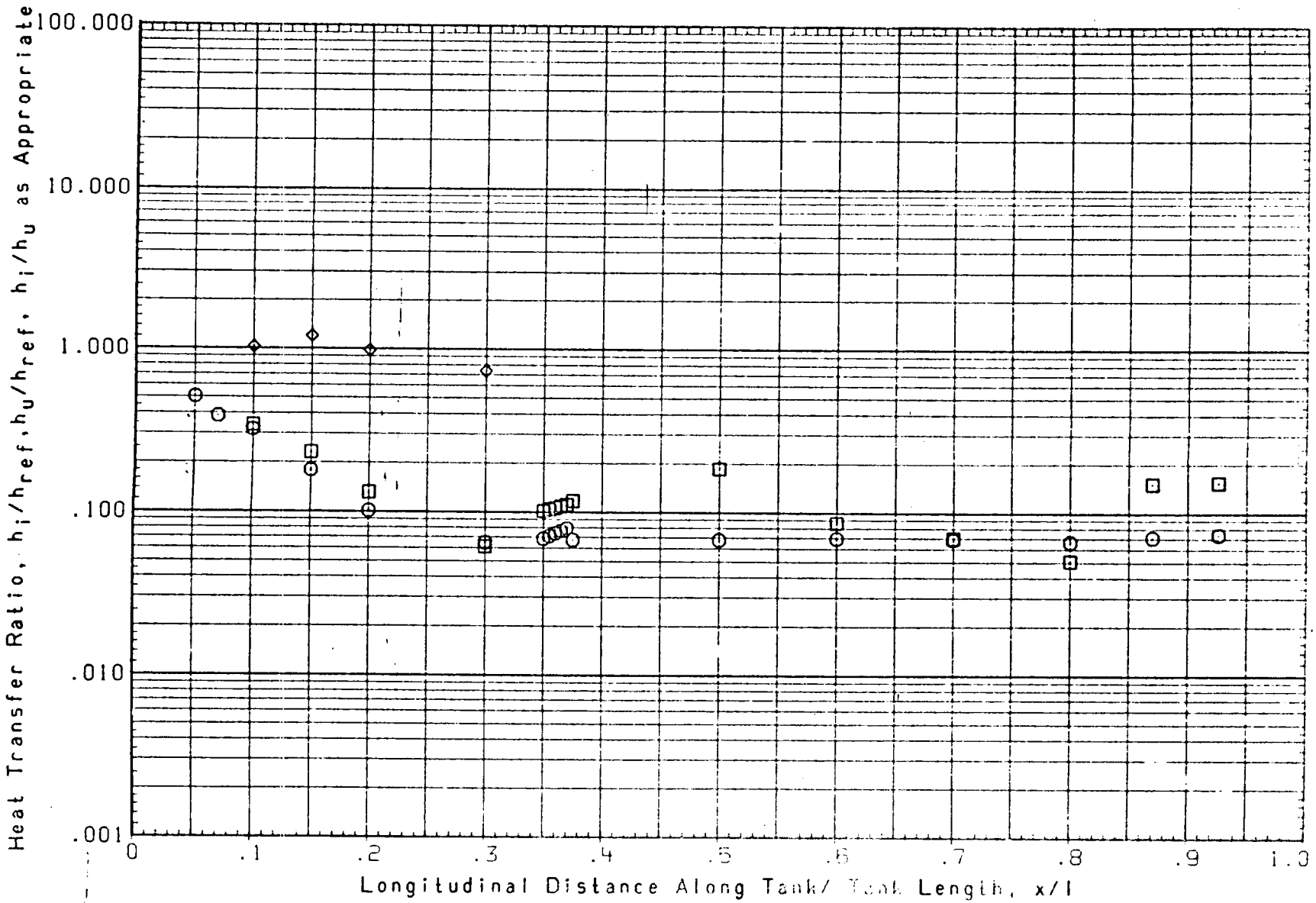


FIG. 12 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0. BETA = -6

MACH = 3.010 ALPHA = .010 PHI = 29.800

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT04)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-6.000
(LVFT24)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-6.000
(CVFT24)	◇	DATA NOT AVAILABLE	.000	-6.000

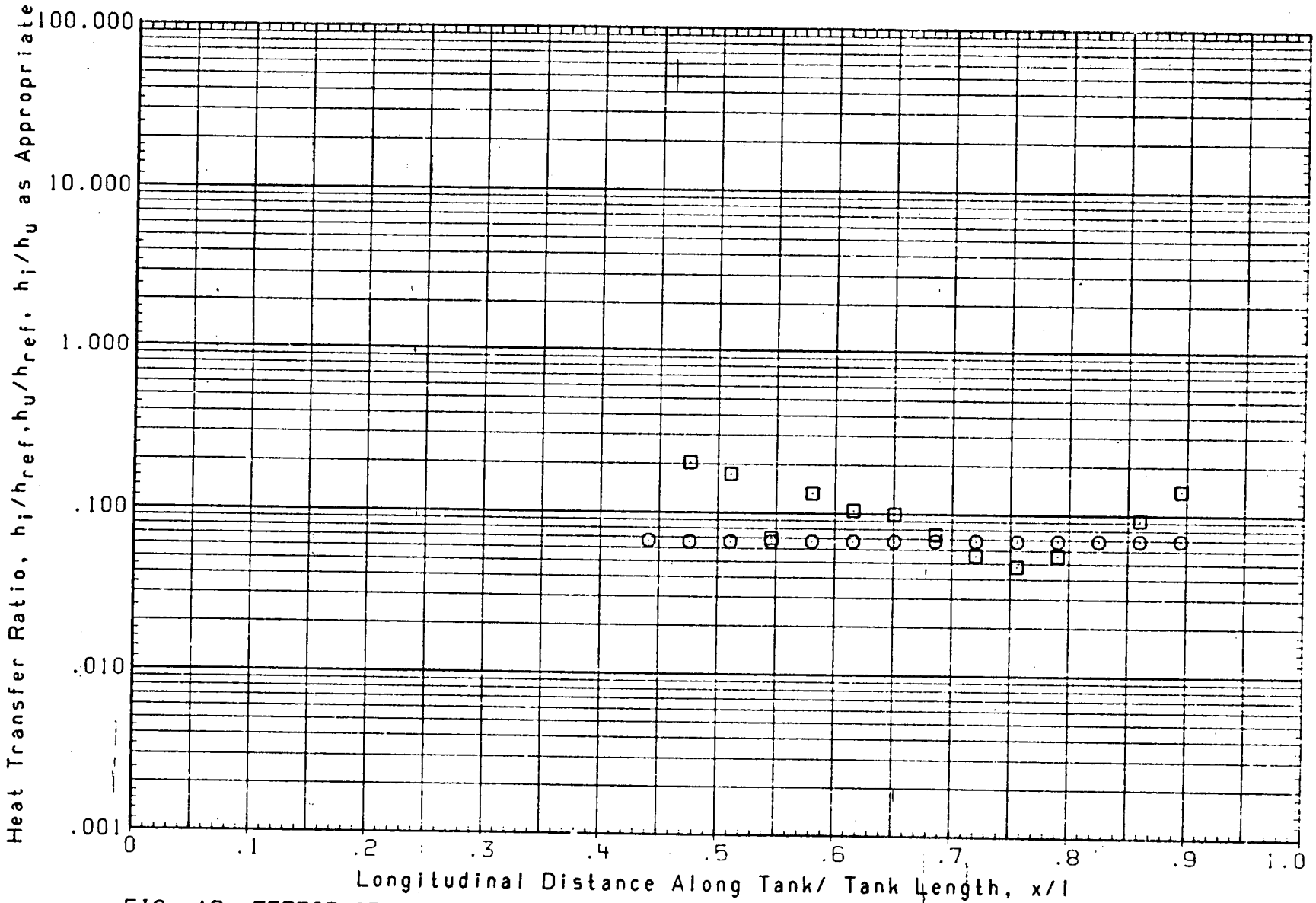


FIG. 12 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = -6

MACH = 3.010 ALPHA = .010 PHI = 31.430

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT04)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-6.000
(LVFT24)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-6.000
(CVFT24)	◇	DATA NOT AVAILABLE	.000	-6.000

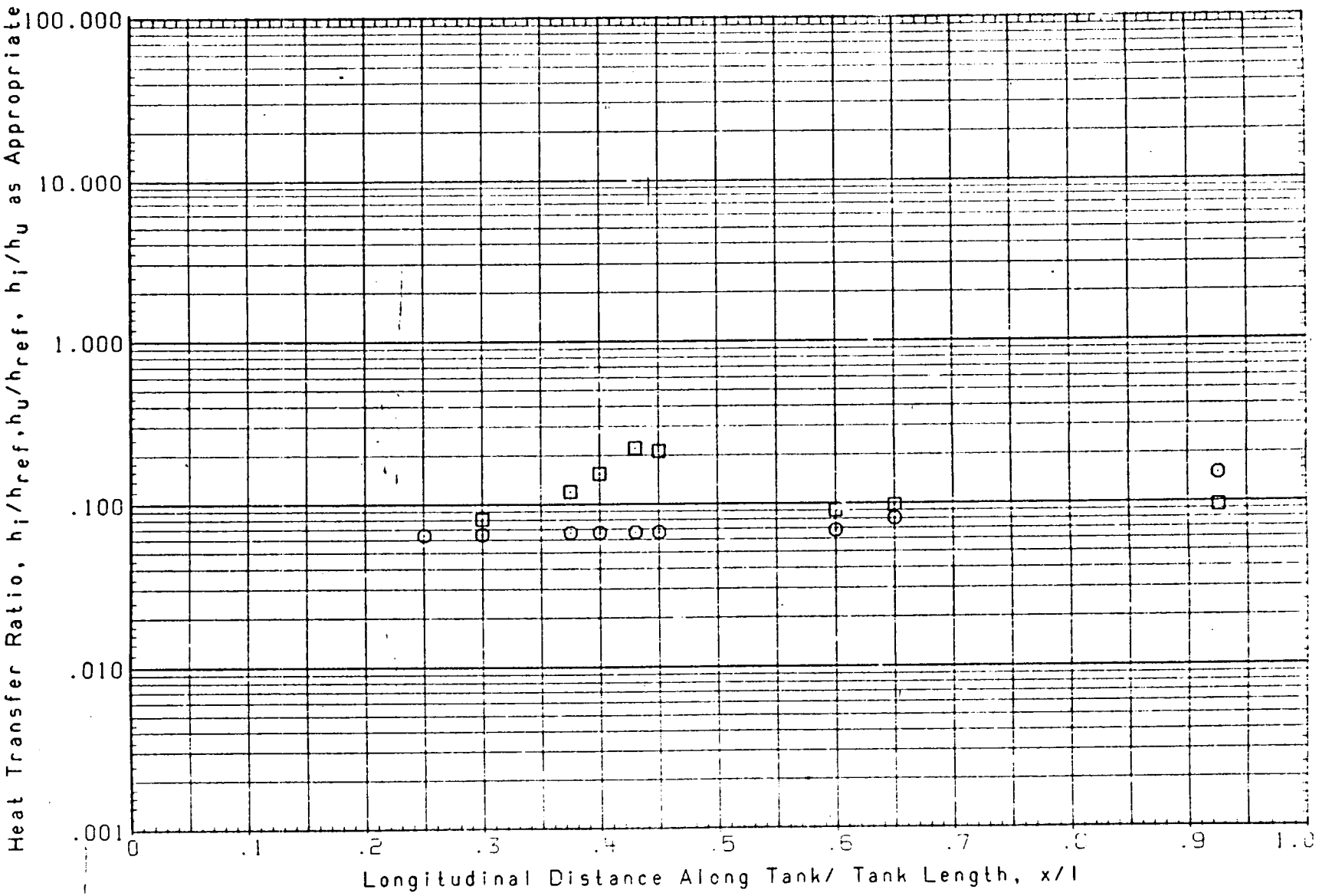


FIG. 12 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = -6

MACH = 3.010 ALPHA = [illegible]

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT04)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-6.000
(LVFT24)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-6.000
(CVFT24)	◇	DATA NOT AVAILABLE	.000	-6.000

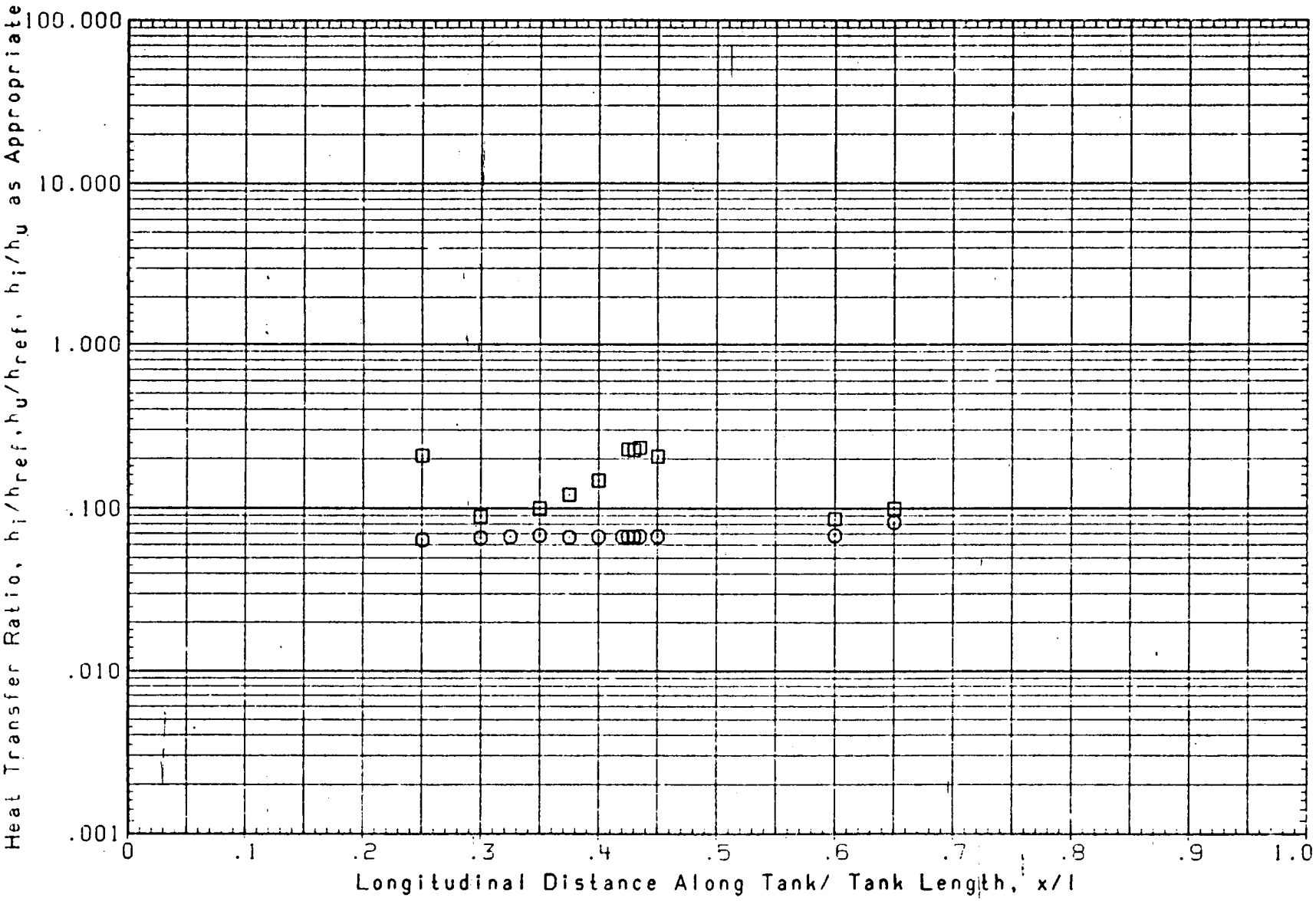


FIG. 12 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = -6

MACH = 3.010 ALPHA = .010 PHI = 36.320

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT04)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-6.000
(LVFT24)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-6.000
(CVFT24)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-6.000

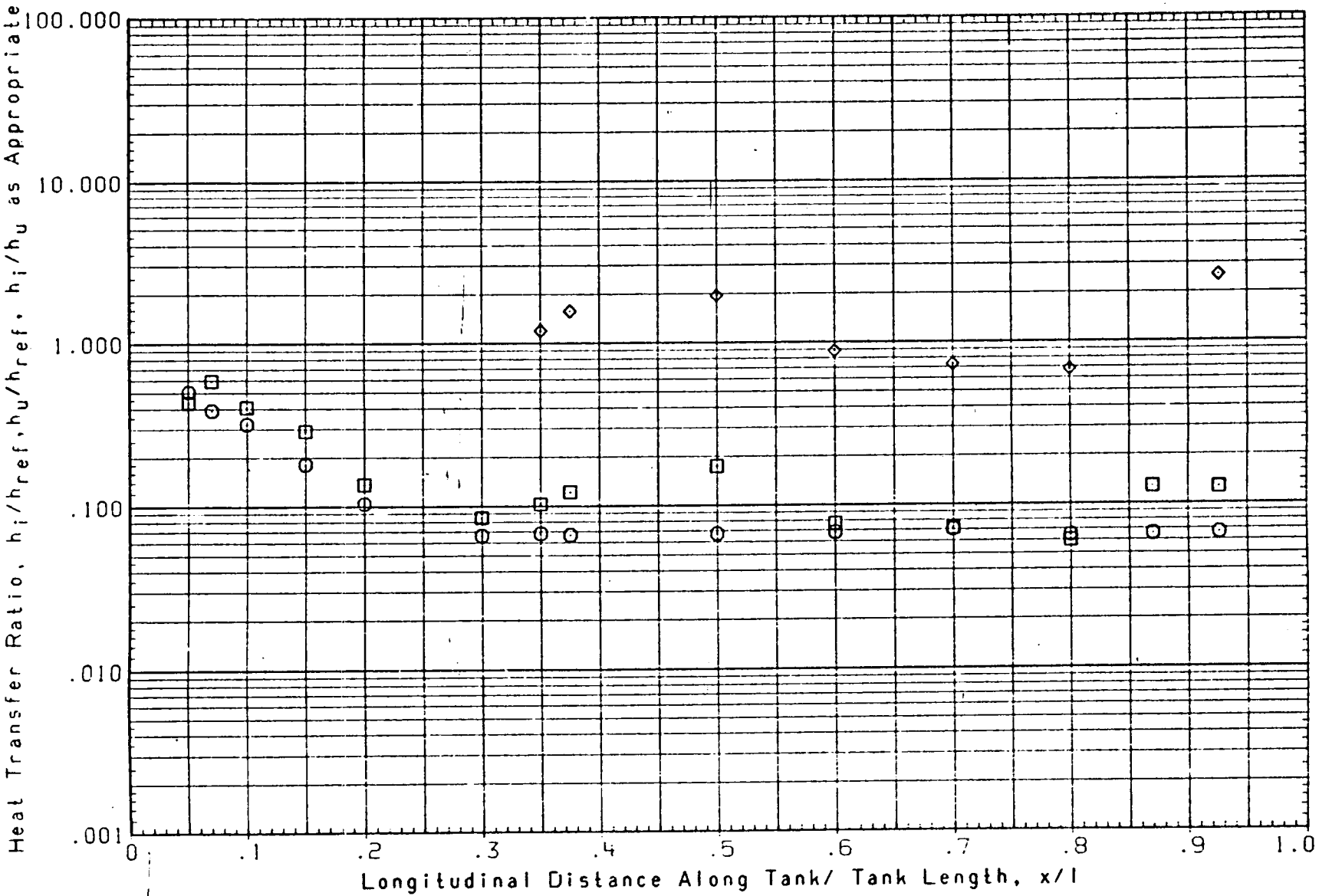


FIG. 12 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = -6

MACH = 3.010 ALPHA = .010 PHI = 37.700

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT04)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-6.000
(LVFT24)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-6.000
(CVFT24)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-6.000

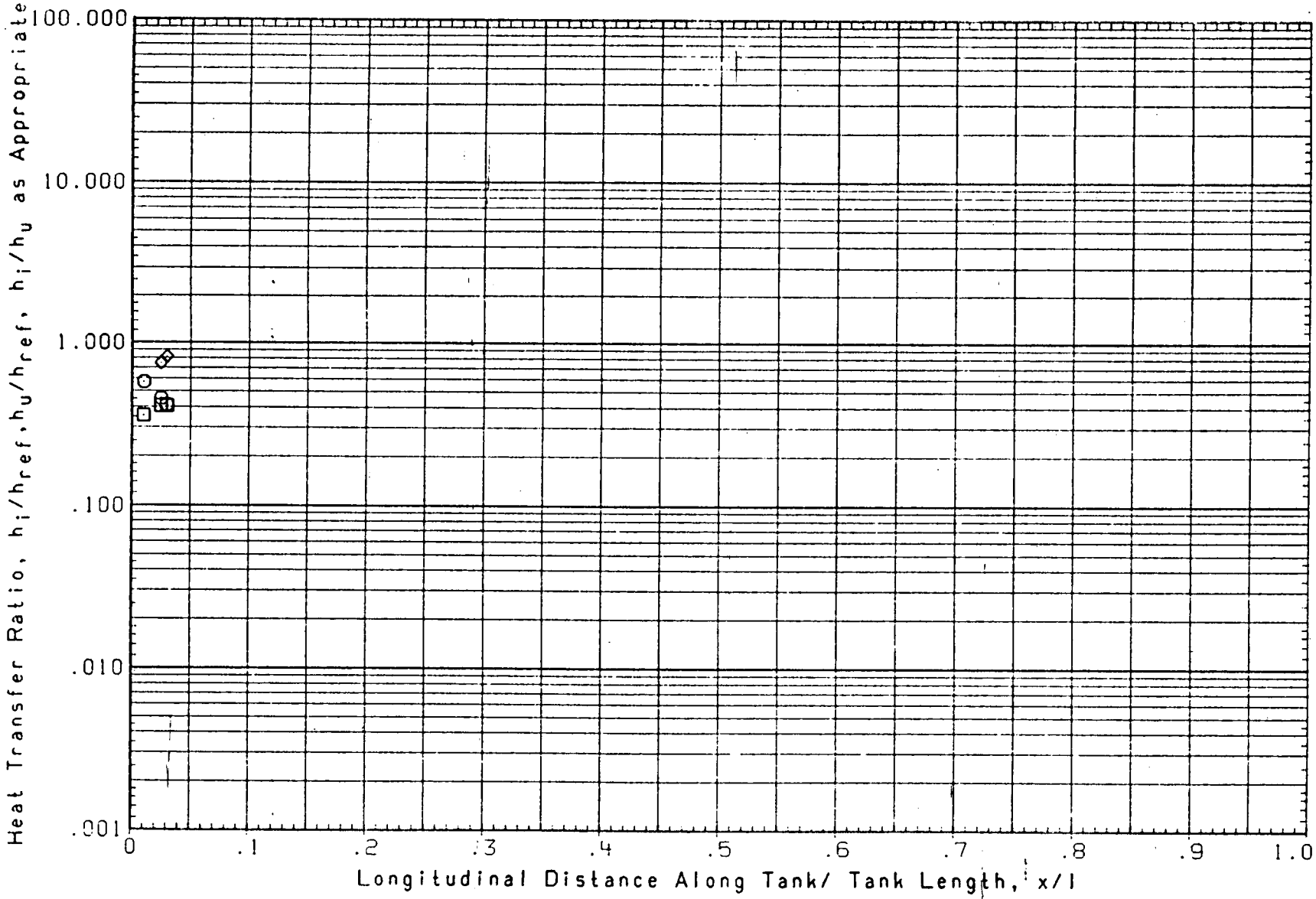


FIG. 12 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = -6

MACH = 3.010 ALPHA = .010 PHI = 39.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT04)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-6.000
(LVFT24)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-6.000
(CVFT24)	◇	DATA NOT AVAILABLE	.000	-6.000

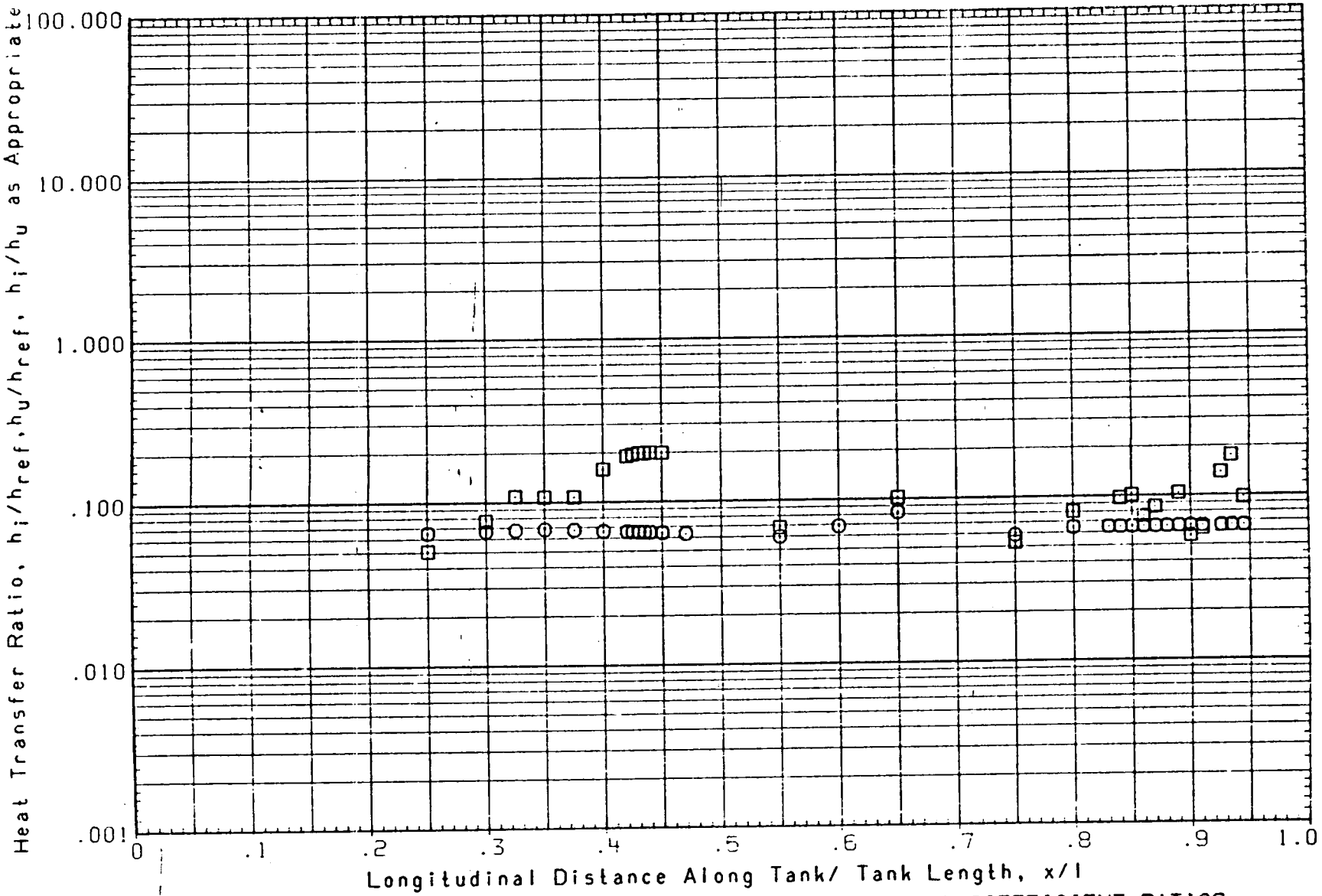


FIG. 12 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = -6

MACH = 3.010 ALPHA = .010 PHI = 45.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT04)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-6.000
(LVFT24)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-6.000
(CVFT24)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-6.000

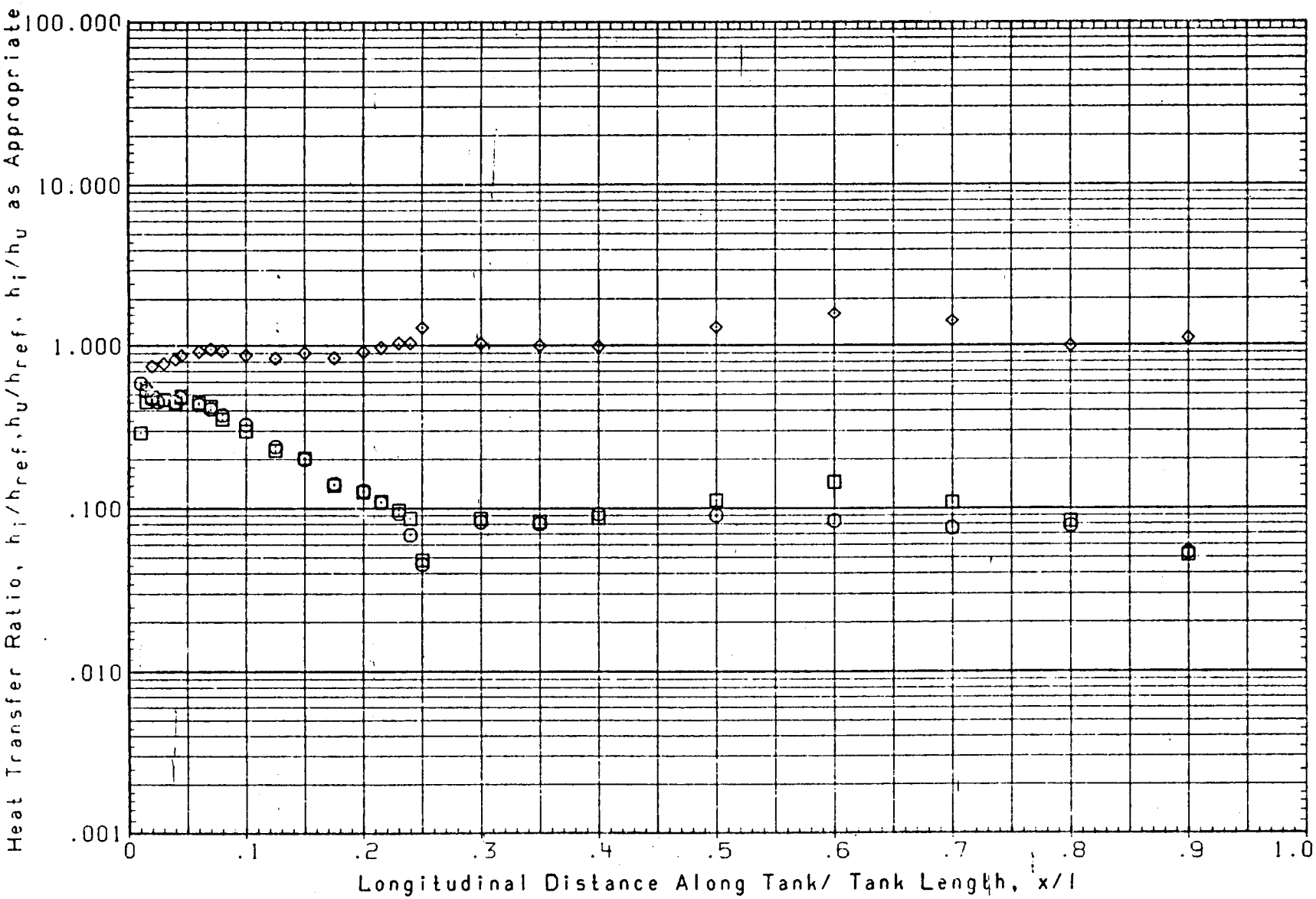


FIG. 12 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = -6

MACH = 3.010 ALPHA = .010 PHI = 180.000

(KVFT04)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-6.000
(LVFT24)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-6.000
(CVFT24)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-6.000

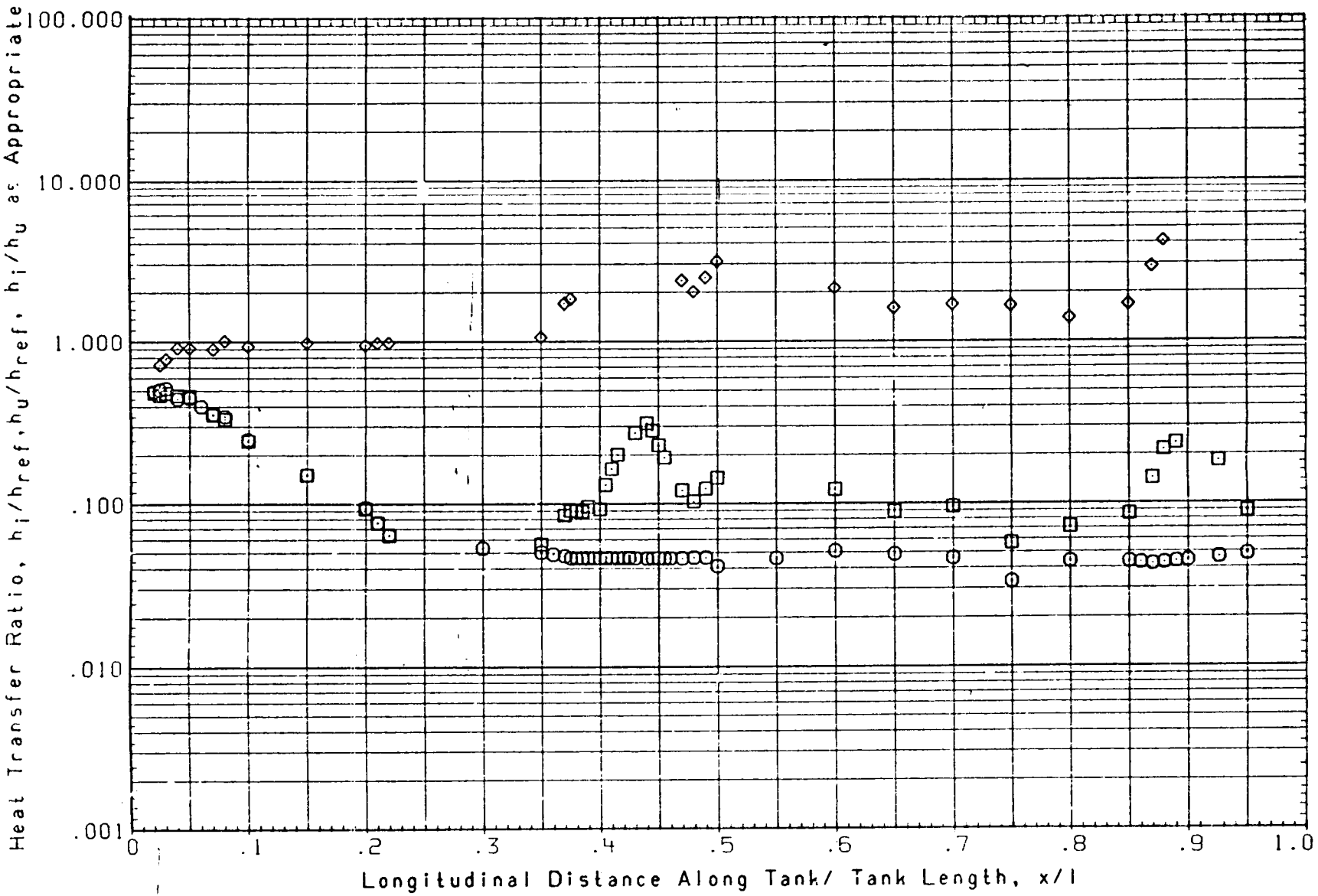


FIG. 12 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = -6

MACH = 4.020 ALPHA = .010 PHI = .000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT04)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-6.000
(LVFT24)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-6.000
(CVFT24)	◇	DATA NOT AVAILABLE	.000	-6.000

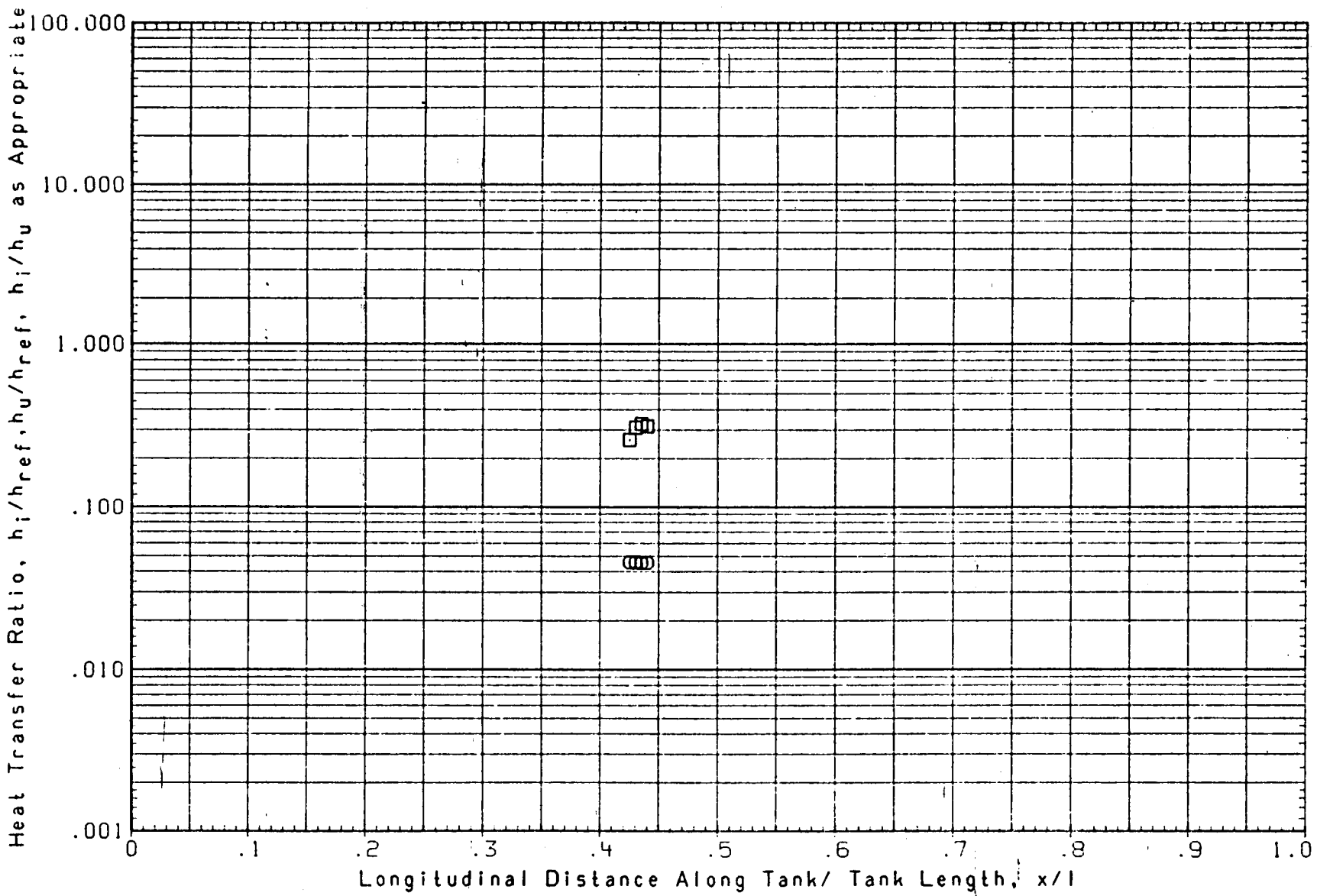


FIG. 12 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = -6

MACH = 4.020 ALPHA = .010 PHI = 5.630

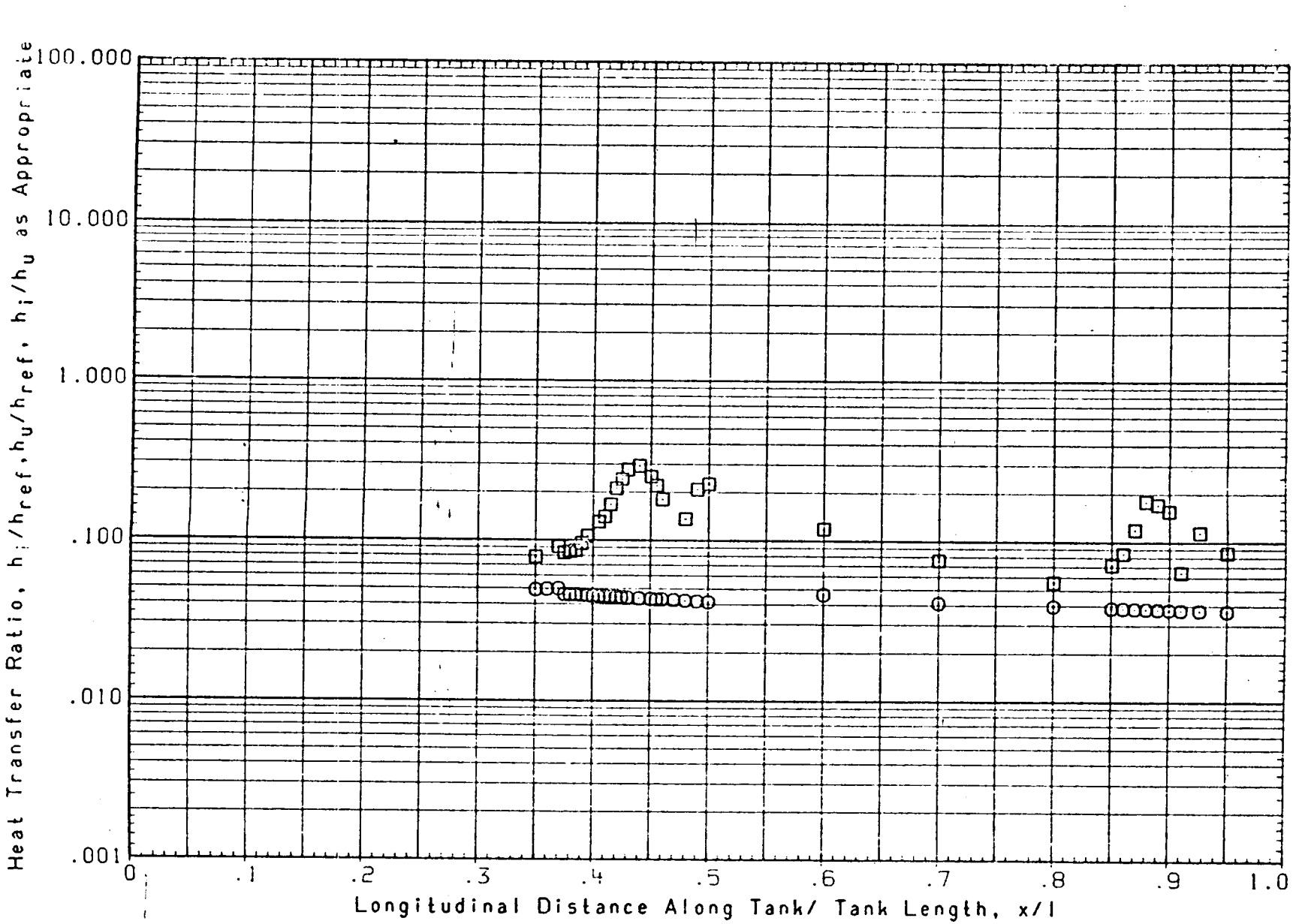


FIG. 12 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = -6

MACH = 4.020 ALPHA = .010 PHI = 11.250

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT04)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-6.000
(LVFT24)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-6.000
(CVFT24)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-6.000

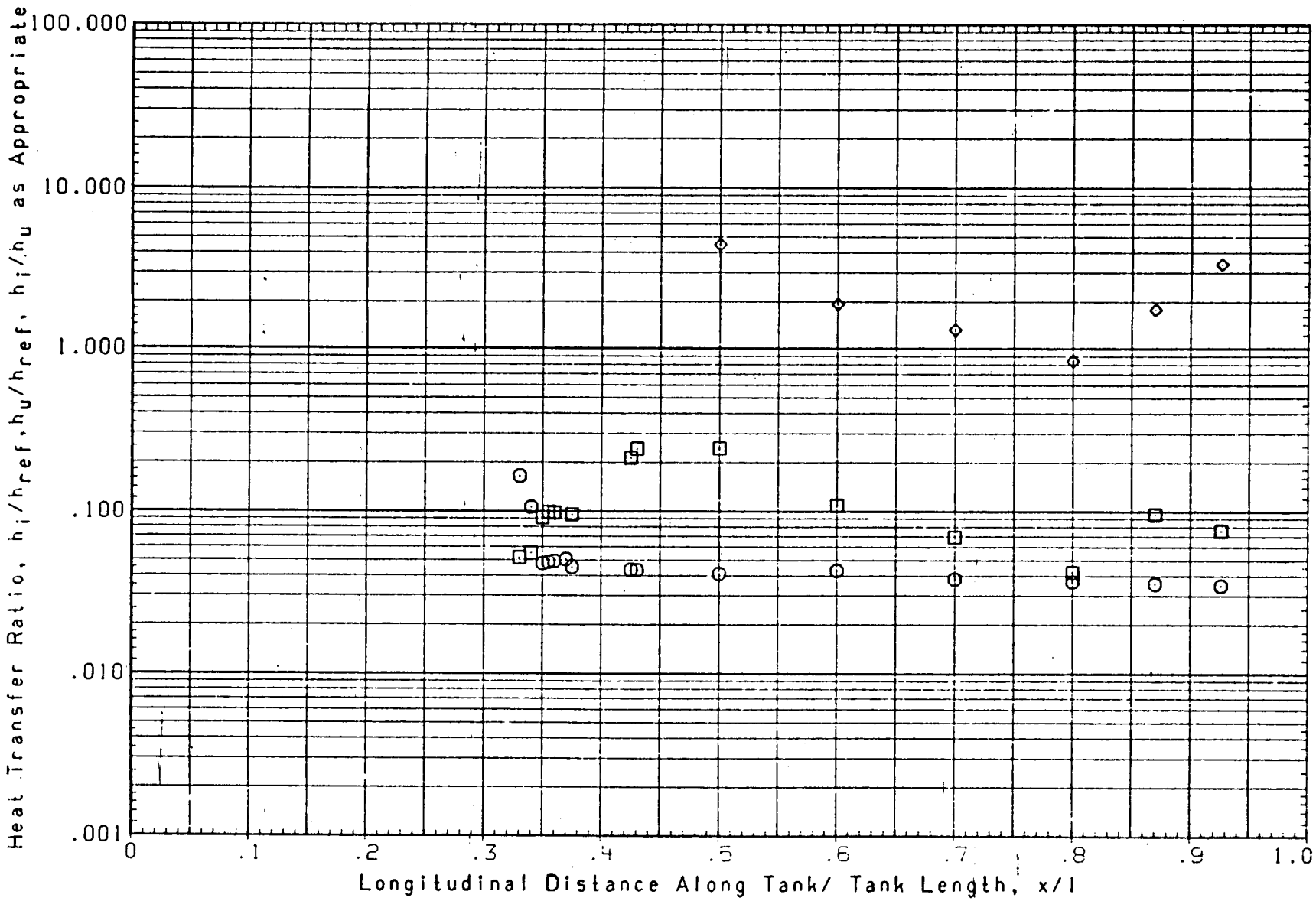


FIG. 12 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = -6

MACH = 4.020 ALPHA = .010 PHI = 17.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT04)	○	H41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-6.000
(LVFT24)	□	H41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-6.000
(CVFT24)	◇	DATA NOT AVAILABLE	.000	-6.000

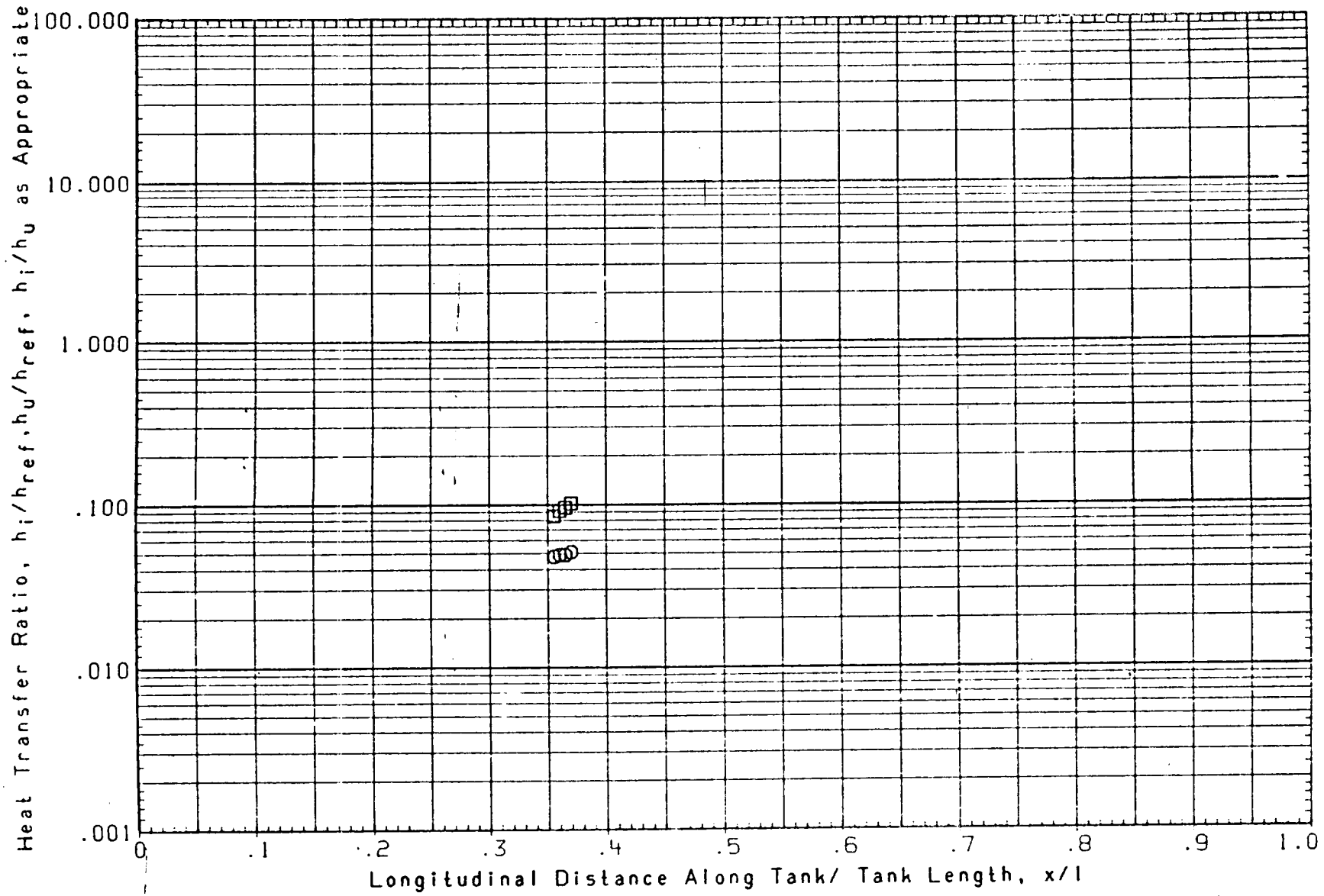


FIG. 12 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = -6

MACH = 4.020 ALPHA = .010 PHI = 20.980

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT04)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-6.000
(LVFT24)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-6.000
(CVFT24)	◇	DATA NOT AVAILABLE	.000	-6.000

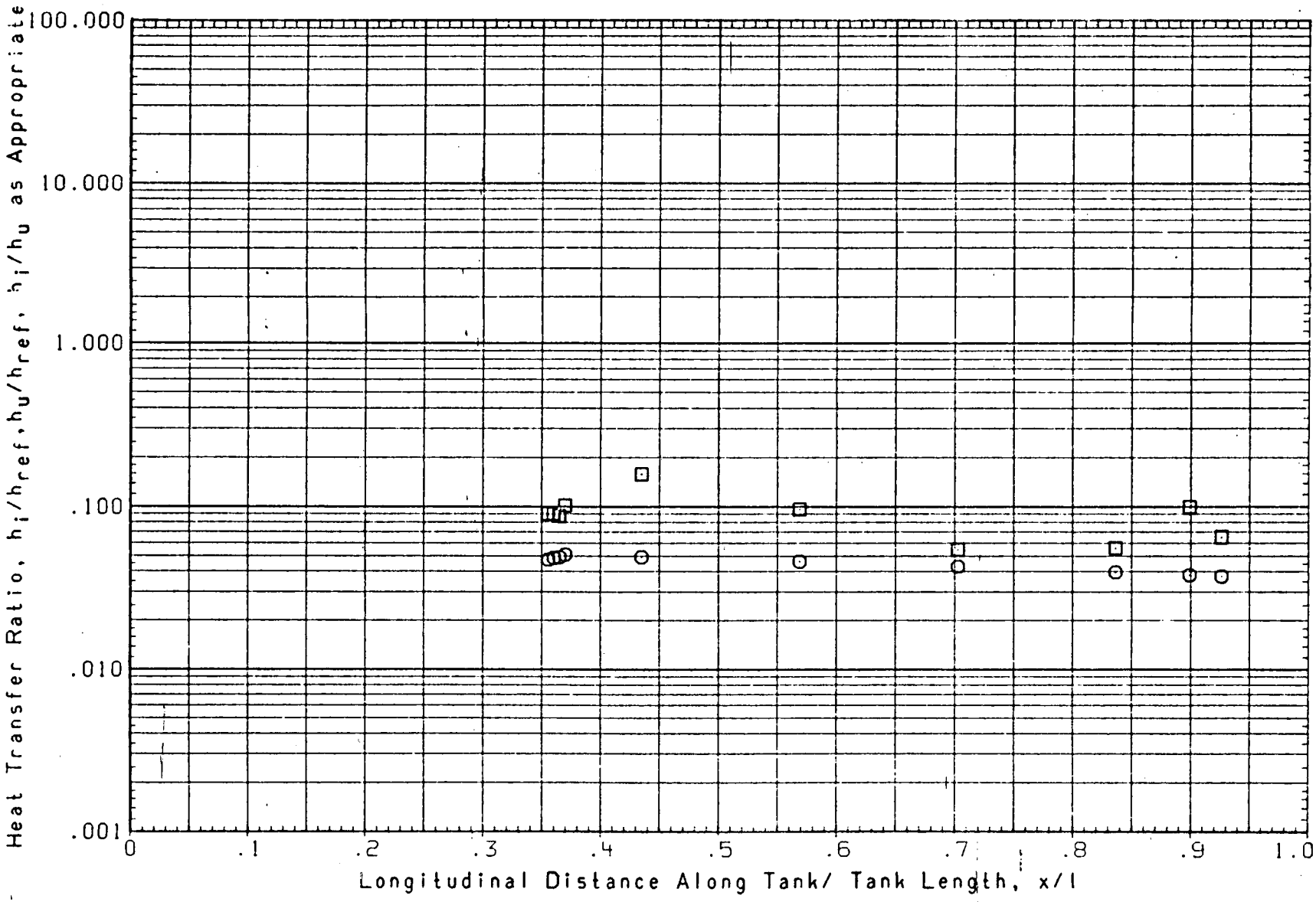


FIG. 12 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = -6

MACH = 4.020 ALPHA = .010 PHI = 23.075

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT04)	○	I-41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-6.000
(LVFT24)	□	I-41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-6.000
(CVFT24)	◇	I-41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-6.000

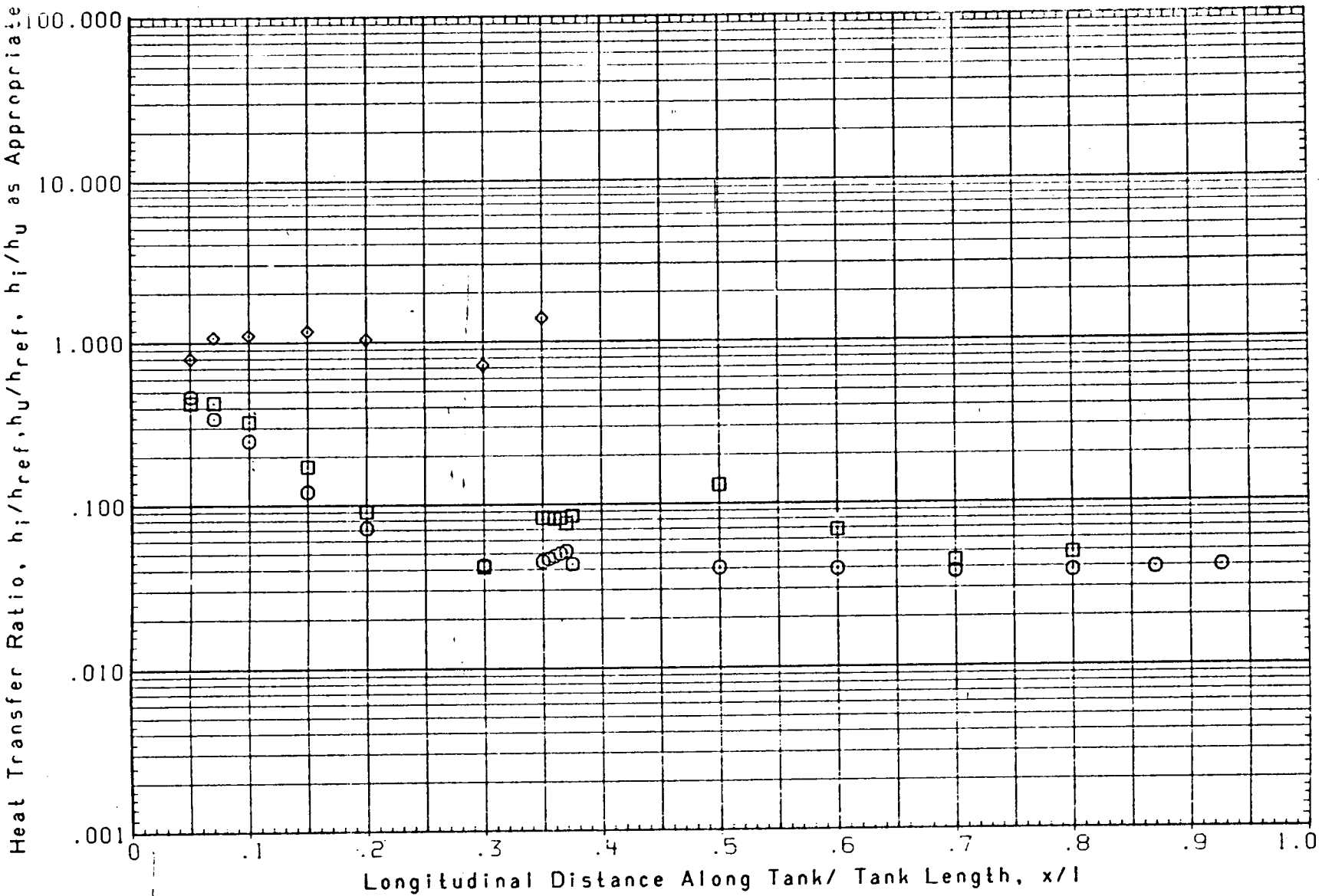


FIG. 12 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = -6

MACH = 4.020 ALPHA = .010 PHI = 29.800

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT04)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-6.000
(LVFT24)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-6.000
(CVFT24)	◇	DATA NOT AVAILABLE	.000	-6.000

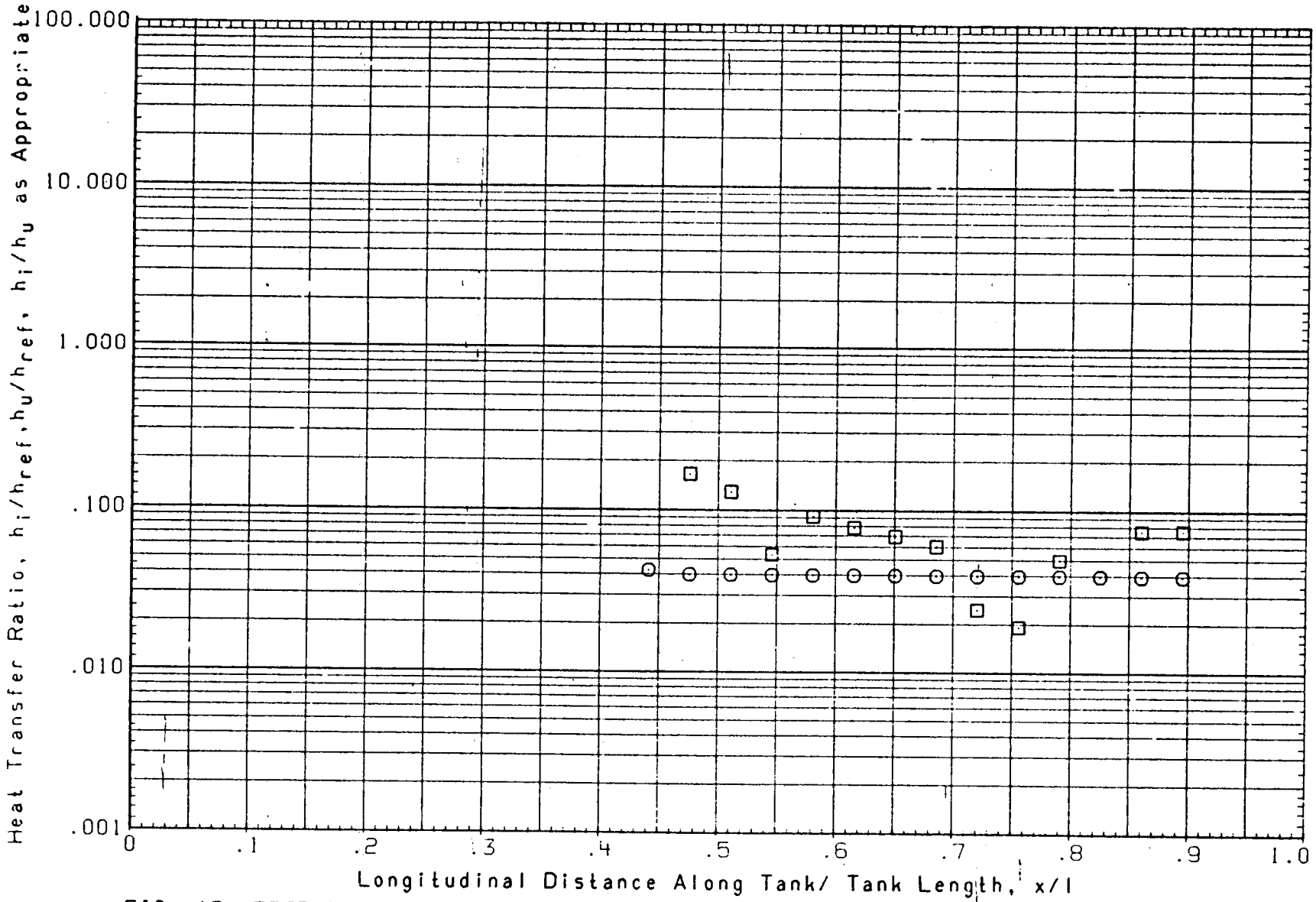


FIG. 12 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = -6

MACH = 4.020 ALPHA = .010 PHI = 31.430

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT04)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-6.000
(LVFT24)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-6.000
(CVFT24)	◇	DATA NOT AVAILABLE	.000	-6.000

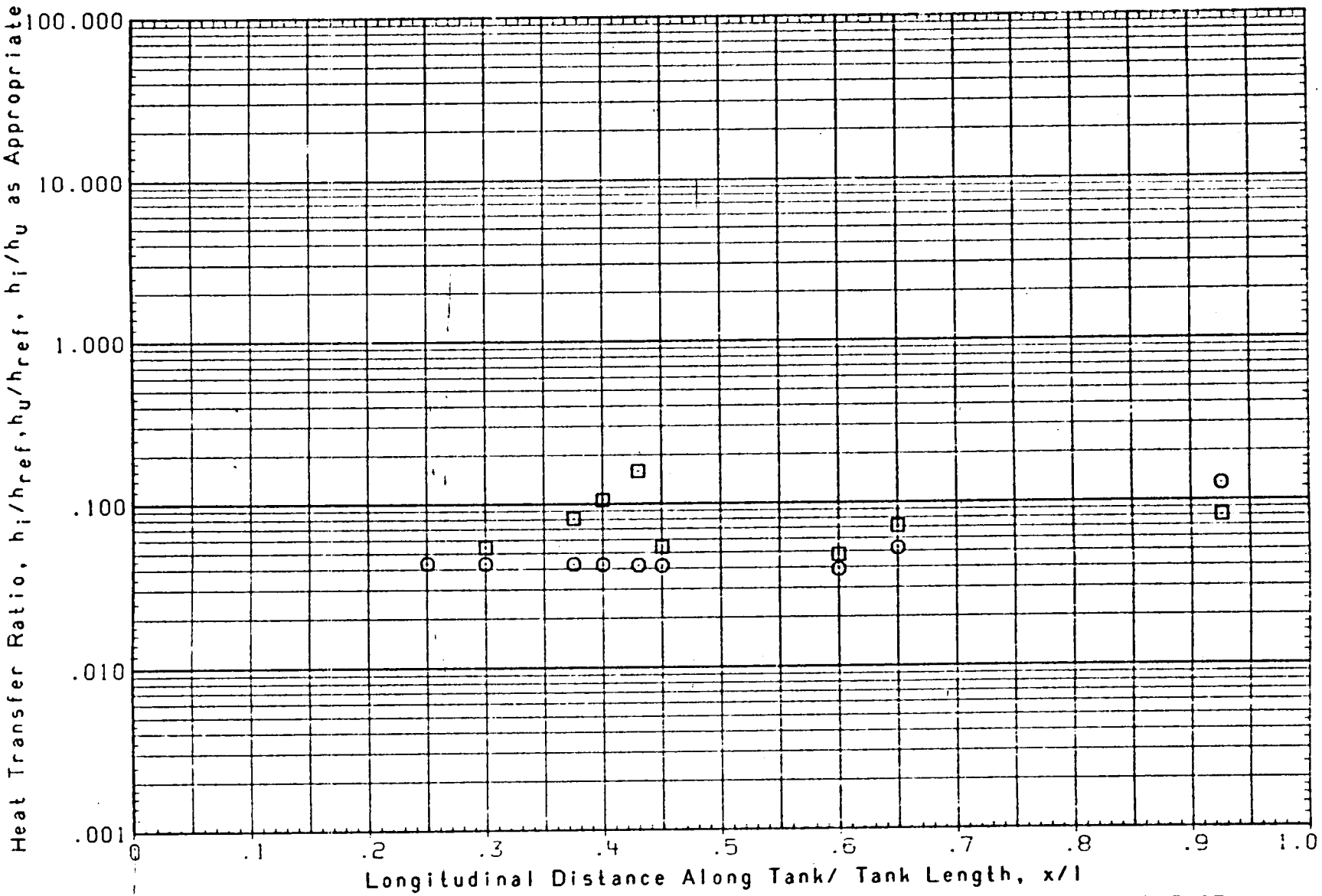


FIG. 12 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = -6

MACH = 4.020 ALPHA = .010 PHI = 33.750

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT04)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-6.000
(LVFT24)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-6.000
(CVFT24)	◇	DATA NOT AVAILABLE	.000	-6.000

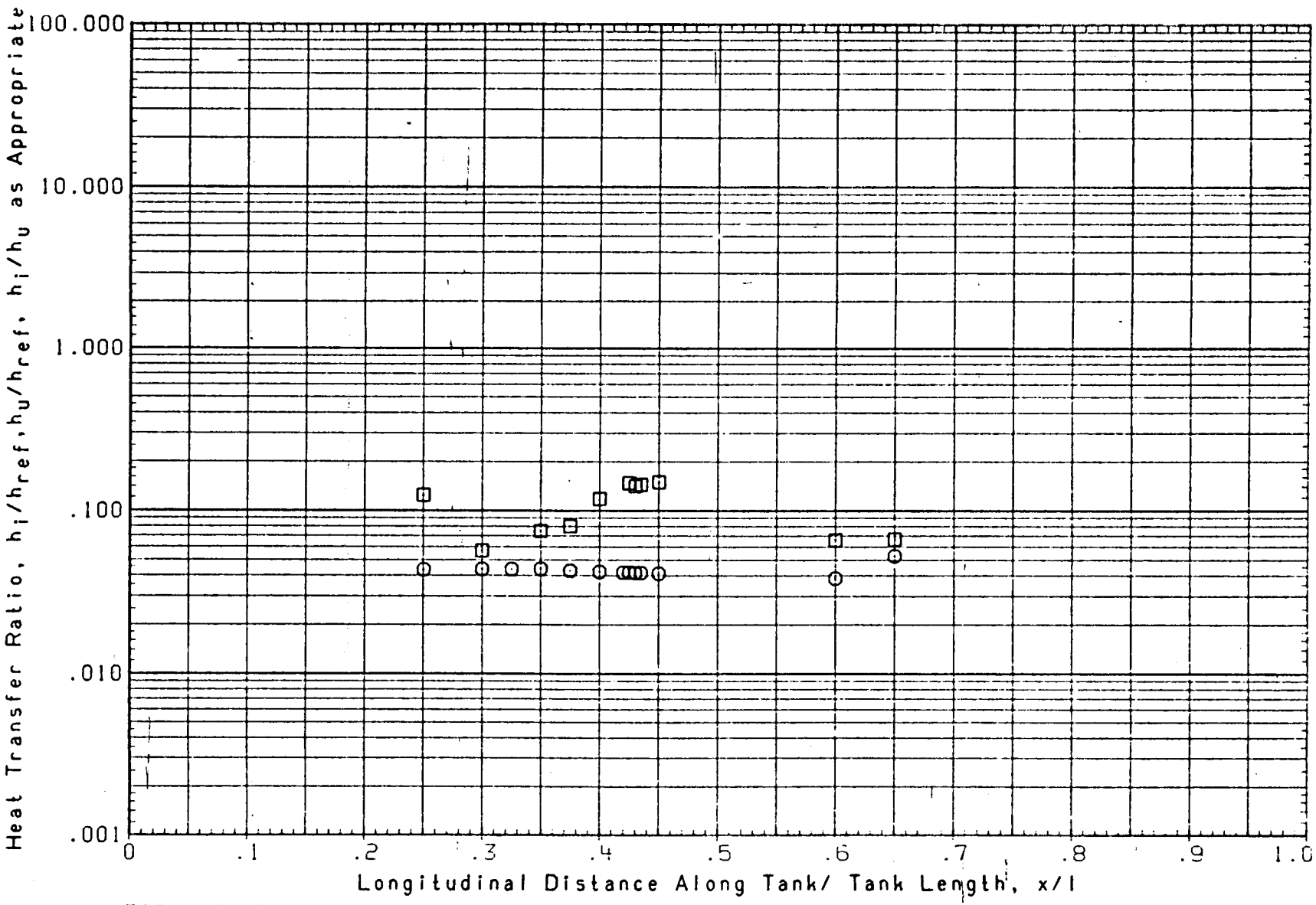


FIG. 12 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = -6

MACH = 4.020 ALPHA = .010 PHI = 36.320

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT04)	○	H41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-6.000
(LVFT24)	□	H41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-6.000
(OVFT24)	◇	H41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-6.000

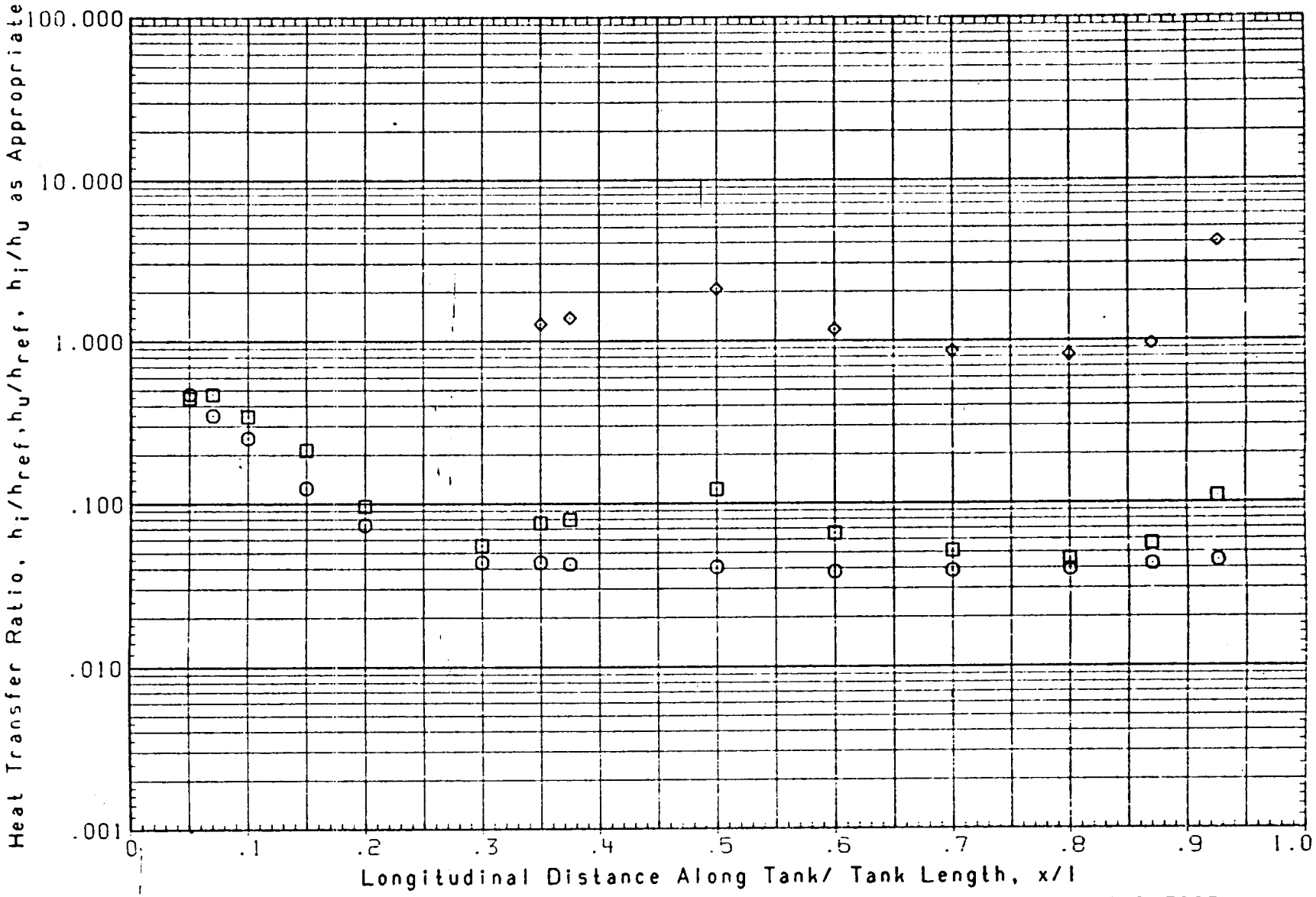


FIG. 12 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = -6

MACH = 4.020 ALPHA = .010 PHI = 37.700

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT04)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-6.000
(LVFT24)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-6.000
(CVFT24)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-6.000

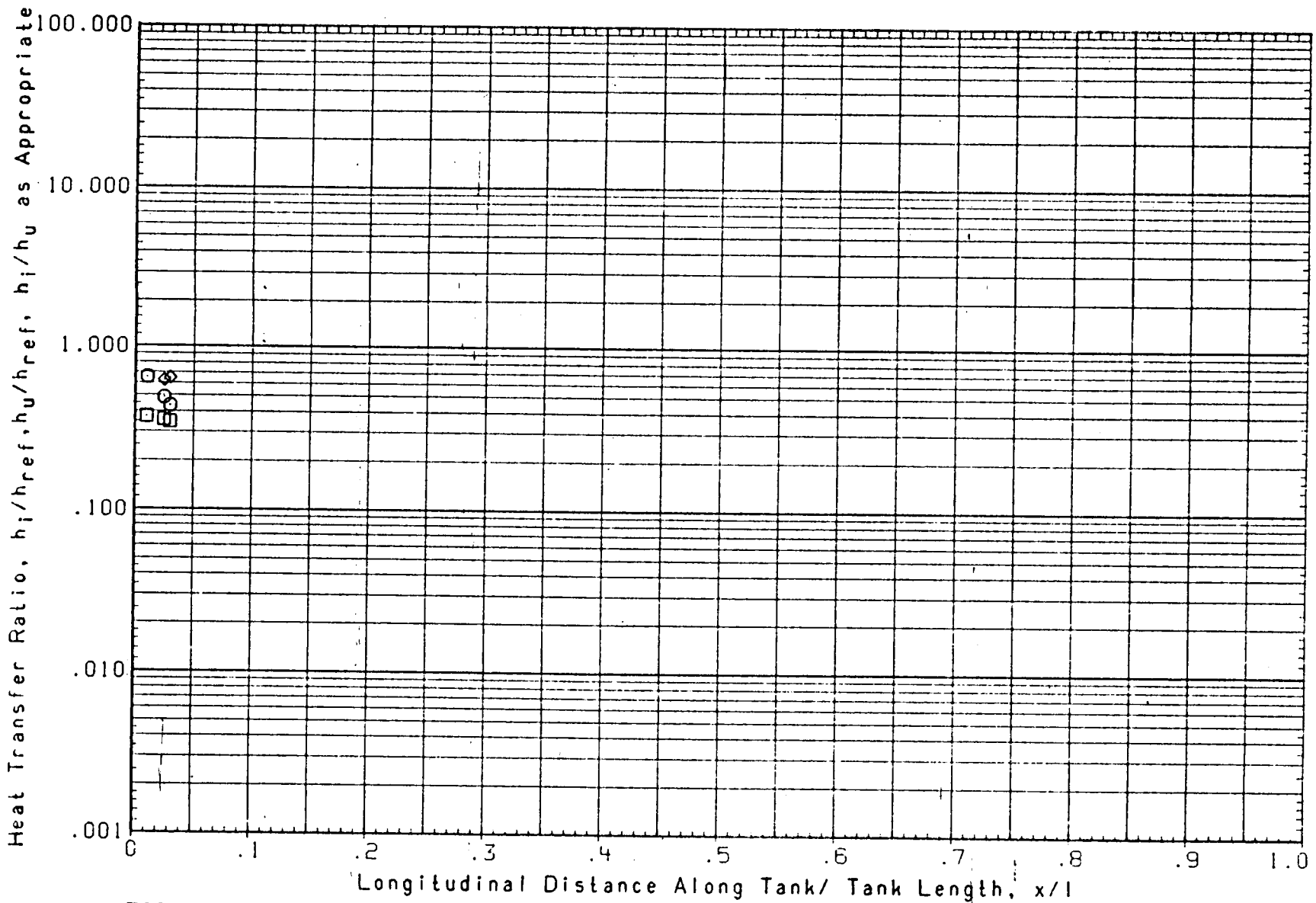


FIG. 12 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = -6

MACH = 4.020 ALPHA = .010 PHI = 39.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT04)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-6.000
(LVFT24)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-6.000
(CVFT24)	◇	DATA NOT AVAILABLE	.000	-6.000

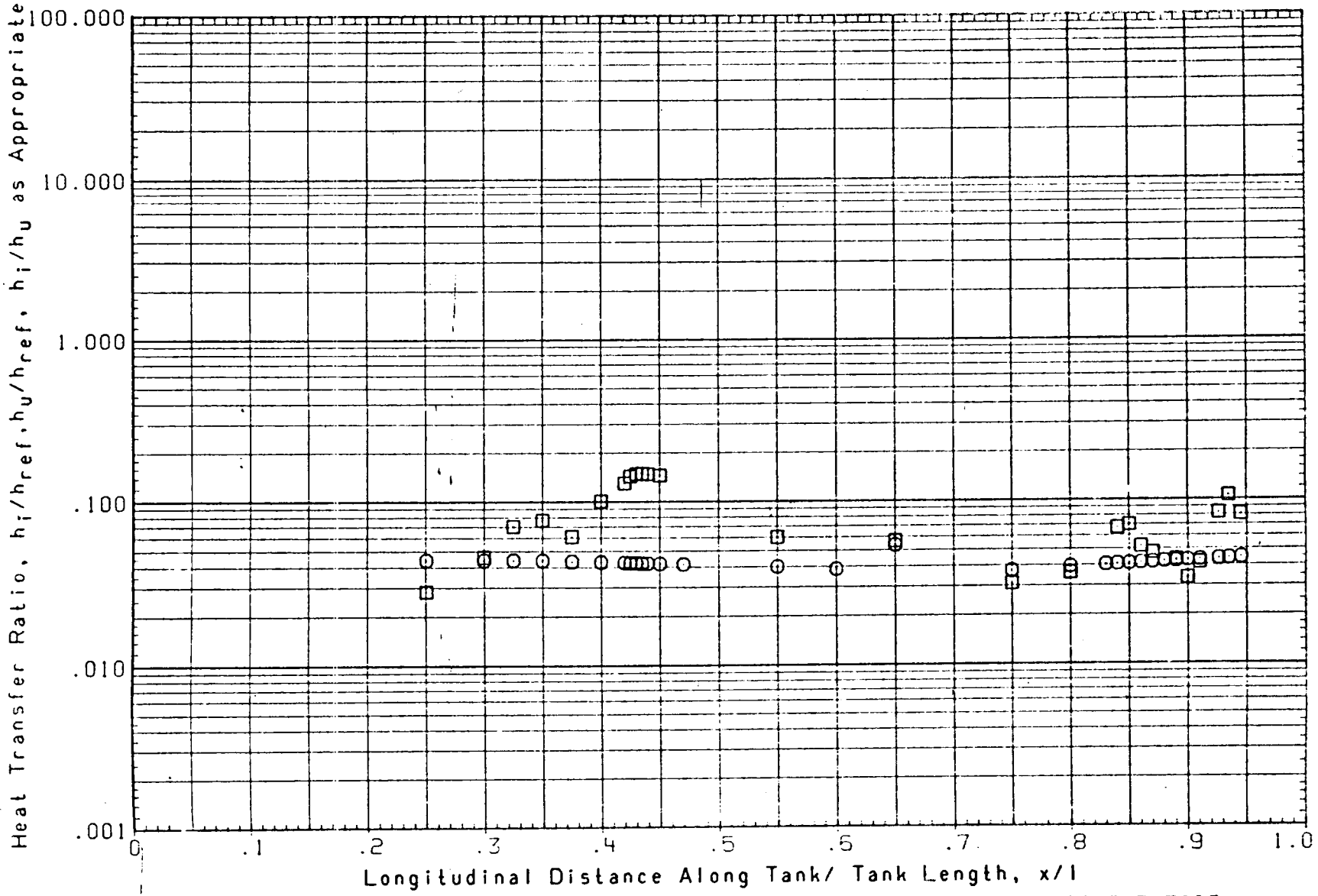


FIG. 12 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = -6

MACH = 4.020 ALPHA = .010 PHI = 45.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT04)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-6.000
(LVFT24)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-6.000
(CVFT24)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-6.000

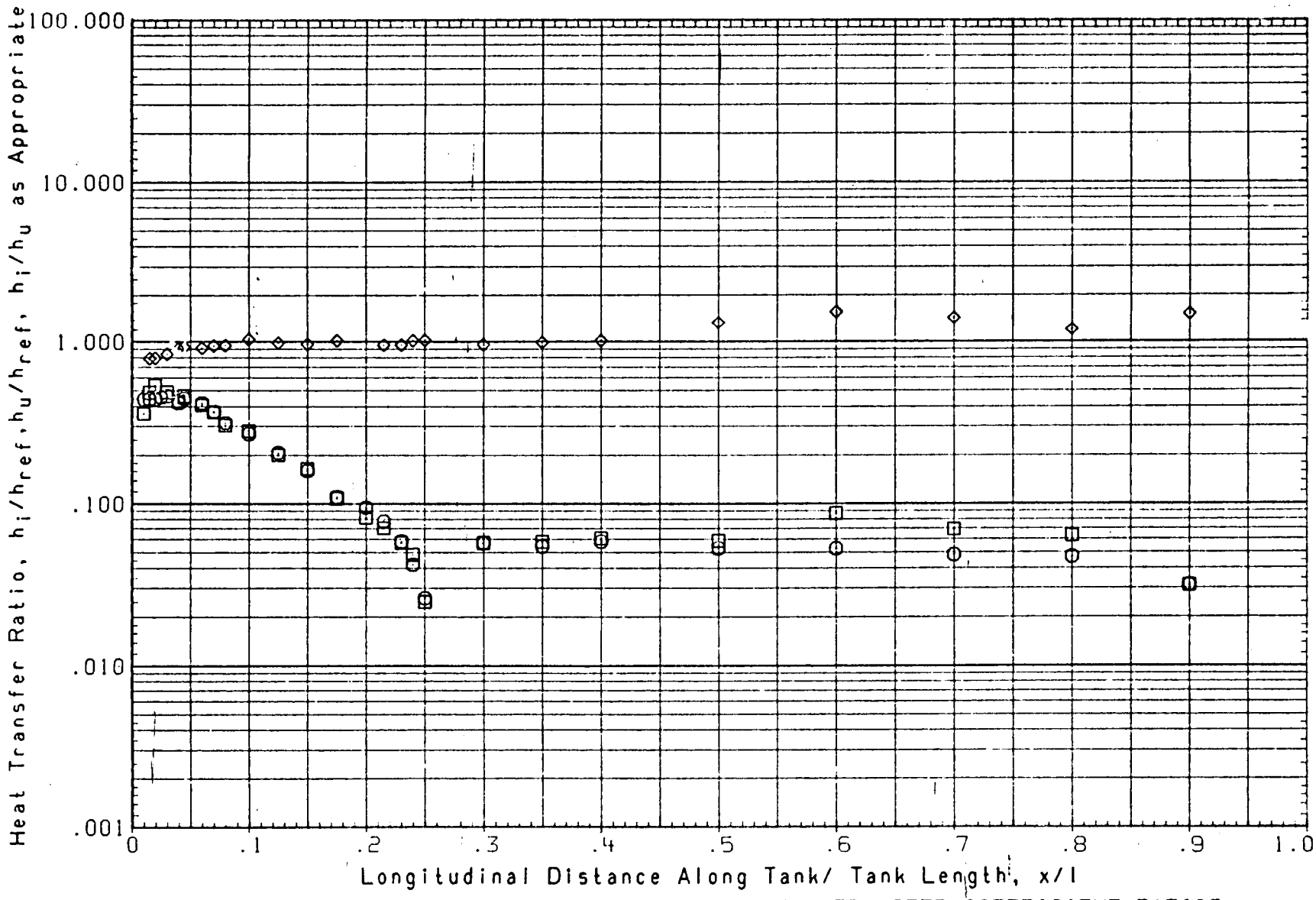


FIG. 12 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = -6

MACH = 4.020 ALPHA = .010 PHI = 180.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT05)	○	!H41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-9.000
(LVFT25)	□	!H41B(V41A-A4A) O " S (SPIKED ET DATA) HI/HREF	.000	-9.000
(BVFT25)	◇	!H41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-9.000

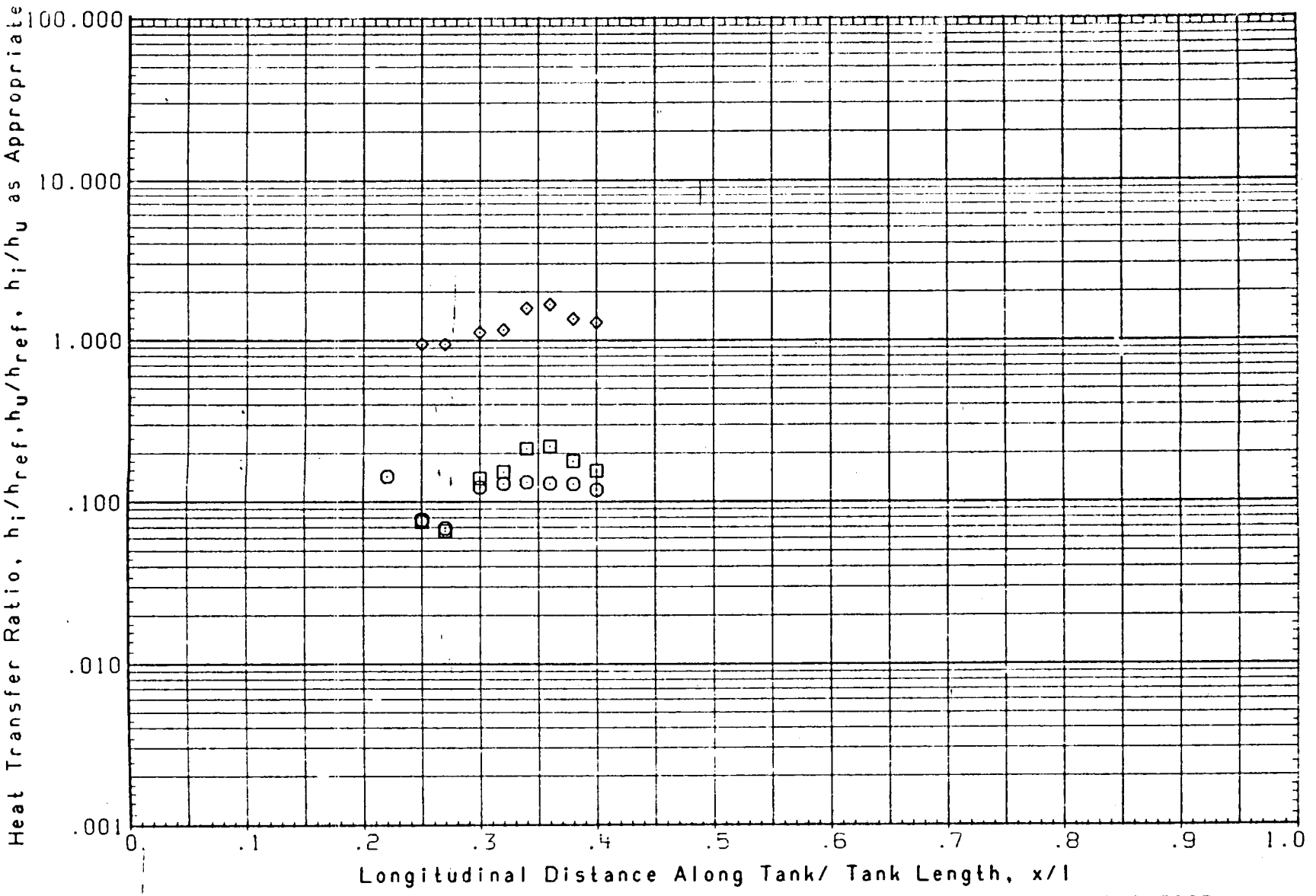


FIG. 13 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -9

MACH = 3.010 ALPHA = .000 PHI = 235.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT05)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-9.000
(LVFT25)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-9.000
(BVFT25)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-9.000

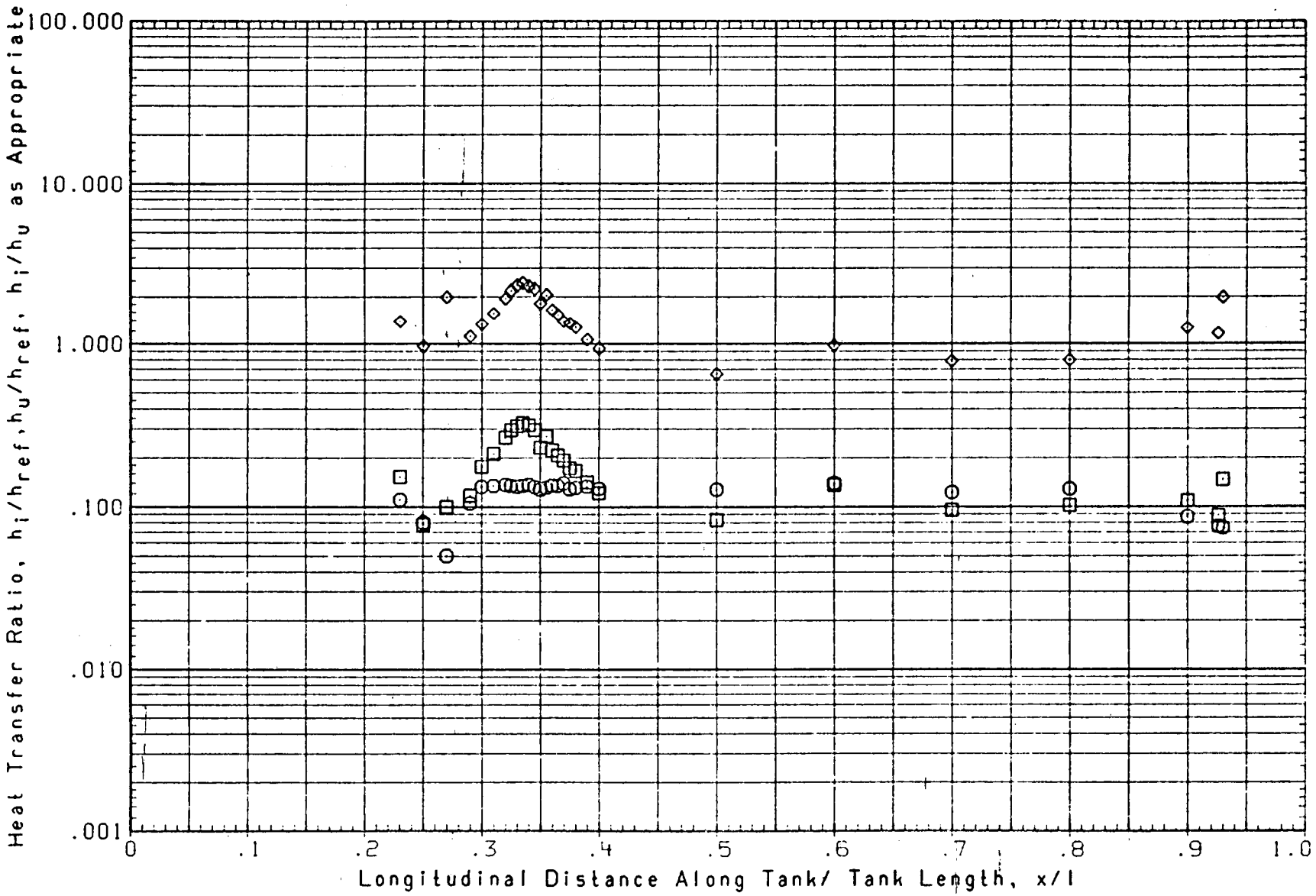


FIG. 13 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -9

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT05)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-9.000
(LVFT25)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-9.000
(BVFT25)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-9.000

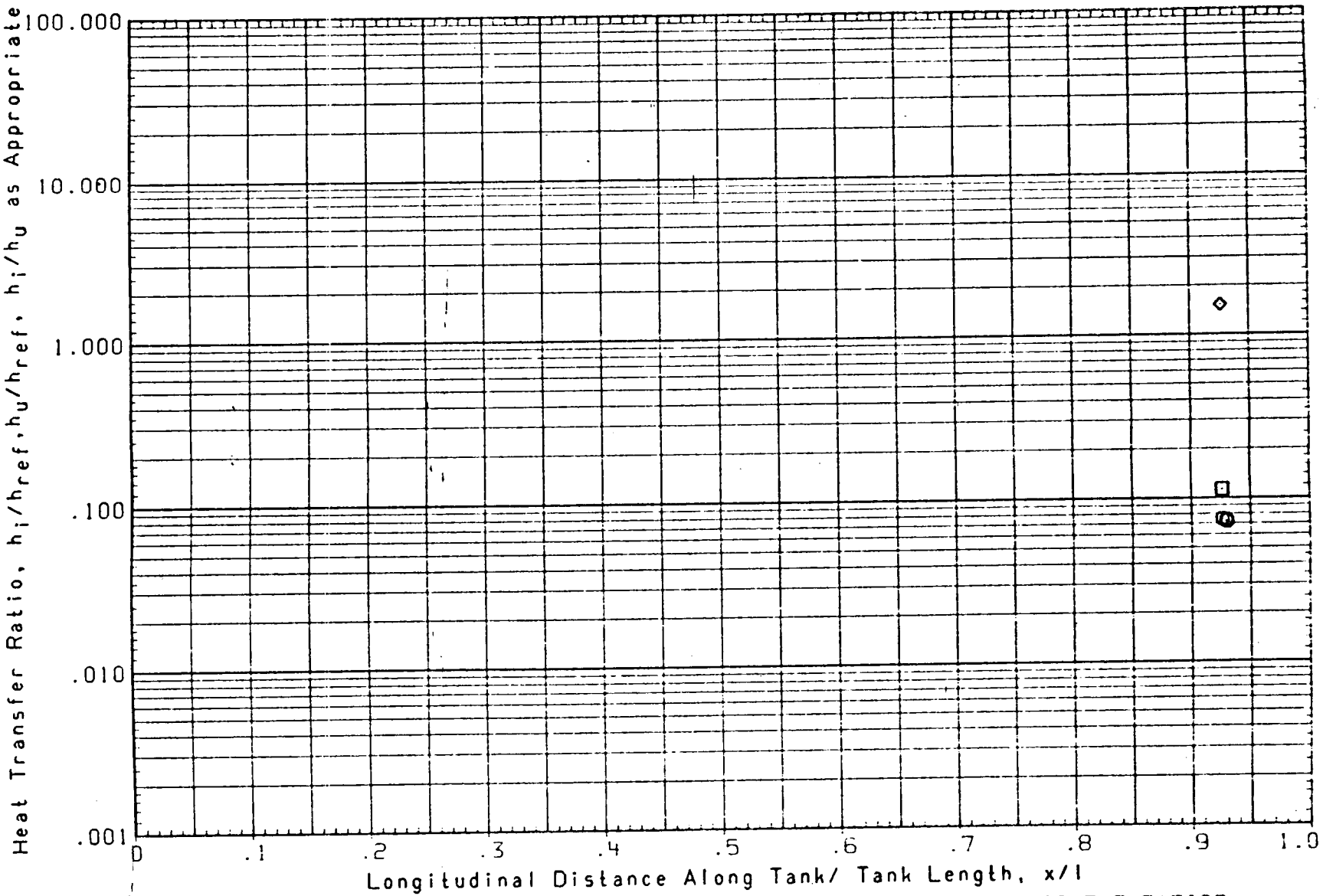


FIG. 13 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -9

MACH = 3.010 ALPHA = .000 PHI = 250.570

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT05)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-9.000
(LVFT25)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-9.000
(BVFT25)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-9.000

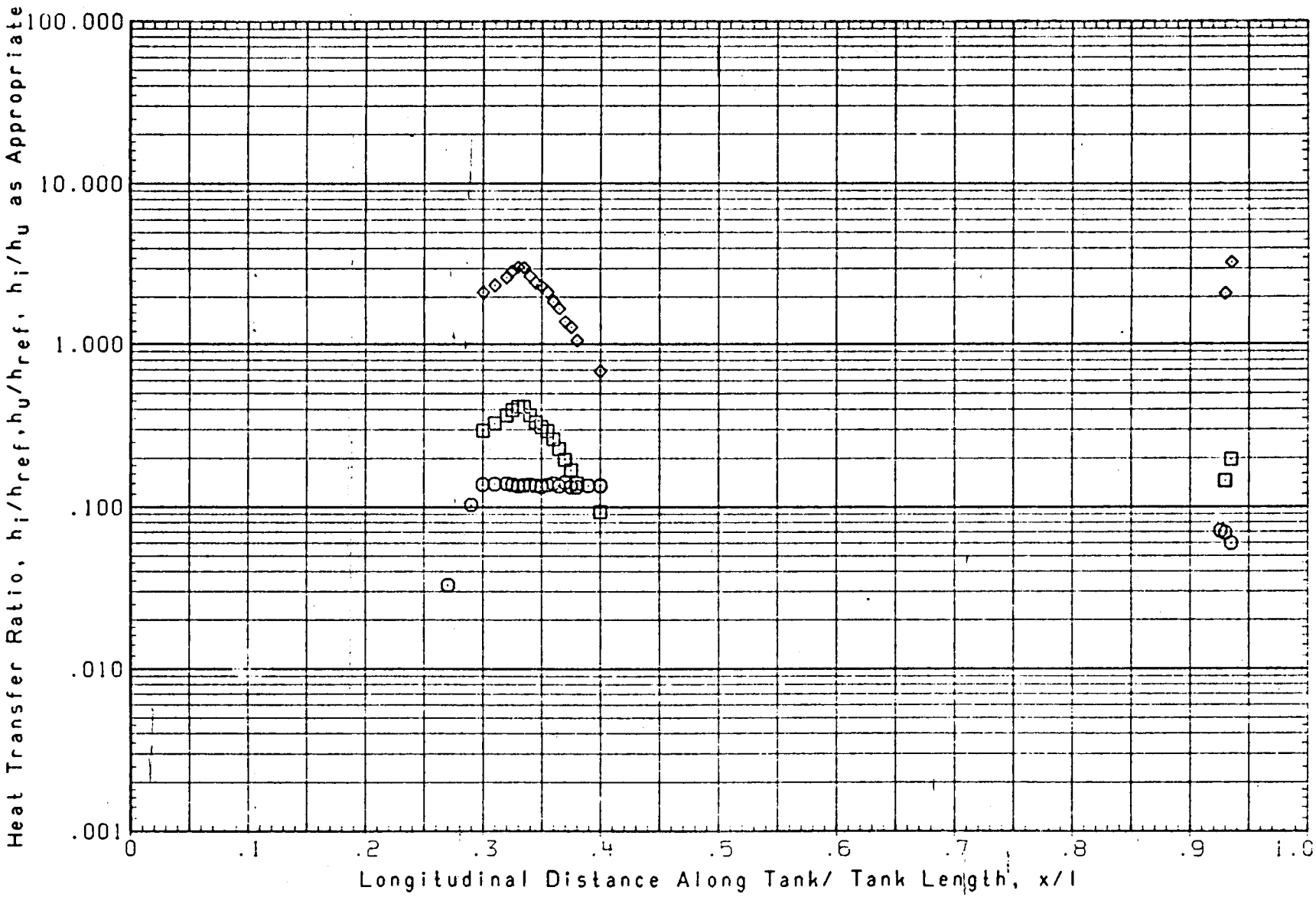


FIG. 13 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -9

MACH = 3.010 ALPHA = .000 PHI = 258.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT05)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-9.000
(LVFT25)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-9.000
(BVFT25)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-9.000

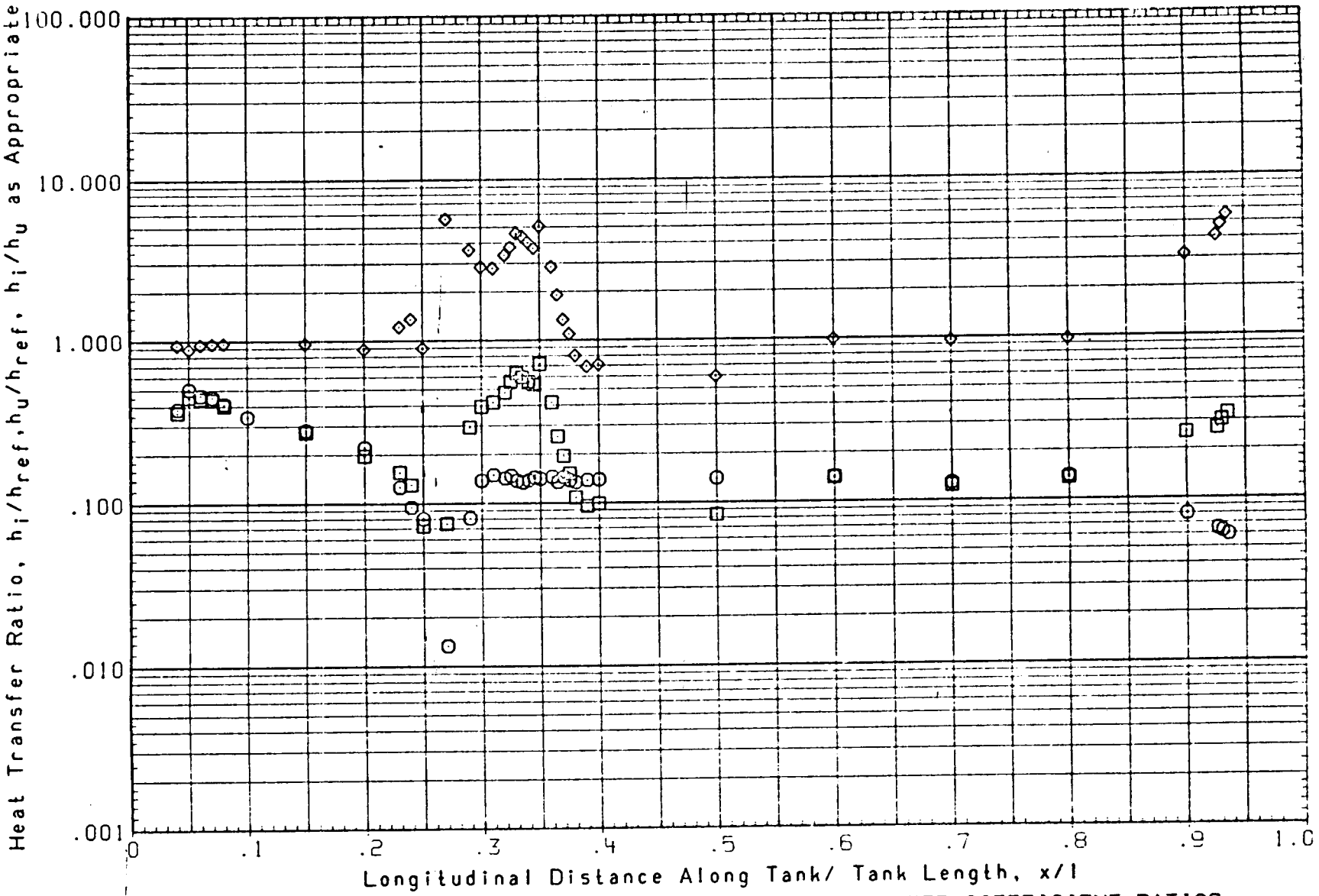


FIG. 13 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -9

MACH = 3.010 ALPHA = .000 PHI = 270.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT05)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-9.000
(LVFT25)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-9.000
(BVFT25)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-9.000

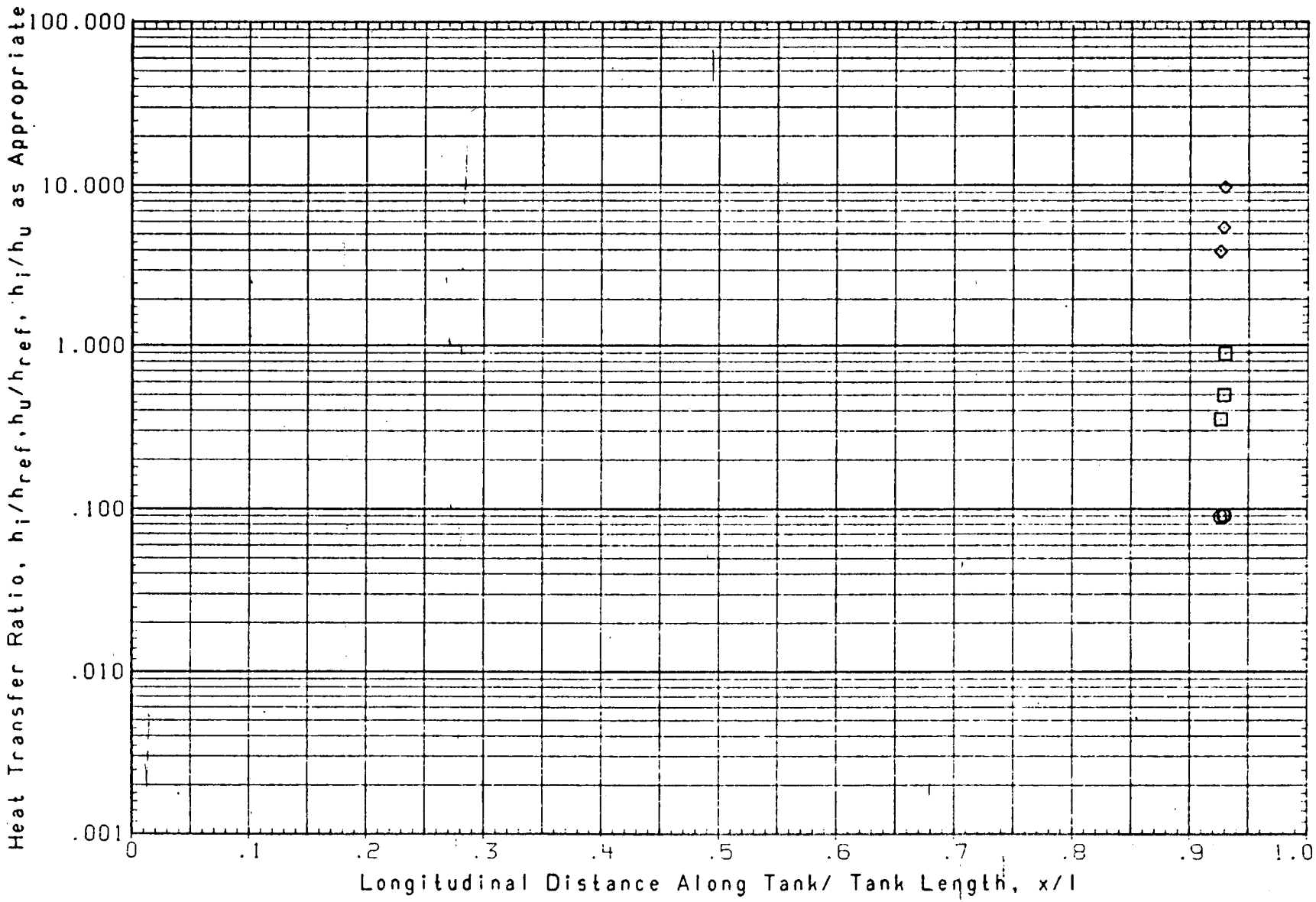


FIG. 13 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -9

MACH = 3.010 ALPHA = .000 PHI = 289.430

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT05)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-9.000
(LVFT25)	□	IH41B(V41A-A4A) C T S (SPIKED ET DATA) HI/HREF	.000	-9.000
(BVFT25)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-9.000

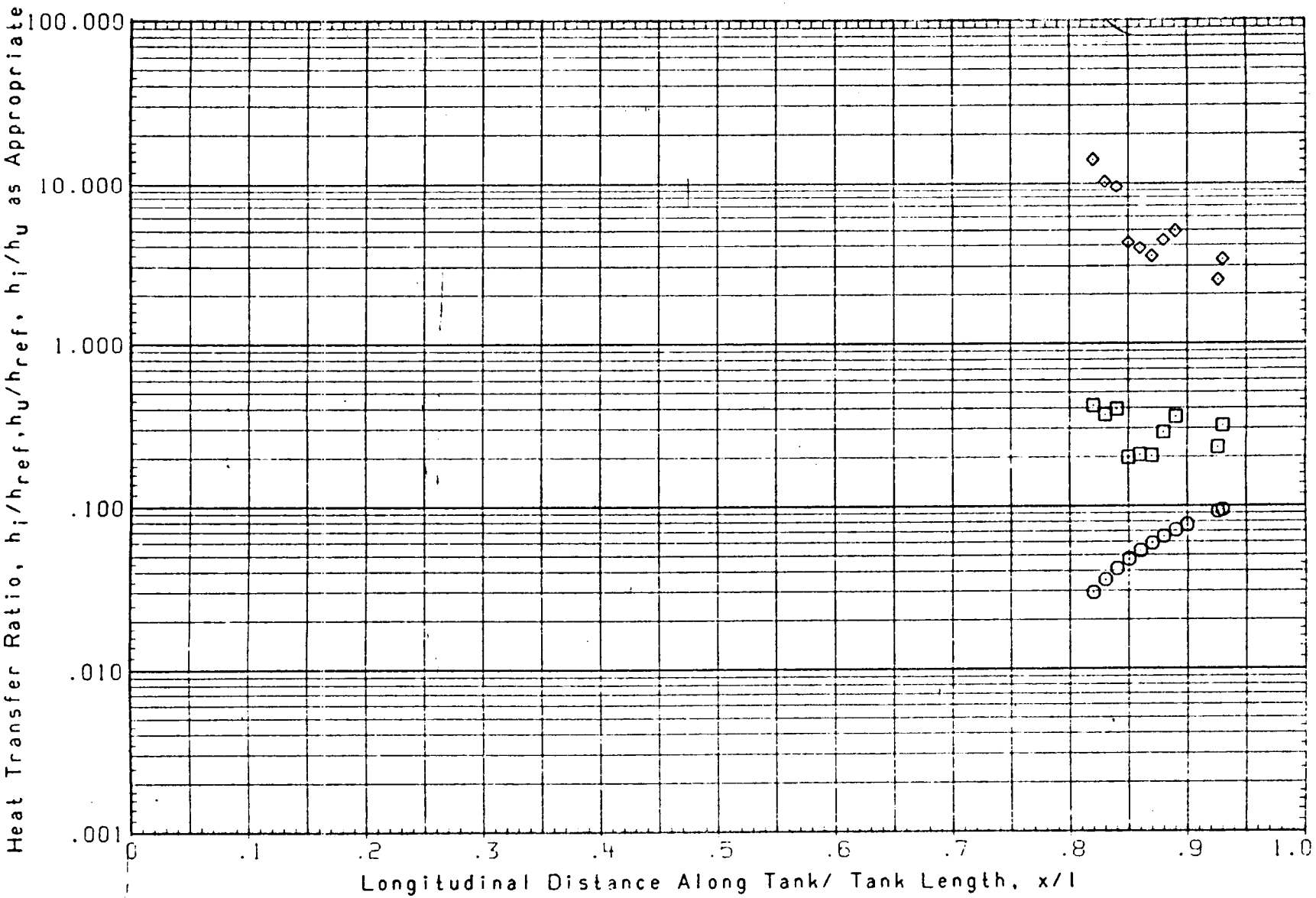


FIG. 13 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -9

MACH = 3.010 ALPHA = .000 PHI = 292.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT05)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-9.000
(LVFT25)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-9.000
(BVFT25)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-9.000

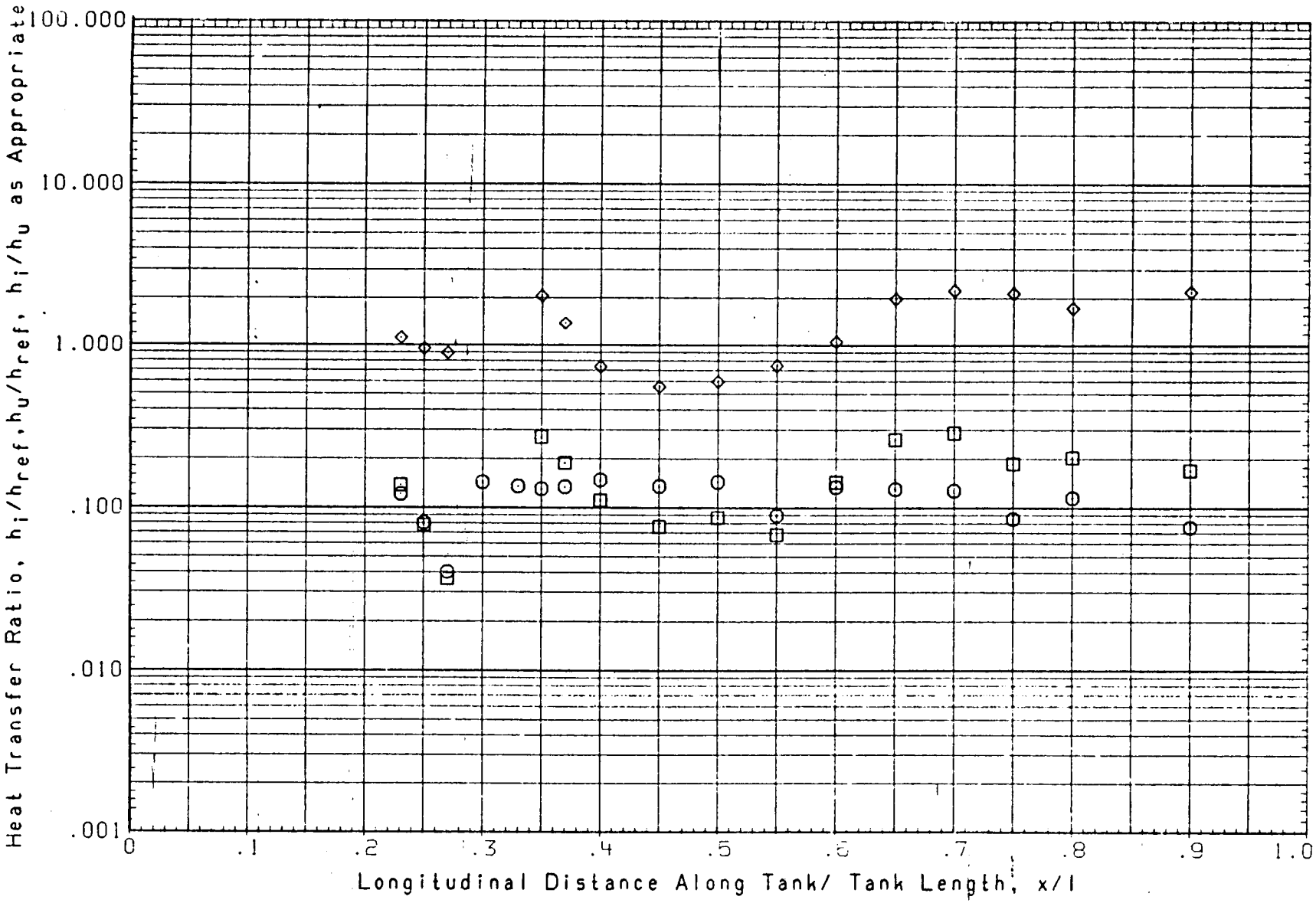


FIG. 13 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -9

MACH = 3.010 ALPHA = .000 PHI = 292.500

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(RVFT05)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-9.000
(LVFT25)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-9.000
(BVFT25)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-9.000

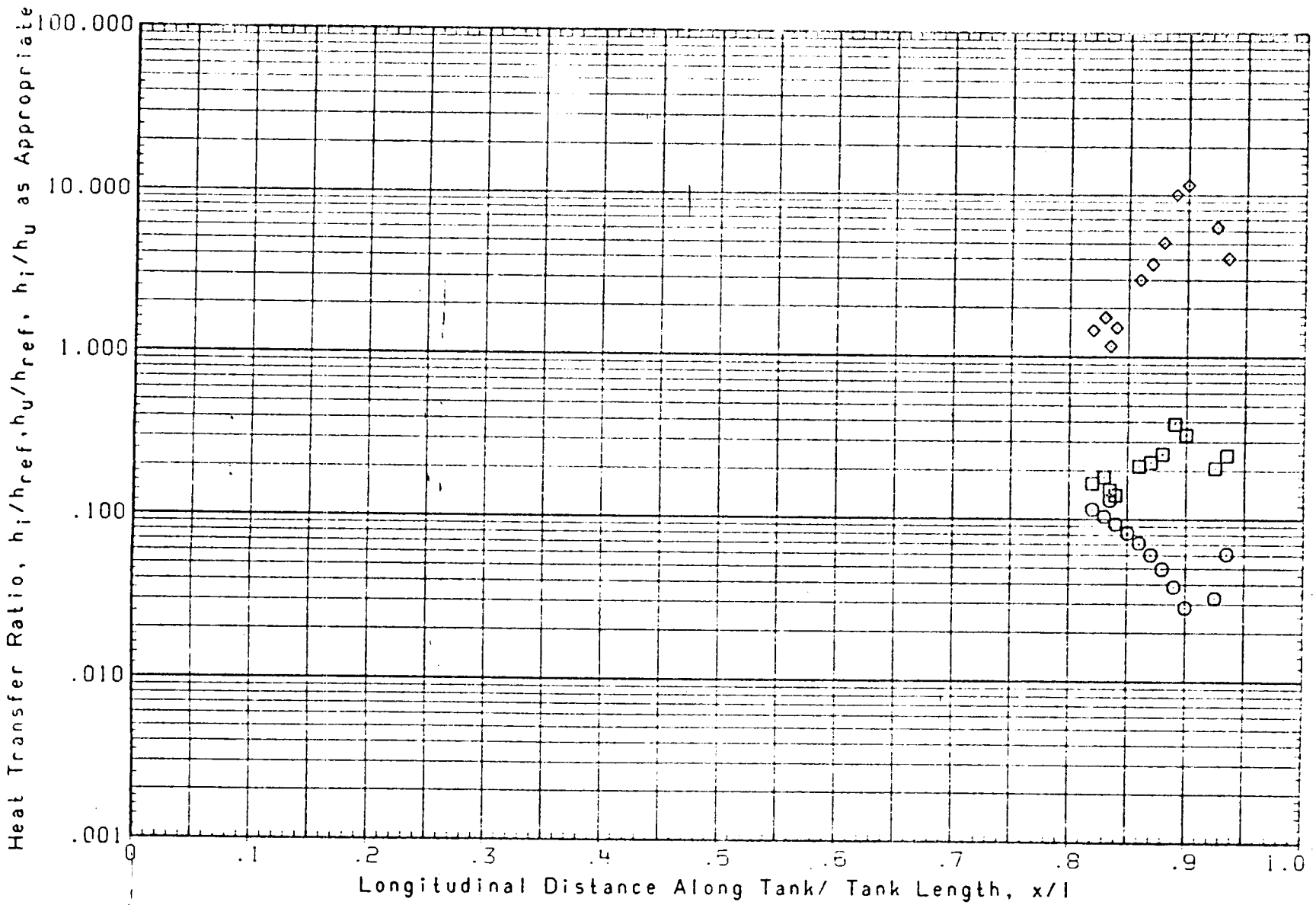


FIG. 13 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -9

MACH = 3.010 ALPHA = .000 PHI = 301.500

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT05)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-9.000
(LVFT25)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-9.000
(BVFT25)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-9.000

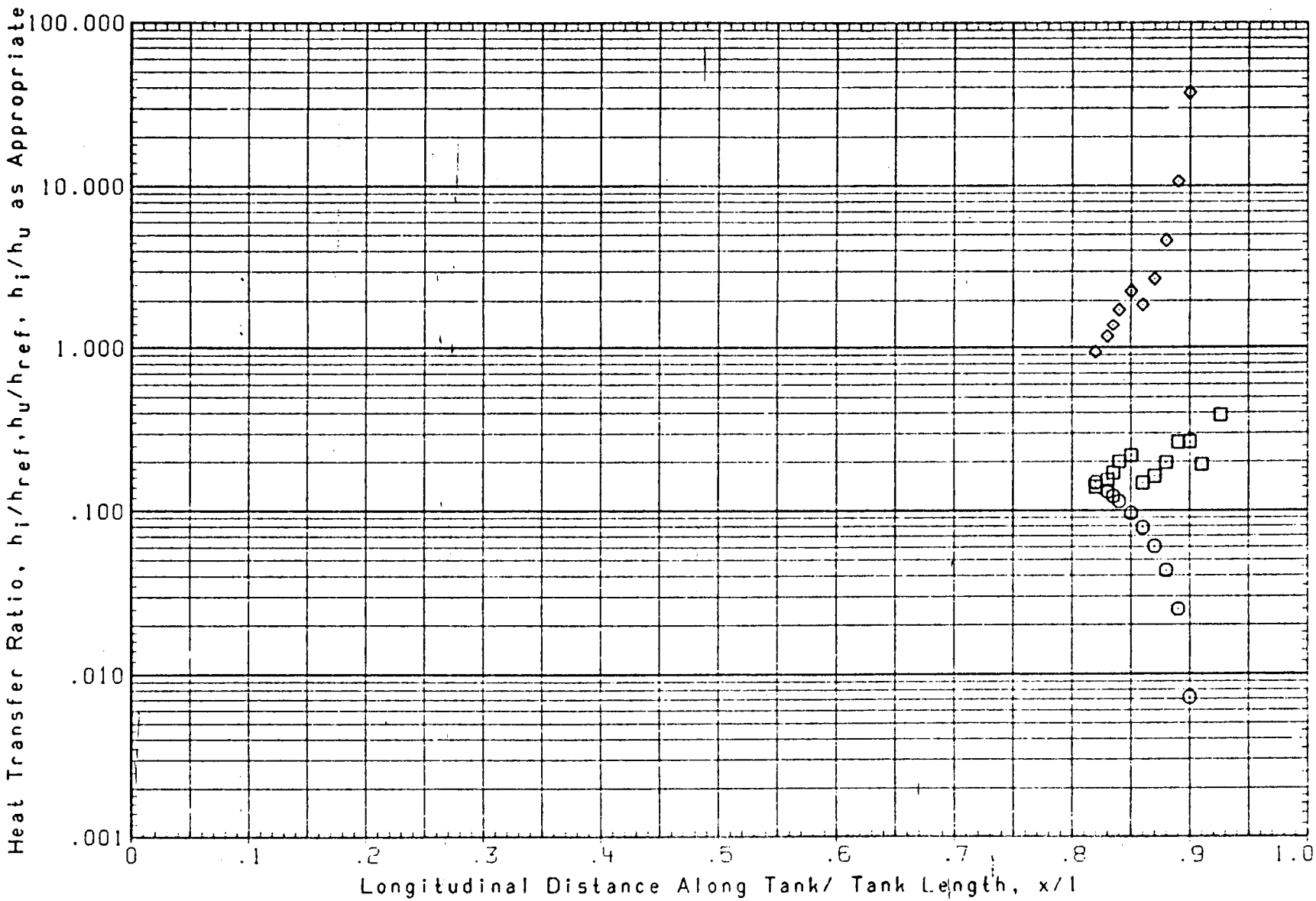


FIG. 13 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -9

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		BETA
(KVFT05)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-9.000
(LVFT25)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-9.000
(BVFT25)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-9.000

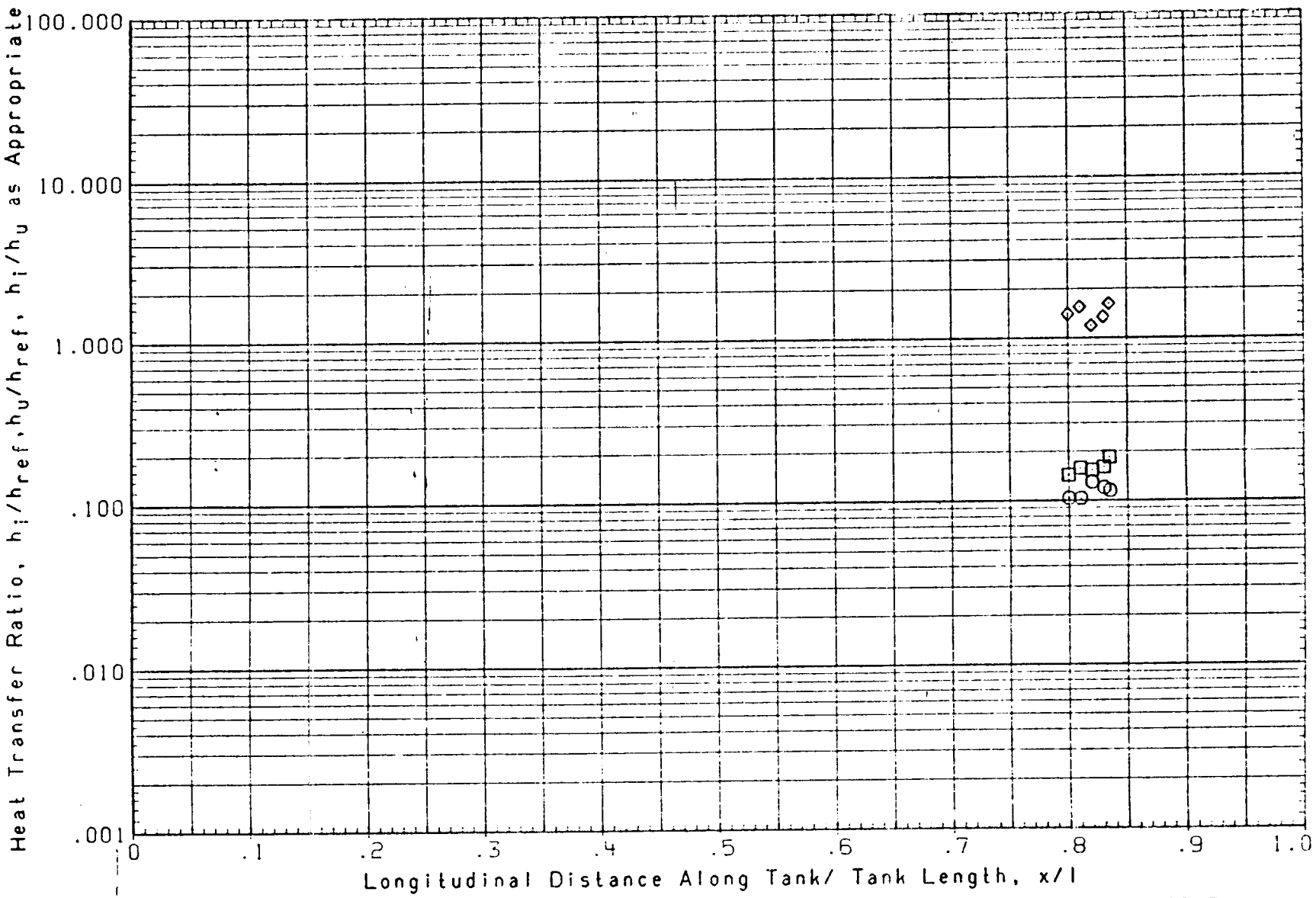


FIG. 13 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -9

MACH = 3.010 ALPHA = .000 PHI = 309.300

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT05)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-9.000
(LVFT25)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-9.000
(BVFT25)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-9.000

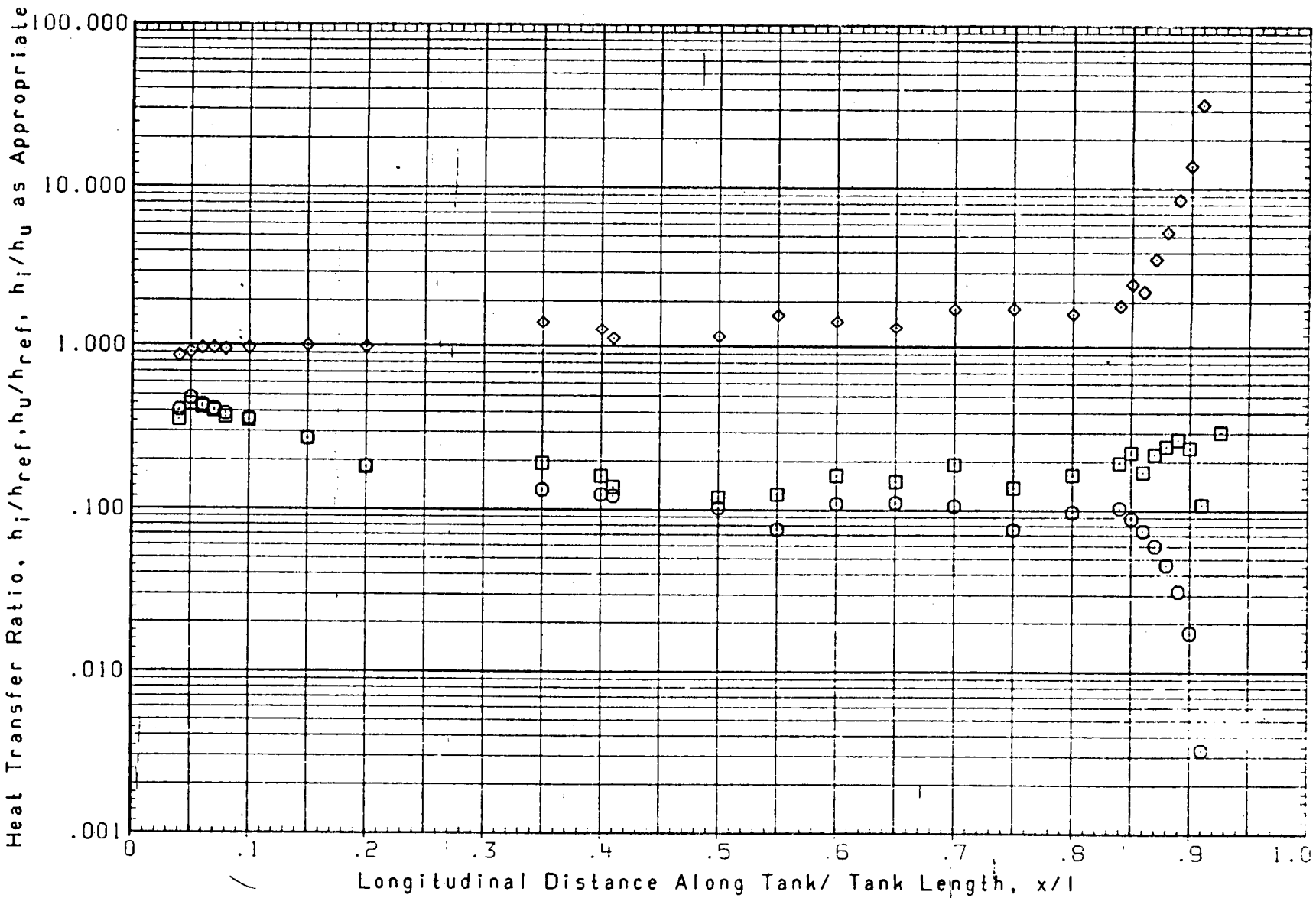


FIG. 13 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -9

MACH = 3.010 ALPHA = .000 PHI = 315.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT05)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-9.000
(LVFT25)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-9.000
(BVFT25)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-9.000

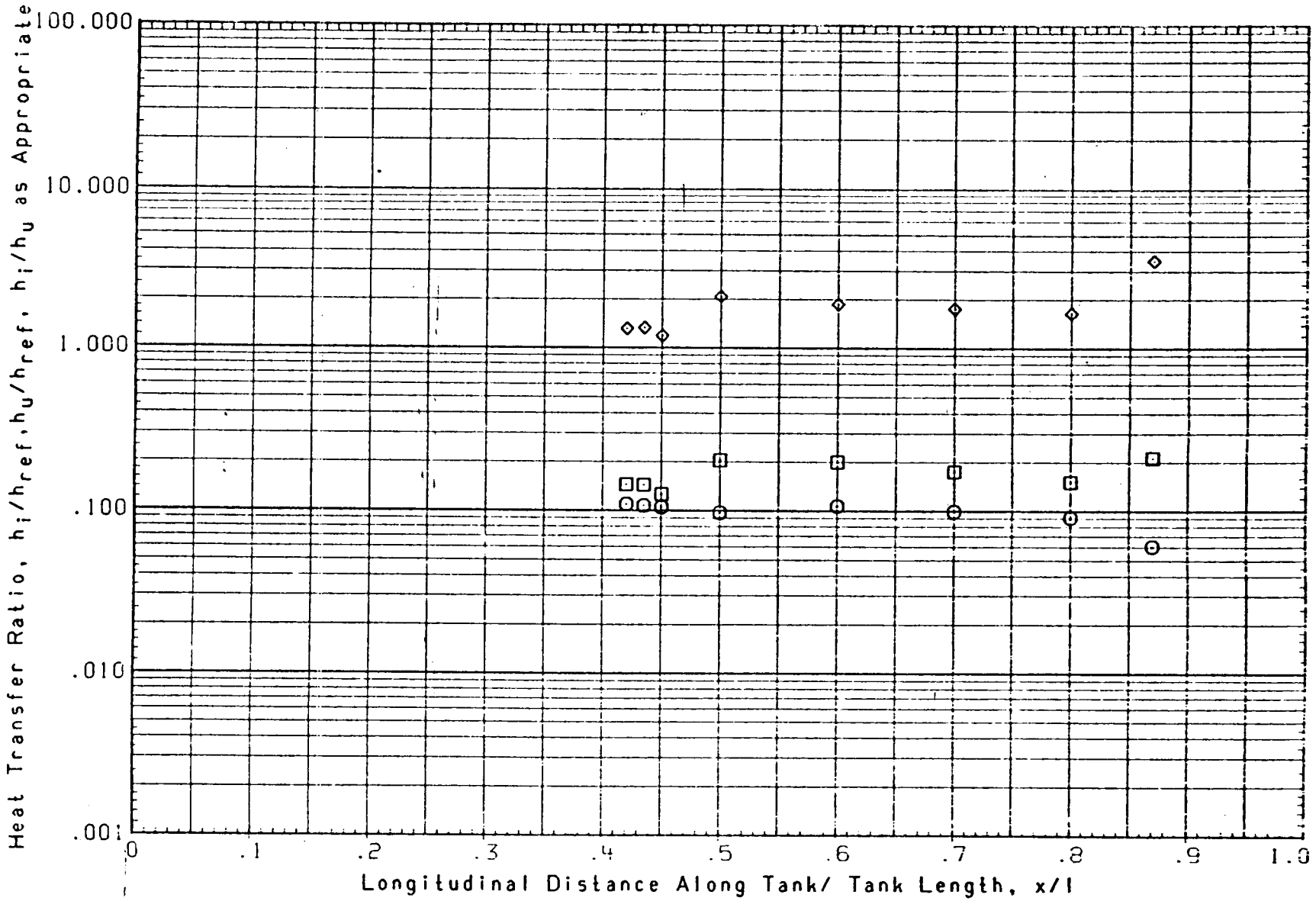


FIG. 13 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -9

MACH = 3.010 ALPHA = .000 PHI = 322.300

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT05)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-9.000
(LVFT25)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-9.000
(BVFT25)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-9.000

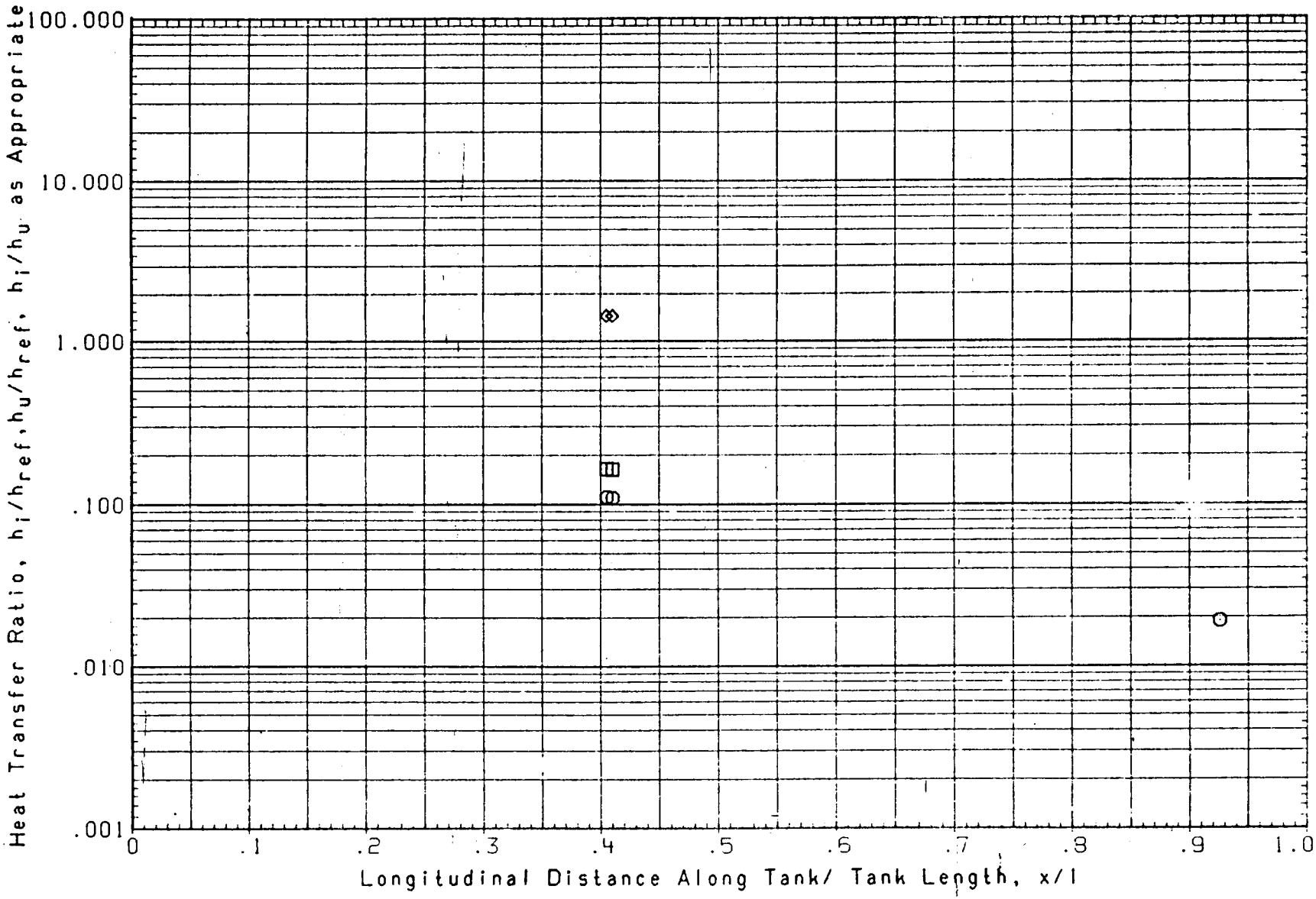


FIG. 13 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -9

MACH = 3.010 ALPHA = .000 PHI = 324.450

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT05)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-9.000
(LVFT25)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-9.000
(BVFT25)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-9.000

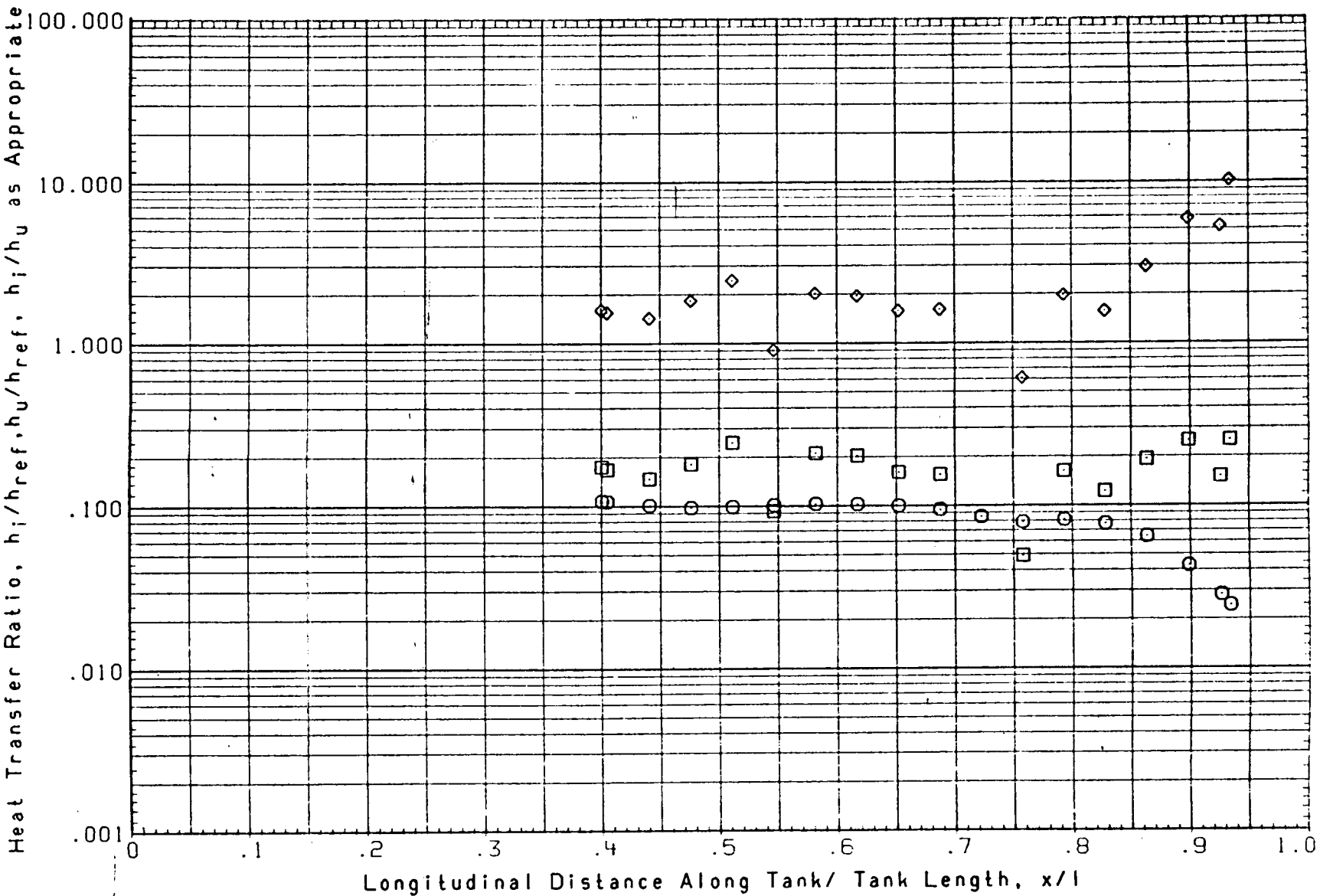


FIG. 13 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -9

MACH = 3.010 ALPHA = .000 PHI = 326.850

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT05)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-9.000
(LVFT25)	□	IH41B(V41A-A4A) O'T S (SPIKED ET DATA) HI/HREF	.000	-9.000
(BVFT25)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-9.000

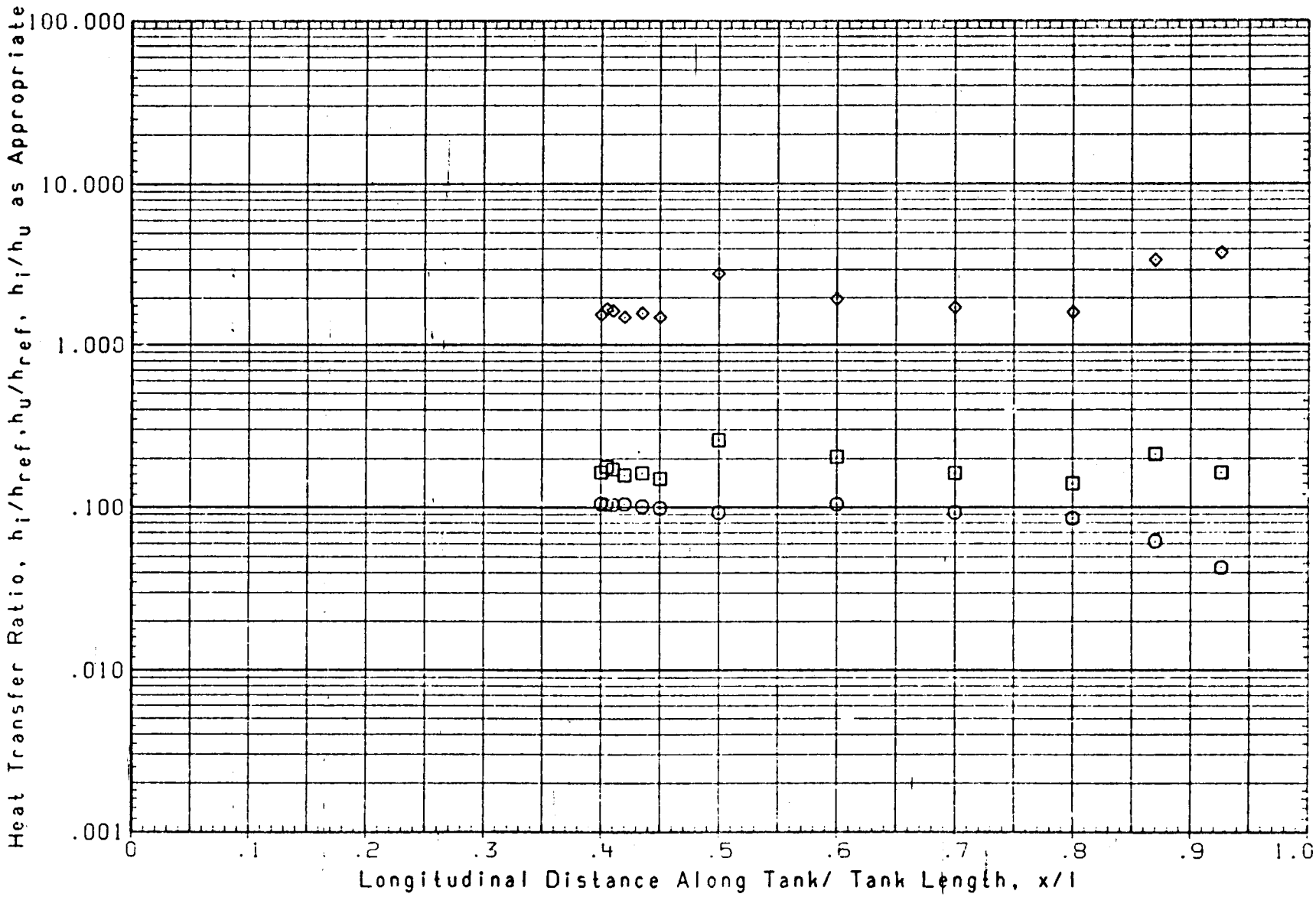


FIG. 13 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -9

MACH = 3.010 ALPHA = .000 PHI = 330.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT05)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-9.000
(LVFT25)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-9.000
(BVFT25)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-9.000

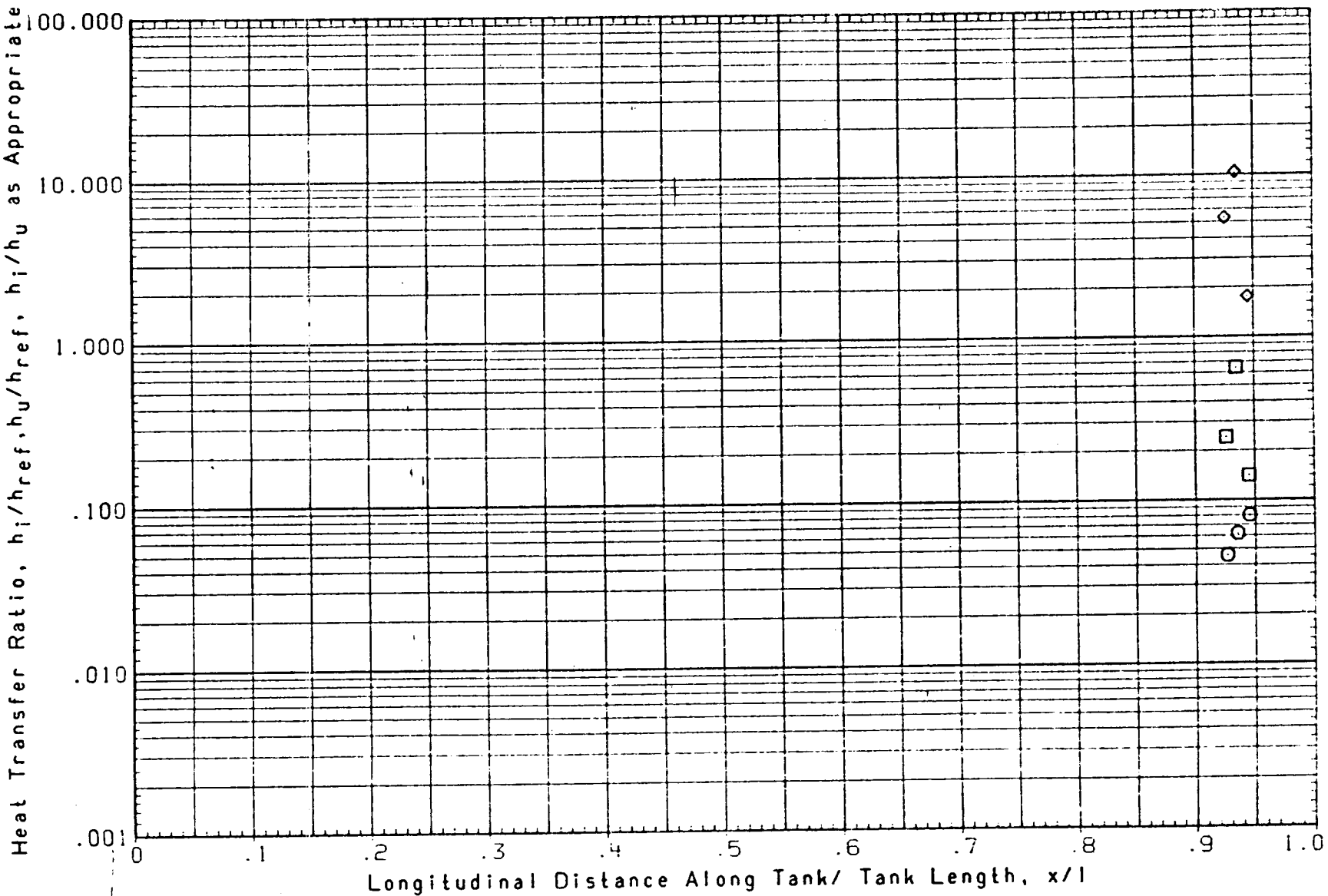


FIG. 13 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -9

MACH = 3.010 ALPHA = .000 PHI = 334.930

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT05)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-9.000
(LVFT25)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-9.000
(BVFT25)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-9.000

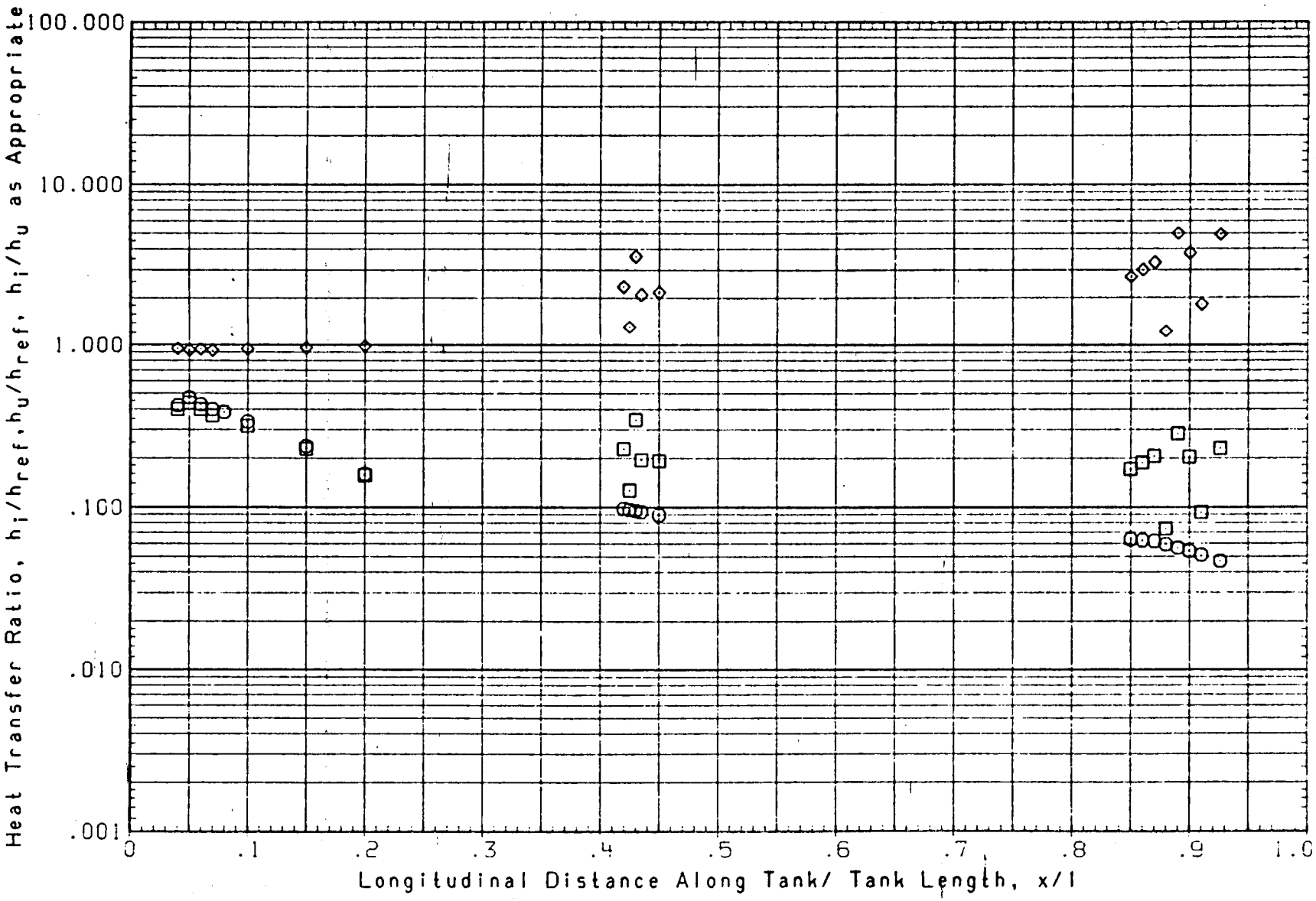


FIG. 13 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -9

MACH = 3.010 ALPHA = .000 PHI = 337.500

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT05)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-9.000
(LVFT25)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-9.000
(BVFT25)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-9.000

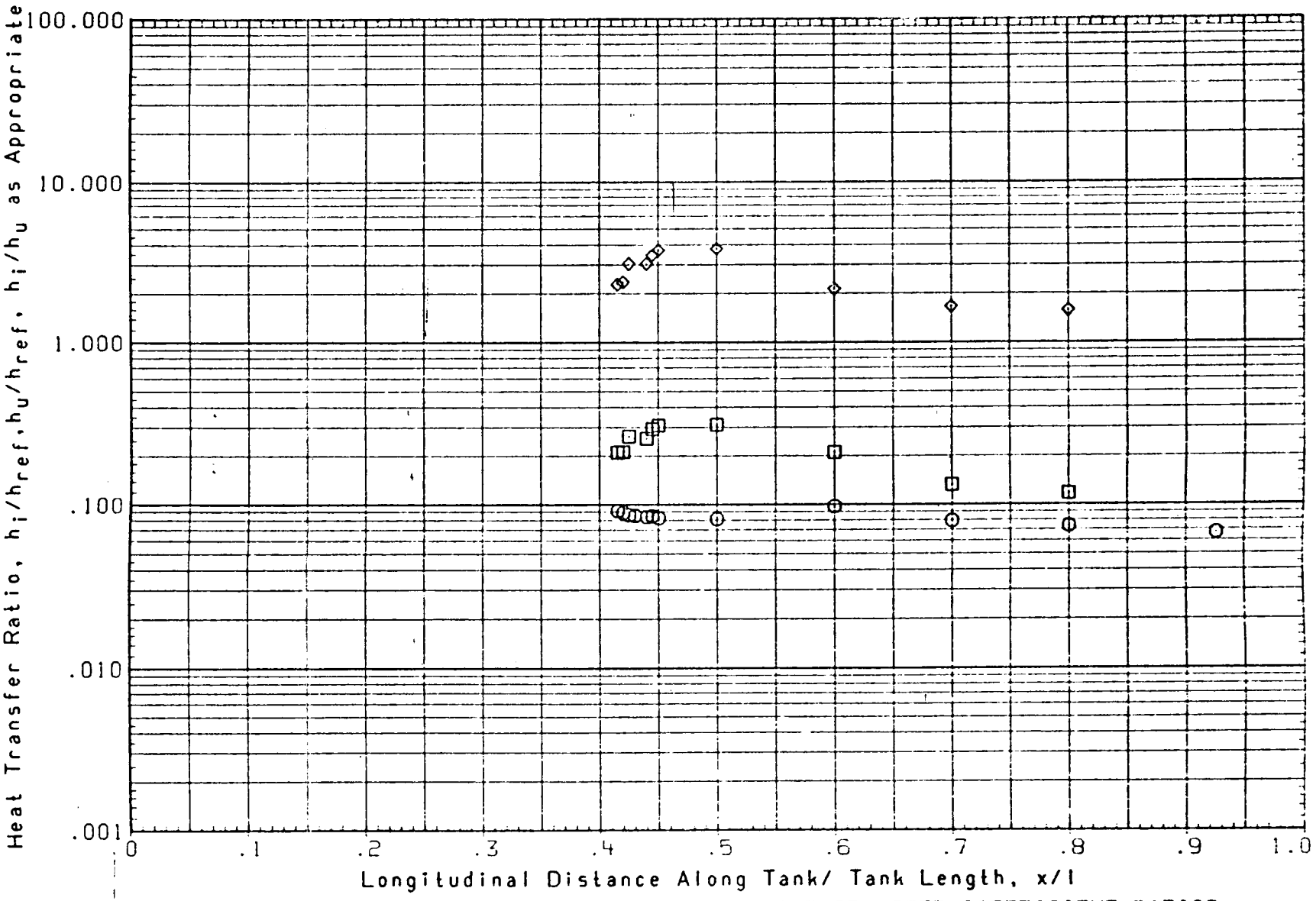


FIG. 13 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -9

MACH = 3.010 ALPHA = .000 PHI = 343.120

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT05)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-9.000
(LVFT25)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-9.000
(BVFT25)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-9.000

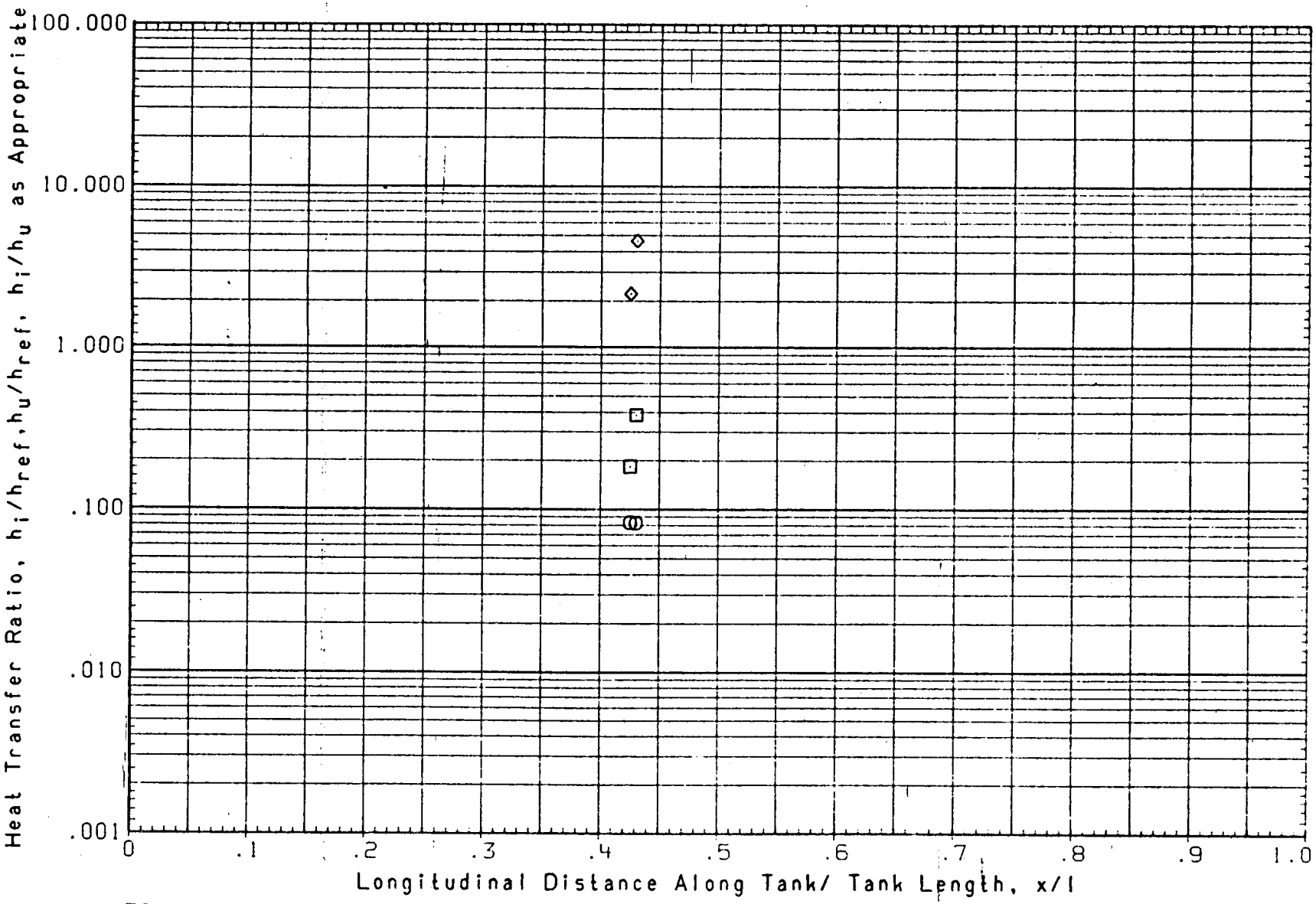


FIG. 13 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -9

MACH = 3.010 ALPHA = .000 PHI = 345.560

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT05)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-9.000
(LVFT25)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-9.000
(BVFT25)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-9.000

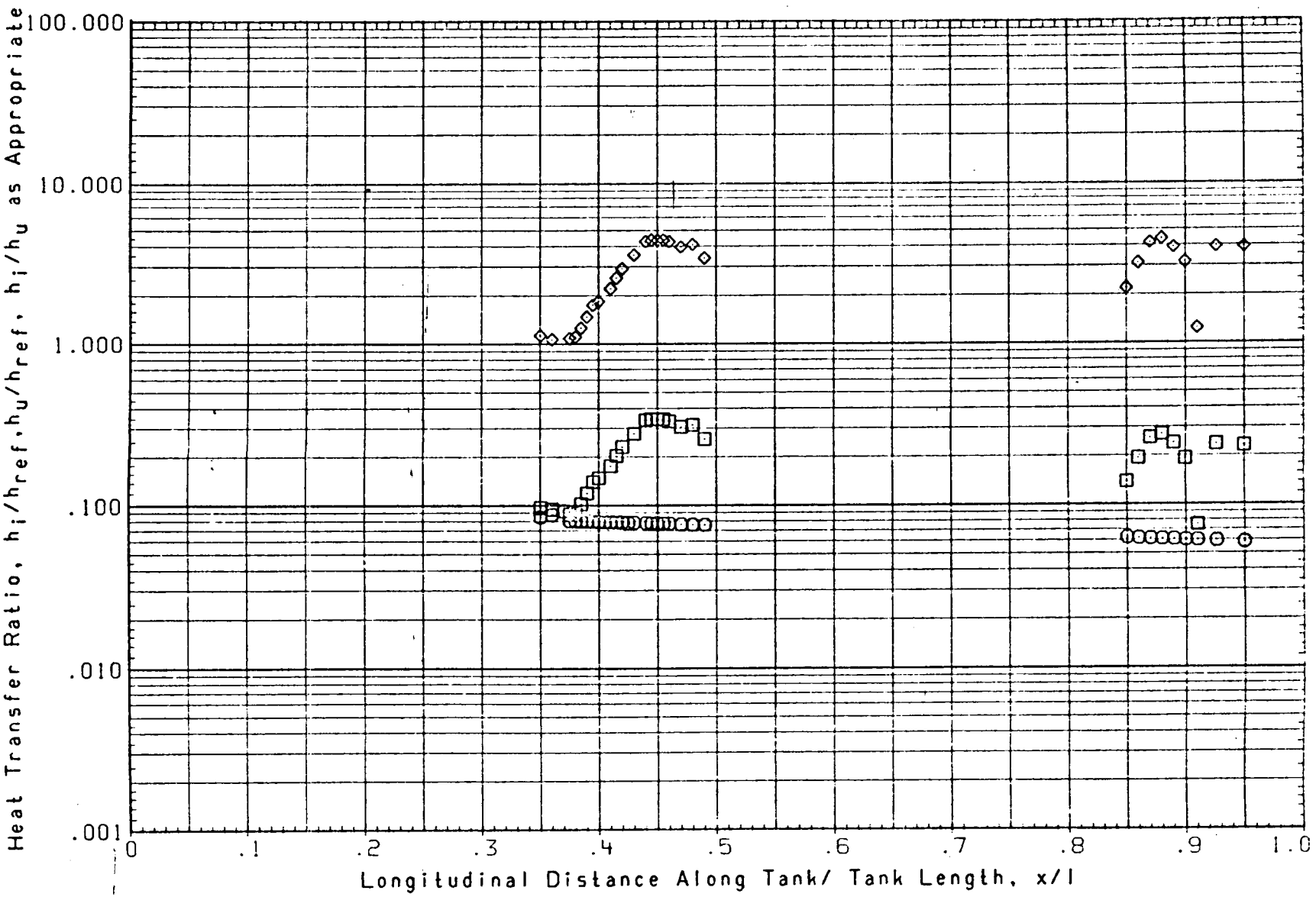


FIG. 13 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -9

MACH = 3.010 ALPHA = .000 PHI = 348.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT05)	○	(H41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-9.000
(LVFT25)	□	DATA NOT AVAILABLE	.000	-9.000
(BVFT25)	◇	DATA NOT AVAILABLE	.000	-9.000

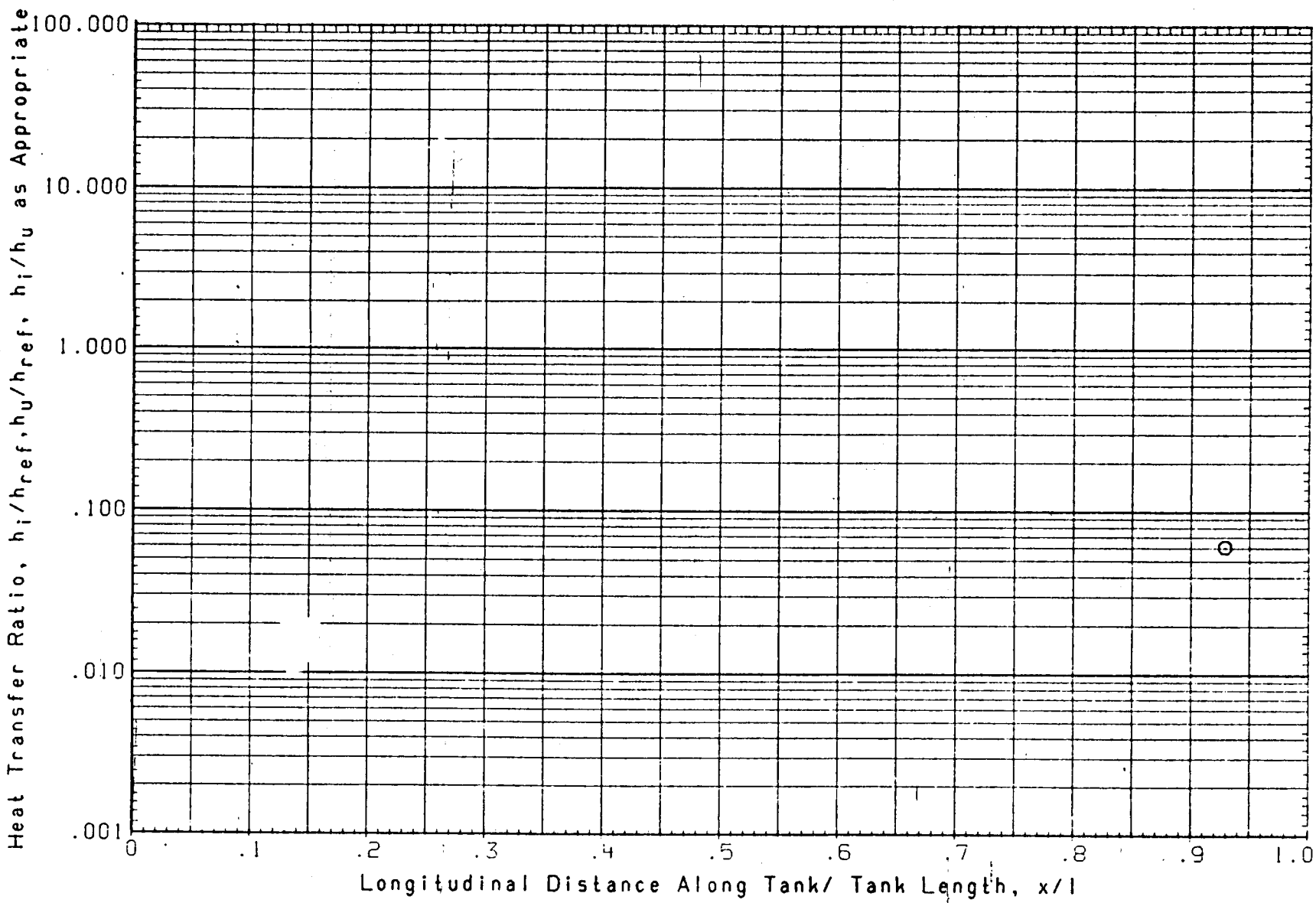


FIG. 13 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -9

MACH = 3.010 ALPHA = .000 PHI = 352.200

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT05)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-9.000
(LVFT25)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-9.000
(BVFT25)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-9.000

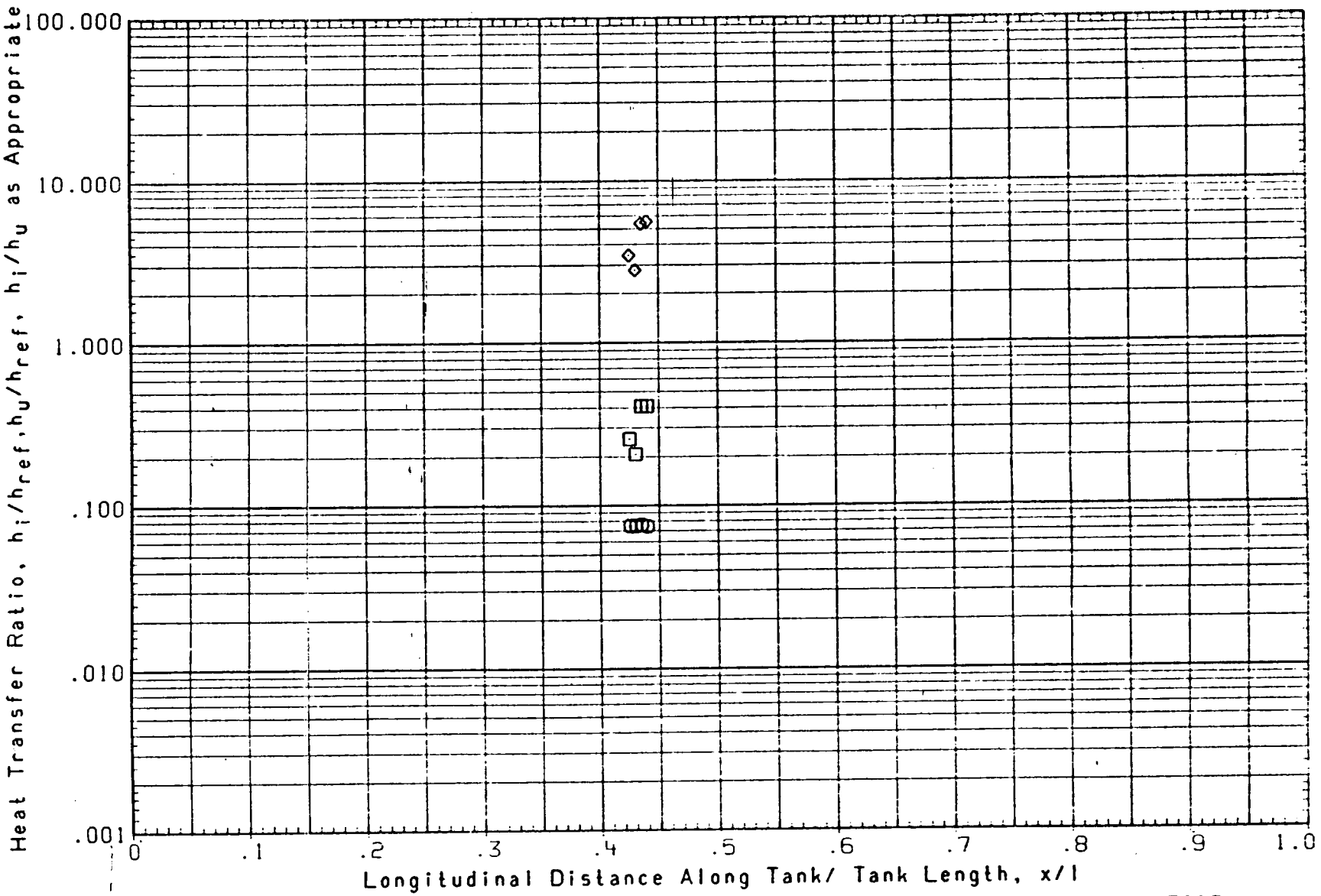


FIG. 13 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS WINDWARD SIDE, ALPHA = 0, BETA = -9

MACH = 3.010 ALPHA = .000 PHI = 354.000

DATA SET	SYMBOL.	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT05)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-9.000
(LVFT25)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-9.000
(BVFT25)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-9.000

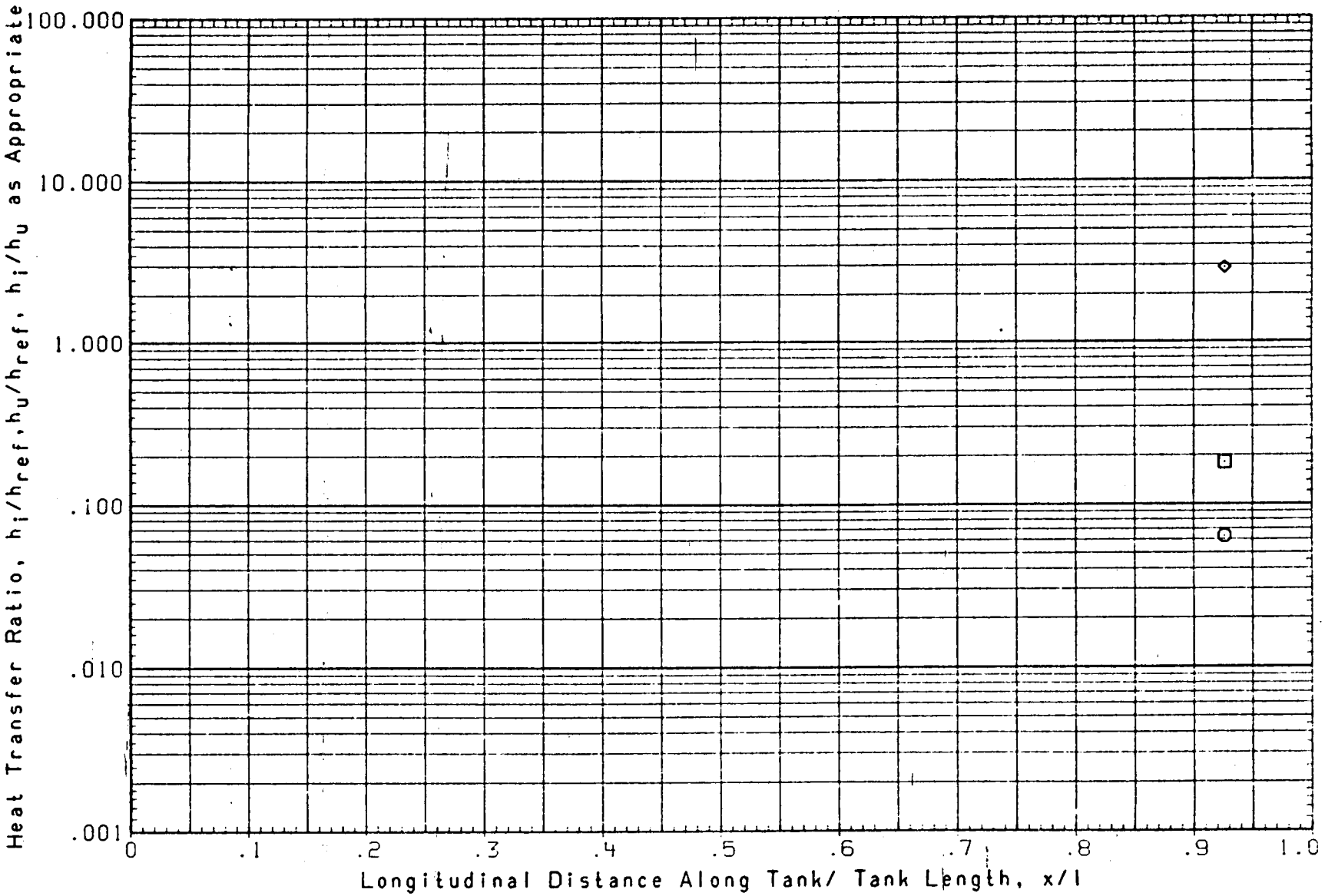


FIG. 13 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -9

MACH = 3.010 ALPHA = .000 PHI = 355.160

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT05)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-9.000
(LVFT25)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-9.000
(BVFT25)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-9.000

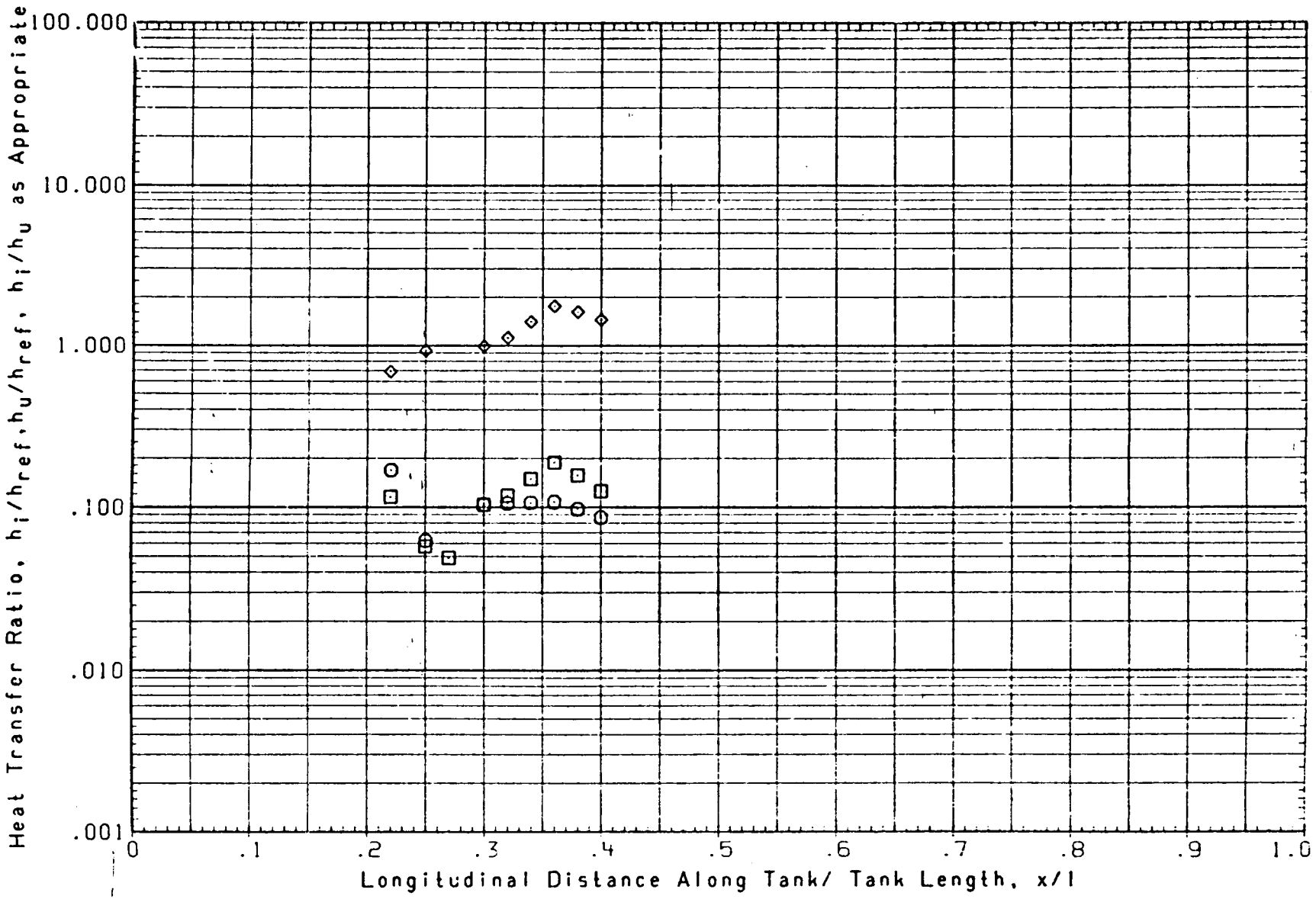


FIG. 13 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE ALPHA = 0, BETA = -9

MACH = 4.020 ALPHA = .010 PHI = 235.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT05)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-9.000
(LVFT25)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-9.000
(BVFT25)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-9.000

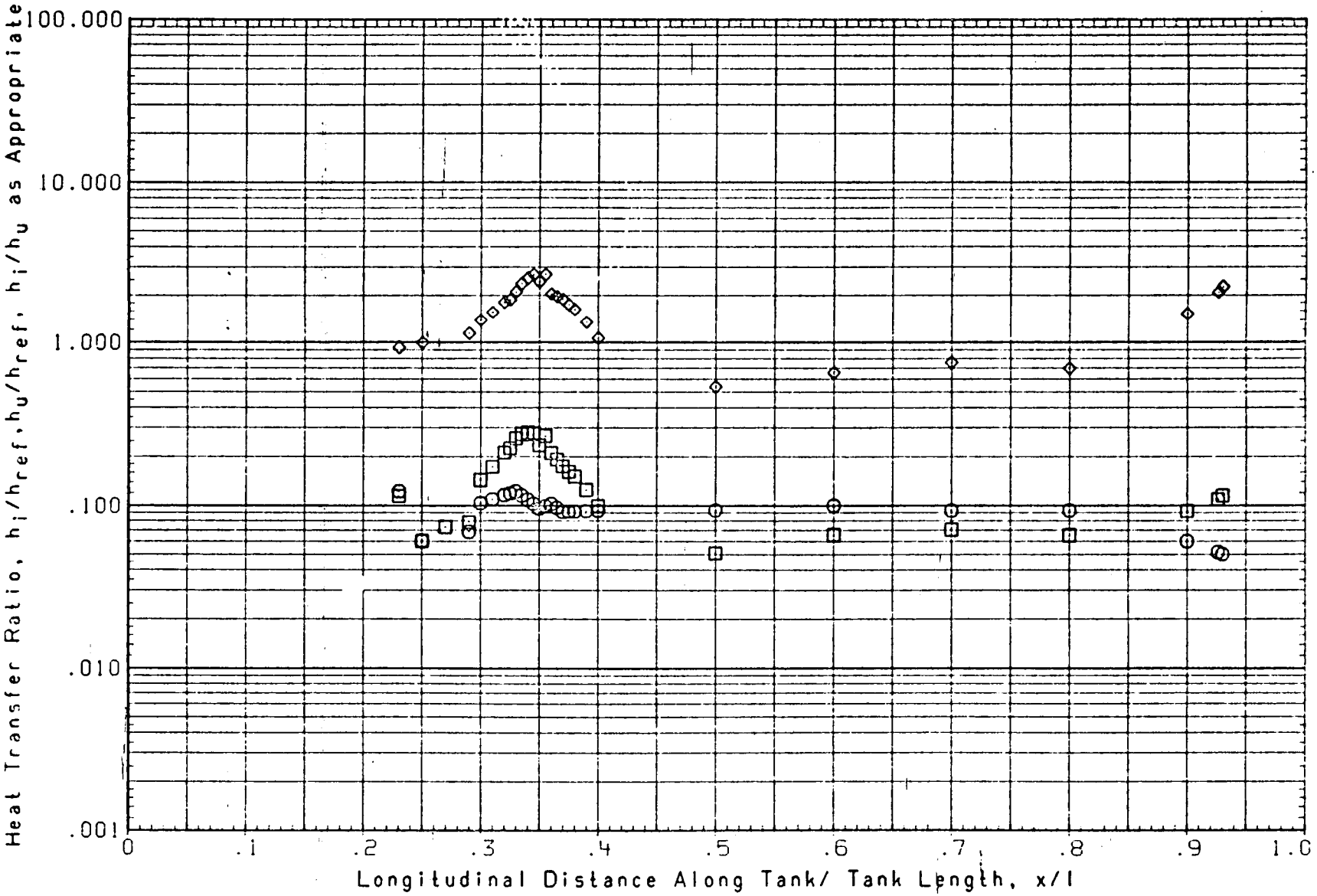


FIG. 13 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -9

MACH = 4.020 ALPHA = .010 PHI = 247.500

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT05)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-9.000
(LVFT25)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-9.000
(BVFT25)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-9.000

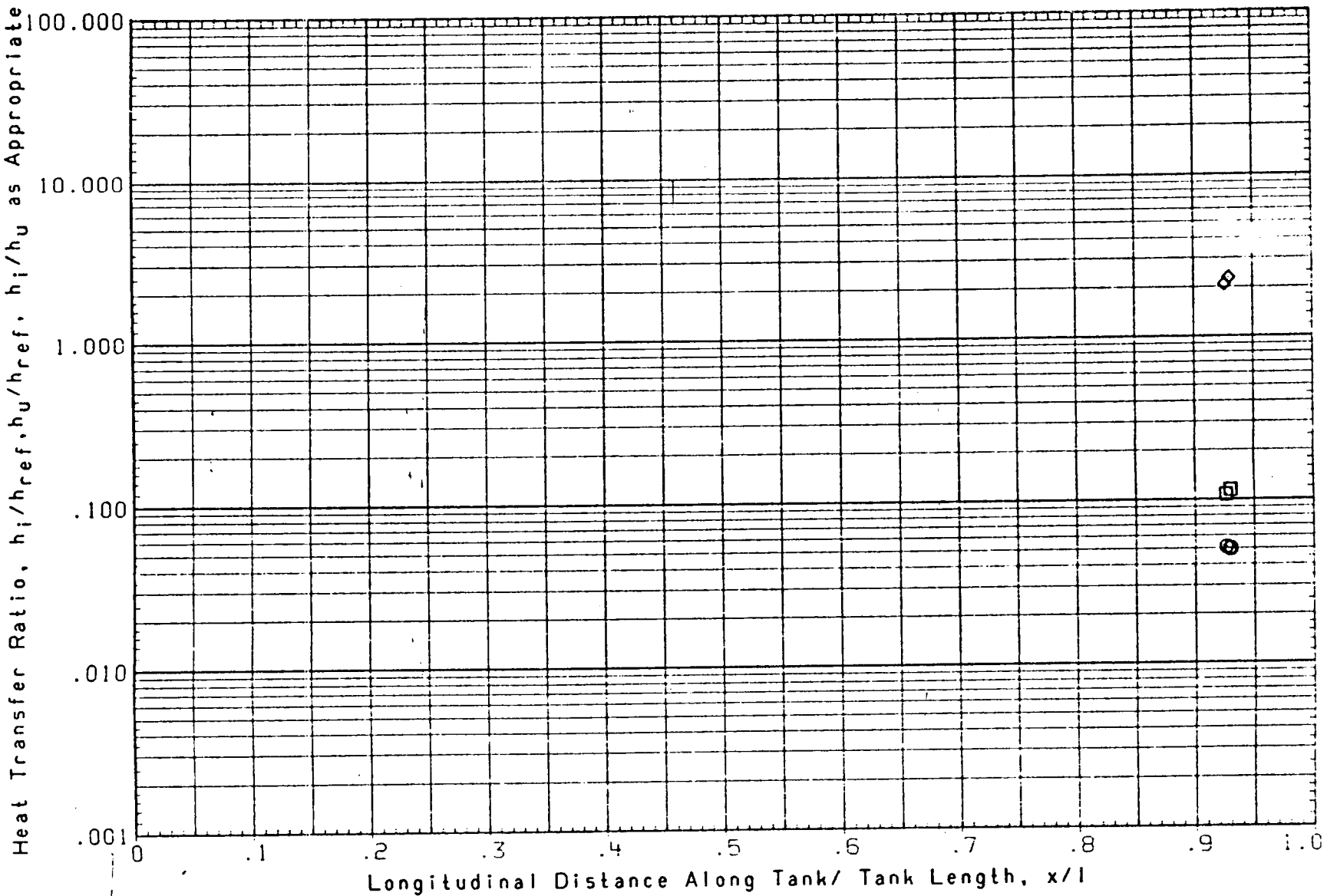


FIG. 13 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -9

MACH = 4.020 ALPHA = .010 PHI = 250.570

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT05)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-9.000
(LVFT25)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-9.000
(BVFT25)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-9.000

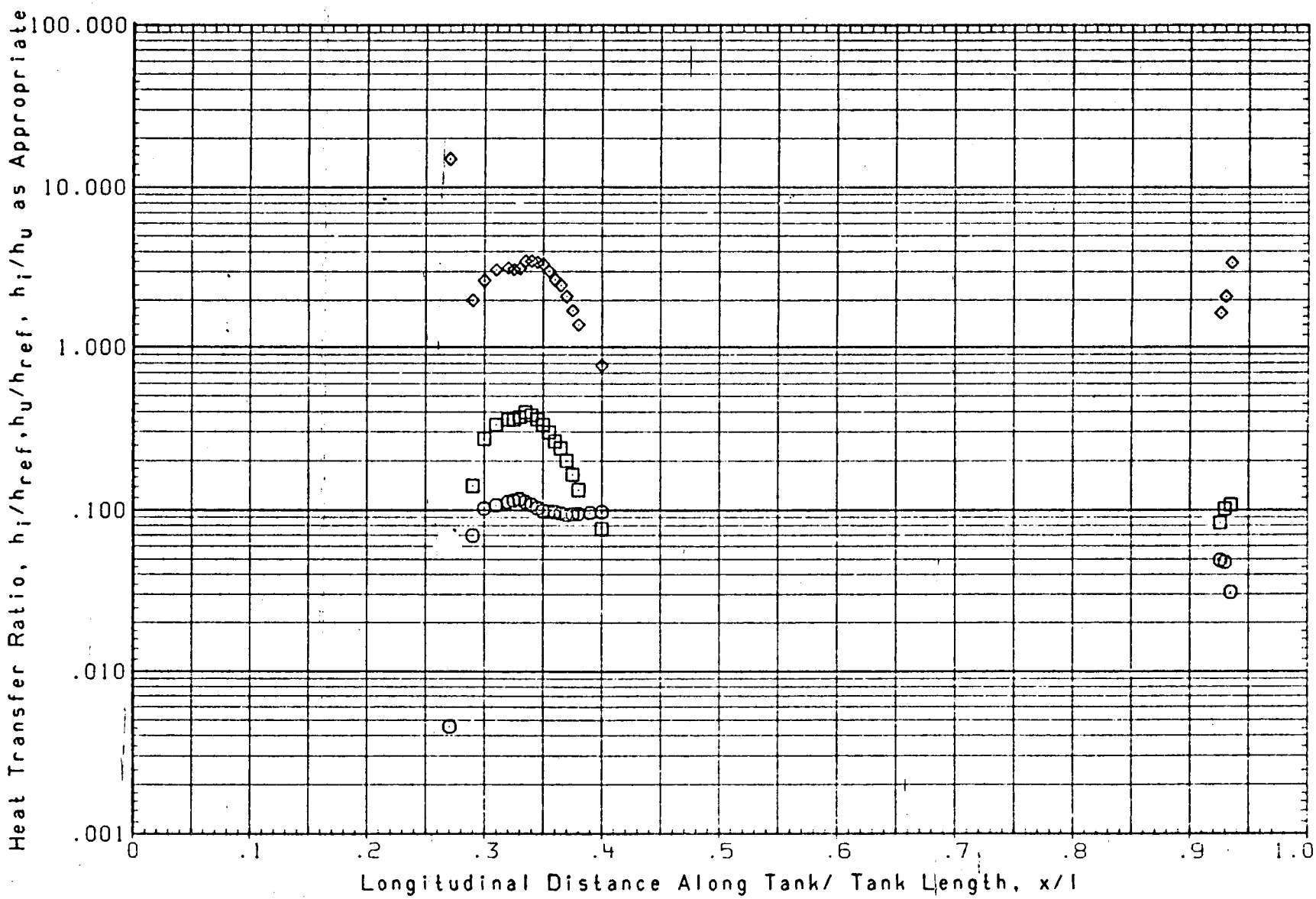


FIG. 13 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -9

MACH = 4.020 ALPHA = .010 PHI = 258.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT05)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-9.000
(LVFT25)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-9.000
(BVFT25)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-9.000

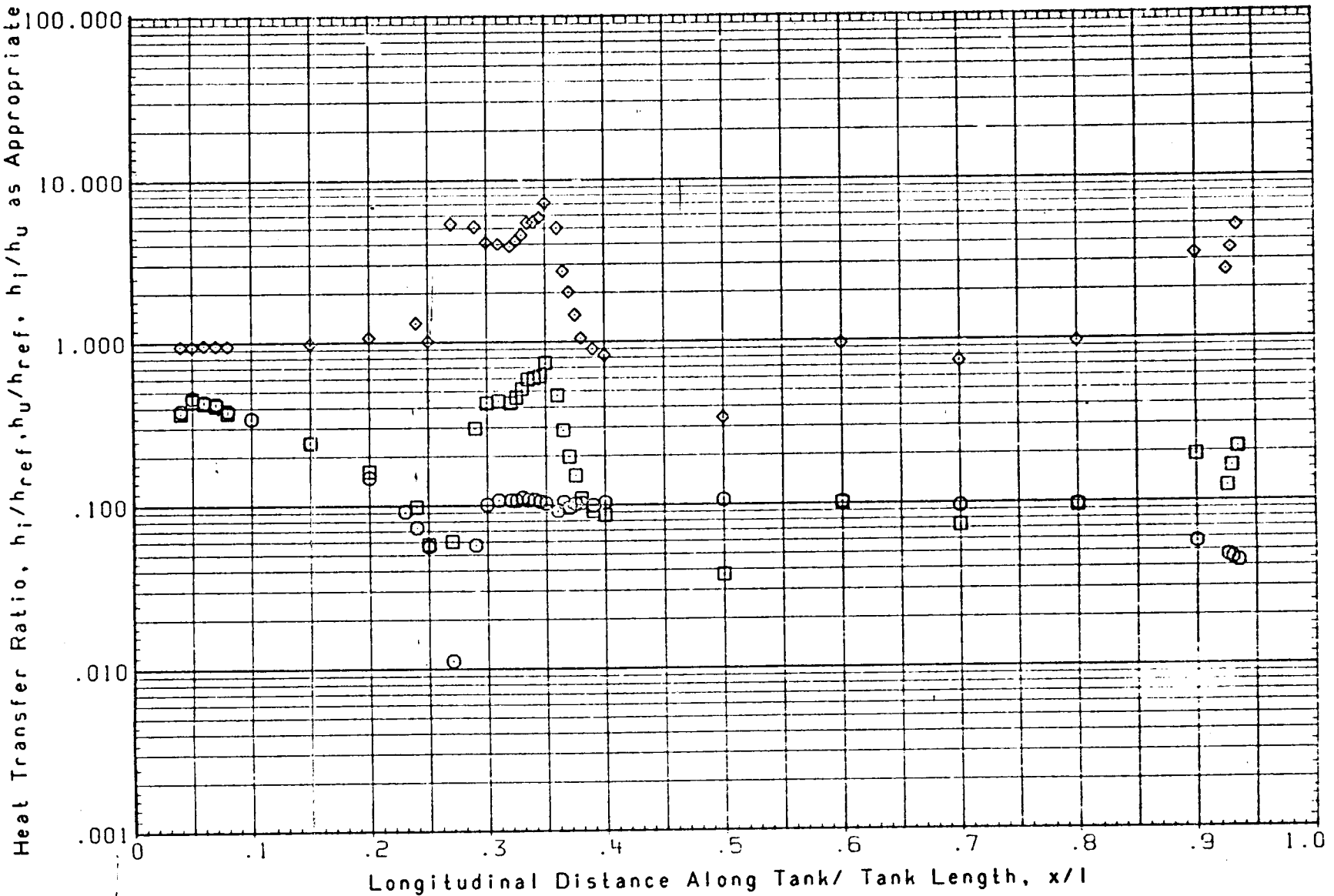


FIG. 13 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -9

MACH = 4.020 ALPHA = .010 PHI = 270.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT05)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-9.000
(LVFT25)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-9.000
(BVFT25)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-9.000

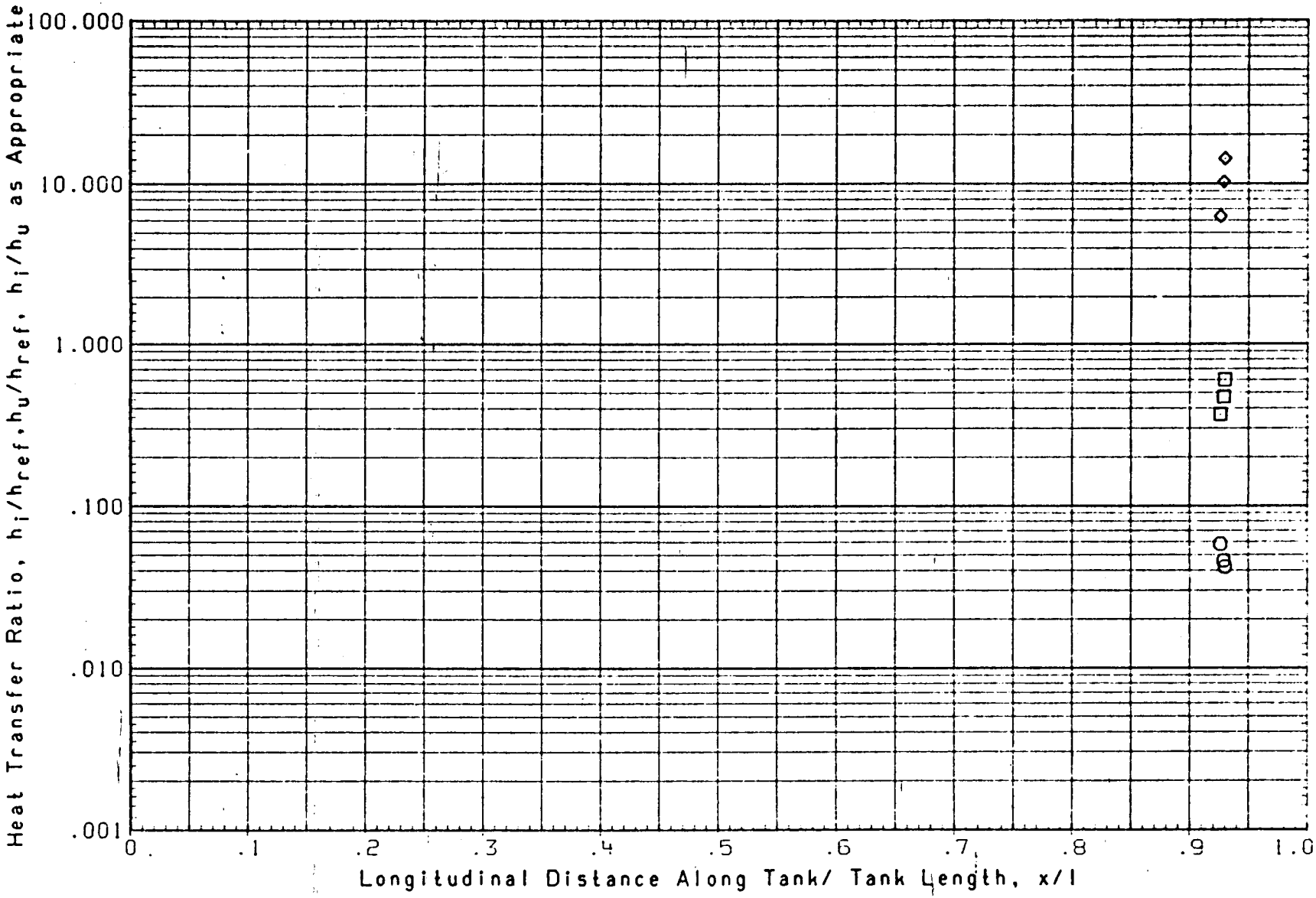


FIG. 13 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -9

MACH = 4.020 ALPHA = .010 PHI = 283.430

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT05)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-9.000
(LVFT25)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-9.000
(BVFT25)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-9.000

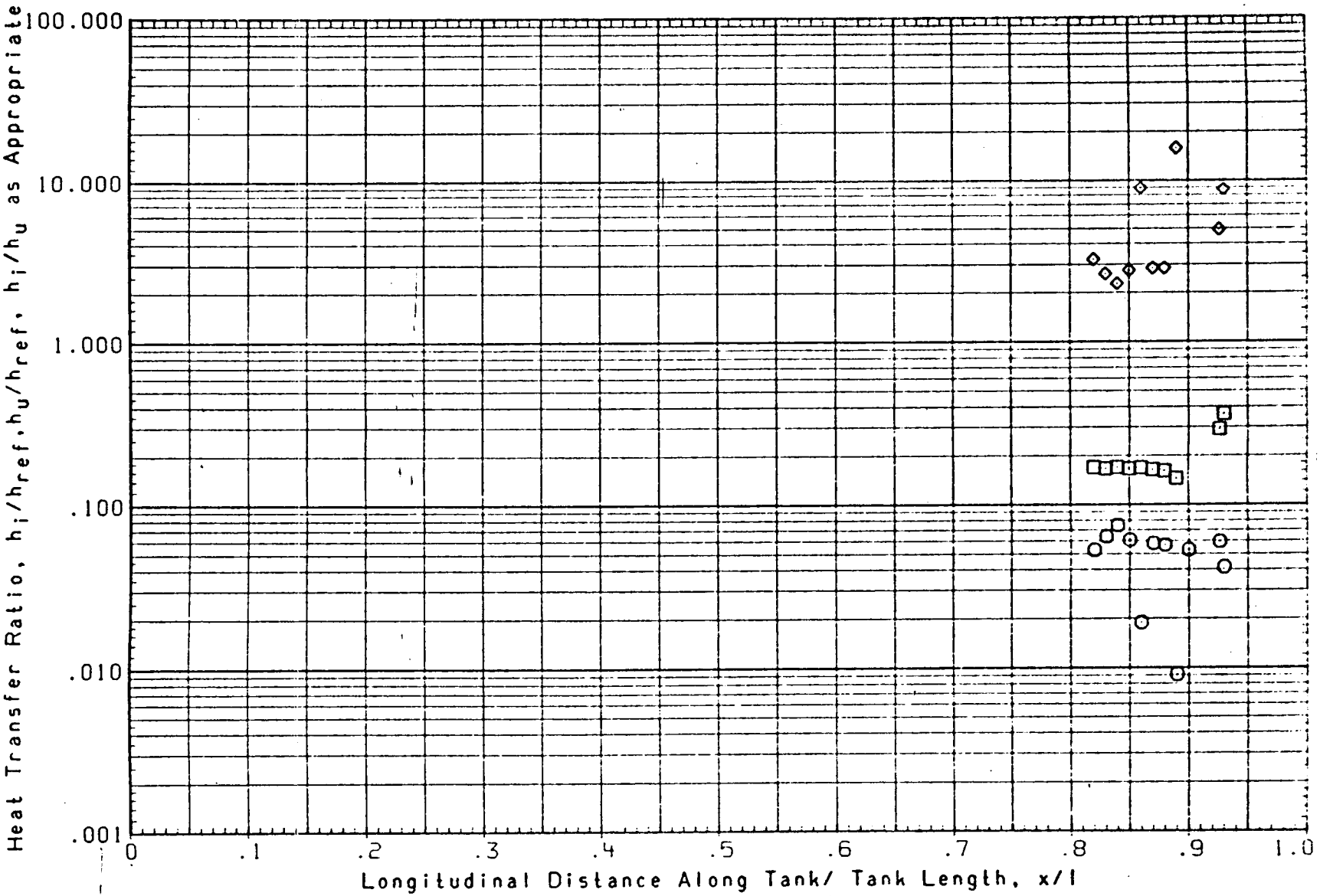


FIG. 13 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -9

MACH = 4.020 ALPHA = .010 PHI = 292.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT05)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-9.000
(LVFT25)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-9.000
(BVFT25)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-9.000

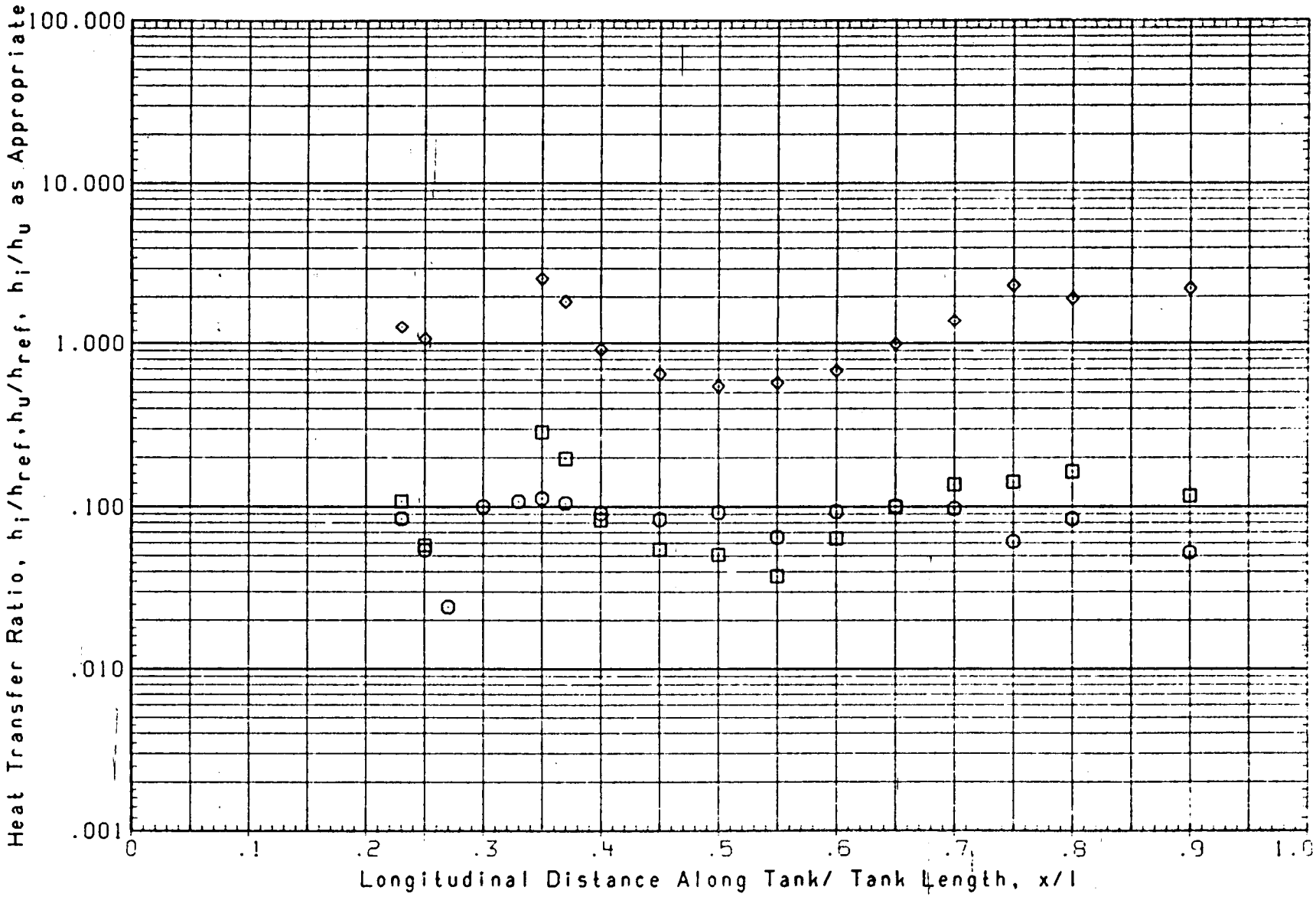


FIG. 13 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -9

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT05)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-9.000
(LVFT25)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-9.000
(BVFT25)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-9.000

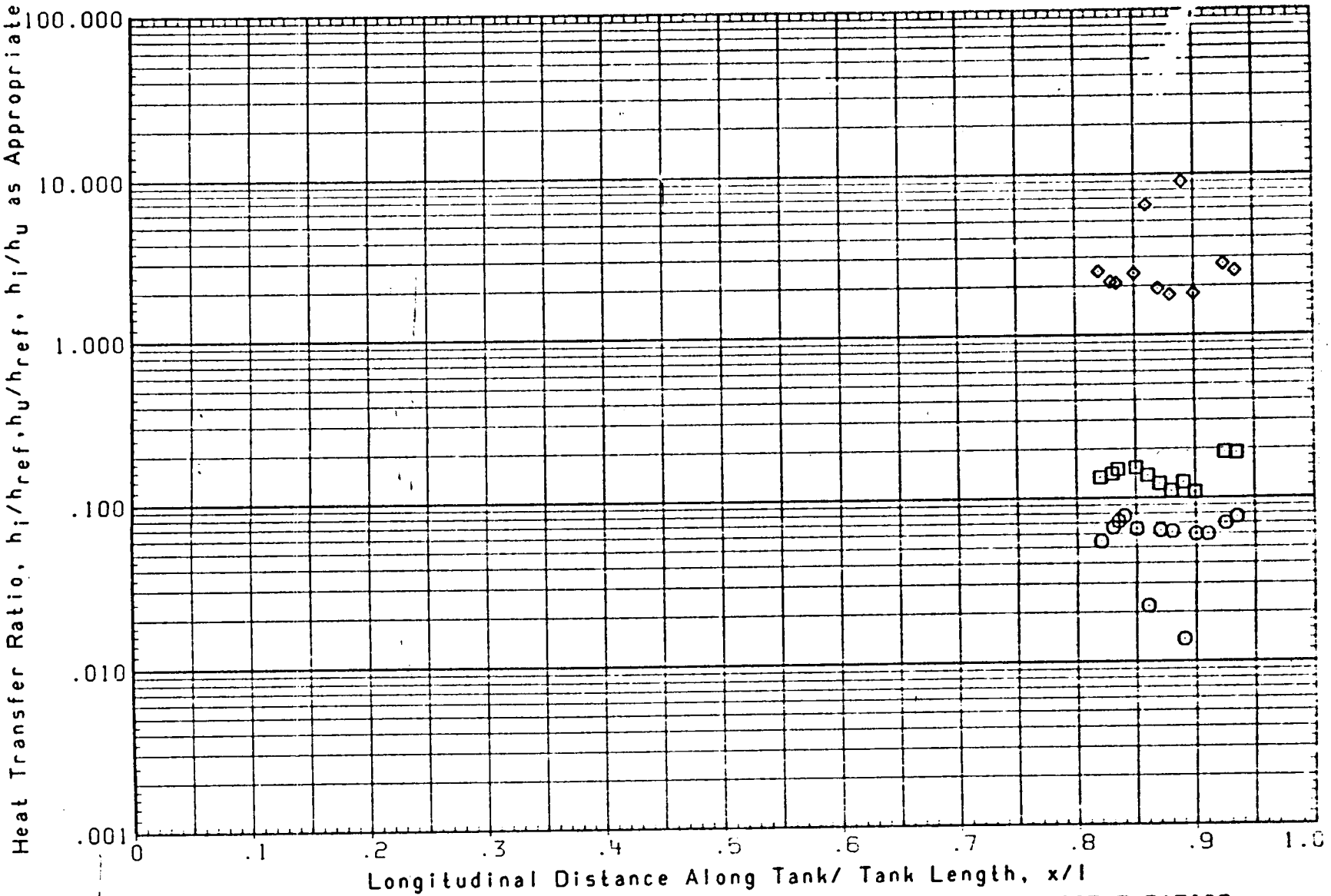


FIG. 13 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -9

MACH = 4.020 ALPHA = .010 PHI = 301.500

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT05)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-9.000
(LVFT25)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-9.000
(BVFT25)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-9.000

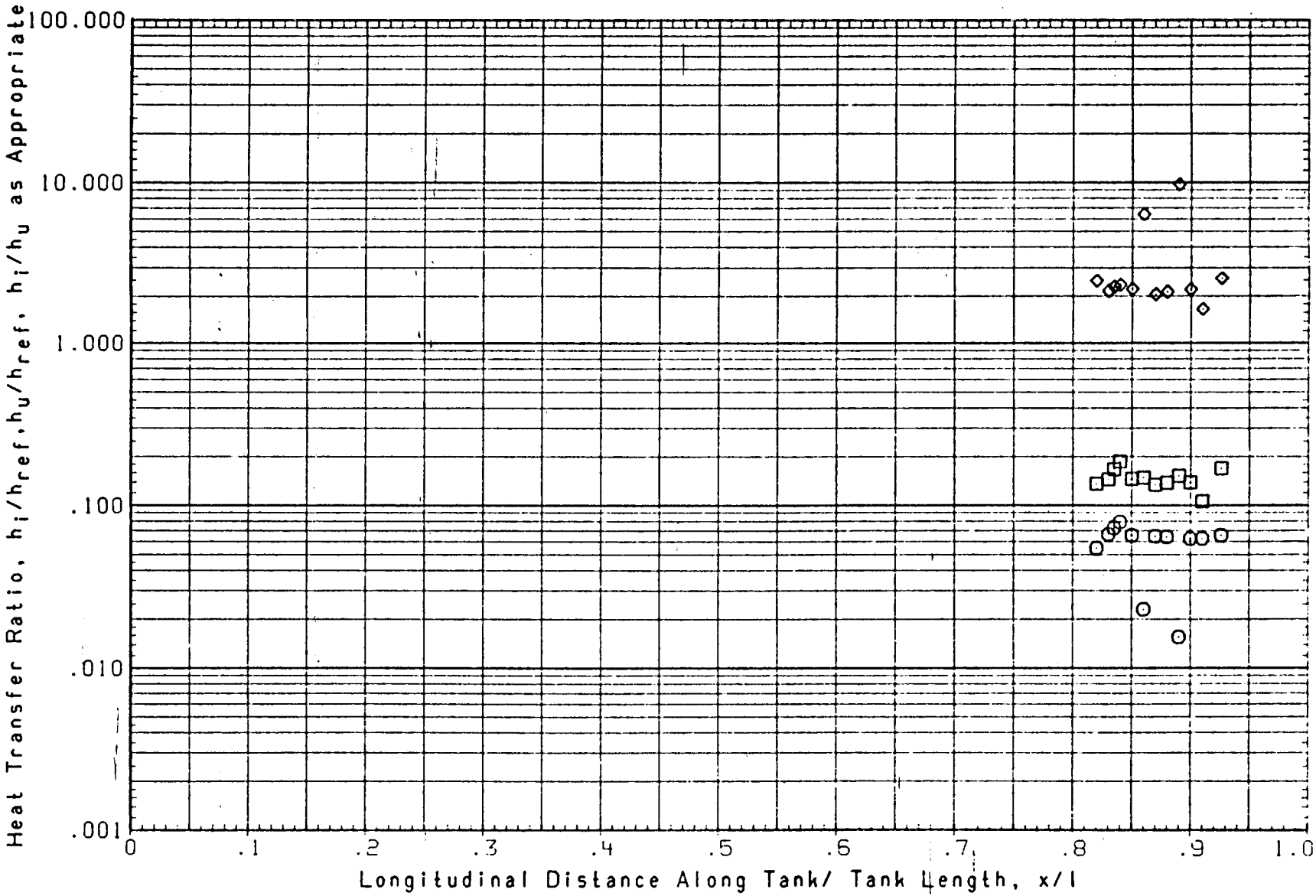


FIG. 13 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -9

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT05)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-9.000
(LVFT25)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-9.000
(BVFT25)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-9.000

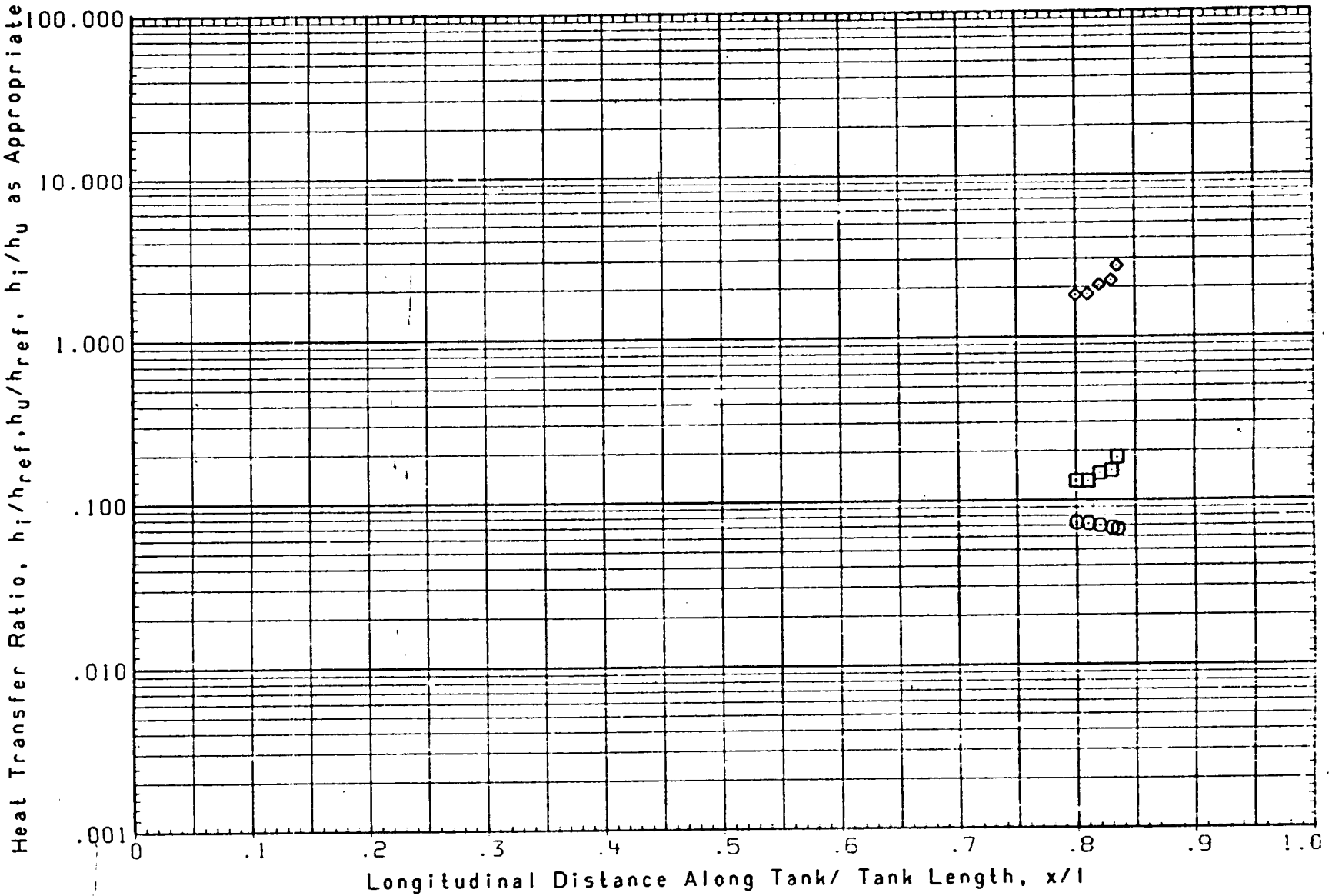


FIG. 13 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -9

MACH = 4.020 ALPHA = .010 PHI = 309.300

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFTC5)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-9.000
(LVFT25)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-9.000
(BVFT25)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-9.000

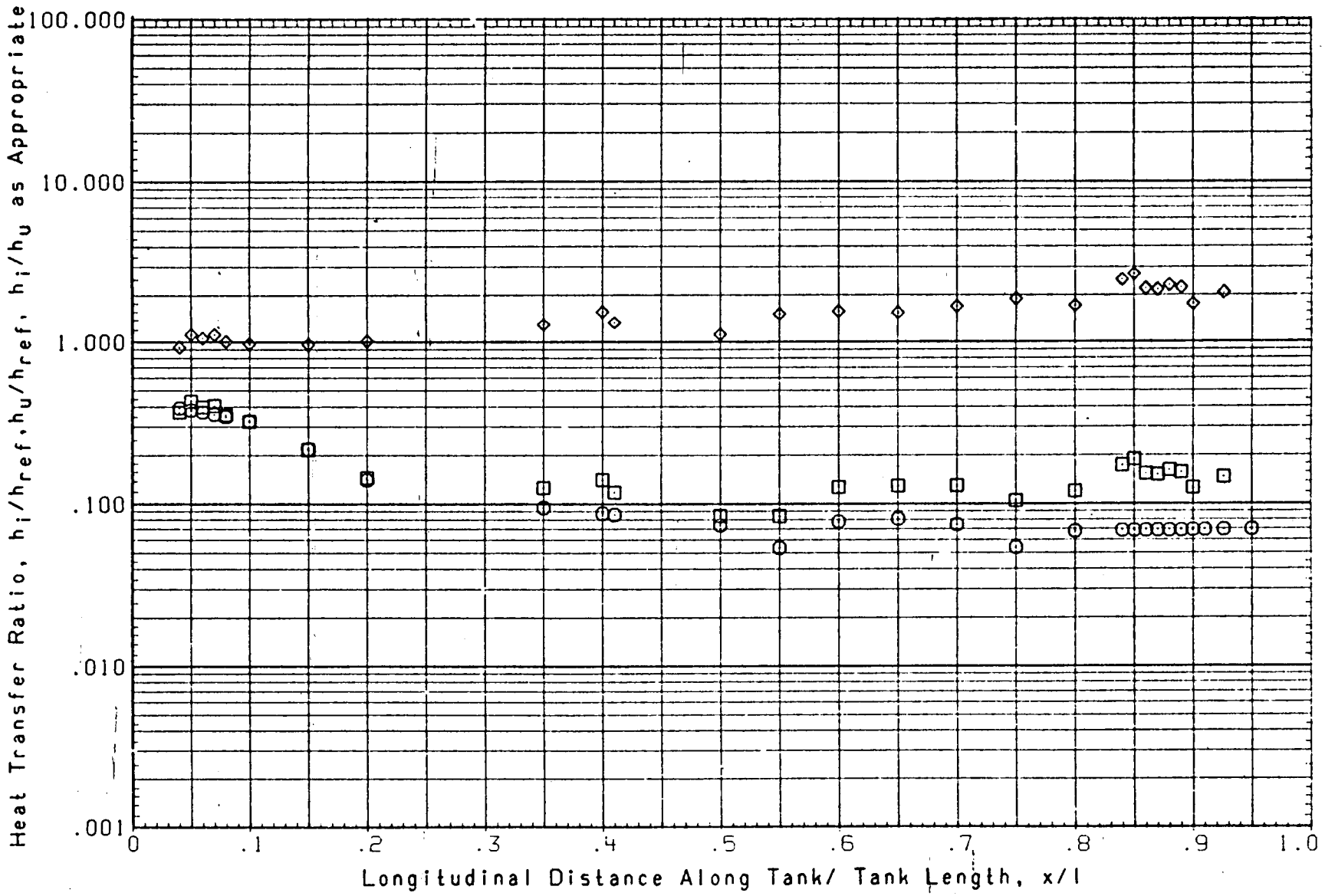


FIG. 13 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -9

MACH = 4.020 ALPHA = .010 PHI = 315.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT05)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-9.000
(LVFT25)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-9.000
(BVFT25)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-9.000

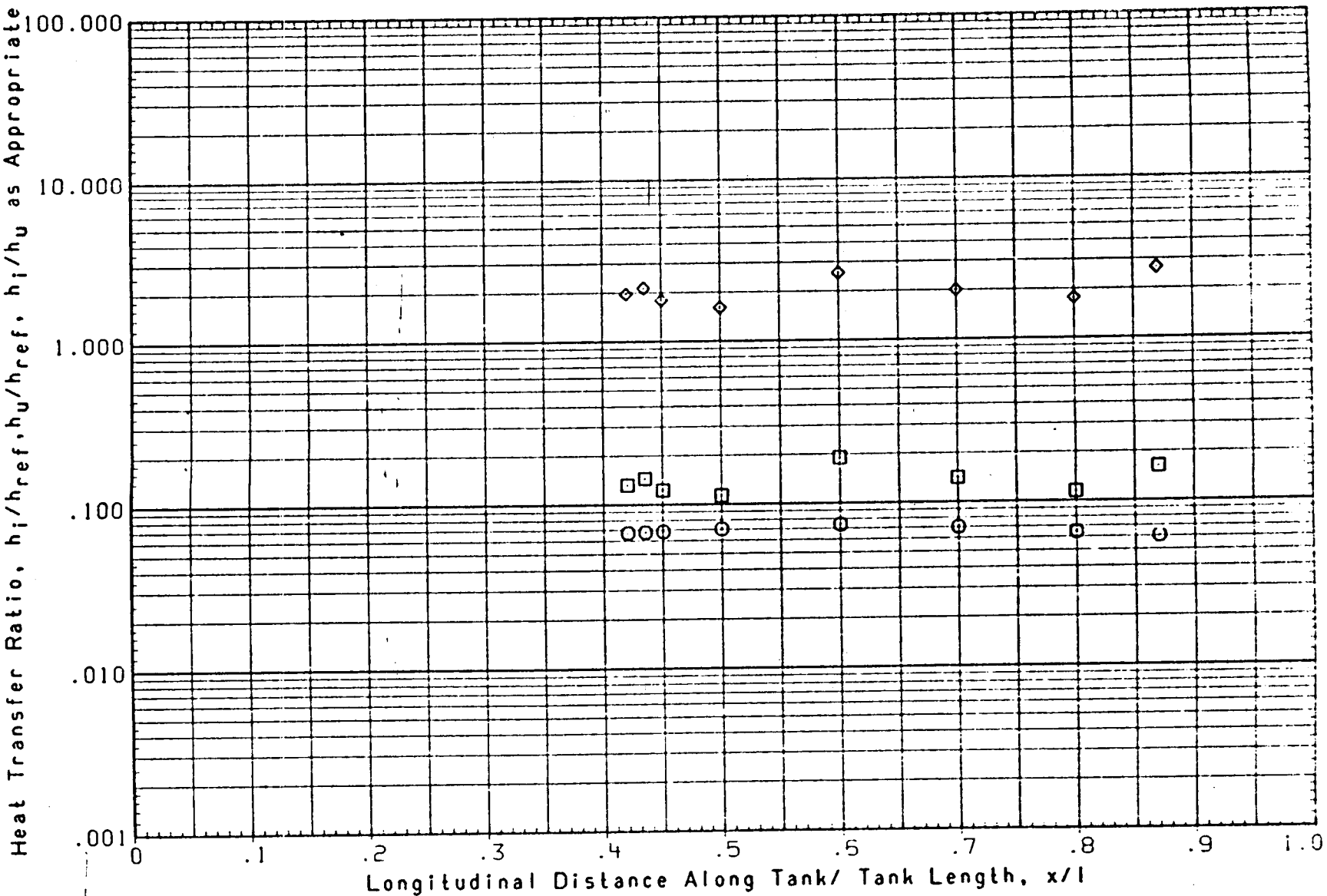


FIG. 13 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -9

MACH = 4.020 ALPHA = .010 PHI = 322.300

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT05)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-9.000
(LVFT25)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-9.000
(BVFT25)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-9.000

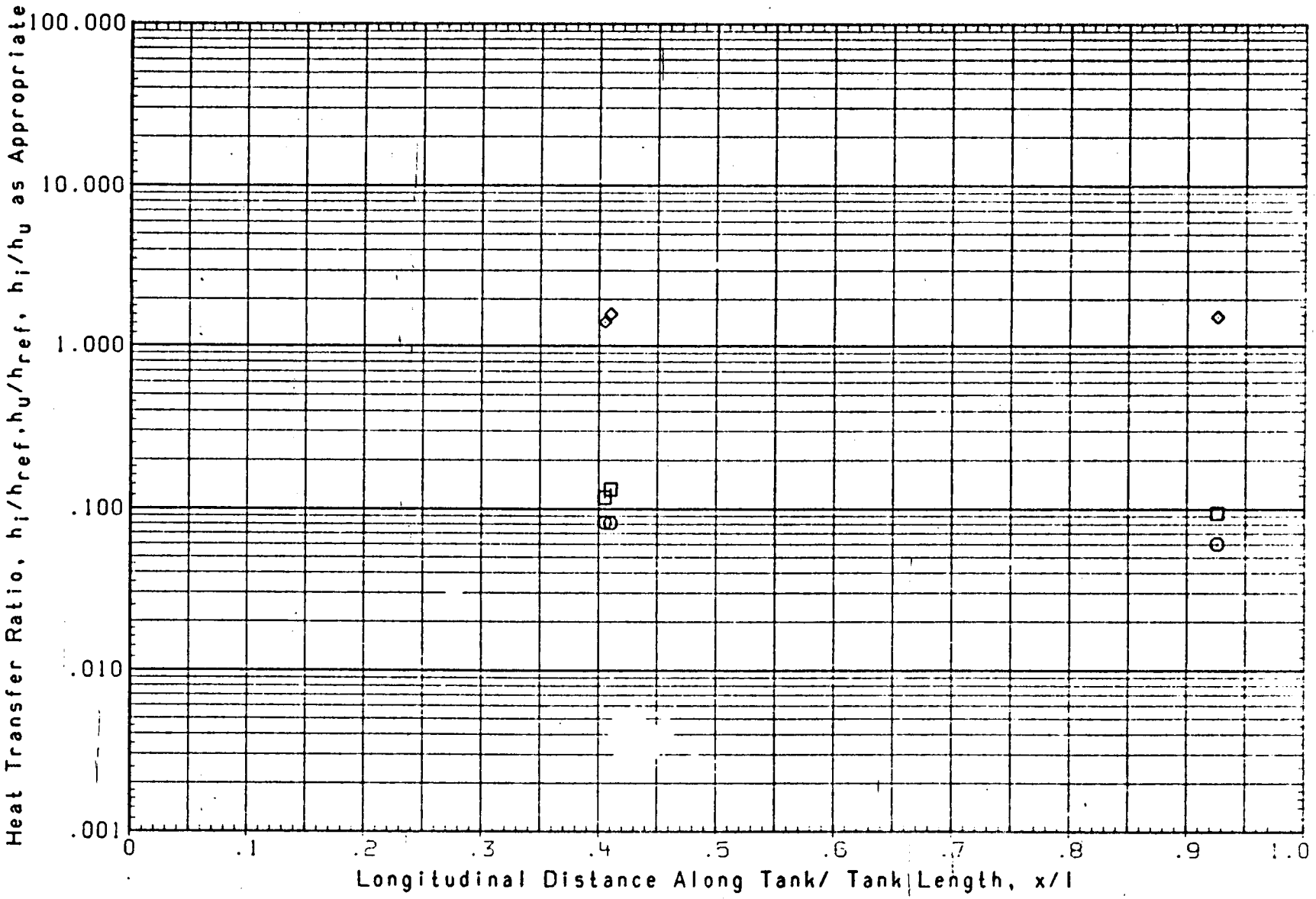


FIG. 13 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -9

MACH = 4.020 ALPHA = .010 PHI = 324.450

DATA SET	SYMBOL	DESCRIPTION	ALPHA	BETA
(KVFT05)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-9.000
(LVFT25)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-9.000
(BVFT25)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-9.000

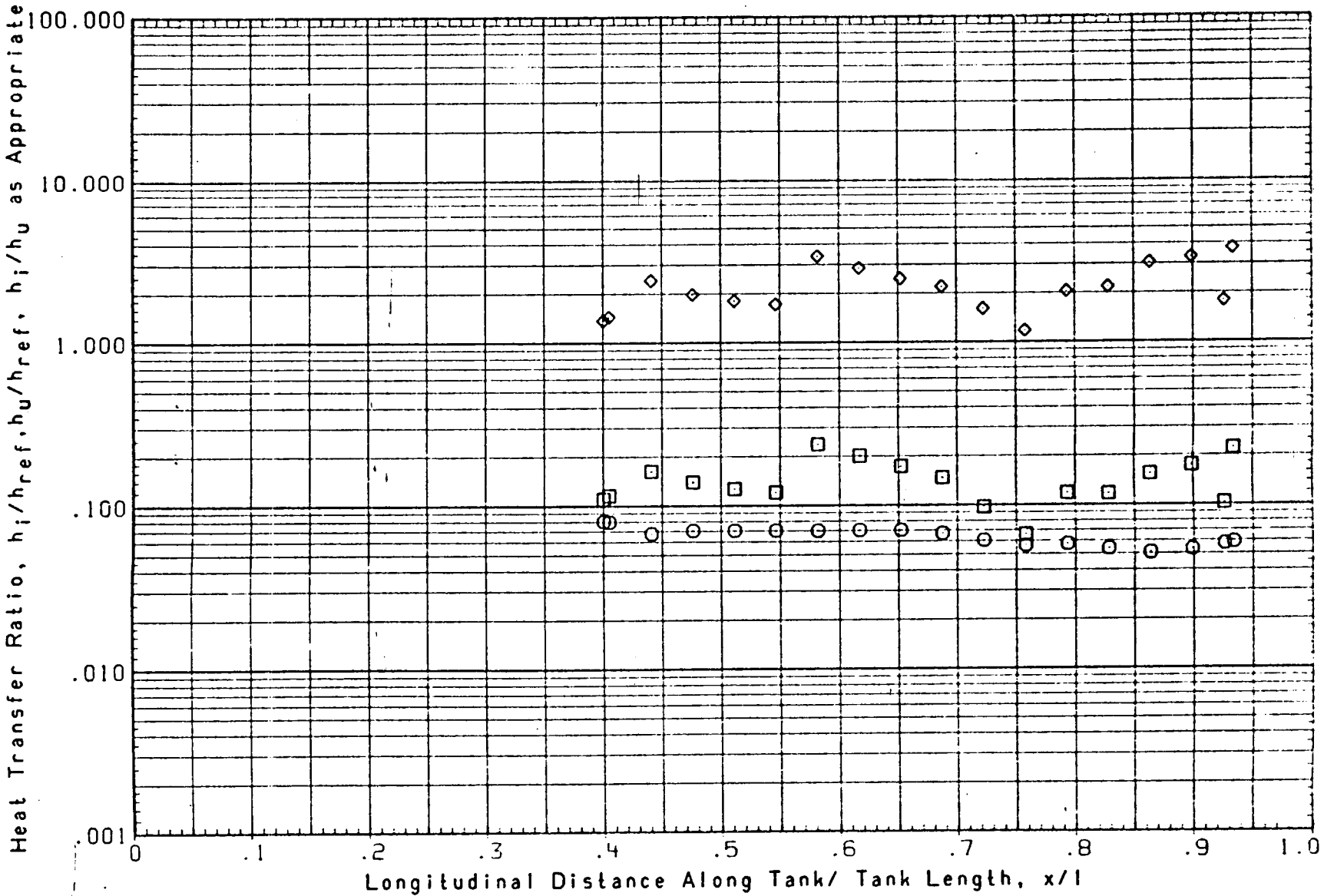


FIG. 13 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -9

MACH = 4.020 ALPHA = .010 PHI = 326.850

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT05)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-9.000
(LVFT25)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-9.000
(BVFT25)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-9.000

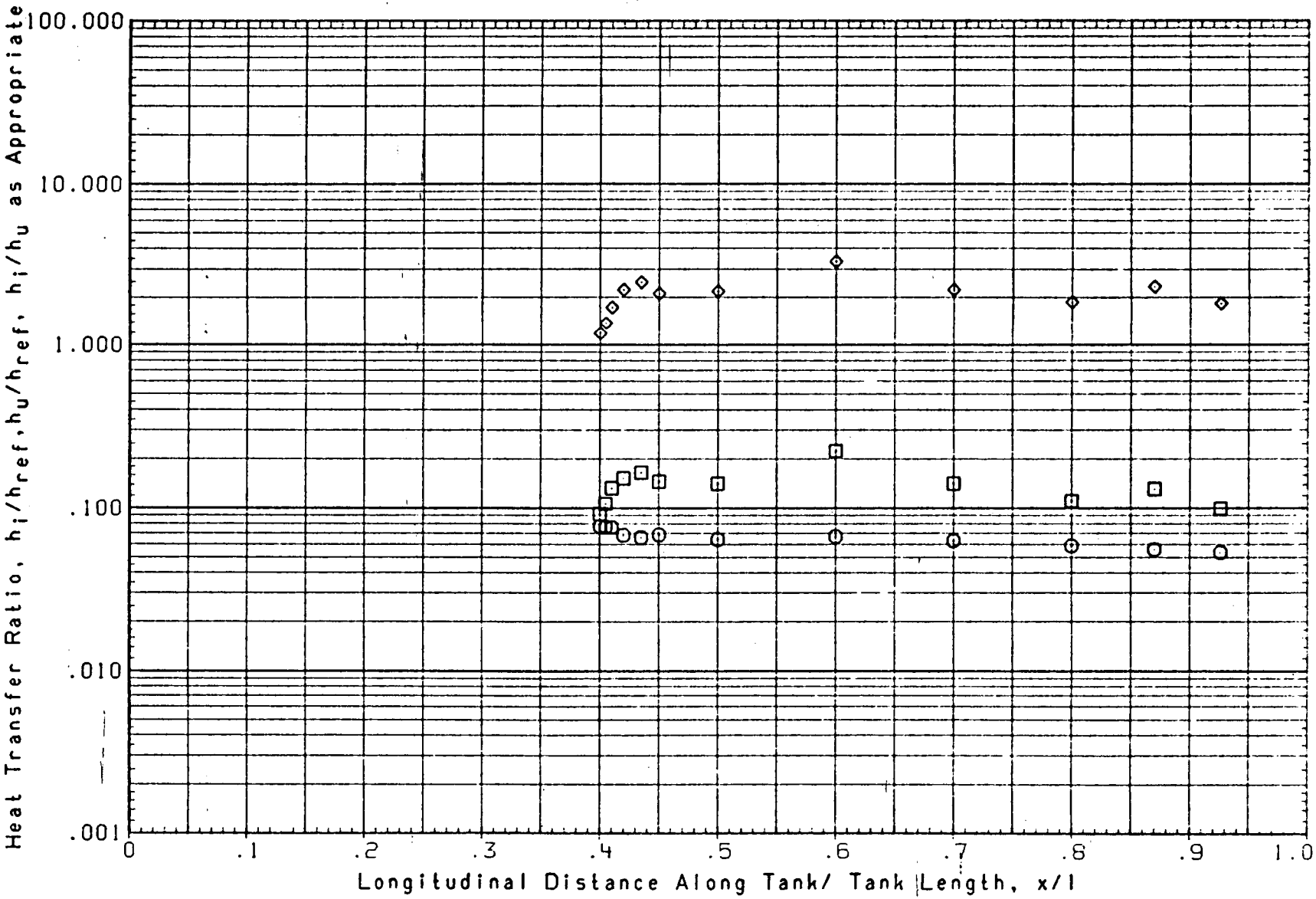


FIG. 13 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -9

MACH = 4.020 ALPHA = .010 PHI = 330.200

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT05)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-9.000
(LVFT25)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-9.000
(BVFT25)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-9.000

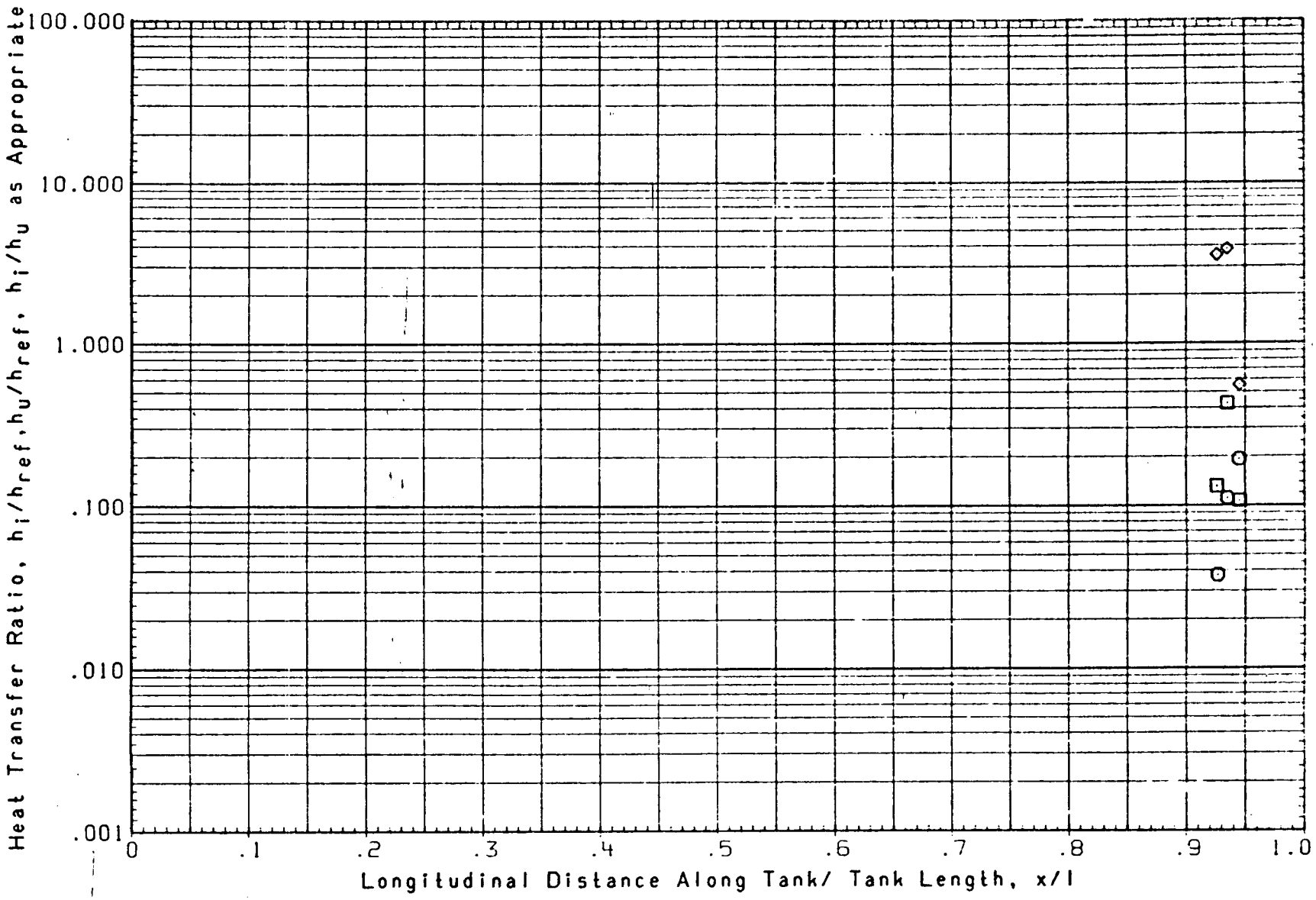


FIG. 13 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -9

MACH = 4.020 ALPHA = .010 PHI = 334.980

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT05)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-9.000
(LVFT25)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-9.000
(BVFT25)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-9.000

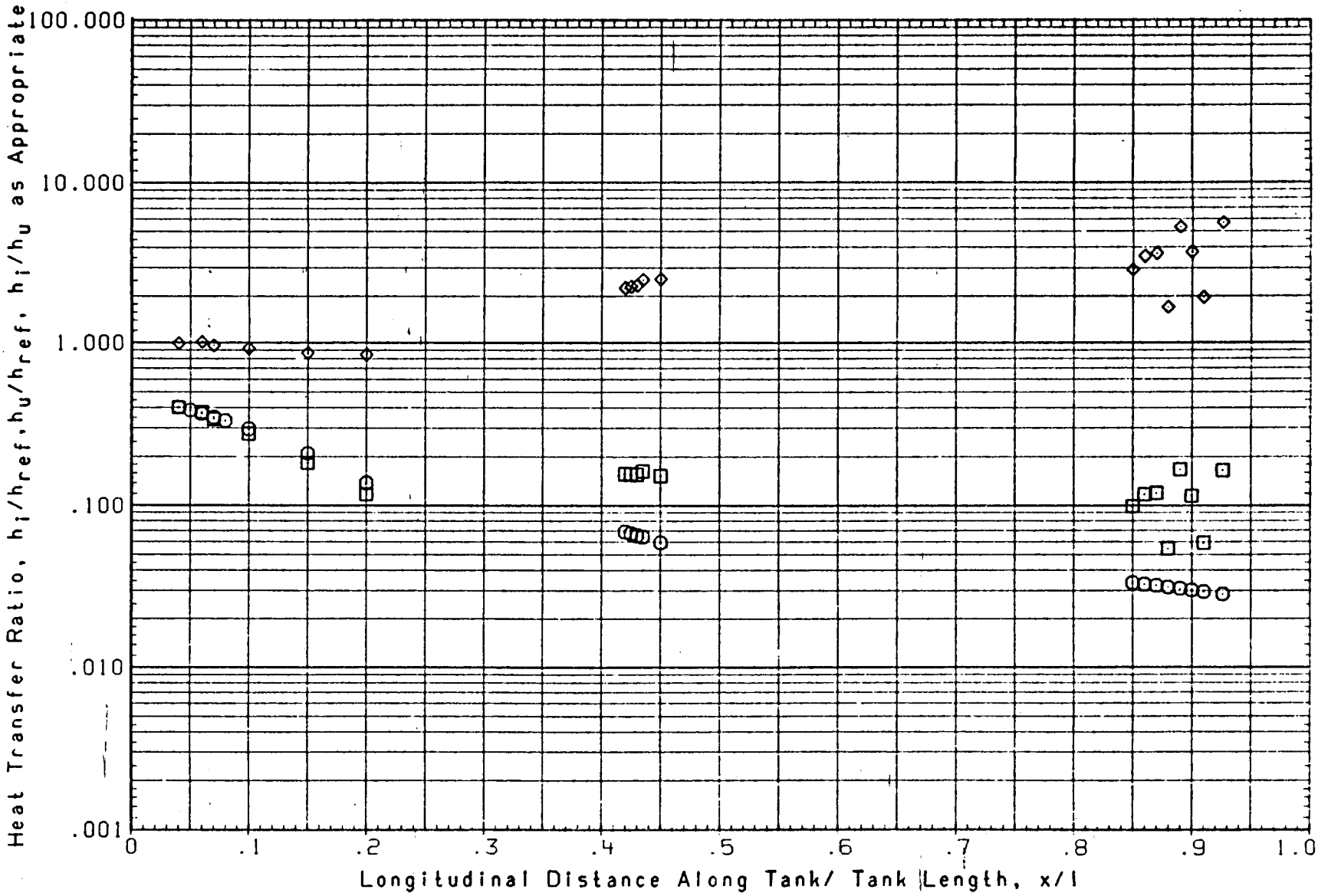


FIG. 13 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -9

MACH = 4.020 ALPHA = .010 PHI = 337.500

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT05)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-9.000
(LVFT25)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-9.000
(BVFT25)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-9.000

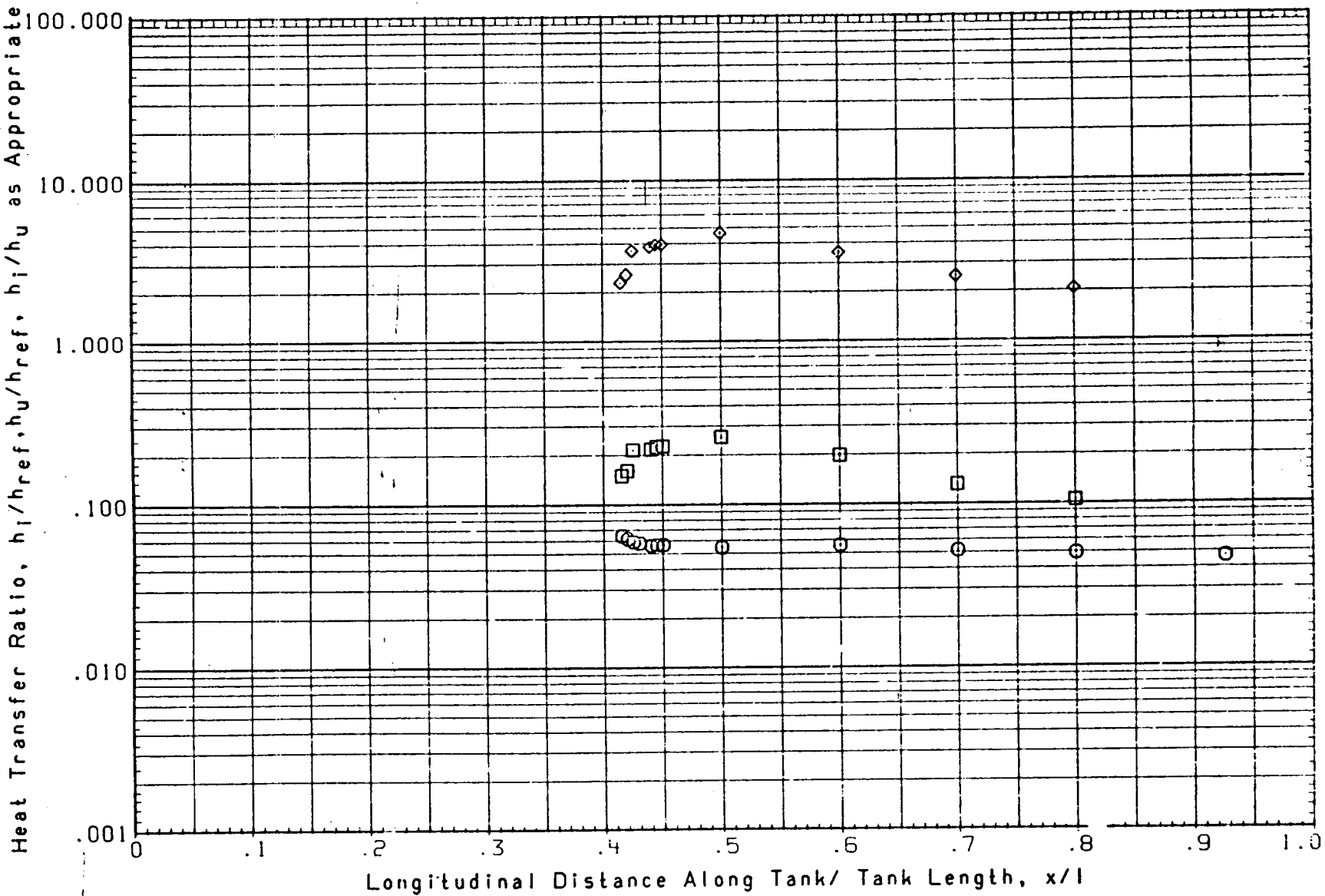


FIG. 13 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -9

MACH = 4.020 ALPHA = .010 PHI = 343.120

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT05)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-9.000
(LVFT25)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-9.000
(BVFT25)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-9.000

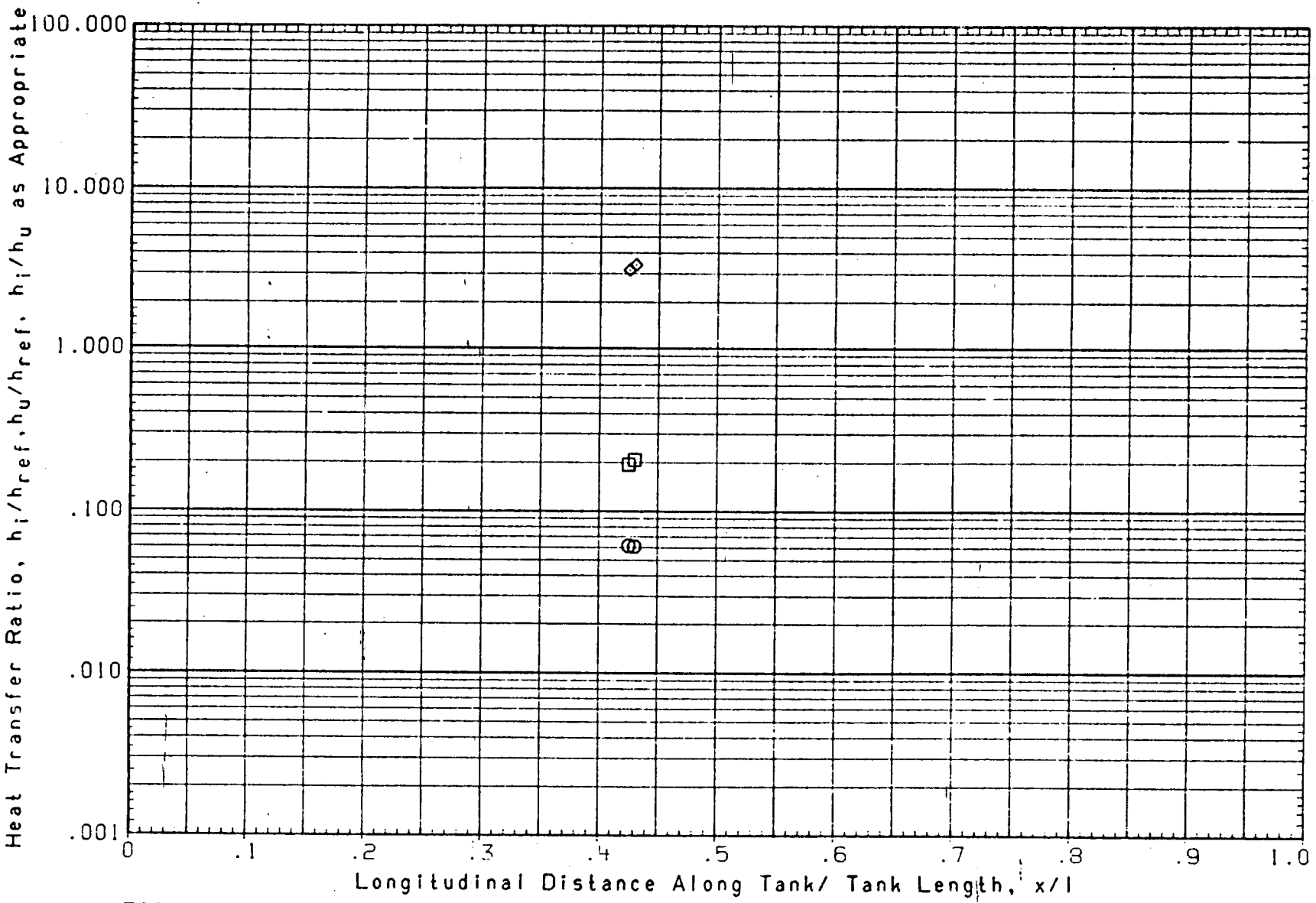


FIG. 13 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -9

MACH = 4.020 ALPHA = .010 PHI = 345.560

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT05)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-9.000
(LVFT25)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-9.000
(BVFT25)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-9.000

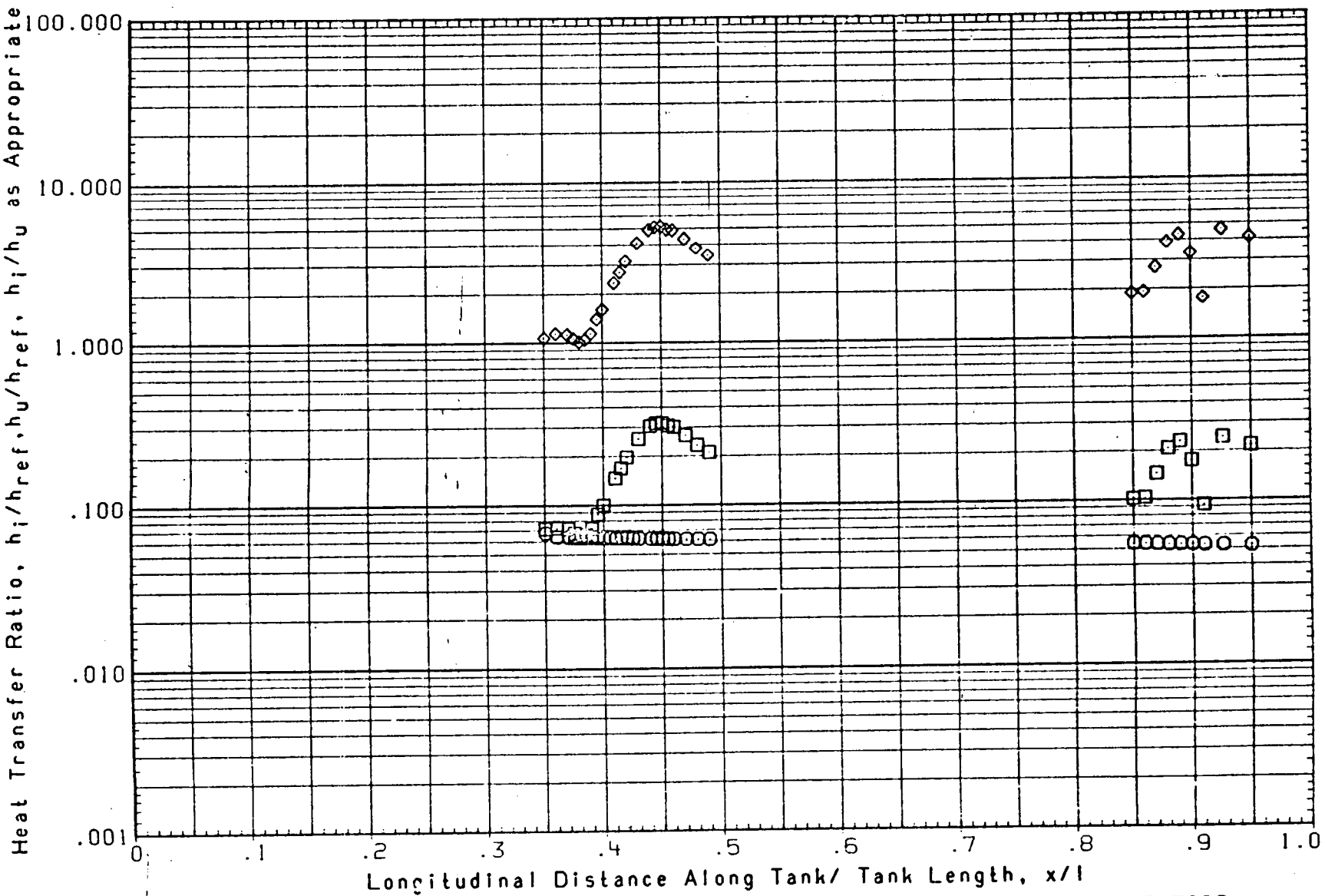


FIG. 13 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS WINDWARD SIDE, ALPHA = 0, BETA = -9

MACH = 4.020 ALPHA = .010 PHI = 348.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT05)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-9.000
(LVFT25)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-9.000
(BVFT25)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-9.000

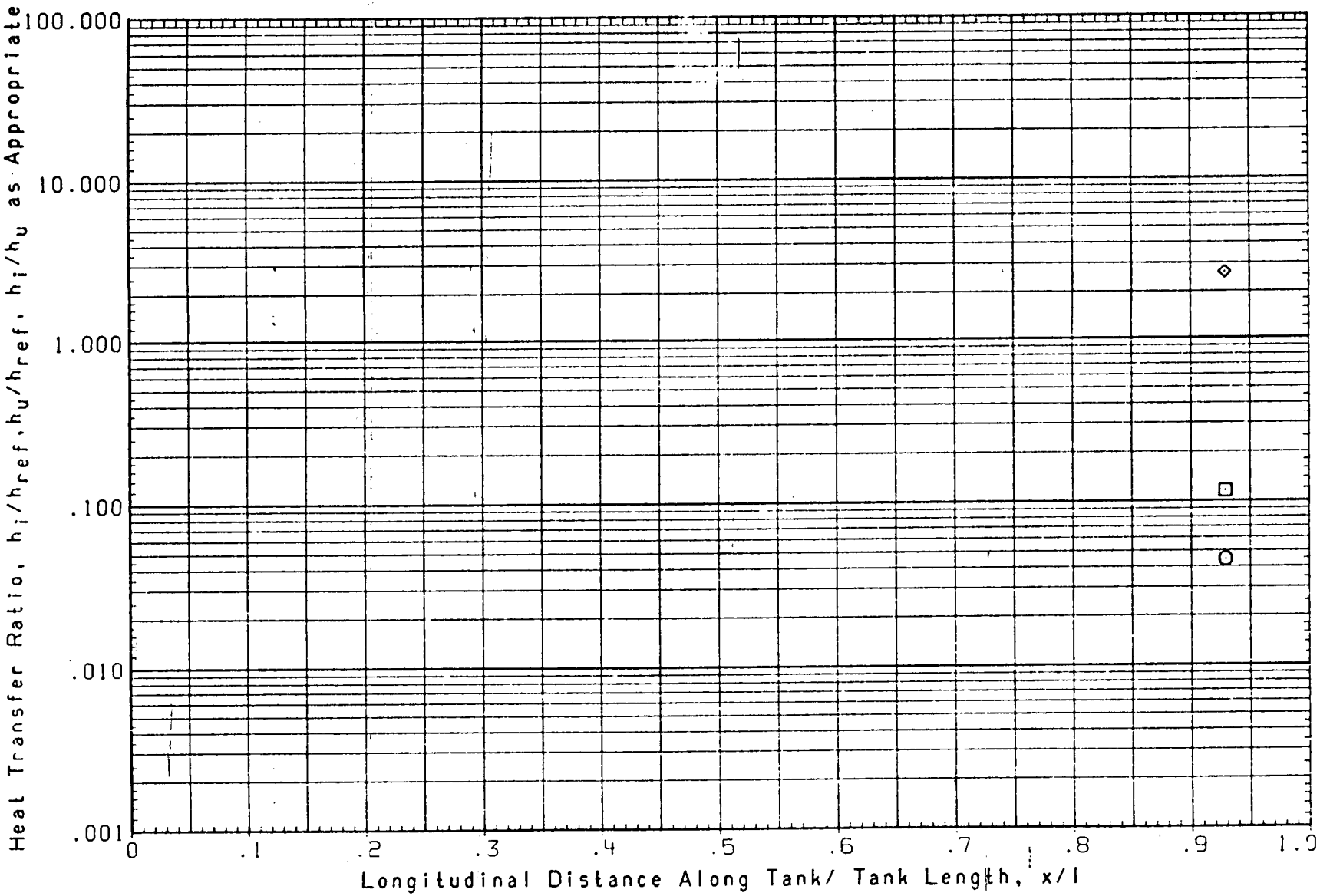


FIG. 13 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -9

MACH = 4.020 ALPHA = .010 PHI = 352.200

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT05)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-9.000
(LVFT25)	□	IH41B(V41A-A4A) O T 5 (SPIKED ET DATA) HI/HREF	.000	-9.000
(BVFT25)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-9.000

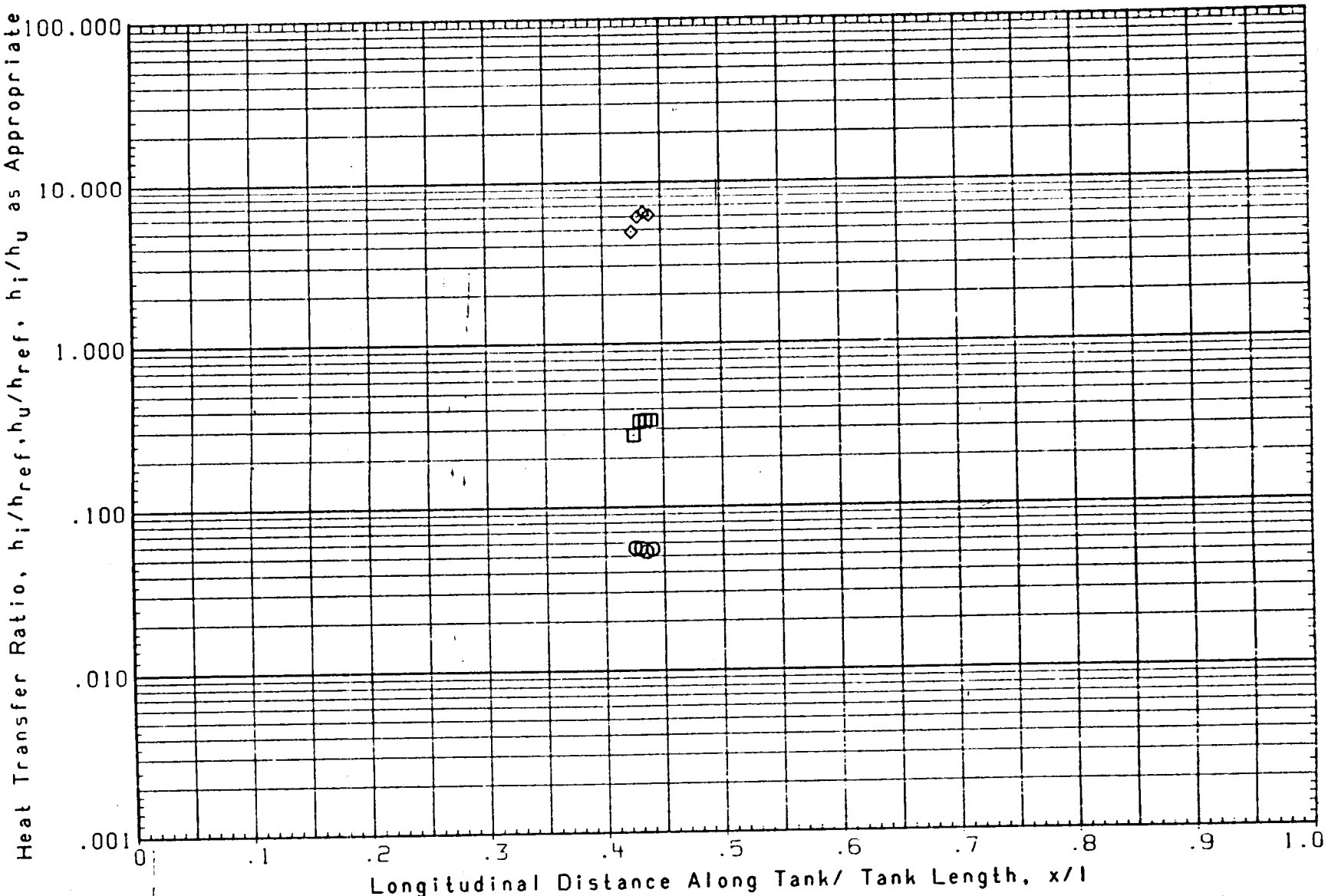


FIG. 13 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -9

MACH = 4.020 ALPHA = .010 PHI = 354.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT05)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-9.000
(LVFT25)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-9.000
(BVFT25)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-9.000

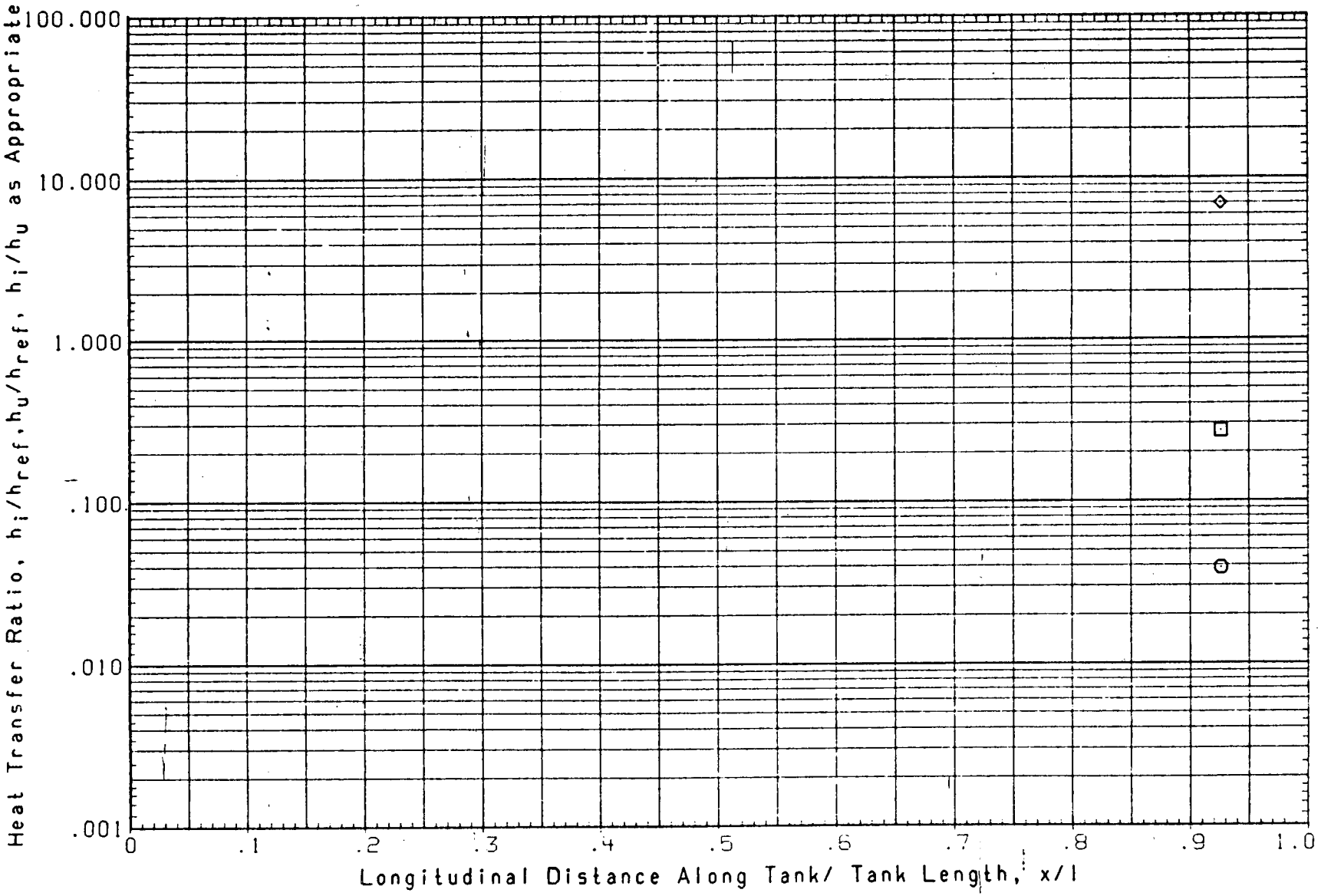


FIG. 13 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = -9

MACH = 4.020 ALPHA = .010 PHI = 355.160

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT05)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-9.000
(LVFT25)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-9.000
(CVFT25)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-9.000

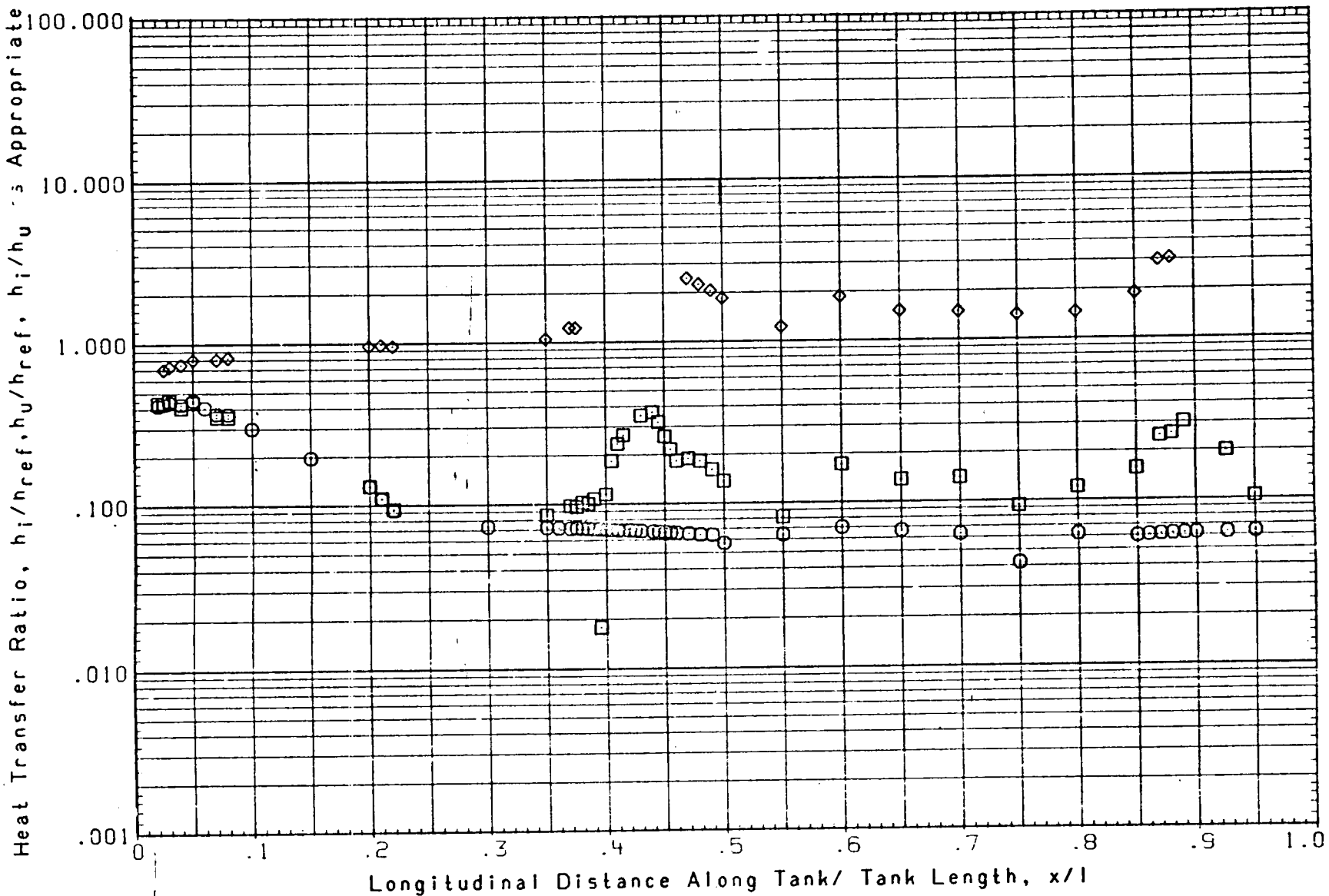


FIG. 14 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = -9

MACH = 3.010 ALPHA = .000 PHI = .000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT05)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-9.000
(LVFT25)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-9.000
(CVFT25)	◇	DATA NOT AVAILABLE	.000	-9.000

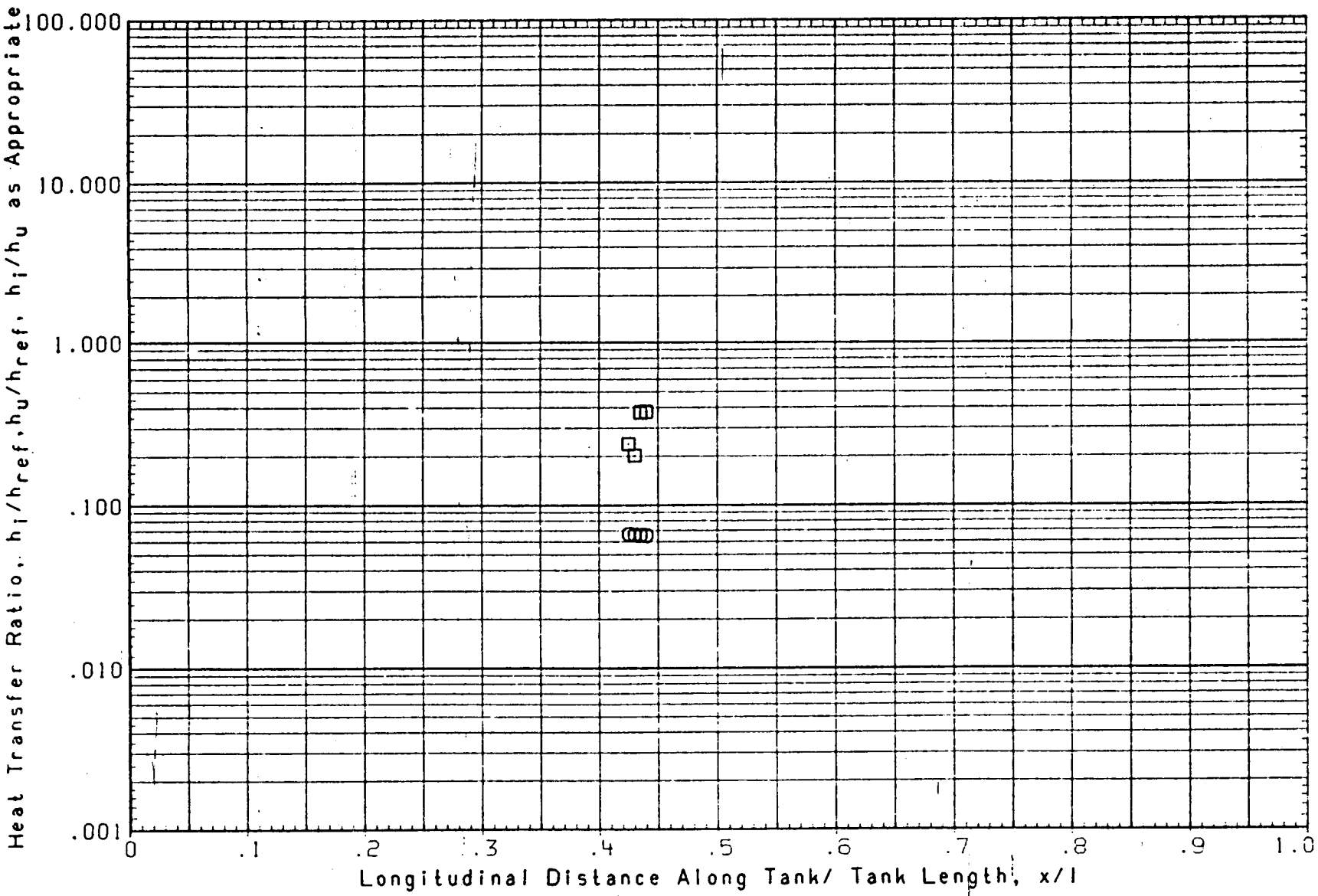


FIG. 14 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = -9

MACH = 3.010 ALPHA = .000 PHI = 5.630

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT05)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-9.000
(LVFT25)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-9.000
(CVFT25)	◇	DATA NOT AVAILABLE	.000	-9.000

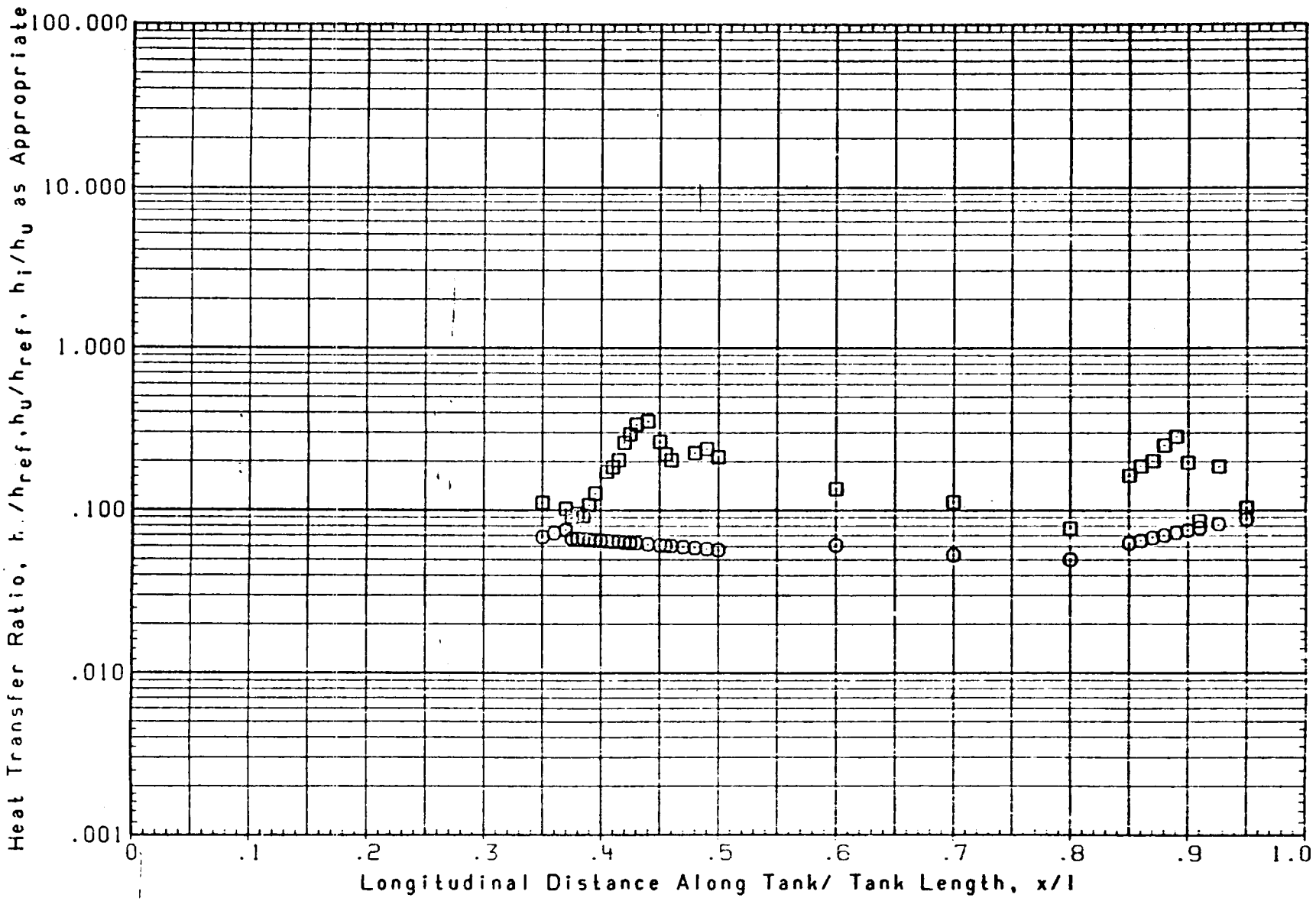


FIG. 14 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = -9

MACH = 3.010 ALPHA = .000 PHI = 11.250

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT05)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-9.000
(LVFT25)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-9.000
(CVFT25)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-9.000

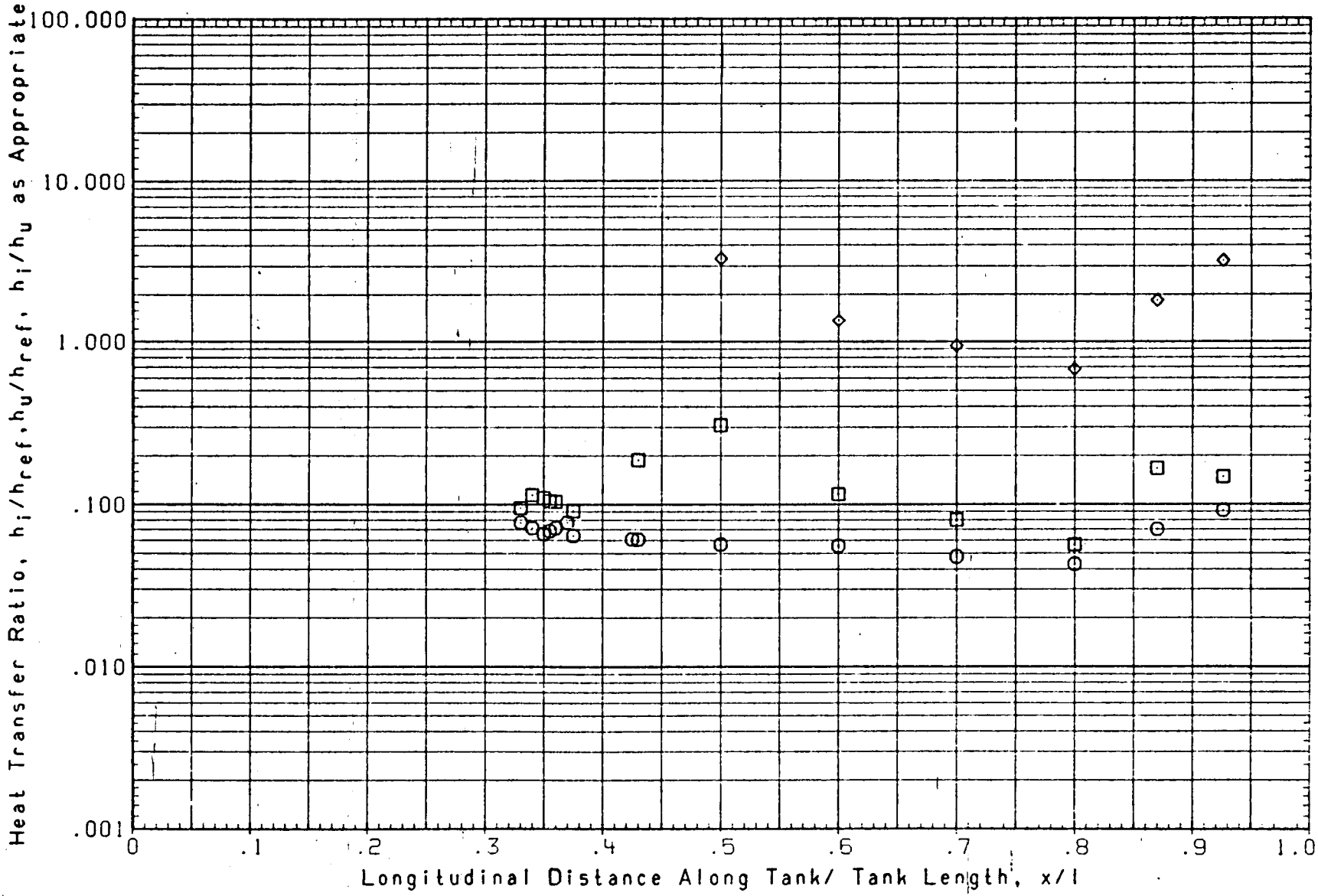


FIG. 14 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = -9

MACH = 3.010 ALPHA = .000 PHI = 17.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT05)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-9.000
(LVFT25)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-9.000
(CVFT25)	◇	DATA NOT AVAILABLE	.000	-9.000

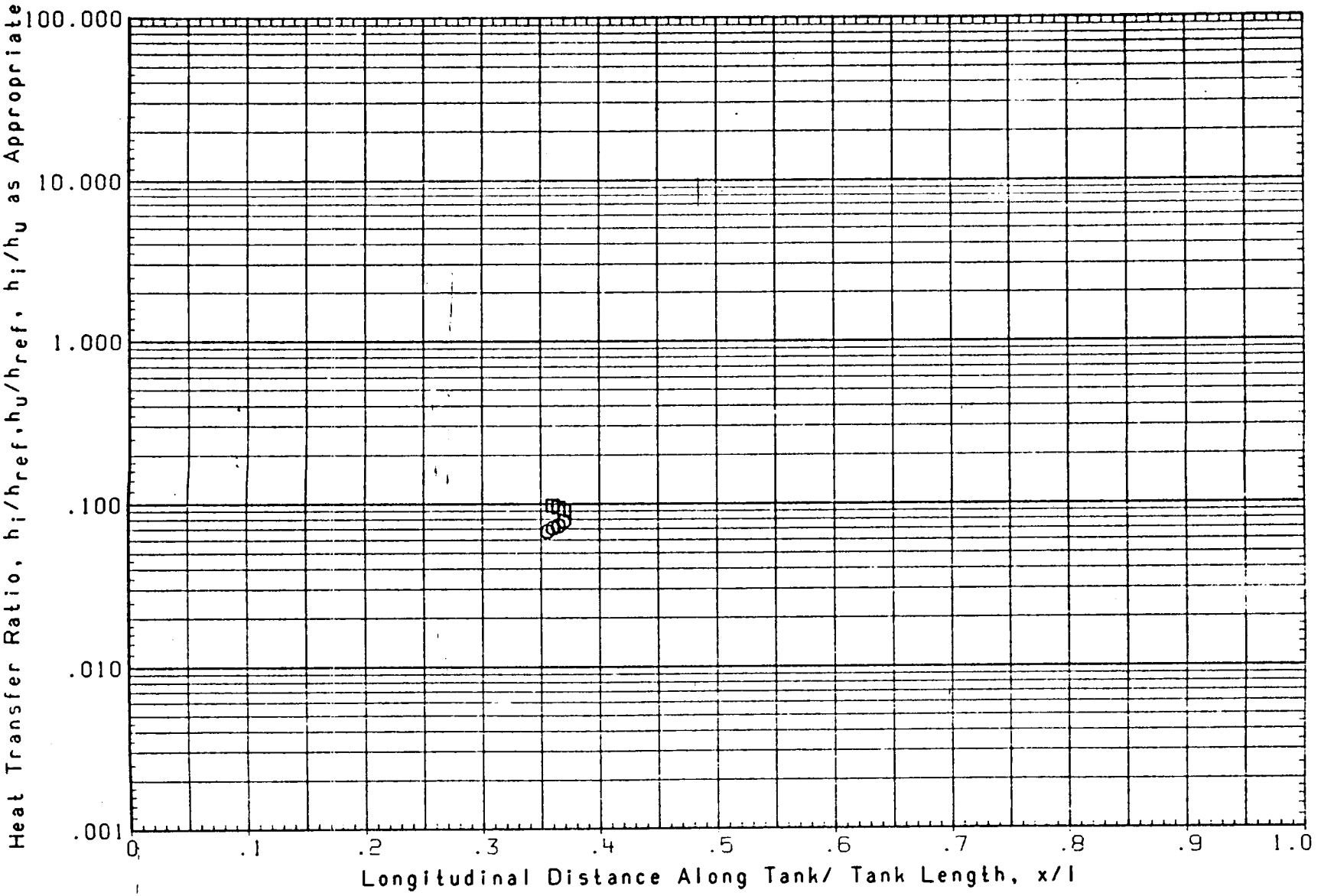


FIG. 14 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = -9

MACH = 3.010 ALPHA = .000 PHI = 20.980

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT05)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-9.000
(LVFT25)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-9.000
(CVFT25)	◇	DATA NOT AVAILABLE	.000	-9.000

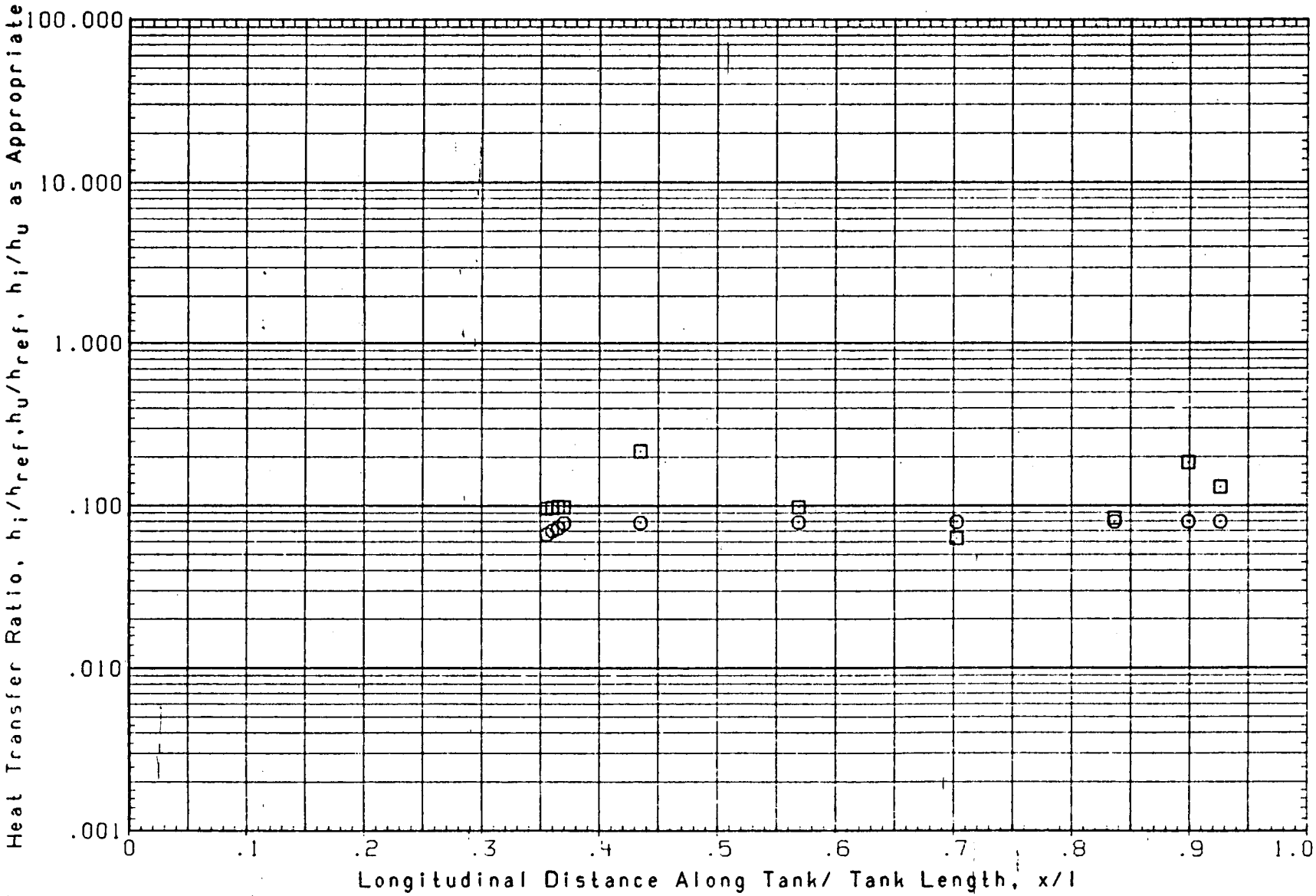


FIG. 14 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = -9

MACH = 3.010 ALPHA = .000 PHI = 23.075

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT05)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-9.000
(LVFT25)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-9.000
(CVFT25)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-9.000

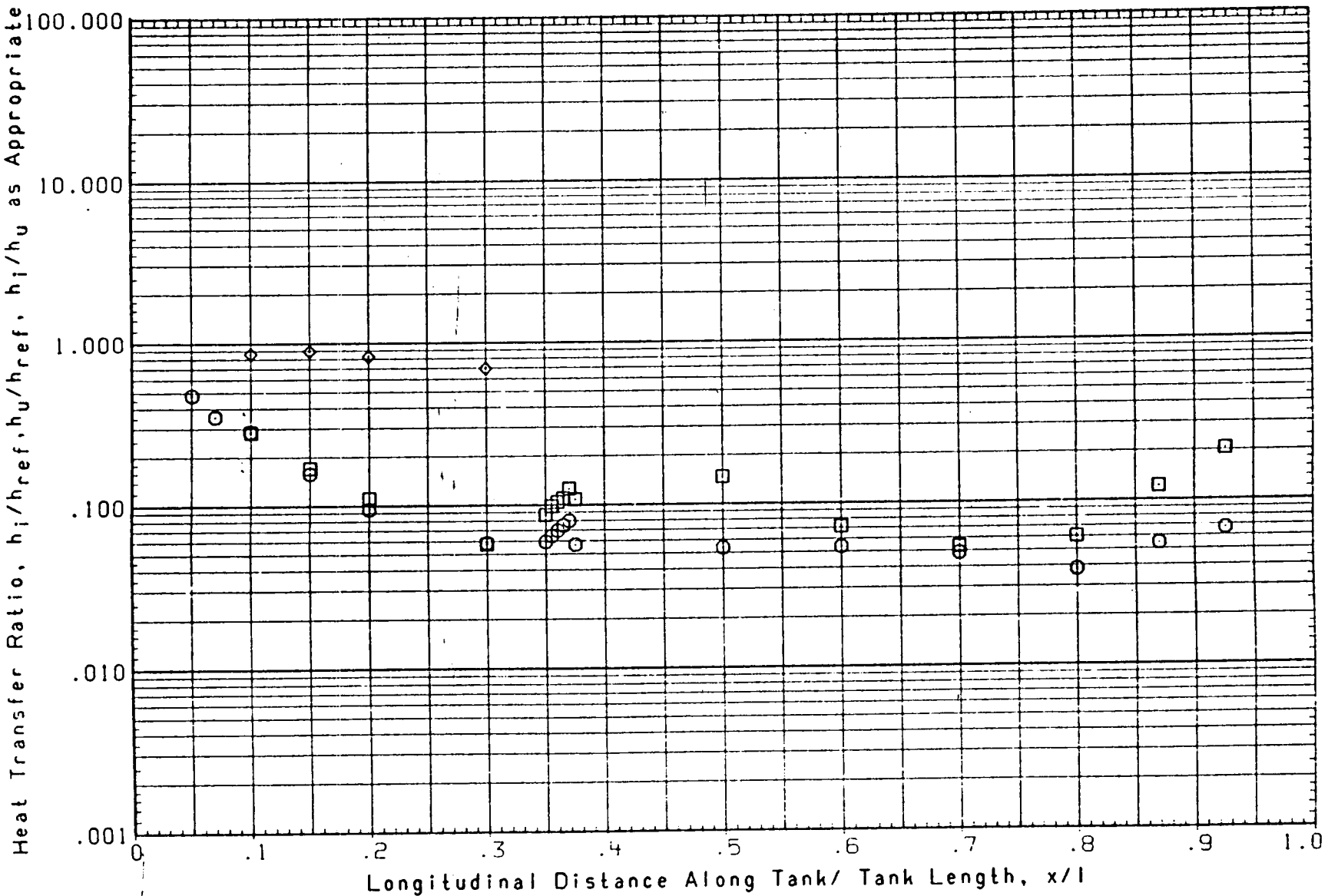


FIG. 14 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = -9

MACH = 3.010 ALPHA = .000 PHI = 29.800

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT05)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-9.000
(LVFT25)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-9.000
(CVFT25)	◇	DATA NOT AVAILABLE	.000	-9.000

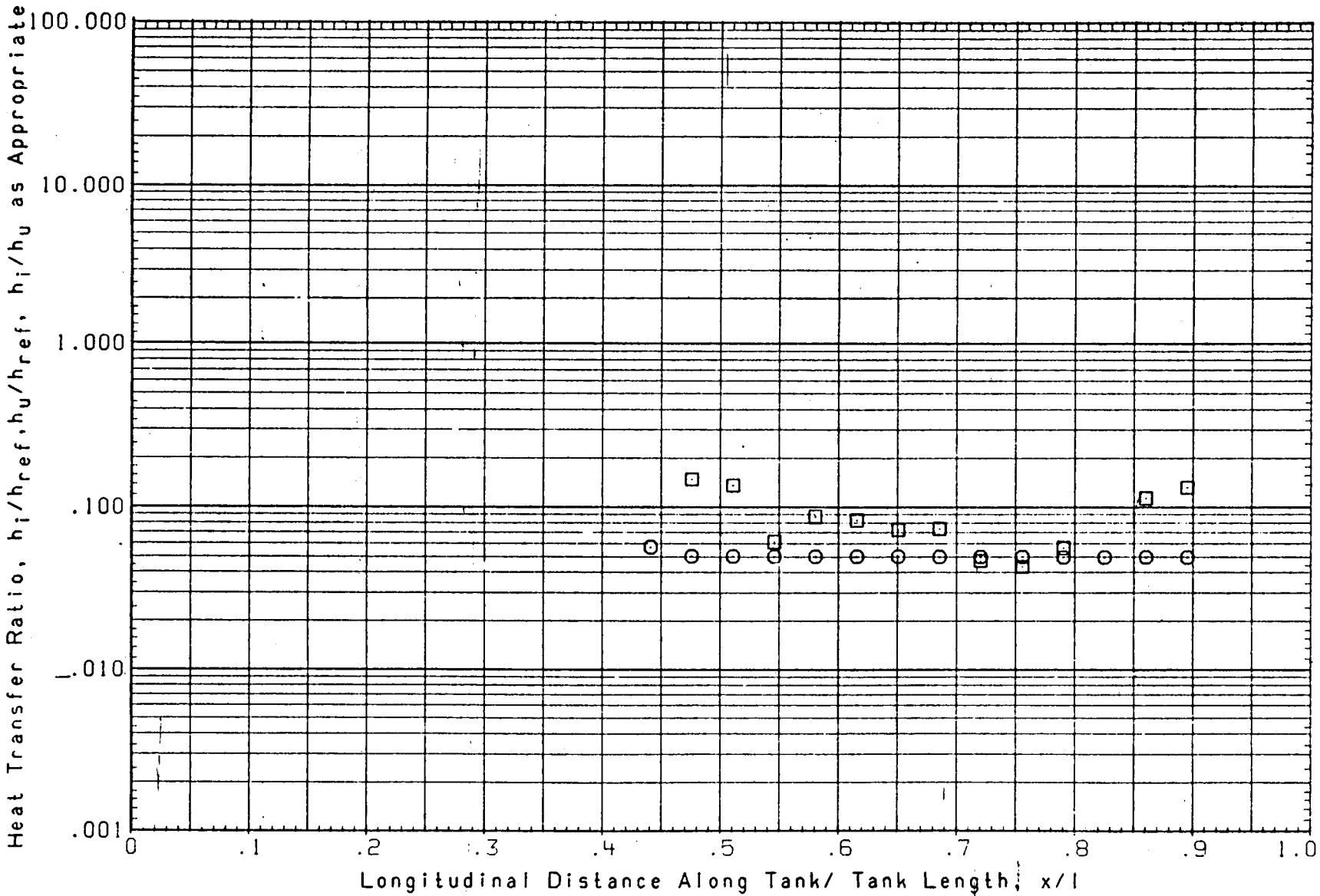


FIG. 14 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = -9

MACH = 3.010 ALPHA = .000 PHI = 31.430

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT05)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-9.000
(LVFT25)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-9.000
(CVFT25)	◇	DATA NOT AVAILABLE	.000	-9.000

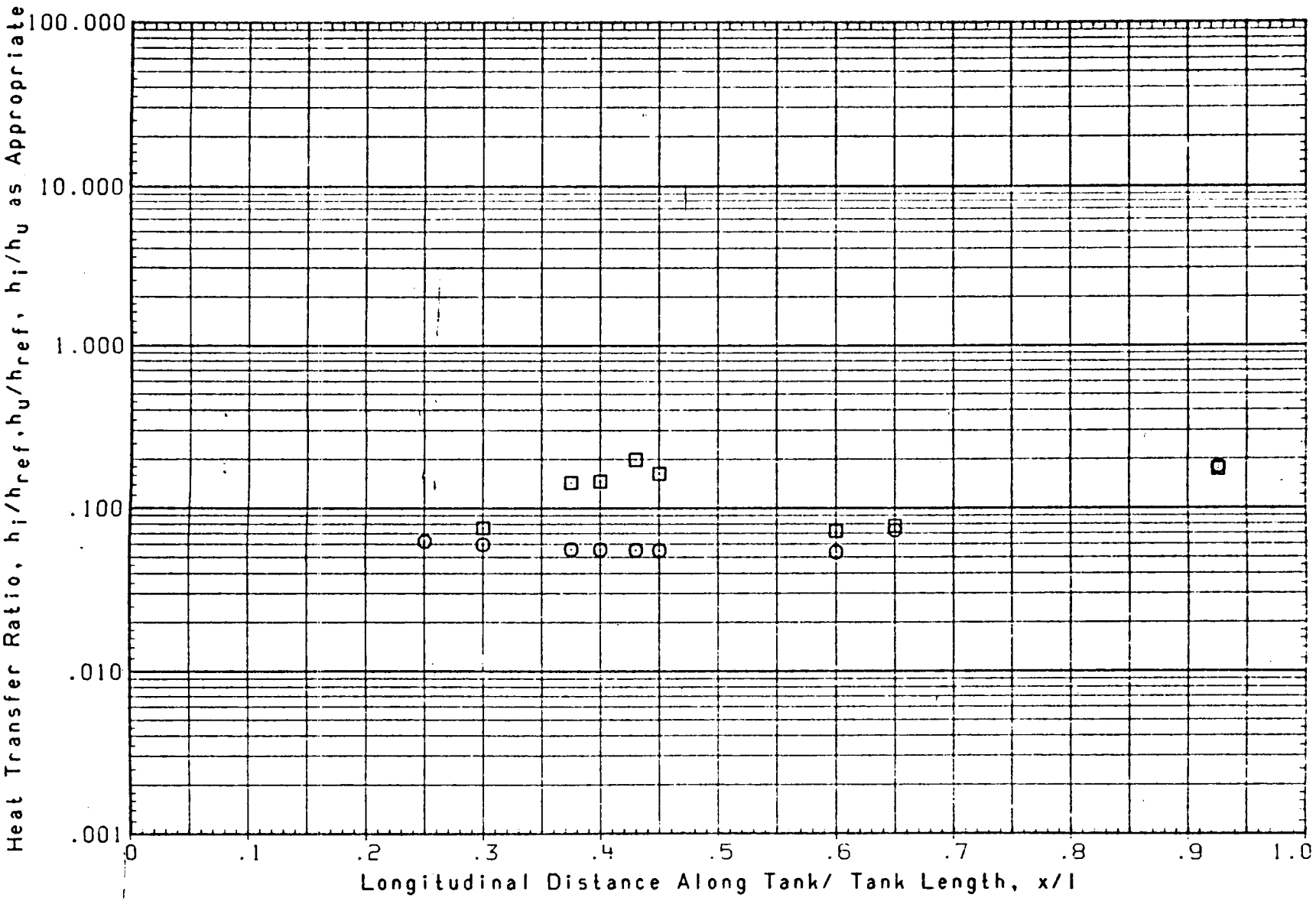


FIG. 14 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS LEEWARD SIDE, ALPHA = 0, BETA = -9

MACH = 3.010 ALPHA = .000 PHI = 33.750

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT05)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-9.000
(LVFT25)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-9.000
(CVFT25)	◇	DATA NOT AVAILABLE	.000	-9.000

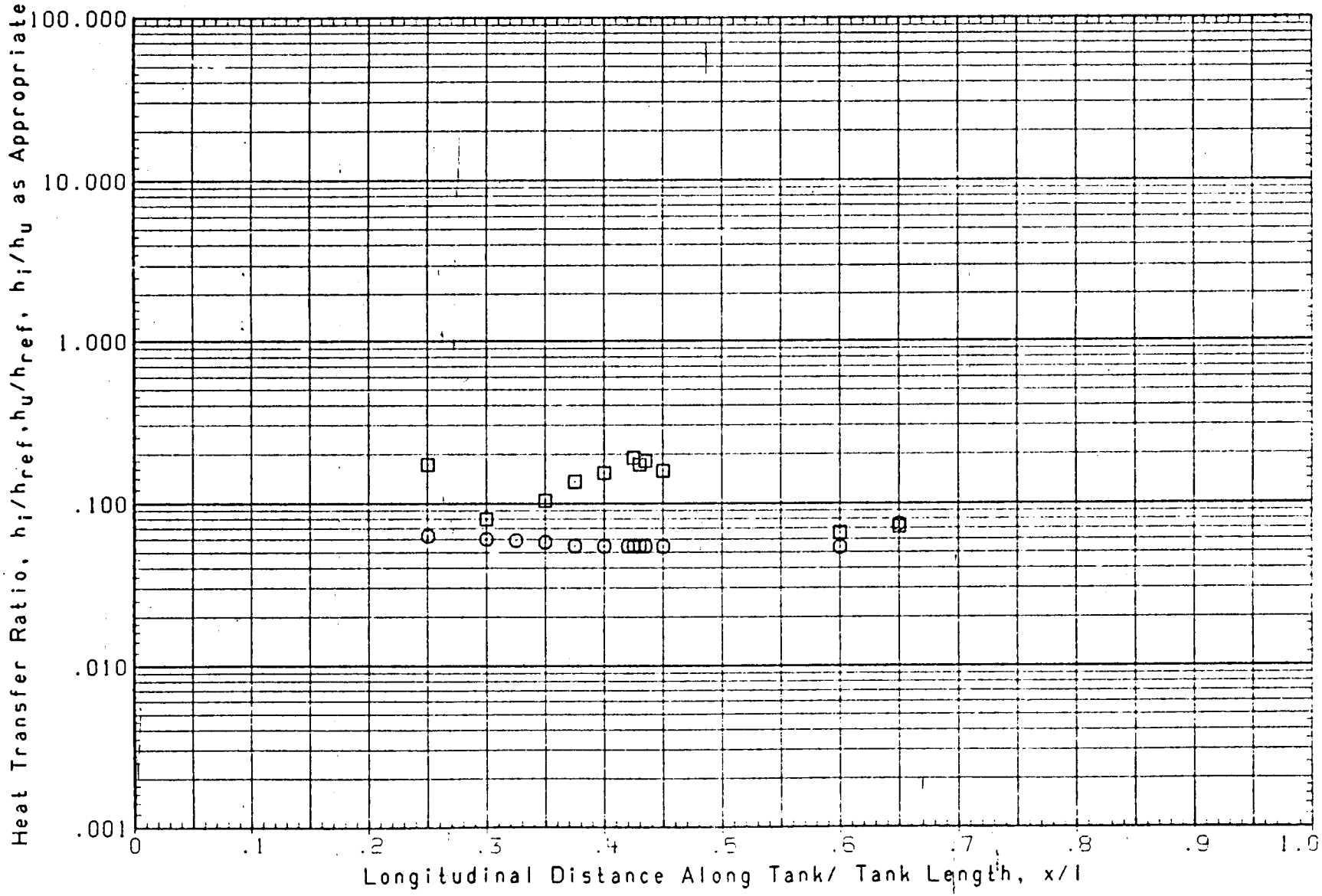


FIG. 14 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = -9

MACH = 3.010 ALPHA = .000 PHI = 30.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT05)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-9.000
(LVFT25)	□	IH41B(V41A-A4A) C T S (SPIKED ET DATA) HI/HREF	.000	-9.000
(CVFT25)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-9.000

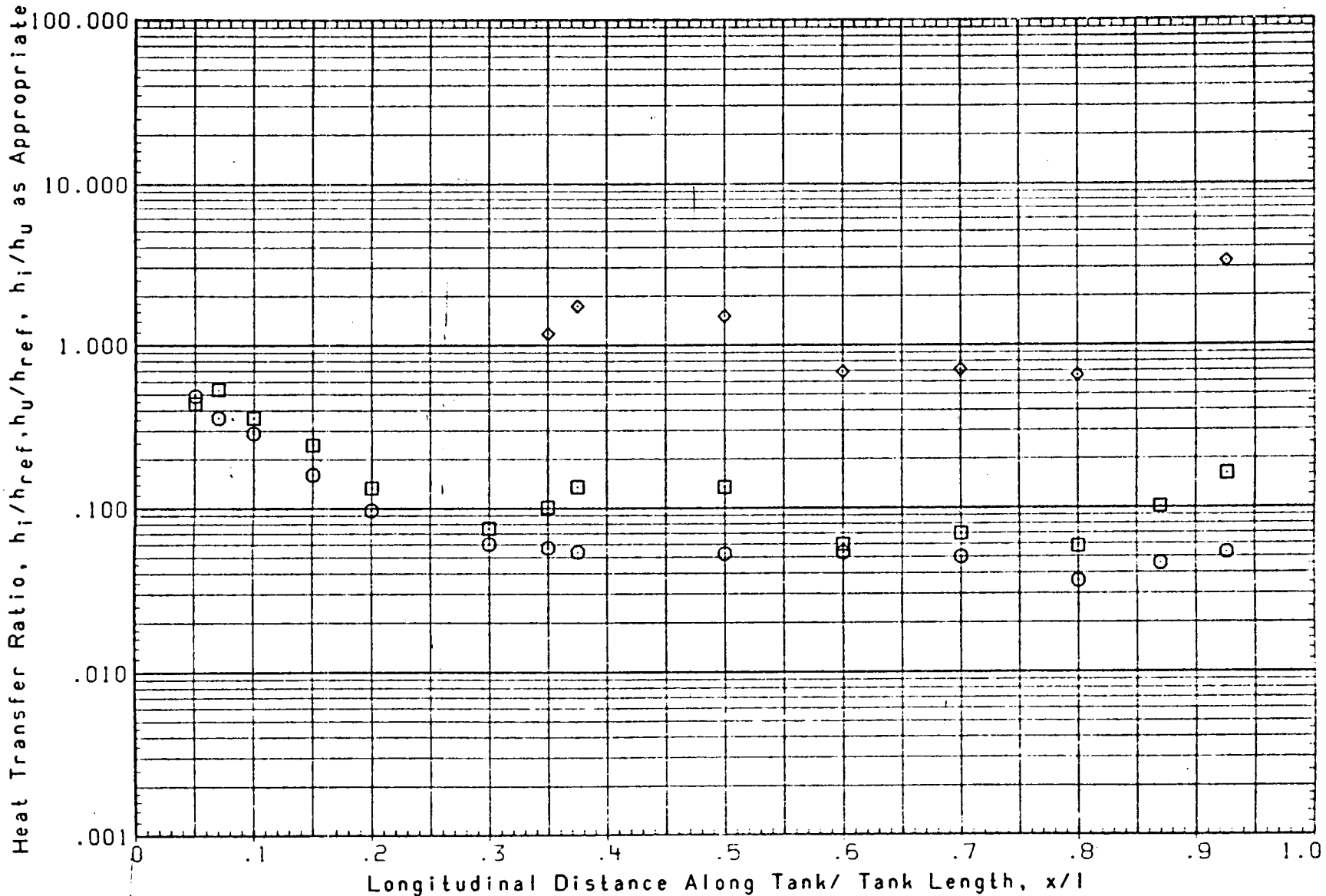


FIG. 14 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS LEEWARD SIDE, ALPHA = 0, BETA = -9

MACH = 3.010 ALPHA = .000 PHI = 37.700

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT05)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-9.000
(LVFT25)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-9.000
(CVFT25)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-9.000

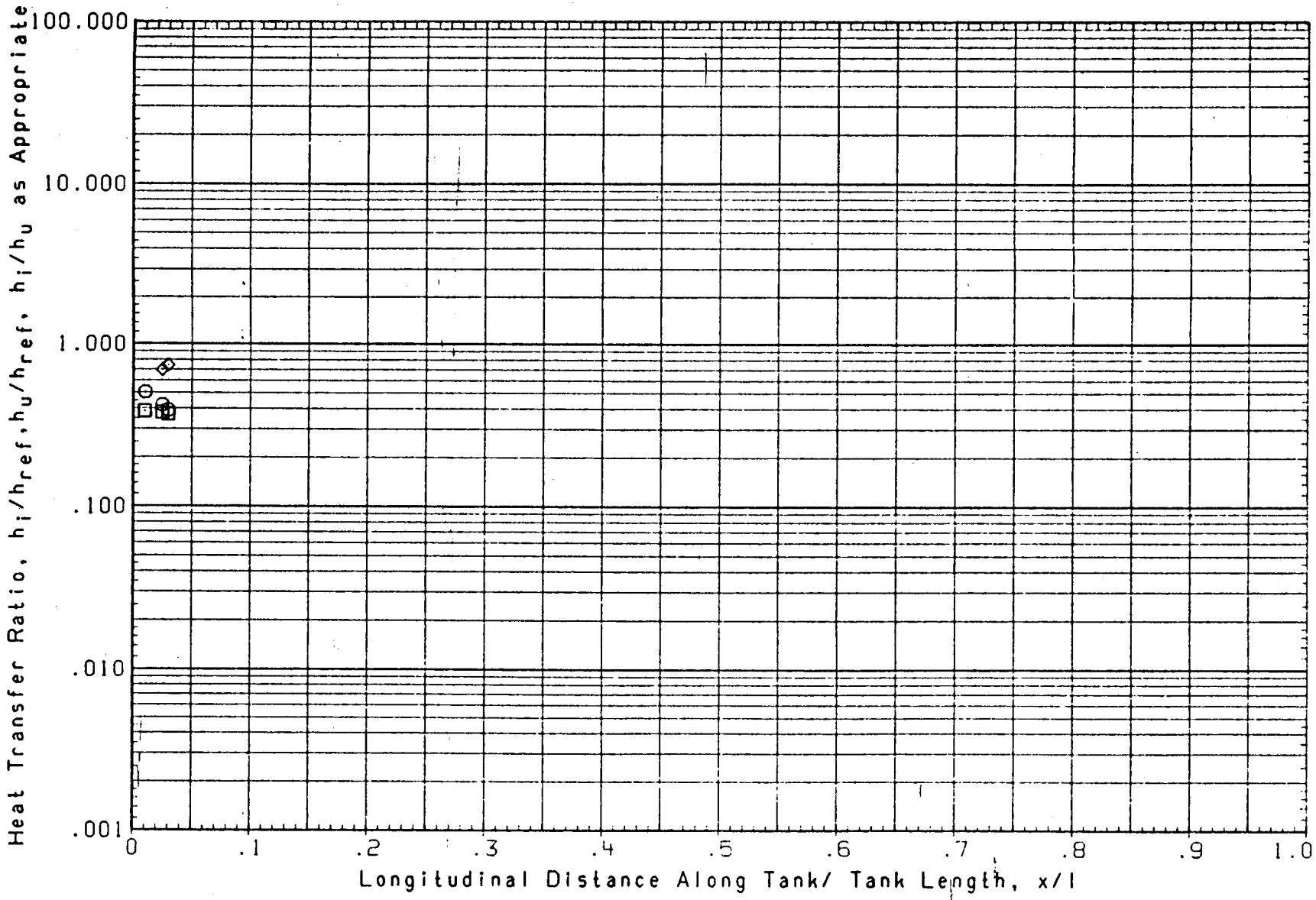


FIG. 14 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = -9

MACH = 3.010 ALPHA = .000 PHI = 32.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT05)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-9.000
(LVFT25)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-9.000
(CVFT25)	◇	DATA NOT AVAILABLE	.000	-9.000

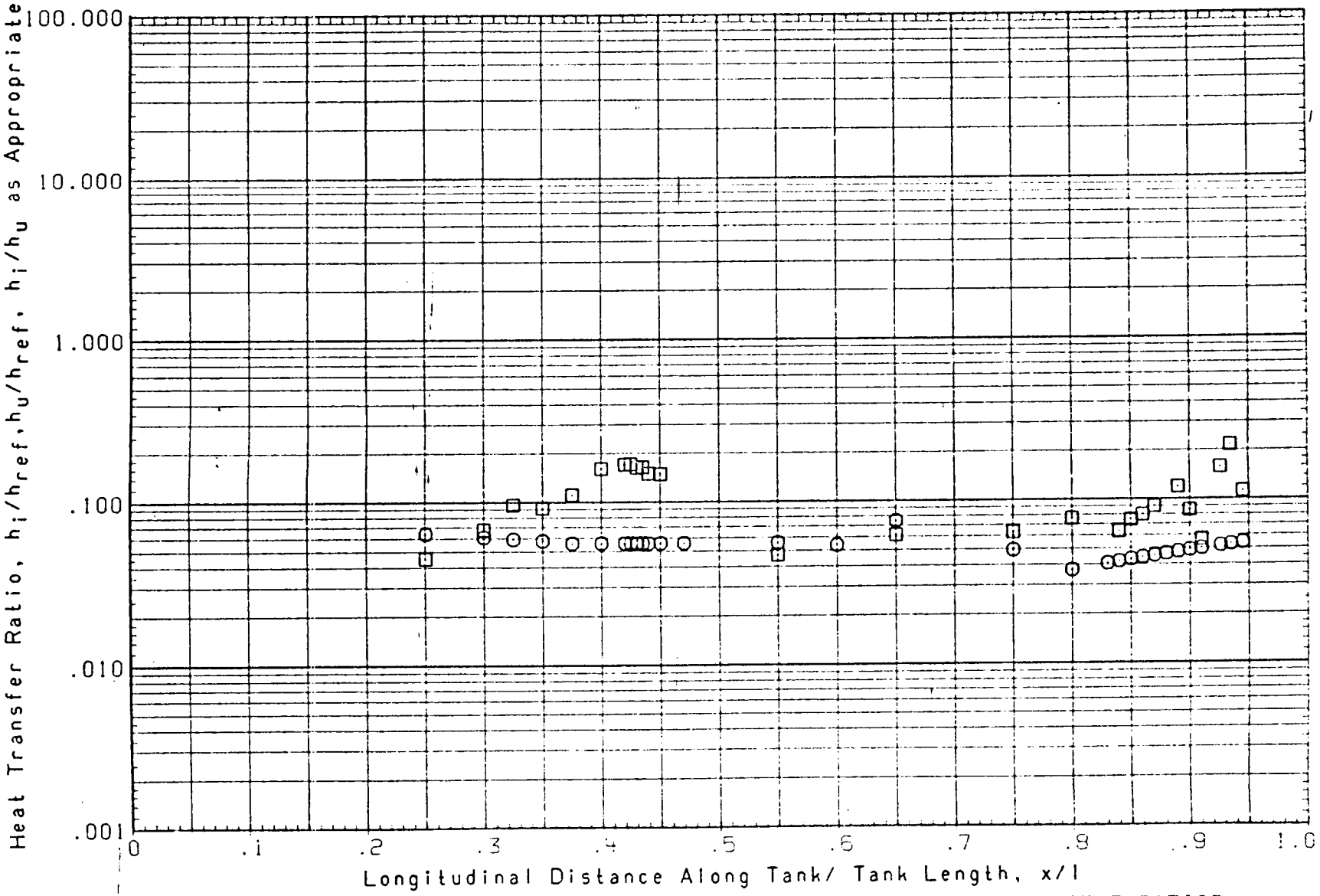


FIG. 14 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = -9

MACH = 3.010 ALPHA = .000 BETA = -9.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT05)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-9.000
(LVFT25)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-9.000
(CVFT25)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-9.000

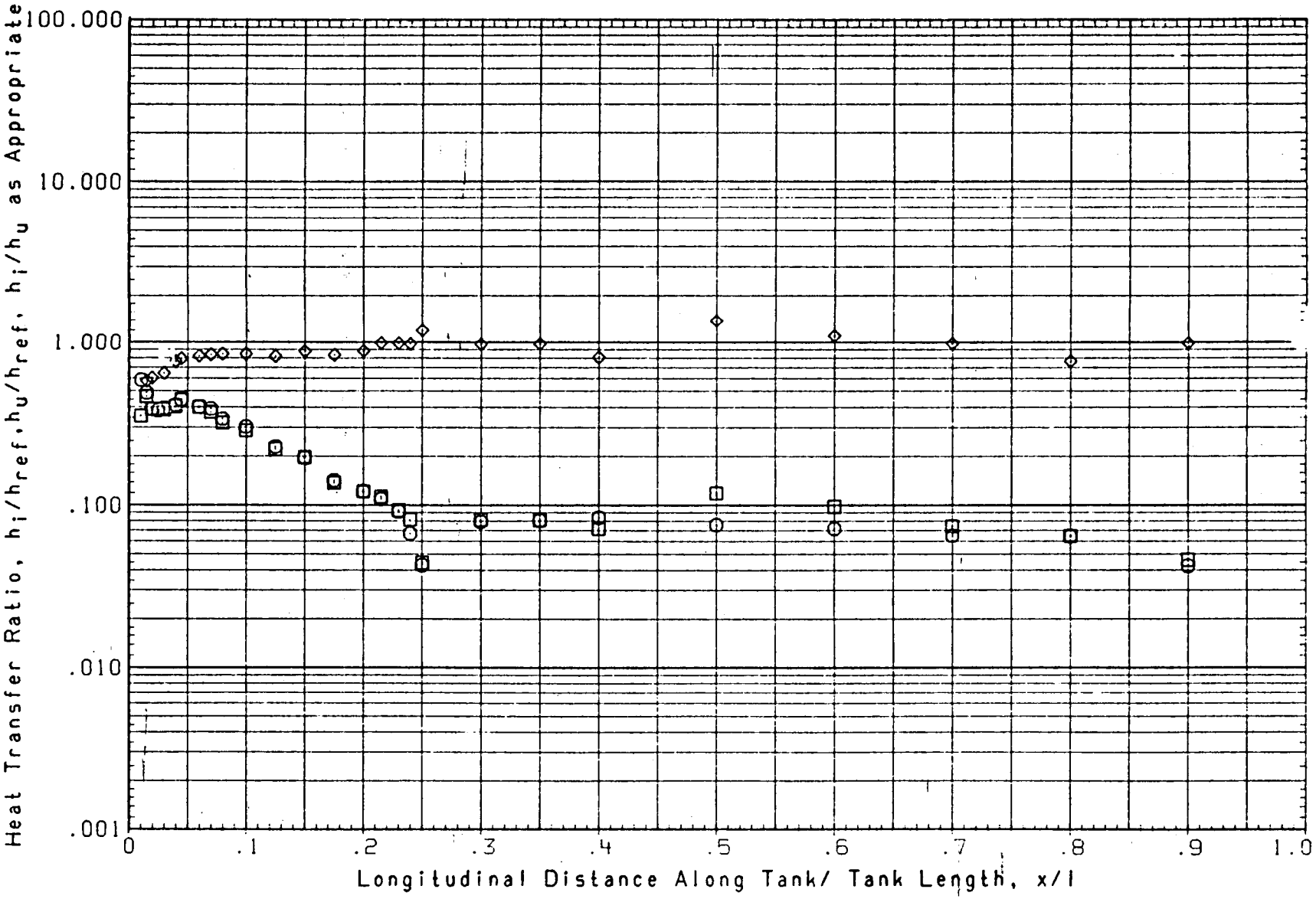


FIG. 14 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = -9

MACH = 3.010 ALPHA = .000 PHI = 180.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT05)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-9.000
(LVFT25)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-9.000
(CVFT25)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-9.000

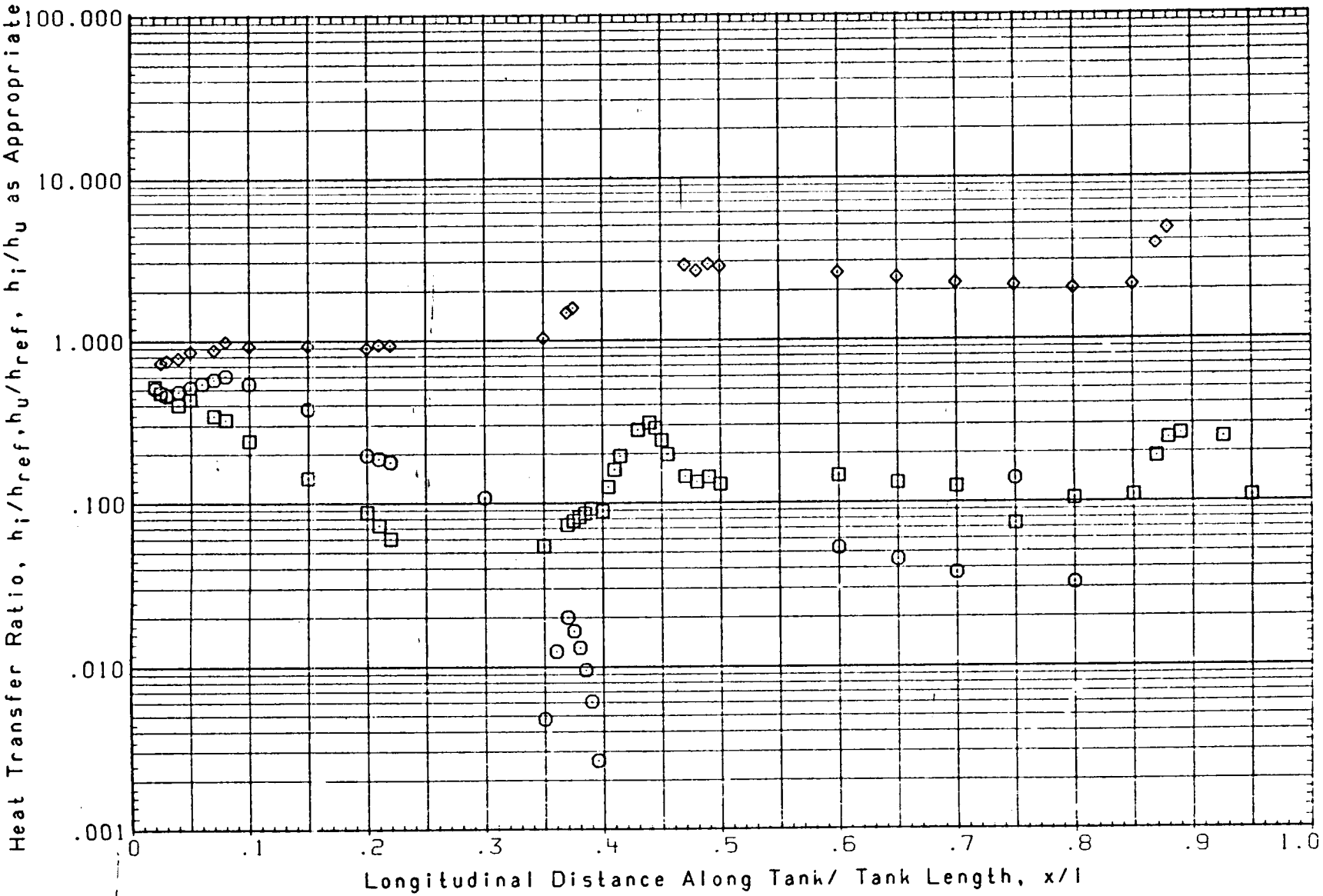


FIG. 14 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = -90

MACH = 4.020 ALPHA = .010 PHI = .000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT05)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-9.000
(LVFT25)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-9.000
(CVFT25)	◇	DATA NOT AVAILABLE	.000	-9.000

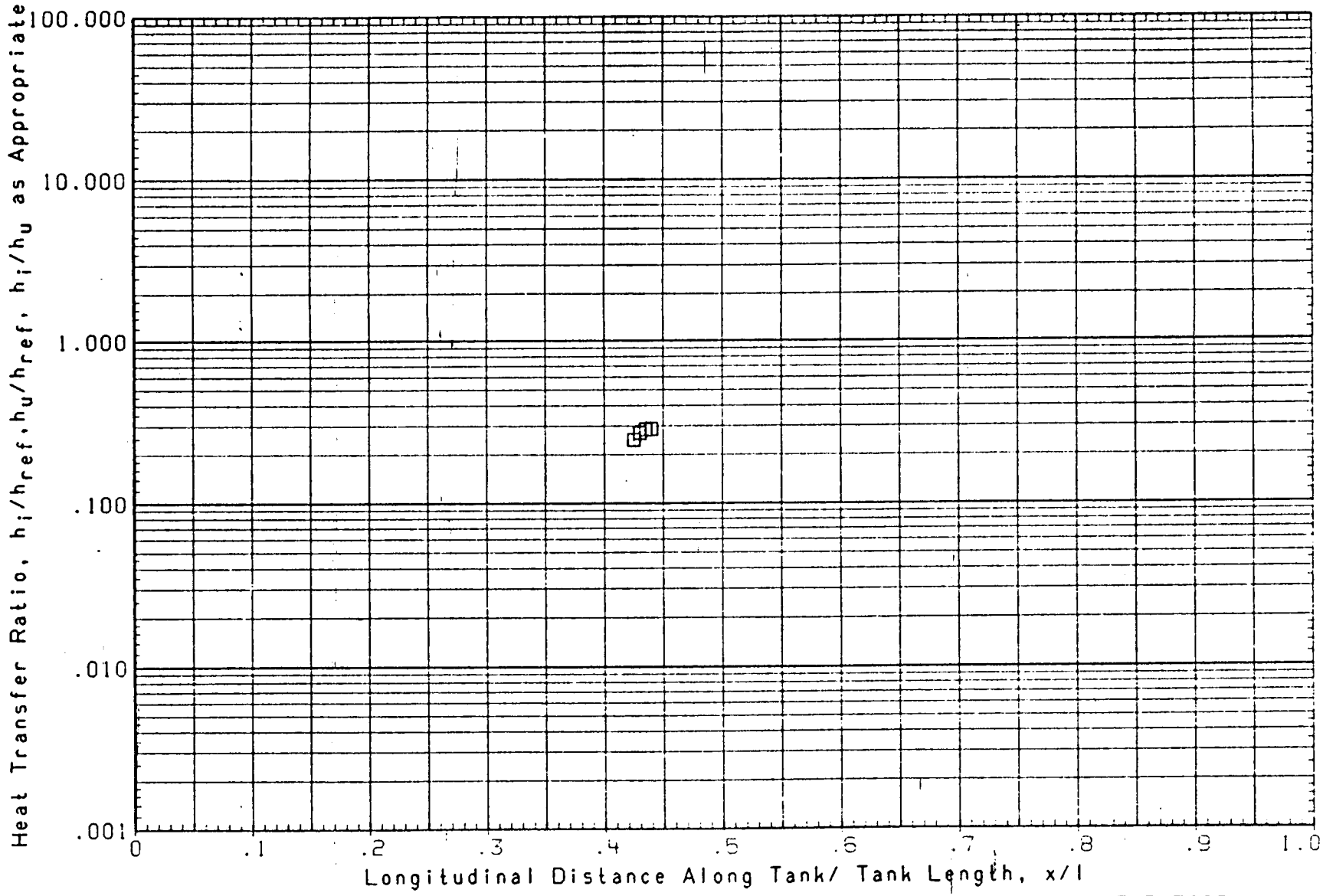


FIG. 14 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0 BETA = -9

MACH = 4.020 ALPHA = .010 PHI = 5.630

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT05)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-9.000
(LVFT25)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-9.000
(CVFT25)	◇	DATA NOT AVAILABLE	.000	-9.000

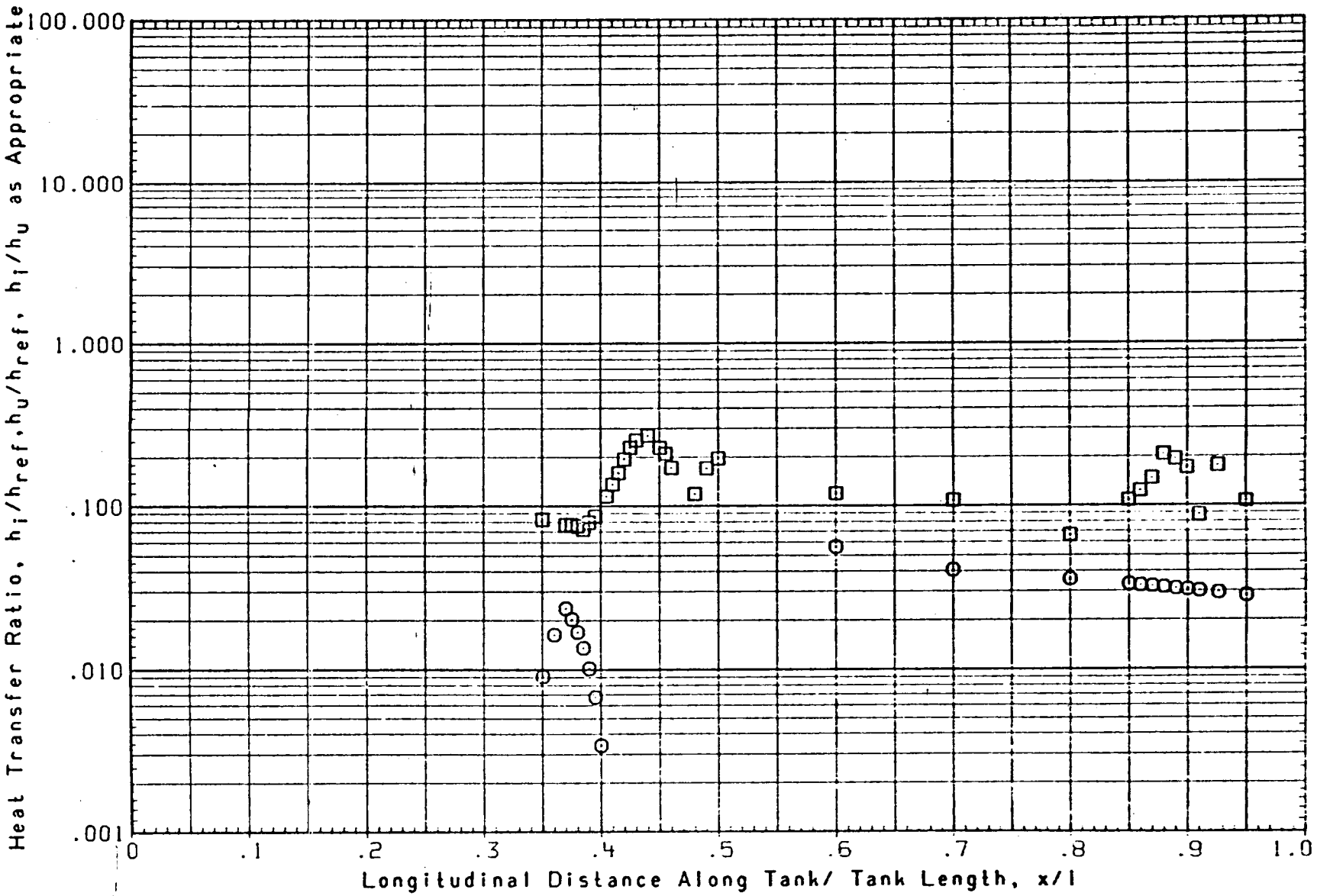


FIG. 14 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = -9

MACH = 4.020 ALPHA = .010 PHI = 11.250

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT05)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-9.000
(LVFT25)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-9.000
(CVFT25)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-9.000

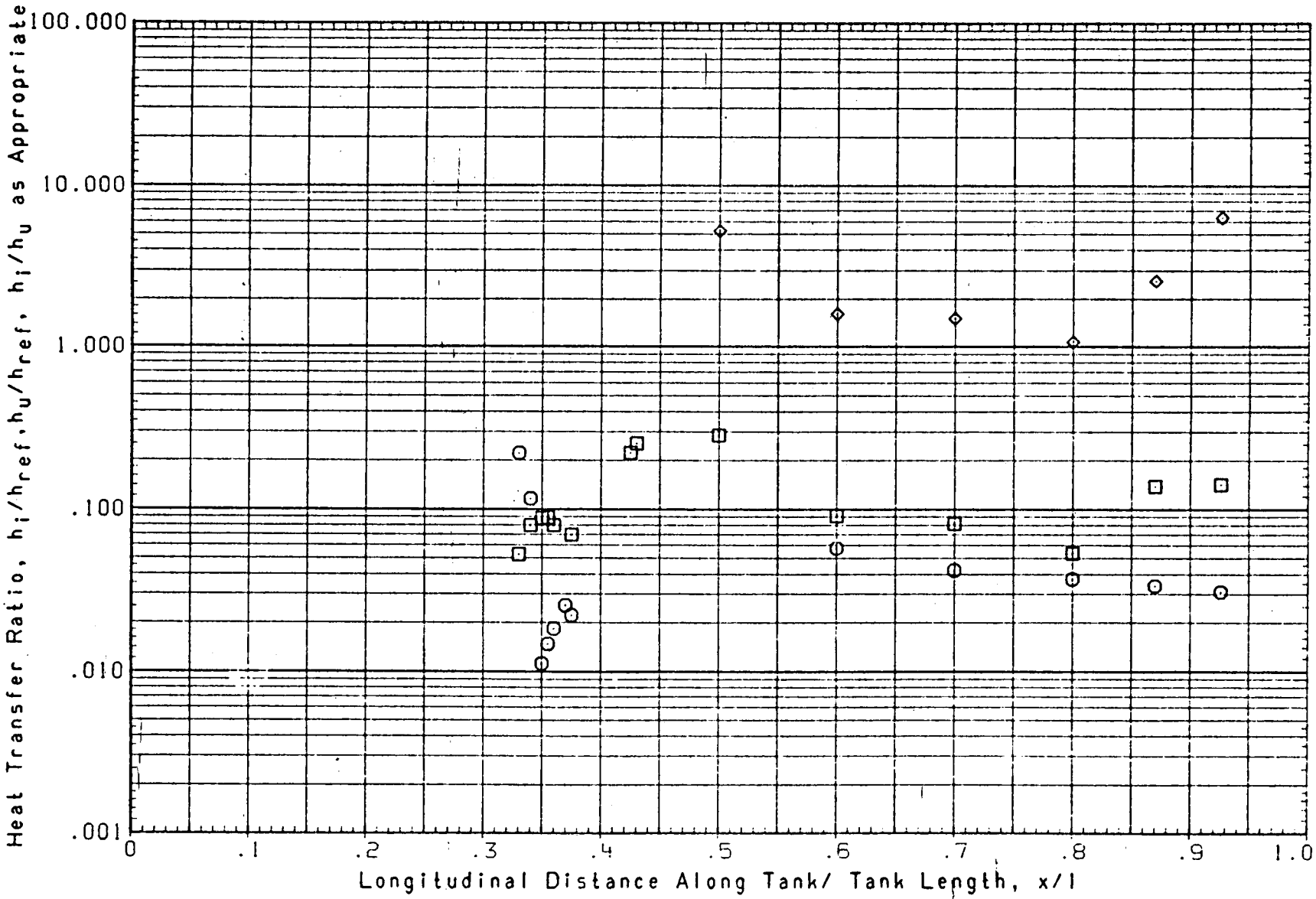


FIG. 14 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0 BETA = -9

MACH = 4.020 ALPHA = .010 PHI = 17.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT05)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-9.000
(LVFT25)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-9.000
(CVFT25)	◇	DATA NOT AVAILABLE	.000	-9.000

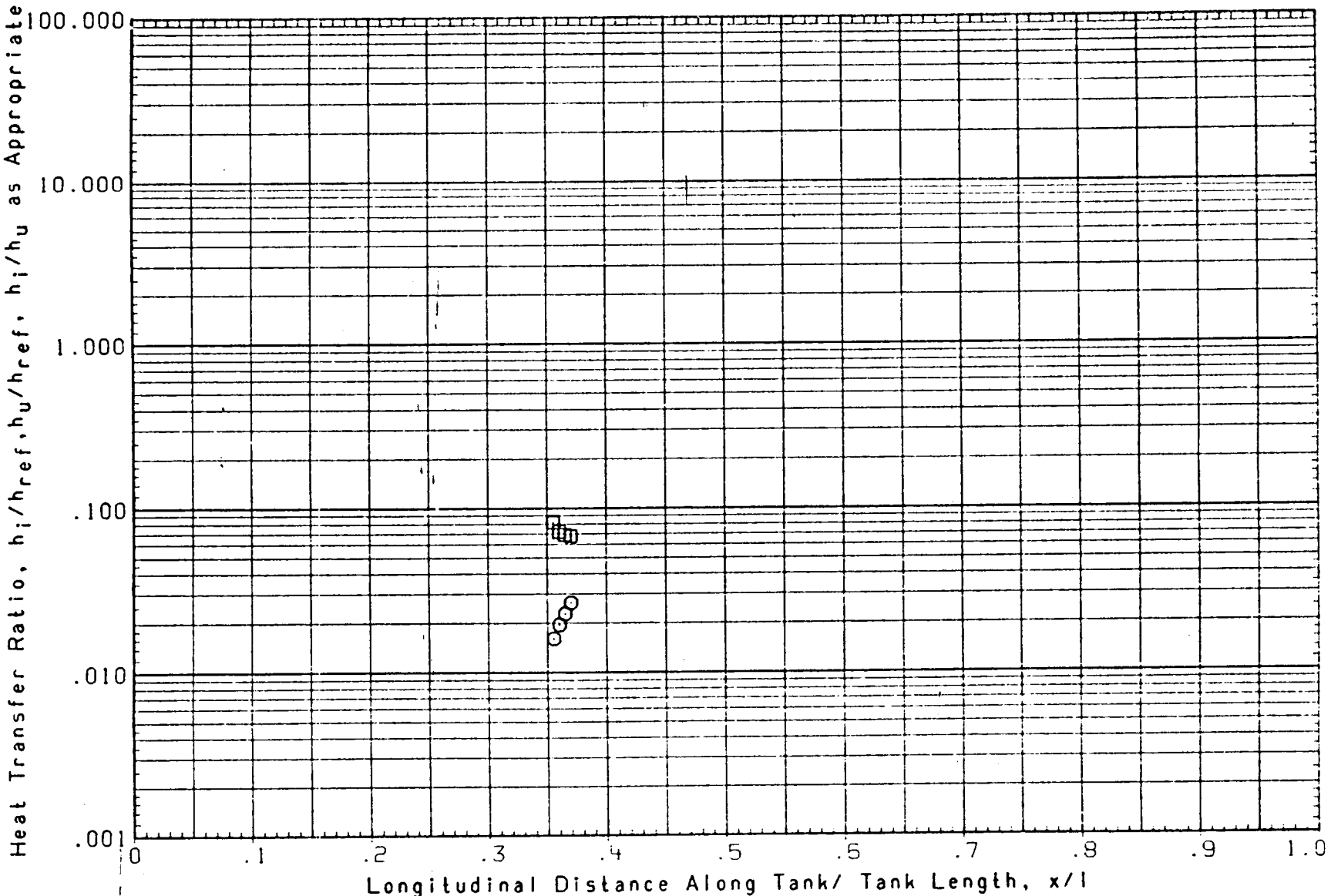


FIG. 14 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = -9

MACH = 4.020 ALPHA = .010 PHI = 20.980

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT05)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-9.000
(LVFT25)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-9.000
(CVFT25)	◇	DATA NOT AVAILABLE	.000	-9.000

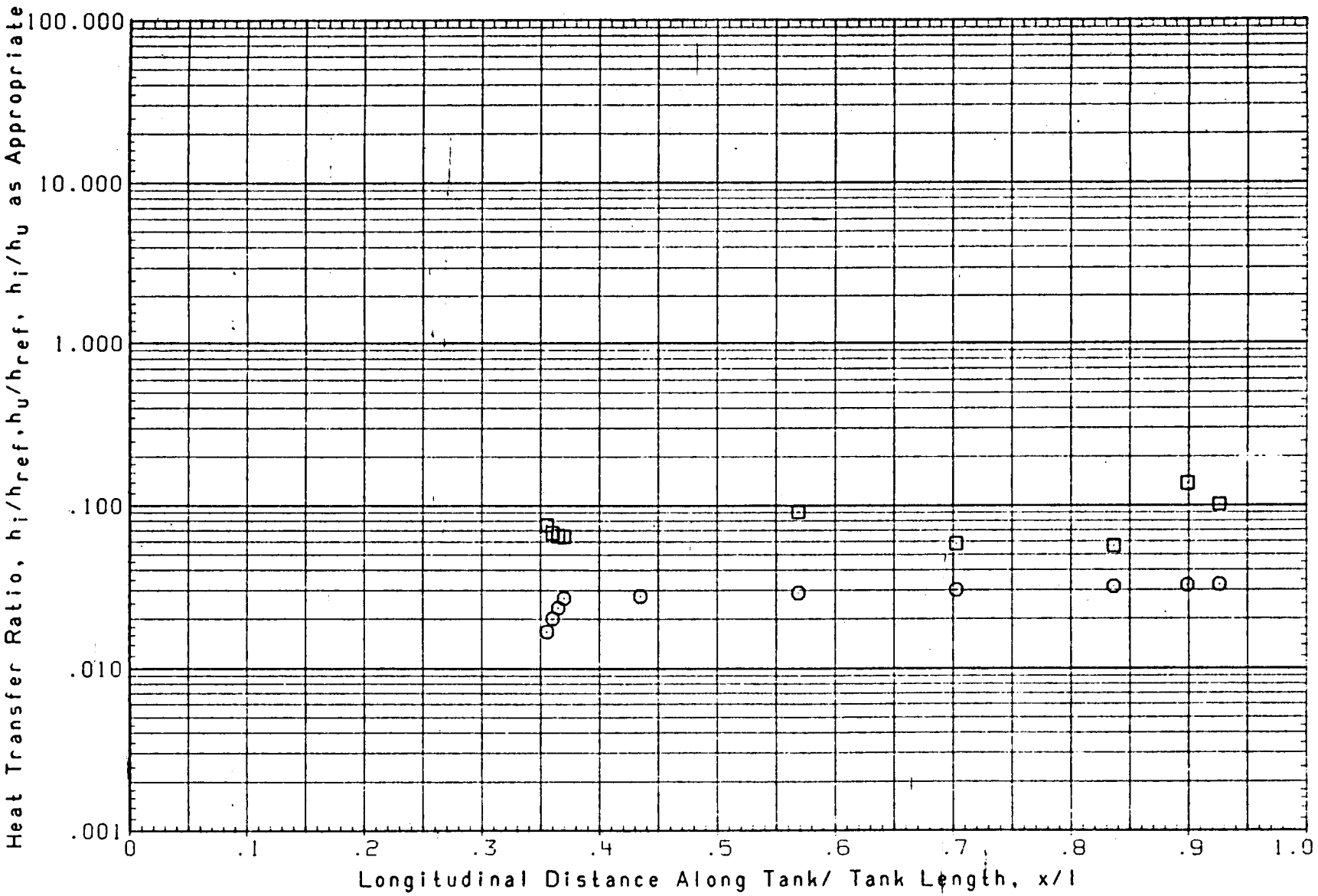


FIG. 14 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = -9

MACH = 4.020 ALPHA = .010 PHI = 23.075

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	PHI	BETA
(RVFT05)	○	IH41B(ALDC 741A-44A) SPIKED EXTERNAL TANK ALONE	.000	-9.000
(LVFT25)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-9.000
(CVFT25)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-9.000

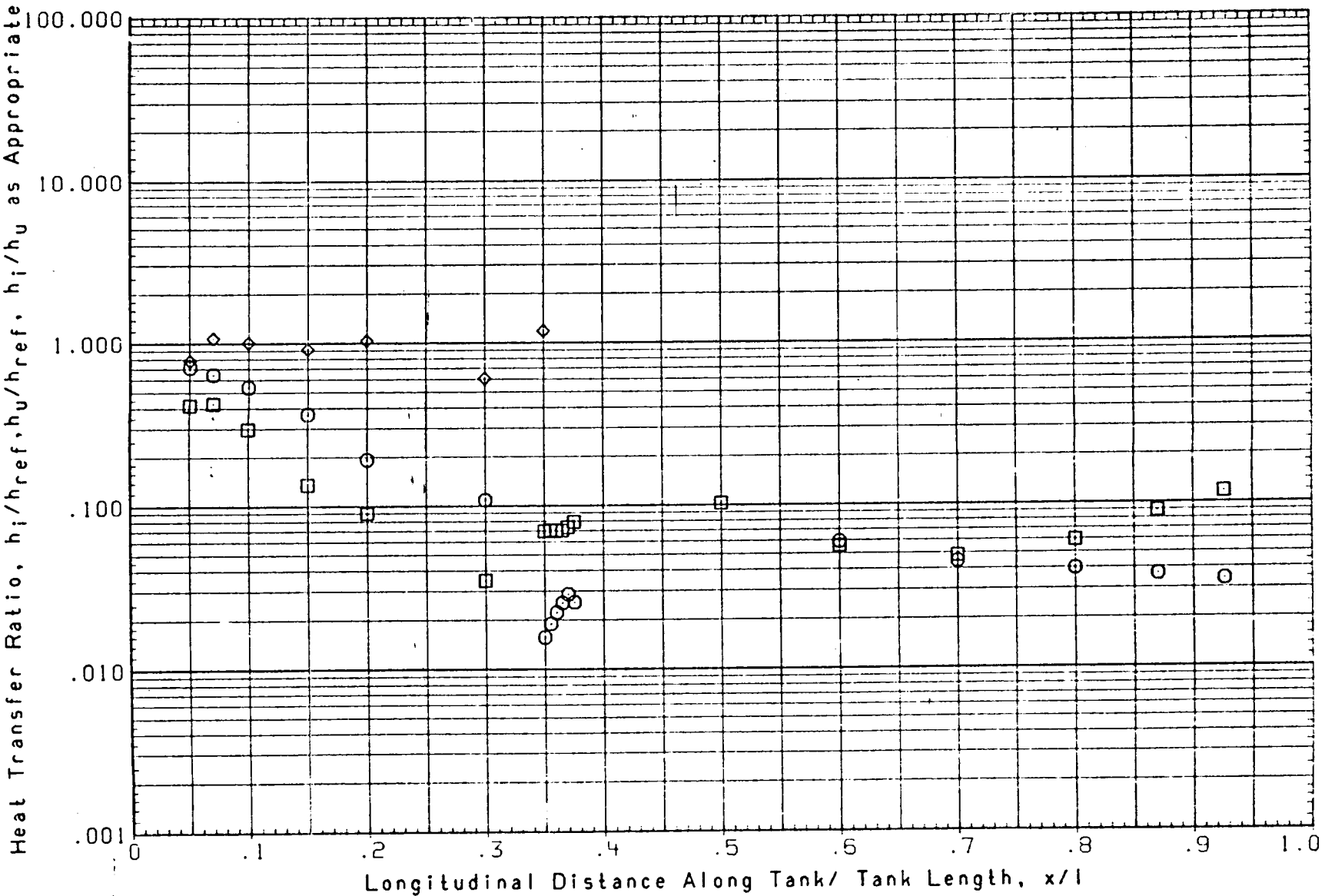


FIG. 14 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = -9

MACH = 4.020 ALPHA = .010 PHI = 29.800

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT05)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-9.000
(LVFT25)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-9.000
(CVFT25)	◇	DATA NOT AVAILABLE	.000	-9.000

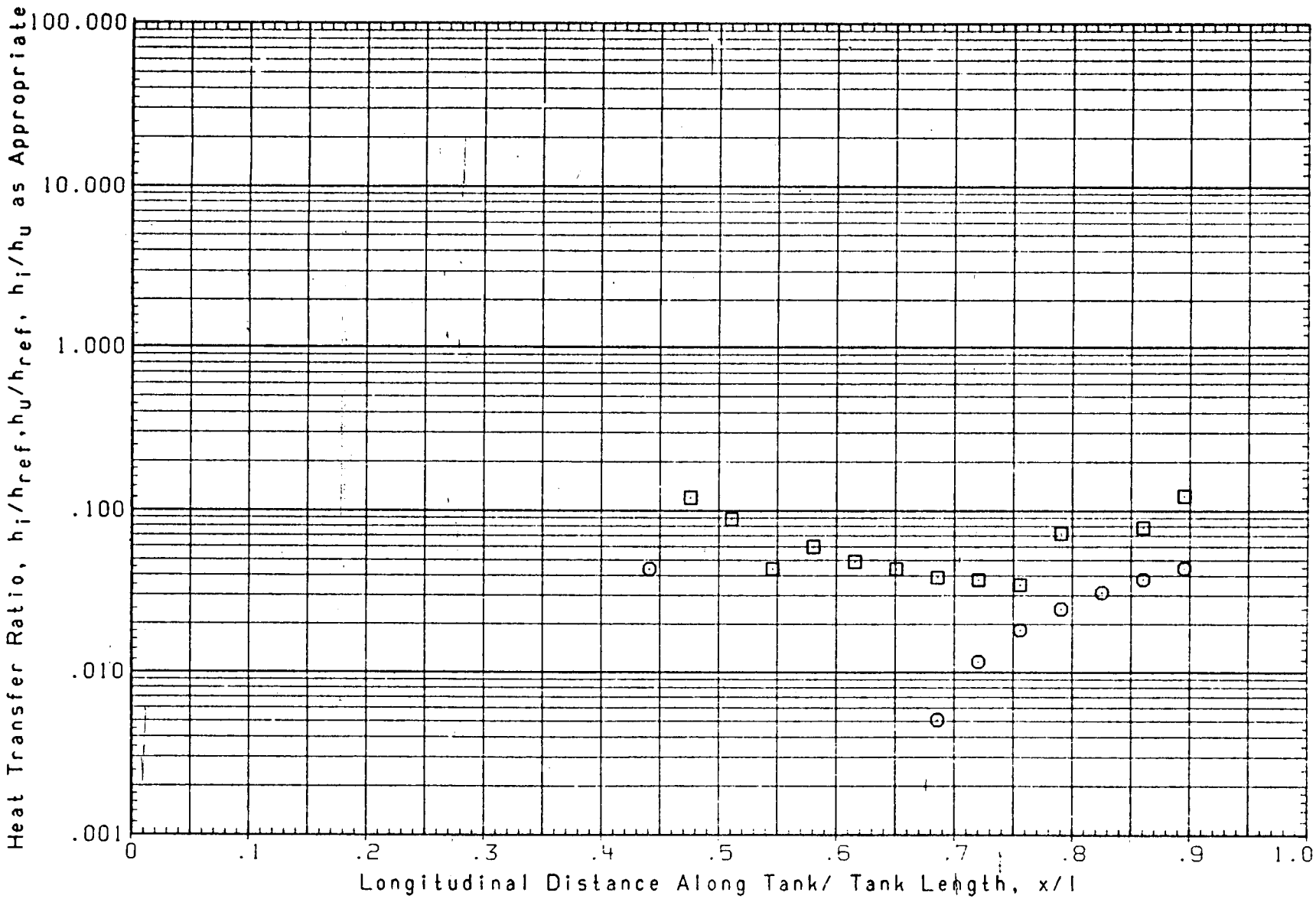


FIG. 14 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT05)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-9.000
(LVFT25)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-9.000
(CVFT25)	◇	DATA NOT AVAILABLE	.000	-9.000

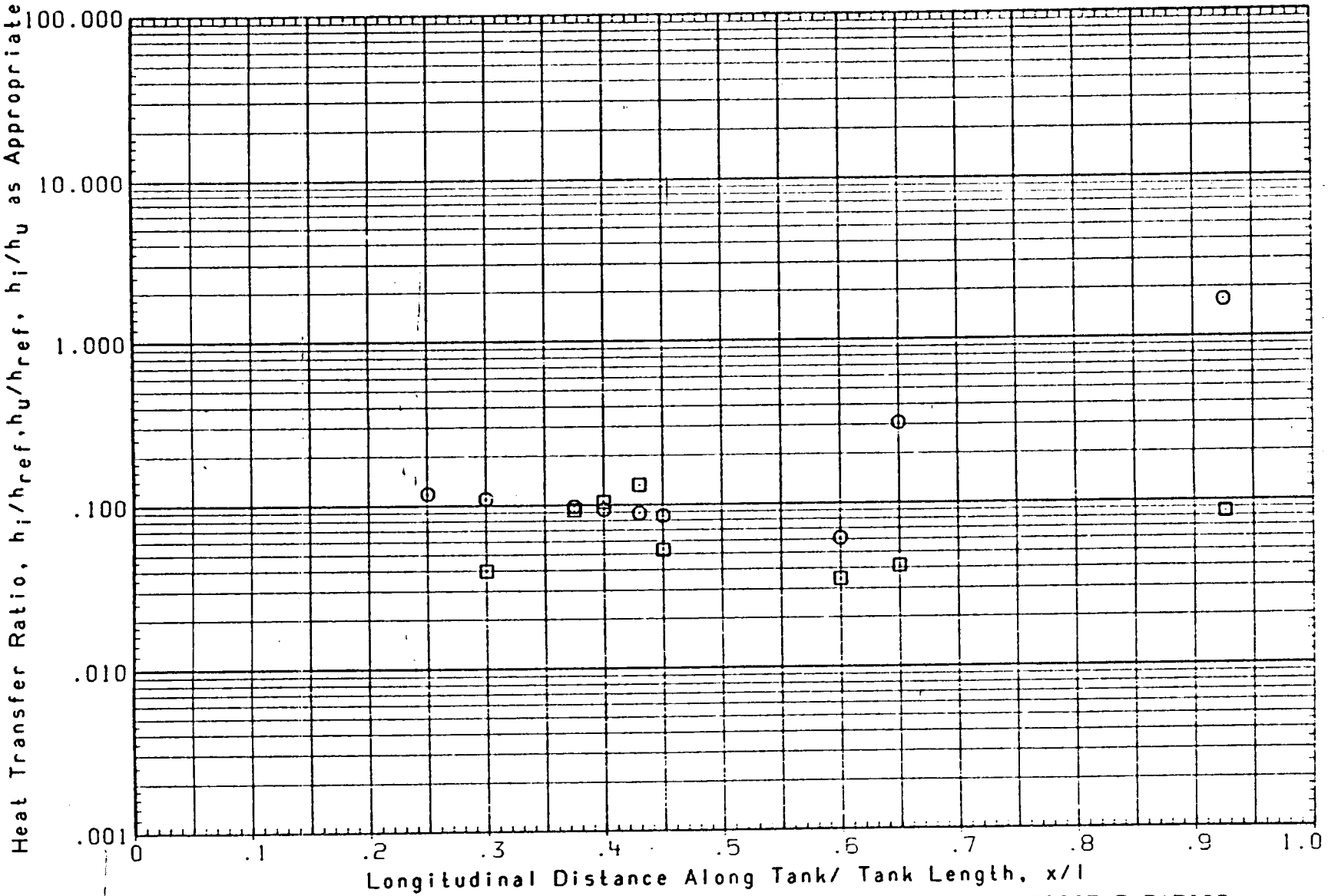


FIG. 14 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = -9

MACH = 4.020 ALPHA = .010 PHI = 33.750

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT05)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-9.000
(LVFT25)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-9.000
(CVFT25)	◇	DATA NOT AVAILABLE	.000	-9.000

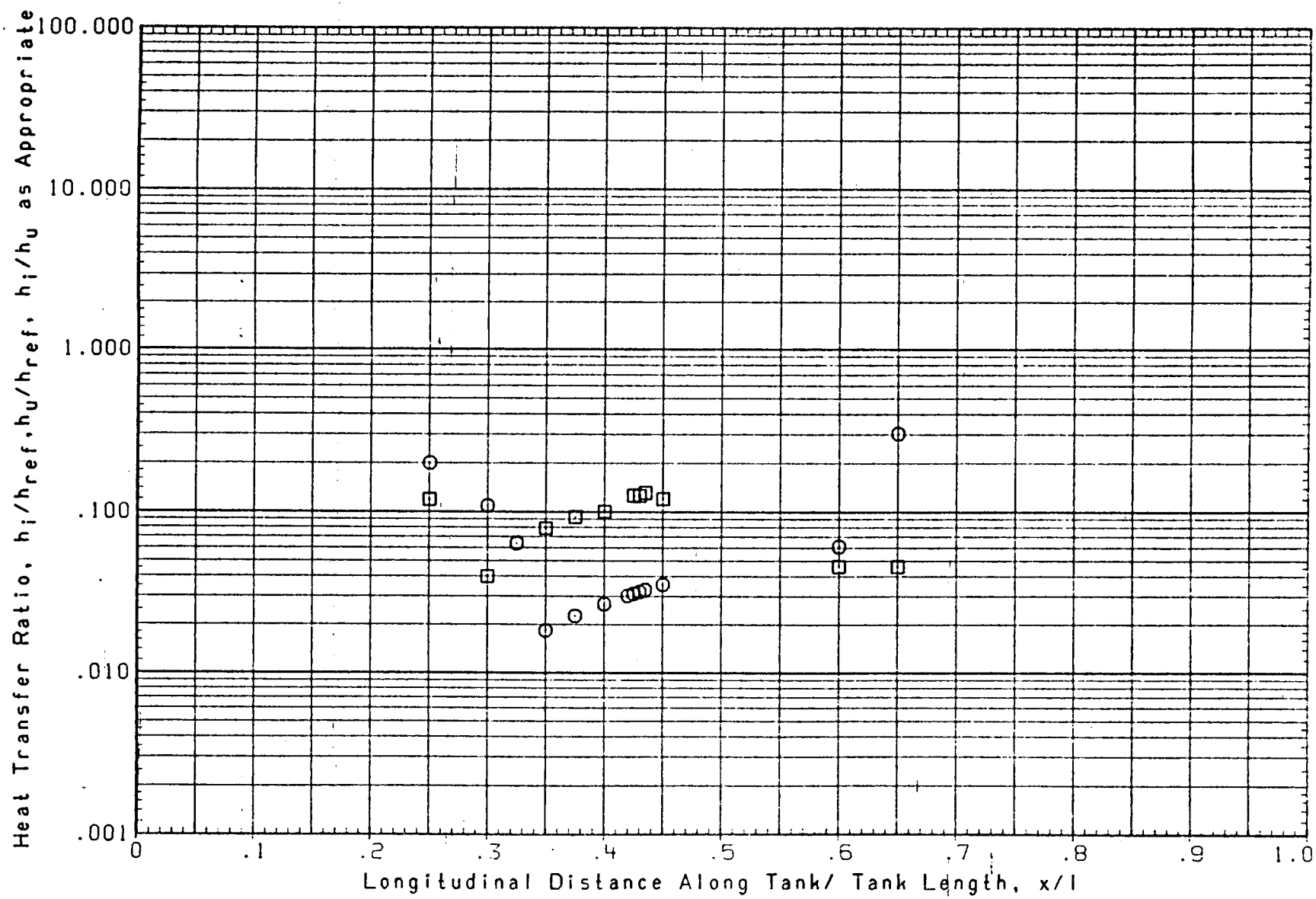


FIG. 14 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = [illegible], BETA [illegible]

MACH = [illegible]

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT05)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-9.000
(LVFT25)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-9.000
(CVFT25)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-9.000

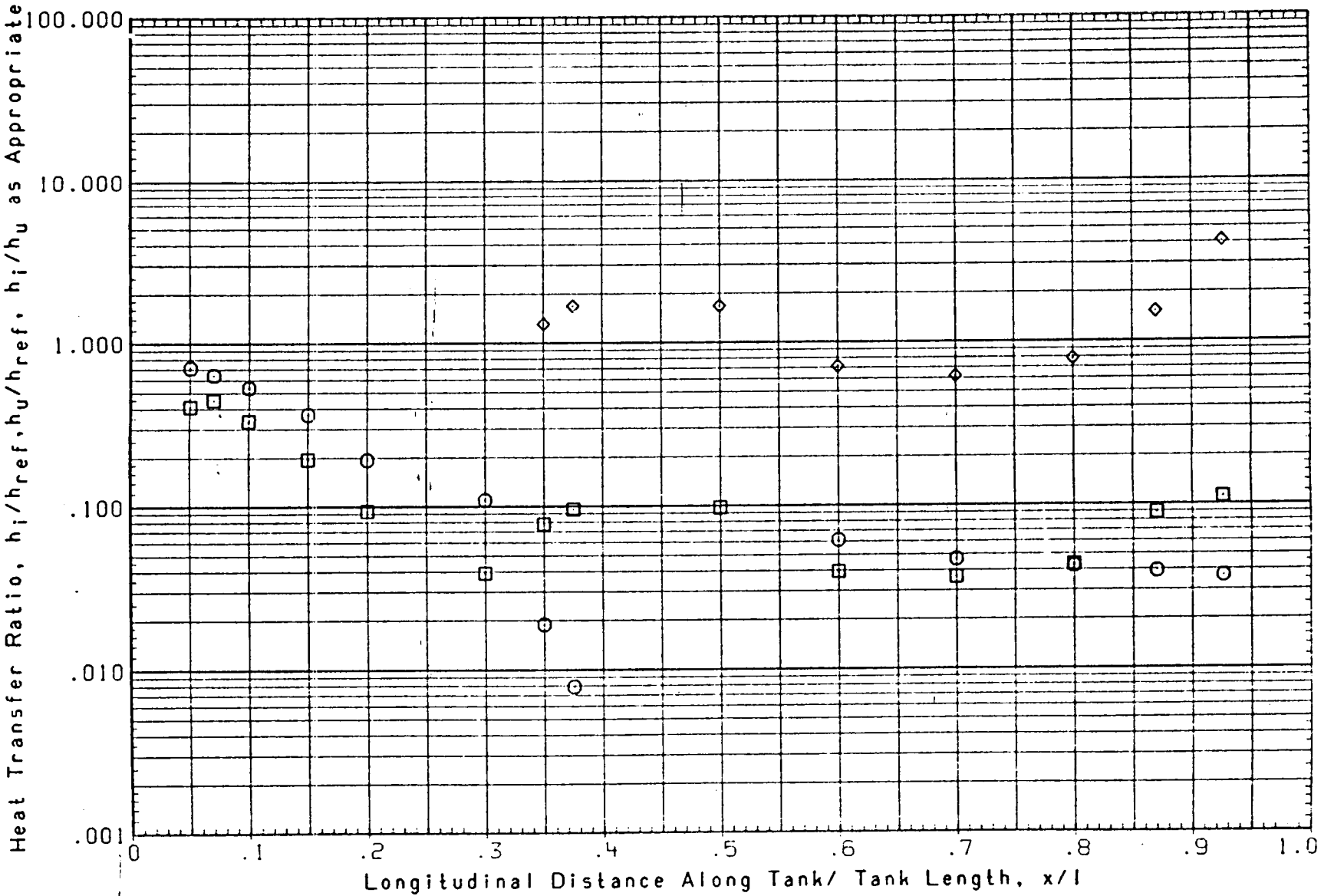


FIG. 14 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS LEEWARD SIDE, ALPHA = 0, BETA = -9

MACH = 4.020 ALPHA = .010 PHI = 37.700

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT05)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-9.000
(LVFT25)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-9.000
(CVFT25)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-9.000

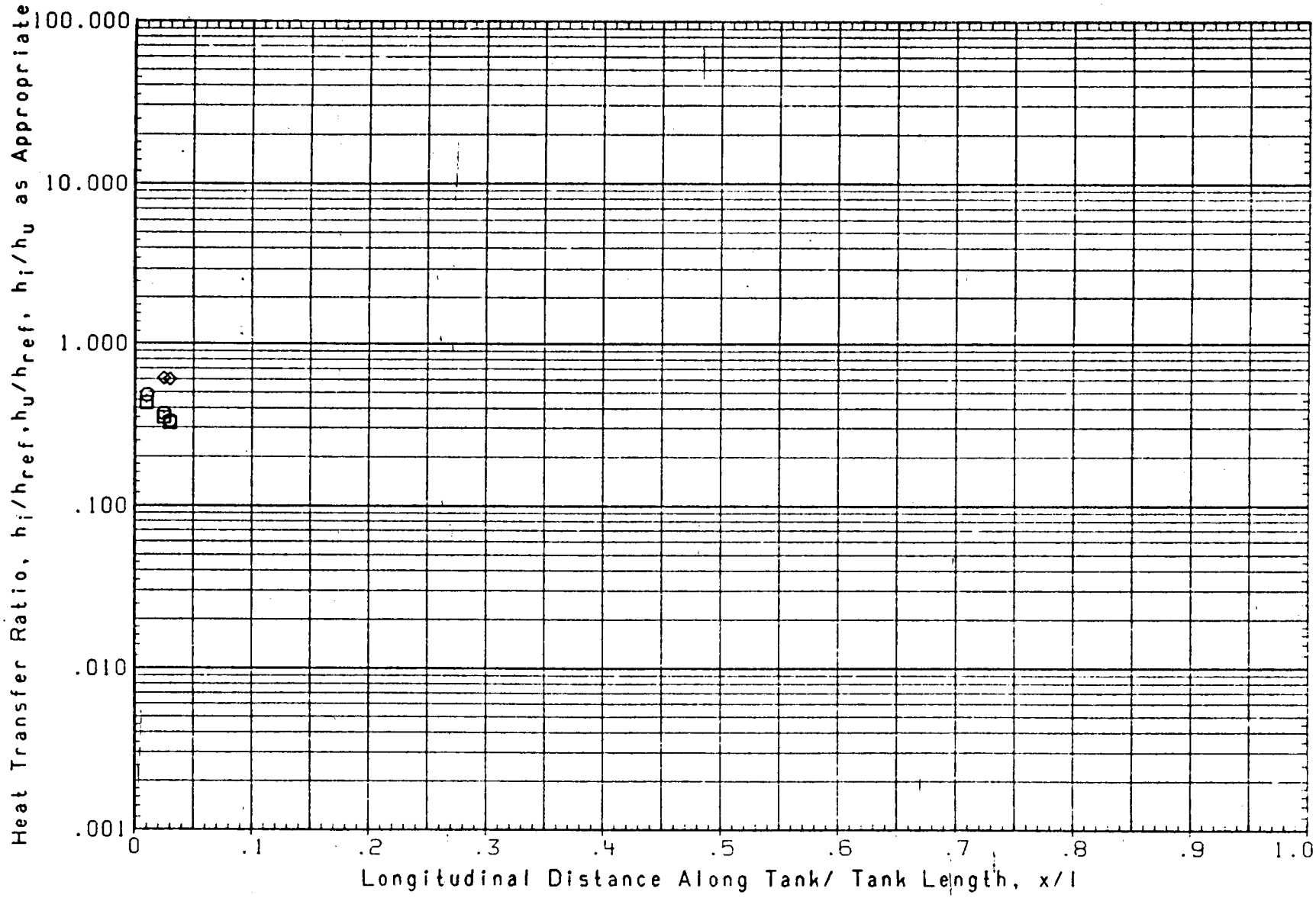


FIG. 14 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = -9

MACH = 4.620 ALPHA = .01[illegible] PHI [illegible]

			ALPHA	BETA
(KVFT05)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-9.000
(LVFT25)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-9.000
(CVFT25)	◇	DATA NOT AVAILABLE	.000	-9.000

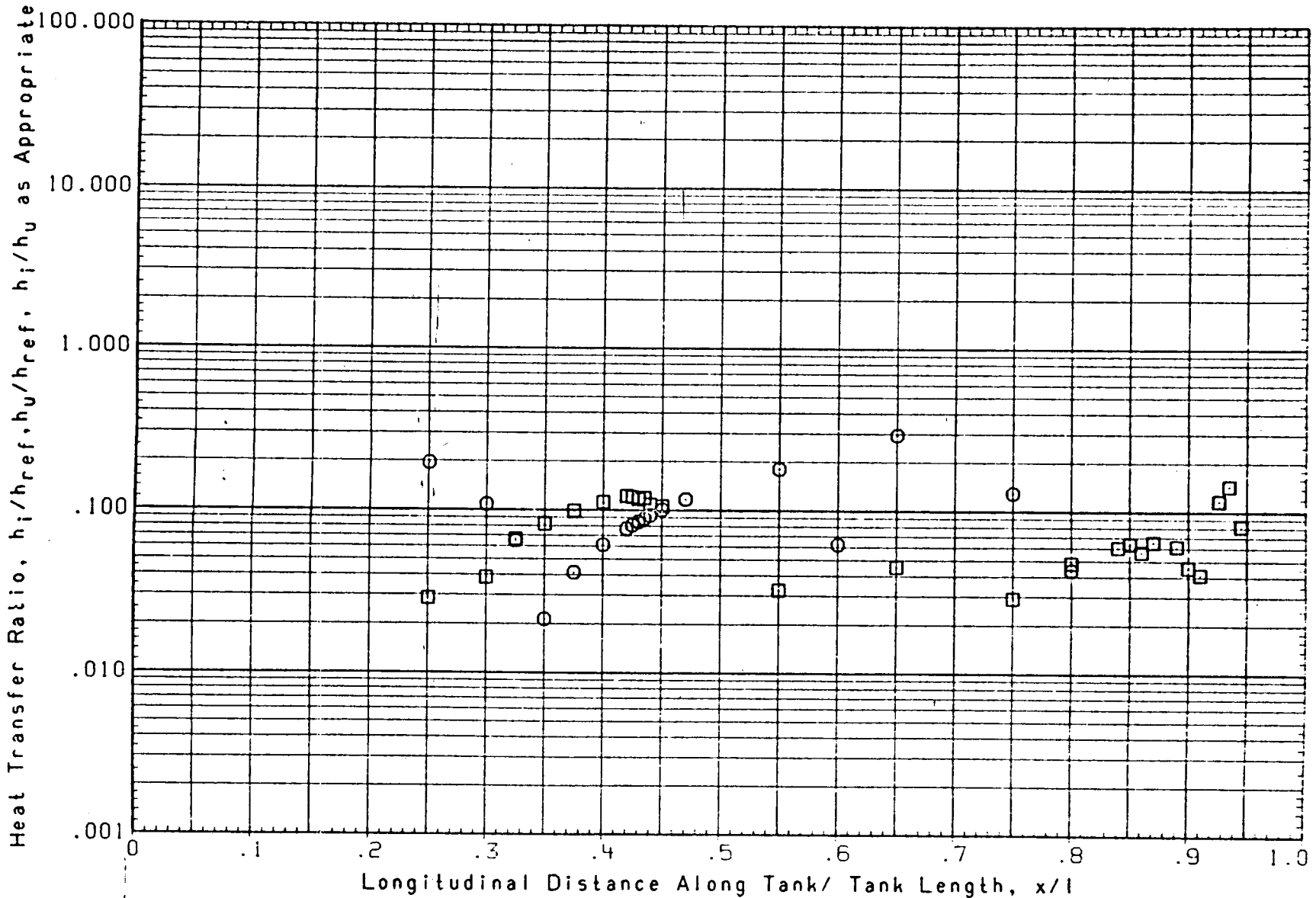


FIG. 14 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = -9

MACH = 4.020 ALPHA = .010 PHI = 45.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT05)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	-9.000
(LVFT25)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	-9.000
(CVFT25)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	-9.000

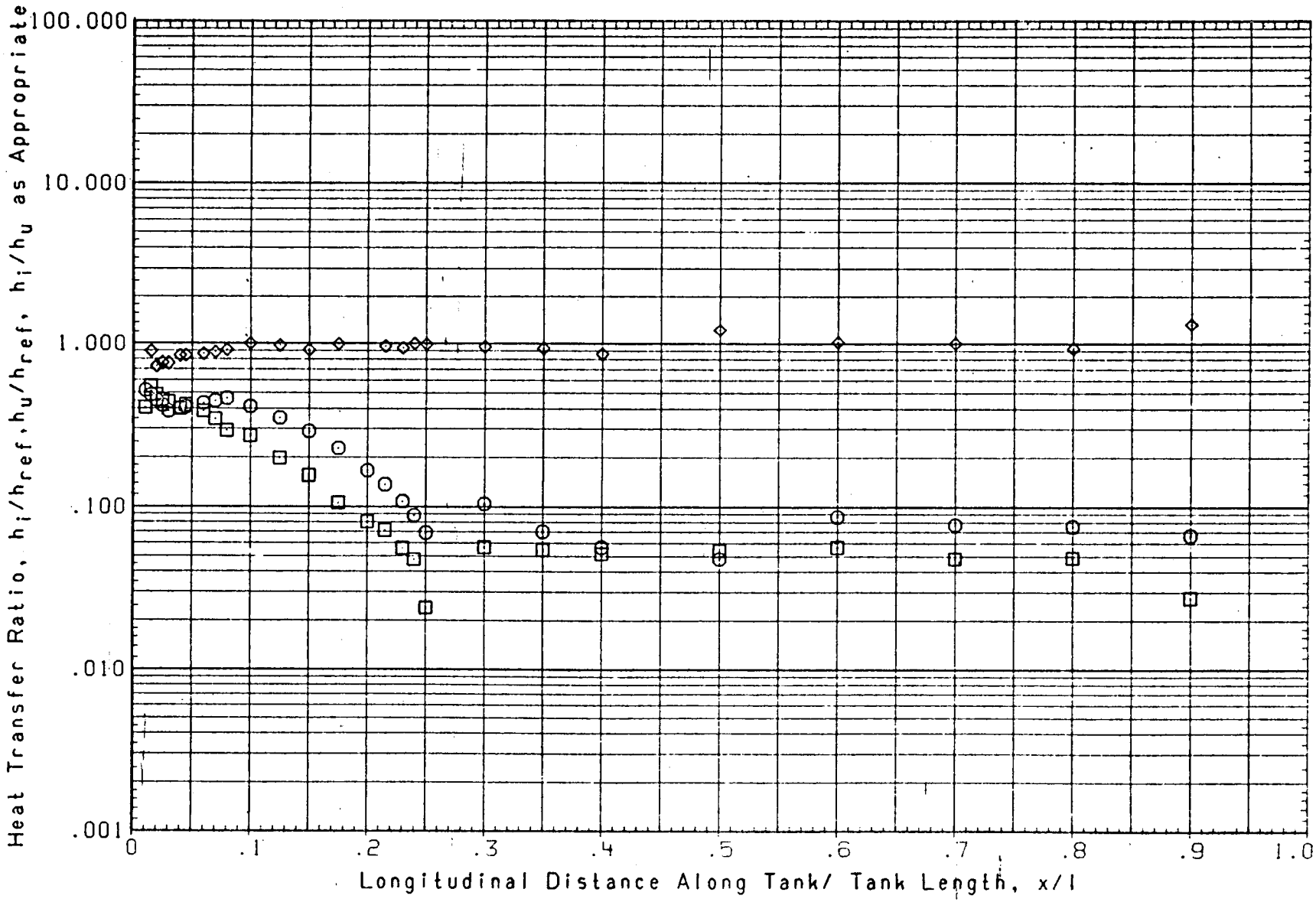


FIG. 14 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = 9

MACH = 4.020 ALPH = .010 PHI

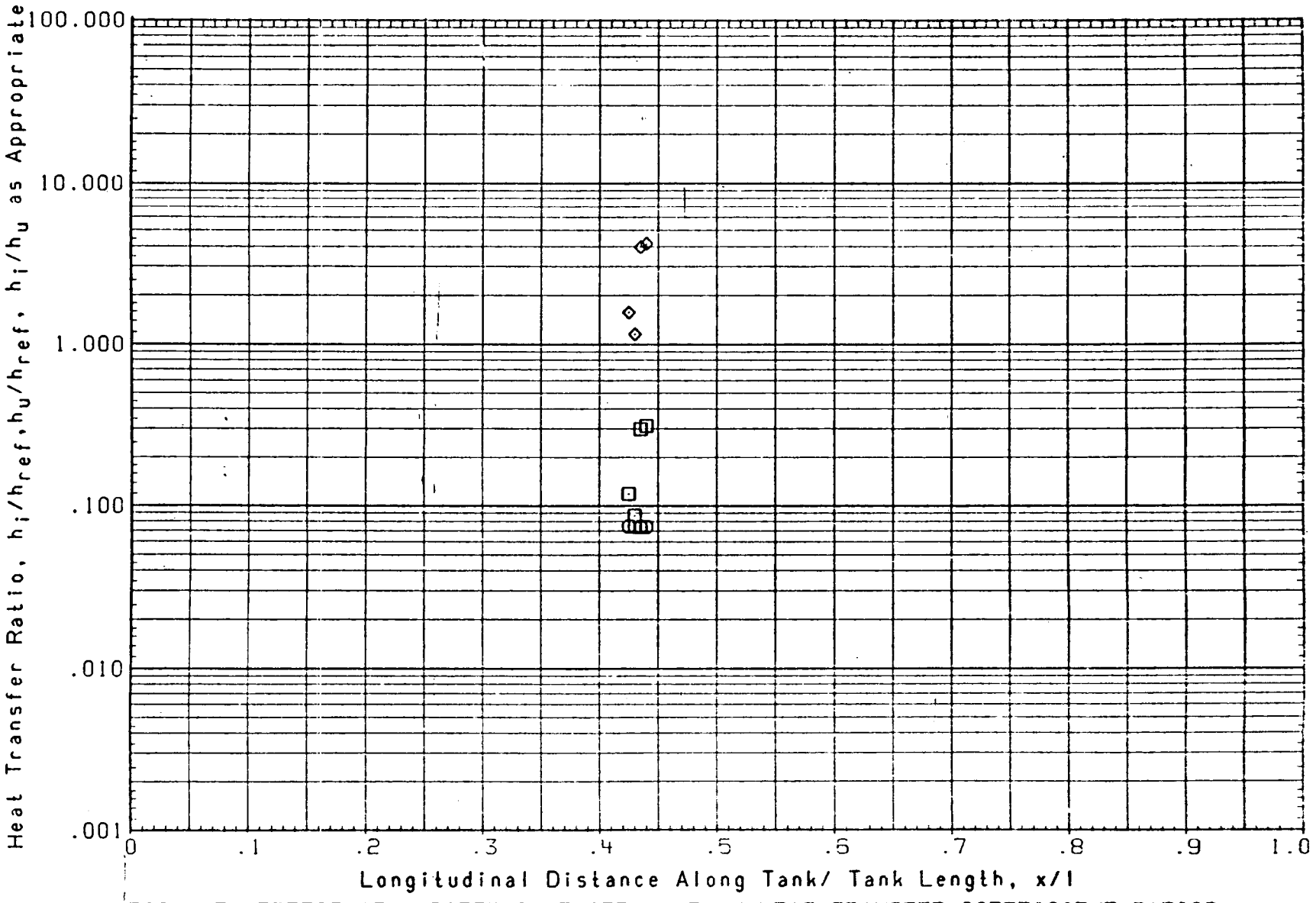


FIG. 15 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = 6

MACH = 3.010 ALPHA = .000 PHI = 5.630

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT06)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	6.000
(LVFT26)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	6.000
(BVFT26)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	6.000

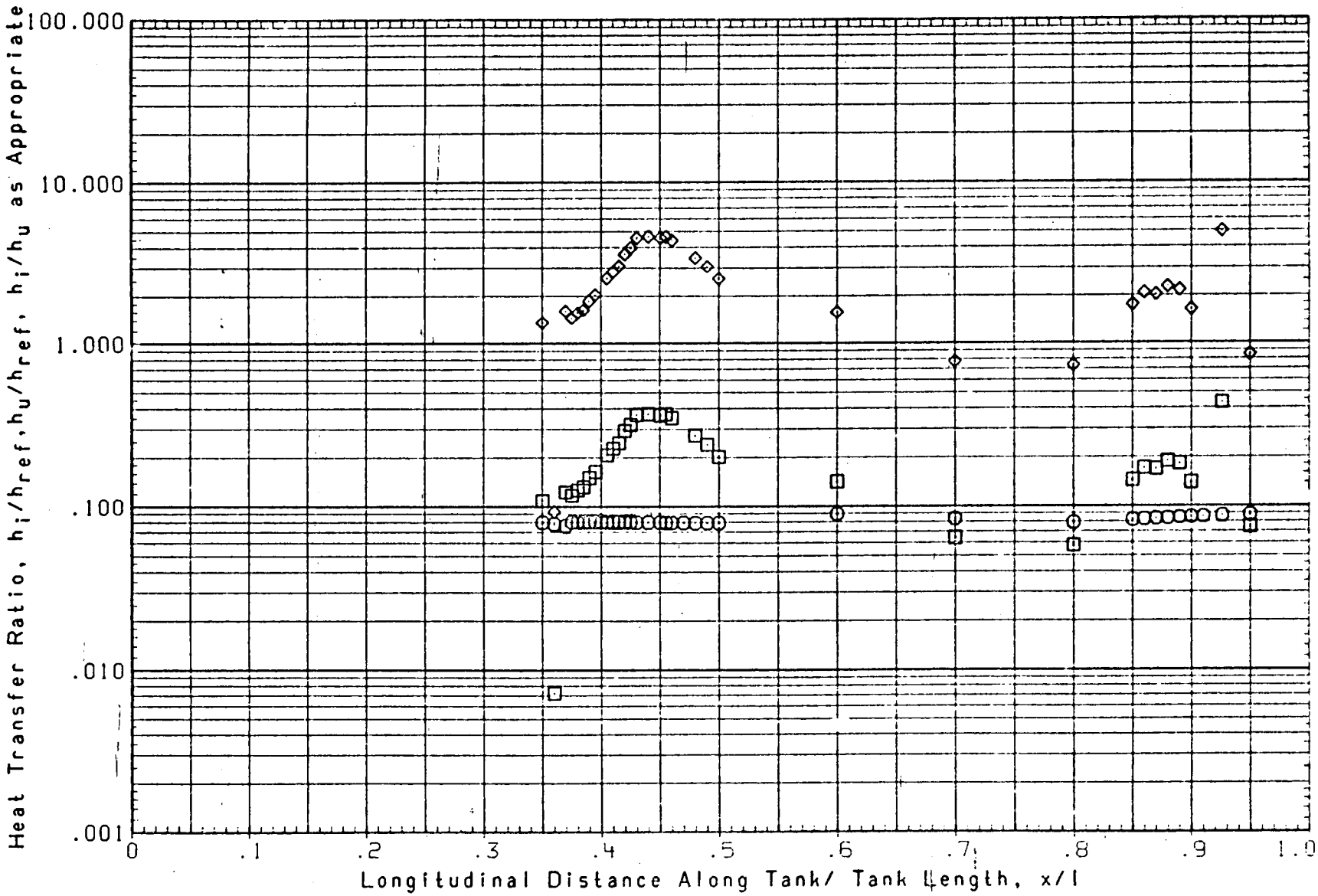


FIG. 15 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0

MACH = 5.010

DATA SET	SYMBOL	CONFIGURATION		
(KVFT06)	○	[H41B(ACDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	[illegible]	6.000
(LVFT26)	□	[H41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	6.000
(BVFT26)	◇	[H41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	6.000

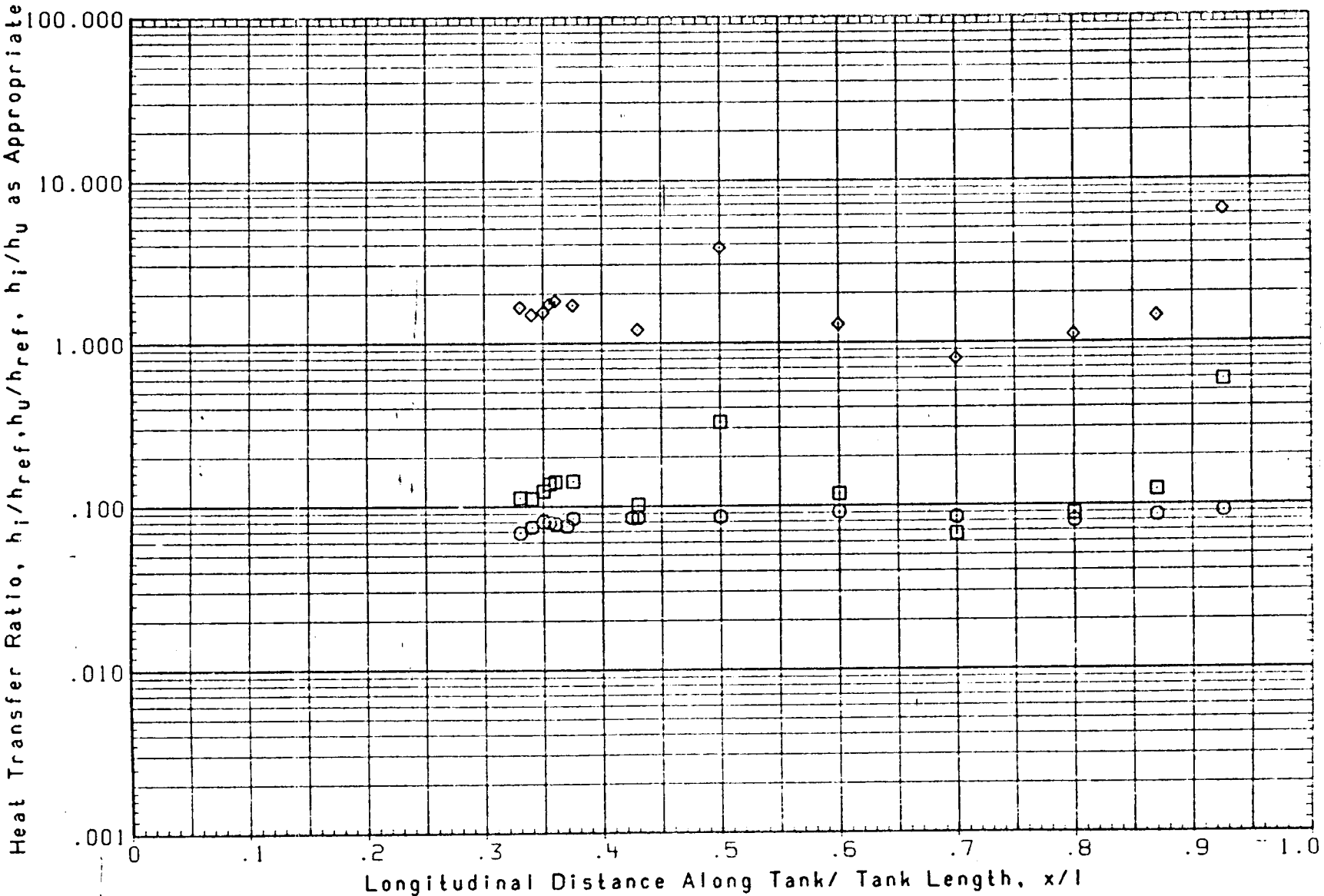


FIG. 15 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0,.BETA = 6

MACH = 3.010 ALPHA = .000 PHI = 17.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT06)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	6.000
(LVFT26)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	6.000
(BVFT26)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	6.000

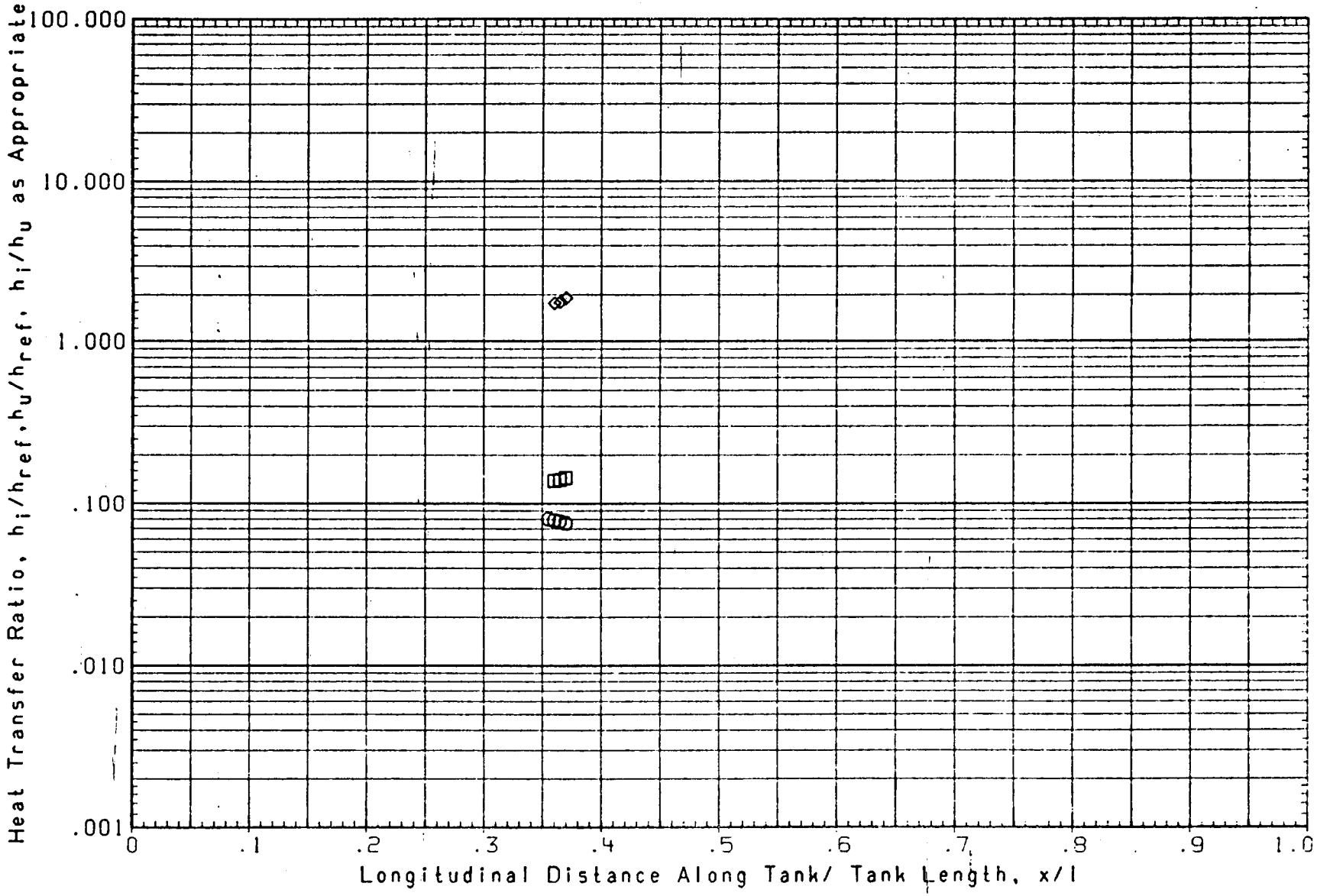


FIG. 15 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = 6

MACH = 3.010 ALPHA = [illegible] PHI = [illegible] PAGE [illegible]

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT06)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	6.000
(LVFT26)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	6.000
(BVFT26)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO. HI/HU	.000	6.000

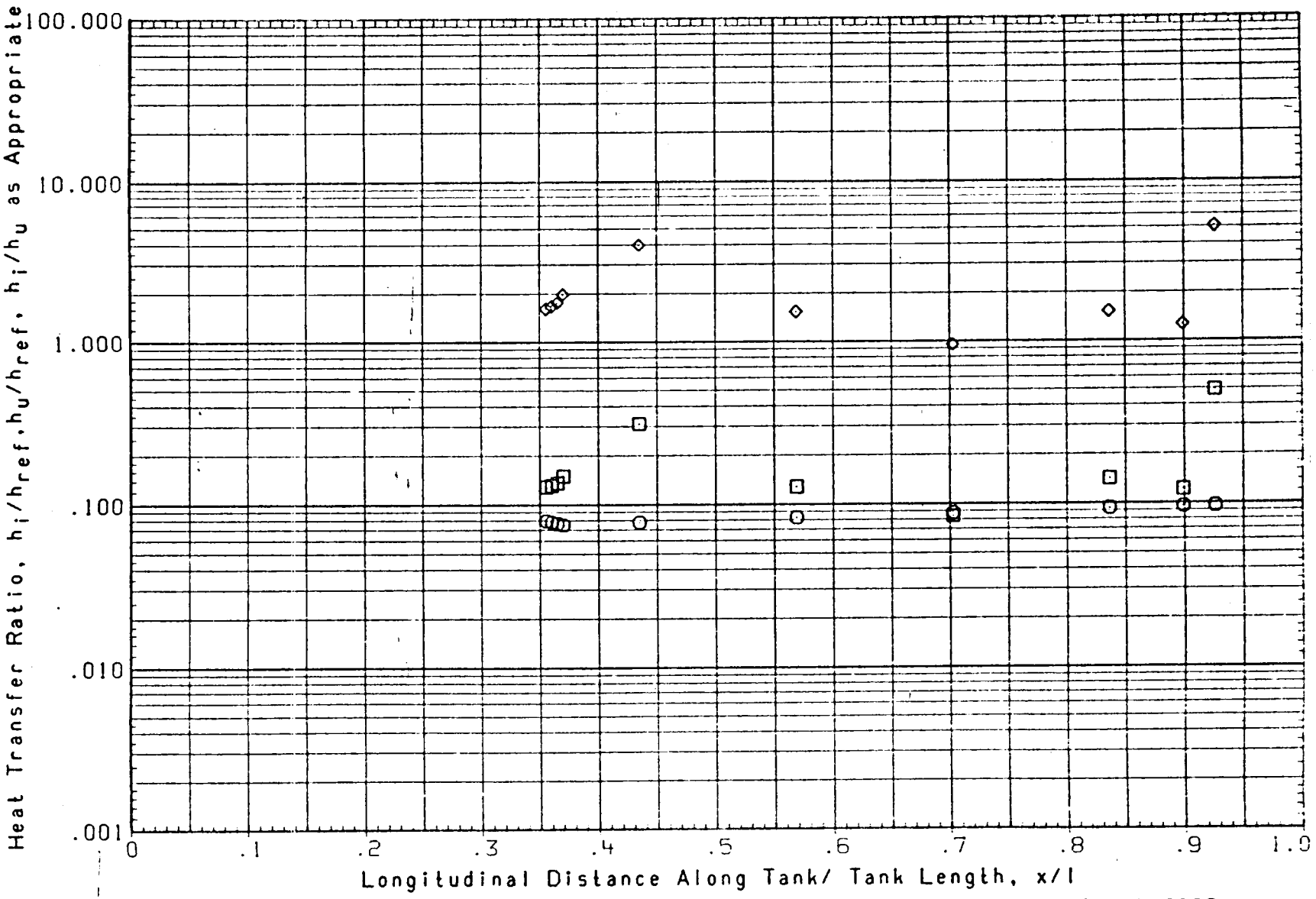


FIG. 15 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = 6

MACH = 3.010 ALPHA = .000 PHI = 23.075

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT06)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	6.000
(LVFT26)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	6.000
(BVFT26)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	6.000

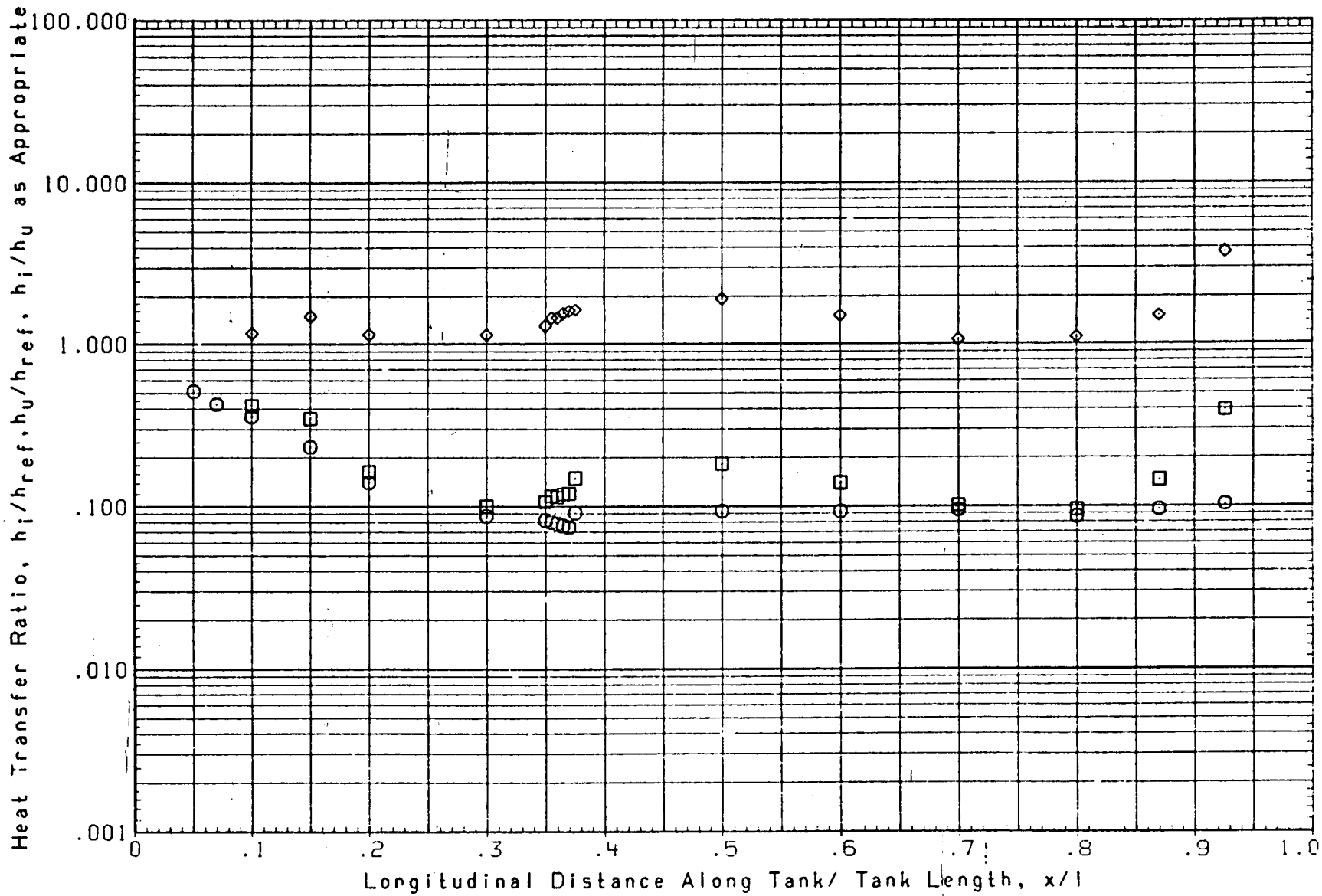


FIG. 15 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = 6

MACH = 3.010

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT06)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	6.000
(LVFT26)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	6.000
(BVFT26)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	6.000

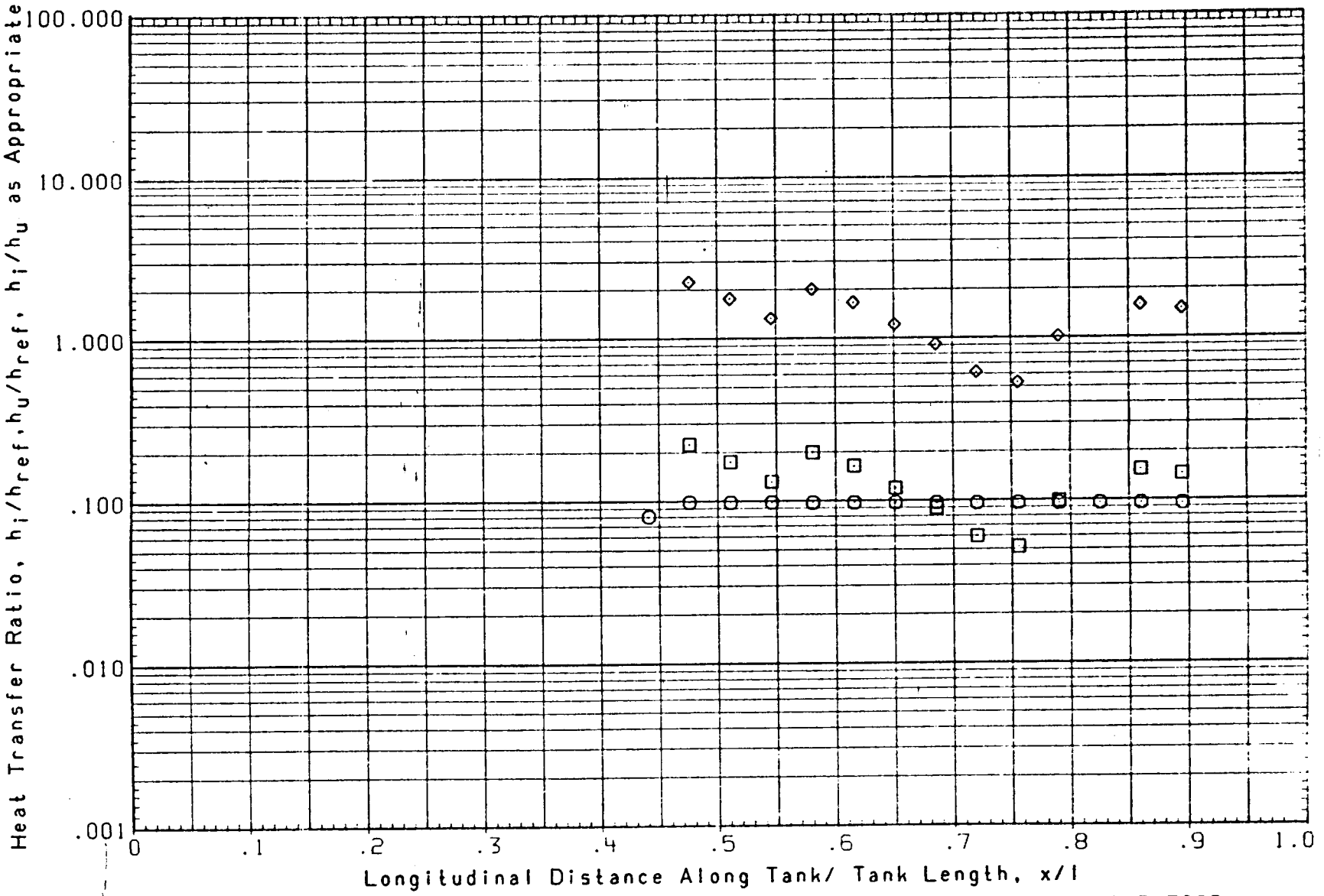


FIG. 15 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = 6

MACH = 3.010 ALPHA = .000 PHI = 31.430

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT06)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	6.000
(LVFT26)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	6.000
(BVFT26)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	6.000

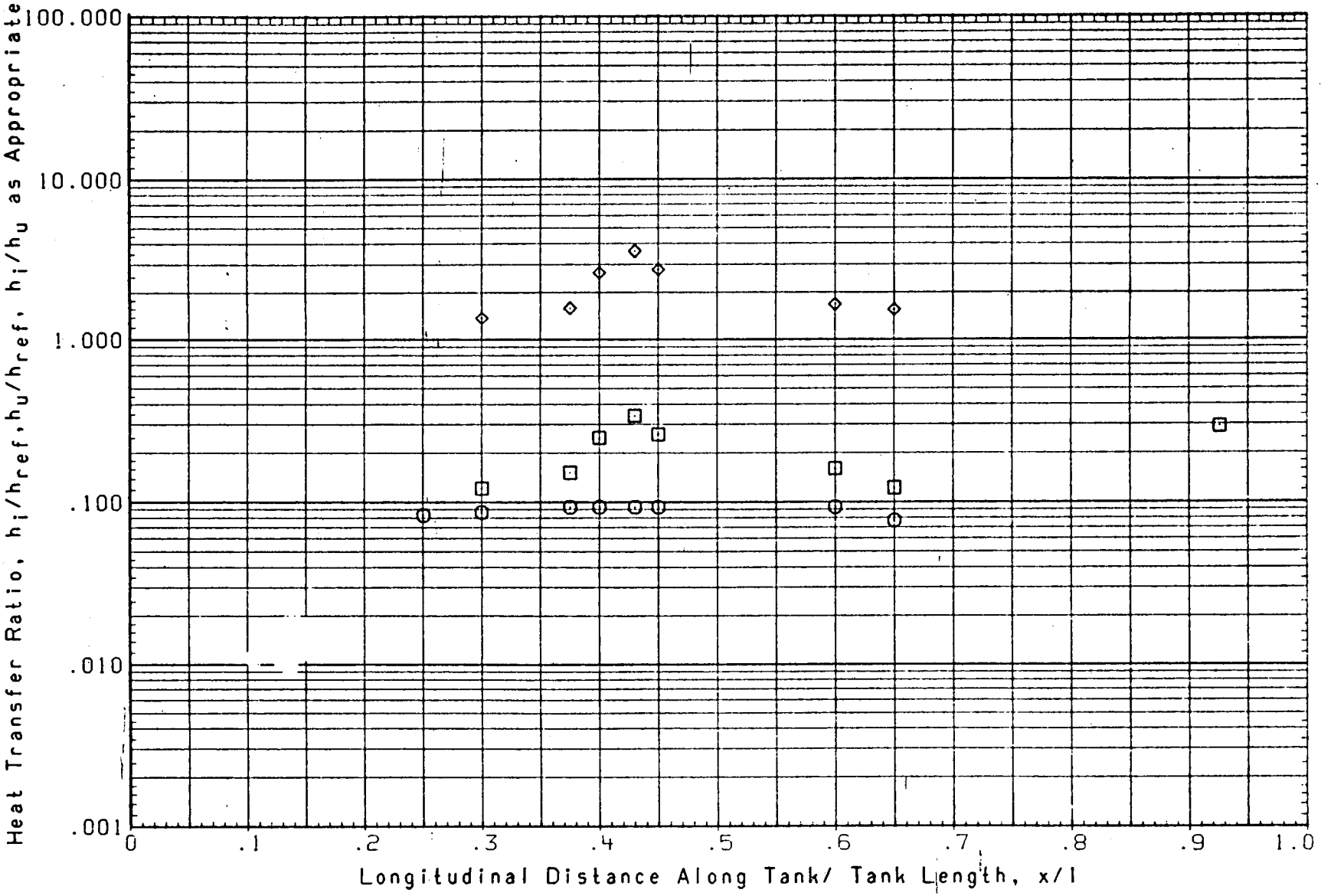


FIG. 15 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = 6

MACH = 3.010 ALPHA = .000 PHI = [illegible]750

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT06)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	6.000
(LVFT26)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	6.000
(BVFT26)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	6.000

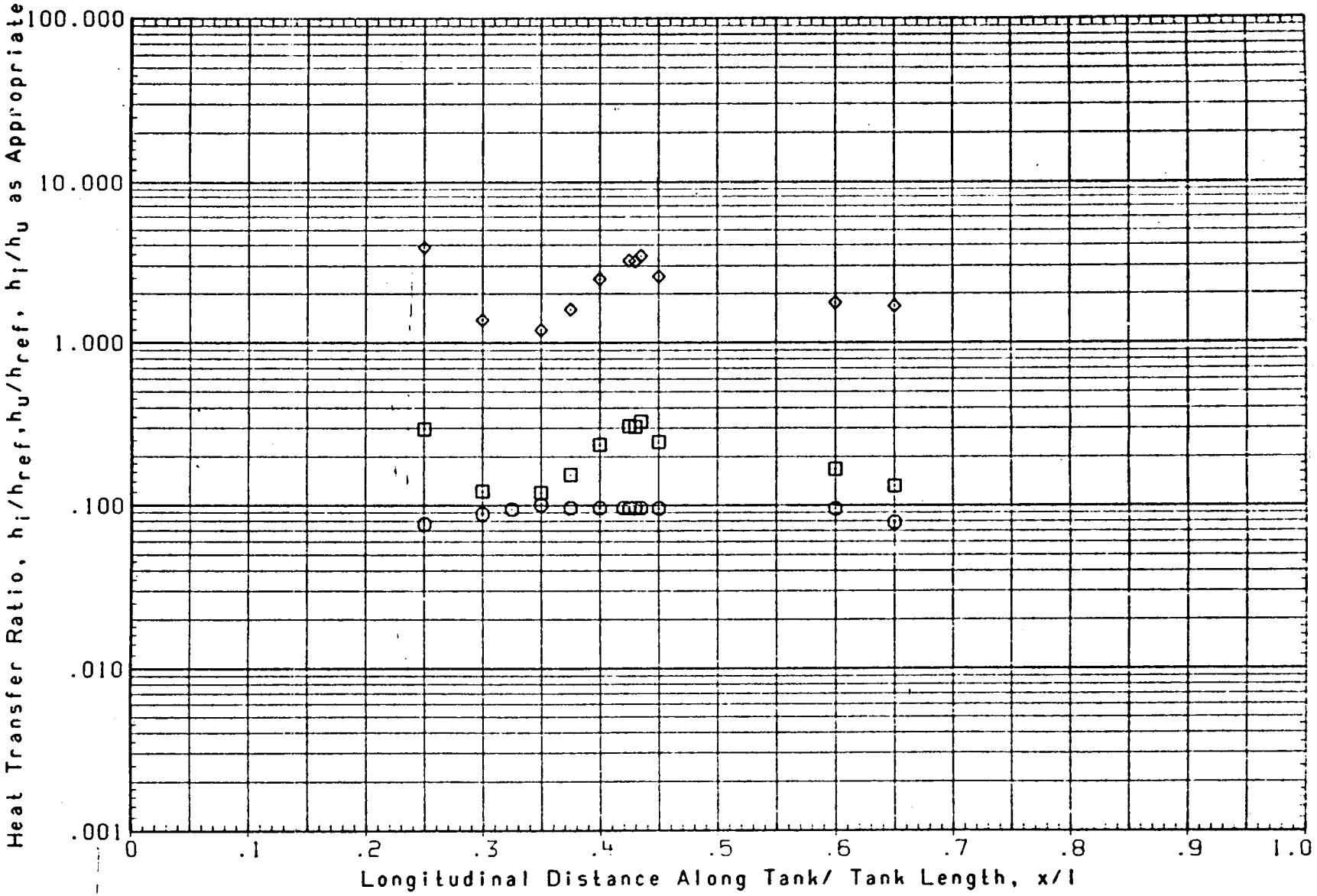


FIG. 15 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = 6

MACH = 3.010 ALPHA = .000 PHI = 36.320

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT06)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	6.000
(LVFT26)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	6.000
(BVFT26)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	6.000

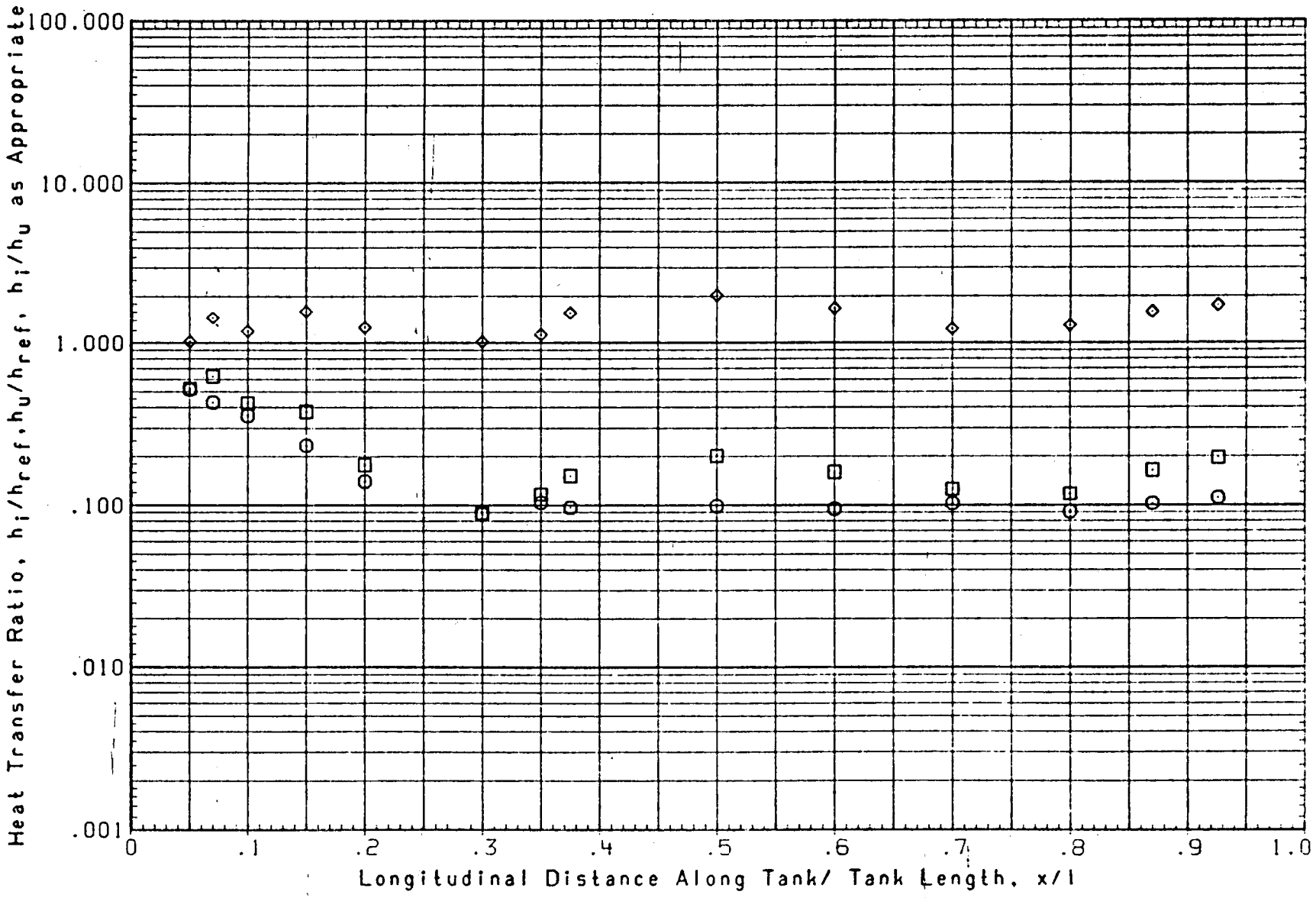


FIG. 15 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LINDWARD SIDE, ALPHA = 0 BETA = 6

MACH = 3.010 ALPHA = .000 [illegible]

DATA SET	SYMBOL	[illegible]	[illegible]	BETA
(KVFT06)	○	IH41B(V41A-A44A) SPIKED EXTERNAL TANK ALONE	.000	6.000
(LVFT26)	□	IH41B(V41A-A44A) O T S (SPIKED ET DATA) HI/HREF	.000	6.000
(BVFT26)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	6.000

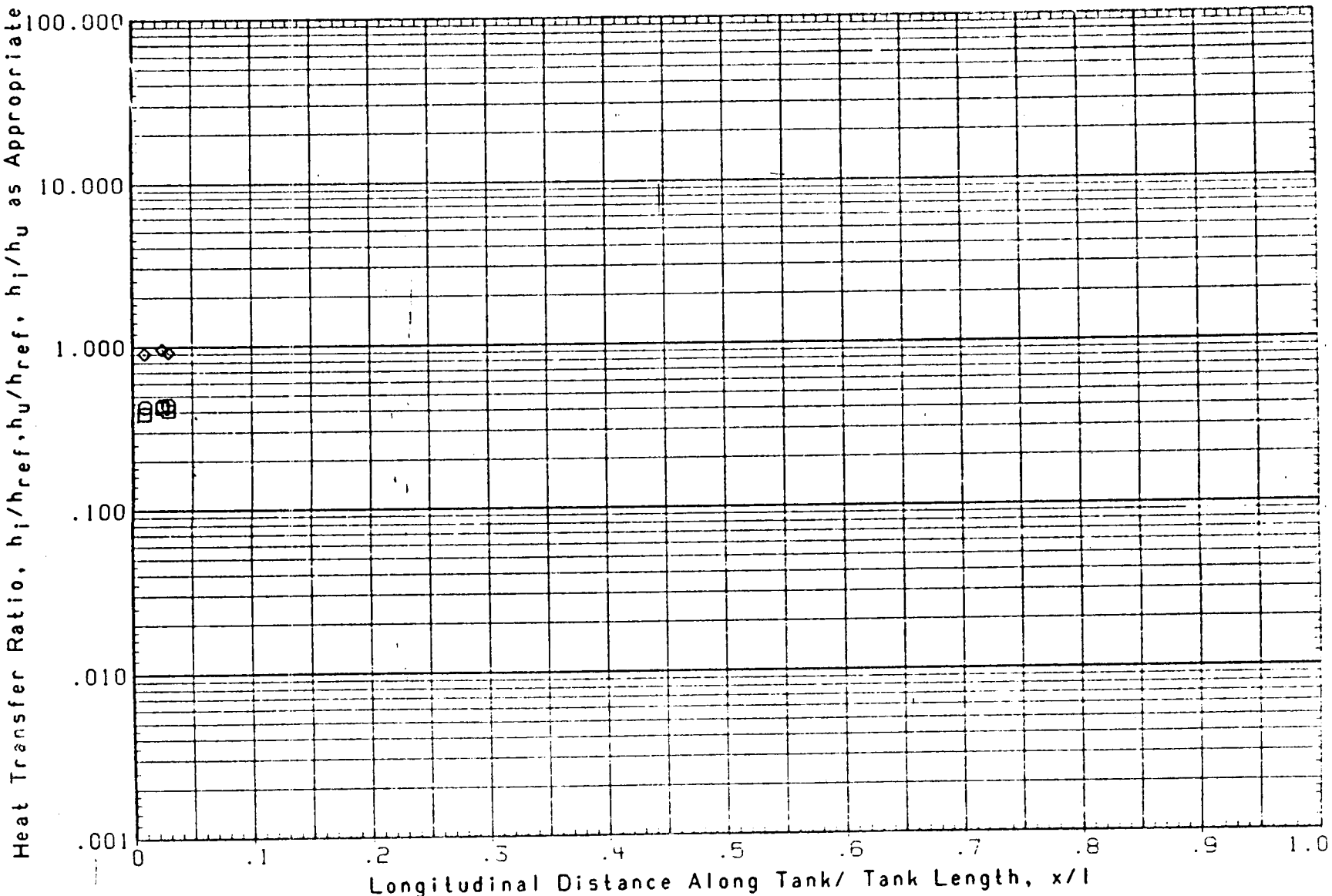


FIG. 15 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS WINDWARD SIDE, ALPHA = 0, BETA = 6

MACH = 3.010 ALPHA = .000 PHI = 39.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT06)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	6.000
(LVFT26)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	6.000
(BVFT26)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	6.000

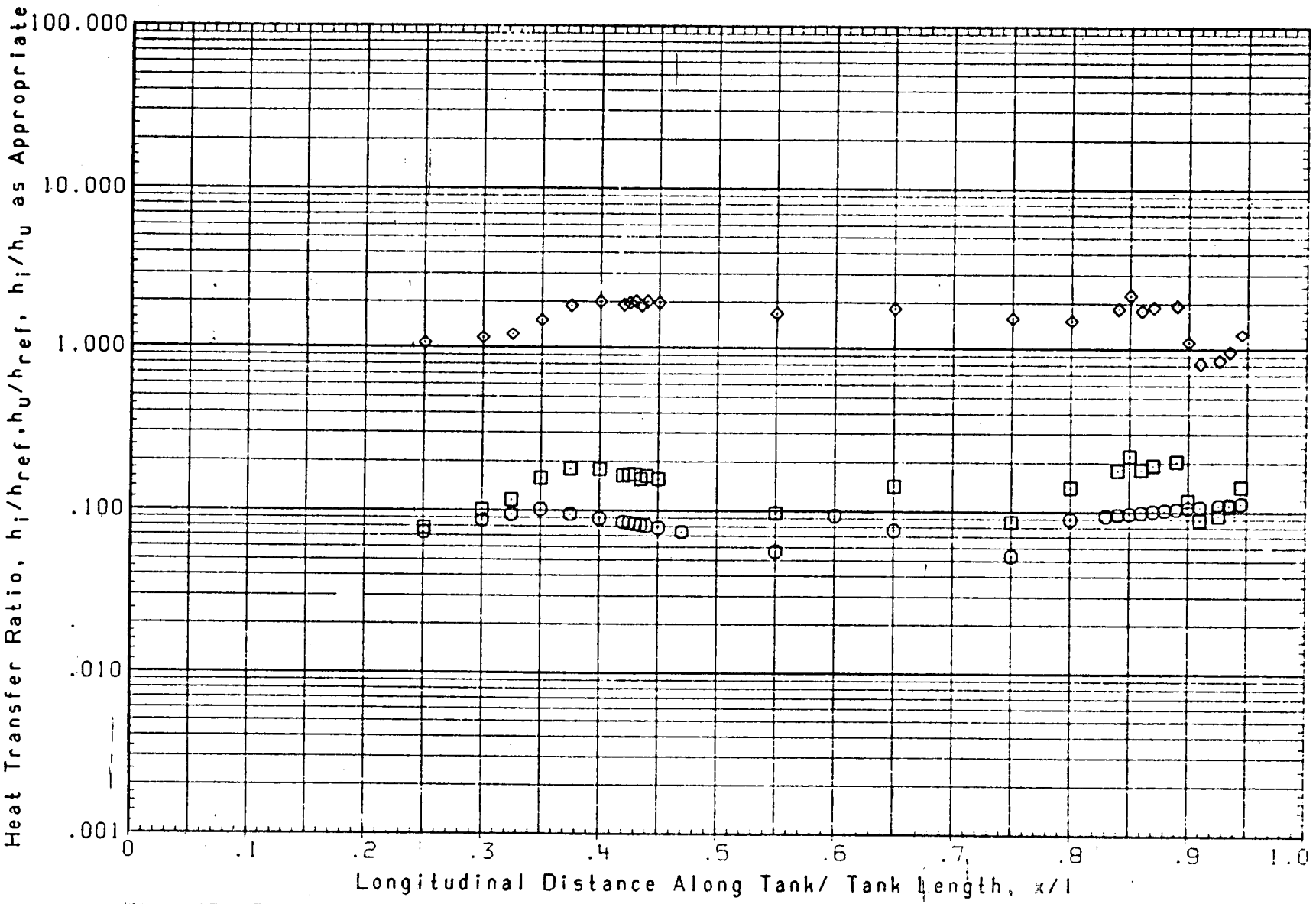


FIG. 15 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = [illegible]

MACH = [illegible] 010 [illegible]

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	[illegible]	BETA
(KVFT06)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	6.000
(LVFT26)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	6.000
(BVFT26)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	6.000

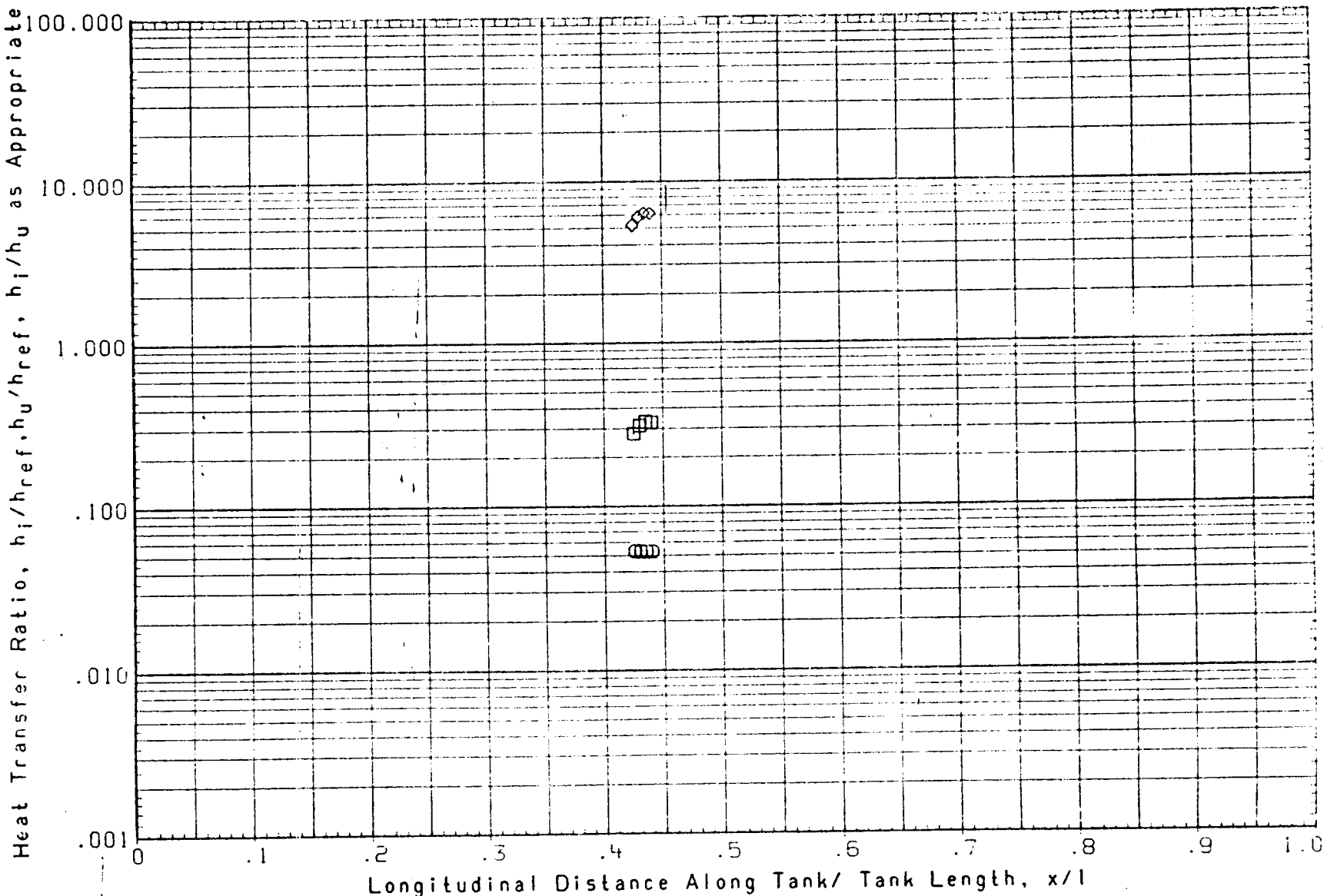


FIG. 15 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = 6

MACH = 4.020 ALPHA = .000 PHI = 5.630

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT06)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	6.000
(LVFT26)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	6.000
(BVFT26)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	6.000

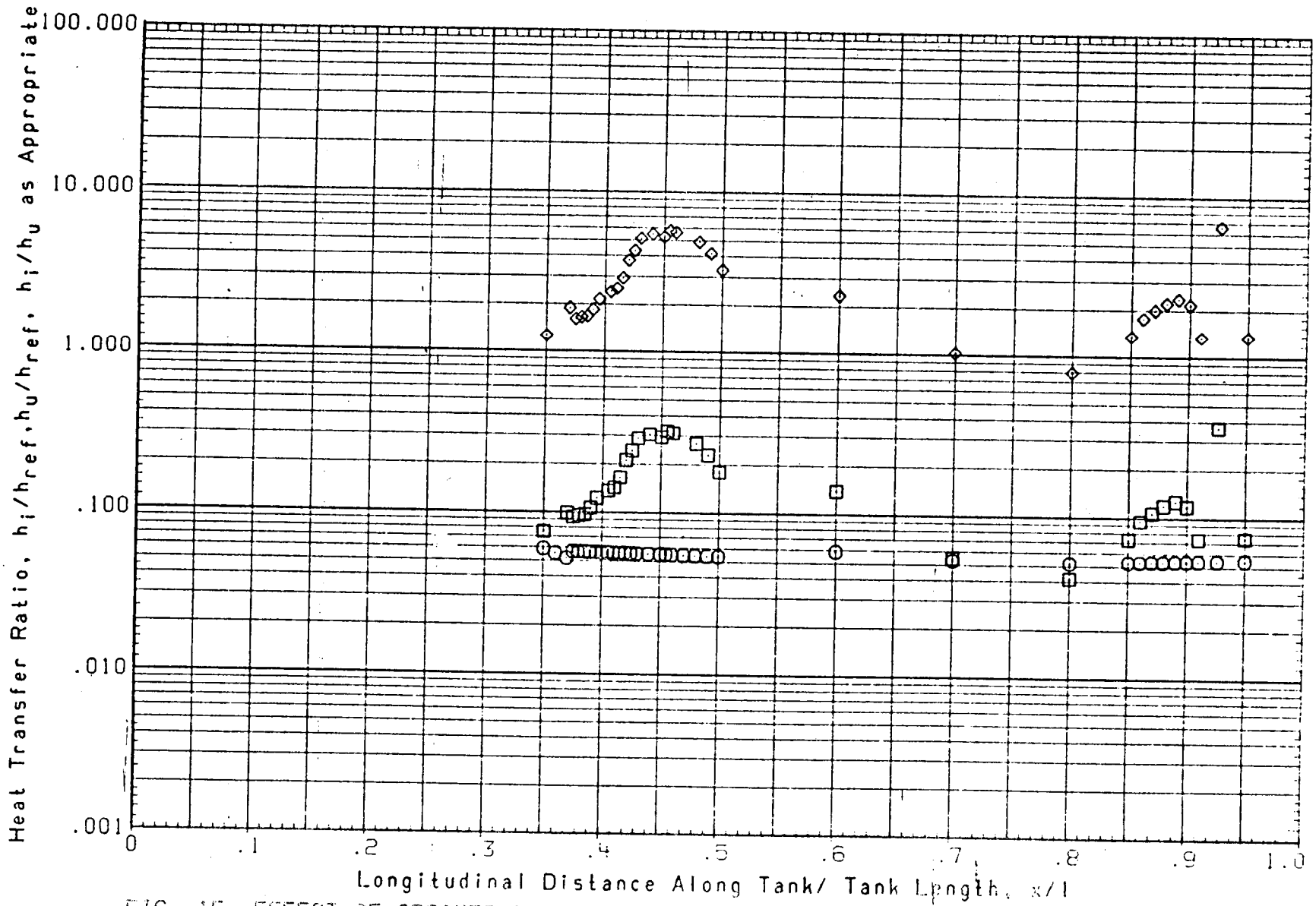


FIG. 15 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE ALPHA = 0
MACH = [illegible] ALTITUDE [illegible]

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT06)	○	IH41B(AEDC V4 A-A4A) SPIKED EXTERNAL TANK ALONE	.000	6.000
(LVFT26)	□	IH41B(V41A-A3A) O T S (SPIKED ET DATA) HI/HREF	.000	6.000
(BVFT26)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	6.000

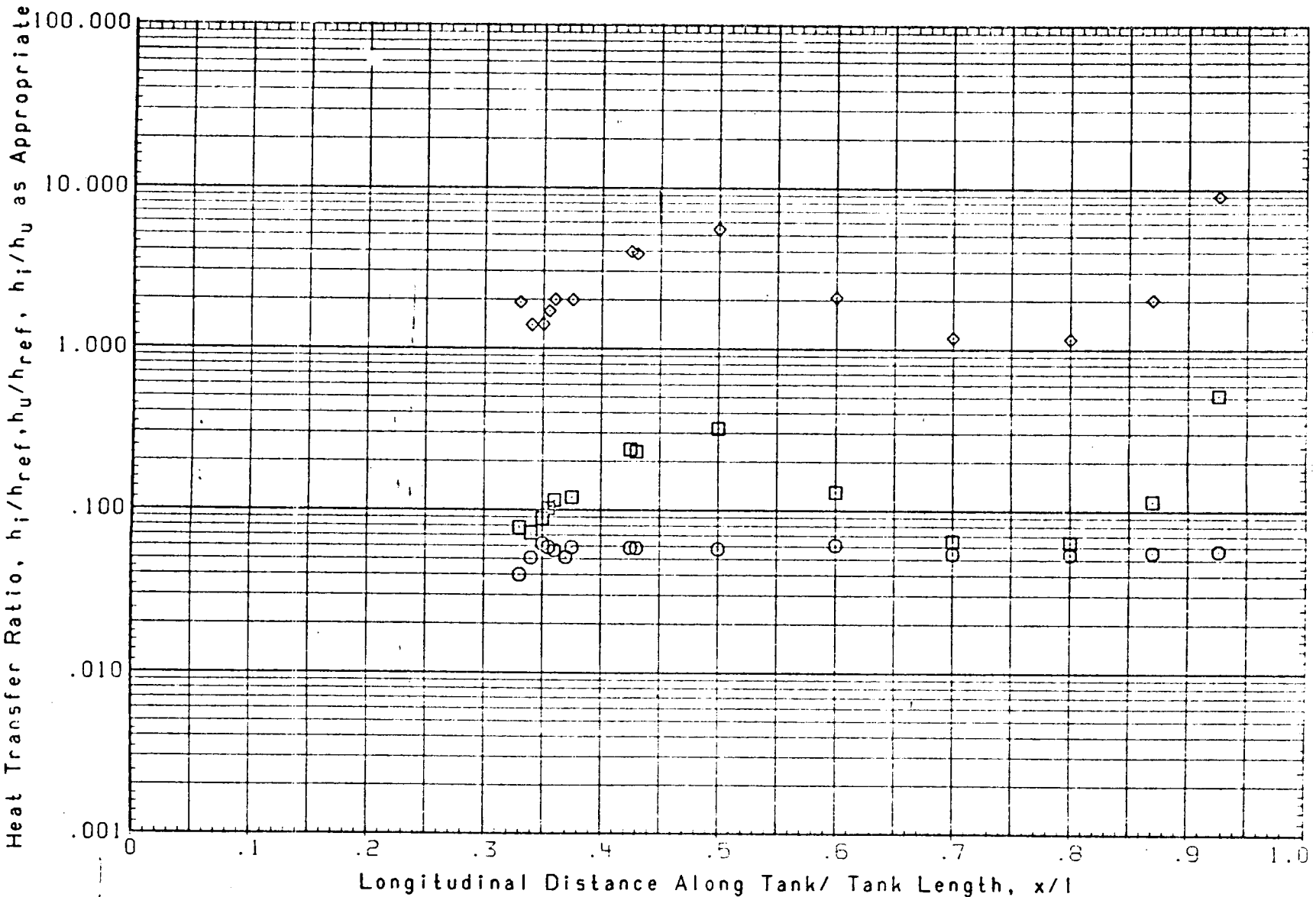


FIG. 15 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS WINDWARD SIDE, ALPHA = 0, BETA = 6

MACH = 4.020 ALPHA = .000 PHI = 17.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT05)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	6.000
(LVFT26)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	6.000
(BVFT26)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	6.000

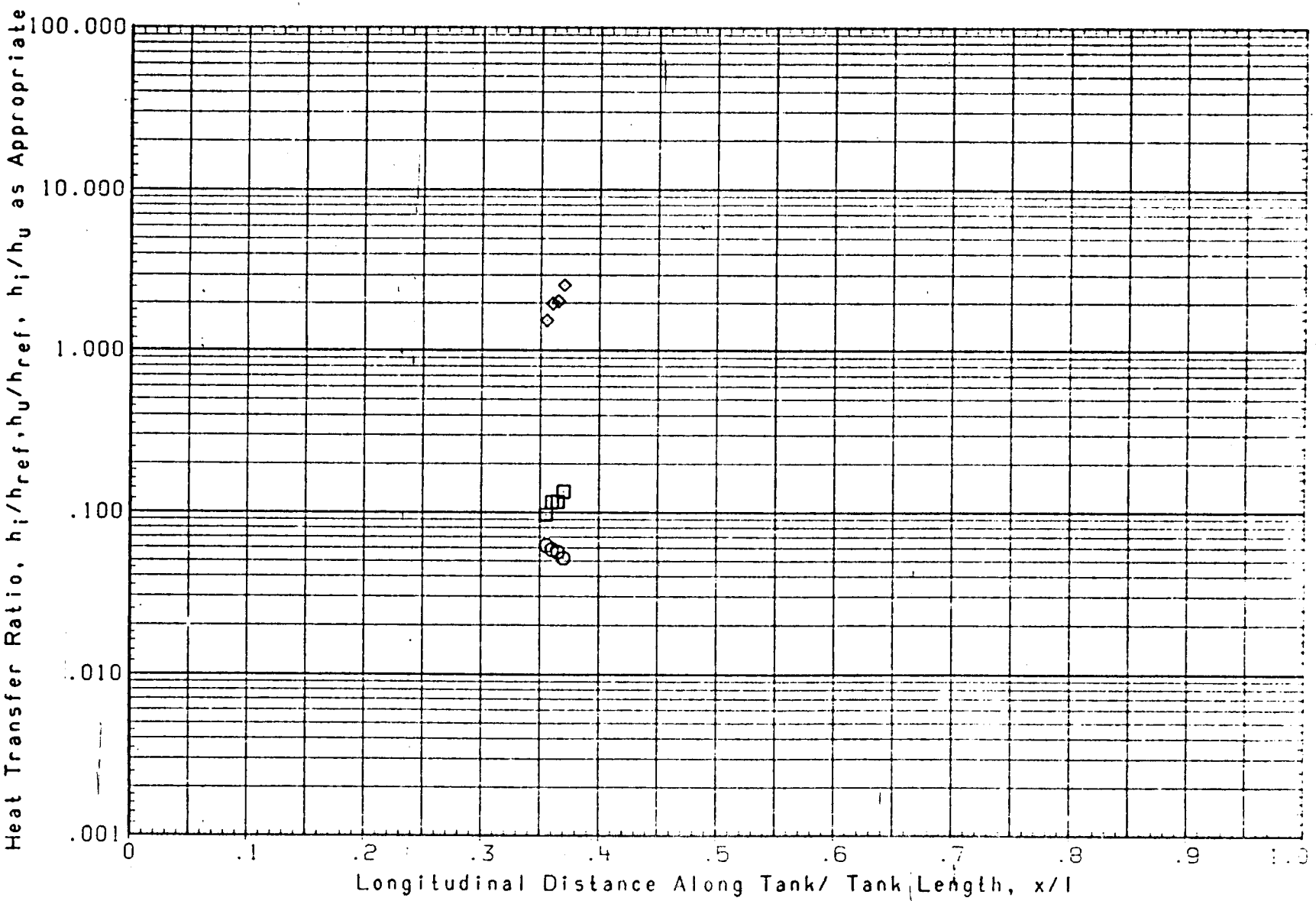


FIG. 15 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = 6

MACH = 4.020 [illegible]

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT06)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	6.000
(LVFT26)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	6.000
(BVFT26)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	6.000

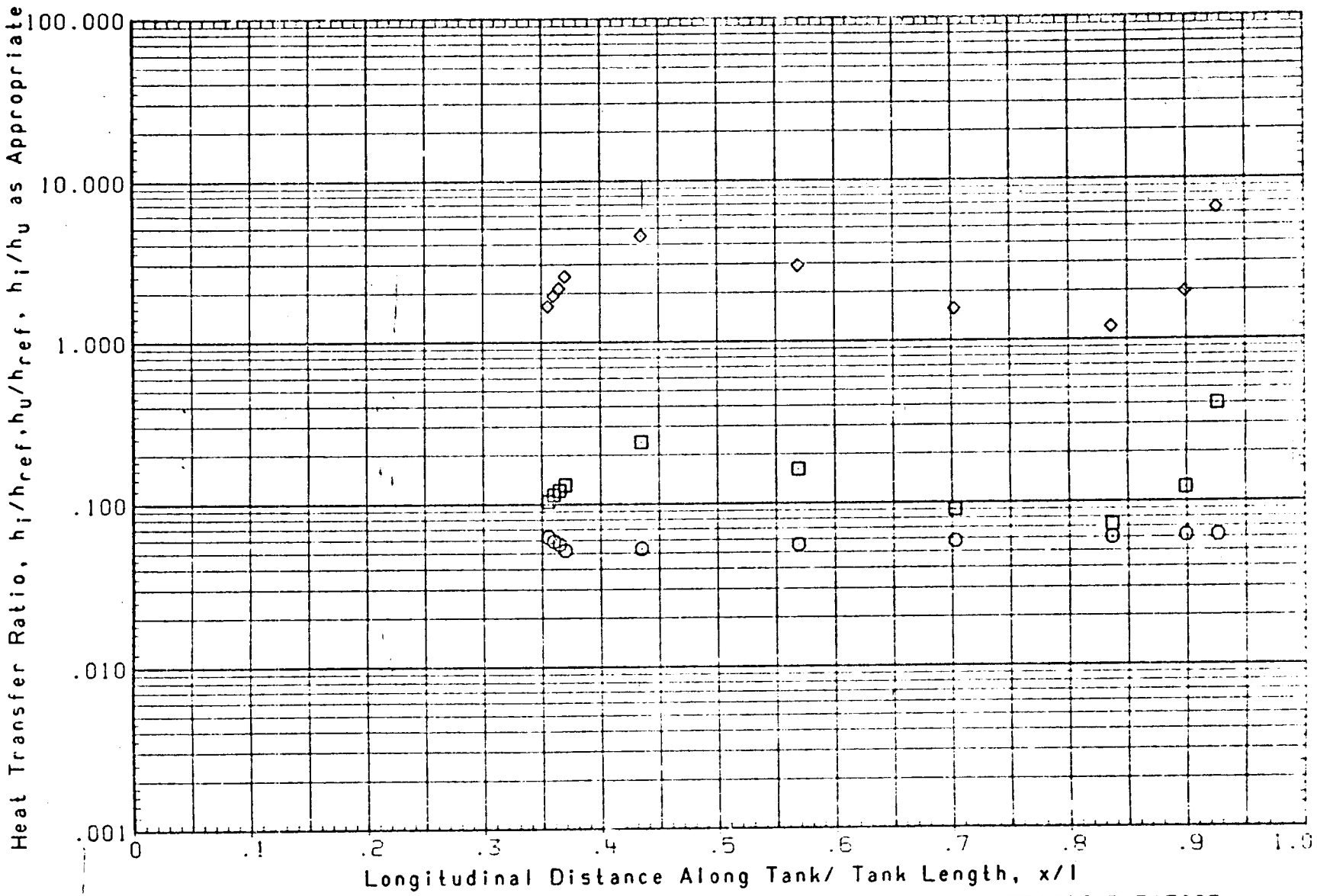


FIG. 15 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = 6

MACH = 4.020 ALPHA = .000 PHI = 23.075

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT06)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	6.000
(LVFT26)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	6.000
(BVFT26)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	6.000

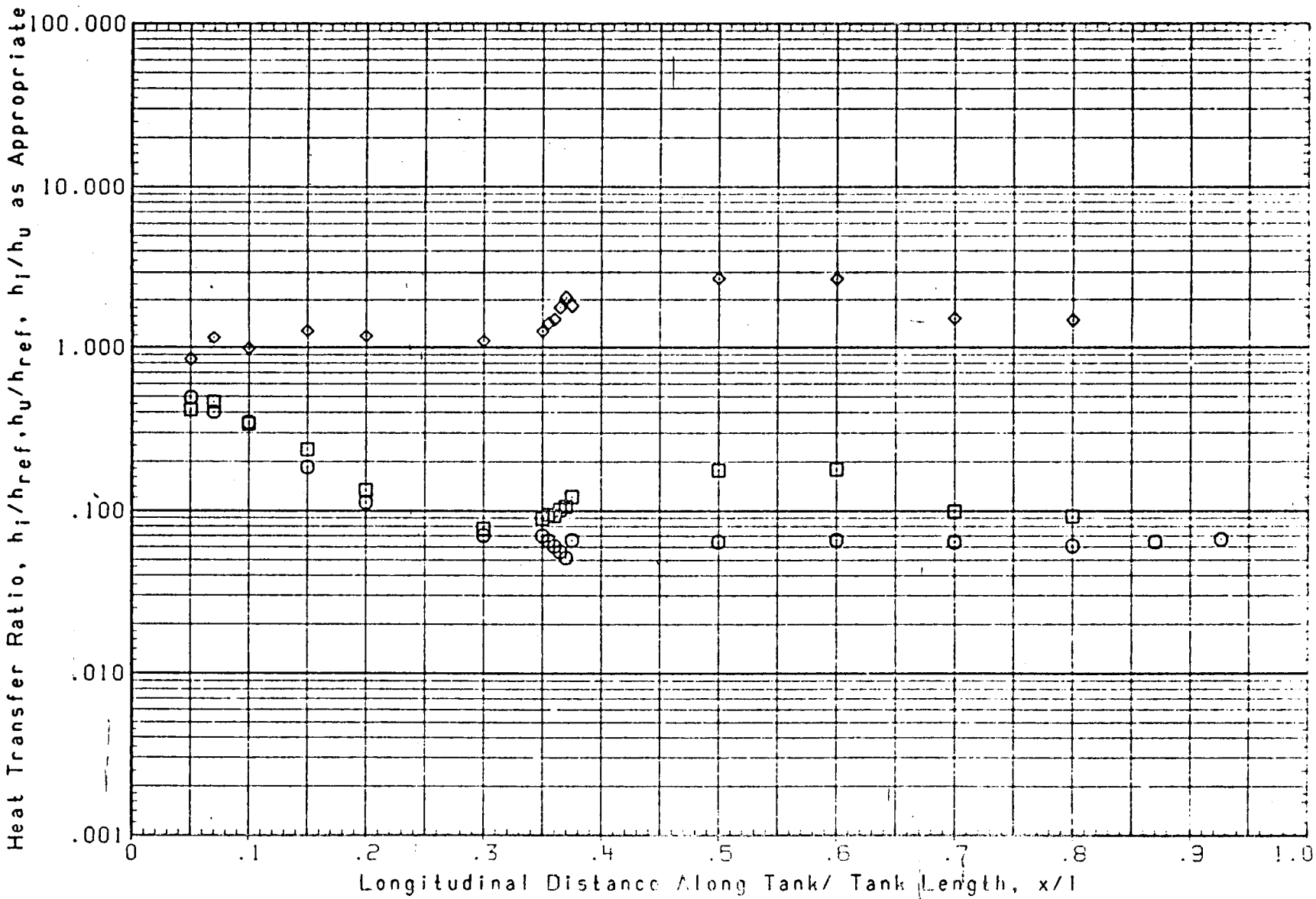


FIG. 15 EFFECT OF ORBITER ON EXTERN[illegible] HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPH[illegible]

MACH = [illegible]

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT06)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	6.000
(LVFT26)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	6.000
(BVFT26)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	6.000

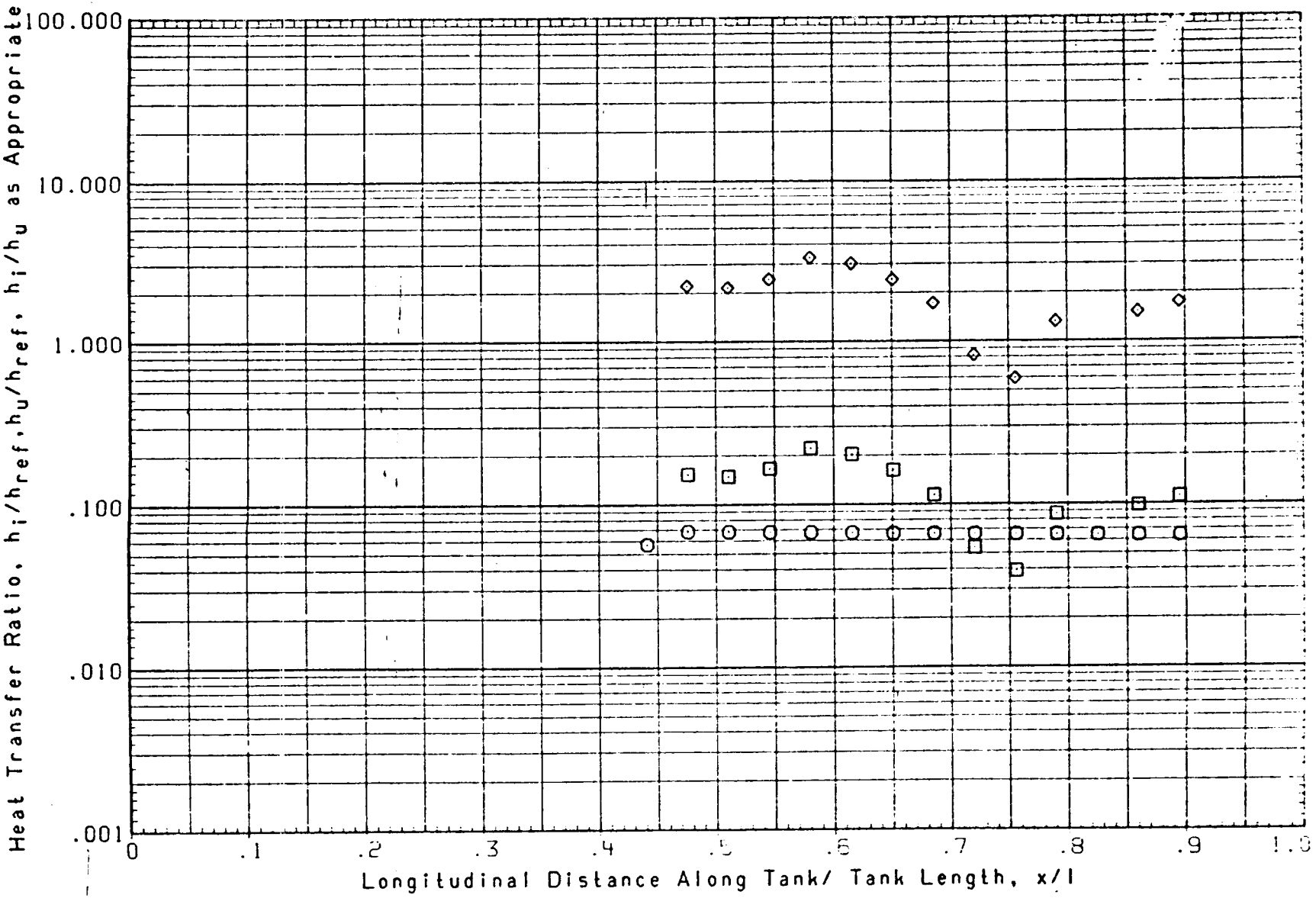


FIG. 15 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS WINDWARD SIDE, ALPHA = 0, BETA = 6

MACH = 4.020 ALPHA = .000 PHI = 31.430

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT06)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	6.000
(LVFT26)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	6.000
(BVFT26)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	6.000

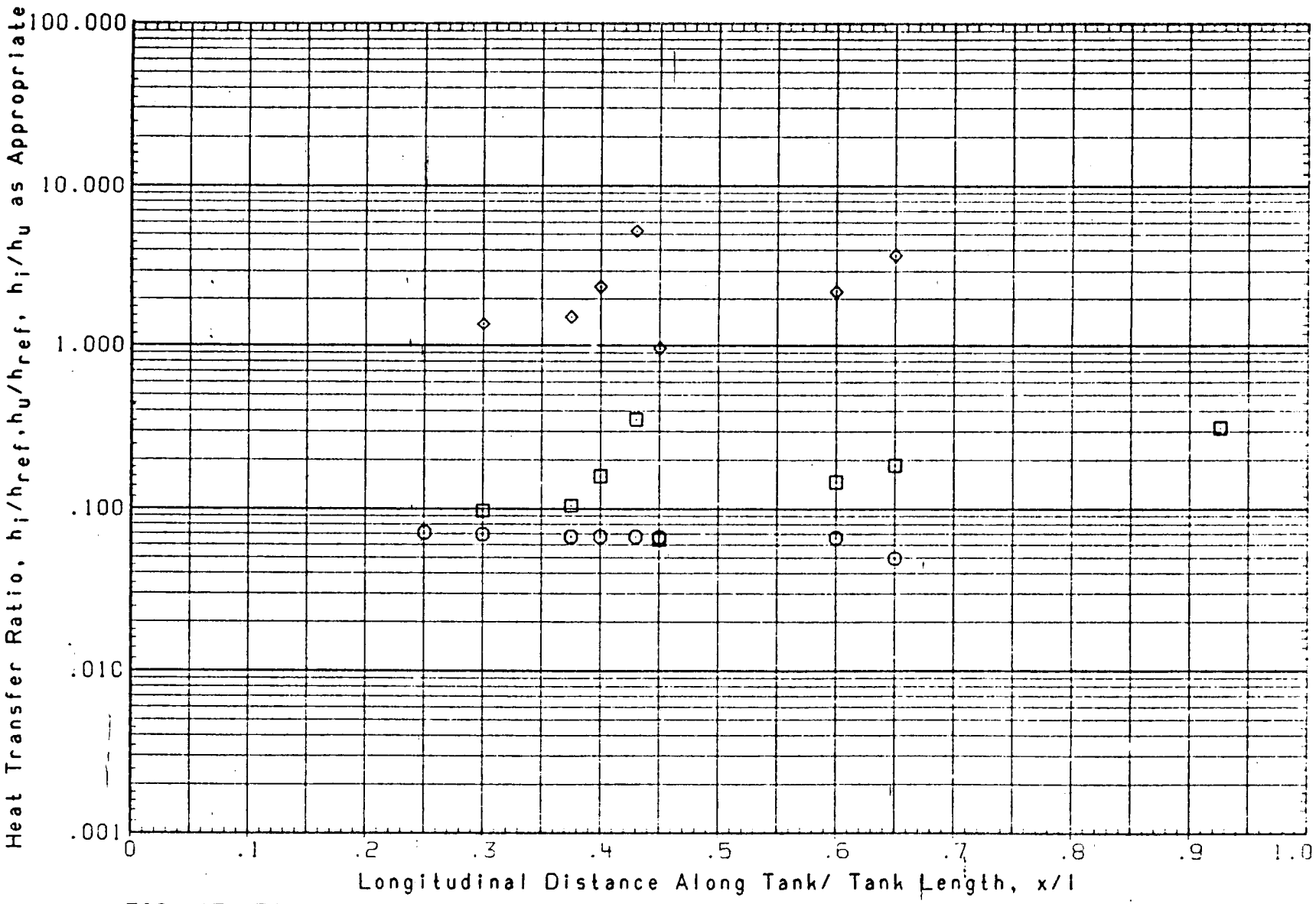


FIG. 15 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = 6

MACH = 4.020 ALPHA = .000 PHI = 33.750

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT06)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	6.000
(LVFT26)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	6.000
(GVFT26)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	6.000

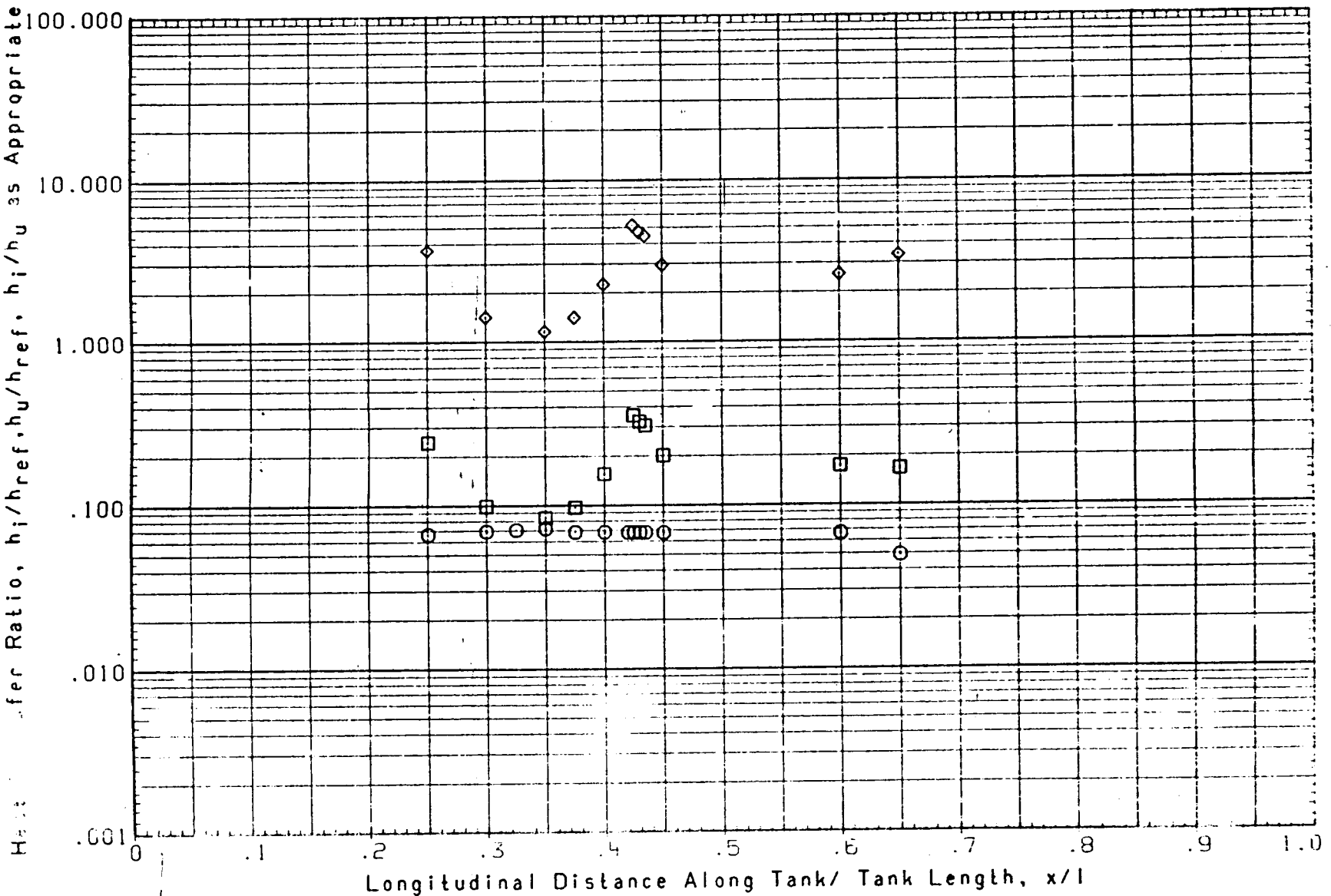


FIG 15 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = 6

MACH = 4.020 ALPHA = .000 PHI = 36.320

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT06)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	6.000
(LVFT26)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	6.000
(BVFT26)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	6.000

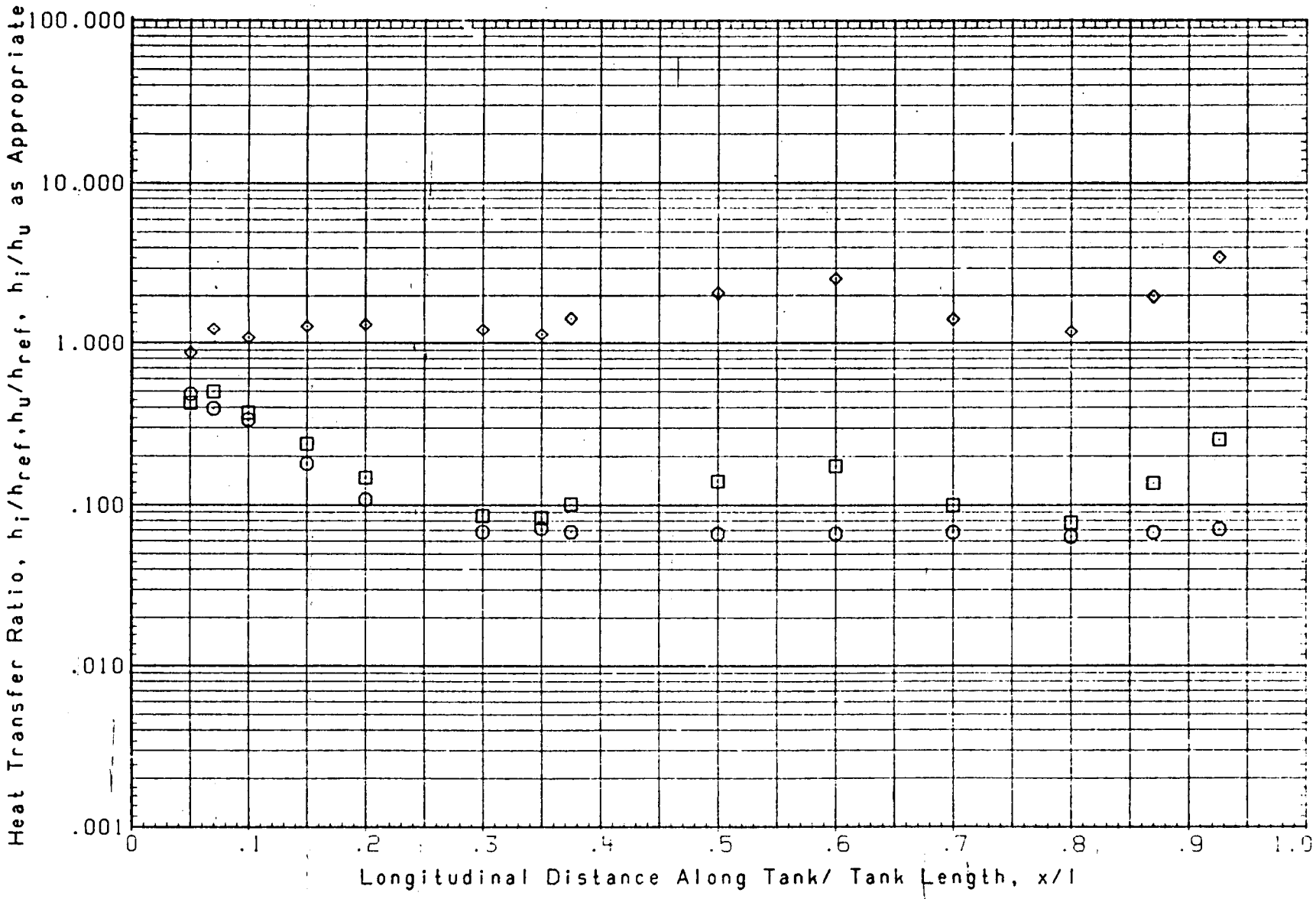


FIG. 15 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = 6

MACH = 4.020 ALPHA = .000 PHI = 37.700

DATA SET	SYMBOL	CONFIG	DESCRIPTION	ALPHA	BETA
(RVFT06)	○	IH41B(ALL V41A-A4A)	SPIKED EXTERNAL TANK ALONE	.000	6.000
(LVFT26)	□	IH41B(V41A-A4A)	O T S (SPIKED ET DATA) HI/HREF	.000	6.000
(BVFT26)	◇	IH41B.ET	HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	6.000

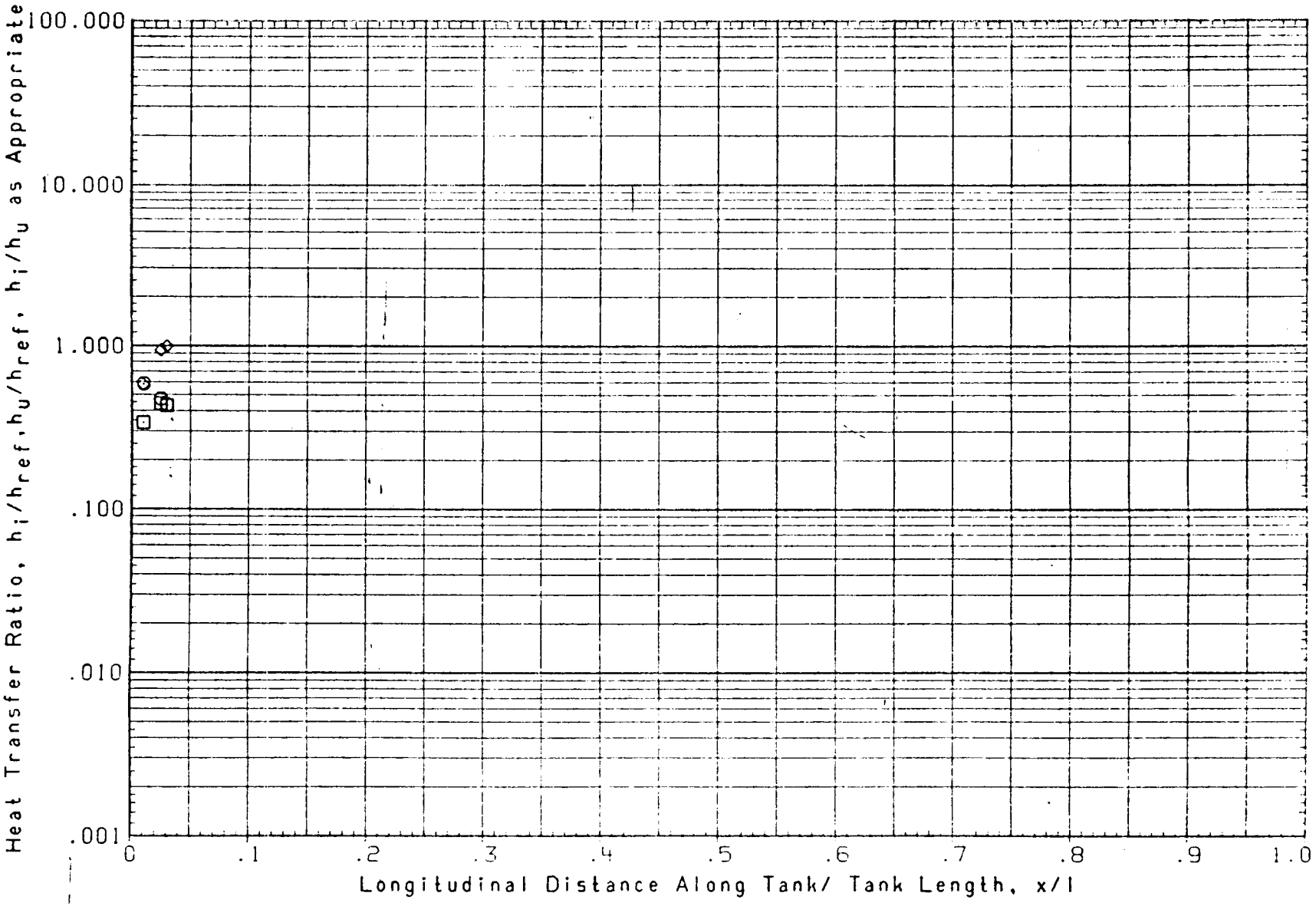


FIG. 15 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = 6

MACH = 4.020 ALPHA = .000 PHI = 39.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT06)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	6.000
(LVFT26)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	6.000
(BVFT26)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	6.000

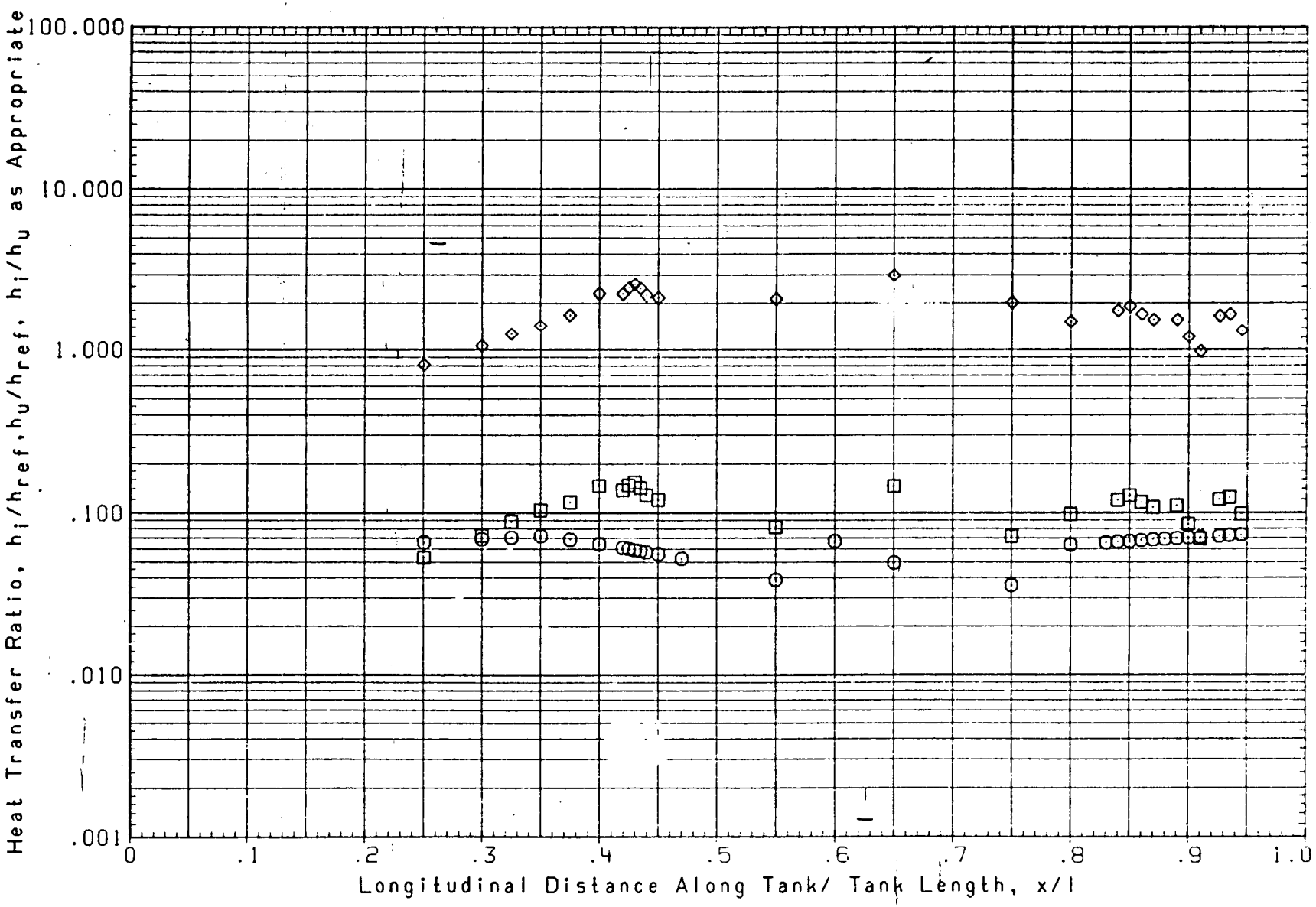


FIG. 15 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 0, BETA = 6

MACH = 4.020 ALPHA = .000 PHI = 45.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT06)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	6.000
(LVFT26)	□	IH41B(V41A-34A) O T S (SPIKED ET DATA) HI/HREF	.000	6.000
(CVFT26)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	6.000

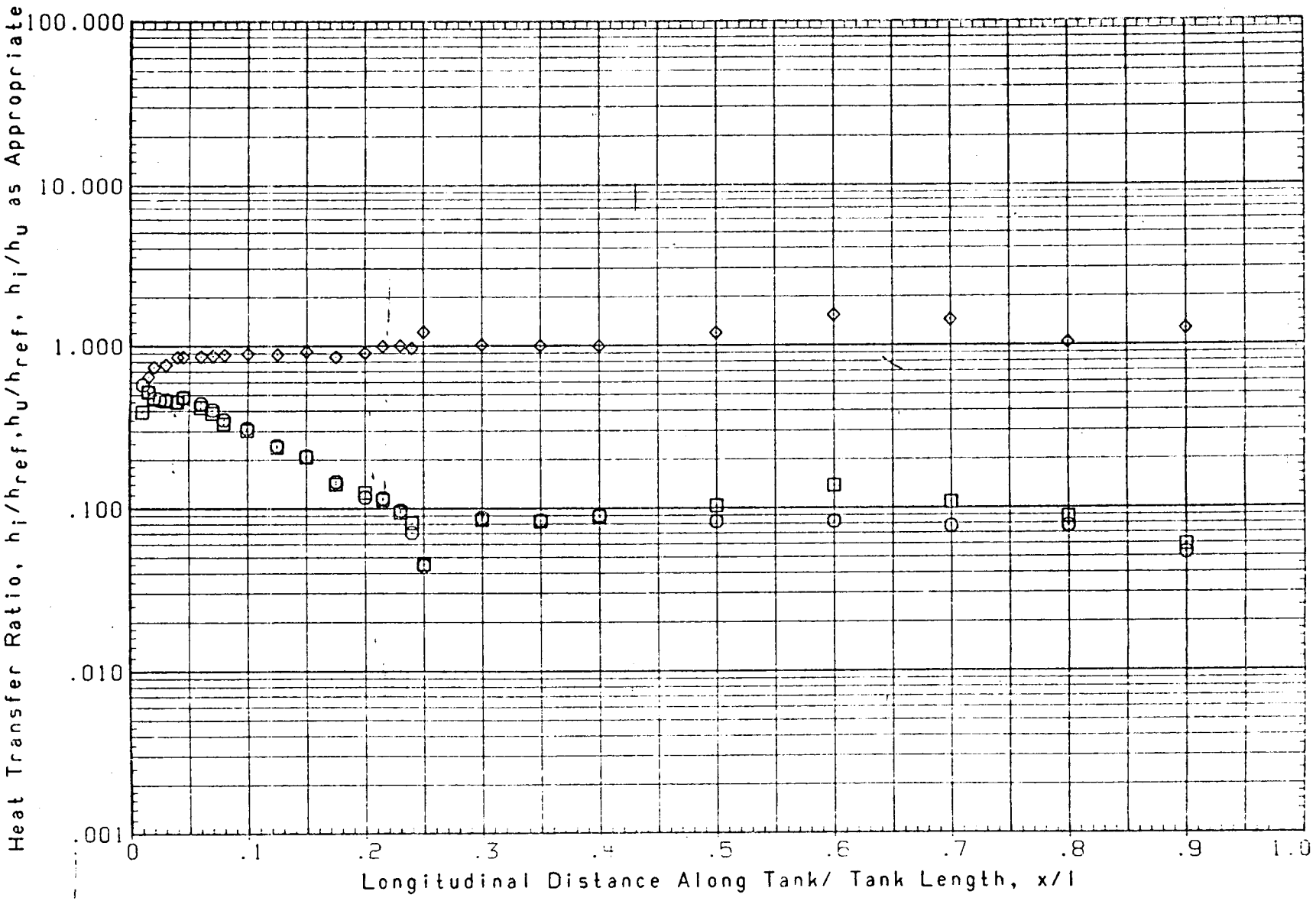


FIG. 16 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = 6

MACH = 3.010 ALPHA = .000 PHI = 180.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT06)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	6.000
(LVFT26)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	6.000
(CVFT26)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	6.000

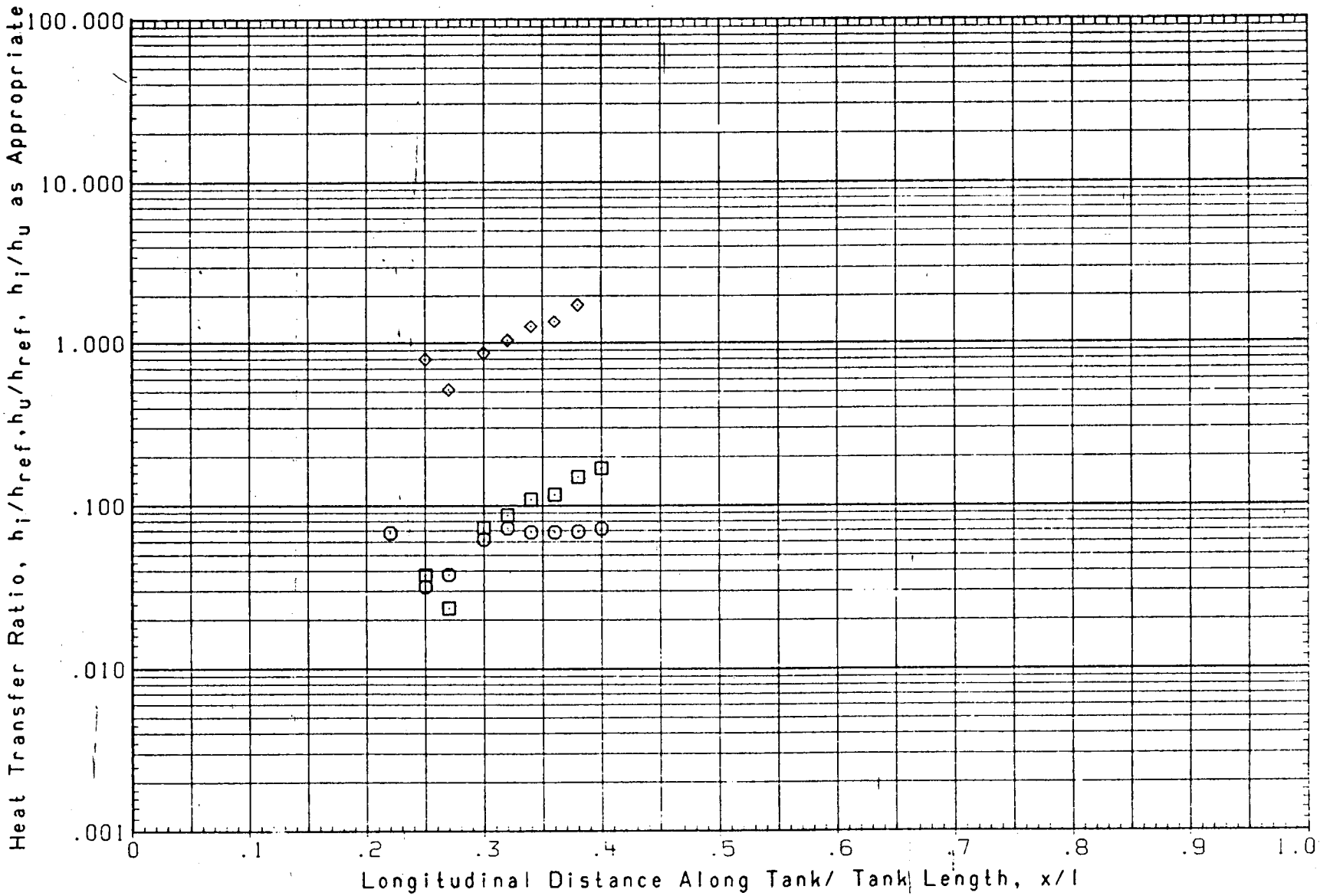


FIG. 16 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = 6

MACH = 3.010 ALPHA = .000 PHI = 235.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT06)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	6.000
(LVFT26)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	6.000
(CVFT26)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	6.000

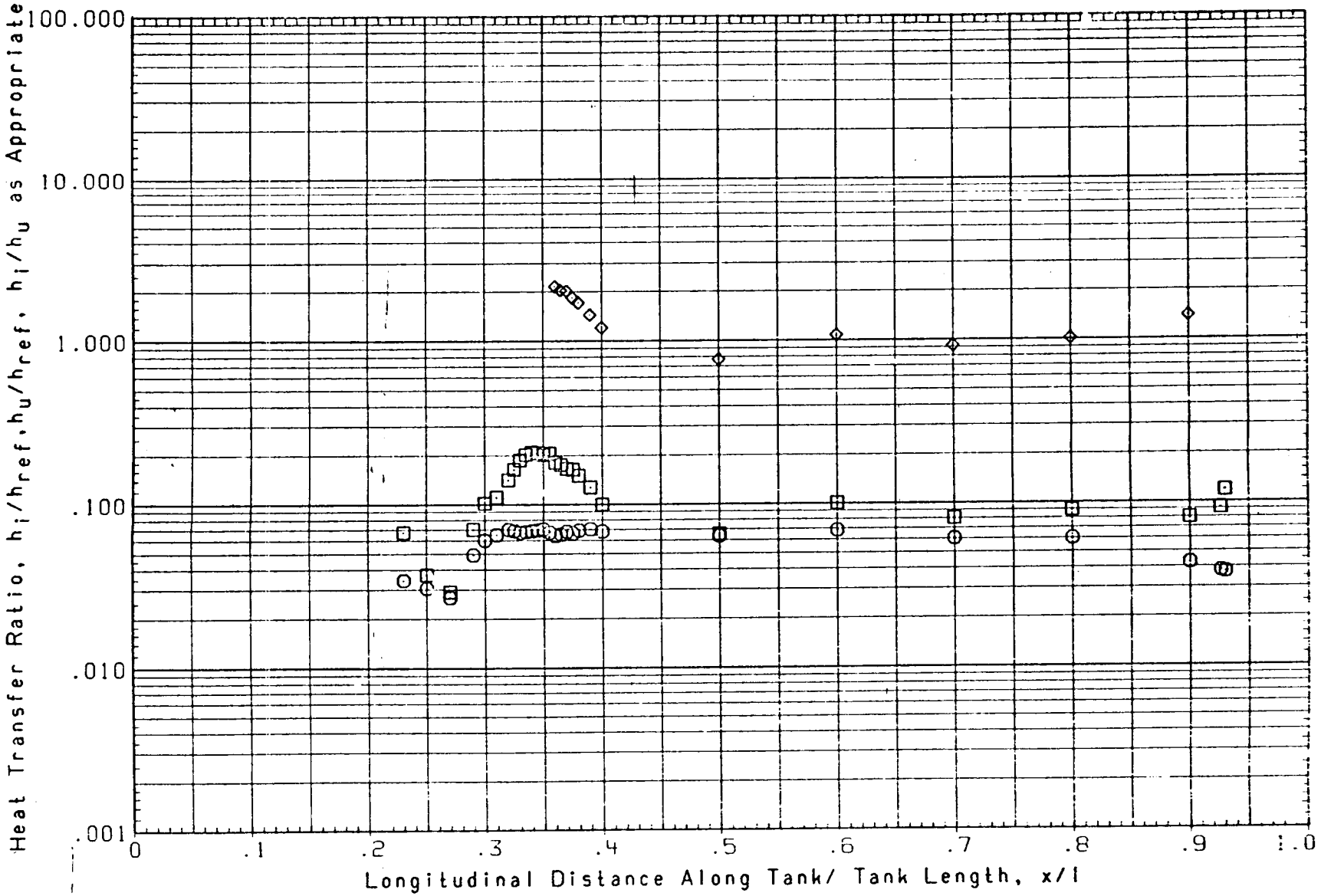


FIG. 16 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = 6

MACH = 3.010 ALPHA = .000 PHI = 247.500

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT06)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	6.000
(LVFT26)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	6.000
(CVFT26)	◇	DATA NOT AVAILABLE	.000	6.000

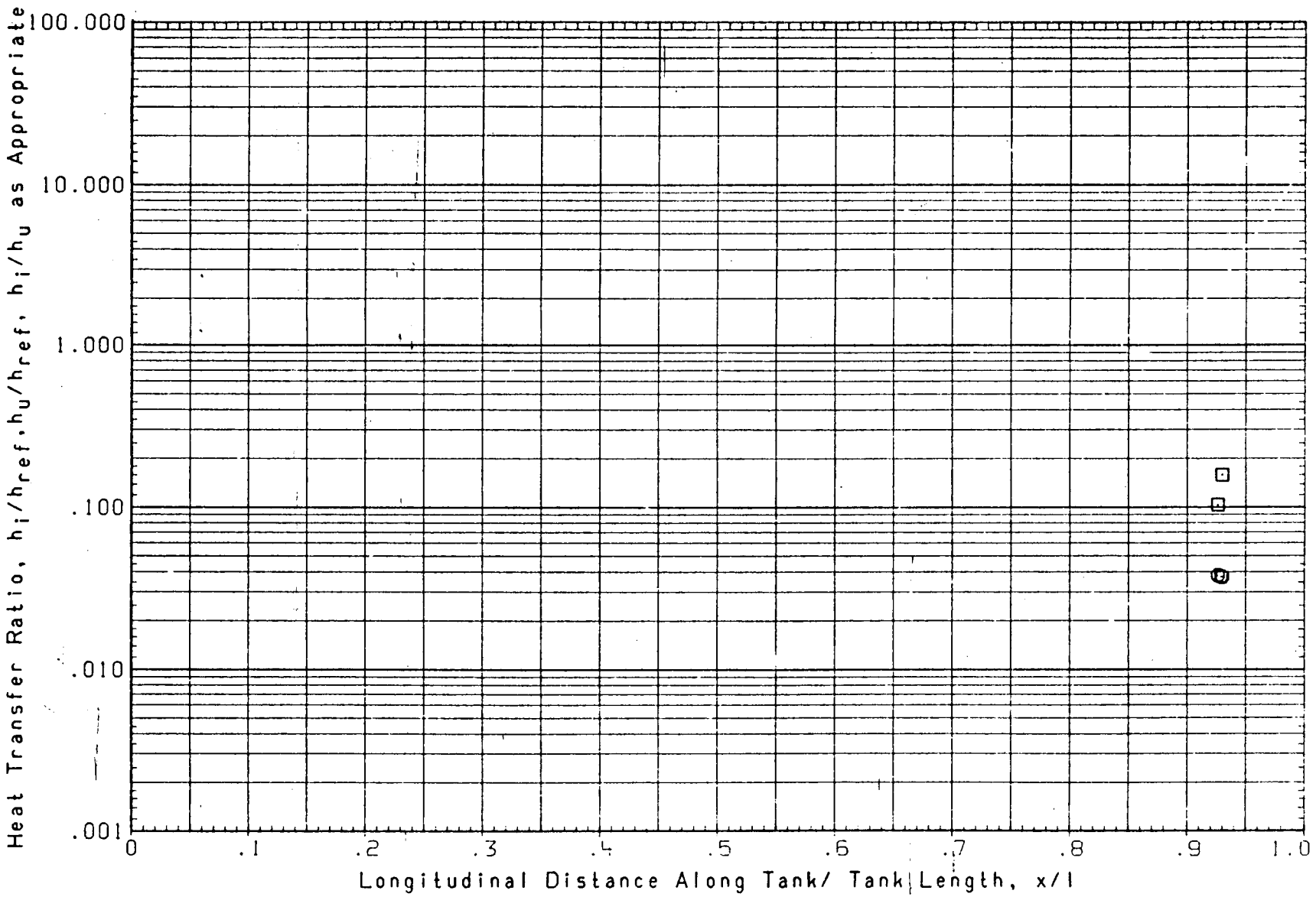


FIG. 16 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = 6

MACH = 3.010 ALPHA = .000 PHI = 250.570

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT06)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	6.000
(LVFT26)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	6.000
(CVFT26)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	6.000

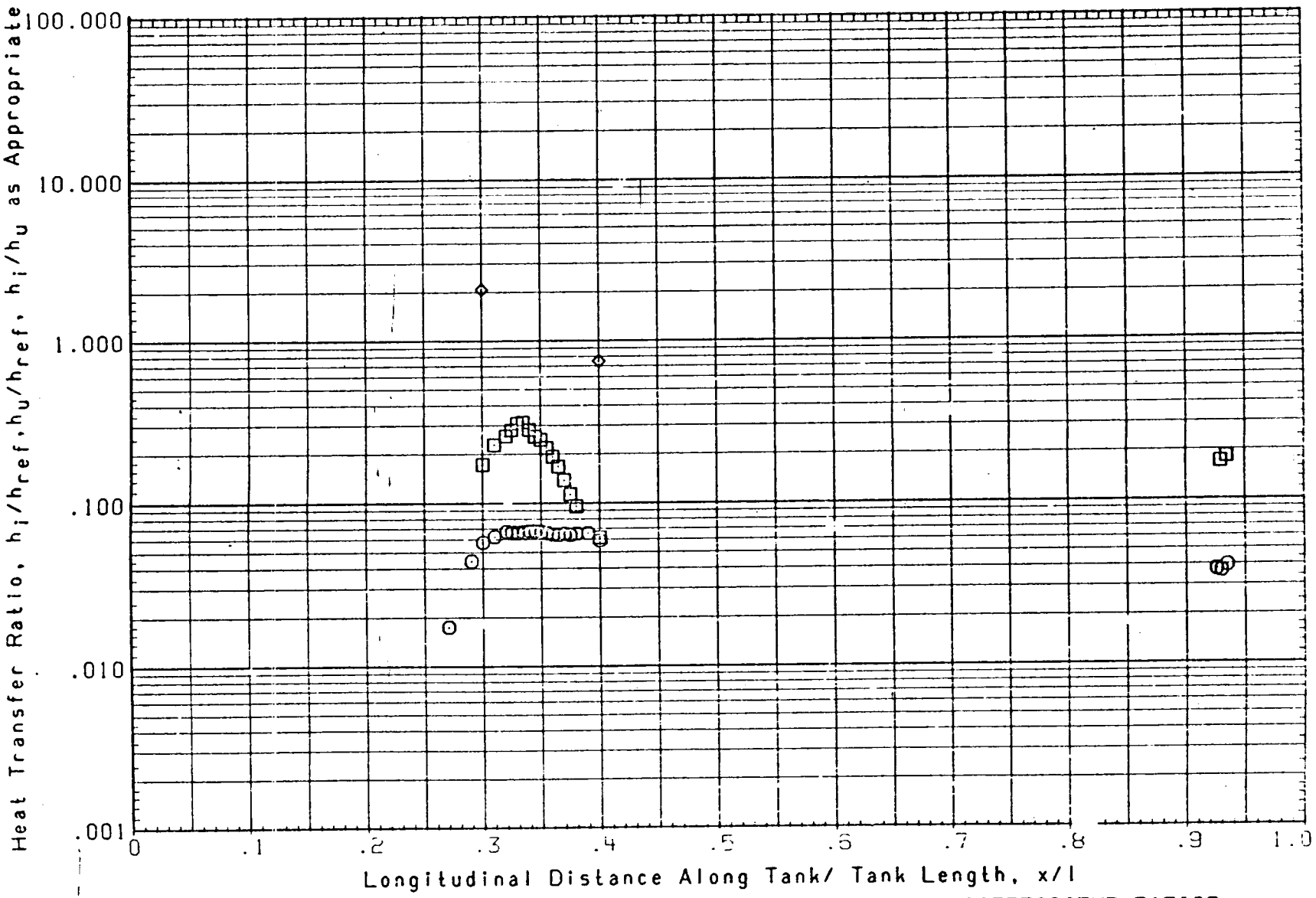


FIG. 16 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = 6

MACH = 3.010 ALPHA = .000 PHI = 258.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT06)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	6.000
(LVFT26)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	6.000
(CVFT26)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	6.000

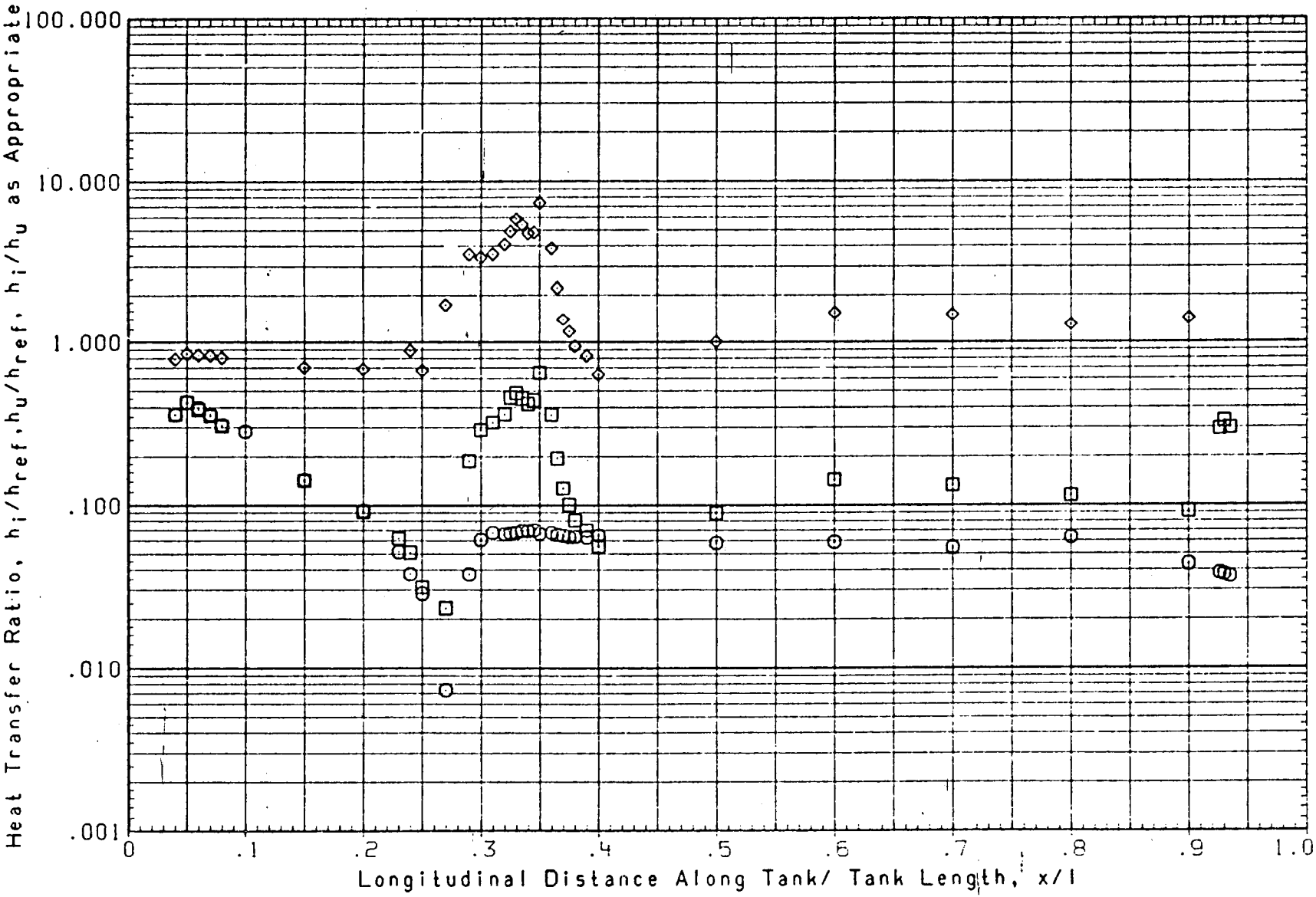


FIG. 16 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = 6

MACH = 3.010 ALPHA = .000 PHI = 270.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT06)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	6.000
(LVFT26)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	6.000
(CVFT26)	◇	DATA NOT AVAILABLE	.000	6.000

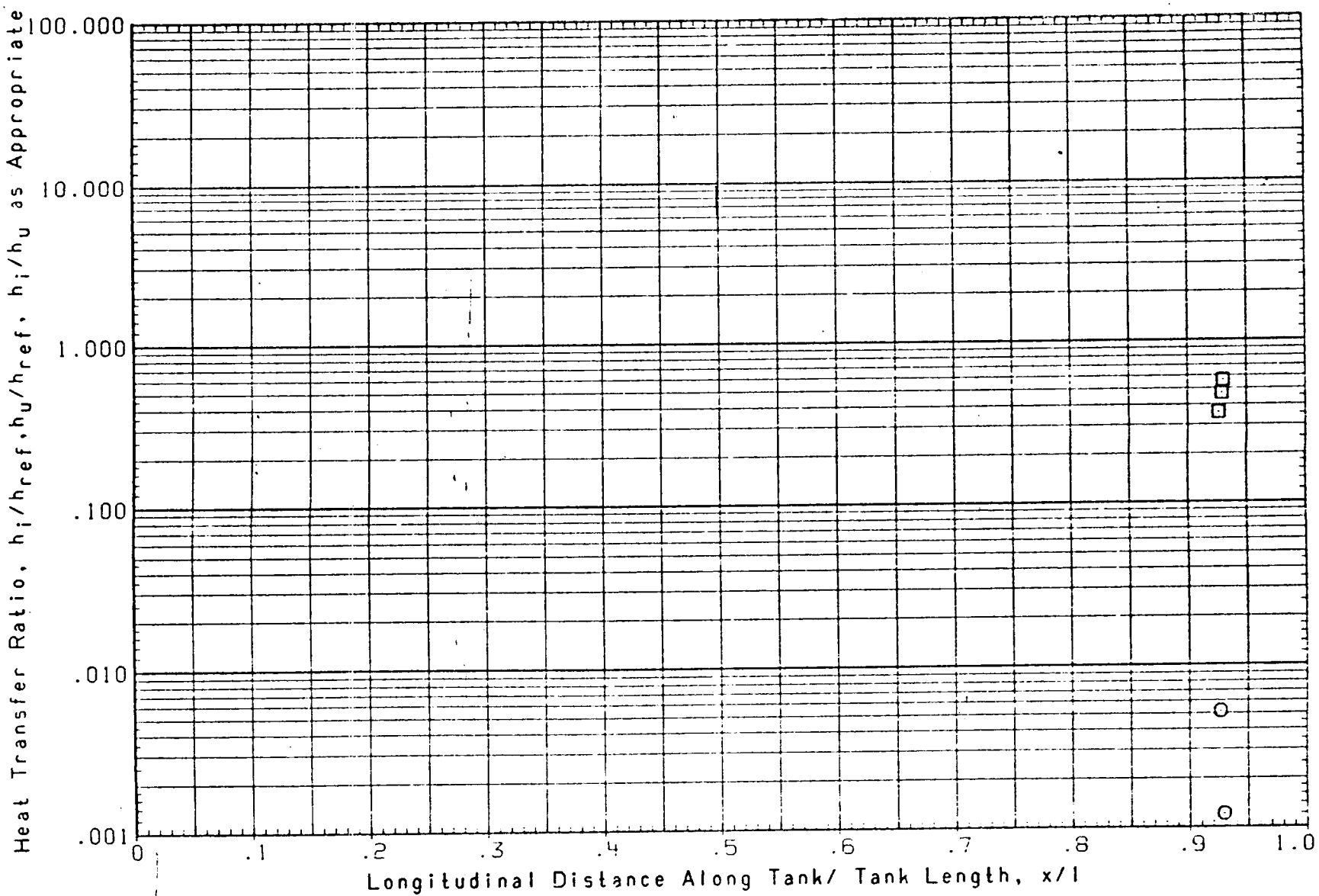


FIG. 16 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = 6

MACH = 3.010 ALPHA = .000 PHI = 289.430

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT06)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	6.000
(LVFT26)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	6.000
(CVFT26)	◇	DATA NOT AVAILABLE	.000	6.000

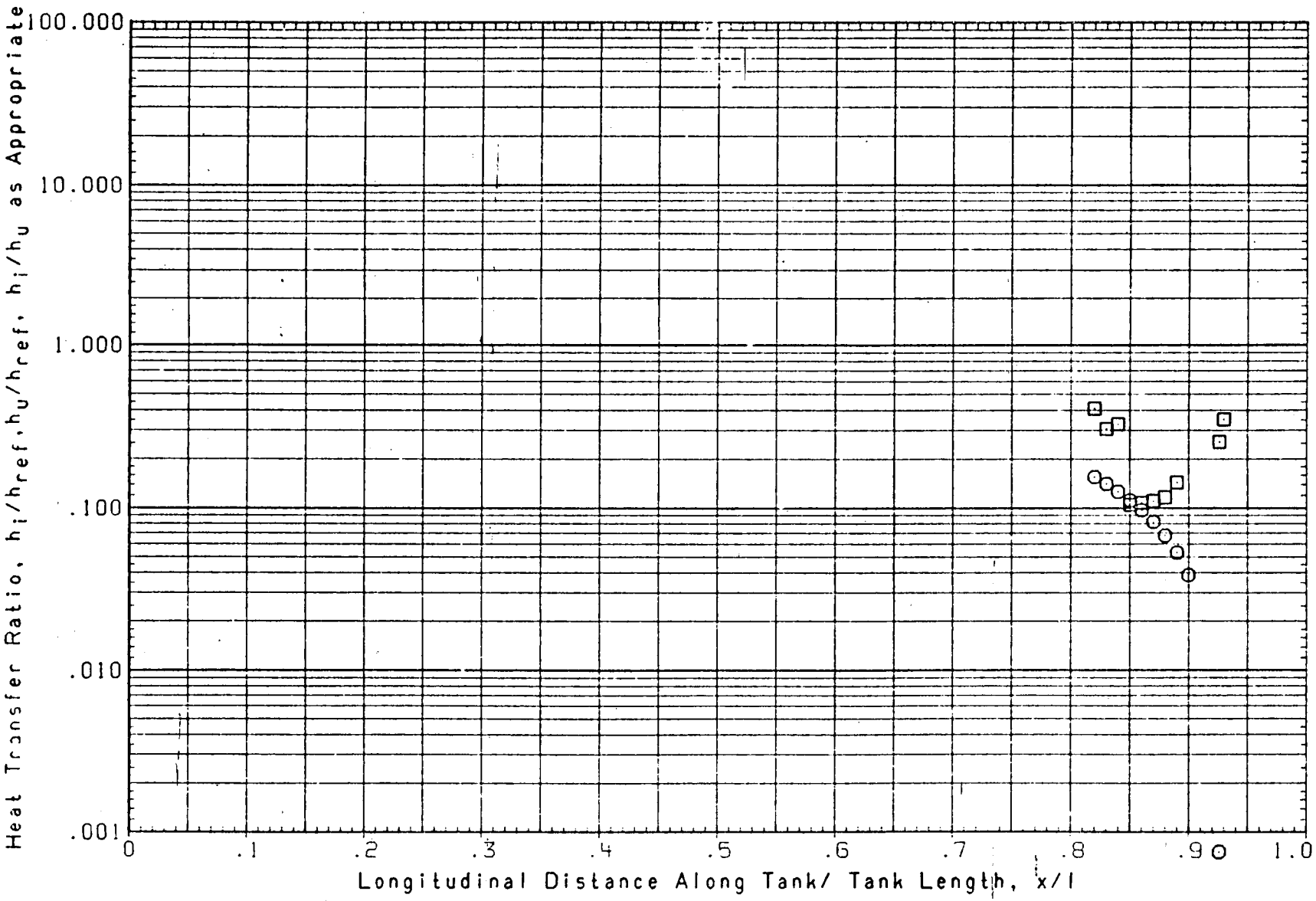


FIG. 16 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = 6

MACH = 3.010 ALPHA = .000 PHI = 292.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT06)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	6.000
(LVFT26)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	6.000
(CVFT26)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	6.000

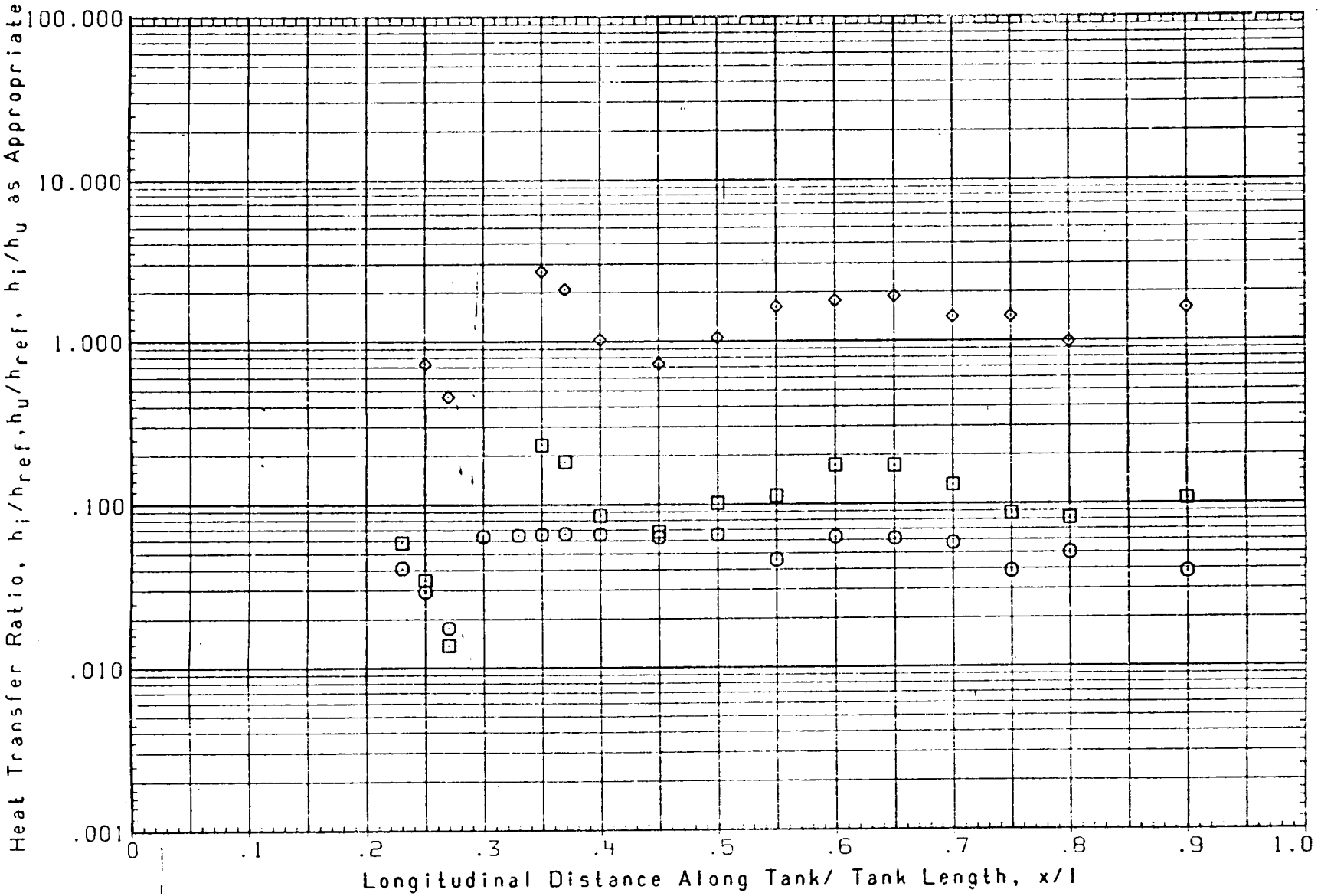


FIG. 16 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = 6

MACH = 3.010 ALPHA = .000 PHI = 292.500

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT06)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	6.000
(LVFT26)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	6.000
(CVFT26)	◇	DATA NOT AVAILABLE	.000	6.000

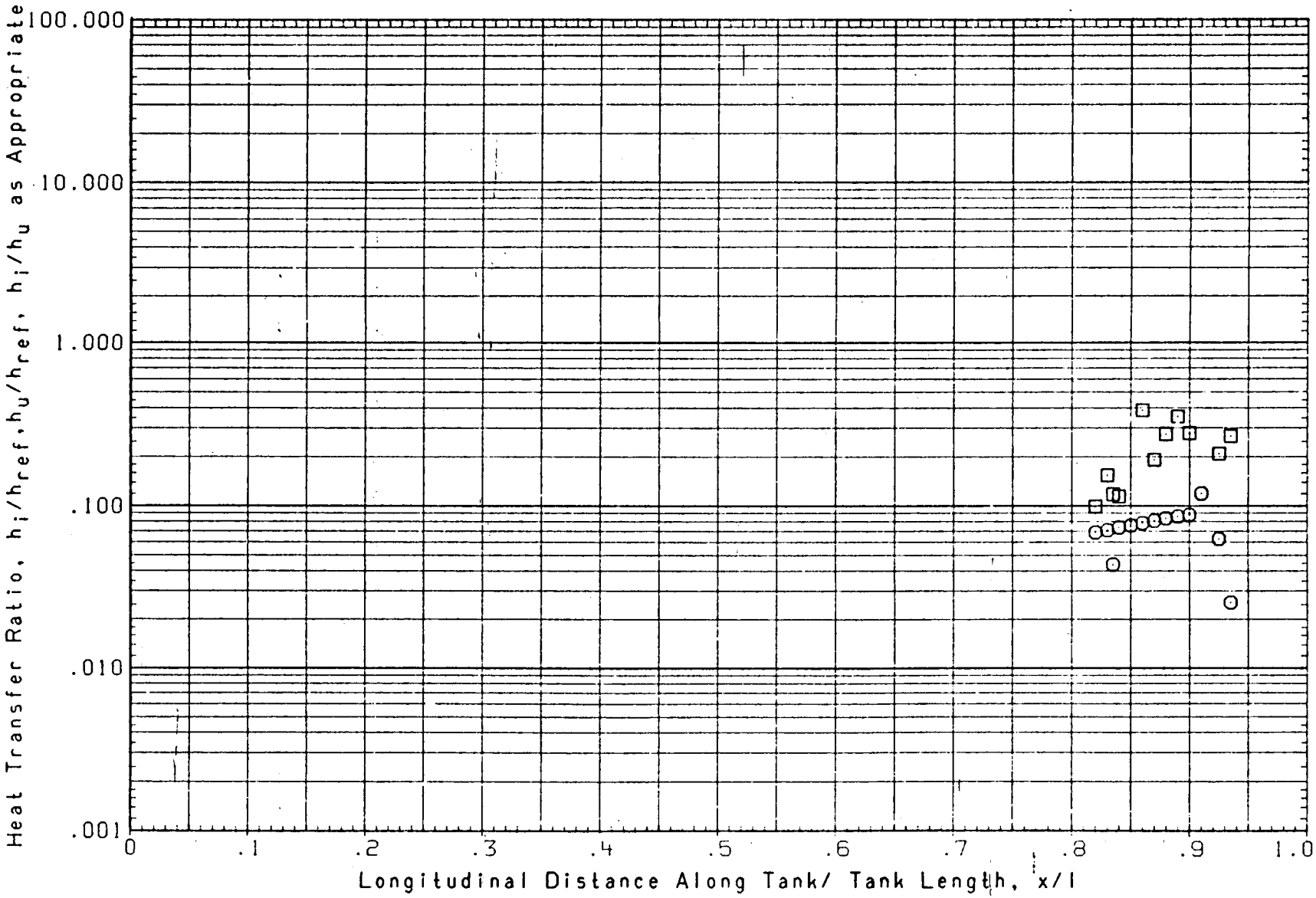


FIG. 16 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = 6

MACH = 3.010 ALPHA = .000 PHI = 301.500

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT06)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	6.000
(LVFT26)	□	IH41B(V41A-A4A) O T S SPIKED ET DATA) HI/HREF	.000	6.000
(CVFT26)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	6.000

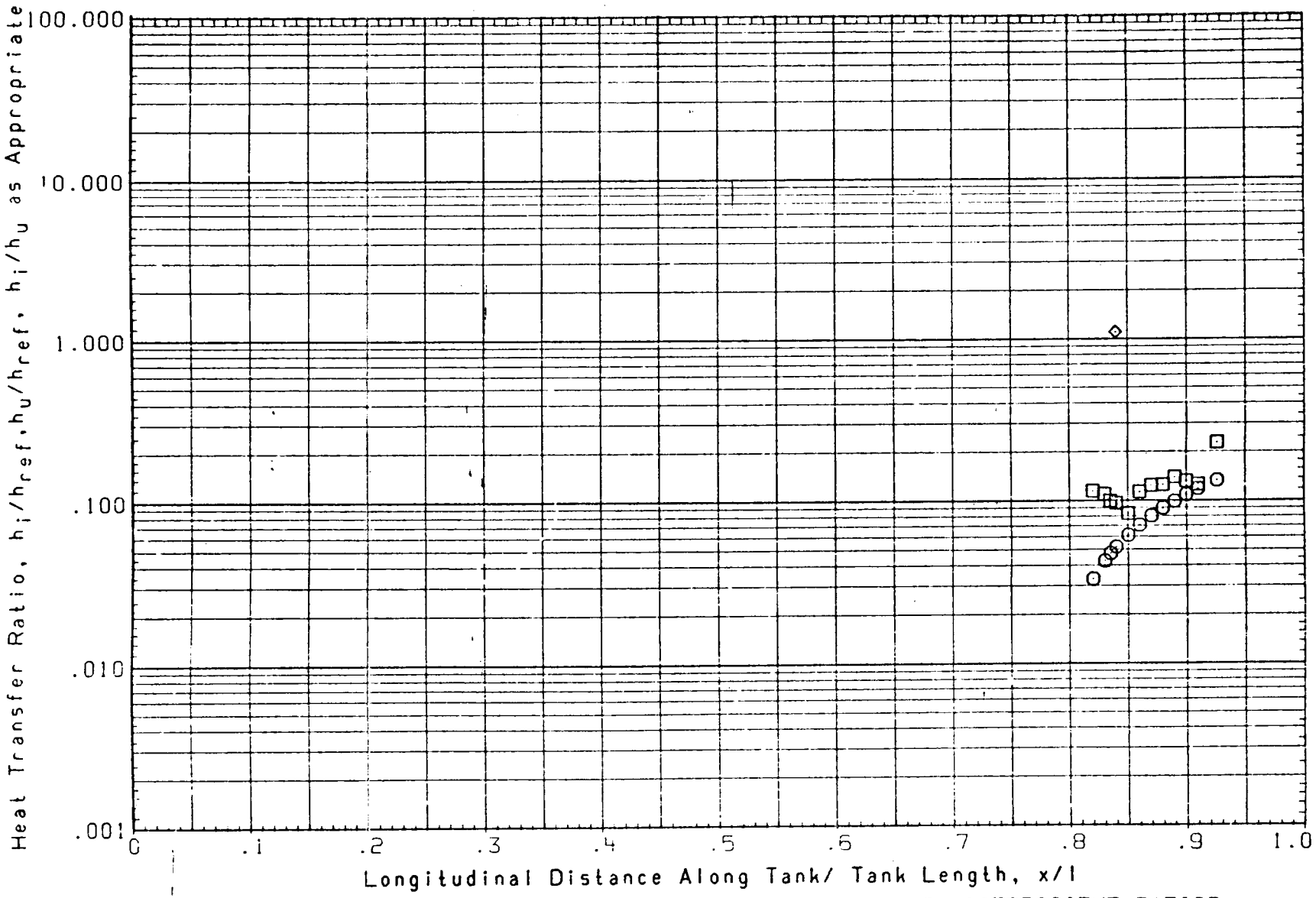


FIG. 16 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = 6

MACH = 3.010 ALPHA = .000 PHI = 305.400

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT06)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	6.000
(LVFT26)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	6.000
(CVFT26)	◇	DATA NOT AVAILABLE	.000	6.000

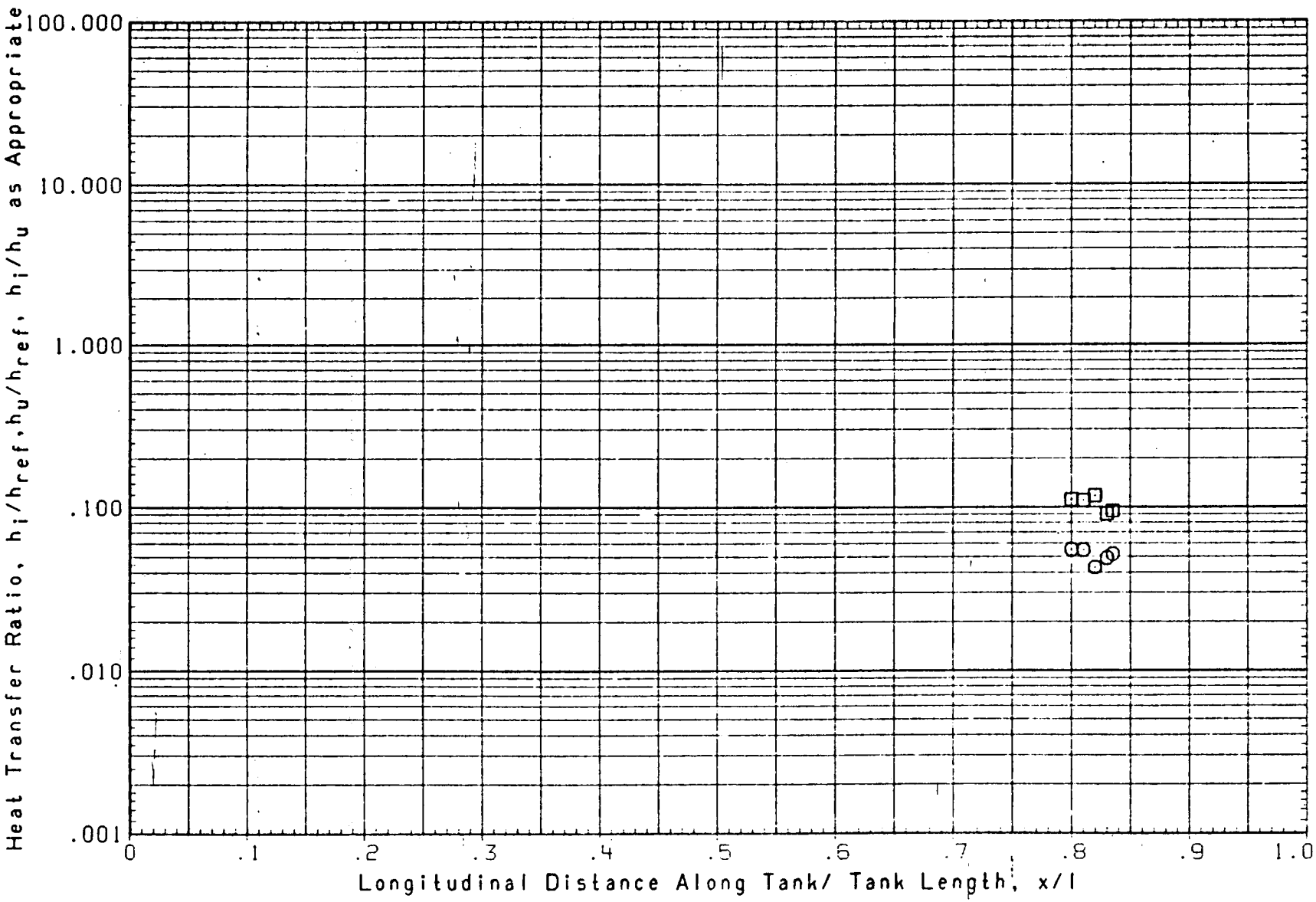


FIG. 16 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = 6

MACH = 3.010 ALPHA = .000 PHI = 309.300

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT06)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	6.000
(LVFT26)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	6.000
(CVFT26)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	6.000

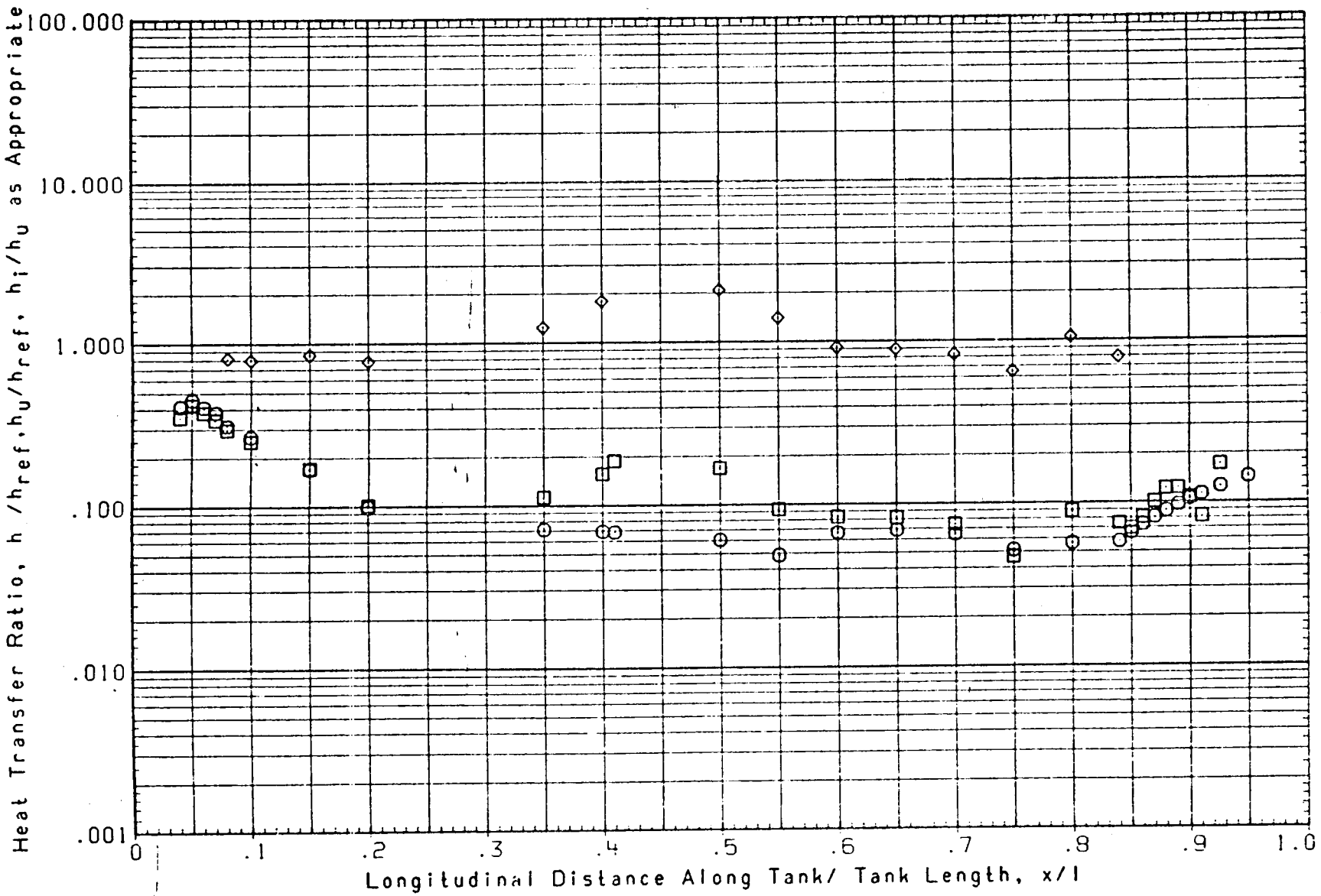


FIG. 16 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = 6

MACH = 3.010 ALPHA = .000 PHI = 315.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT06)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	6.000
(LVFT26)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	6.000
(CVFT26)	◇	DATA NOT AVAILABLE	.000	6.000

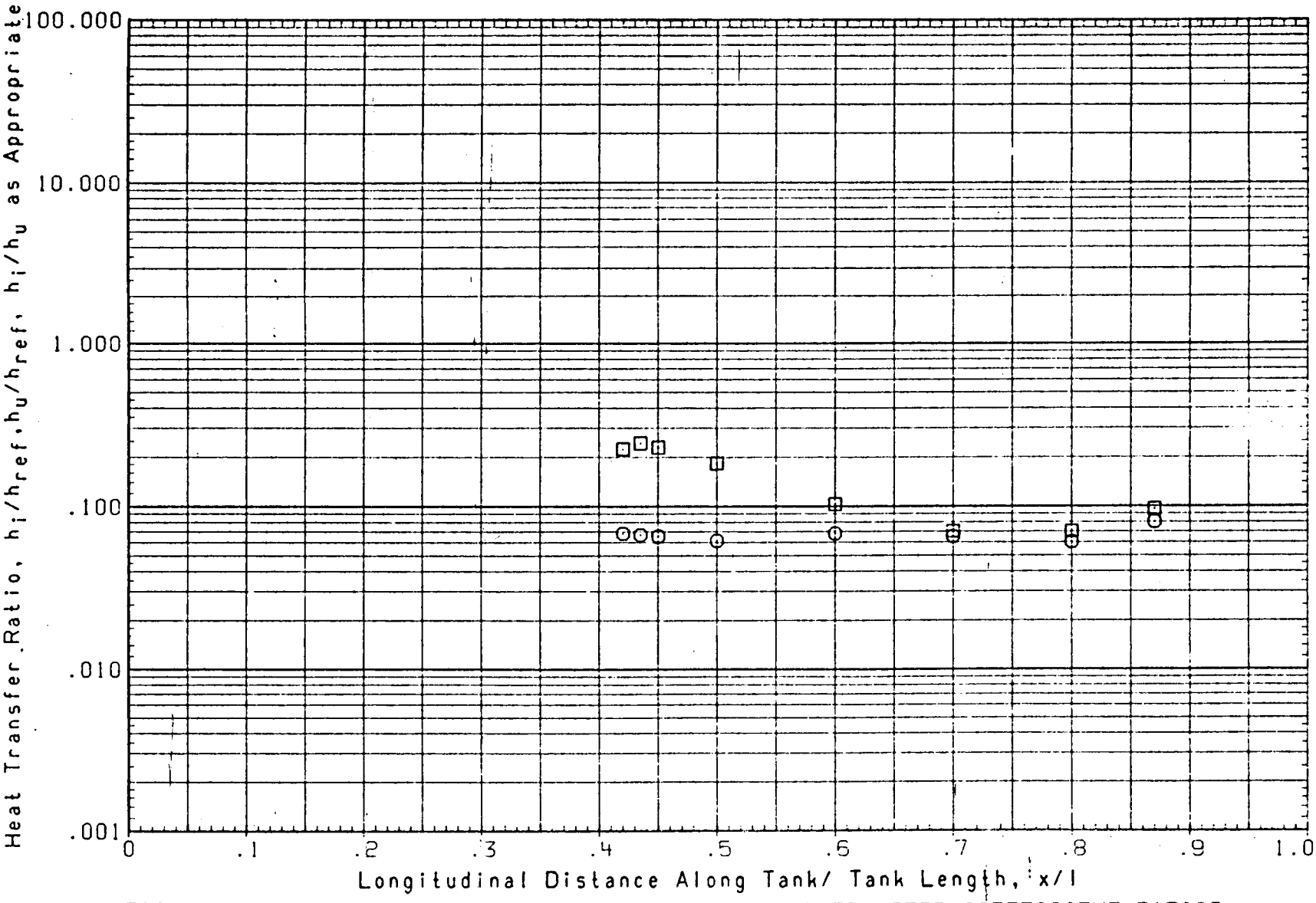


FIG. 16 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = 6

MACH = 3.010 ALPHA = .000 PHI = 322.300

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT06)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	6.000
(LVFT26)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	6.000
(CVFT26)	◇	DATA NOT AVAILABLE	.000	6.000

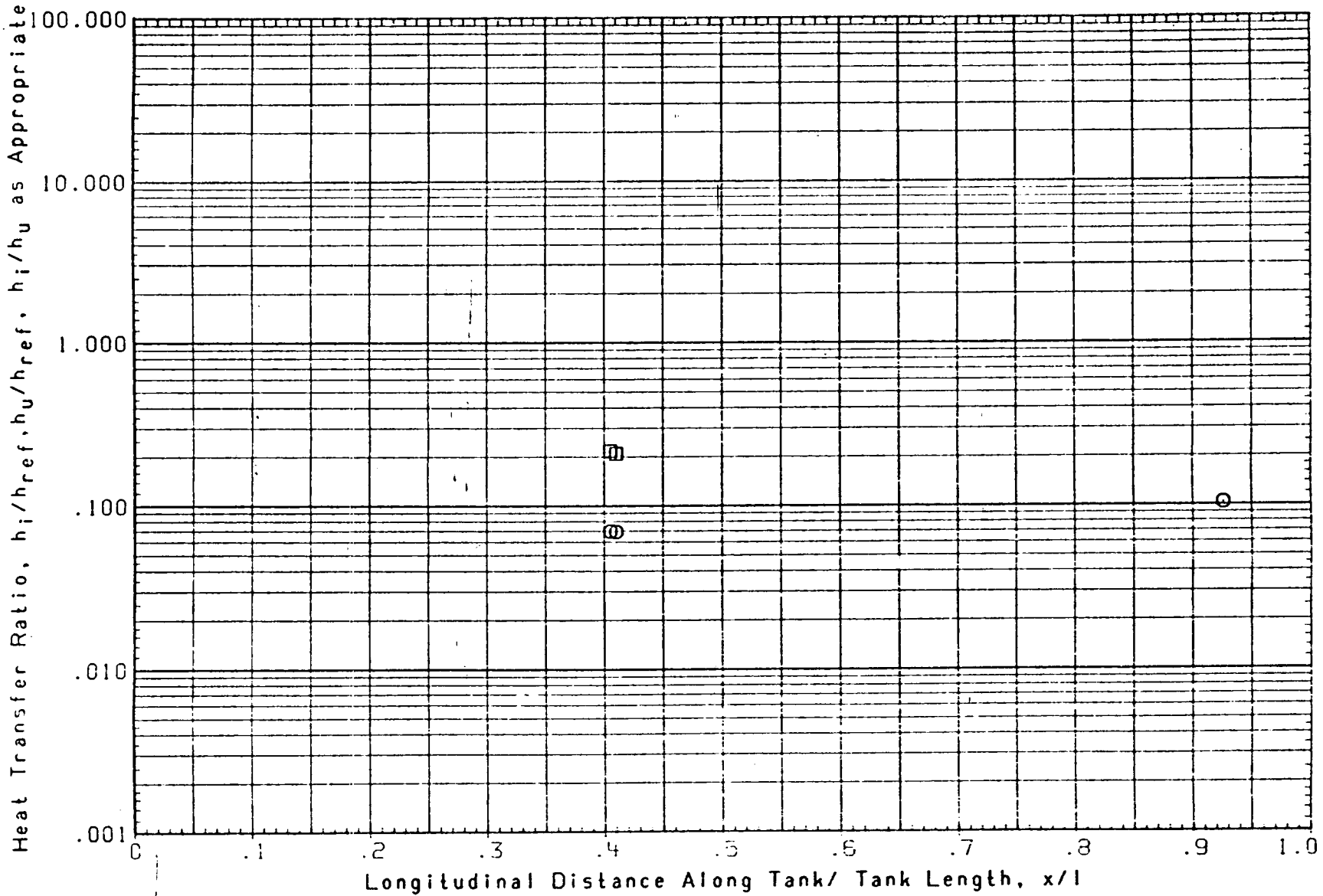


FIG. 16 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = 6

MACH = 3.010 ALPHA = .000 PHI = 324.450

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT06)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	6.000
(LVFT26)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	6.000
(CVFT26)	◇	DATA NOT AVAILABLE	.000	6.000

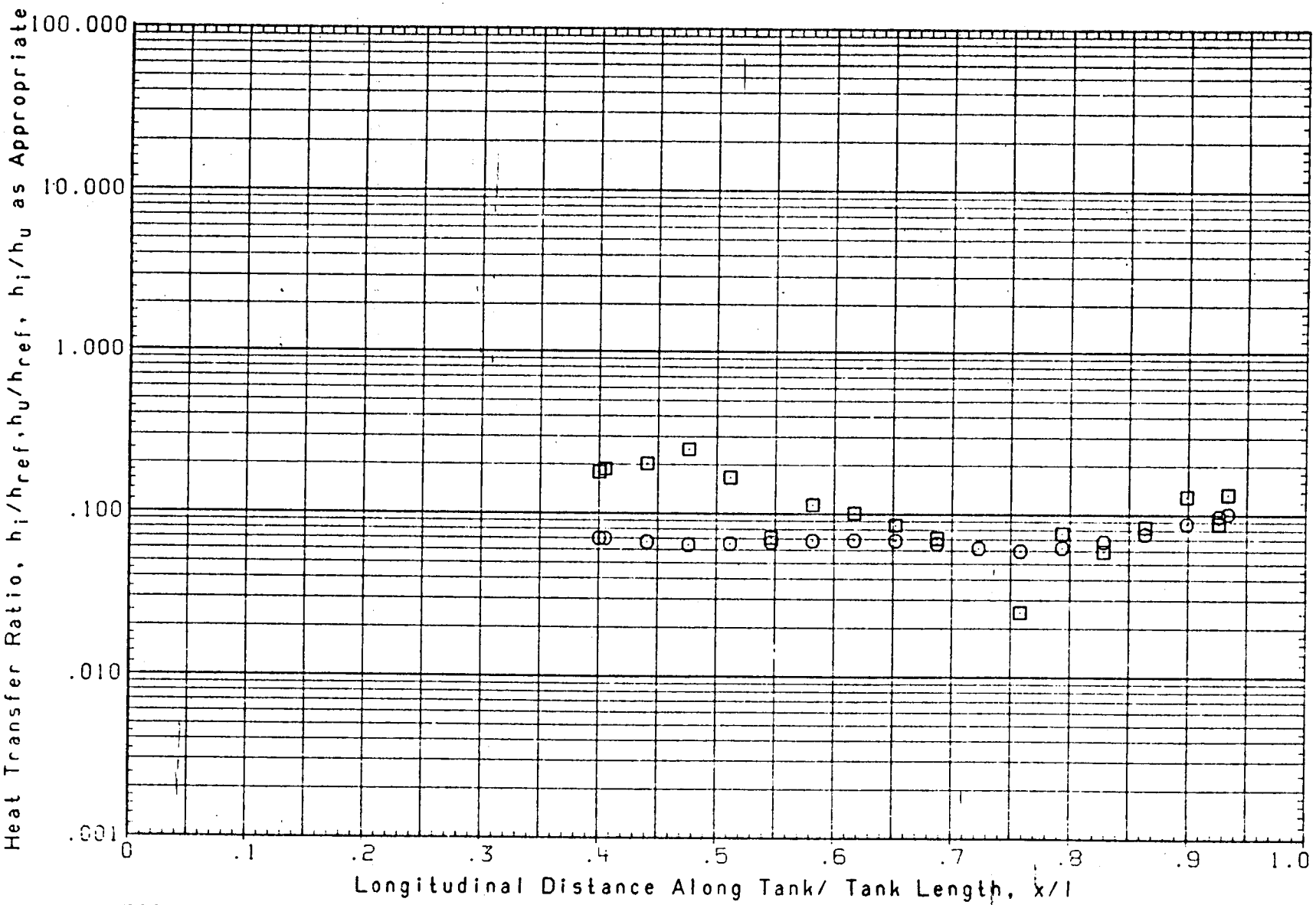


FIG. 16 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = 6

MACH = 3.010 ALPHA = .000 PHI = 326.950

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT06)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	6.000
(LVFT26)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	6.000
(CVFT26)	◇	DATA NOT AVAILABLE	.000	6.000

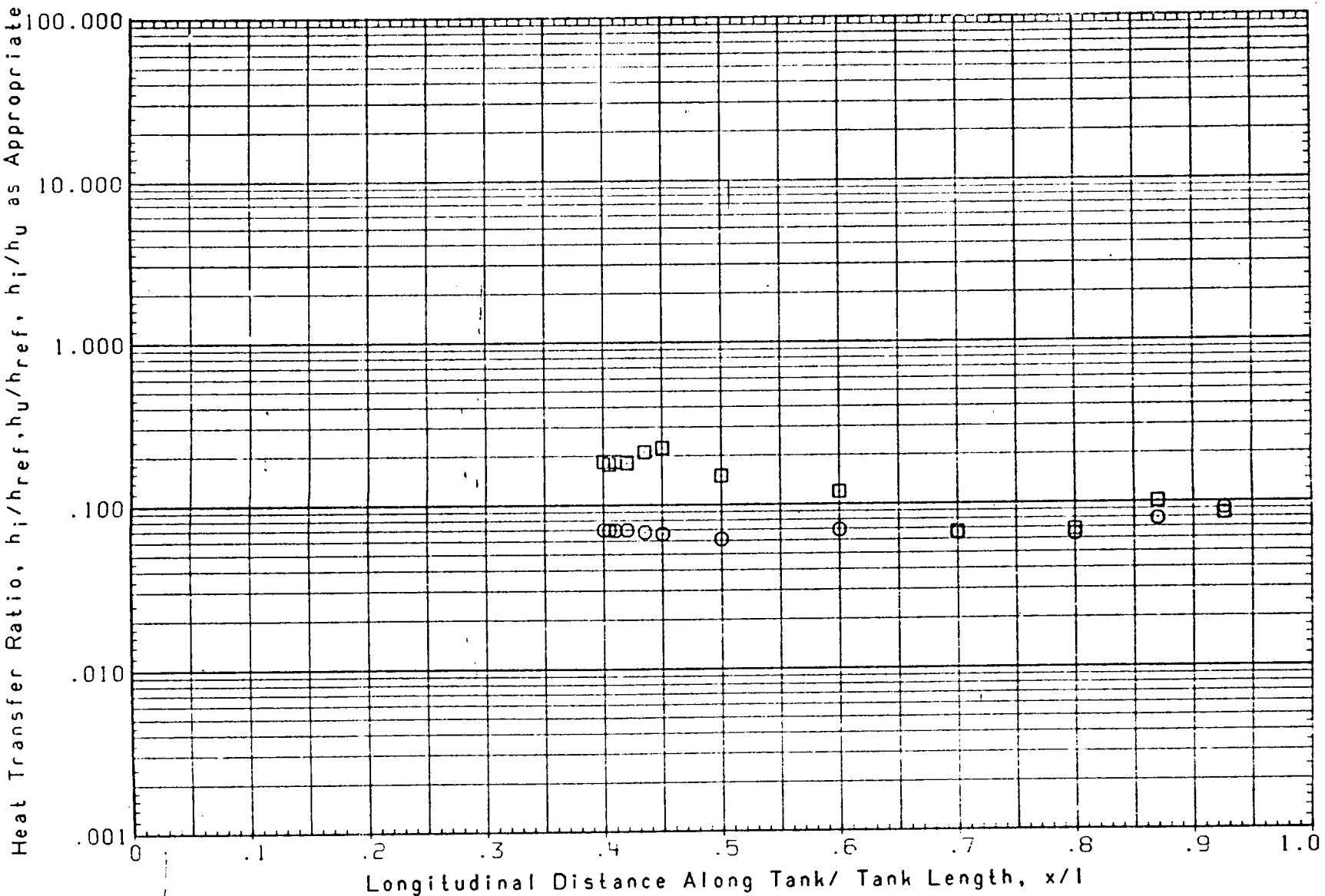


FIG. 16 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = 6

MACH = 3.010 ALPHA = .000 PHI = 330.200

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT06)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	6.000
(LVFT26)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	6.000
(CVFT26)	◇	DATA NOT AVAILABLE	.000	6.000

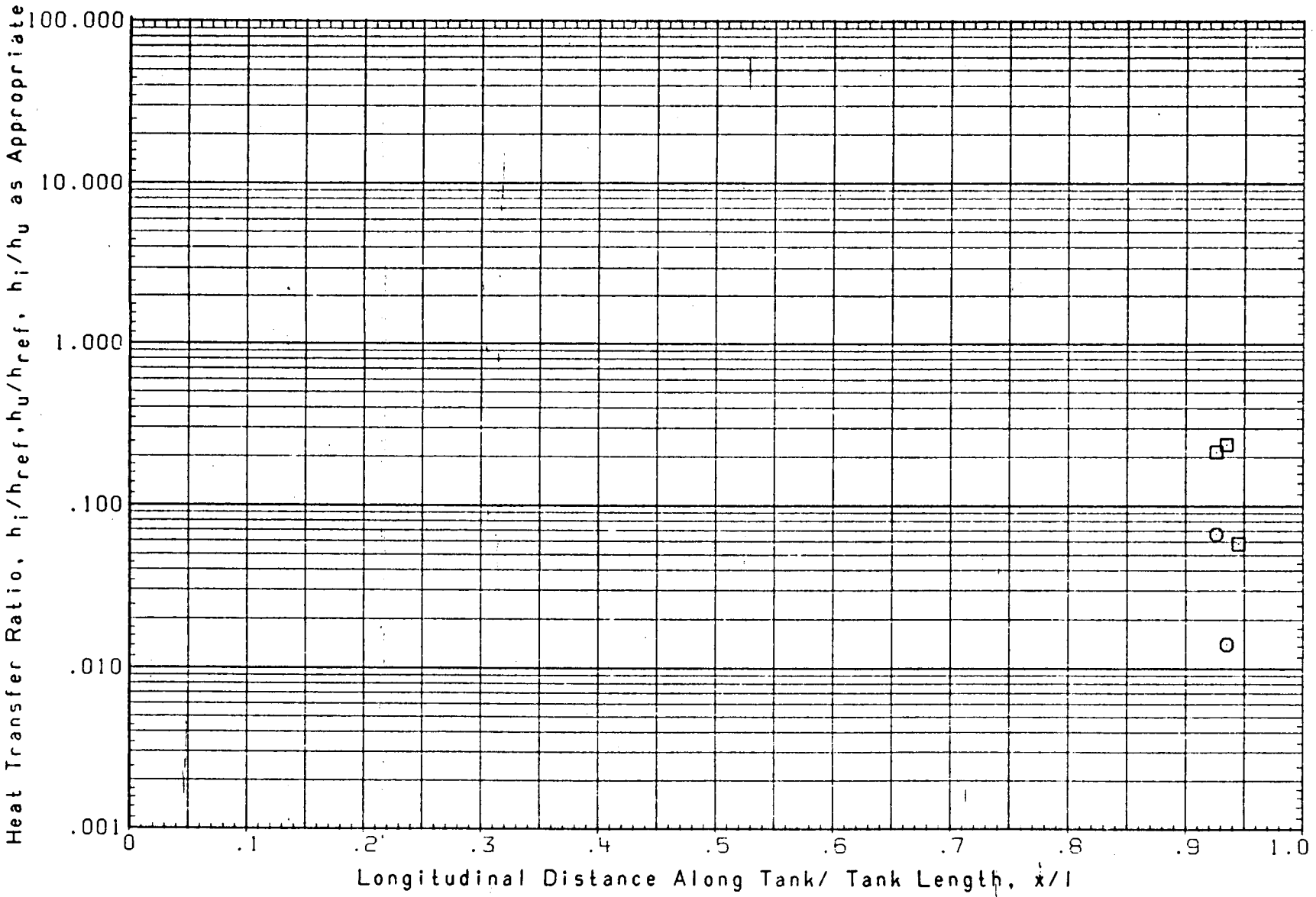


FIG. 16 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = 6

MACH = 3.010 ALPHA = .000 PHI = 334.980

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT06)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	6.000
(LVFT26)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	6.000
(CVFT26)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	6.000

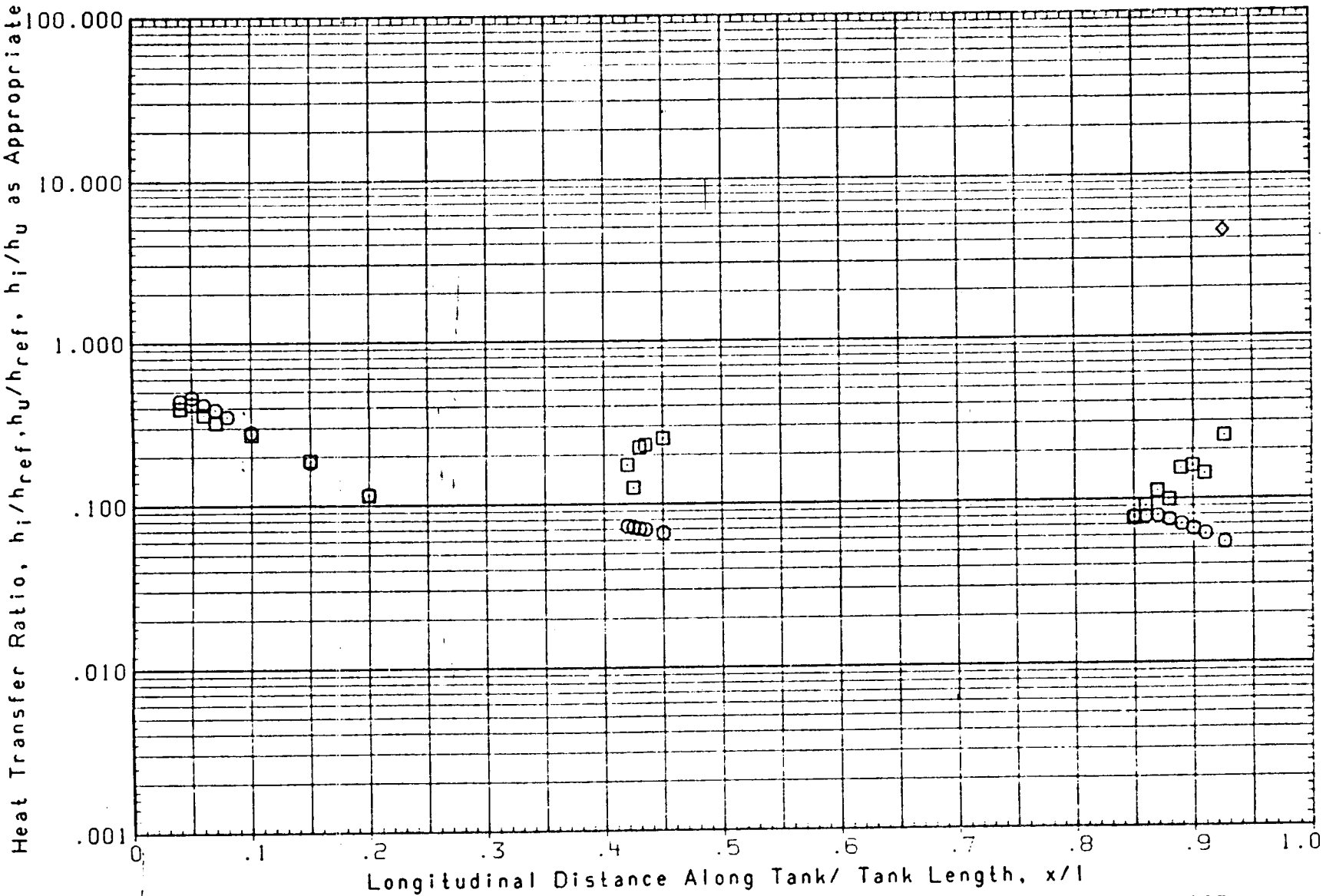


FIG. 16 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = 6

MACH = 3.010 ALPHA = .000 PHI = 337.500

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT06)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	6.000
(LVFT26)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	6.000
(CVFT26)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	6.000

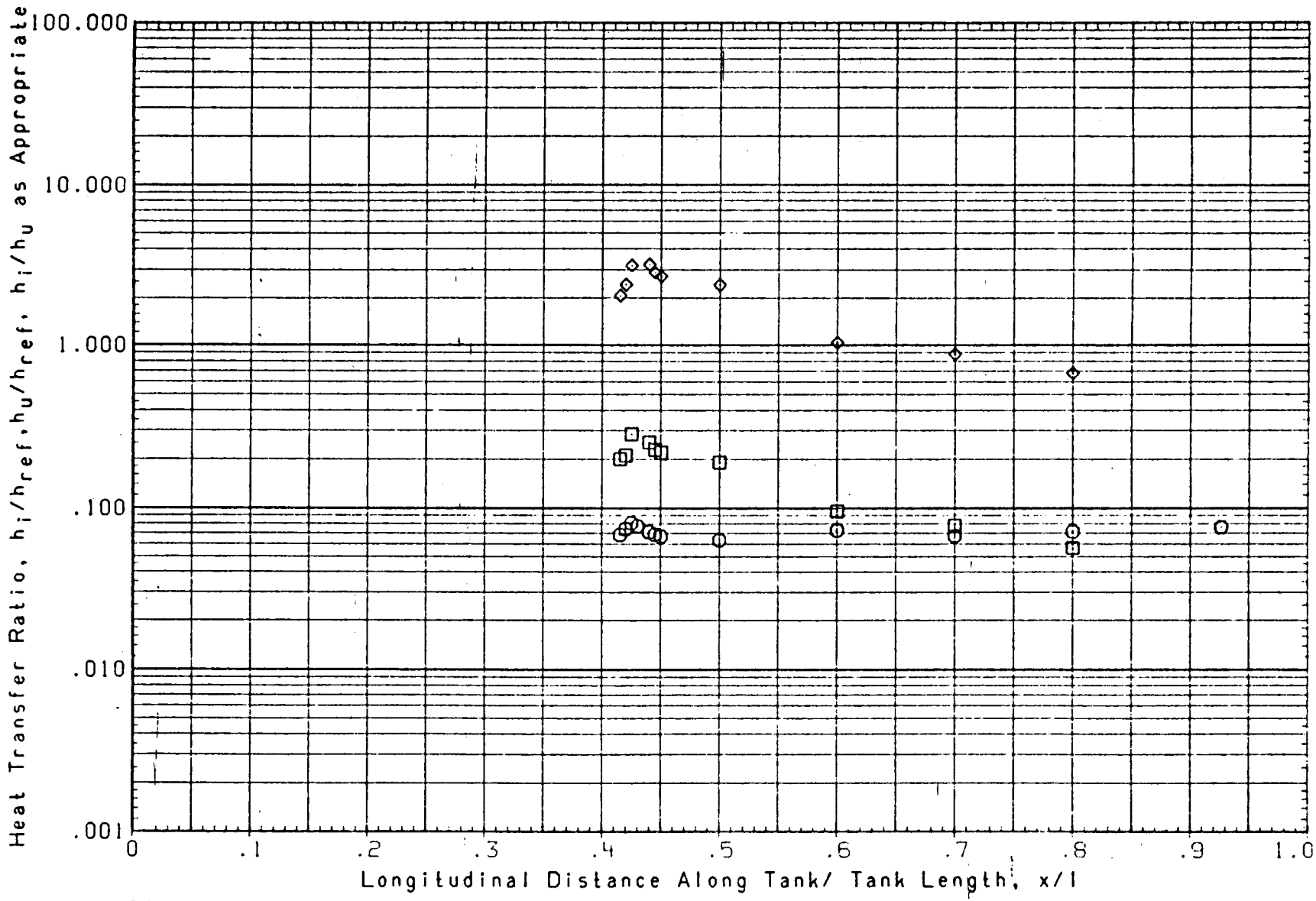


FIG. 16 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = 6

MACH = 3.010 ALPHA = .000 PHI = 343.120

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT06)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	6.000
(LVFT26)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	6.000
(CVFT26)	◇	DATA NOT AVAILABLE	.000	6.000

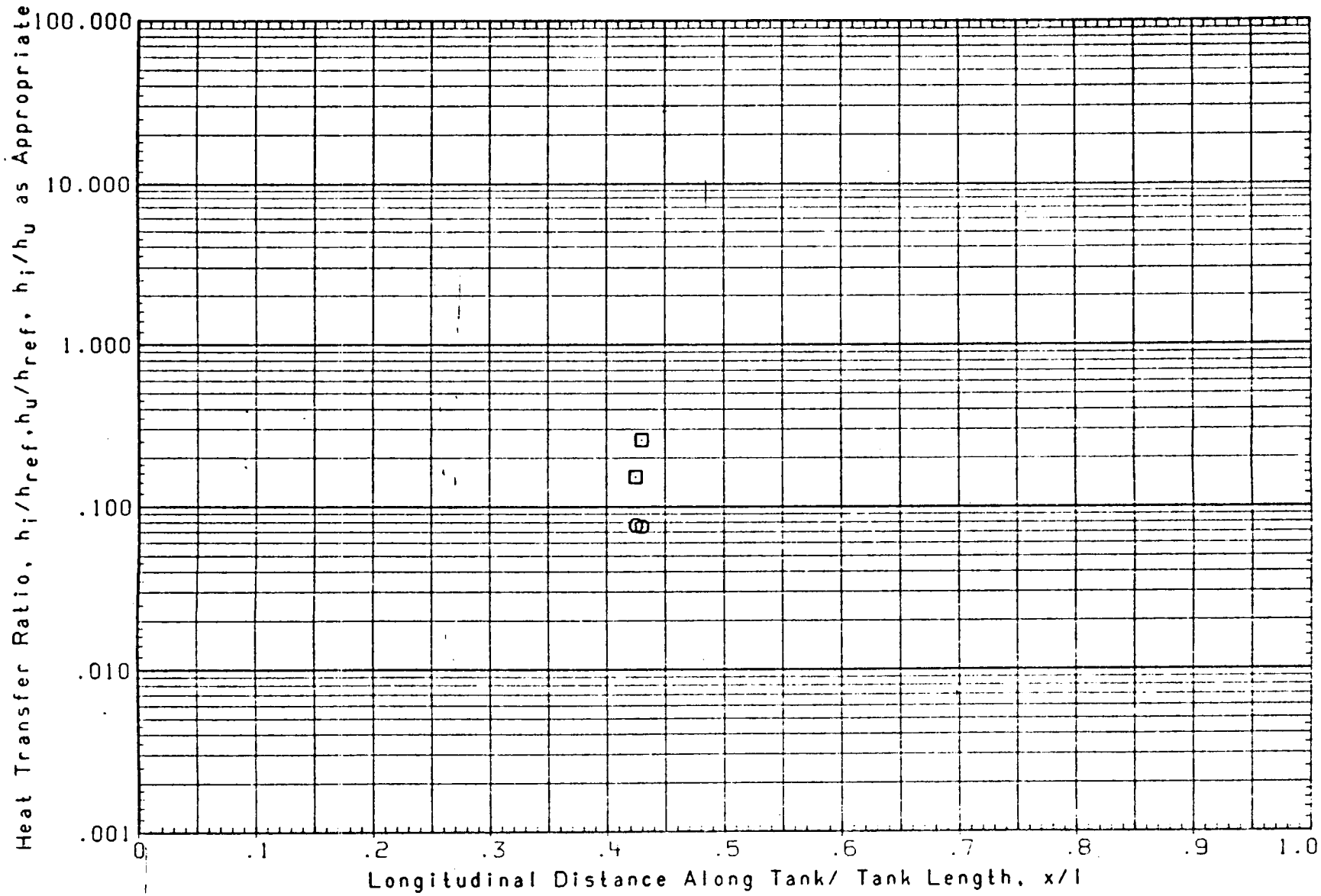


FIG. 16 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = 6

MACH = 3.010 ALPHA = .000 PHI = 345.550

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT06)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	6.000
(LVFT26)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	6.000
(CVFT26)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	6.000

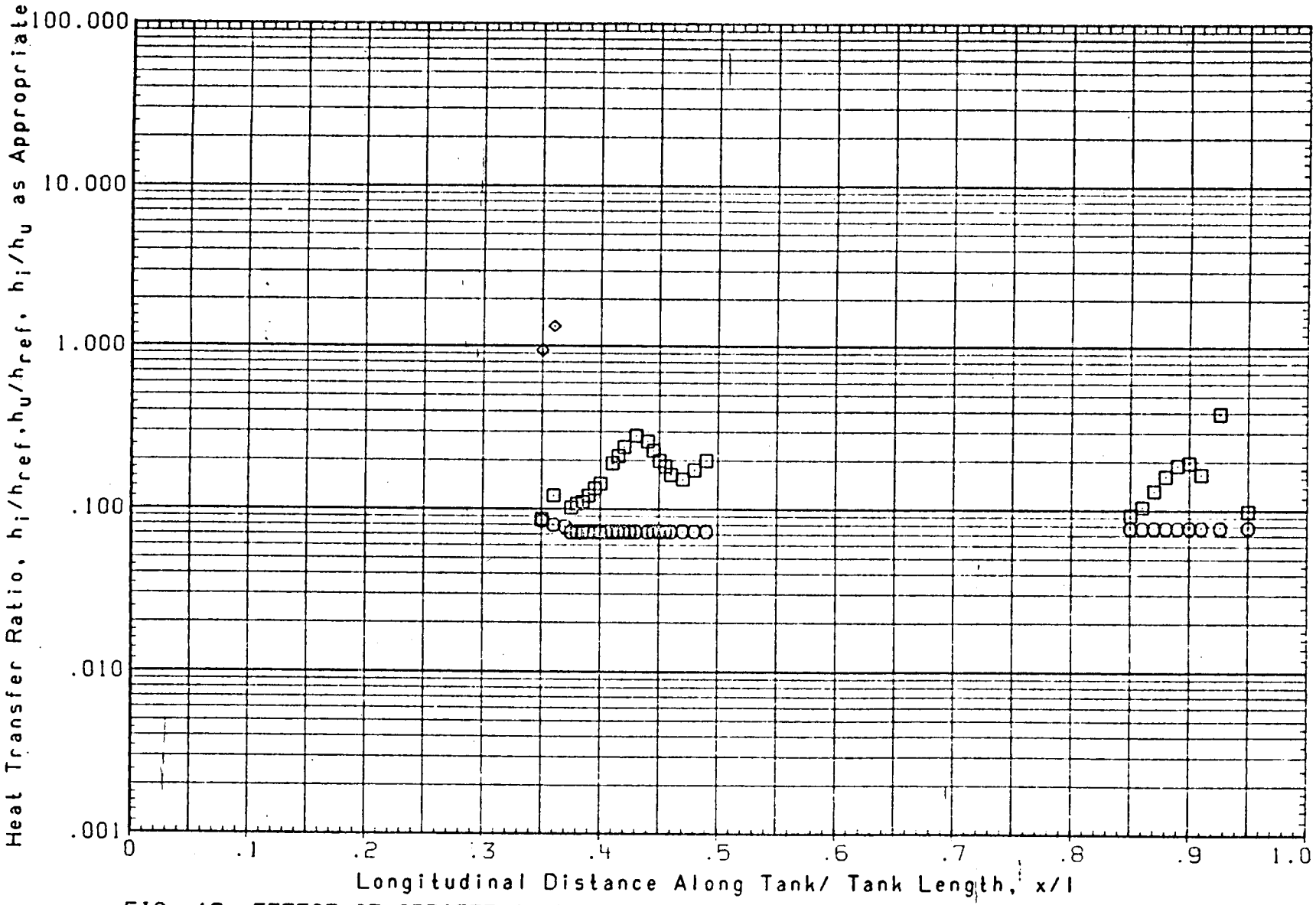


FIG. 16 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = 6

MACH = 3.010 ALPHA = .000 PHI = 348.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT06)	○	1H41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	6.000
(LVFT26)	□	DATA NOT AVAILABLE	.000	6.000
(CVFT26)	◇	DATA NOT AVAILABLE	.000	6.000

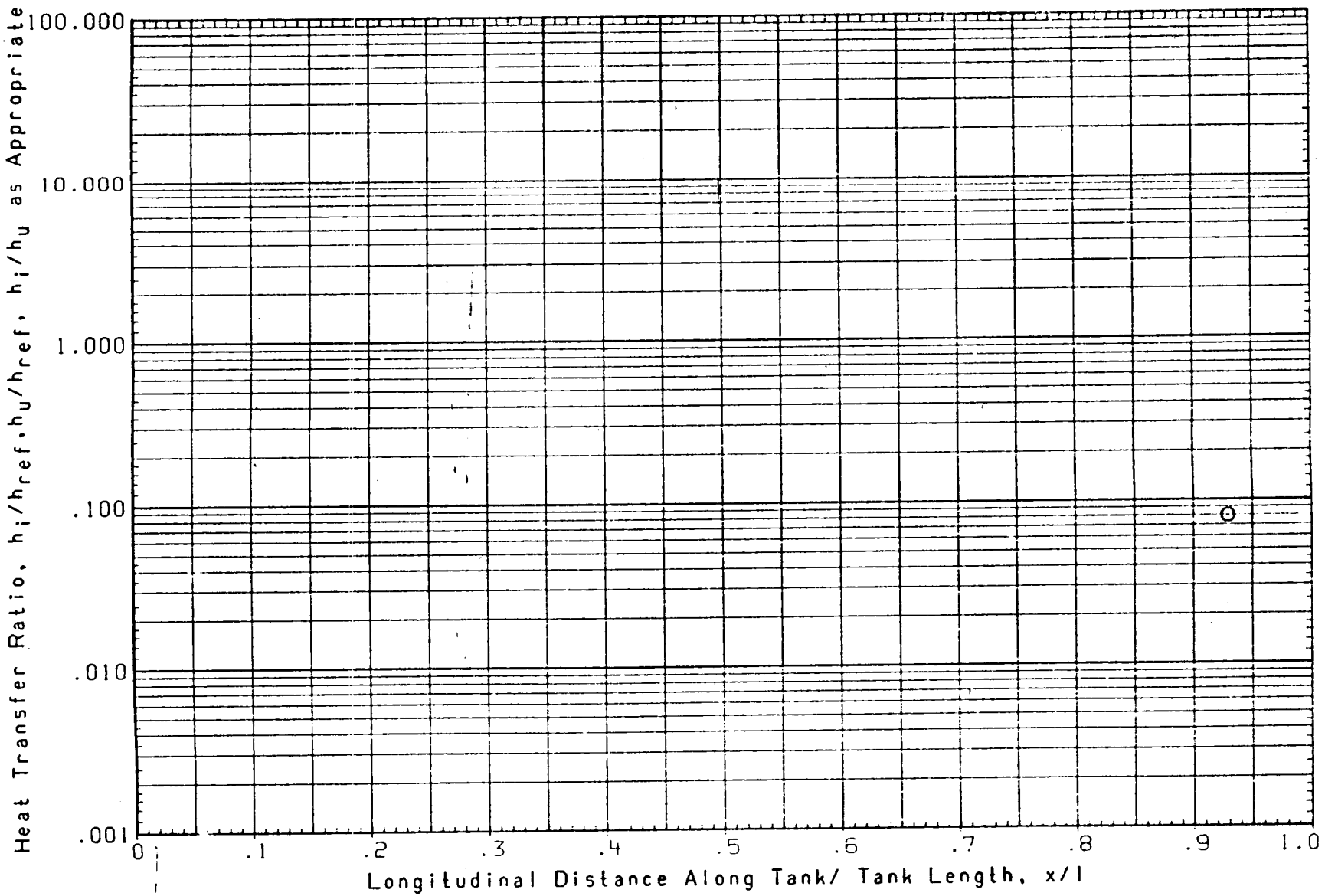


FIG. 16 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = 6

MACH = 3.010 ALPHA = .000 PHI = 352.200

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT06)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	6.000
(LVFT26)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	6.000
(CVFT26)	◇	DATA NOT AVAILABLE	.000	6.000

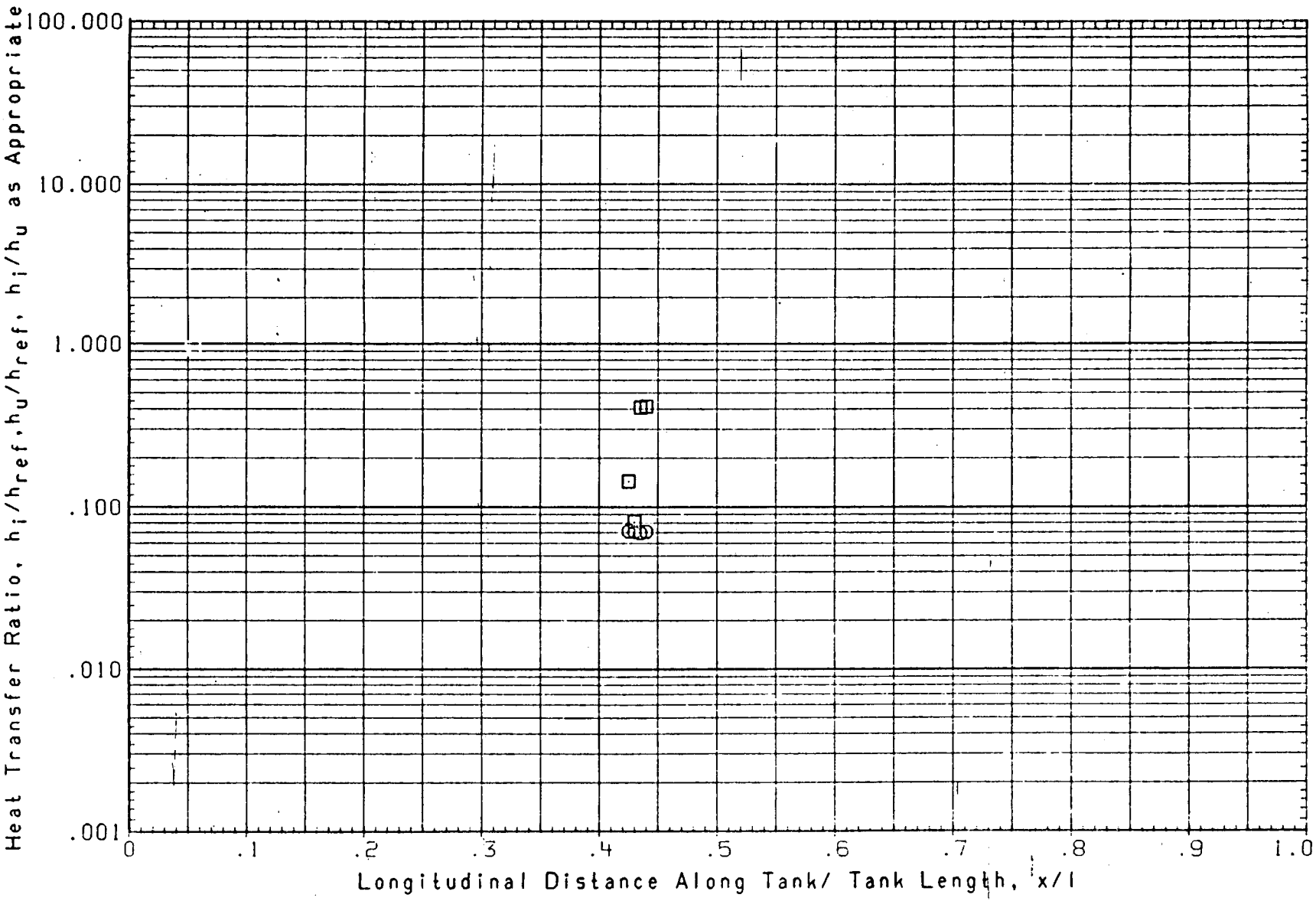


FIG. 16 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = 6

MACH = 3.010 ALPHA = .000 PHI = 354.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT06)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	6.000
(LVFT26)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) Hi/HREF	.000	6.000
(CVFT26)	◇	DATA NOT AVAILABLE	.000	6.000

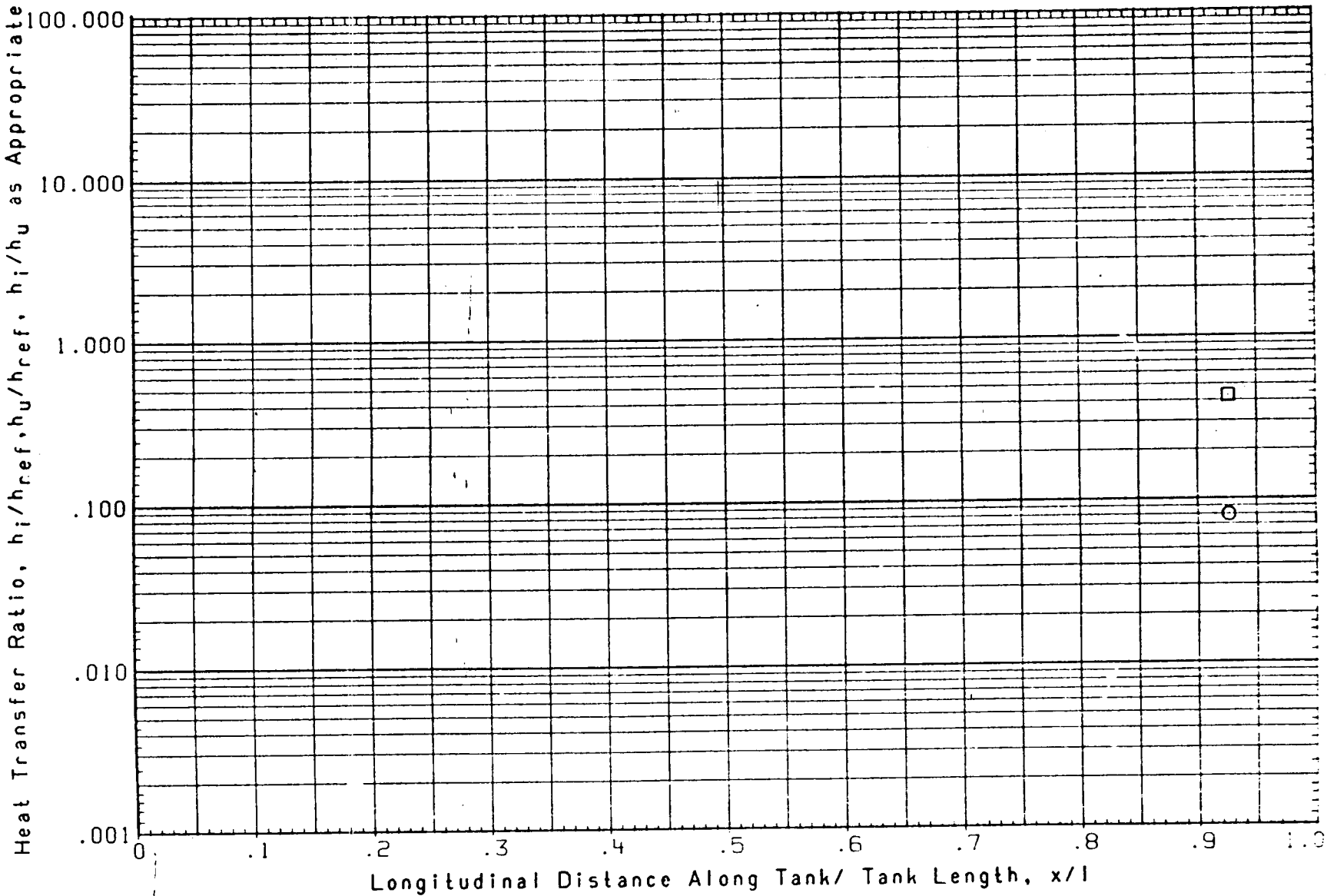


FIG. 16 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = 6

MACH = 3.010 ALPHA = .000 PHI = 355.160

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT06)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	6.000
(LVFT26)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	6.000
(CVFT26)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	6.000

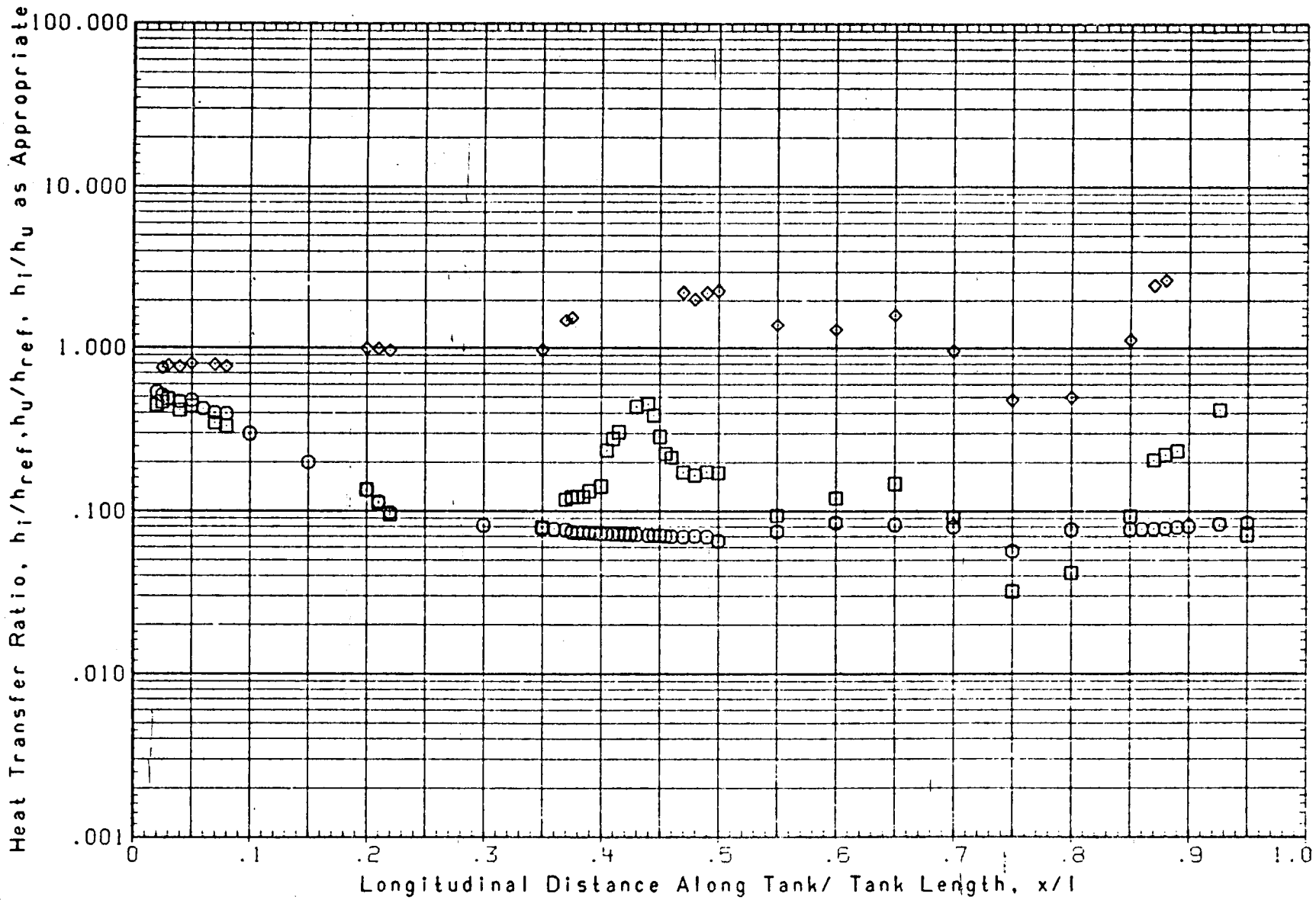


FIG. 16 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = 6

MACH = 3.010 ALPHA = .000 PHI = 360.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT06)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	6.000
(LVFT26)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	6.000
(CVFT26)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	6.000

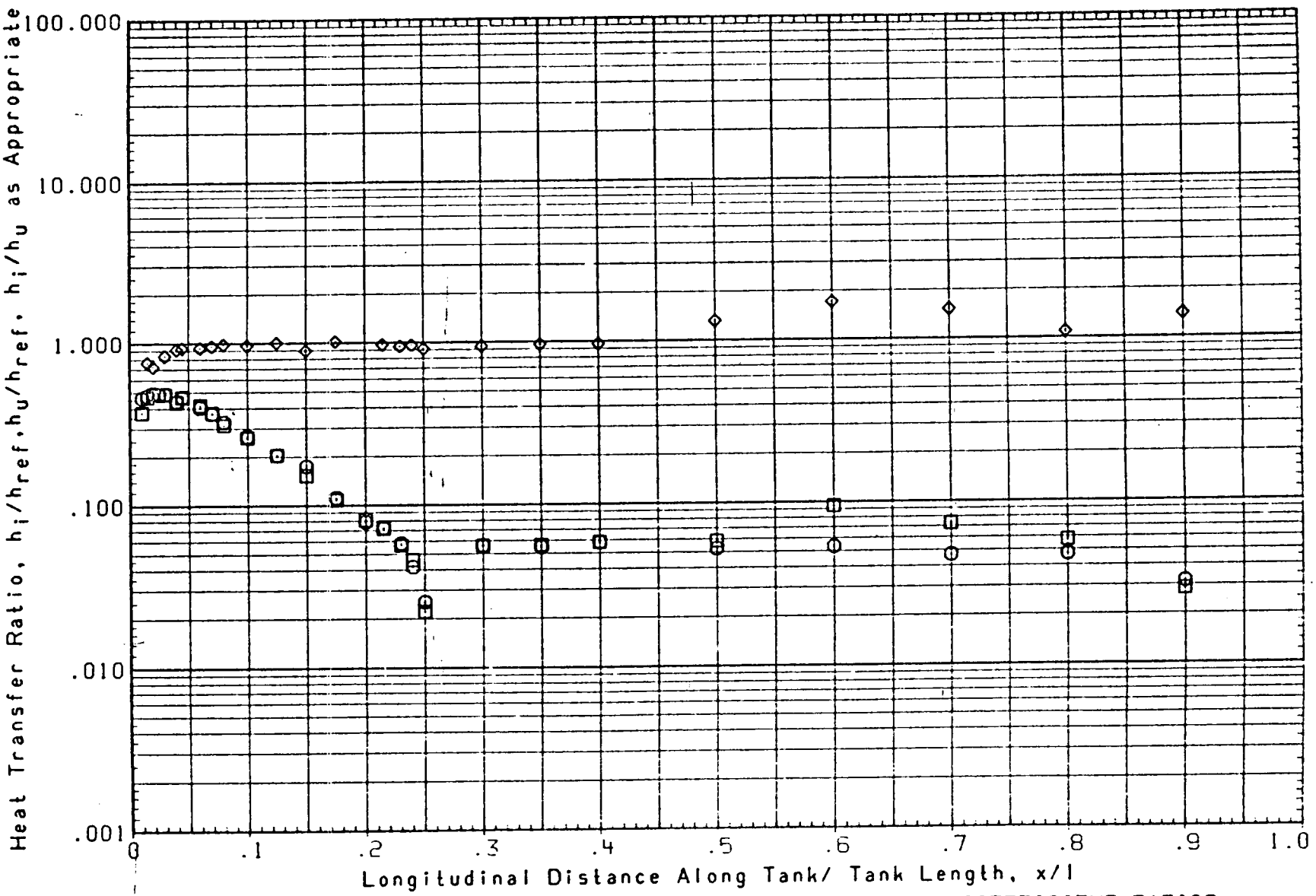


FIG. 16 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = 6

MACH = 4.020 ALPHA = .000 PHI = 180.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT06)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	6.000
(LVFT26)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	6.000
(CVFT26)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	6.000

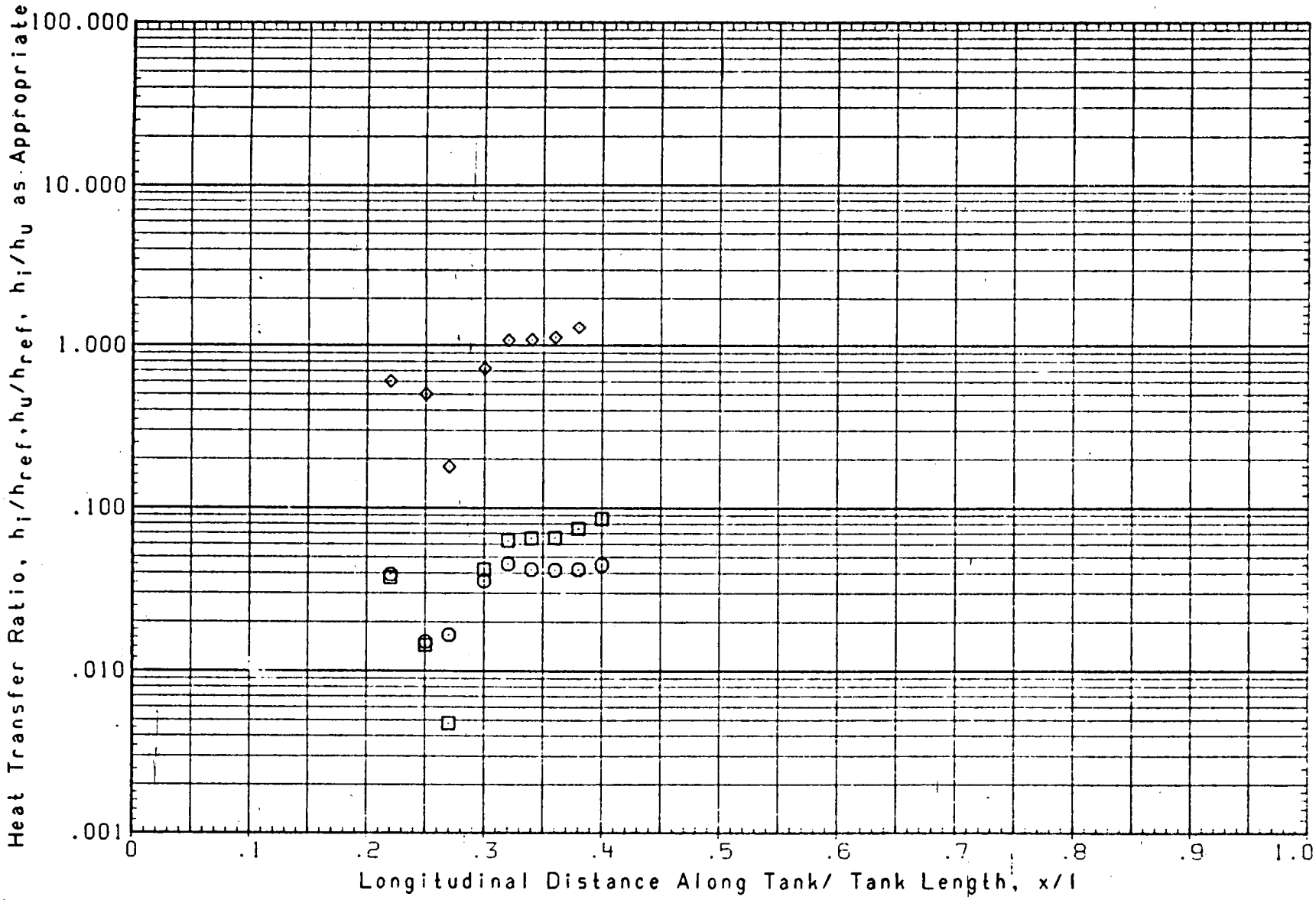


FIG. 16 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = 6

MACH = 4.020 ALPHA = .000 PHI = 335.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT06)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	6.000
(LVFT26)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	6.000
(CVFT26)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	6.000

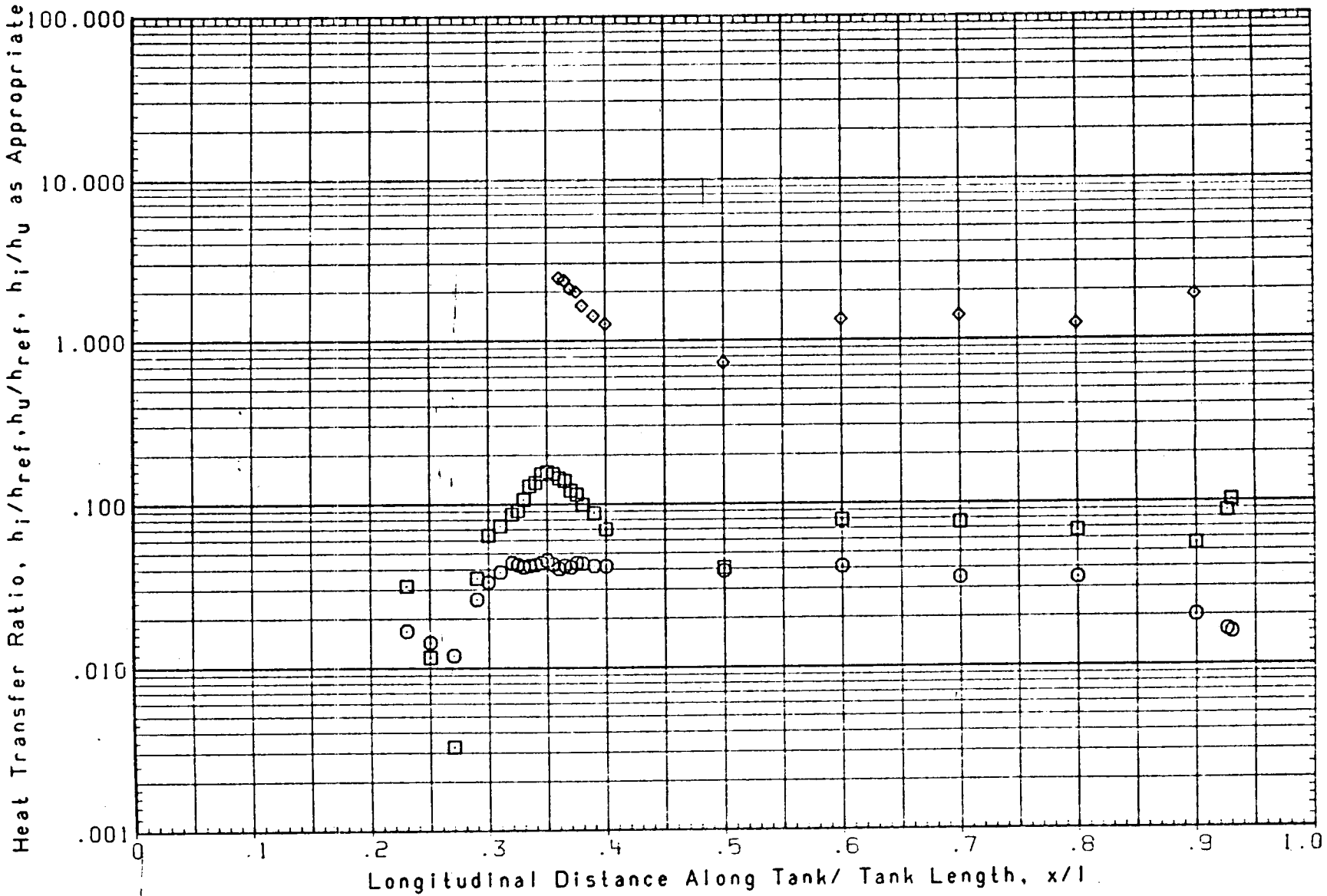


FIG. 16 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = 6

MACH = 4.020 ALPHA = .000 PHI = 247.500

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT06)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	6.000
(LVFT26)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	6.000
(CVFT26)	◇	DATA NOT AVAILABLE	.000	6.000

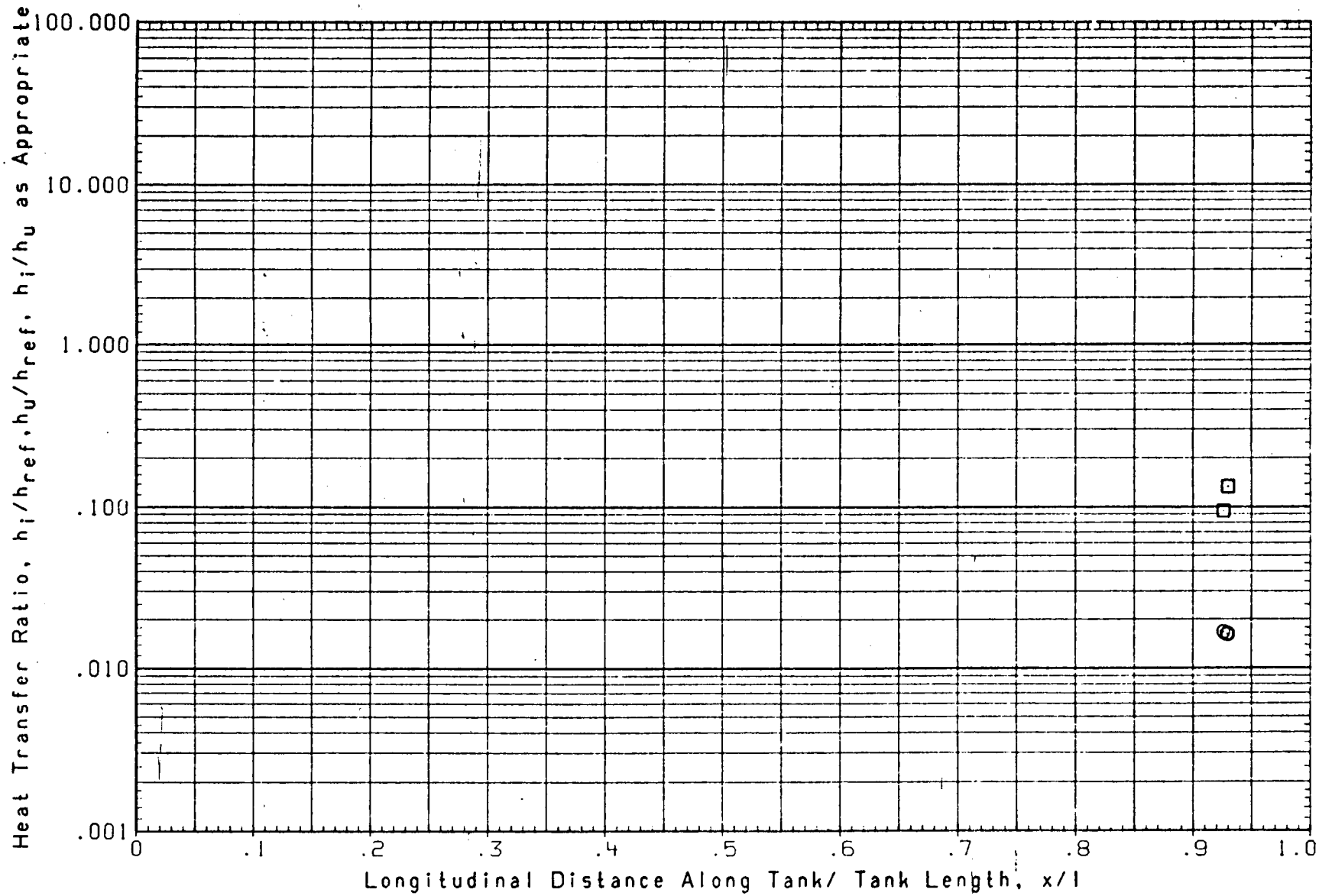


FIG. 16 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = 6

MACH = 4.020 ALPHA = .000 PHI = 250.570

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT06)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	6.000
(LVFT26)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	6.000
(CVFT26)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	6.000

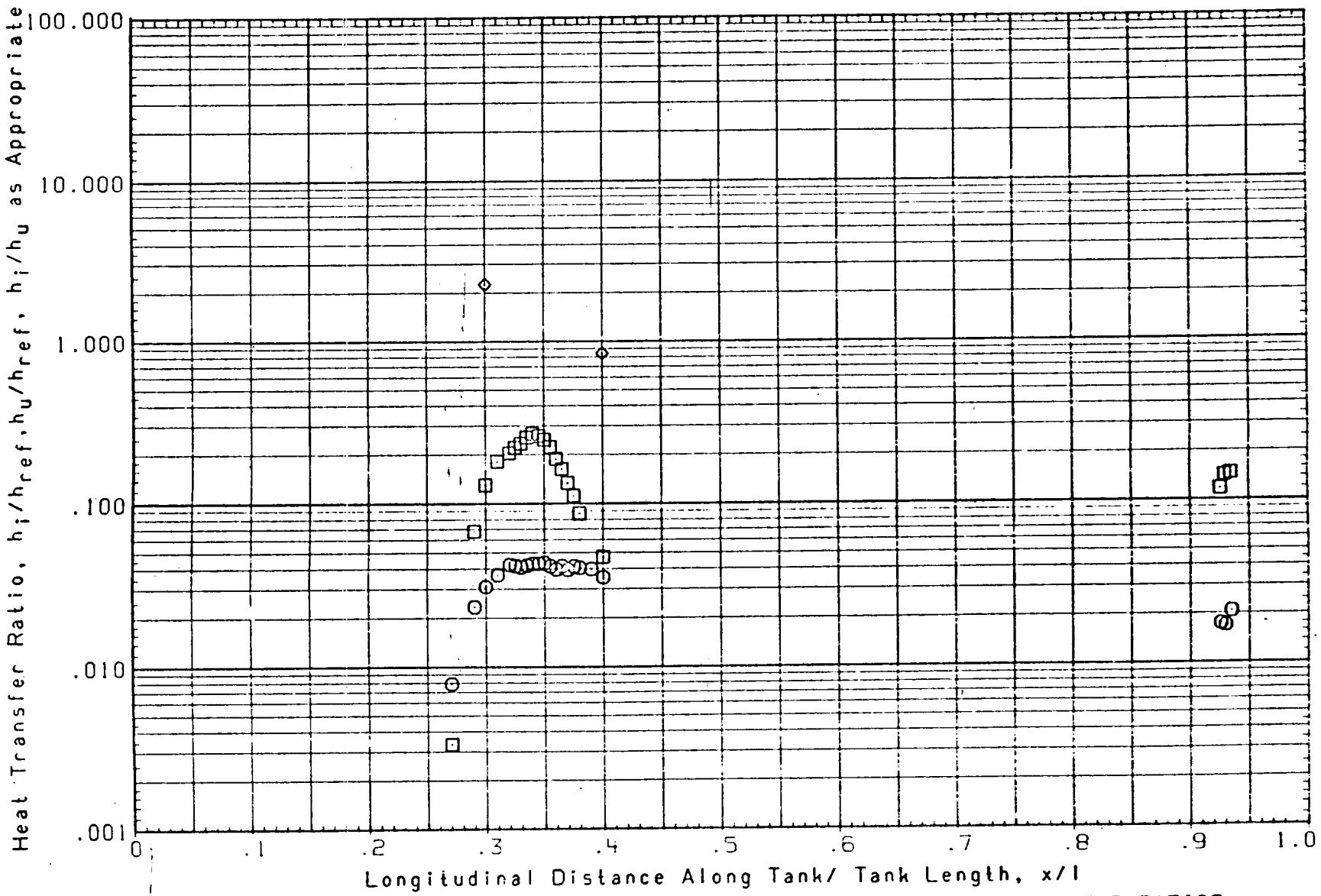


FIG. 16 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = 6

MACH = 4.020 ALPHA = .000 PHI = 255.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT06)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	6.000
(LVFT26)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	6.000
(CVFT26)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	6.000

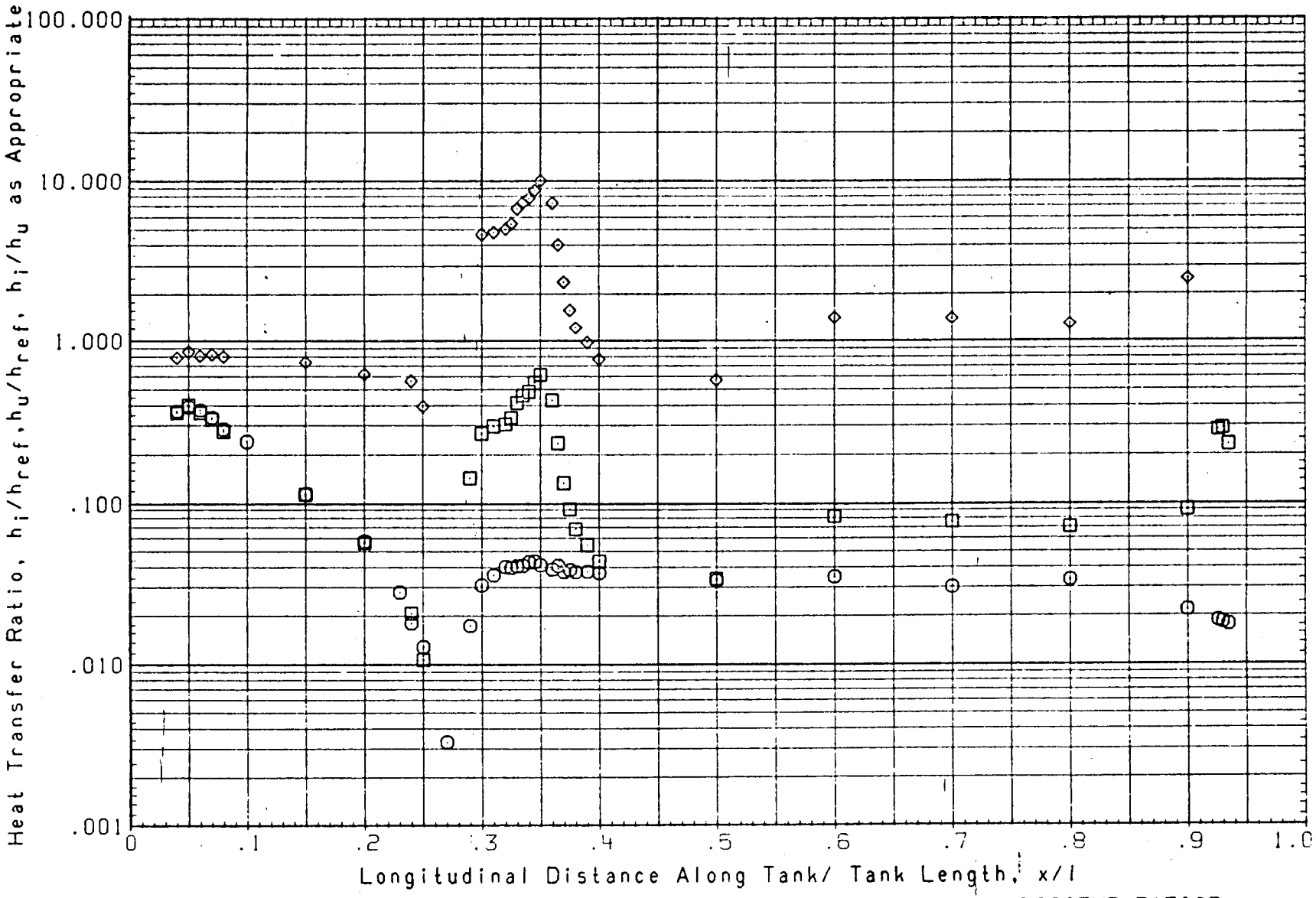


FIG. 16 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = 6

MACH = 4.020 ALPHA = .000 PHI = 270.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT06)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	6.000
(LVFT26)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	6.000
(CVFT26)	◇	DATA NOT AVAILABLE	.000	6.000

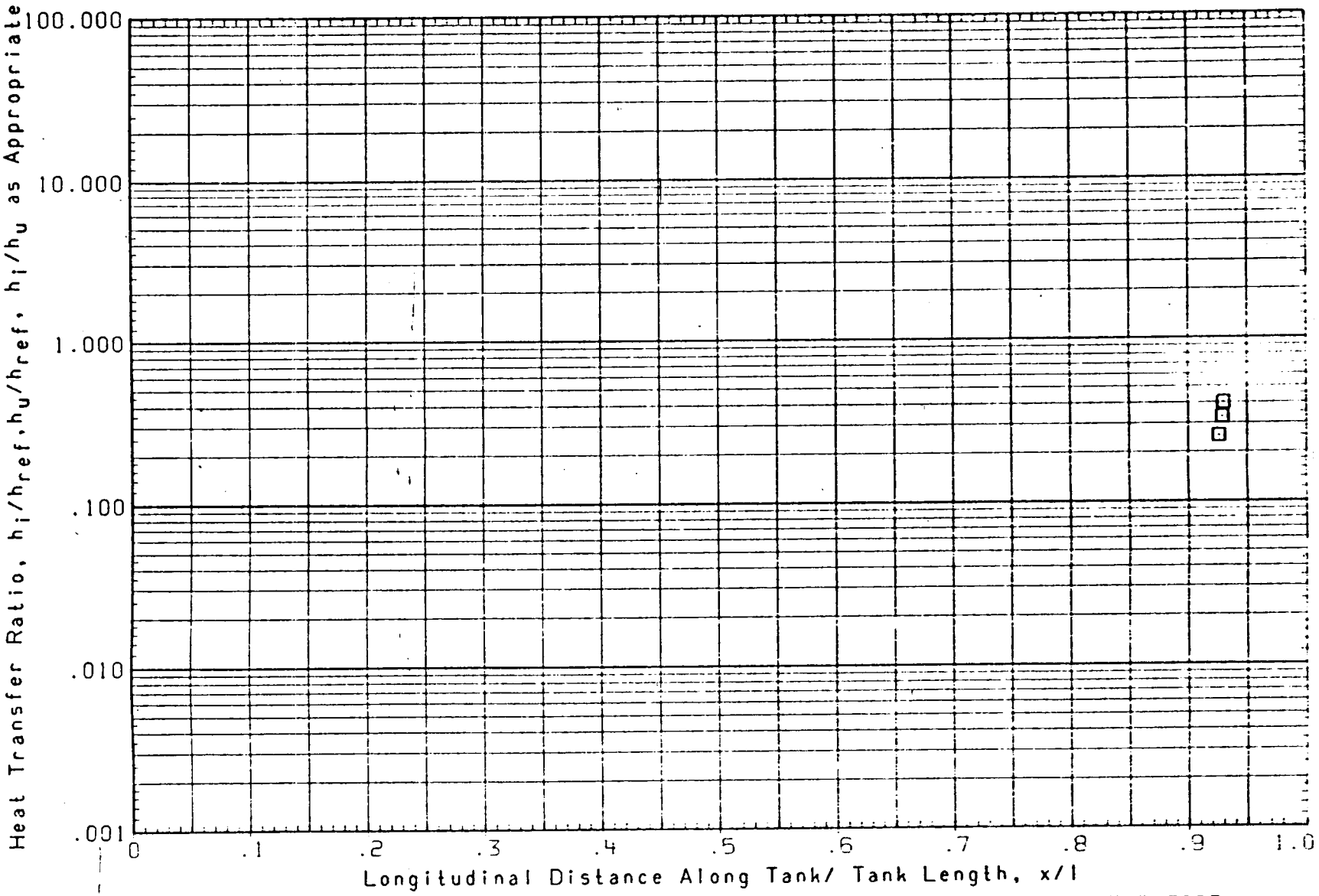


FIG. 16 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = 6

MACH = 4.020 ALPHA = .000 PHI = 289.430

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT06)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	6.000
(LVFT26)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	6.000
(CVFT26)	◇	DATA NOT AVAILABLE	.000	6.000

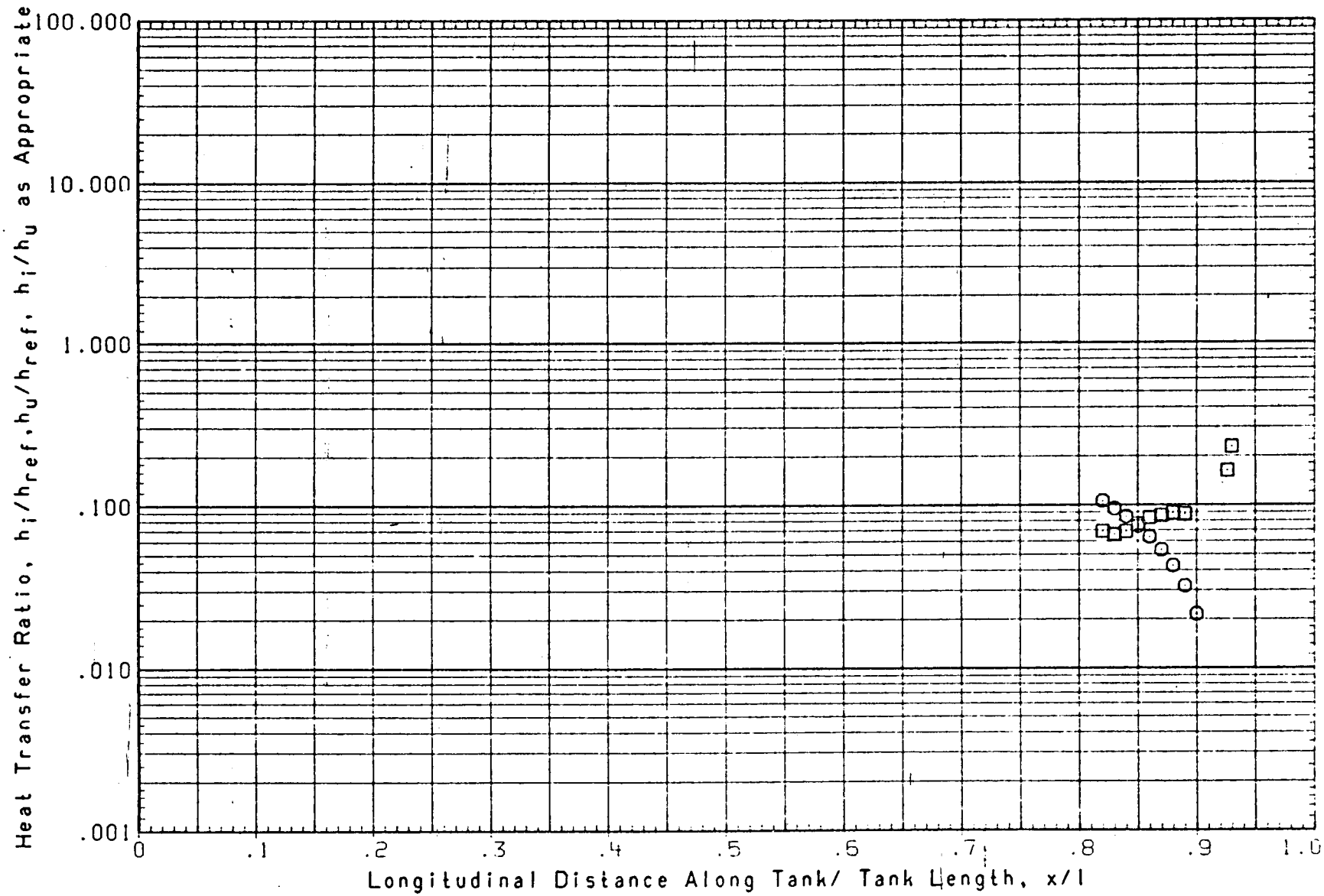


FIG. 16 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = 6

MACH = 4.020 ALPHA = .000 PHI = 292.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT06)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	6.000
(LVFT26)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	6.000
(CVFT26)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	6.000

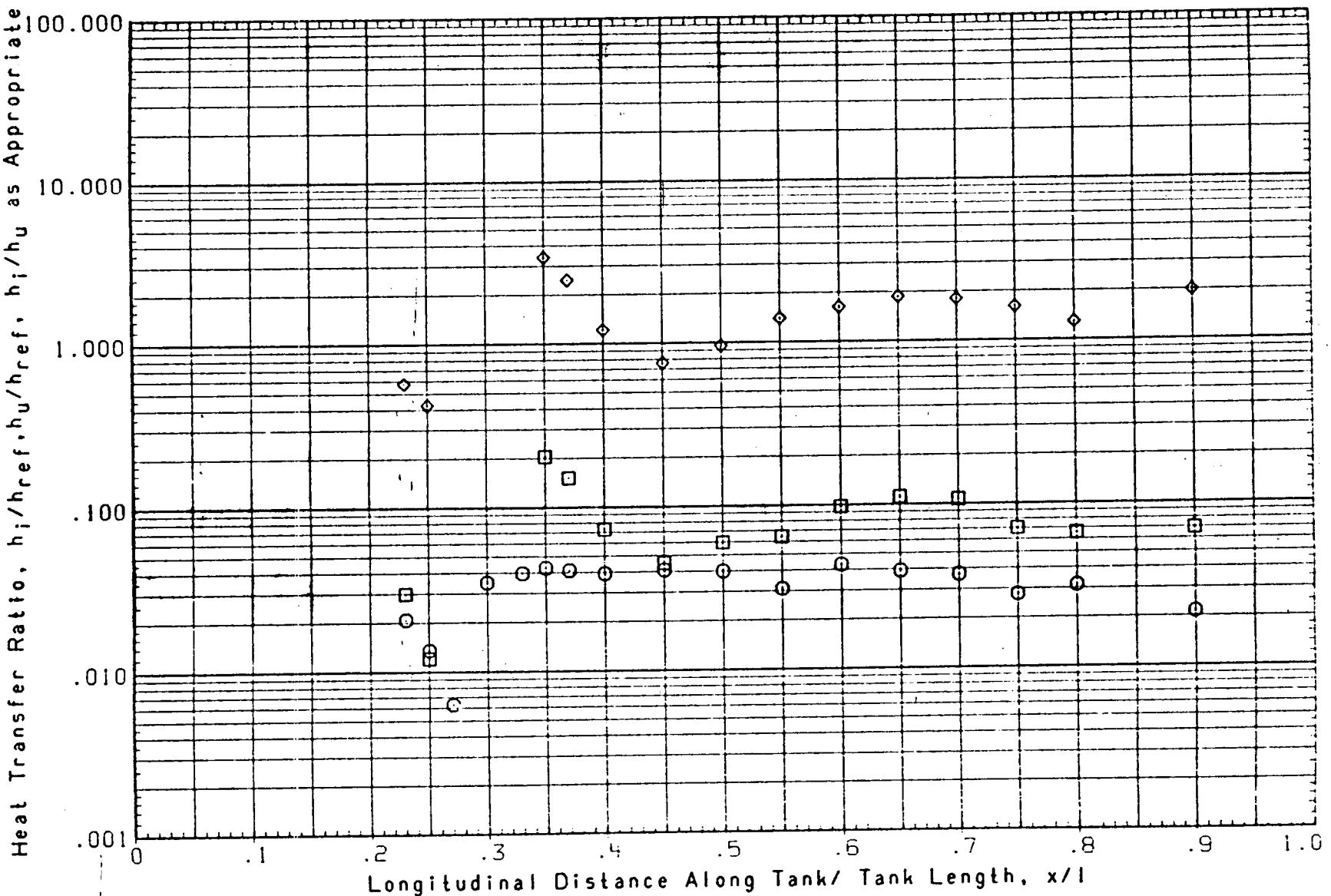


FIG. 16 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = 6

MACH = 4.020 ALPHA = .000 PHI = 292.500

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT06)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	6.000
(LVFT26)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	6.000
(CVFT26)	◇	DATA NOT AVAILABLE	.000	6.000

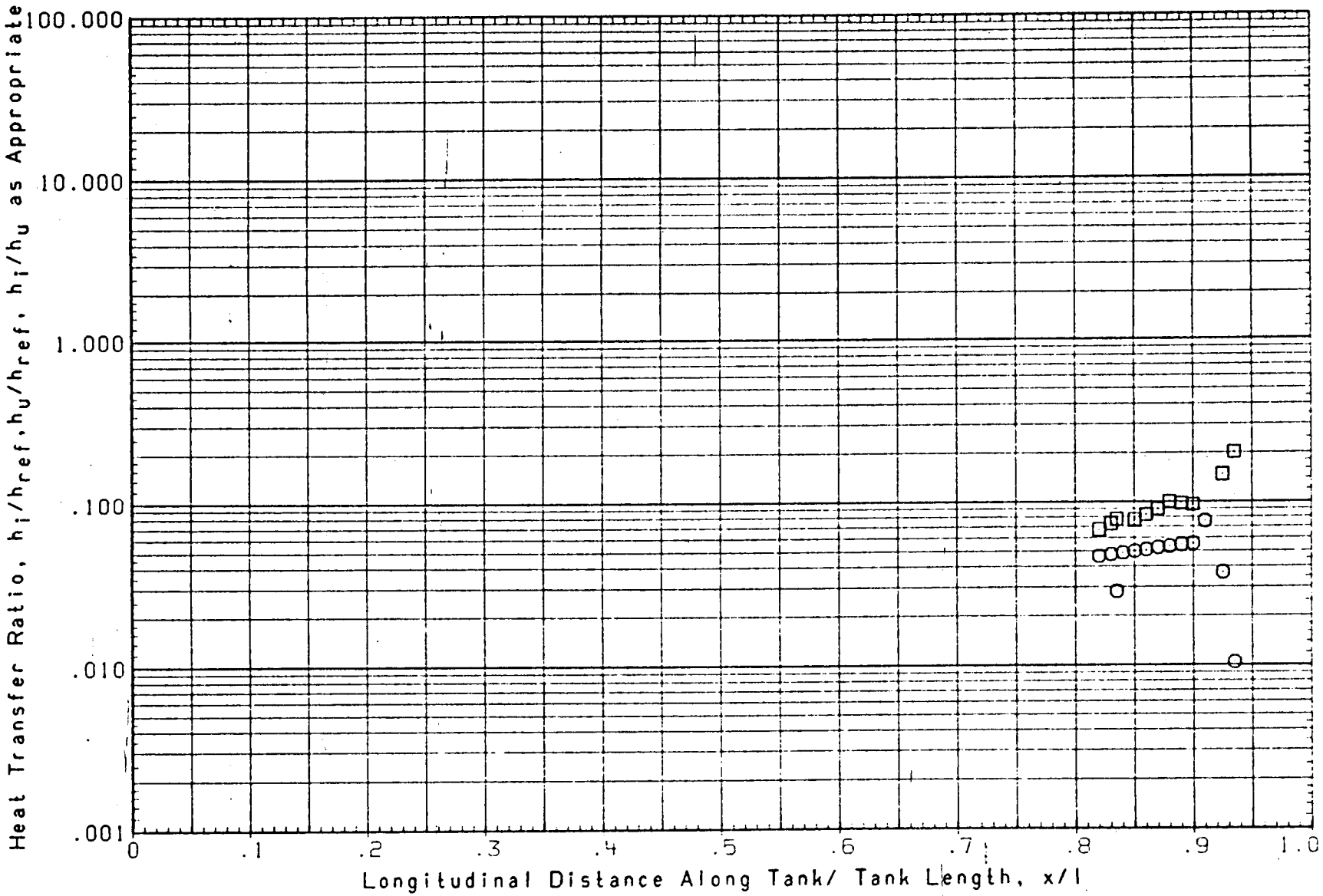


FIG. 16 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = 6

MACH = 4.020 ALPHA = .000 PHI = 301.500

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT06)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	6.000
(LVFT26)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	6.000
(CVFT26)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	6.000

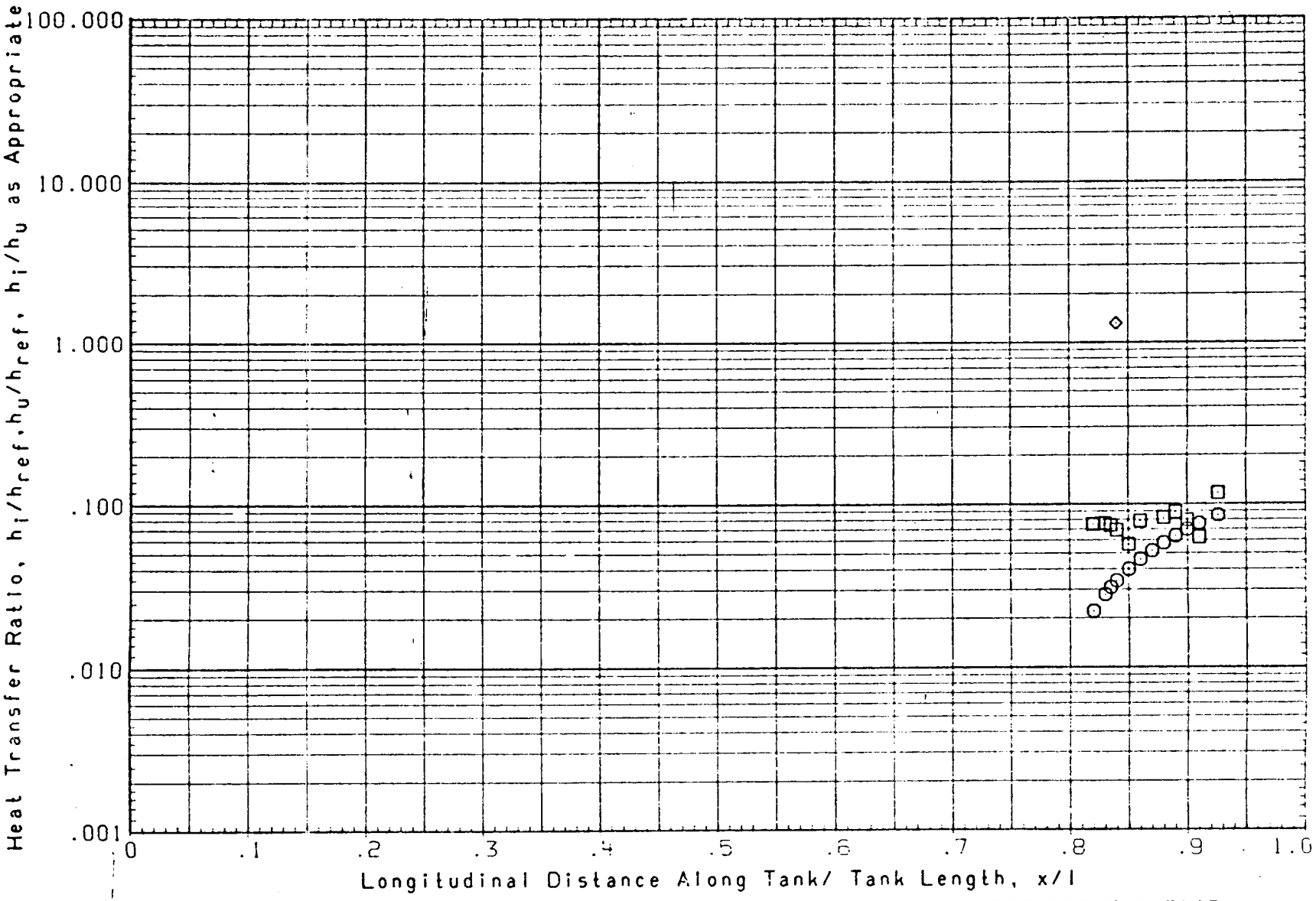


FIG. 16 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = 6

MACH = 4.020 ALPHA = .000 PHI = 305.400

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT06)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	6.000
(LVFT26)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	6.000
(CVFT26)	◇	DATA NOT AVAILABLE	.000	6.000

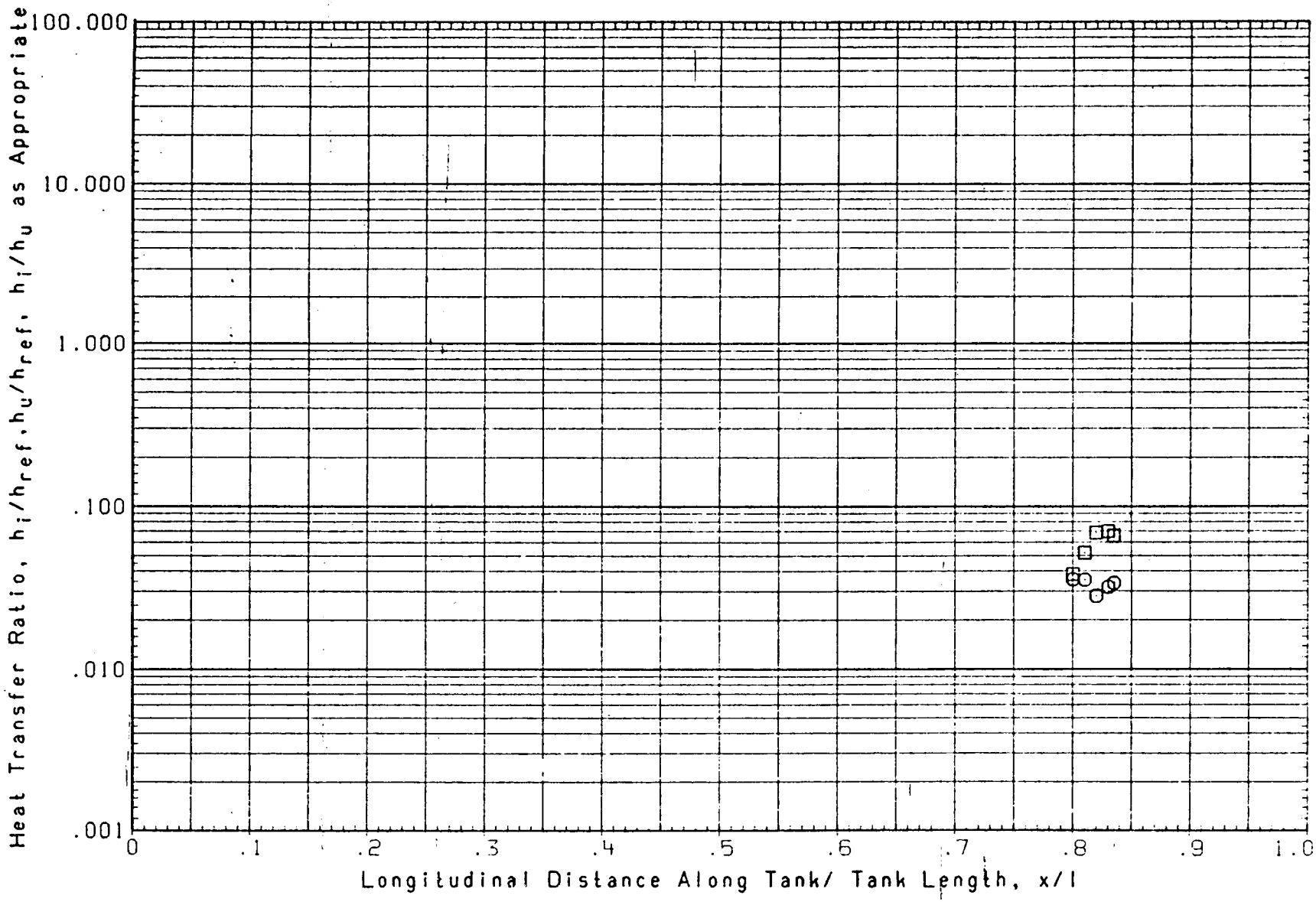


FIG. 16 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = 6

MACH = 4.020 ALPHA = .000 PHI = 309.300

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT06)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	6.000
(LVFT26)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	6.000
(CVFT26)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	6.000

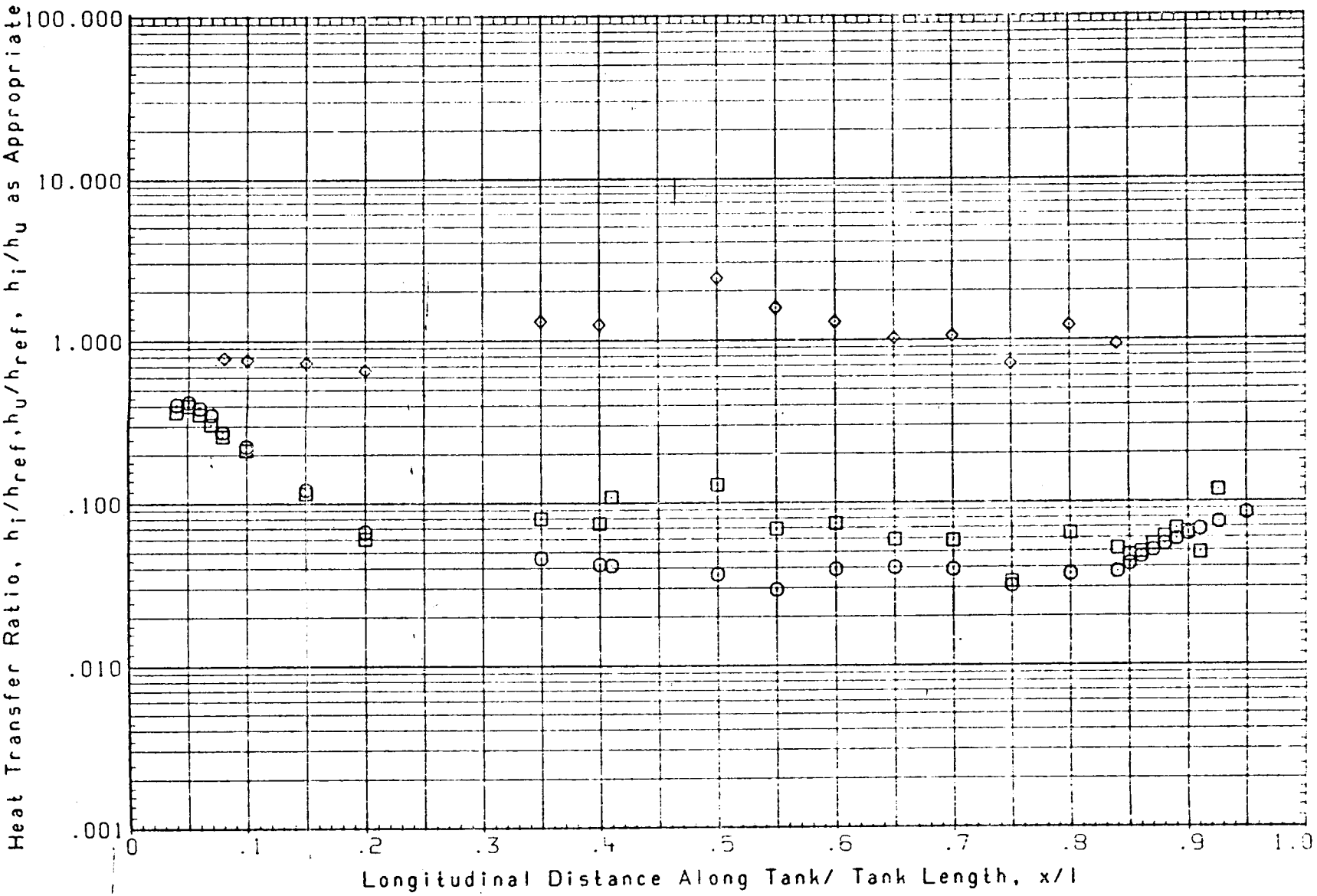


FIG. 16 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = 6

MACH = 4.020 ALPHA = .000 PHI = 315.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT06)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	6.000
(LVFT26)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	6.000
(CVFT26)	◇	DATA NOT AVAILABLE	.000	6.000

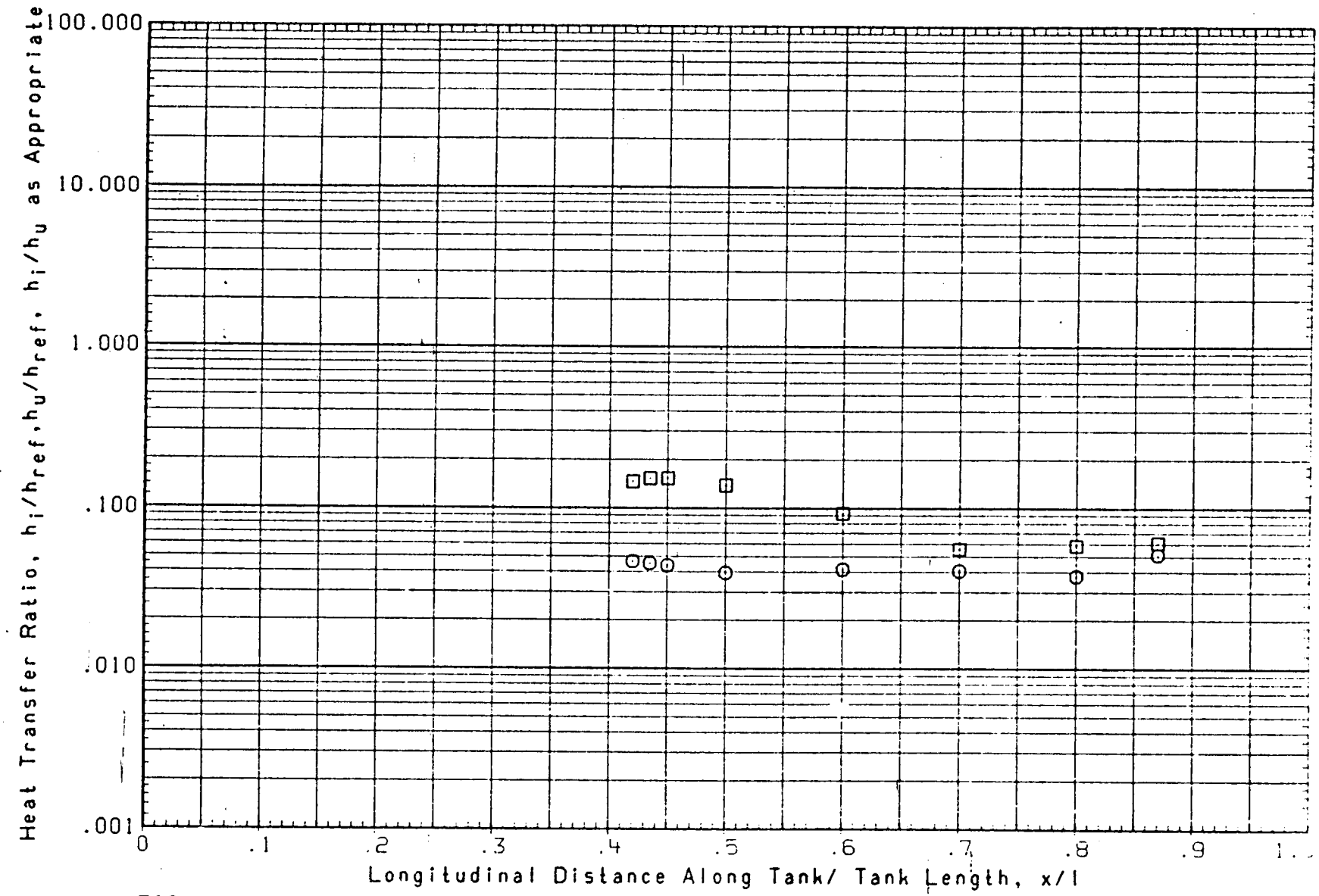


FIG. 16 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = 6

MACH = 4.020 ALPHA = .000 PHI = 322.300

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT06)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	6.000
(LVFT26)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	6.000
(CVFT26)	◇	DATA NOT AVAILABLE	.000	6.000

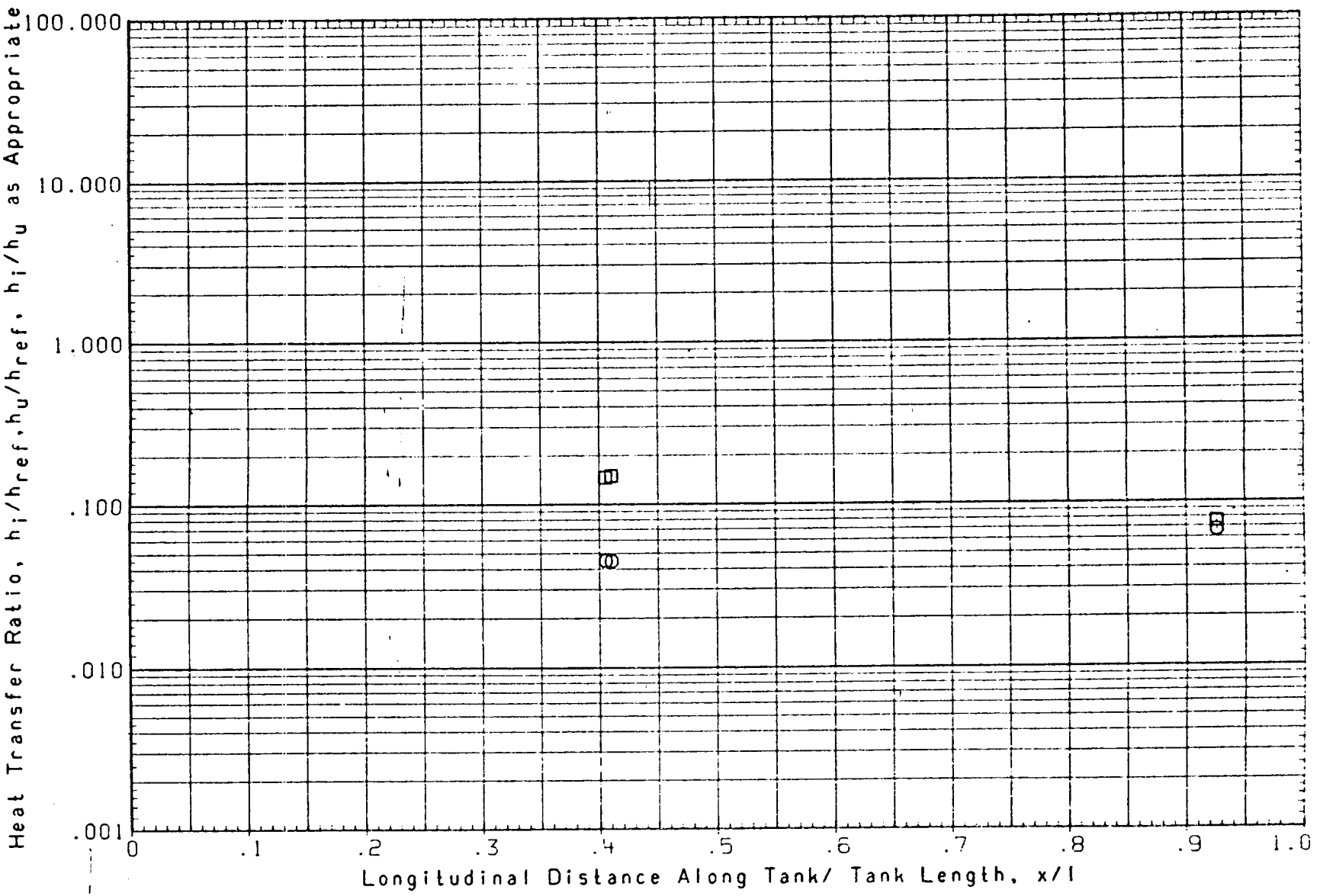


FIG. 16 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = 6

MACH = 4.020 ALPHA = .000 PHI = 324.450

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT06)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	6.000
(LVFT26)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	6.000
(CVFT26)	◇	DATA NOT AVAILABLE	.000	6.000

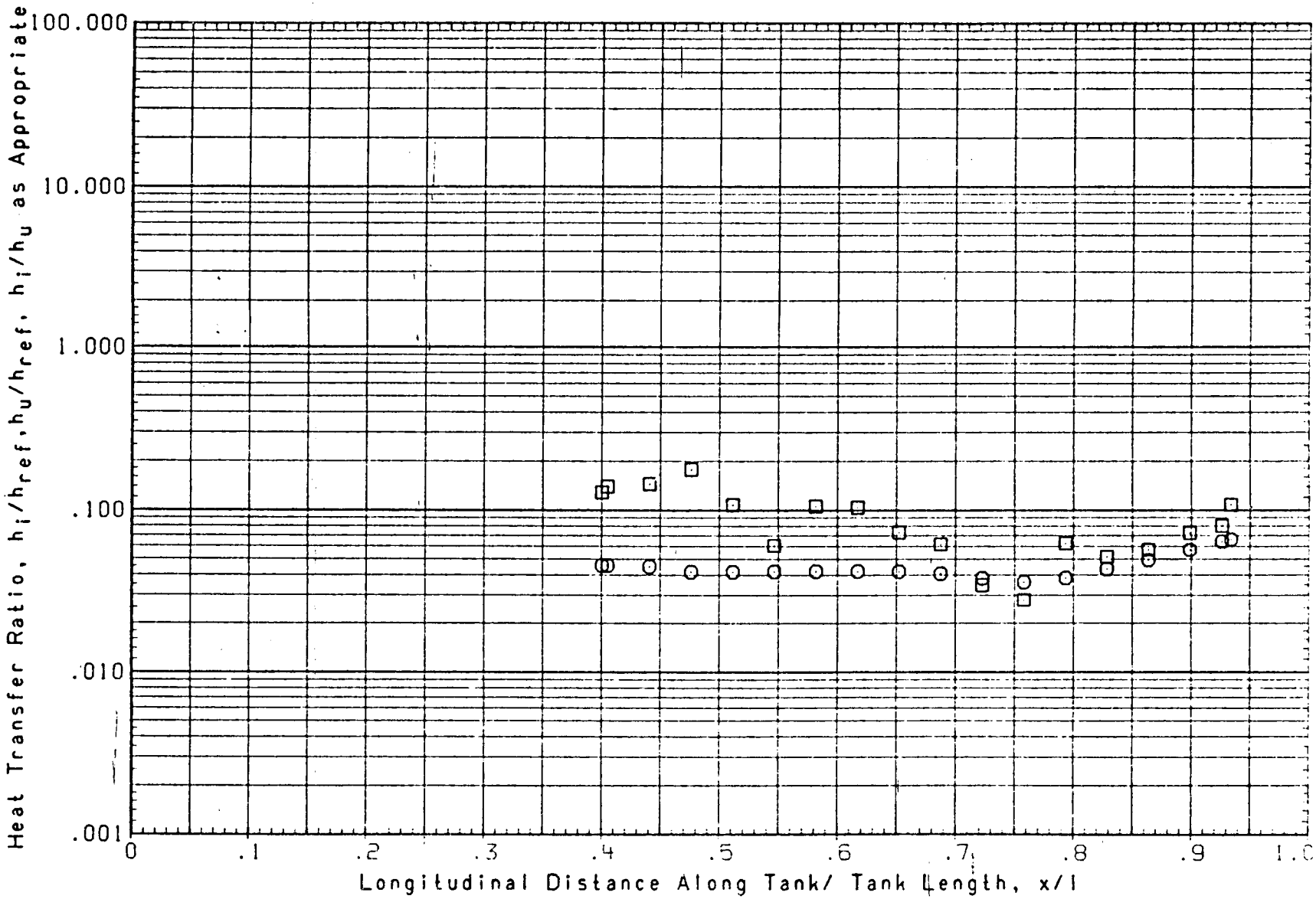


FIG. 16 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = 6

MACH = 4.020 ALPHA = .000 PHI = 326.850

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT06)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	6.000
(LVFT26)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI[illegible]	.000	6.000
(CVFT26)	◇	DATA NOT AVAILABLE	.000	6.000

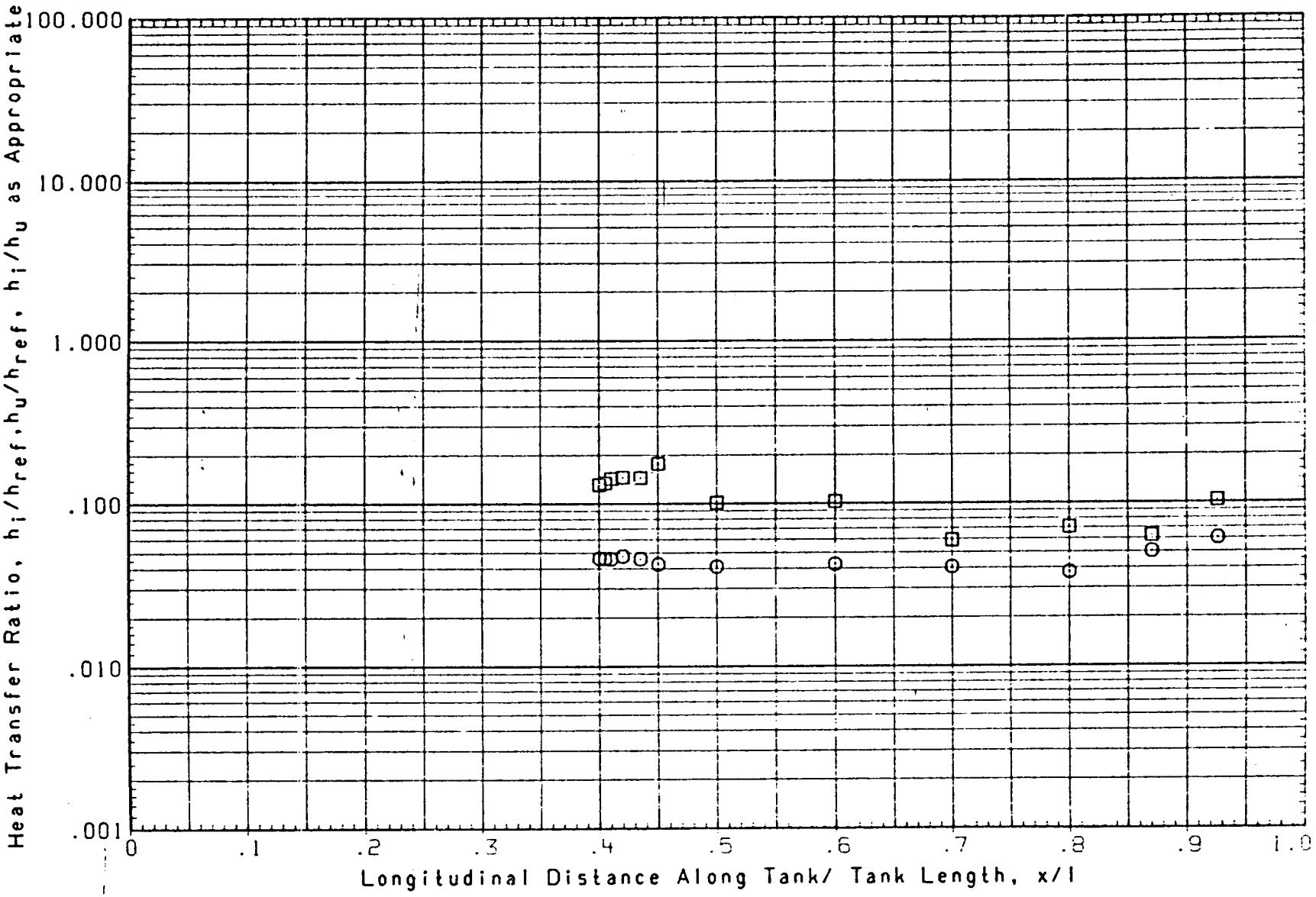


FIG. 16 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = 6

MACH = 4.020 ALPHA = .000 PHI = 330.200

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT06)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	6.000
(LVFT26)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	6.000
(CVFT26)	◇	DATA NOT AVAILABLE	.000	6.000

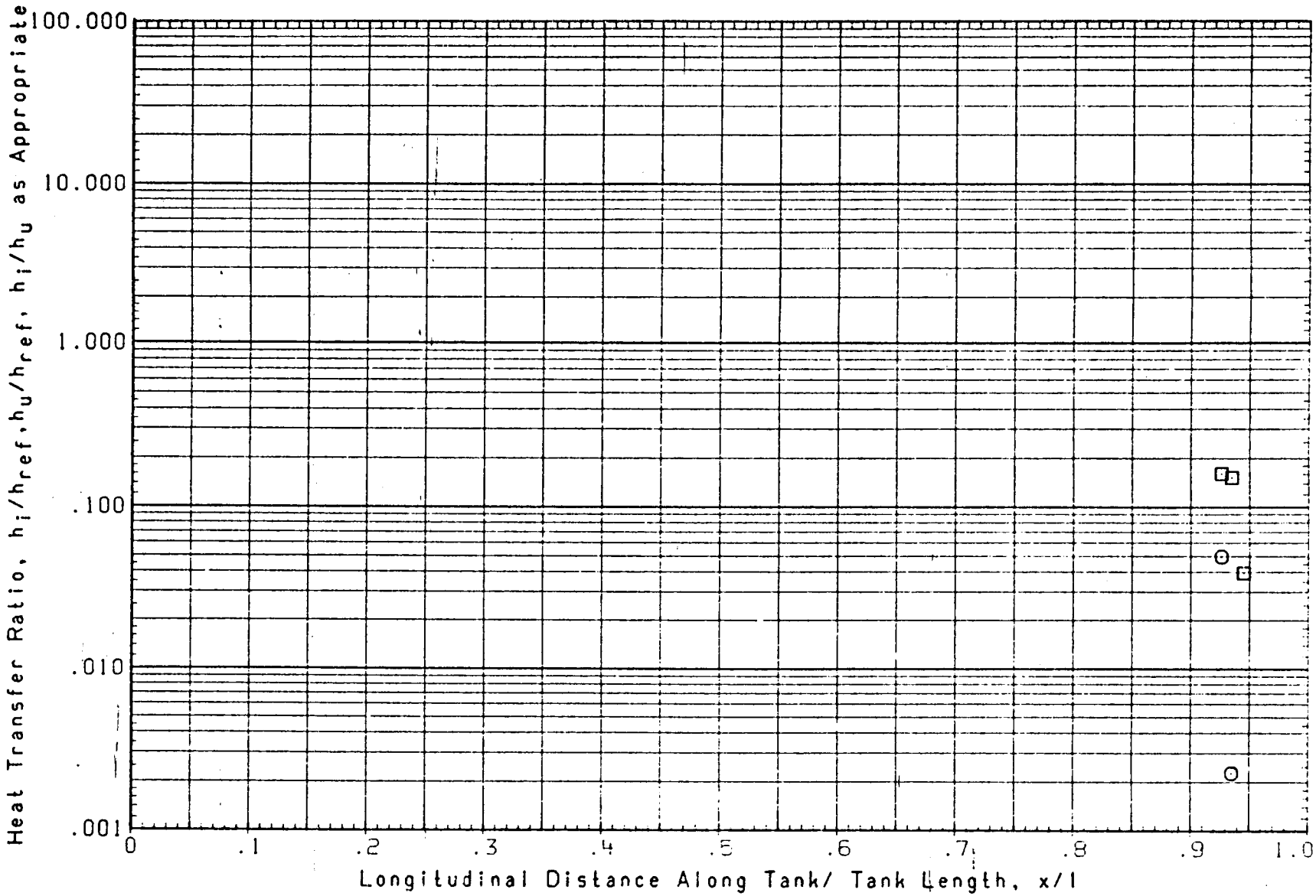


FIG. 16 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = 6

MACH = 4.020 ALPHA = .000 PHI = 334.980

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT06)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	6.000
(LVFT26)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	6.000
(CVFT26)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	6.000

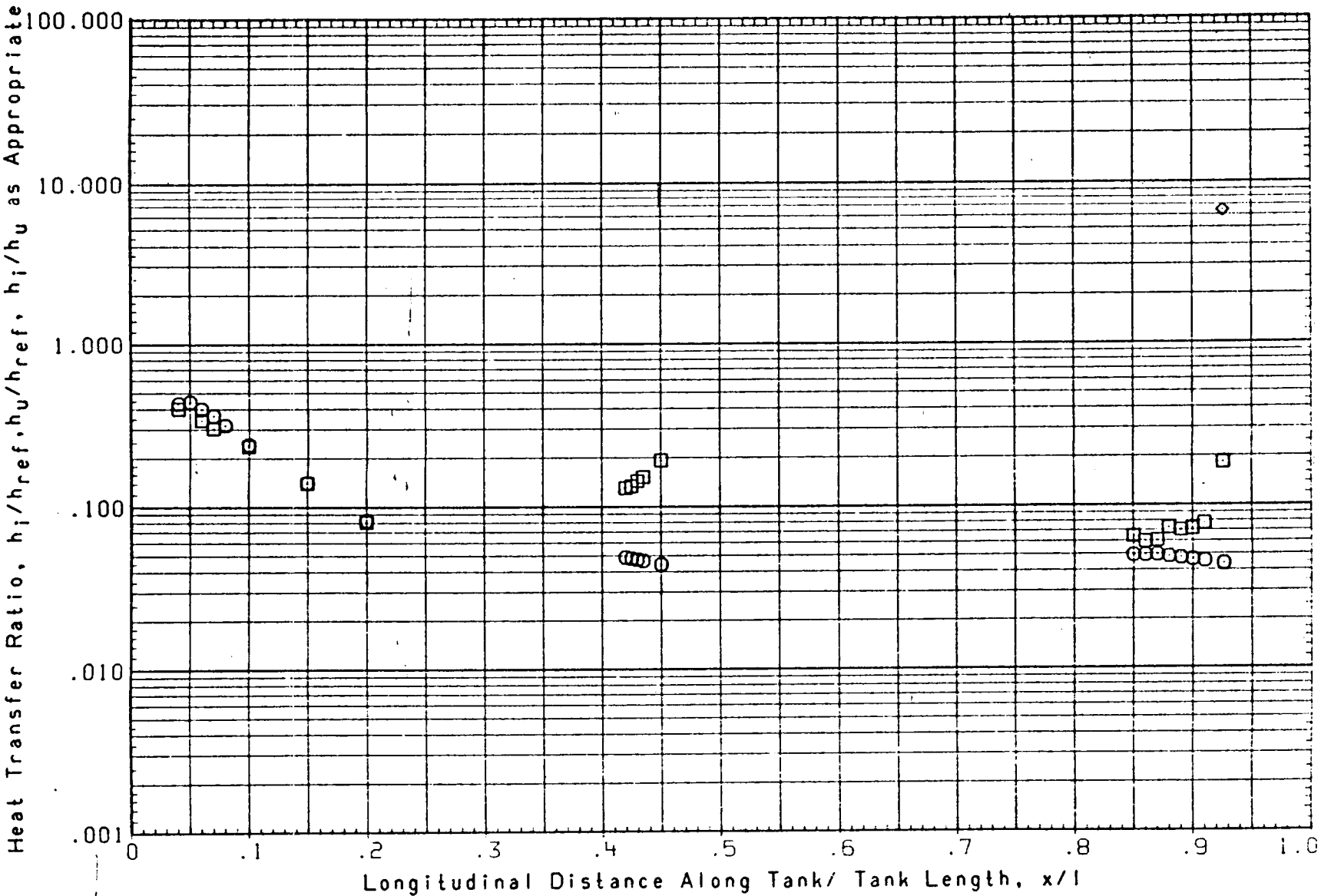


FIG. 16 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = 6

MACH = 4.020 ALPHA = .000 PHI = 337.500

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT06)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	6.000
(LVFT26)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	6.000
(CVFT26)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	6.000

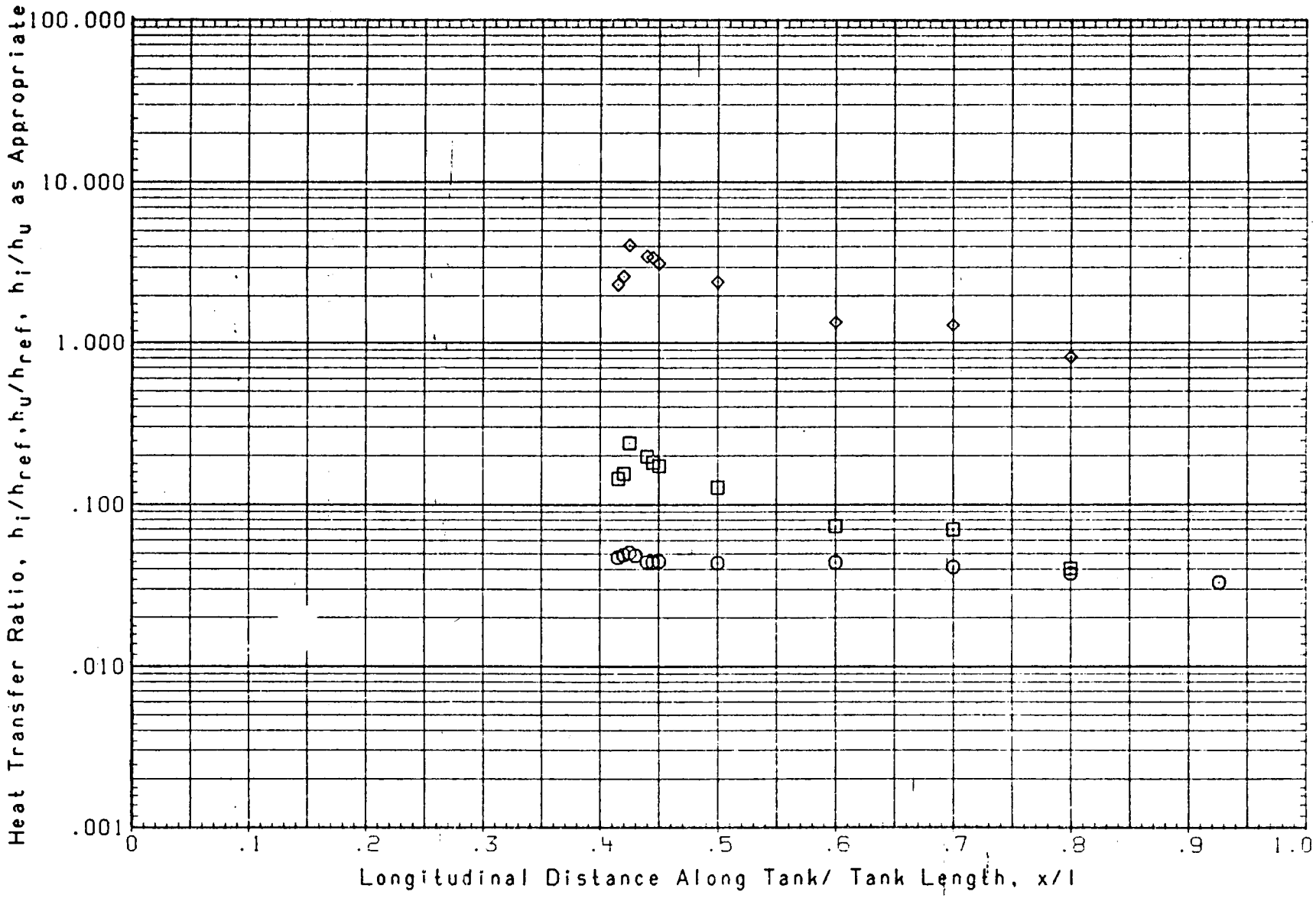


FIG. 16 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = 6

MACH = 4.020 ALPHA = .000 PHI = 343.120

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT06)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	6.000
(LVFT26)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/REF	.000	6.000
(CVFT26)	◇	DATA NOT AVAILABLE	.000	6.000

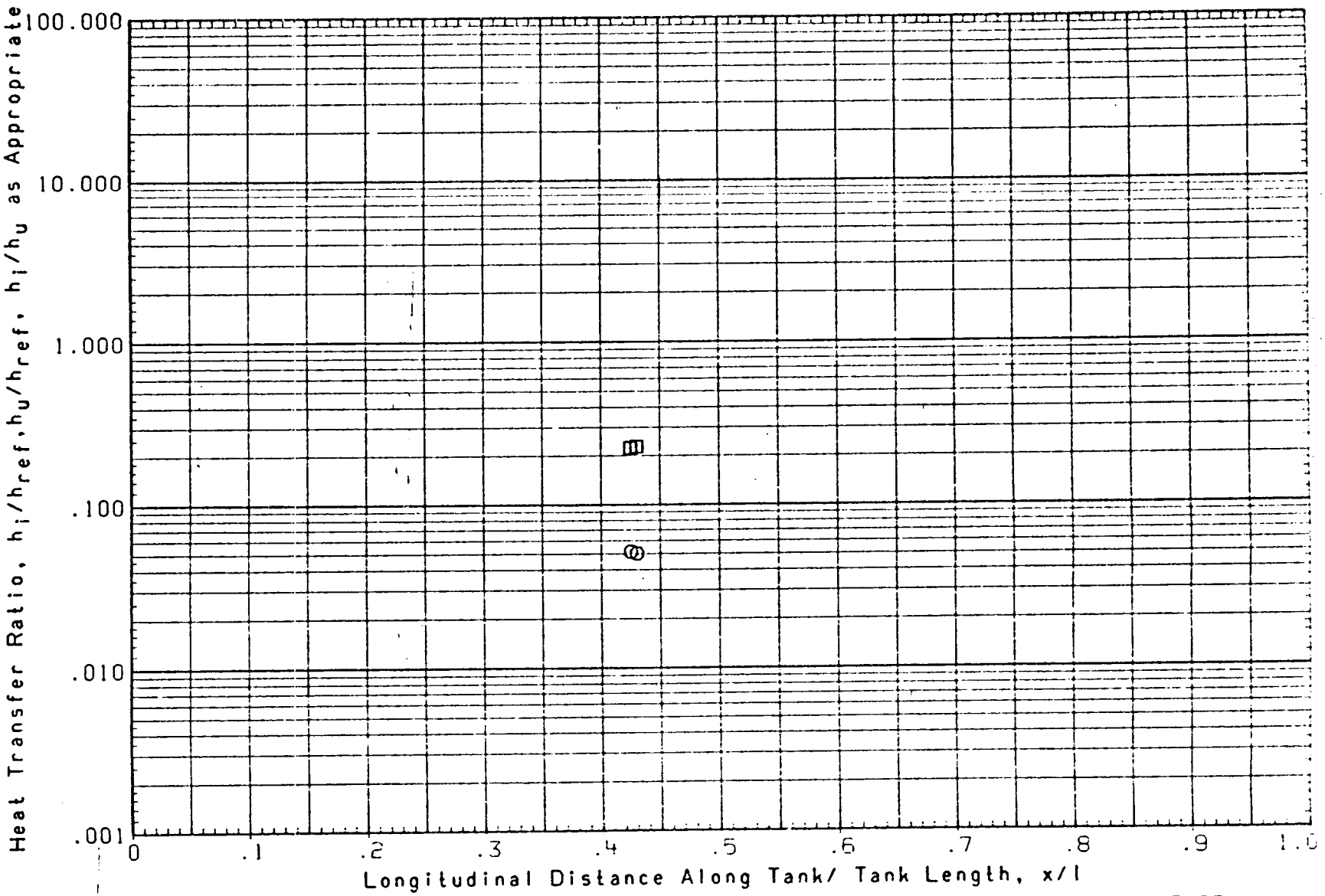


FIG. 16 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = 6

MACH = 4.020 ALPHA = .000 PHI = 345.560

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT06)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	6.000
(LVFT26)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	6.000
(CVFT26)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	.000	6.000

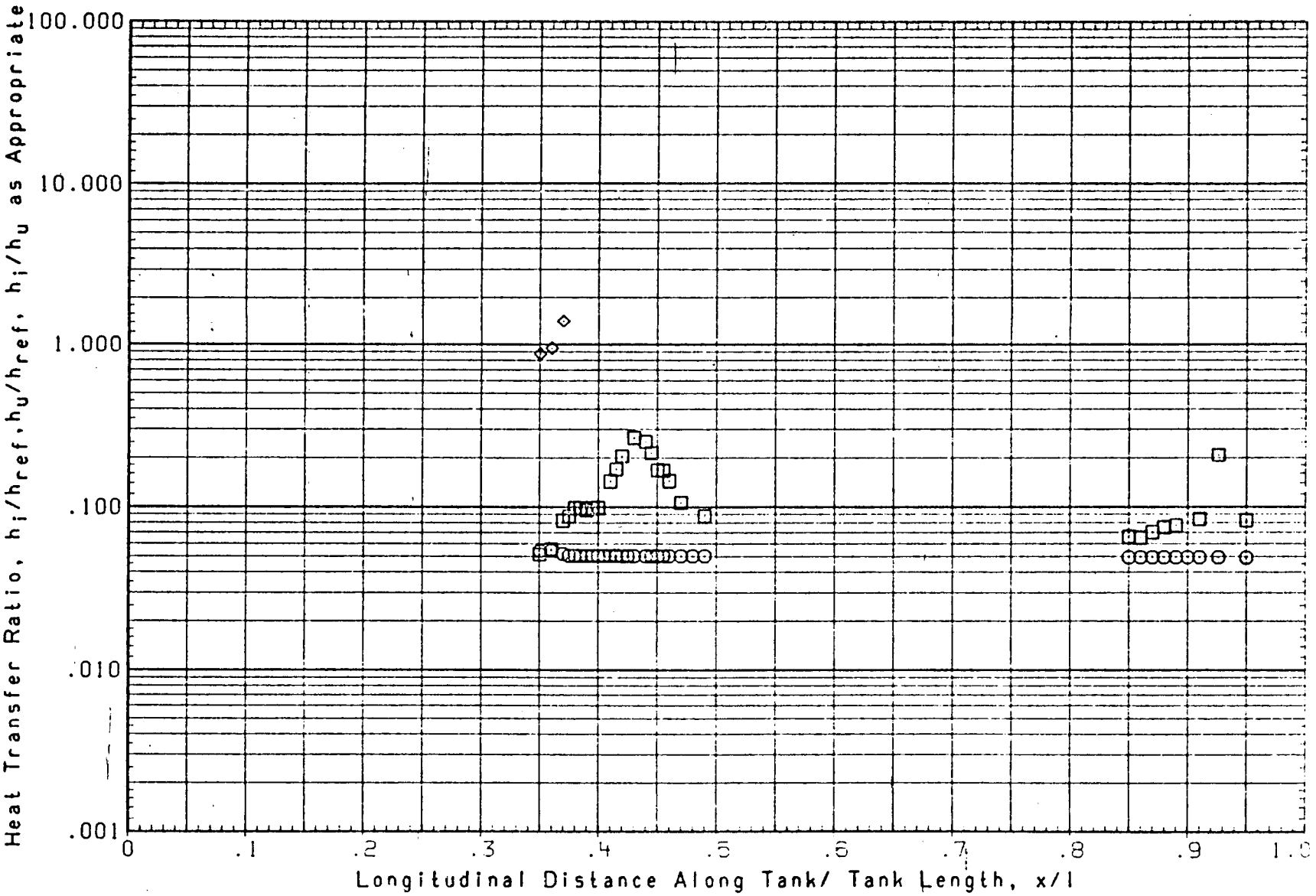


FIG. 16 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = 6

MACH = 4.020 ALPHA = .000 PHI = 348.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT06)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	6.000
(LVFT26)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) Hi/HREF	.000	6.000
(CVFT26)	◇	DATA NOT AVAILABLE	.000	6.000

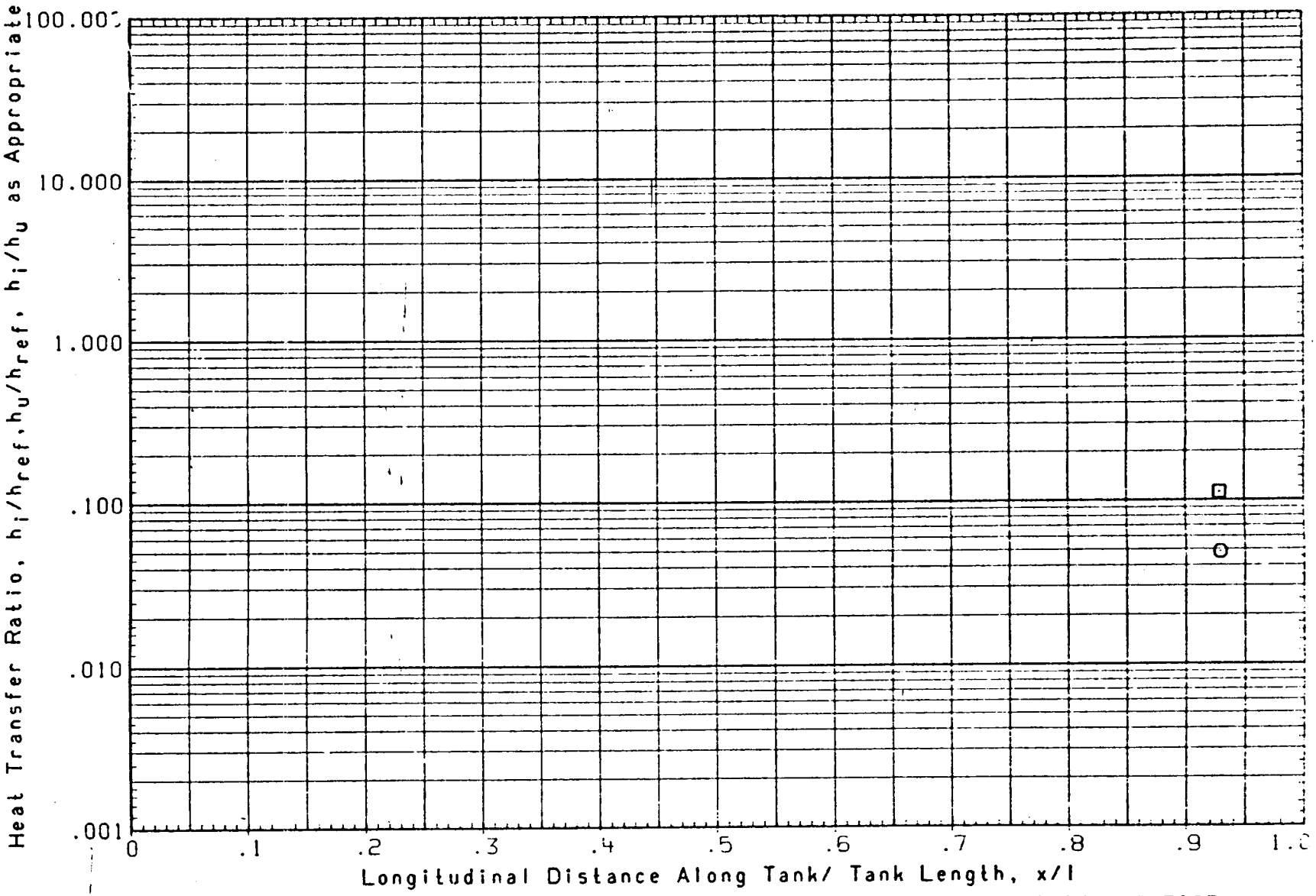


FIG. 16 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = 6

MACH = 4.020 ALPHA = .000 PHI = 352.200

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT06)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	6.000
(LVFT26)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	6.000
(CVFT26)	◇	DATA NOT AVAILABLE	.000	6.000

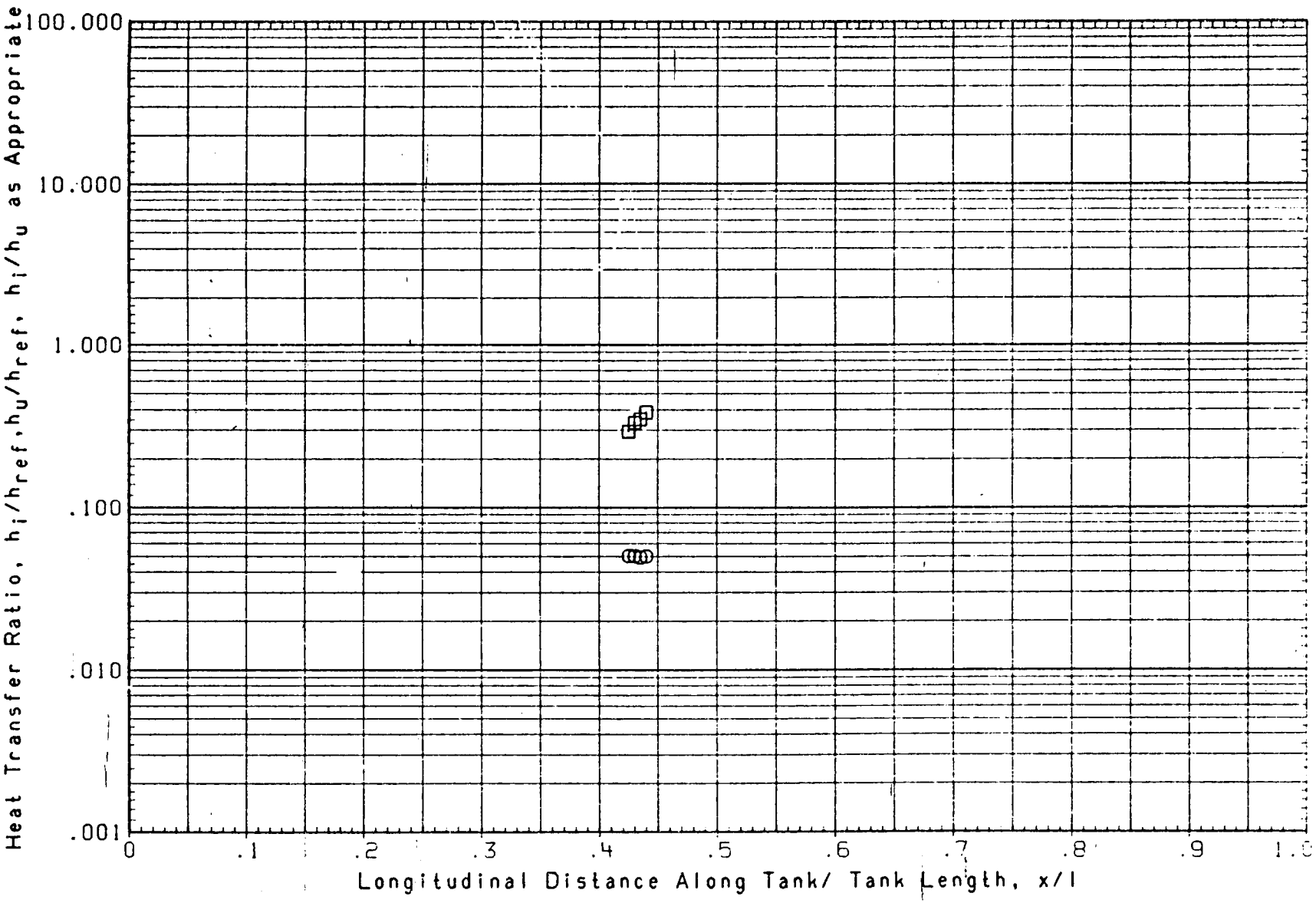


FIG. 16 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = 6

MACH = 4.020 ALPHA = .000 PHI = 354.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT06)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	6.000
(LVFT26)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	6.000
(CVFT26)	◇	DATA NOT AVAILABLE	.000	6.000

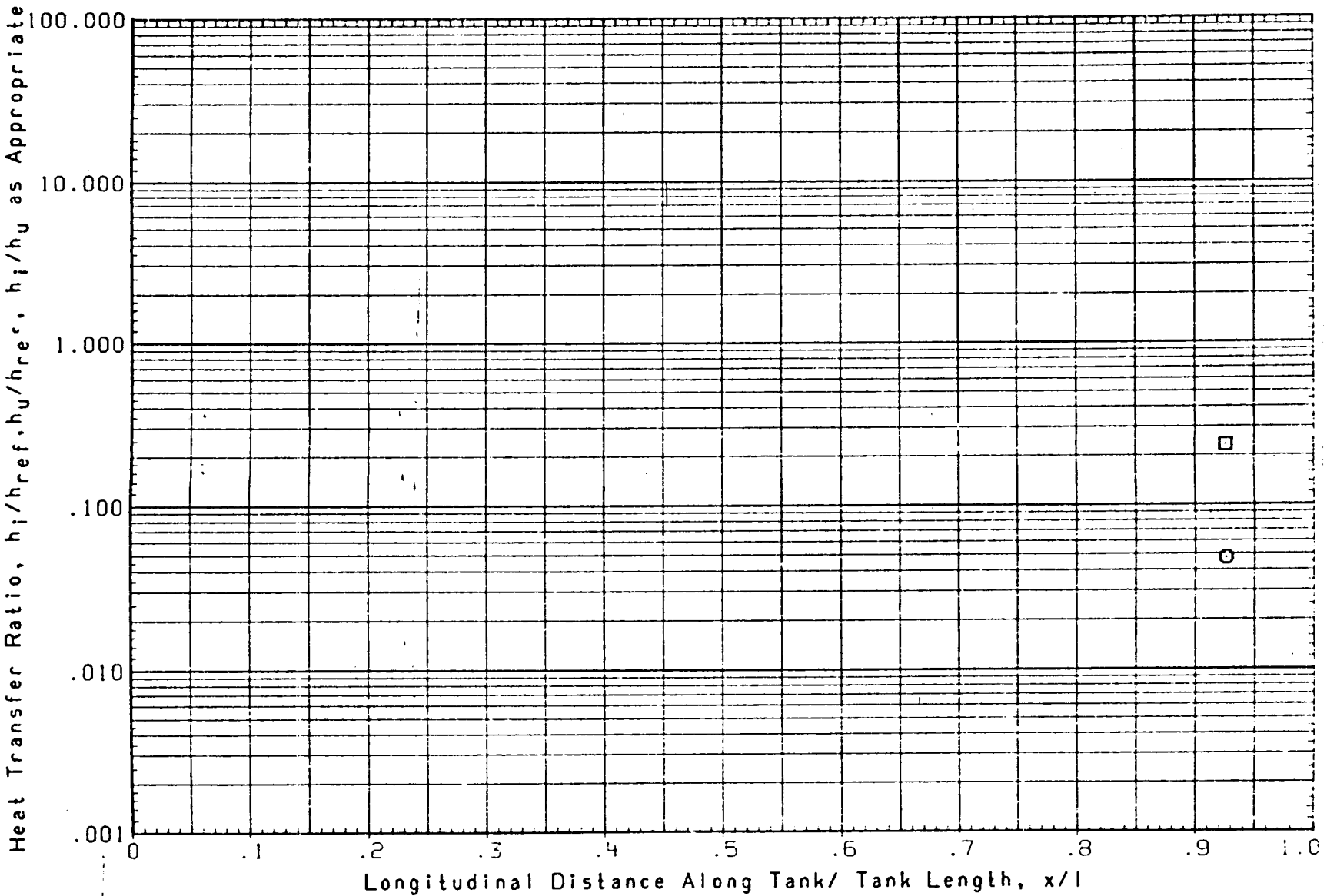


FIG. 16 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = 6

MACH = 4.020 ALPHA = .000 PHI = 355.180

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT06)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	.000	6.000
(LVFT26)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	.000	6.000
(CVFT26)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO. HI/HU	.000	6.000

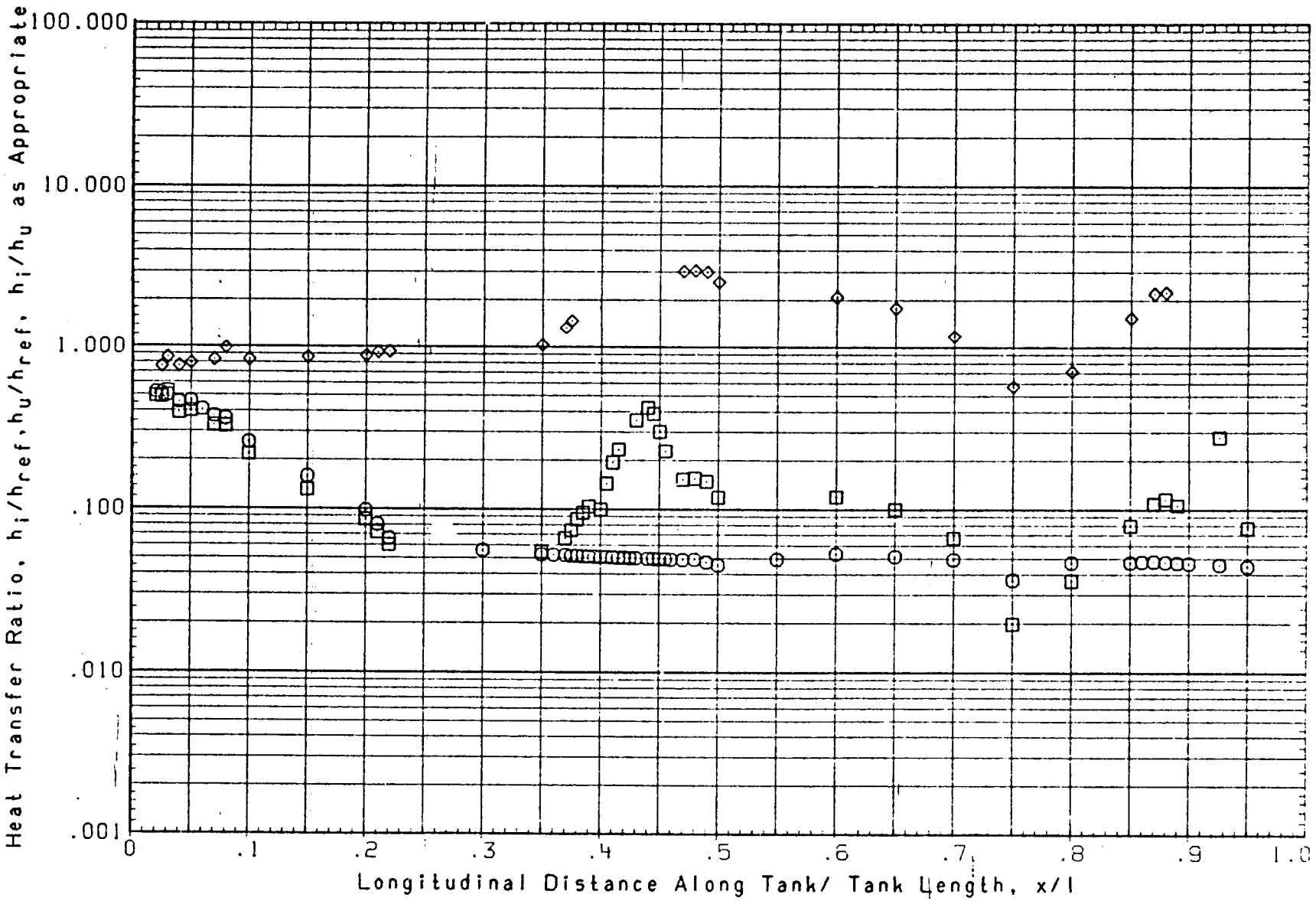


FIG. 16 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 0, BETA = 6

MACH = 4.020 ALPHA = .000 PHI = 360.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT07)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	.000
(LVFT27)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	.000
(BVFT27)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	.000

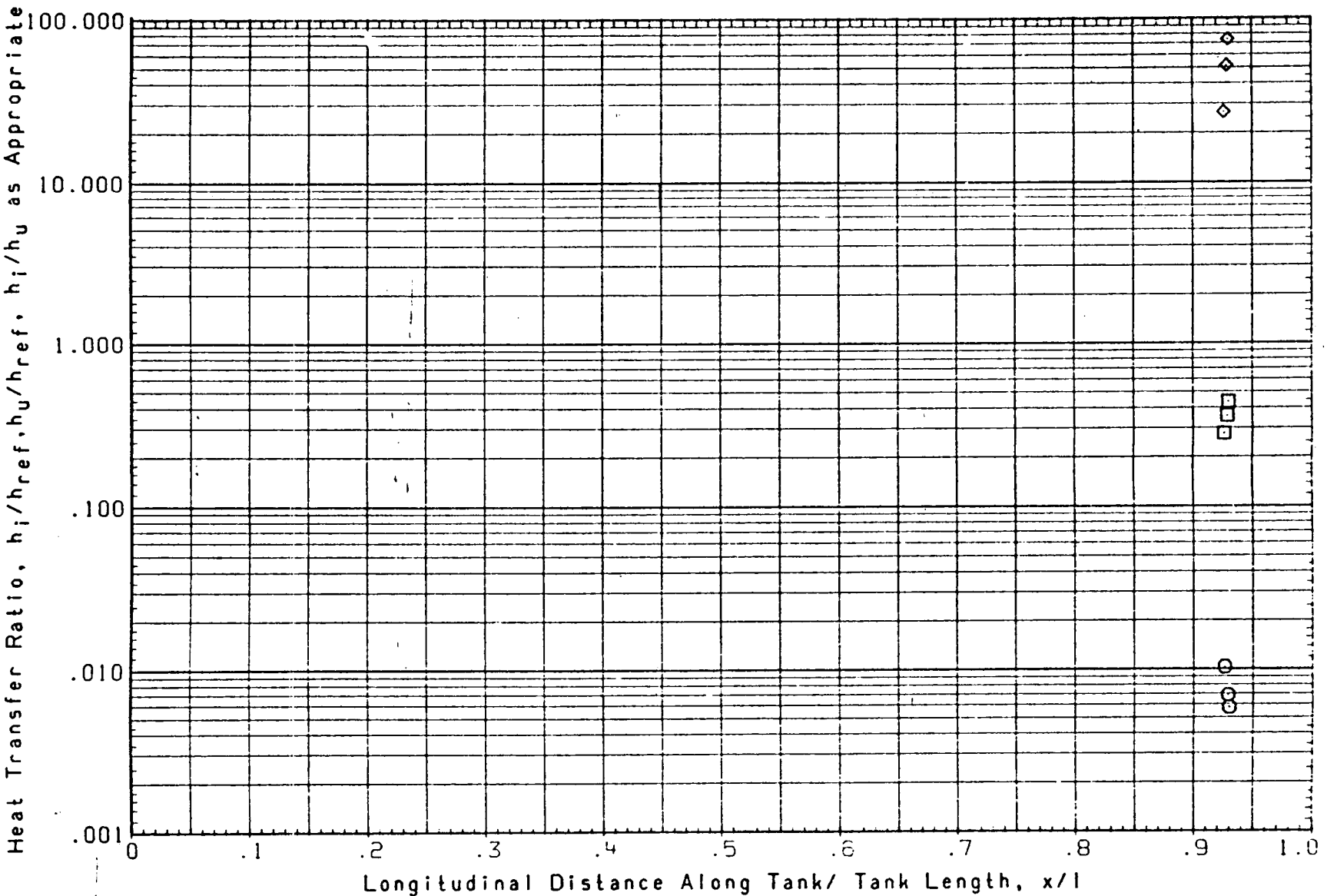


FIG. 17 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = 0

MACH = 4.020 ALPHA = -5.000 PHI = 289.430

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT07)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	.000
(LVFT27)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	.000
(BVFT27)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	.000

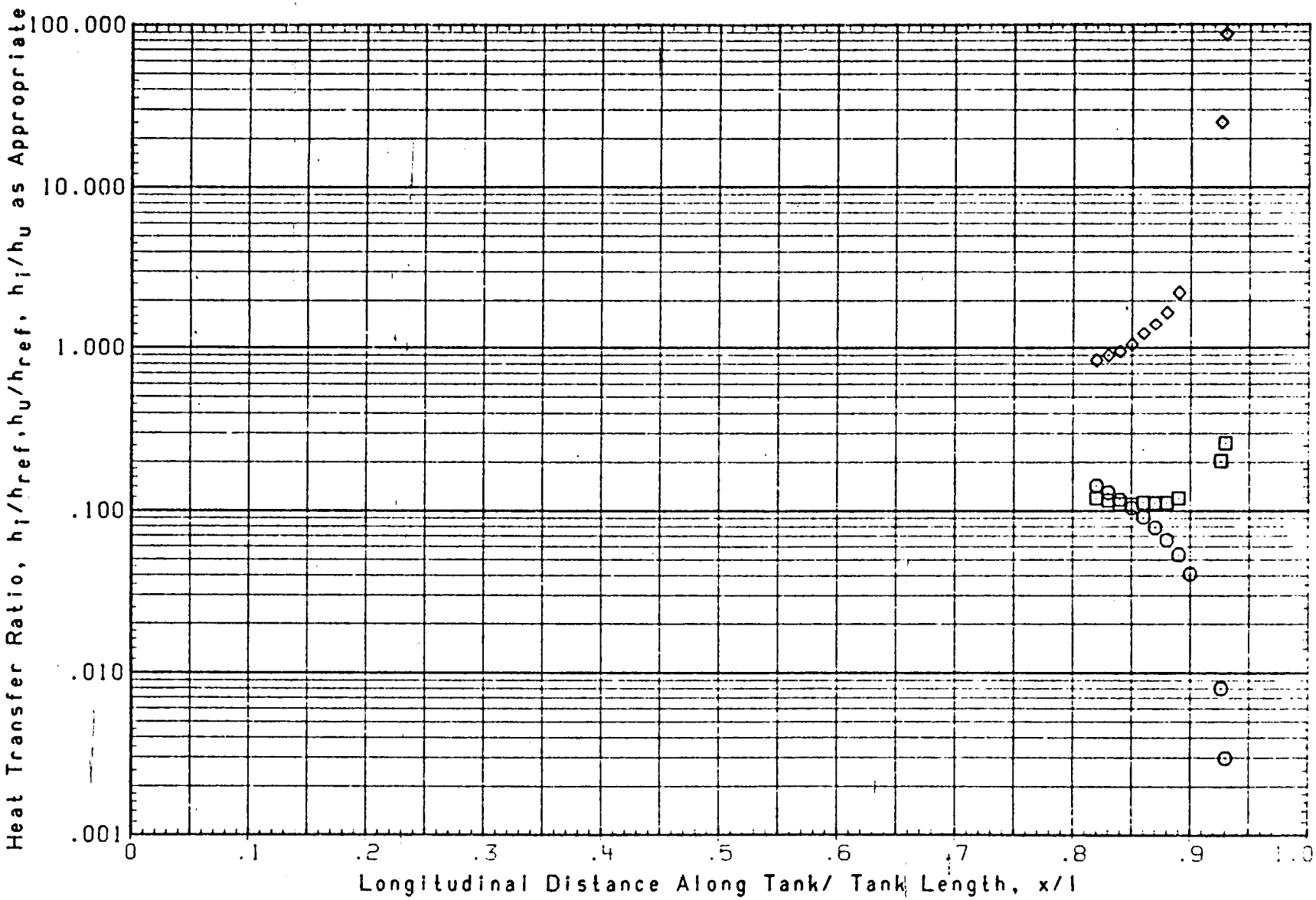


FIG. 17 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = 0

MACH = 4.020 ALPHA = -5.000 PHI = 292.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT07)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	.000
(LVFT27)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	.000
(BVFT27)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	.000

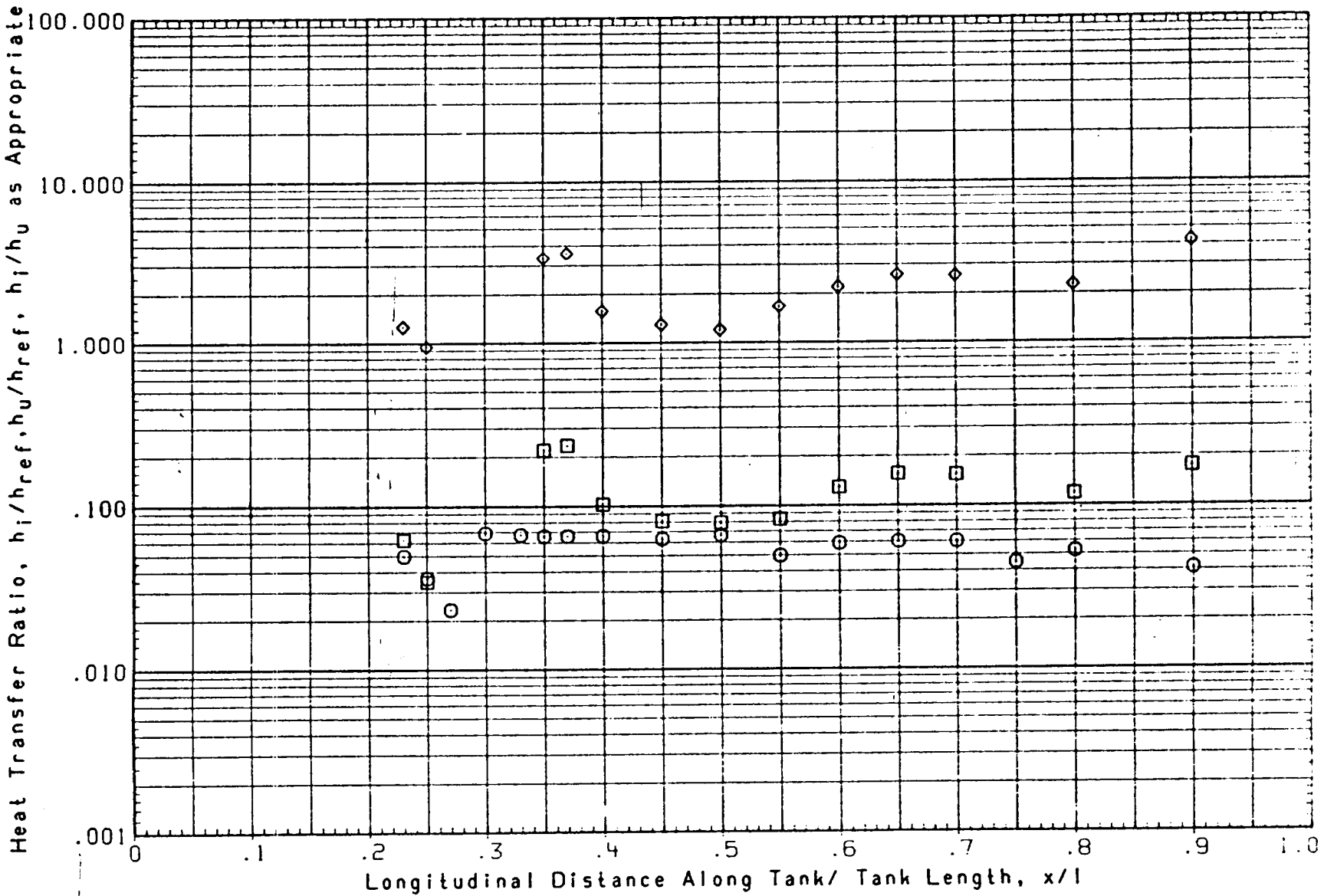


FIG. 17 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = 0

MACH = 4.020 ALPHA = -5.000 PHI = 292.500

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT07)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	.000
(LVFT27)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	.000
(BVFT27)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	.000

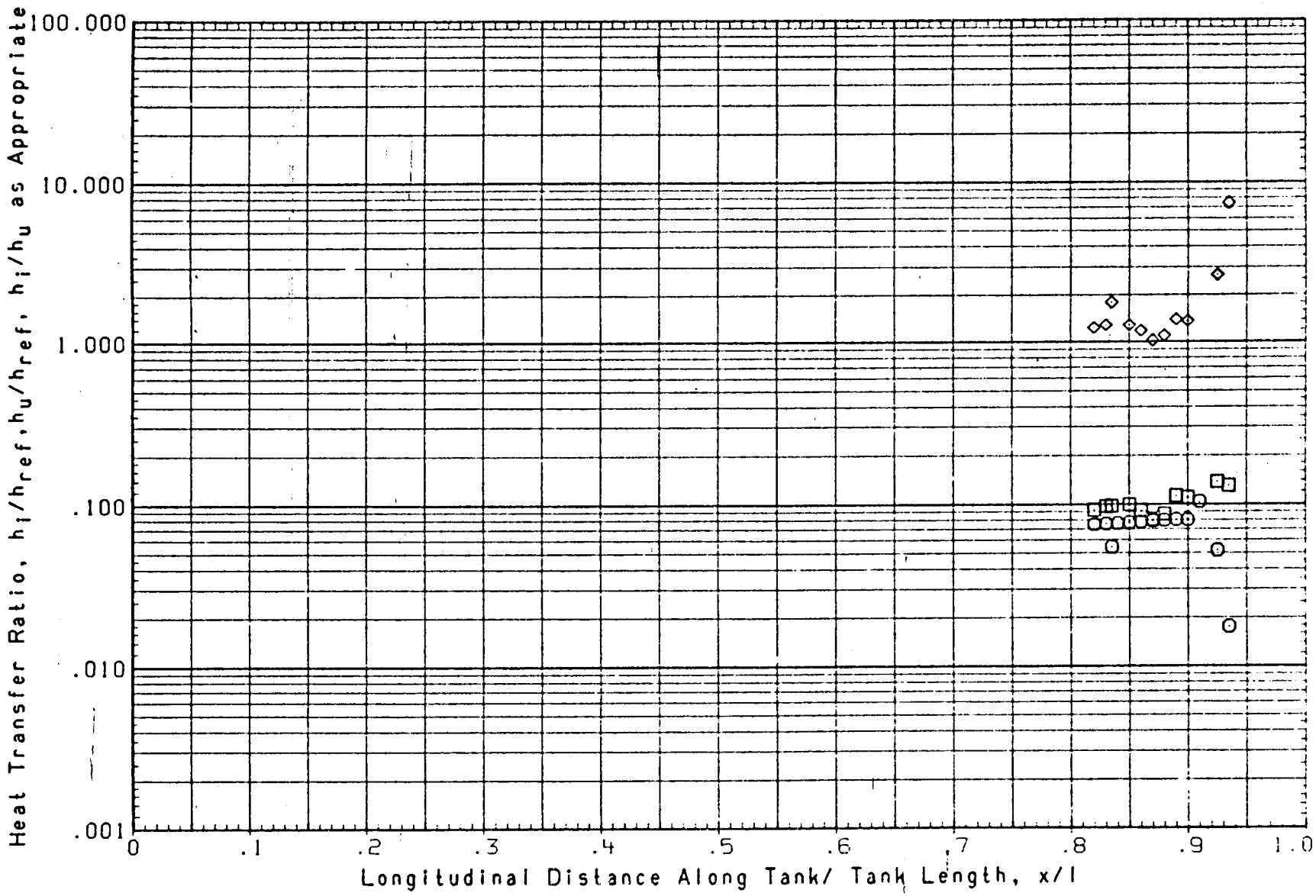


FIG. 17 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = 0

MACH = 4.020 ALPHA = -5.000 PHI = 301.500

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT07)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	.000
(LVFT27)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	.000
(BVFT27)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	.000

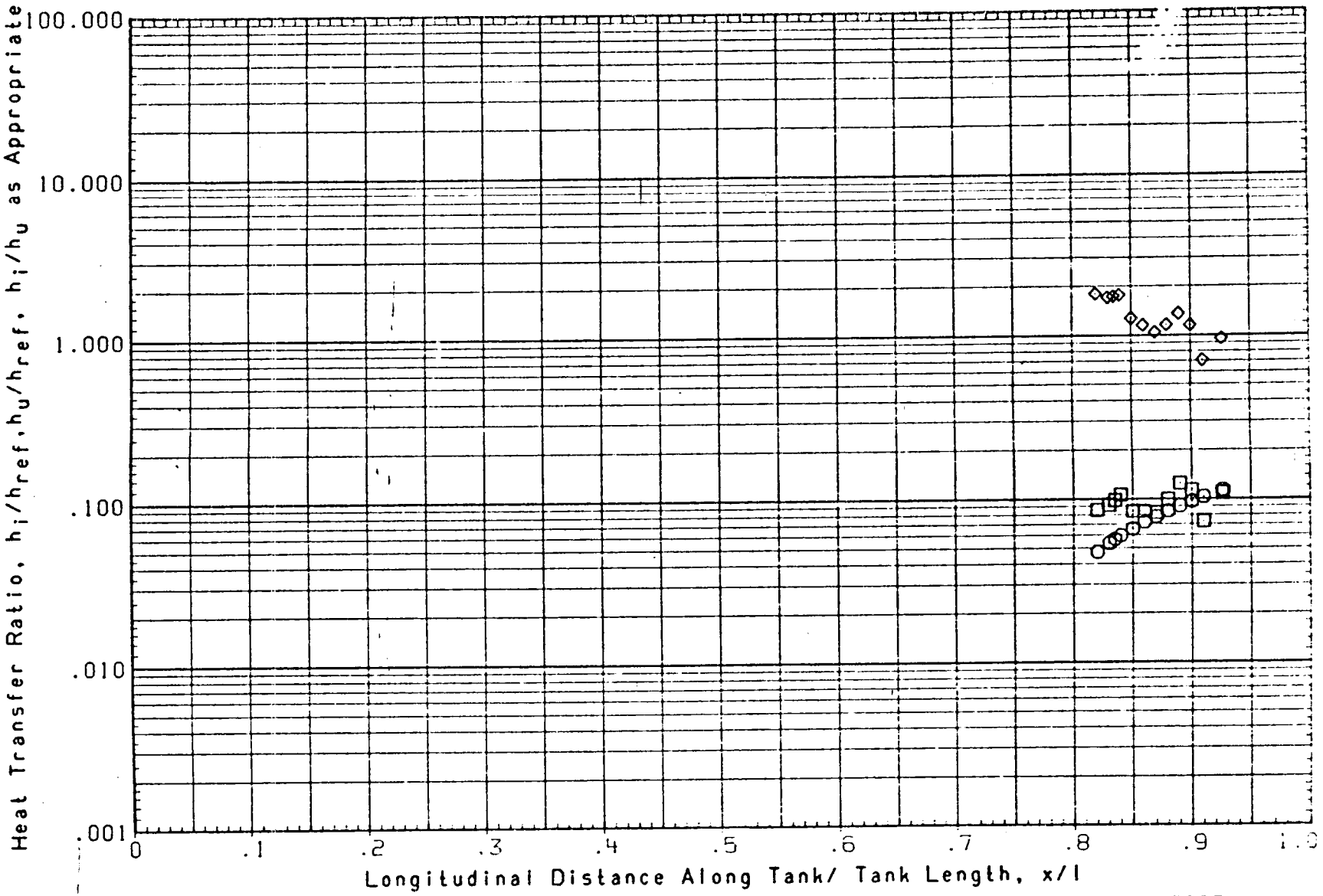


FIG. 17 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = 0

MACH = 4.020 ALPHA = -5.000 PHI = 305.400

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT07)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	.000
(LVFT27)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	.000
(BVFT27)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	.000

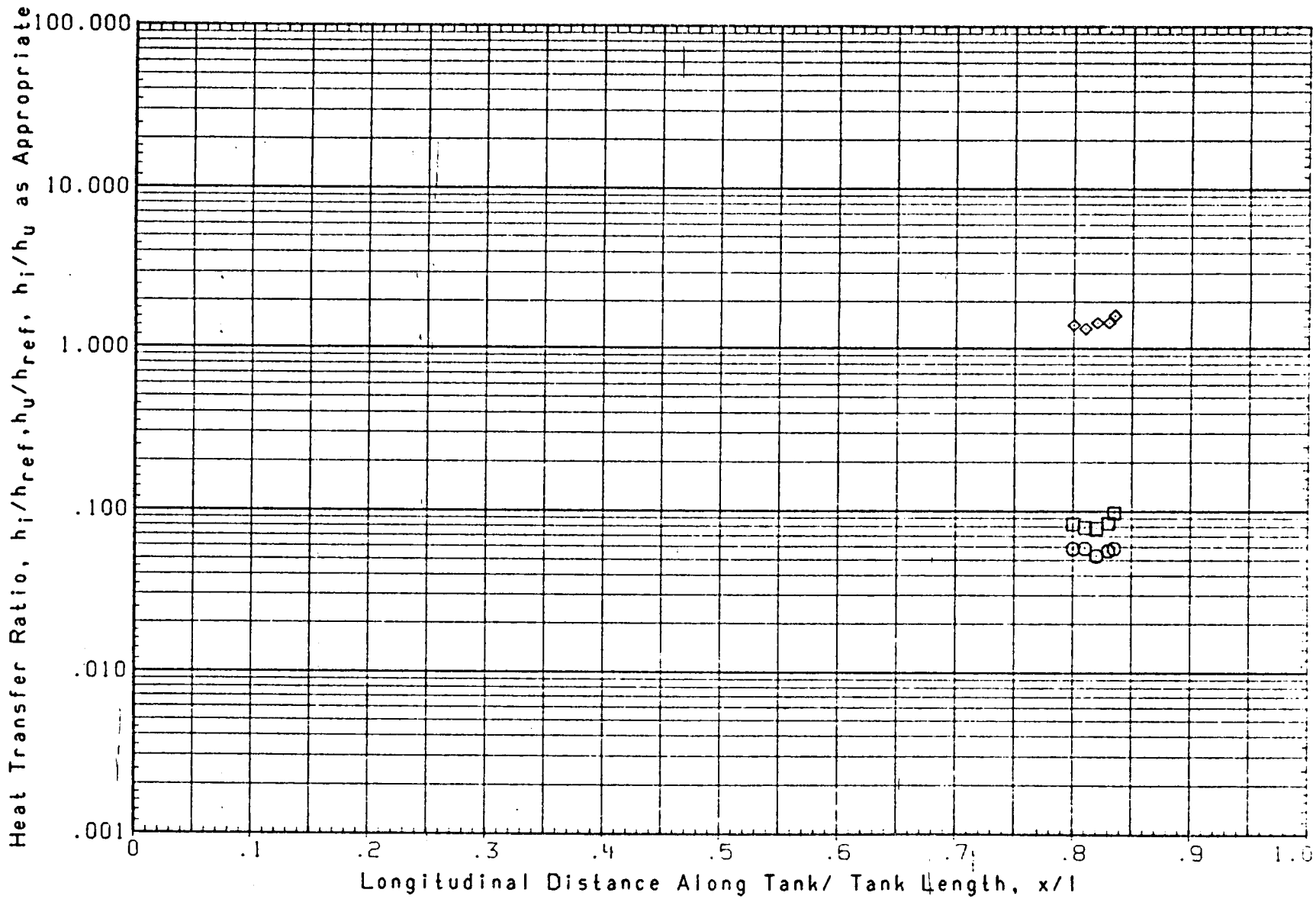


FIG. 17 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = 0

MACH = 4.020 ALPHA = -5.000 PHI = 309.300

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT07)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	.000
(LVFT27)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	.000
(BVFT27)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	.000

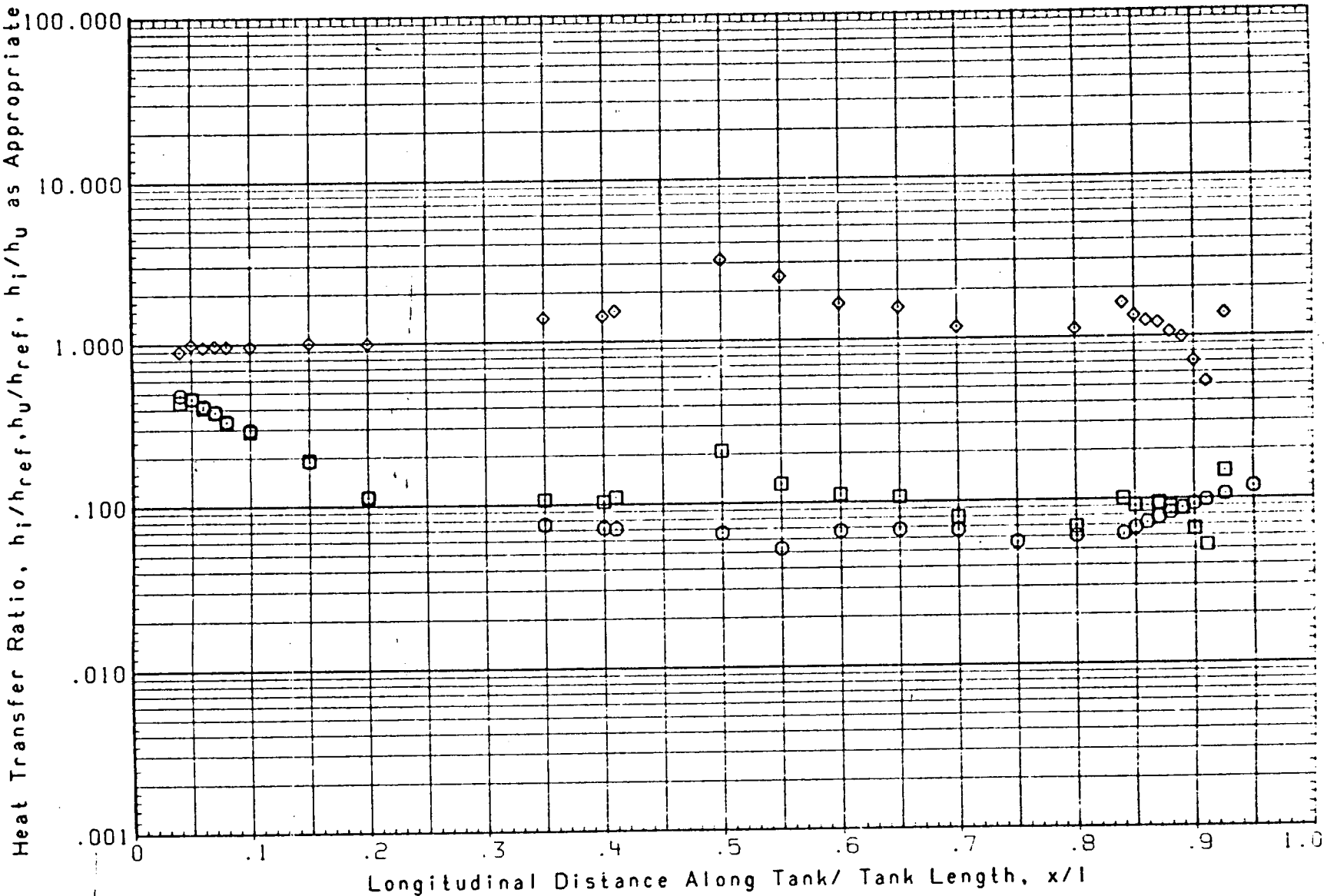


FIG. 17 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = 0

MACH = 4.020 ALPHA = -5.000 PHI = 315.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT07)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	.000
(LVFT27)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	.000
(BVFT27)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5 000	.000

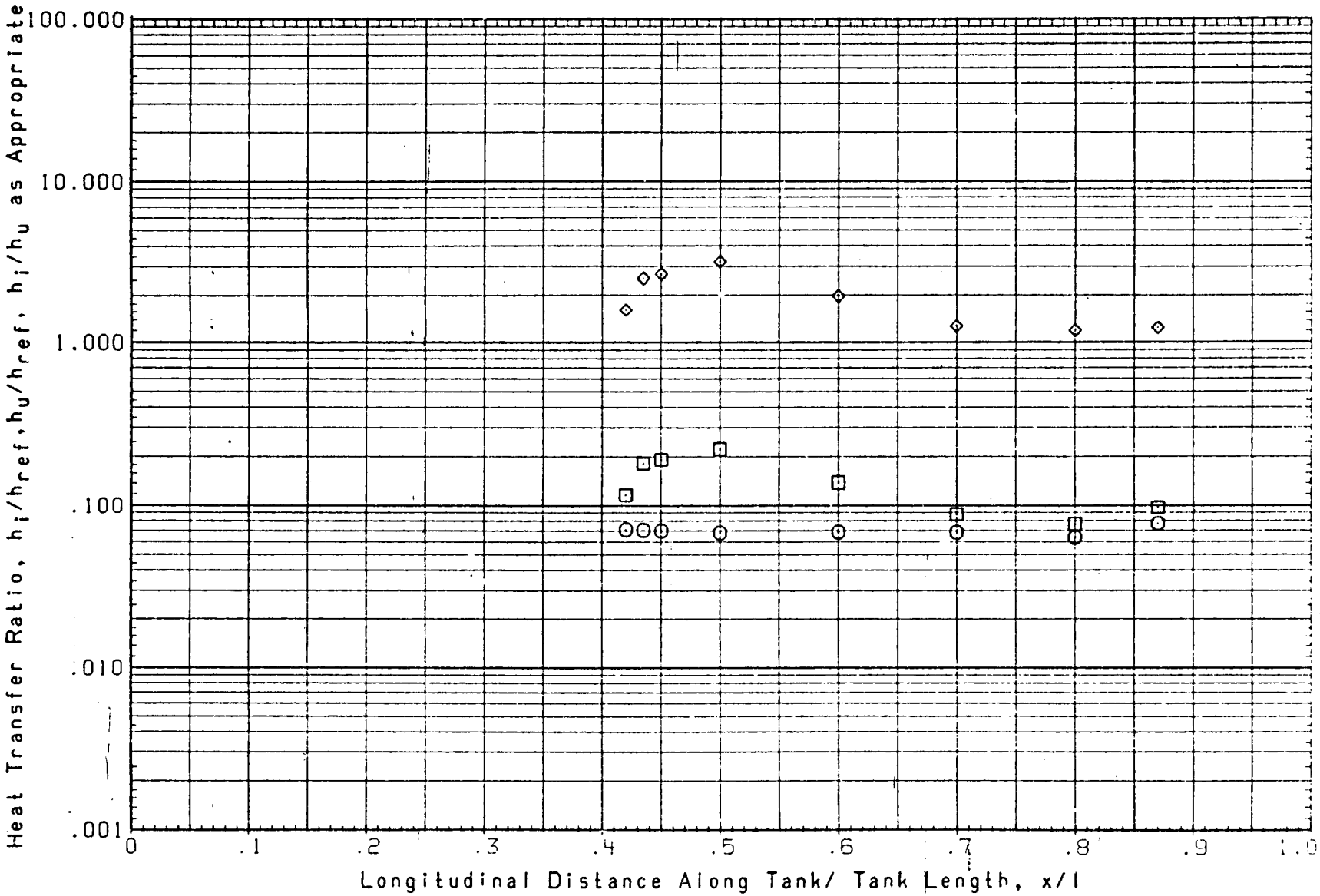


FIG. 17 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = 0

MACH = 4.020 ALPHA = -5.000 PHI = 322.300

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT07)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	.000
(LVFT27)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	.000
(BVFT27)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	.000

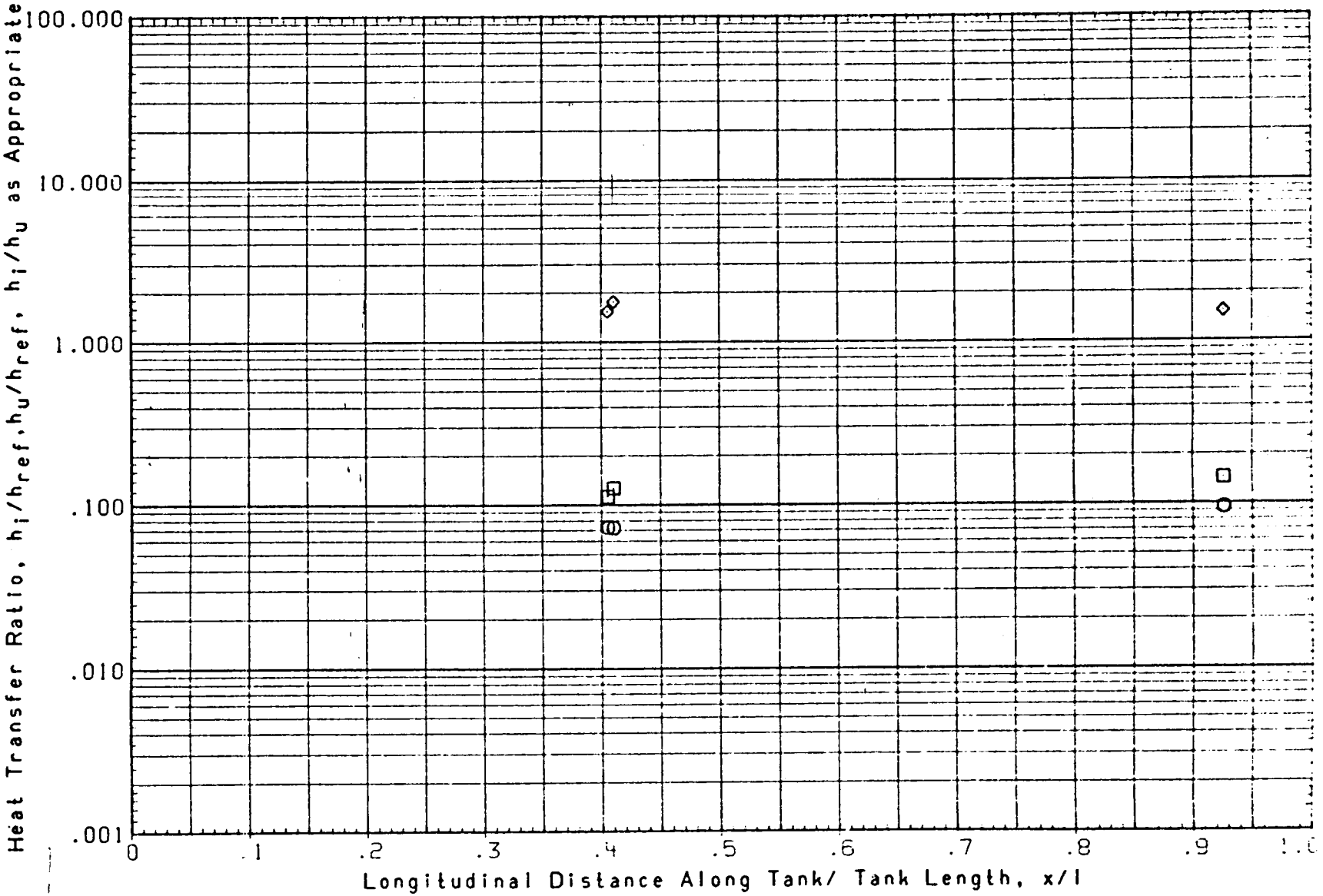


FIG. 17 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = 0

MACH = 4.020 ALPHA = -5.000 PHI = 324.450

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT07)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	.000
(LVFT27)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	.000
(BVFT27)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	.000

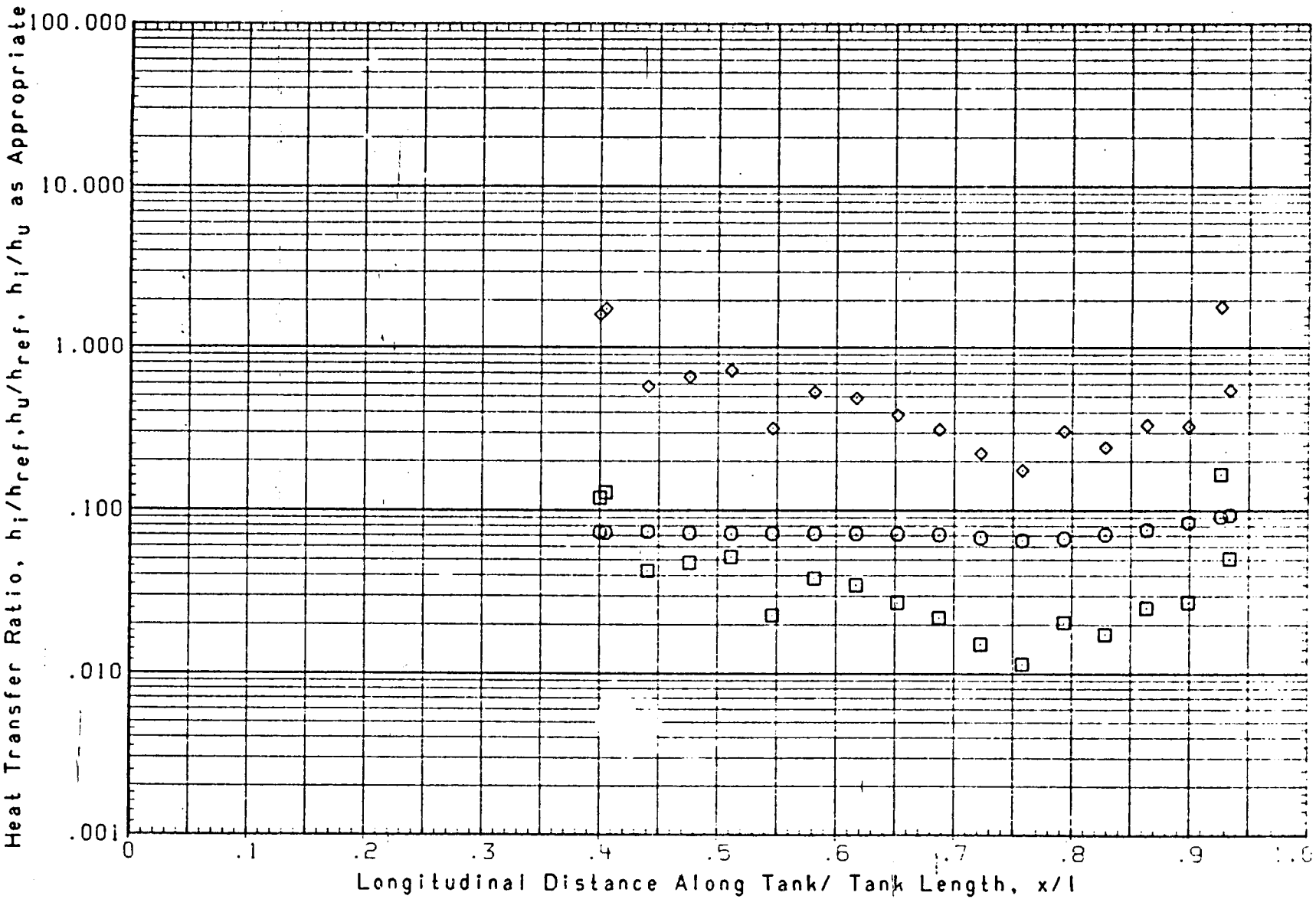


FIG. 17 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = 0

MACH = 4.020 ALPHA = -5.000 PHI = 326.850

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT07)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	.000
(LVFT27)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	.000
(BVFT27)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	.000

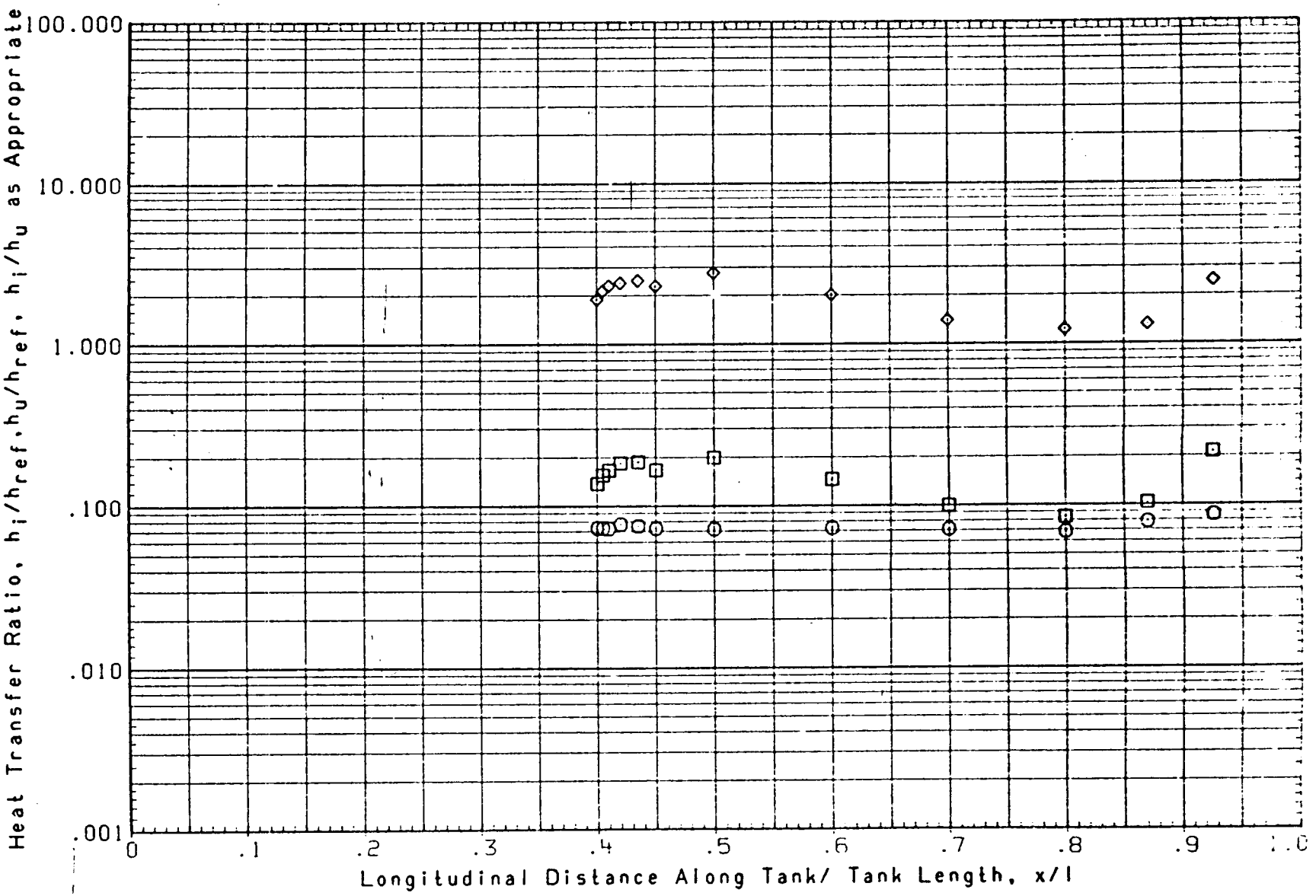


FIG. 17 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = 0

MACH = 4.020 ALPHA = -5.000 PHI = 330.200

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT07)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	.000
(LVFT27)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	.000
(BVFT27)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	.000

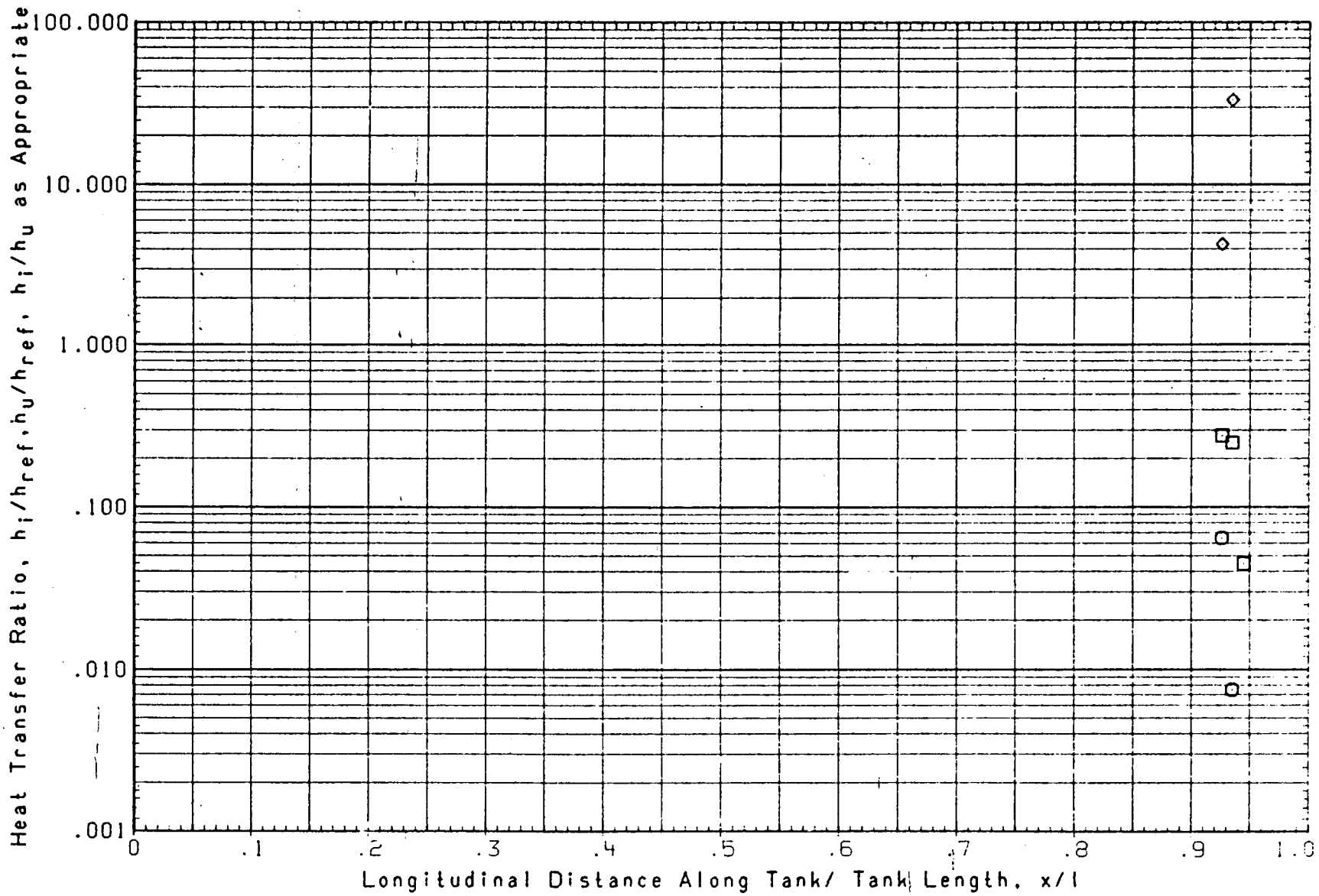


FIG. 17 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = 0

MACH = 4.020 ALPHA = -5.000 PHI = 334.280

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT07)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	.000
(LVFT27)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	.000
(BVFT27)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	.000

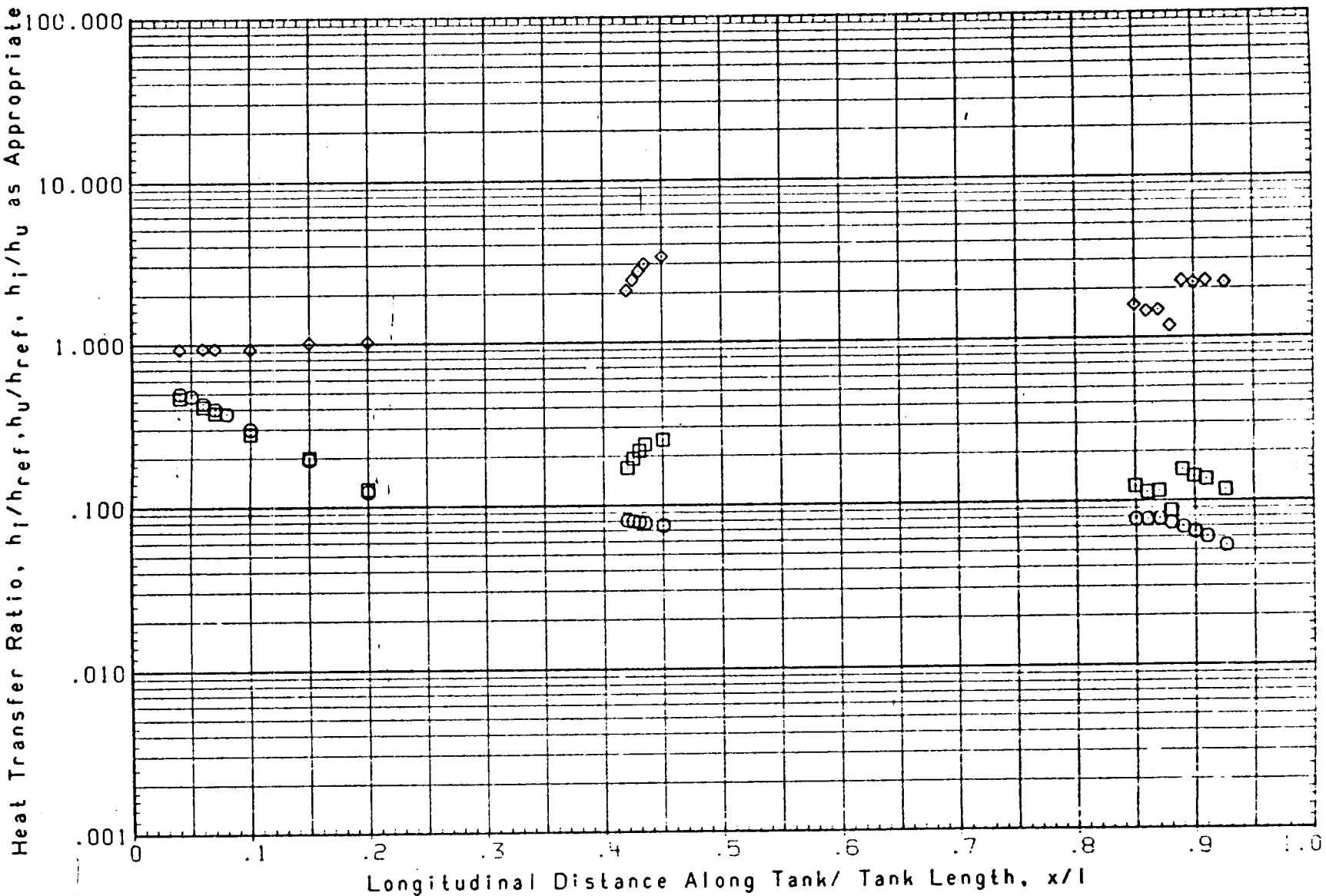


FIG. 17 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = 0

MACH = 4.020 ALPHA = -5.000 PHI = 337.500

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT07)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	.000
(LVFT27)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	.000
(BVFT27)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	.000

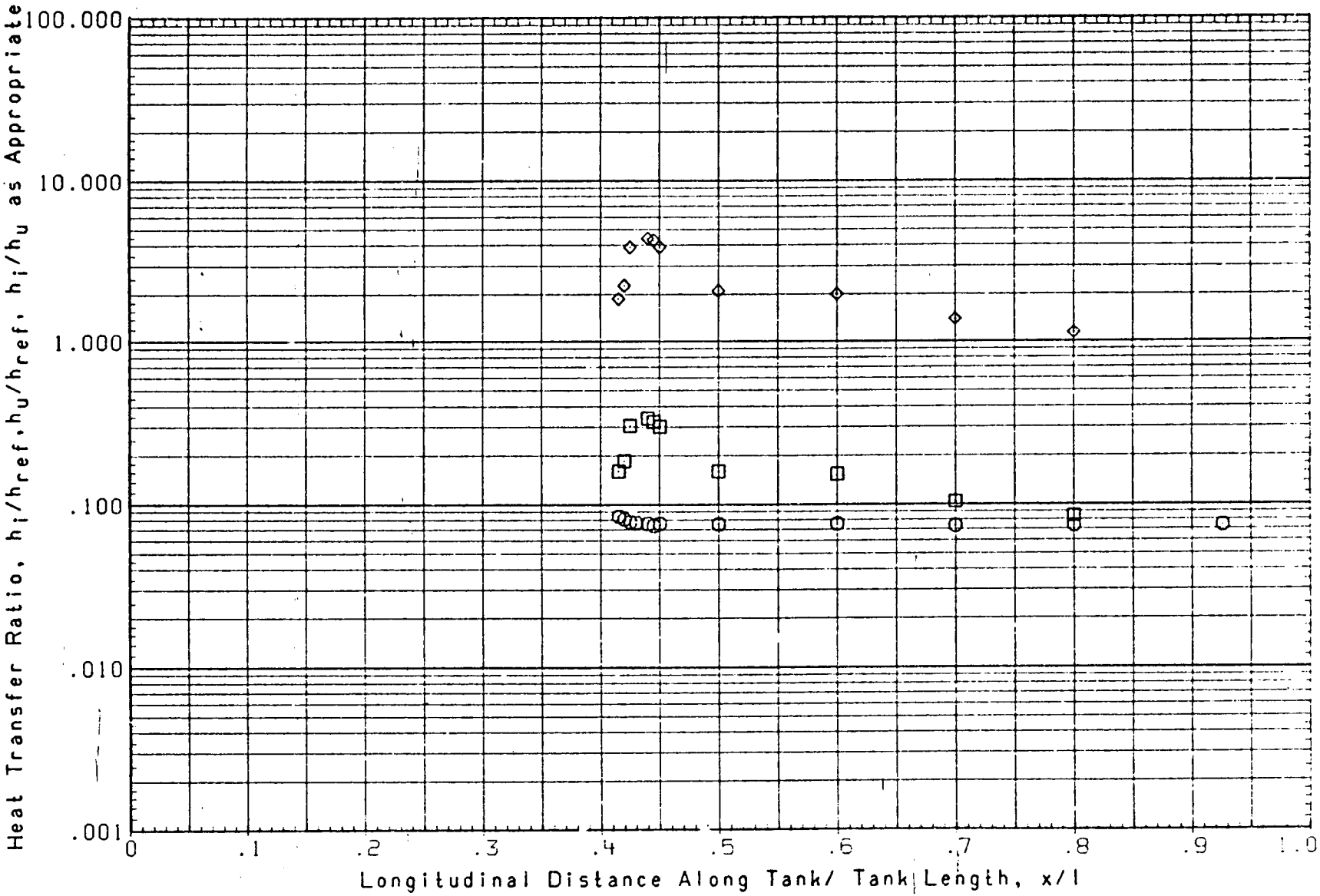


FIG. 17 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = 0

MACH = 4.020 ALPHA = -5.000 PHI = 343.120

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT07)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	.000
(LVFT27)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	.000
(BVFT27)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	.000

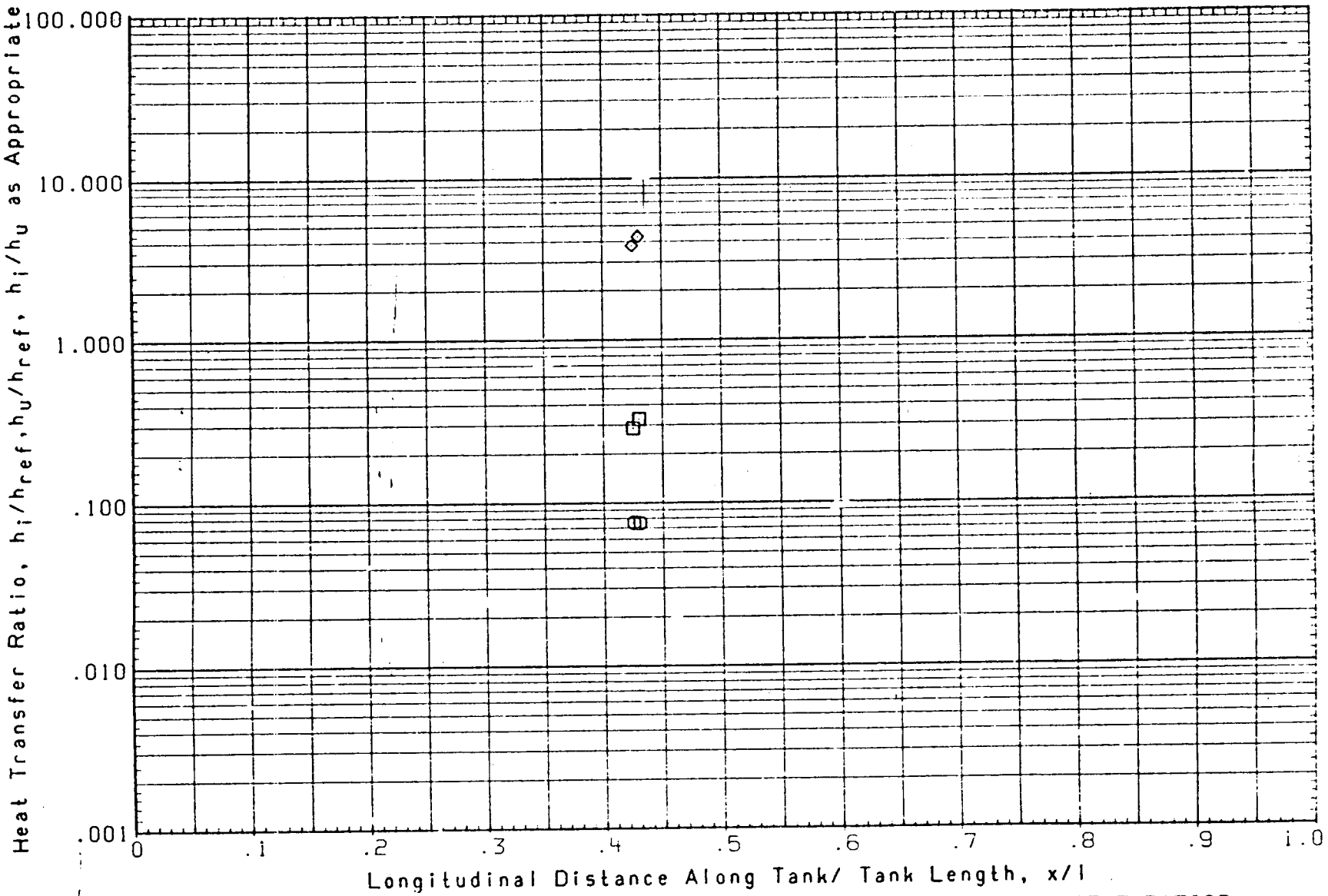


FIG. 17 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = 0

MACH = 4.020 ALPHA = -5.000 PHI = 345.560

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT07)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	.000
(LVFT27)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	.000
(BVFT27)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/H	-5.000	.000

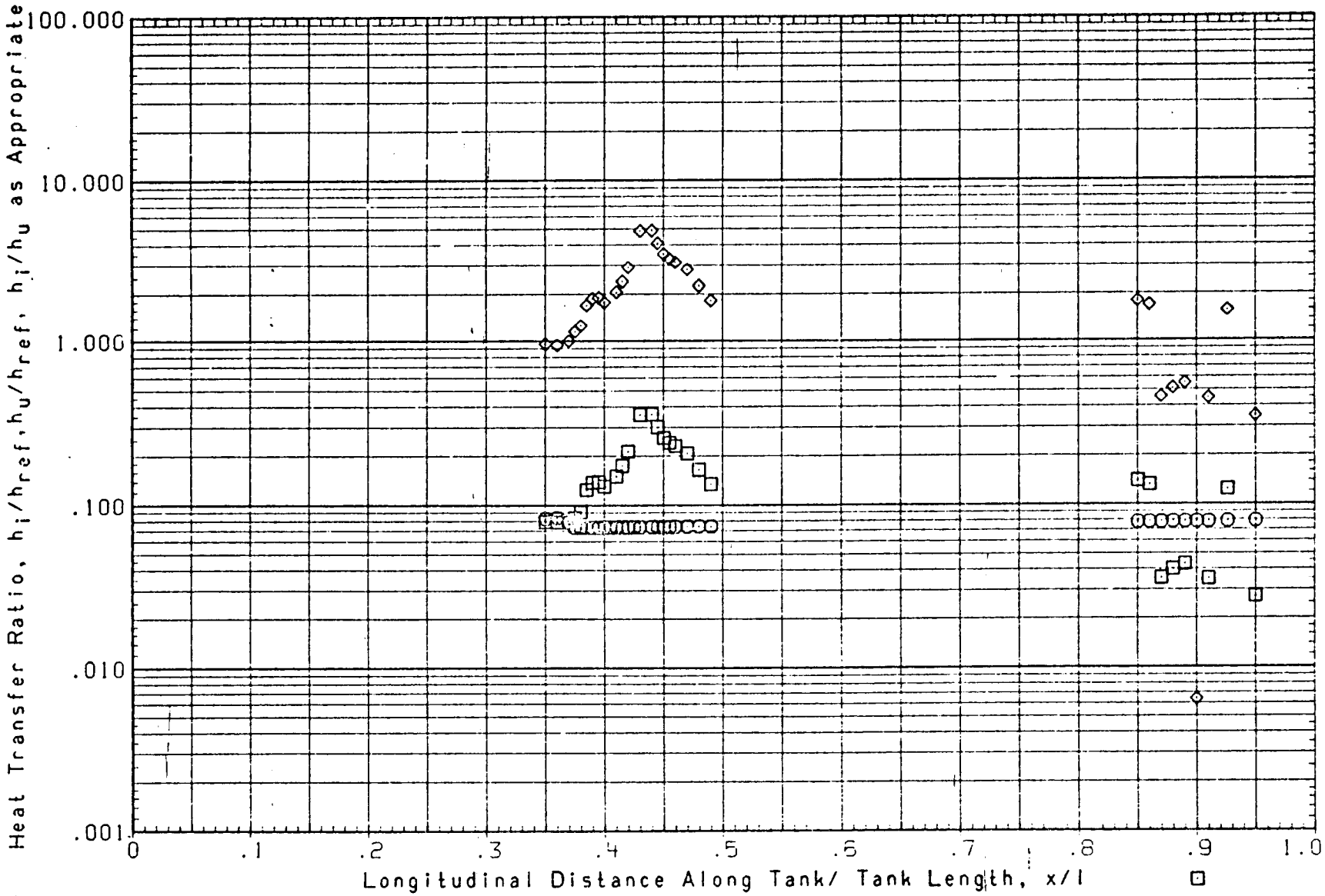


FIG. 17 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = 0

MACH = 4.020 ALPHA = -5.000 PHI = 343.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT07)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	.000
(LVFT27)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	.000
(BVFT27)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	.000

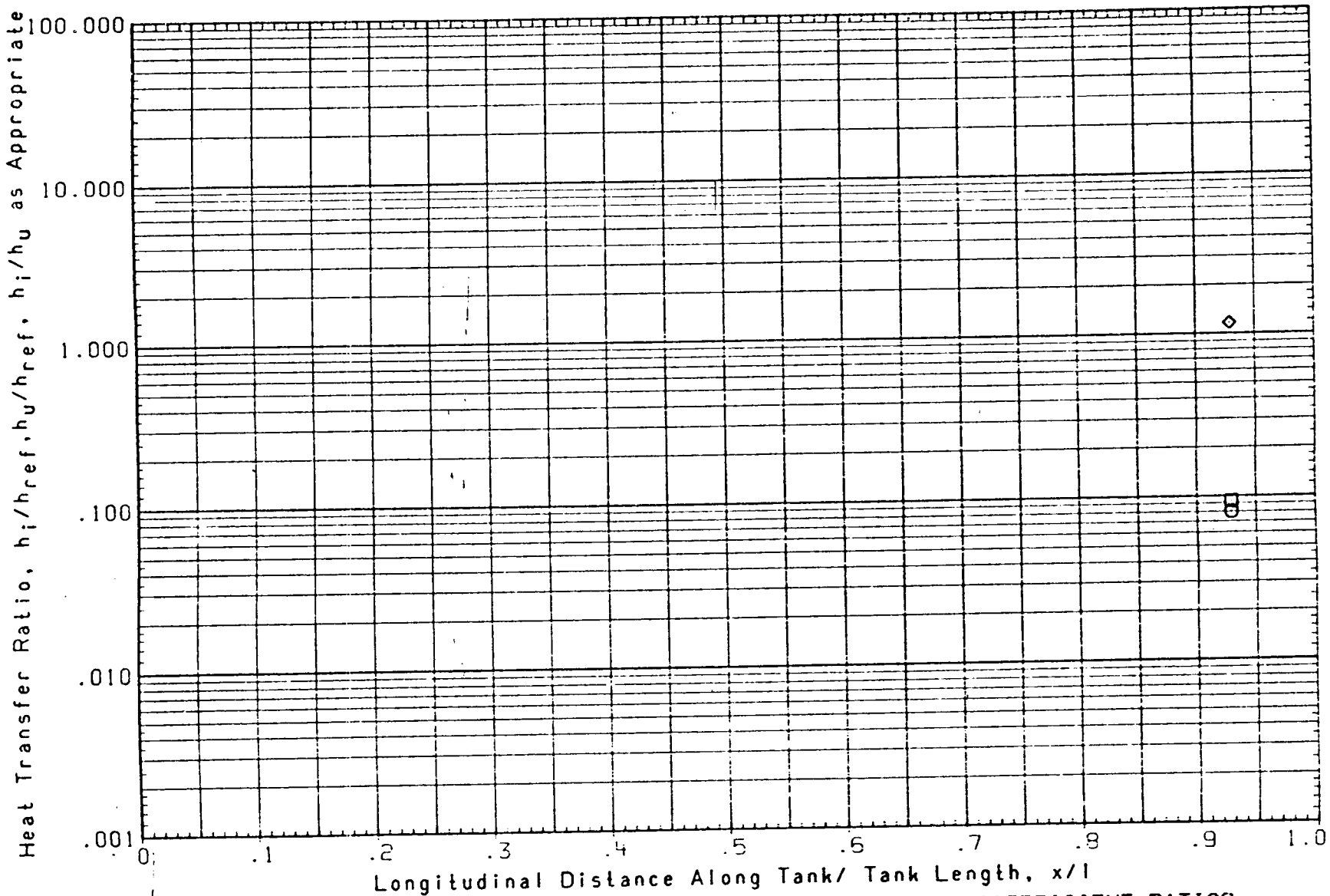


FIG. 17 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = 0

MACH = 4.020 ALPHA = -5.000 PHI = 352.200

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT07)	⊙	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	.000
(LVFT27)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	.000
(BVFT27)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	.000

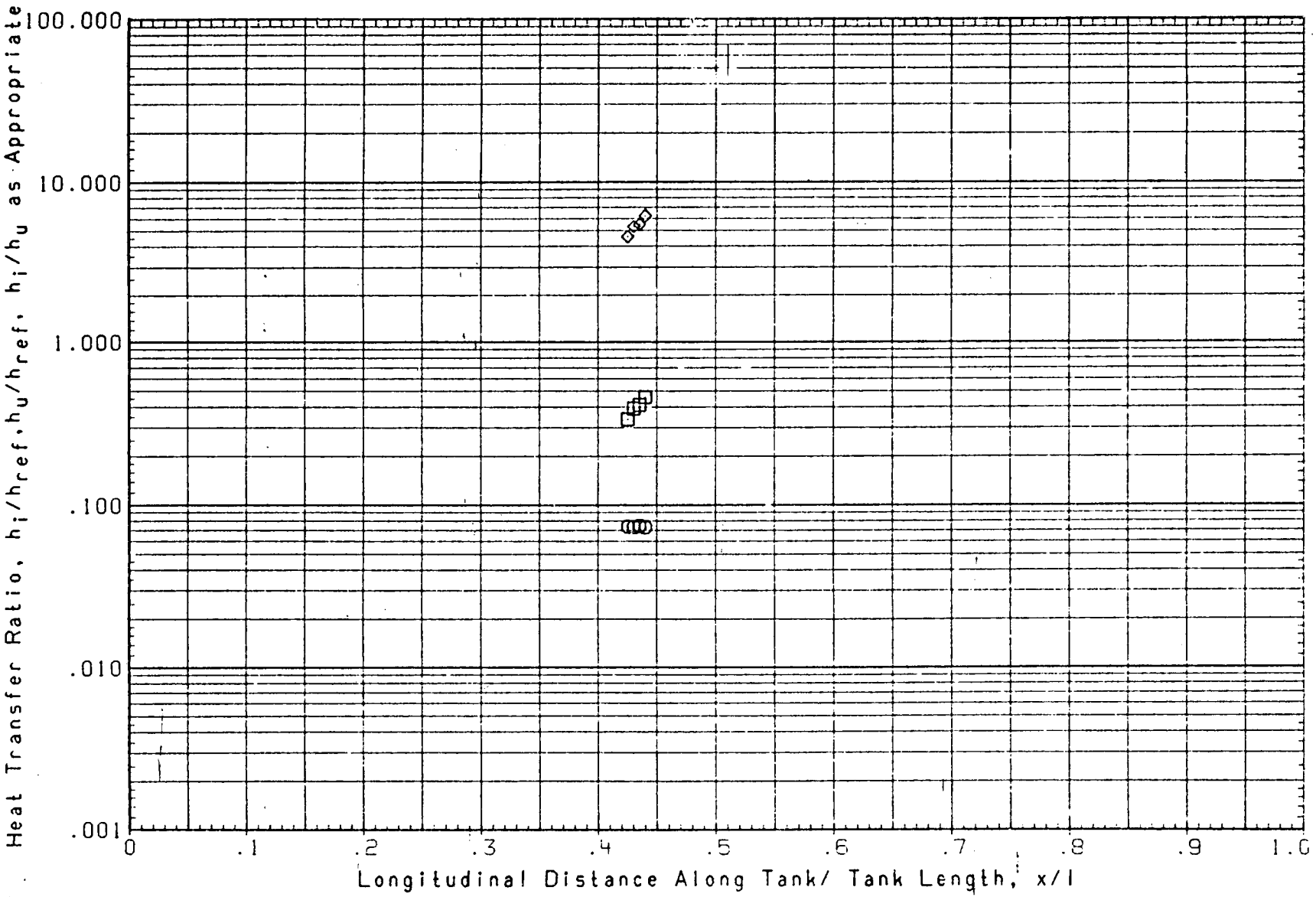


FIG. 17 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = 0

MACH = 4.020 ALPHA = -5.000 PHI = 354.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT07)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	.000
(LVFT27)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	.000
(BVFT27)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	.000

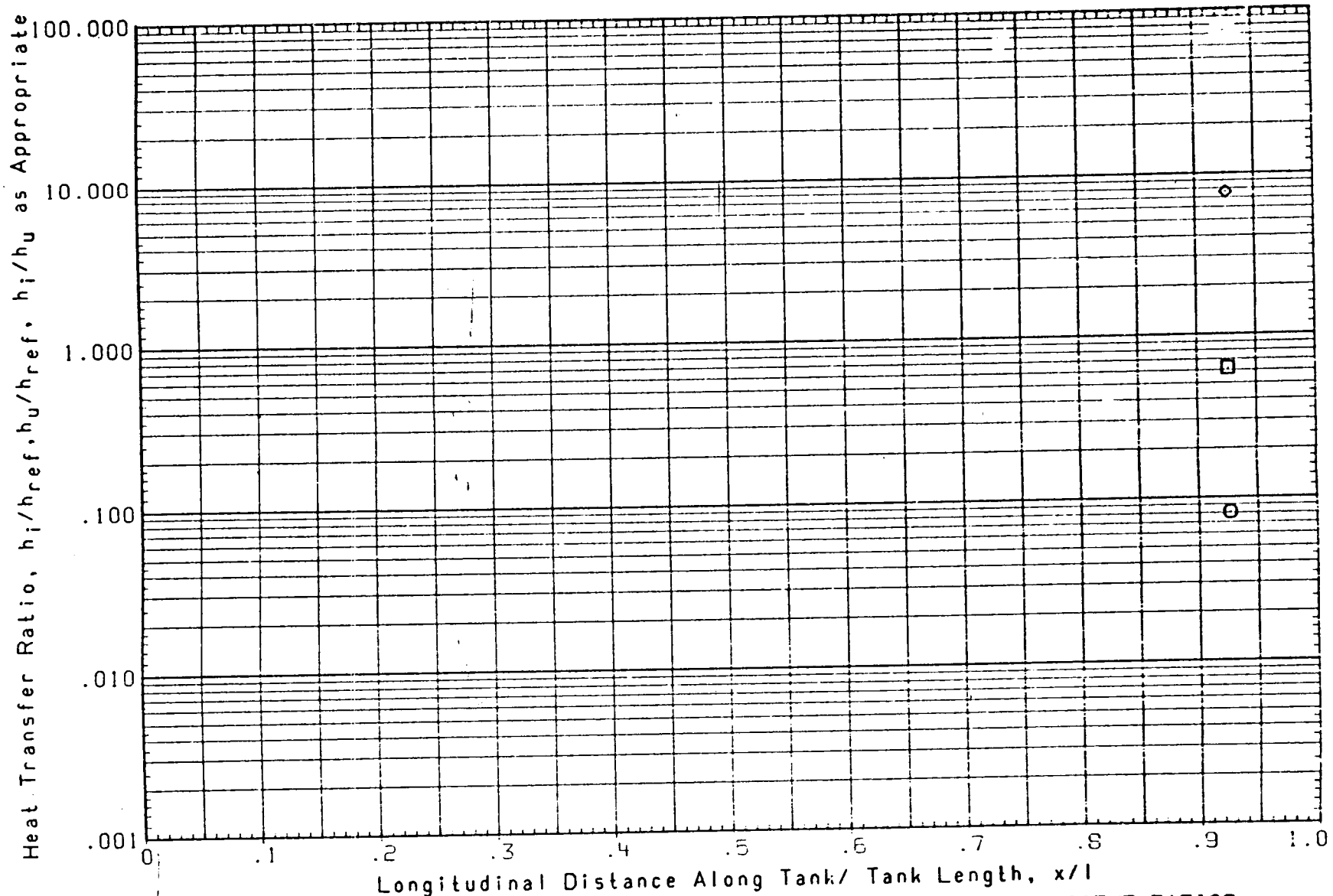


FIG. 17 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = 0

MACH = 4.020 ALPHA = -5.000 PHI = 355.160

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT07)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	.000
(LVFT27)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	.000
(BVFT27)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	.000

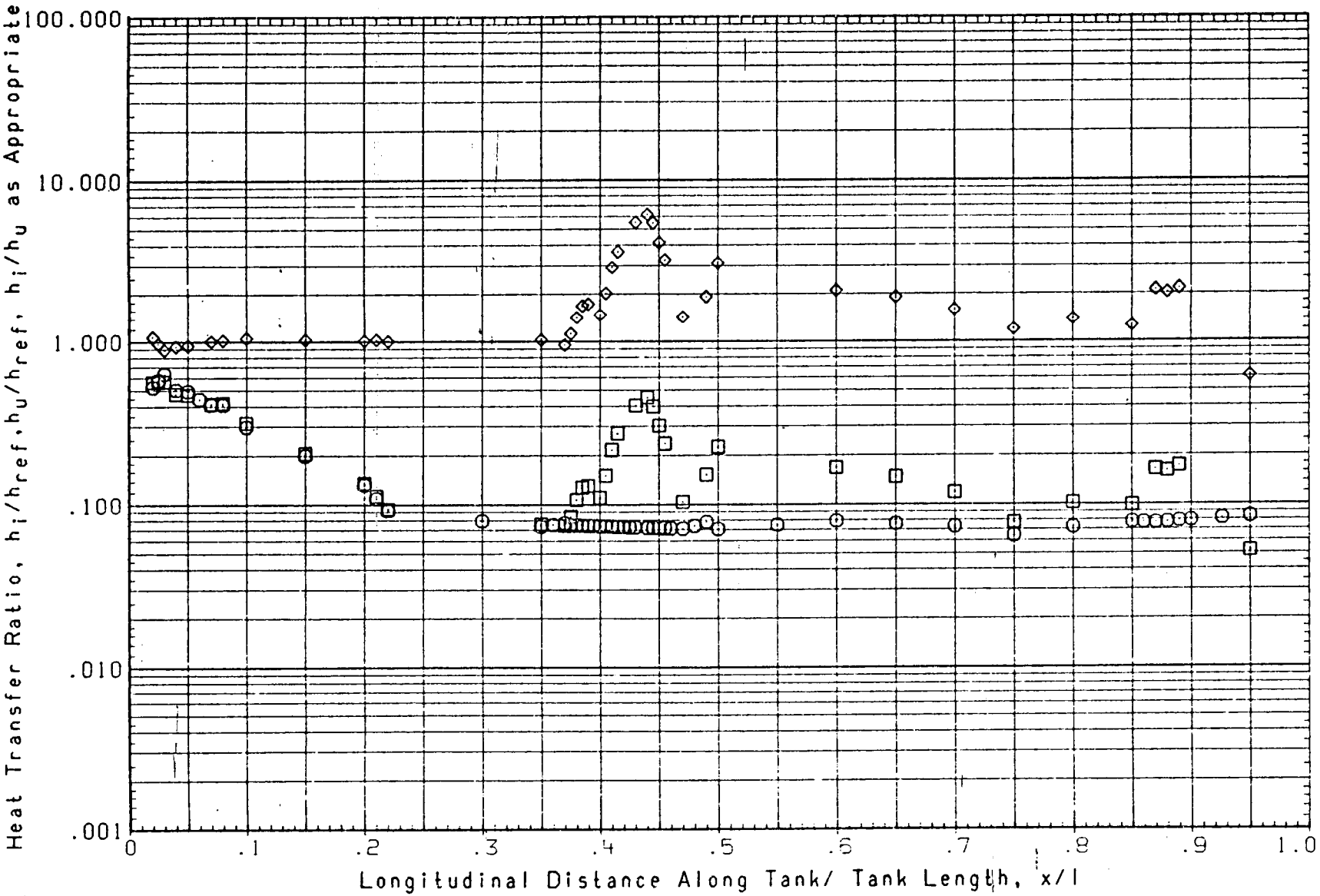


FIG. 17 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = 0

MACH = 4.020 ALPHA = -5.000 PHI = 360.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT07)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	.000
(LVFT27)	□	IH41B(V41A-A4A) O T (SPIKED ET DATA) HI/HREF	-5.000	.000
(BVFT27)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	.000

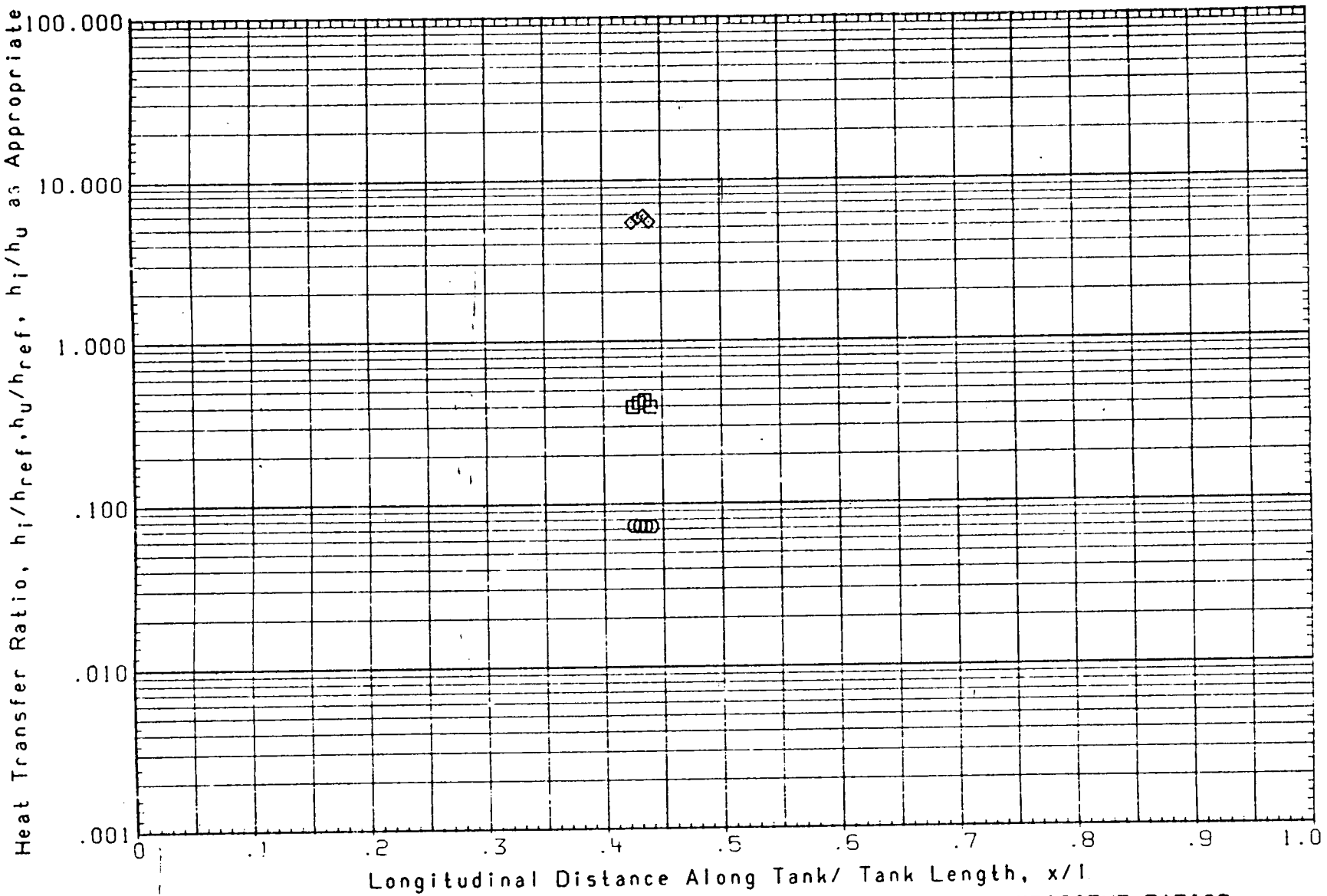


FIG. 17 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = 0

MACH = 4.020 ALPHA = -5.000 PHI = 5.630

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT07)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	.000
(LVFT27)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	.000
(BVFT27)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	.000

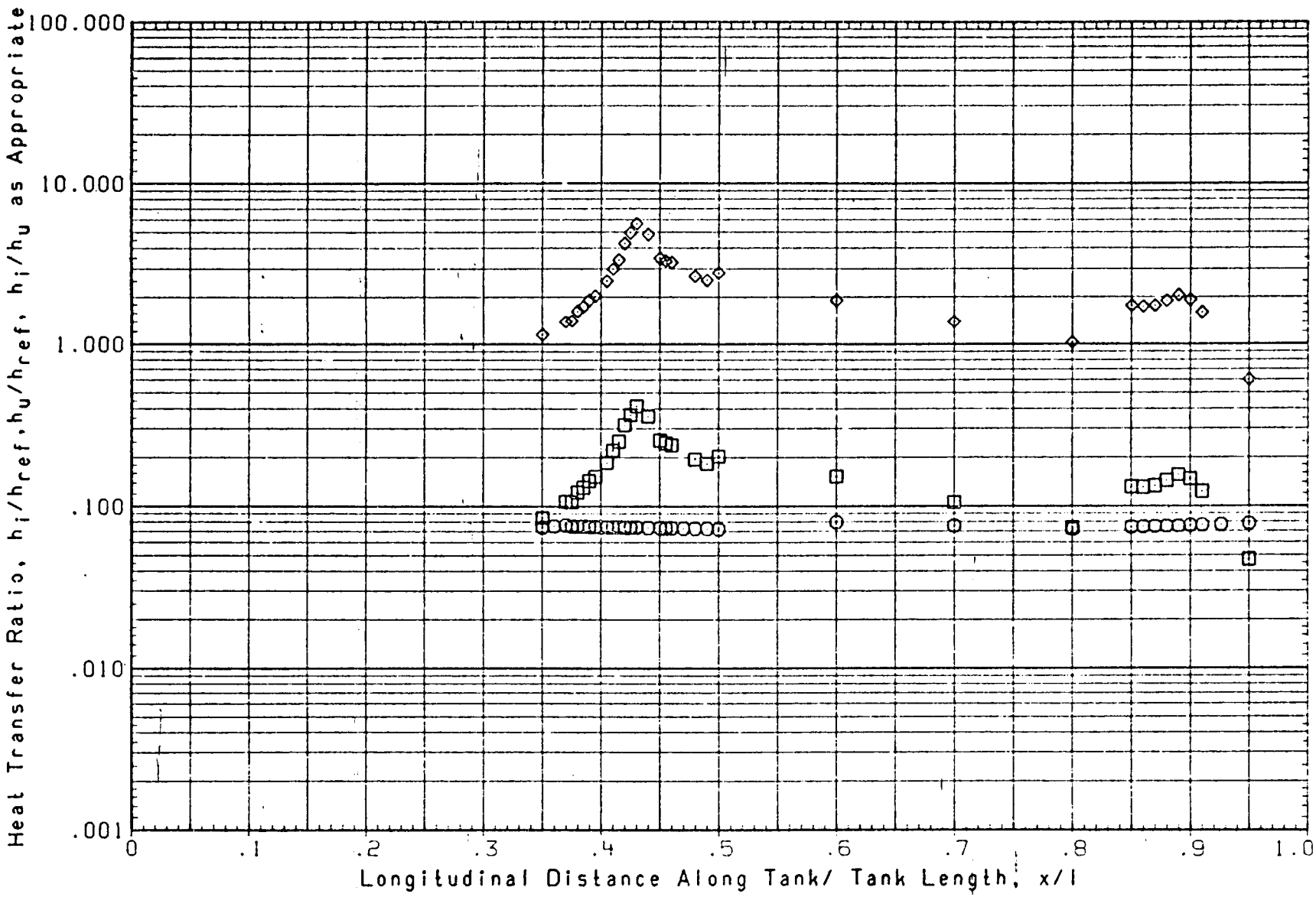


FIG. 17 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = 0

MACH = 4.020 ALPHA = -5.000 PHI = 11.250

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT07)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	.000
(LVFT27)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	.000
(BVFT27)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	.000

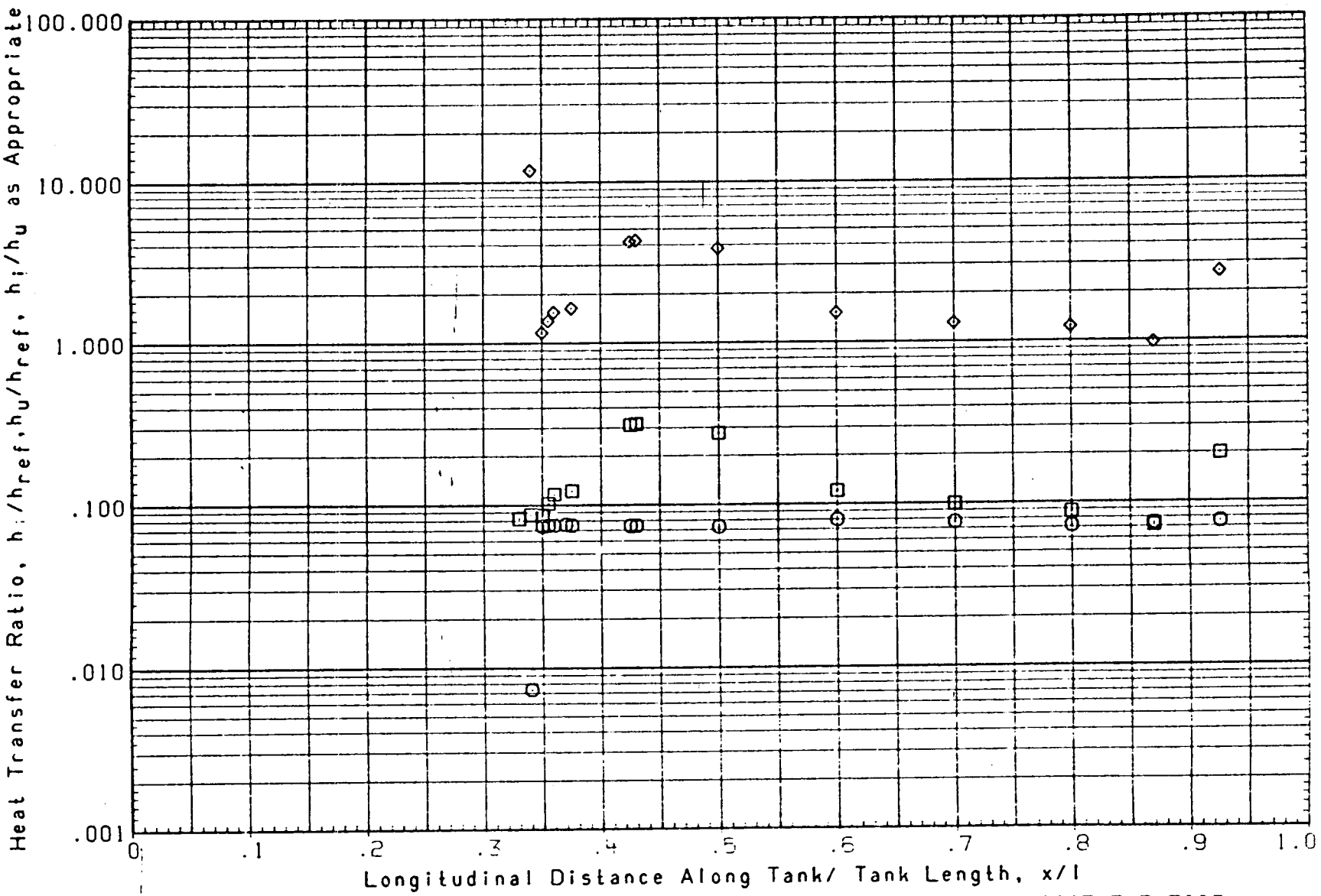


FIG. 17 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = 0

MACH = 4.020 ALPHA = -5.000 PHI = 17.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT07)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	.000
(LVFT27)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	.000
(BVFT27)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	.000

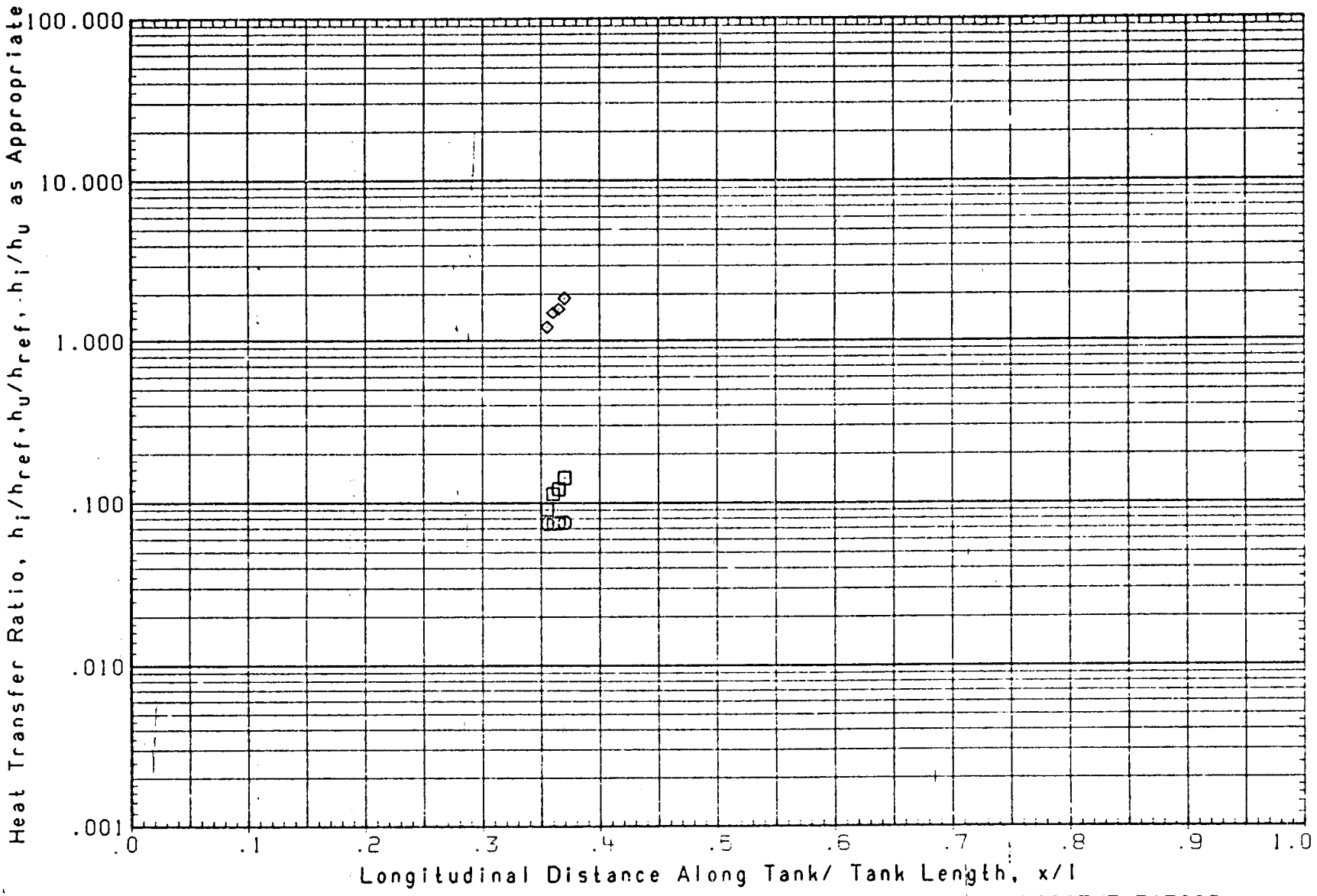


FIG. 17 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = 0

MACH = 4.020 ALPHA = -5.000 PHI = 20.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT07)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	.000
(LVFT27)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	.000
(BVFT27)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	.000

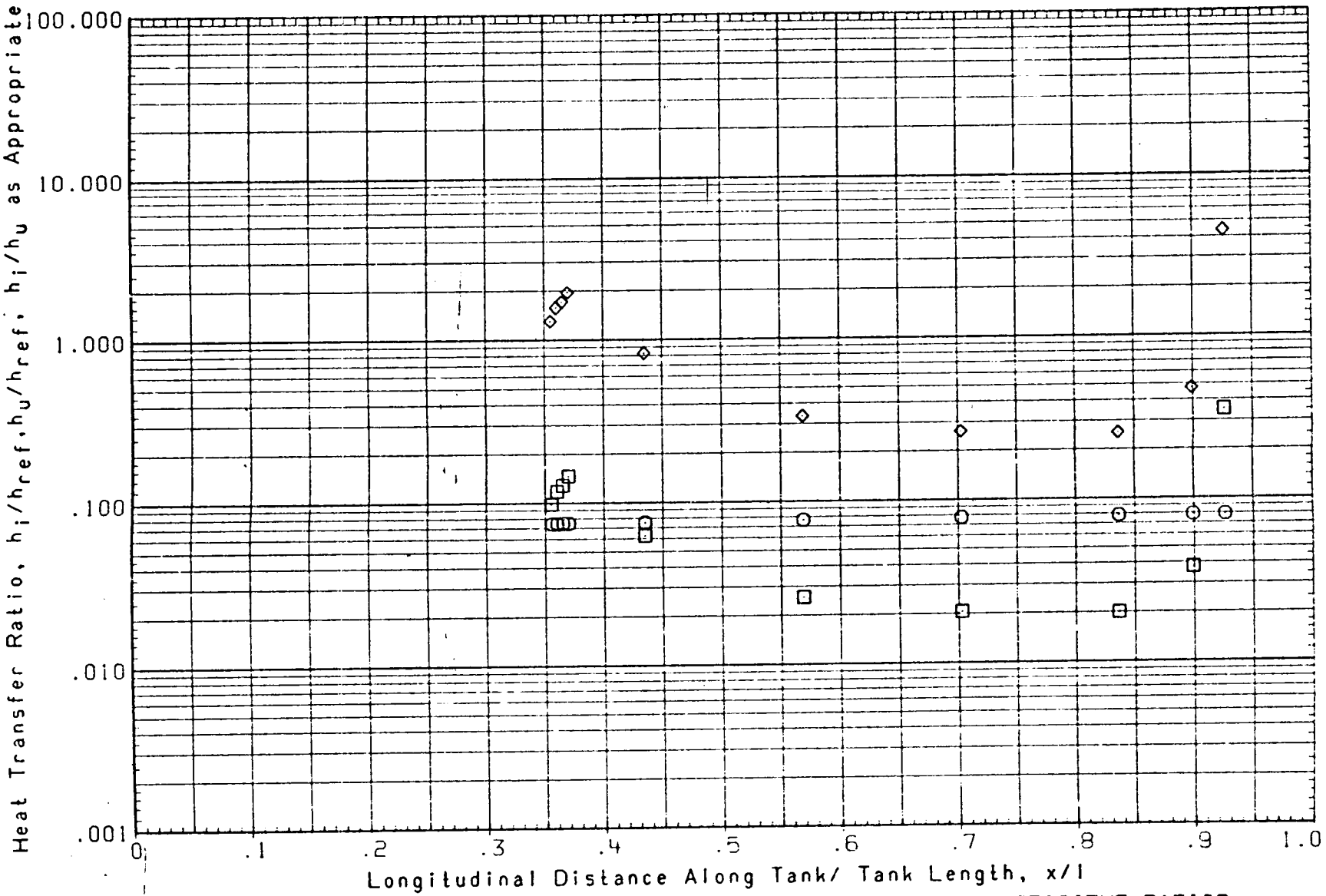


FIG. 17 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = 0

MACH = 4.020 ALPHA = -5.000 PHI = 23.075

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT07)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	.000
(LVFT27)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	.000
(BVFT27)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	.000

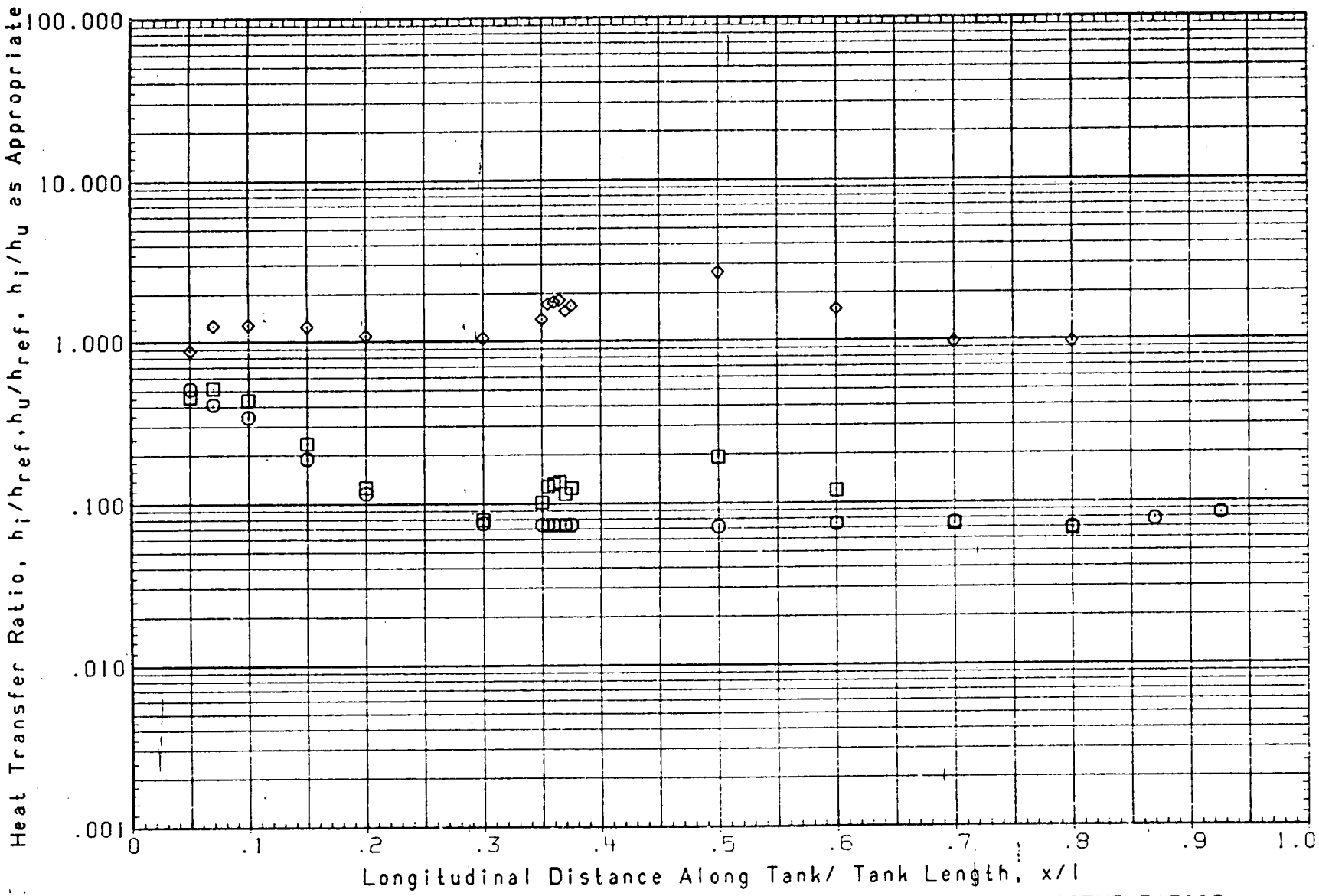


FIG. 17 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = 0

MACH = 4.020 ALPHA = -5.000 PHI = 29.800

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT07)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	.000
(LVFT27)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	.000
(BVFT27)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	.000

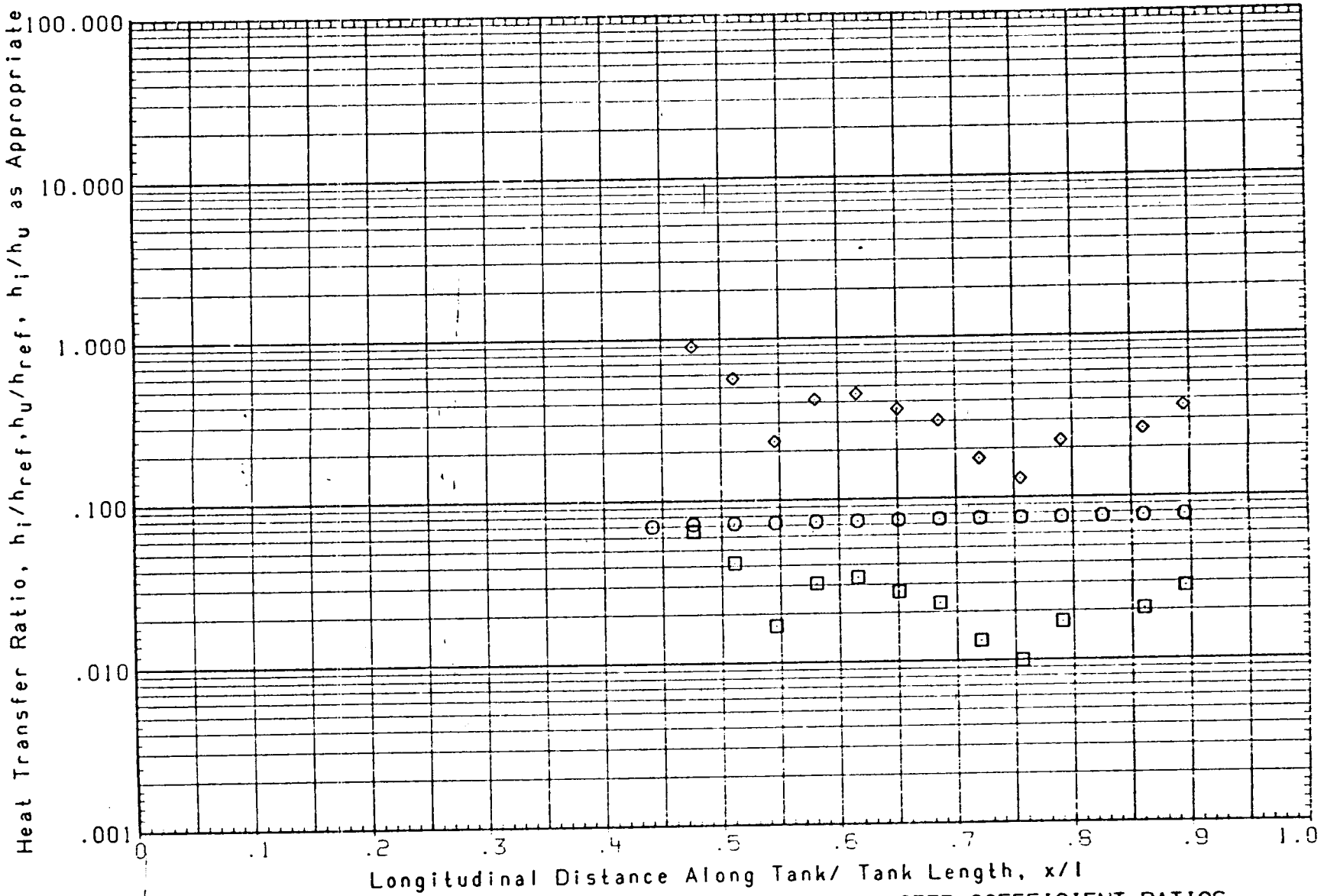


FIG. 17 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = 0

MACH = 4.020 ALPHA = -5.000 PHI = 31.430

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT07)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	.000
(LVFT27)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	.000
(BVFT27)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	.000

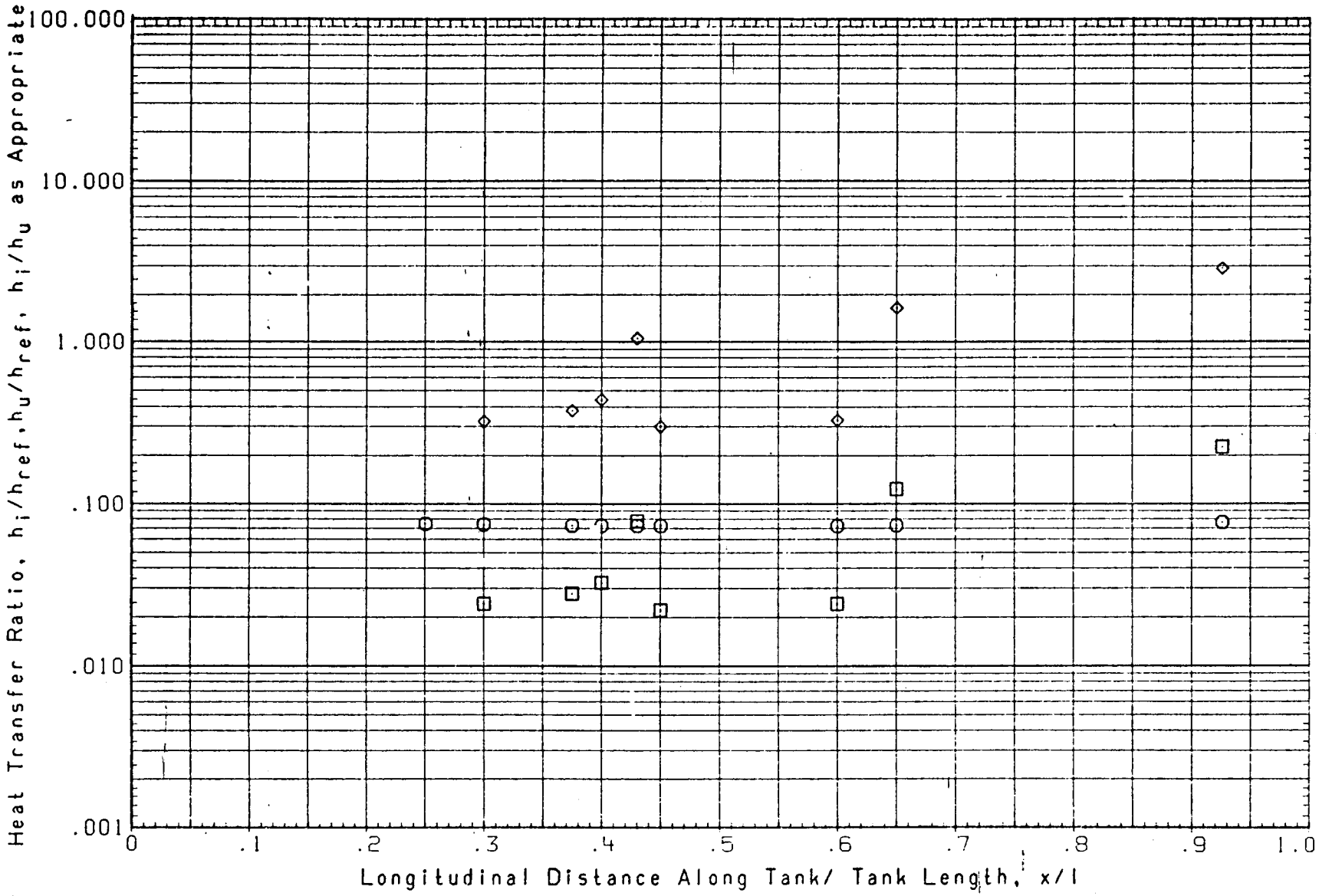


FIG. 17 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = 0

MACH = 4.020 ALPHA = -5.000 PHI = 33.750

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT07)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	.000
(LVFT27)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	.000
(BVFT27)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	.000

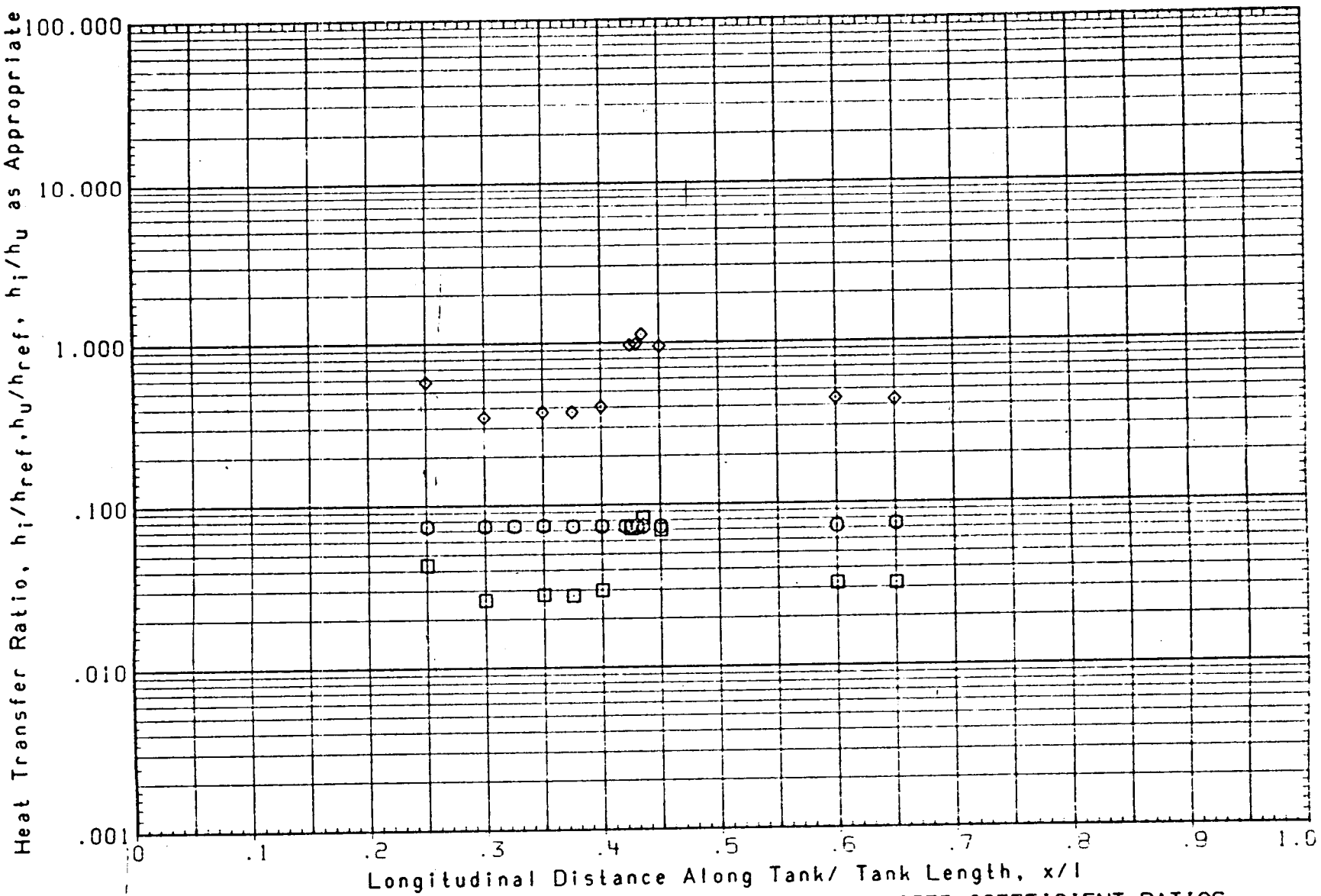


FIG. 17 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = 0

MACH = 4.020 ALPHA = -5.000 PHI = 36.320

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT07)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	.000
(LVFT27)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	.000
(BVFT27)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	.000

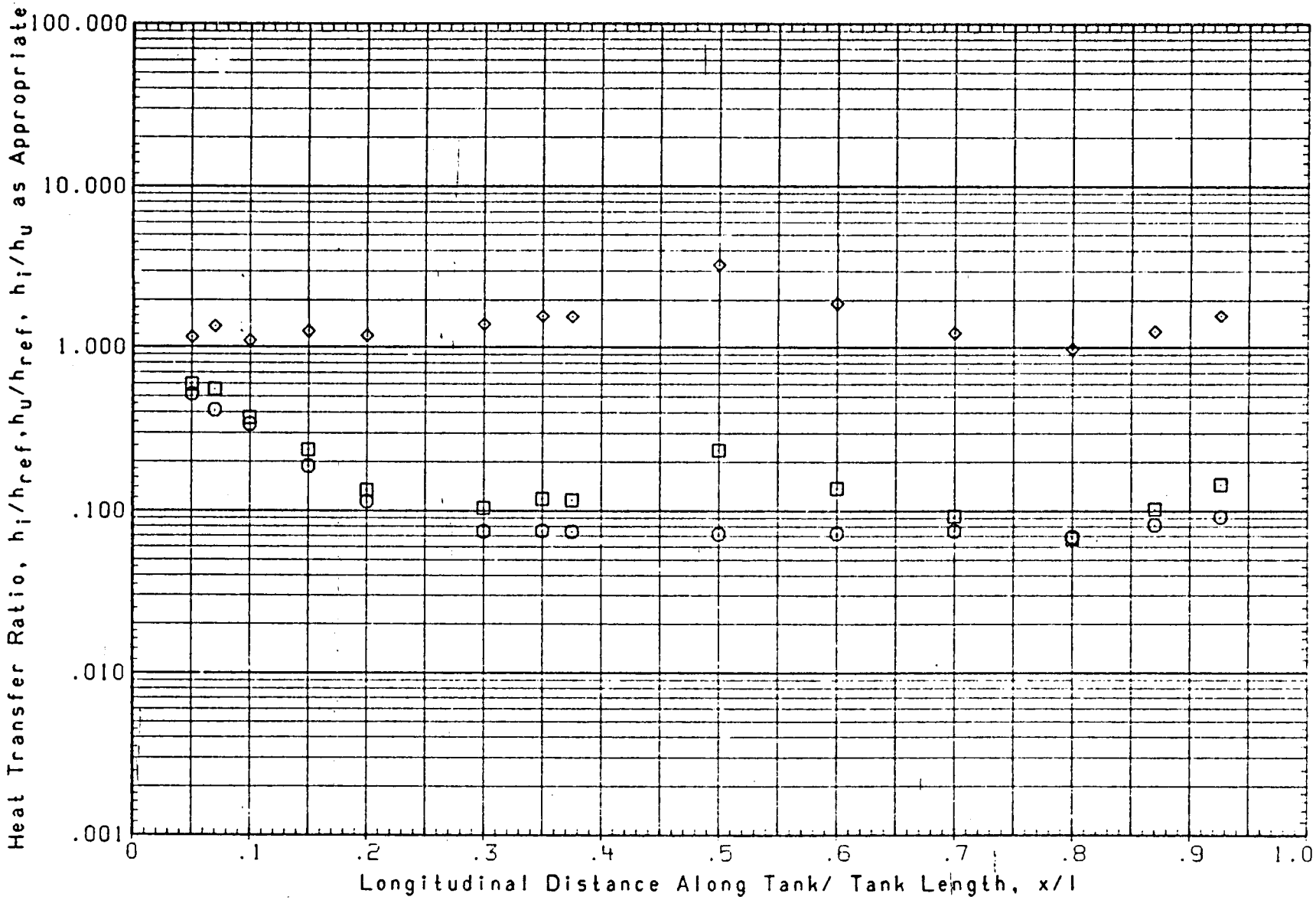


FIG. 17 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = 0

MACH = 4.020 ALPHA = -5.000 PHI = 37.700

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT07)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	.000
(LVFT27)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	.000
(BVFT27)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	.000

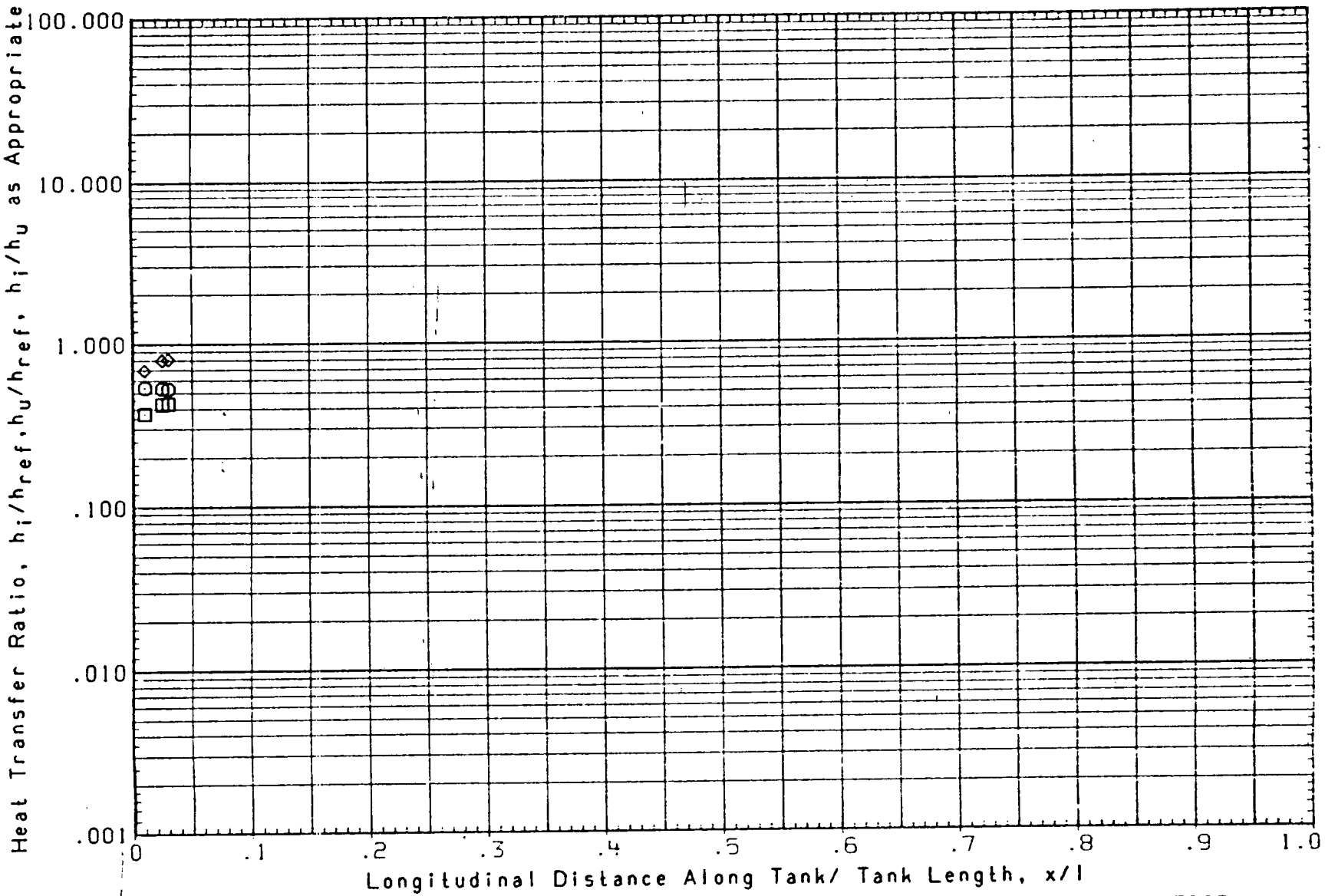


FIG. 17 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = 0

MACH = 4.020 ALPHA = -5.000 PHI = 39.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT07)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	.000
(LVFT27)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	.000
(BVFT27)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	.000

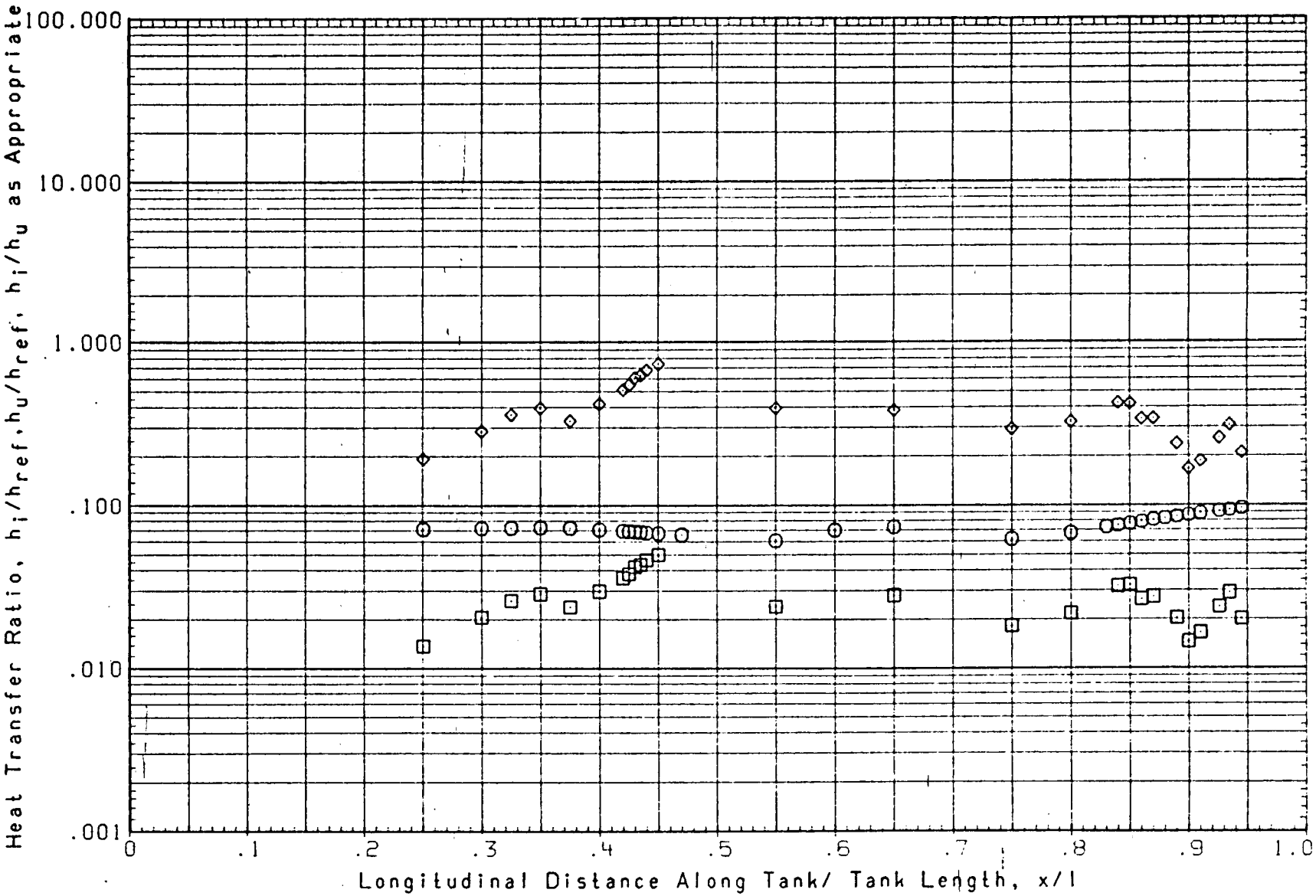


FIG. 17 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = 0

MACH = 4.020 ALPHA = -5.000 PHI = 45.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT07)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	.000
(LVFT27)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	.000
(CVFT27)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	.000

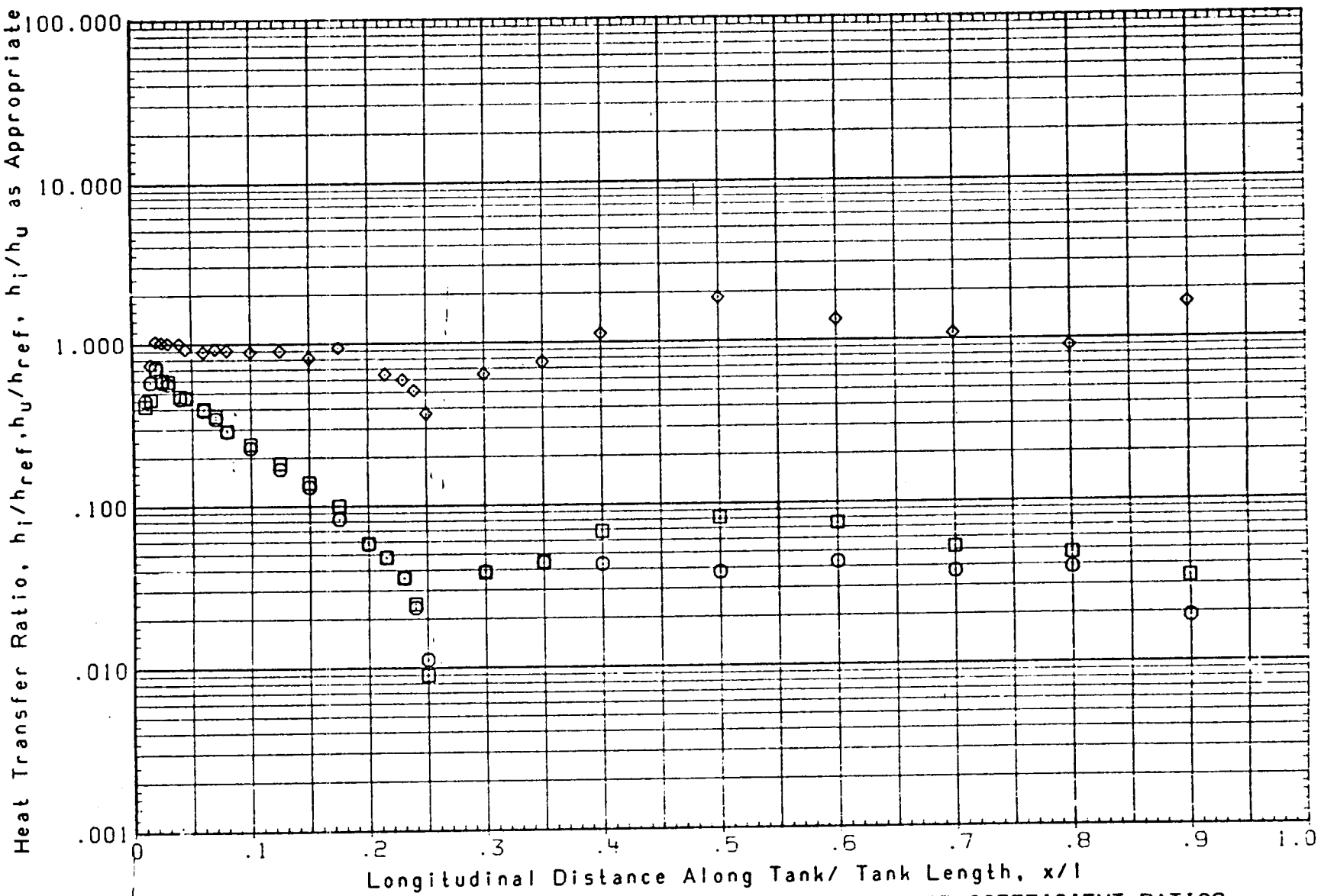


FIG. 18 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = -5, BETA = 0

MACH = 4.020 ALPHA = -5.000 PHI = 180.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT07)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	.000
(LVFT27)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	.000
(CVFT27)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	.000

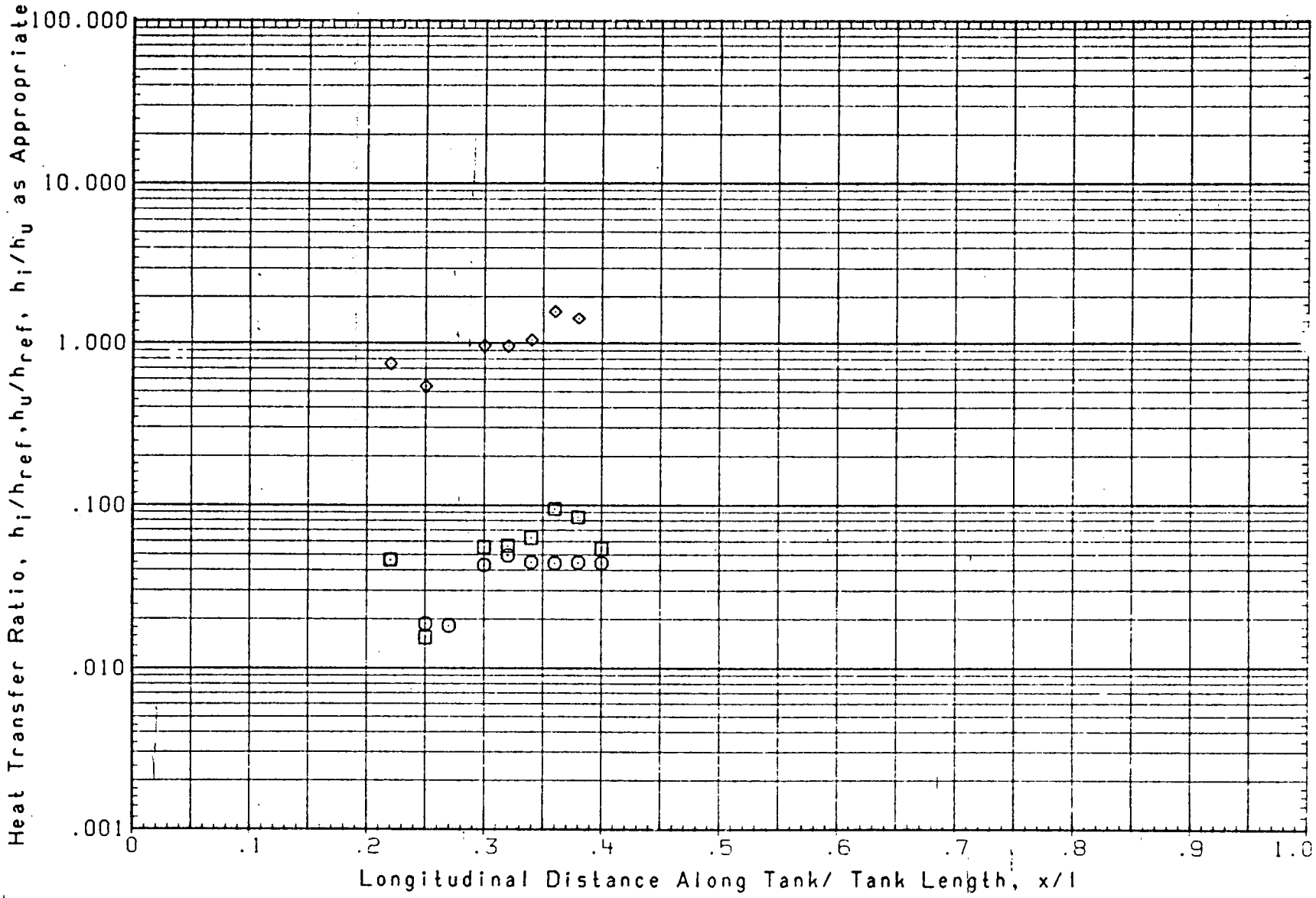


FIG. 18 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = -5, BETA = 0

MACH = 4.020 ALPHA = -5.000 PHI = 235.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT07)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	.000
(LVFT27)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	.000
(CVFT27)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	.000

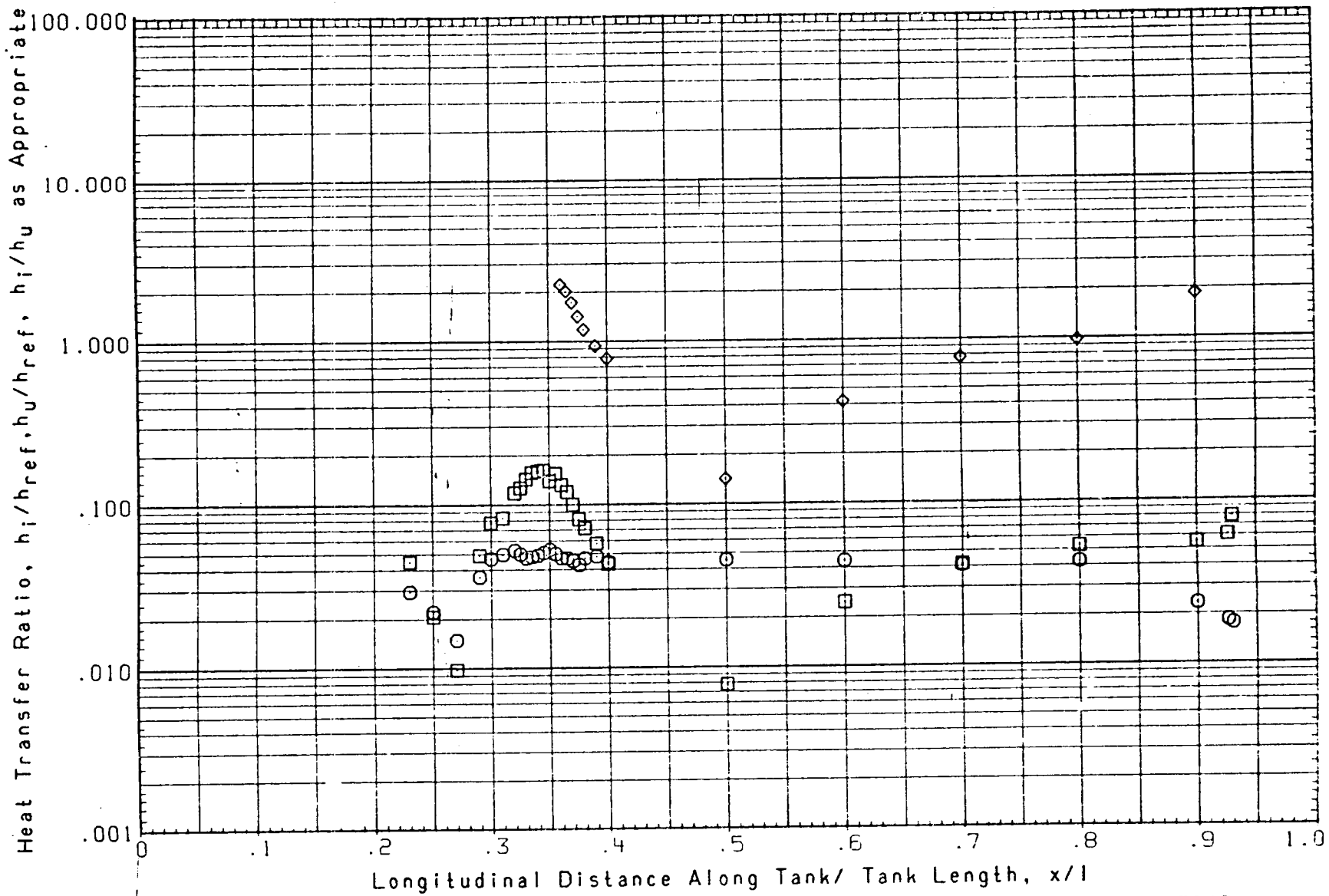


FIG. 18 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = -5, BETA = 0

MACH = 4.020 ALPHA = -5.000 PHI = 247.500

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT07)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	.000
(LVFT27)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	.000
(CVFT27)	◇	DATA NOT AVAILABLE	-5.000	.000

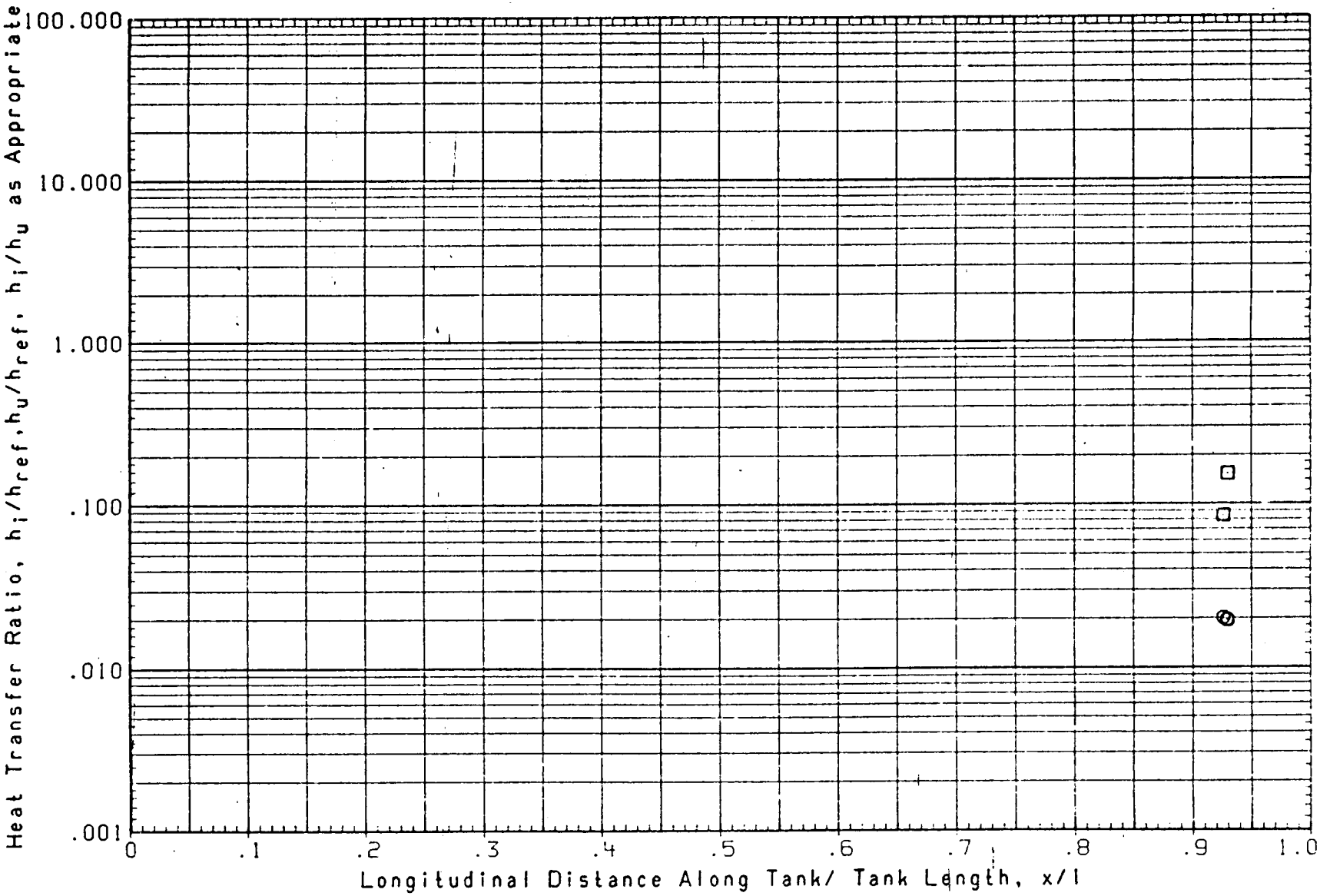


FIG. 18 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = -5, BETA = 0

MACH = 4.020 ALPHA = -5.000 PHI = 250.570

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT07)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	.000
(LVFT27)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	.000
(CVFT27)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	.000

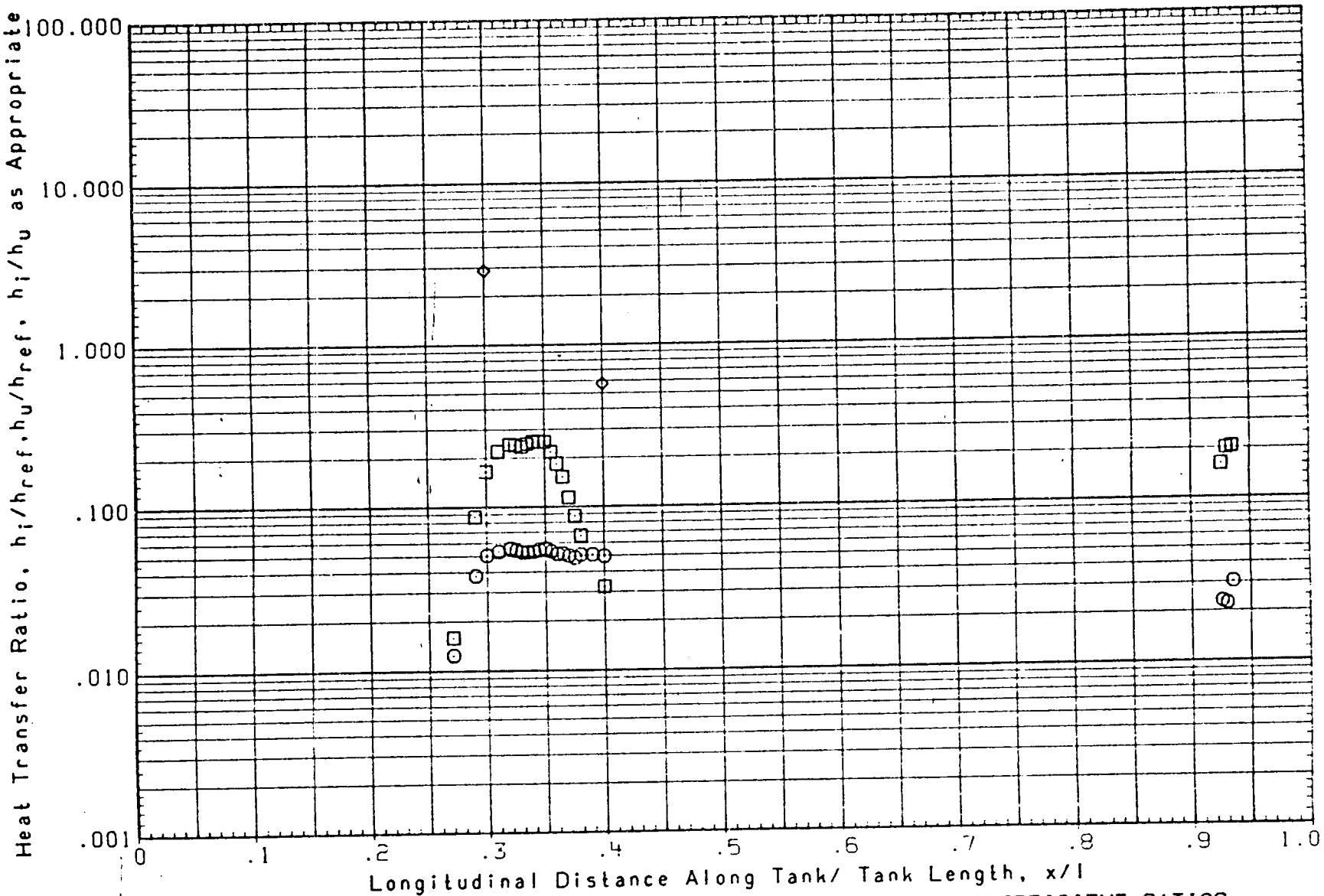


FIG. 18 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = -5, BETA = 0

MACH = 4.020 ALPHA = -5.000 PHI = 258.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT07)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	.000
(LVFT27)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	.000
(CVFT27)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	.000

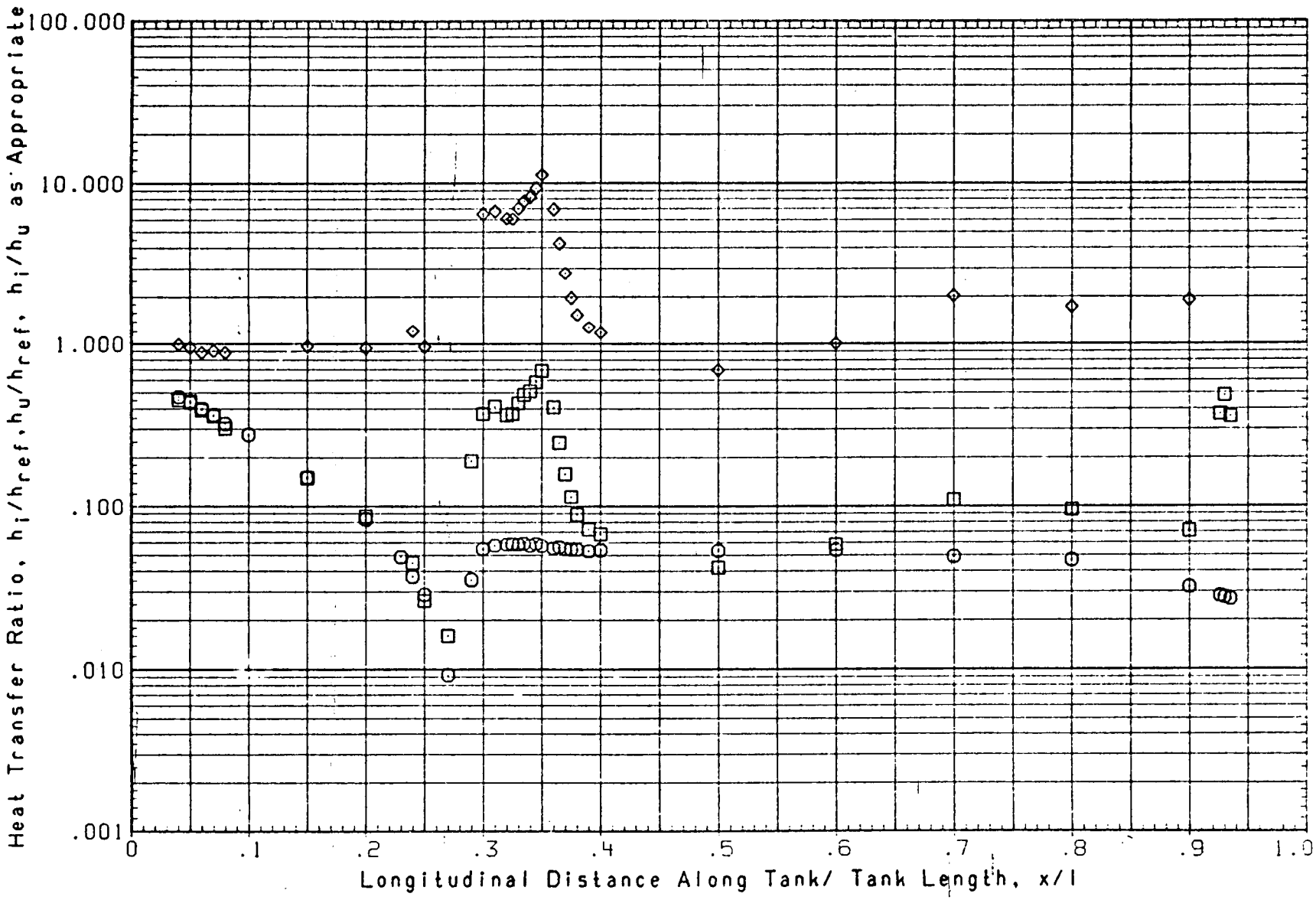


FIG. 18 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = -5, BETA = 0

MACH = 4.020 ALPHA = -5.000 PHI = 270.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT08)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-3.000
(LVFT28)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-3.000
(BVFT28)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-3.000

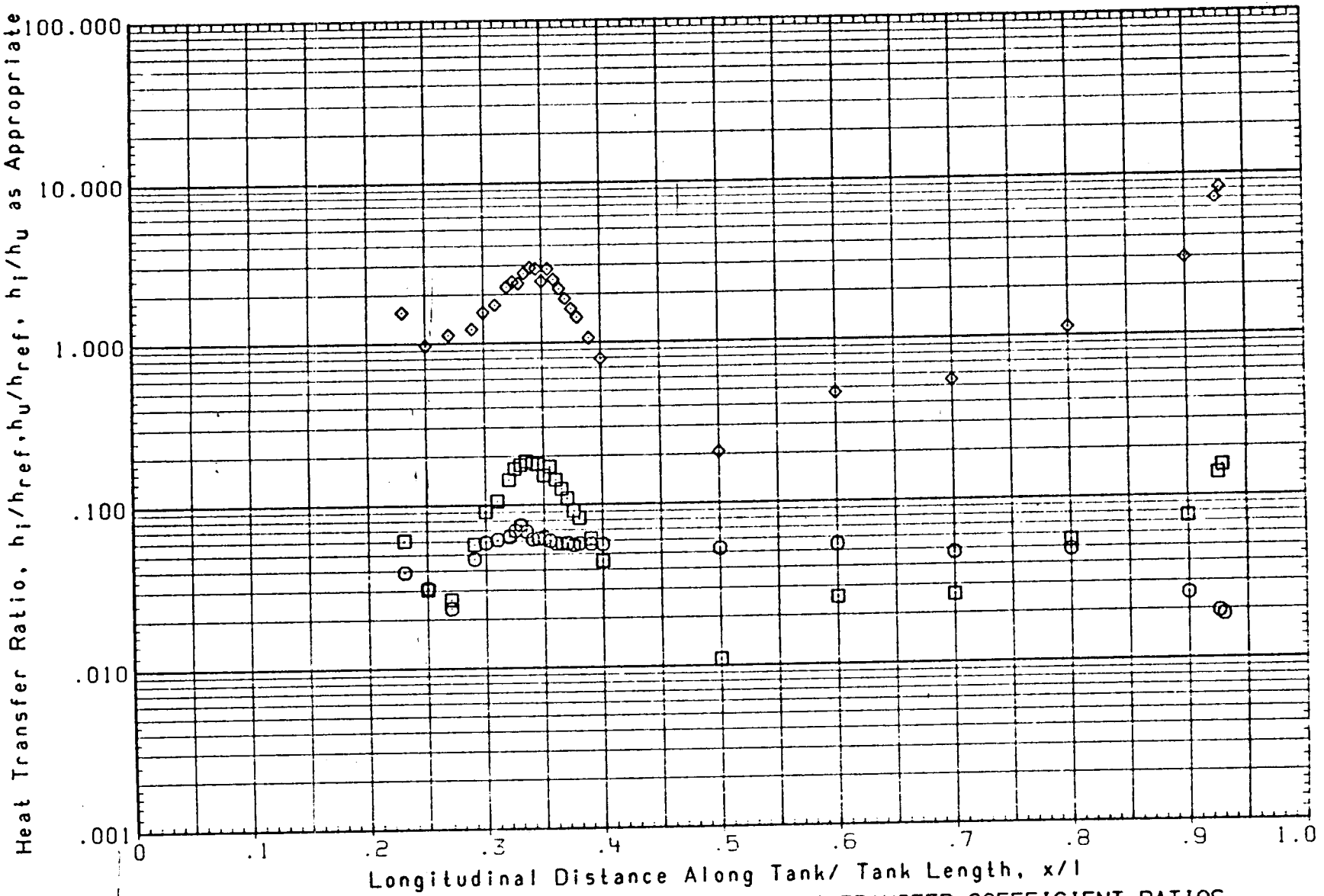


FIG. 19 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS WINDWARD SIDE, ALPHA = -5, BETA = -3

MACH = 4.020 ALPHA = -5.000 PHI = 247.500

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT08)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-3.000
(LVFT28)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-3.000
(BVFT28)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-3.000

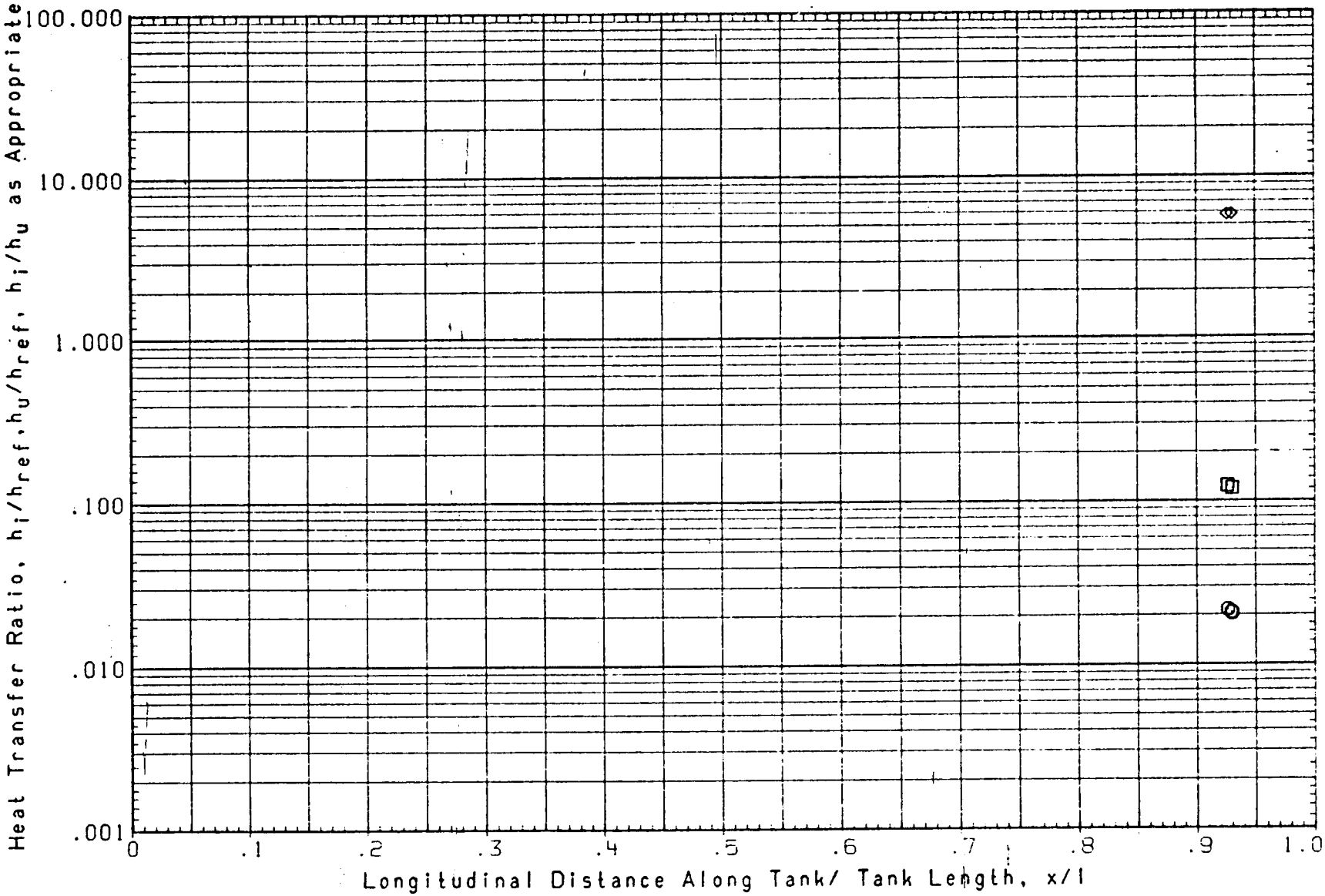


FIG. 19 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -3

MACH = 4.020 ALPHA = -5.000 PHI = 250.570

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT08)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-3.000
(LVFT28)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-3.000
(BVFT28)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-3.000

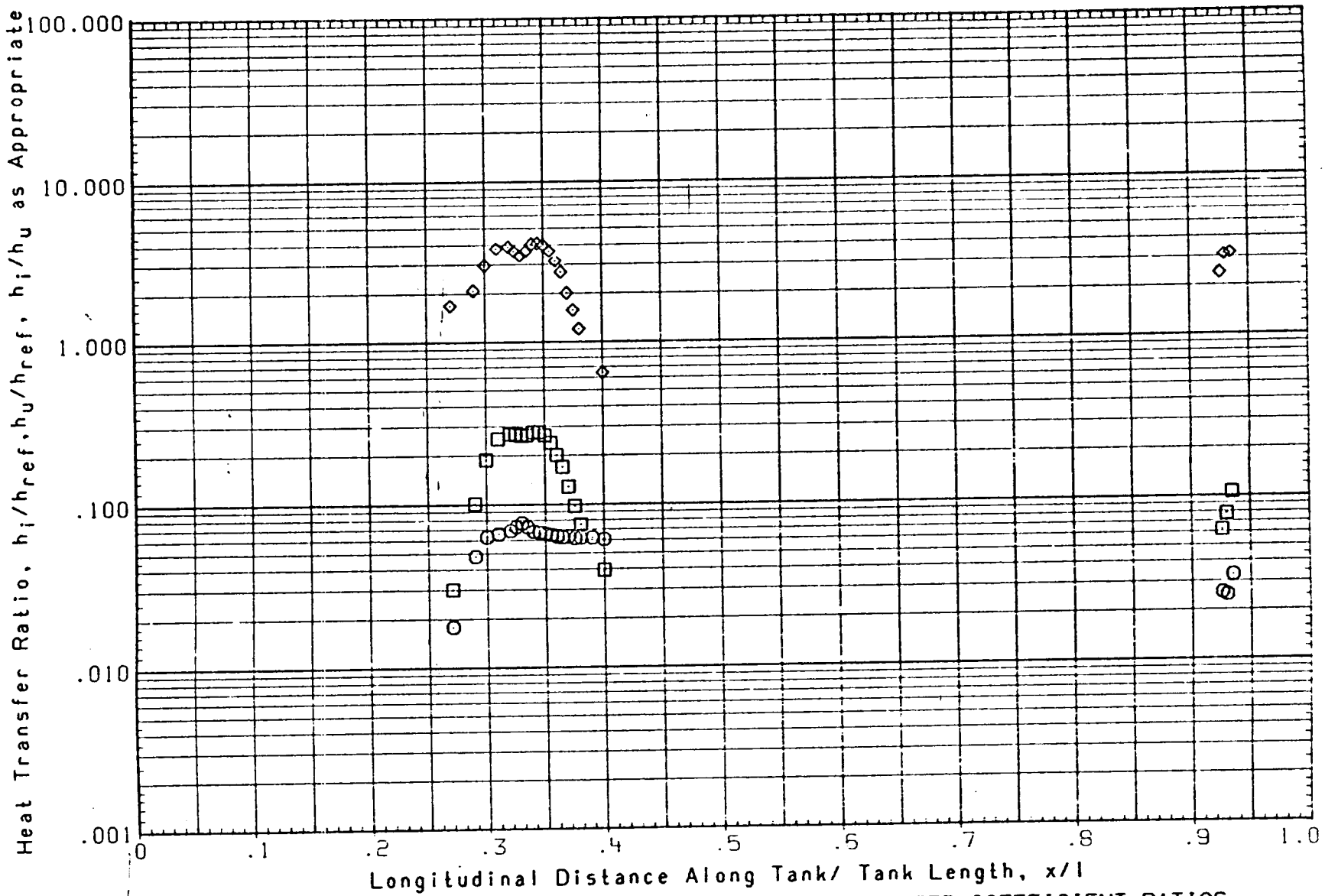


FIG. 19 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -3

MACH = 4.020 ALPHA = -5.000 PHI = 258.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT08)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-3.000
(LVFT28)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-3.000
(BVFT28)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-3.000

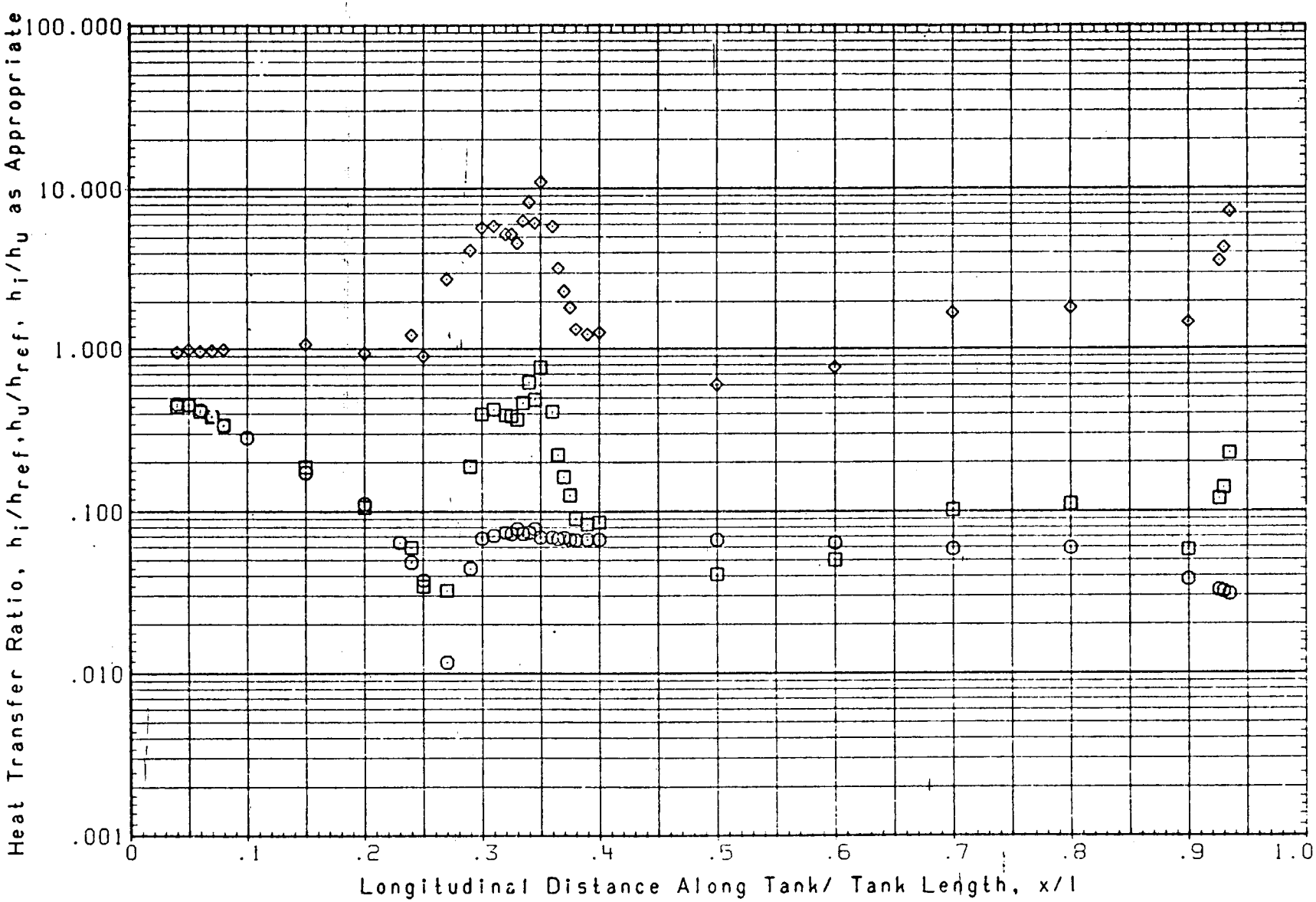


FIG. 19 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -3

MACH = 4.020 ALPHA = -5.000 PHI = 270.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT08)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-3.000
(LVFT28)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-3.000
(BVFT28)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-3.000

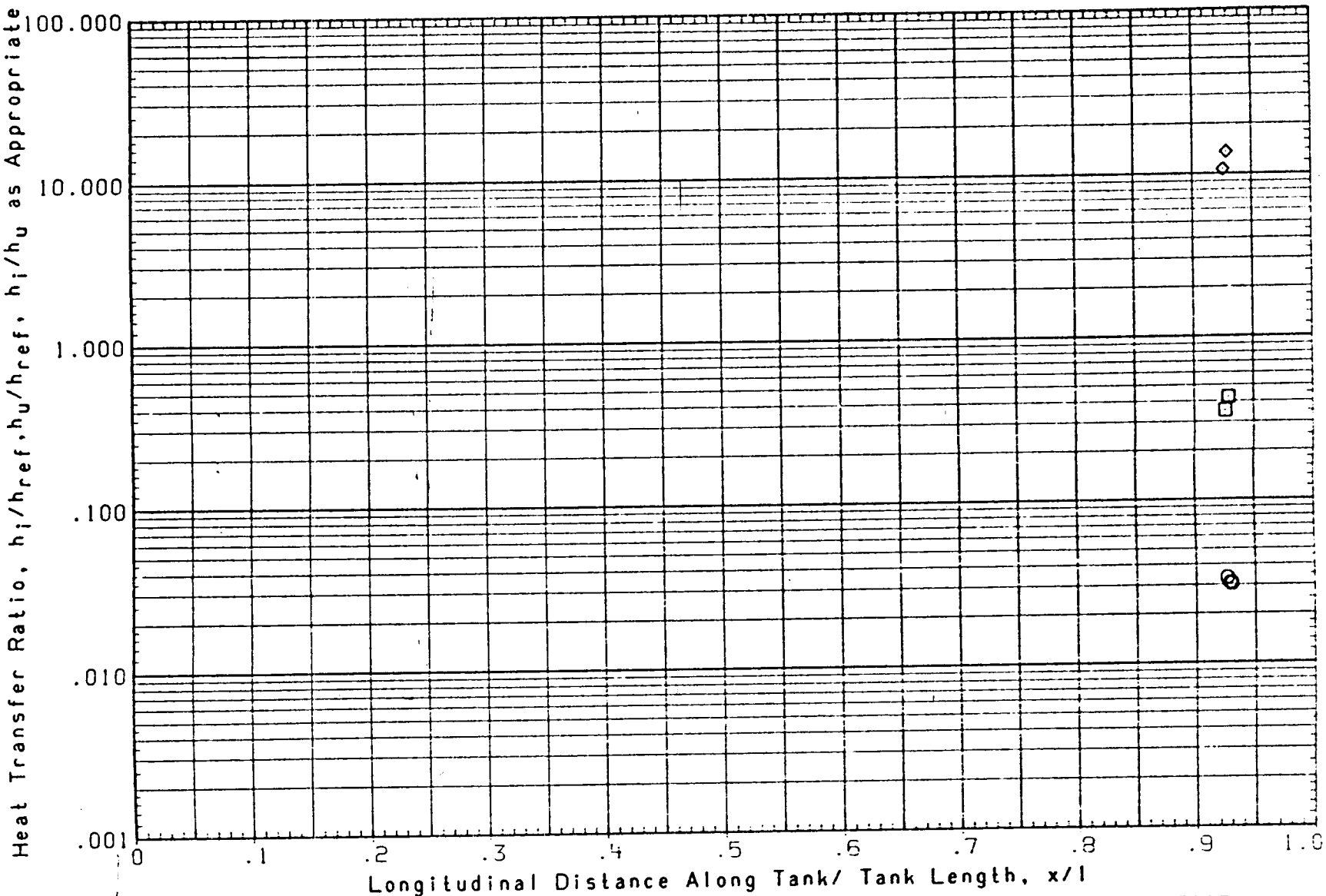


FIG. 19 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -3

MACH = 4.020 ALPHA = -5.000 PHI = 289.430

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT08)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-3.000
(LVFT28)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-3.000
(BVFT28)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-3.000

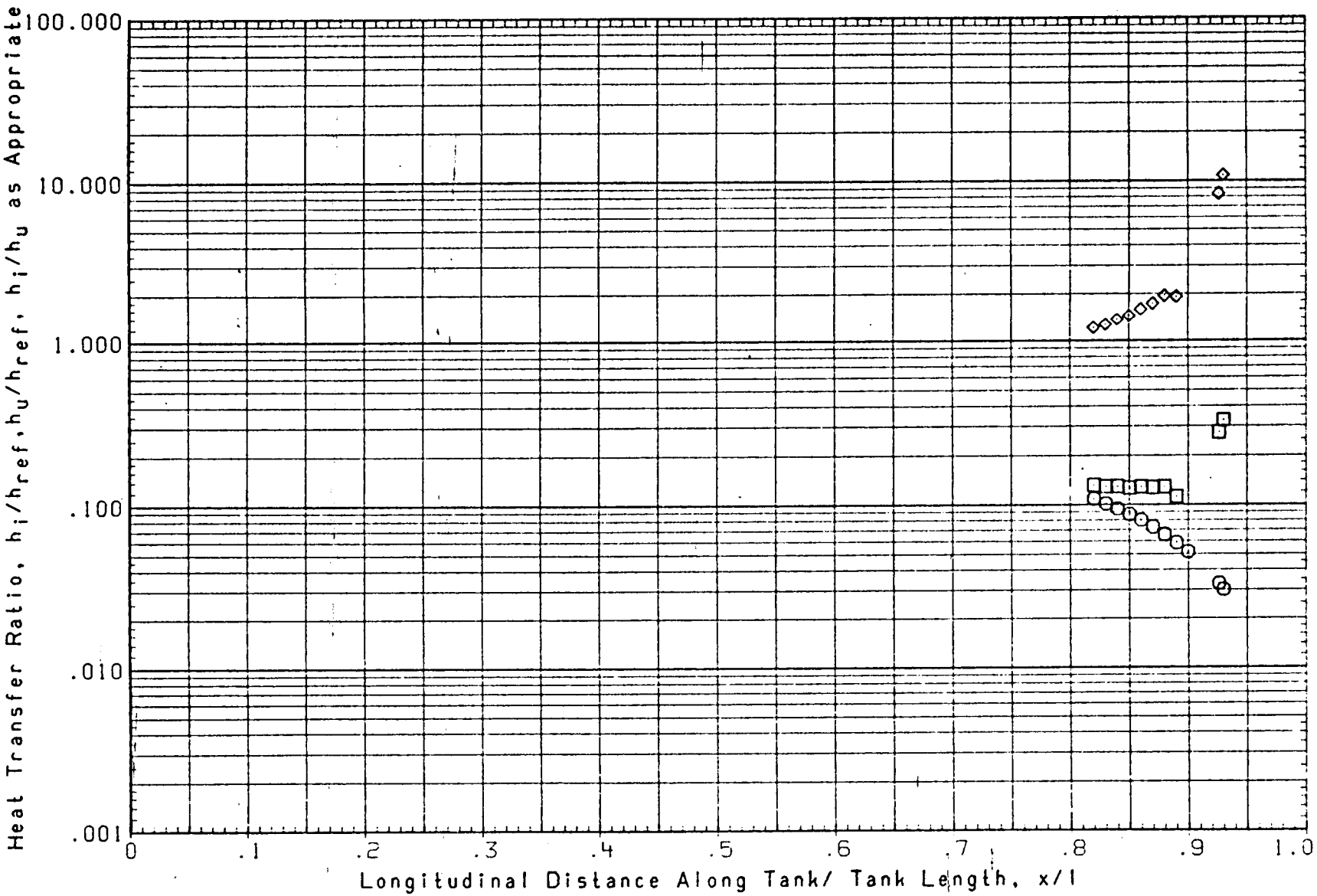


FIG. 19 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -3

MACH = 4.020 ALPHA = -5.000 PHI = 292.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT0B)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-3.000
(LVFT2B)	□	IH41B(V41A-A4A) C T S (SPIKED ET DATA) HI/HREF	-5.000	-3.000
(BVFT2B)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-3.000

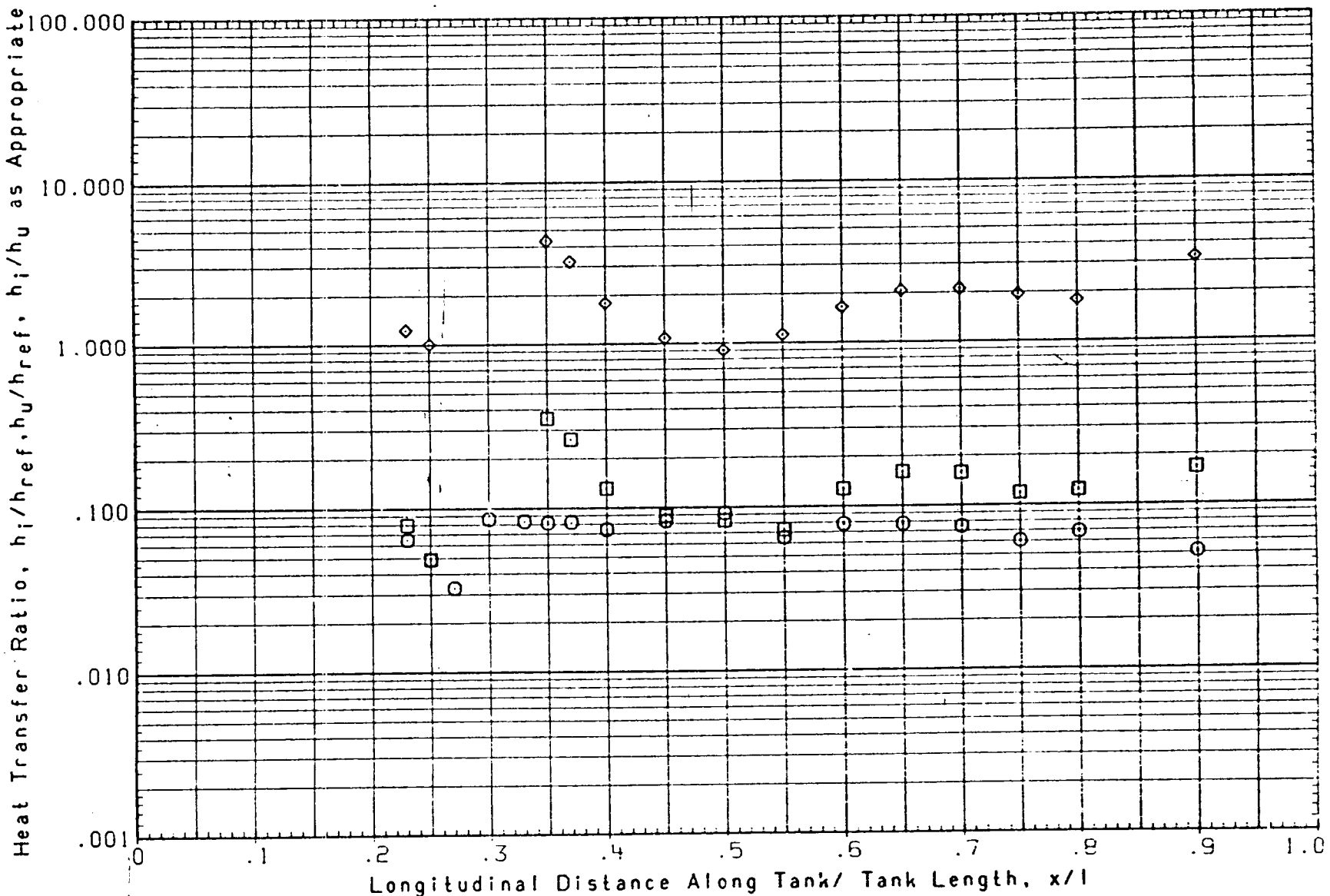


FIG. 19 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -3

MACH = 4.020 ALPHA = -5.000 PHI = 292.500

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT08)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-3.000
(LVFT28)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-3.000
(BVFT28)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-3.000

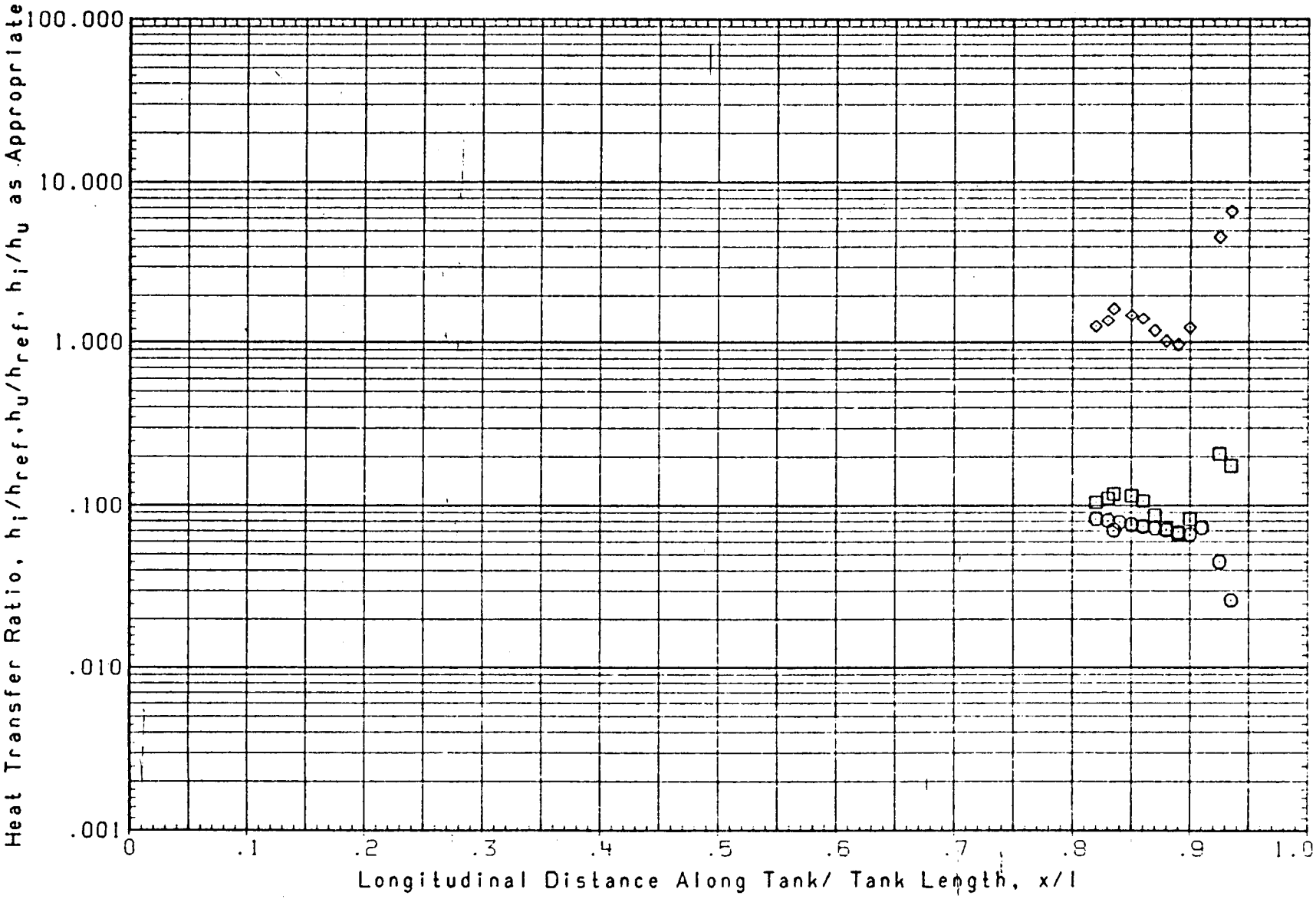


FIG. 19 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -3

MACH = 4.020 ALPHA = -5.000 PHI = 301.500

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT08)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-3.000
(LVFT28)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-3.000
(BVFT28)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-3.000

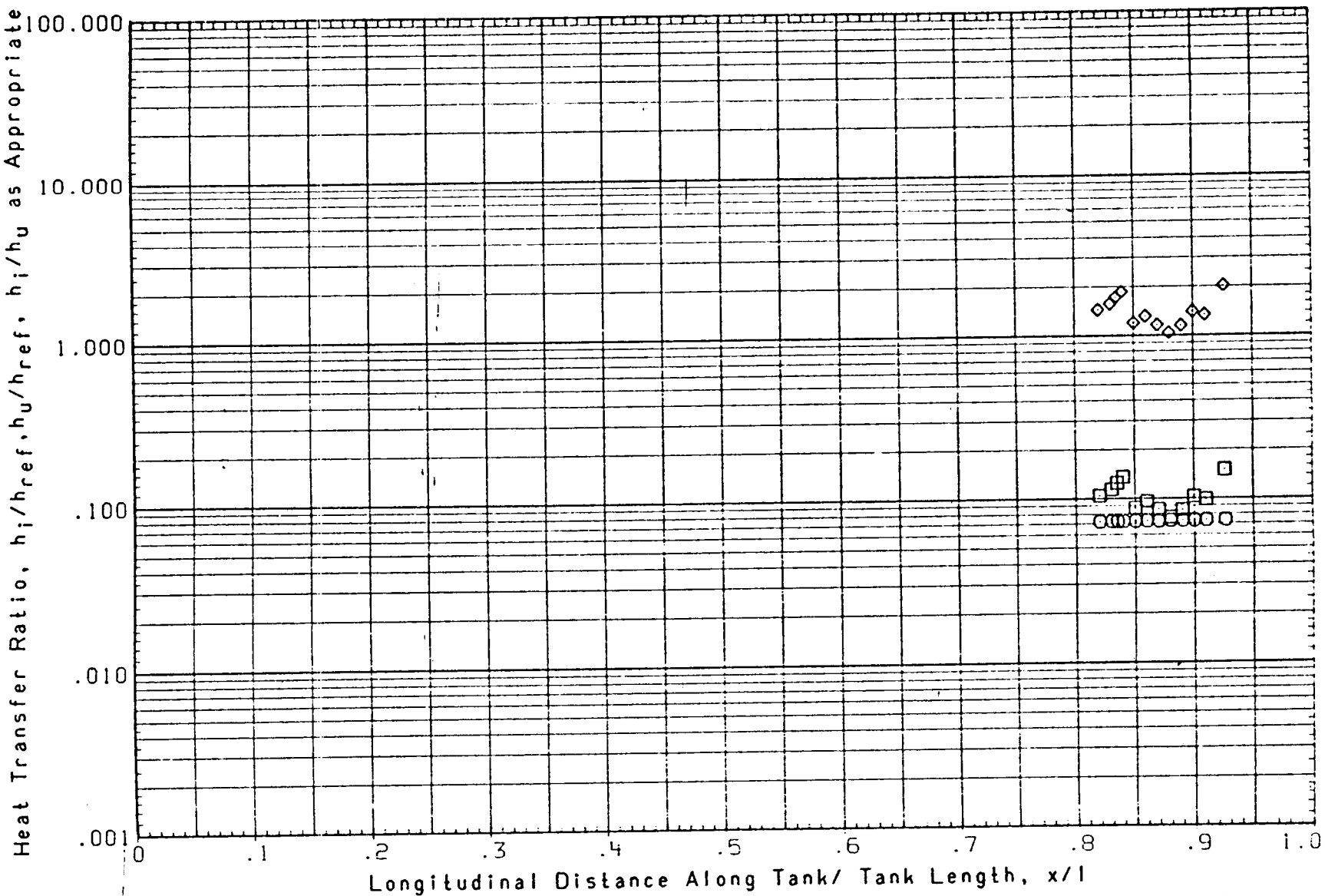


FIG. 19 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS WINDWARD SIDE, ALPHA = -5, BETA = -3

MACH = 4.020 ALPHA = -5.000 PHI = 305.400

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT08)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-3.000
(LVFT28)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-3.000
(BVFT28)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-3.000

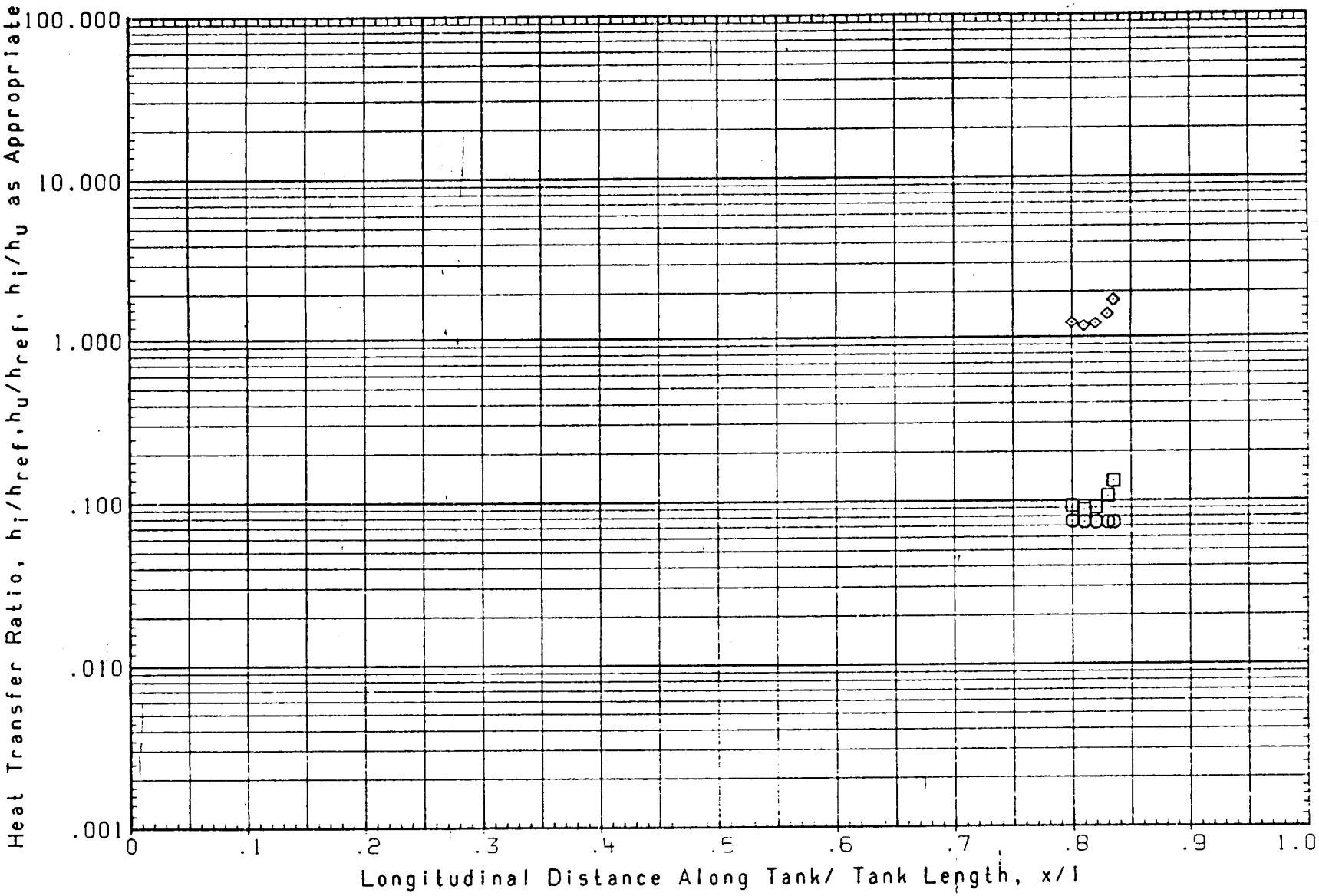


FIG. 19 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -3

MACH = 4.020 ALPHA = -5.000 PHI = 309.300

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT08)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-3.000
(LVFT28)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-3.000
(BVFT28)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-3.000

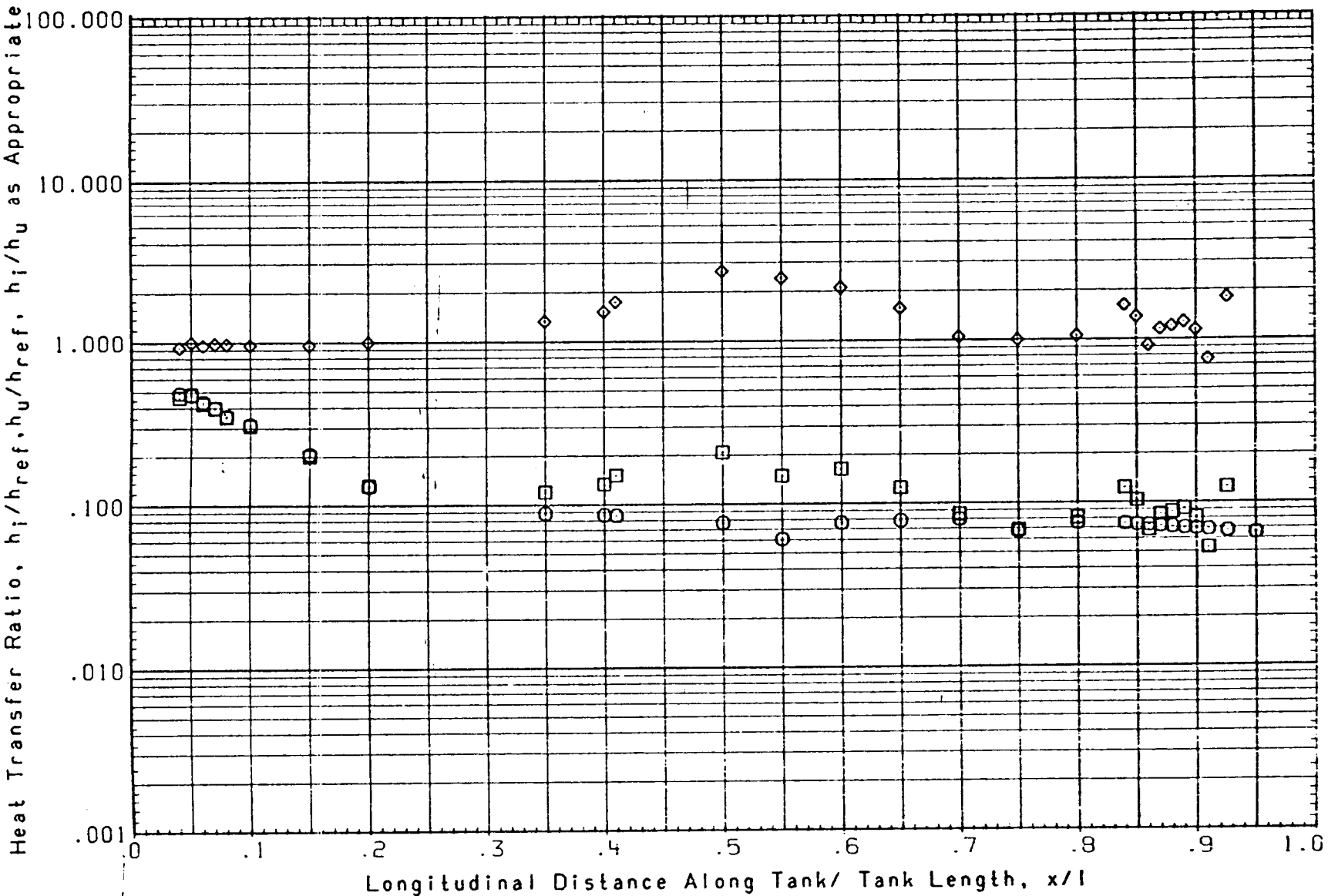


FIG. 19 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -3

MACH = 4.020 ALPHA = -5.000 PHI = 315.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT08)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-3.000
(LVFT28)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-3.000
(BVFT28)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-3.000

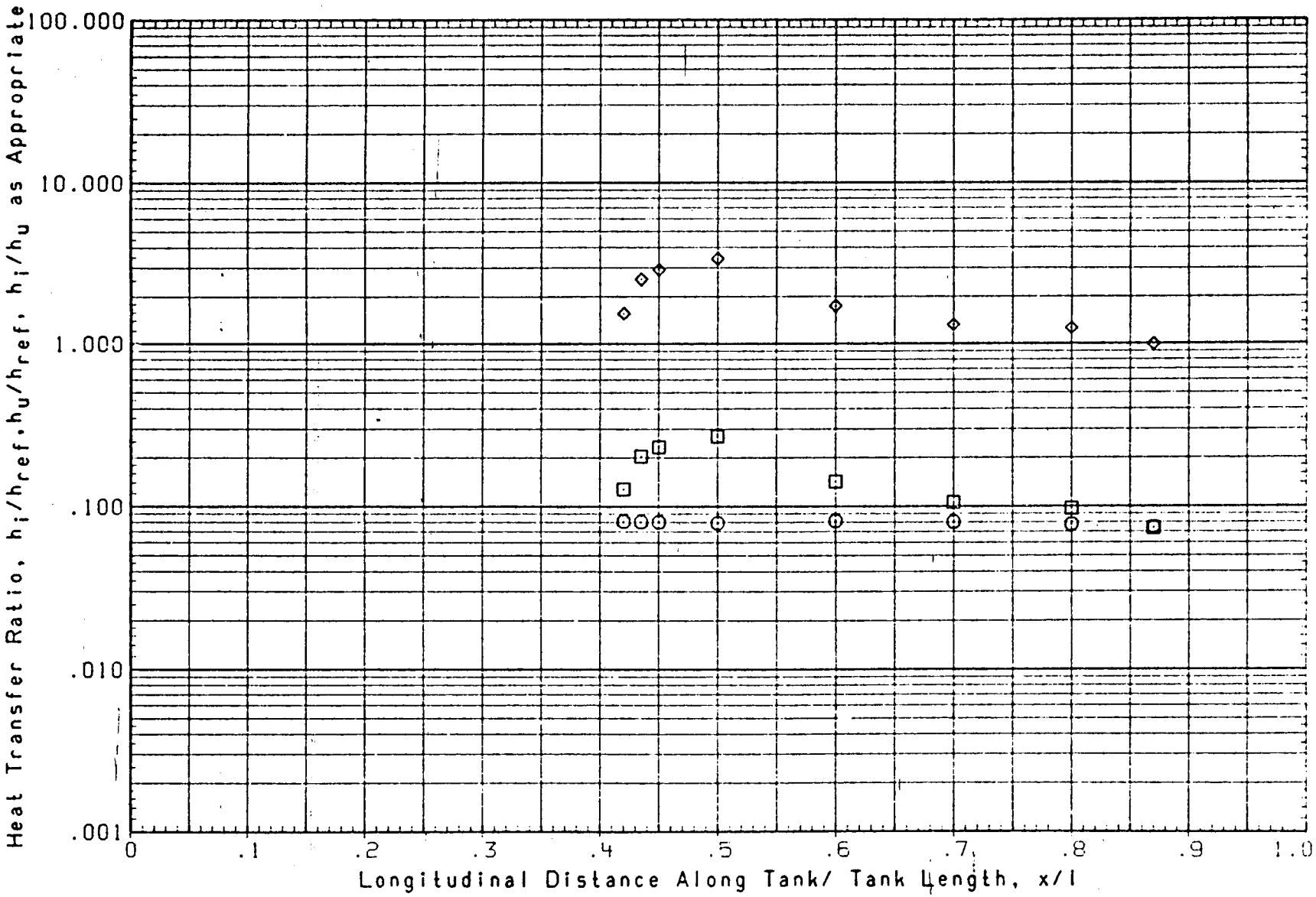


FIG. 19 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -3

MACH = 4.020 ALPHA = -5.000 PHI = 322.300

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT08)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-3.000
(LVFT28)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-3.000
(BVFT28)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-3.000

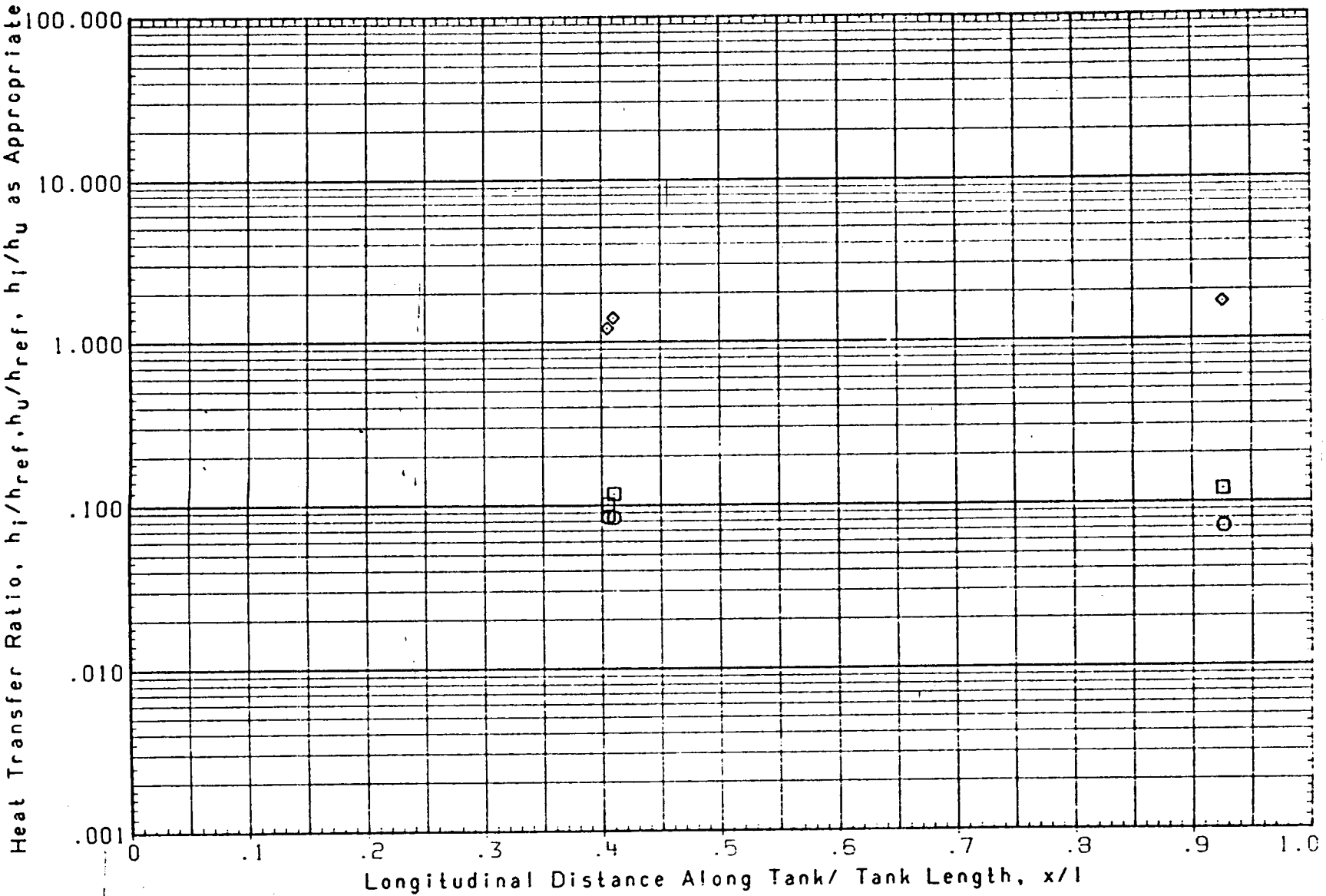


FIG. 19 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS WINDWARD SIDE, ALPHA = -5, BETA = -3

MACH = 4.020 ALPHA = -5.000 PHI = 324.450

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT08)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-3.000
(LVFT28)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-3.000
(BVFT28)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-3.000

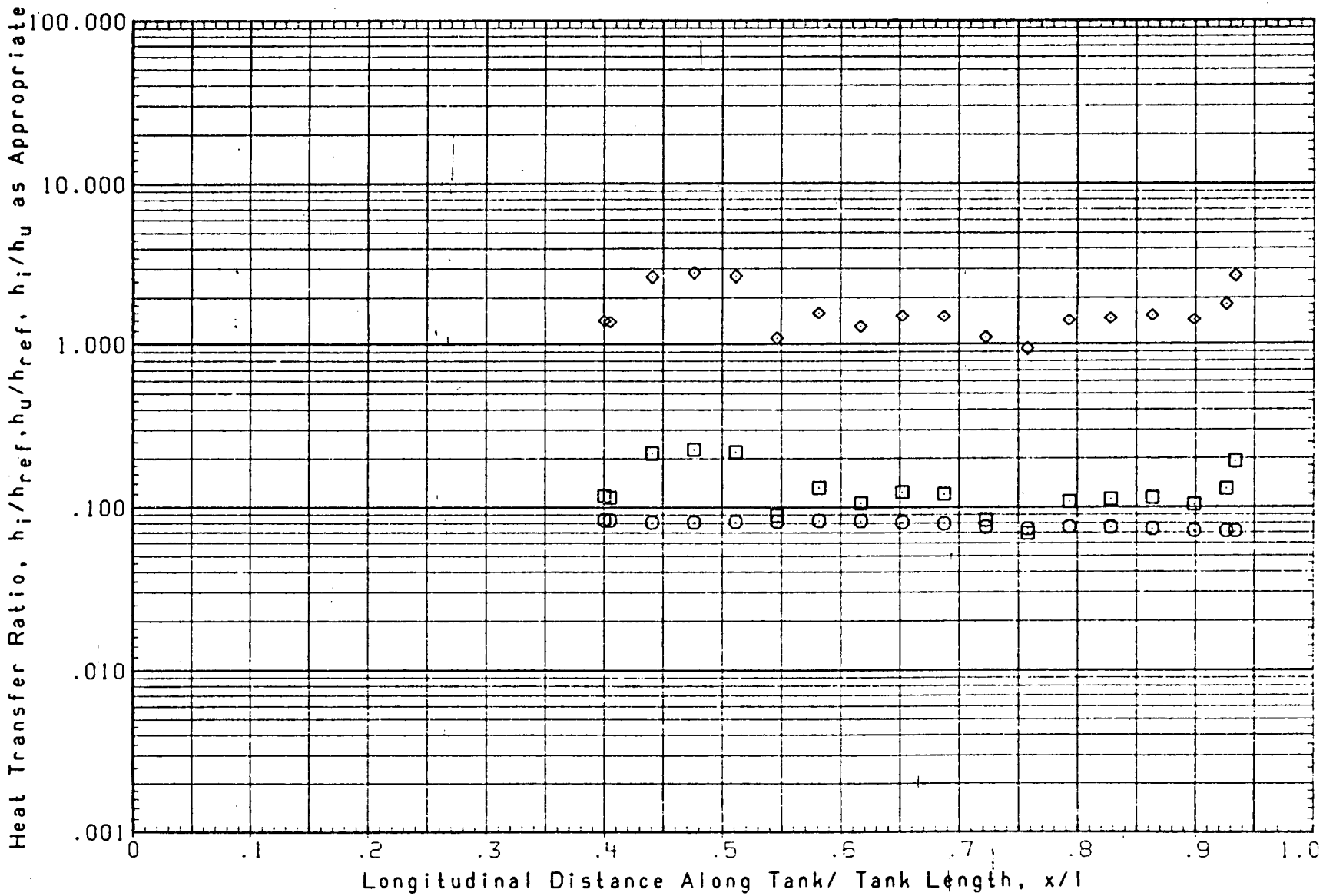


FIG. 19 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -3

MACH = 4.020 ALPHA = -5.000 PHI = 325.850

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT08)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-3.000
(LVFT28)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-3.000
(BVFT28)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-3.000

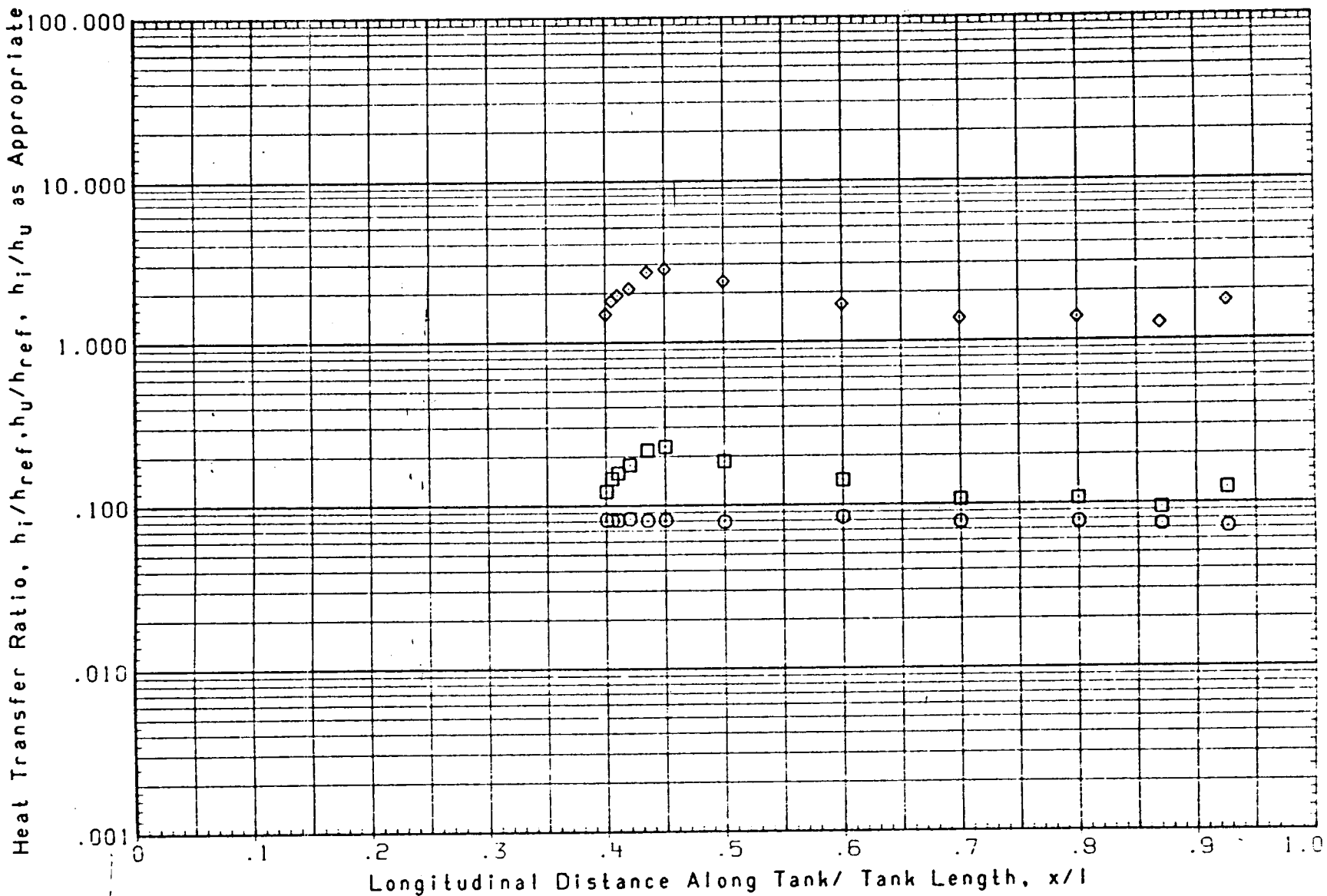


FIG. 19 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS WINDWARD SIDE, ALPHA = -5, BETA = -3

MACH = 4.020 ALPHA = -5.000 PHI = 330.200

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT08)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-3.000
(LVFT28)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-3.000
(BVFT28)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-3.000

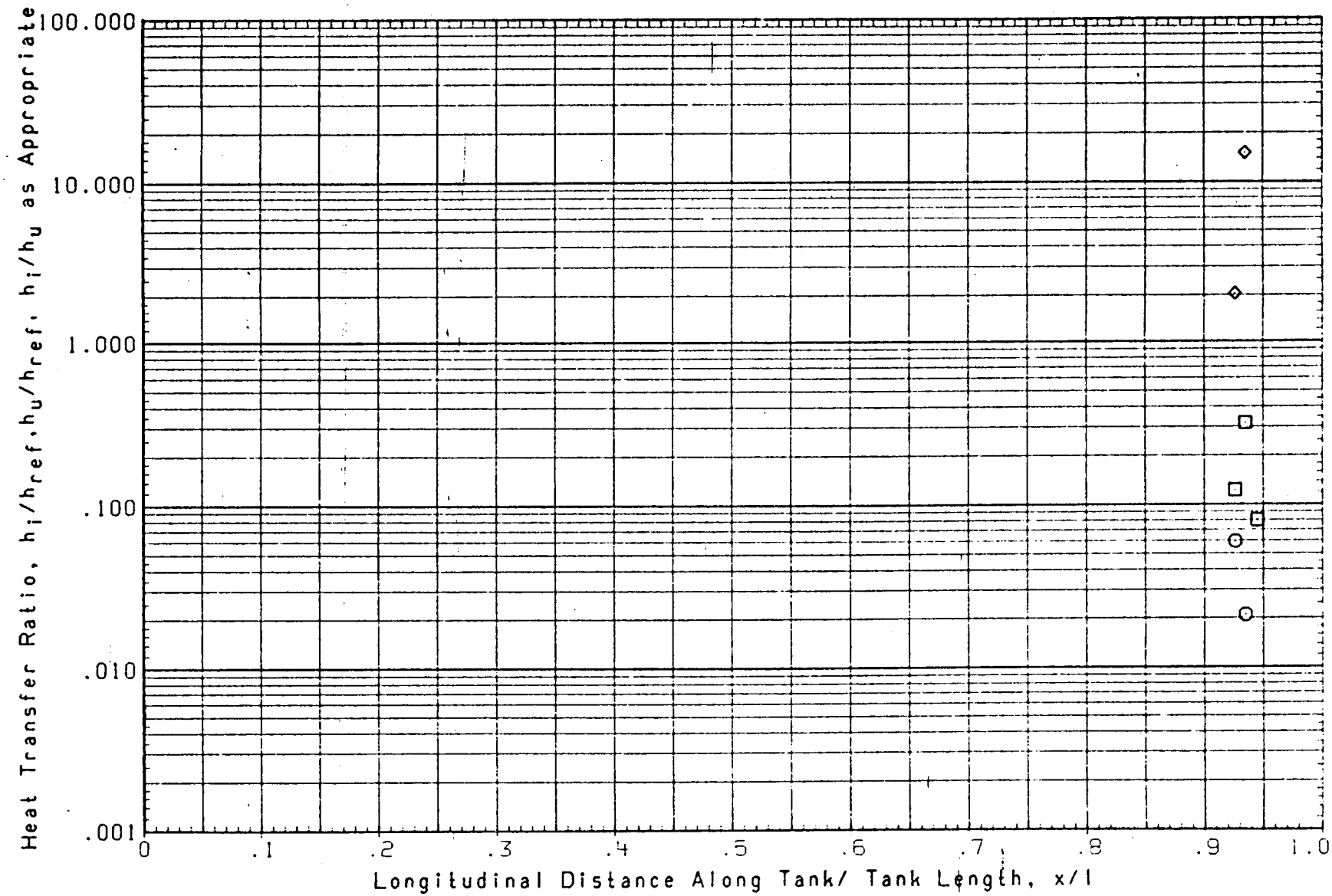


FIG. 19 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -3

MACH = 4.020 ALPHA = -5.000 PHI = 334.950

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT08)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-3.000
(LVFT28)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-3.000
(BVFT28)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-3.000

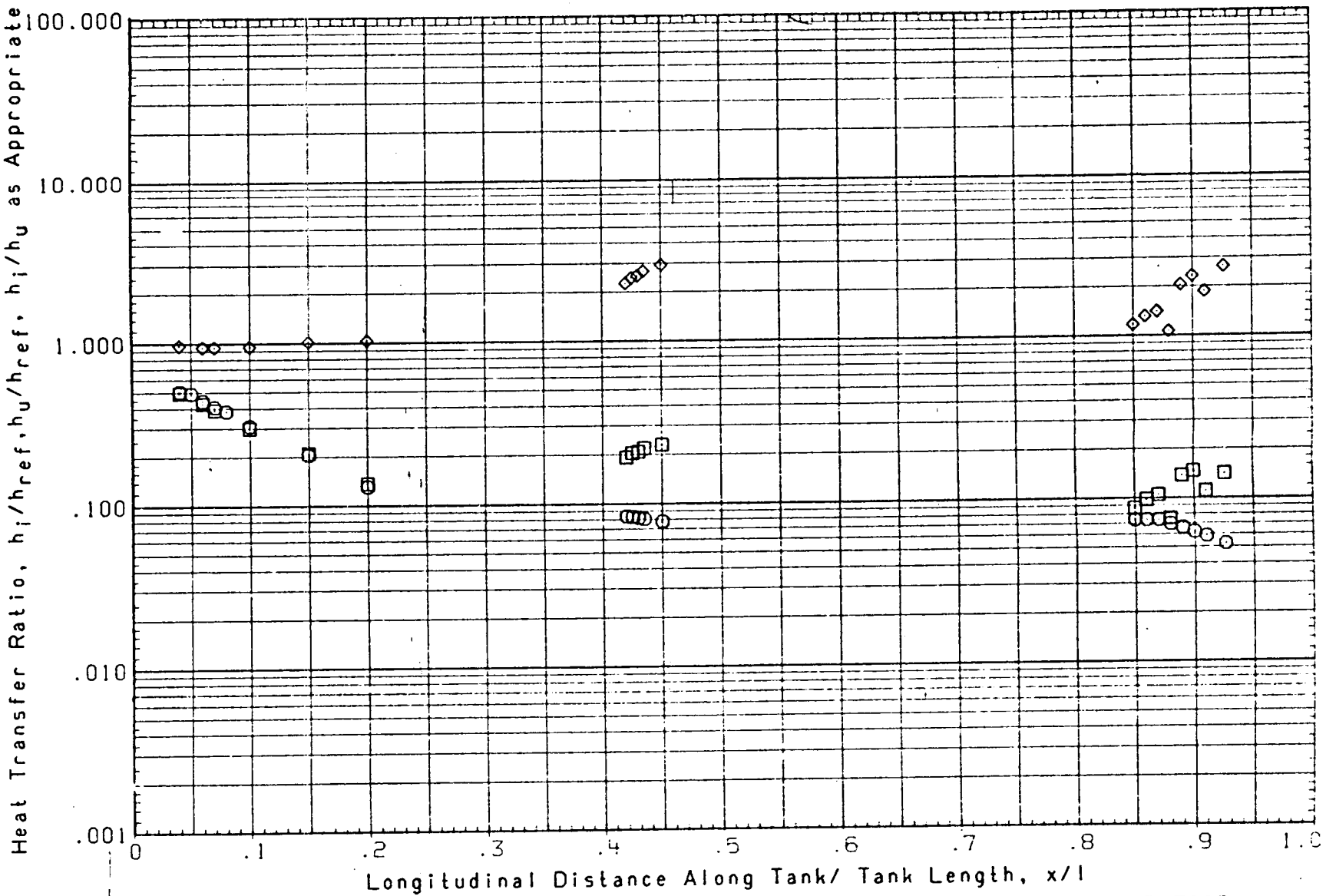


FIG. 19 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -3

MACH = 4.020 ALPHA = -5.000 PHI = 337.500

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT08)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-3.000
(LVFT28)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-3.000
(BVFT28)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-3.000

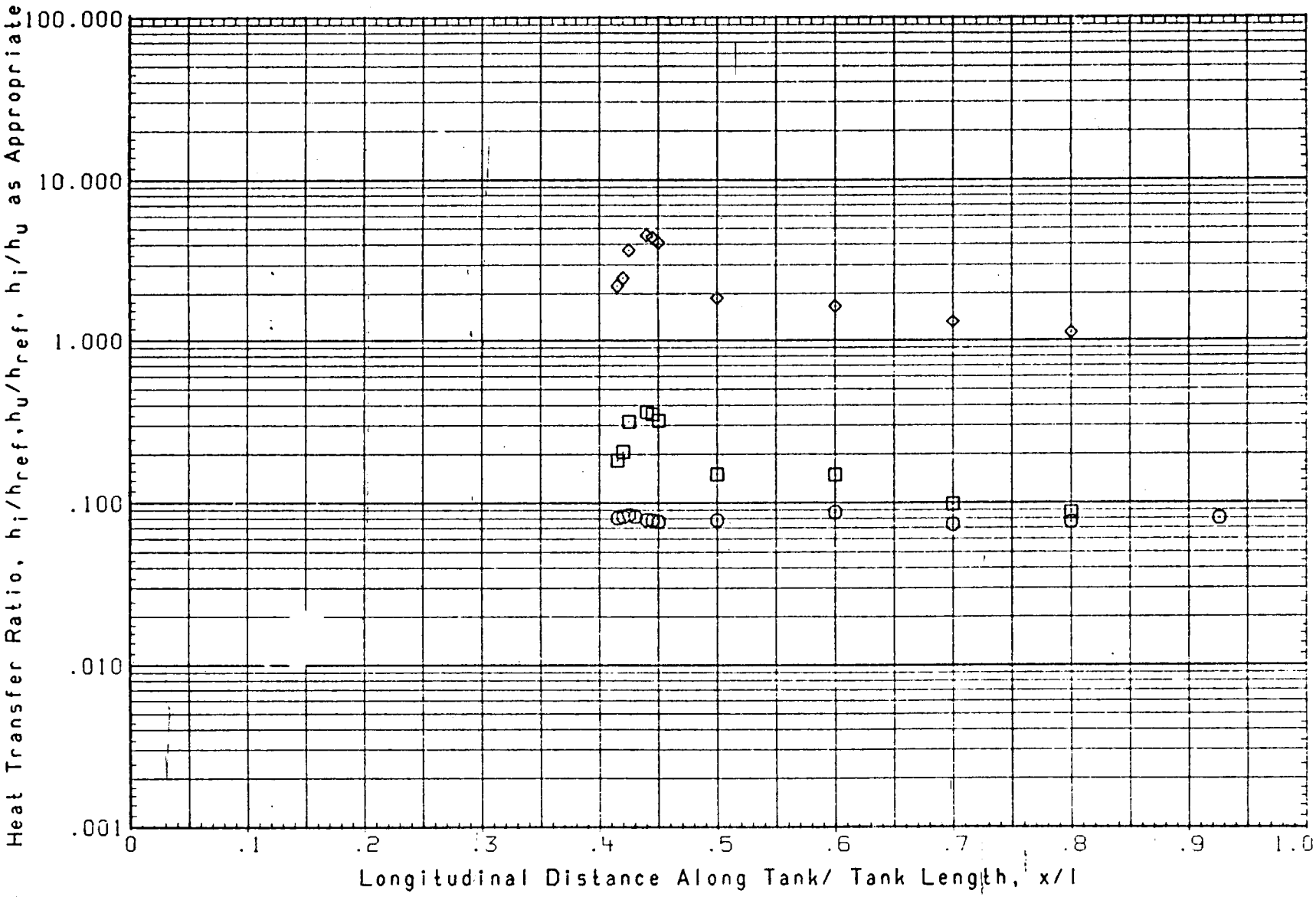


FIG. 19 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -3

MACH = 4.020 ALPHA = -5.000 PHI = 343.120

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT08)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-3.000
(LVFT28)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-3.000
(BVFT28)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-3.000

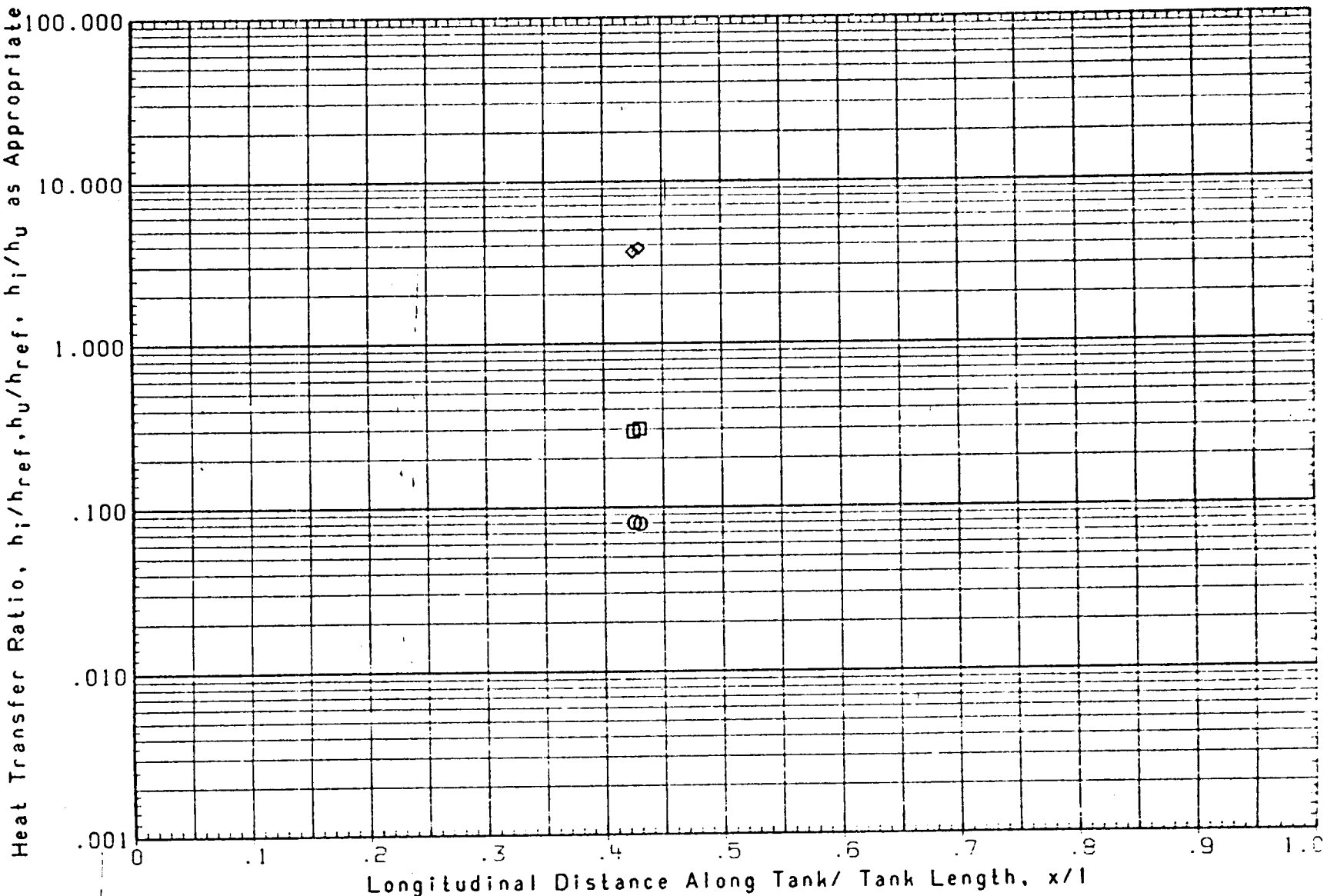


FIG. 19 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS WINDWARD SIDE, ALPHA = -5, BETA = -3

MACH = 4.020 ALPHA = -5.000 PHI = 345.560

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT08)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-3.000
(LVFT28)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-3.000
(BVFT28)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-3.000

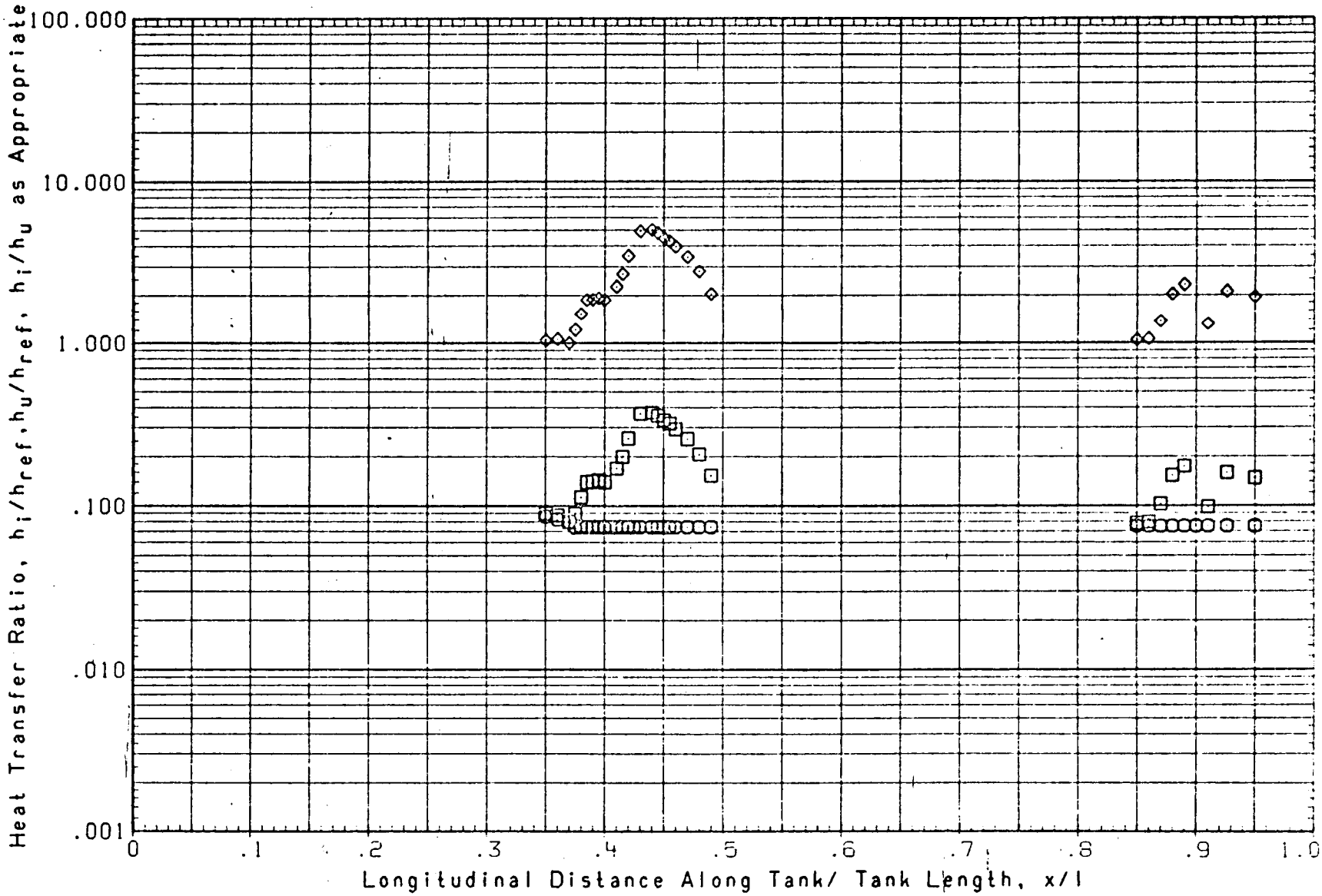


FIG. 19 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -3

MACH = 4.020 ALPHA = -5.000 PHI = 348.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT08)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-3.000
(LVFT28)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-3.000
(BVFT28)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-3.000

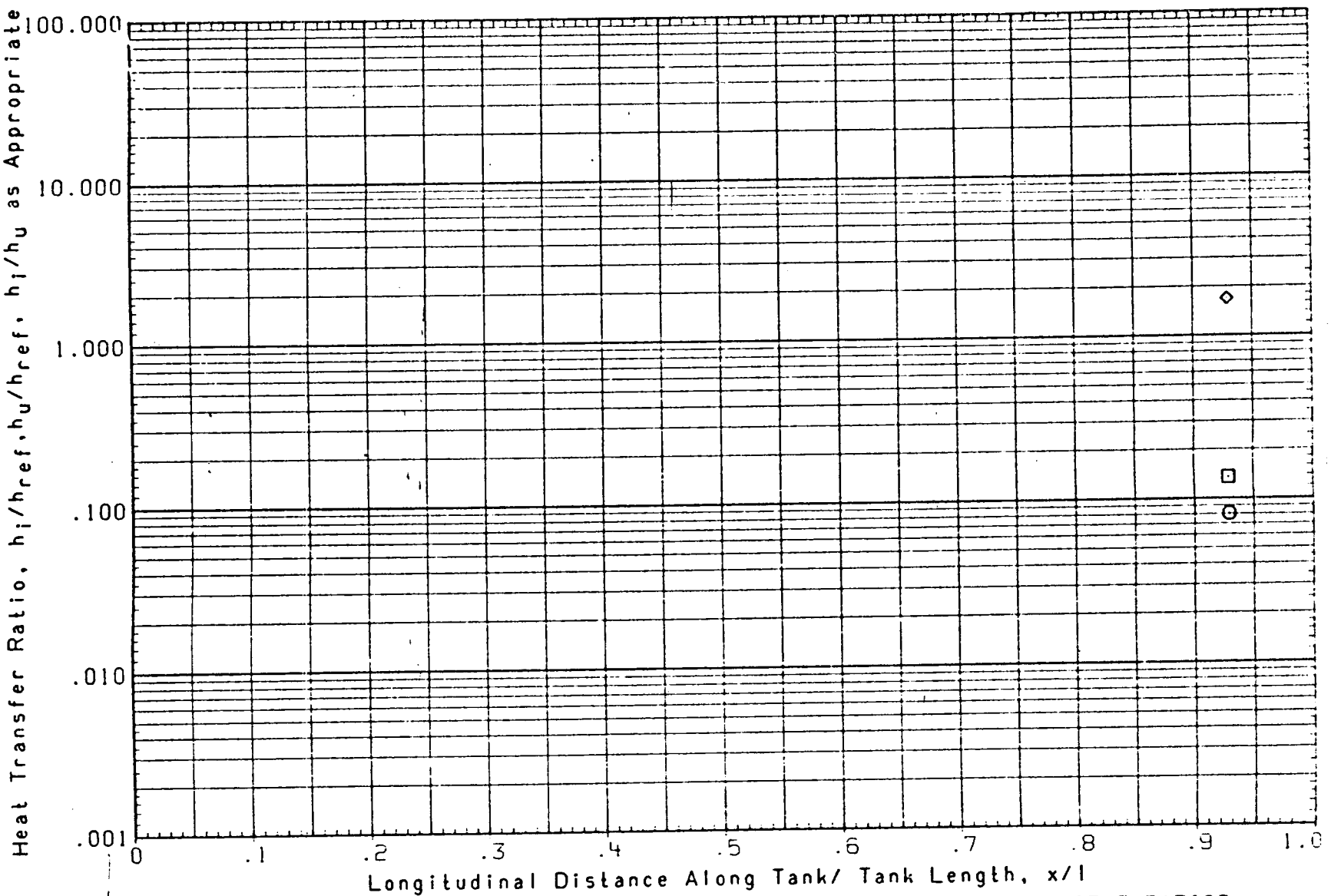


FIG. 19 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -3

MACH = 4.020 ALPHA = -5.000 PHI = 352.200

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT08)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-3.000
(LVFT28)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-3.000
(BVFT28)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-3.000

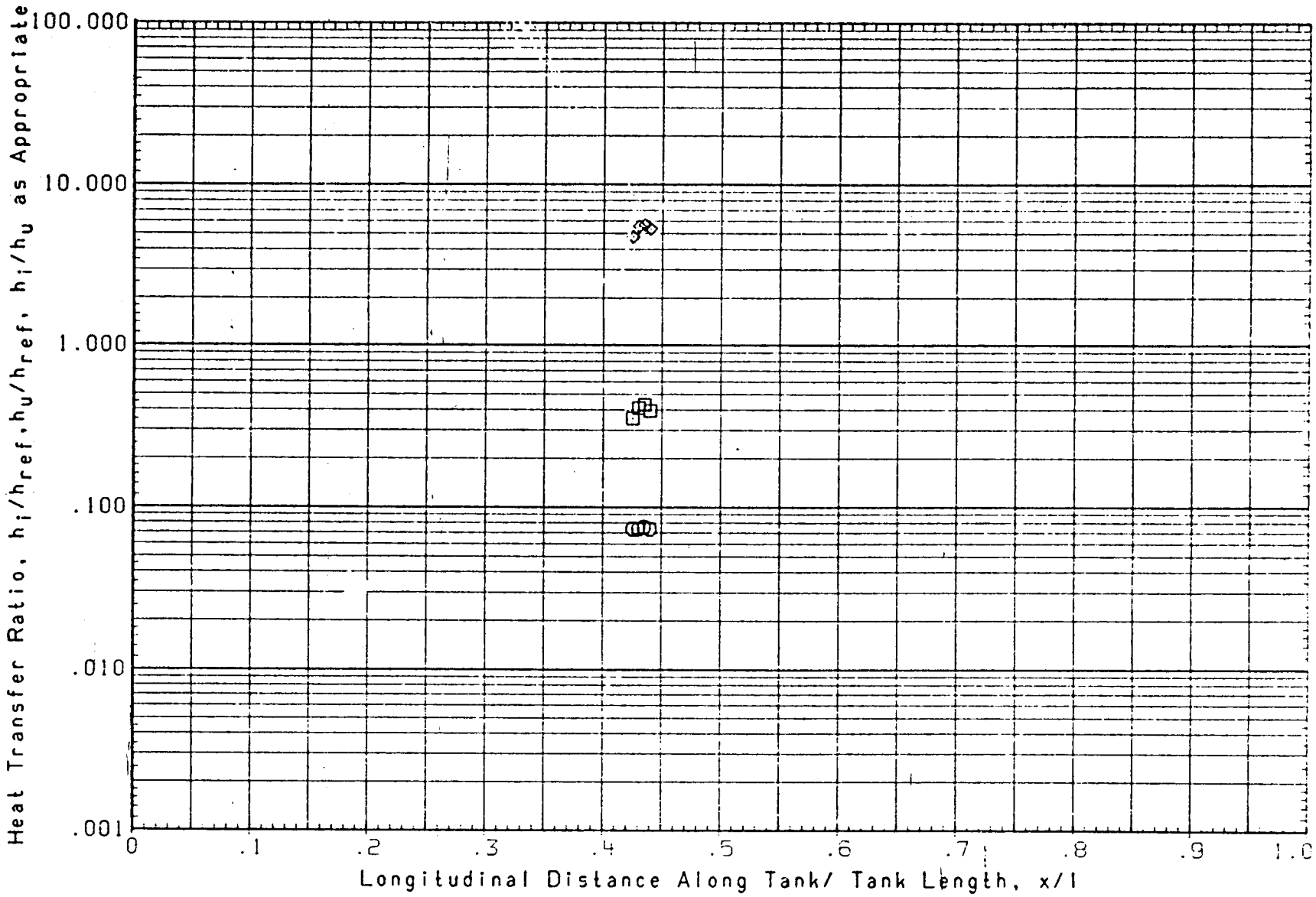


FIG. 19 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS WINDWARD SIDE, ALPHA = -5, BETA = -3

MACH = 4.020 ALPHA = -5.000 PHI = 354.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT08)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-3.000
(LVFT28)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-3.000
(BVFT28)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-3.000

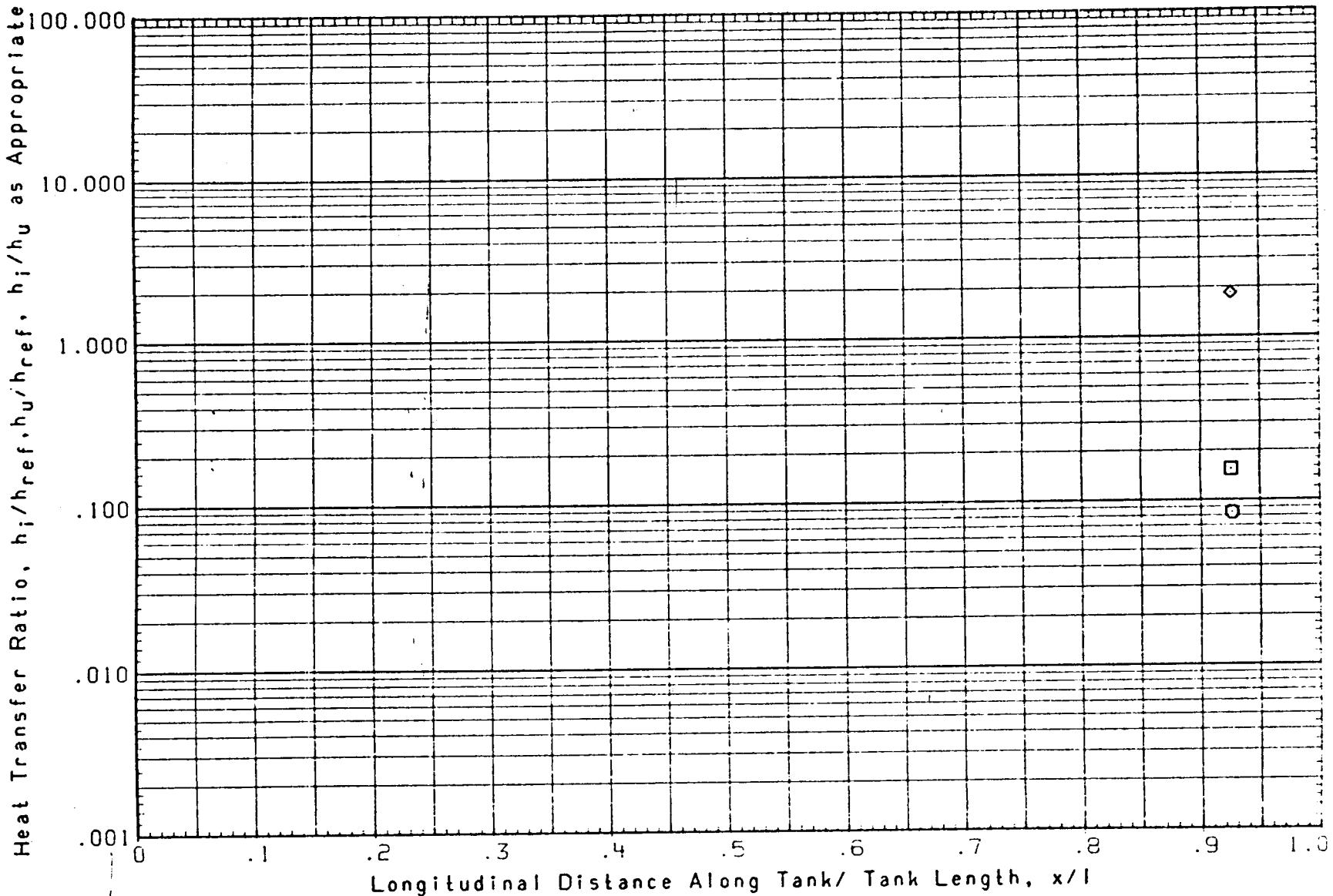


FIG. 19 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -3

MACH = 4.020 ALPHA = -5.000 PHI = 355.160

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT08)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-3.000
(LVFT28)	□	IH41B(V41A-A4A) O.T.S (SPIKED ET DATA) HI/HREF	-5.000	-3.000
(BVFT28)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-3.000

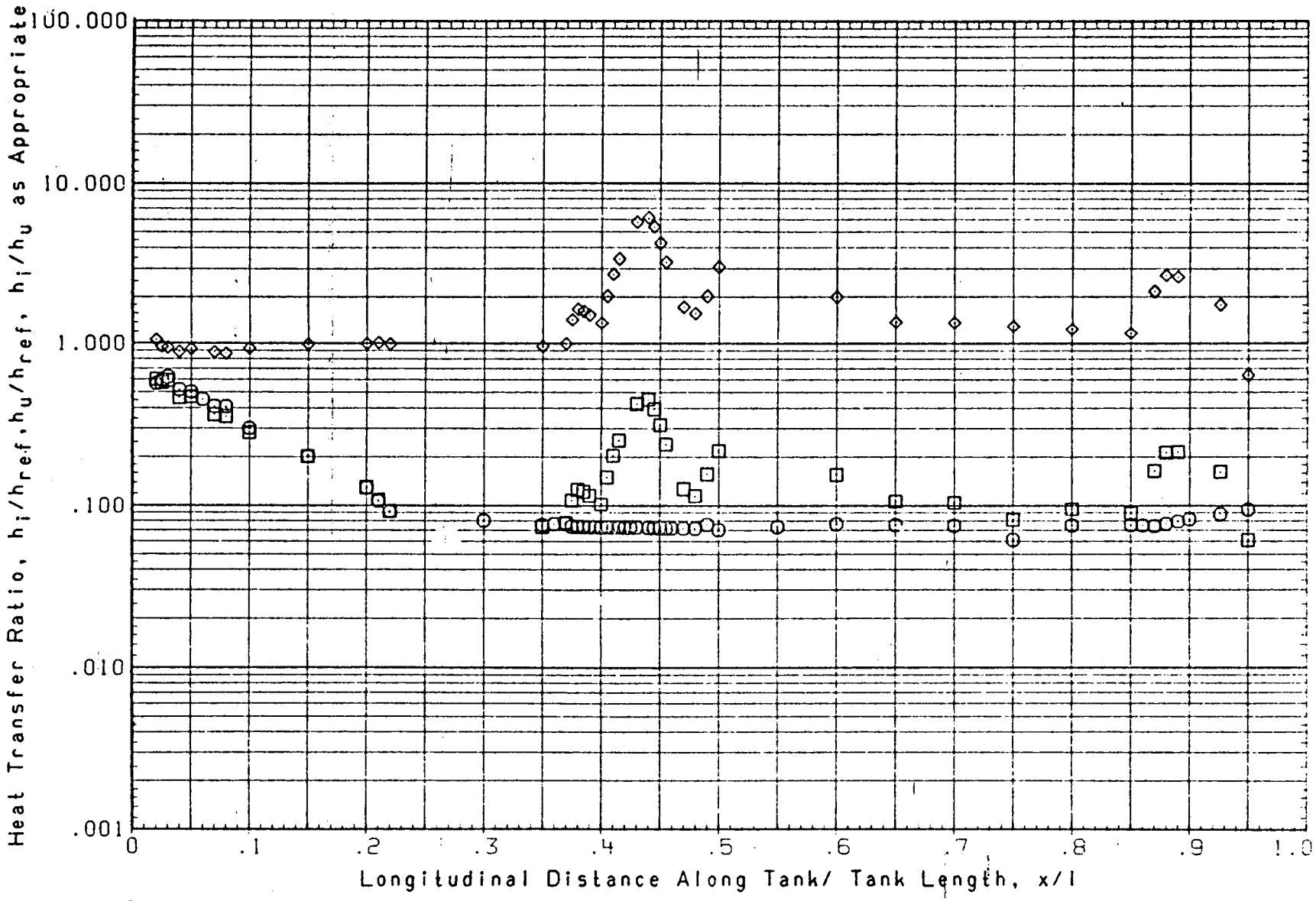


FIG. 19 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -3

MACH = 4.020 ALPHA = -5.000 PHI = 360.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT08)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-3.000
(LVFT28)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-3.000
(BVFT28)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-3.000

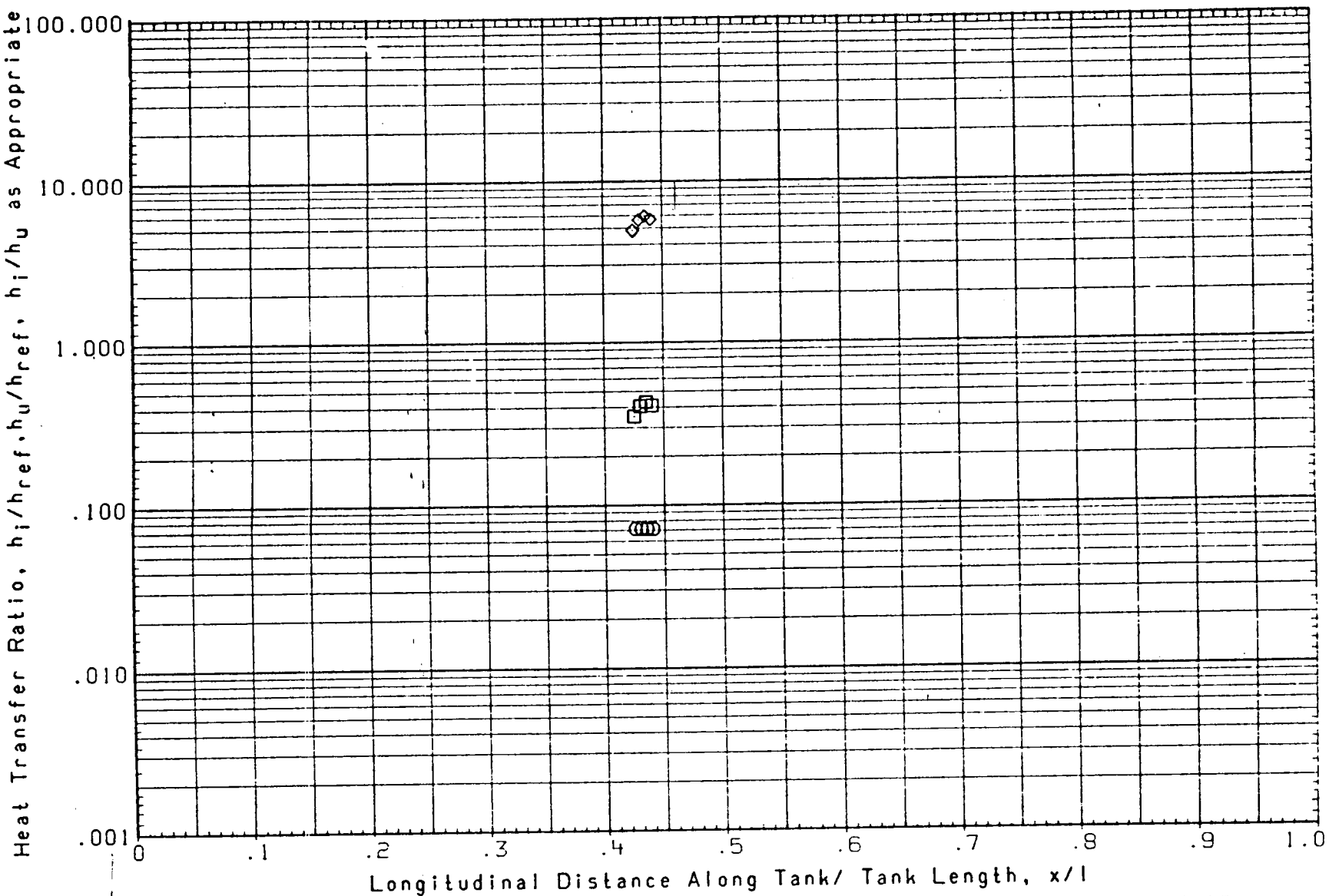


FIG. 19 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -3

MACH = 4.020 ALPHA = -5.000 PHI = 5.630

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT08)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-3.000
(LVFT28)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-3.000
(BVFT28)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-3.000

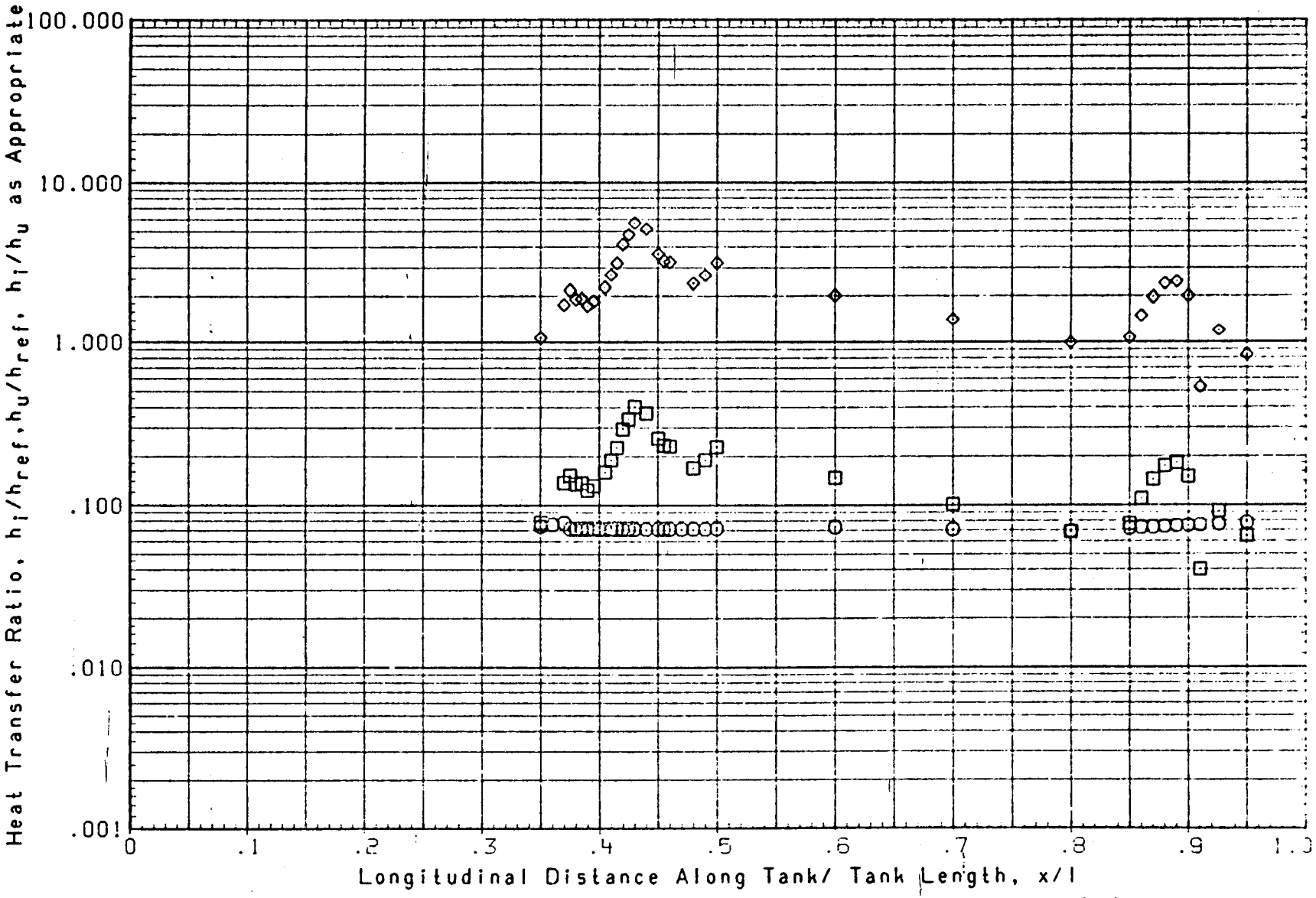


FIG. 19 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -3

MACH = 4.020 ALPHA = -5.000 PHI = 11.350

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT08)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-3.000
(LVFT28)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-3.000
(BVFT28)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-3.000

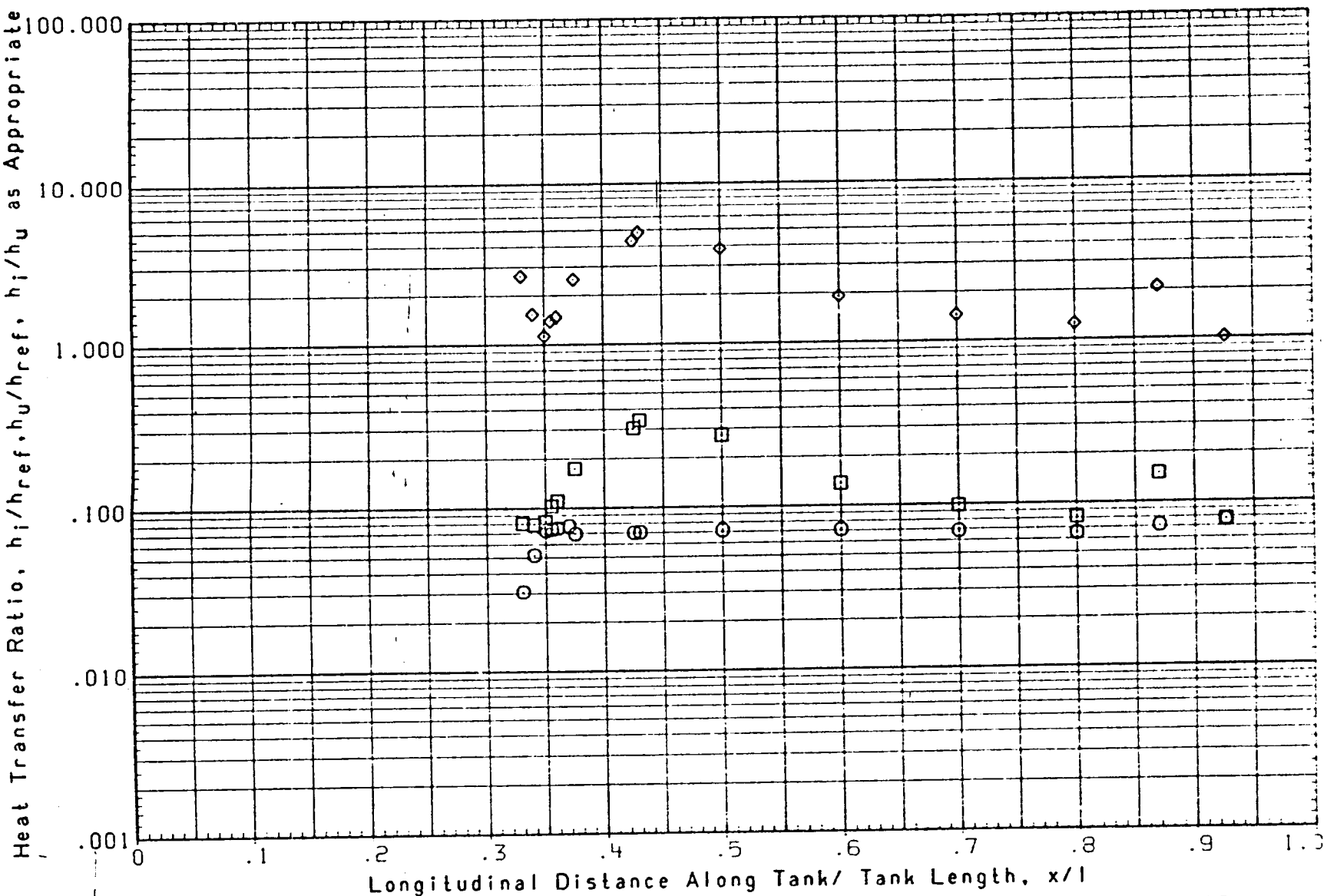


FIG. 19 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS WINDWARD SIDE, ALPHA = -5, BETA = -3

MACH = 4.020 ALPHA = -5.000 PHI = 17.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT08)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-3.000
(LVFT28)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-3.000
(BVFT28)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-3.000

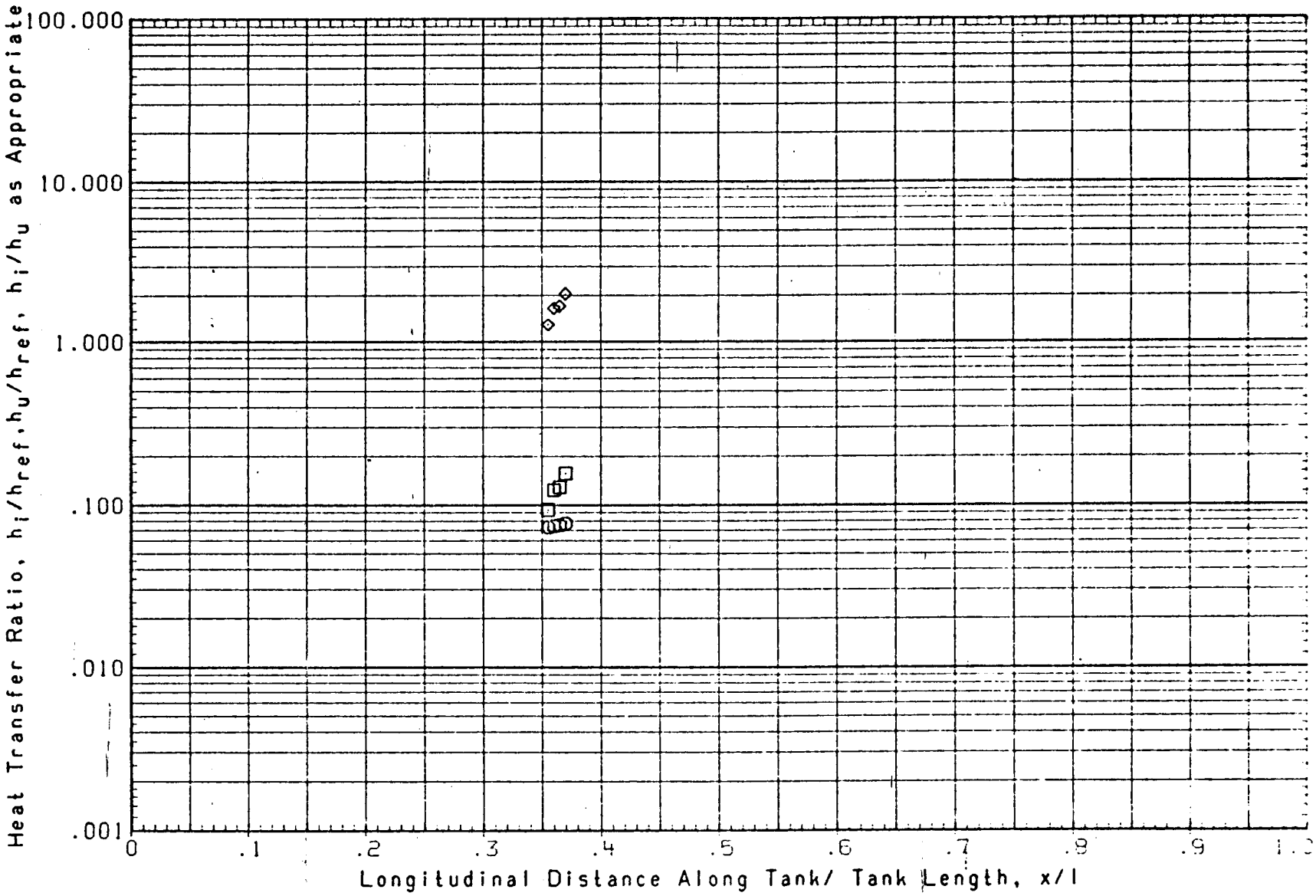


FIG. 19 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -3

MACH = 4.020 ALPHA = -5.000 PHI = 20.980

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT08)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-3.000
(LVFT28)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-3.000
(BVFT28)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-3.000

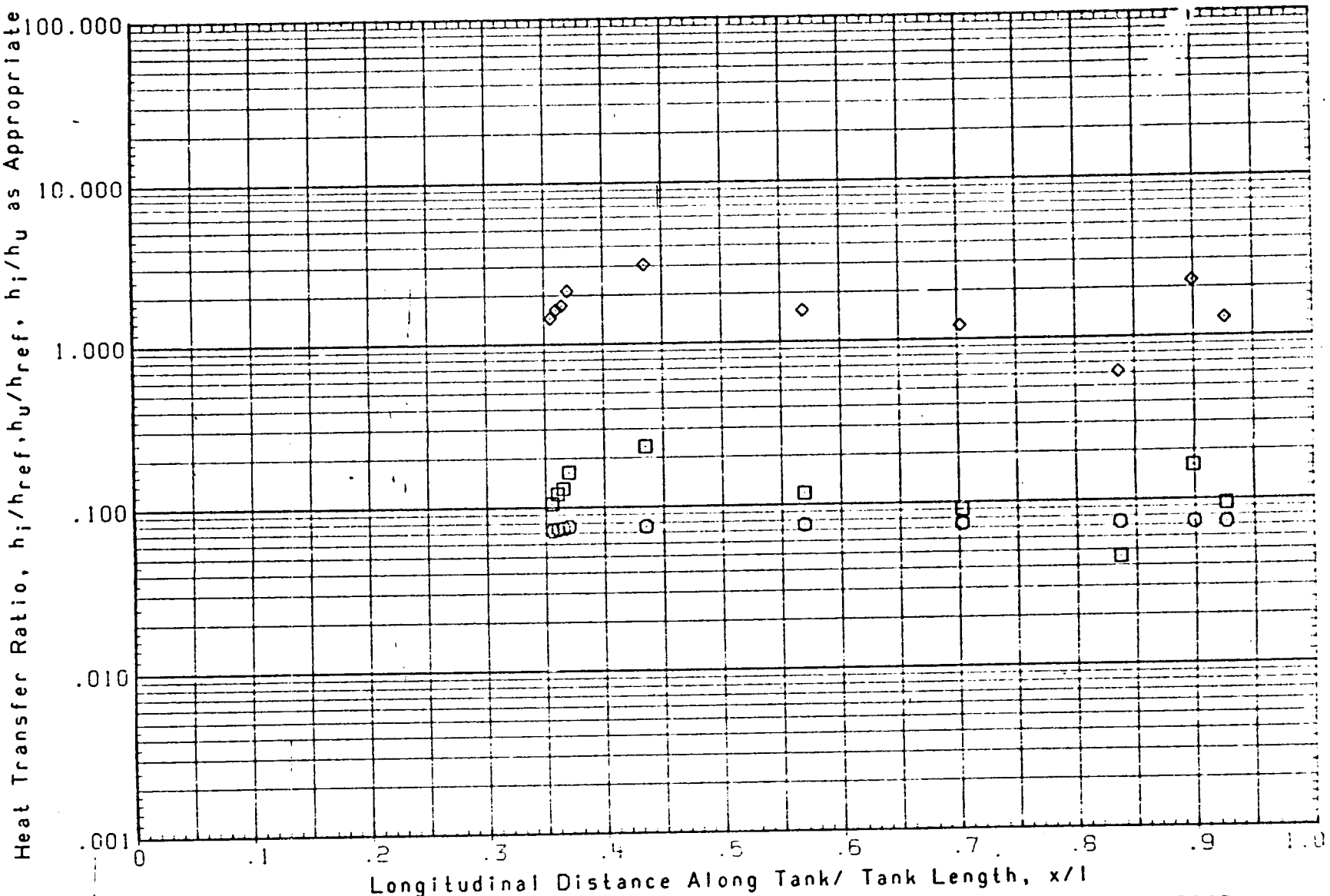


FIG. 19 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -3

MACH = 4.020 ALPHA = -5.000 PHI = 23.075

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT08)	○	IH41B(AEDC V41A+A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-3.000
(LVFT28)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-3.000
(BVFT28)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-3.000

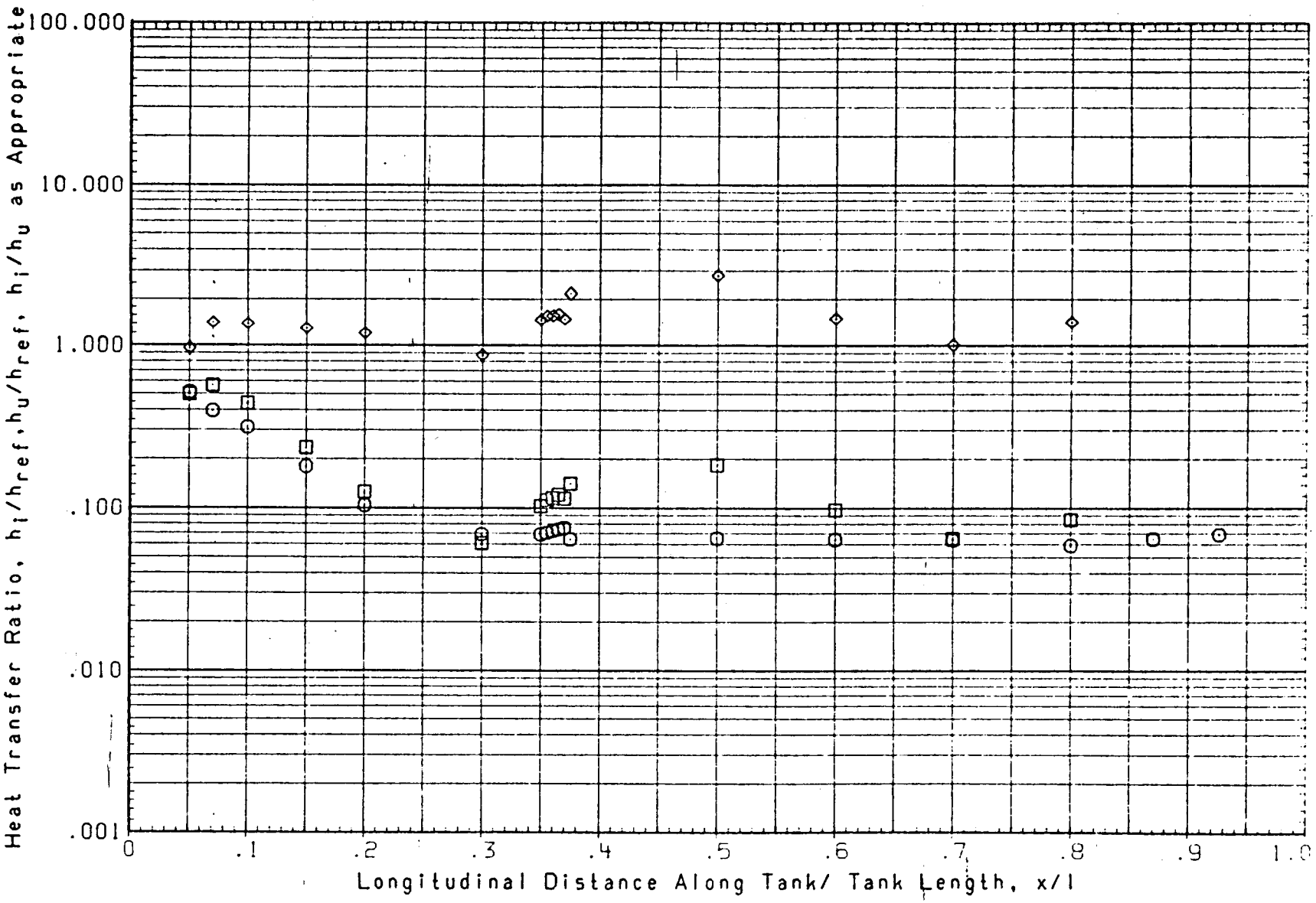


FIG. 19 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -3

MACH = 4.020 ALPHA = -5.000 PHI = 29.800

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT08)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-3.000
(LVFT28)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-3.000
(BVFT28)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-3.000

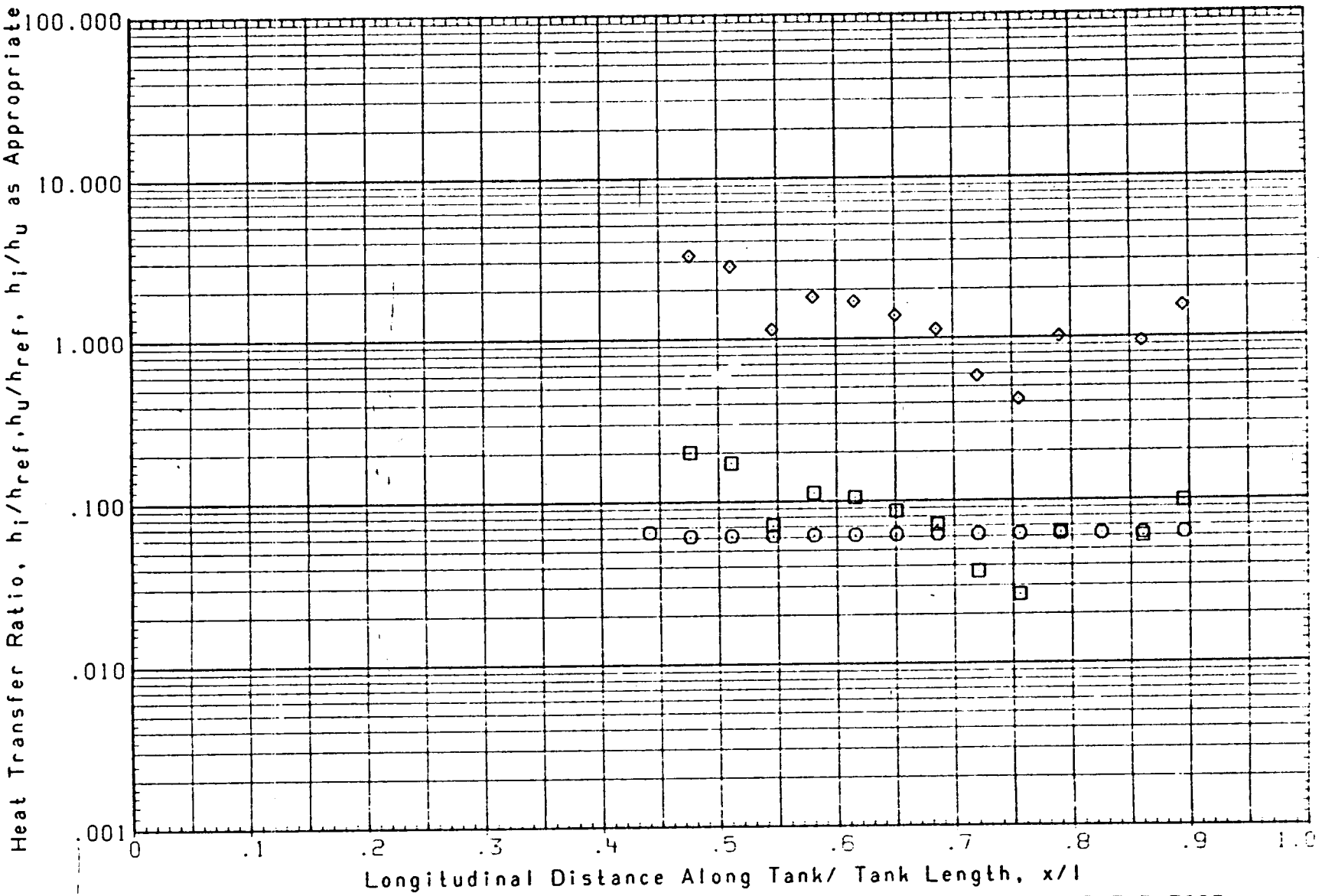


FIG. 19 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -3

MACH = 4.020 ALPHA = -5.000 PHI = 31.430

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT08)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-3.000
(LVFT28)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-3.000
(BVFT28)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-3.000

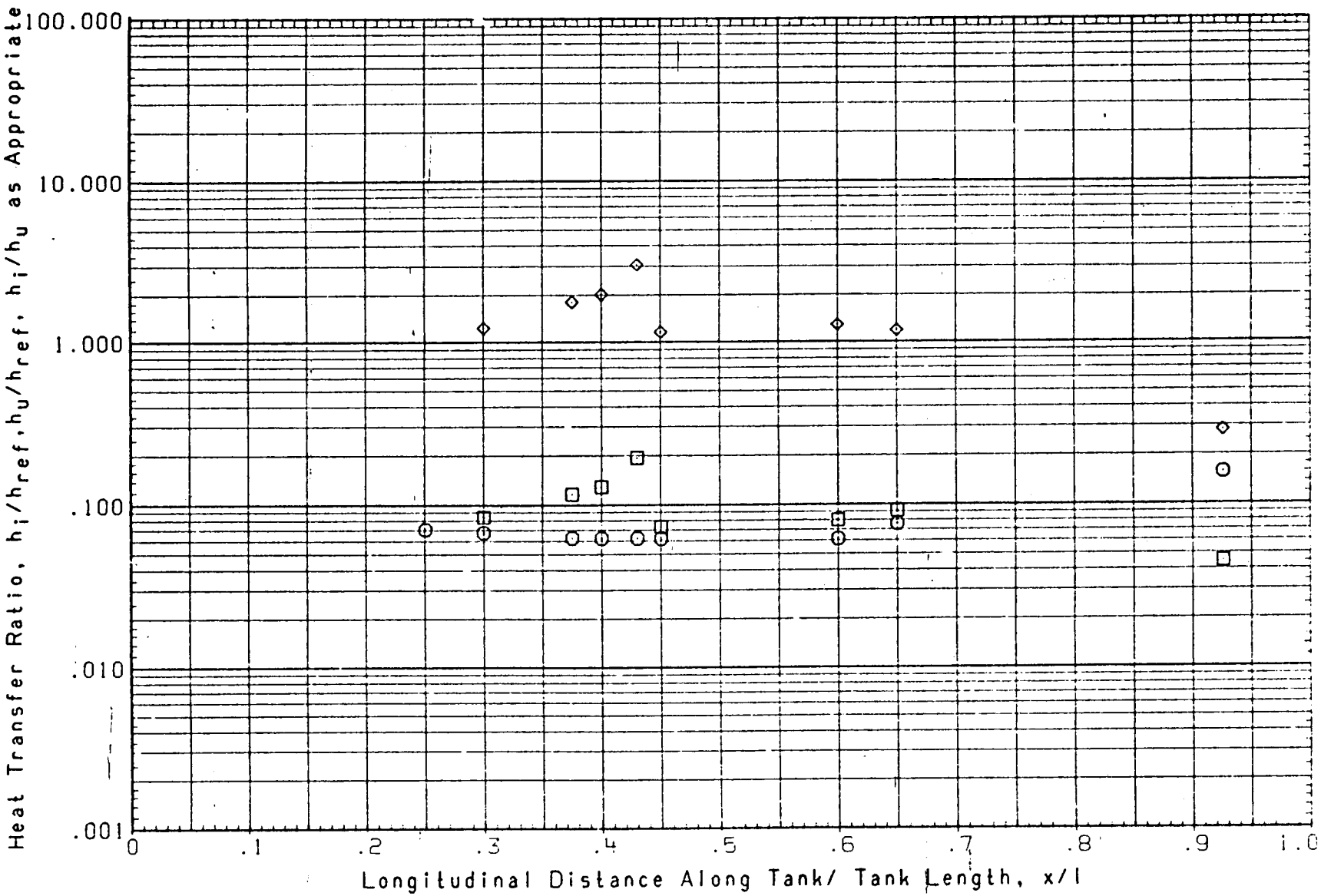


FIG. 19 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -3

MACH = 4.020 ALPHA = -5.000 PHI = 33.750

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT08)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-3.000
(LVFT28)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-3.000
(BVFT28)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-3.000

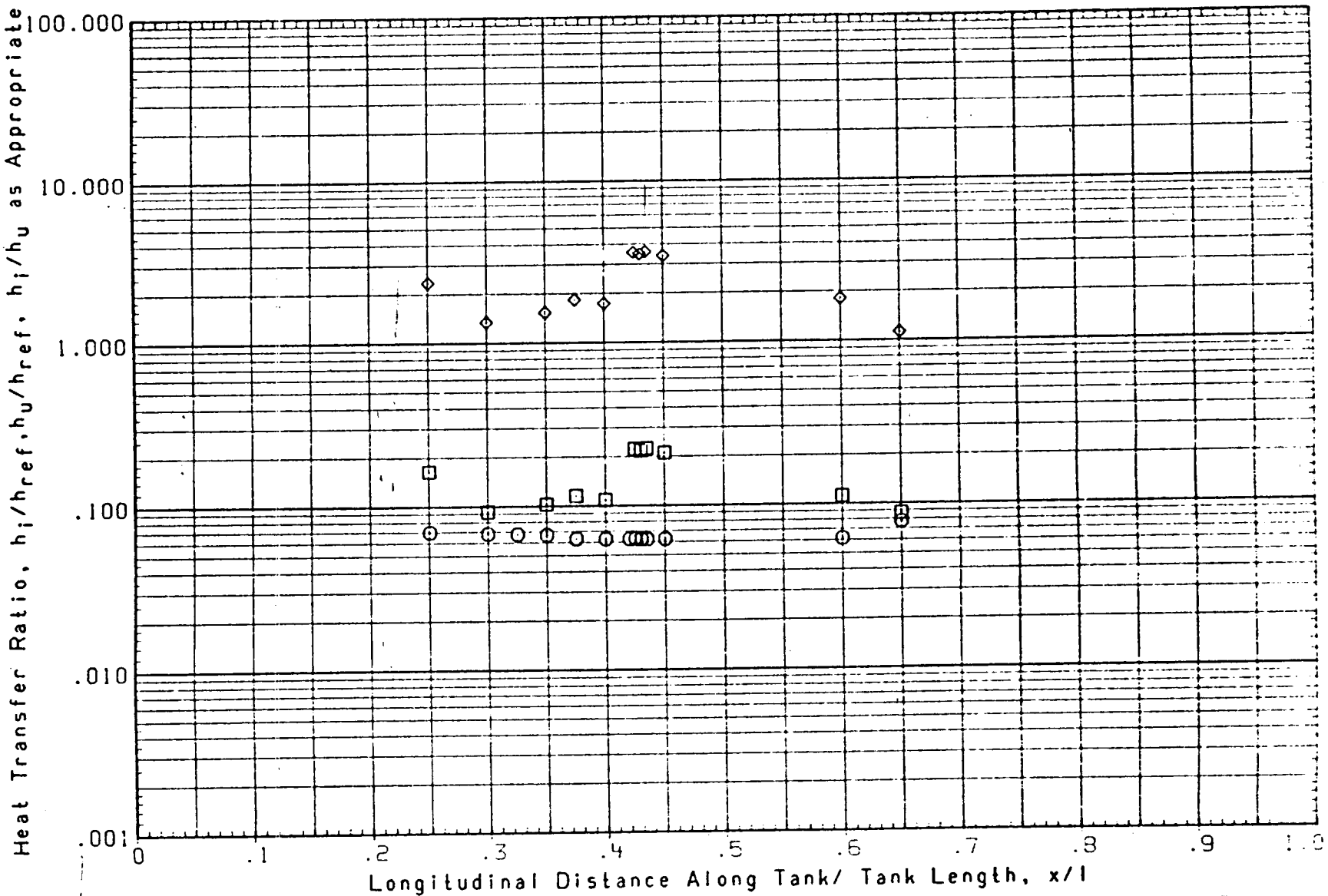


FIG. 19 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -3

MACH = 4.020 ALPHA = -5.000 PHI = 36.320

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT08)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-3.000
(LVFT28)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-3.000
(BVFT28)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-3.000

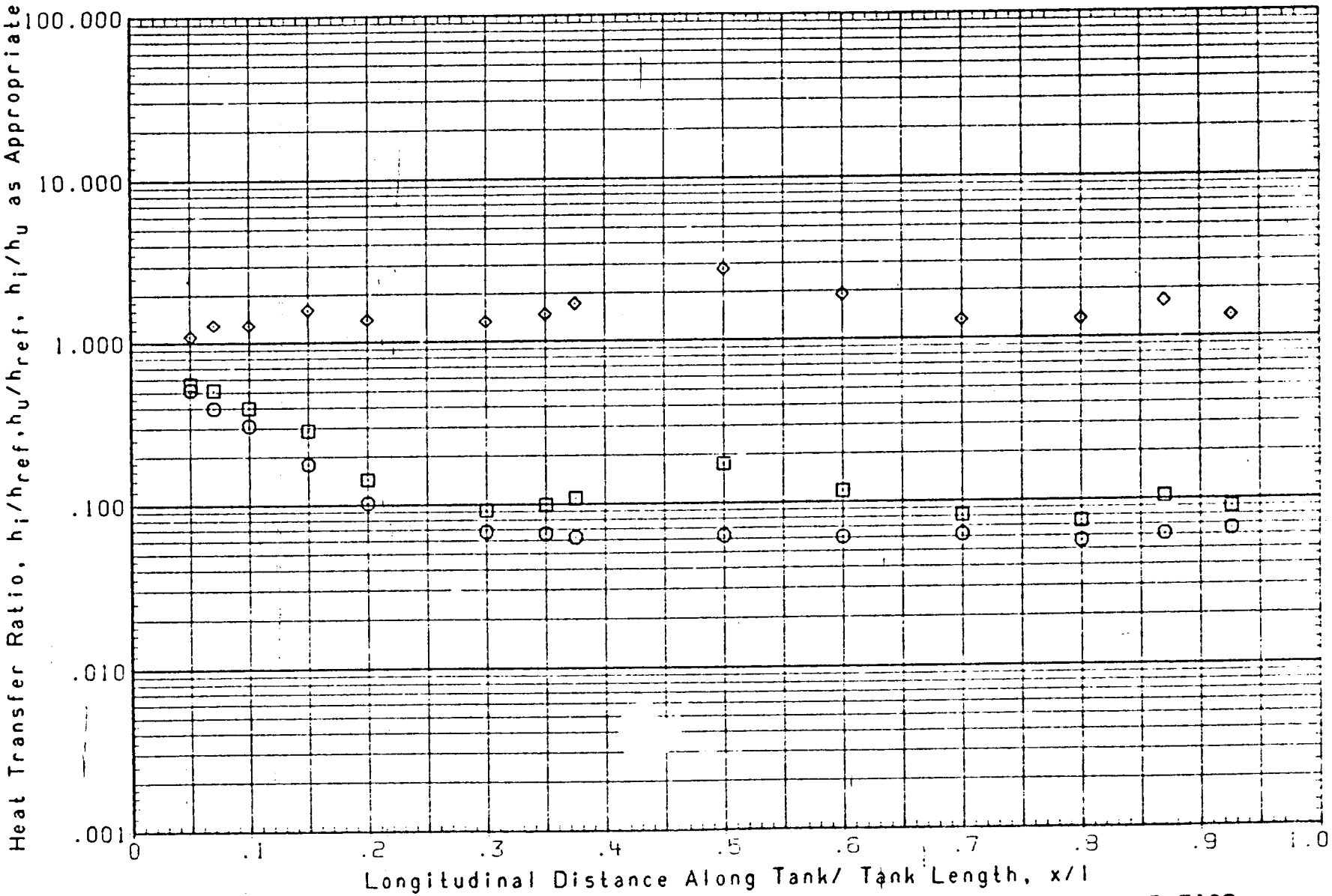


FIG. 19 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -3

MACH = 4.020 ALPHA = -5.000 PHI = 57.700

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT08)	○	(H41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-3.000
(LVFT28)	□	(H41B(V41A-[illegible]A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-3.000
(BVFT28)	◇	(H41B,ET HEAT TRANSFER DIFFERENCE RATIO, HI/HU	-5.000	-3.000

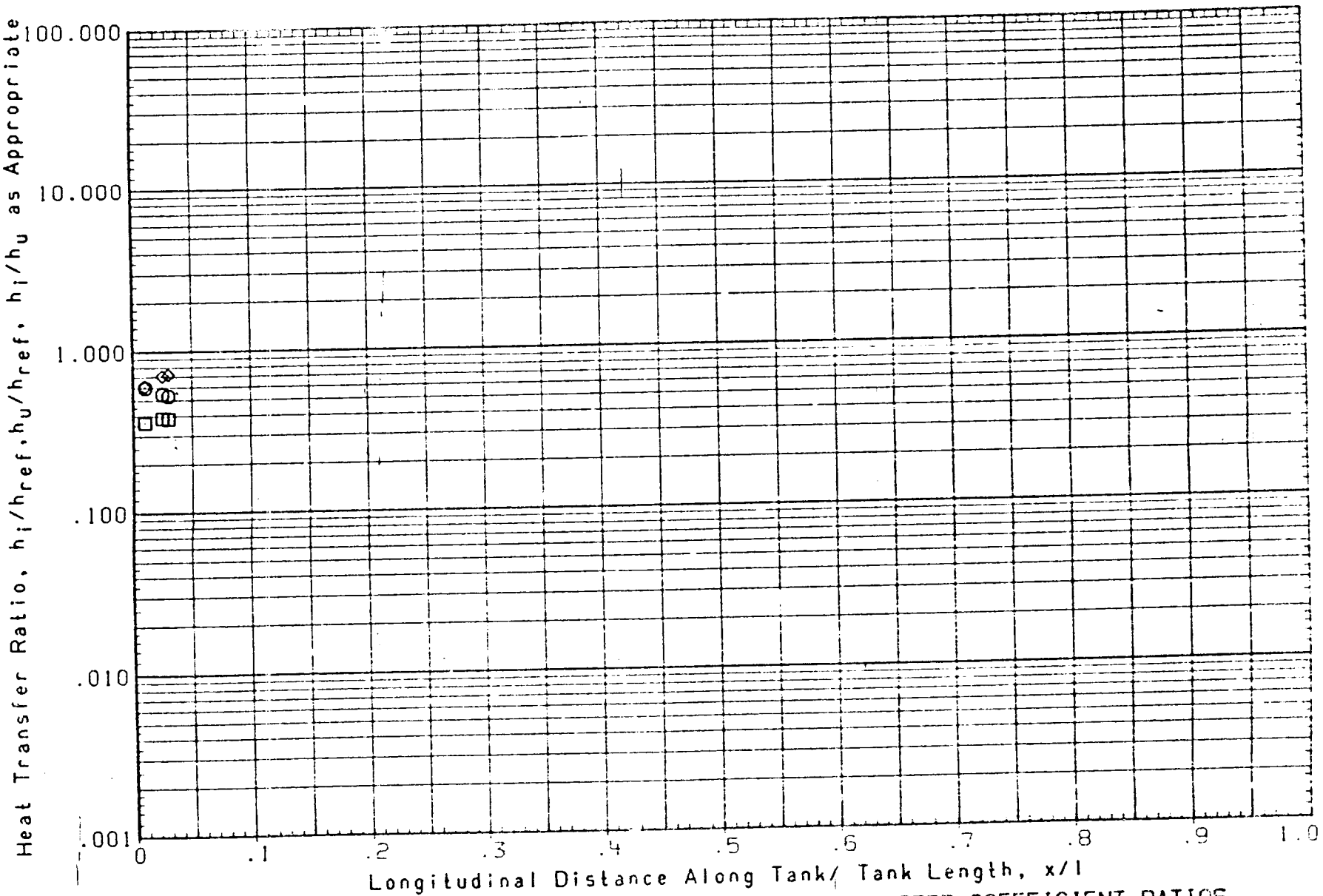


FIG. 19 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS WINDWARD SIDE, ALPHA = -5, BETA = -3

MACH = 4.020 ALPHA = -5.000 PHI = 39.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT08)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-3.000
(LVFT28)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-3.000
(BVFT28)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-3.000

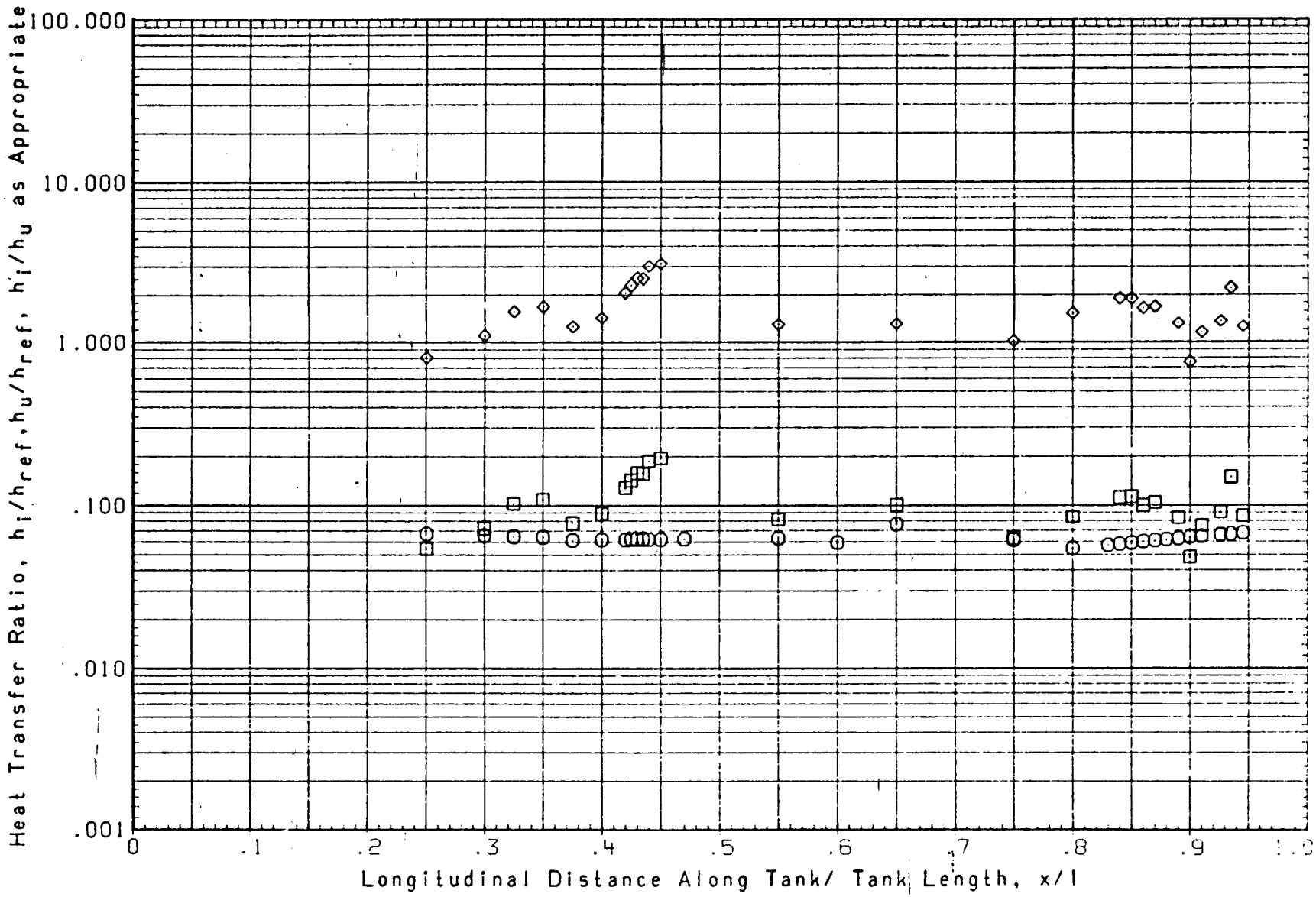


FIG. 19 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -3

MACH = 4.020 ALPHA = -5.000 PHI = 45.000

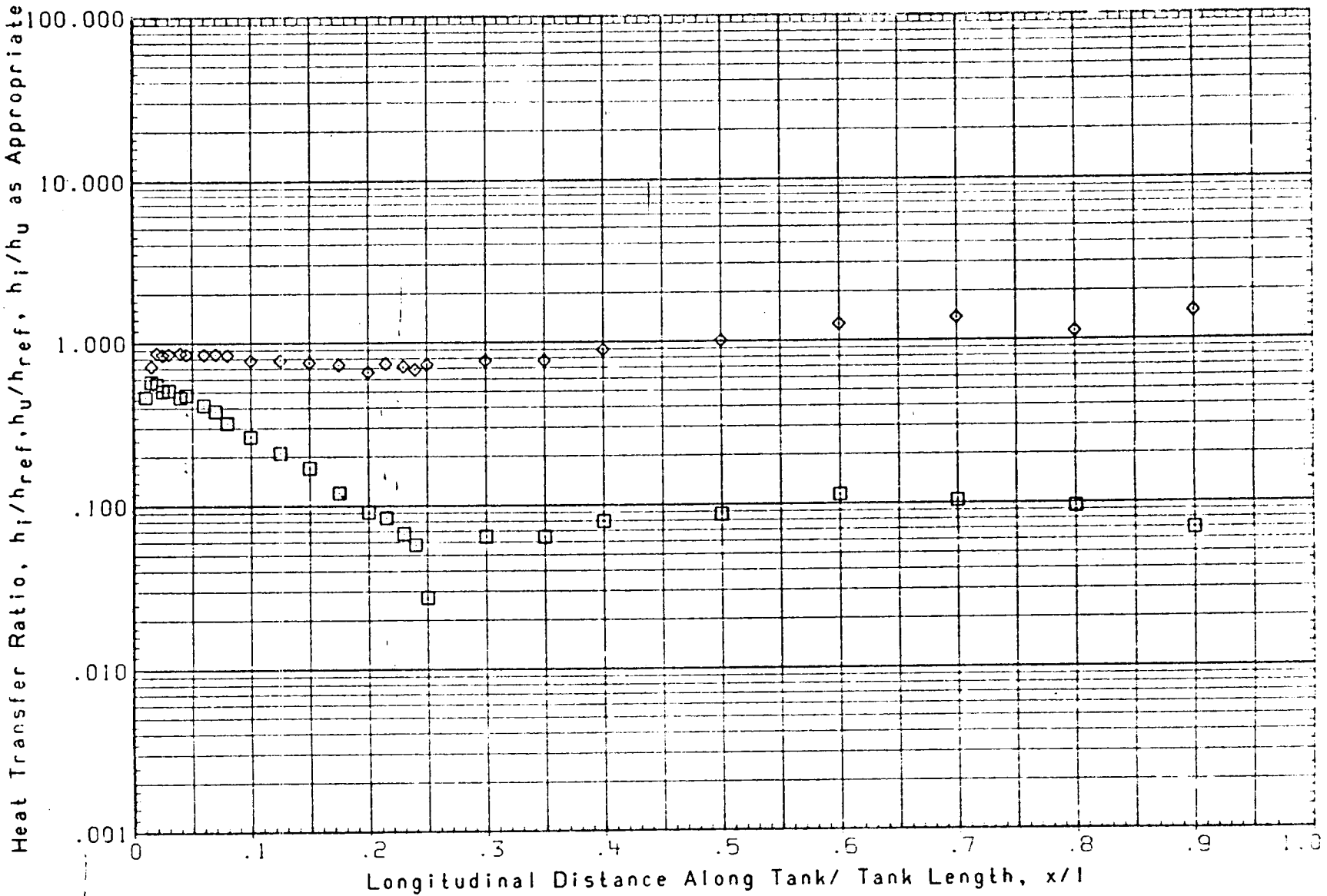


FIG. 20 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = -5, BETA = -3

MACH = 3.010 ALPHA = -4.934 PHI = 180.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT08)	○	DATA NOT AVAILABLE	-5.000	-3.000
(LVFT28)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-3.000
(CVFT28)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-3.000

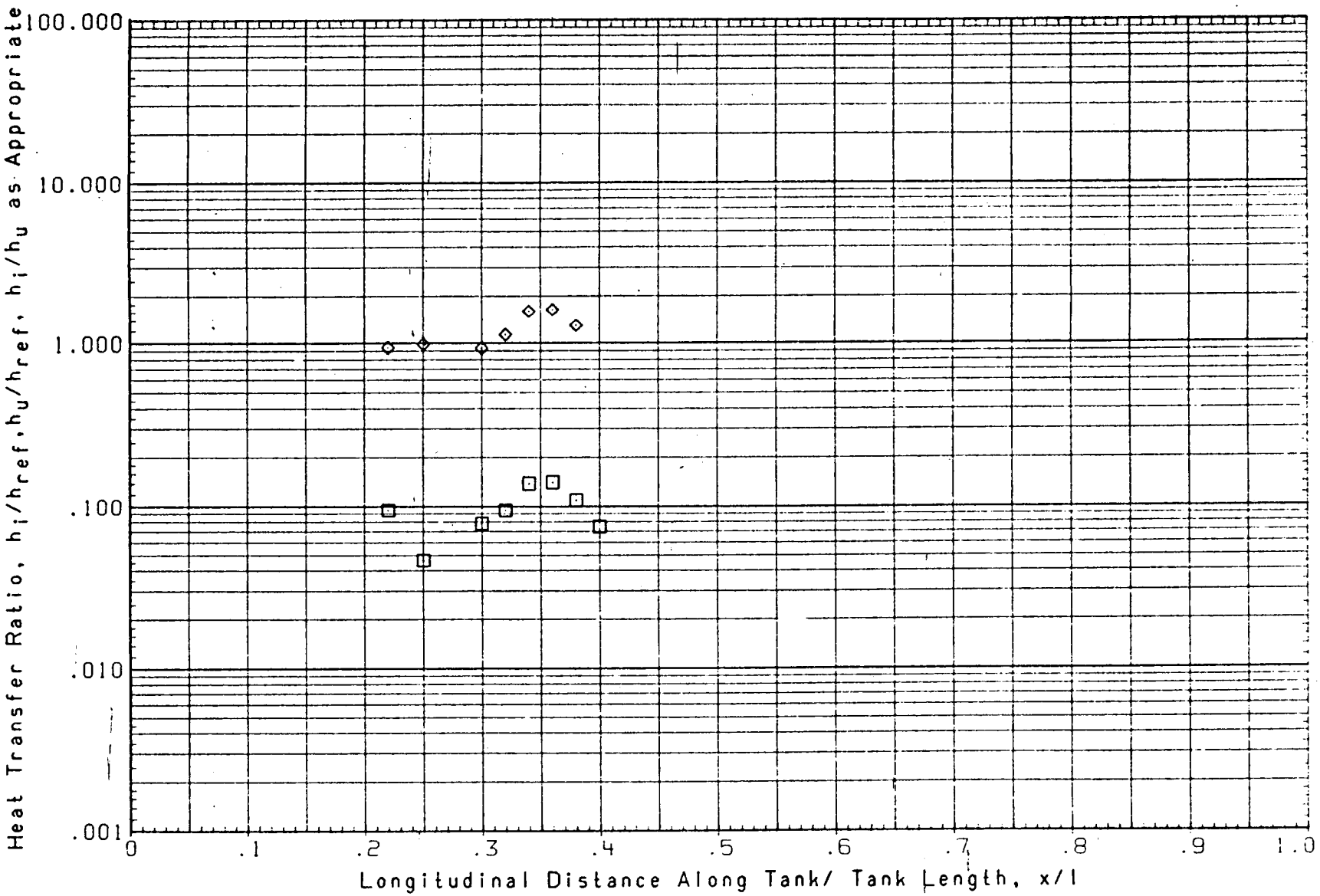


FIG. 20 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = -5, BETA = -3

MACH = 3.010 ALPHA = -4.934 PHI = 235.000

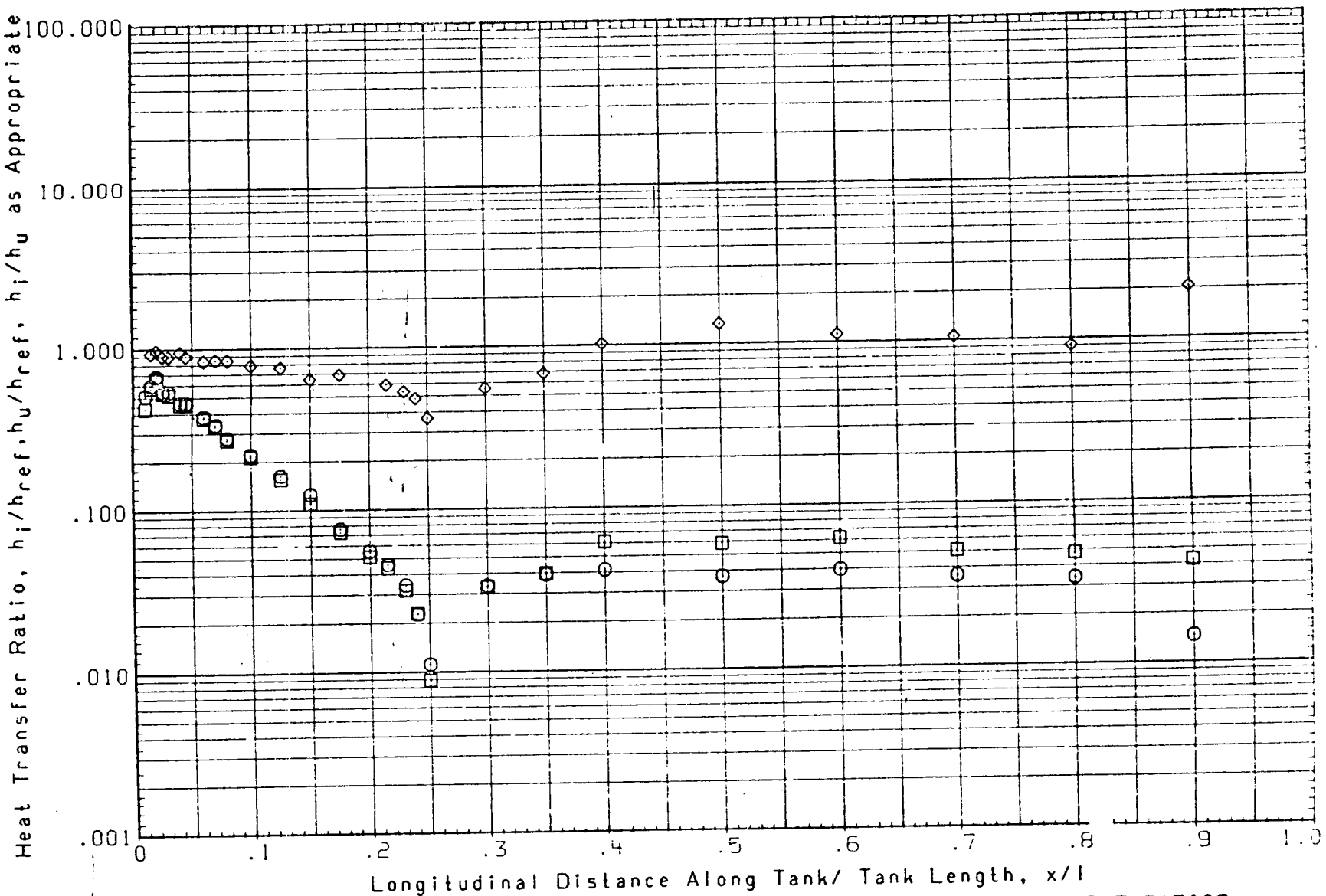


FIG. 20 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = -5, BETA = -3

MACH = 4.020 ALPHA = -5.000 PHI = 180.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT08)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-3.000
(LVFT28)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-3.000
(CVFT26)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-3.000

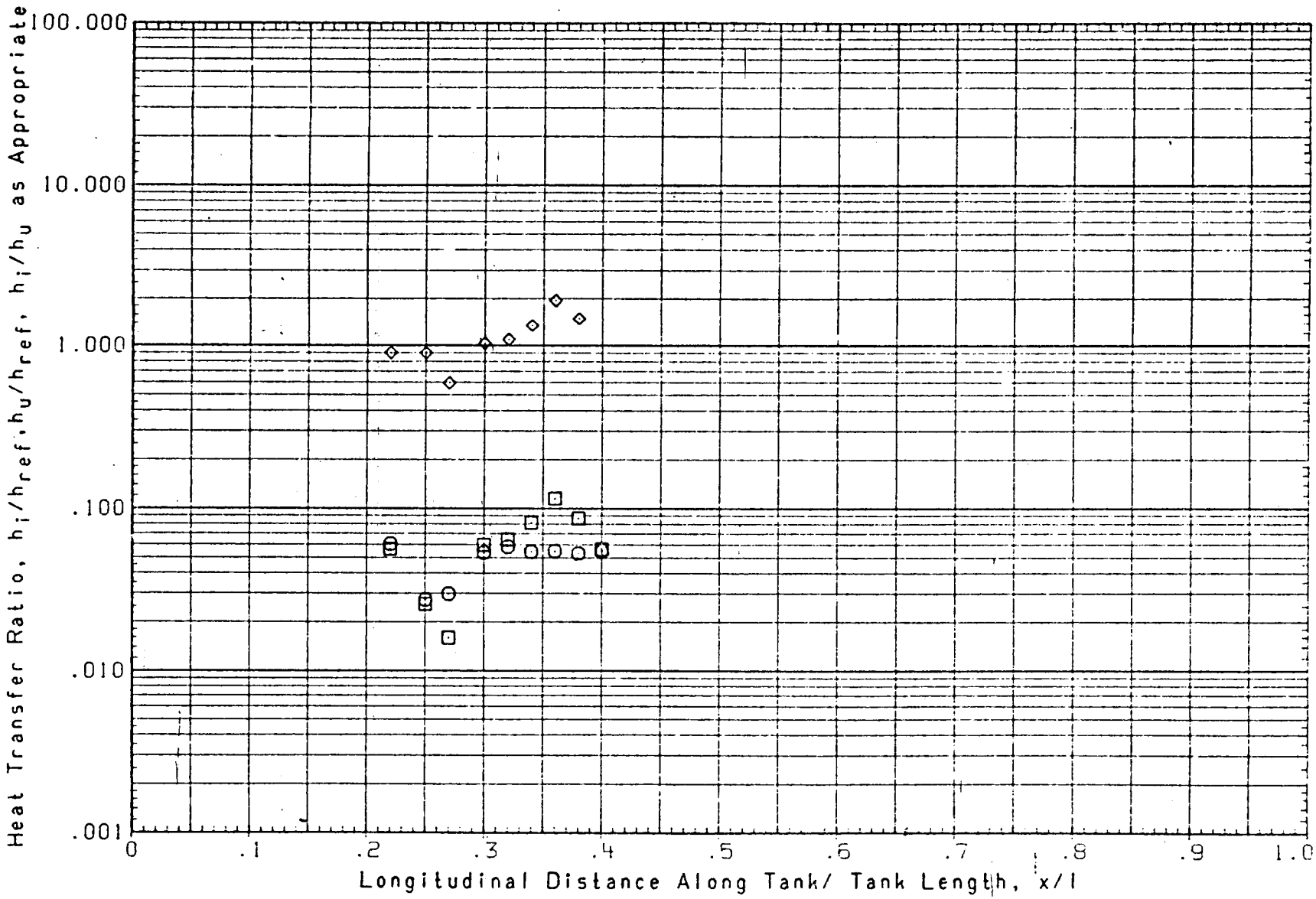


FIG. 20 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = -5, BETA = -3

MACH = 4.020 ALPHA = -5.000 PHI = 235.000

DATA SET	SYMBOL	CONFIGURATION		
(KVFT09)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-6.000
(LVFT29)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-6.000
(BVFT29)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-6.000

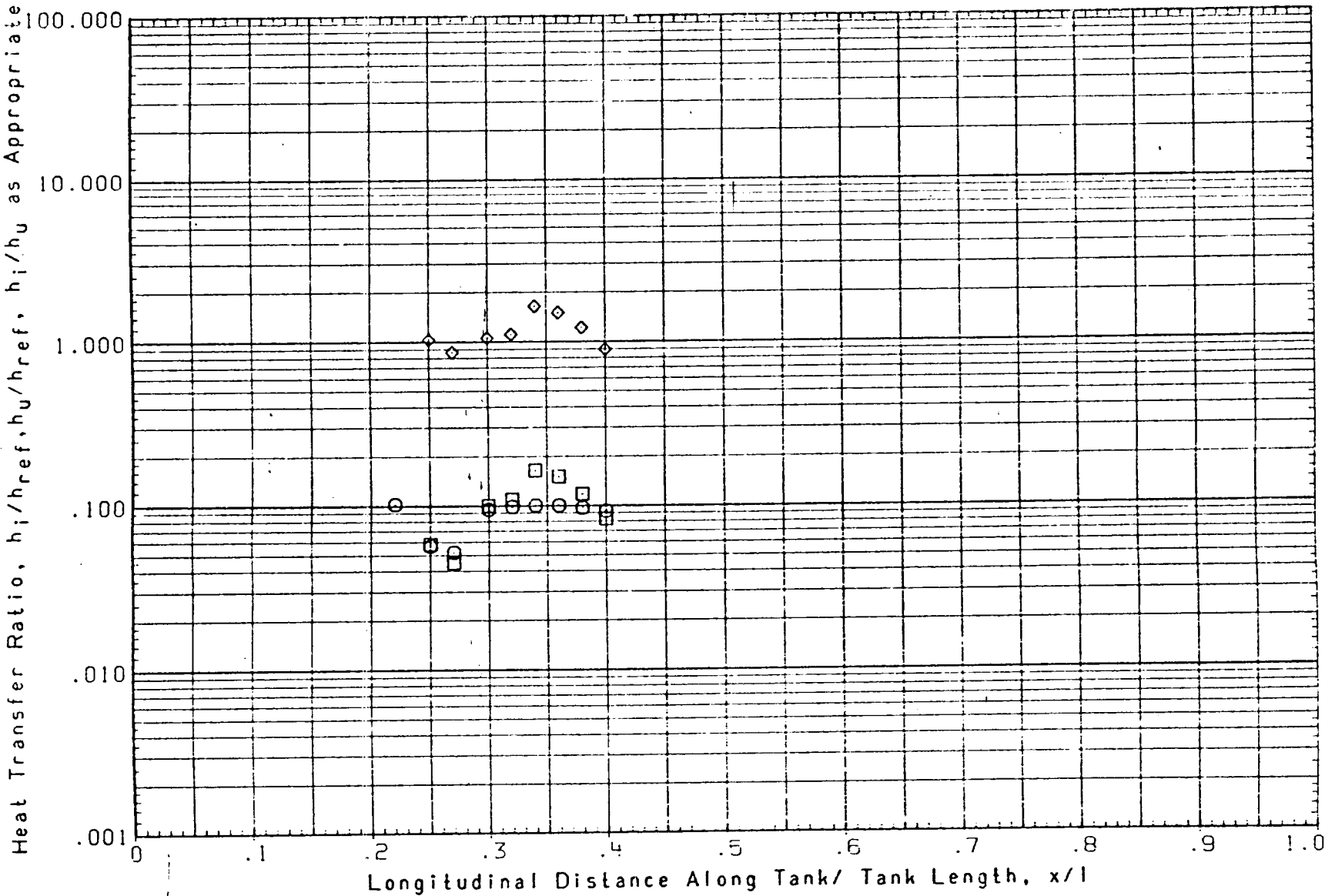


FIG. 21 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -6

MACH = 3.010 ALPHA = -4.985 PHI = 235.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT09)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-6.000
(LVFT29)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-6.000
(BVFT29)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-6.000

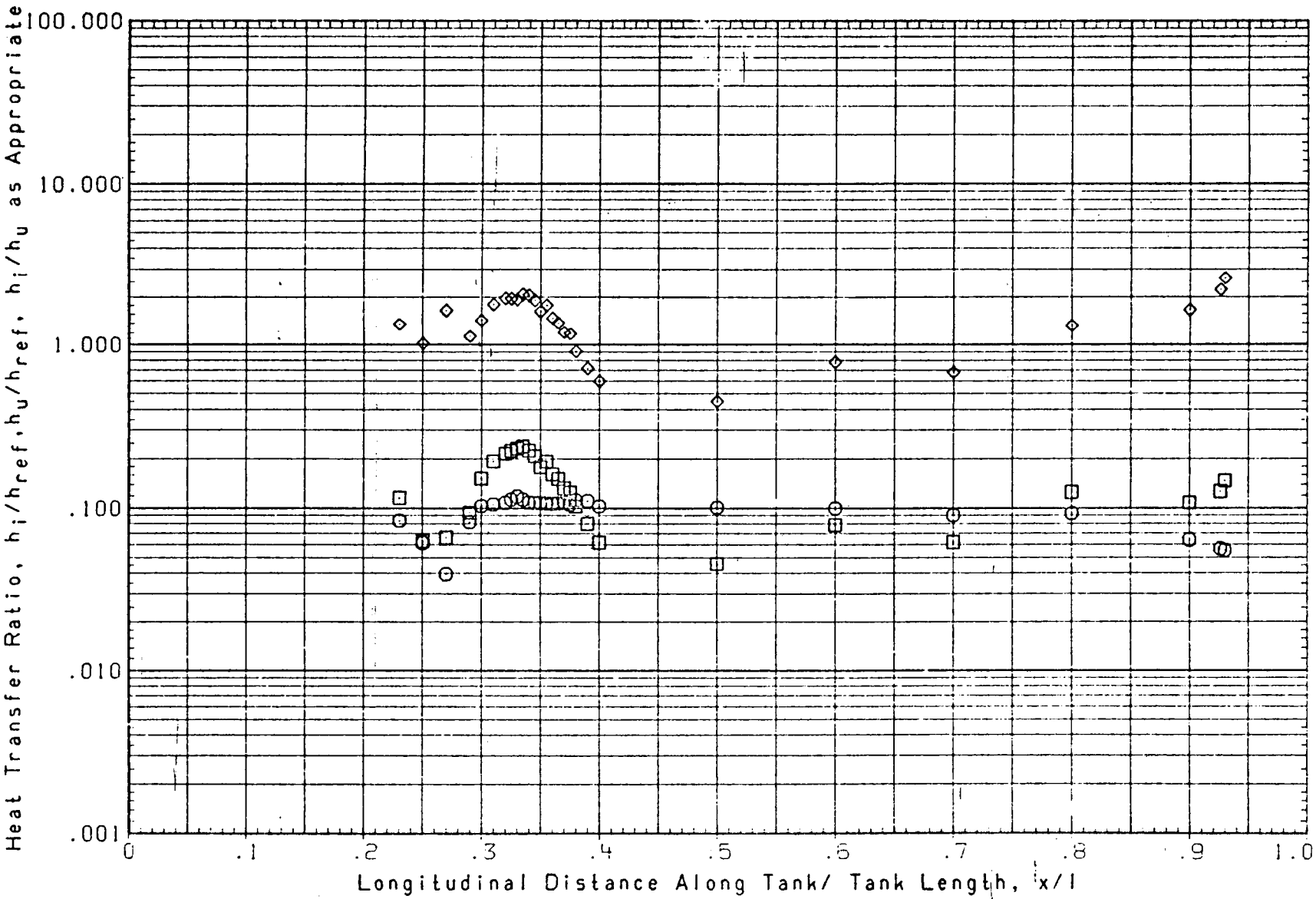


FIG. 21 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS WINDWARD SIDE, ALPHA = -5, BETA = -6

MACH = 3.010 ALPHA = -4.985 PHI = 247.500

DATA SET	SYMBOL	CONFIGURATION/DESCRIPTION	ALPHA	BETA
(KVFT09)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-6.000
(LVFT29)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-6.000
(BVFT29)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-6.000

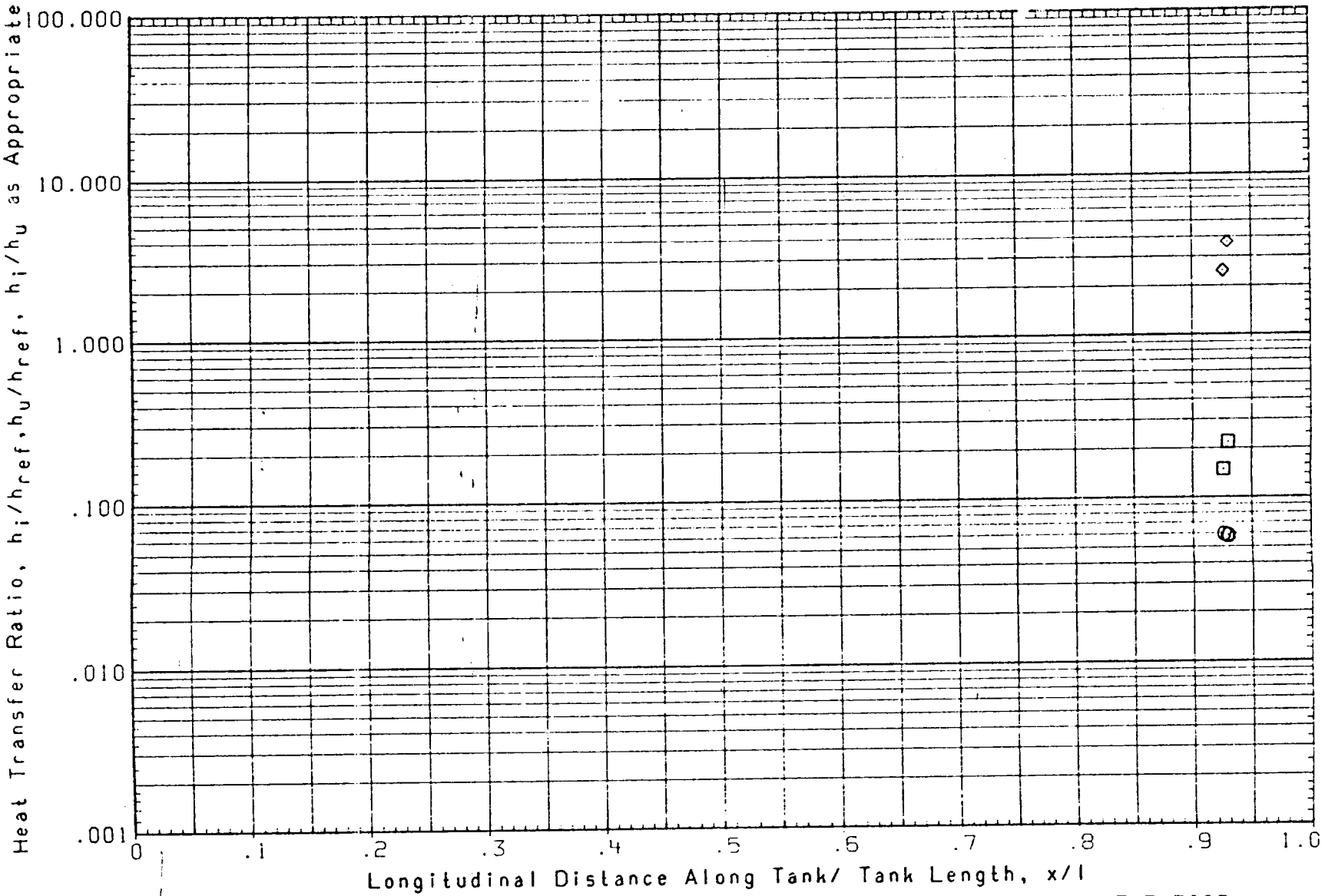


FIG. 21 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -6

MACH = 3.010 ALPHA = -4.985 PHI = 250.570

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT09)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-6.000
(LVFT29)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-6.000
(BVFT29)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-6.000

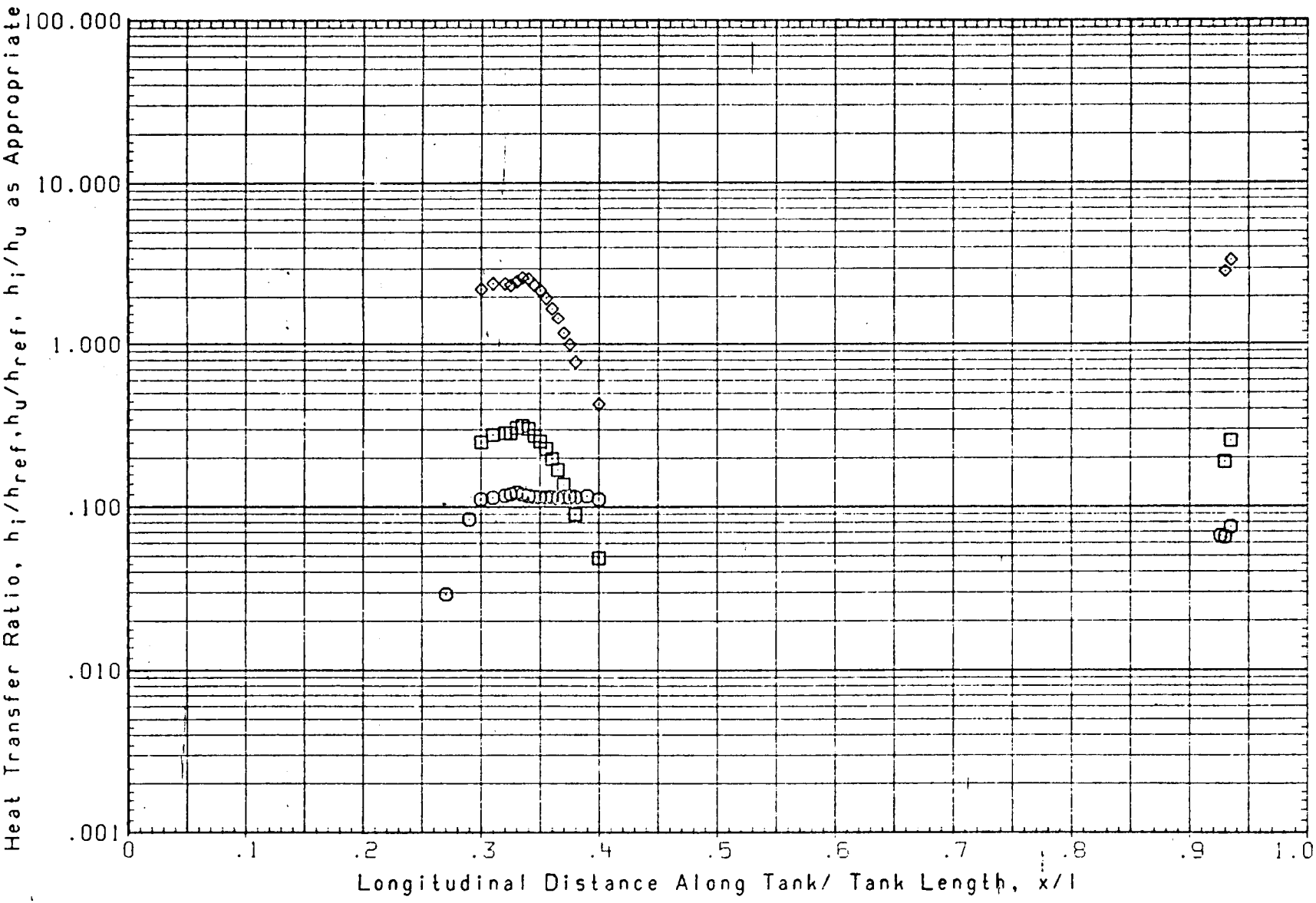


FIG. 21 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -6

MACH = 3.010 ALPHA = -4.985 PHI = 258.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT09)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-6.000
(LVFT29)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-6.000
(BVFT29)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-6.000

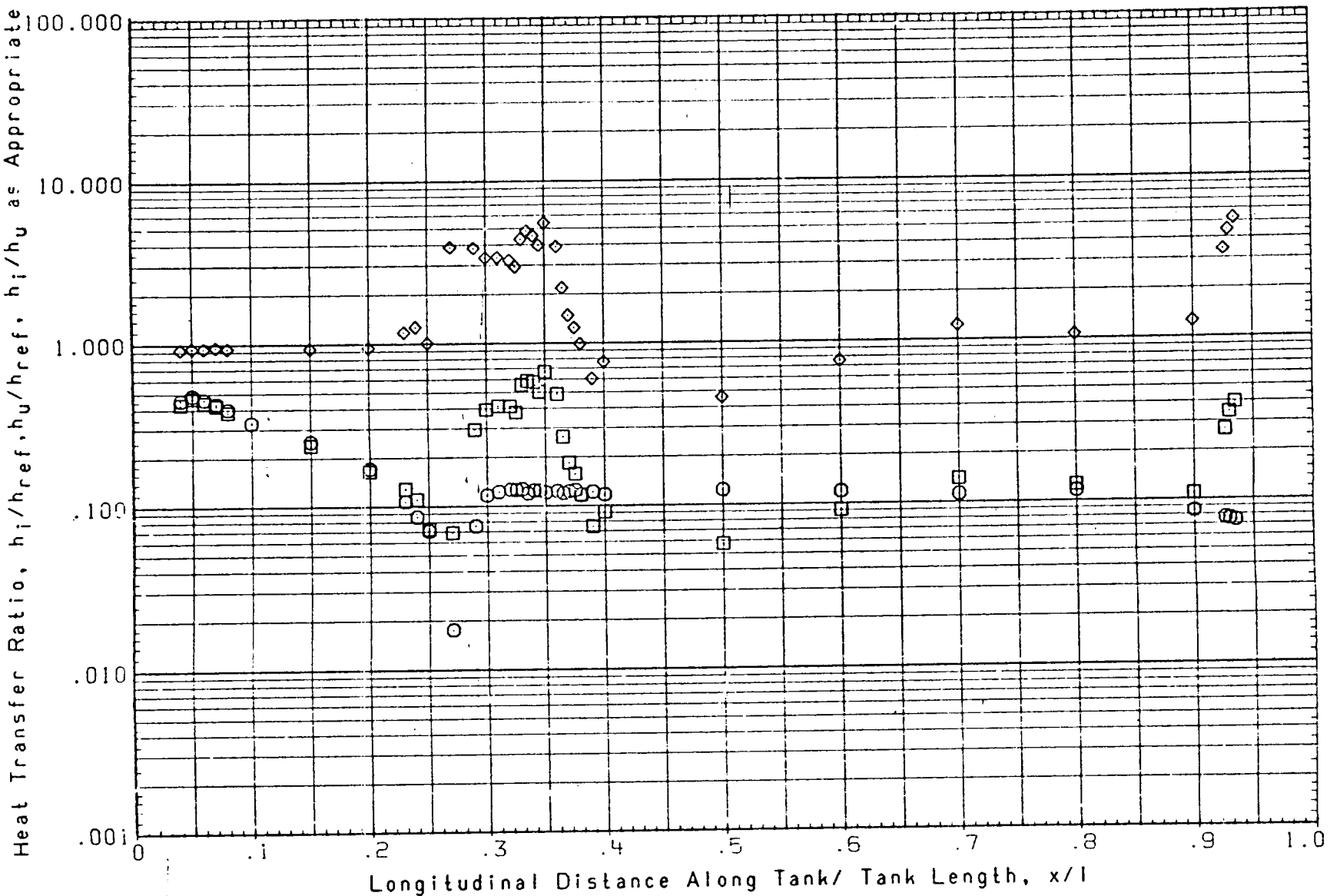


FIG. 21 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -6

MACH = 3.010 ALPHA = -4.985 PHI = 270.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT09)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-6.000
(LVFT29)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-6.000
(BVFT29)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-6.000

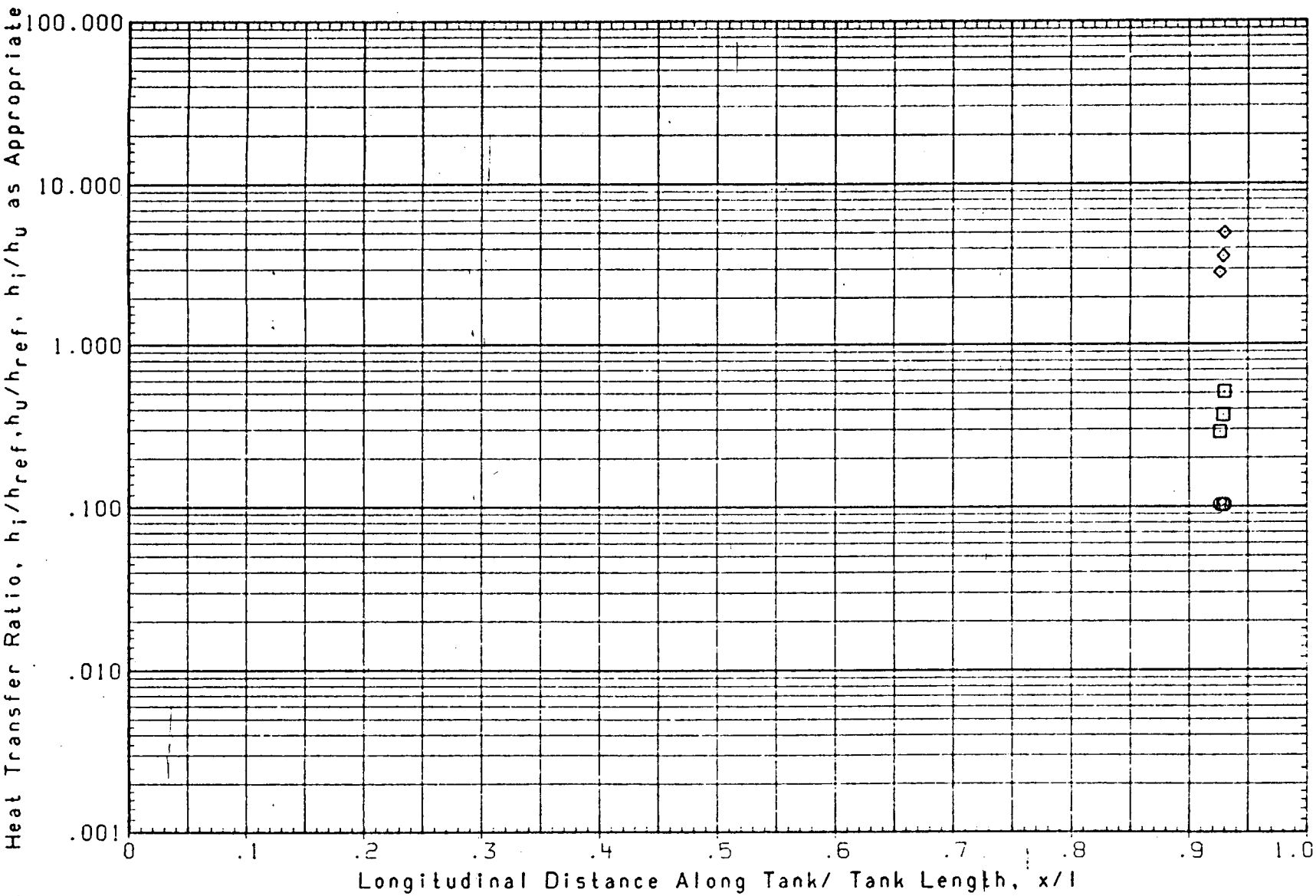


FIG. 21 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -6

MACH = 3.010 ALPHA = -4.985 PHI = 289.430

DATA SET	SYMBOL	CONFIGURATION		
(KVFT09)	○	IH41B(AEDC V41A-A9A) SPIKED EXTERNAL TANK ALONE	-5.000	-6.000
(LVFT29)	□	IH41B(V41A-A9A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-6.000
(BVFT29)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-6.000

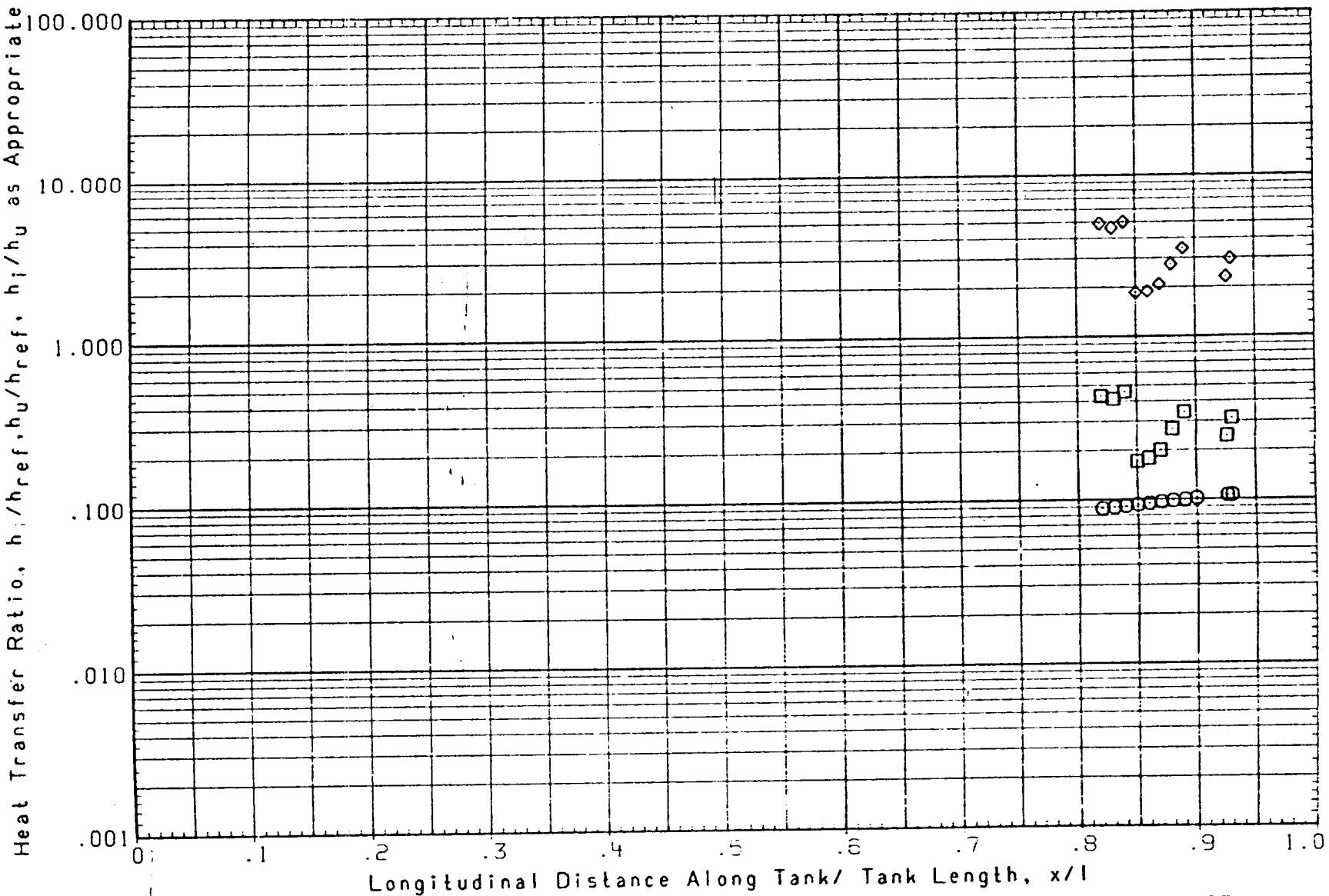


FIG. 21 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -6

MACH = 3.010 ALPHA = -4.985 PHI = 292.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT09)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-6.000
(LVFT29)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-6.000
(BVFT29)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-6.000

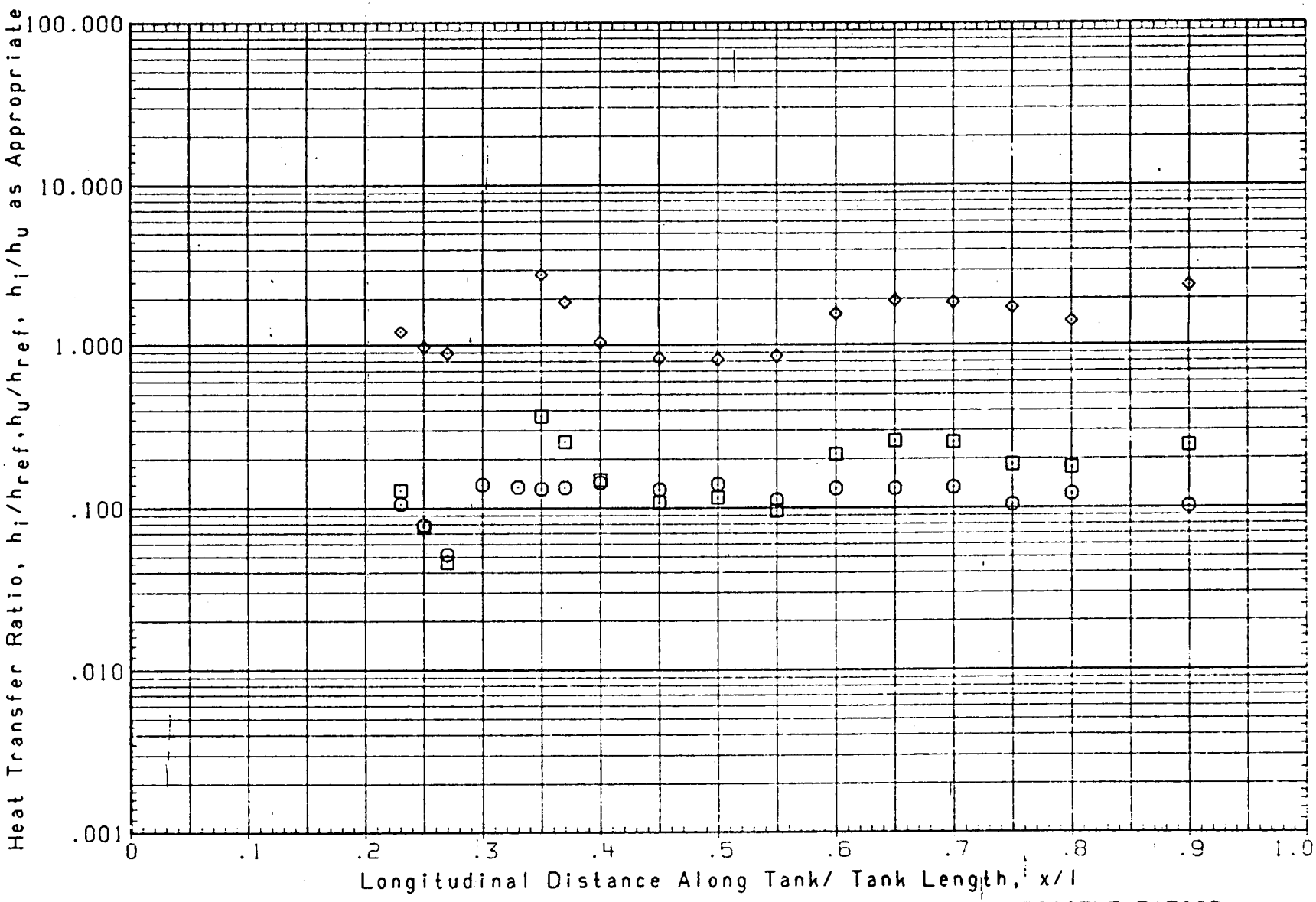


FIG. 21 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -6

MACH = 3.010 ALPHA = -4.985 PHI = 292.500

DATA SET	SYMBOL	CONFIGURATION		
(KVFT09)	○	IH41B(AEDC V41A-A4A) [illegible] EXTERNAL TANK ALONE	[illegible]	[illegible]
(LVFT29)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-6.000
(BVFT29)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-6.000

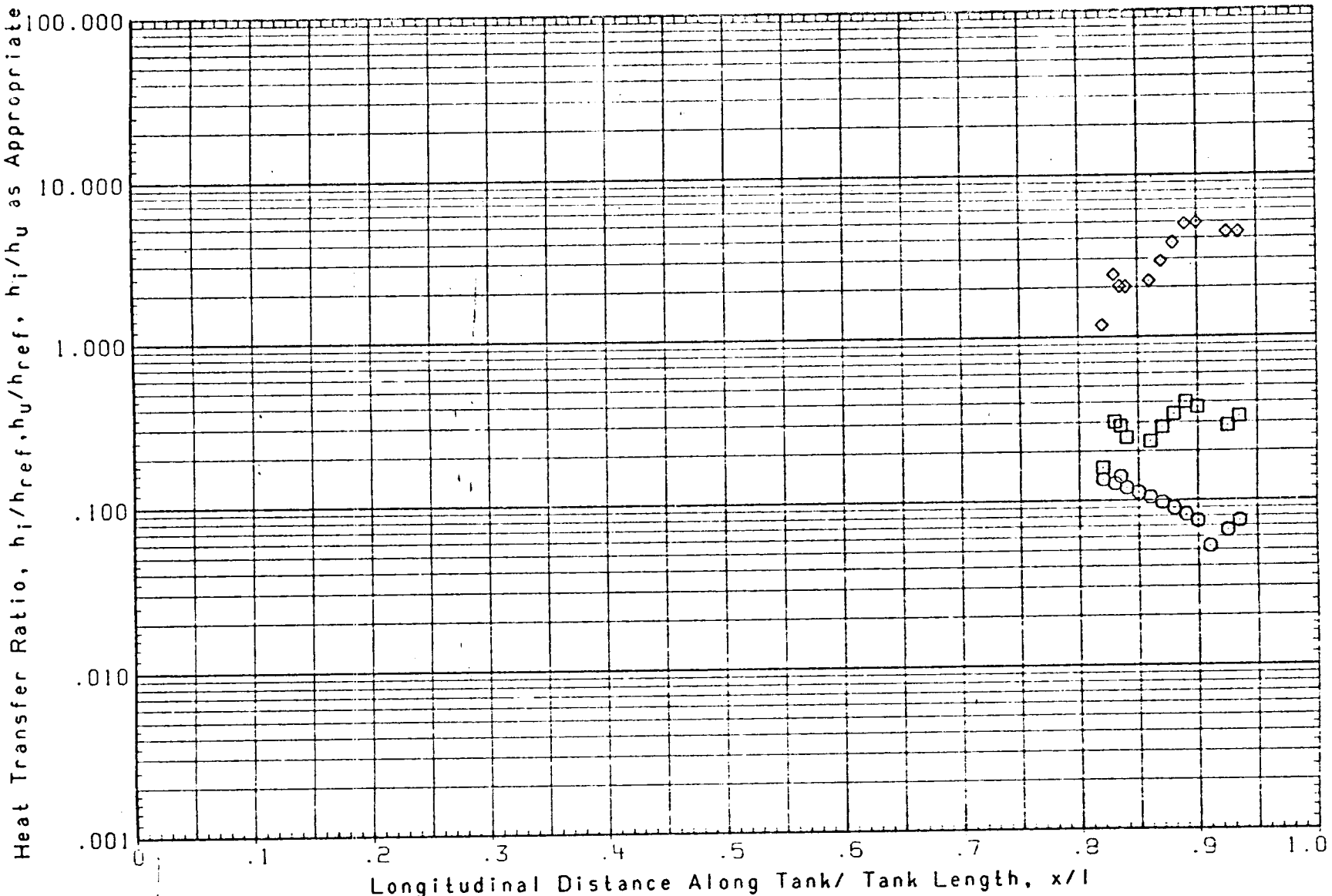


FIG. 21 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -6

MACH = 3.010 ALPHA = -4.985 PHI = 301.500

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT09)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-6.000
(LVFT29)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-6.000
(BVFT29)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-6.000

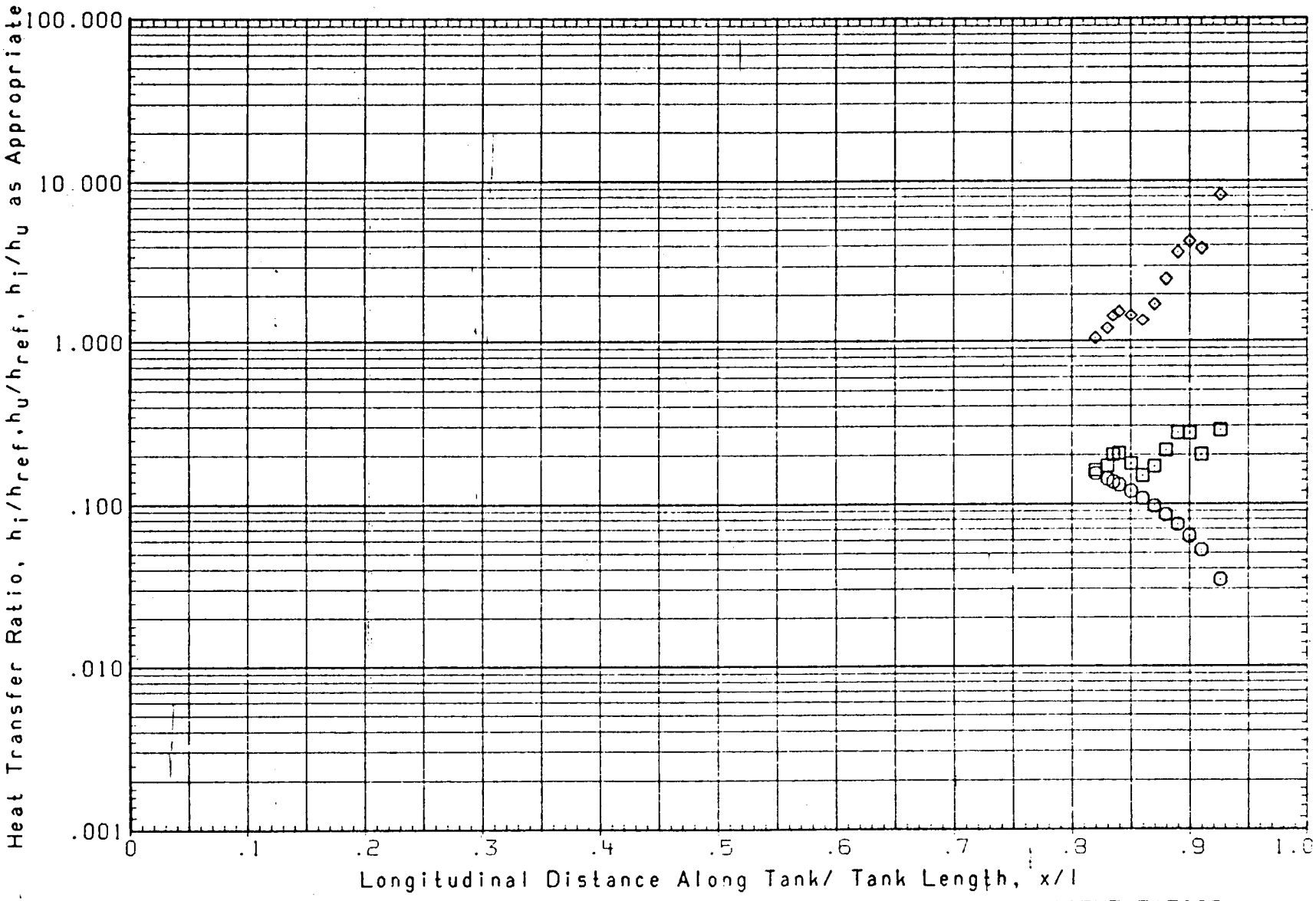


FIG. 21 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -6

MACH = 3.010 ALPHA = -4.985 PHI = 305.400

DATA SET	SYMBOL	CONFIGURATION	[illegible]	[illegible]
(KVFT09)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	[illegible]	6.000
(LVFT29)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-6.000
(BVFT29)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-6.000

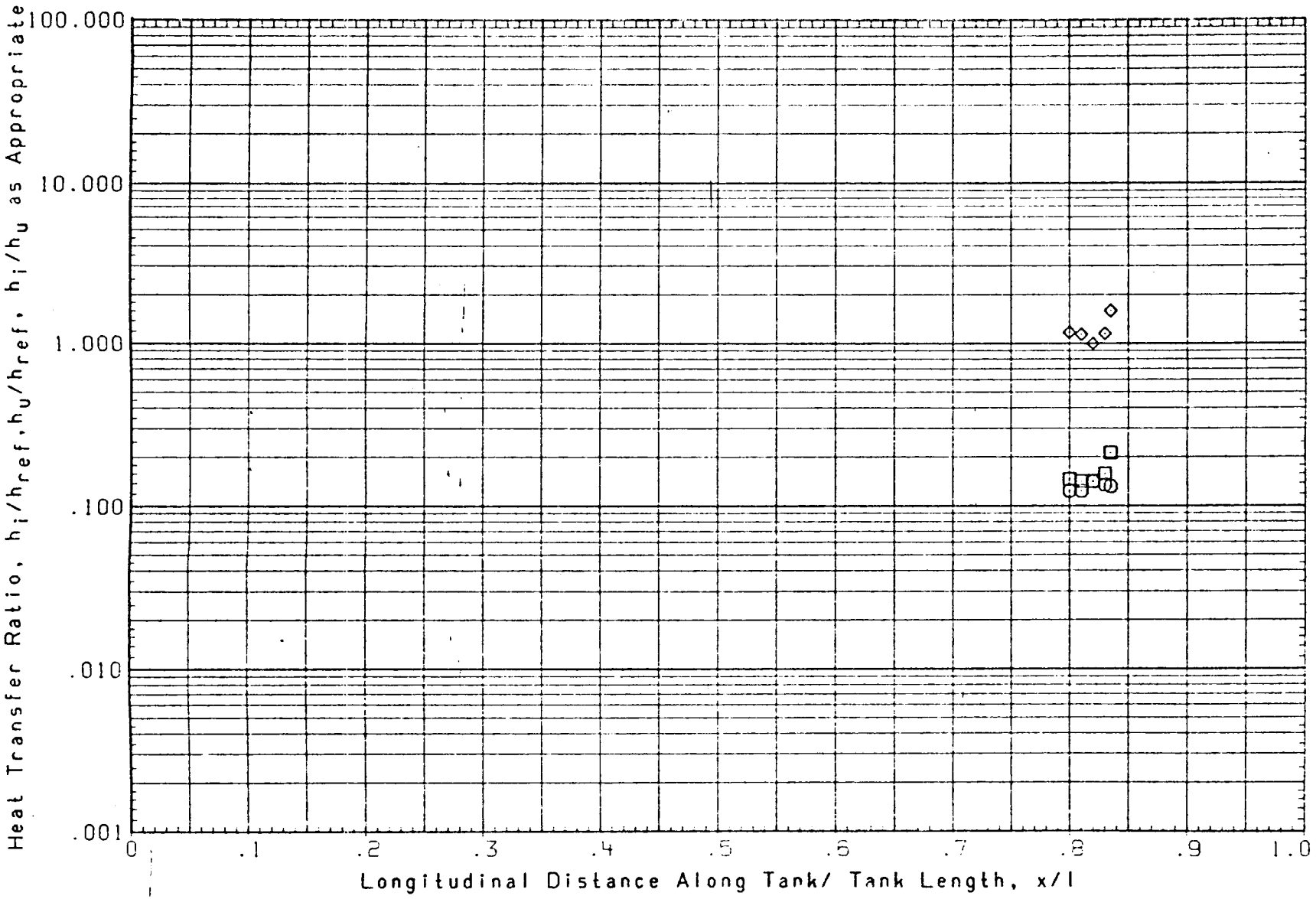


FIG. 21 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -6

MACH = 3.010 ALPHA = -4.985 PHI = 309.300

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT03)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-6.000
(LVFT29)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-6.000
(BVFT29)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-6.000

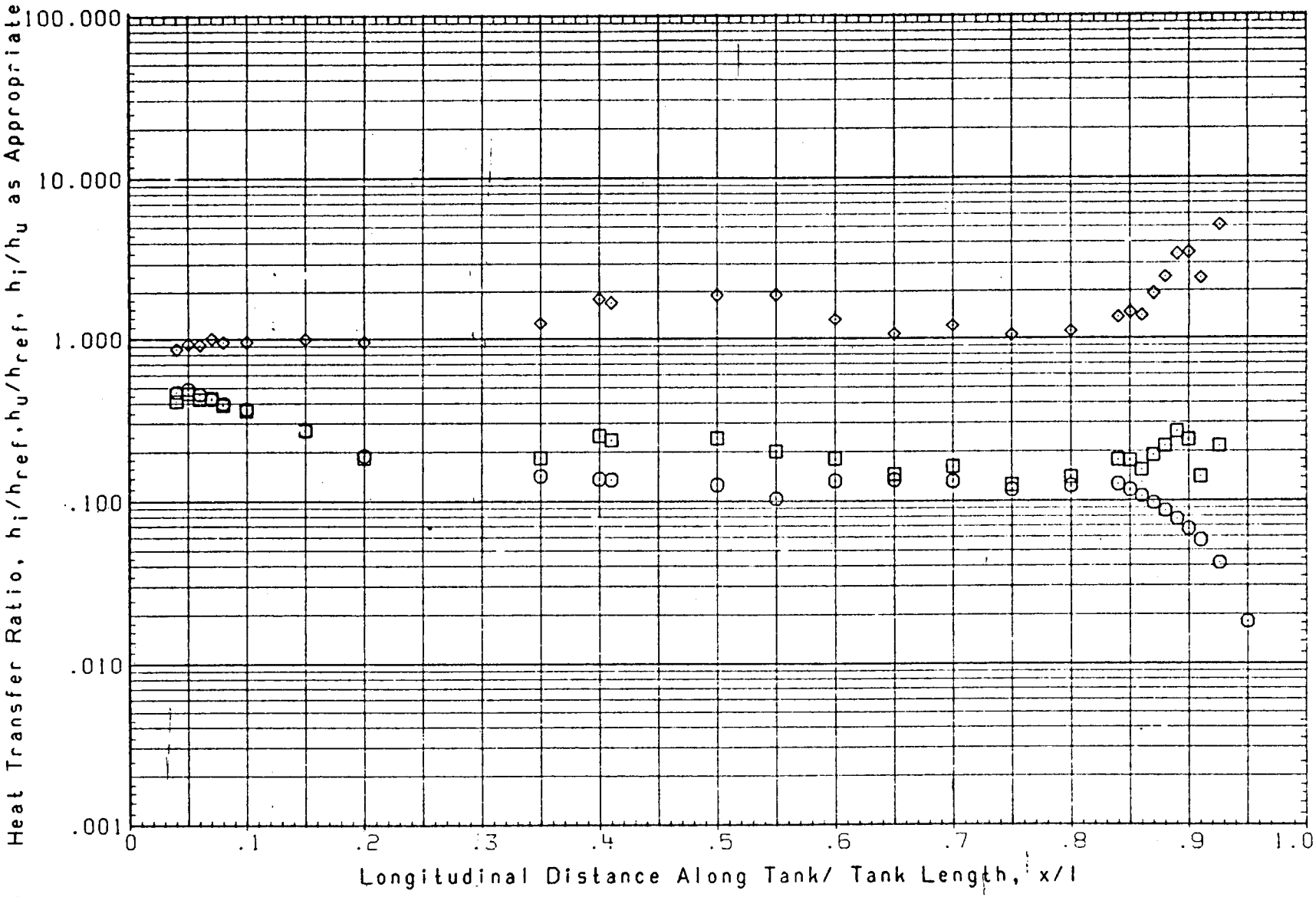


FIG. 21 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -6

MACH = 3.010 ALPHA = -4.985 PHI = 315.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		
(KVFT09)	○	IH41B(AEDC V41A-A8A) SPIKED EXTERNAL TANK ALONE	[illegible]	-7.000
(LVFT29)	□	IH41B(V41A-A4A) O I S (SPIKED ET DATA) HI/HREF	-5.000	-5.000
(BVFT29)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-6.000

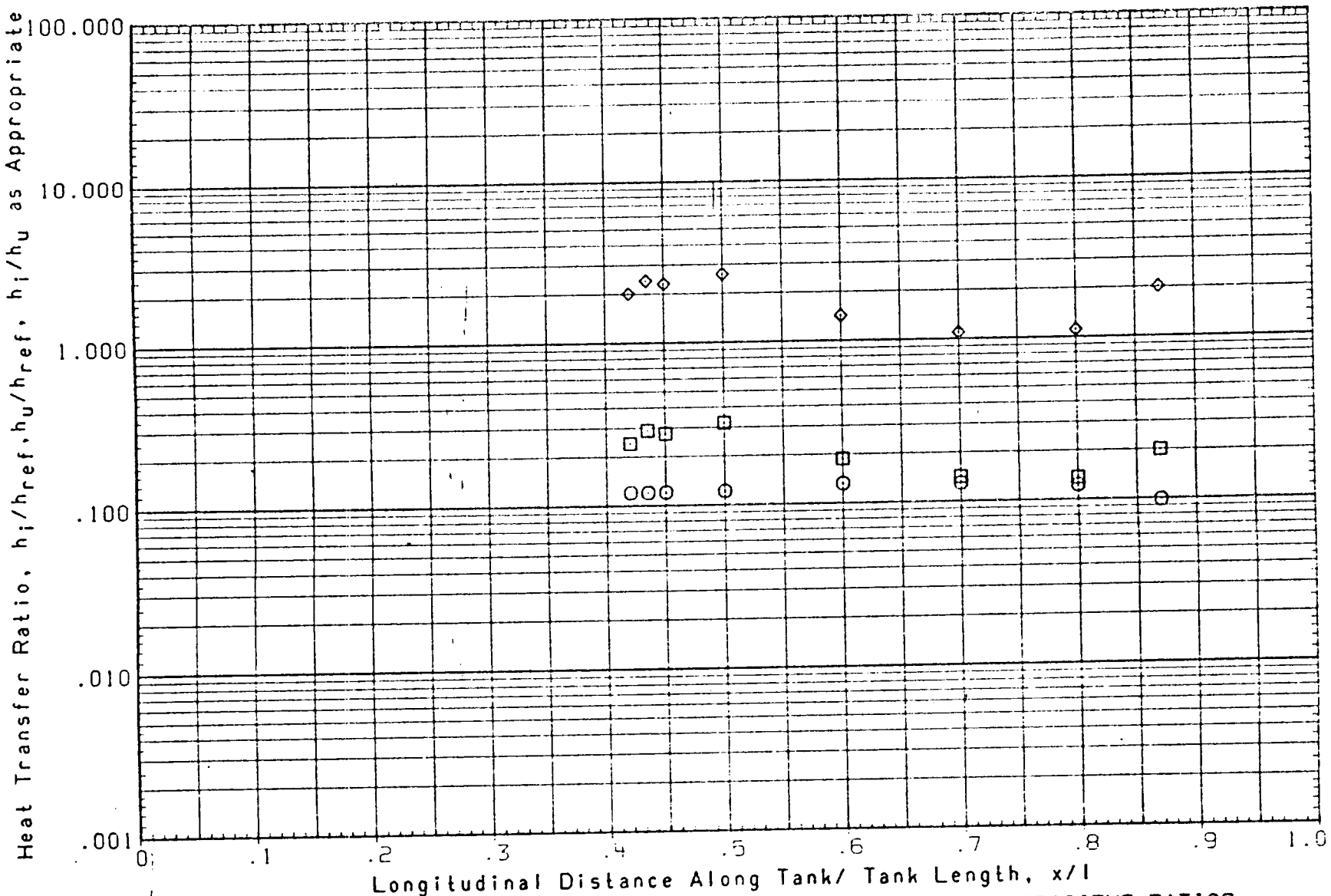


FIG. 21 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -6

MACH = 3.010 ALPHA = -4.985 PHI = 322.300

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT09)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-6.000
(LVFT29)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-6.000
(BVFT29)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-6.000

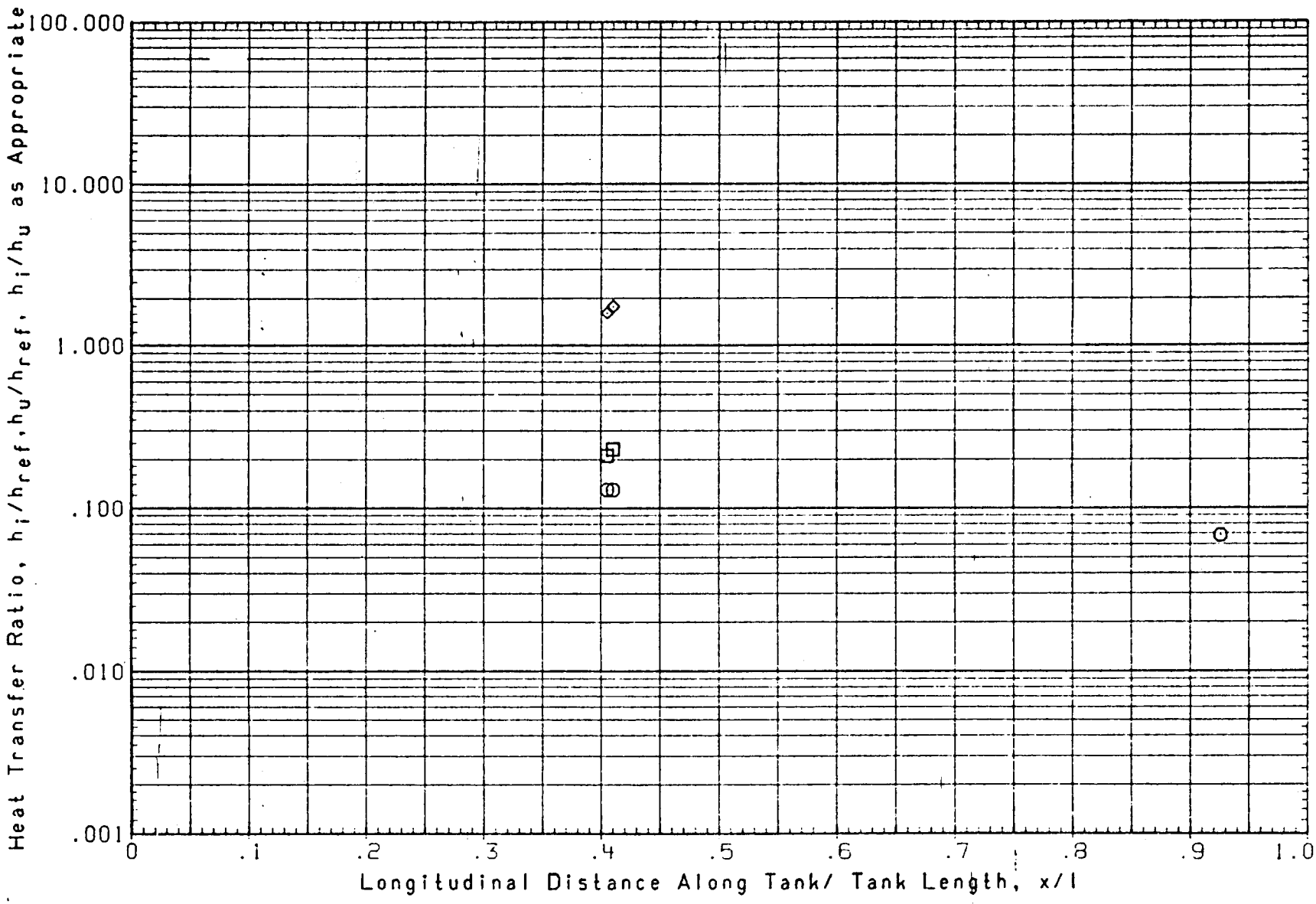


FIG. 21 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS WINDWARD SIDE, ALPHA = -5, BETA = -6

MACH = 3.010 ALPHA = -4.985 PHI = 324.450

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT09)	○	IH41B(AEDC V41A-A49) SPIKED EXTERNAL TANK ALONE	-5.000	-6.000
(LVFT29)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-6.000
(BVFT29)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-6.000

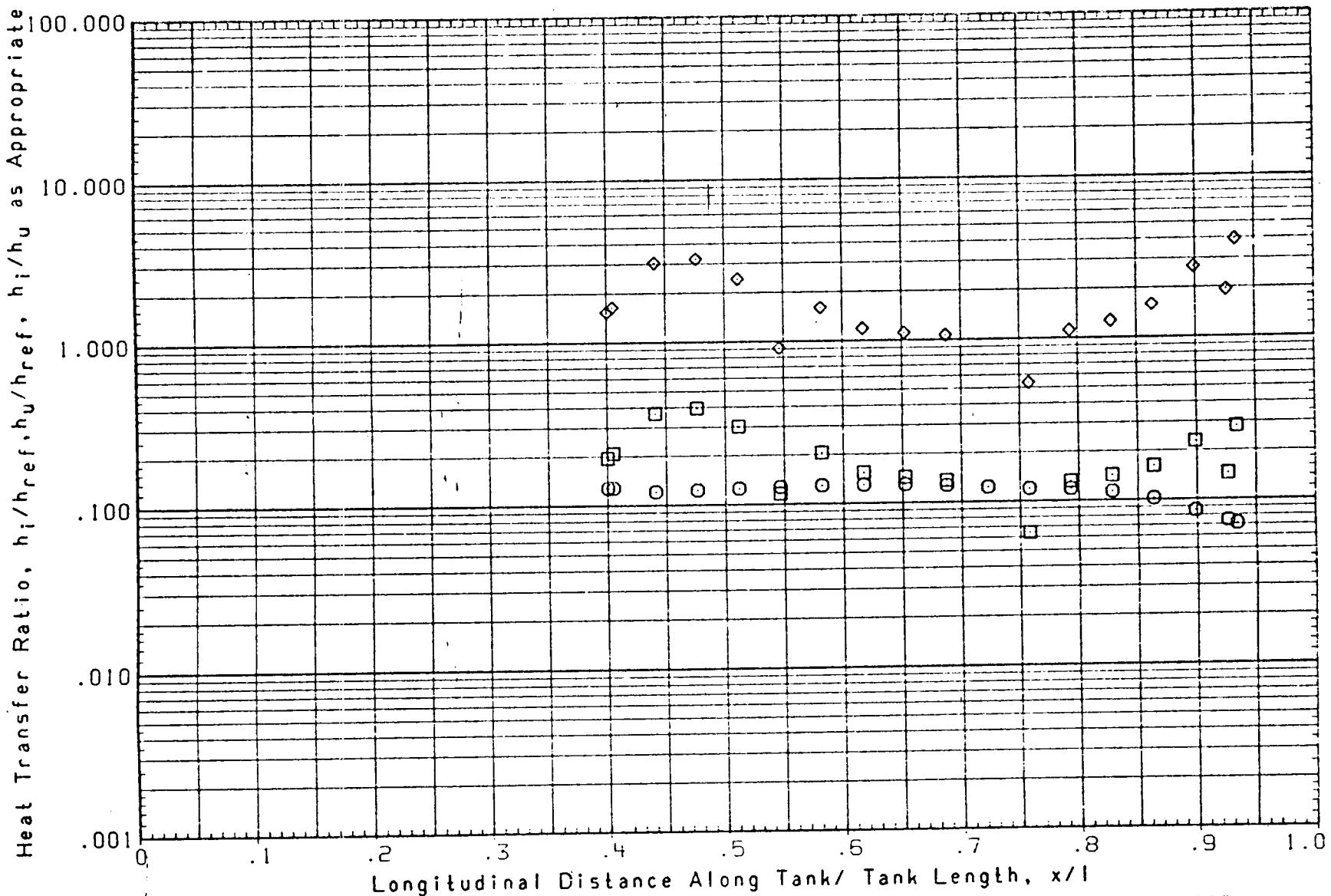


FIG. 21 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS WINDWARD SIDE, ALPHA = -5, BETA = -6

MACH = 3.010 ALPHA = -4.985 PHI = 326.850

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT09)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-6.000
(LVFT29)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-6.000
(BVFT29)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-6.000

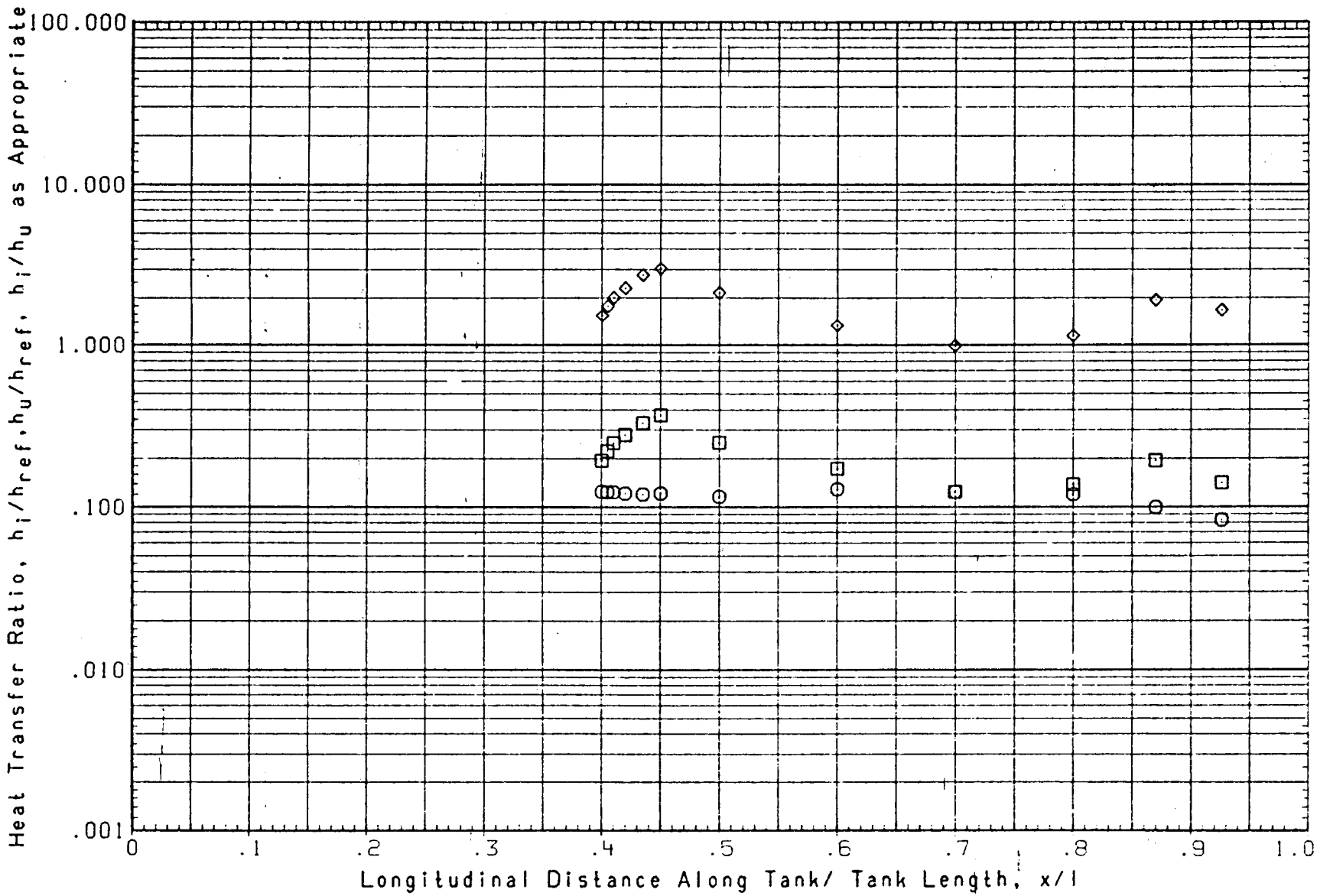


FIG. 21 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -6

MACH = 3.010 ALPHA = -4.985 PHI = 330.200

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT09)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-6.000
(LVFT29)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-6.000
(BVFT29)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-6.000

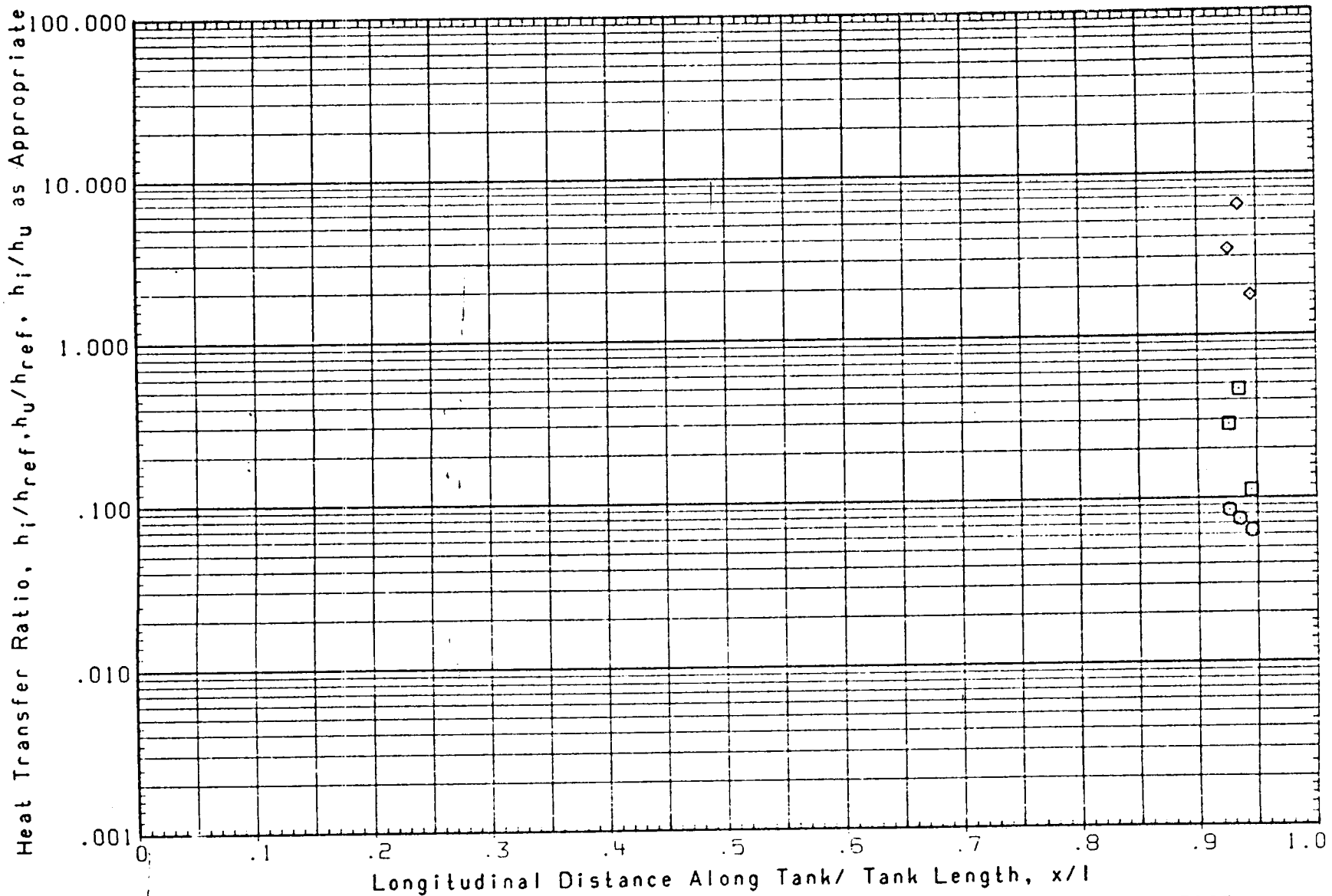


FIG. 21 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -6

MACH = 3.010 ALPHA = -4.985 PHI = 334.980

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT09)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-6.000
(LVFT29)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-6.000
(BVFT29)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-6.000

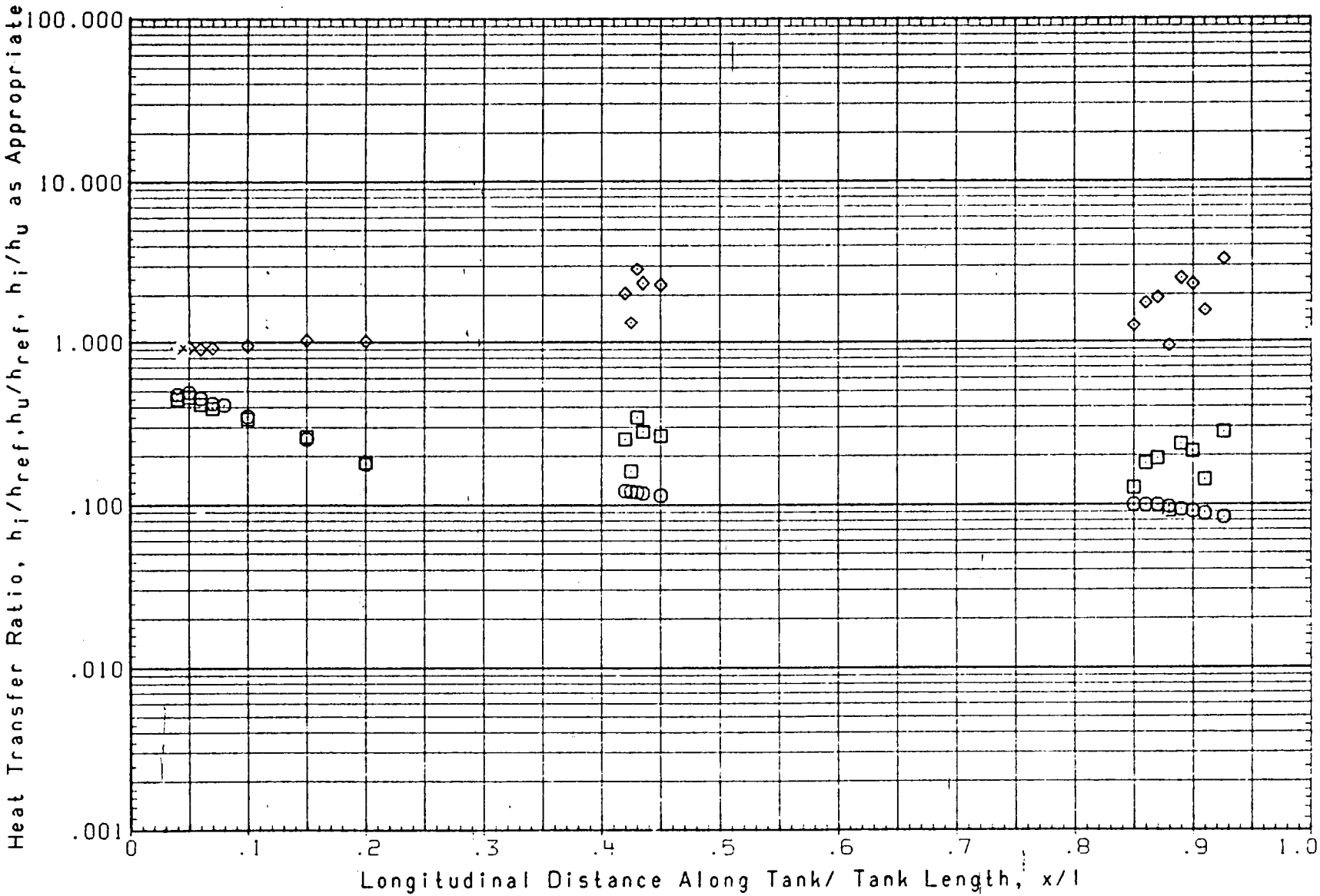


FIG. 21 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -6

MACH = 3.010 ALPHA = -4.985 PHI = 337.500

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT09)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-6.000
(LVFT29)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-6.000
(BVFT29)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-6.000

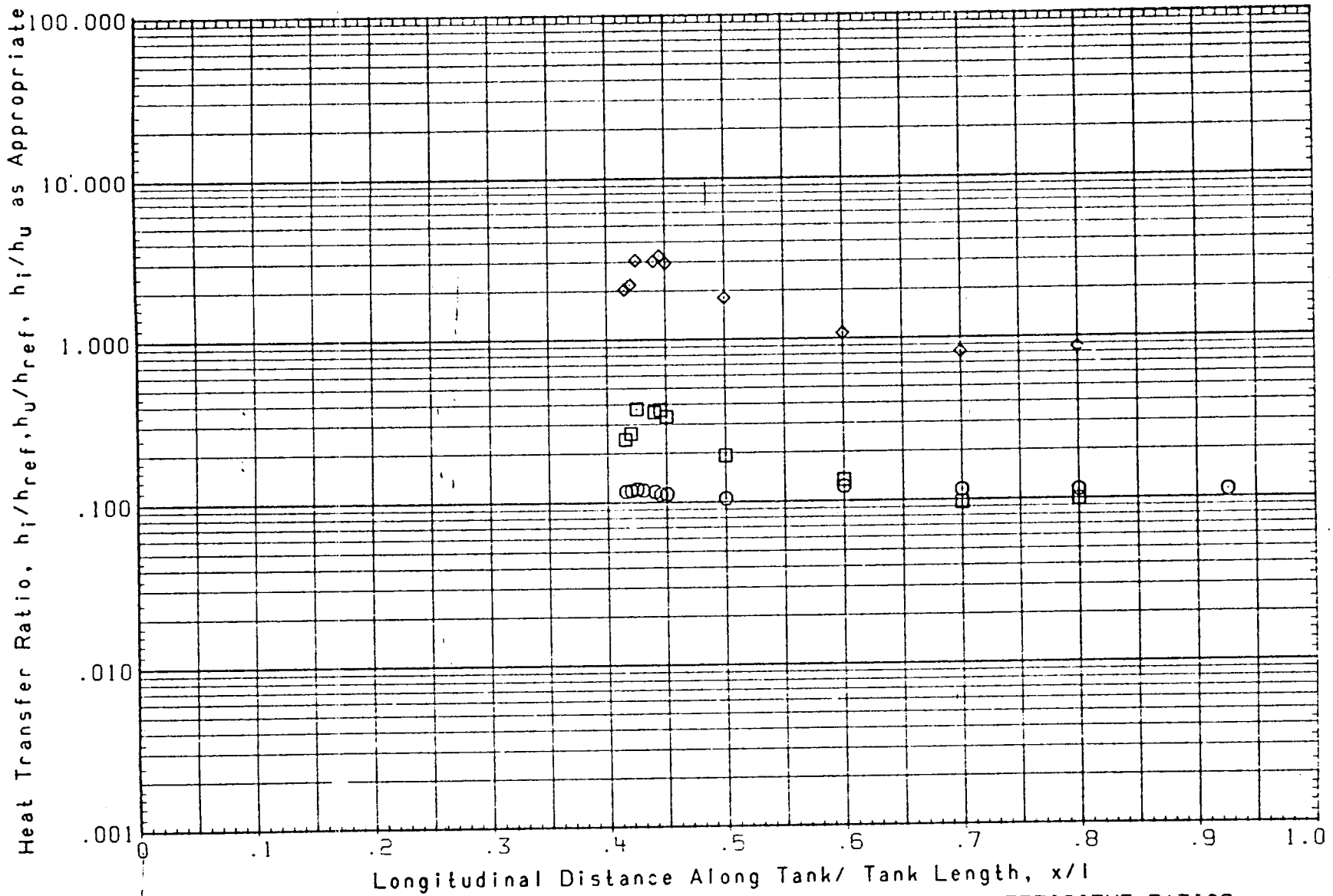


FIG. 21 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -6

MACH = 3.010 ALPHA = -4.985 PHI = 343.120

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT09)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-6.000
(LVFT29)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-6.000
(BVFT29)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-6.000

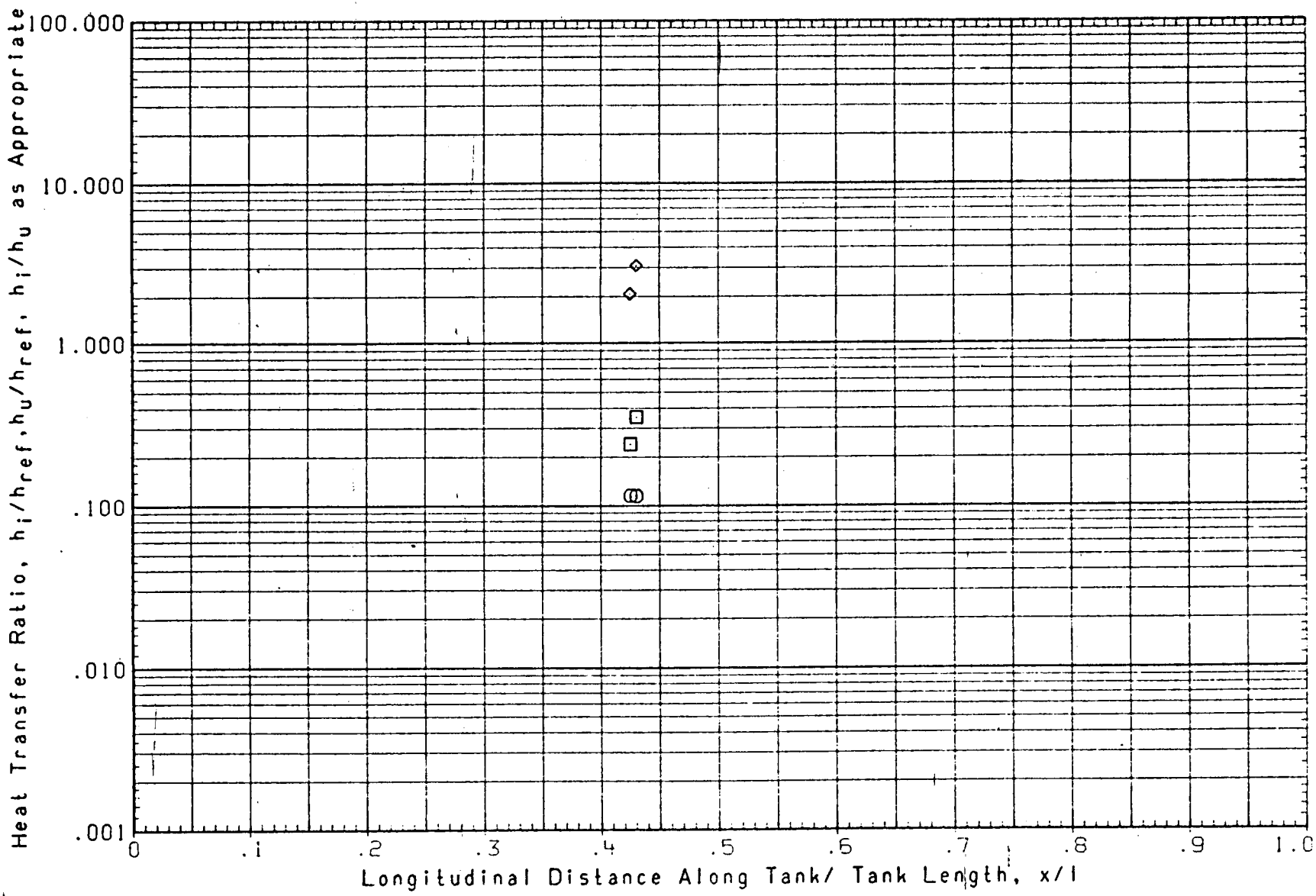


FIG. 21 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -6

MACH = 3.010 ALPHA = -4.985 PHI = 345.560

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT09)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-6.000
(LVFT29)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-6.000
(BVFT29)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-6.000

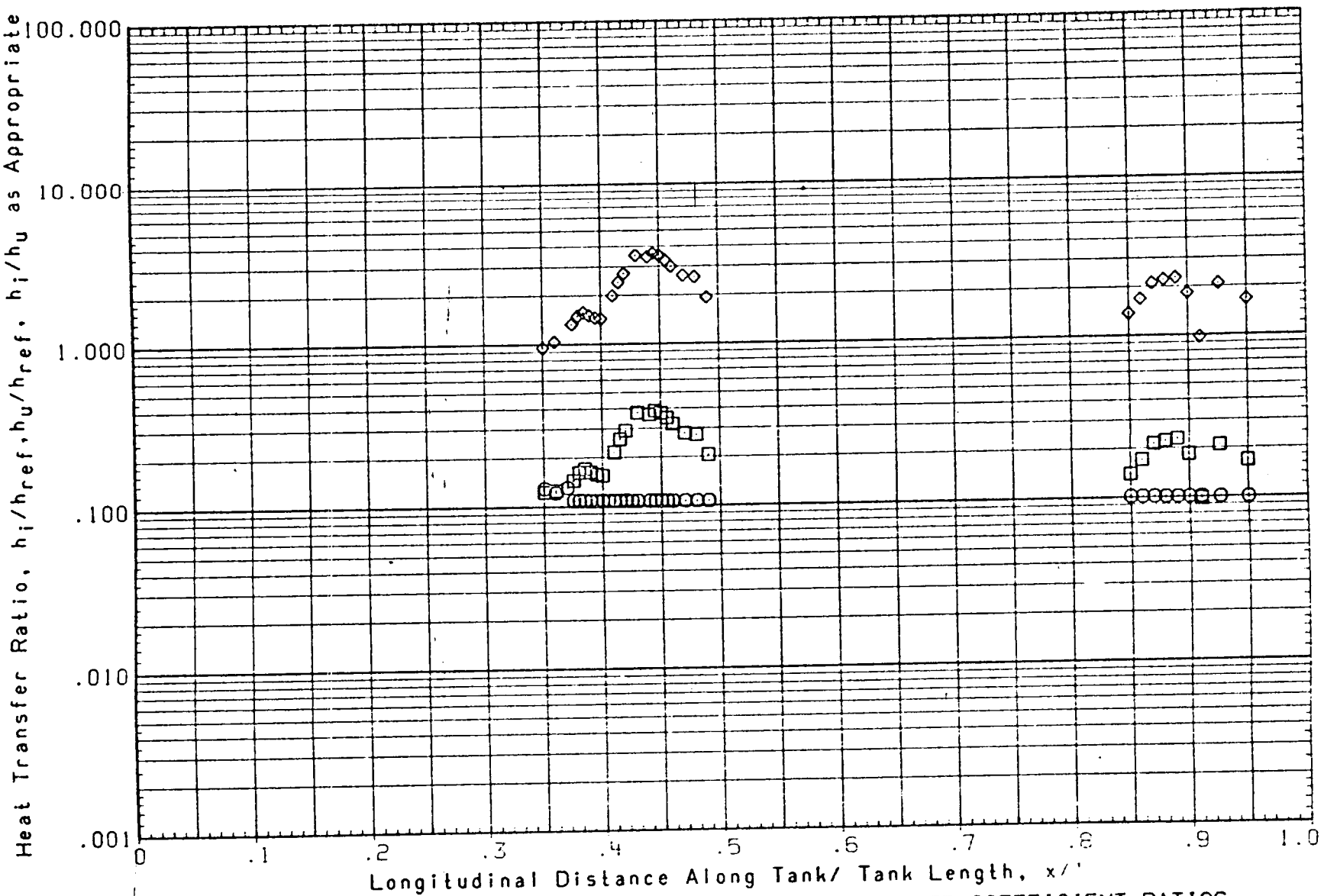


FIG. 21 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS WINDWARD SIDE, ALPHA = -5, BETA = -5

MACH = 3.010 ALPHA = -4.985 PHI = 348.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT09)	○	1H41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-6.000
(LVFT29)	□	DATA NOT AVAILABLE	-5.000	-6.000
(BVFT29)	◇	DATA NOT AVAILABLE	-5.000	-6.000

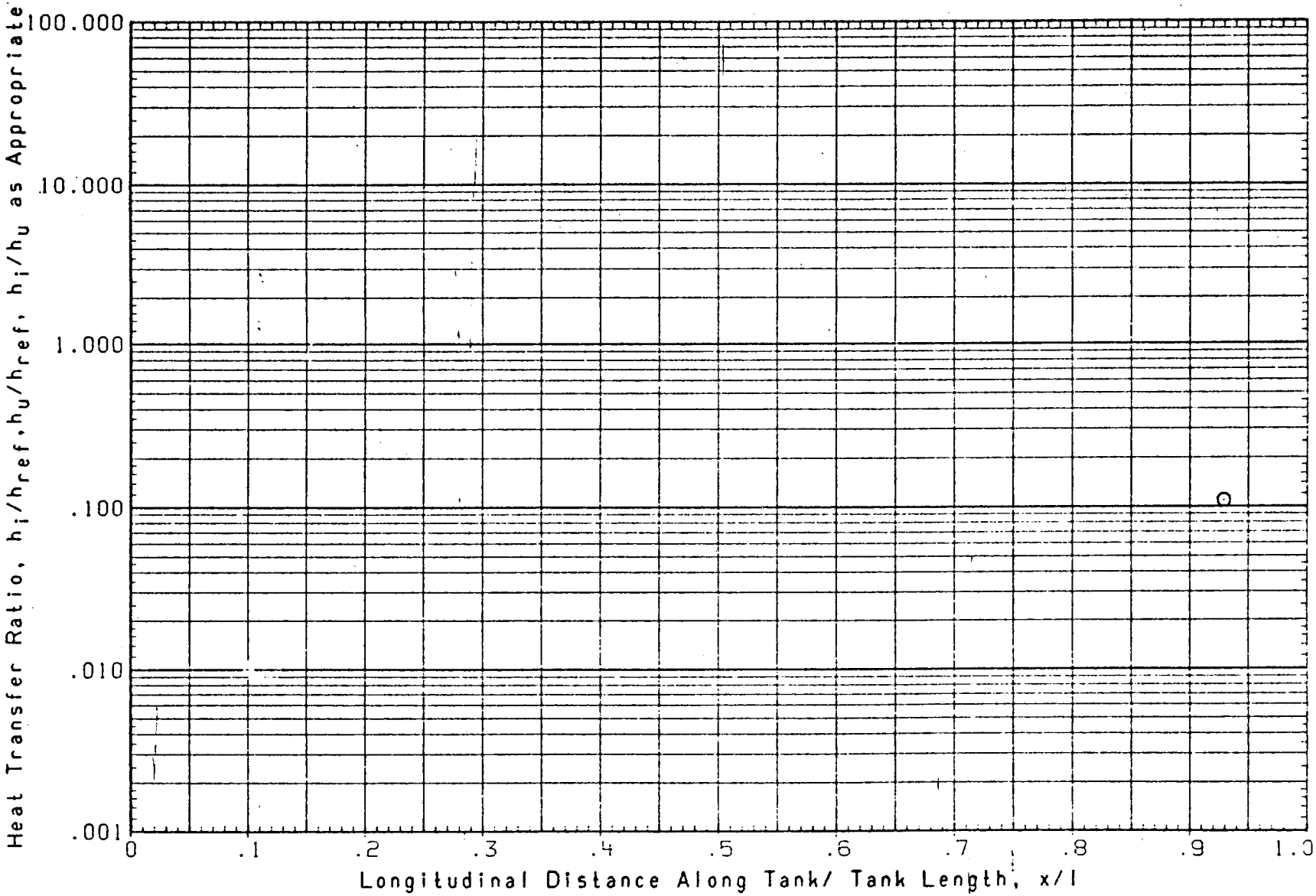


FIG. 21 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -6

MACH = 3.010 ALPHA = -4.985 PHI = 352.200

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT09)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-6.000
(LVFT29)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-6.000
(BVFT29)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-6.000

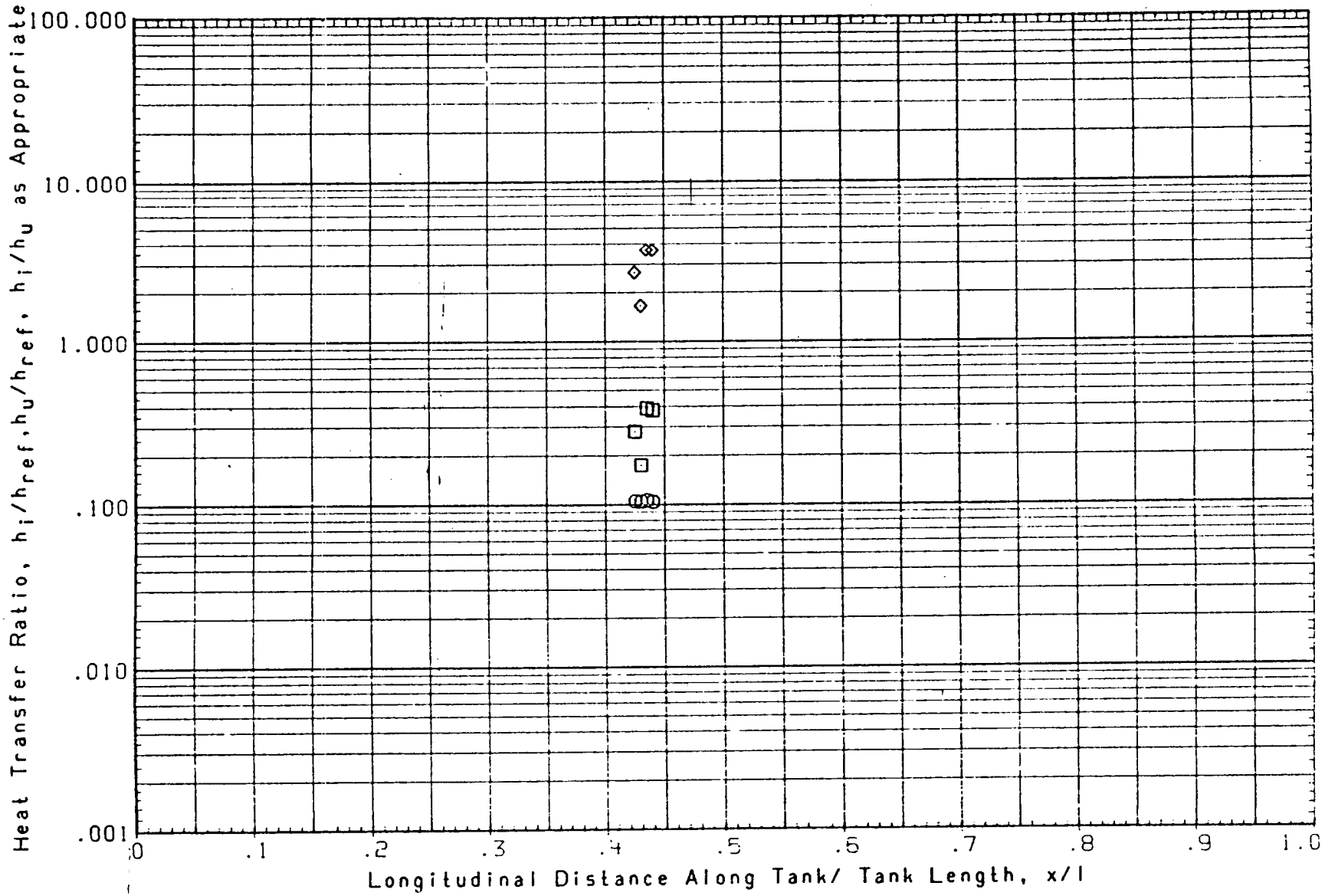


FIG. 21 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -6

MACH = 3.010 ALPHA = -4.985 PHI = 354.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT09)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-6.000
(LVFT29)	□	DATA NOT AVAILABLE	-5.000	-6.000
(BVFT29)	◇	DATA NOT AVAILABLE	-5.000	-6.000

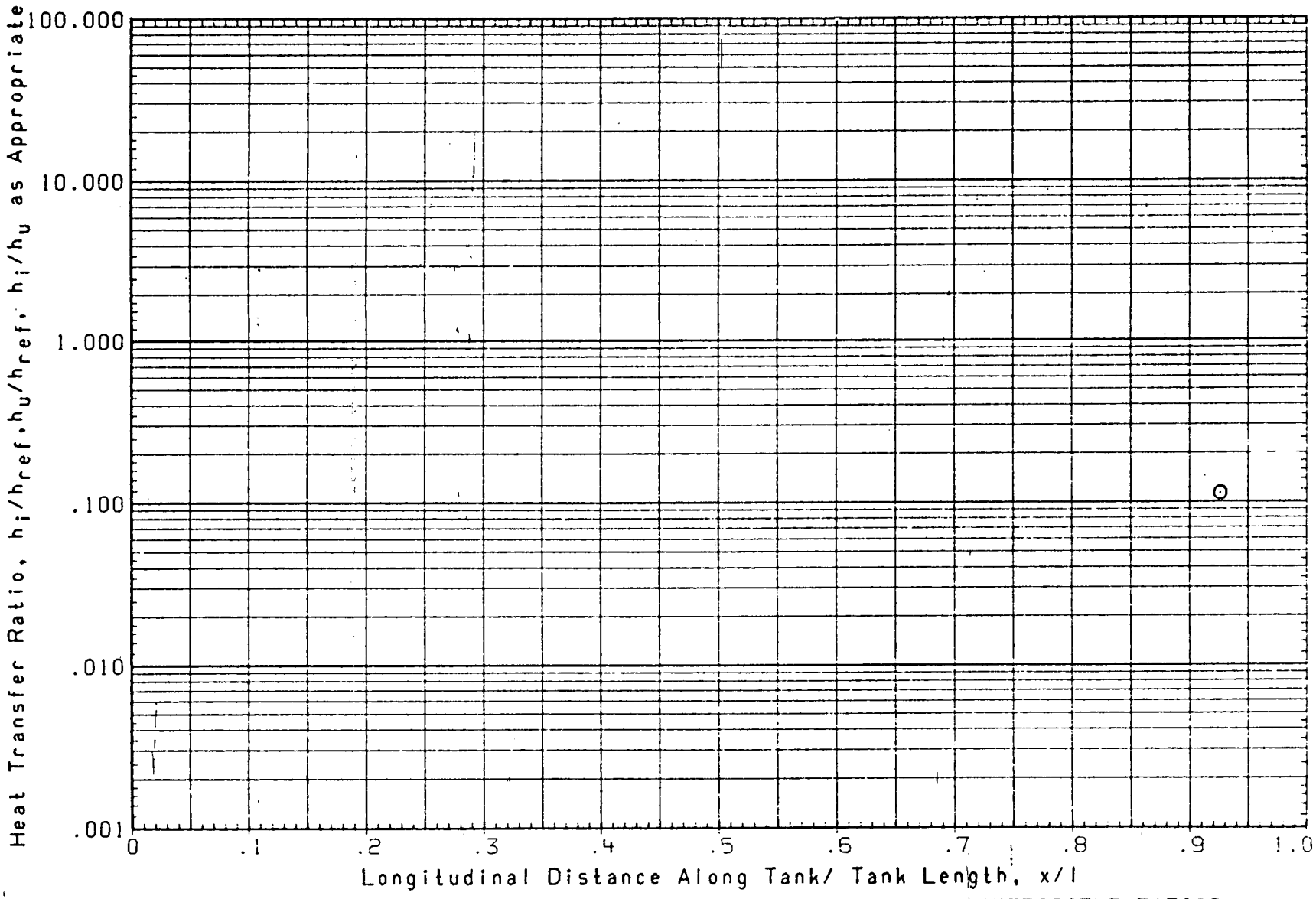


FIG. 21 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -6

MACH = 3.010 ALPHA = -4.985 PHI = 355.160

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT09)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-6.000
(LVFT29)	□	IH41B(V41A-A4A) O " S (SPIKED ET DATA) HI/HREF	-5.000	-5 000
(BVFT29)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-6.000

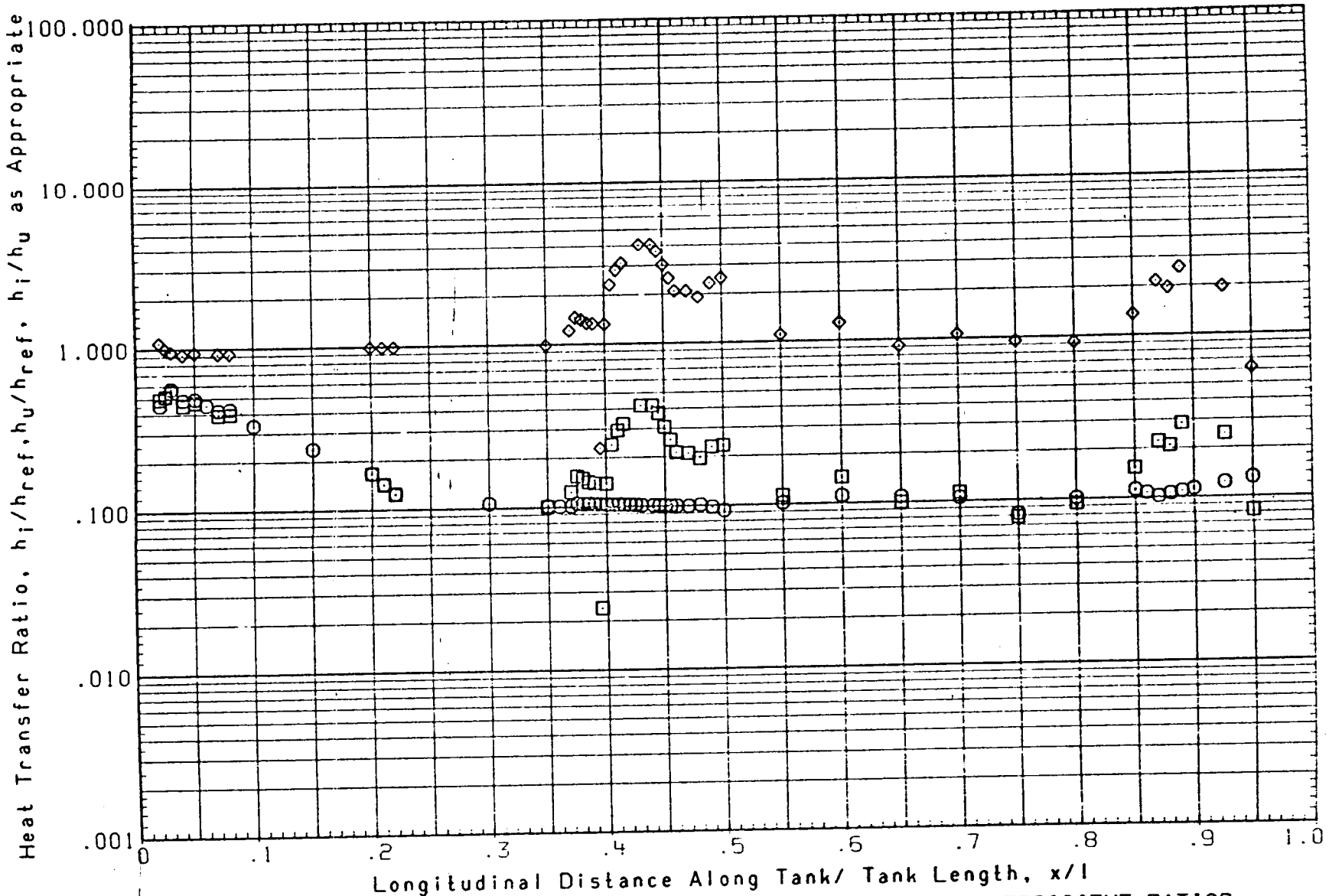


FIG. 21 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -6

MACH = 3.010 ALPHA = -4.985 PHI = 360.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT09)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-6.000
(LVFT29)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-6.000
(BVFT29)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-6.000

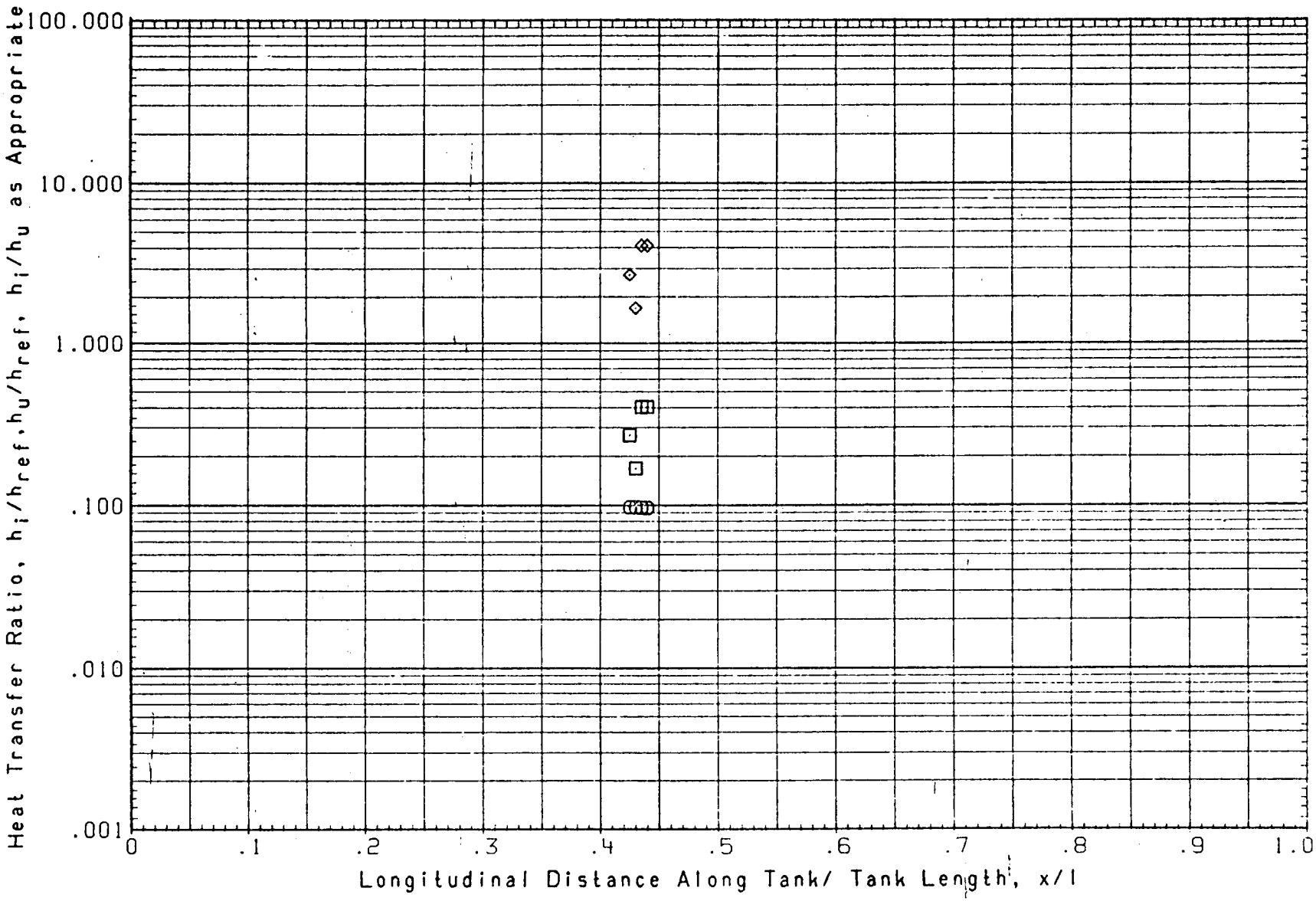


FIG. 21 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -6

MACH = 3.010 ALPHA = -4.985 PHI = 5.630

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT09)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-6.000
(LVFT29)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-6.000
(BVFT29)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-6.000

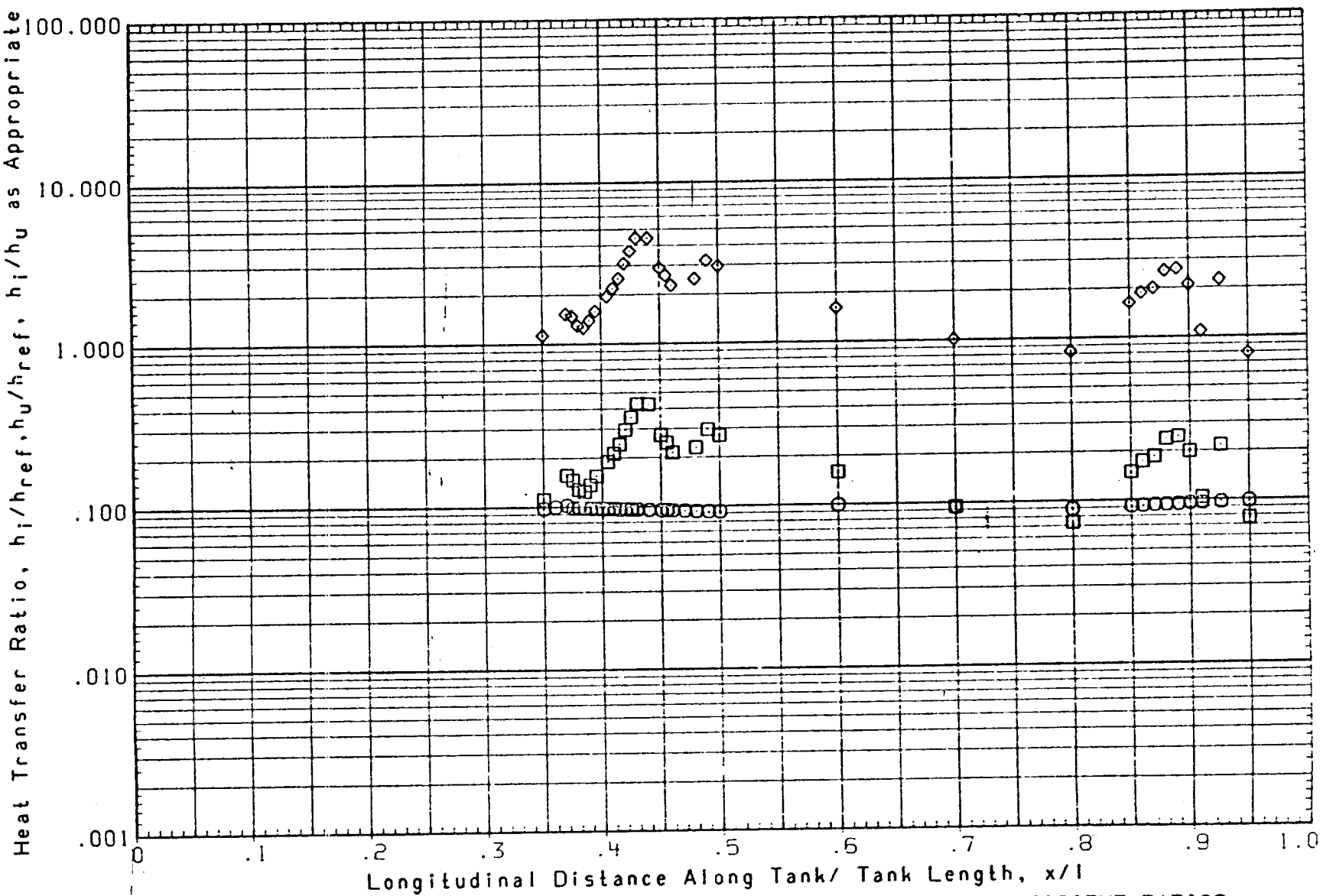


FIG. 21 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -6

MACH = 3.010 ALPHA = -4.985 PHI = 11.250

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT09)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-6.000
(LVFT29)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-6.000
(BVFT29)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-6.000

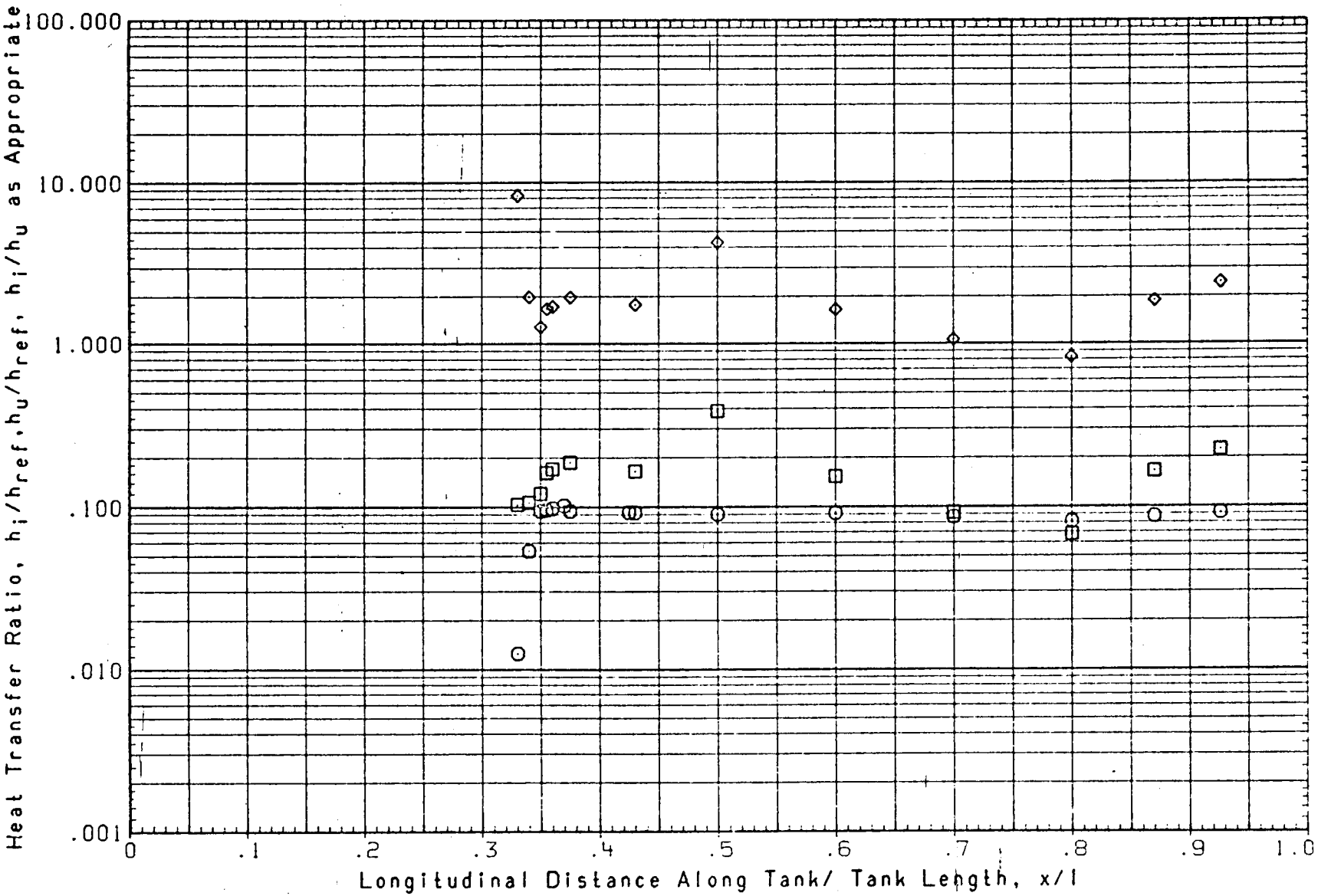


FIG. 21 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -6

MACH = 3.010 ALPHA = -4.985 PHI = 17.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT09)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-6.000
(LVFT29)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-6.000
(BVFT29)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-6.000

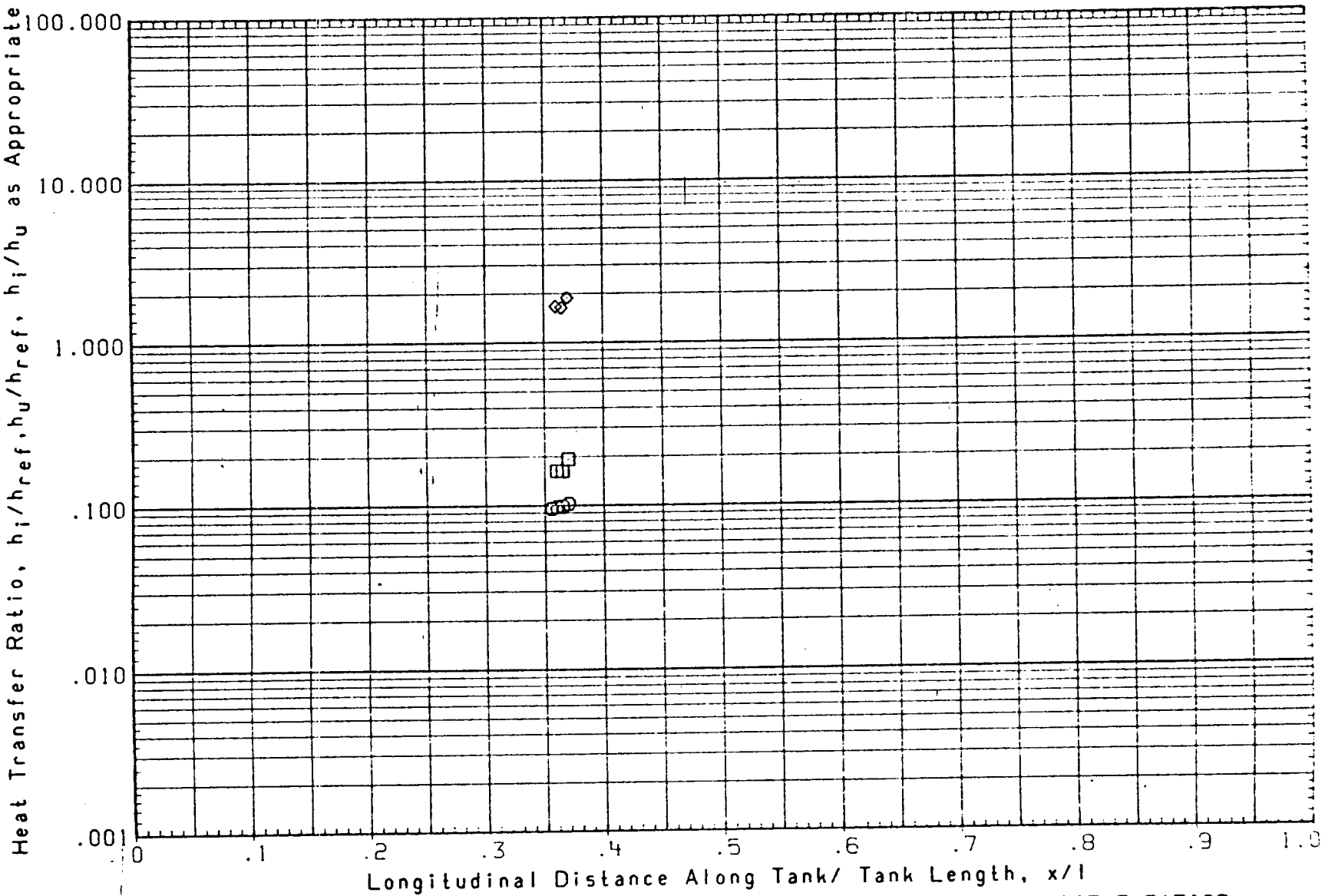


FIG. 21 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -6

MACH = 3.010 ALPHA = -4.985 PHI = 20.980

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT09)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-6.000
(LVFT29)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-6.000
(BVFT29)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-6.000

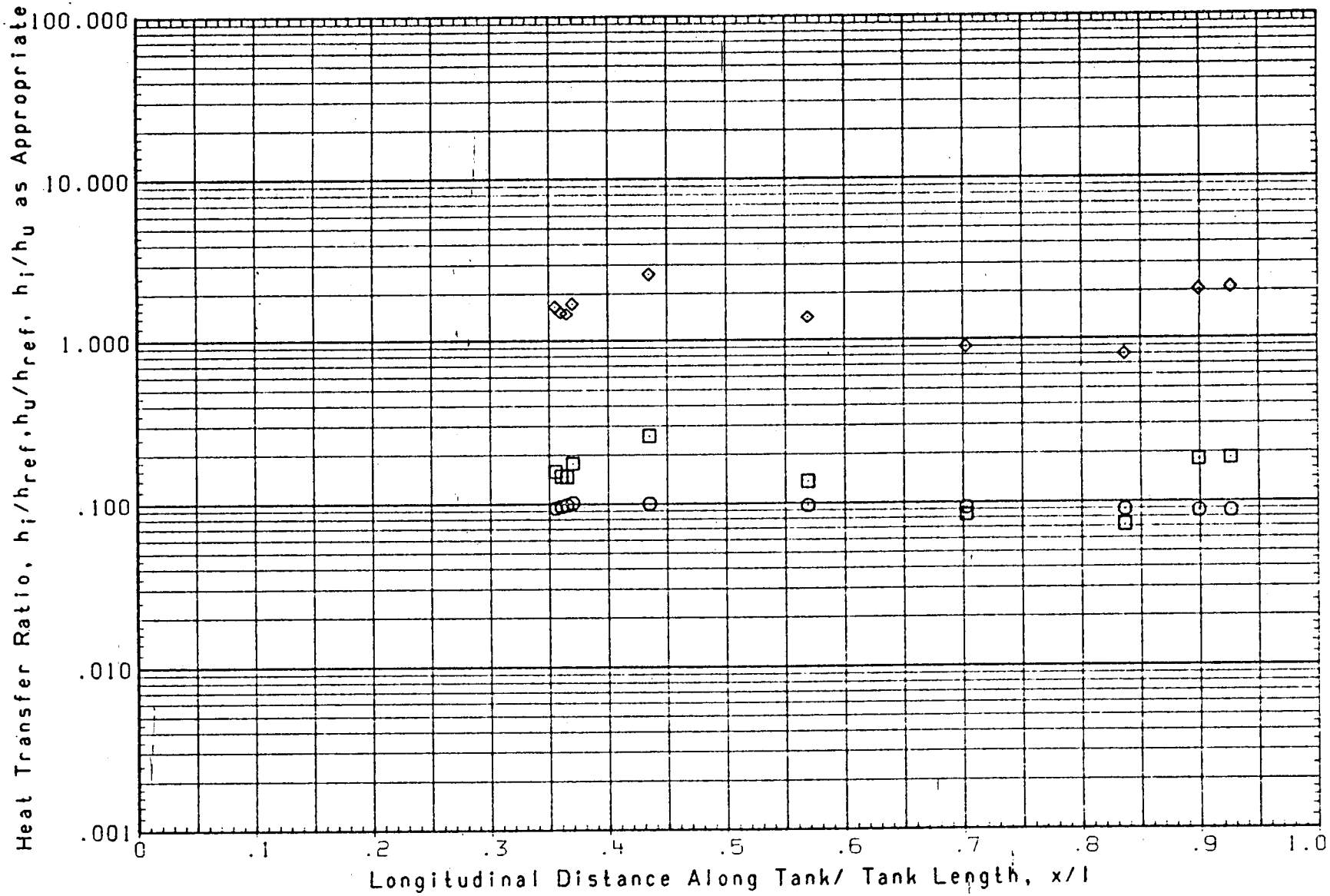


FIG. 21 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -6

MACH = 3.010 ALPHA = -4.985 PHI = 23.075

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT09)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-6.000
(LVFT29)	□	IH41B(V41A-A4A) C T S (SPIKED ET DATA) HI/HREF	-5.000	-6.000
(BVFT29)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-6.000

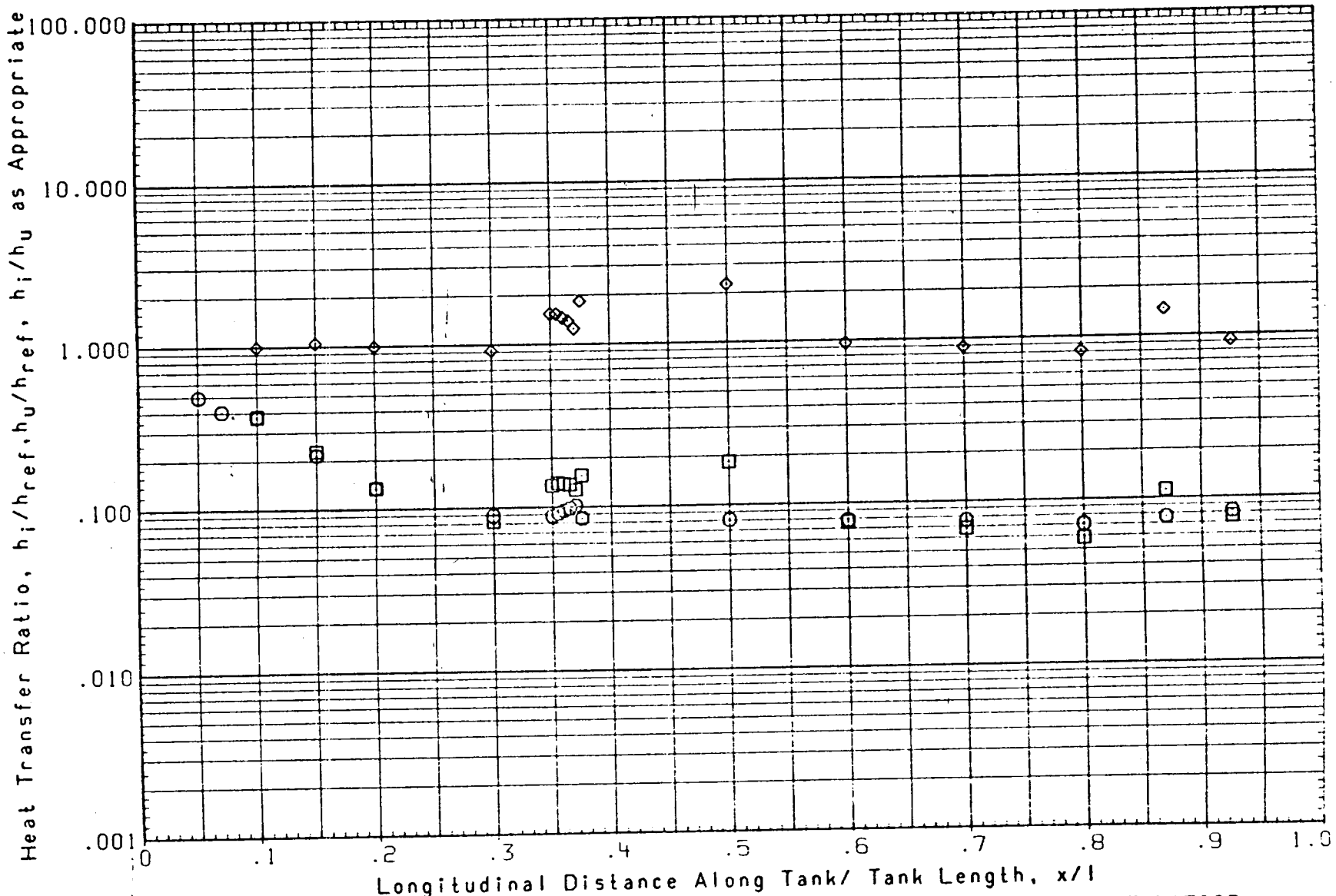


FIG. 21 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -6

MACH = 3.010 ALPHA = -4.985 PHI = 29.800

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT09)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-6.000
(LVFT29)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA; HI/HREF	-5.000	-6.000
(BVFT29)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-6.000

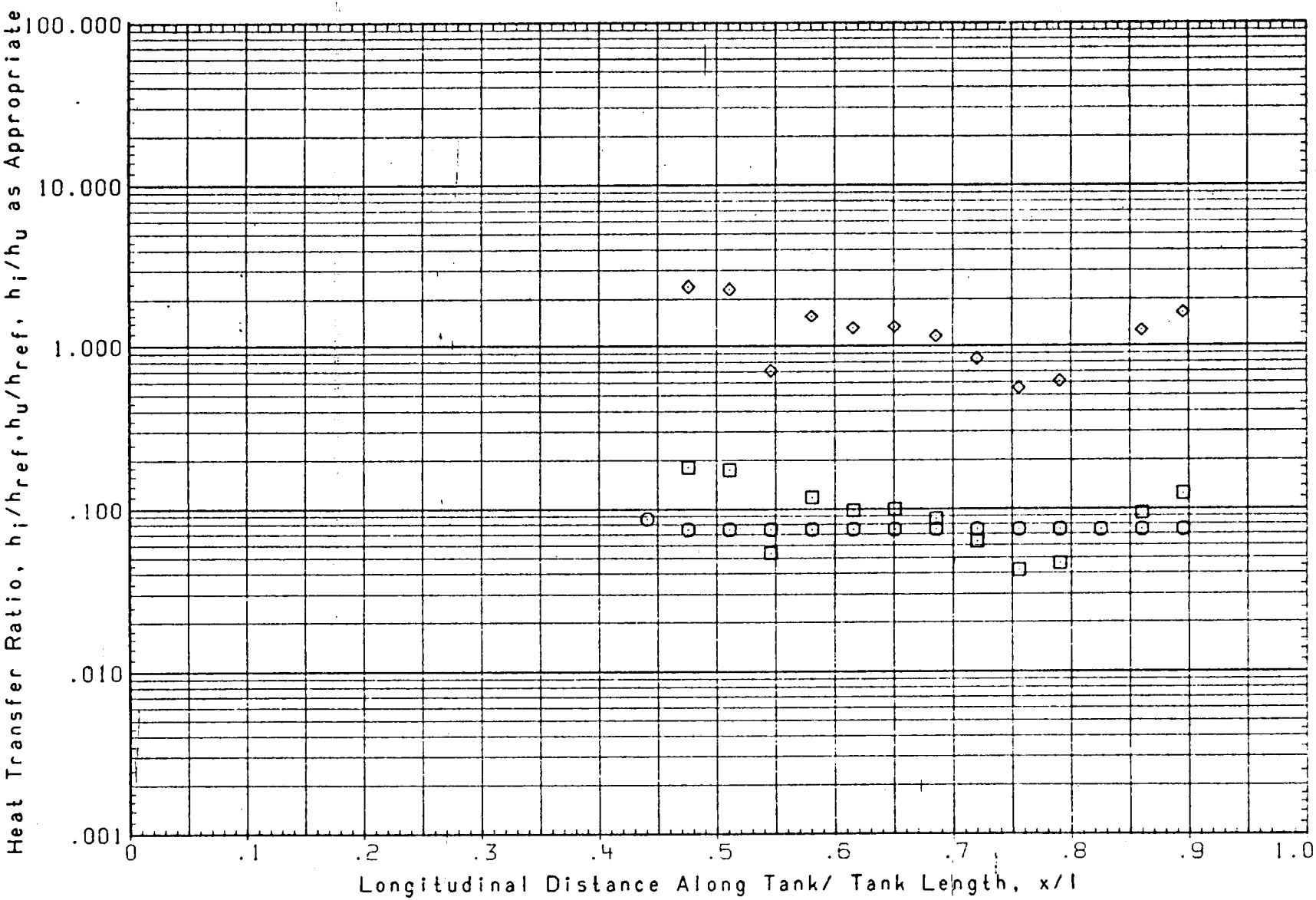


FIG. 21 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -6

MACH = 3.010 ALPHA = -4.985 PHI = 31.430

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT09)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-6.000
(LVFT29)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-6.000
(BVFT29)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-6.000

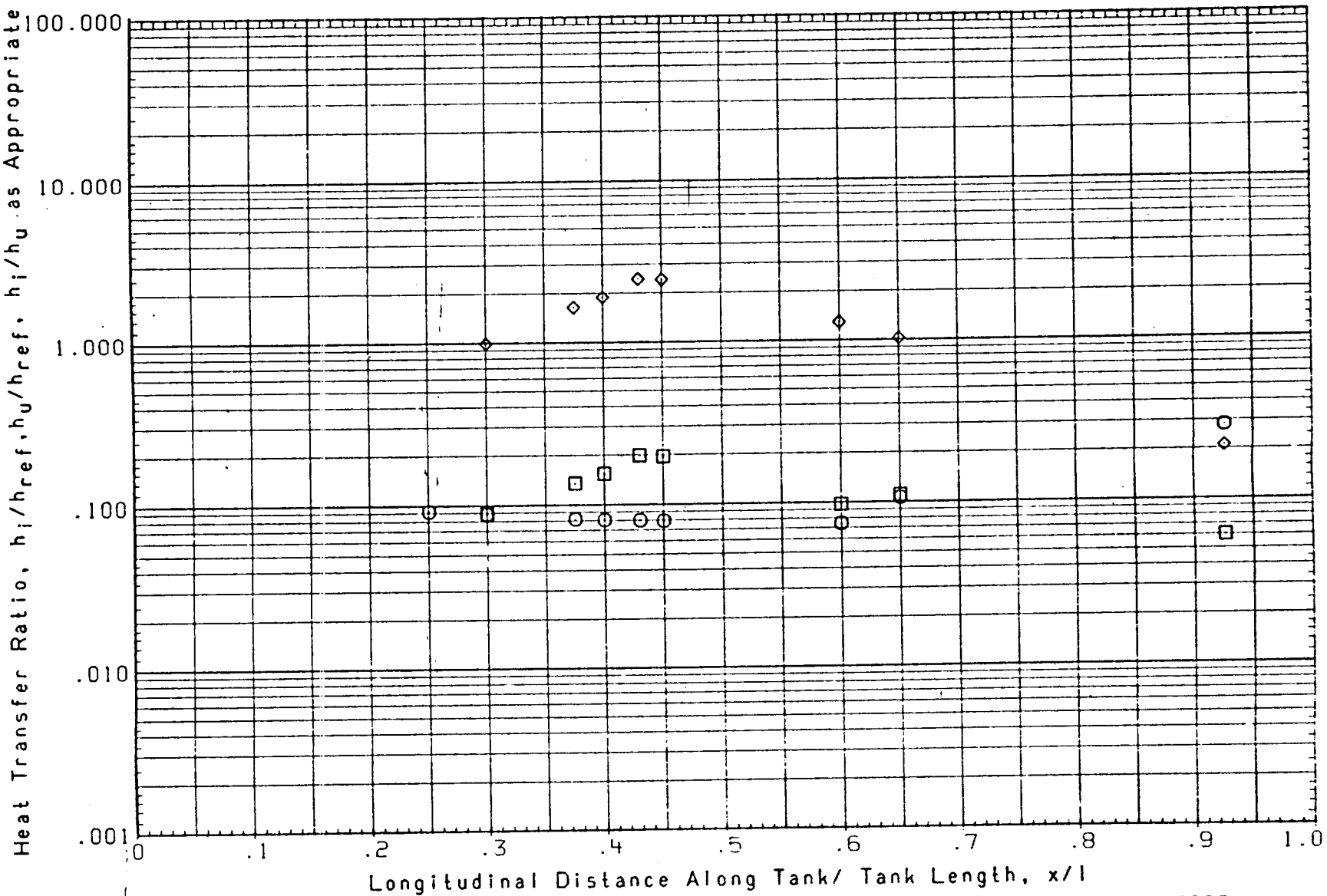


FIG. 21 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS WINDWARD SIDE, ALPHA = -5, BETA = -6

MACH = 3.010 ALPHA = -4.985 PHI = 33.750

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT09)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-6.000
(LVFT29)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-6.000
(BVFT29)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-6.000

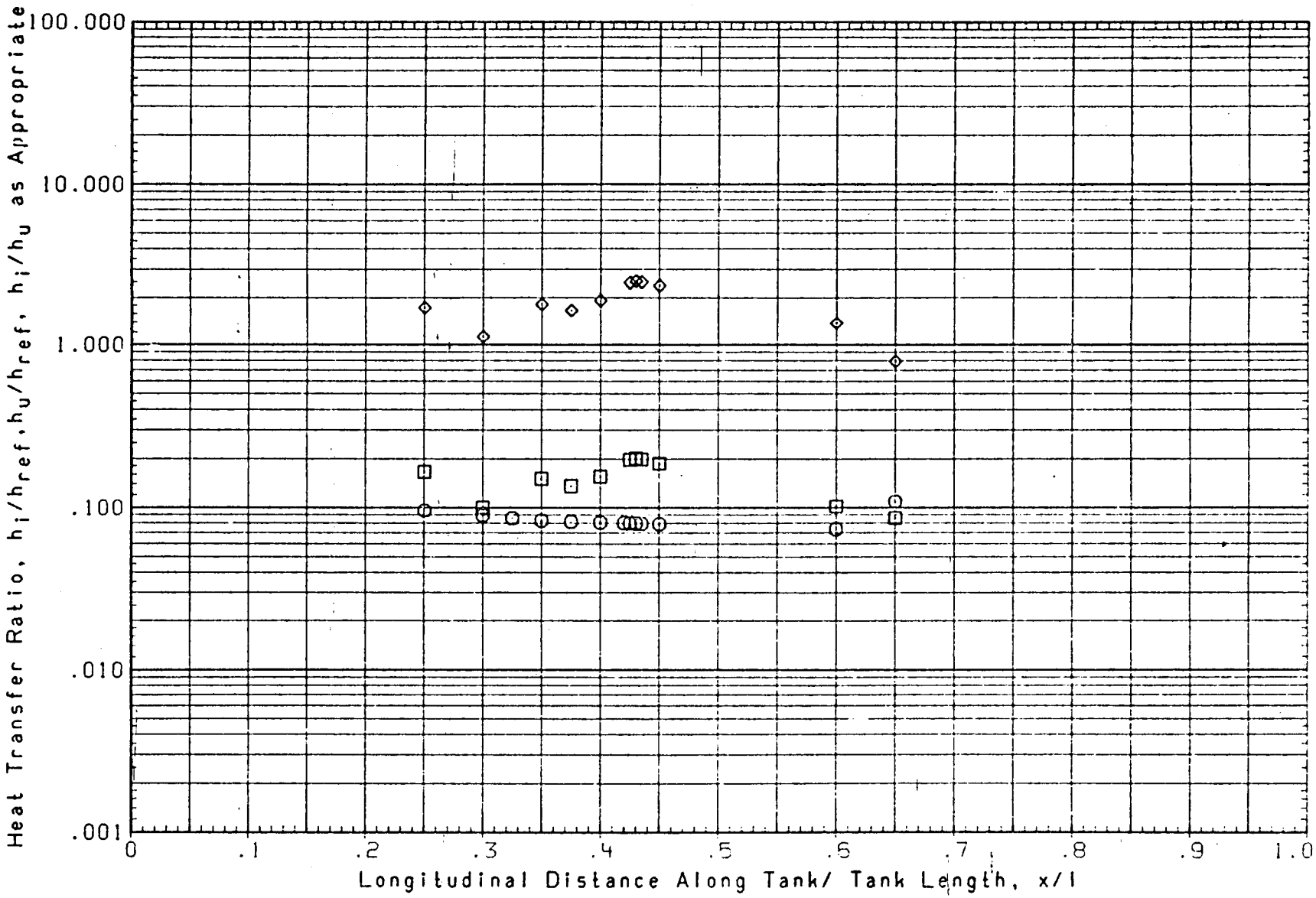


FIG. 21 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -6

MACH = 3.010 ALPHA = -4.985 PHI = 36.320

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT09)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-6.000
(LVFT29)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-6.000
(BVFT29)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-6.000

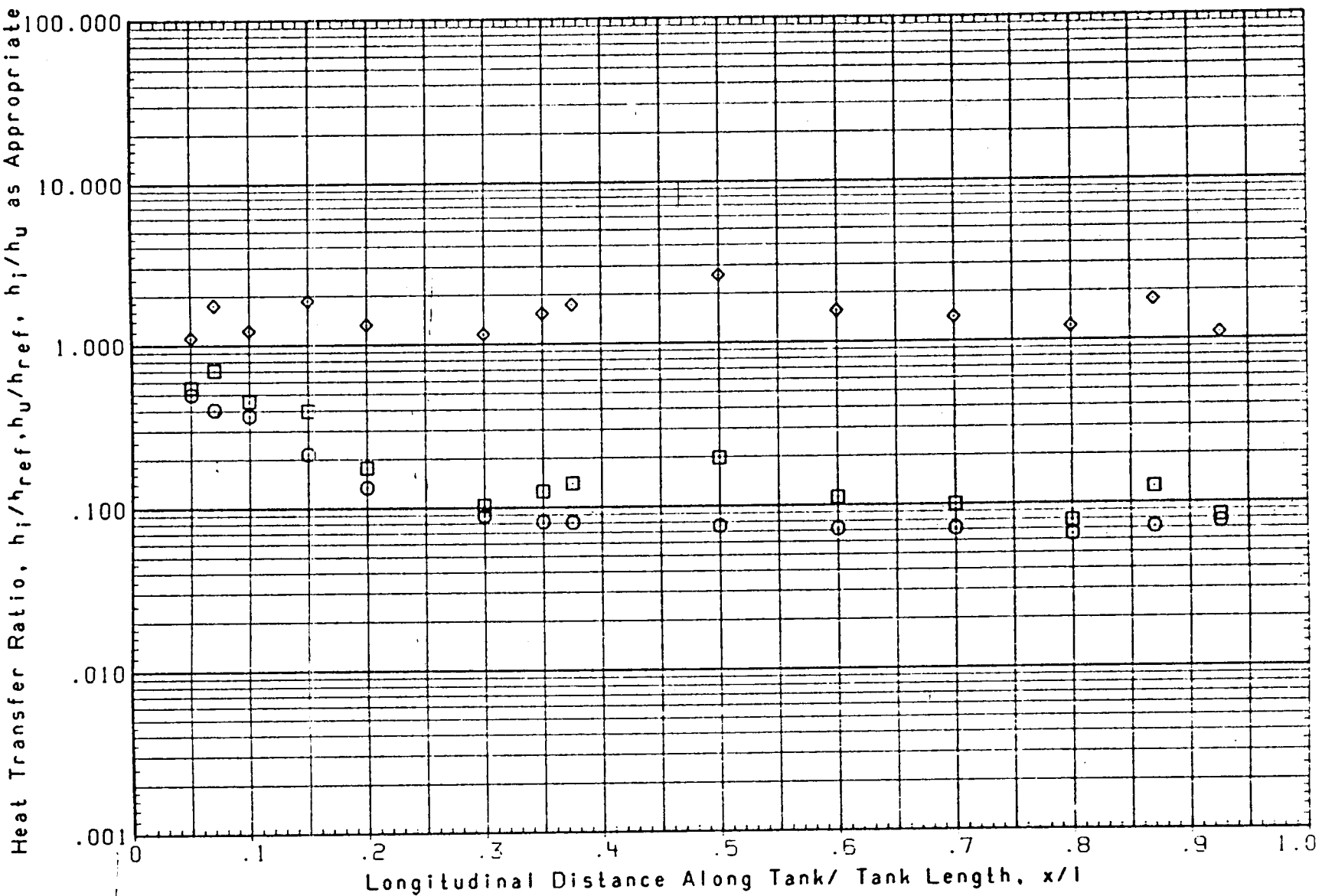


FIG. 21 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -6

MACH = 3.010 ALPHA = -4.985 PHI = 37.700

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT09)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-6.000
(LVFT29)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-6.000
(BVFT29)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-6.000

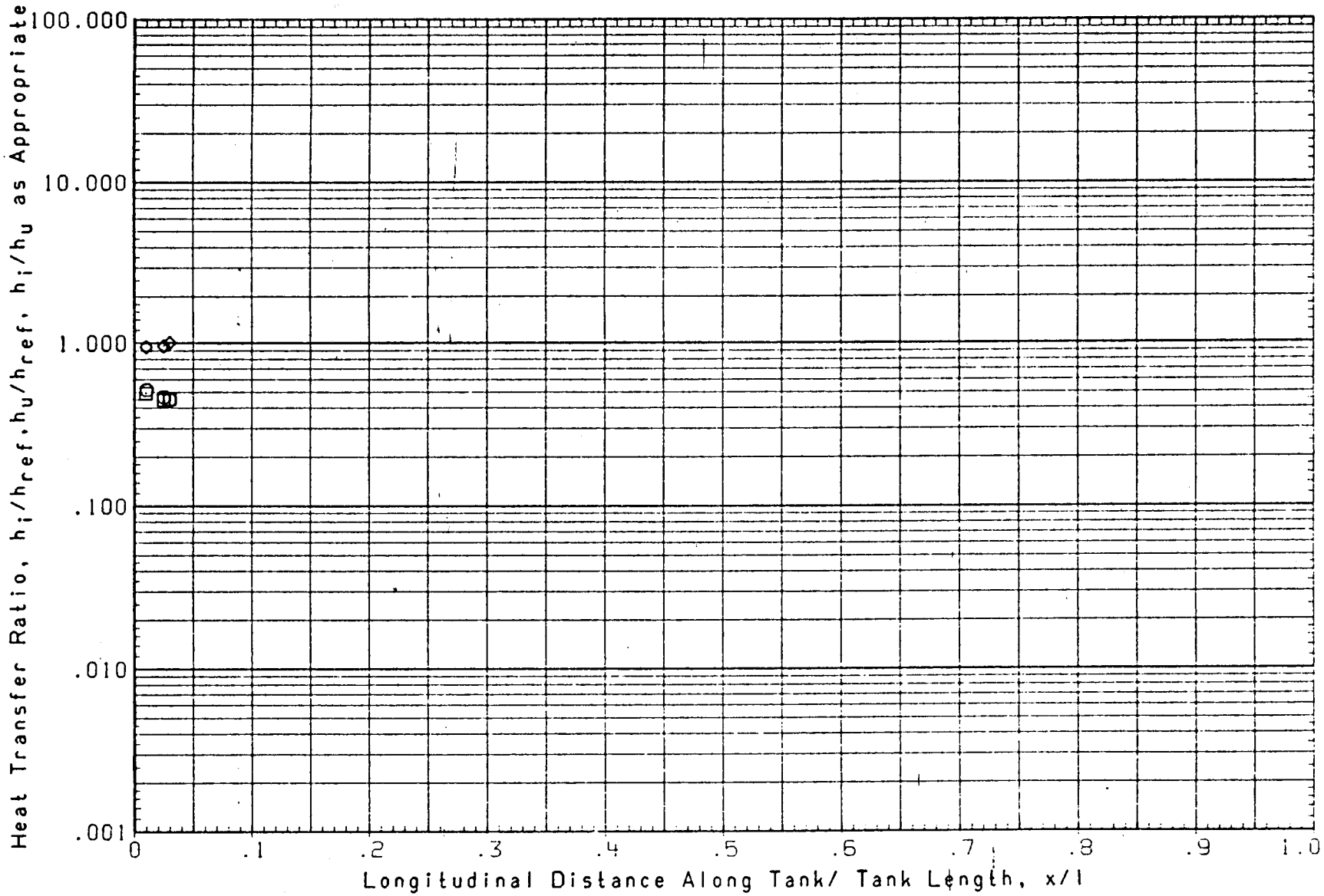


FIG. 21 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -6

MACH = 3.010 ALPHA = -4.985 PHI = 39.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT09)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-6.000
(LVFT29)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-6.000
(BVFT29)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-6.000

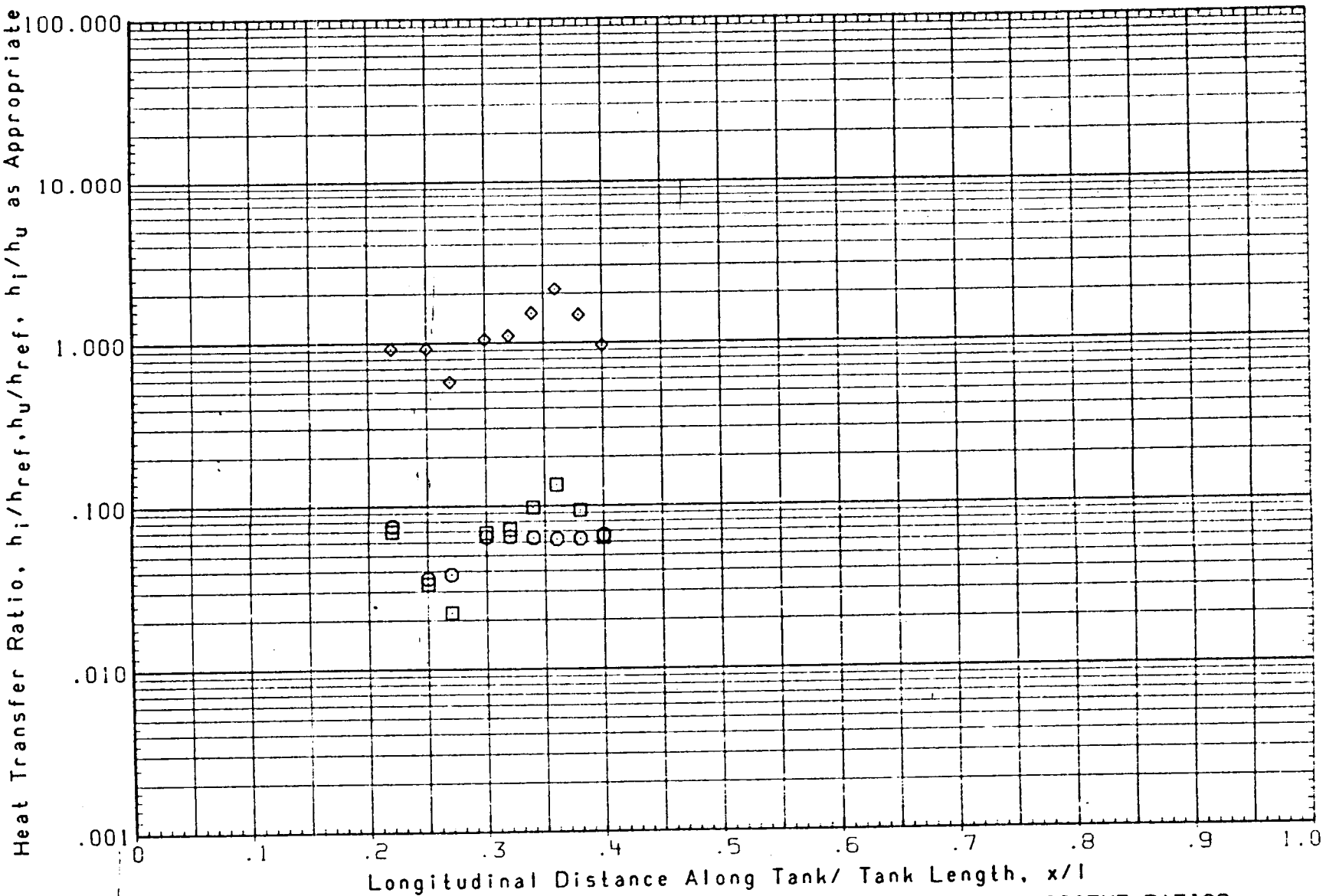


FIG. 21 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -6

MACH = 4.020 ALPHA = -4.995 PHI = 235.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT09)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-6.000
(LVFT29)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-6.000
(BVFT29)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-6.000

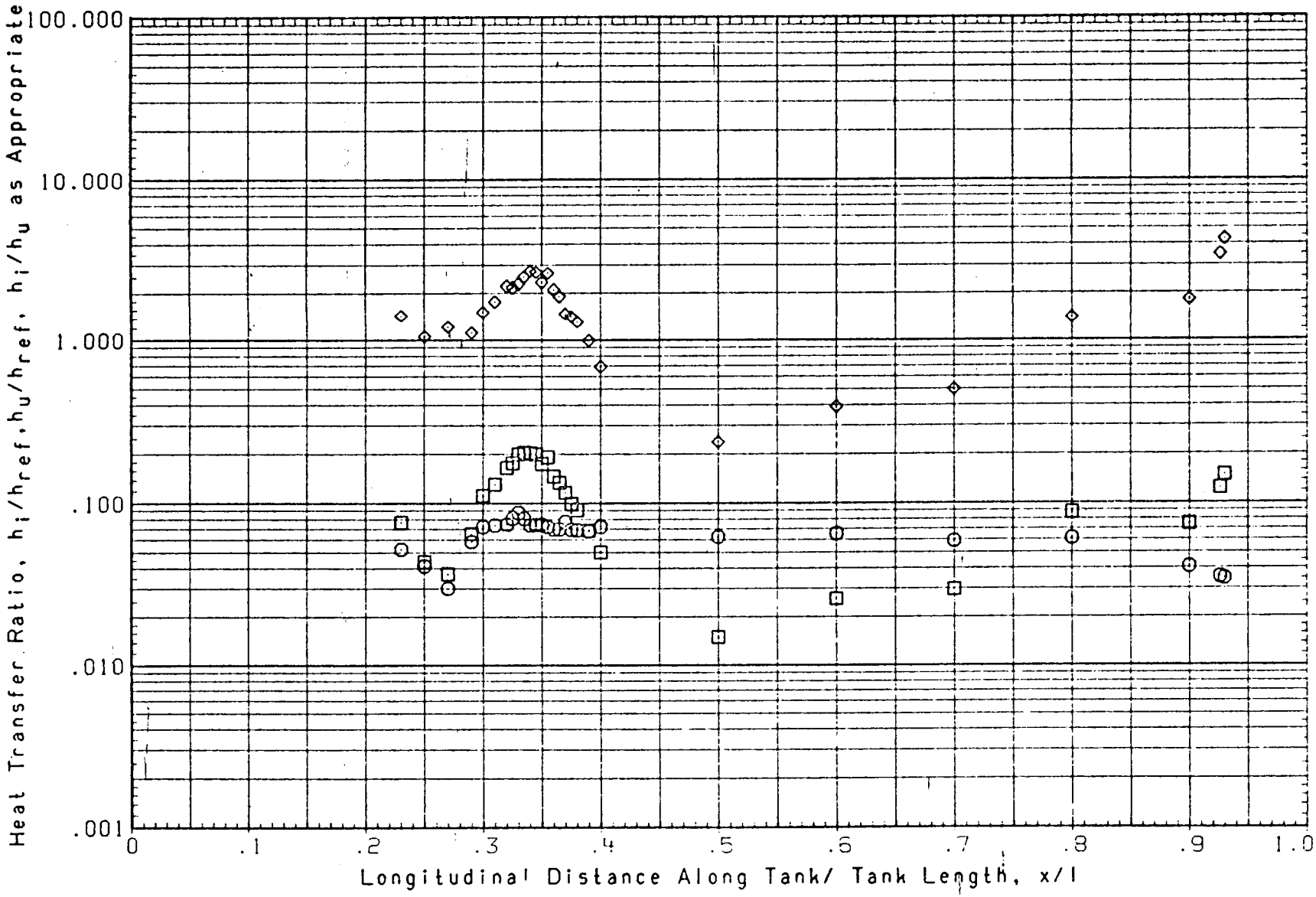


FIG. 21 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -6

MACH = 4.020 ALPHA = -4.995 PHI = 247.500

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT09)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-6.000
(LVFT29)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-6.000
(BVFT29)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-6.000

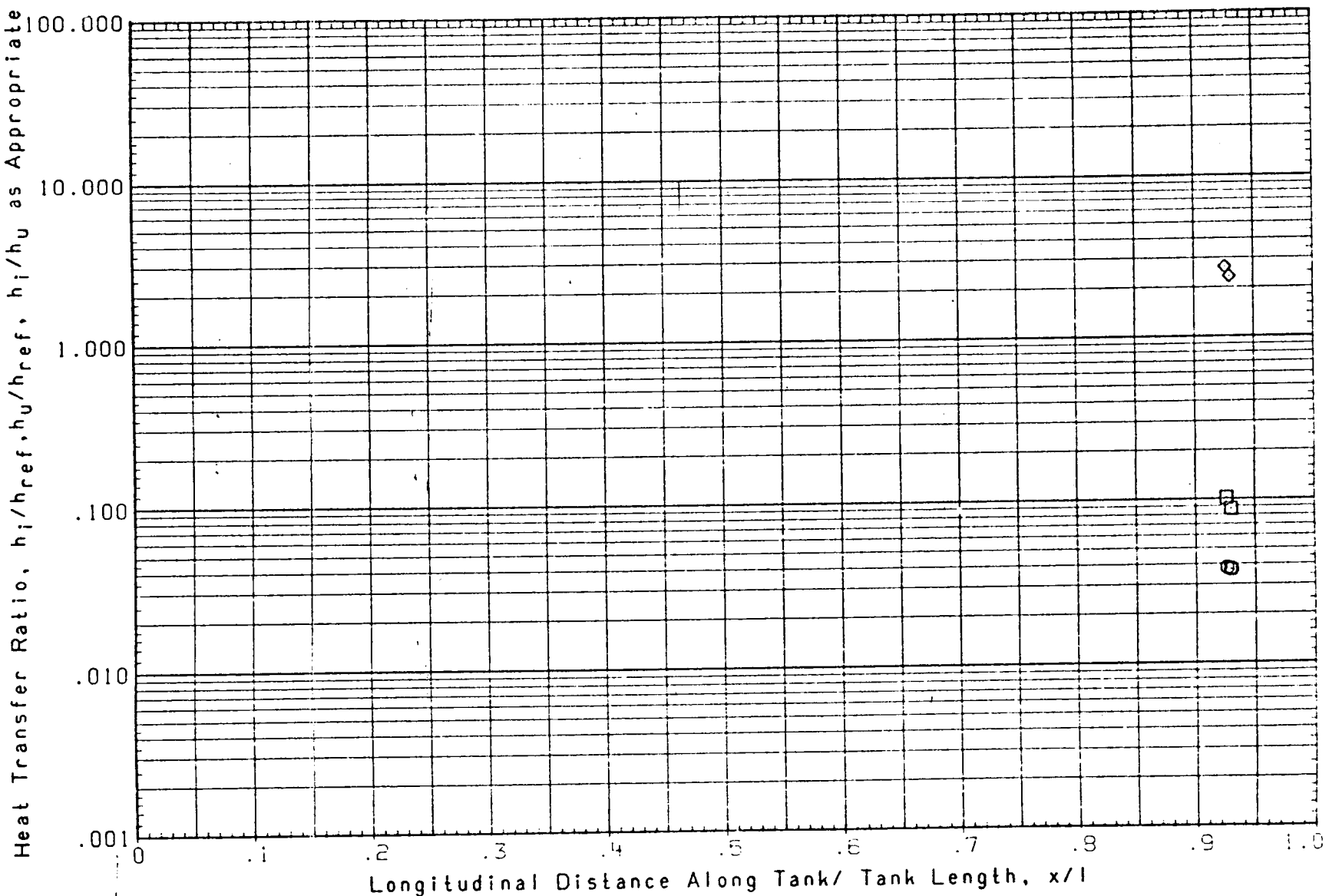


FIG. 21 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -6

MACH = 4.020 ALPHA = -4.995 PHI = 250.570

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT09)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-6.000
(LVFT29)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-6.000
(BVFT29)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-6.000

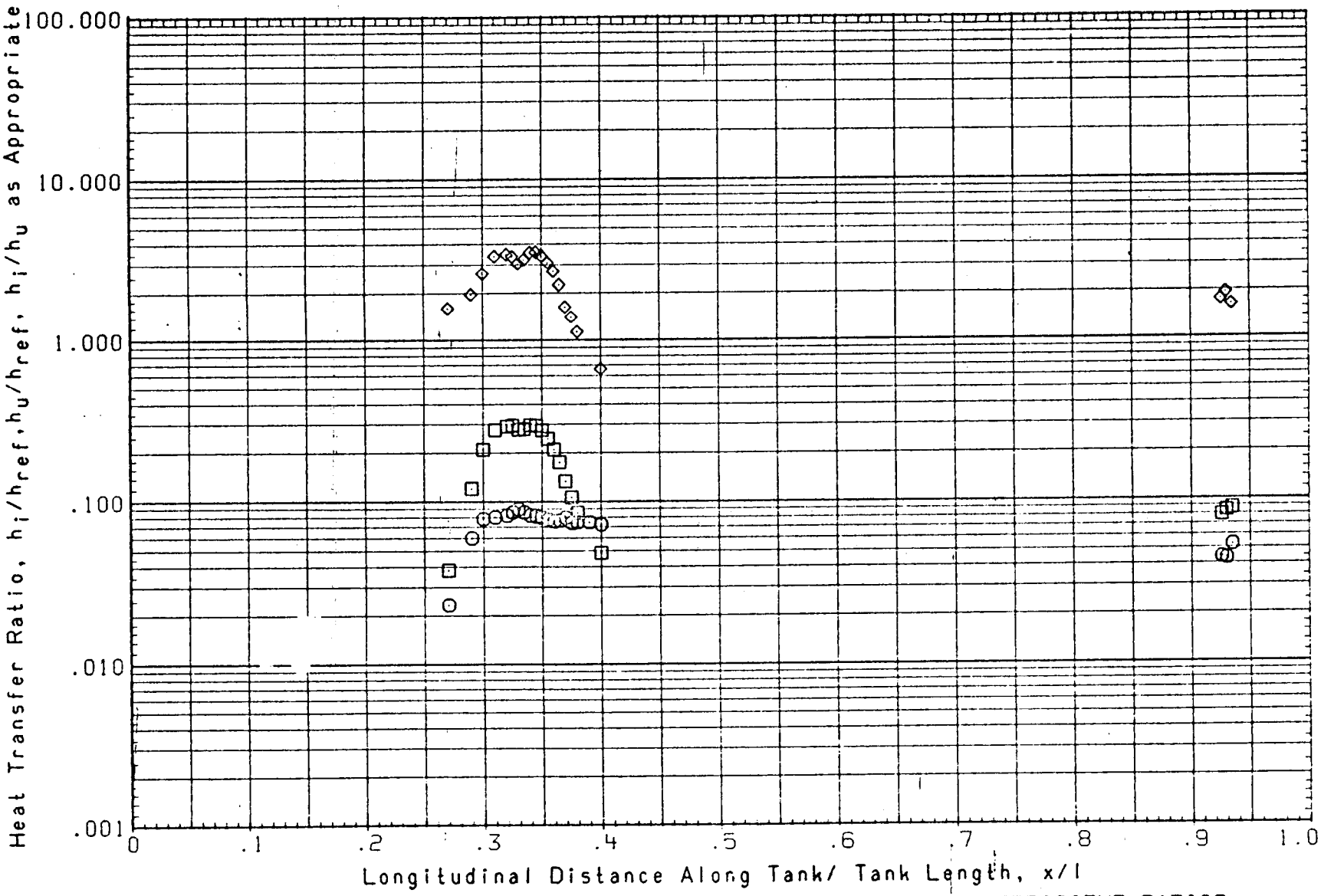


FIG. 21 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS WINDWARD SIDE, ALPHA = -5, BETA = -6

MACH = 4.020 ALPHA = -4.995 PHI = 258.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT09)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-6.000
(LVFT29)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-6.000
(BVFT29)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-6.000

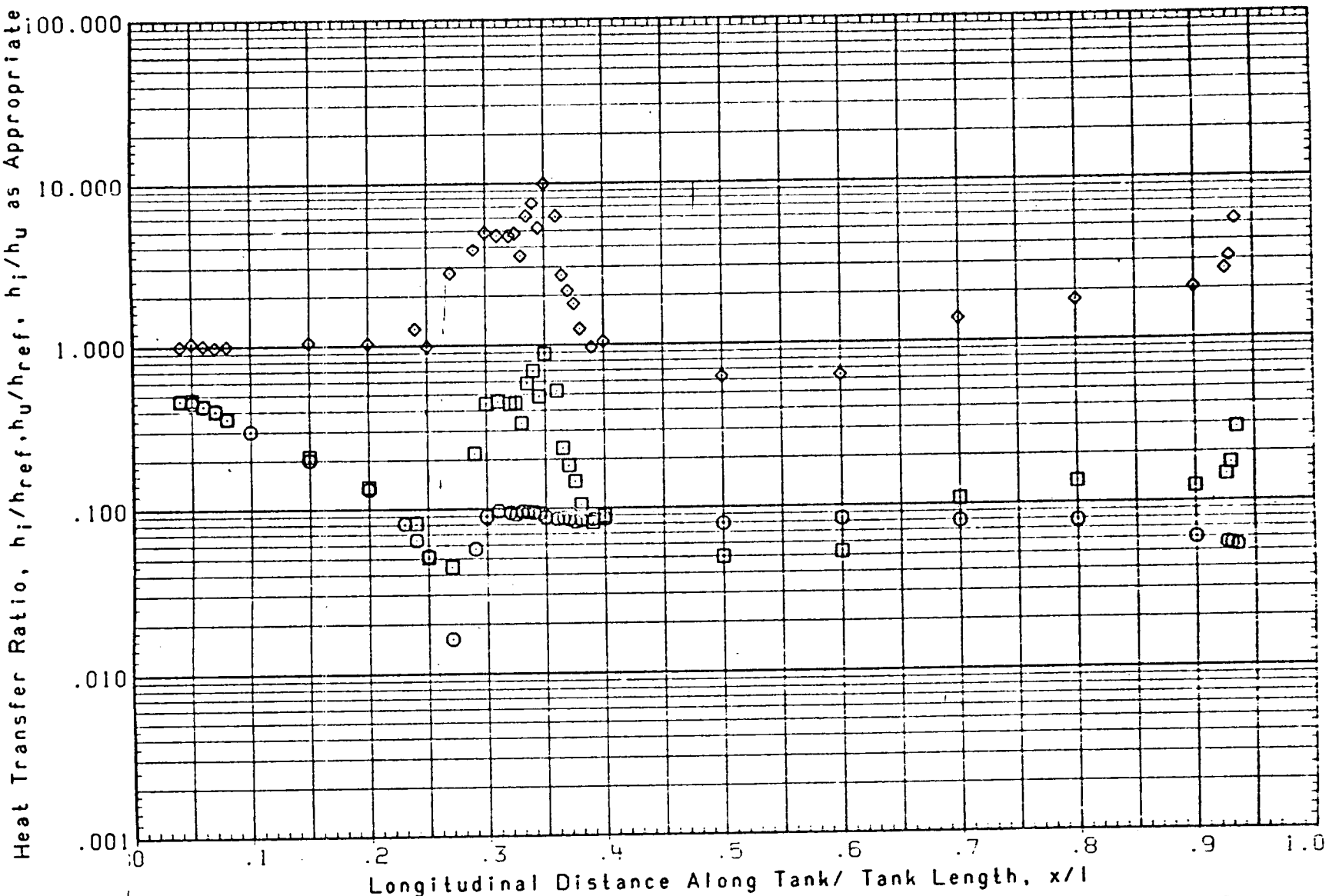


FIG. 21 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -6

MACH = 4.020 ALPHA = -4.995 PHI = 270.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT09)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-6.000
(LVFT29)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-6.000
(BVFT29)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-6.000

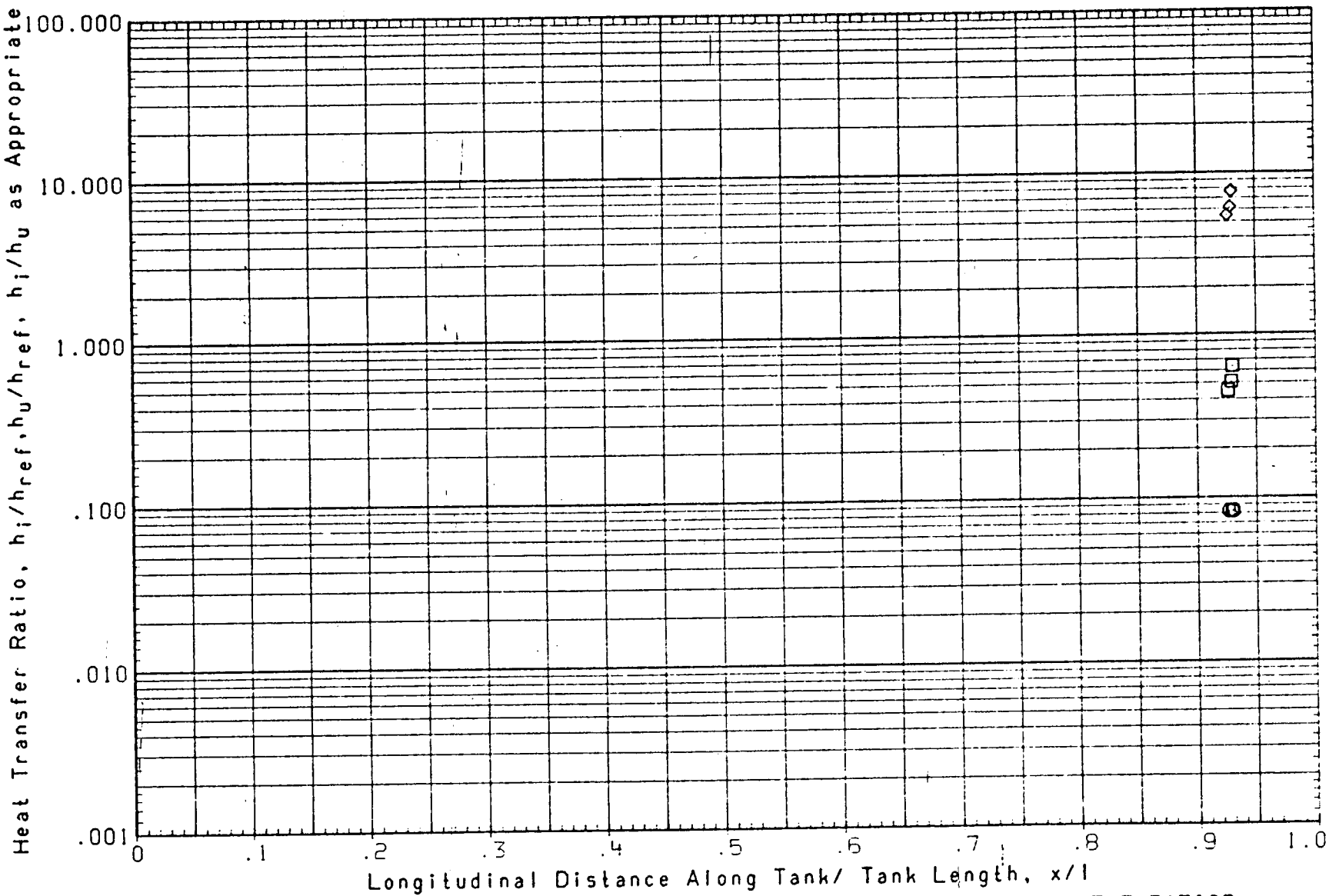


FIG. 21 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS WINDWARD SIDE, ALPHA = -5, BETA = -6

MACH = 4.020 ALPHA = -4.995 PHI = 229.430

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT09)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-6.000
(LVFT29)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-6.000
(BVFT29)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-6.000

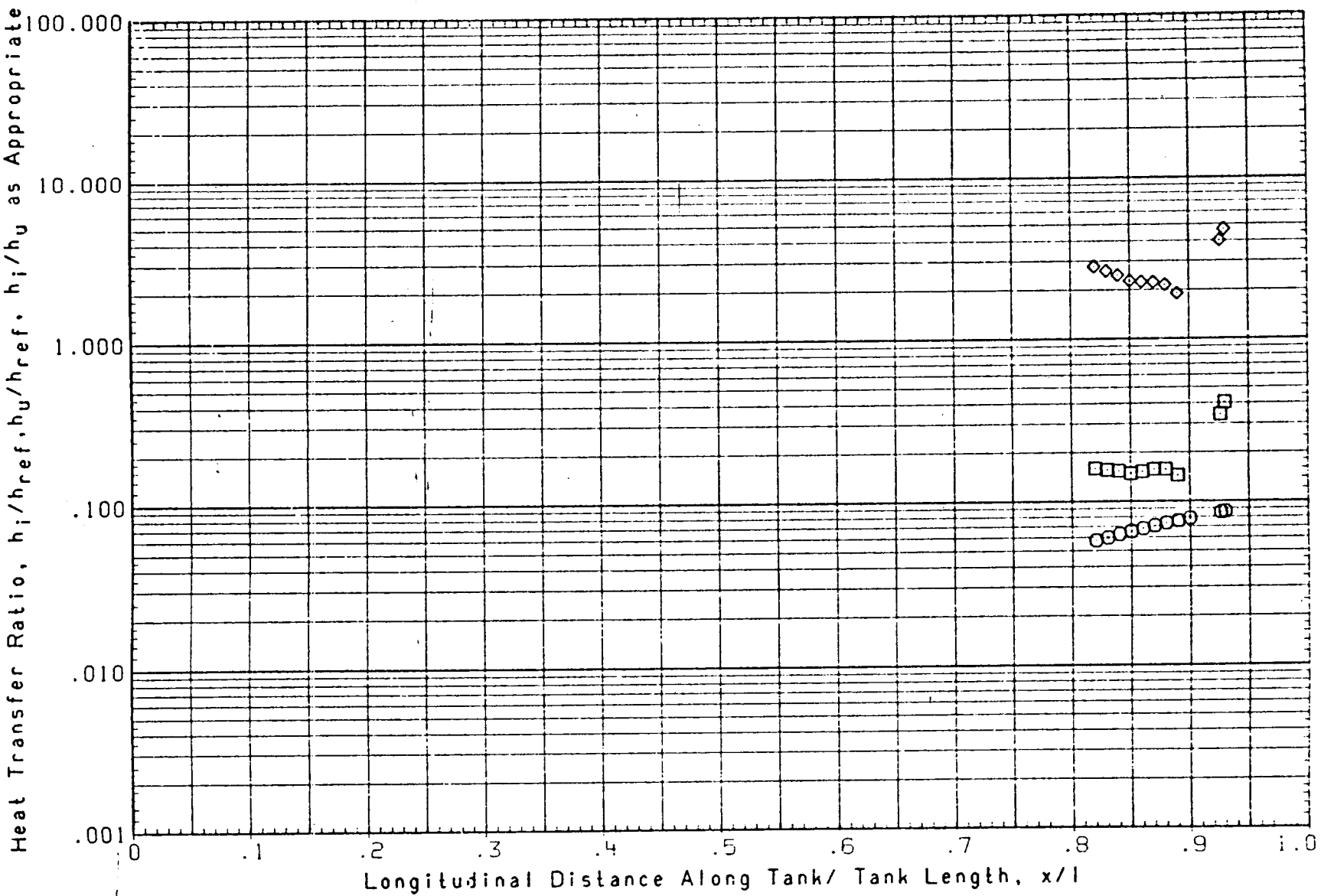


FIG. 21 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -6

MACH = 4.020 ALPHA = -4.995 PHI = 232.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT09)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-6.000
(LVFT29)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-6.000
(BVFT29)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-6.000

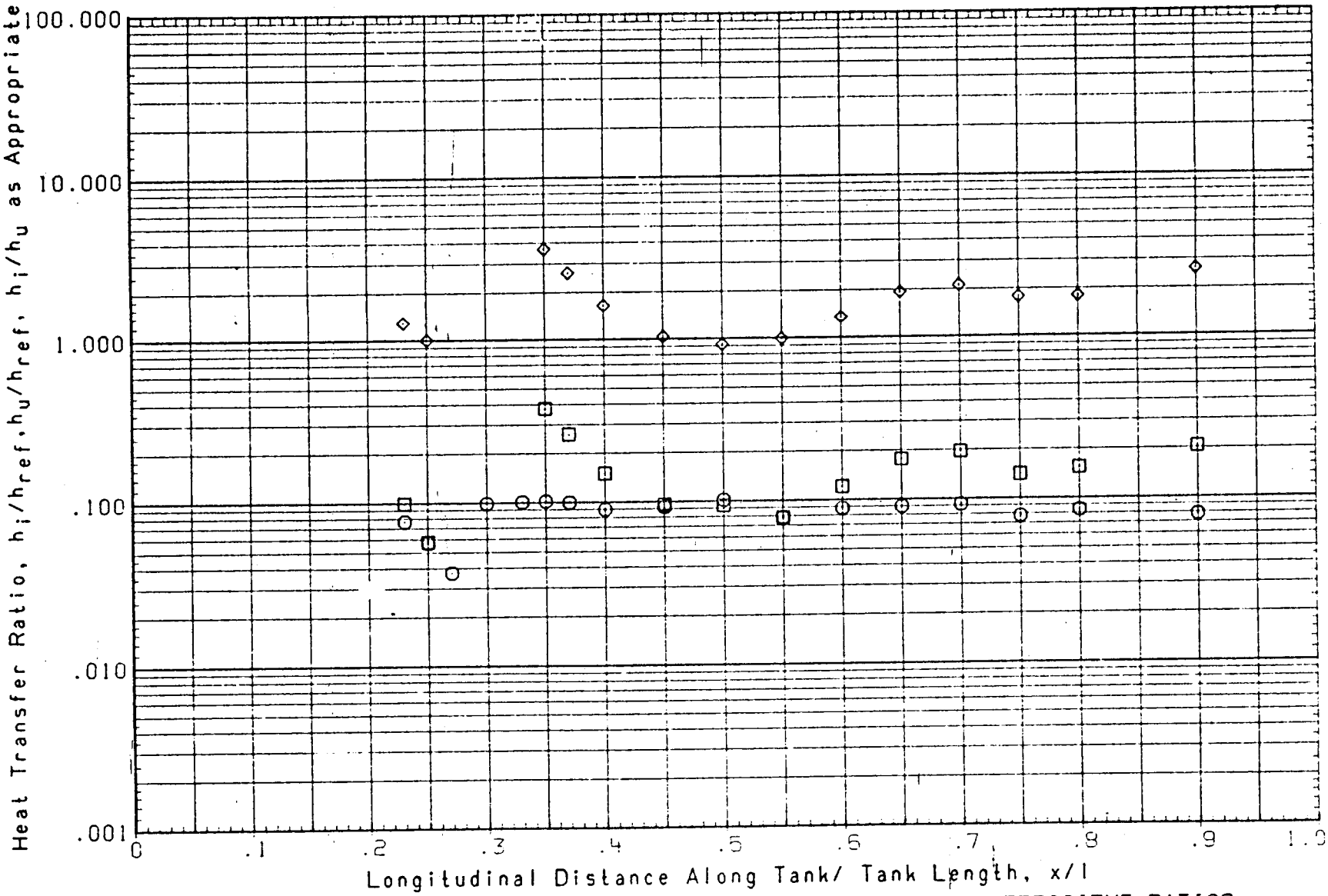


FIG. 21 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -6

MACH = 4.020 ALPHA = -4.995 PHI = 292.500

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT09)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-6.000
(LVFT29)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-6.000
(BVFT29)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-6.000

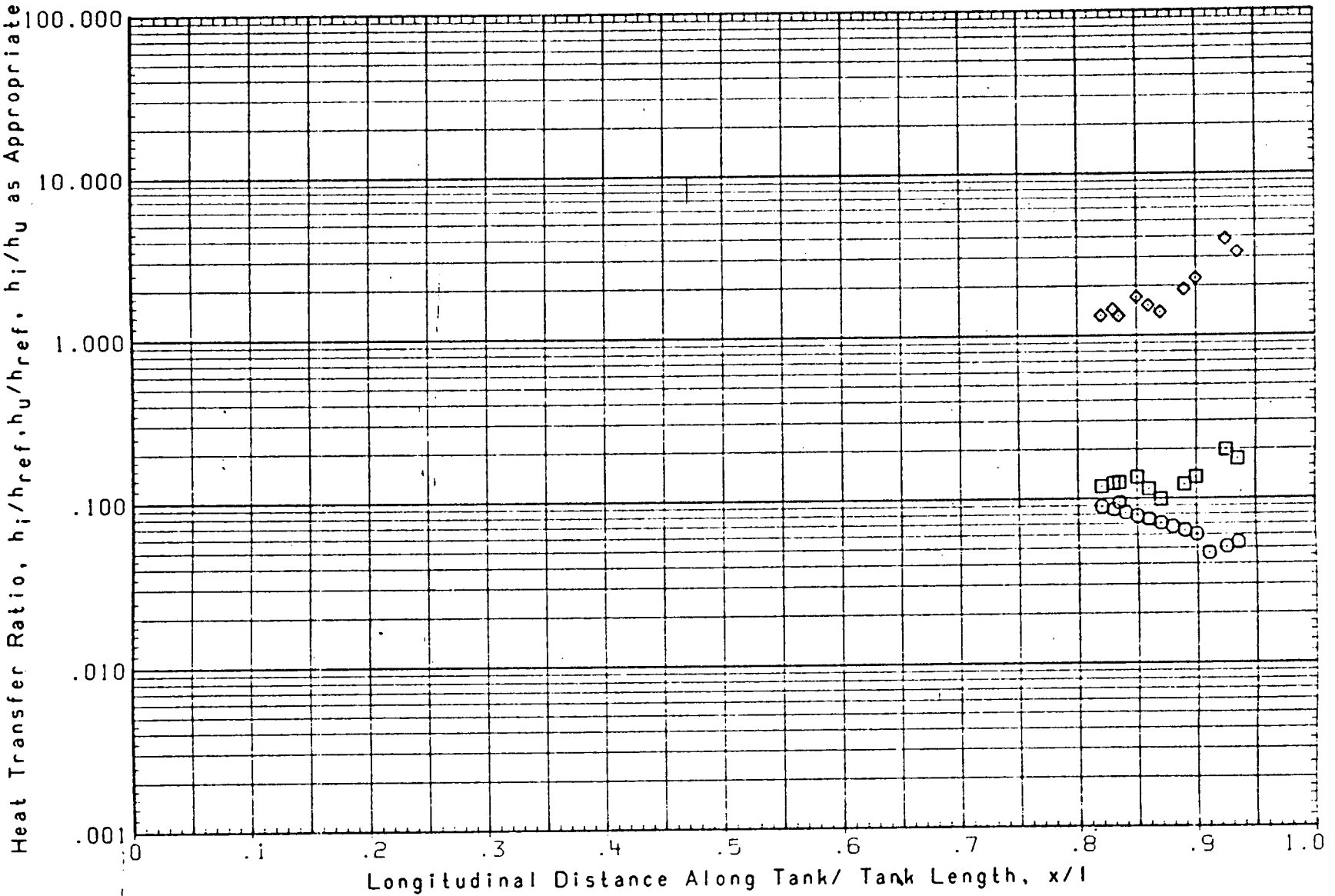


FIG. 21 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -6

MACH = 4.020 ALPHA = -4.995 PHI = 301.500

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT09)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-6.000
(LVFT29)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-6.000
(BVFT29)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-6.000

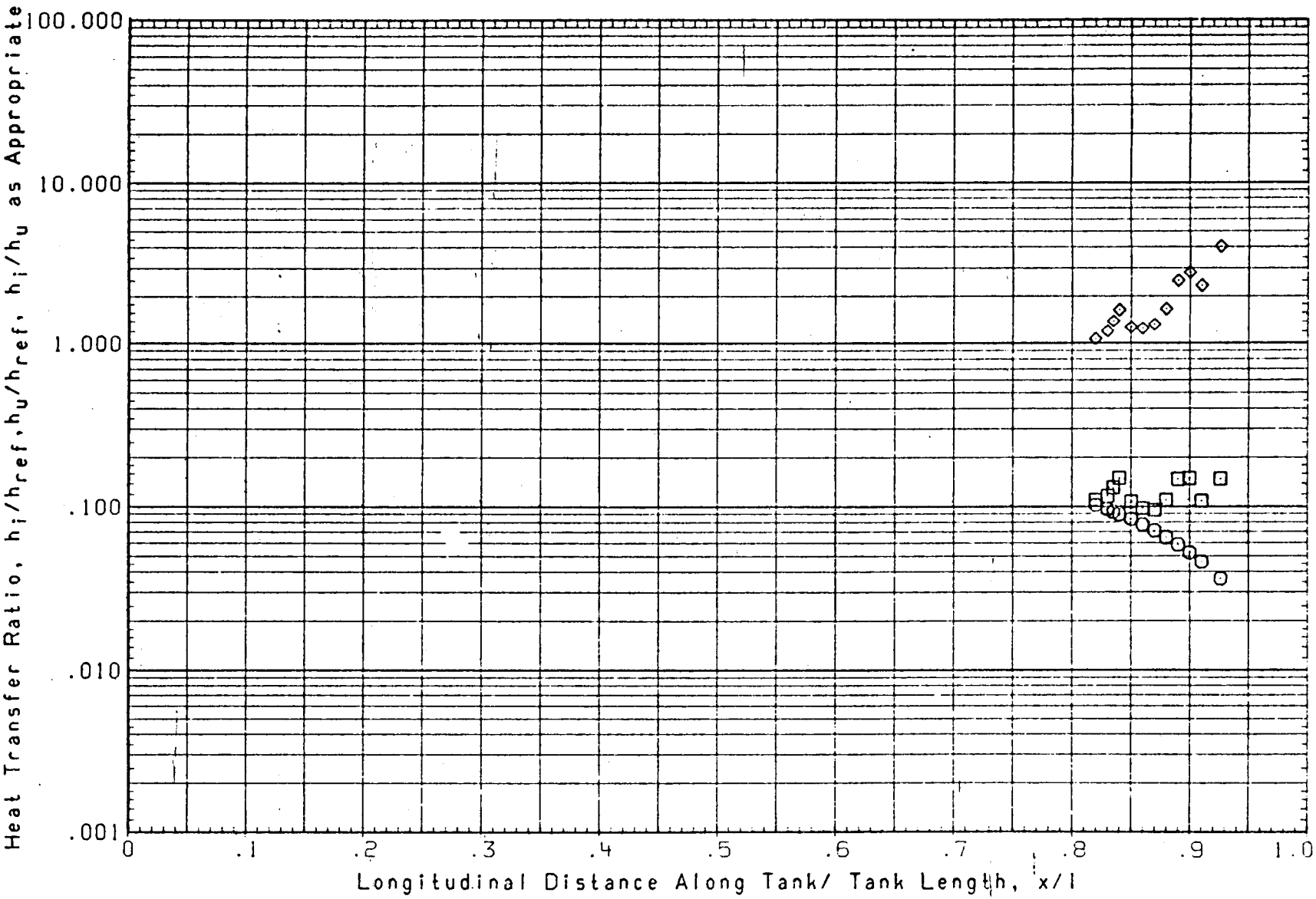


FIG. 21 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -6

MACH = 4.020 ALPHA = -4.995 PHI = 305.400

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT09)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-6.000
(LVFT29)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-6.000
(BVFT29)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-6.000

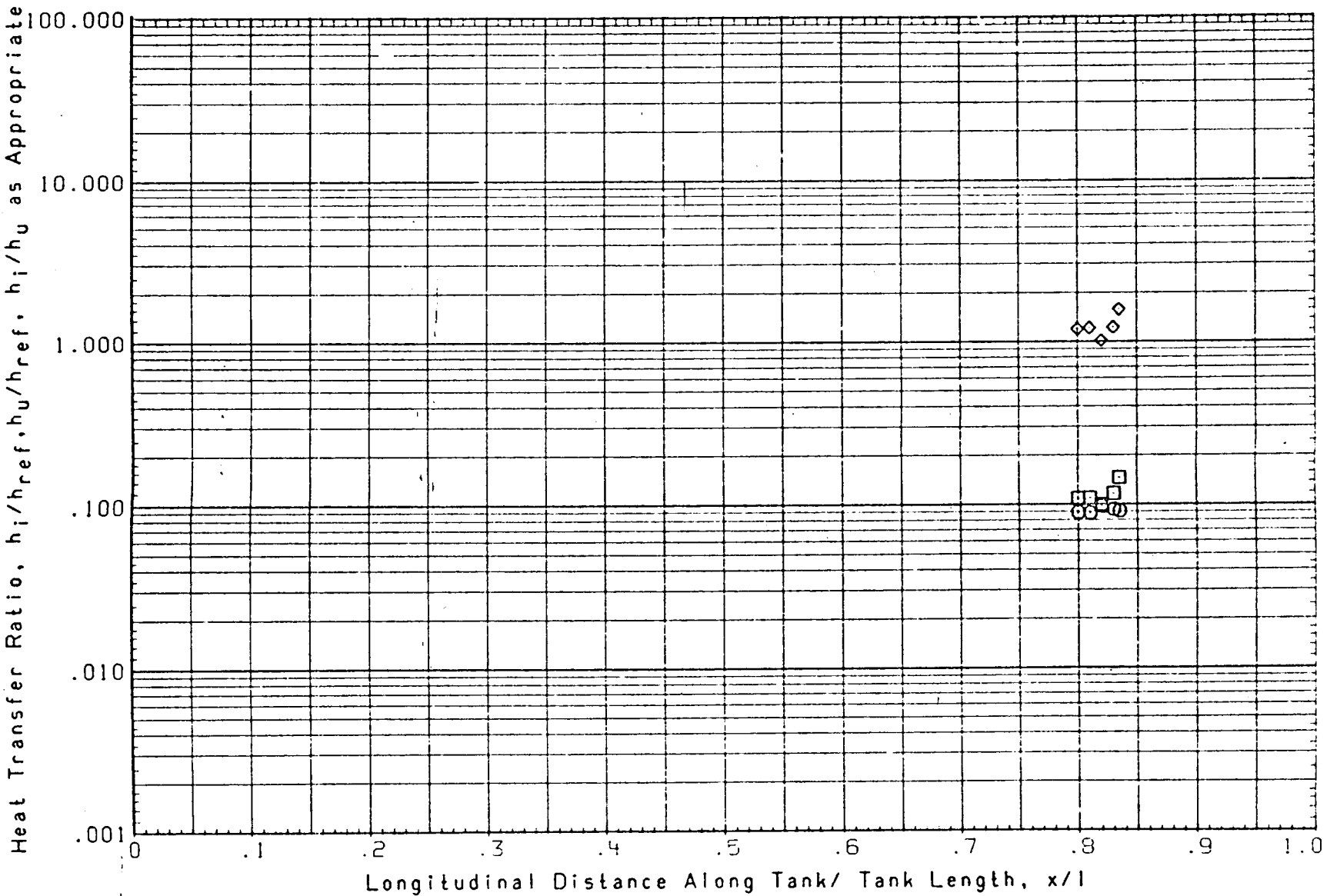


FIG. 21 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -6

MACH = 4.020 ALPHA = -4.995 PHI = 309.300

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT09)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-6.000
(LVFT29)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-6.000
(BVFT29)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-6.000

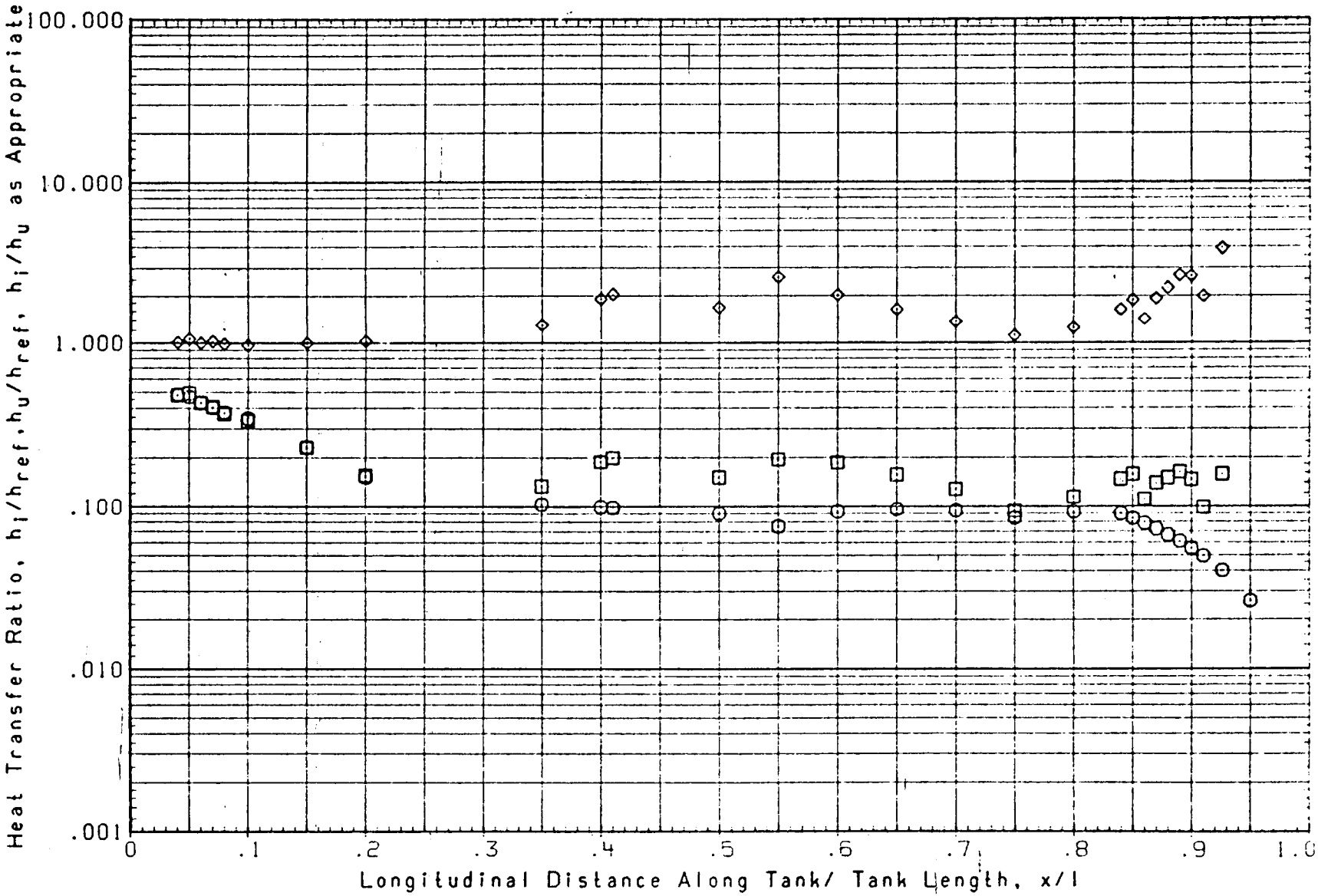


FIG. 21 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -6

MACH = 4.020 ALPHA = -4.995 PHI = 315.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT09)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-6.000
(LVFT29)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-6.000
(BVFT29)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-6.000

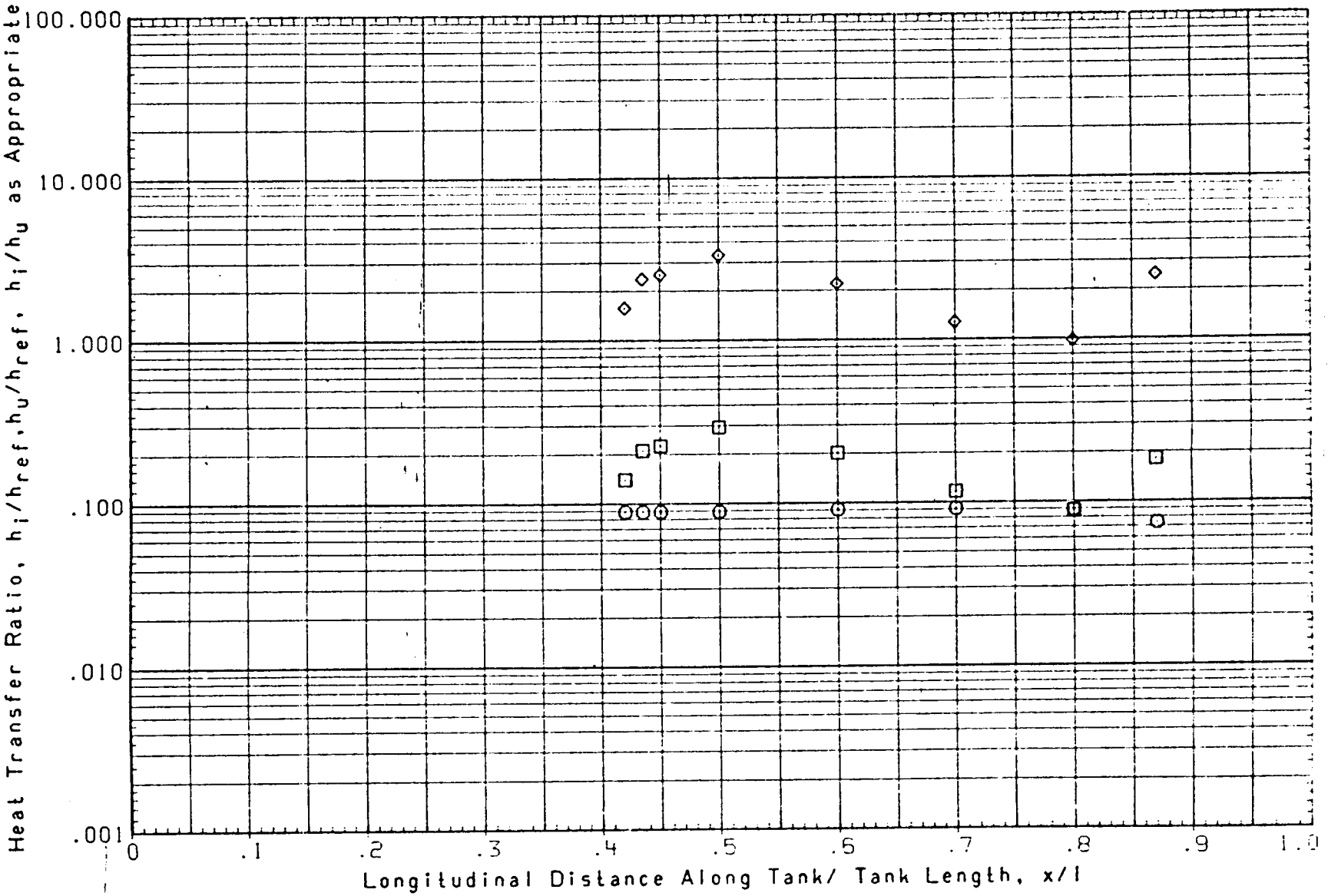


FIG. 21 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -6

MACH = 4.020 ALPHA = -4.995 PHI = 322.300

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT09)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-6.000
(LVFT29)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-6.000
(BVFT29)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-6.000

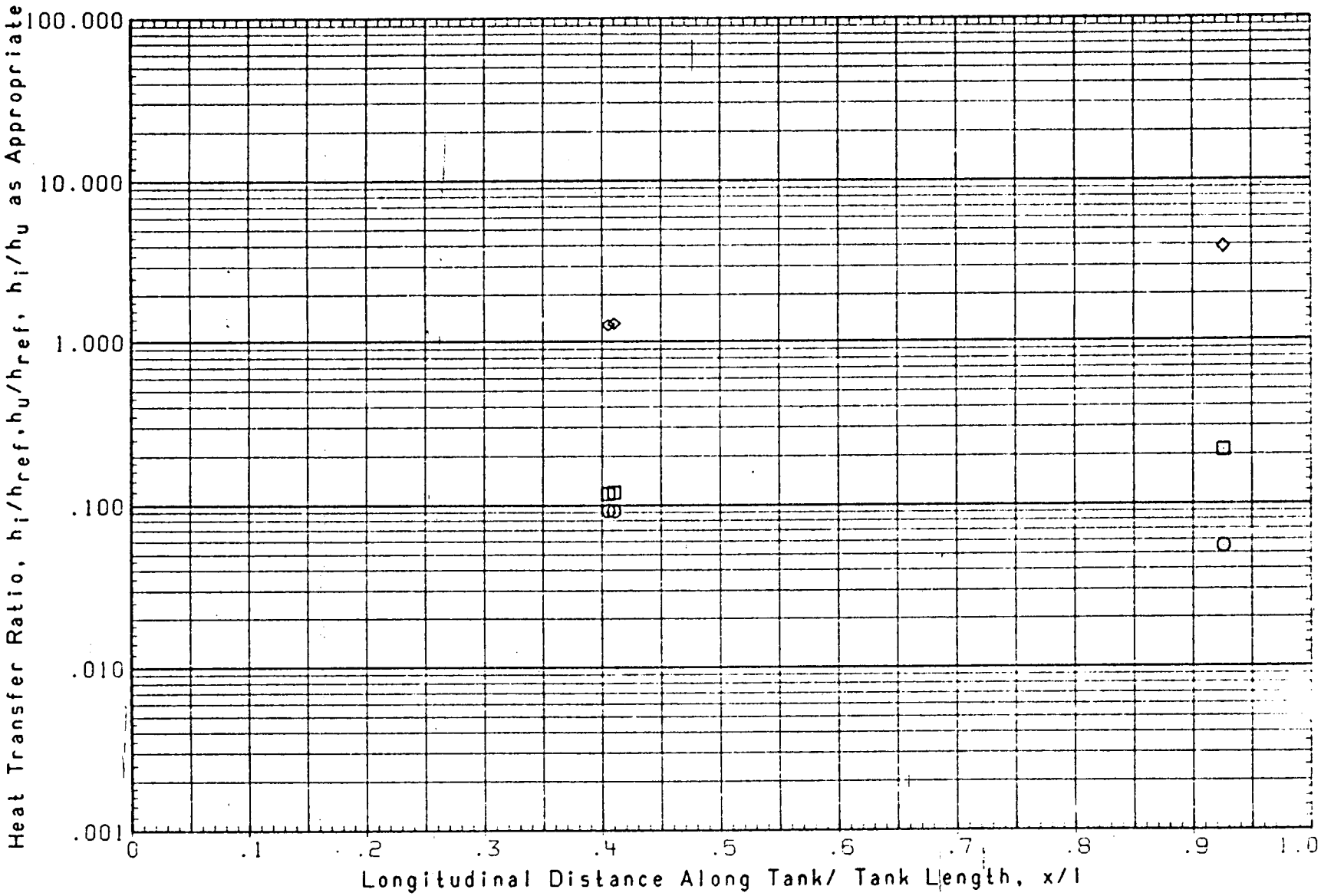


FIG. 21 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -6

MACH = 4.020 ALPHA = -4.995 PHI = 334.460

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT09)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-6.000
(LVFT29)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-6.000
(BVFT29)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-6.000

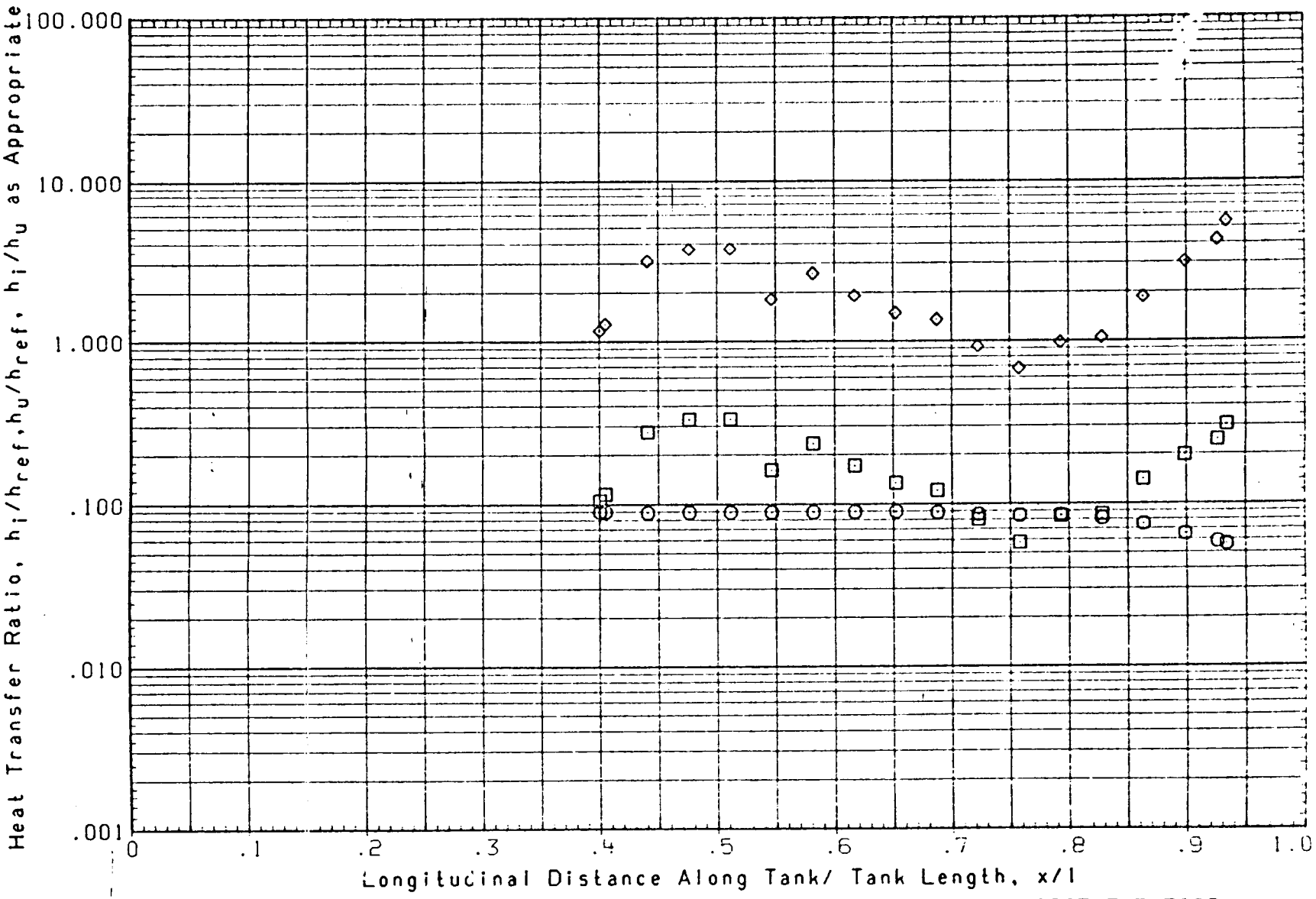


FIG. 21 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS WINDWARD SIDE, ALPHA = -5, BETA = -6

MACH = 4.020 ALPHA = -4.995 PHI = 326.650

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT09)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-6.000
(LVFT29)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-6.000
(BVFT29)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-6.000

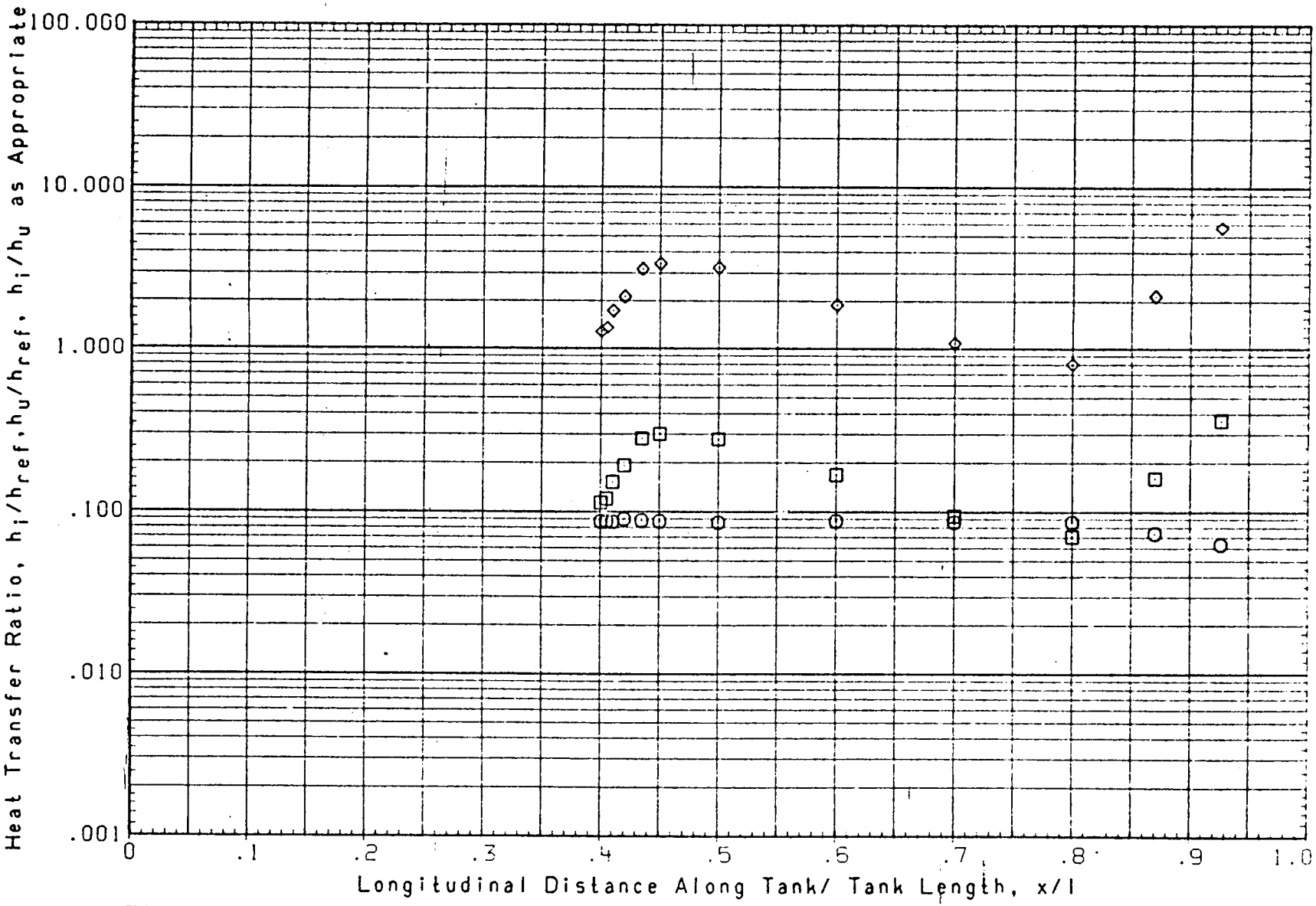


FIG. 21 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -6

MACH = 4.020 ALPHA = -4.995 PHI = 330.200

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT09)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-6.000
(LVFT29)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-6.000
(BVFT29)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-6.000

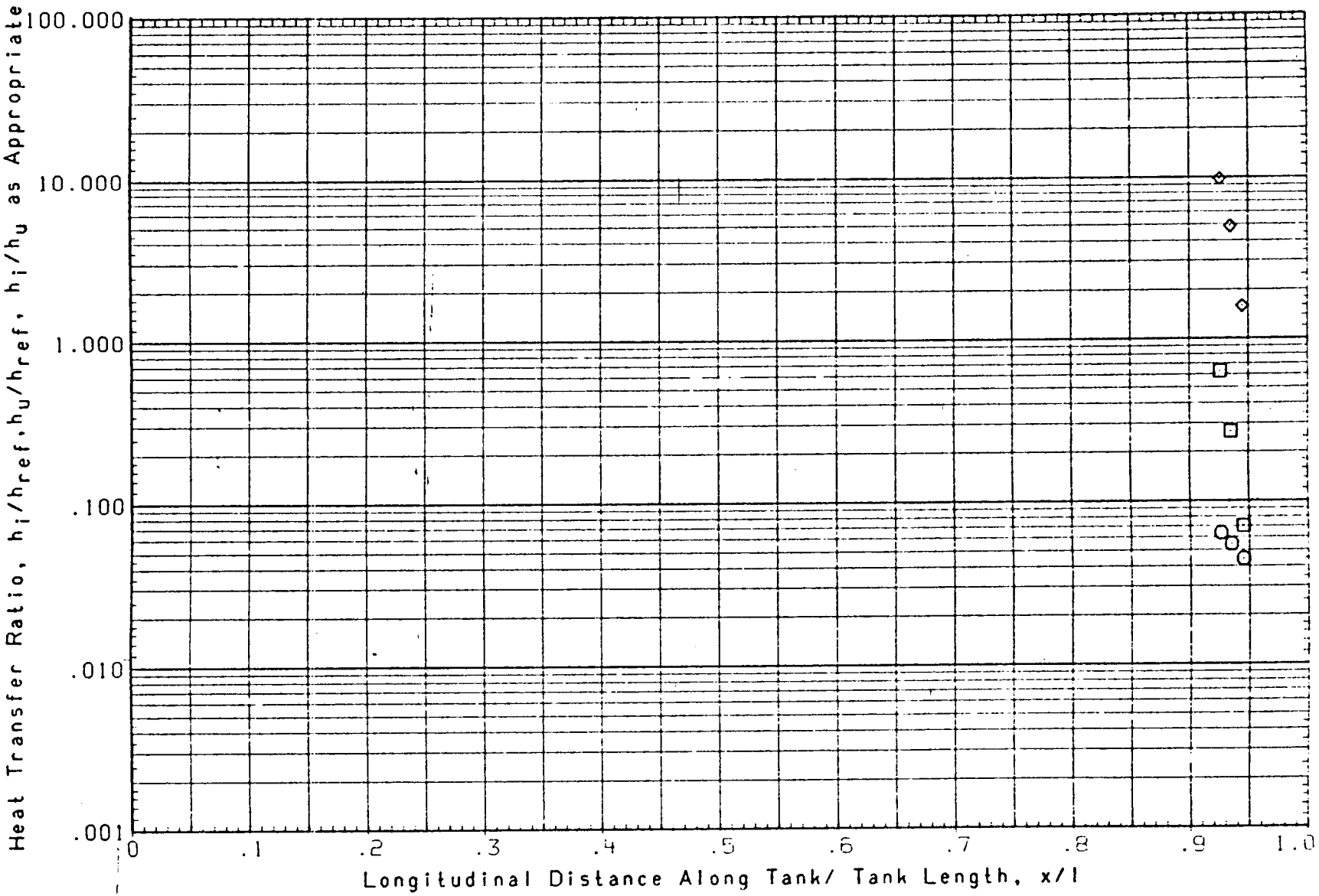


FIG. 21 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -6

MACH = 4.020 ALPHA = -4.995 PHI = 334.980

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT09)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-6.000
(LVFT29)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-6.000
(BVFT29)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-6.000

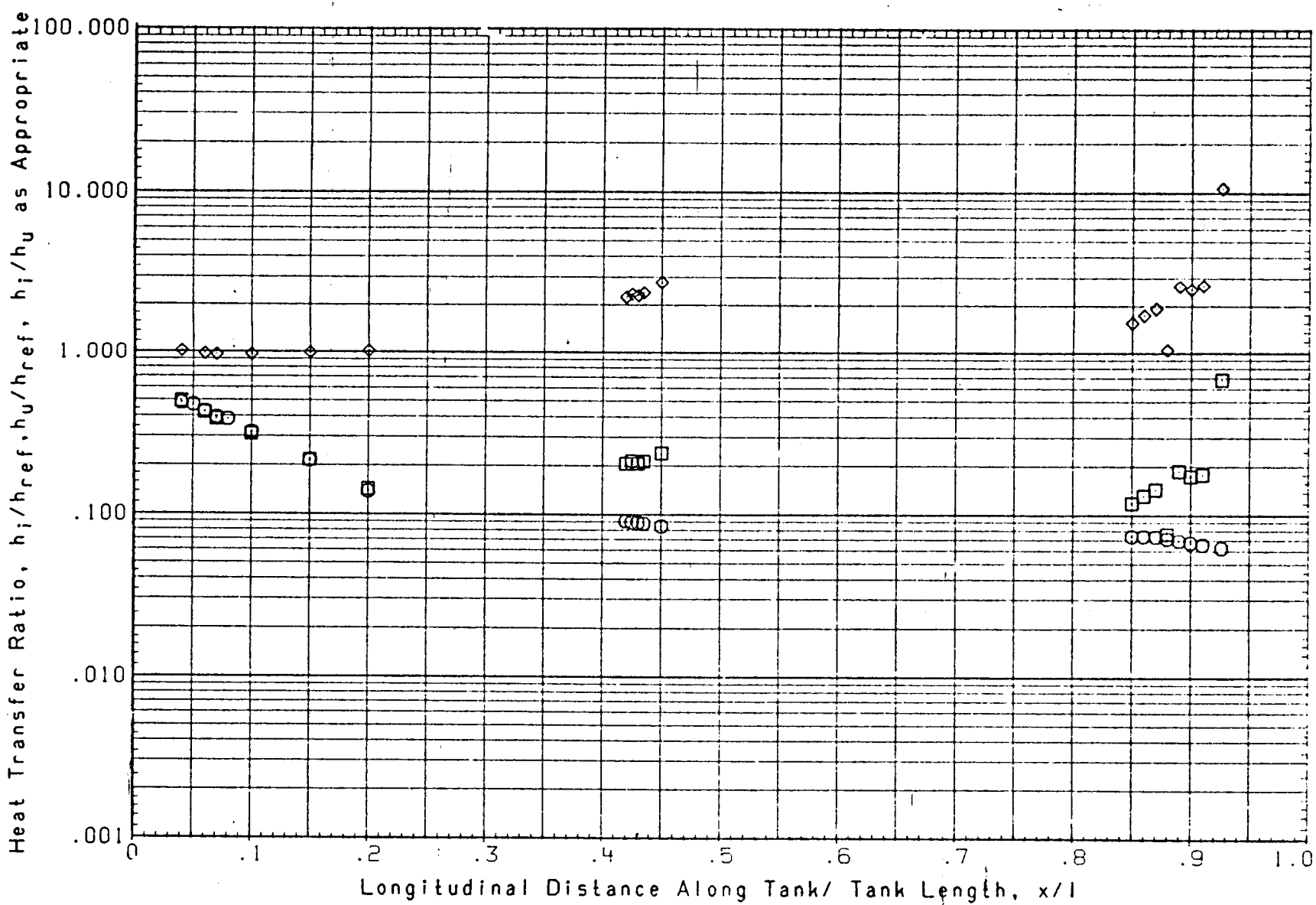


FIG. 21 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -6

MACH = 4.020 ALPHA = -4.995 PHI = 337.500

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	PHA	BETA
(KVFT09)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-6.000
(LVFT29)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-6.000
(BVFT29)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-6.000

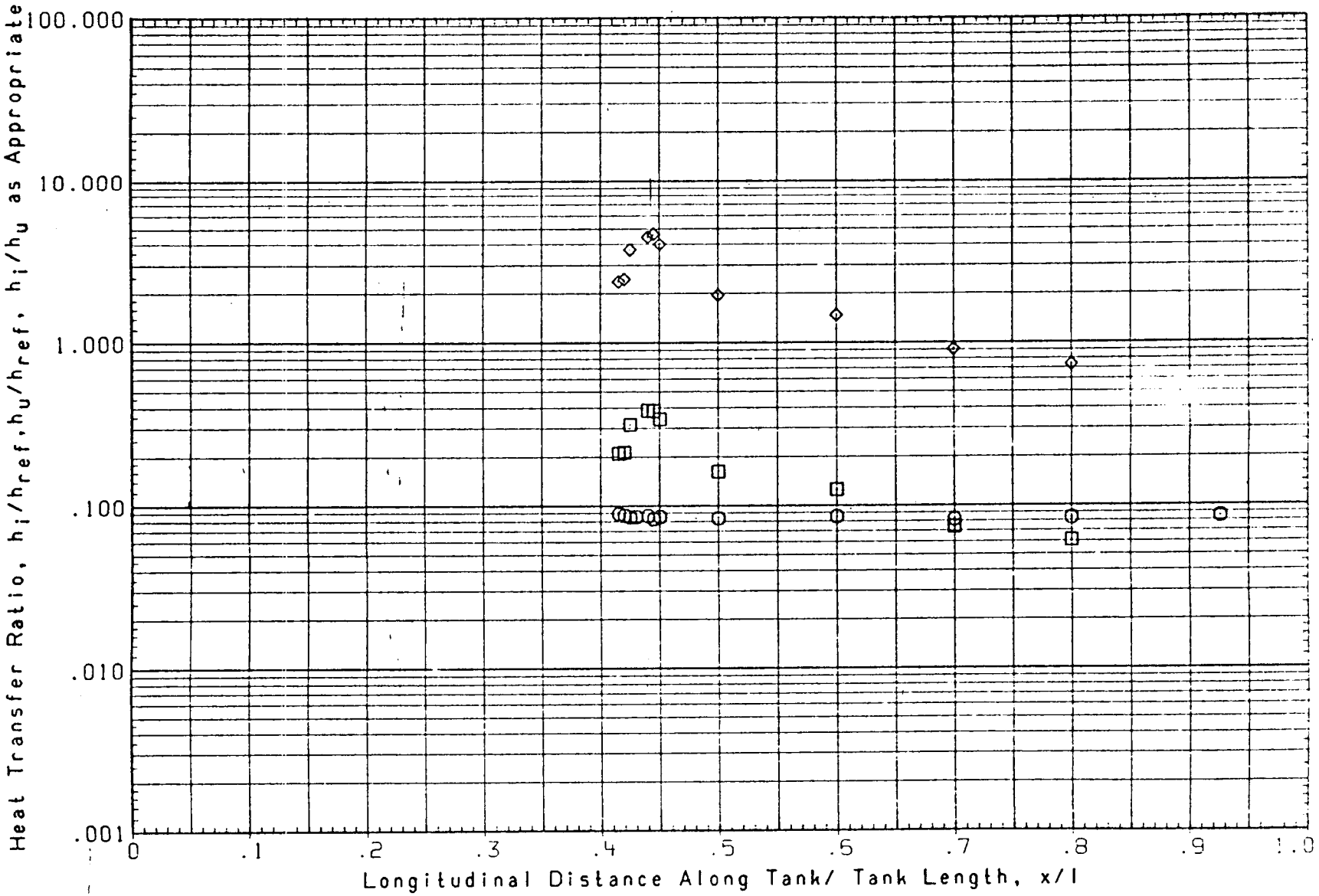


FIG. 21 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -6

MACH = 4.020 ALPHA = -4.995 PHI = 343.120

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT09)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-6.000
(LVFT29)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-6.000
(BVFT29)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-6.000

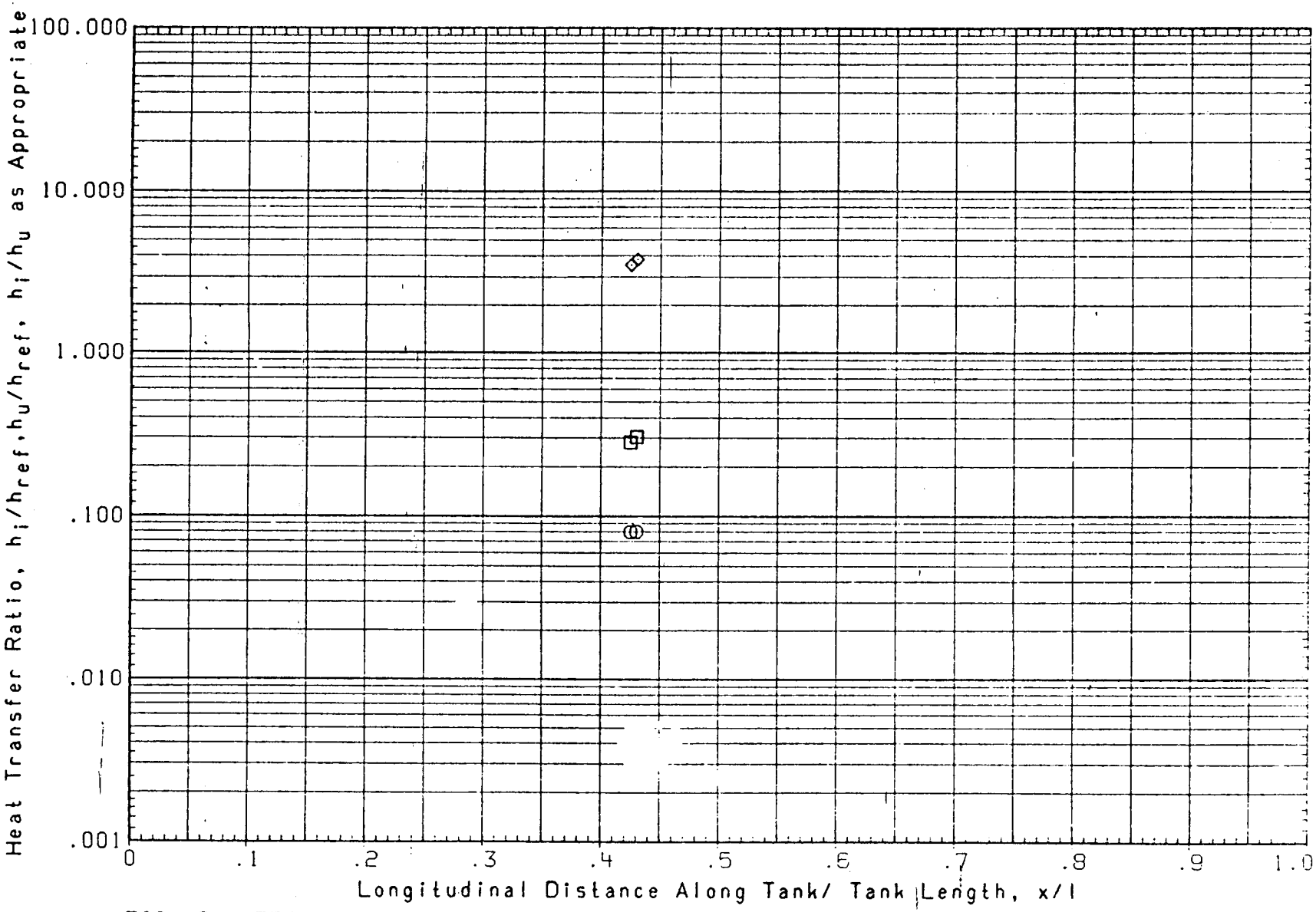


FIG. 21 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -6

MACH = 4.020 ALPHA = -4.995 PHI = 345.560

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT09)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-6.000
(LVFT29)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-6.000
(BVFT29)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-6.000

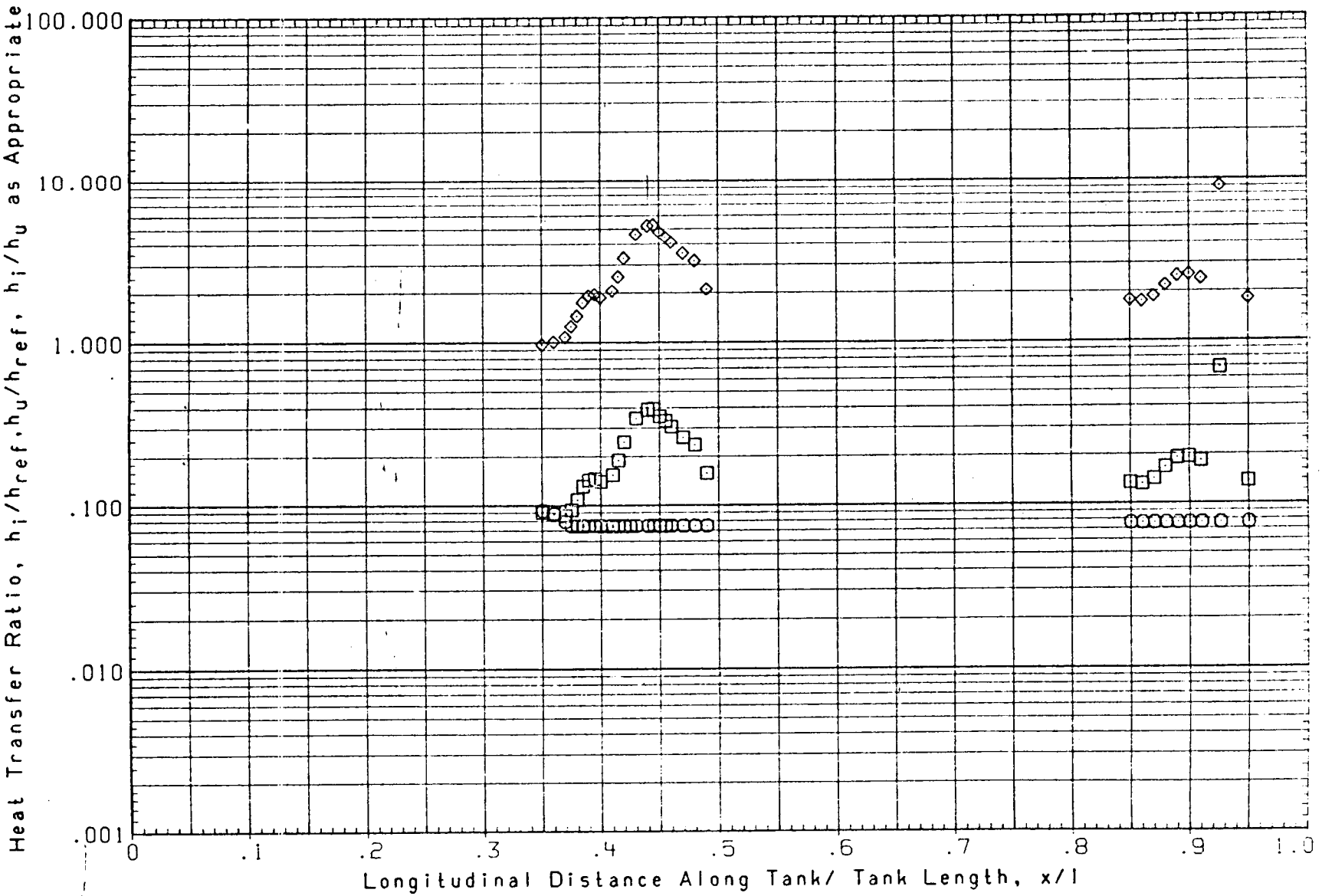


FIG. 21 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS WINDWARD SIDE, ALPHA = -5, BETA = -6

MACH = 4.020 ALPHA = -4.995 PHI = 348.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT09)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-6.000
(LVFT29)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-6.000
(BVFT29)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-6.000

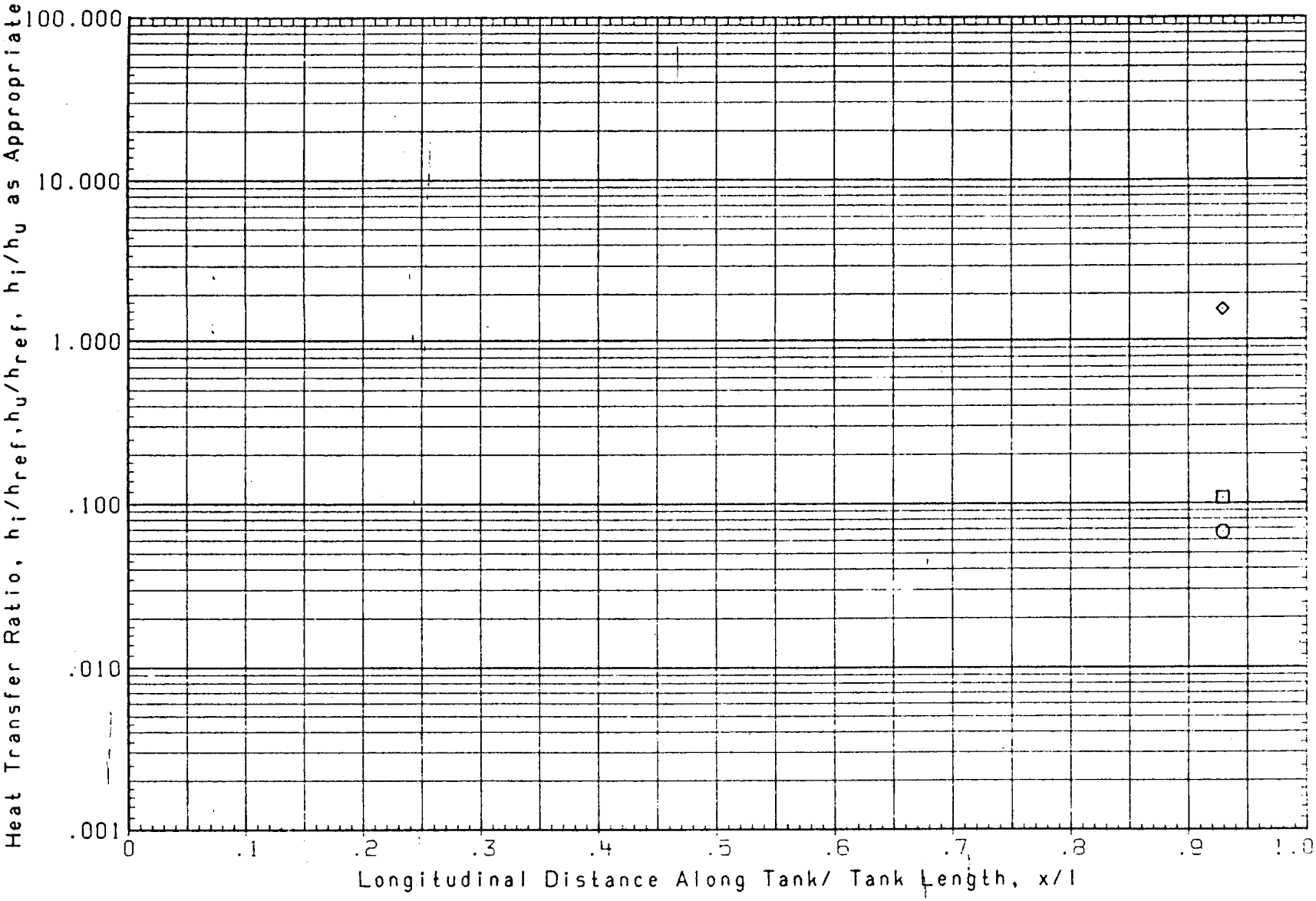


FIG. 21 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -6

MACH = 4.020 ALPHA = -4.995 PHI = 352.200

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT09)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-6.000
(LVFT29)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-6.000
(BVFT29)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-6.000

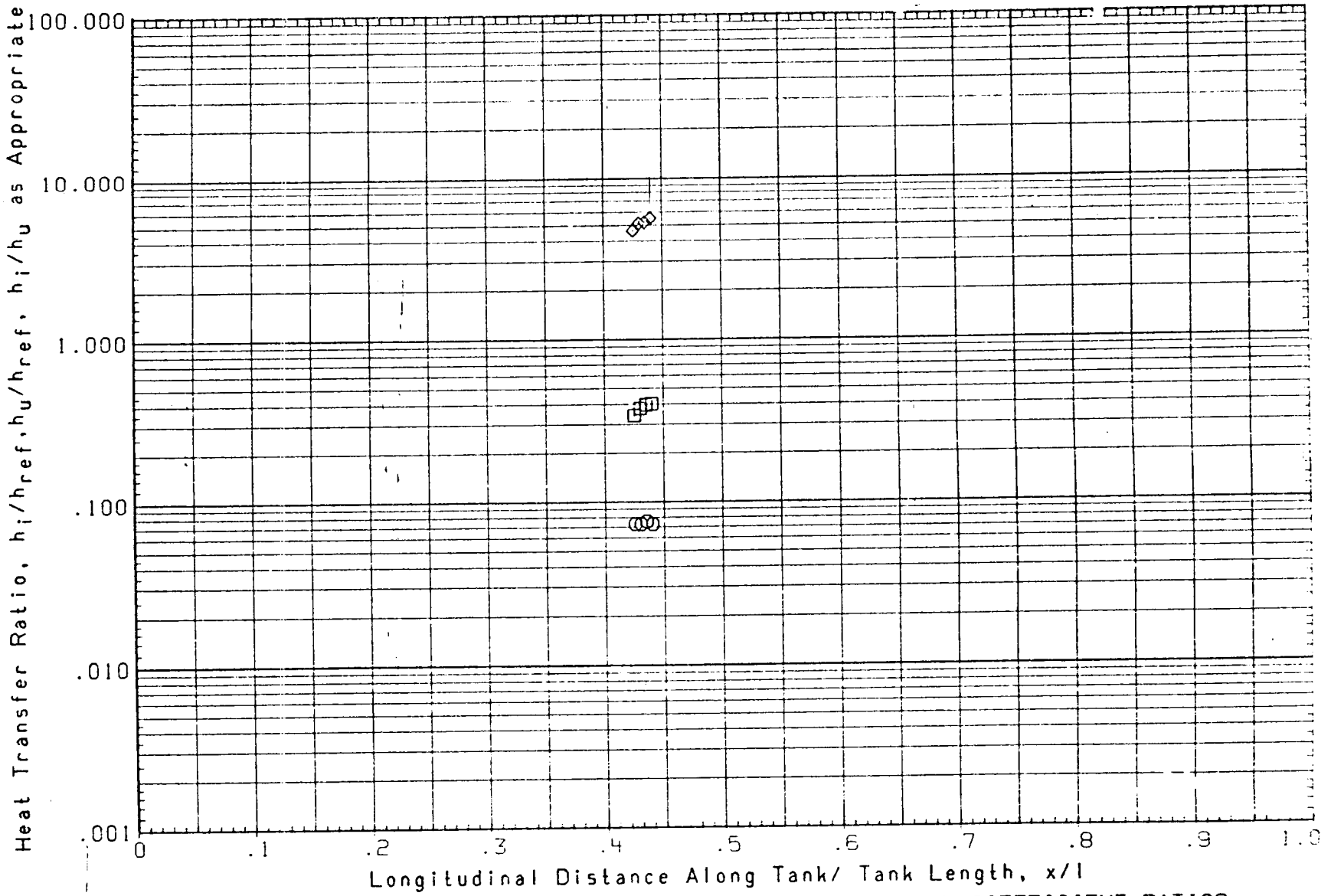


FIG. 21 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -6

MACH = 4.020 ALPHA = -4.995 PHI = 354.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT09)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-6.000
(LVFT29)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-6.000
(BVFT29)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-6.000

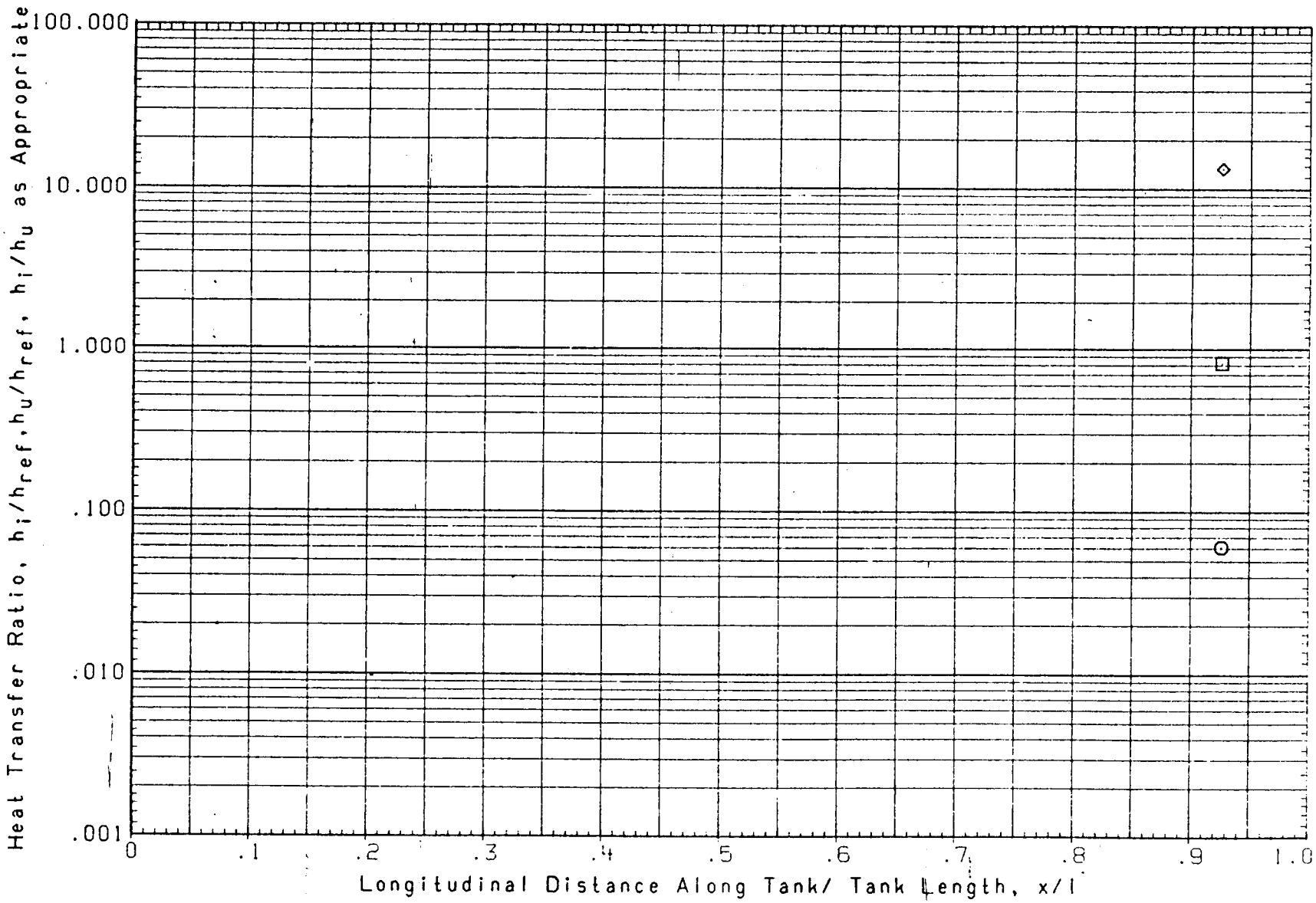


FIG. 21 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS WINDWARD SIDE, ALPHA = -5, BETA = -6

MACH = 4.020 ALPHA = -4.995 PHI = 355.160

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT09)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-6.000
(LVFT29)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-6.000
(BVFT29)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-6.000

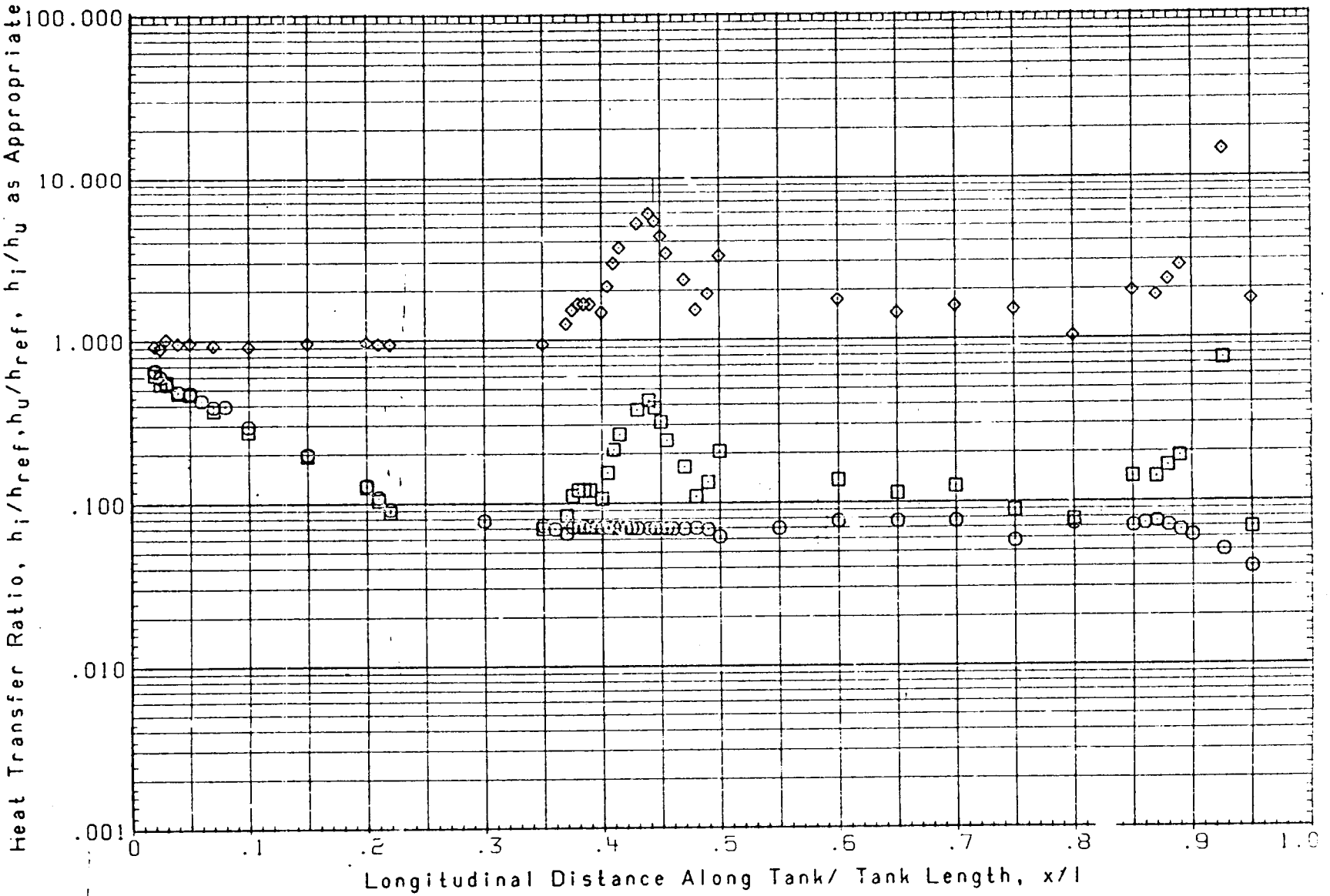


FIG. 21 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -6

MACH = 4.020 ALPHA = -4.995 PHI = 360.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT09)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-6.000
(LVFT29)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-6.000
(BVFT29)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-6.000

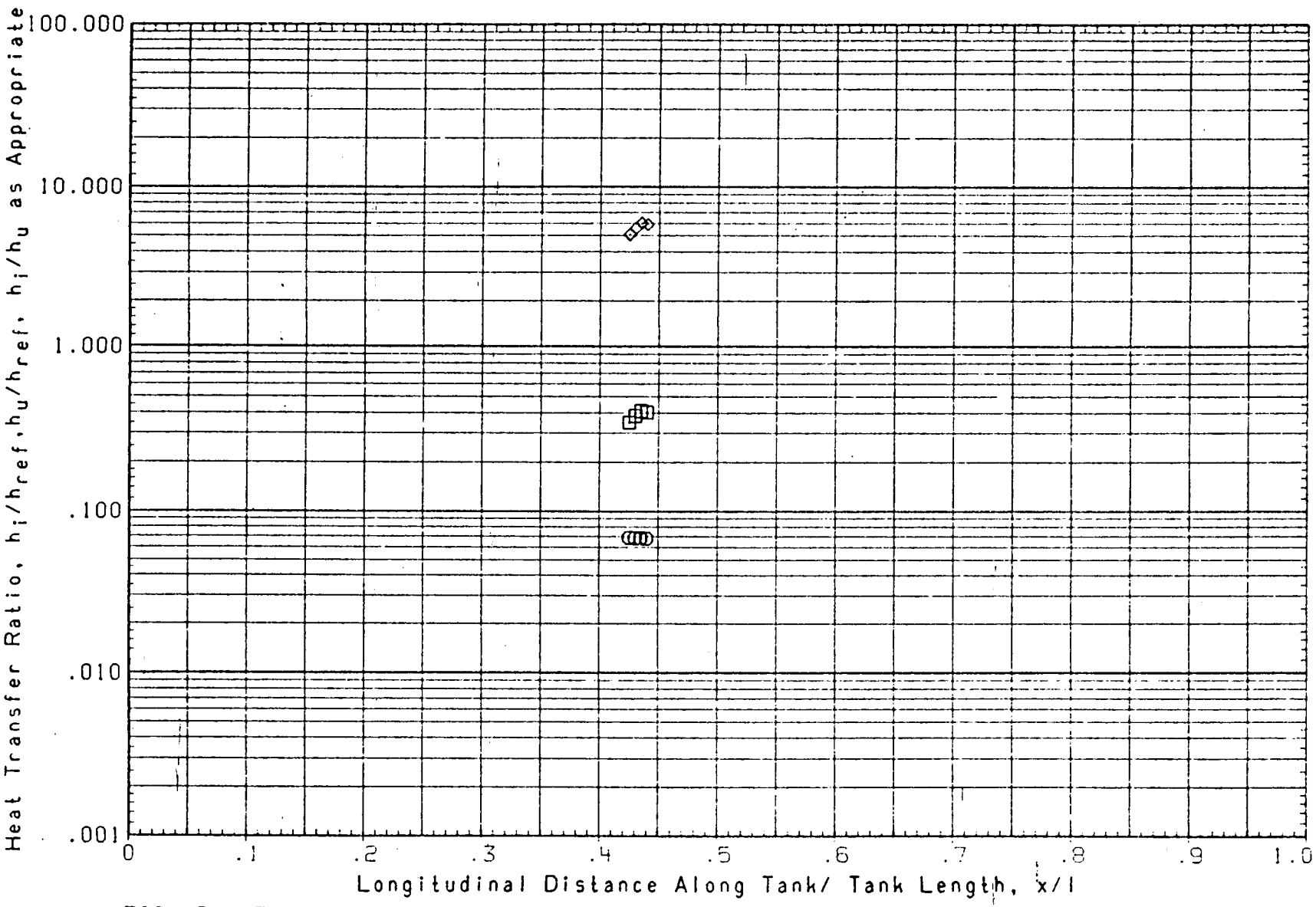


FIG. 21 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS WINDWARD SIDE, ALPHA = -5, BETA = -6

MACH = 4.020 ALPHA = -4.995 PHI = 5.630

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT09)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-6.000
(LVFT29)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-6.000
(BVFT29)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-6.000

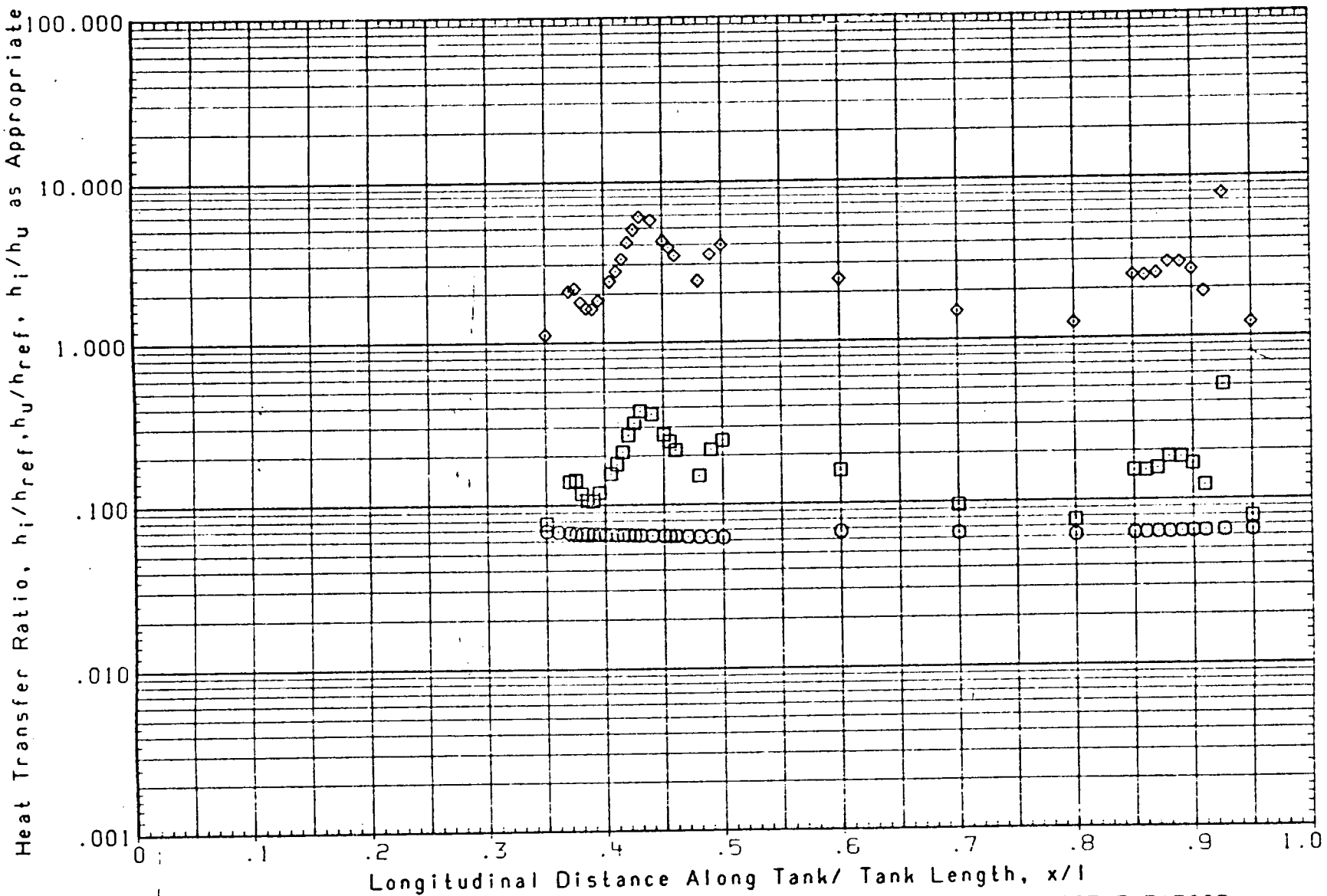


FIG. 21 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS WINDWARD SIDE, ALPHA = -5, BETA = -6

MACH = 4.020 ALPHA = -4.995 PHI = 11.250

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT09)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-6.000
(LVFT29)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-6.000
(BVFT29)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-6.000

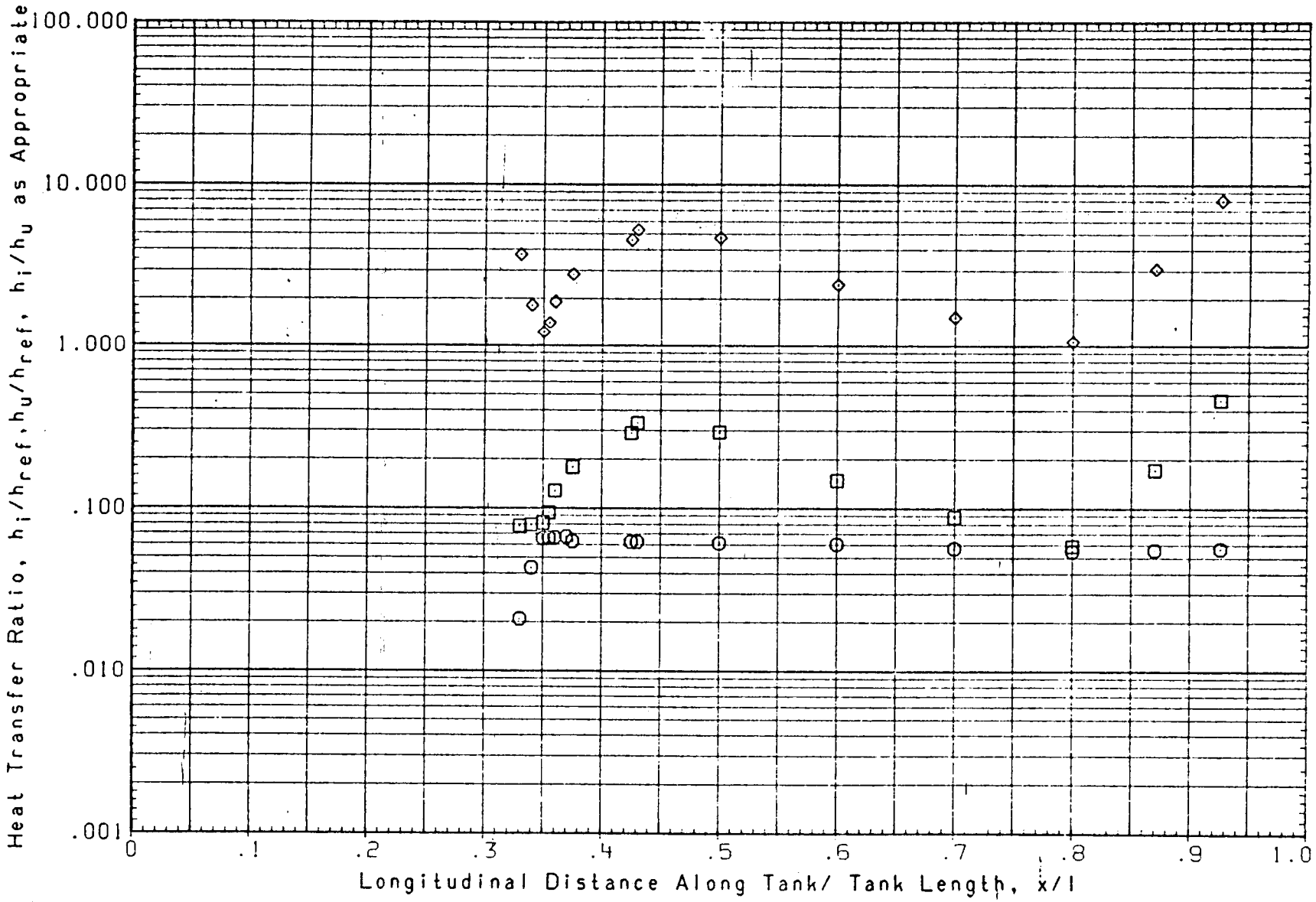


FIG. 21 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -6

MACH = 4.020 ALPHA = -4.995 PHI = 17.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT09)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-6.000
(LVFT29)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-6.000
(BVFT29)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-6.000

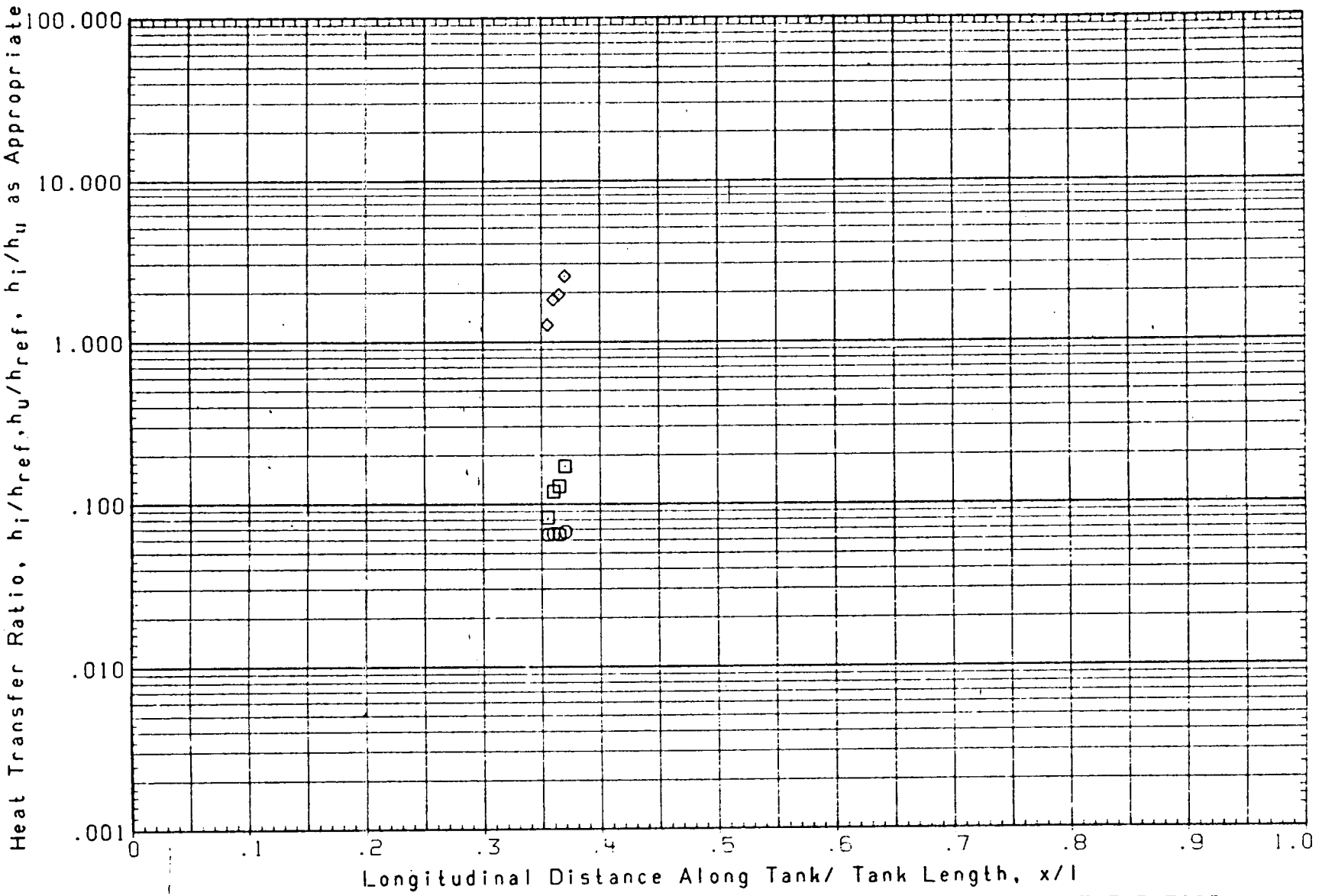


FIG. 21 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -6

MACH = 4.020 ALPHA = -4.995 PHI = 20.980

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT09)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-6.000
(LVFT29)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-6.000
(BVFT29)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-6.000

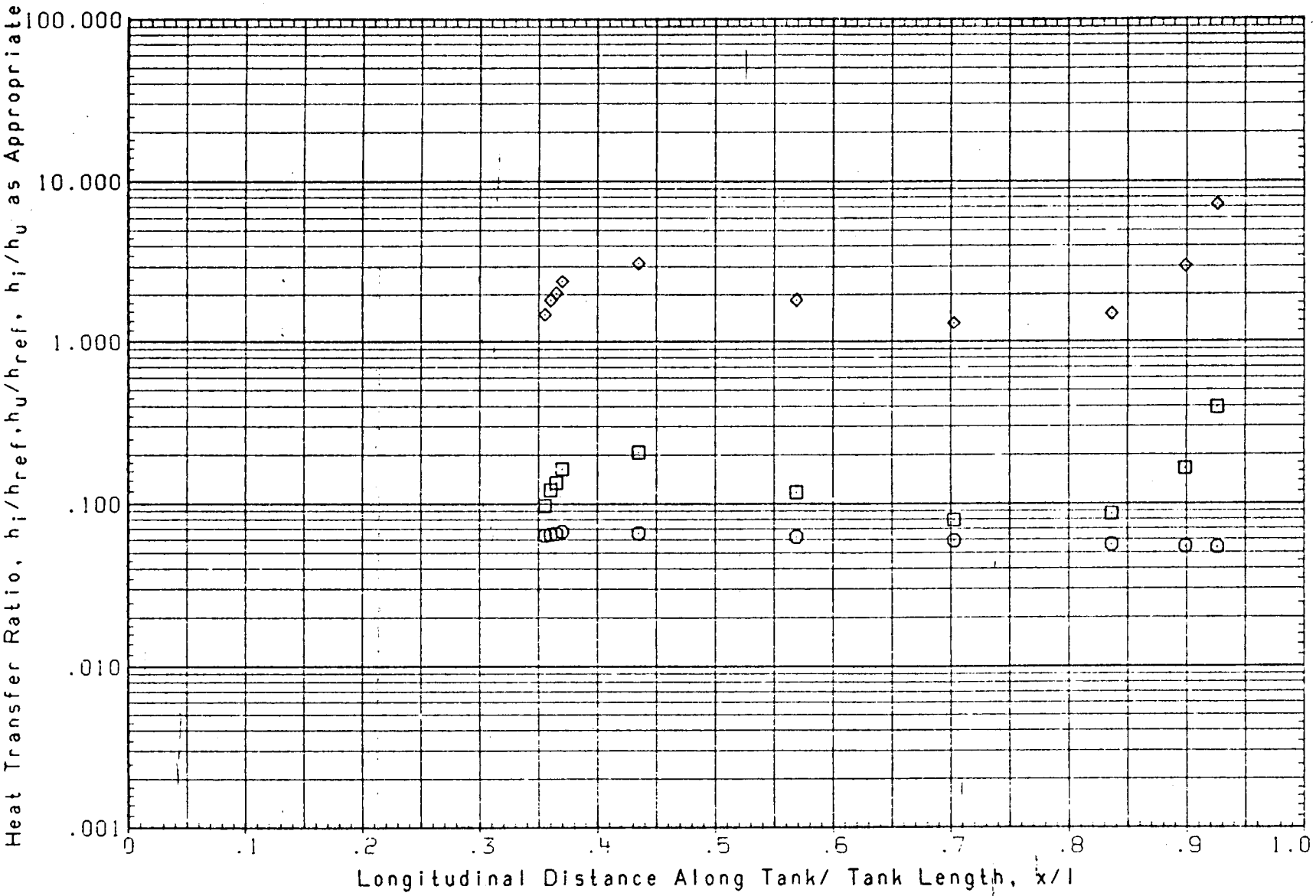


FIG. 21 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -6

MACH = 4.020 ALPHA = -4.995 PHI = 23.075

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT09)	○	IH41B(AEDC V41A-A4A: SPIKED EXTERNAL TANK ALONE	-5.000	-6.000
(LVFT29)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-6.000
(BVFT29)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-6.000

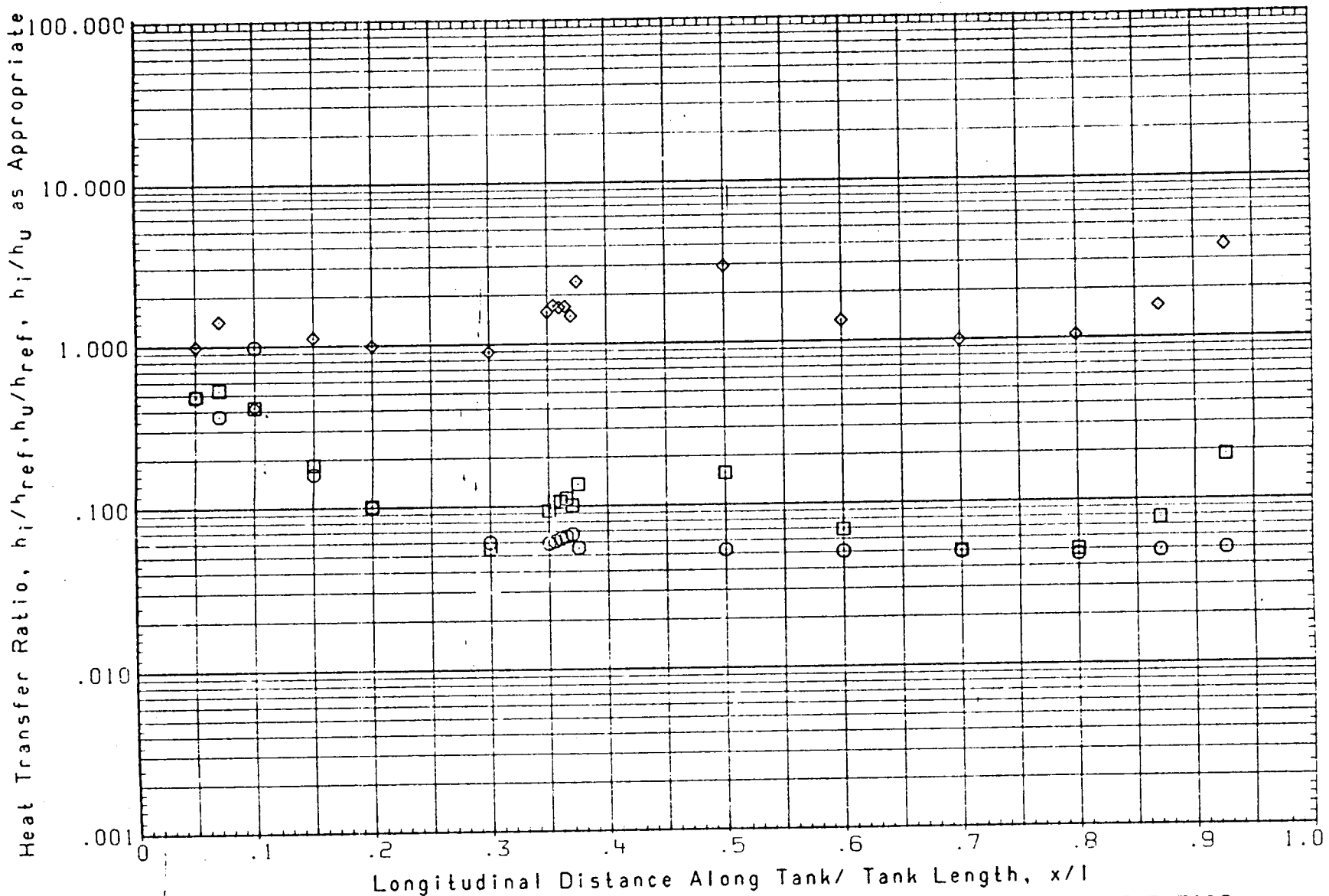


FIG. 21 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS WINDWARD SIDE, ALPHA = -5, BETA = -6

MACH = 4.020 ALPHA = -4.995 PHI = 29.800

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT09)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-6.000
(LVFT29)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-6.000
(BVFT29)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-6.000

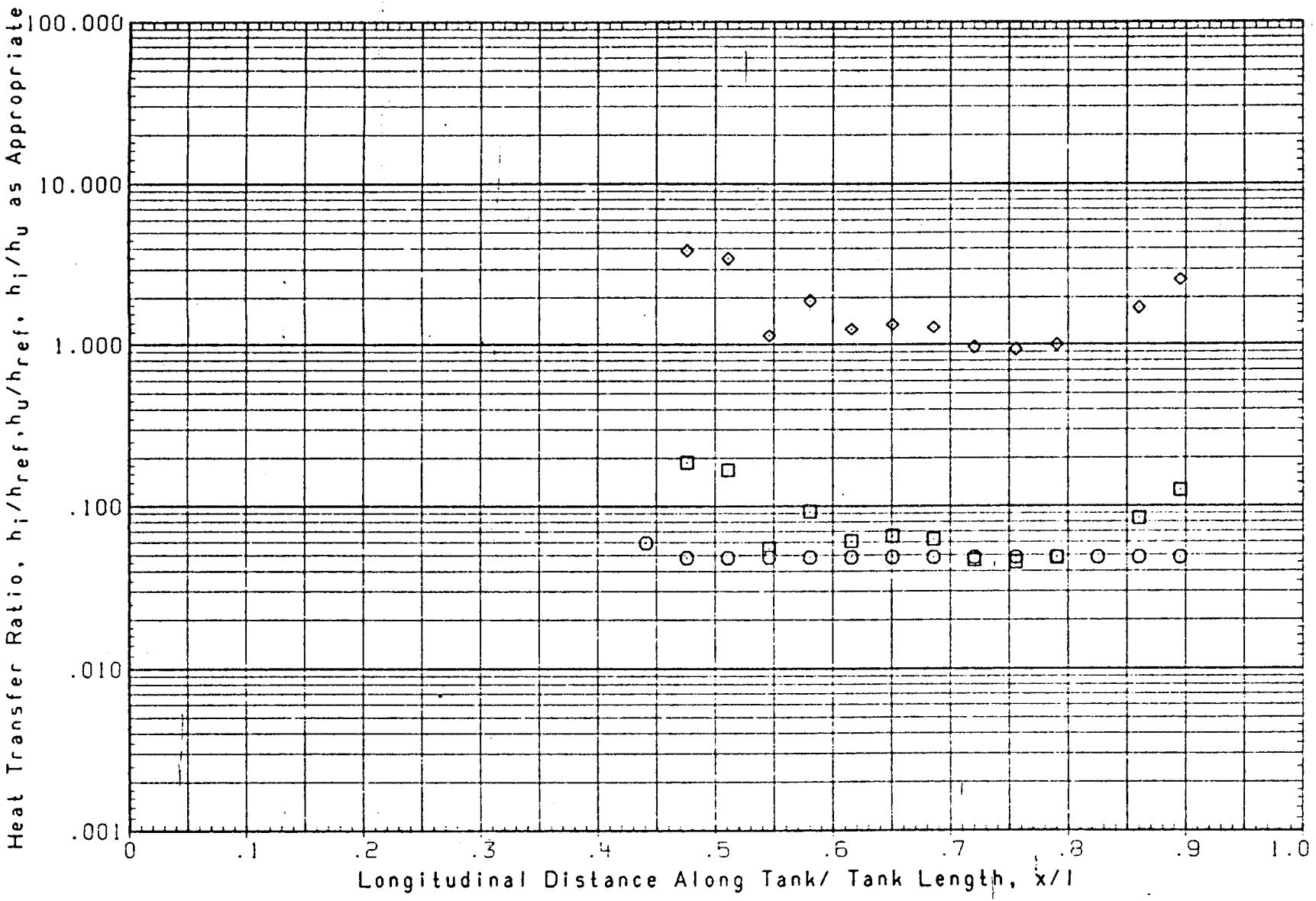


FIG. 21 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS WINDWARD SIDE, ALPHA = -5, BETA = -6

MACH = 4.020 ALPHA = -4.995 PHI = 31.430

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT09)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-6.000
(LVFT29)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-6.000
(BVFT29)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-6.000

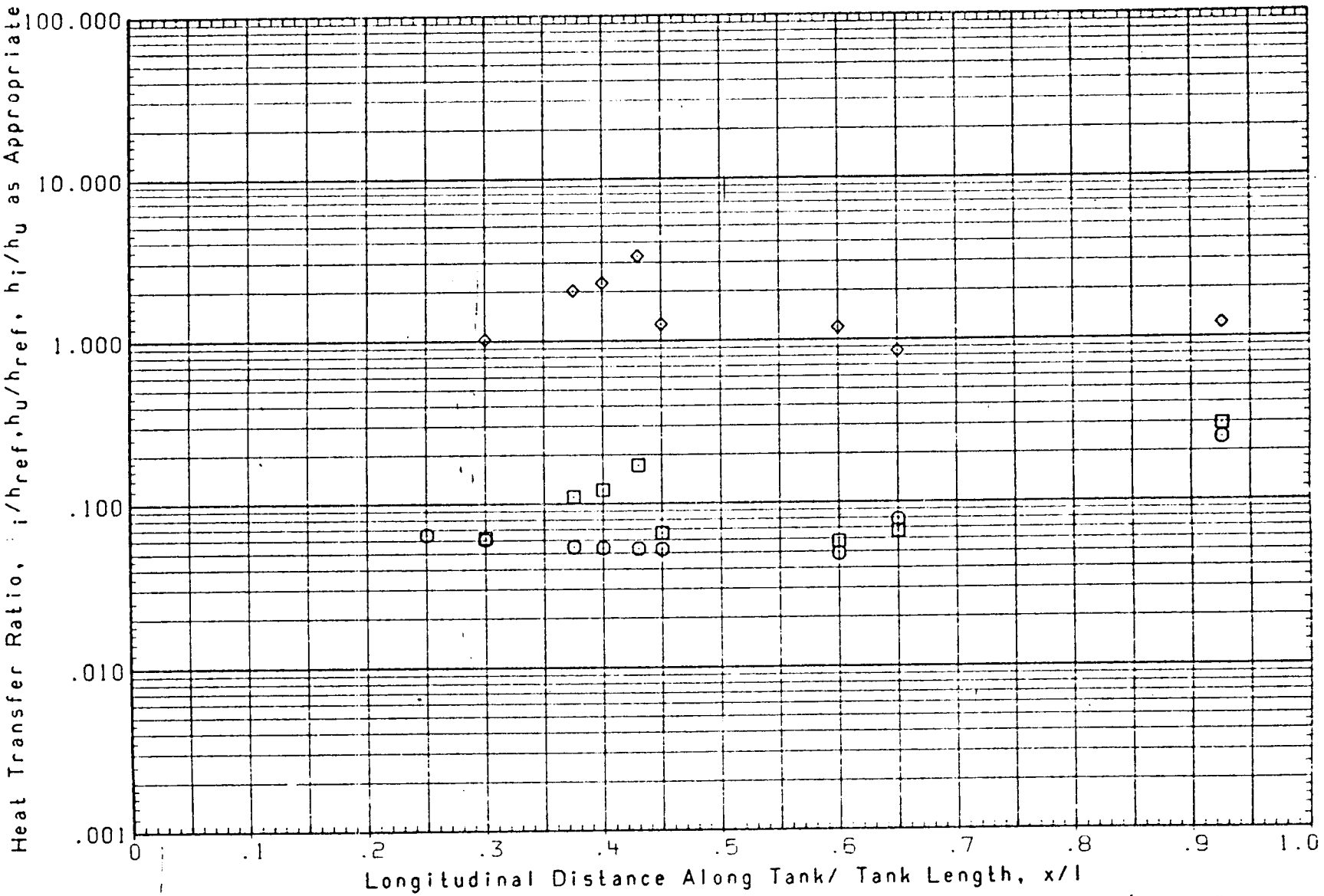


FIG. 21 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -6

MACH = 4.020 ALPHA = -4.995 PHI = 33.750

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT09)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-6.000
(LVFT29)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-6.000
(BVFT29)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-6.000

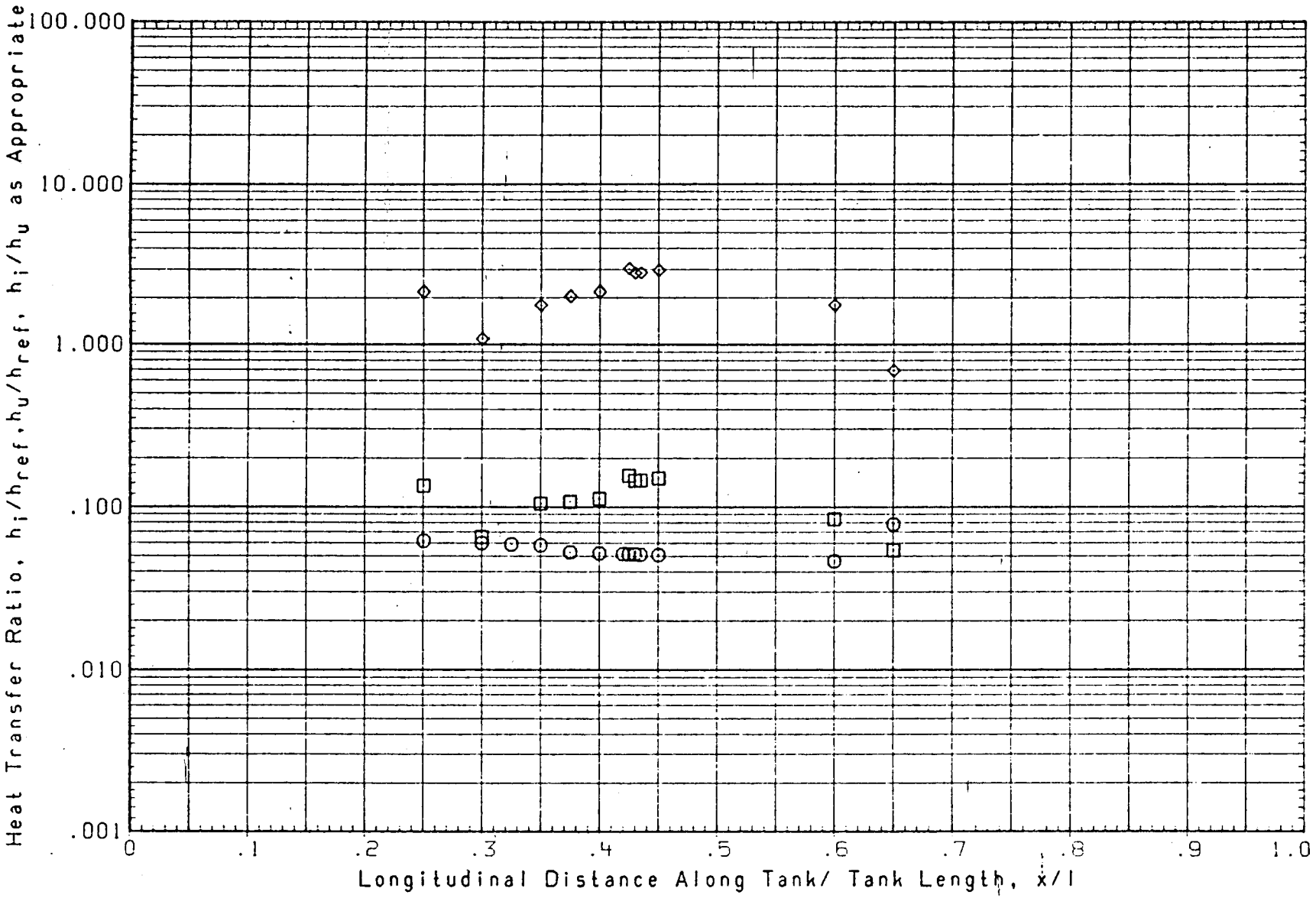


FIG. 21 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -6

MACH = 4.020 ALPHA = -4.995 PHI = 36.320

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT09)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-6.000
(LVFT29)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-6.000
(BVFT29)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-6.000

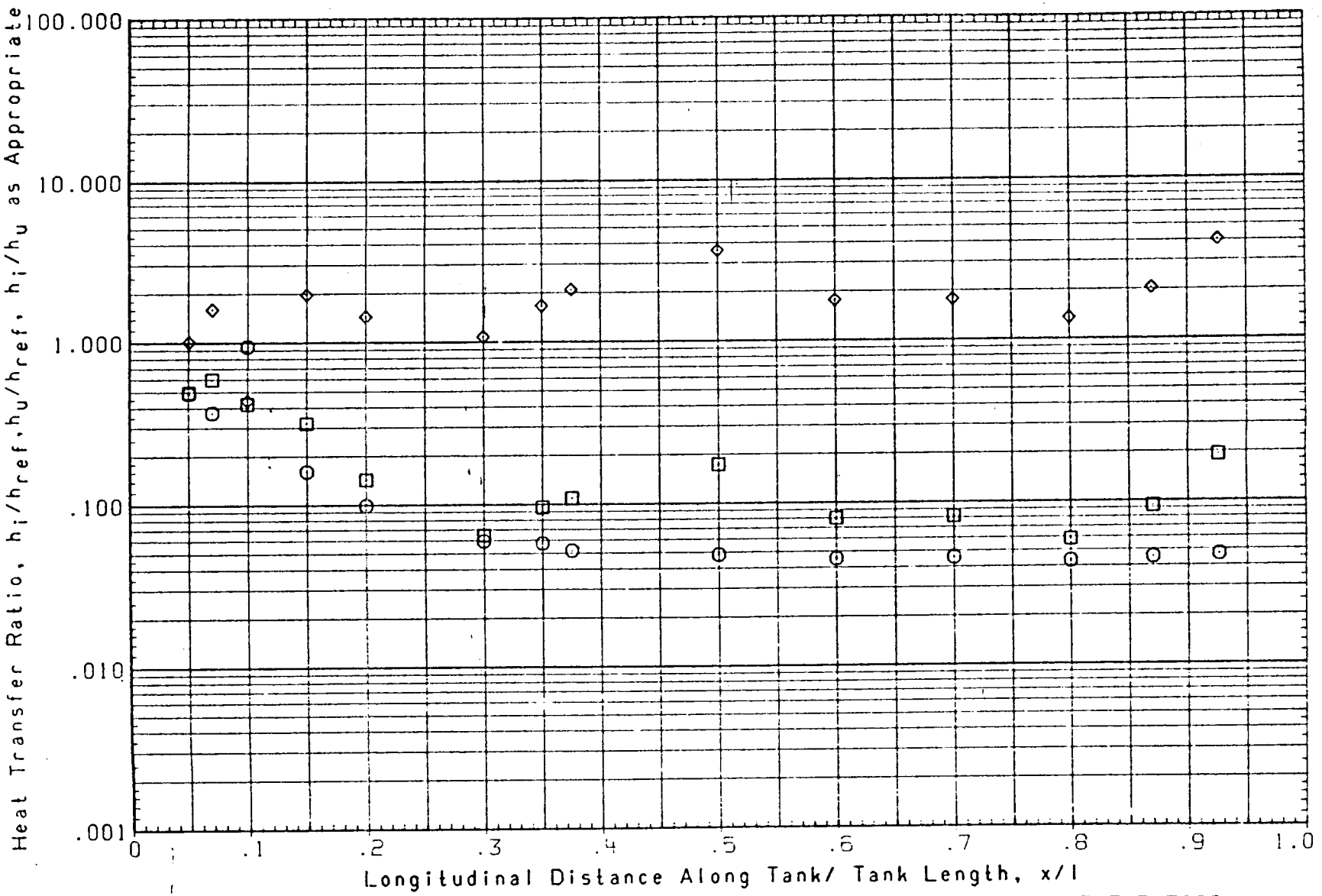


FIG. 21 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -6

MACH = 4.020 ALPHA = -4.995 PHI = 37.700

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT09)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-6.000
(LVFT29)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-6.000
(BVFT29)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-6.000

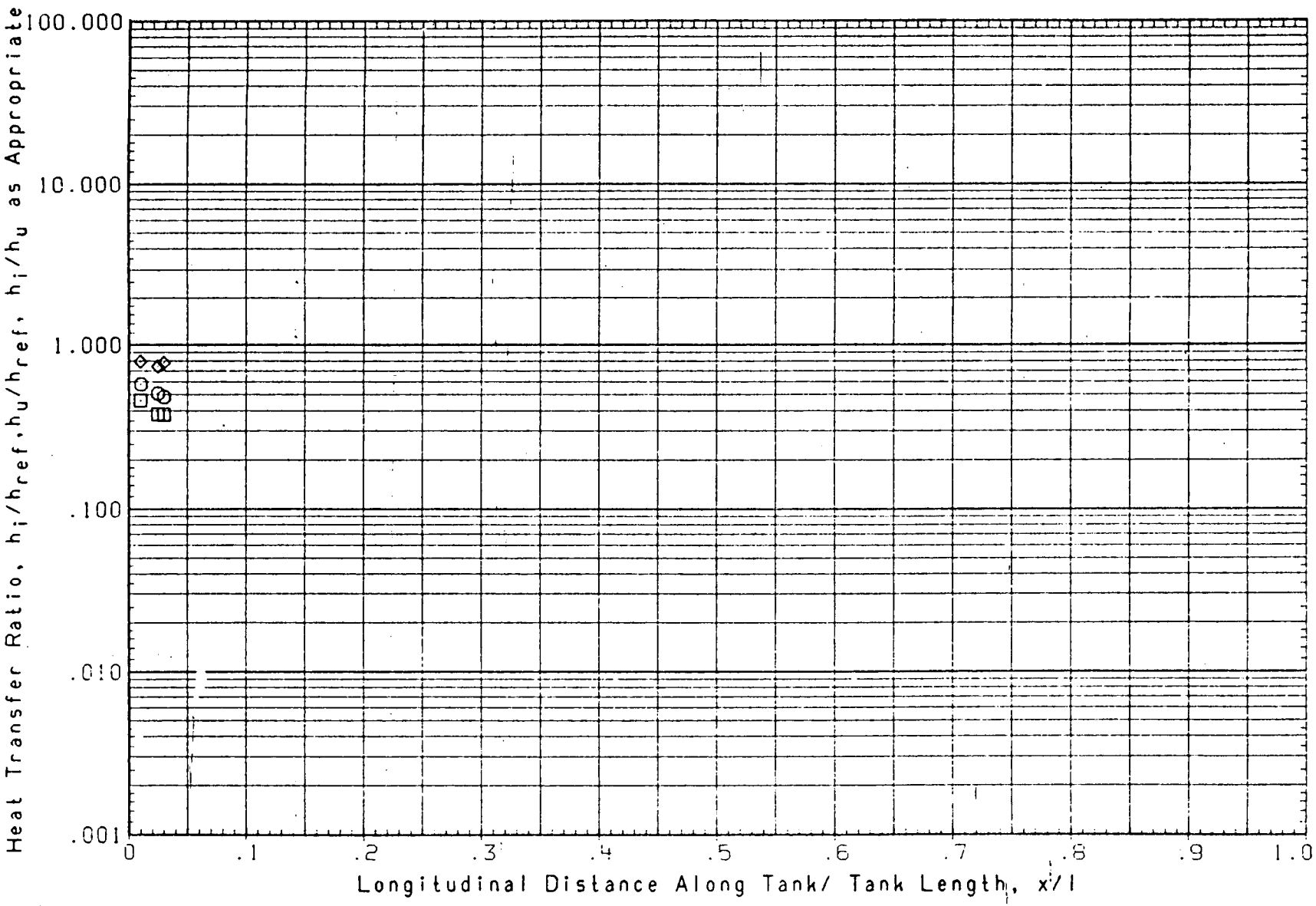


FIG. 21 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -6

MACH = 4.020 ALPHA = -4.995 PHI = 39.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT09)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-6.000
(LVFT29)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-6.000
(CVFT29)	◇	DATA NOT AVAILABLE	-5.000	-6.000

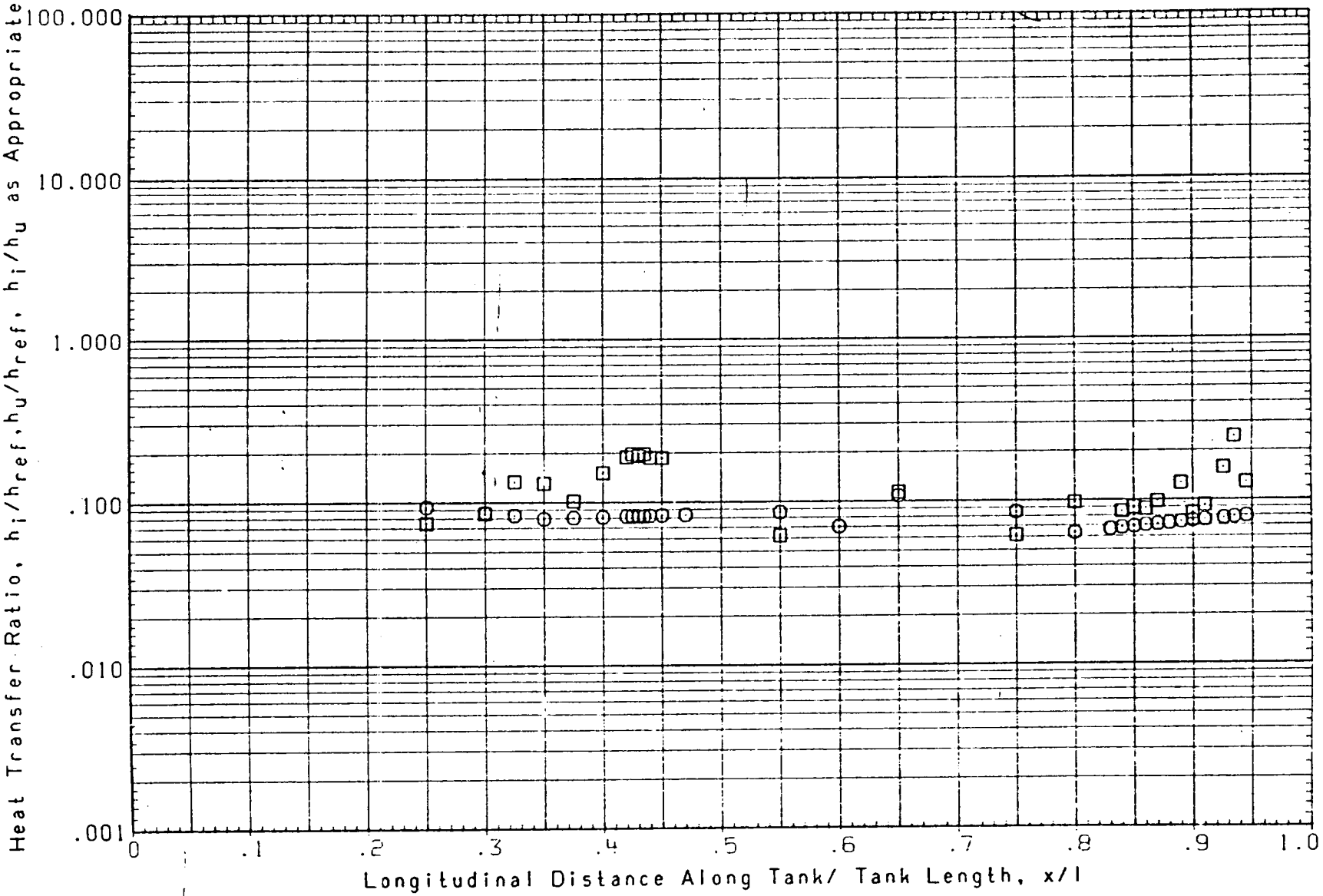


FIG. 22 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = -5, BETA = -6

MACH = 3.010 ALPHA = -4.985 PHI = 45.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT09)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-6.000
(LVFT29)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-6.000
(CVFT29)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-6.000

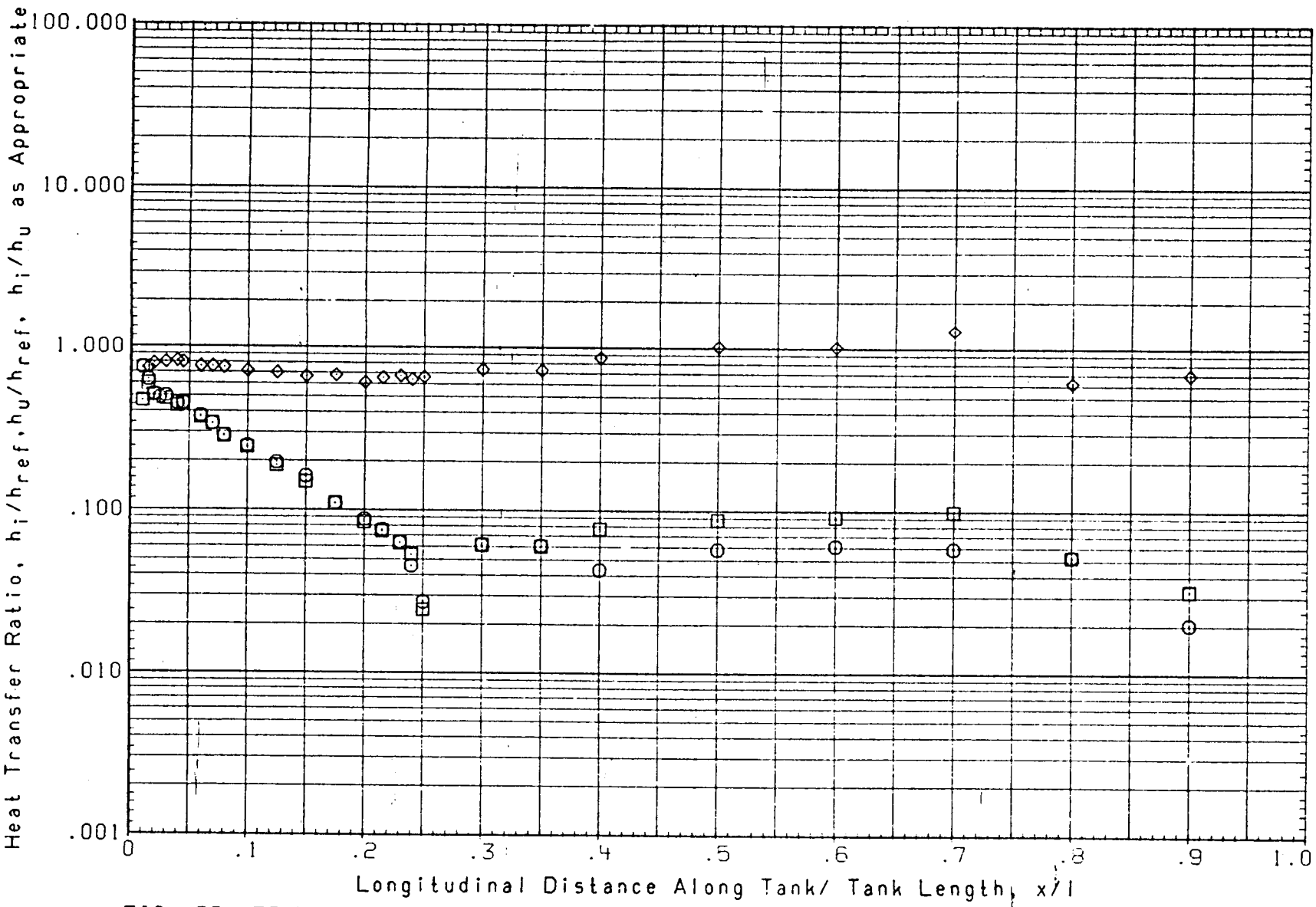


FIG. 22 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = -5, BETA = -6

MACH = 3.010 ALPHA = -4.985 PHI = 180.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT09)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-6.000
(LVFT29)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-6.000
(CVFT29)	◇	DATA NOT AVAILABLE	-5.000	-6.000

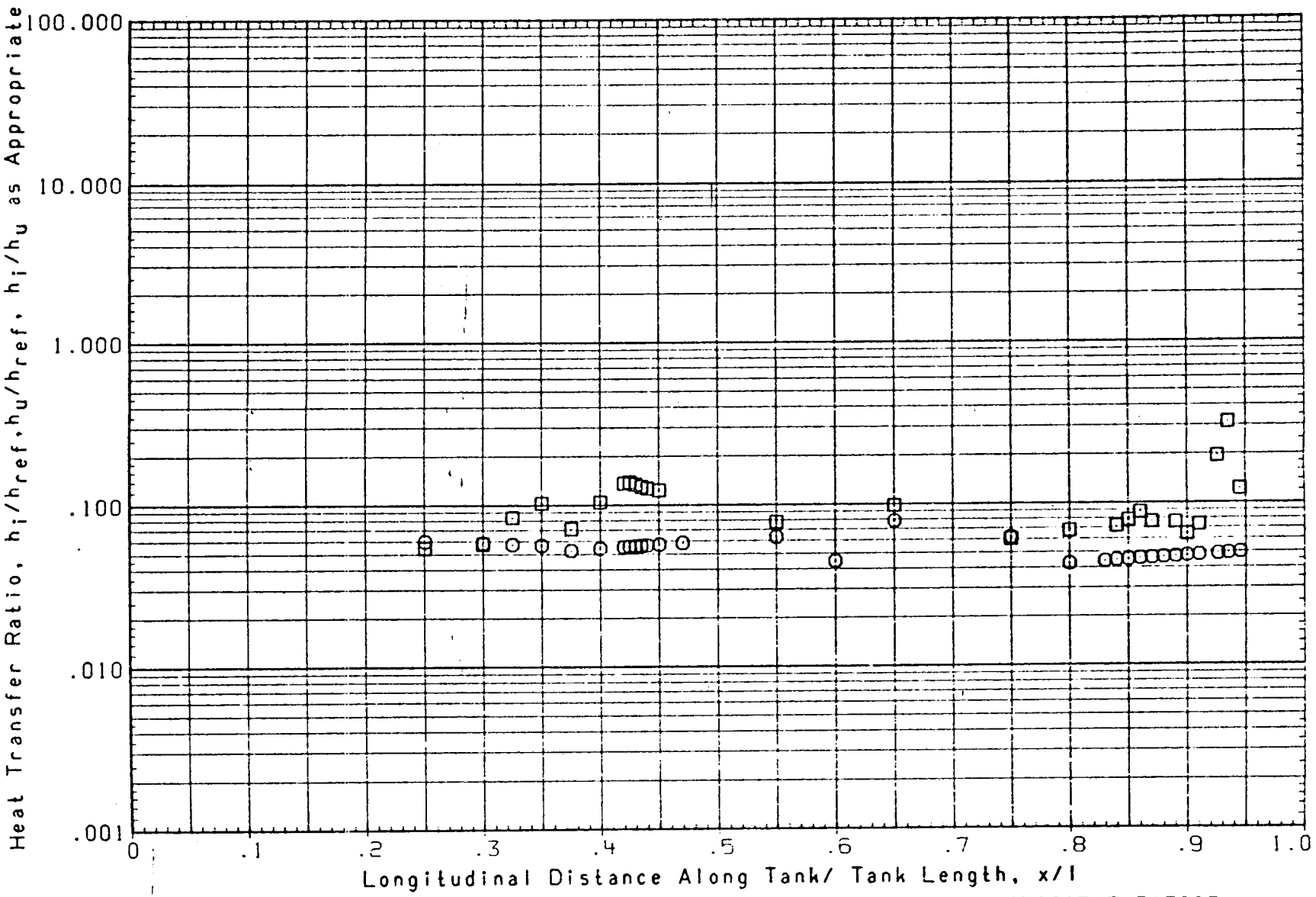


FIG. 22 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = -5, BETA = -6

MACH = 4.020 ALPHA = -4.995 PHI = 45.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT09)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-6.000
(LVFT29)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-6.000
(CVFT29)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-6.000

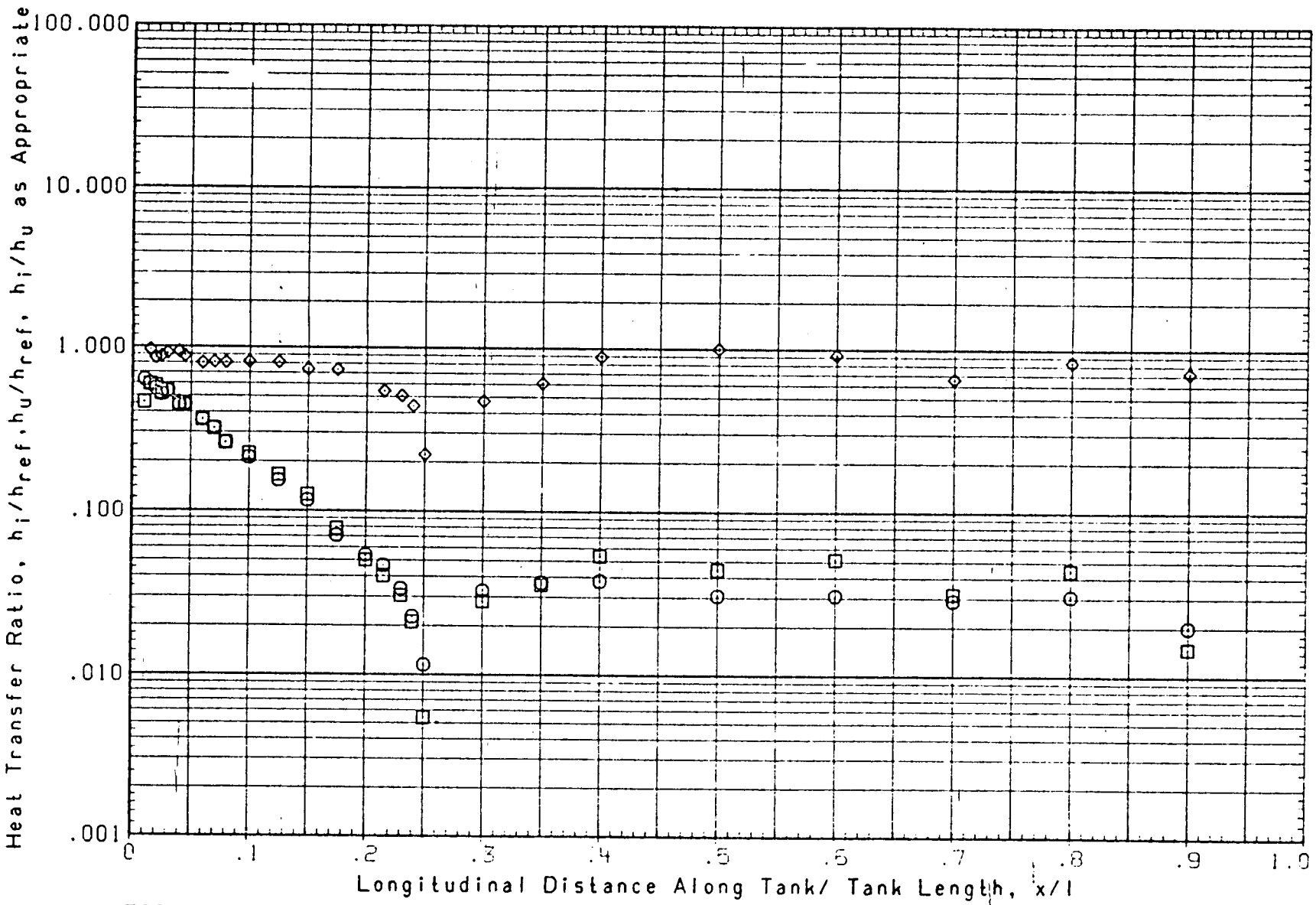


FIG. 22 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS LEEWARD SIDE, ALPHA = -5, BETA = -6

MACH = 4.020 ALPHA = -4.995 PHI = 180.000

DATA SET	SYMBOL	CONFIGURATION	ALPHA	BETA
(KVFT10)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-9.000
(LVFT30)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-9.000
(BVFT30)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-9.000

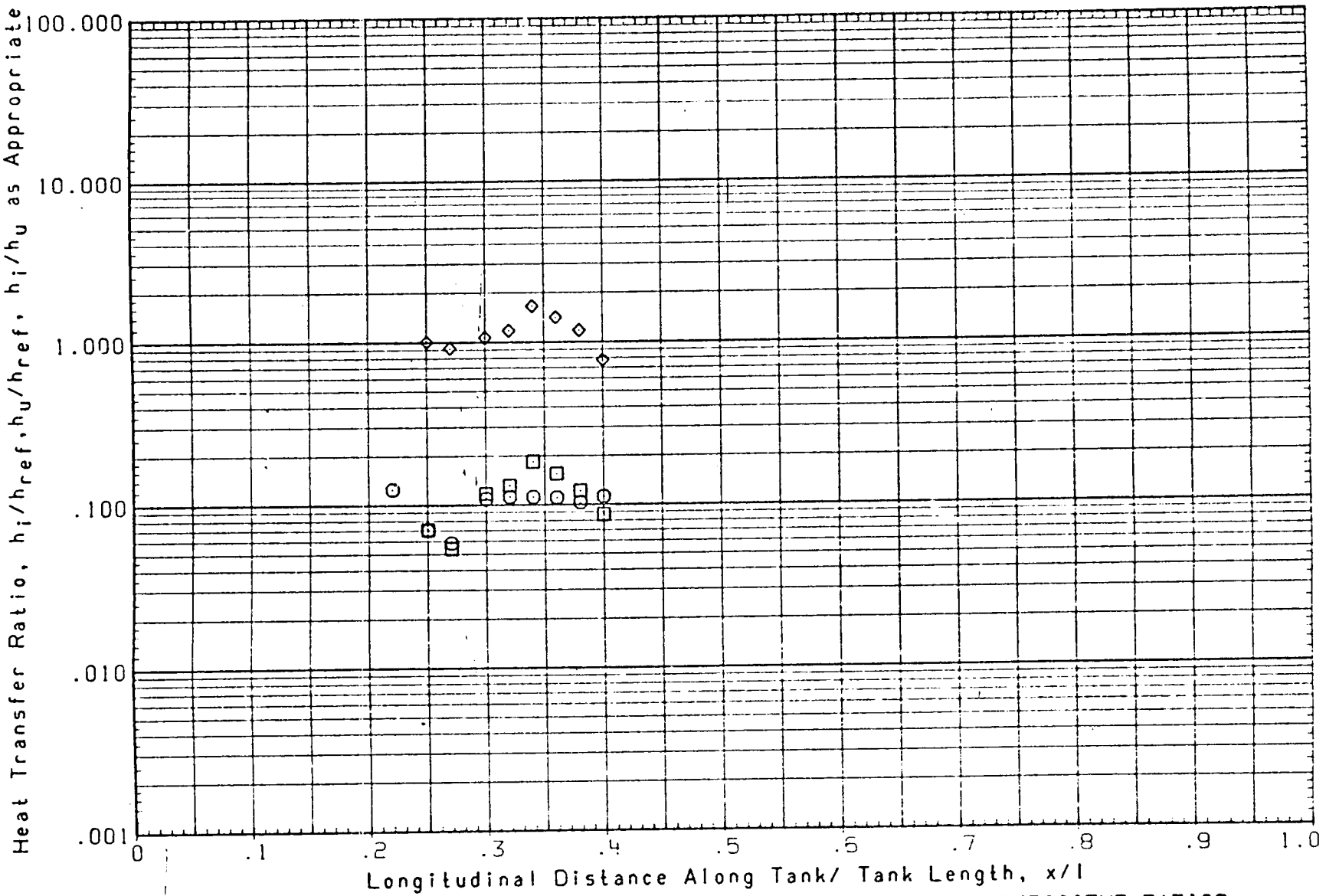


FIG. 23 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -9

MACH = 3.010 ALPHA = -5.000 PHI = 235.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT10)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-9.000
(LVFT30)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-9.000
(BVFT30)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-9.000

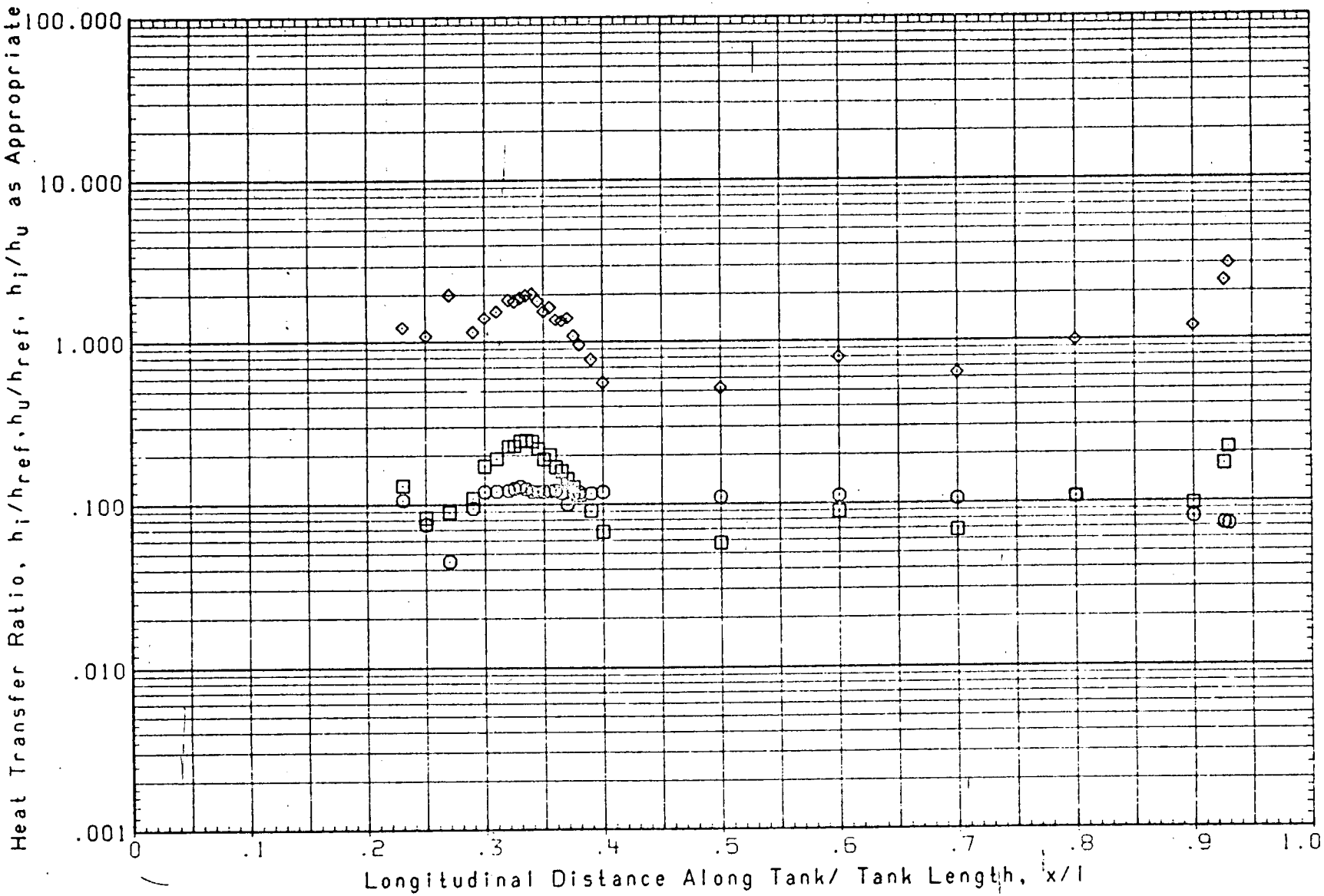


FIG. 23 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -9

MACH = 3.010 ALPHA = -5.000 PHI = 247.500

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT10)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-9.000
(LVFT30)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-9.000
(BVFT30)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-9.000

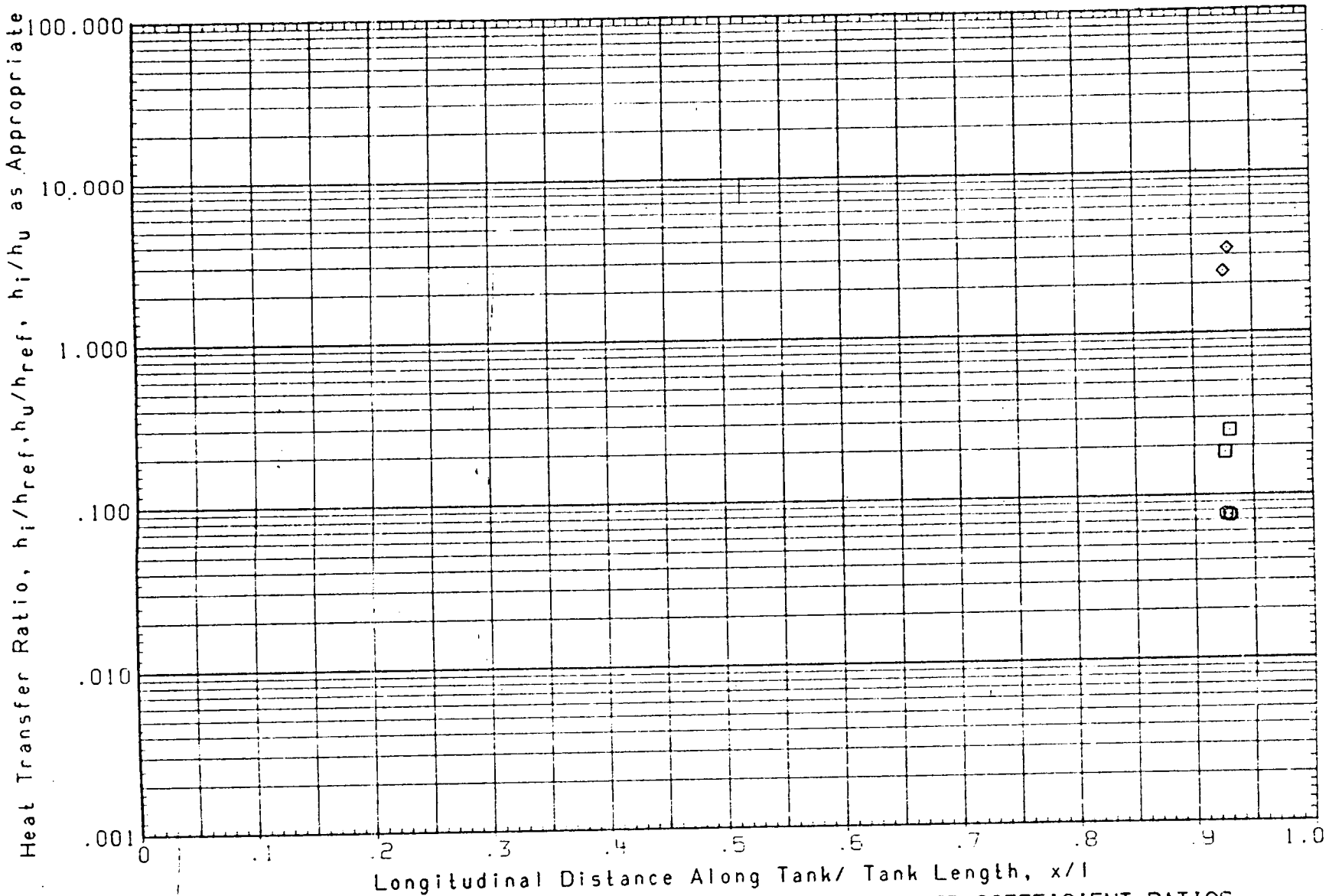


FIG. 23 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -9

MACH = 3.010 ALPHA = -5.000 PHI = 250.570

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT10)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-9.000
(LVFT30)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-9.000
(BVFT30)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-9.000

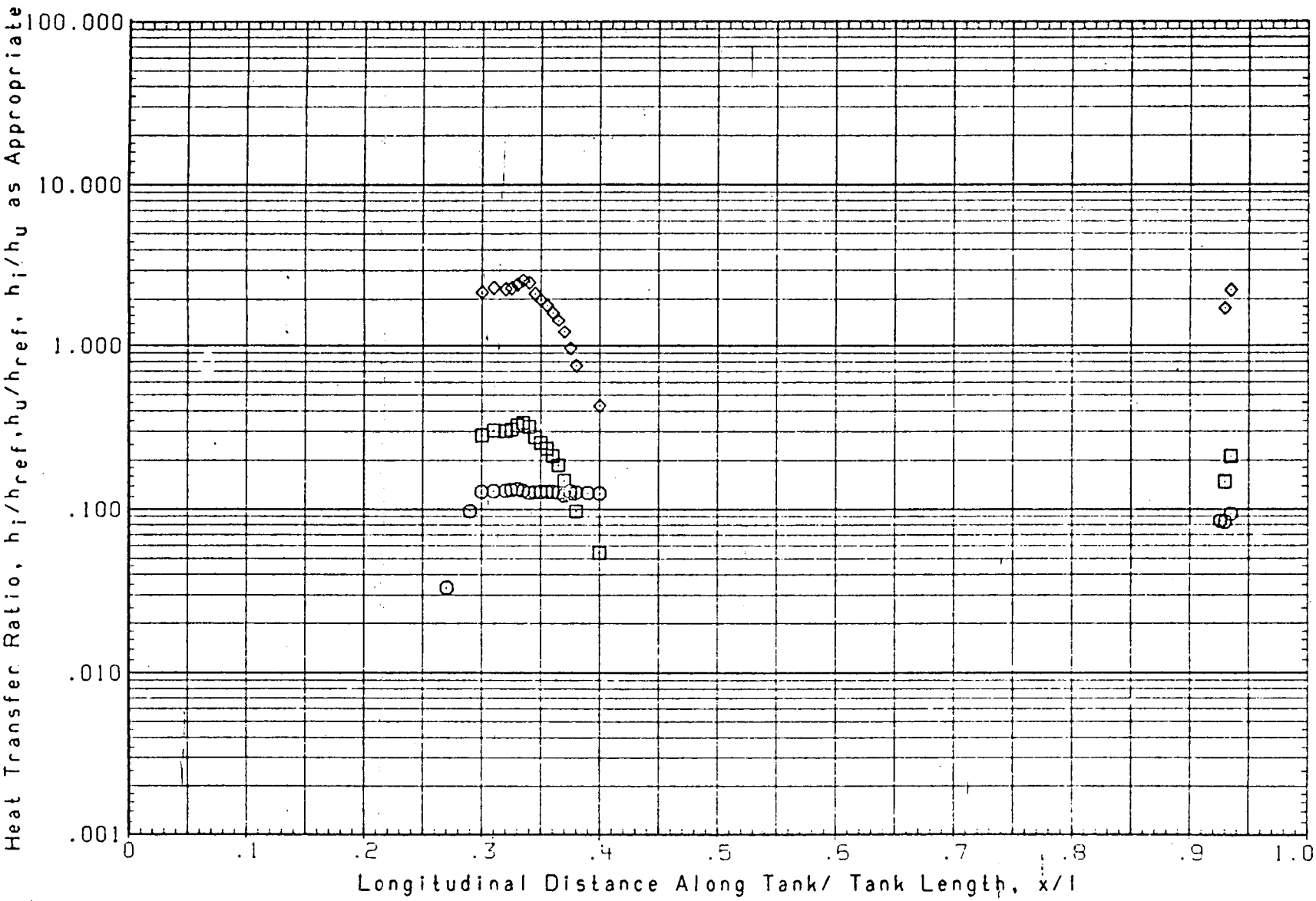


FIG. 23 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -9

MACH = 3.010 ALPHA = -5.000 PHI = 258.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT10)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-9.000
(LVFT30)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-9.000
(BVFT30)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-9.000

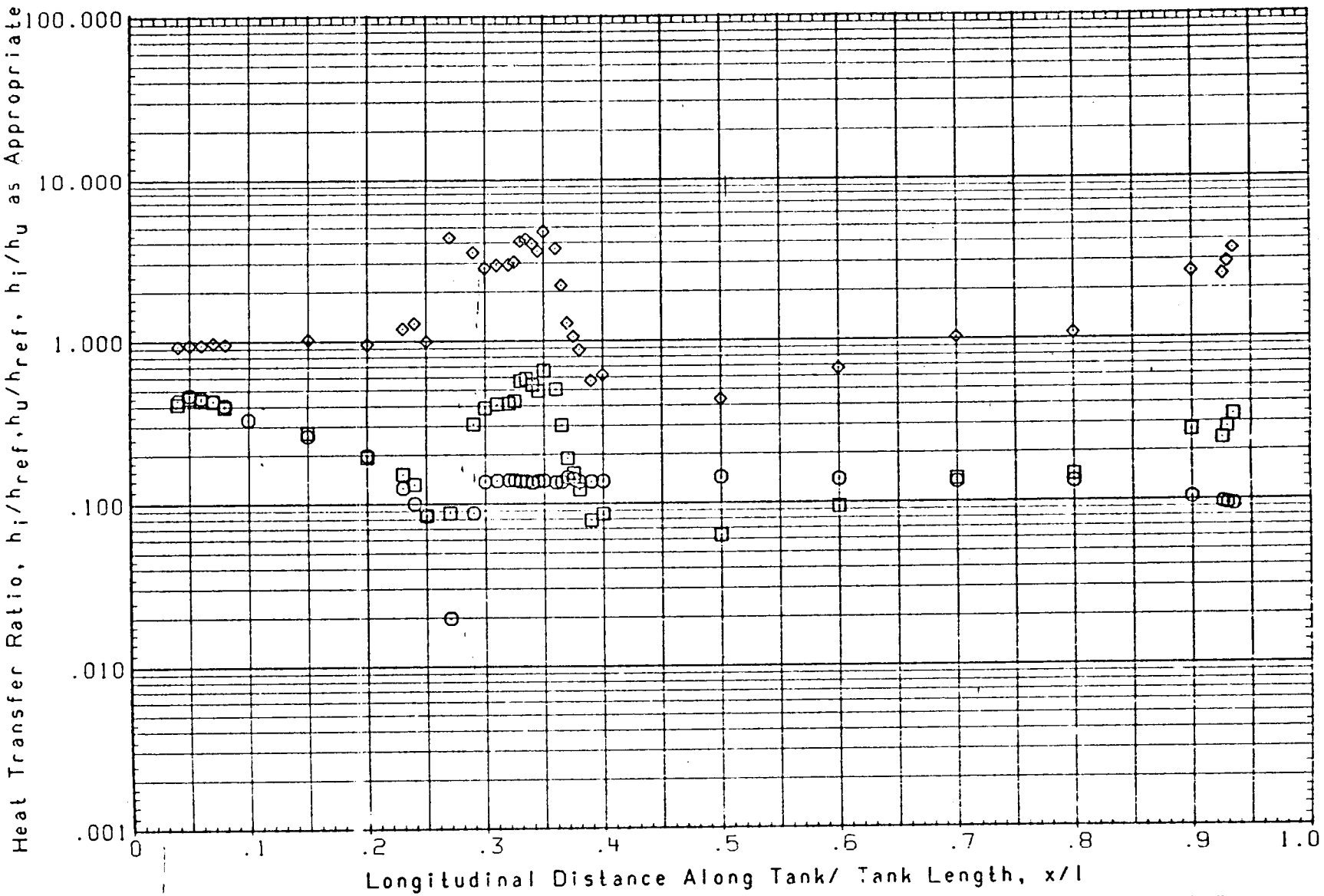


FIG. 23 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -9

MACH = 3.010 ALPHA = -5.000 PHI = 270.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT10)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-9.000
(LVFT30)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-9.000
(BVFT30)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-9.000

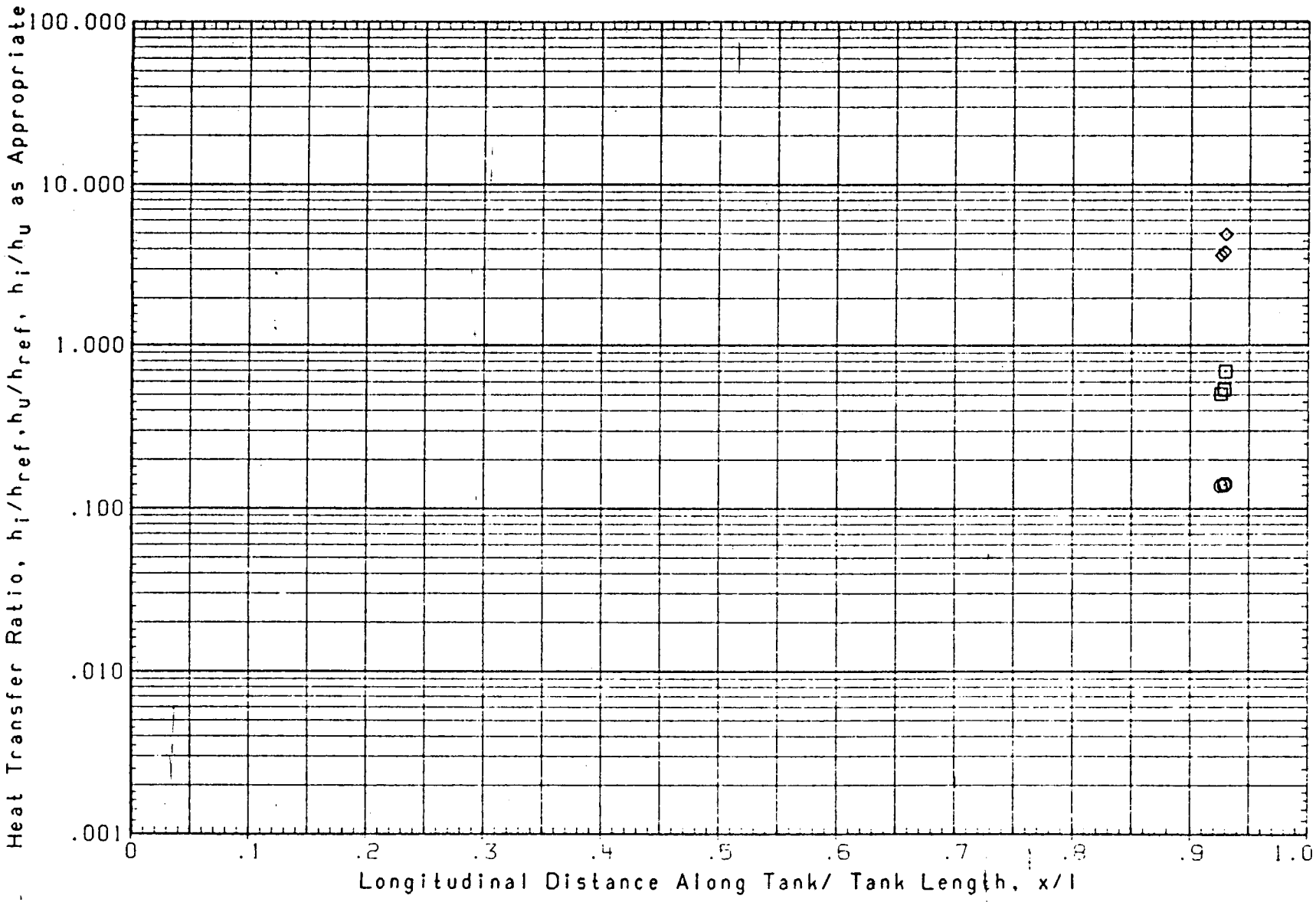


FIG. 23 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -9

MACH = 3.010 ALPHA = -5.000 PHI = 289.130

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT10)	○	1H41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-9.000
(LVFT30)	□	1H41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-9.000
(BVFT30)	◇	1H41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-9.000

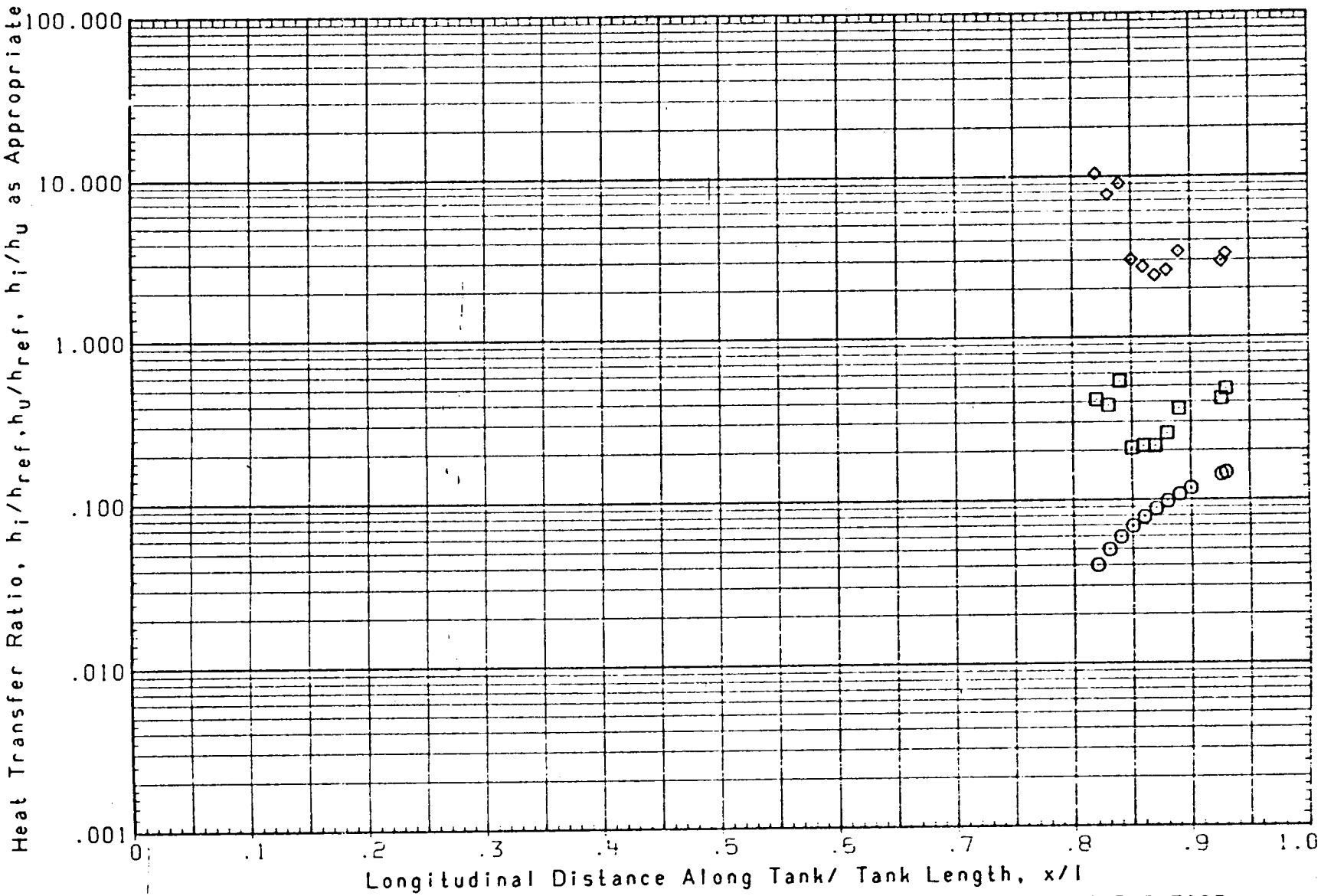


FIG. 23 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -9

MACH = 3.010 ALPHA = -5.000 PHI = 292.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT10)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-9.000
(LVFT30)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-9.000
(BVFT30)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-9.000

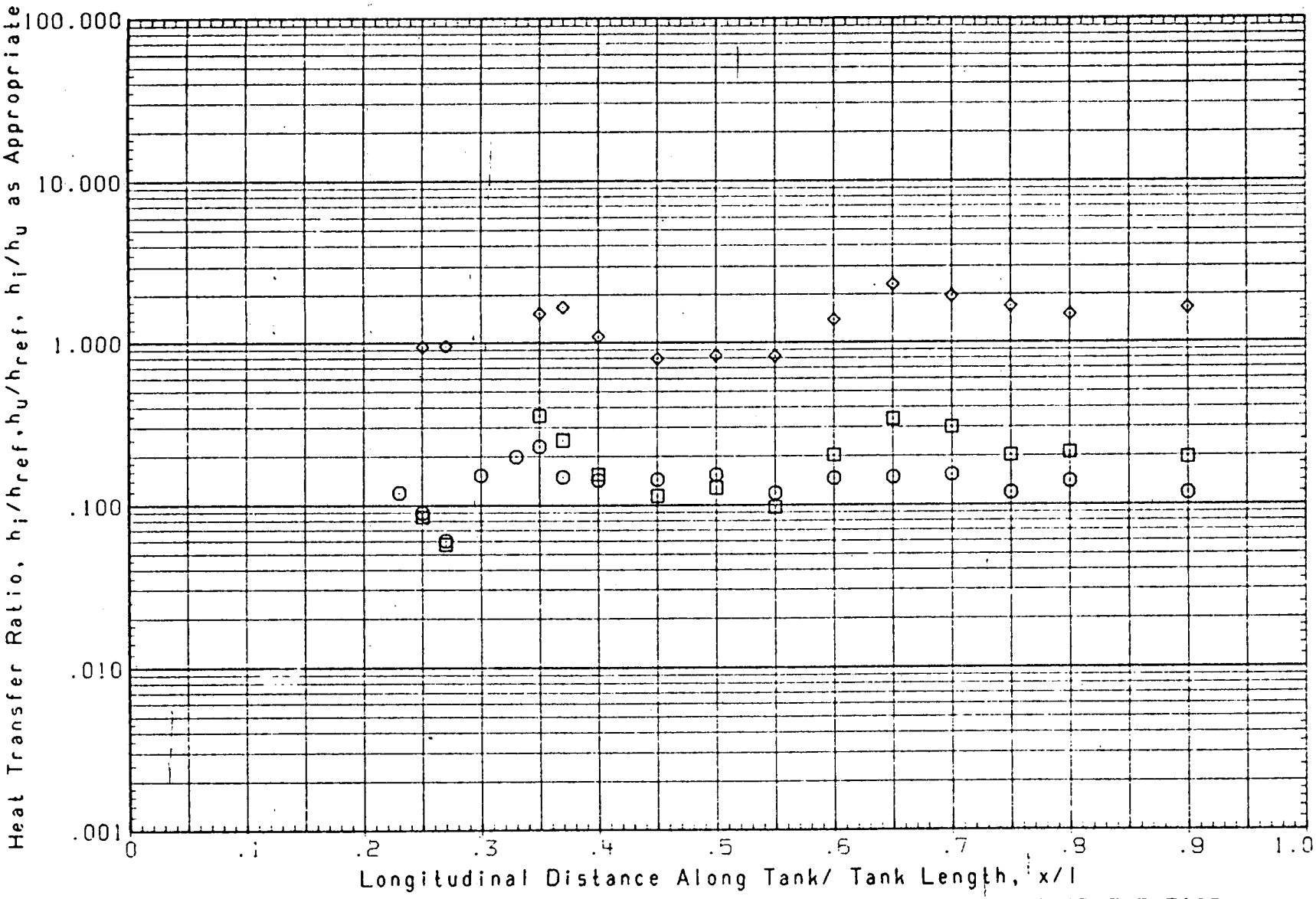


FIG. 23 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -9

MACH = 3.010 ALPHA = -5.000 PHI = 292.500

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT10)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-9.000
(LVFT30)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-9.000
(BVFT30)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-9.000

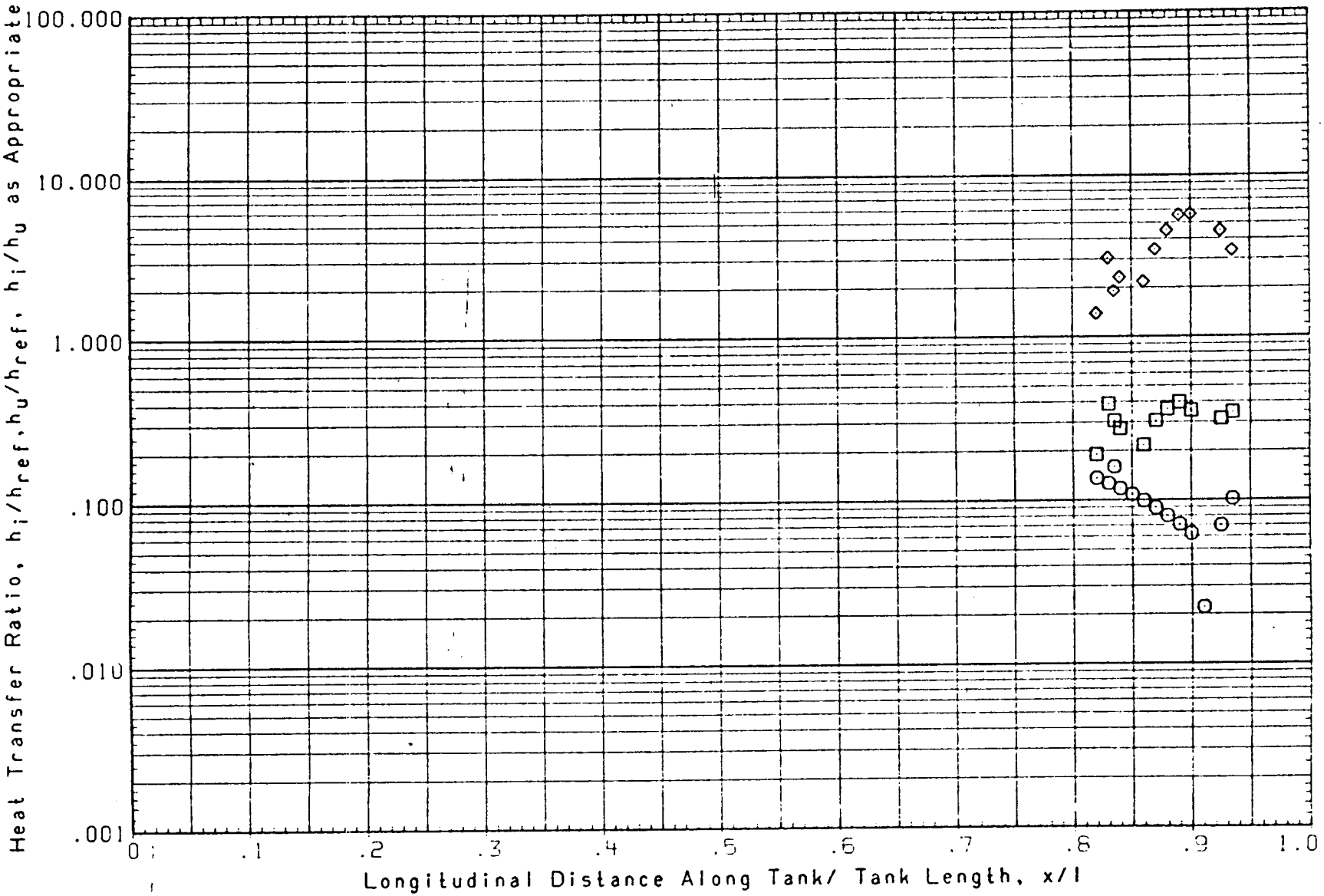


FIG. 23 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -9

MACH = 3.010 ALPHA = -5.000 PHI = 301.500

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT10)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-9.000
(LVFT30)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-9.000
(BVFT30)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-9.000

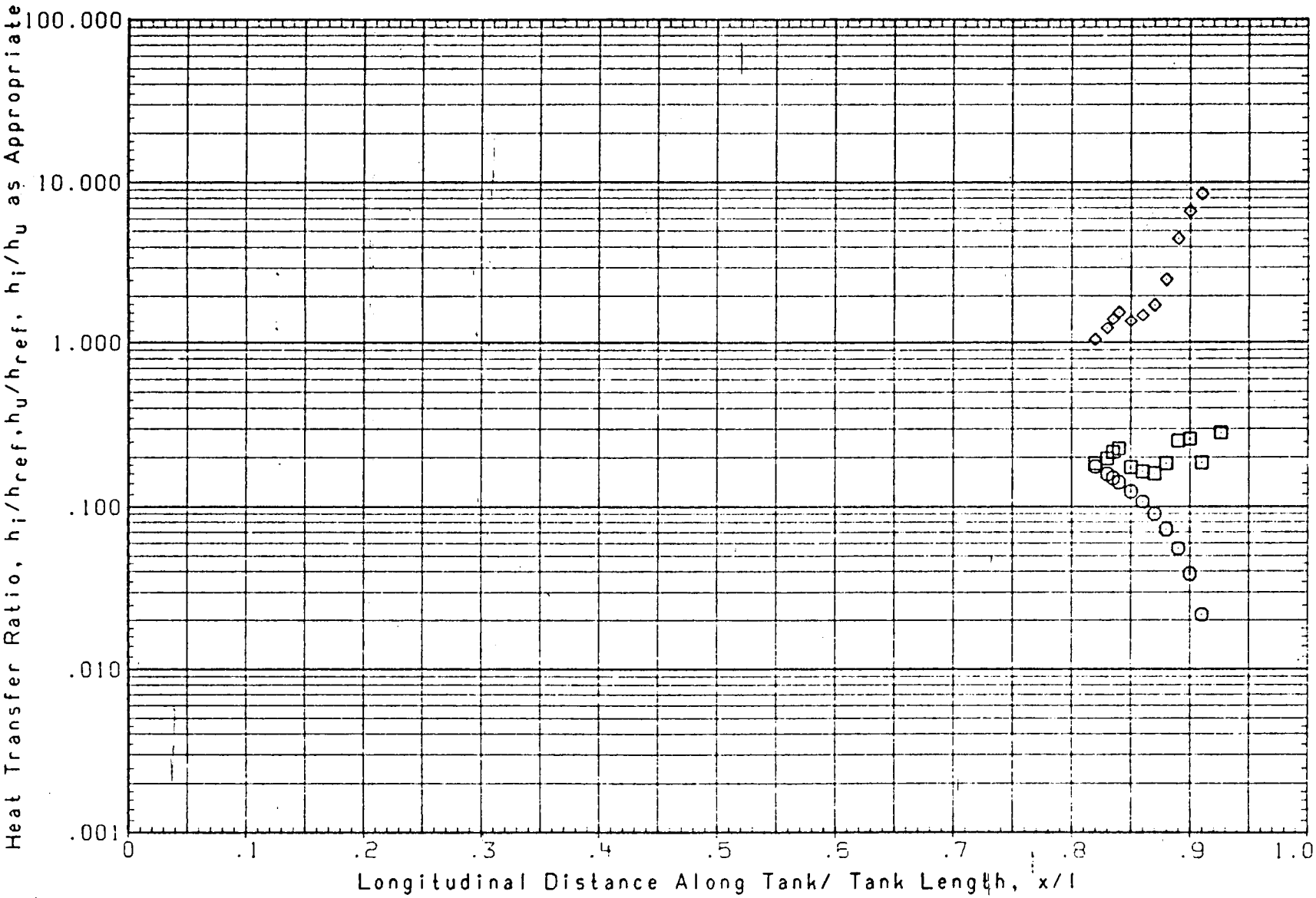


FIG. 23 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -9

DATA SET	SYMBOL	[illegible]		
(KVFT10)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-9.000
(LVFT30)	□	IH41B(V41A-A4A) O T J (SPIKED ET DATA) HI/HREF	-5.000	-9.000
(BVFT30)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-9.000

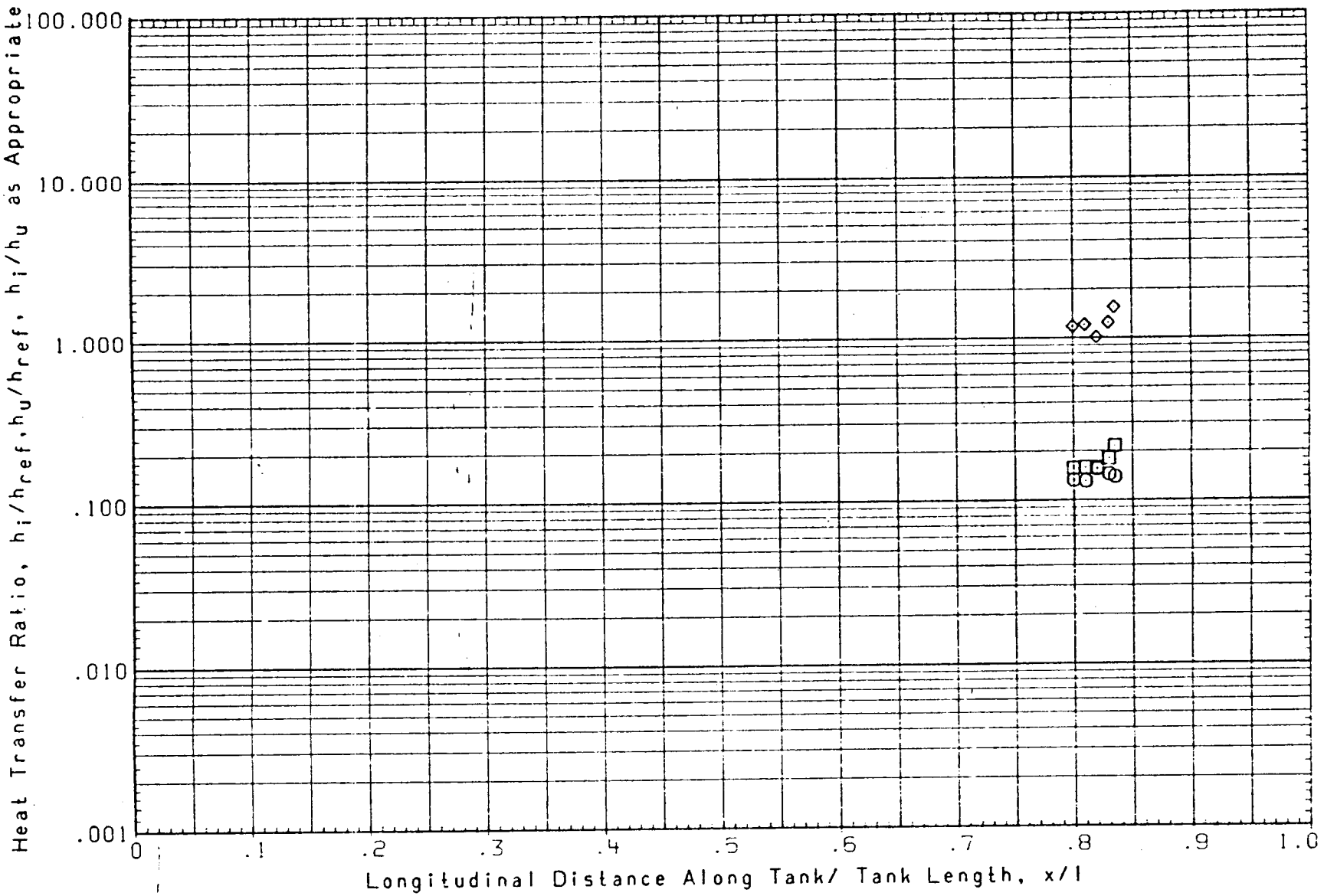


FIG. 23 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -9

MACH = 3.010 ALPHA = -5.000 PHI = 309.300

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT10)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-9.000
(LVFT30)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-9.000
(BVFT30)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-9.000

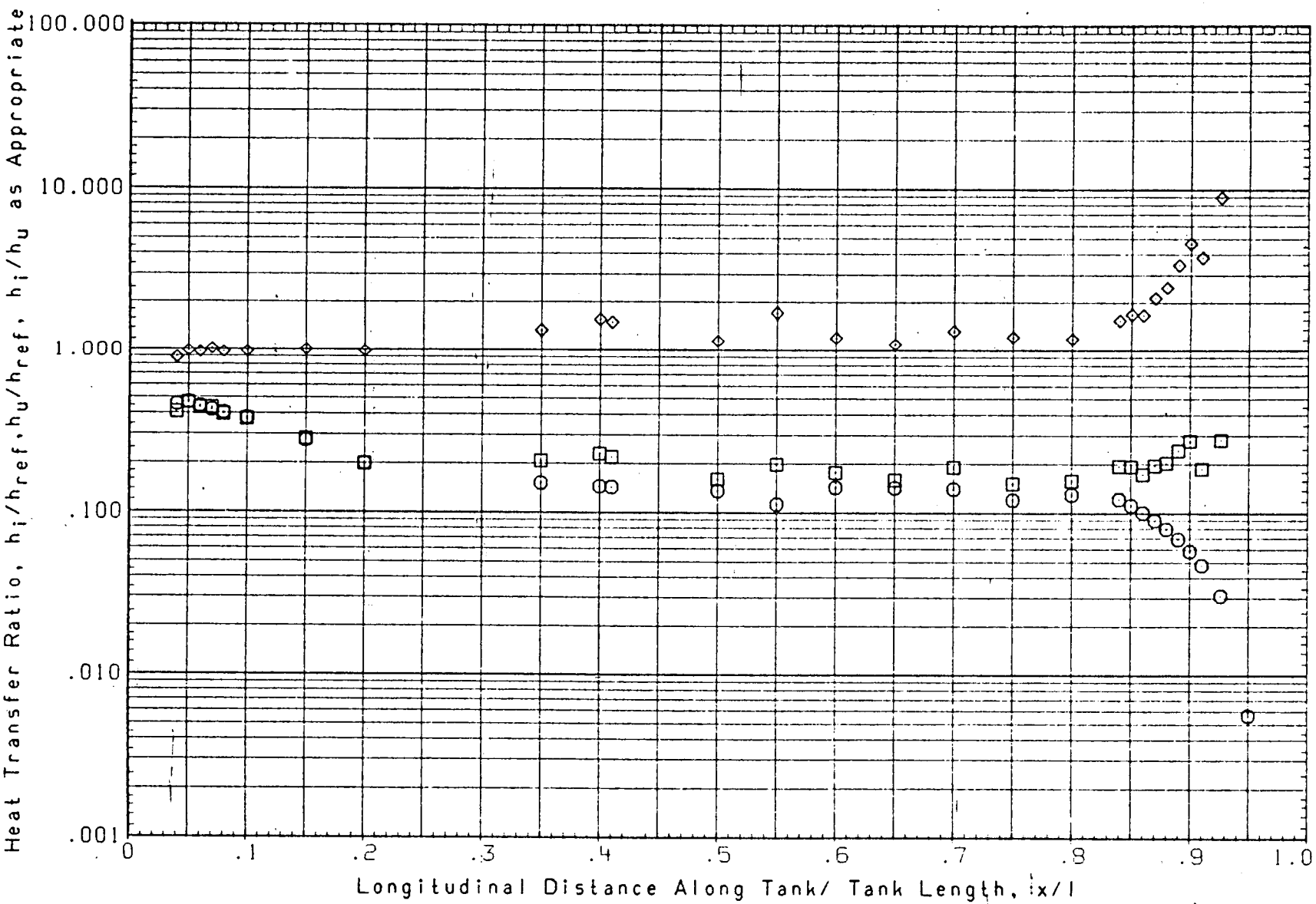


FIG. 23 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -9

MACH = 3.010 ALPHA = -5.000 PHI = 315.000

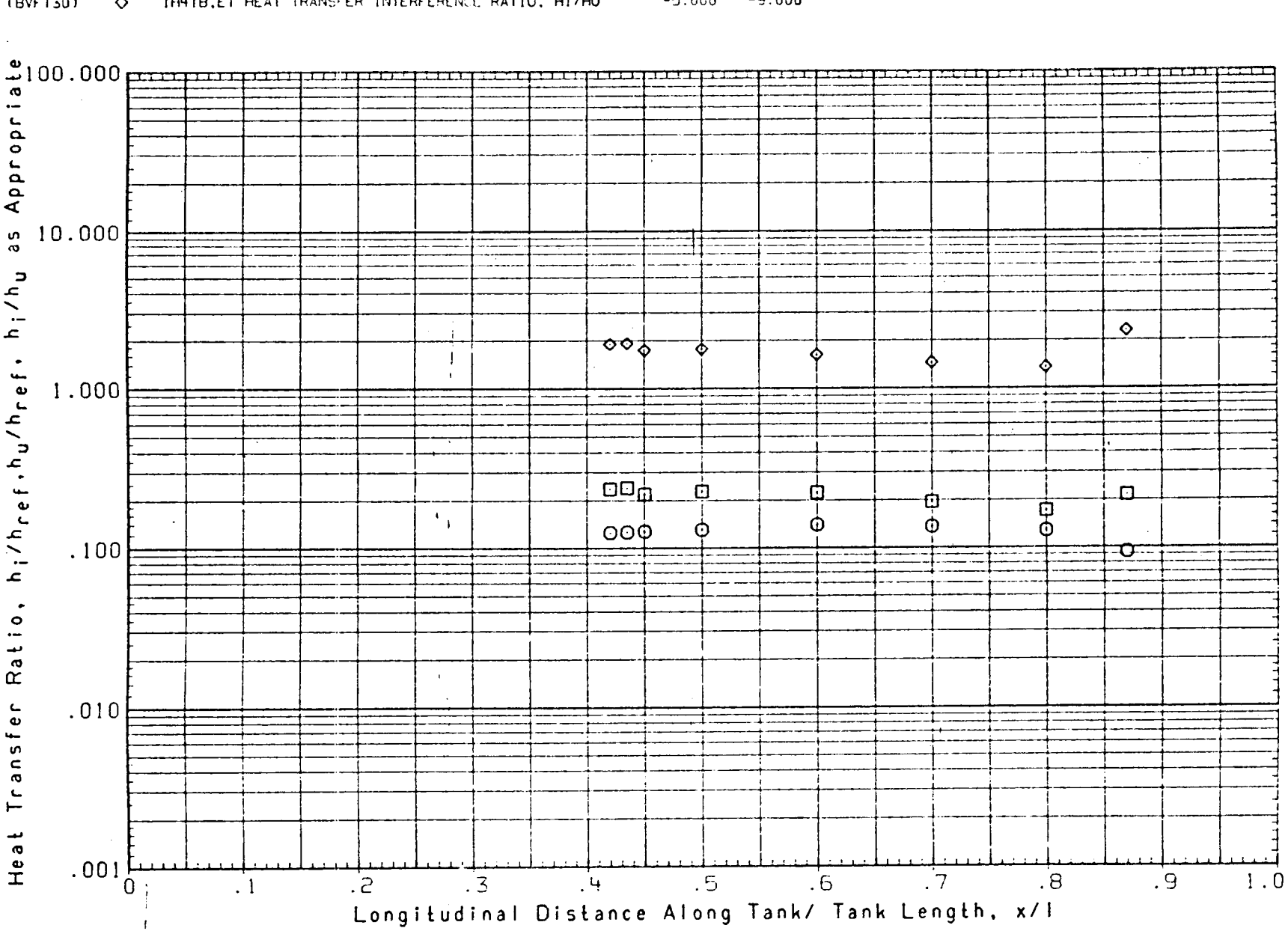


FIG. 23 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -9

MACH = 3.010 ALPHA = -5.000 PHI = 322.300

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT10)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-9.000
(LVFT30)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-9.000
(BVFT30)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-9.000

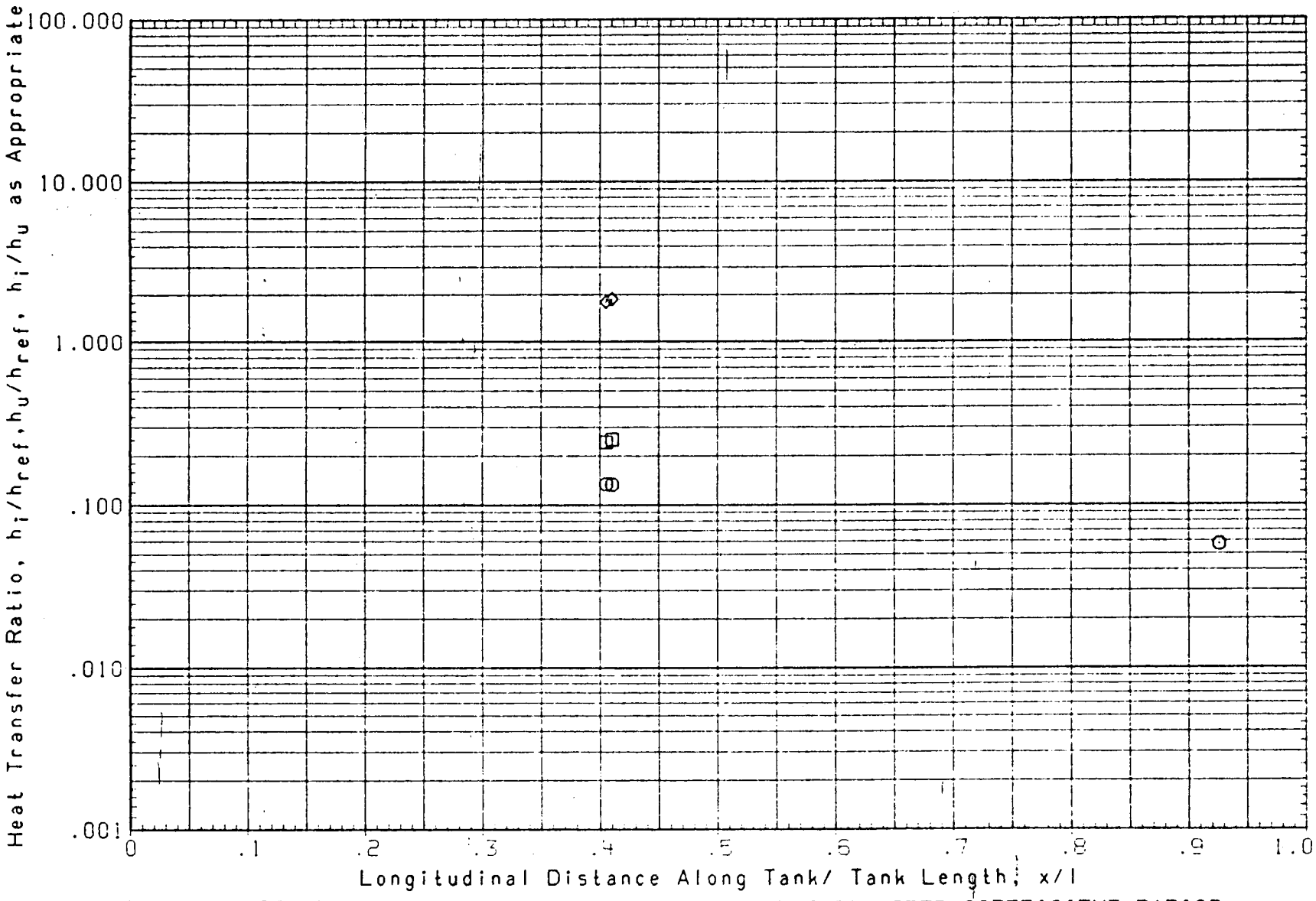


FIG. 23 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -9

MACH = 3.010 ALPHA = -5.000 PHI = 324.480

DATA SET	SYMBOL	CONFIGURATION	ALPHA	BETA
(KVFT10)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-9.000
(LVFT30)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-9.000
(BVFT30)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-9.000

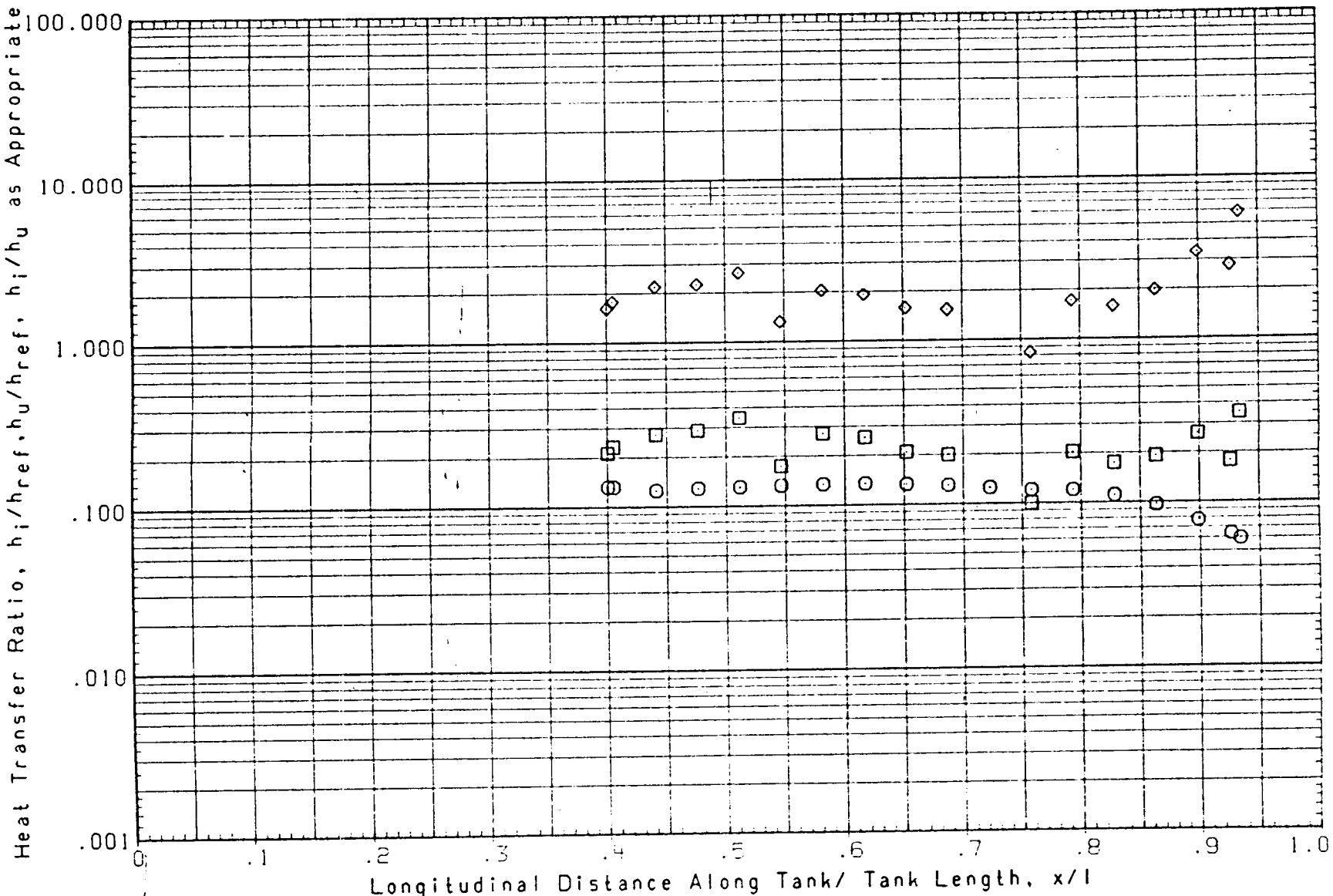


FIG. 23 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS WINDWARD SIDE, ALPHA = -5, BETA = -9

MACH = 3.010 ALPHA = -5.000 PHI = 328.680

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT10)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-9.000
(LVFT30)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-9.000
(BVFT30)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-9.000

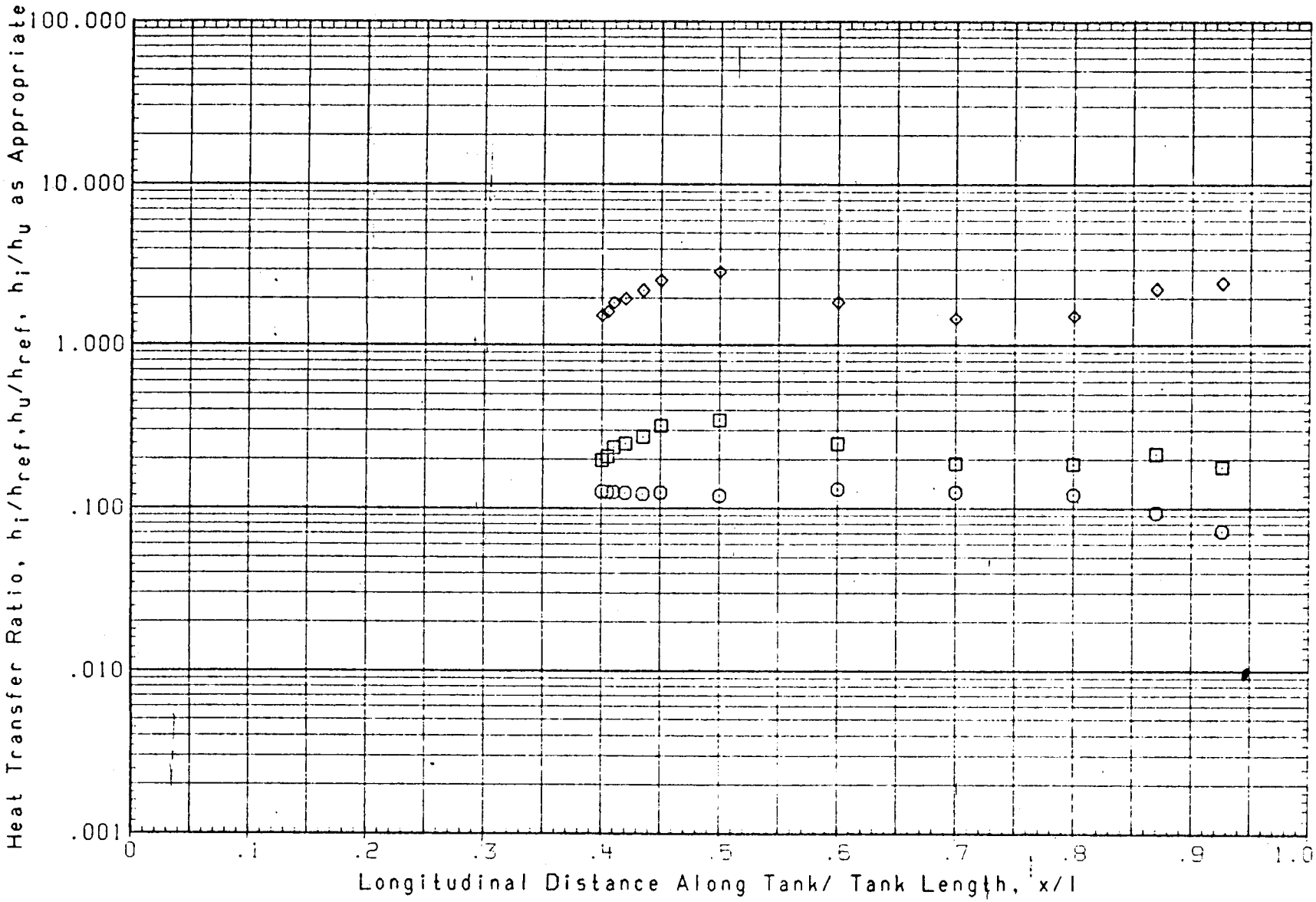


FIG. 23 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -9

MACH = 3.010 ALPHA = -5.000 PHI = 330.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT10)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-9.000
(LVFT30)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-9.000
(BVFT30)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-9.000

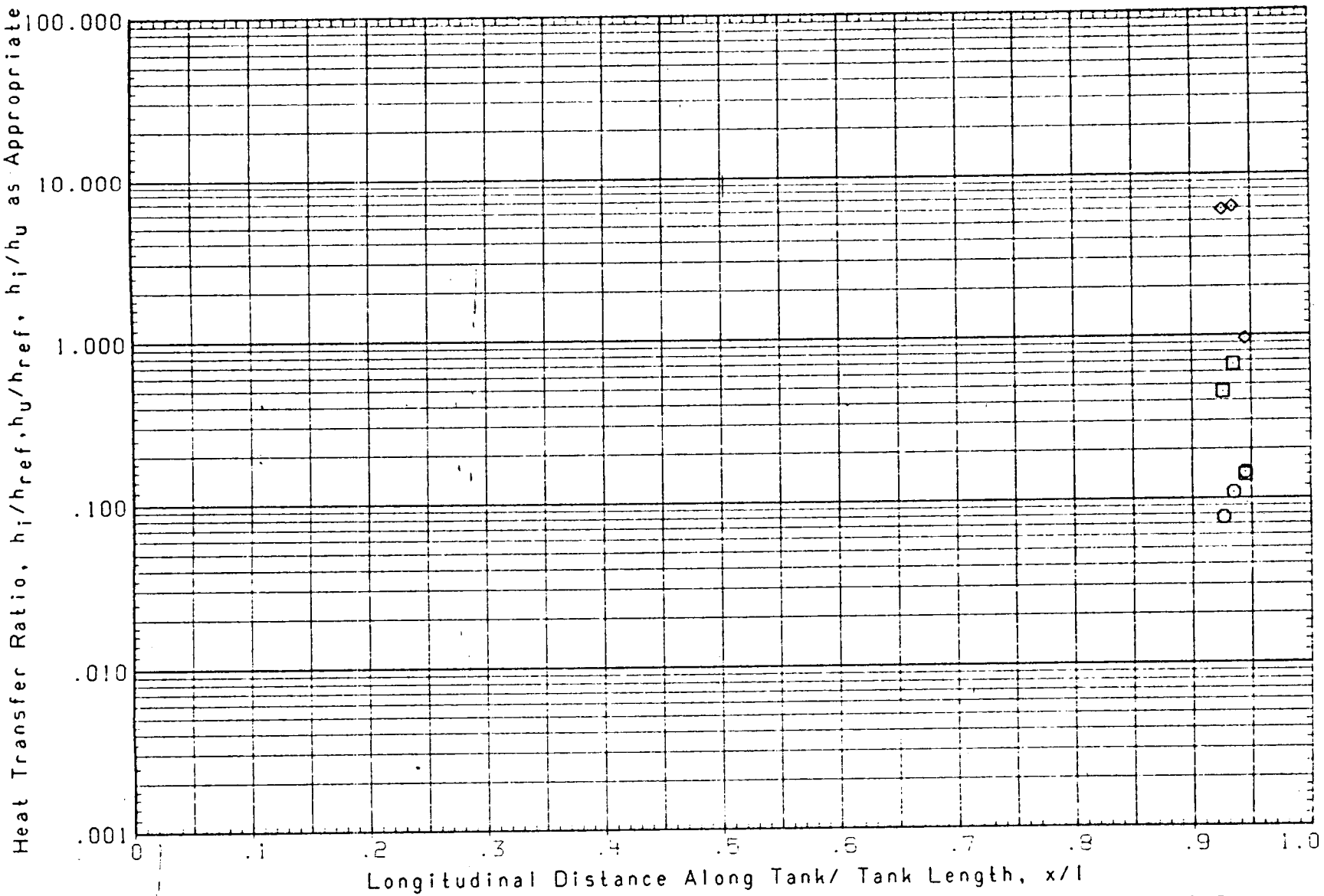


FIG. 23 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -9

MACH = 3.010 ALPHA = -5.000 PHI = 334.980

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT10)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-9.000
(LVFT30)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-9.000
(BVFT30)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-9.000

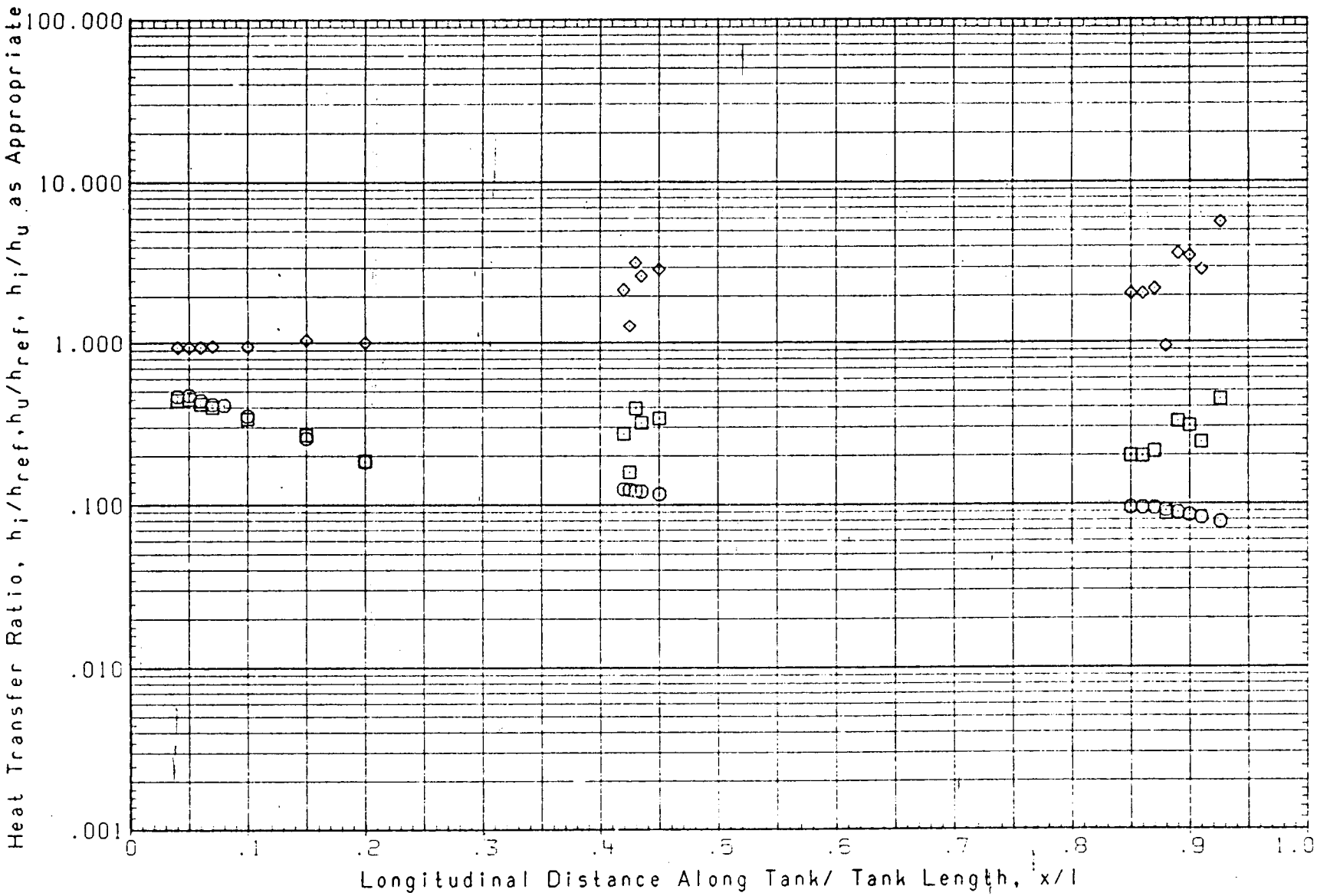


FIG. 23 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -9

MACH = 3.010 ALPHA = -5.000 PHI = 337.500

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT10)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-9.000
(LVFT30)	□	IH41B(V41A-A4A) O T 5 (SPIKED ET DATA) HI/HREF	-5.000	-9.000
(BVFT30)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-9.000

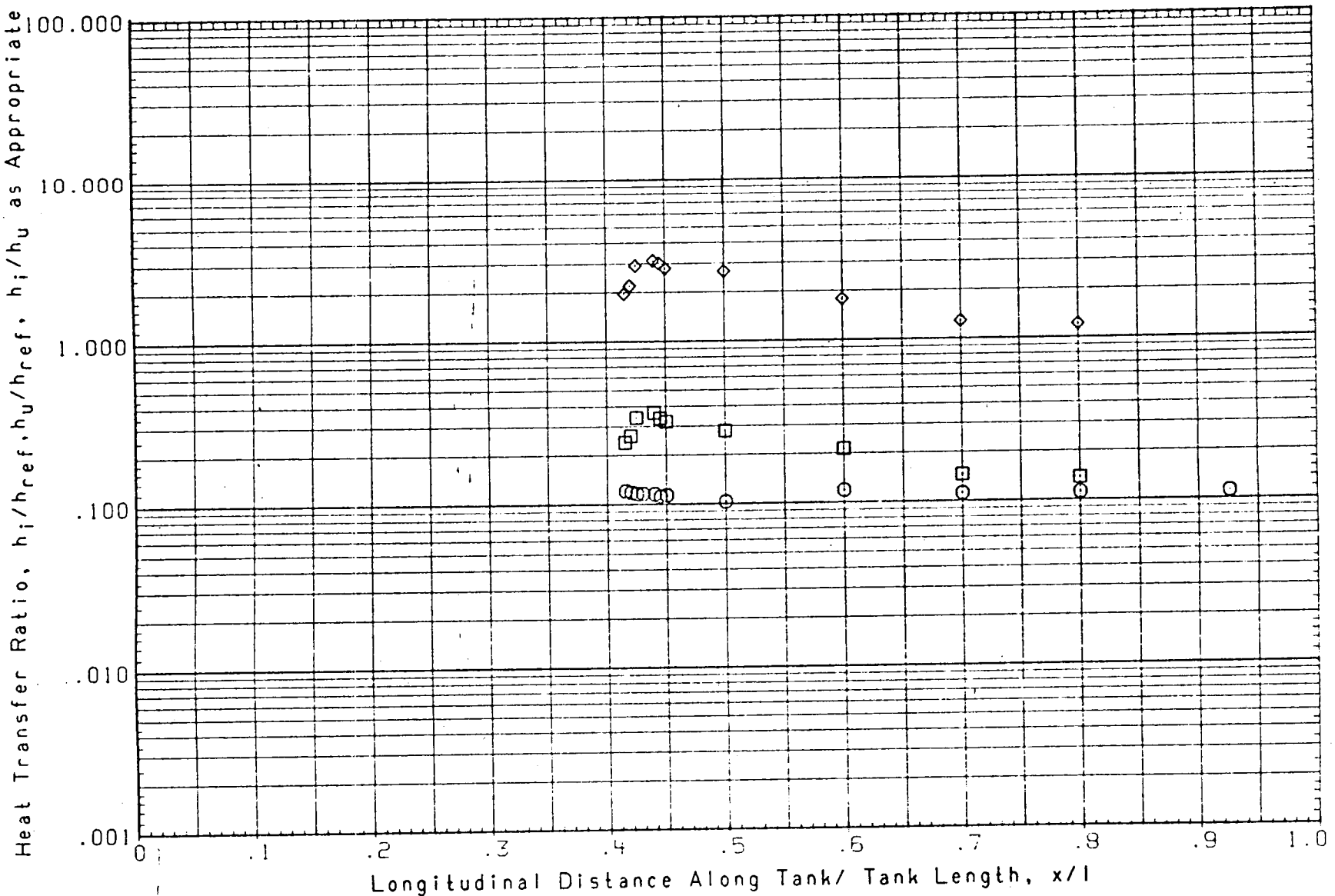


FIG. 23 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -9

MACH = 3.010 ALPHA = -5.000 PHI = 343.120

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT10)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-9.000
(LVFT30)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-9.000
(BVFT30)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-9.000

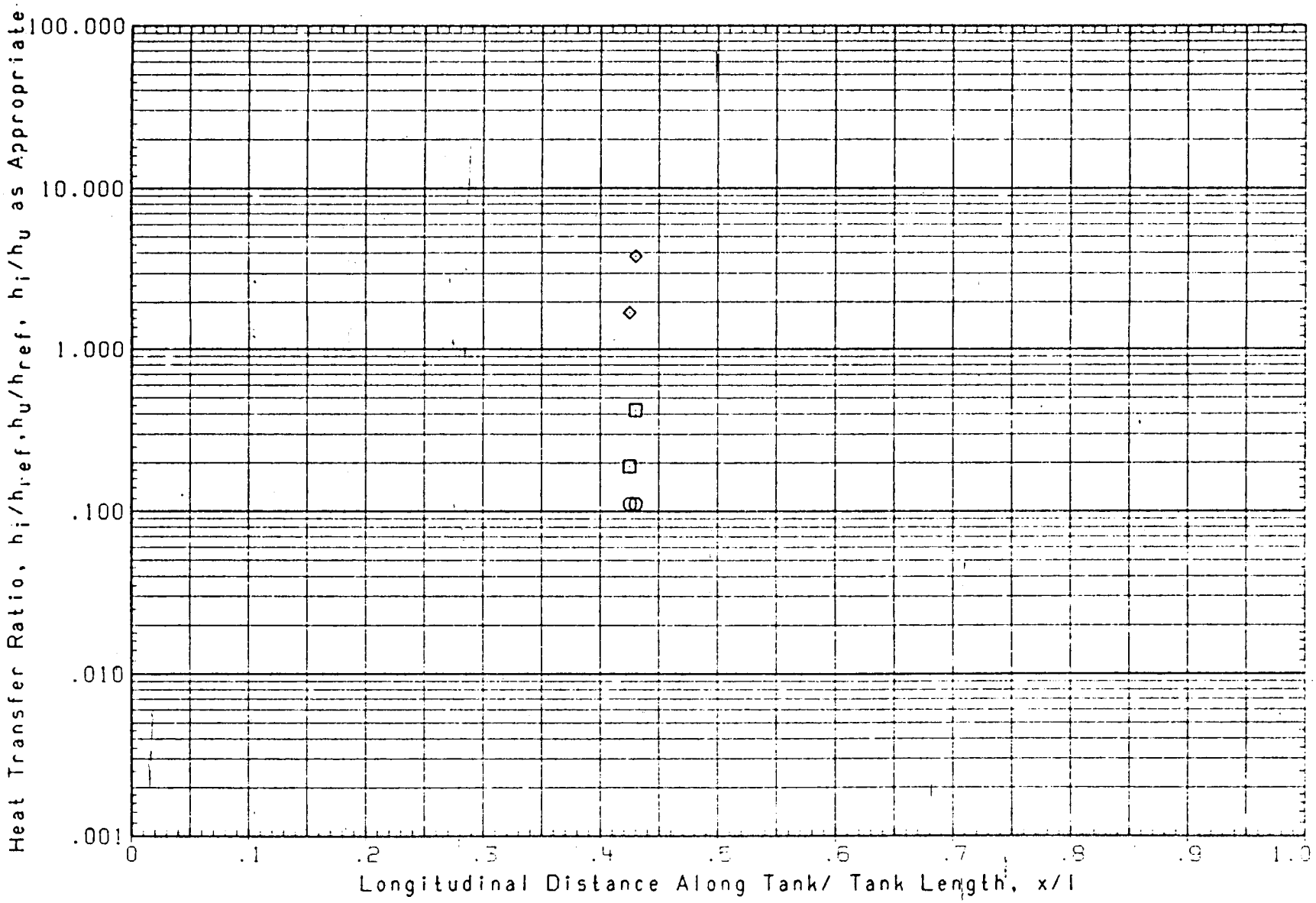


FIG. 23 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -9

MACH = 3.010 ALPHA = -5.000 PHI = 345.000

DATA SET	SYMBOL	CONFIGURATION		
(KVFT10)	○	IH41B(AEDC V41A-A9A) SPIKED EXTERNAL TANK ALONE	[illegible]	-9.000
(LVFT30)	□	IH41B(V41A-A9A) 0 1 5 (SPIKED ET DATA) HI/HREF	-5.000	-9.000
(BVFT30)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-9.000

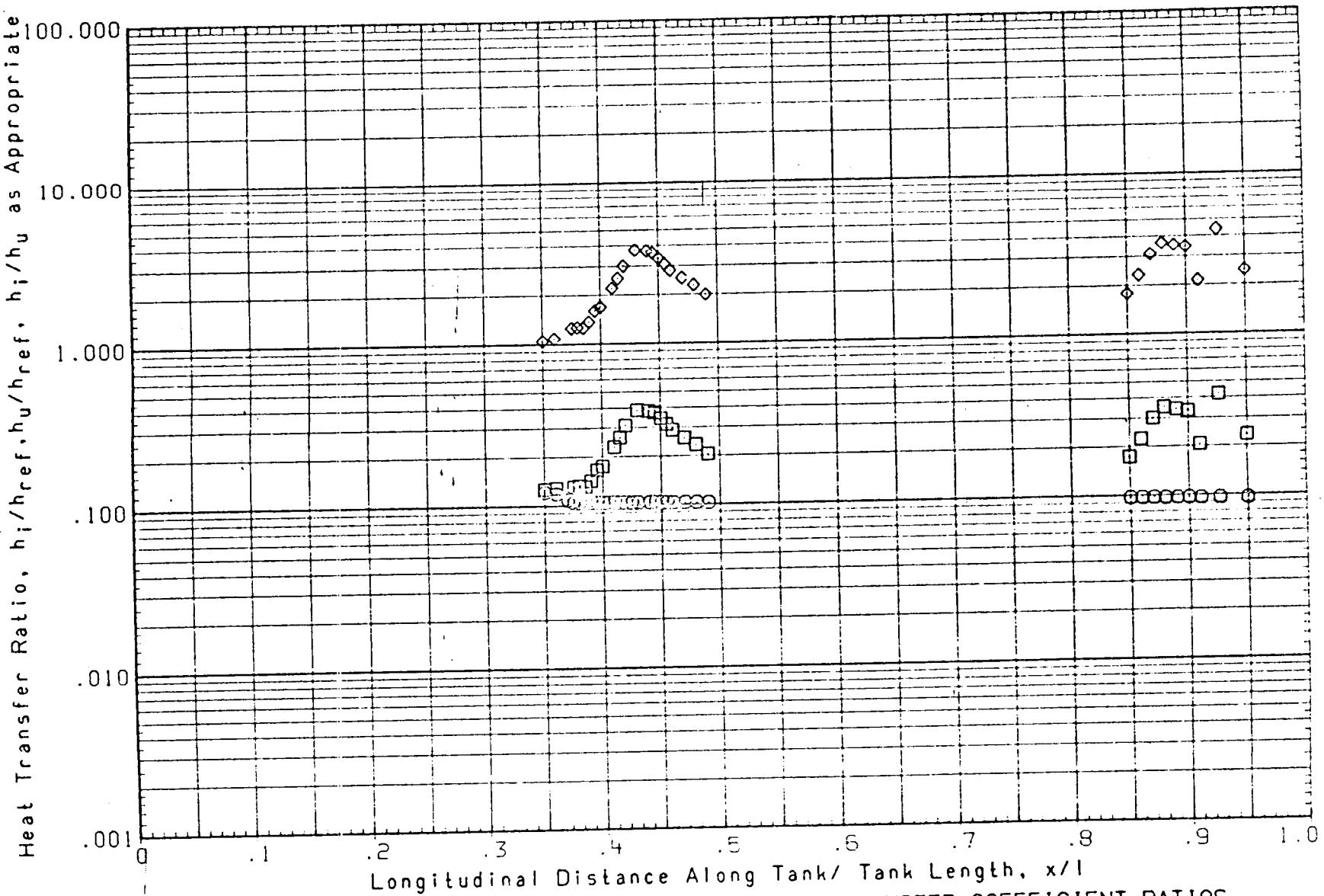


FIG. 23 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -9

MACH = 3.010 ALPHA = -5.000 PHI = 348.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT10)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-9.000
(LVFT30)	□	DATA NOT AVAILABLE	-5.000	-9.000
(BVFT30)	◇	DATA NOT AVAILABLE	-5.000	-9.000

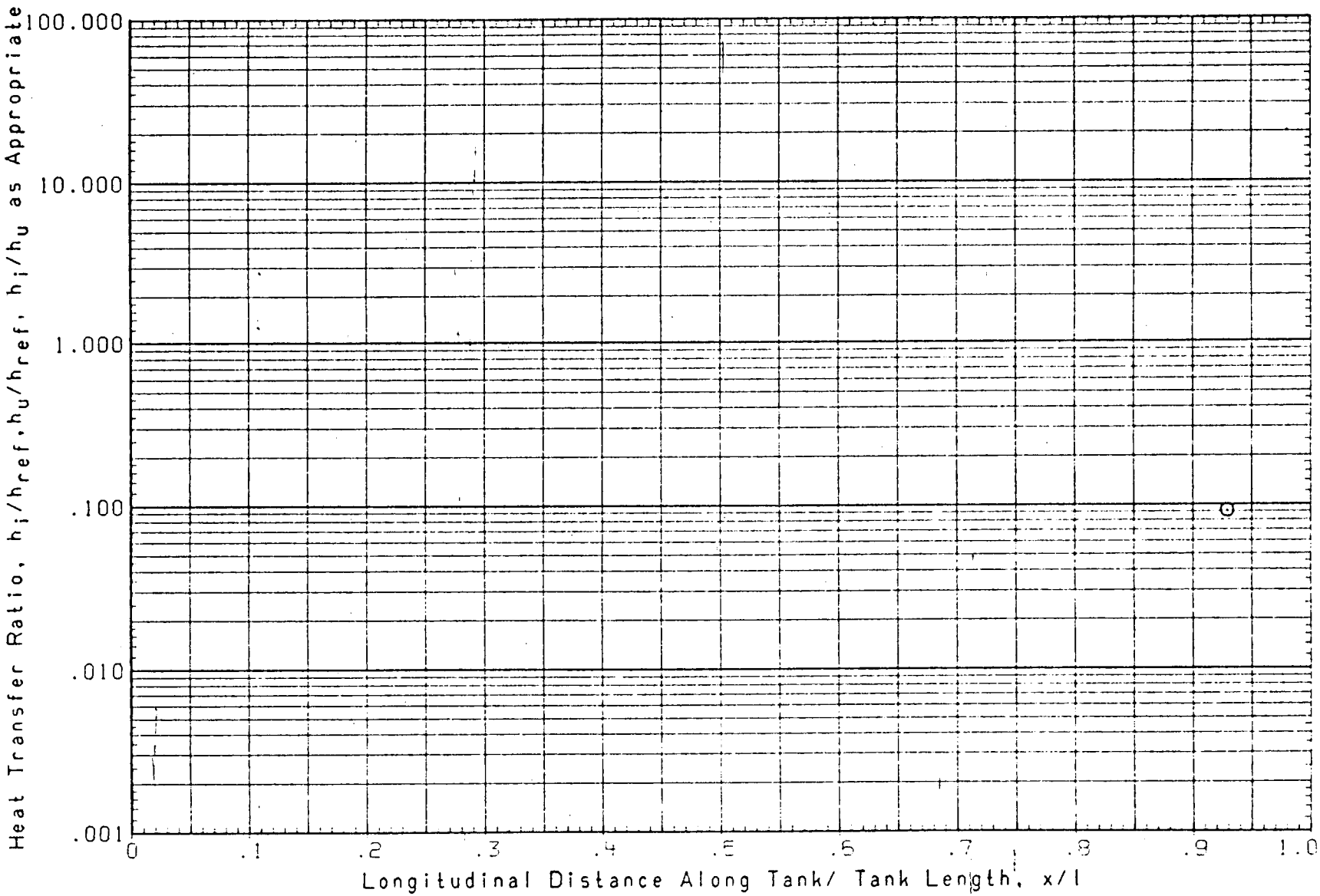


FIG. 23 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -9

MACH = 3.010 ALPHA = -5.000 PHI = 352.200

DATA SET	SYMBOL	CONFIGURATION	ALPHA	BETA
(KVFT10)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-9.000
(LVFT30)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-9.000
(BVFT30)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-9.000

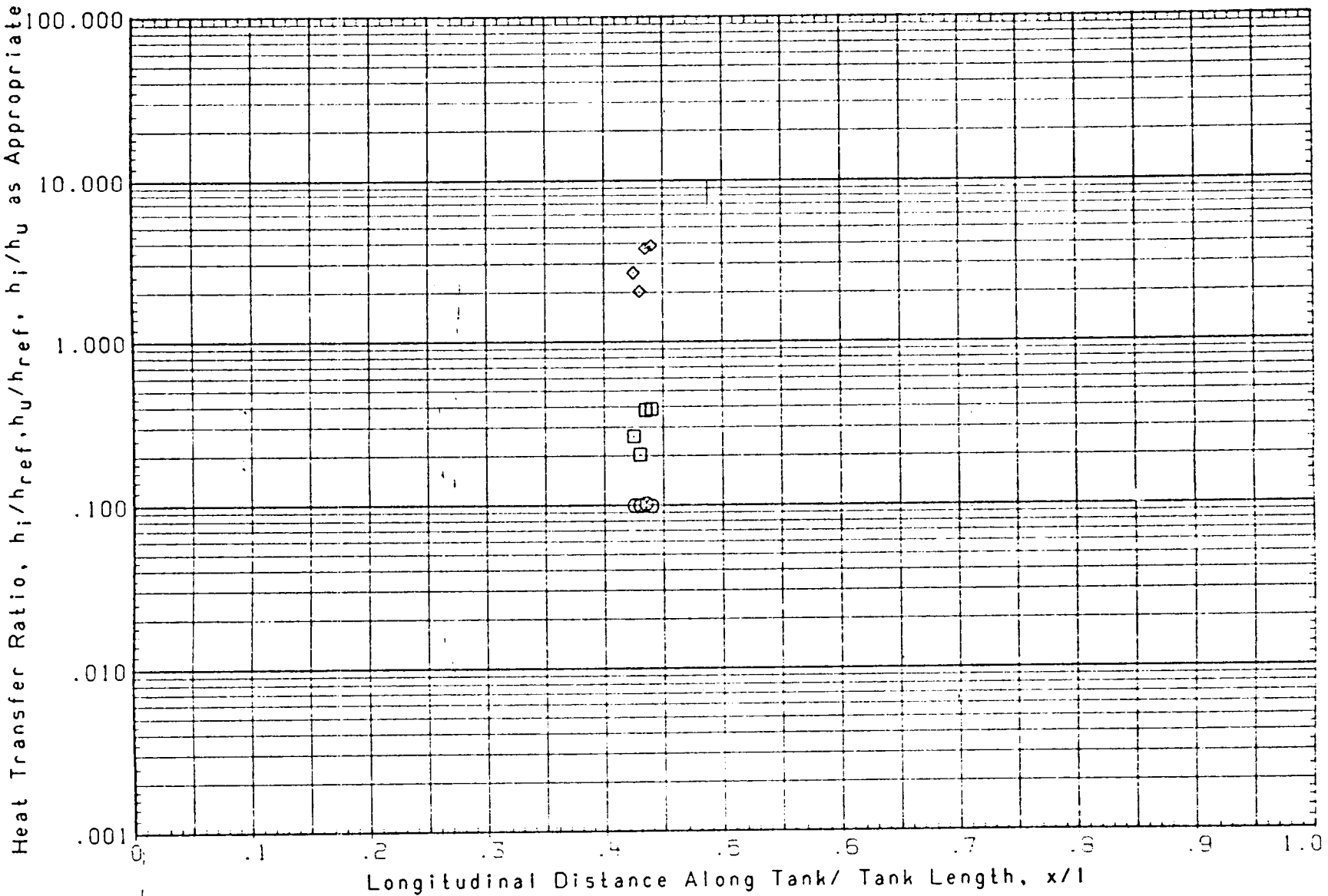


FIG. 23 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -9

MACH = 3.010 ALPHA = -5.000 PHI = 354.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT10)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-9.000
(LVFT30)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-9.000
(BVFT30)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-9.000

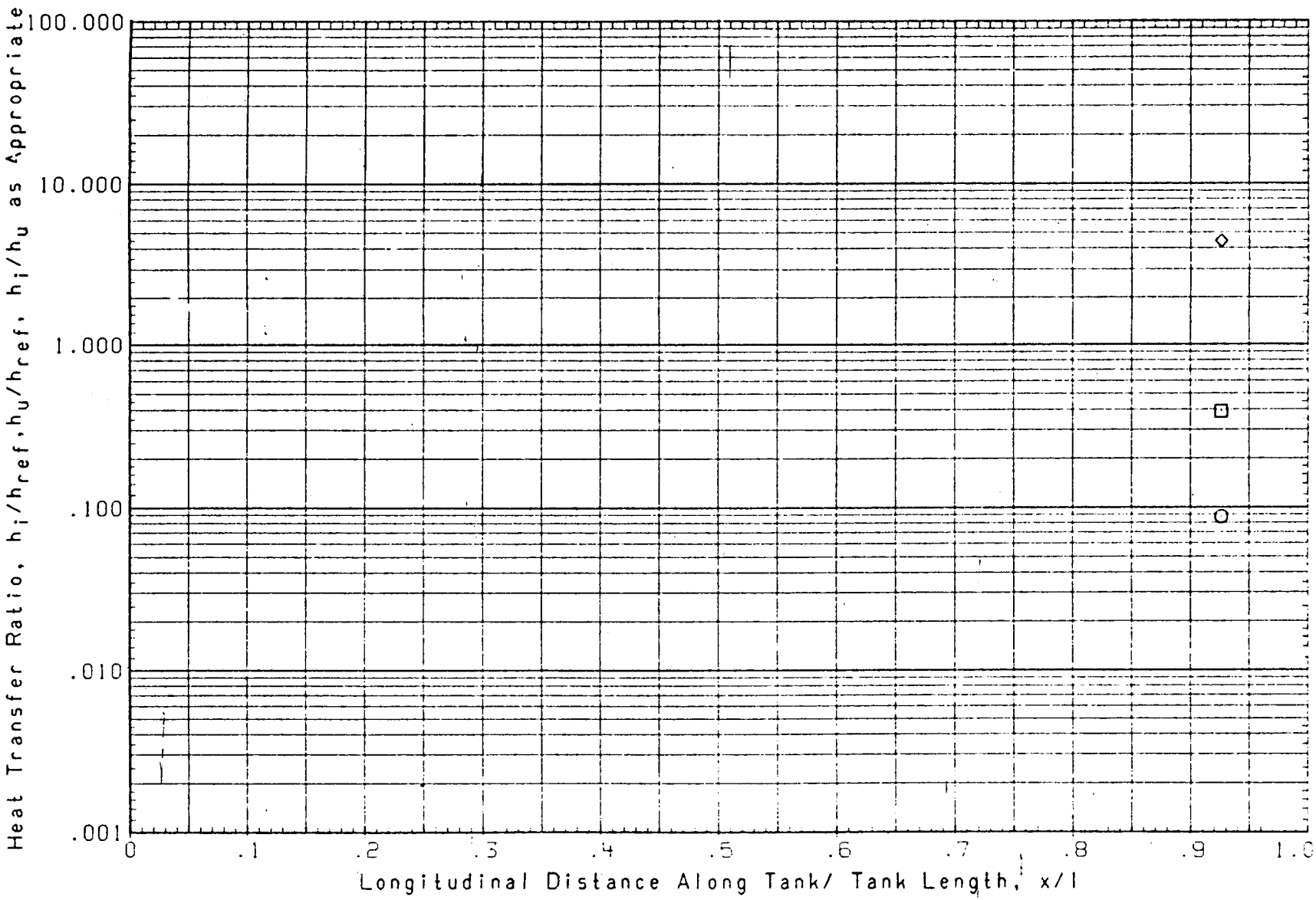


FIG. 23 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -9

MACH = 3.010 ALPHA = -5.000 PHI = 355.180

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT10)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-9.000
(LVFT30)	□	IH41B(V41A-A4A) O I S (SPIKED ET DATA) HI/HREF	-5.000	-9.000
(BVFT30)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-9.000

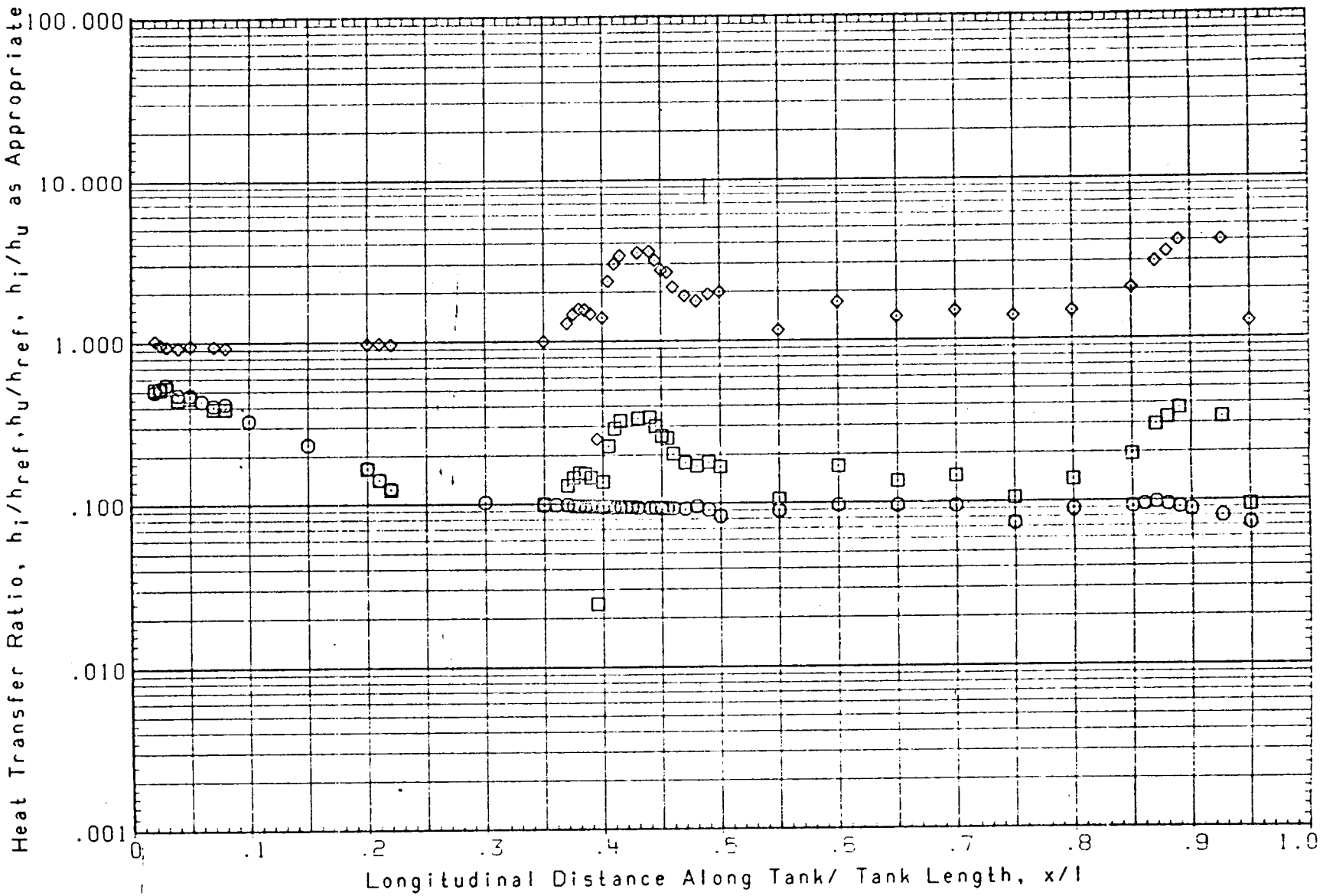


FIG. 23 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -9

MACH = 3.010 ALPHA = -5.000 PHI = 360.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT10)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-9.000
(LVFT30)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-9.000
(BVFT30)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-9.000

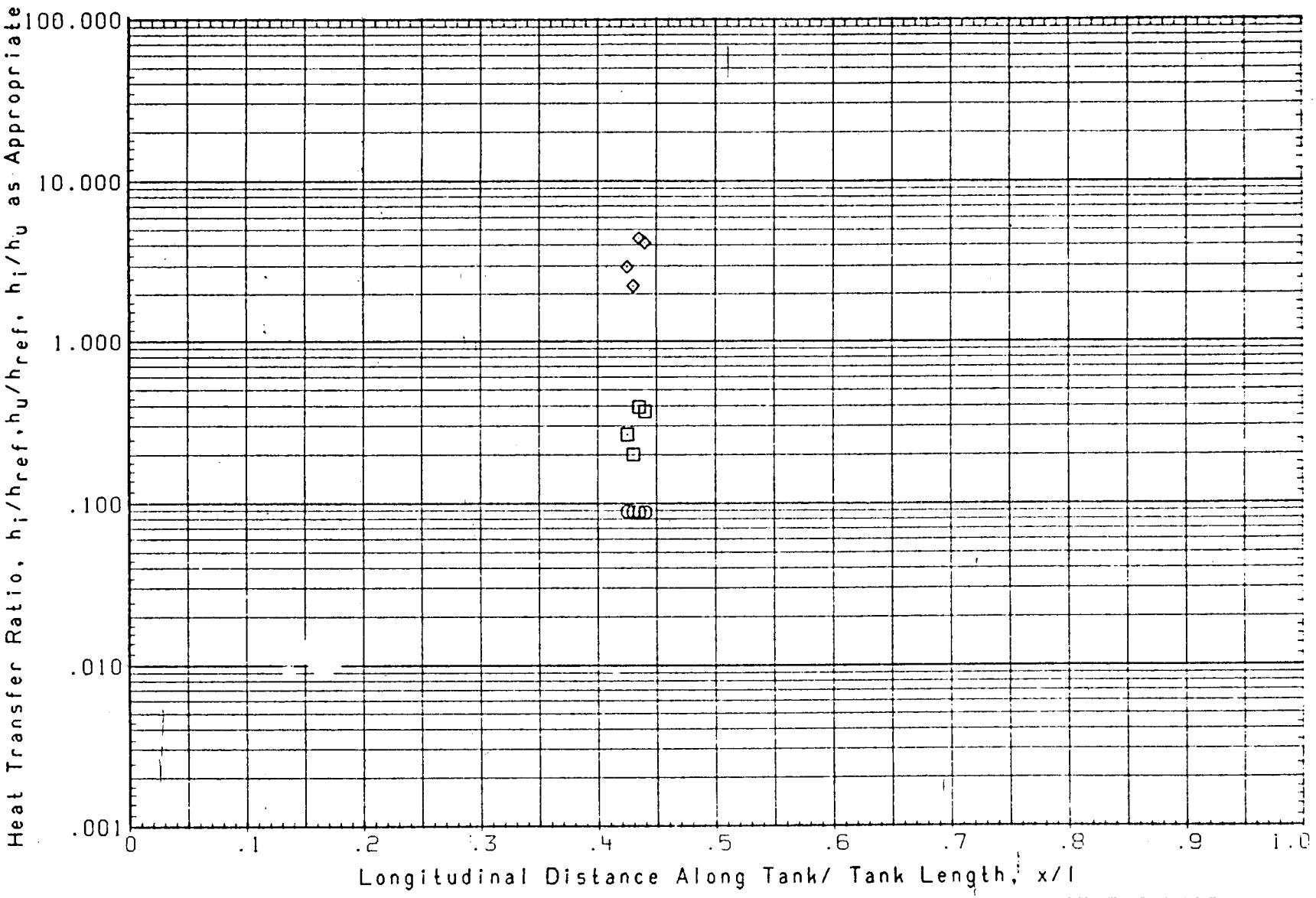


FIG. 23 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS WINDWARD SIDE, ALPHA = -5, BETA = -9

MACH = 3.010 ALPHA = -5.000 PHI = 5.830

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT10)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-9.000
(LVFT30)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-9.000
(BVFT30)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-9.000

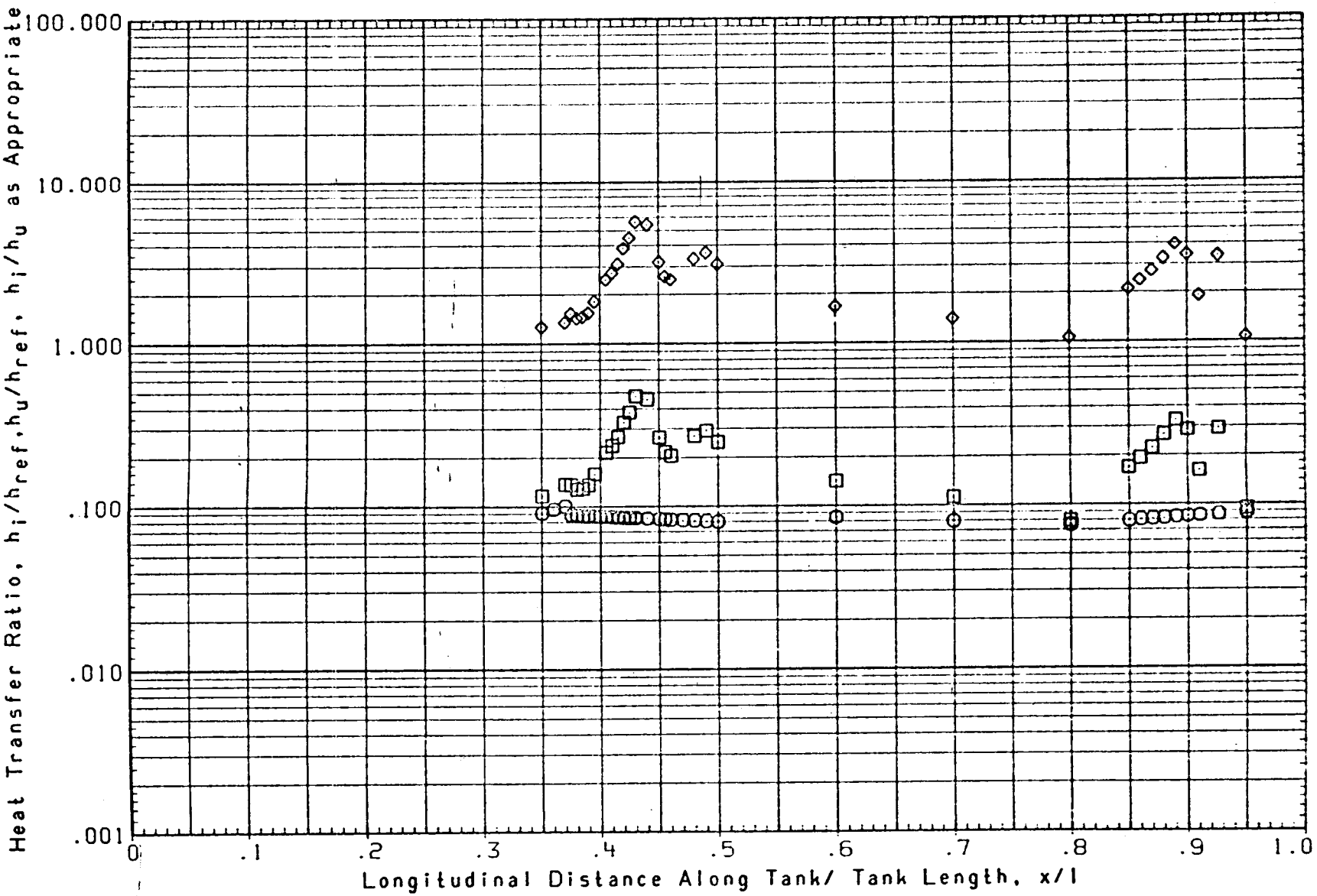


FIG. 23 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -9

MACH = 3.010 ALPHA = -5.000 PHI = 11.250

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT10)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-9.000
(LVFT30)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-9.000
(BVFT30)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-9.000

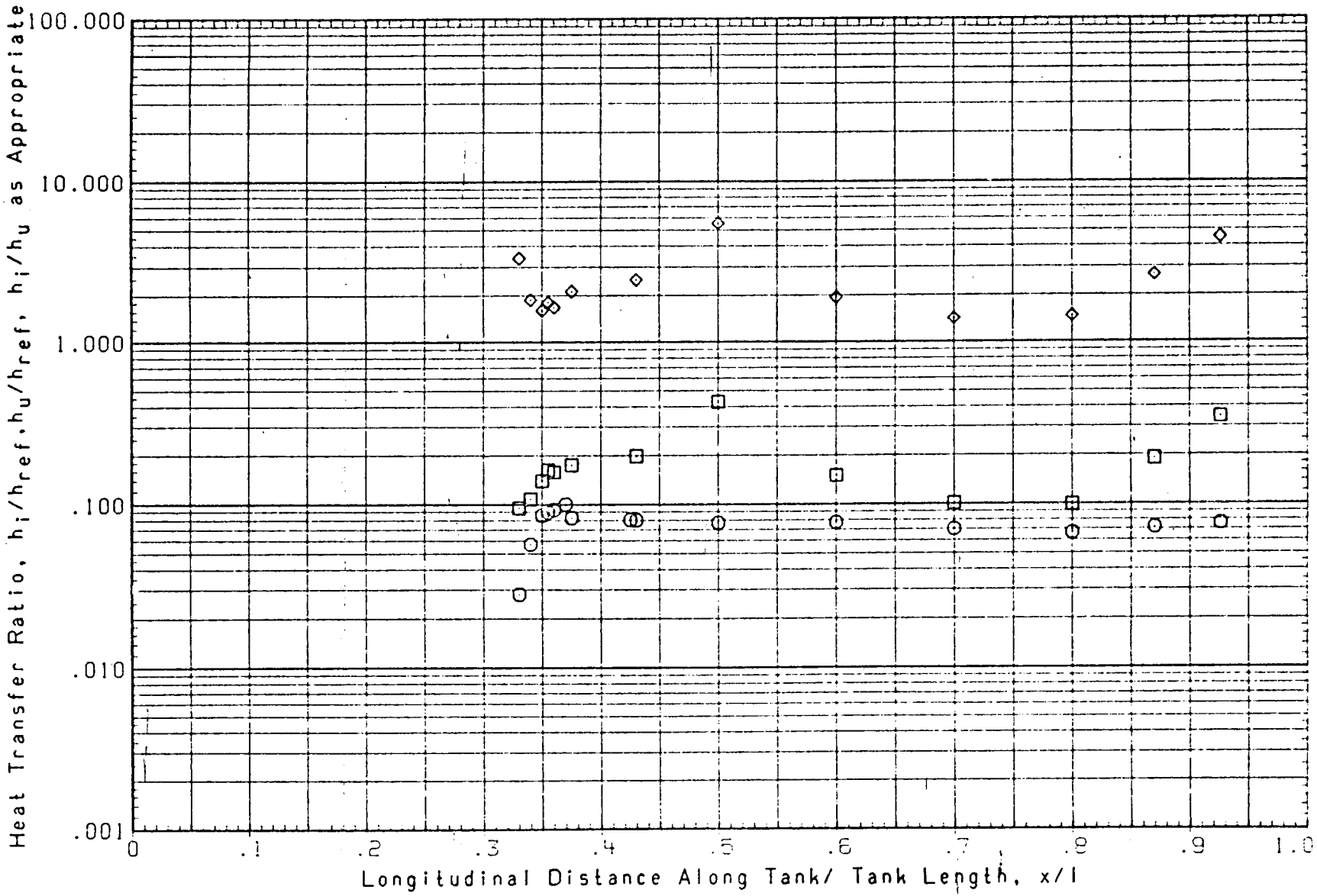


FIG. 23 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -9

MACH = 3.010 ALPHA = -5.000 PHI = 17.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT10)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-9.000
(LVFT30)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-9.000
(BVFT30)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-9.000

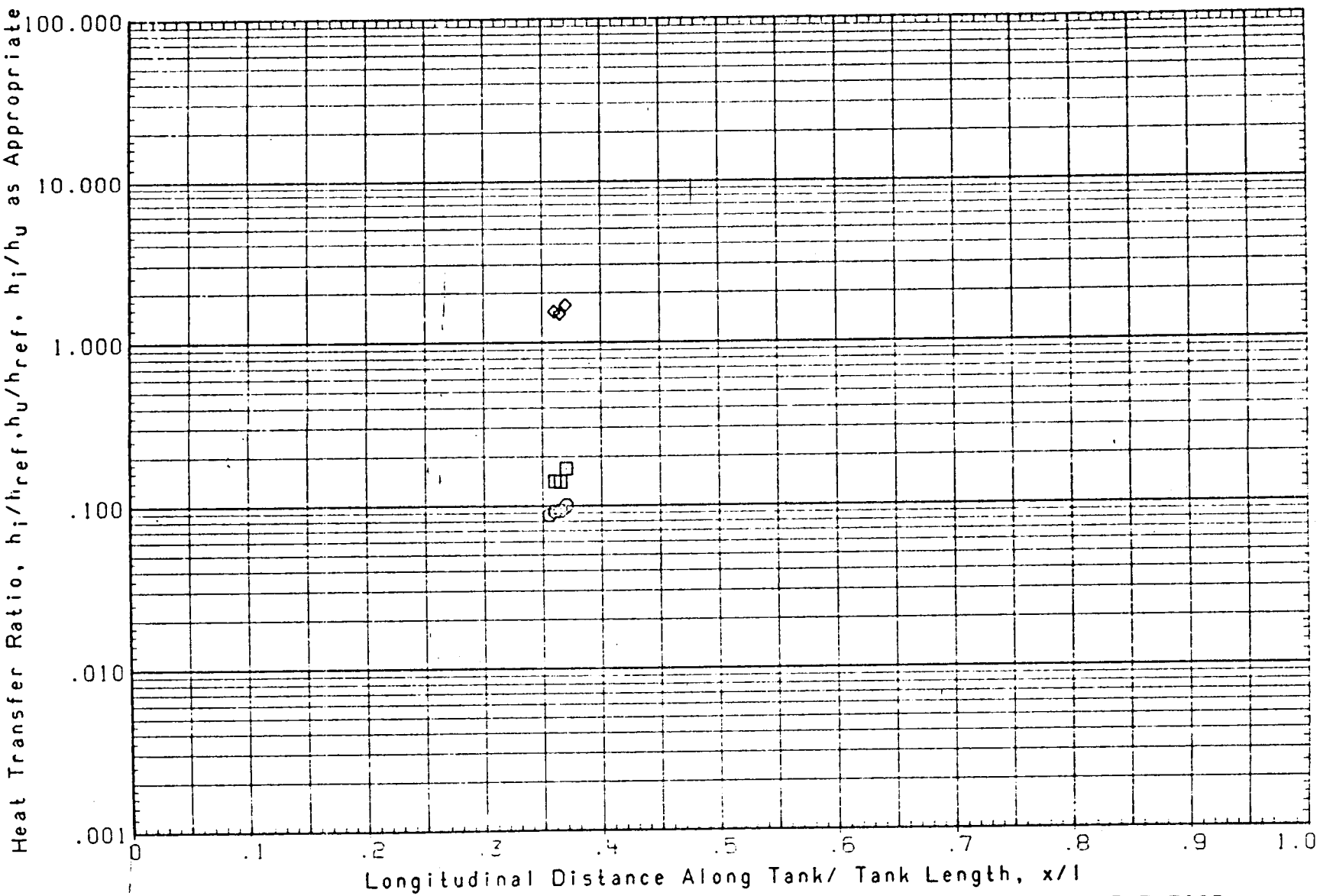


FIG. 23 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS WINDWARD SIDE, ALPHA = -5, BETA = -9

MACH = 3.010 ALPHA = -5.000 PHI = 20.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT10)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-9.000
(LVFT30)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-9.000
(BVFT30)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-9.000

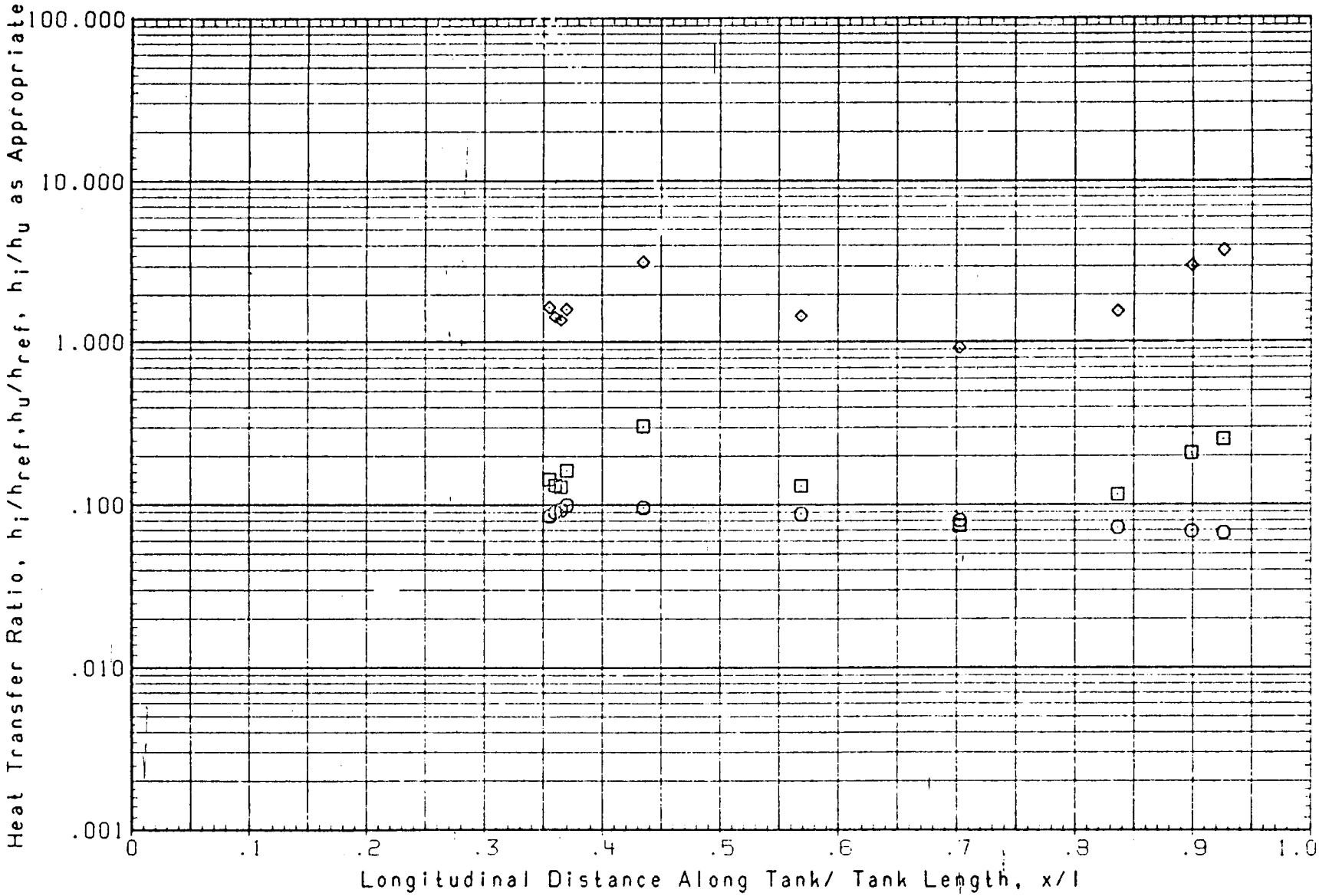


FIG. 23 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -9

MACH = 3.010 ALPHA = -5.000 PHI = 23.075

DATA SET	SYMBOL	CONFIGURATION	ALPHA	BETA
(KVFT10)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-9.000
(LVFT30)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-9.000
(BVFT30)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-9.000

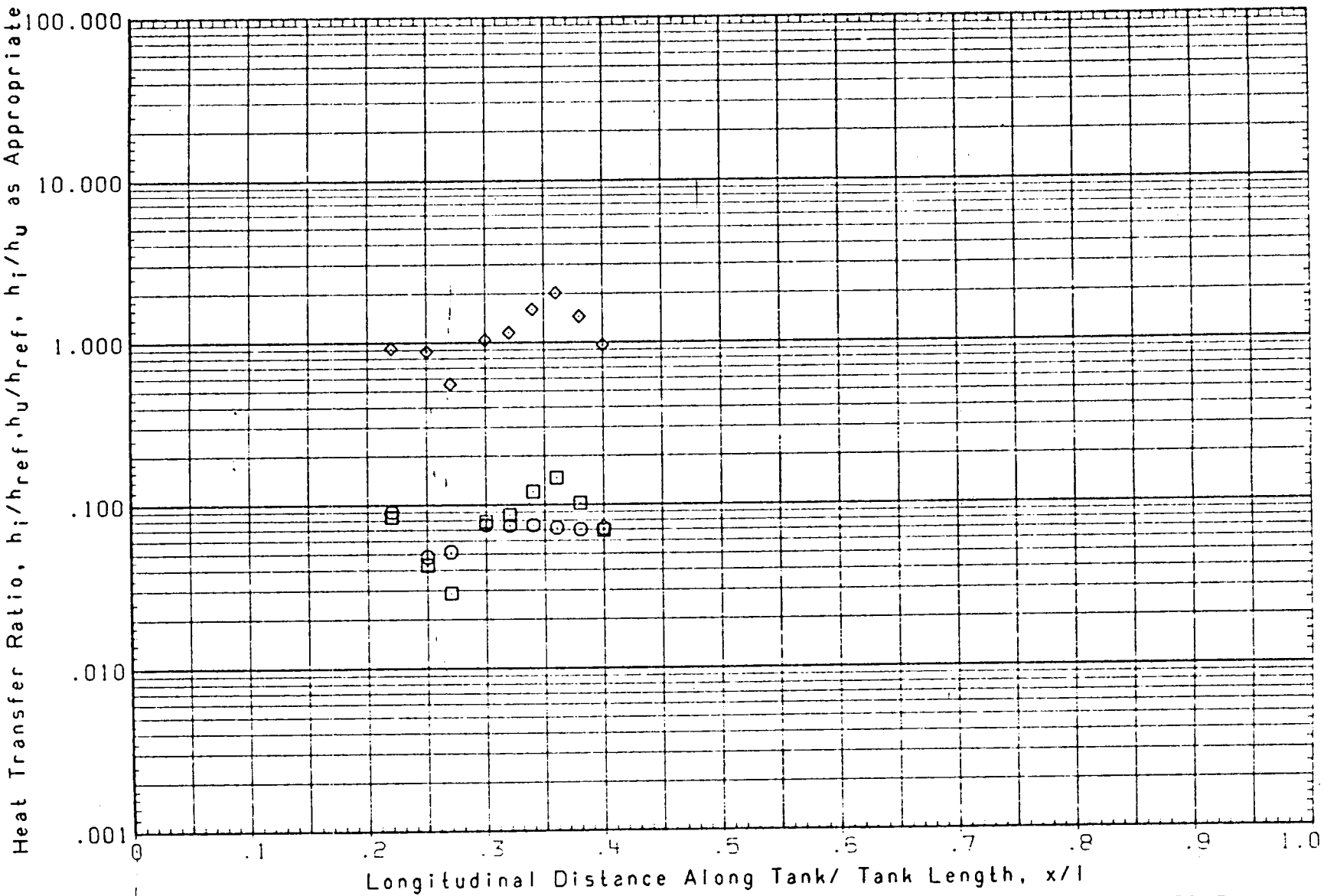


FIG. 23 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -9

MACH = 4.020 ALPHA = -5.000 PHI = 235.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT10)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-9.000
(LVFT30)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-9.000
(BVFT30)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-9.000

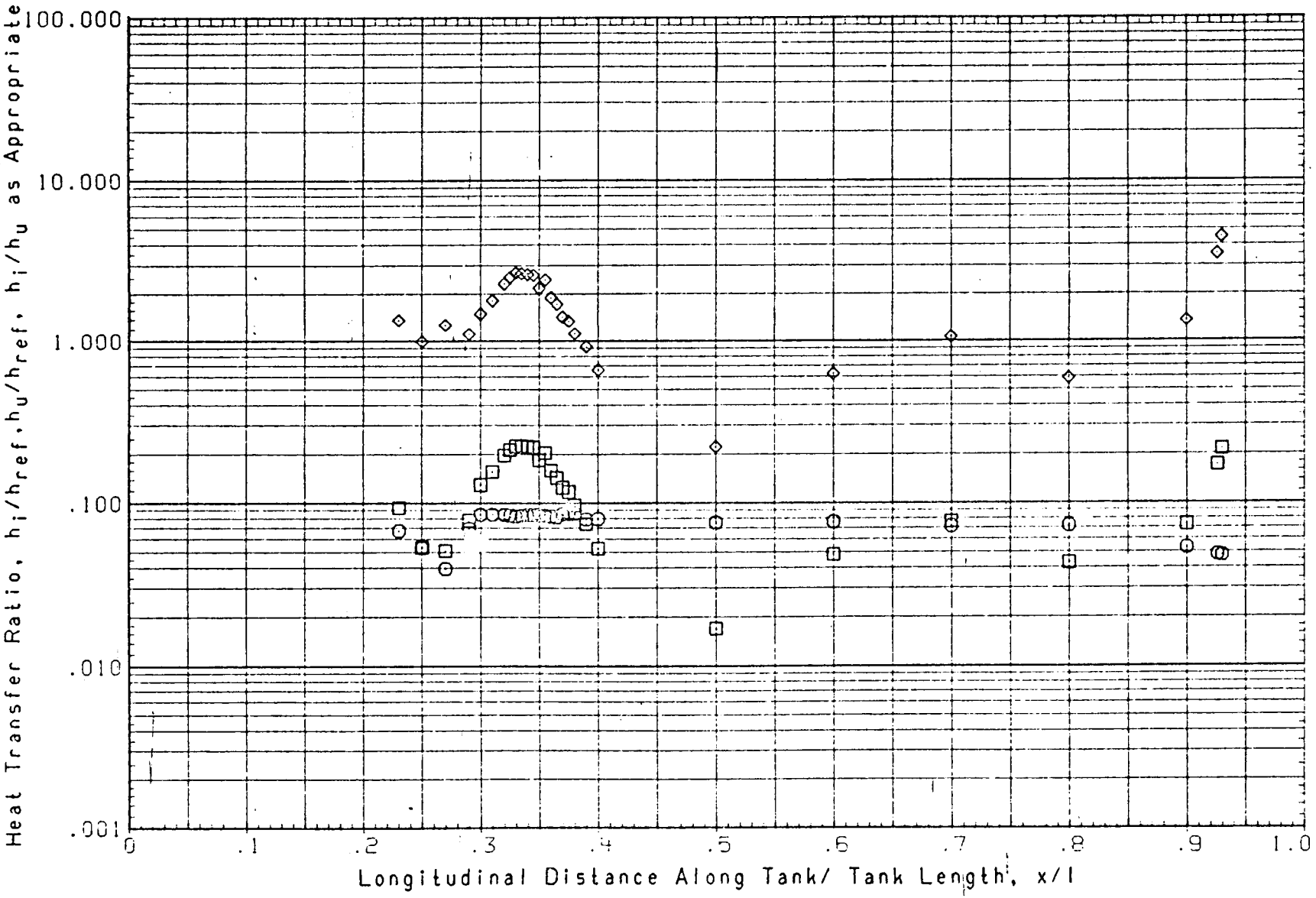


FIG. 23 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS WINDWARD SIDE, ALPHA = -5, BETA = -9

MACH = 4.020 ALPHA = -5.000 PHI = 247.500

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT10)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-9.000
(LVFT30)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-9.000
(BVFT30)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-9.000

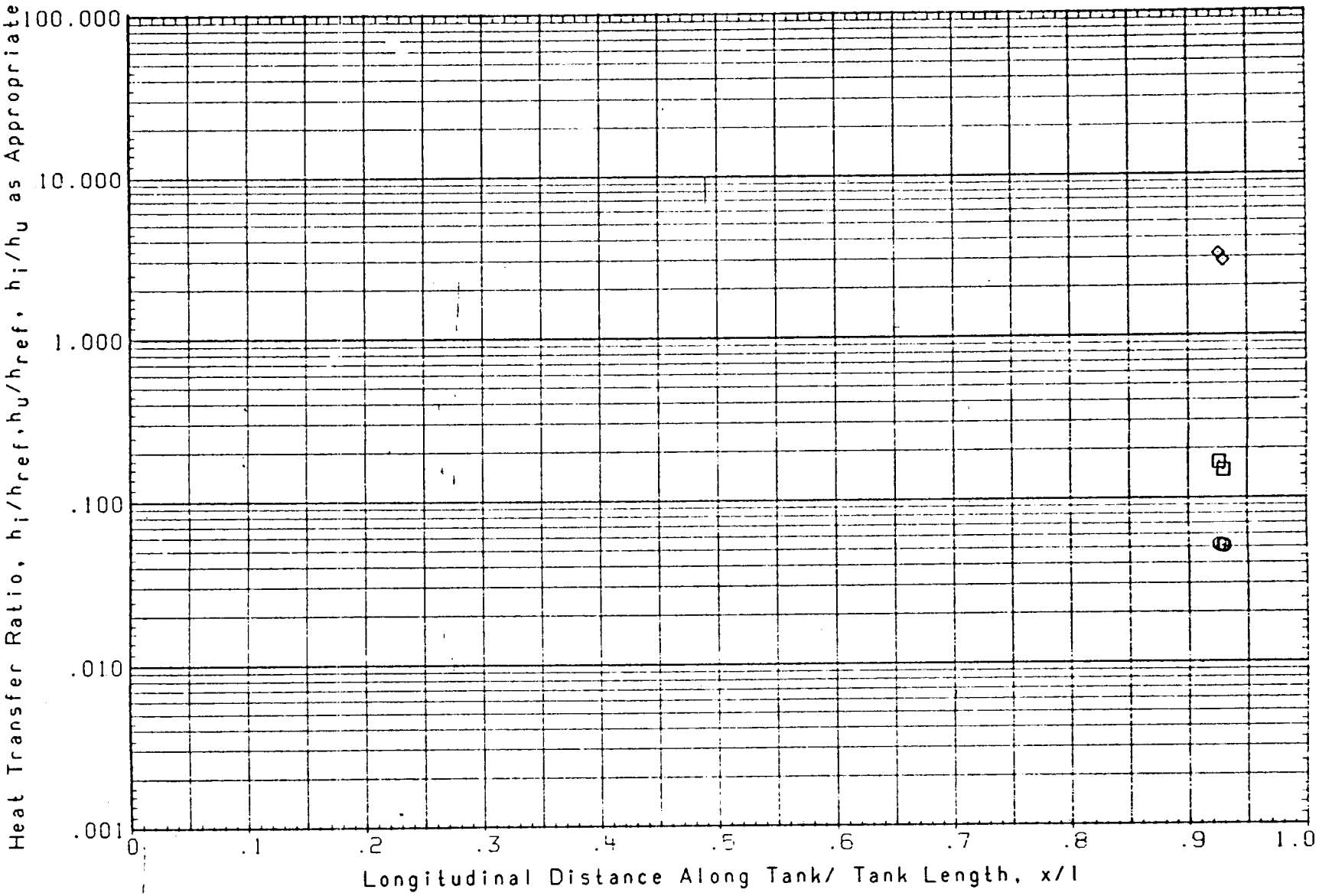


FIG. 23 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -9

MACH = 4.020 ALPHA = -5.005 PHI = 250.570

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT10)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-9.000
(LVFT30)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-9.000
(BVFT30)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-9.000

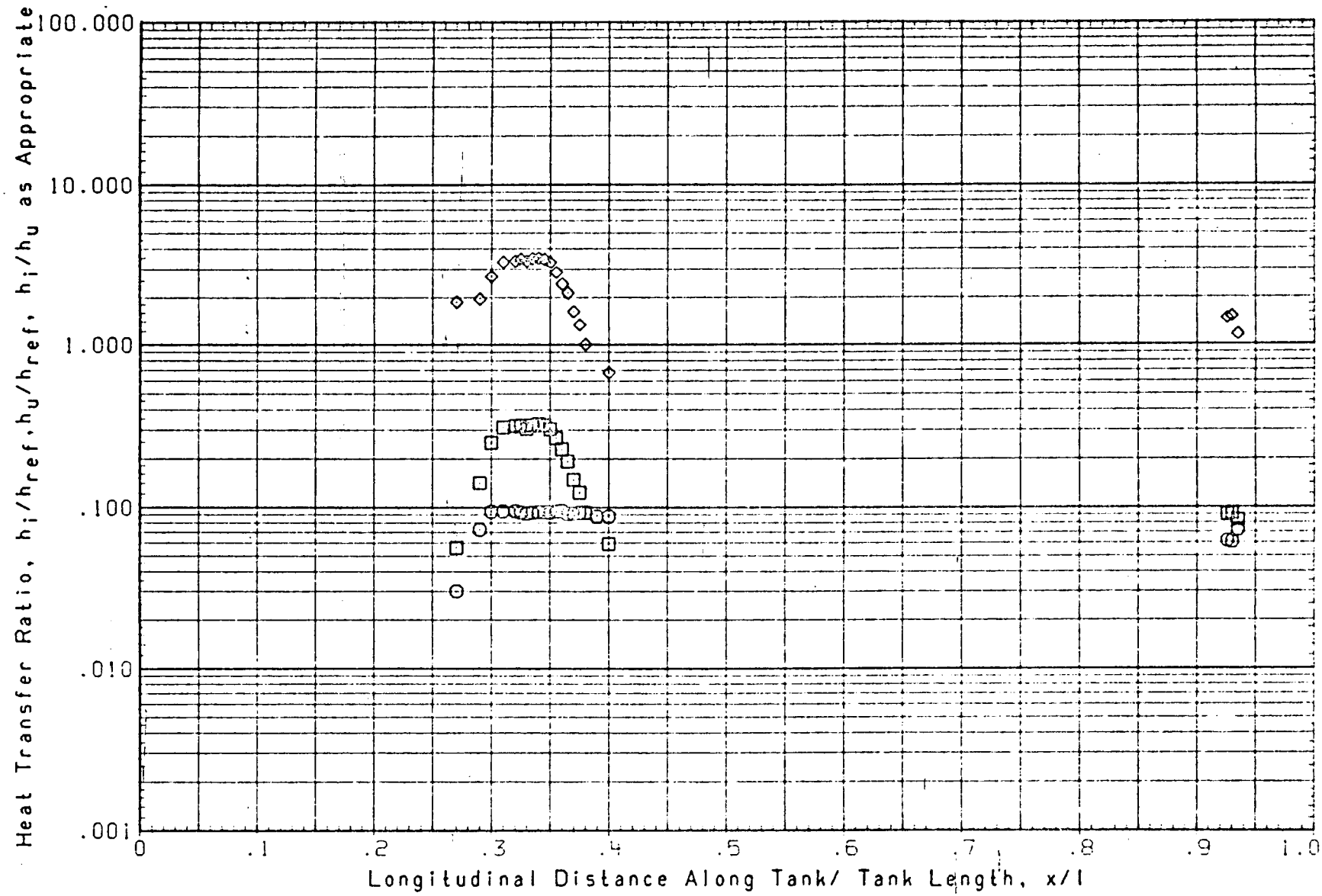


FIG. 23 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -9

MACH = 4.020 ALPHA = -5.005 PHI = 259.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT10)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-9.000
(LVFT30)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-9.000
(BVFT30)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-9.000

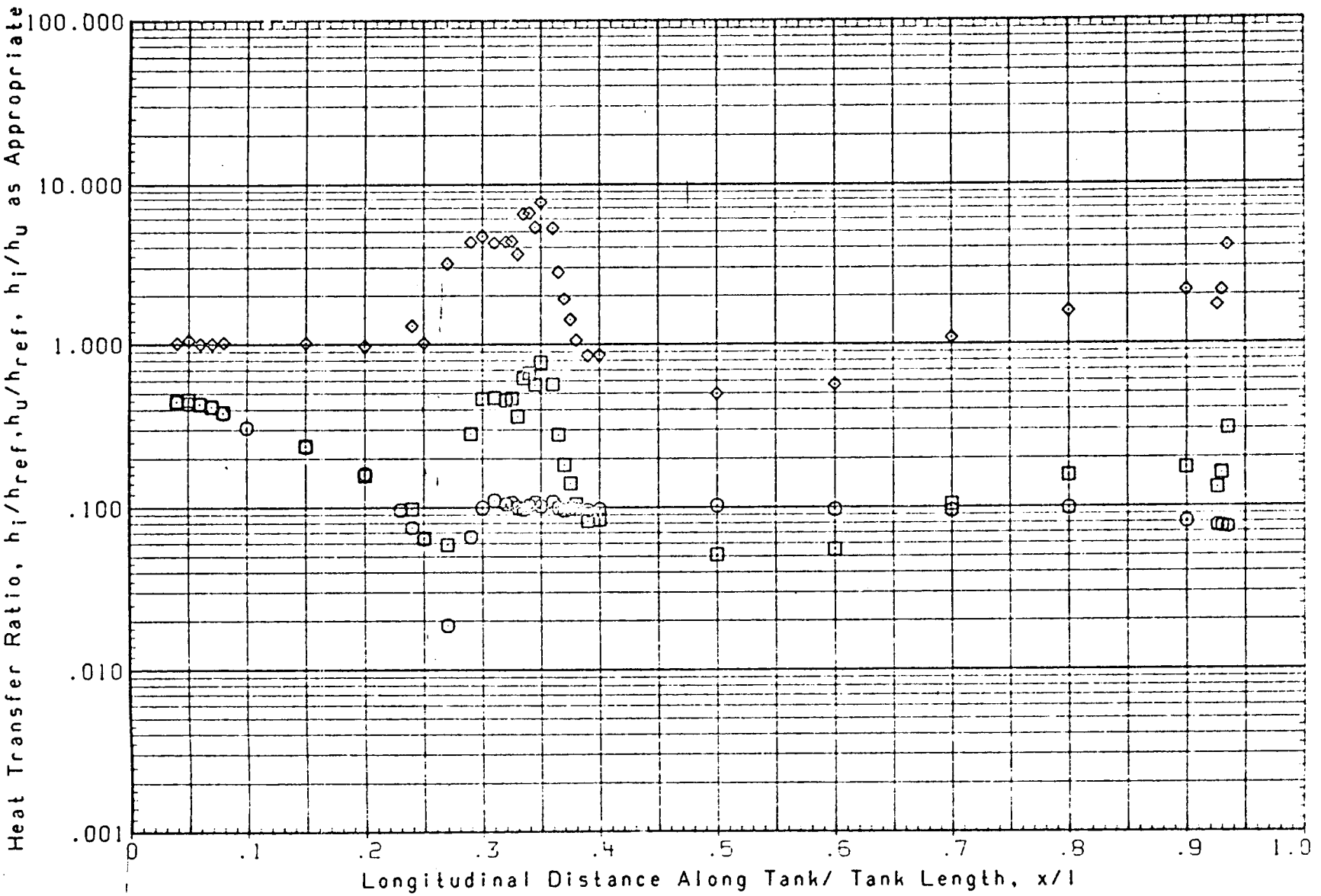


FIG. 23 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -9

MACH = 4.020 ALPHA = -5.005 PHI = 270.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT10)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-9.000
(LVFT30)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-9.000
(BVFT30)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-9.000

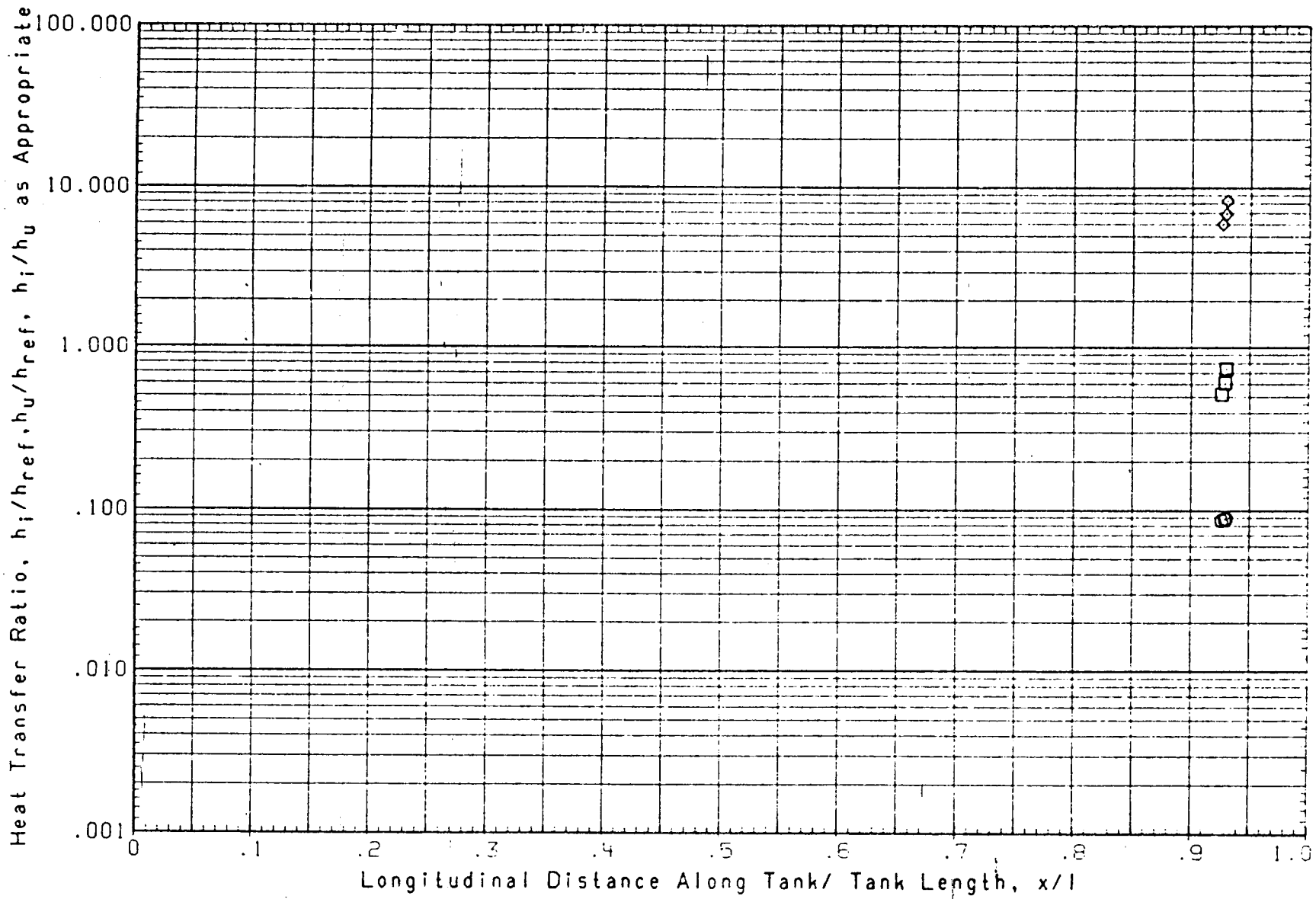


FIG. 23 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS WINDWARD SIDE, ALPHA = -5, BETA = -9

MACH = 4.020 ALPHA = -5.005 PHI = 289.430

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT10)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-9.000
(LVFT30)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-9.000
(BVFT30)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-9.000

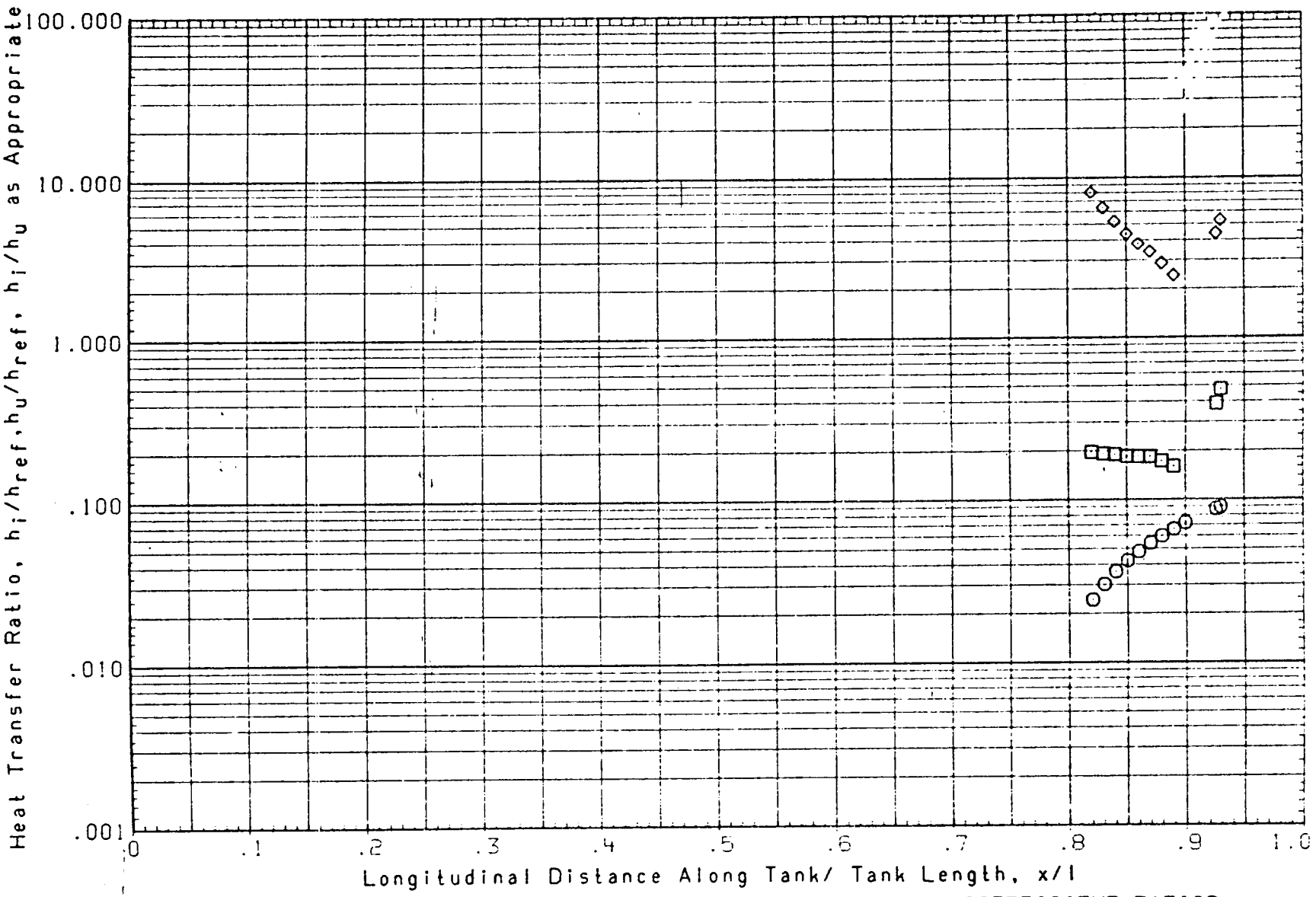


FIG. 23 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -9

MACH = 4.020 ALPHA = -5.005 PHI = 292.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT10)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-9.000
(LVFT30)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-9.000
(BVFT30)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-9.000

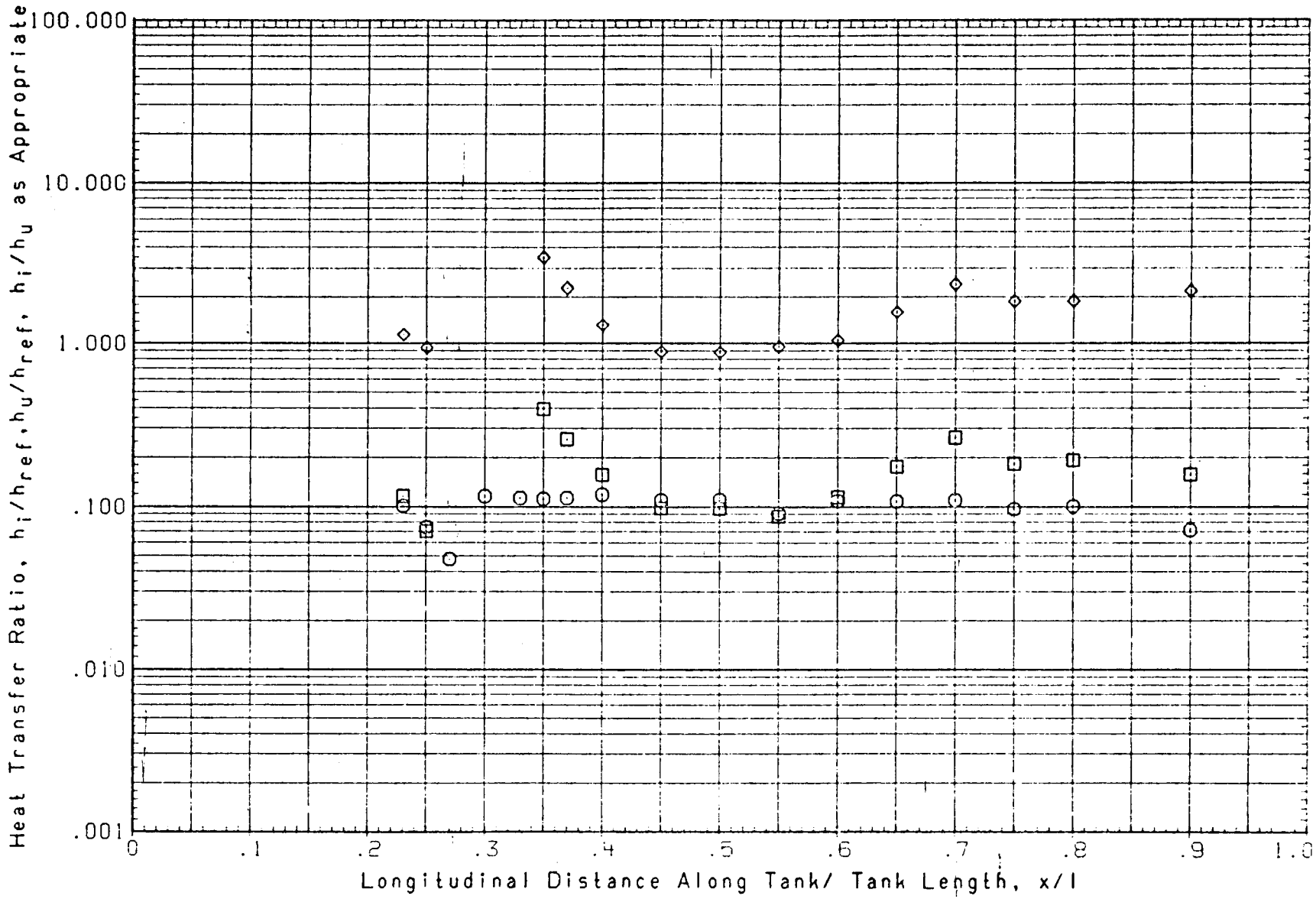


FIG. 23 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -9

MACH = 4.020 ALPHA = -5.005 PHI = 233.500

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT10)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-9.000
(LVFT30)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-9.000
(BVFT30)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-9.000

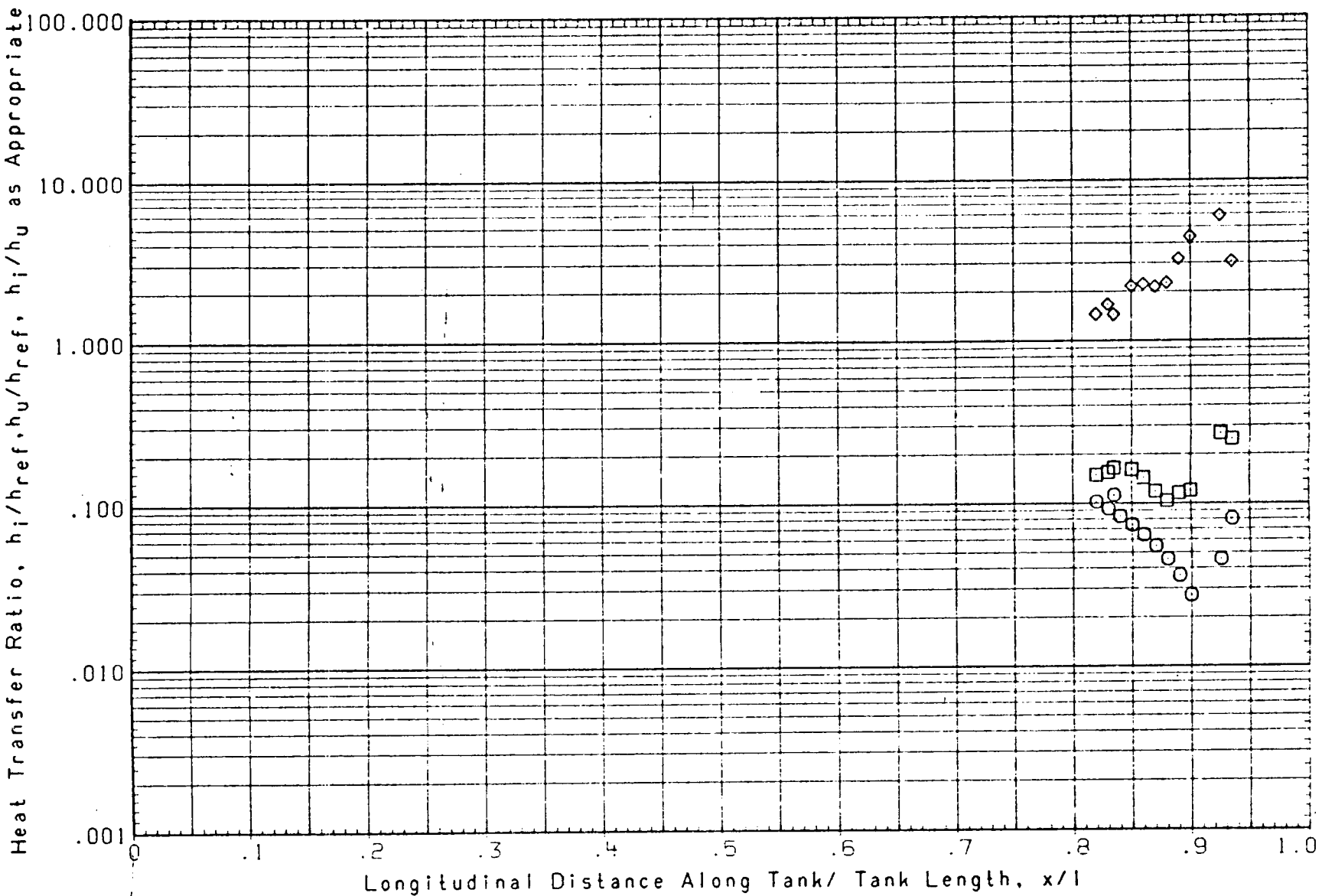


FIG. 23 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -9

MACH = 4.020 ALPHA = -5.005 PHI = 301.500

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT10)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-9.000
(LVFT30)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-9.000
(BVFT30)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-9.000

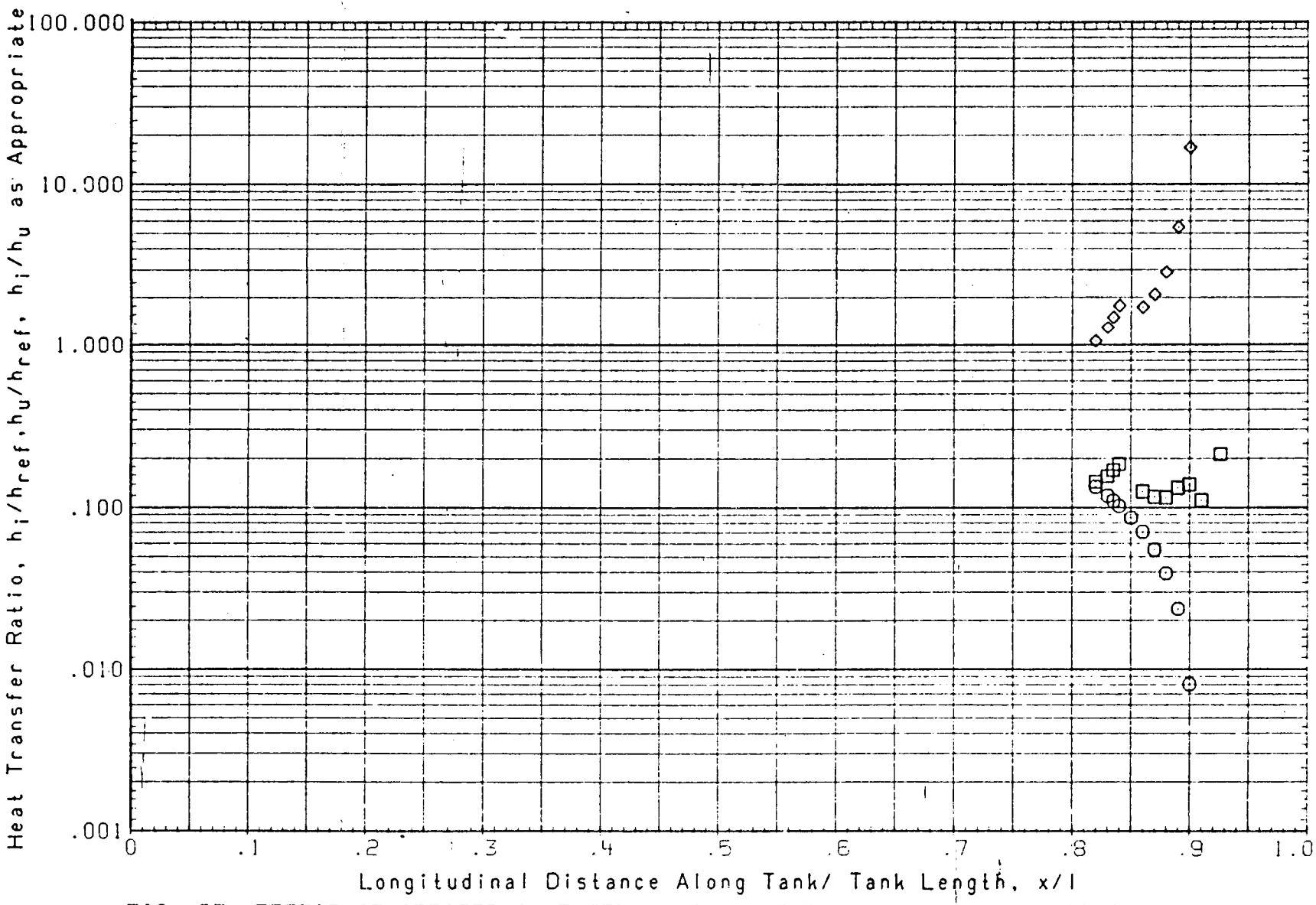


FIG. 23 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -9

MACH = 4.020 ALPHA = -5.005 PHI = 305.400

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT10)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-9.000
(LVFT30)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-9.000
(BVFT30)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-9.000

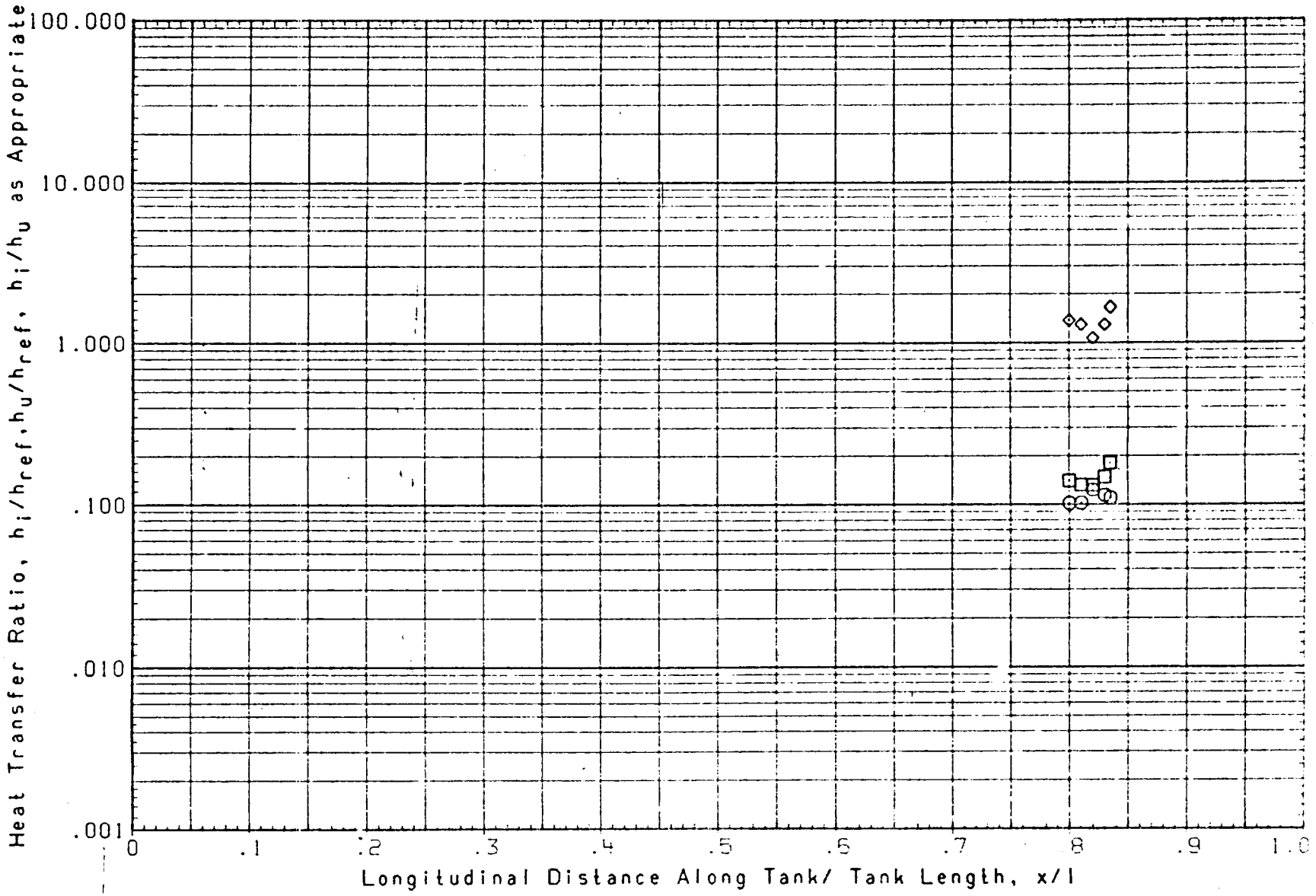


FIG. 23 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -9

MACH = 4.020 ALPHA = -5.005 PHI = 309.300

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT10)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-9.000
(LVFT30)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-9.000
(BVFT30)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-9.000

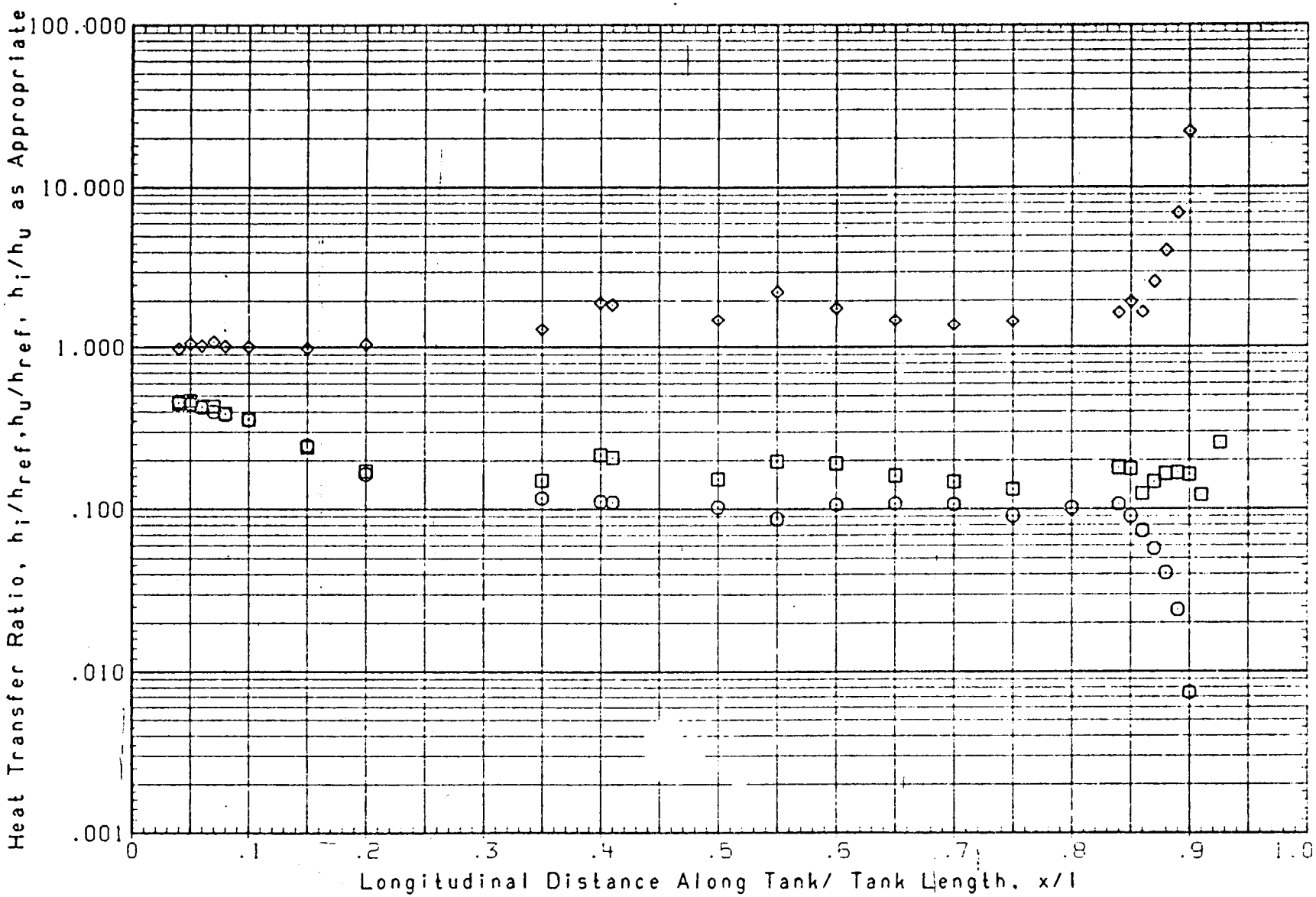


FIG. 23 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -9

MACH = 4.020 ALPHA = -5.005 PHI = 315.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT10)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-9.000
(LVFT30)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-9.000
(BVFT30)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-9.000

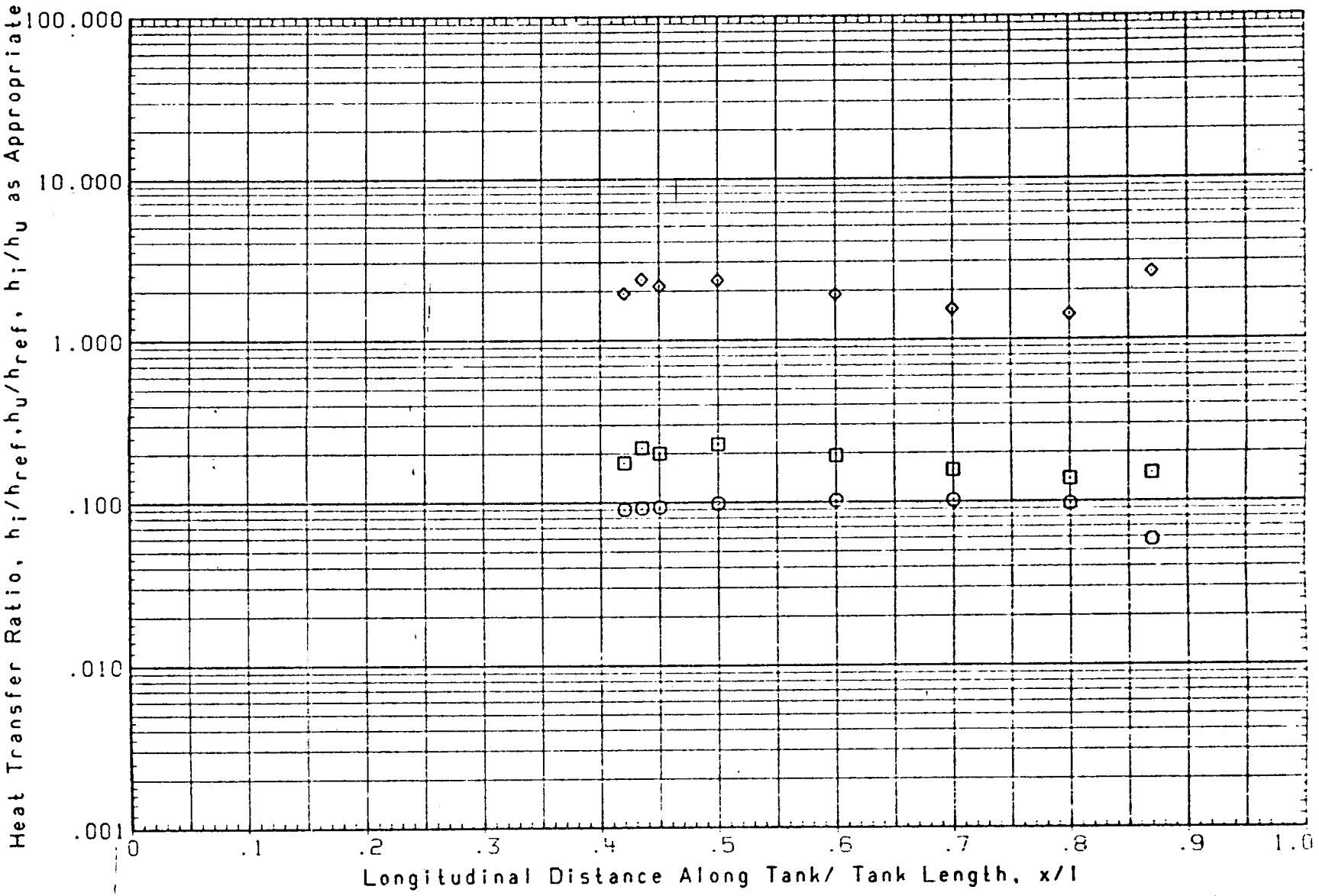


FIG. 23 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS WINDWARD SIDE, ALPHA = -5, BETA = -9

MACH = 4.020 ALPHA = -5.005 PHI = 322.300

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT10)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-9.000
(LVFT30)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-9.000
(BVFT30)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-9.000

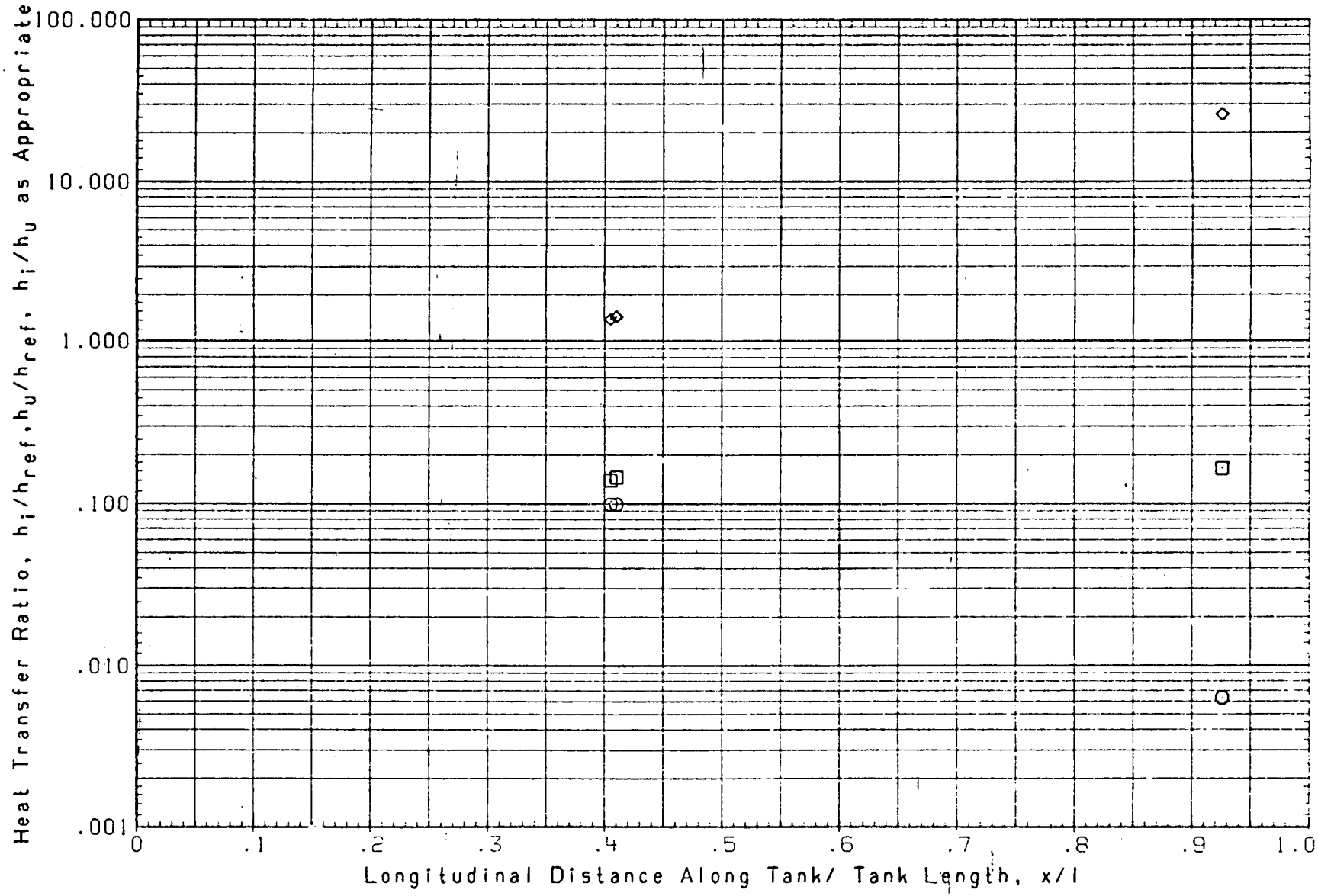


FIG. 23 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -9

MACH = 4.020 ALPHA = -5.005 PHI = 324.450

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT10)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-9.000
(LVFT30)	□	IH41B(V41A-A4A) C T S (SPIKED ET DATA) HI/HREF	-5.000	-9.000
(BVFT30)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-9.000

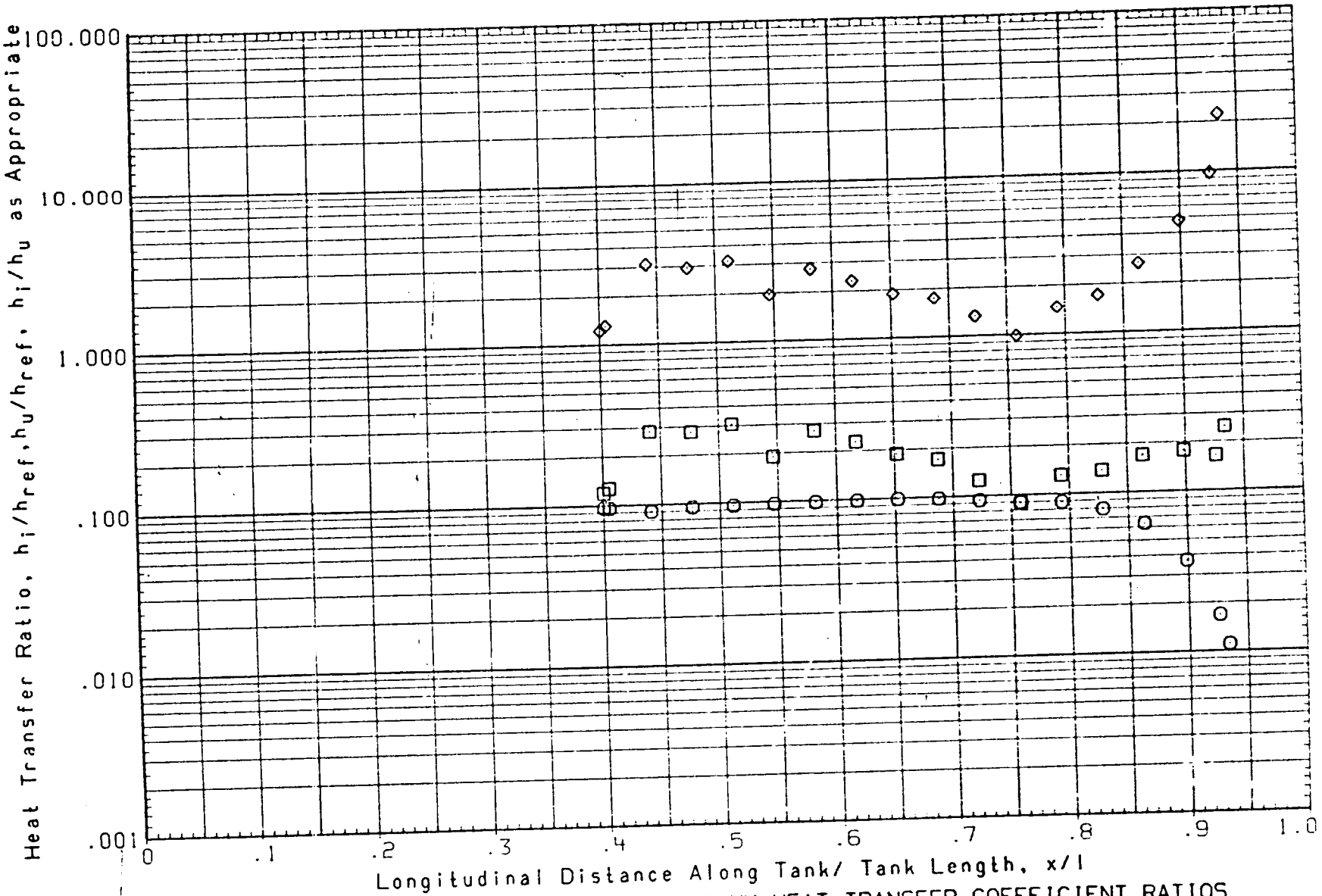


FIG. 23 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -9

MACH = 4.020 ALPHA = -5.005 PHI = 325.850

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT10)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-9.000
(LVFT30)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-9.000
(BVFT30)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-9.000

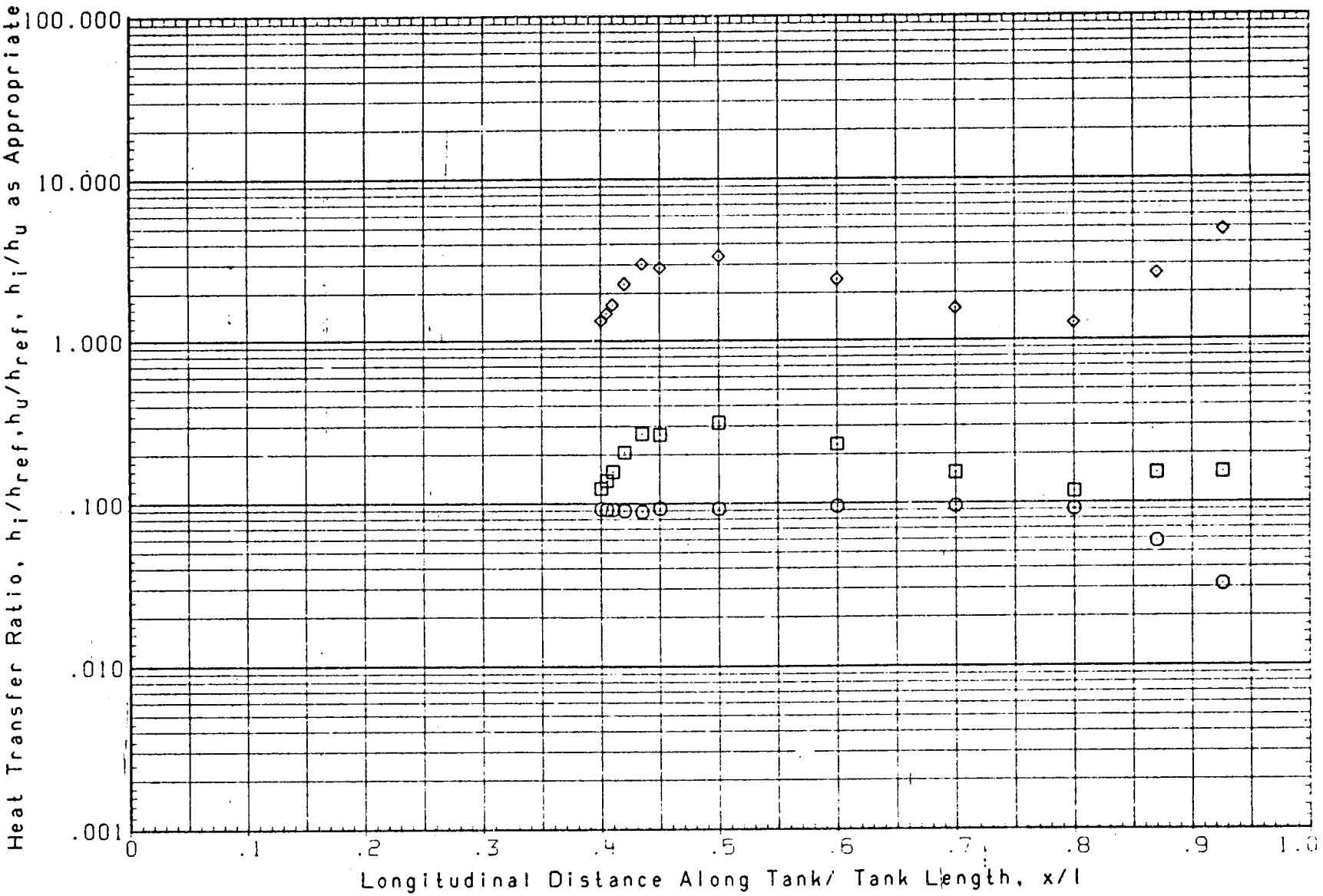


FIG. 23 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS WINDWARD SIDE, ALPHA = -5, BETA = -9

MACH = 4.020 ALPHA = -5.005 PHI = 330.200

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT10)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-9.000
(LVFT30)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-9.000
(BVFT30)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-9.000

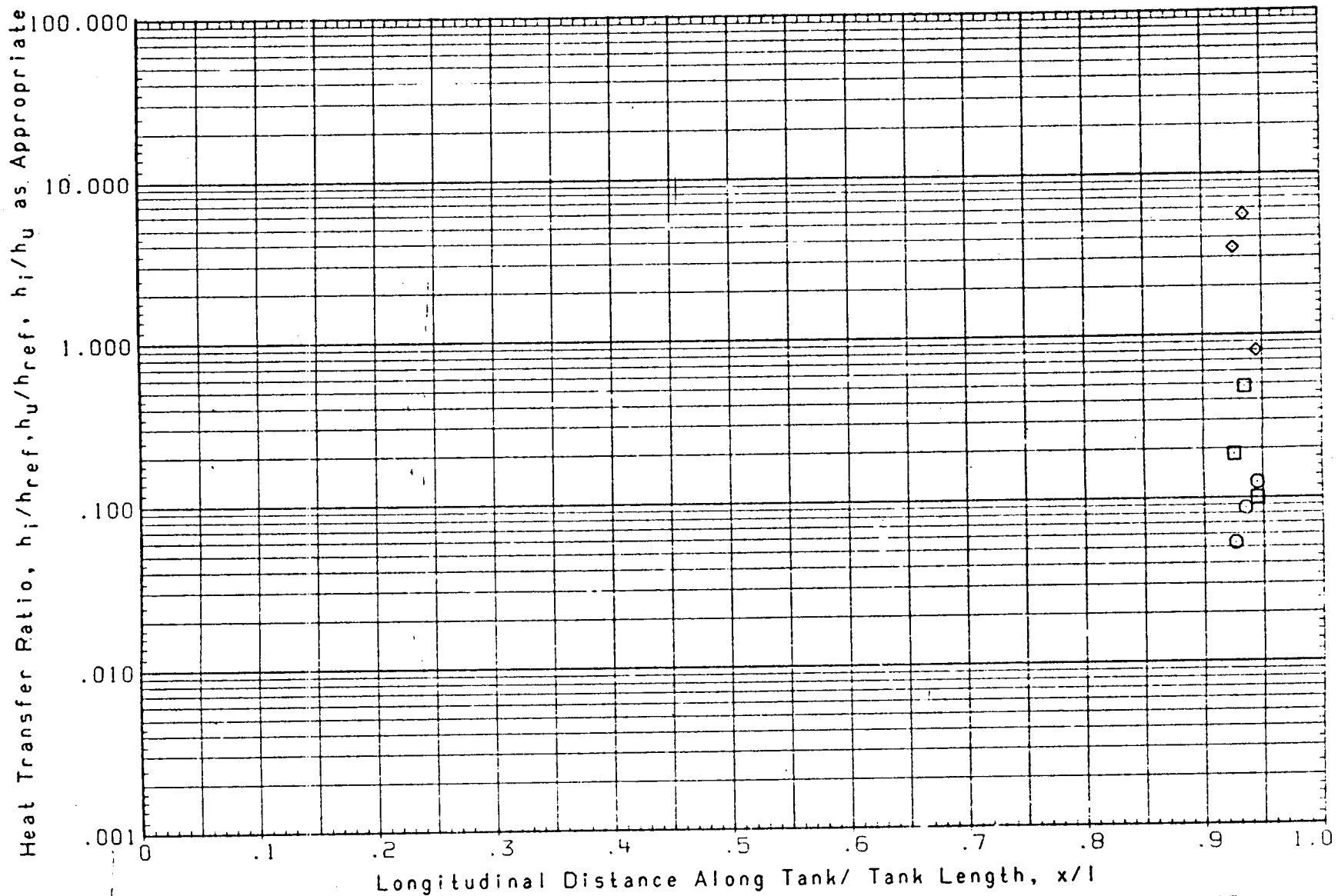


FIG. 23 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -9

MACH = 4.020 ALPHA = -5.005 PHI = 334.980

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT10)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-9.000
(LVFT30)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-9.000
(BVFT30)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-9.000

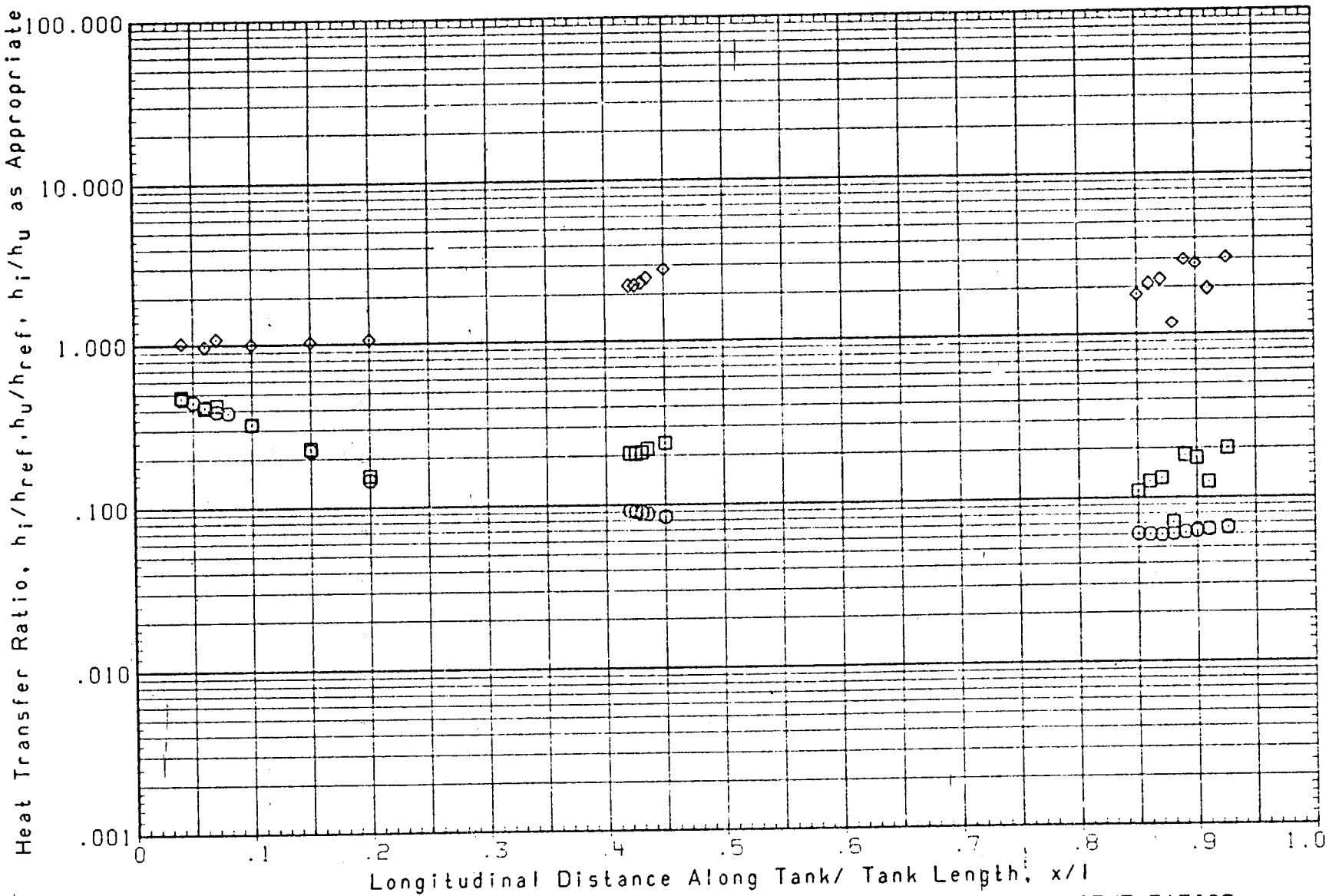


FIG. 23 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -9

MACH = 4.020 ALPHA = -5.005 PHI = 337.500

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT10)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-9.000
(LVFT30)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-9.000
(BVFT30)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-9.000

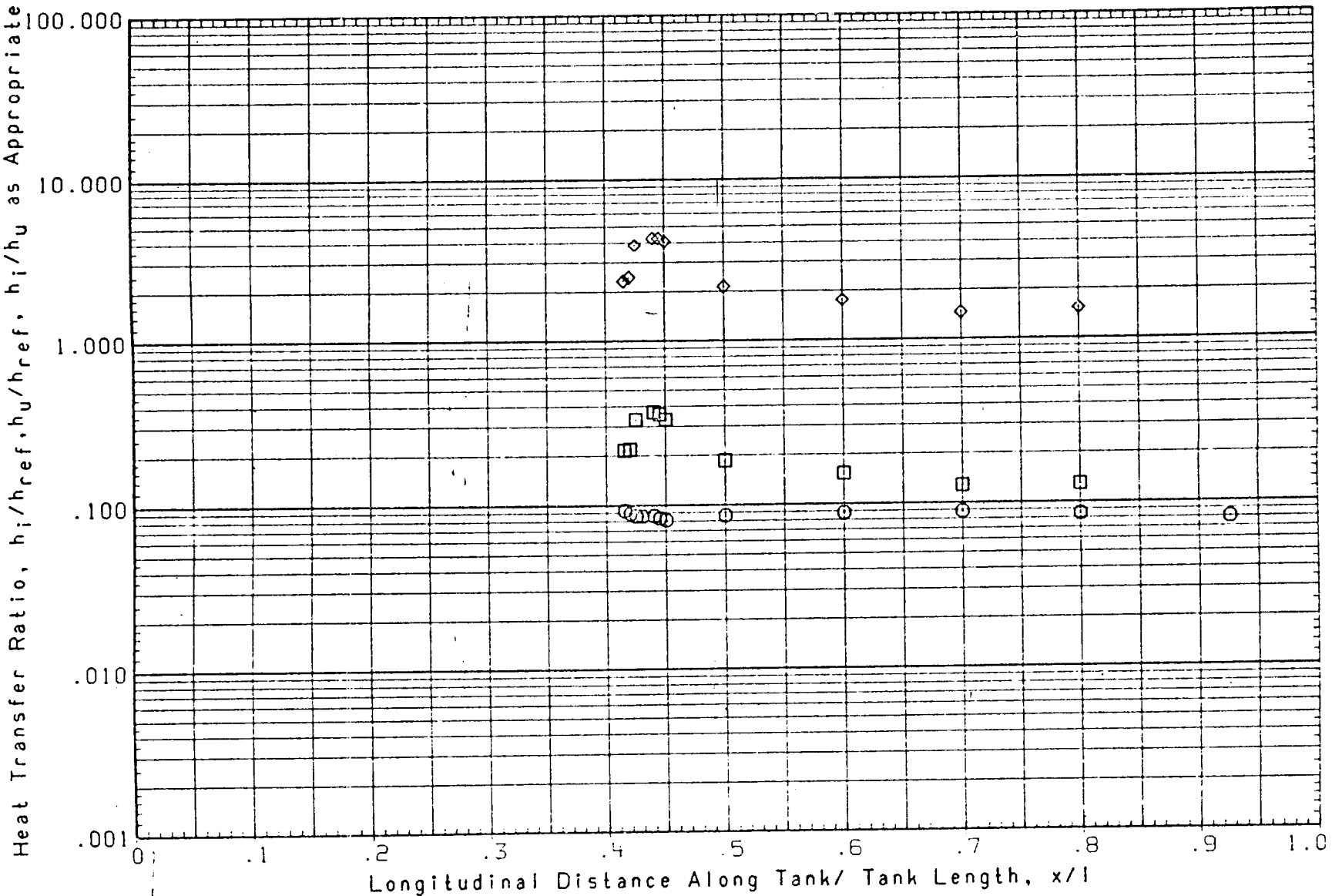


FIG. 23 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5. BETA = -9

MACH = 4.020 ALPHA = -5.005 PHI = 343.120

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT10)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-9.000
(LVFT30)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-9.000
(BVFT30)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-9.000

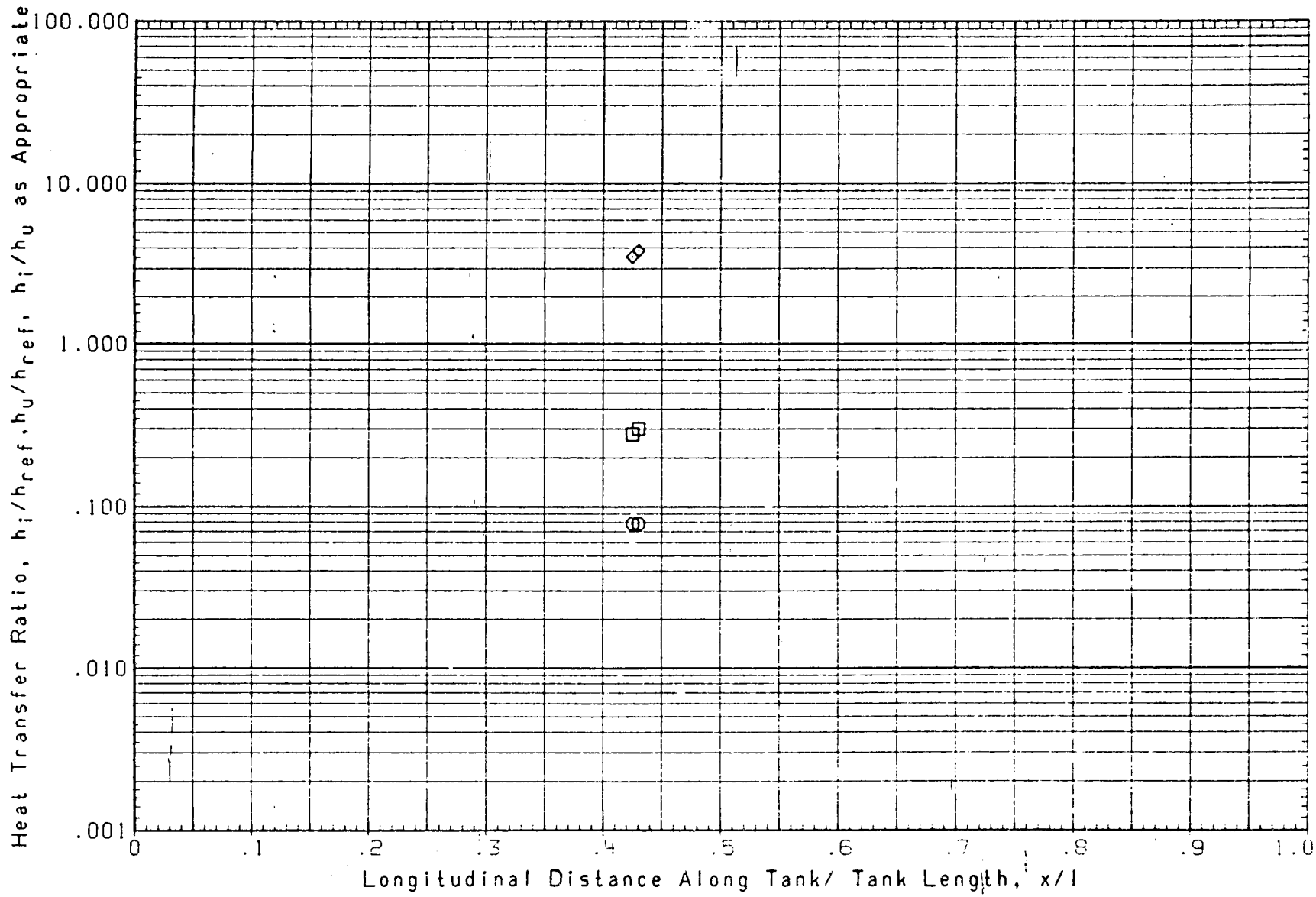


FIG. 23 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -9

MACH = 4.020 ALPHA = -5.005 PHI = 345.560

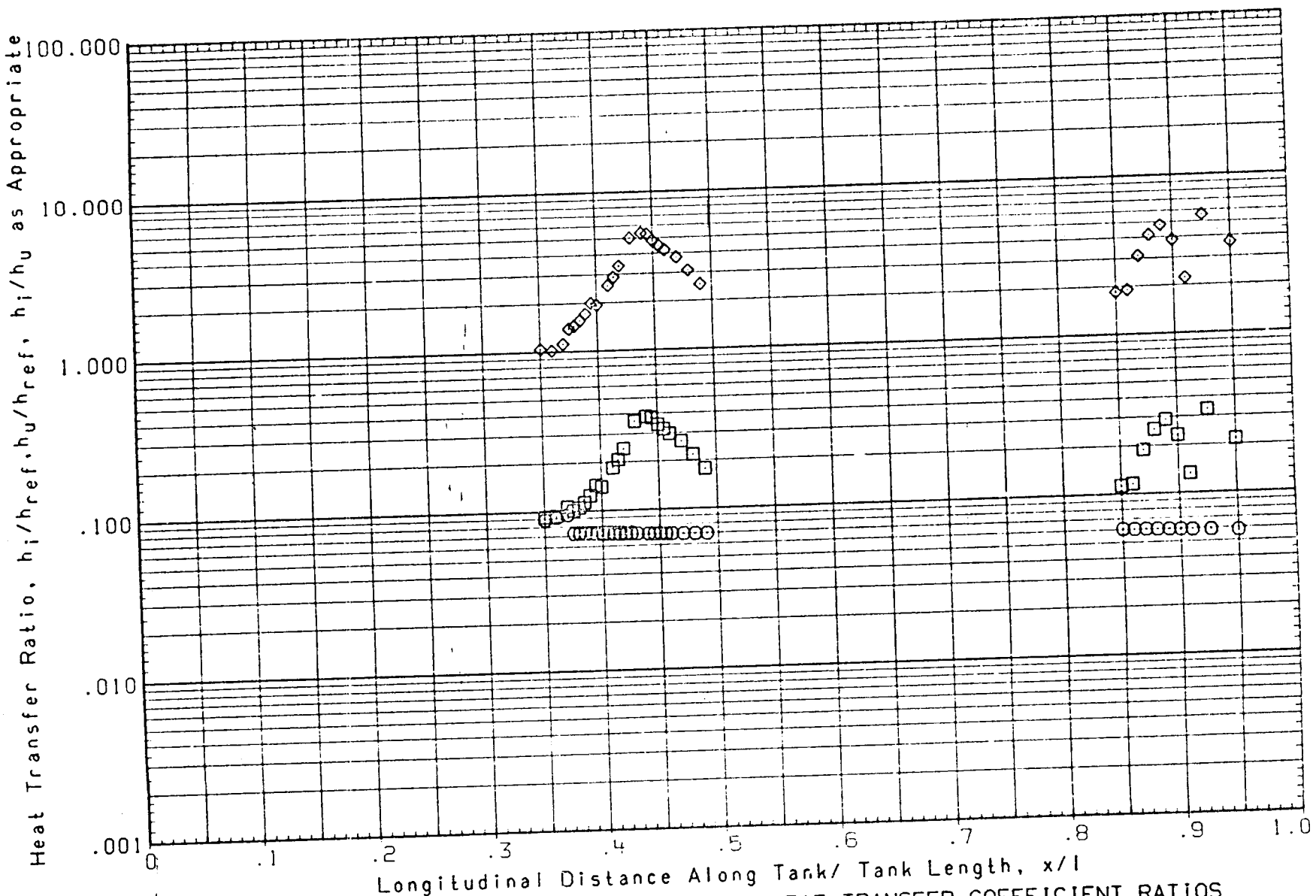


FIG. 23 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -9

MACH = 4.020 ALPHA = -5.005 PHI = 348.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT10)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-9.000
(LVFT30)	□	DATA NOT AVAILABLE	-5.000	-9.000
(BVFT30)	◇	DATA NOT AVAILABLE	-5.000	-9.000

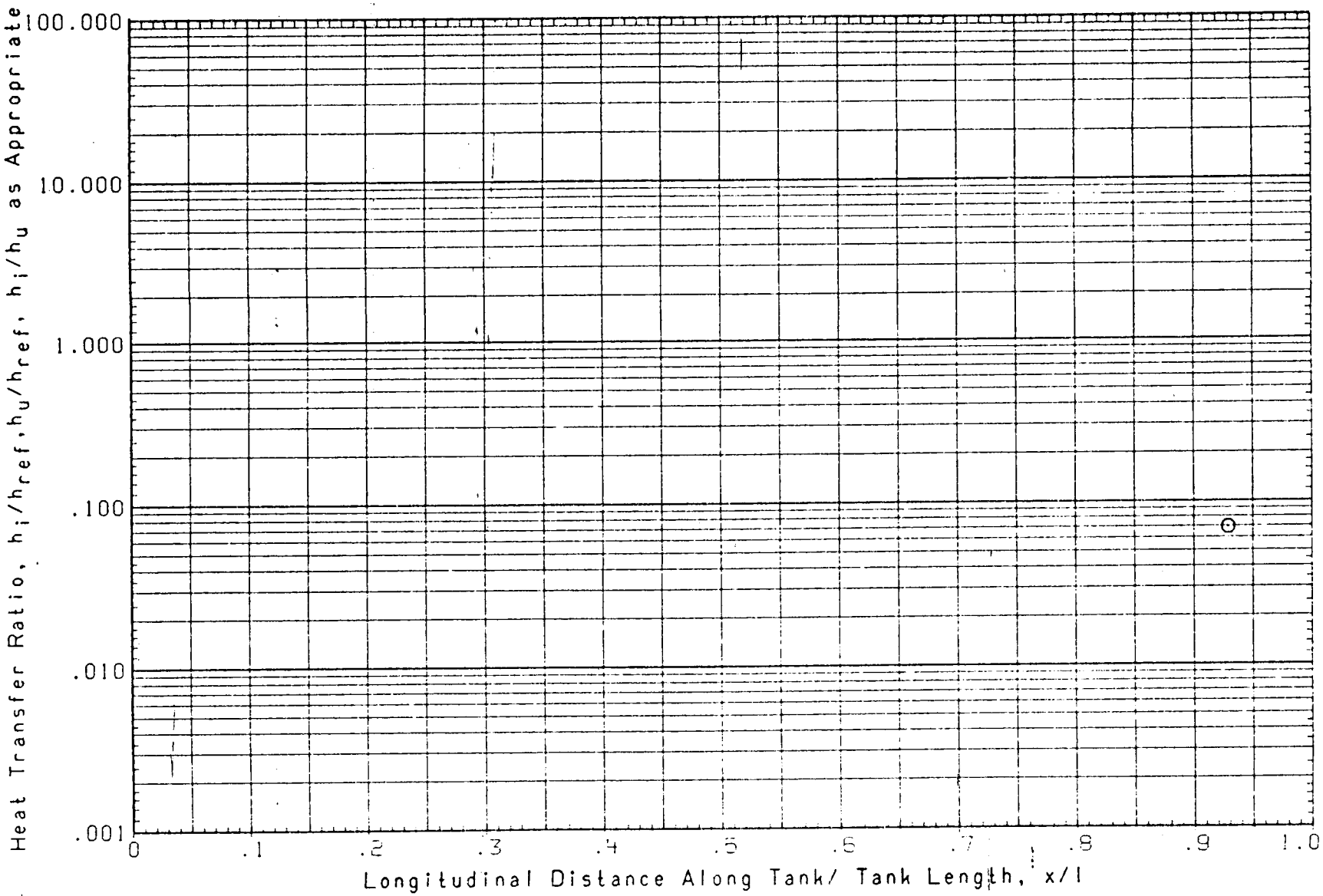


FIG. 23 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -9

MACH = 4.020 ALPHA = -5.000 PHI = 352.800

(KVFT10)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-9.000
(LVFT30)	□	IH41B(V41A-A4A) O T T (SPIKED ET DATA) HI/HREF	-5.000	-9.000
(BVFT30)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-9.000

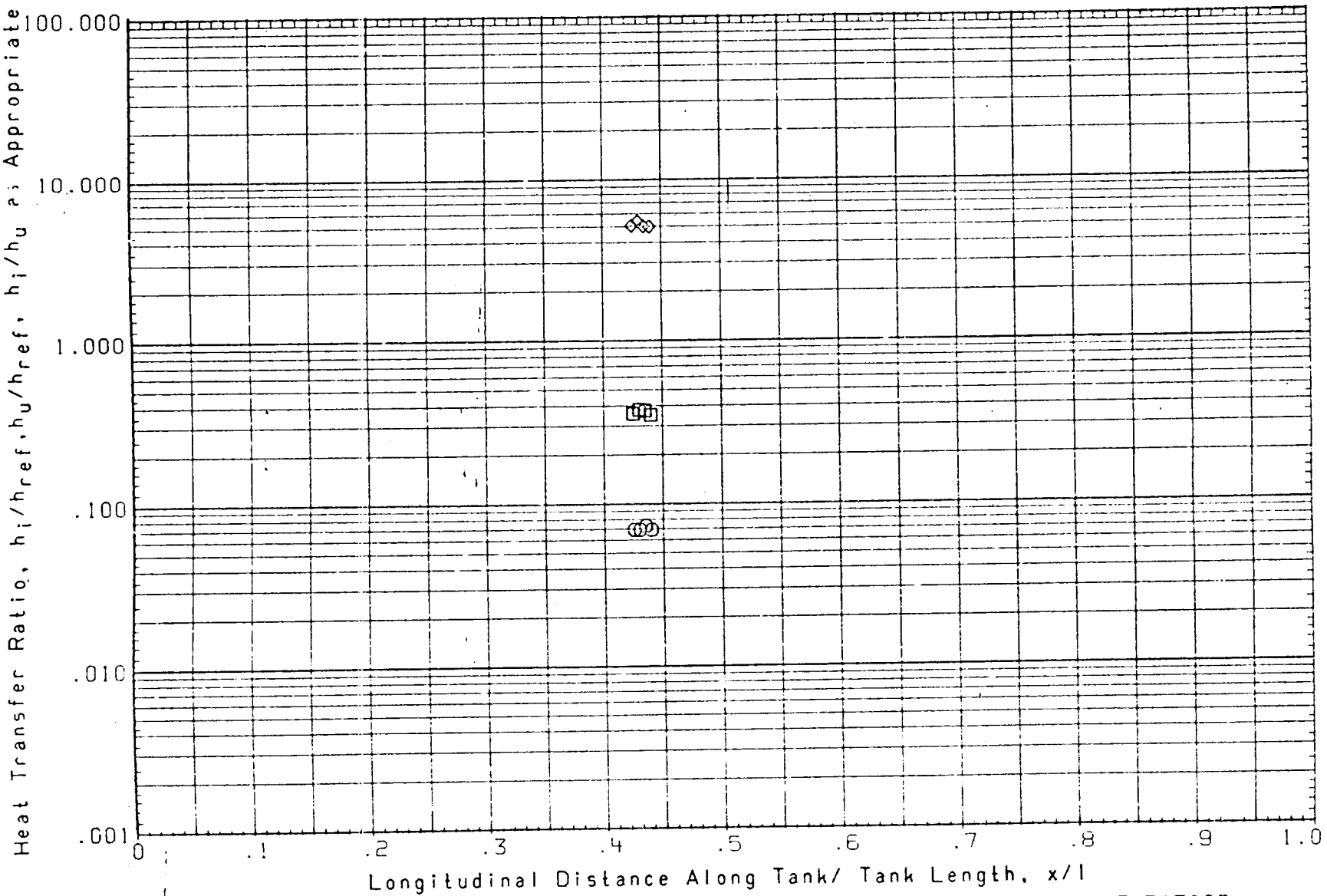


FIG. 23 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -9

MACH = 4.020 ALPHA = -5.000 PHI = 354.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT10)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-9.000
(LVFT30)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-9.000
(BVFT30)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-9.000

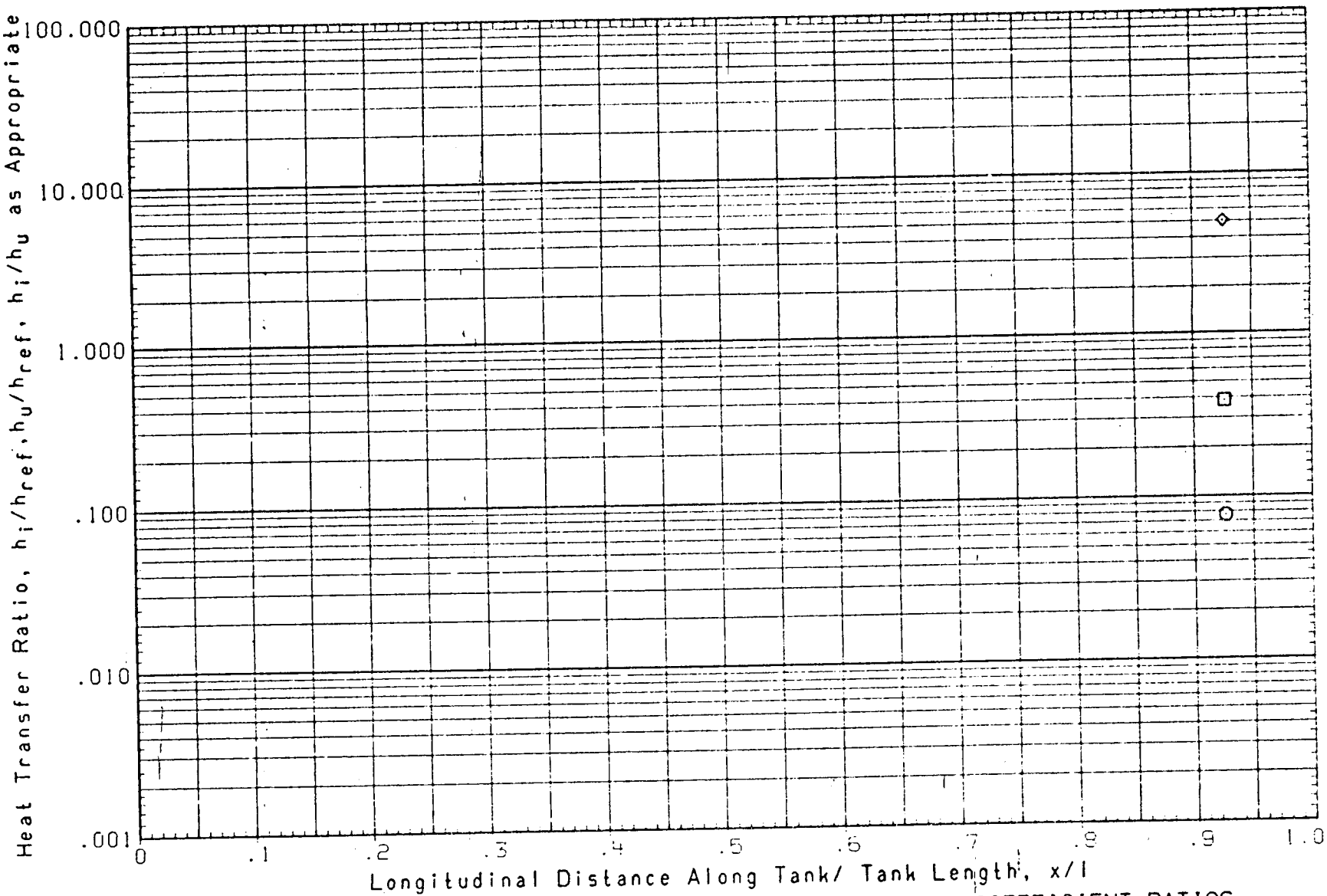


FIG. 23 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -9

MACH = 4.020 ALPHA = -5.000 PHI = 355.160

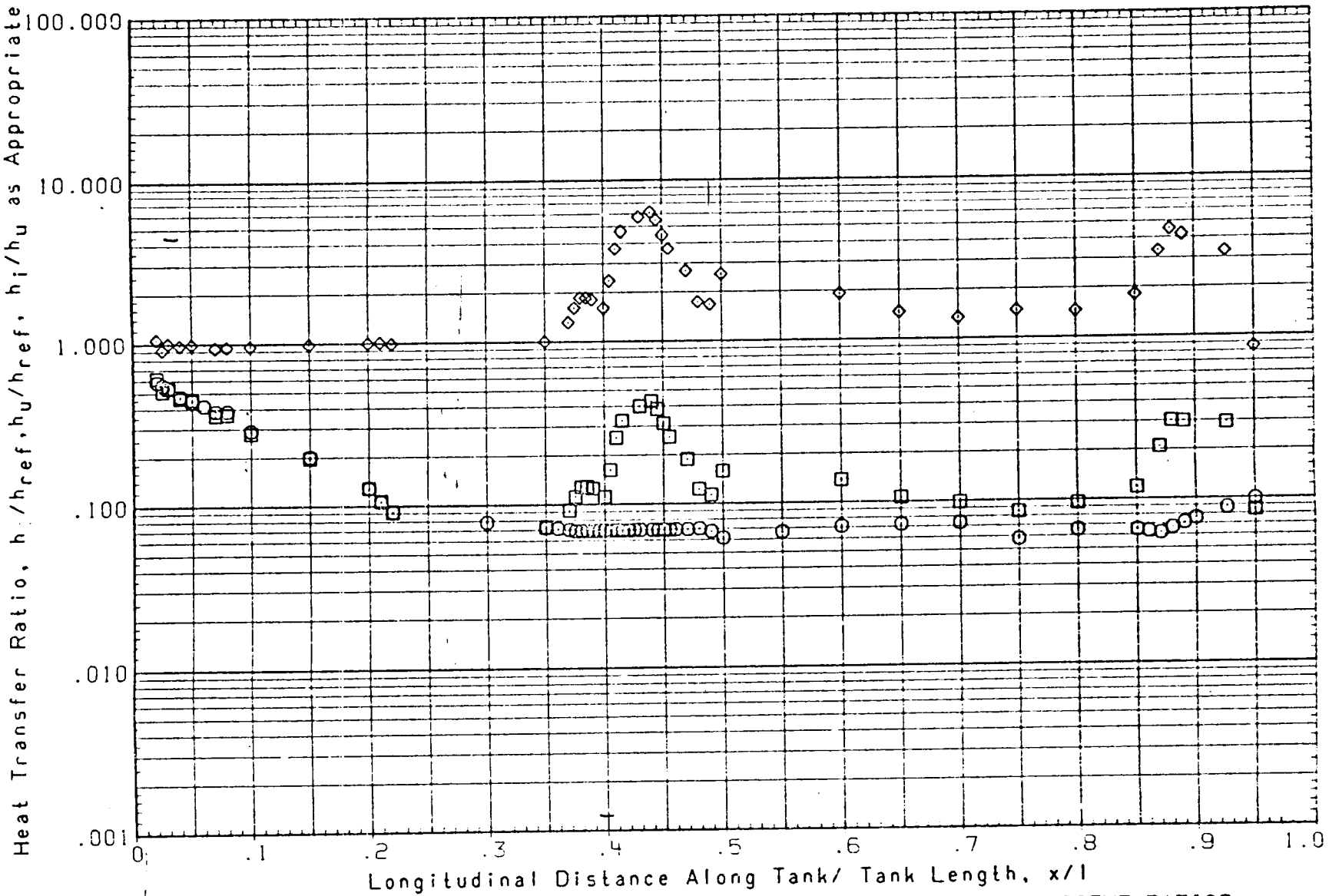


FIG. 23 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -9

MACH = 4.020 ALPHA = -5.005 PHI = 360.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT10)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-9.000
(LVFT30)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-9.000
(BVFT30)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-9.000

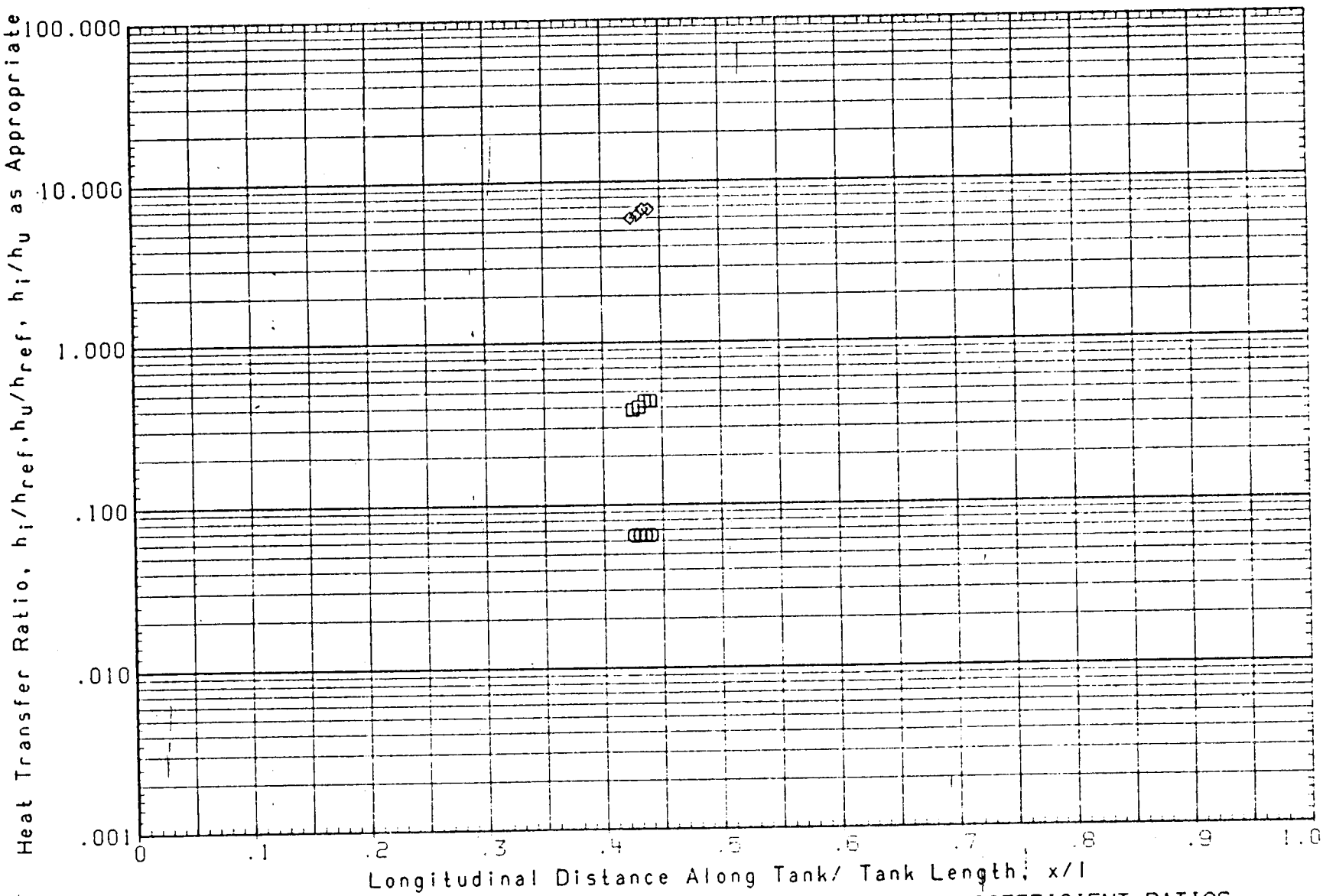


FIG. 23 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -9

MACH = 4.020 ALPHA = -5.005 PHI = 5.630

DATA SET	SYMBOL	CONFIGURATION	ALPHA	BETA
(KVFT10)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-9.000
(LVFT30)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-9.000
(BVFT30)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-9.000

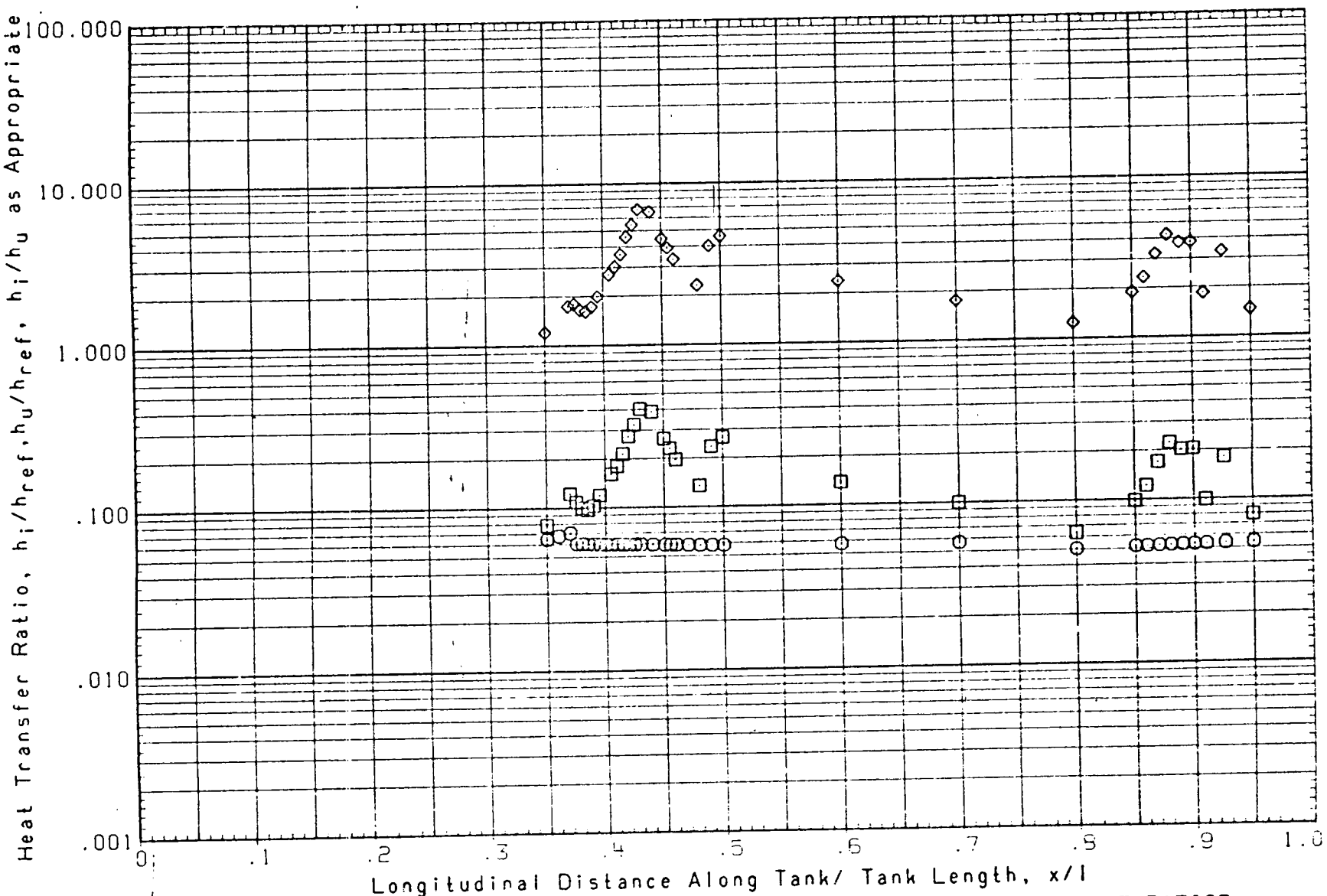


FIG. 23 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -9

MACH = 4.020 ALPHA = -5.005 PHI = 11.250

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT10)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-9.000
(LVFT30)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-9.000
(BVFT30)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-9.000

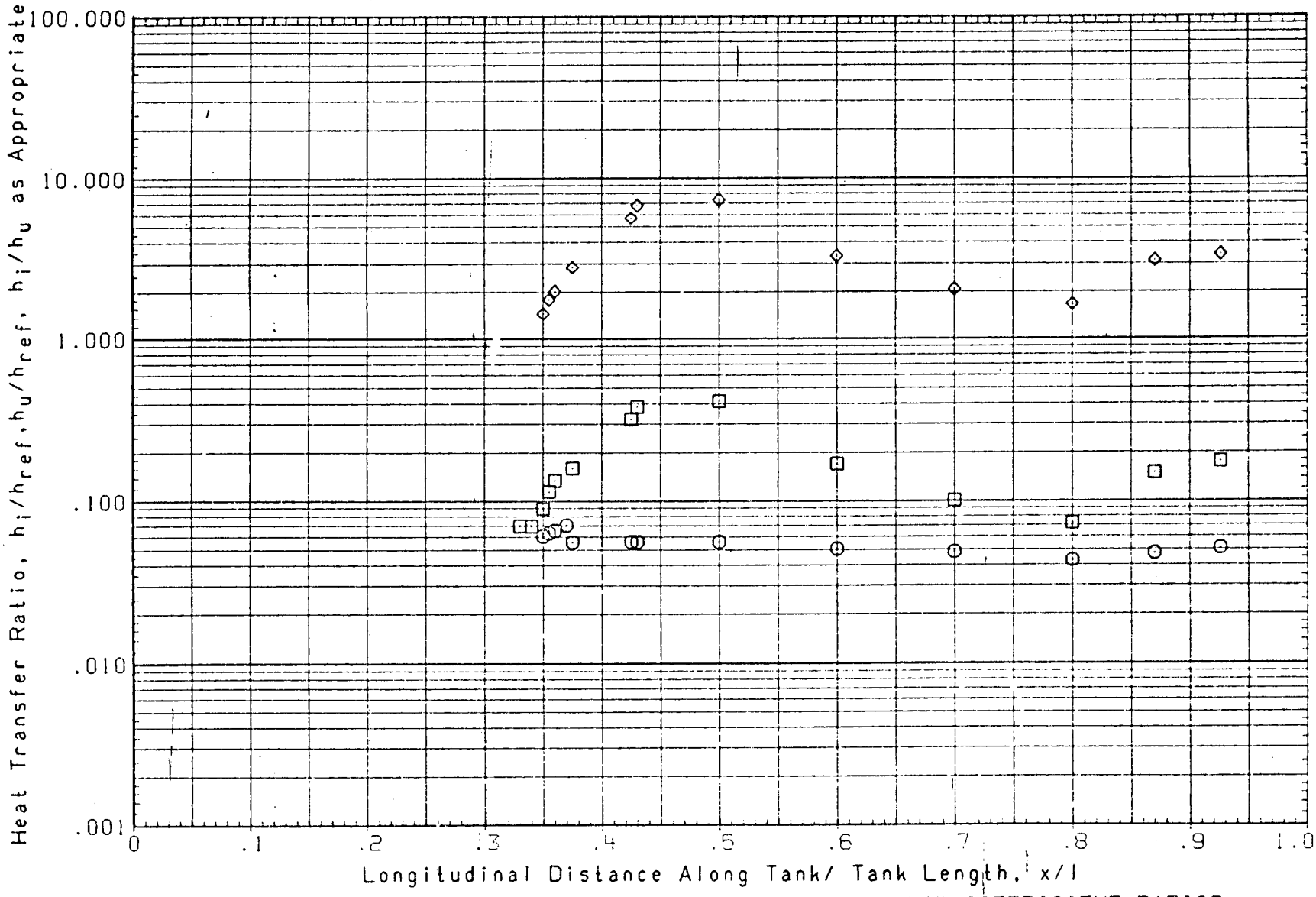


FIG. 23 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -9

MACH = 4.020 ALPHA = -5.005 PHI = 17.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT10)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-9.000
(LVFT30)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-9.000
(BVFT30)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-9.000

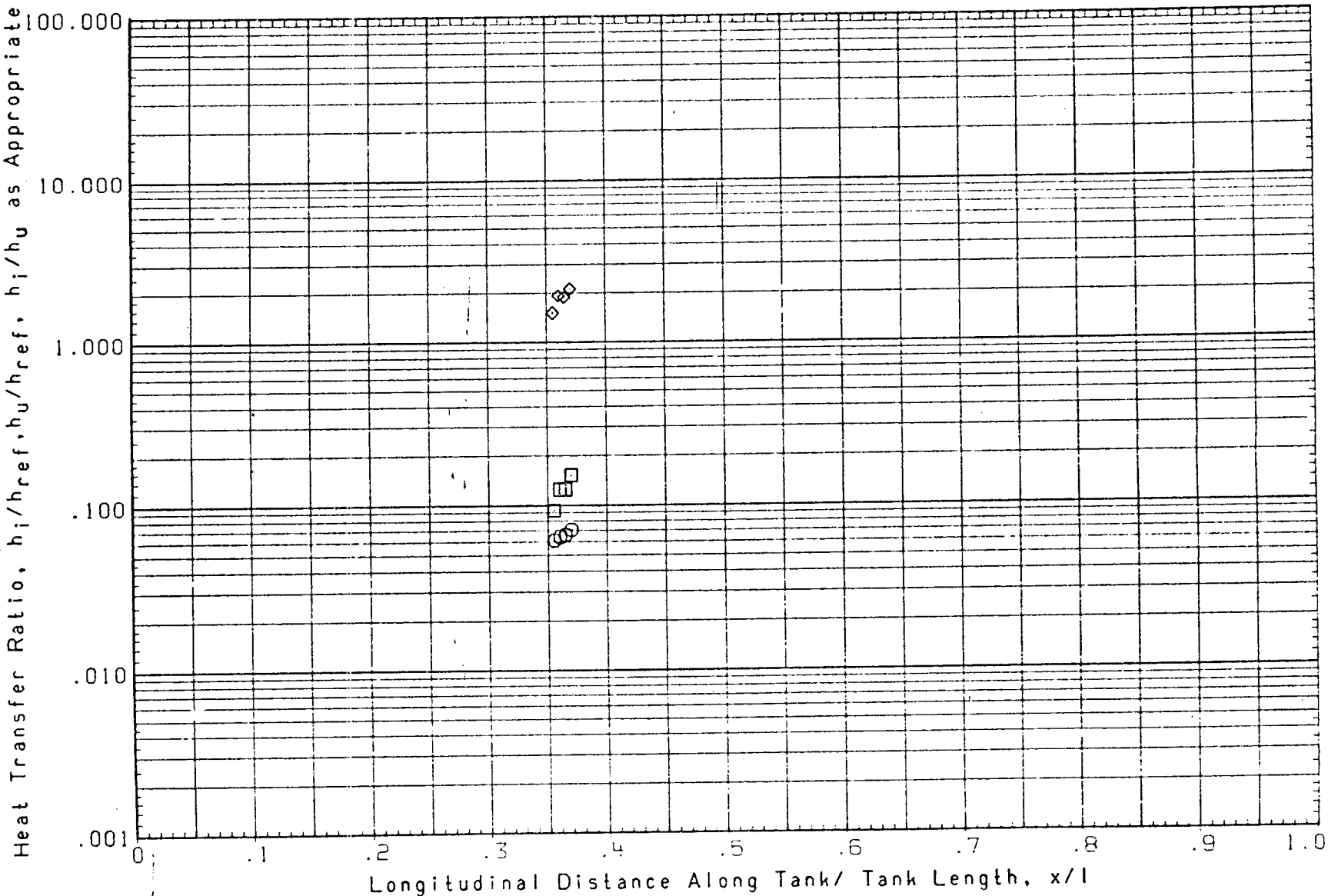


FIG. 23 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -9

MACH = 4.020 ALPHA = -5.005 PHI = 20.980

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT10)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-9.000
(LVFT30)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-9.000
(BVFT30)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-9.000

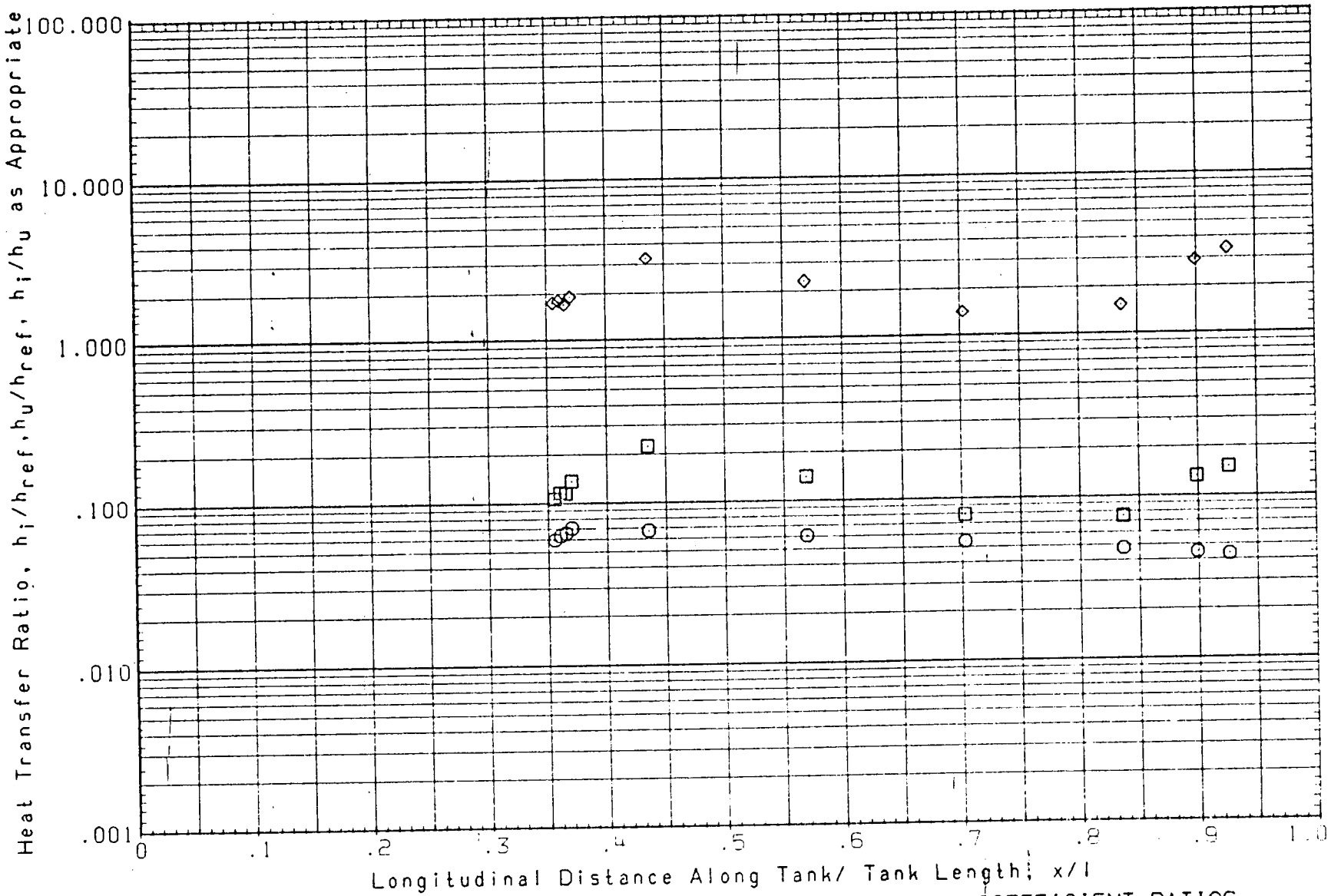


FIG. 23 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = -9

MACH = 4.020 ALPHA = -5.005 PHI = 23.075

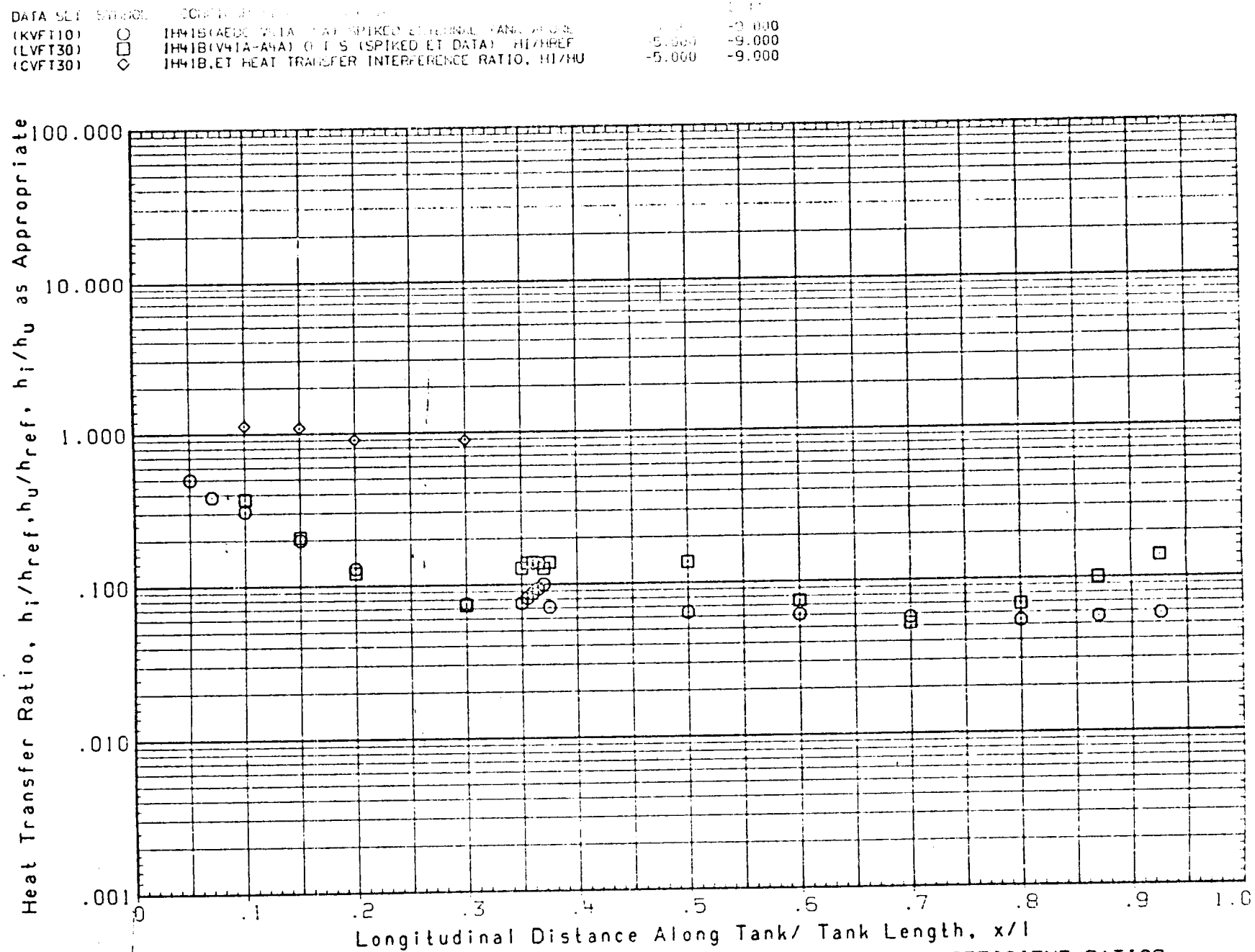


FIG. 24 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = -5, BETA = -9

MACH = 3.010 ALPHA = -5.000 PHI = 29.800

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT10)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-9.000
(LVFT30)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-9.000
(CVFT30)	◇	DATA NOT AVAILABLE	-5.000	-9.000

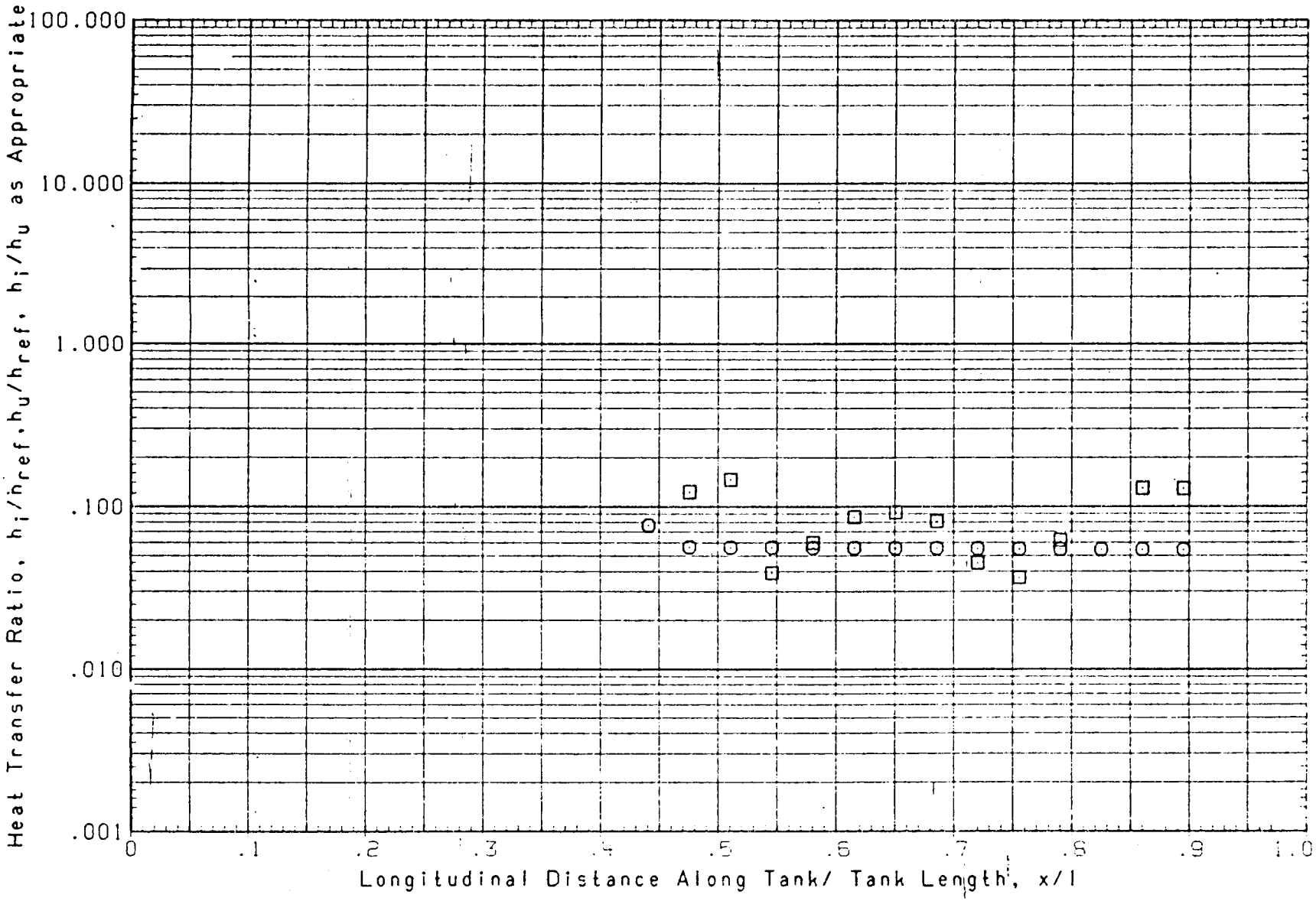


FIG. 24 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = -5, BETA = -9

MACH = 3.010 ALPHA = -5.000 PHI = 31.420

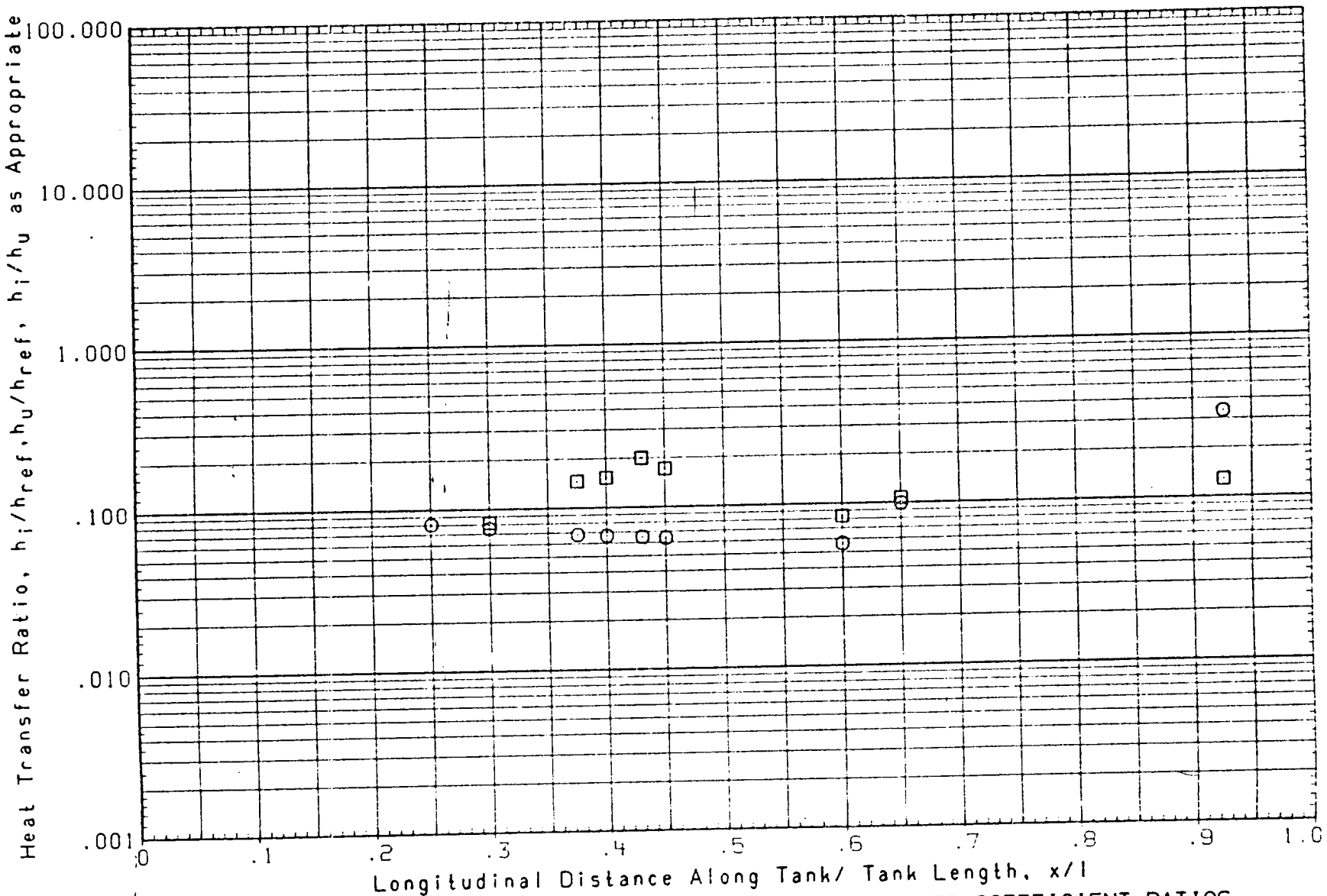


FIG. 24 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = -5, BETA = -9

MACH = 3.010 ALPHA = -5.000 PHI = 33.750

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT10)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-9.000
(LVFT30)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-9.000
(CVFT30)	◇	DATA NOT AVAILABLE	-5.000	-9.000

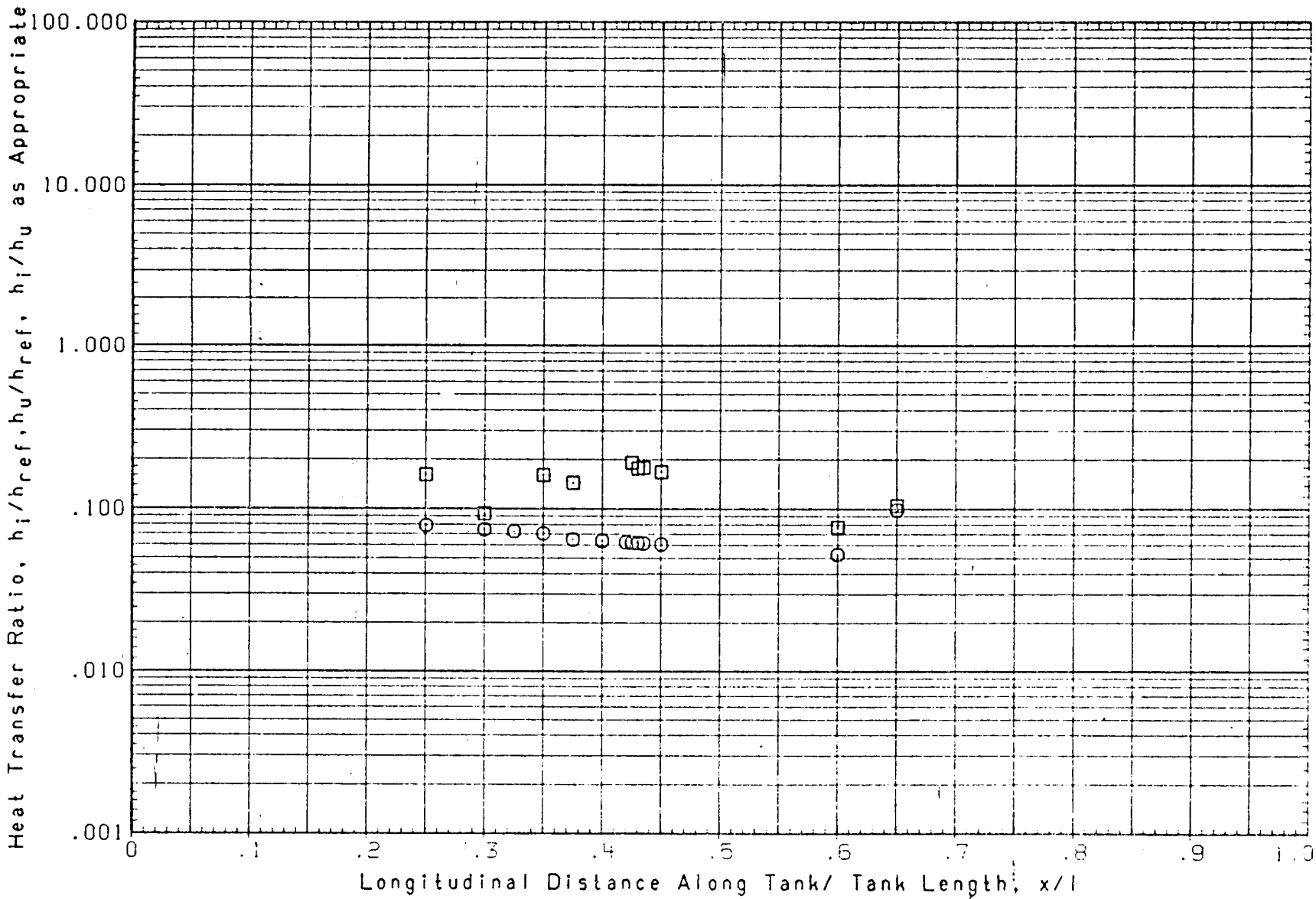


FIG. 24 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = -5, BETA = -9

MACH = 3.010 ALPHA = -5.000 PHI = 35.360

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT10)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-9.000
(LVFT30)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-9.000
(CVFT30)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-9.000

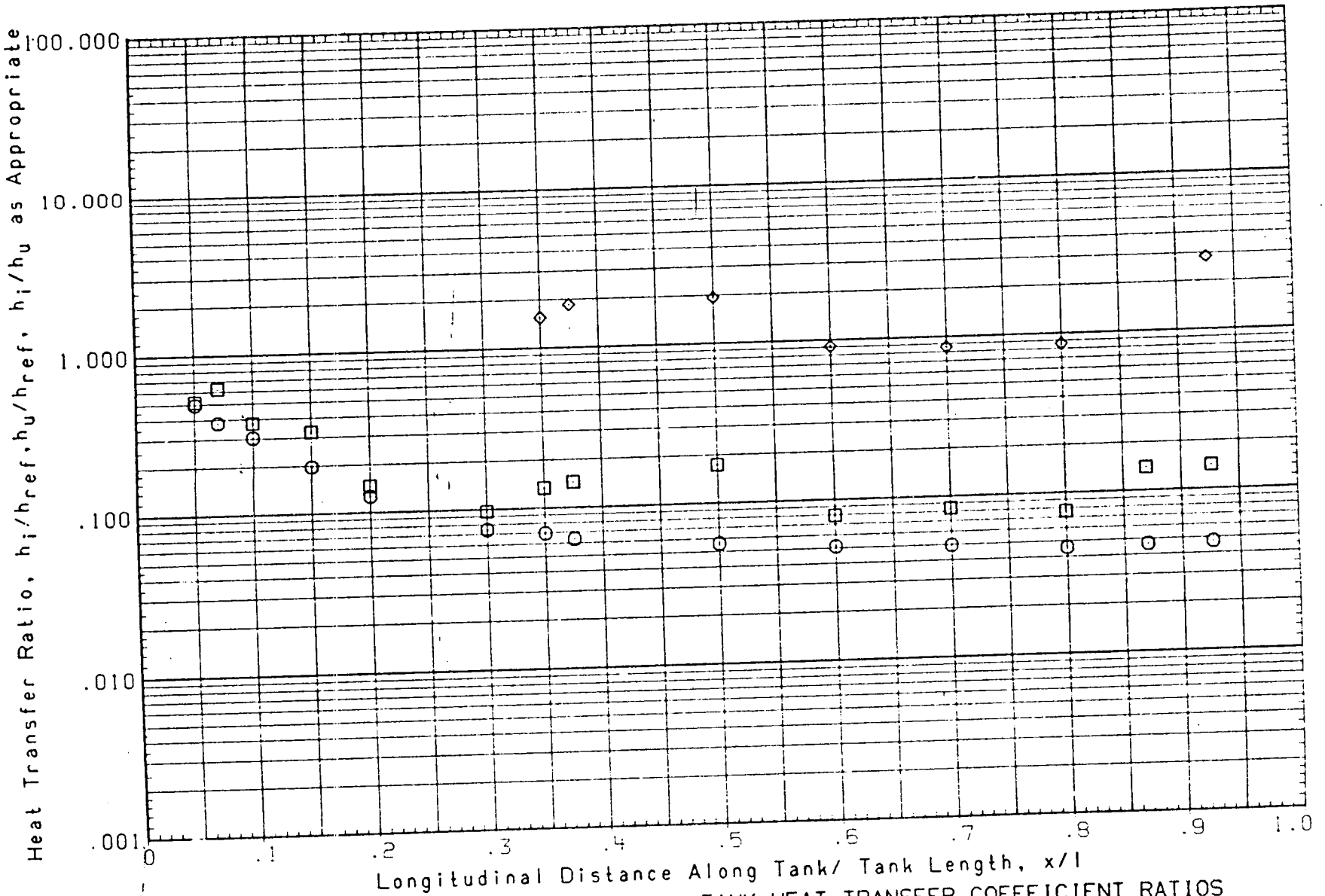


FIG. 24 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = -5, BETA = -9

MACH = 3.010 ALPHA = -5.000 PHI = 37.700

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT10)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-9.000
(LVFT30)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-9.000
(CVFT30)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-9.000

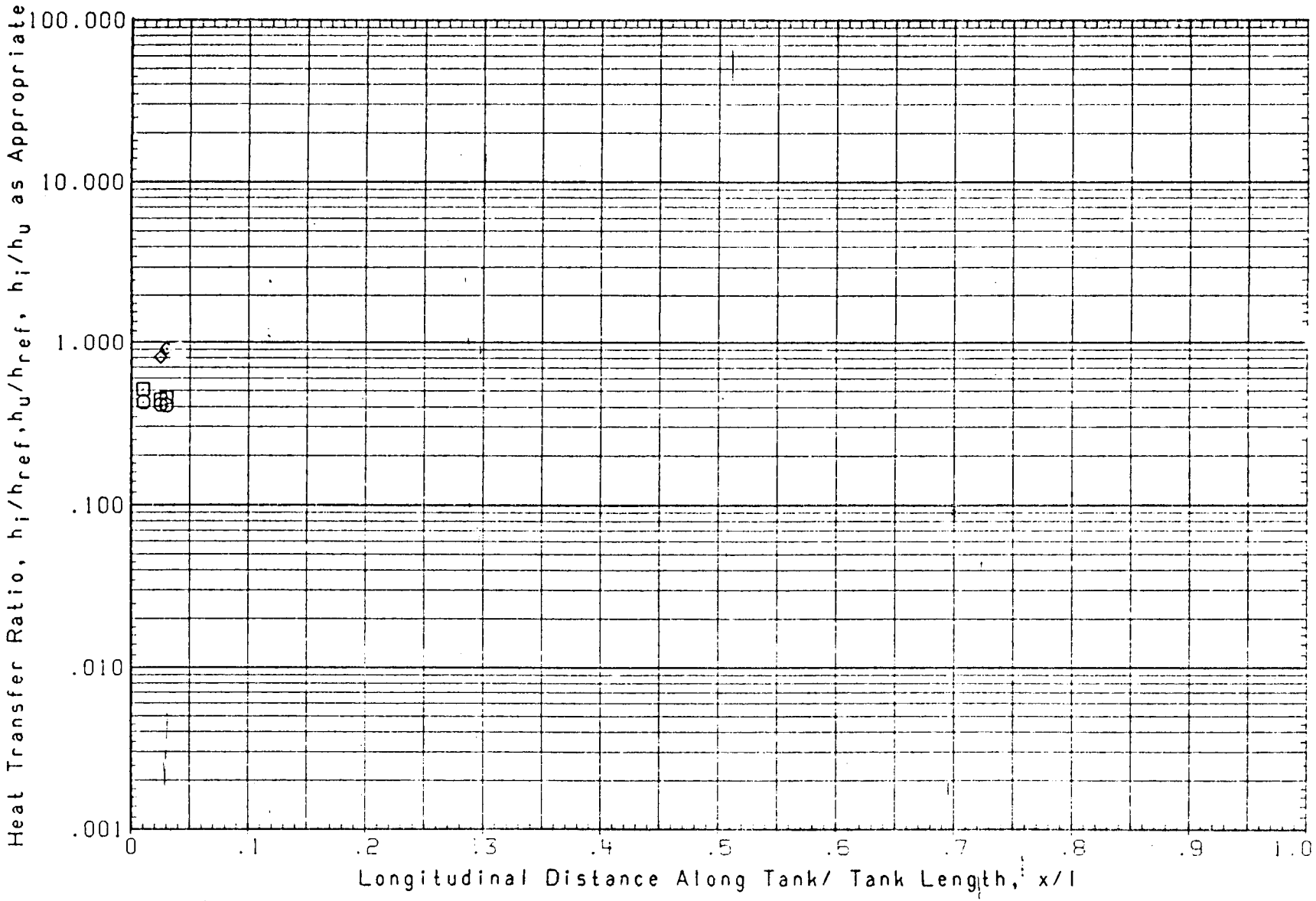


FIG. 24 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = -5, BETA = -9

MACH = 3.010 ALPHA = -5.000 PHI = 39.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		
(KVFT10)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-9.000
(LVFT30)	□	IH41B(V41A-A4A) O I S (SPIKED ET DATA) HI/HREF	-5.000	-9.000
(CVFT30)	◇	DATA NOT AVAILABLE	-5.000	-9.000

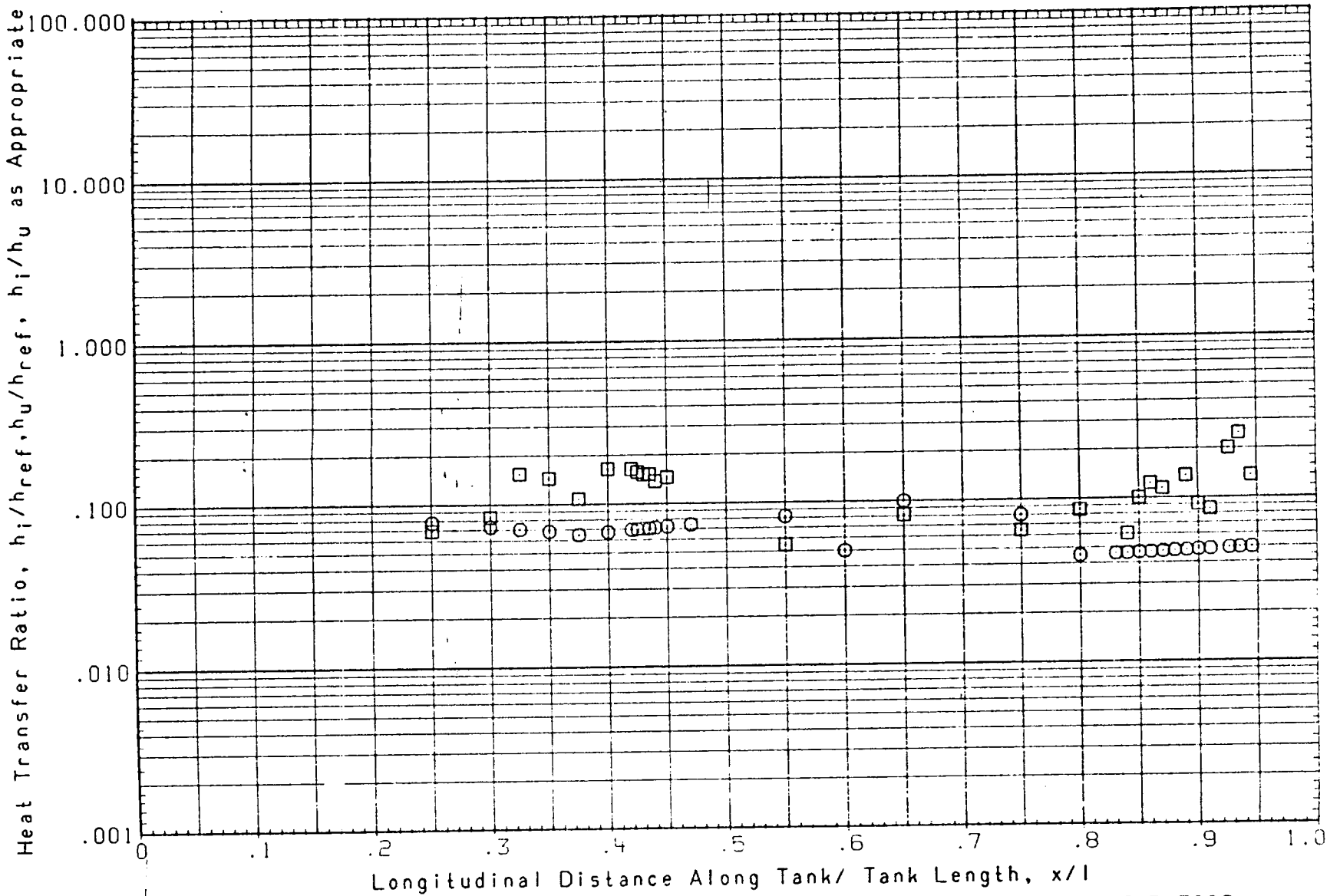


FIG. 24 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = -5, BETA = -9

MACH = 3.010 ALPHA = -5.000 PHI = 45.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT10)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-9.000
(LVFT30)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-9.000
(CVFT30)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-9.000

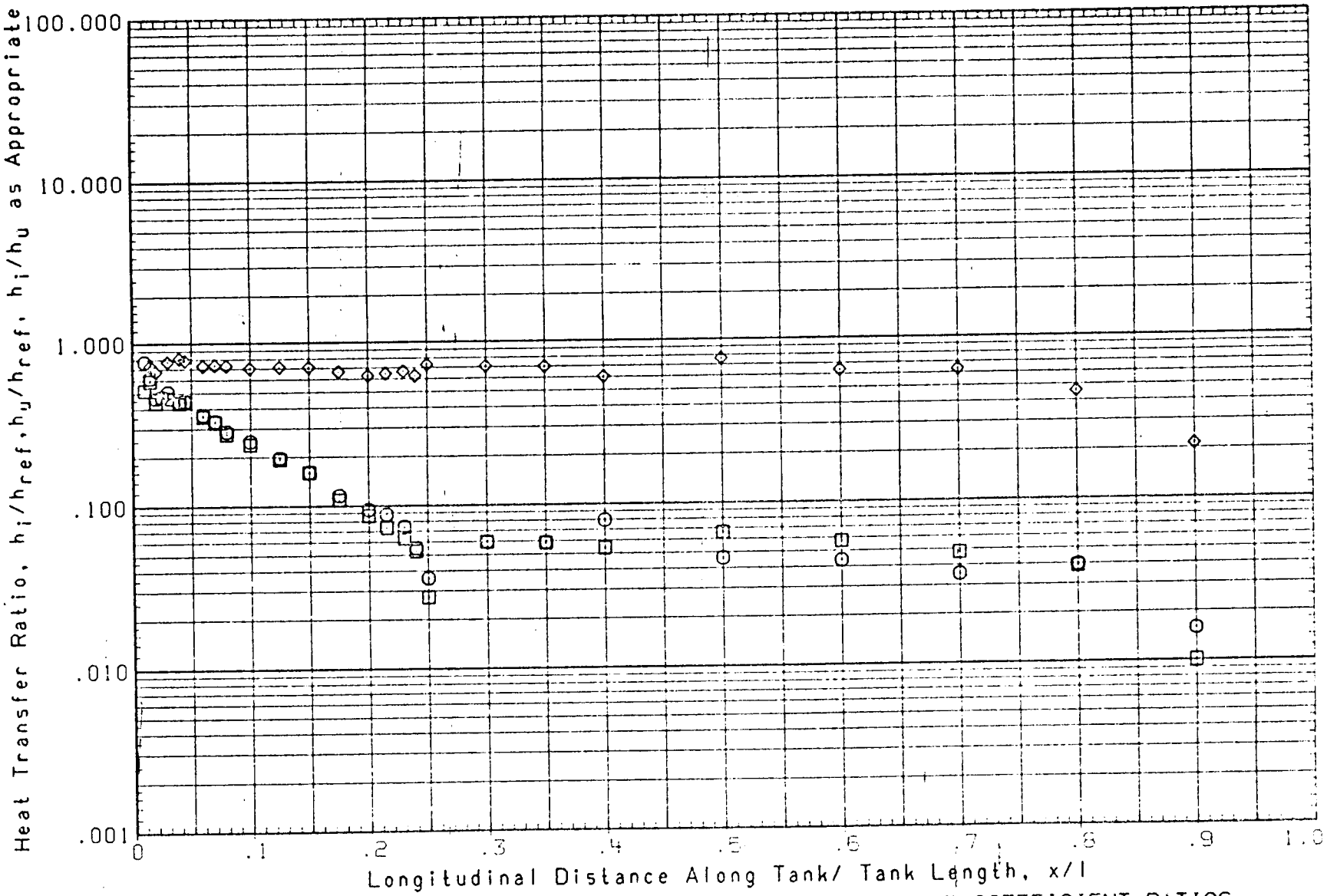


FIG. 24 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS LEEWARD SIDE, ALPHA = -5, BETA = -9

MACH = 3.010 ALPHA = -5.000 PHI = 180.000

DATA SET	SYMBOL	CONFIGURATION		
(KVFT10)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-9.000
(LVFT30)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-9.000
(CVFT30)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-9.000

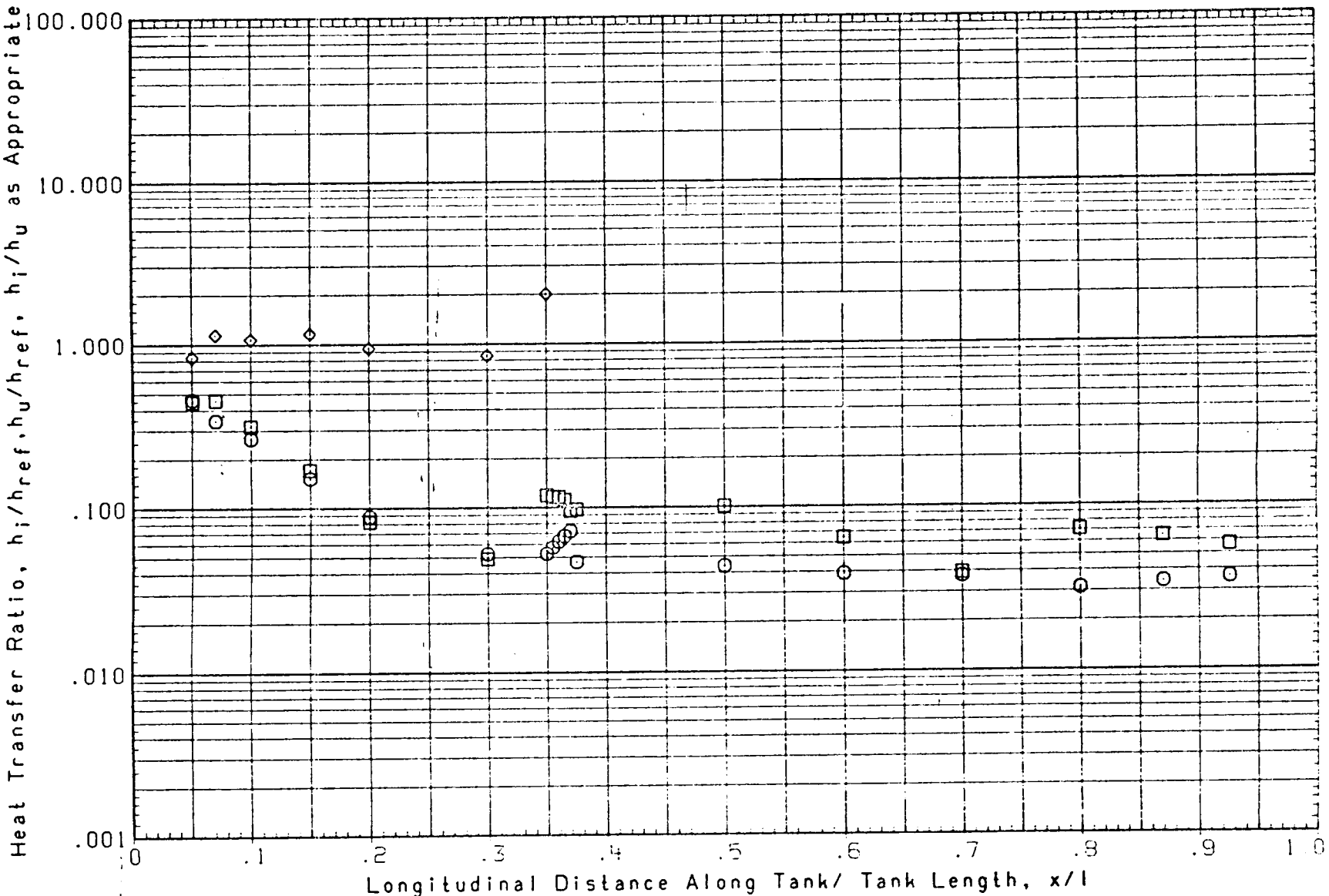


FIG. 24 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = -5, BETA = -9

MACH = 4.020 ALPHA = -5.005 PHI = 29.890

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT10)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-9.000
(LVFT30)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-9.000
(CVFT30)	◇	DATA NOT AVAILABLE	-5.000	-9.000

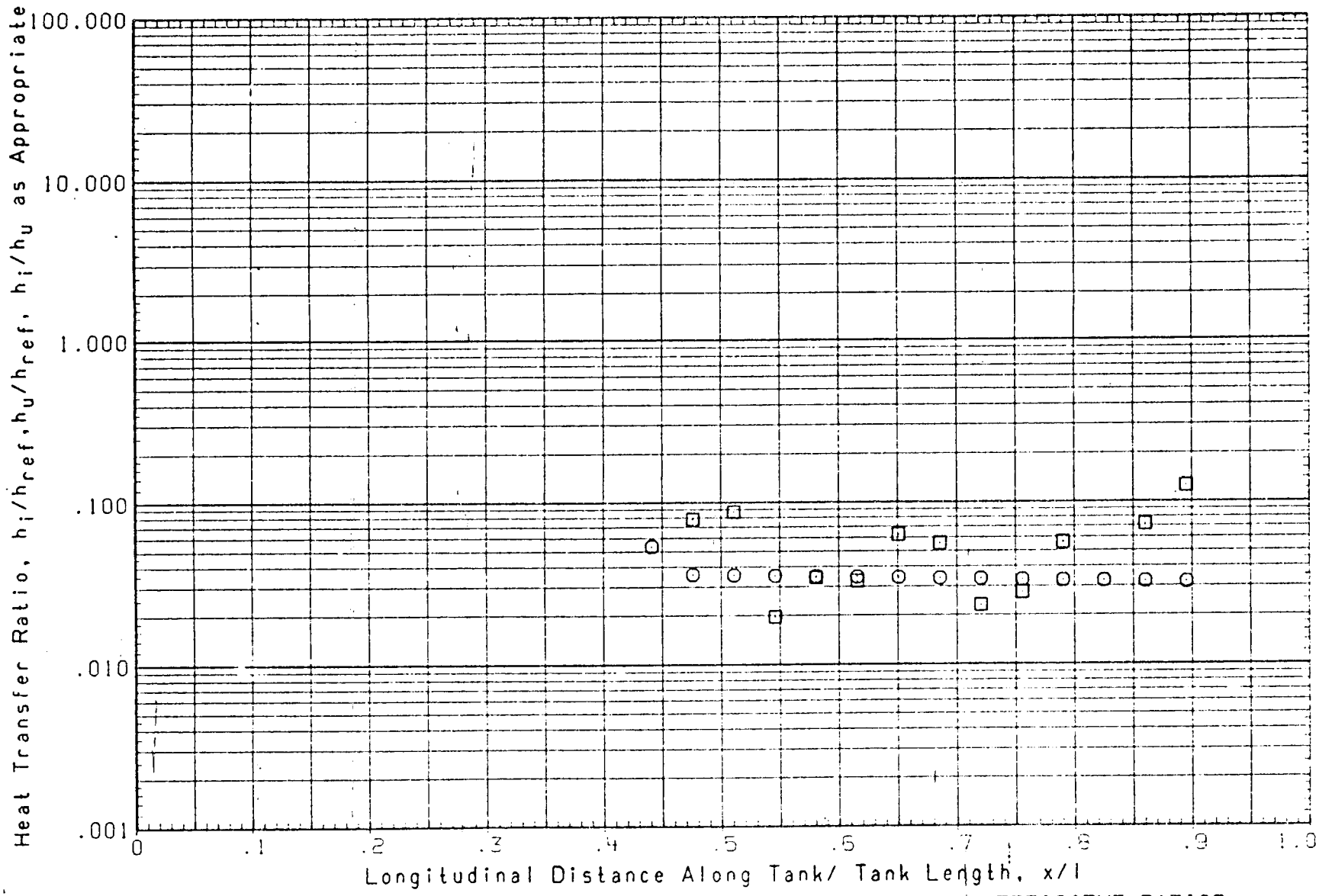


FIG. 24 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = -5, BETA = -9

MACH = 4.020 ALPHA = -5.005 PHI = 31.439

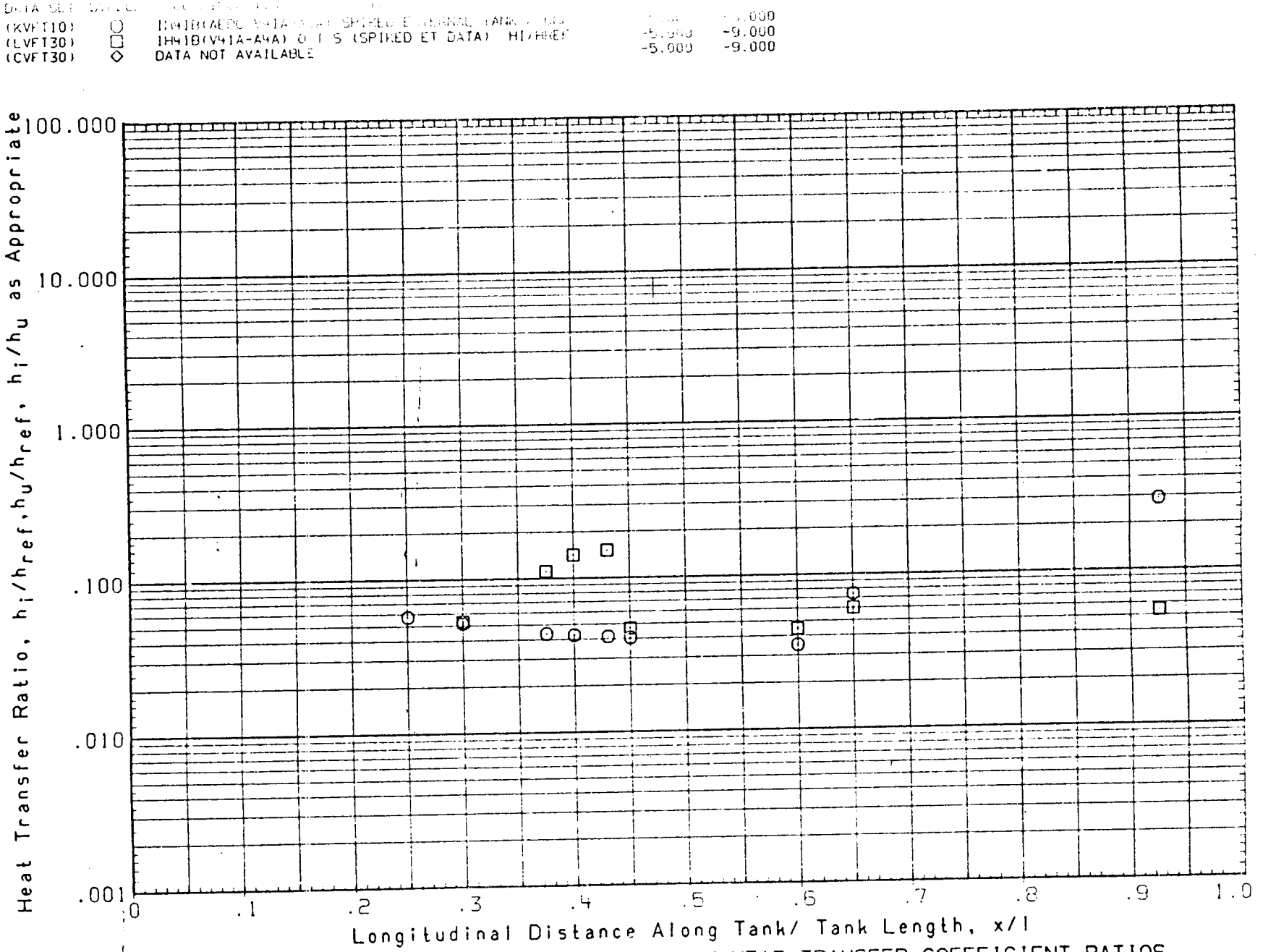


FIG. 24 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = -5, BETA = -9

MACH = 4.020 ALPHA = -5.005 PHI = 33.750

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT10)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-9.000
(LVFT30)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-9.000
(CVFT30)	◇	DATA NOT AVAILABLE	-5.000	-9.000

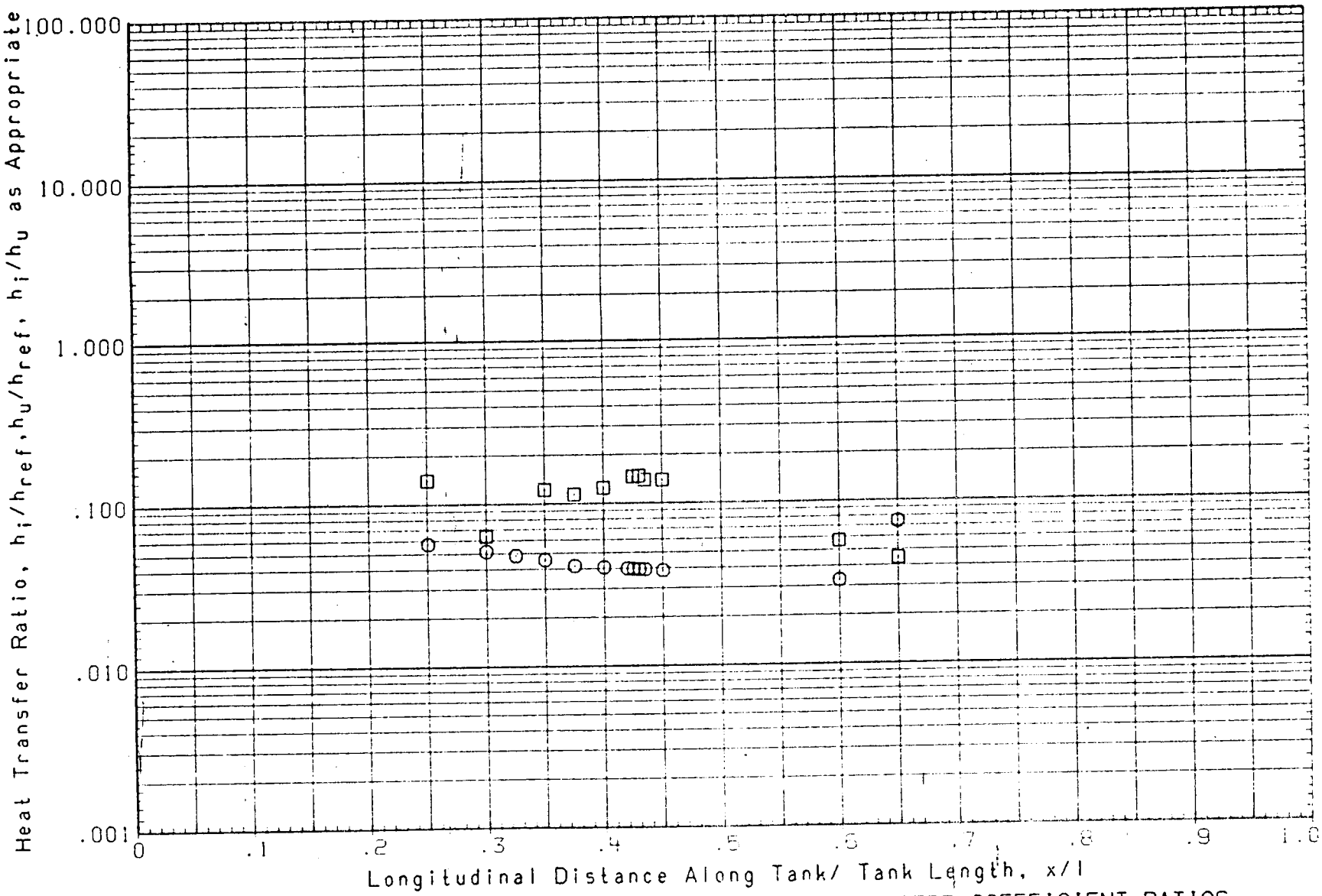


FIG. 24 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = -5, BETA = -9

MACH = 4.020 ALPHA = -5.005 PHI = 35.320

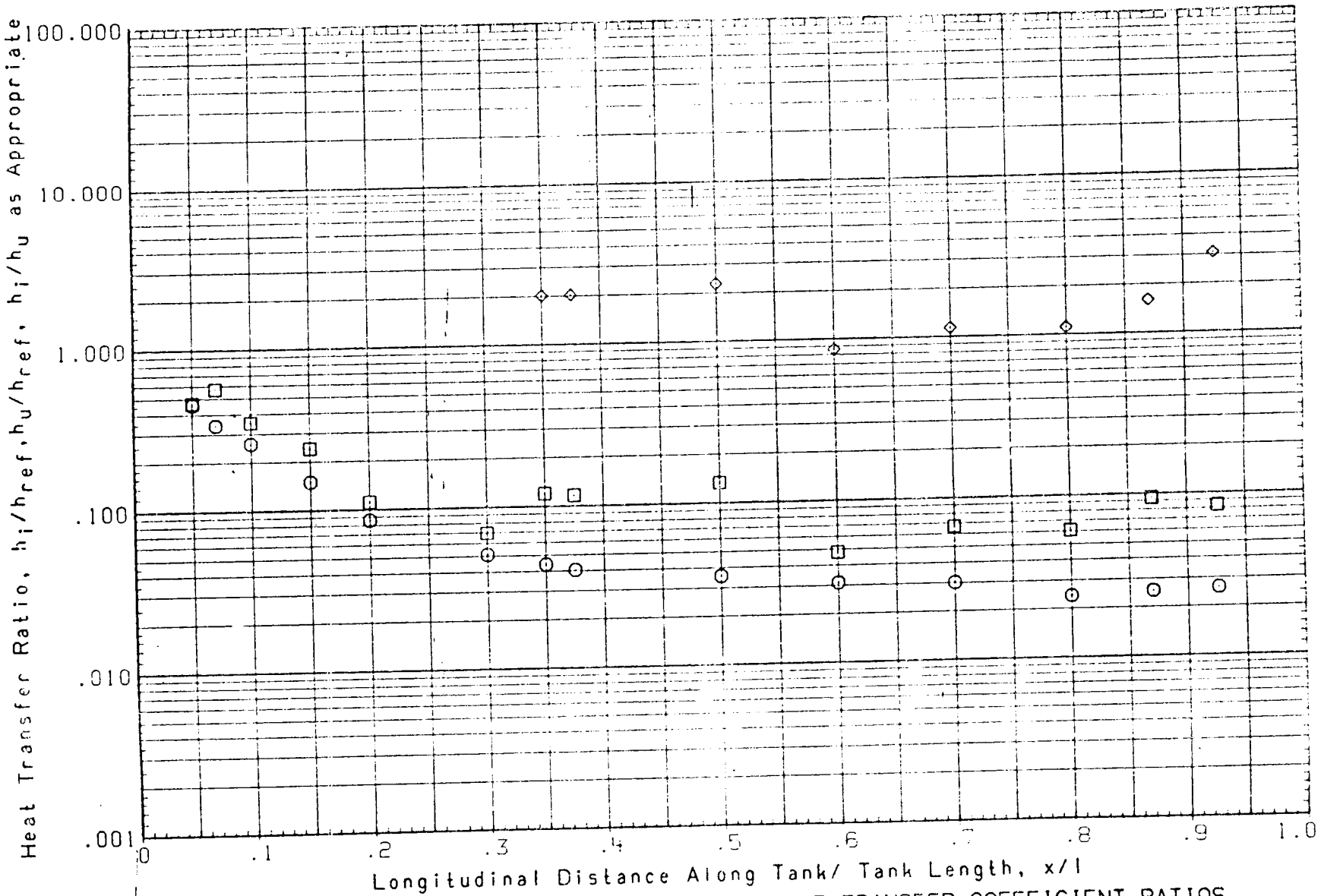


FIG. 24 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = -5, BETA = -9

MACH = 4.020 ALPHA = -5.005 PHI = 37.700

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT10)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-9.000
(LVFT30)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-9.000
(CVFT30)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-9.000

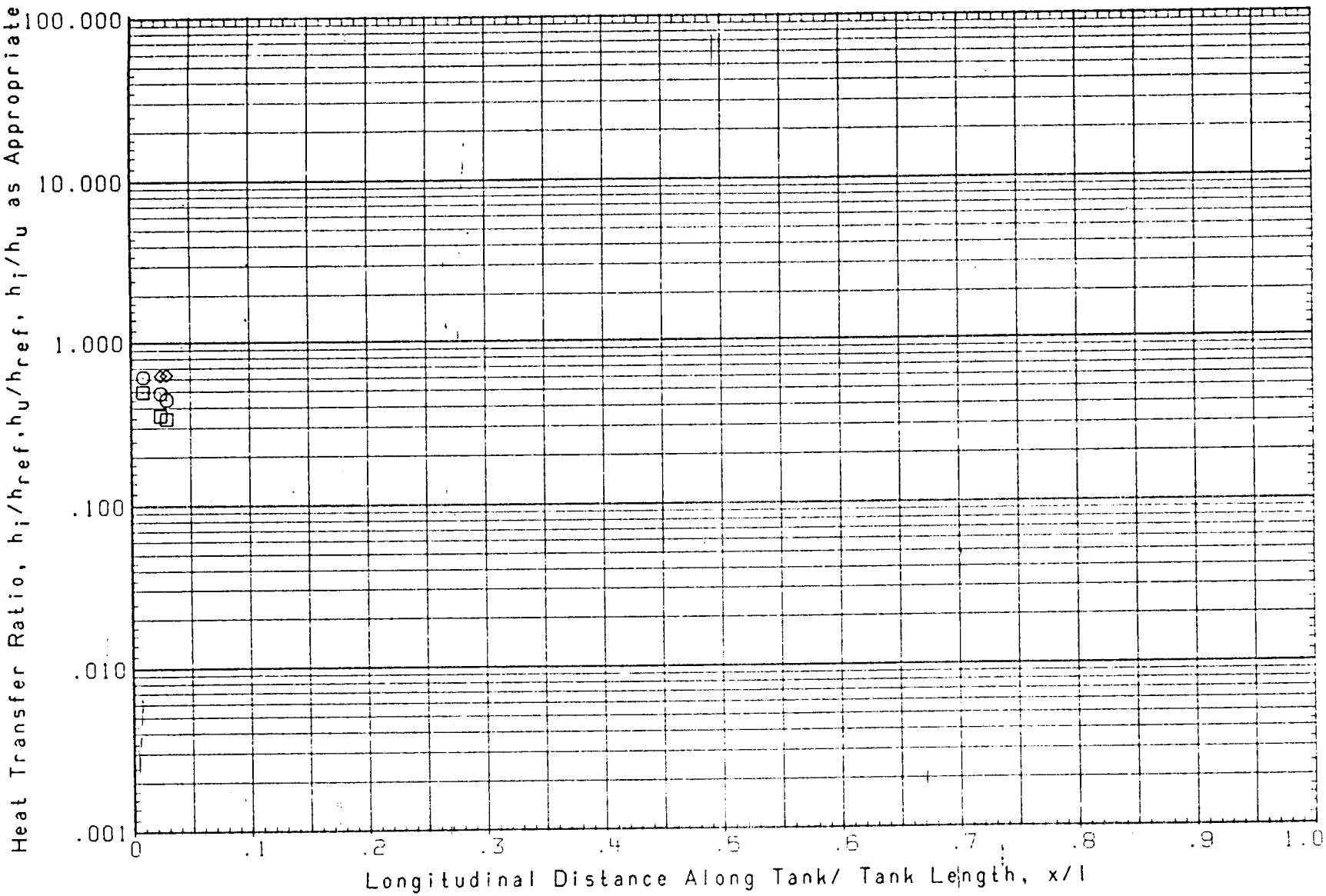


FIG. 24 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = -5, BETA = -9

MACH = 4.020 ALPHA = -5.005 PHI = 33.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT10)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-9.000
(LVFT30)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-9.000
(CVFT30)	◇	DATA NOT AVAILABLE	-5.000	-9.000

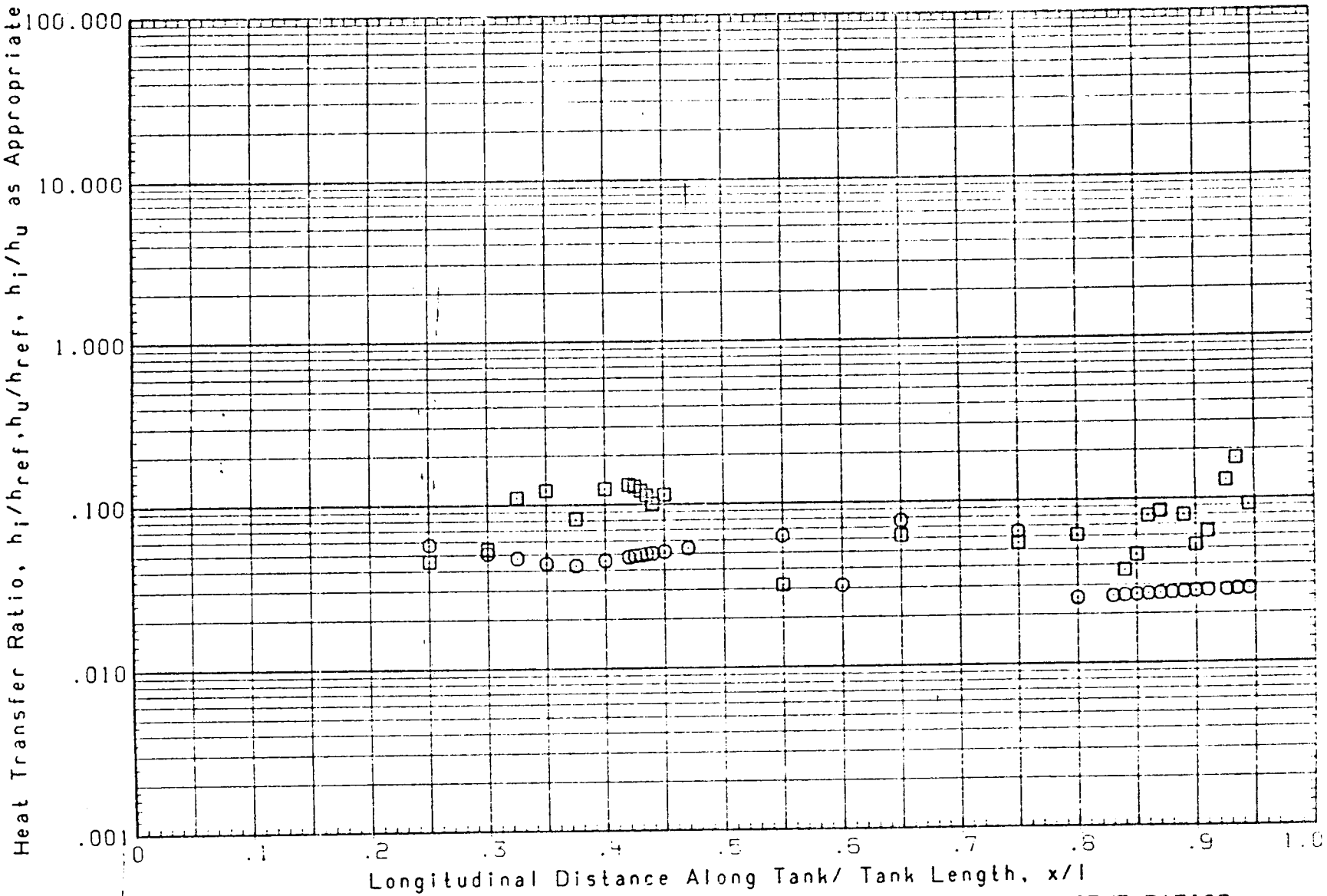


FIG. 24 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = -5, BETA = -9

MACH = 4.020 ALPHA = -5.005 PHI = 45.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT10)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	-9.000
(LVFT30)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	-9.000
(CVFT30)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	-9.000

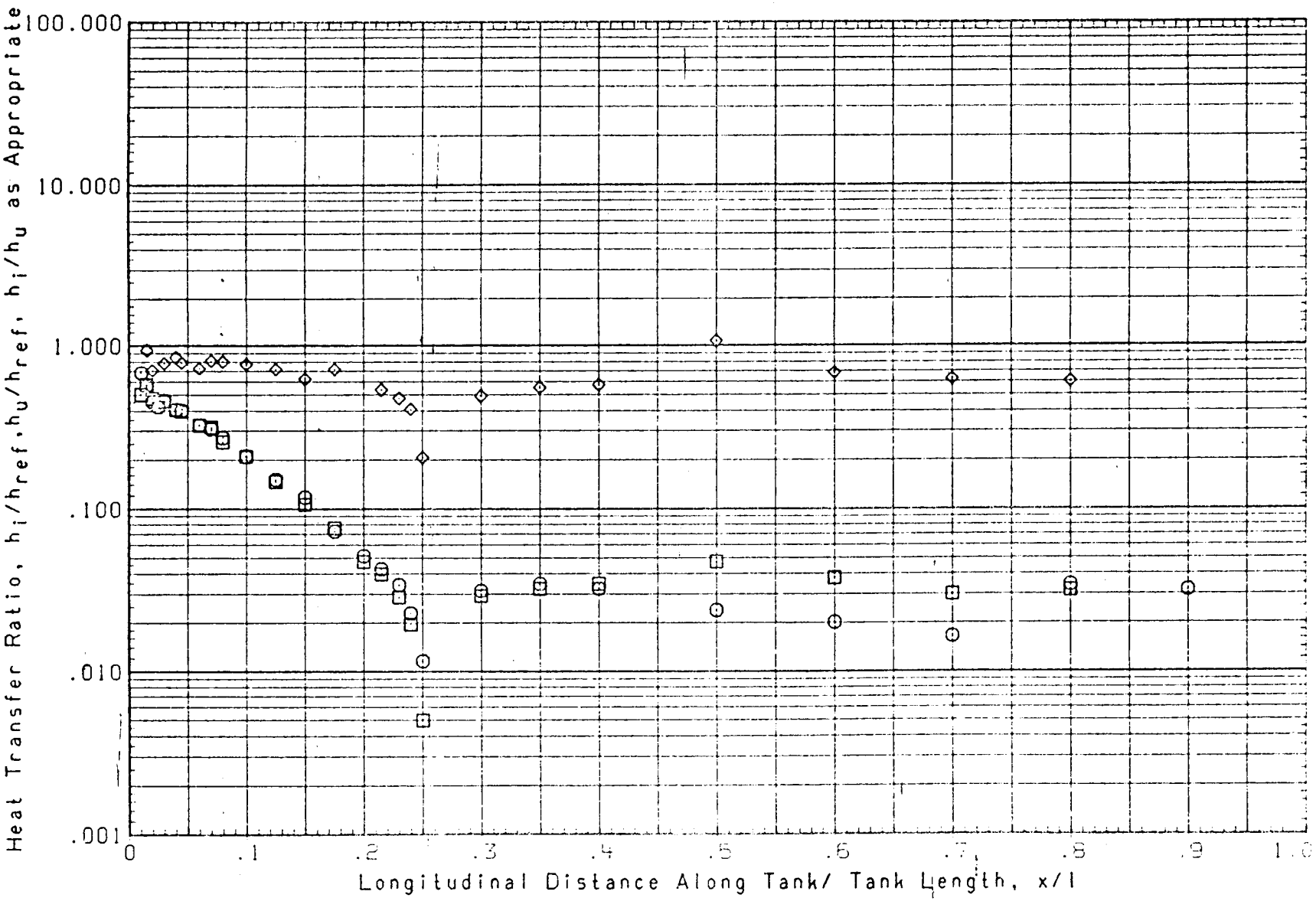


FIG. 24 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = -5, BETA = -9

MACH = 4.020 ALPHA = -5.005 PHI = 180.000

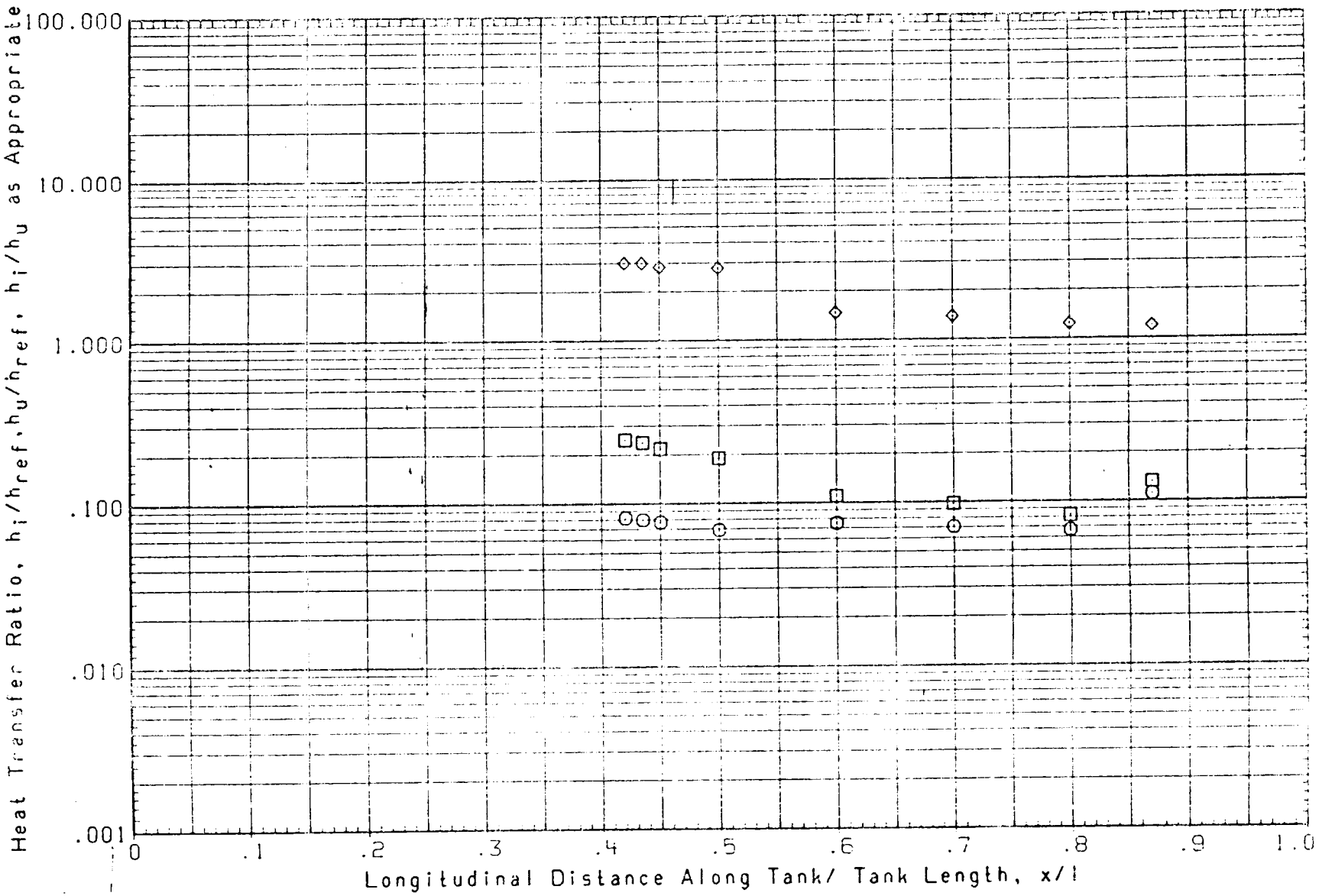


FIG. 25 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = 6

MACH = 3.010 ALPHA = -4.995 PHI = 322.300

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	6.000
(LVFT31)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	6.000
(BVFT31)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	6.000

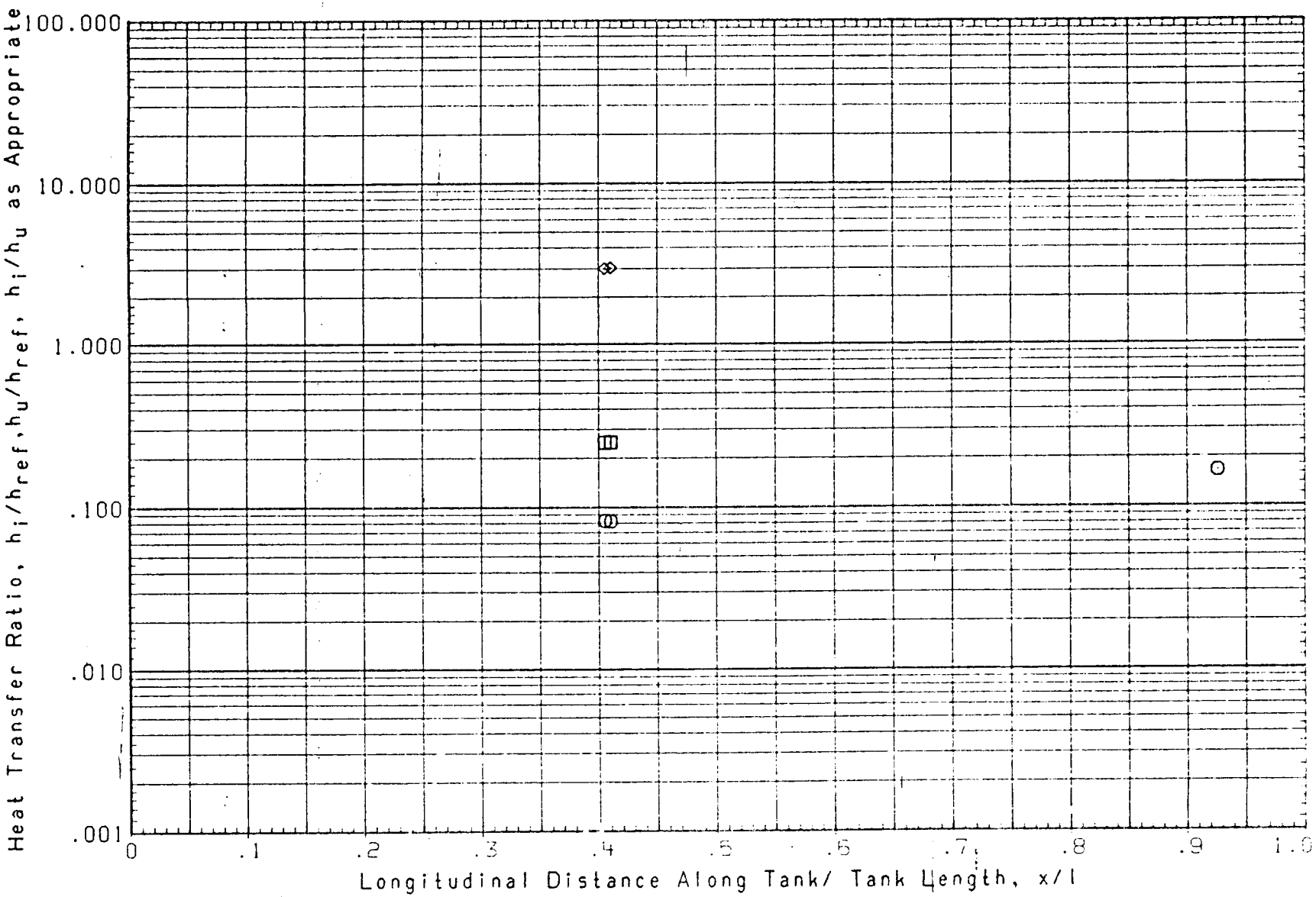


FIG. 25 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = 6

MACH = 3.010 ALPHA = -4.995 PHI = 324.450

DATA SET	SYMBOL	COMPONENT DESCRIPTION		BETA
(KVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	[illegible]	6.000
(LVFT31)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	6.000
(BVFT31)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	6.000

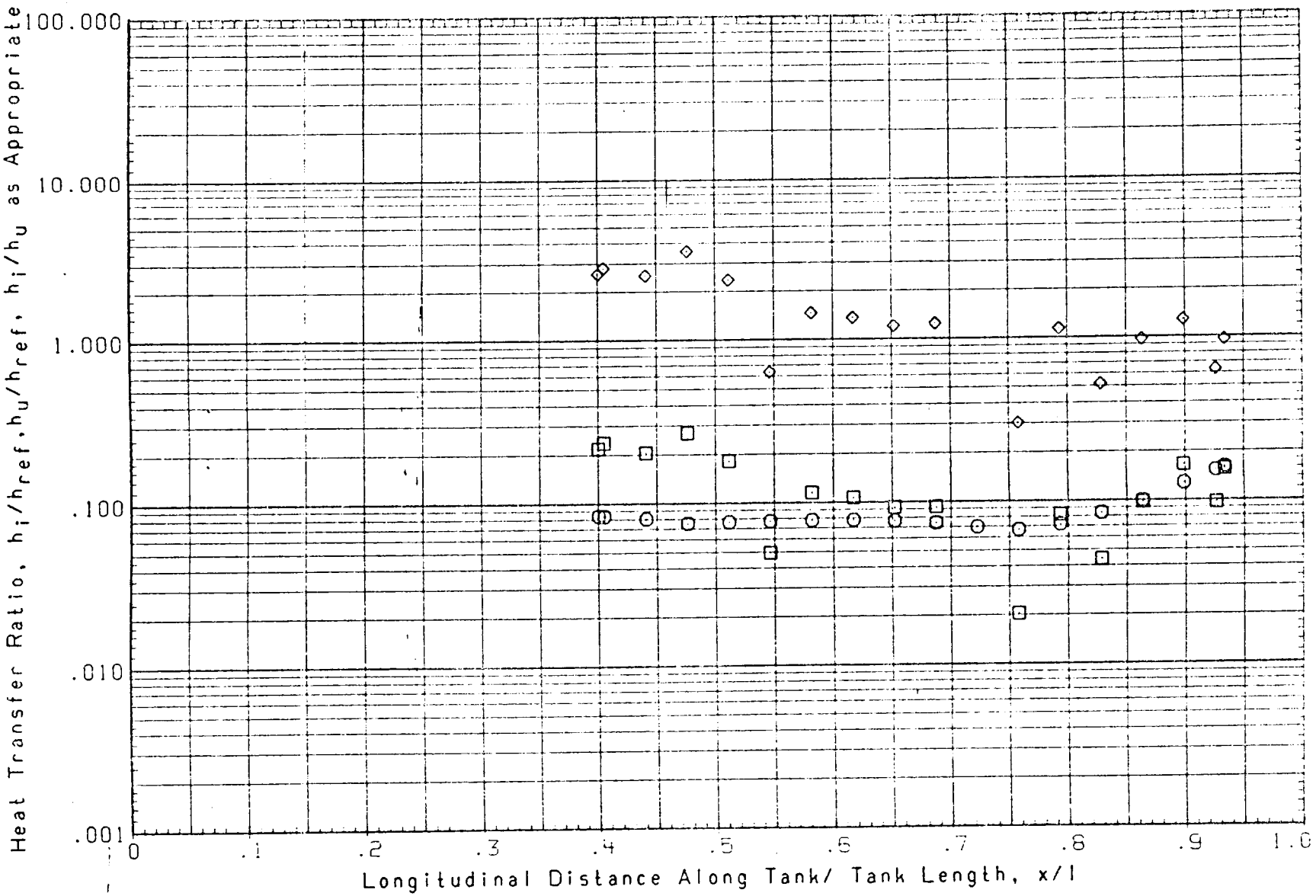


FIG. 25 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = 6

MACH = 3.010 ALPHA = -4.995 PHI = 326.850

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	6.000
(LVFT31)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	6.000
(BVFT31)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	6.000

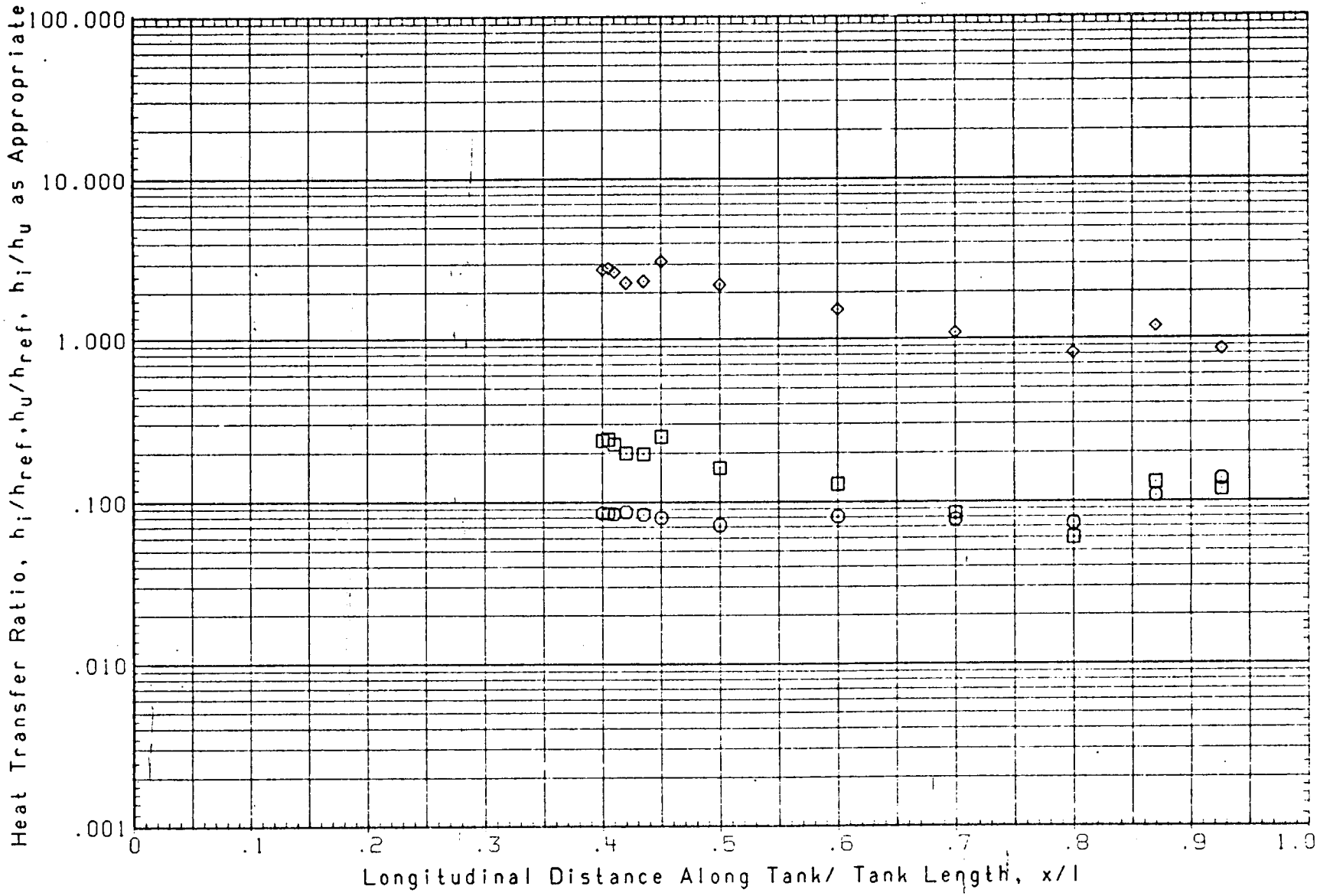


FIG. 25 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = 6

MACH = 3.010 ALPHA = -4.995 PHI = 330.200

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	6.000
(LVFT31)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	6.000
(BVFT31)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	6.000

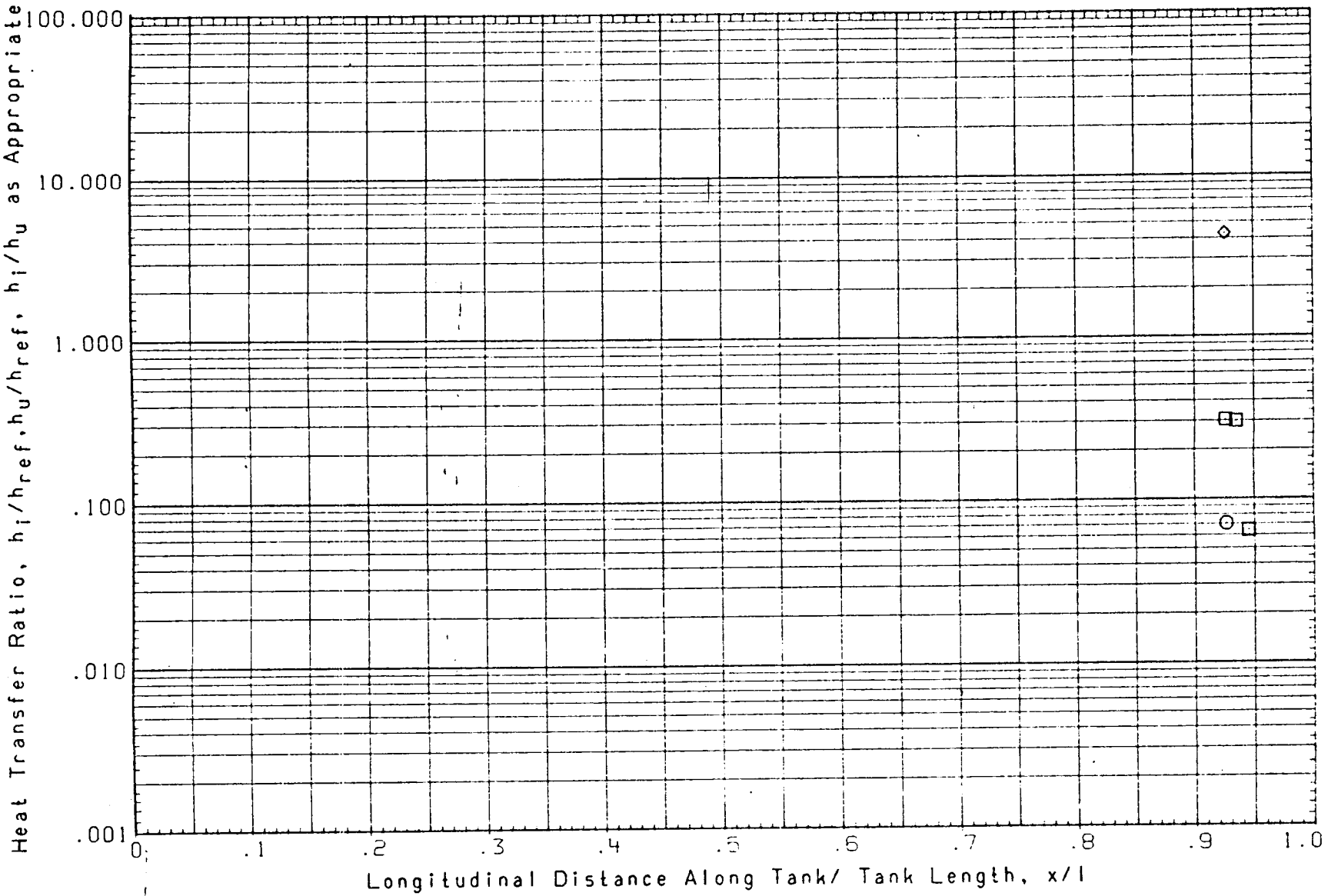


FIG. 25 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = 6

MACH = 3.010 ALPHA = -4.995 PHI = 334.990

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	6.000
(LVFT31)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	6.000
(BVFT31)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	6.000

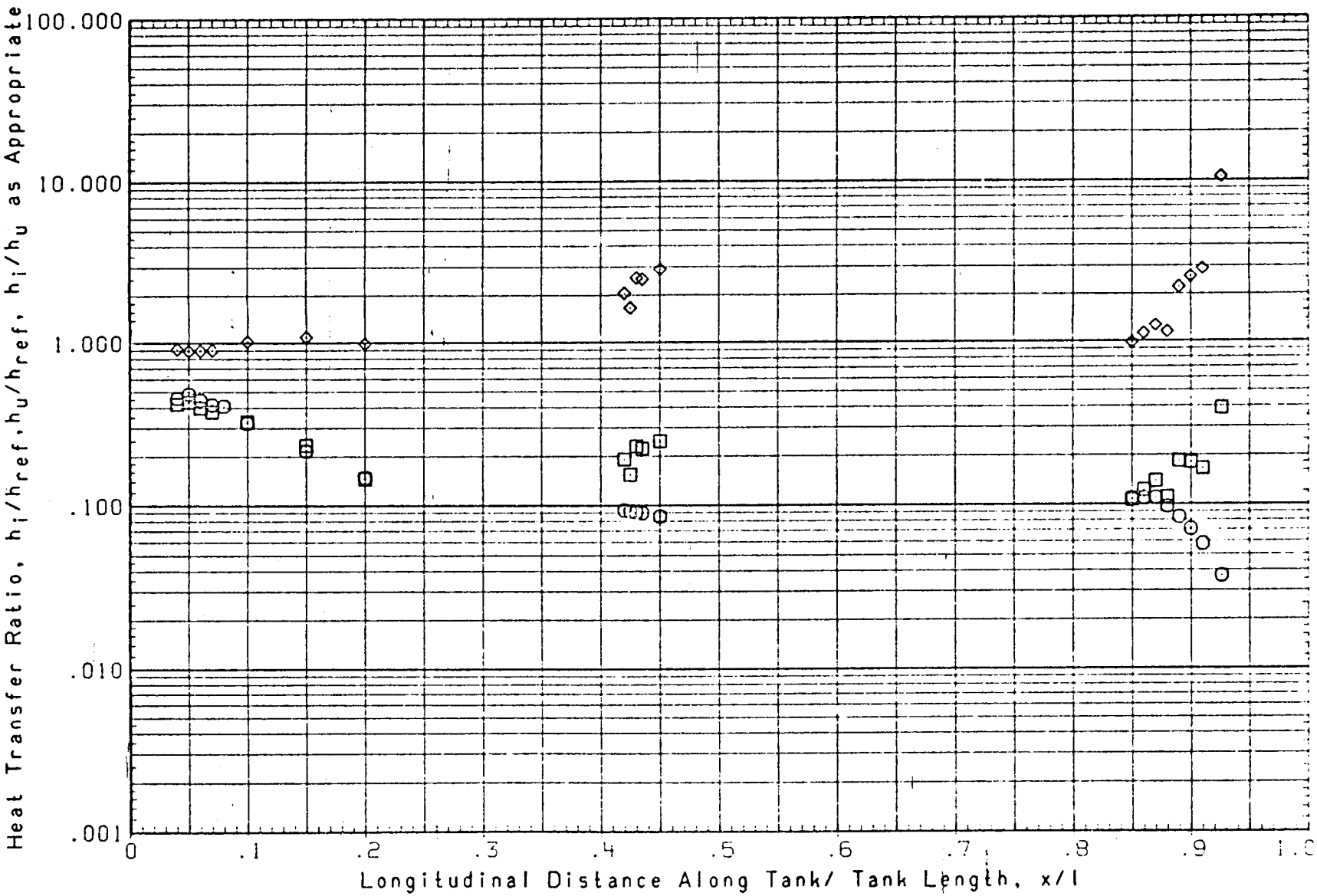


FIG. 25 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = 6

MACH = 3.010 ALPHA = -4.995 PHI = 337.500

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	6.000
(LVFT31)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	6.000
(BVFT31)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	6.000

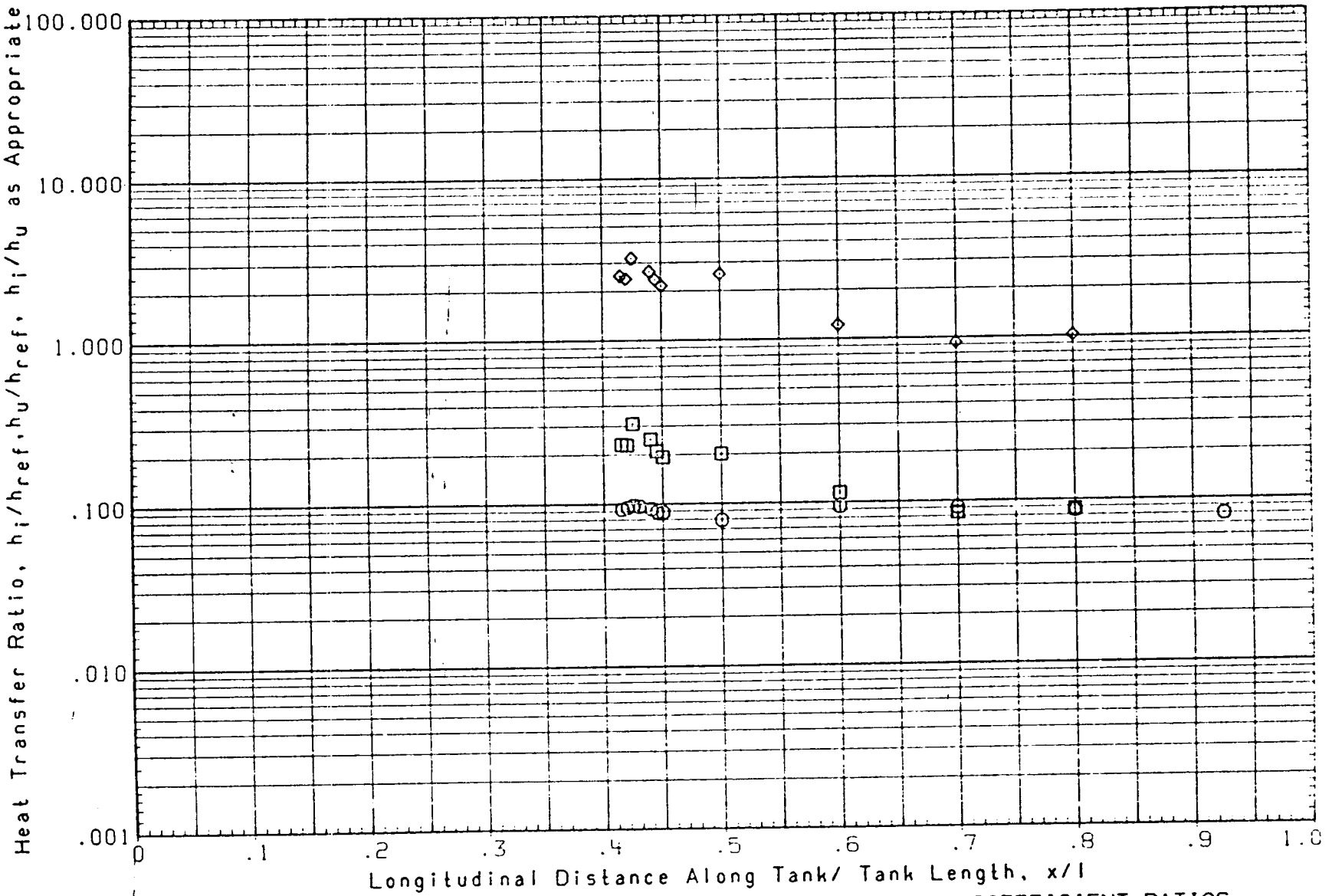


FIG. 25 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = 6

MACH = 3.010 ALPHA = -4.995 PHI = 343.120

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	6.000
(LVFT31)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	6.000
(BVFT31)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	6.000

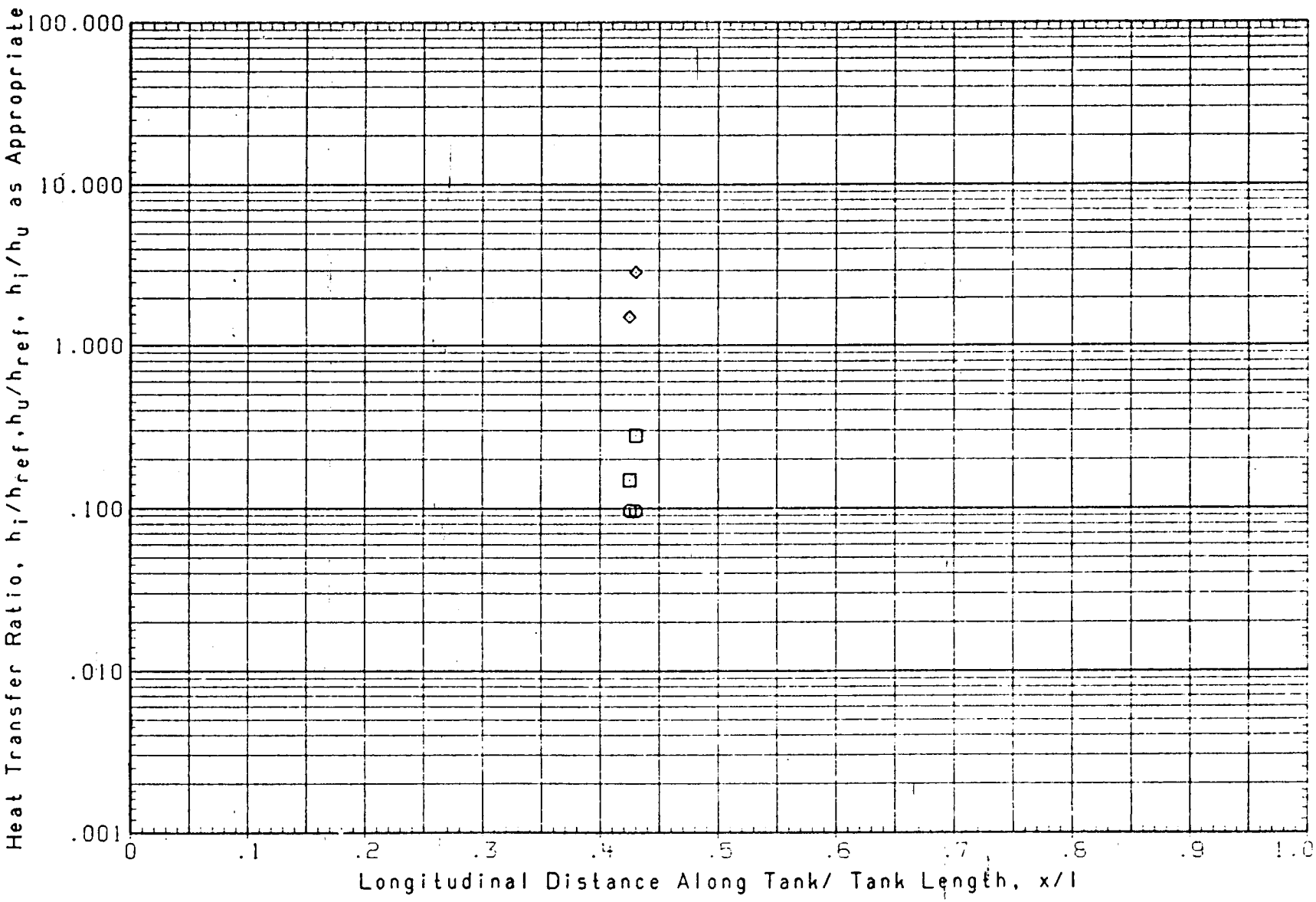


FIG. 25 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = 6

MACH = 3.010 ALPHA = -4.995 PHI = 345.560

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	6.000
(LVFT31)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	6.000
(BVFT31)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	6.000

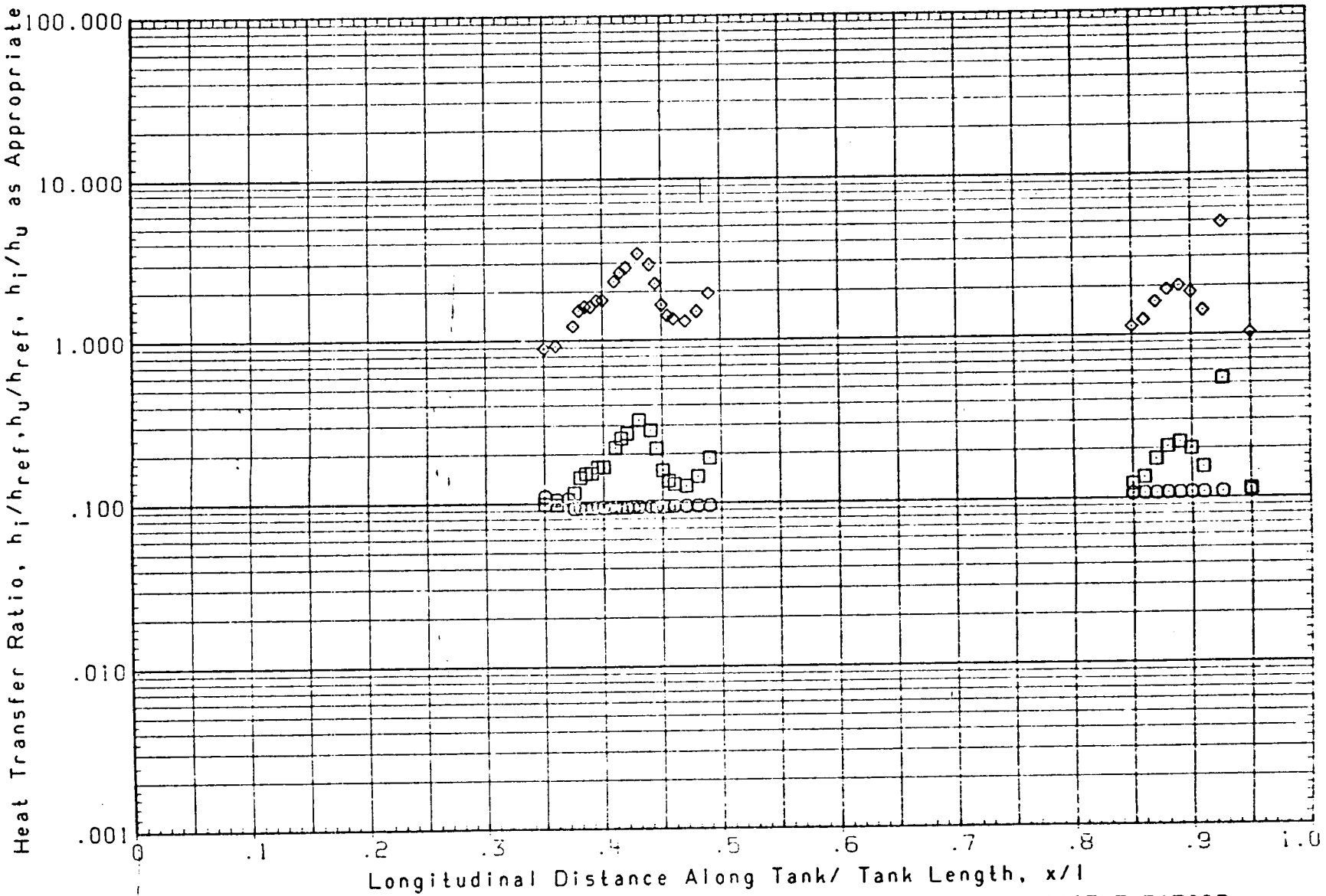


FIG. 25 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = 6

MACH = 3.010 ALPHA = -4.995 PHI = 348.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	6.000
(LVFT31)	□	DATA NOT AVAILABLE	-5.000	6.000
(BVFT31)	◇	DATA NOT AVAILABLE	-5.000	6.000

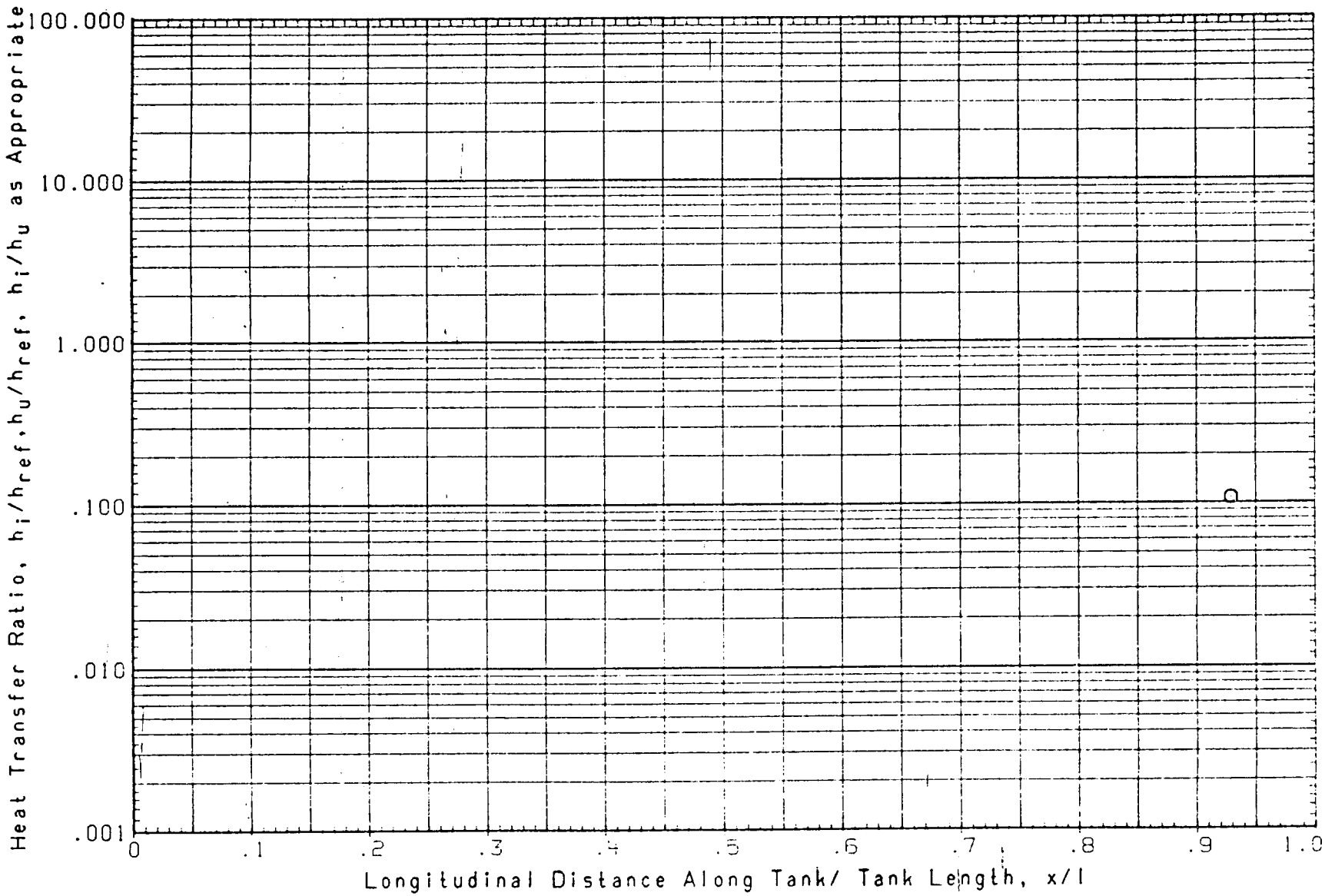


FIG. 25 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = 6

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	6.000
(LVFT31)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	6.000
(BVFT31)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	6.000

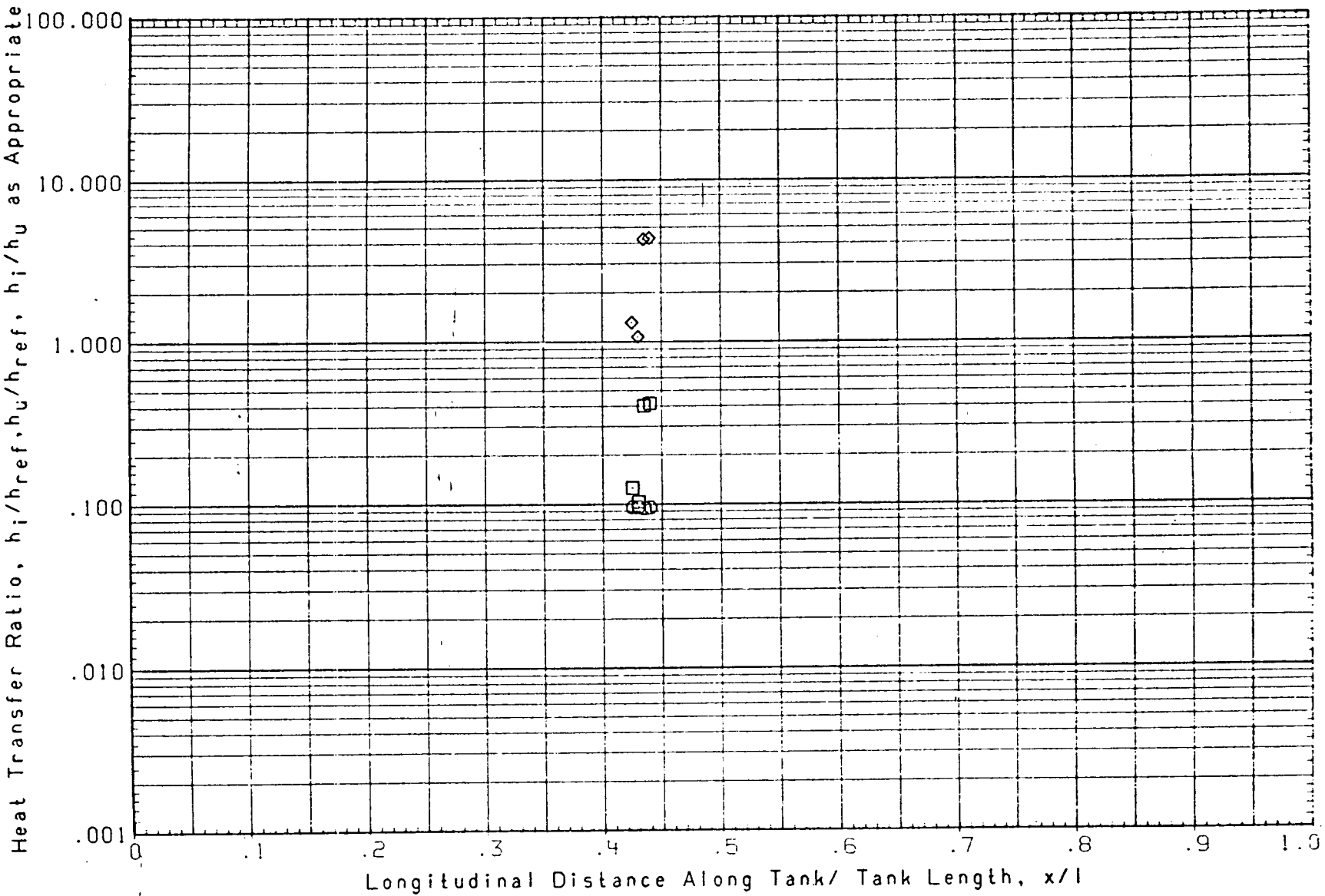


FIG. 25 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = 6

MACH = 3.010 ALPHA = -4.995 PHI = 354.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	6.000
(LVFT31)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	6.000
(BVFT31)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	6.000

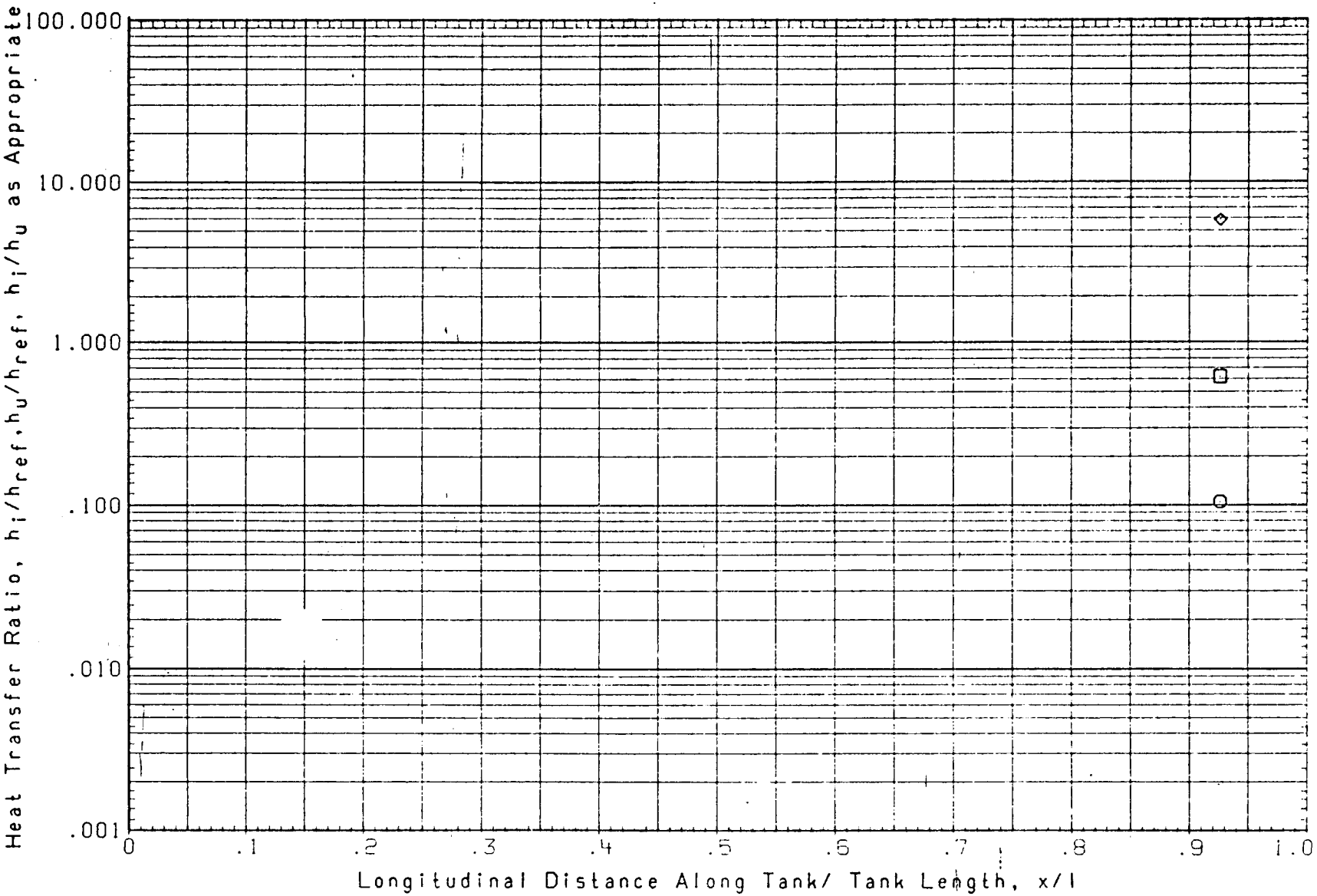


FIG. 25 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = 6

MACH = 3.010 ALPHA = -4.985 PHI = 355.160

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	6.000
(LVFT31)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	6.000
(BVFT31)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	6.000

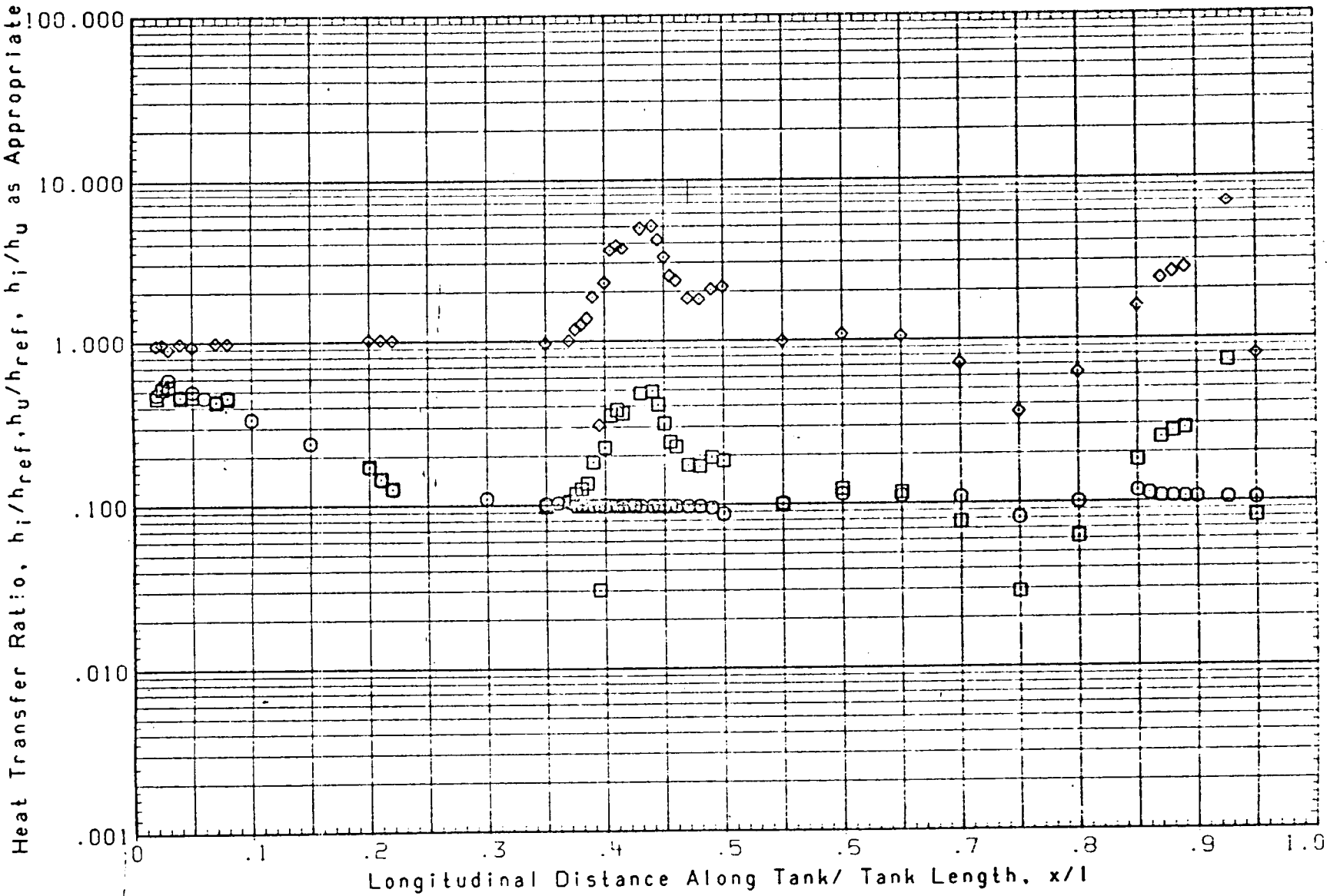


FIG. 25 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = 6

MACH = 3.010 ALPHA = -4.995 PHI = 360.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	6.000
(LVFT31)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	6.000
(BVFT31)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	6.000

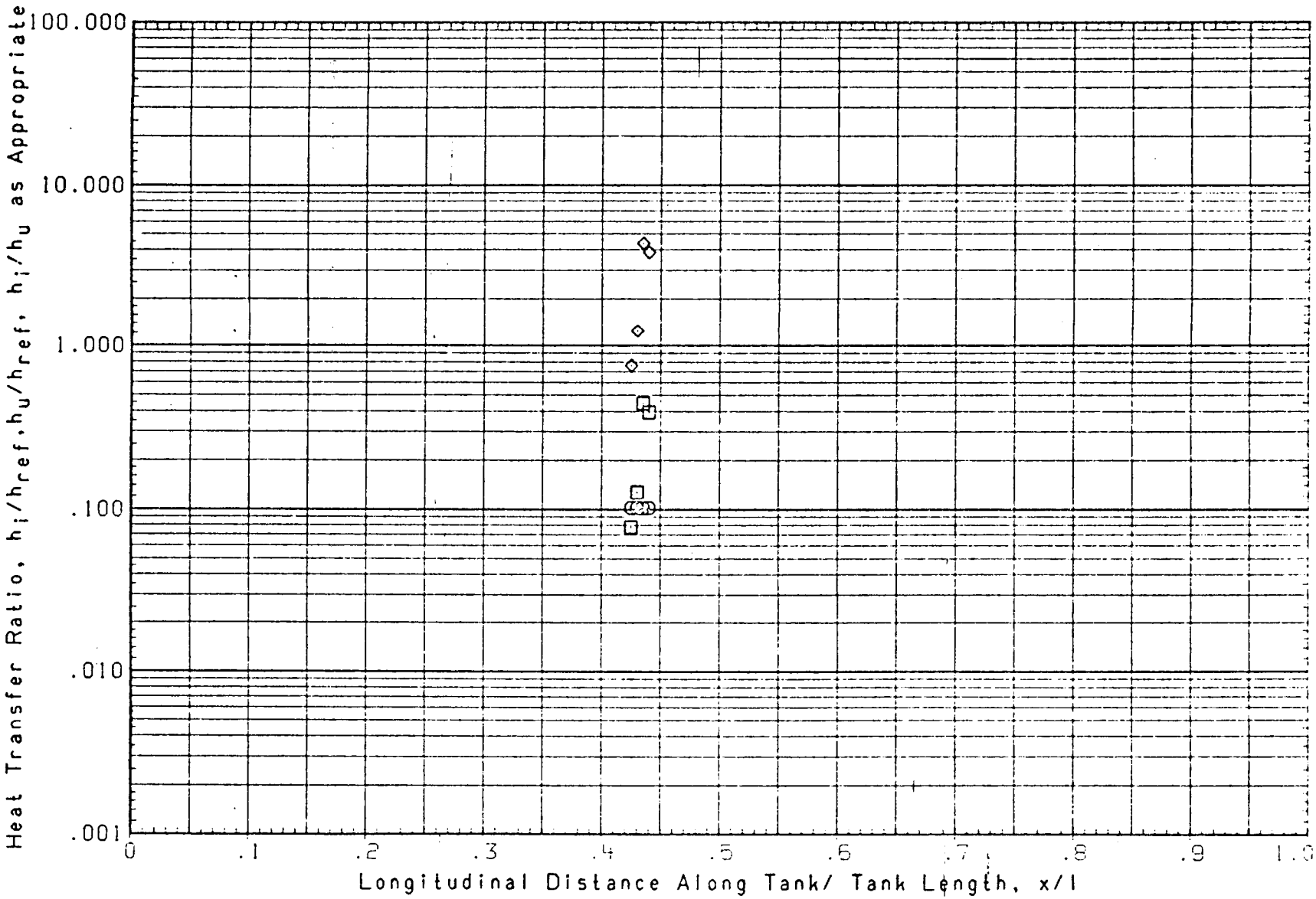


FIG. 25 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = 6

MACH = 3.010 ALPHA = -4.995 PHI = 5.830

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	6.000
(LVFT31)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	6.000
(BVFT31)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	6.000

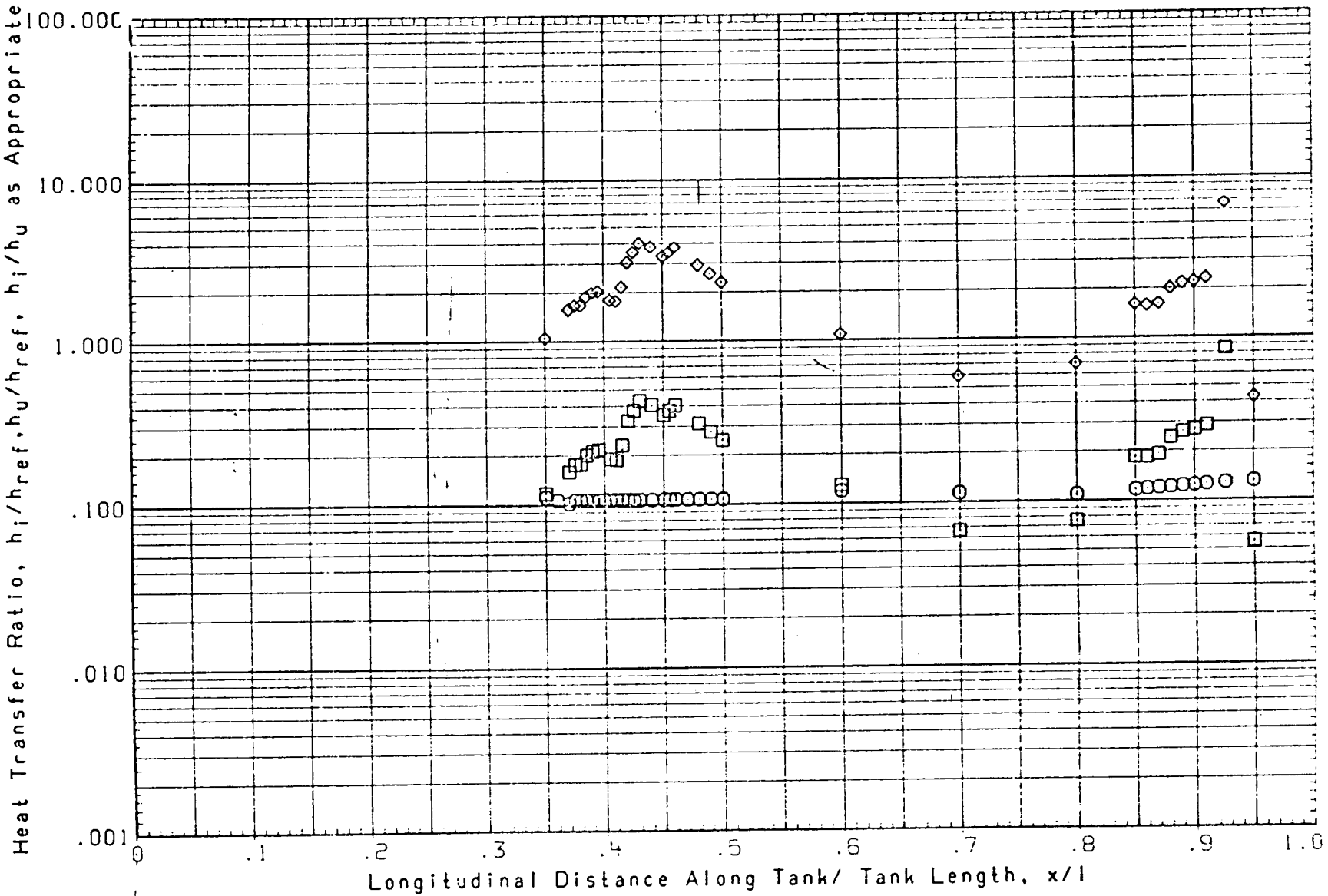


FIG. 25 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS WINDWARD SIDE, ALPHA = -5, BETA = 6

MACH = 3.010 ALPHA = -4.935 PHI = 11.250

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	6.000
(LVFT31)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	6.000
(BVFT31)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	6.000

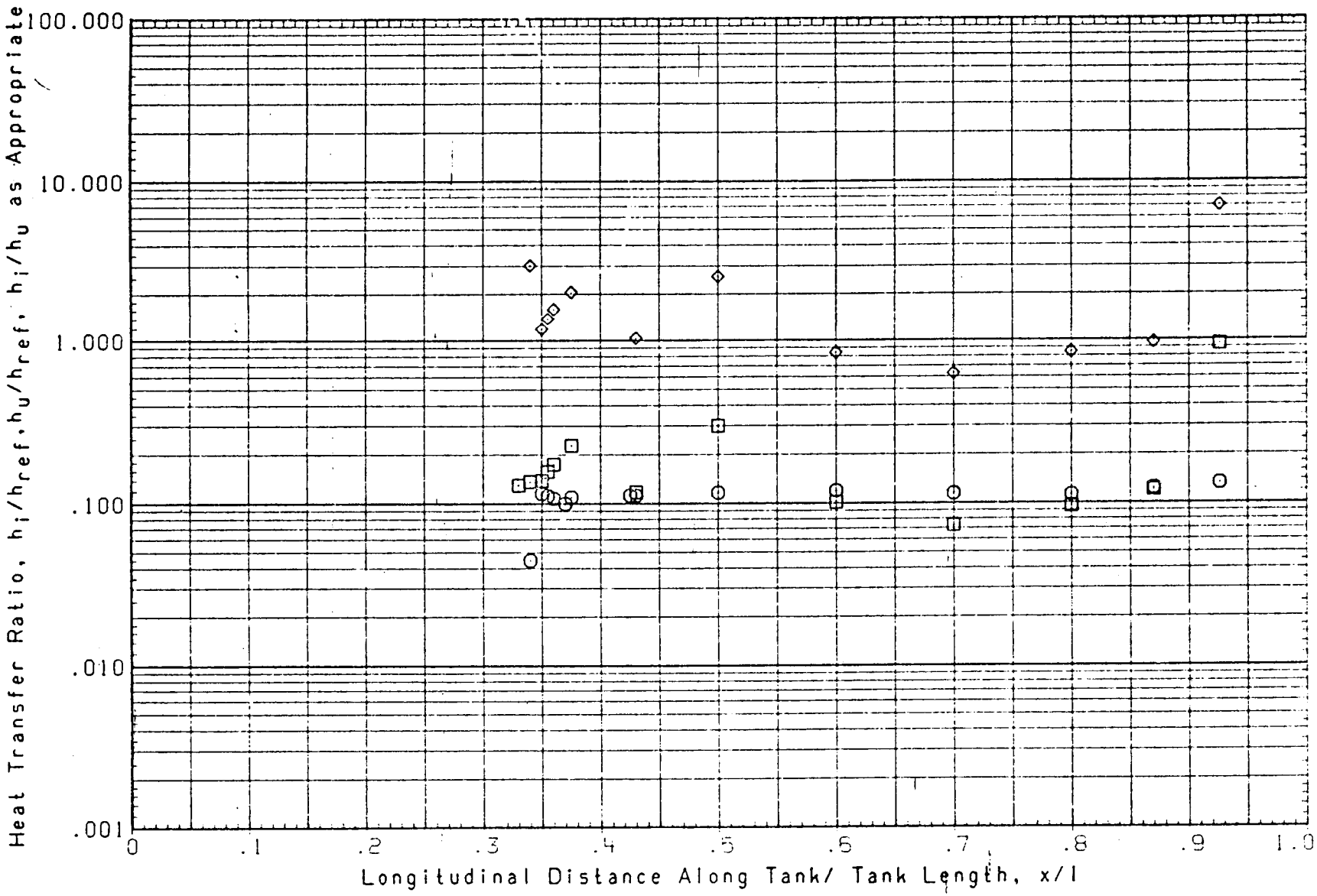


FIG. 25 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = 6

MACH = 3.010 ALPHA = -4.995 PHI = 17.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	6.000
(LVFT31)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	6.000
(BVFT31)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	6.000

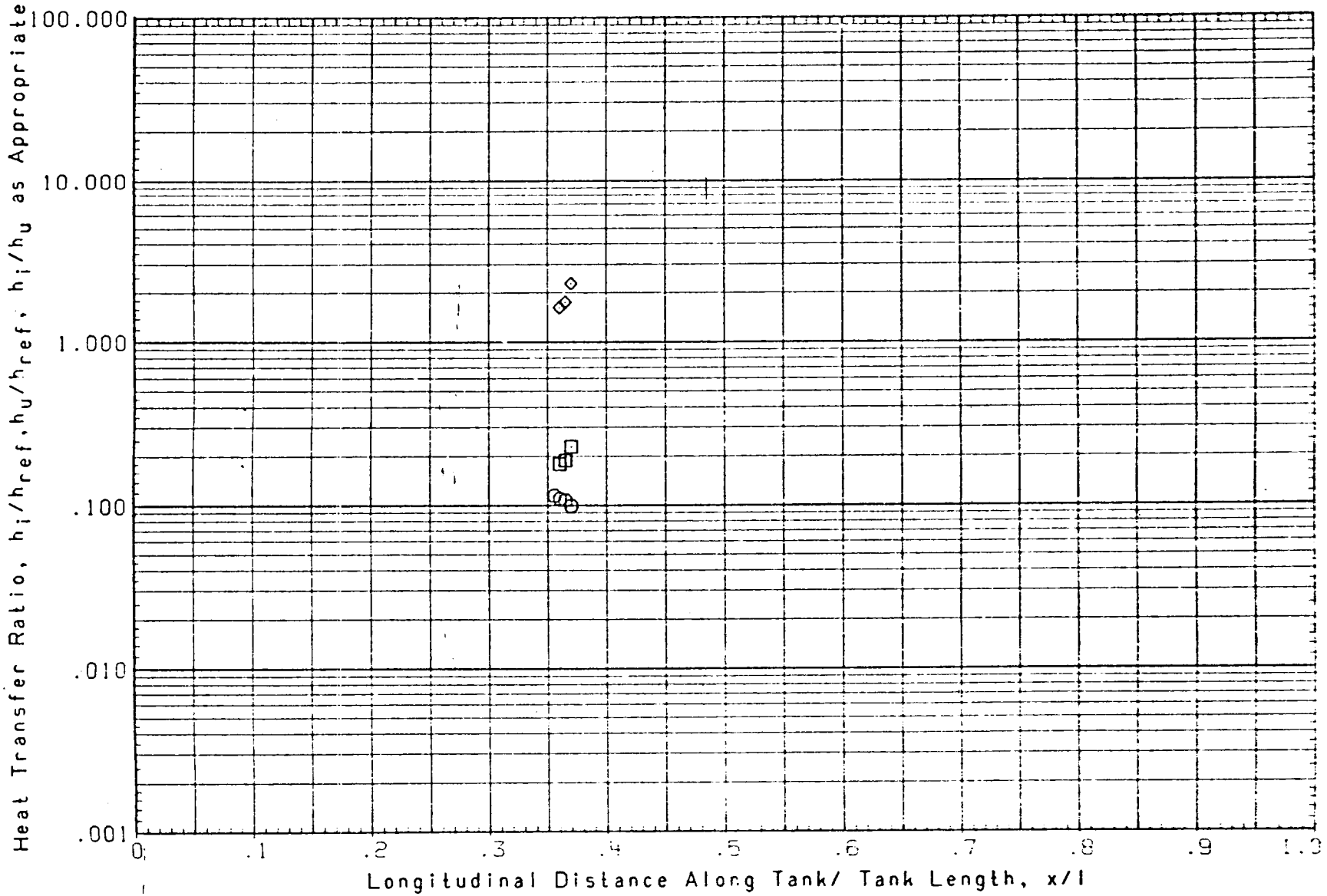


FIG. 25 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = 6

MACH = 3.010 ALPHA = -4.995 PHI = 28.989

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	6.000
(LVFT31)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	6.000
(BVFT31)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	6.000

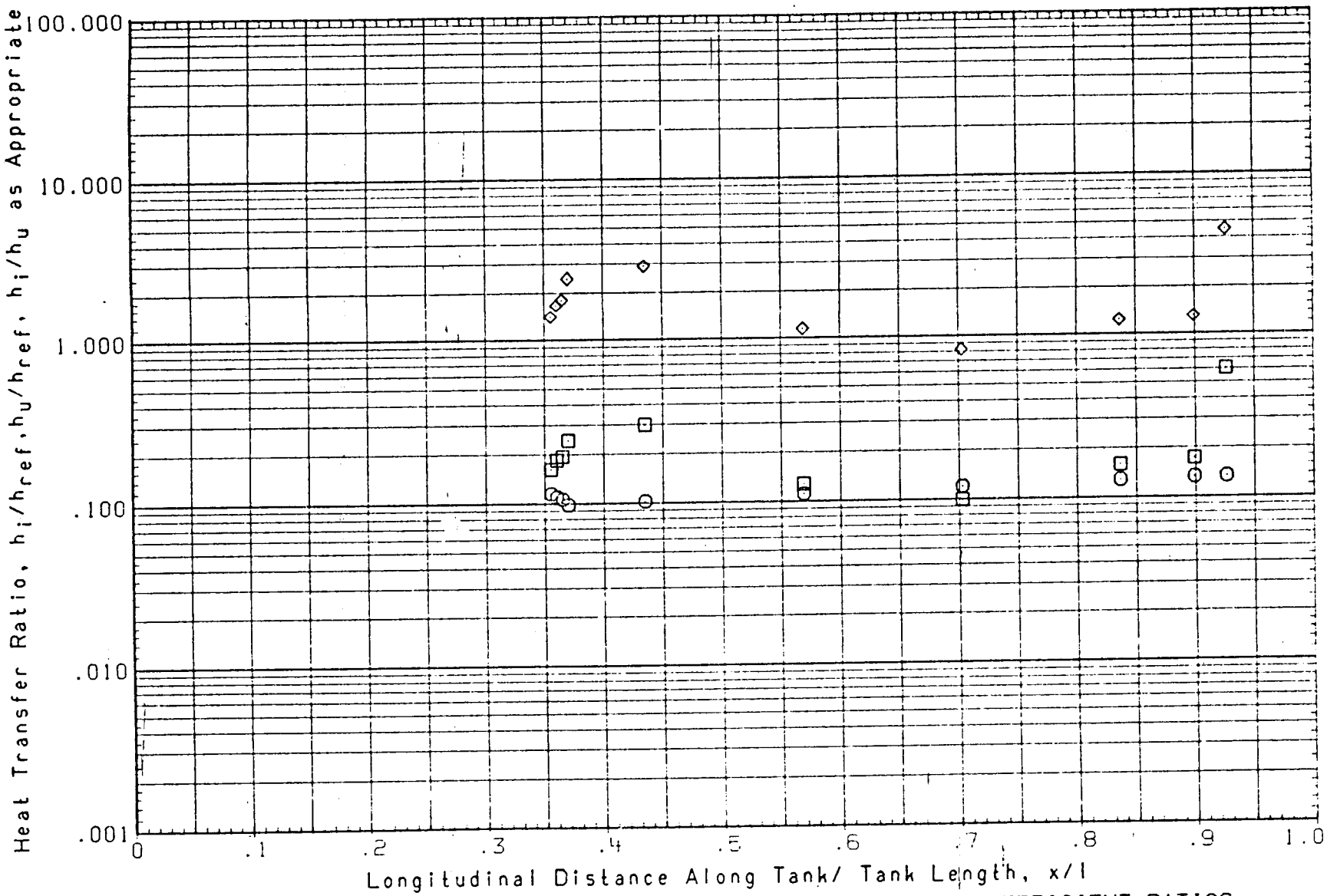


FIG. 25 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = 6

MACH = 3.010 ALPHA = -4.995 PHI = 23.075

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	6.000
(LVFT31)	□	IH41B(V41A-A4A) O " S (SPIKED ET DATA) HI/HREF	-5.000	6.000
(BVFT31)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	6.000

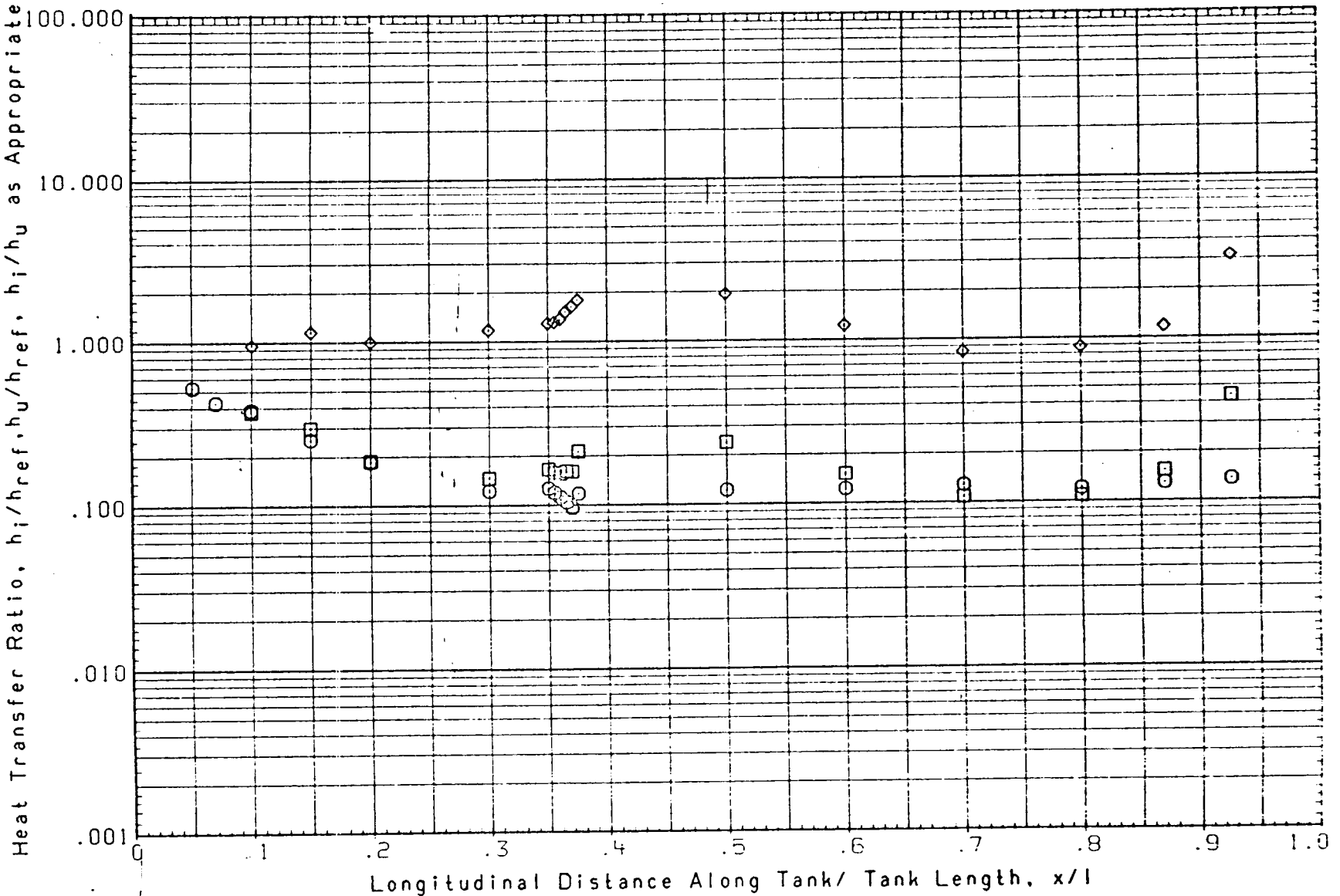


FIG. 25 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = 6

MACH = 3.010 ALPHA = -4.995 PHI = 29.800

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	6.000
(LVFT31)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	6.000
(BVFT31)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	6.000

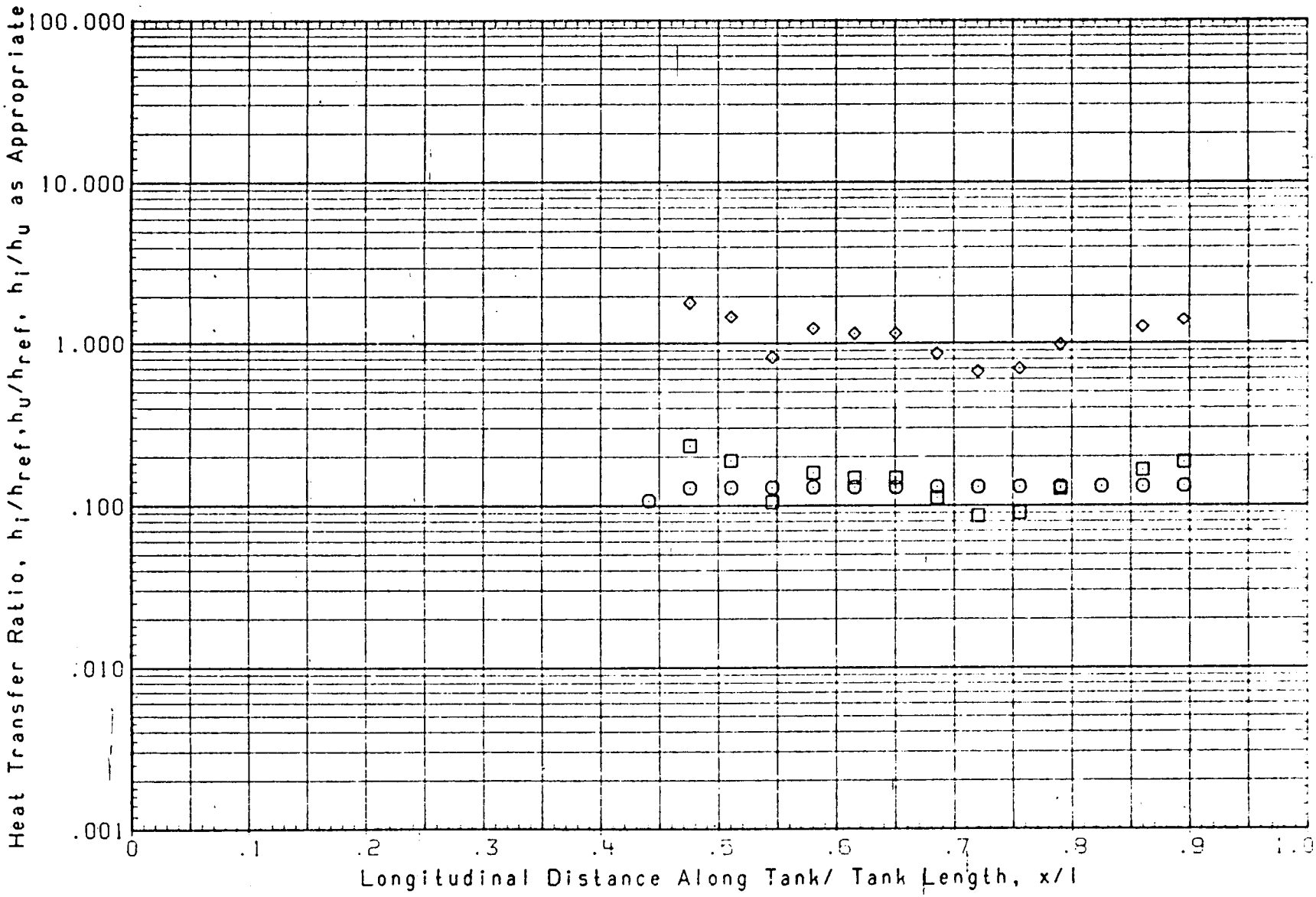


FIG. 25 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = 6

MACH = 3.010 ALPHA = -4.995 PHI = 31.430

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	6.000
(LVFT31)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	6.000
(BVFT31)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	6.000

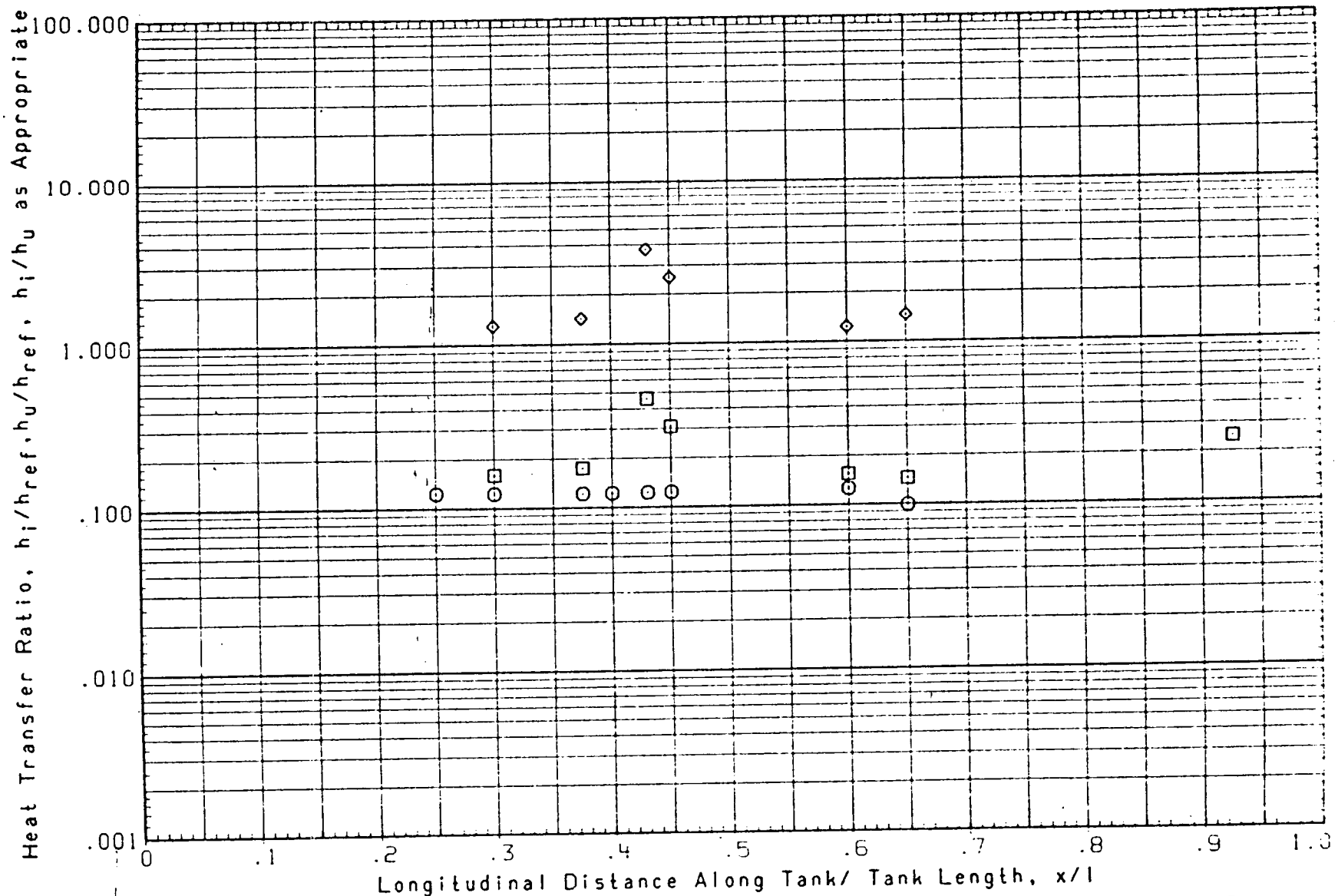


FIG. 25 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = 6

MACH = 3.010 ALPHA = -4.995 PHI = 33.750

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	6.000
(LVFT31)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	6.000
(BVFT31)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	6.000

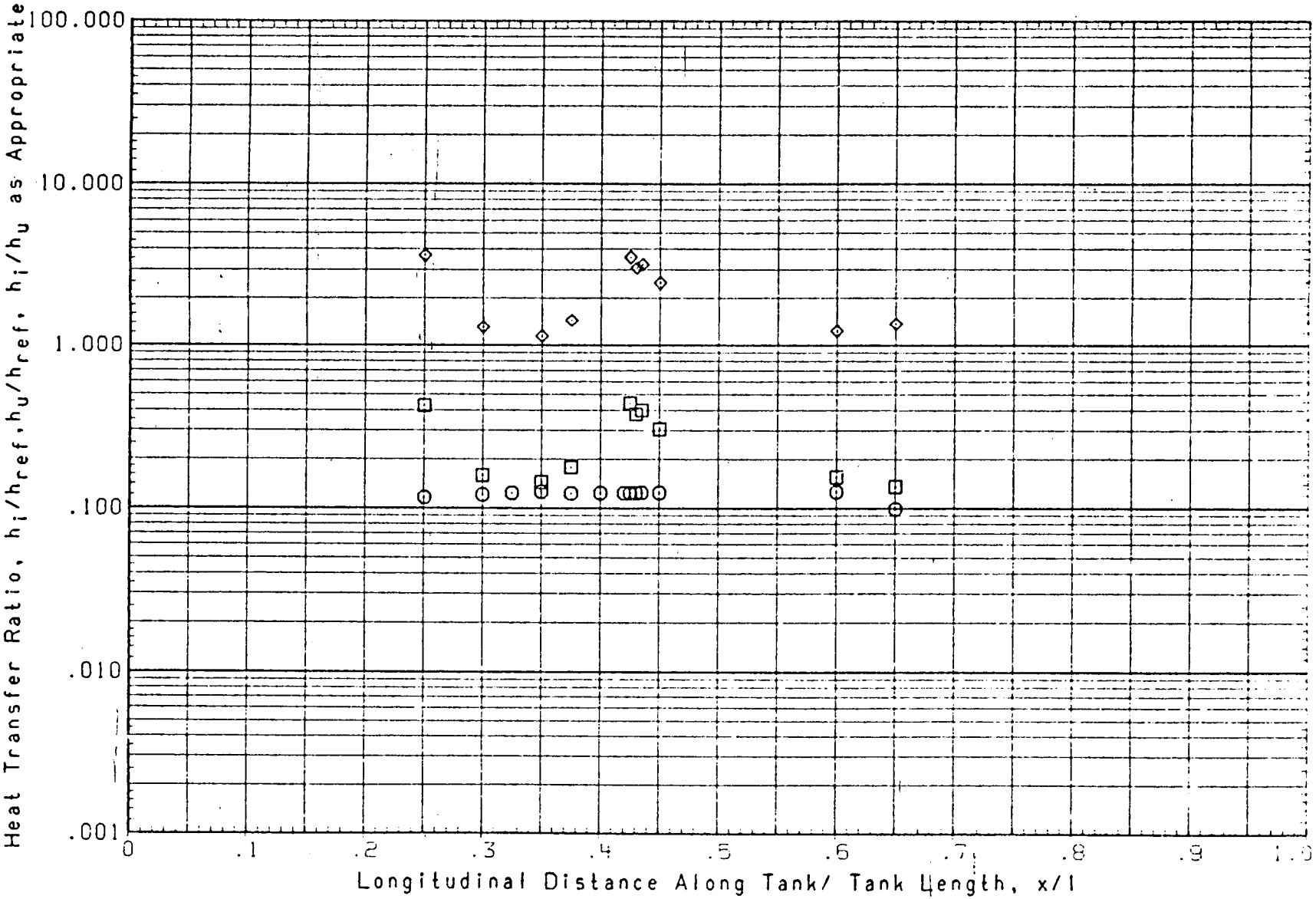


FIG. 25 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = 6

MACH = 3.010 ALPHA = -4.995 PHI = 36.320

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT11)	○	IH41B(AEDC V41A-44A) SPIKED EXTERNAL TANK ALONE	-5.000	6.000
(LVFT31)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	6.000
(BVFT31)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	6.000

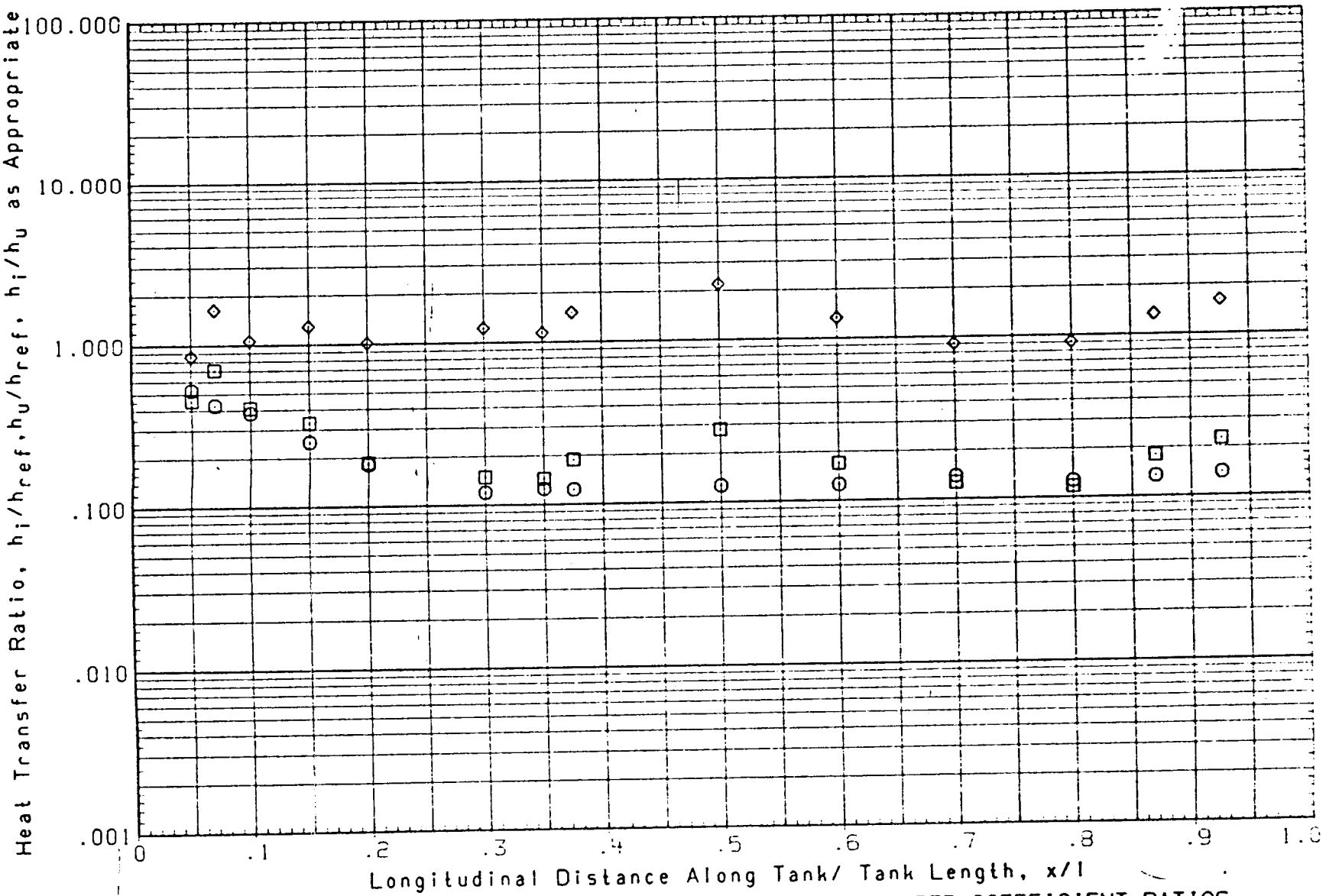


FIG. 25 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS WINDWARD SIDE, ALPHA = -5, BETA = 6

MACH = 3.010 ALPHA = -4.995 PHI = 37.700

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	6.000
(LVFT31)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	6.000
(BVFT31)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	6.000

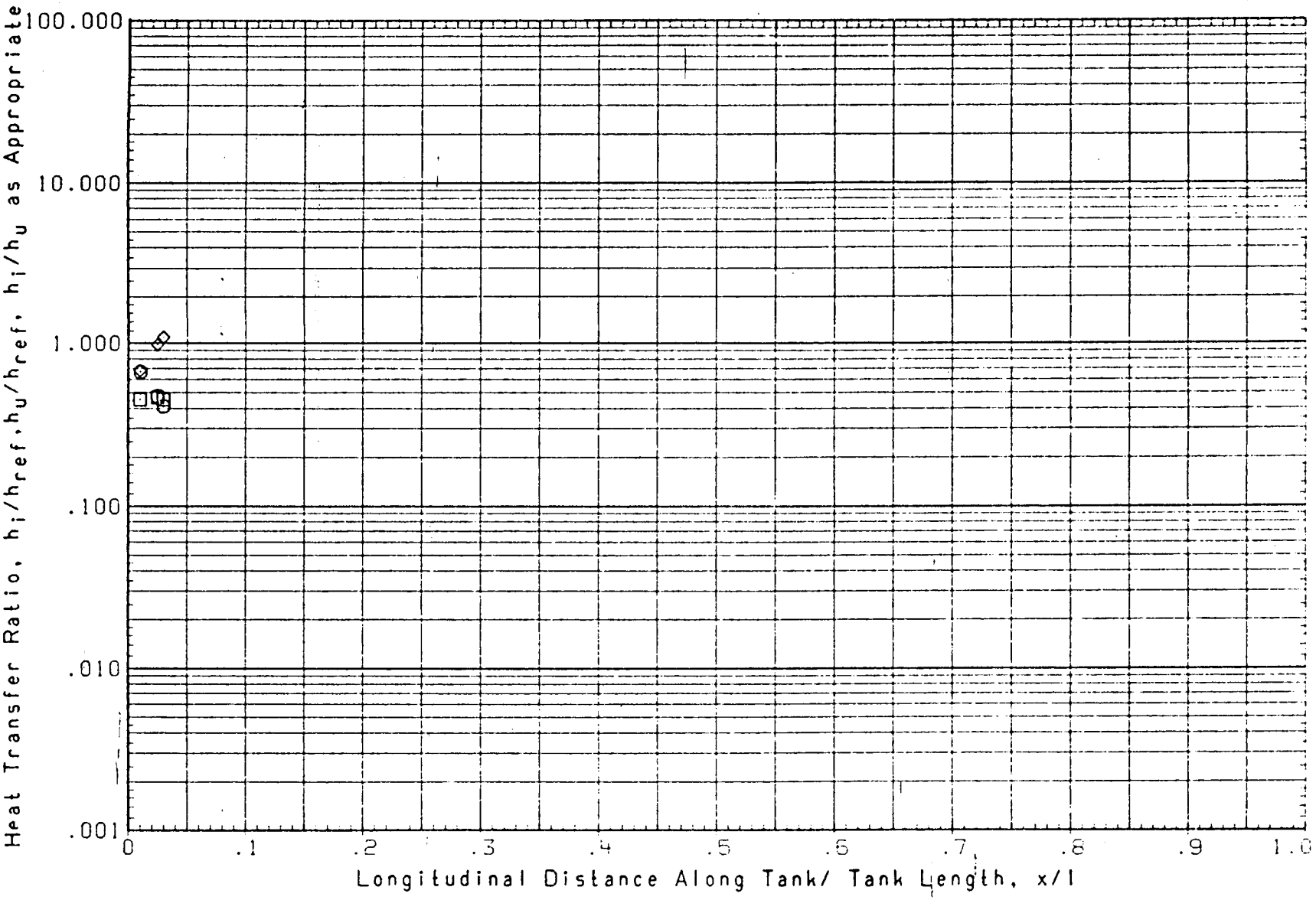


FIG. 25 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = 6

MACH = 3.010 ALPHA = -4.995 PHI = 33.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	6.000
(LVFT31)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	6.000
(BVFT31)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	6.000

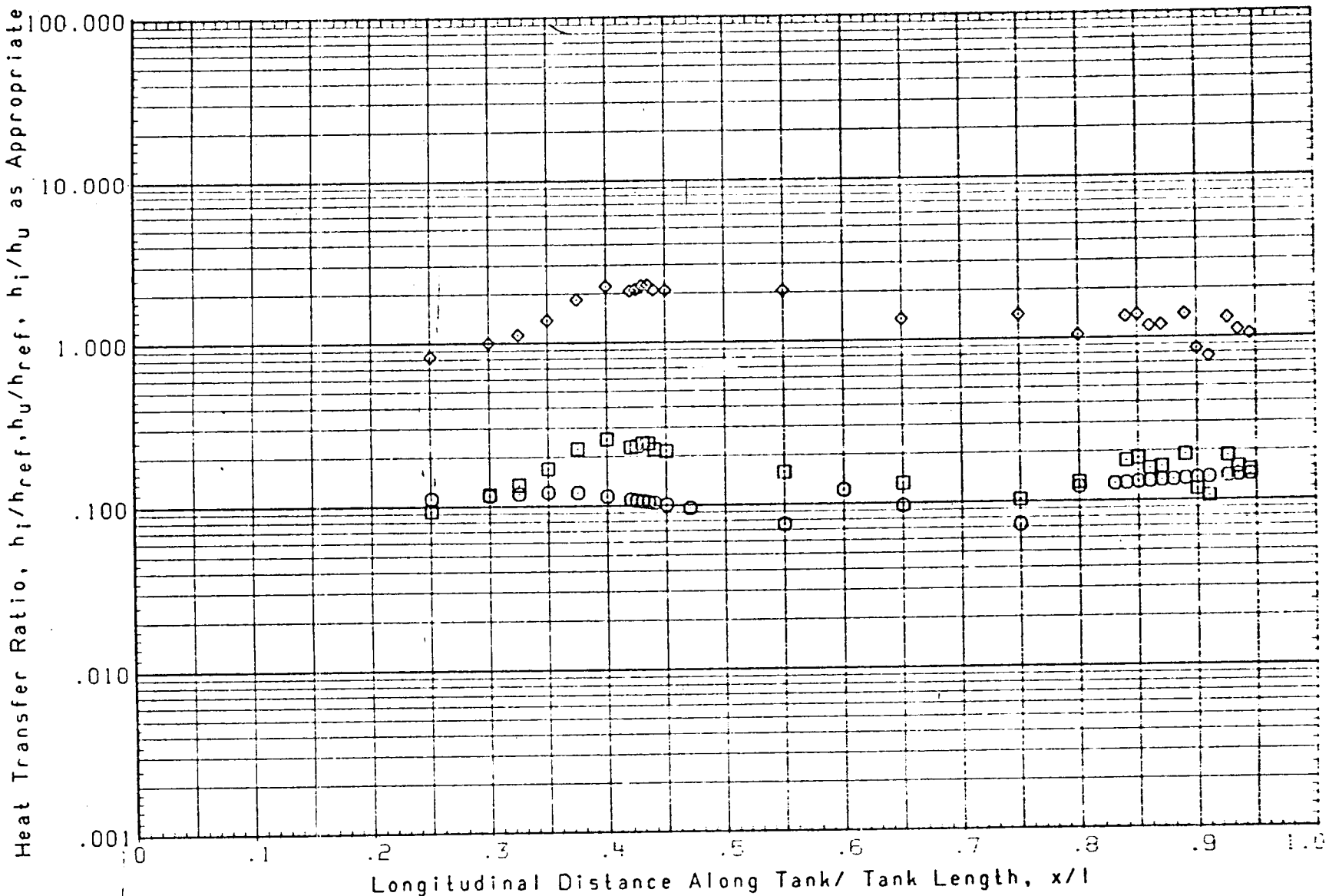


FIG. 25 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = 6

MACH = 3.010 ALPHA = -4.995 PHI = 45.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	6.000
(LVFT31)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	6.000
(BVFT31)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	6.000

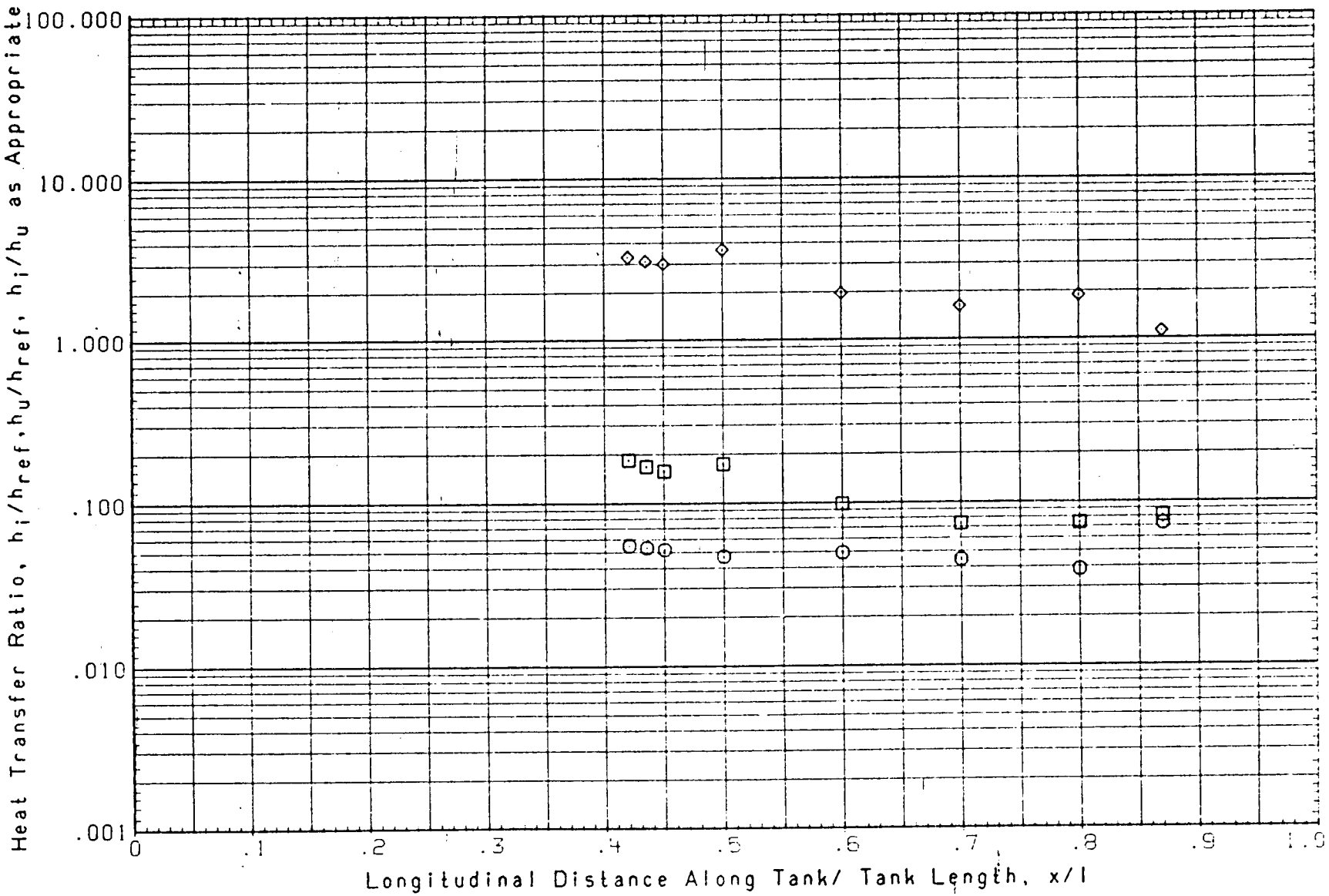


FIG. 25 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = 6

MACH = 4.020 ALPHA = -4.995 PHI = 332.300

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	6.000
(LVFT31)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	6.000
(BVFT31)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	6.000

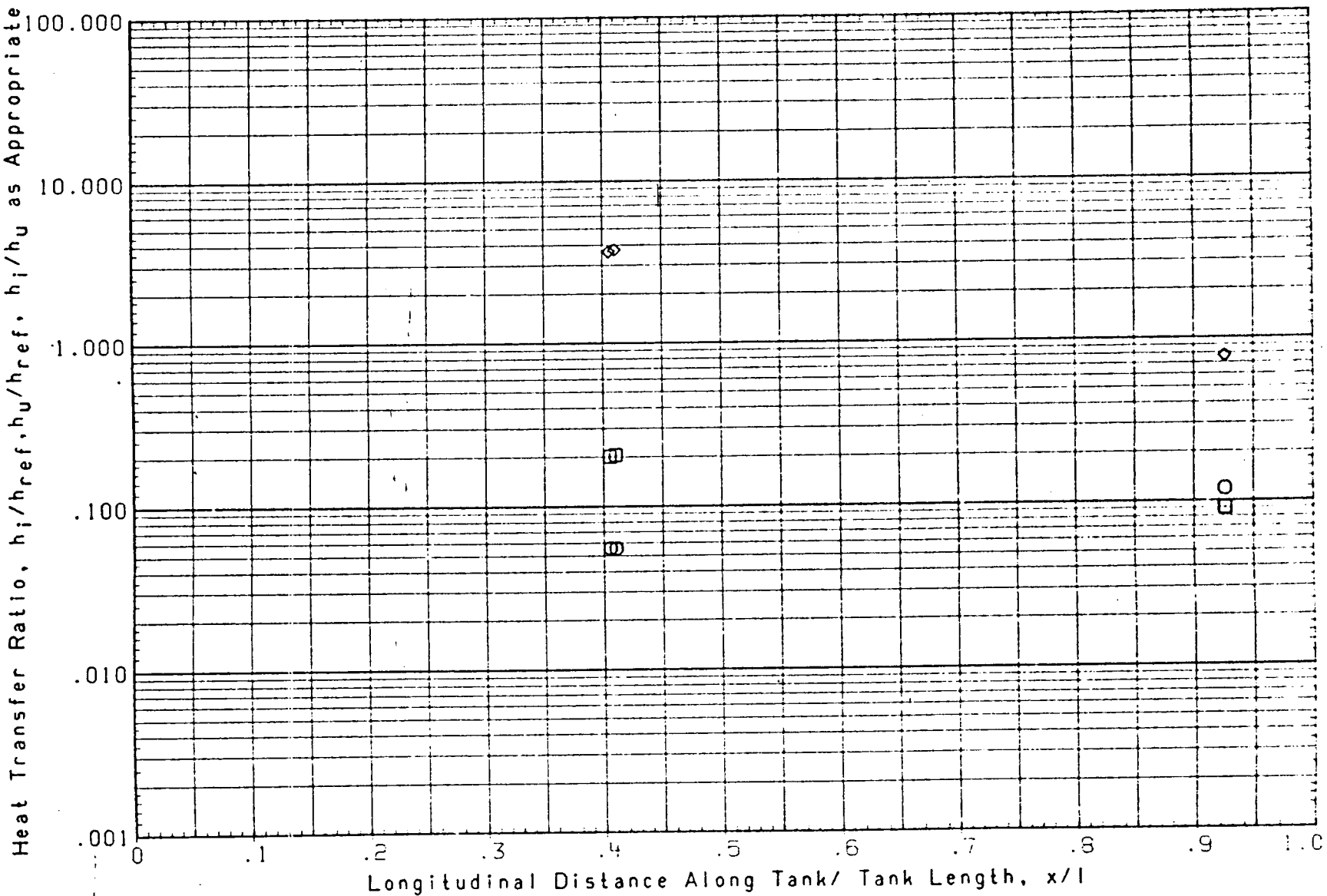


FIG. 25 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = 6

MACH = 4.020 ALPHA = -4.995 PHI = 324.450

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	6.000
(LVFT31)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	6.000
(BVFT31)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	6.000

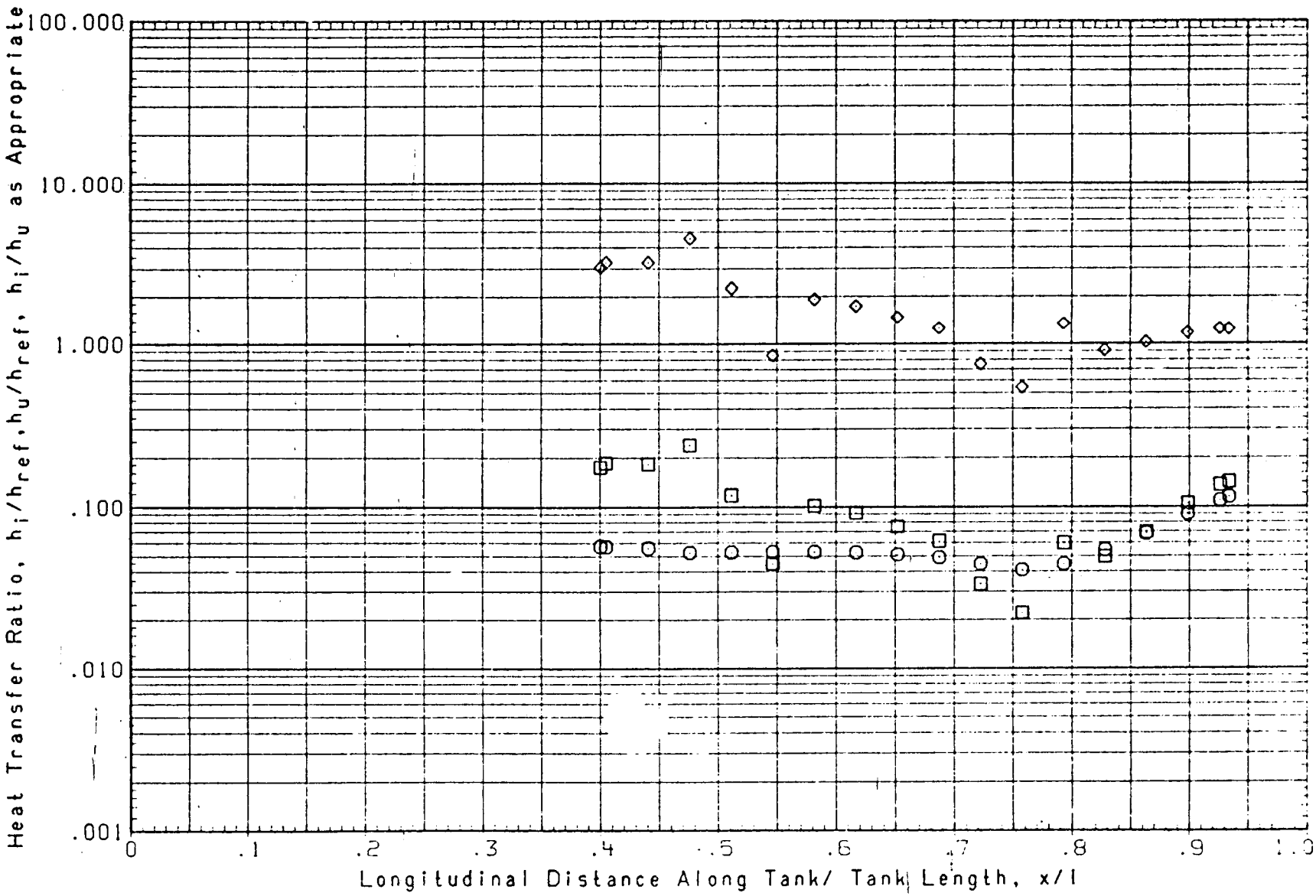


FIG. 25 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = 6

MACH = 4.020 ALPHA = -4.995 PHI = 336.850

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	6.000
(LVFT31)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	6.000
(BVFT31)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	6.000

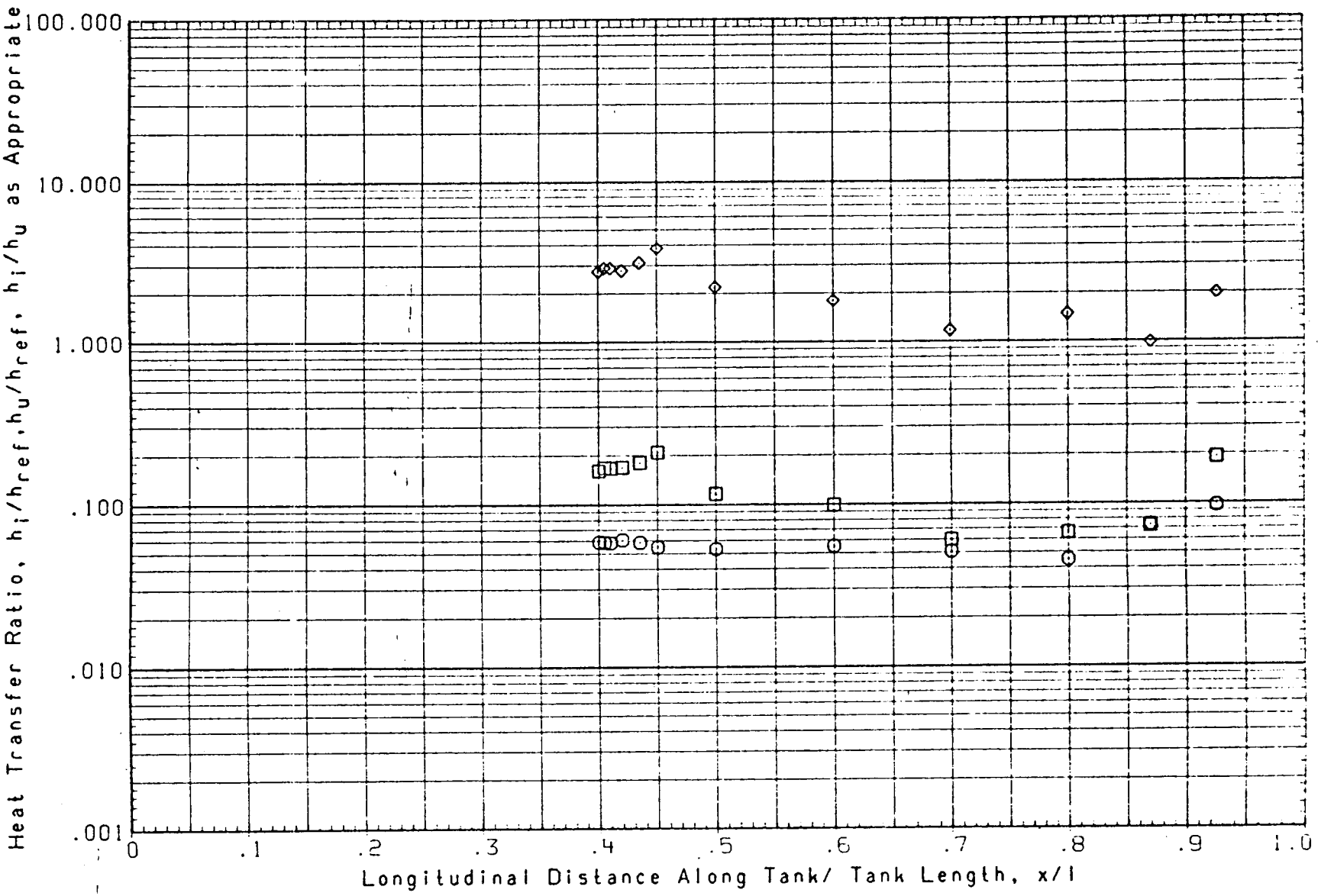


FIG. 25 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = 6

MACH = 4.020 ALPHA = -4.995 PHI = 330.200

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	6.000
(LVFT31)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	6.000
(BVFT31)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	6.000

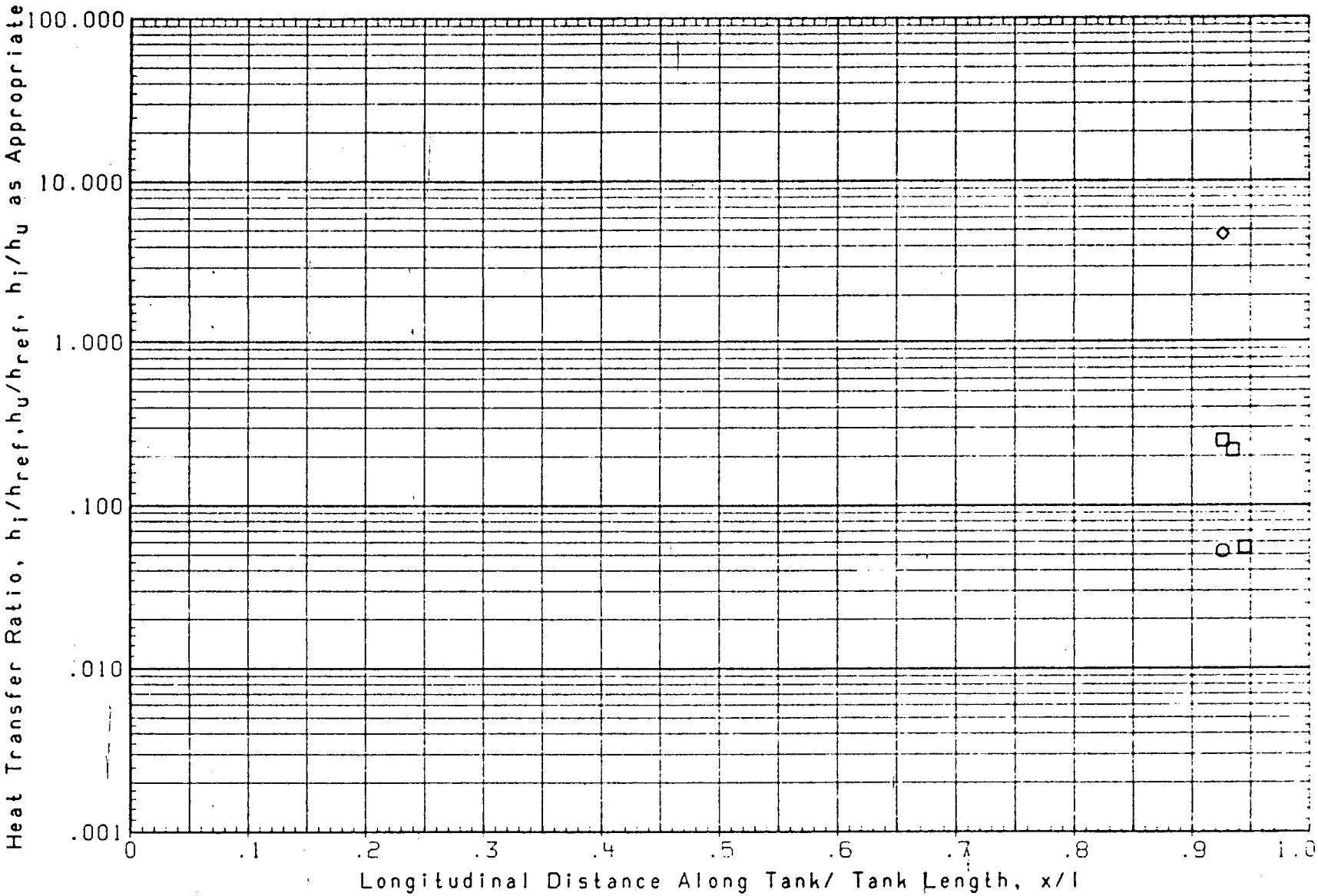


FIG. 25 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = 6

MACH = 4.020 ALPHA = -4.995 PHI = 334.980

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	6.000
(LVFT31)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	6.000
(BVFT31)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	6.000

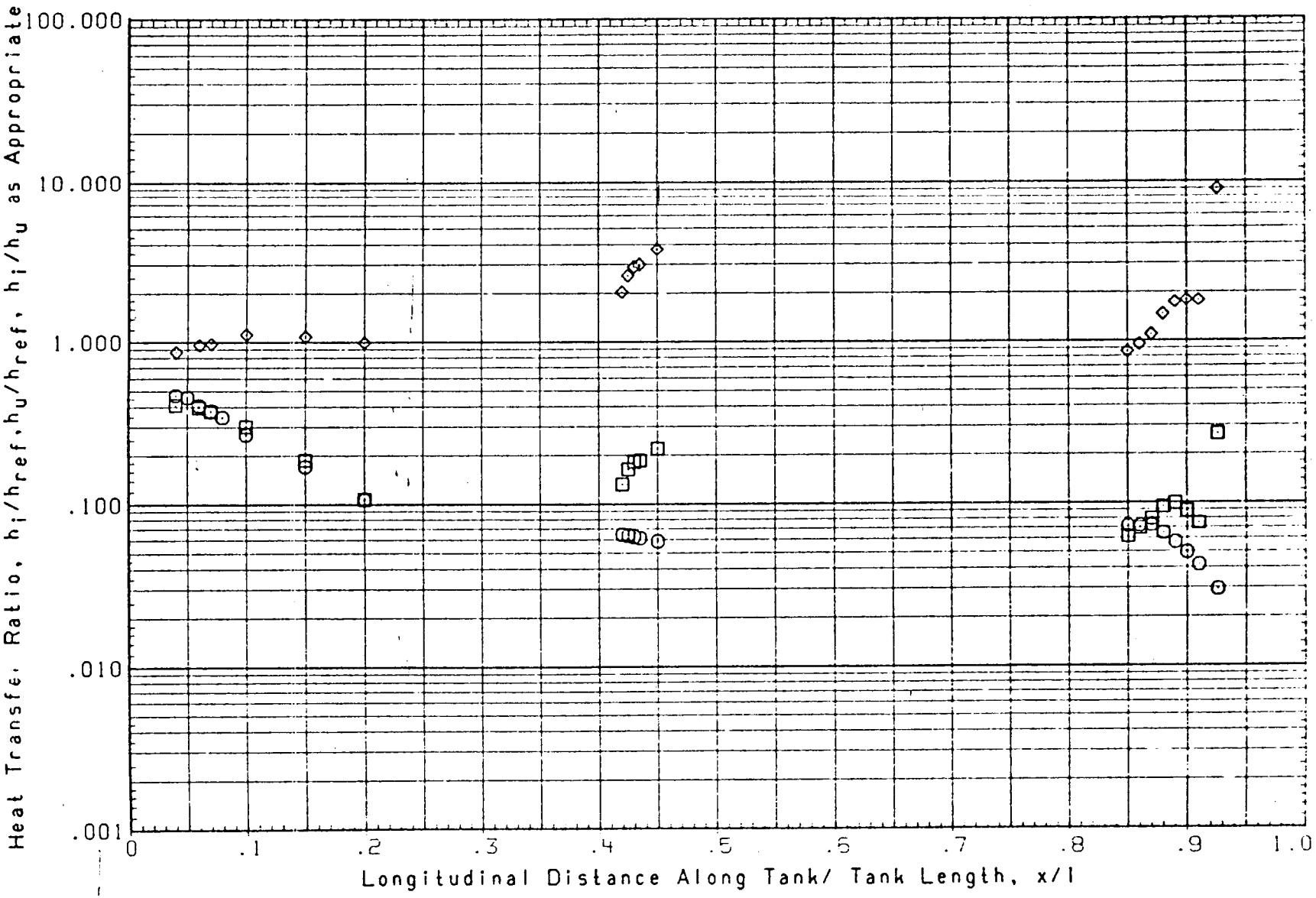


FIG. 25 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = 6

MACH = 4.020 ALPHA = -4.995 PHI = 337.500

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	6.000
(LVFT31)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	6.000
(BVFT31)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	6.000

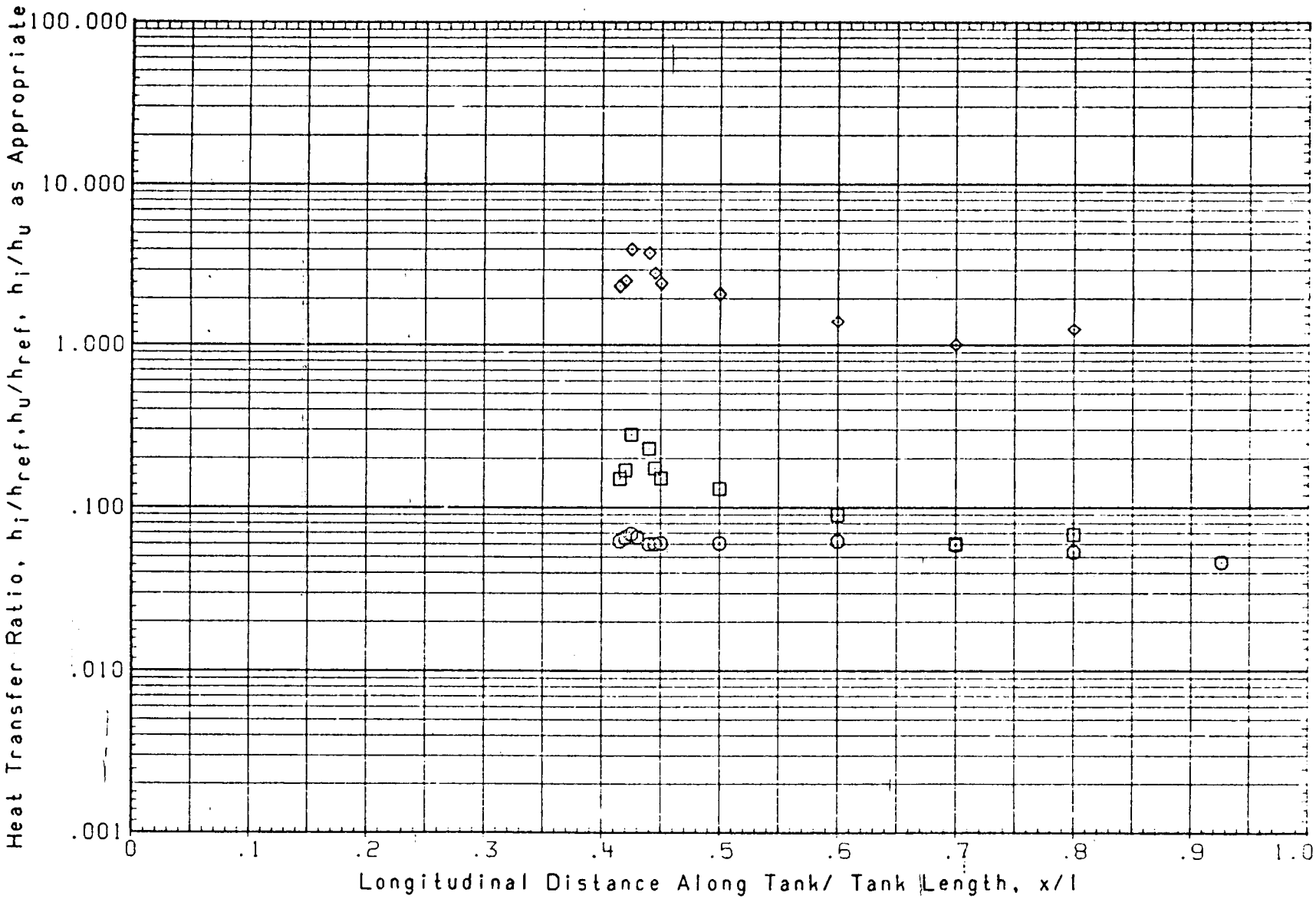


FIG. 25 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = 6

MACH = 4.020 ALPHA = -4.995 PHI = 343.120

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	6.000
(LVFT31)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	6.000
(BVFT31)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	6.000

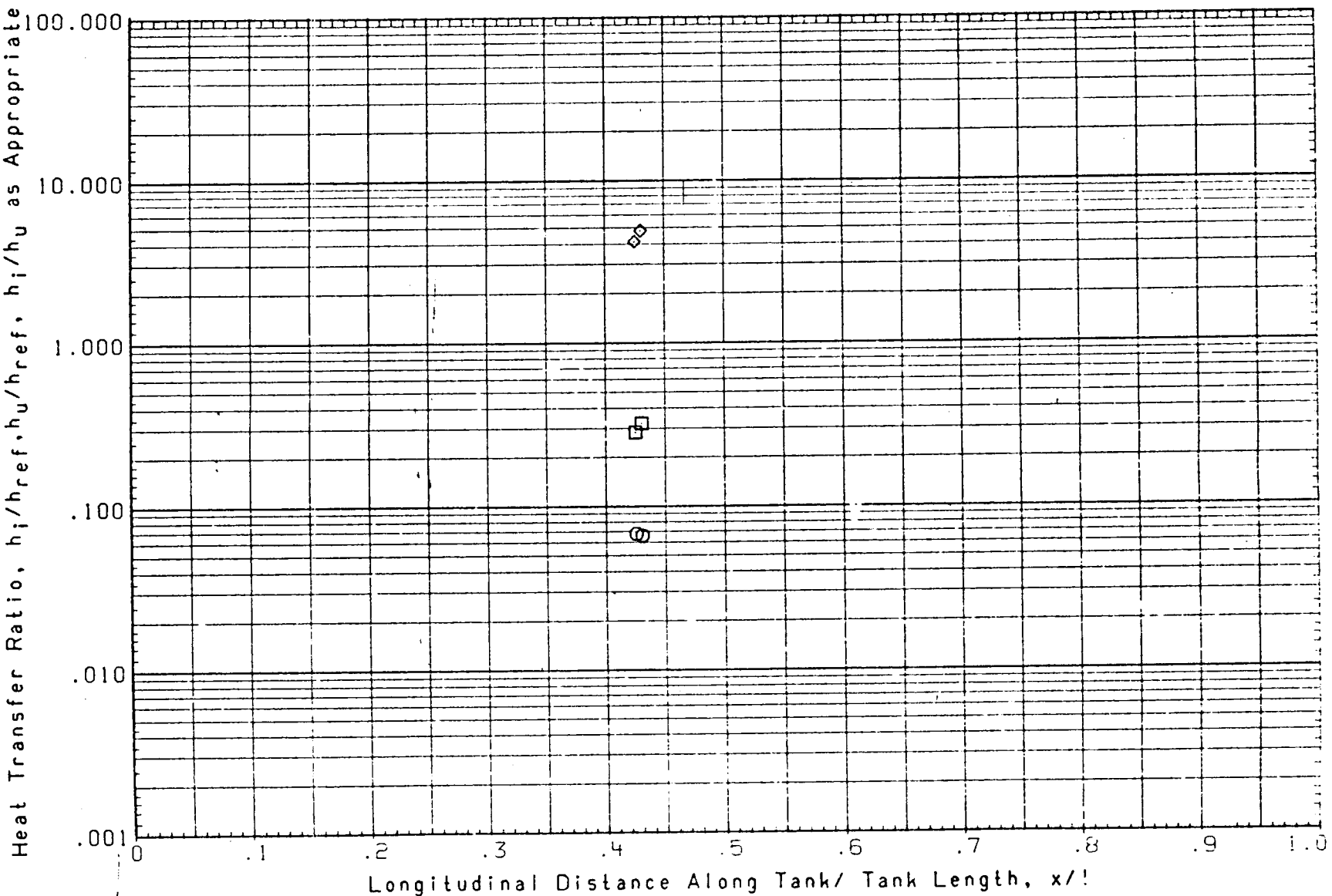


FIG. 25 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = 6

MACH = 4.020 ALPHA = -4.995 PHI = 345.560

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	6.000
(LVFT31)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	6.000
(BVFT31)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	6.000

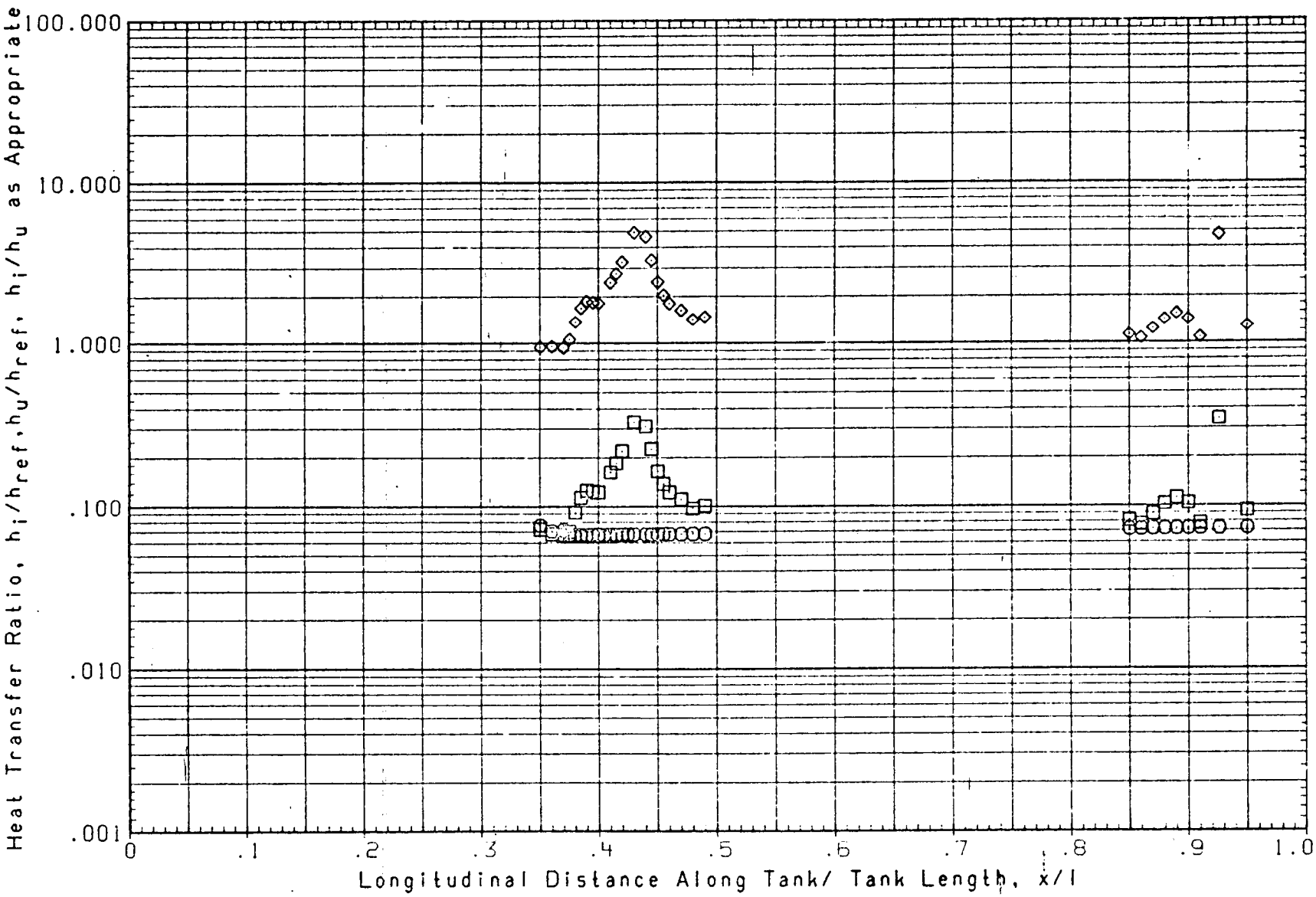


FIG. 25 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = 6

MACH = 4.020 ALPHA = -4.995 PHI = 348.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	6.000
(LVFT31)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	6.000
(BVFT31)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	6.000

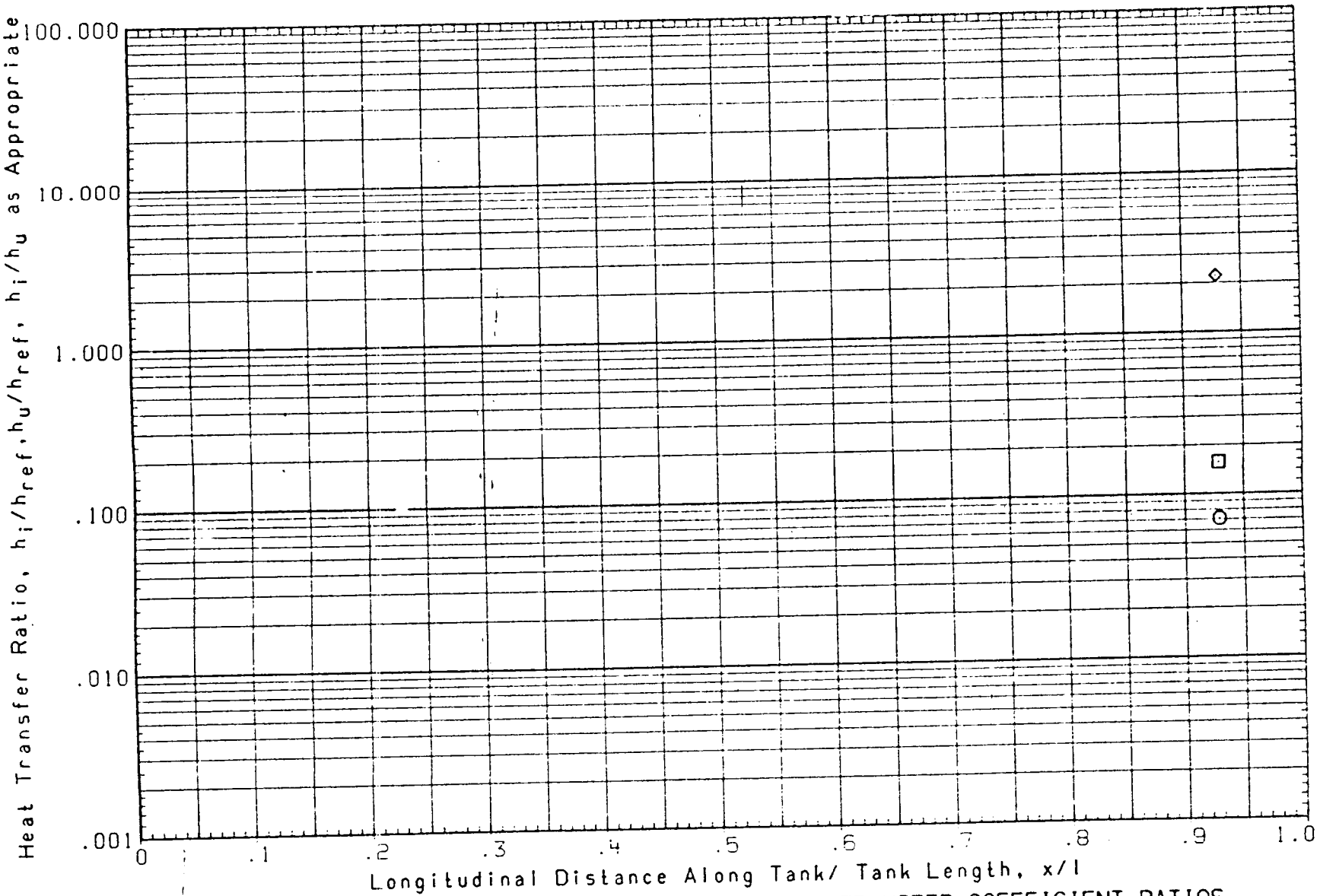


FIG. 25 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = 6

MACH = 4.020 ALPHA = -4.995 PHI = 352.200

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	6.000
(LVFT31)	□	IH41B(V41A-A4A: O T S (SPIKED ET DATA) HI/HREF	-5.000	6.000
(BVFT31)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	6.000

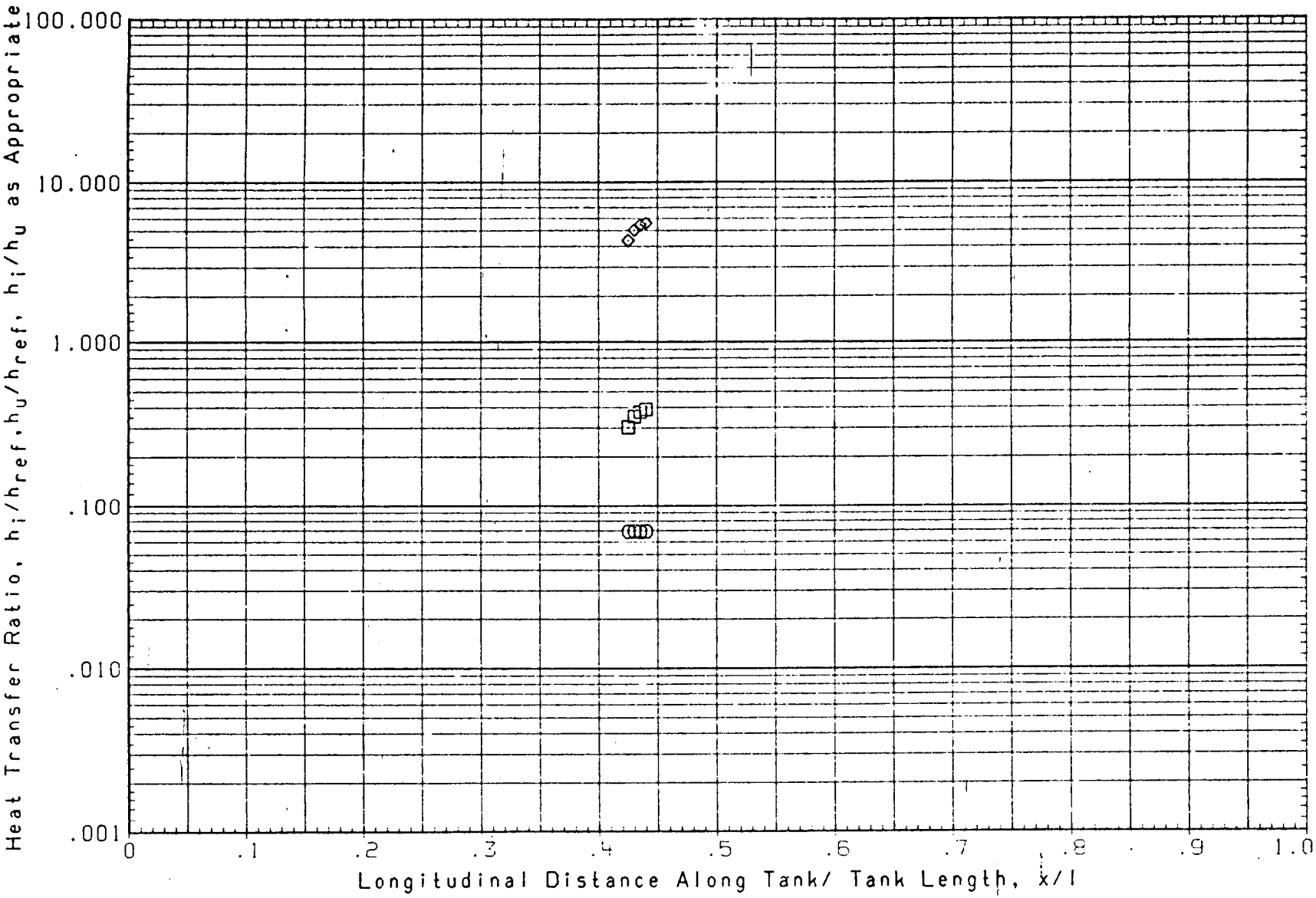


FIG. 25 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = 6

MACH = 4.020 ALPHA = -4.935 PHI = 354.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	6.000
(LVFT31)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	6.000
(BVFT31)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	6.000

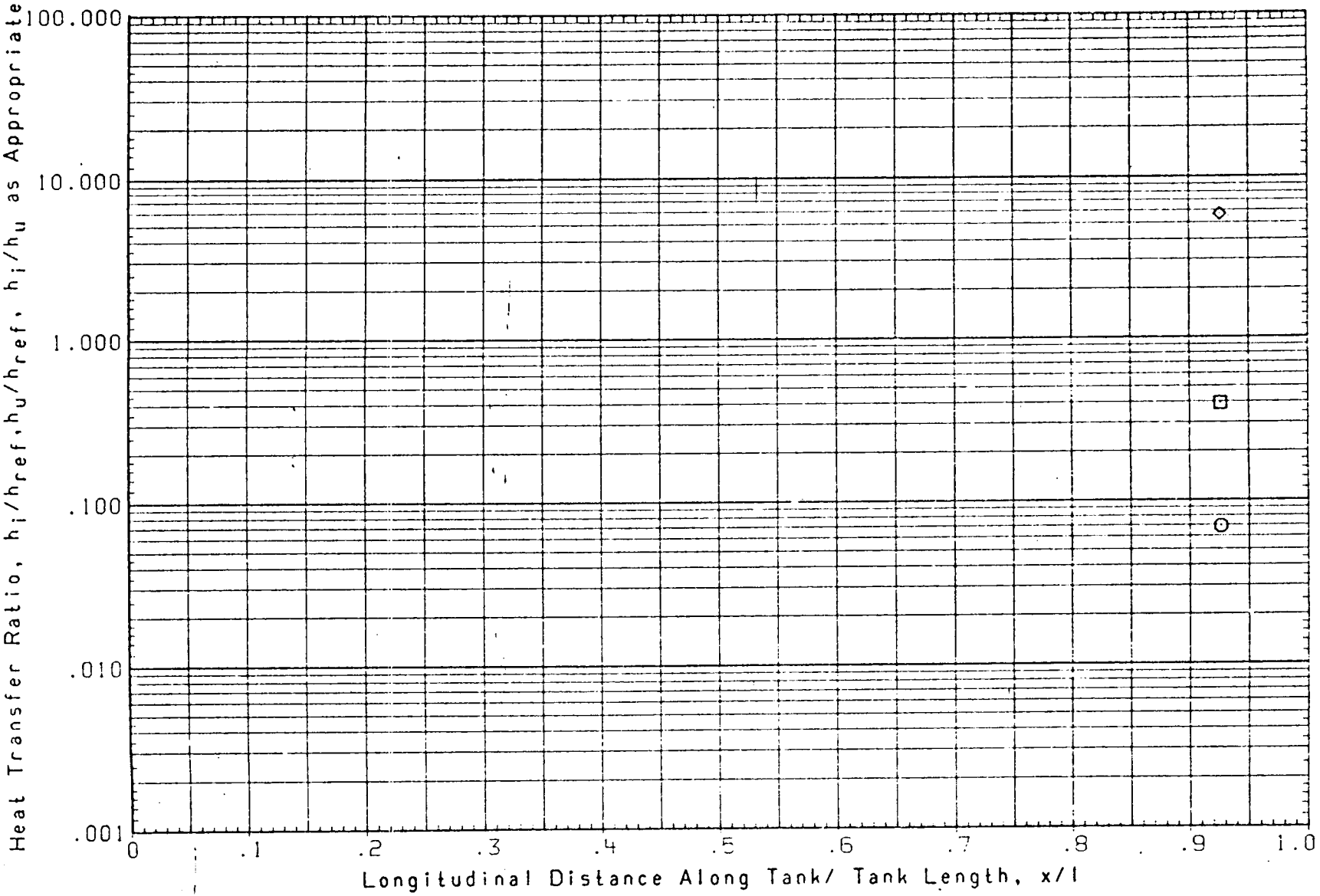


FIG. 125 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS WINDWARD SIDE, ALPHA = -5, BETA = 6

MACH = 4.020 ALPHA = -4.995 PHI = 355.160

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	6.000
(LVFT31)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	6.000
(BVFT31)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	6.000

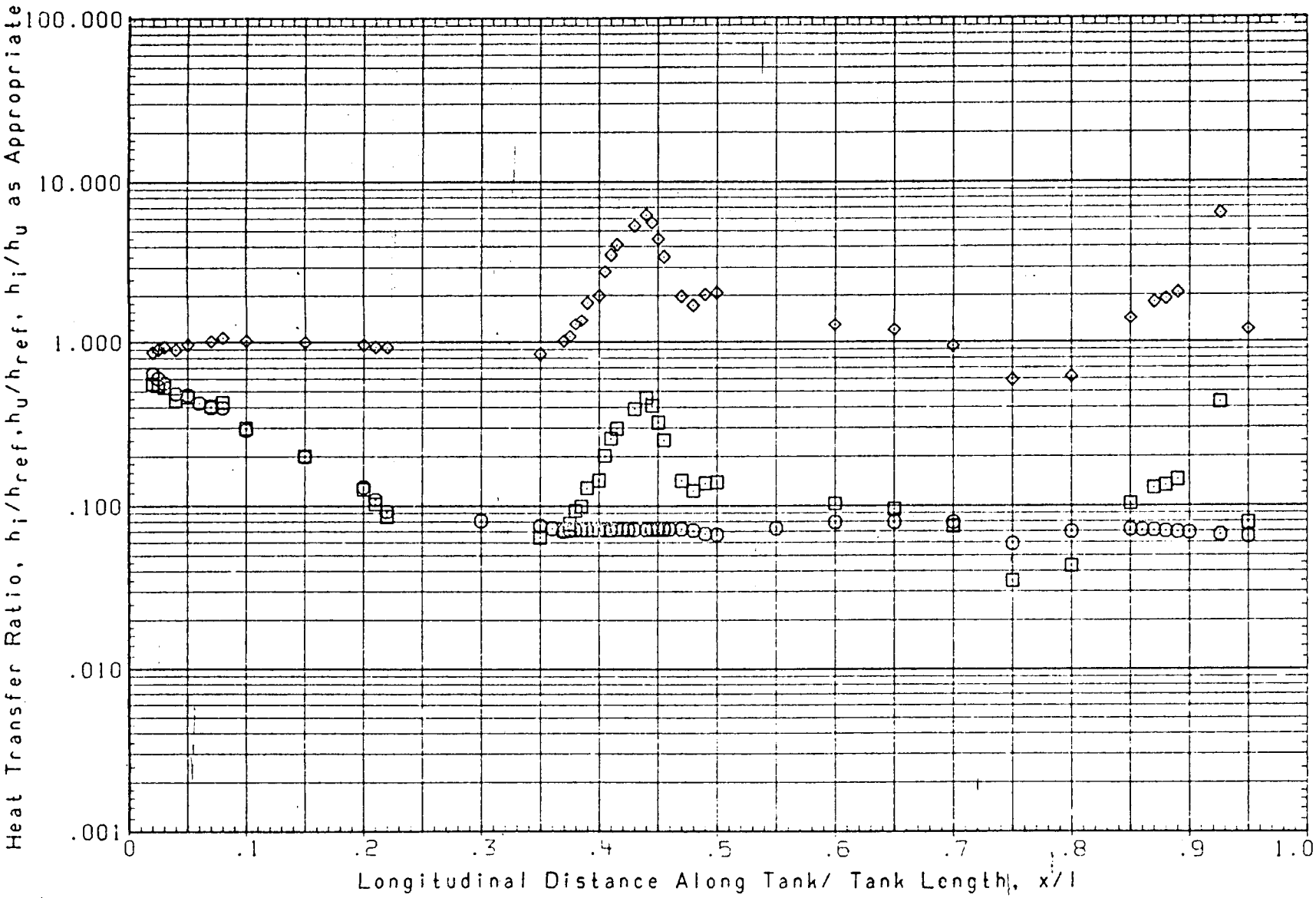


FIG. 25 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = 6

MACH = 4.020 ALPHA = -4.995 PHI = 360.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	6.000
(LVFT31)	□	IH41B(V41A-A4A) O T S SPIKED ET DATA) HI/HREF	-5.000	6.000
(BVFT31)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	6.000

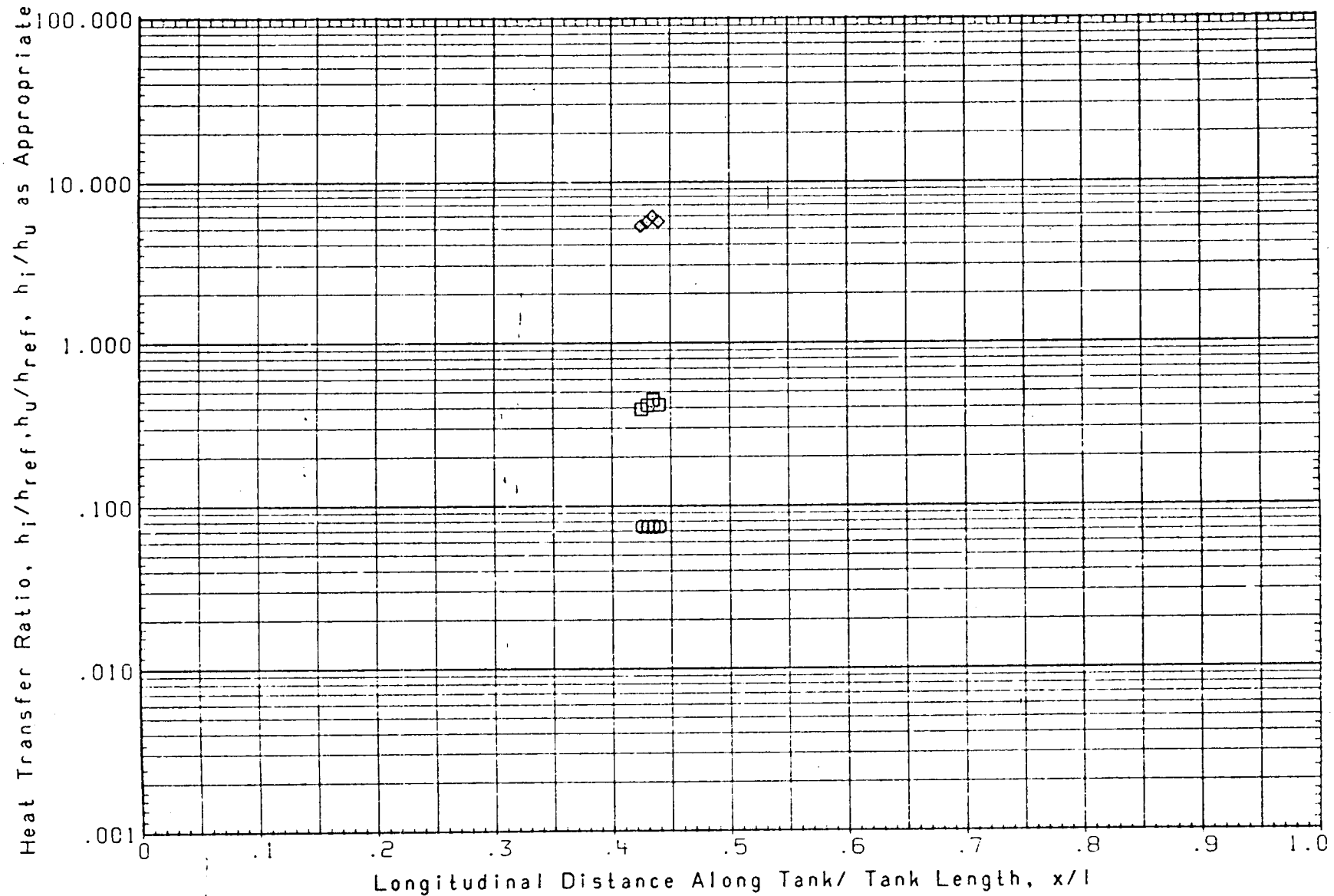


FIG. 25 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = 6

MACH = 4.020 ALPHA = -4.995 PHI = 5.630

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	6.000
(LVFT31)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	6.000
(BVFT31)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	6.000

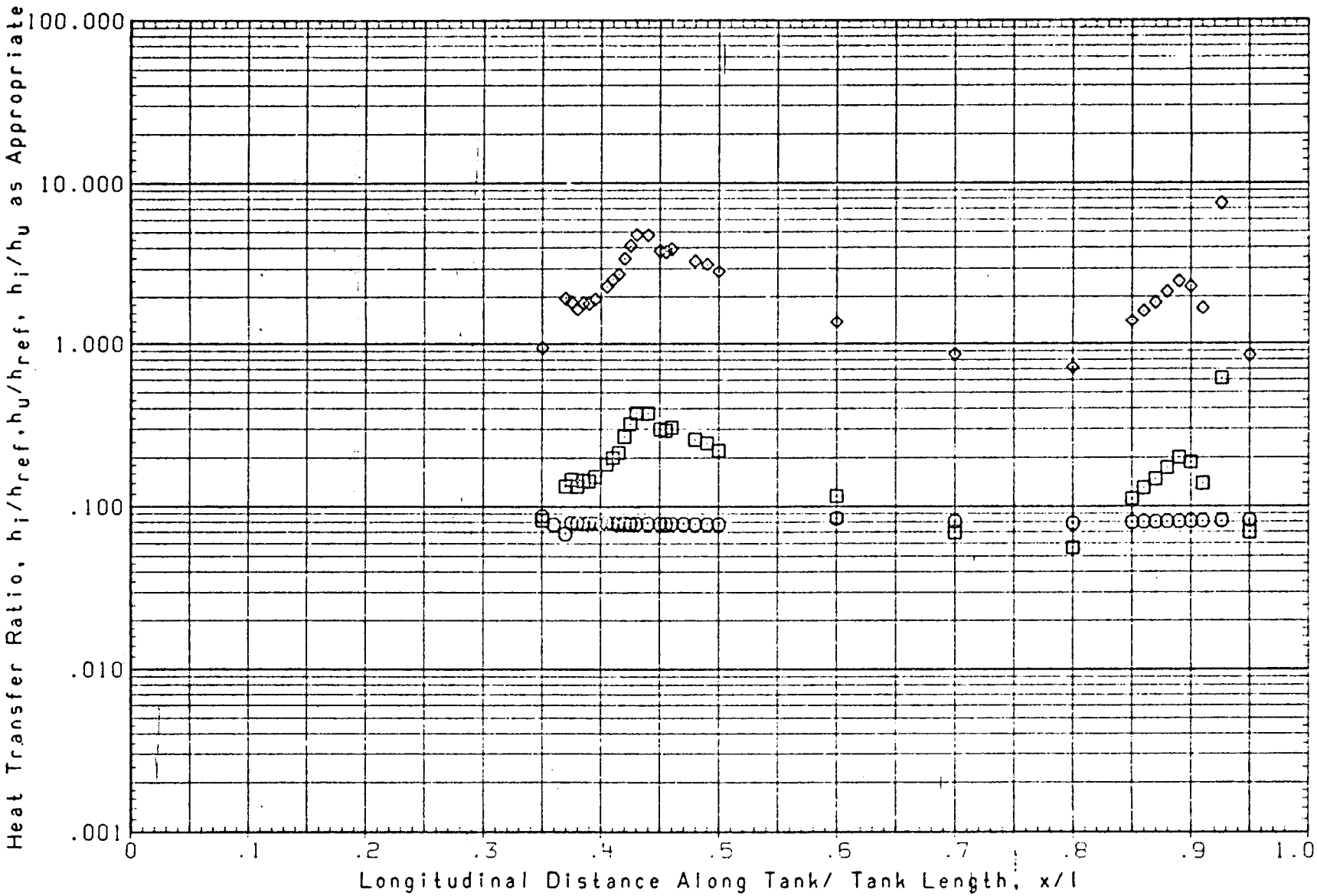


FIG. 25 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = 6

MACH = 4.020 ALPHA = -4.995 PHI = 11.250

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	6.000
(LVFT31)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	6.000
(BVFT31)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	6.000

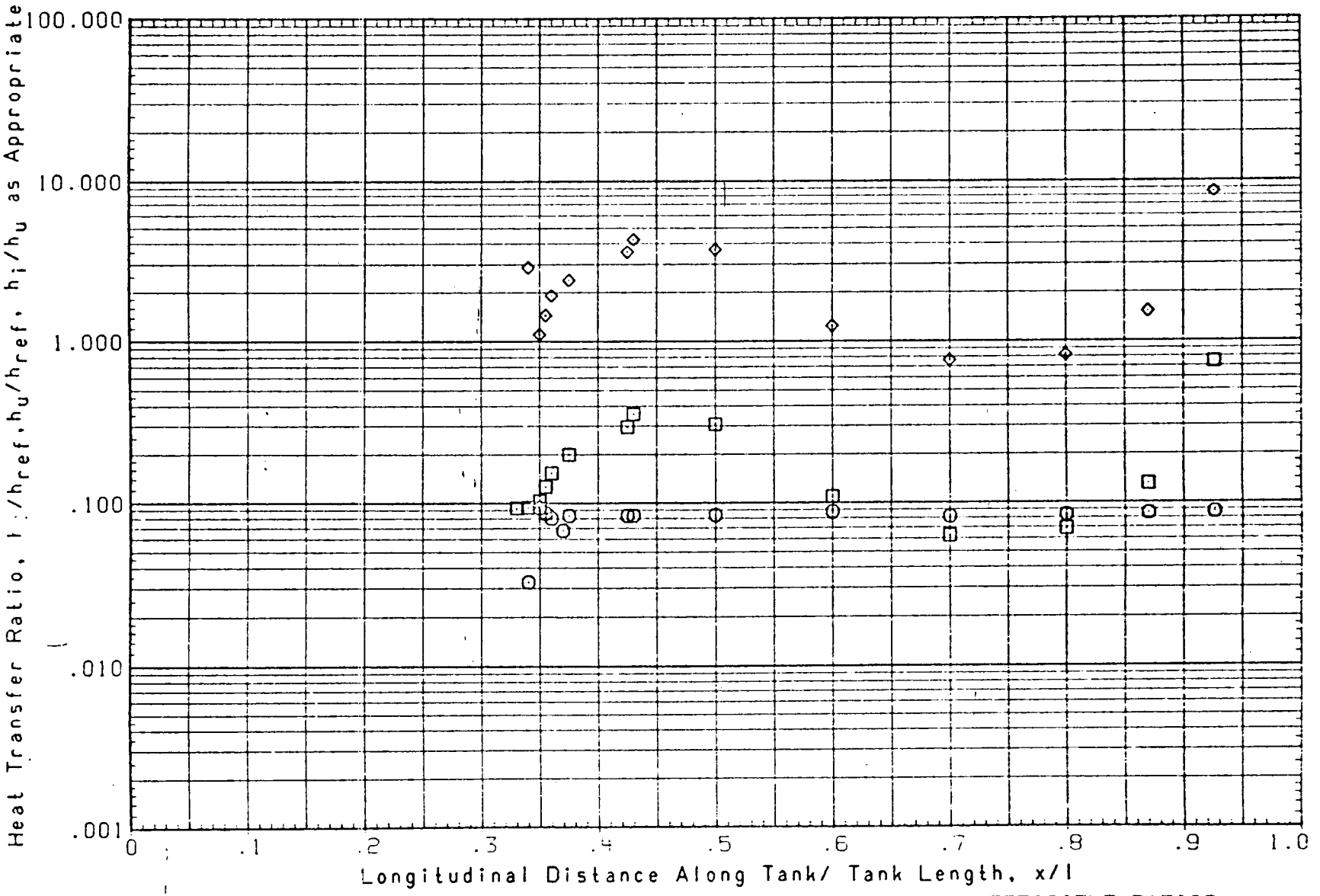


FIG. 25 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = 6

MACH = 4.020 ALPHA = -4.995 PHI = 17.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	6.000
(LVFT31)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	6.000
(BVFT31)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	6.000

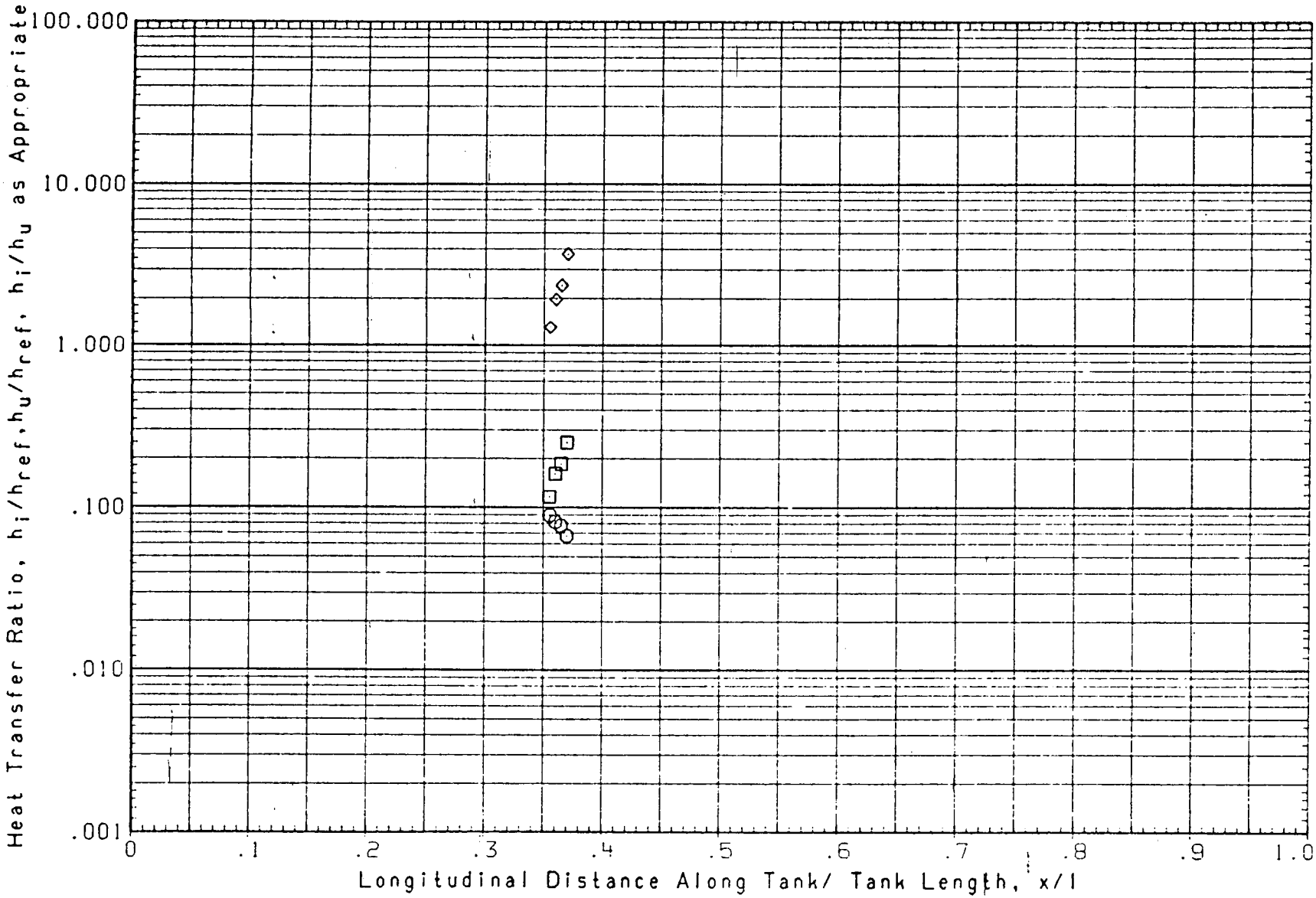


FIG. 25 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = 6

MACH = 4.020 ALPHA = -4.995 PHI = 20.990

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	6.000
(LVFT31)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	6.000
(BVFT31)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	6.000

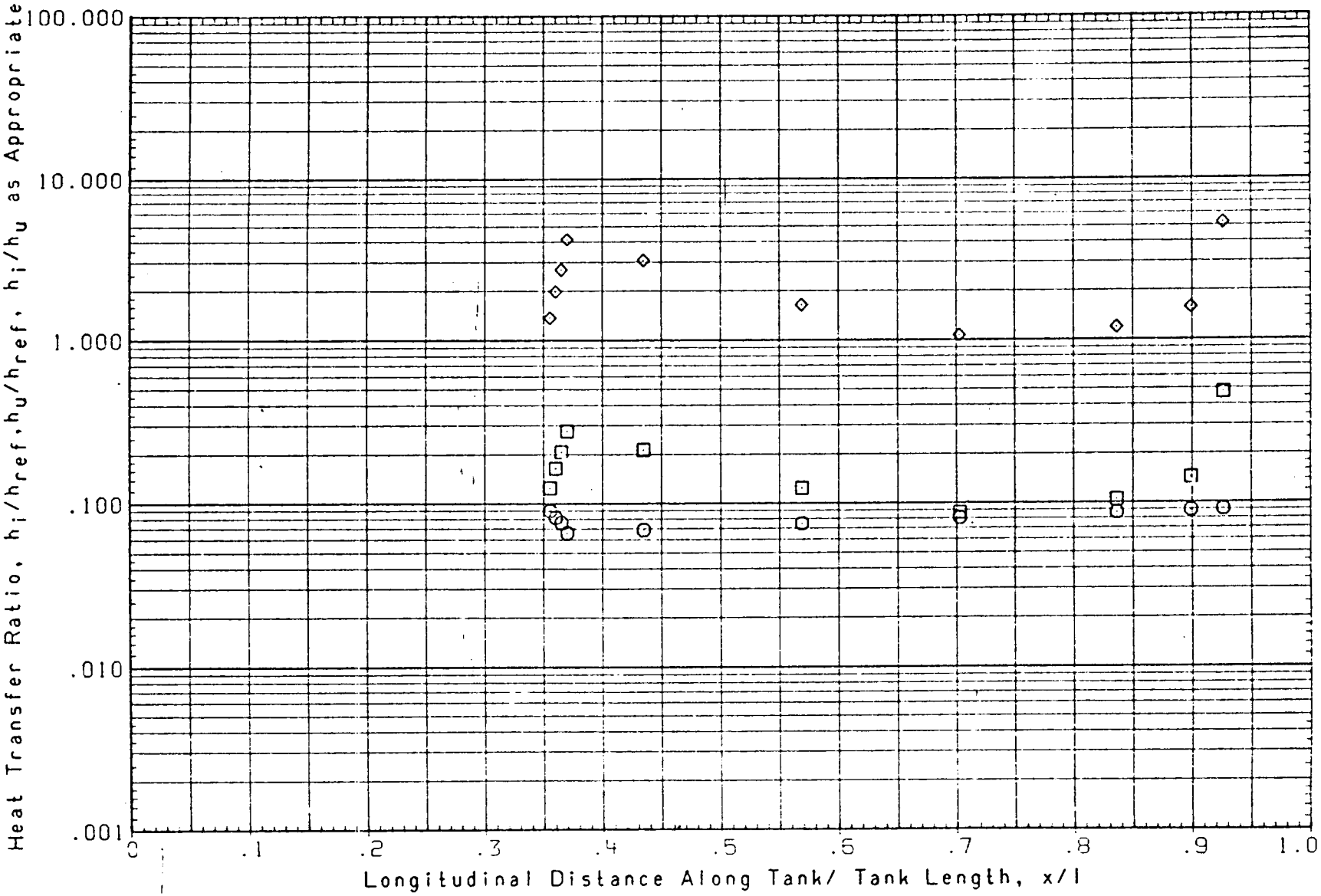


FIG. 25 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = 6

MACH = 4.020 ALPHA = -4.995 PHI = 23.075

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	6.000
(LVFT31)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	6.000
(BVFT31)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	6.000

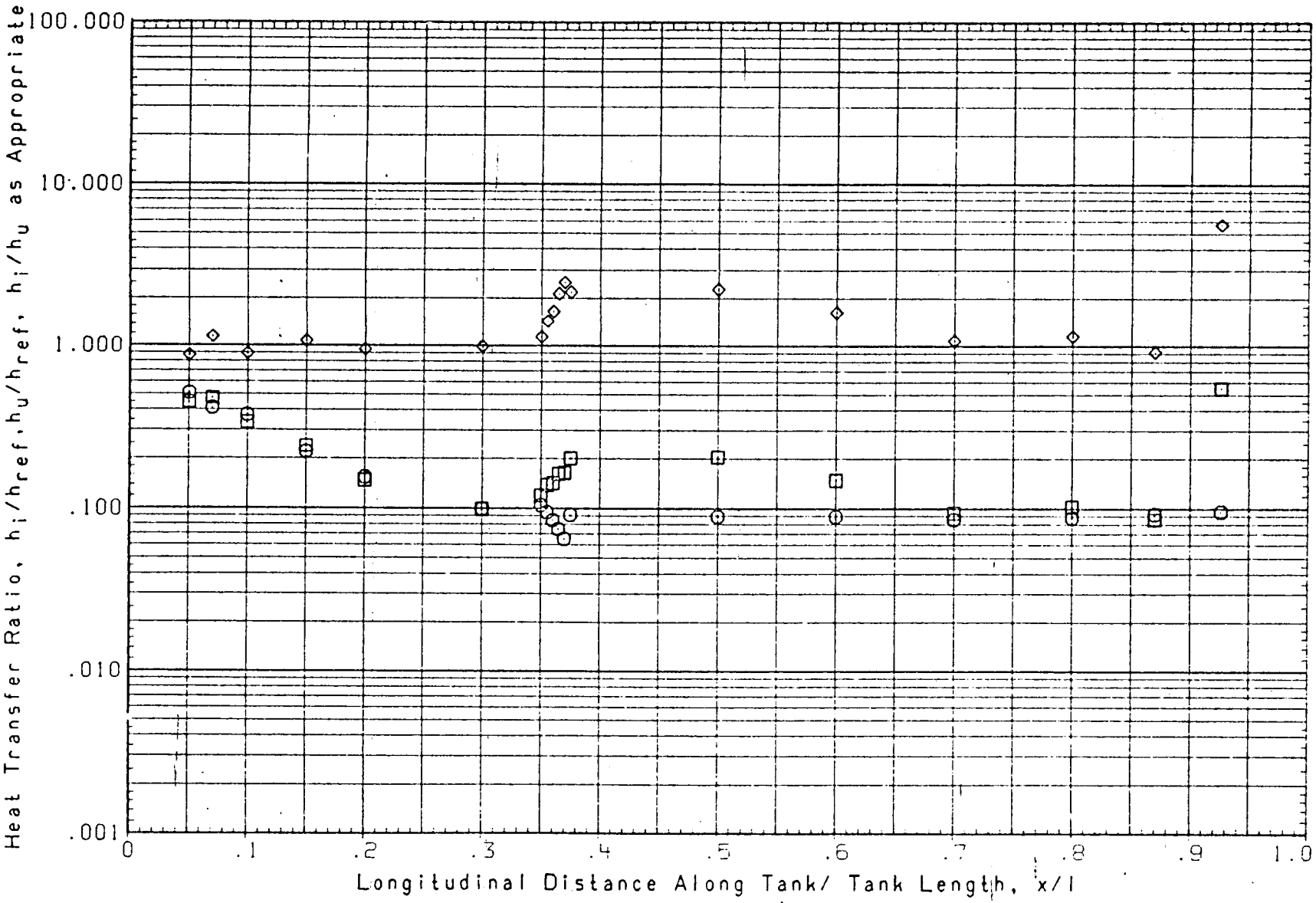


FIG. 25 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = 6

MACH = 4.020 ALPHA = -4.995 PHI = 29.800

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	6.000
(LVFT31)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	6.000
(BVFT31)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	6.000

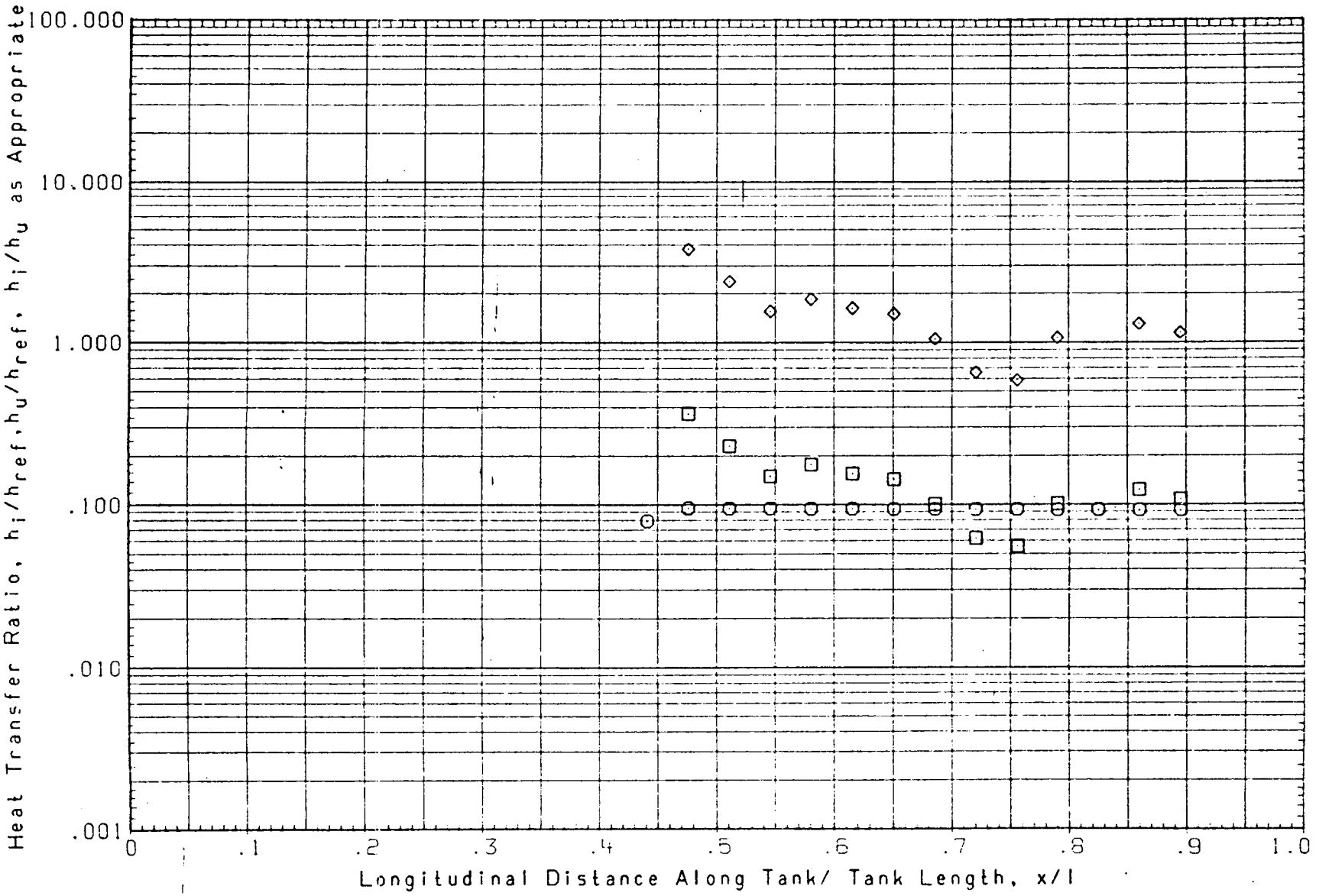


FIG. 25 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = 6

MACH = 4.020 ALPHA = -4.935 PHI = 31.430

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	6.000
(LVFT31)	□	IH41C(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	6.000
(BVFT31)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	6.000

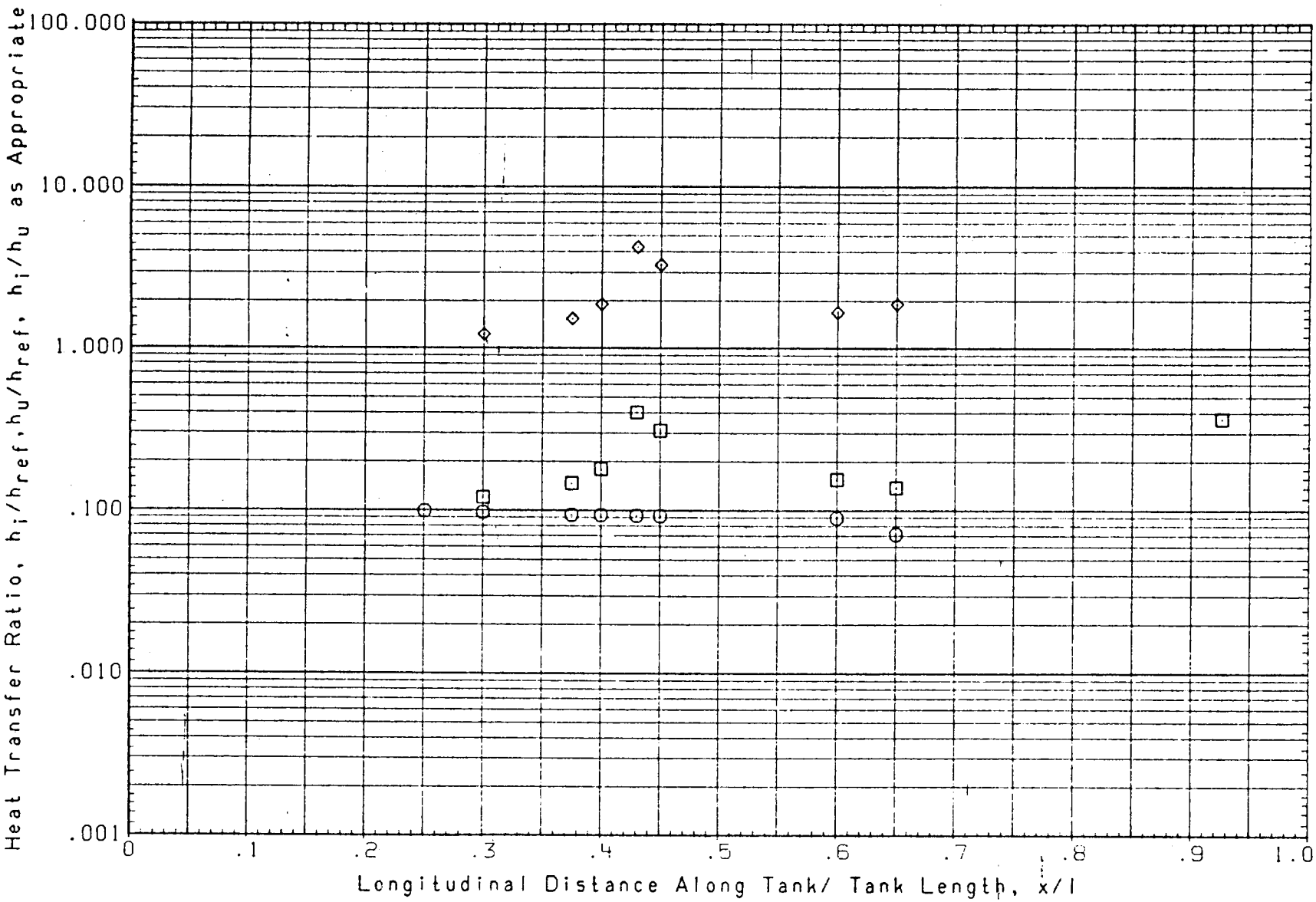


FIG. 25 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = 6

MACH = 4.020 ALPHA = -4.995 PHI = 33.750

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	6.000
(LVFT31)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	6.000
(BVFT31)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	6.000

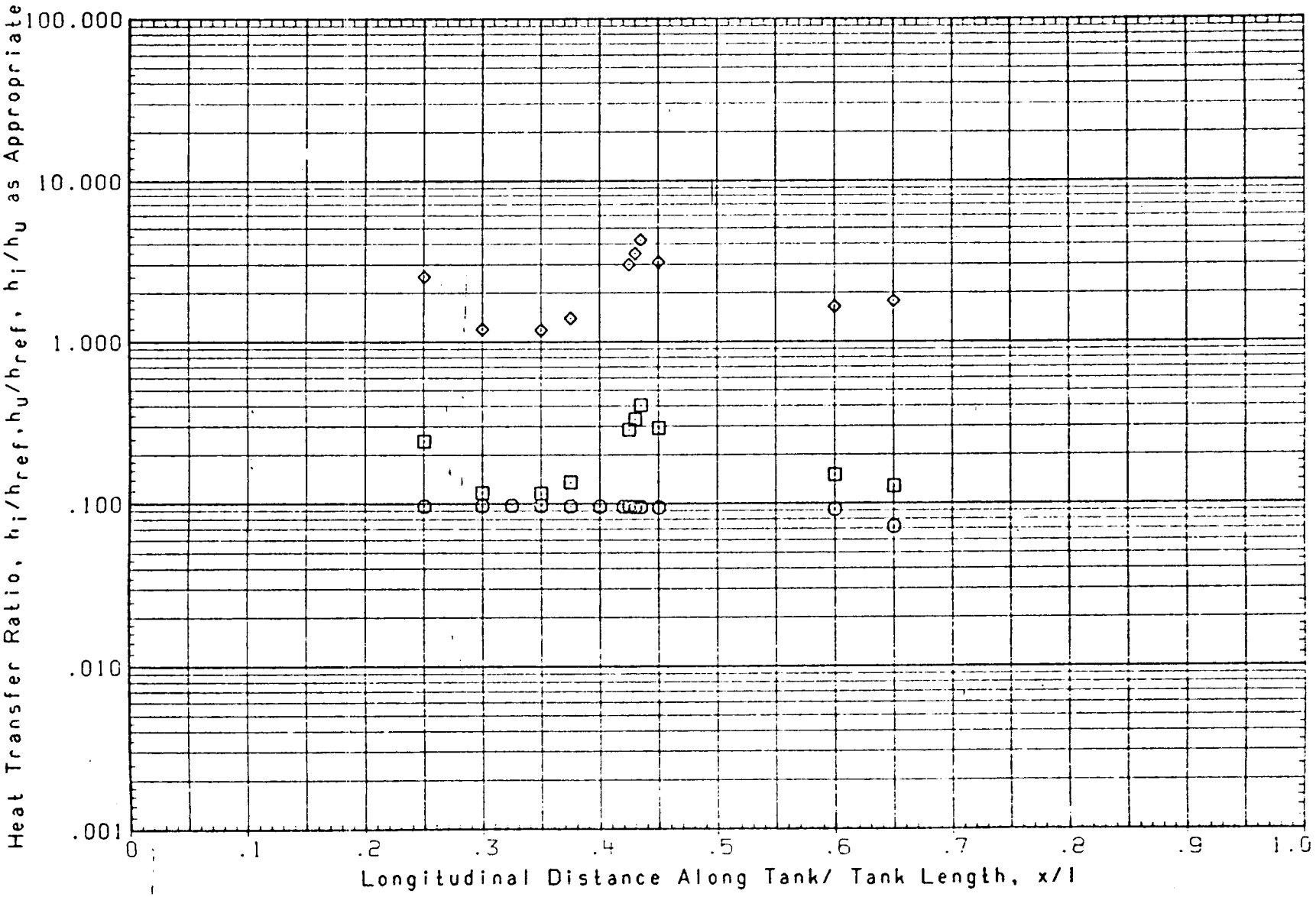


FIG. 25 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = 6

MACH = 4.020 ALPHA = -4.995 PHI = 36.320

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	6.000
(LVFT31)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	6.000
(BVFT31)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	6.000

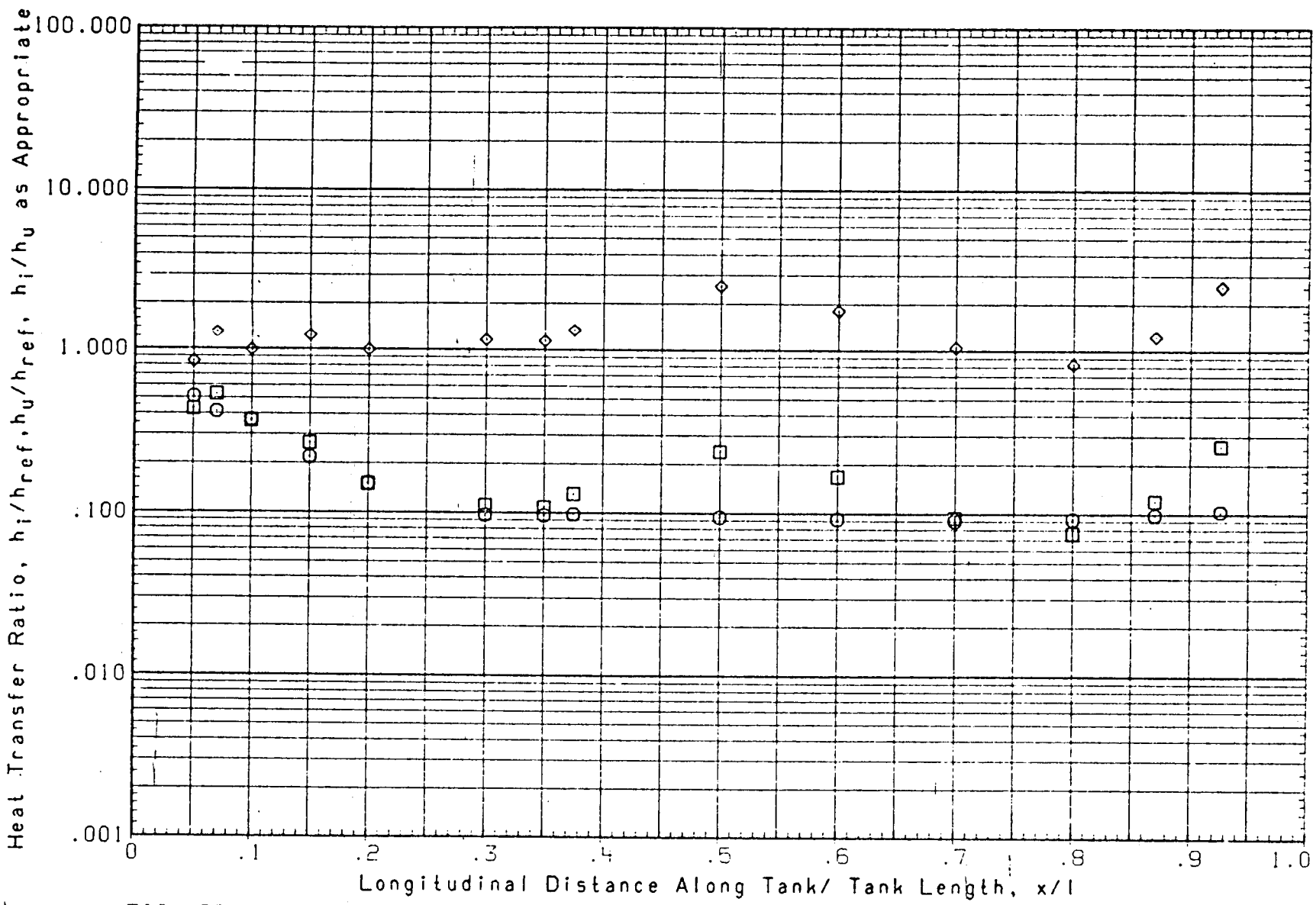


FIG. 25 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = 6

MACH = 4.020 ALPHA = -4.995 PHI = 37.700

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	6.000
(LVFT31)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	6.000
(BVFT31)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	6.000

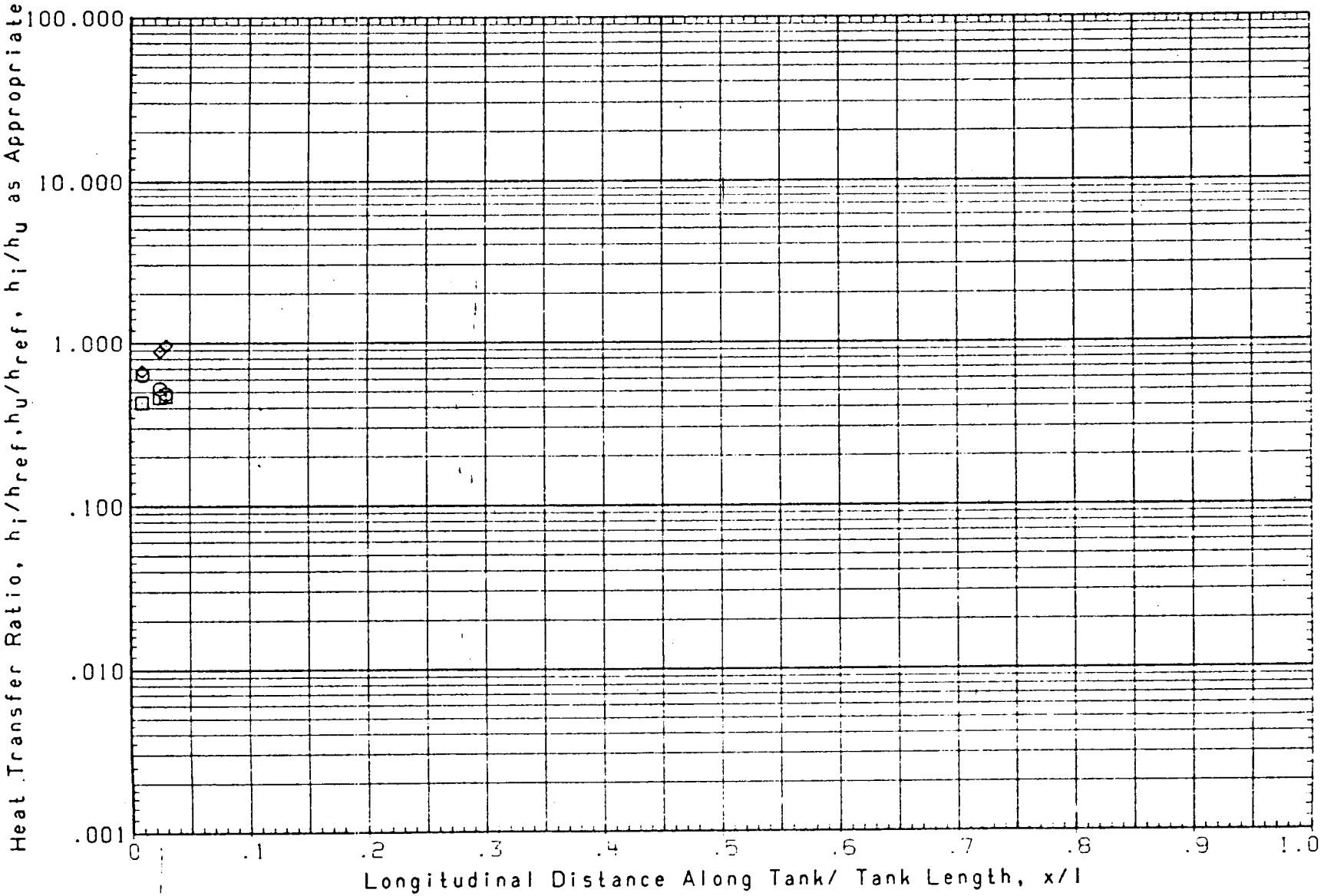


FIG. 25 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = 6

MACH = 4.020 ALPHA = -4.995 PHI = 39.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	6.000
(LVFT31)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	6.000
(BVFT31)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	6.000

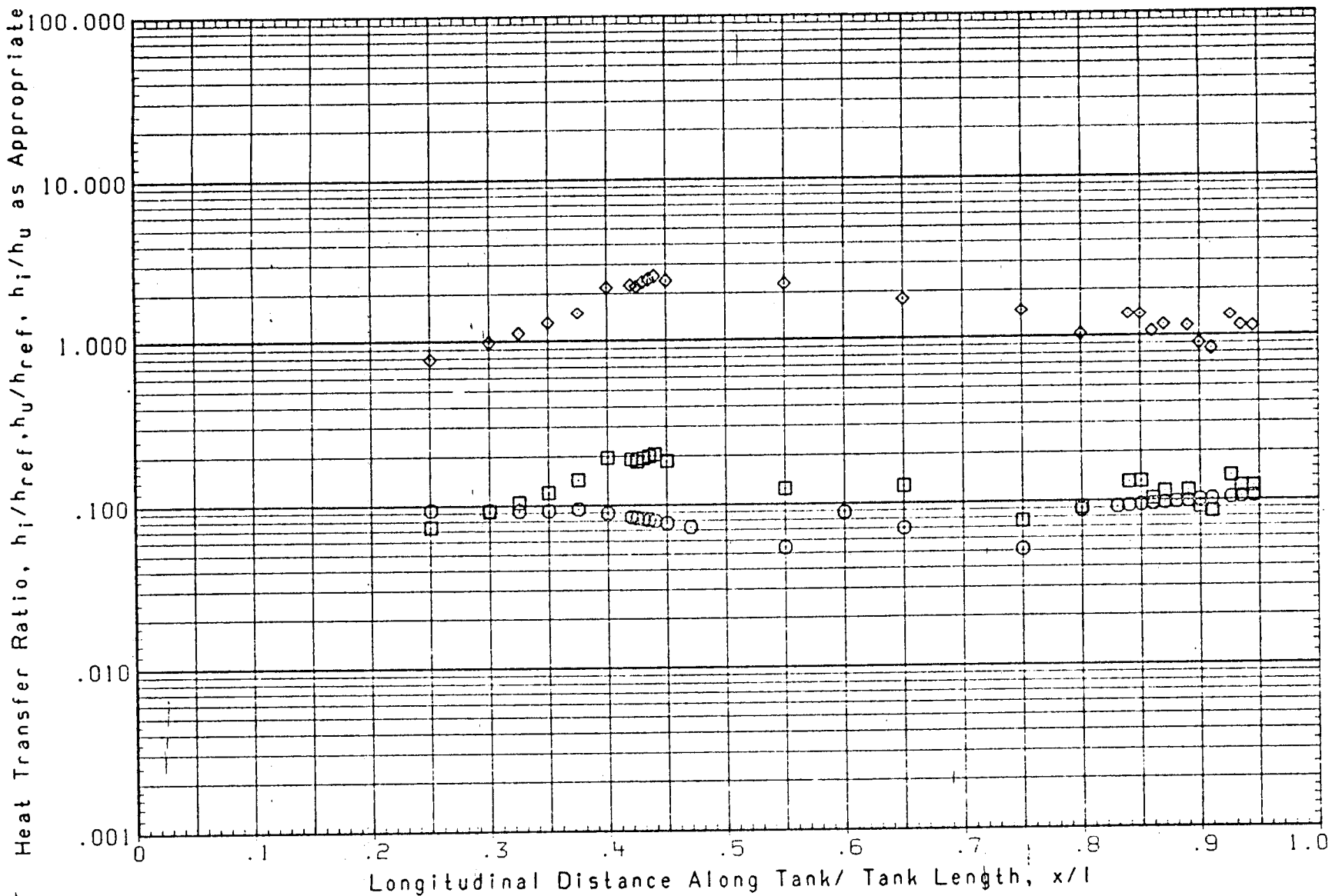


FIG. 25 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = -5, BETA = 6

MACH = 4.020 ALPHA = -4.995 PHI = 45.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	6.000
(LVFT31)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	6.000
(CVFT31)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	6.000

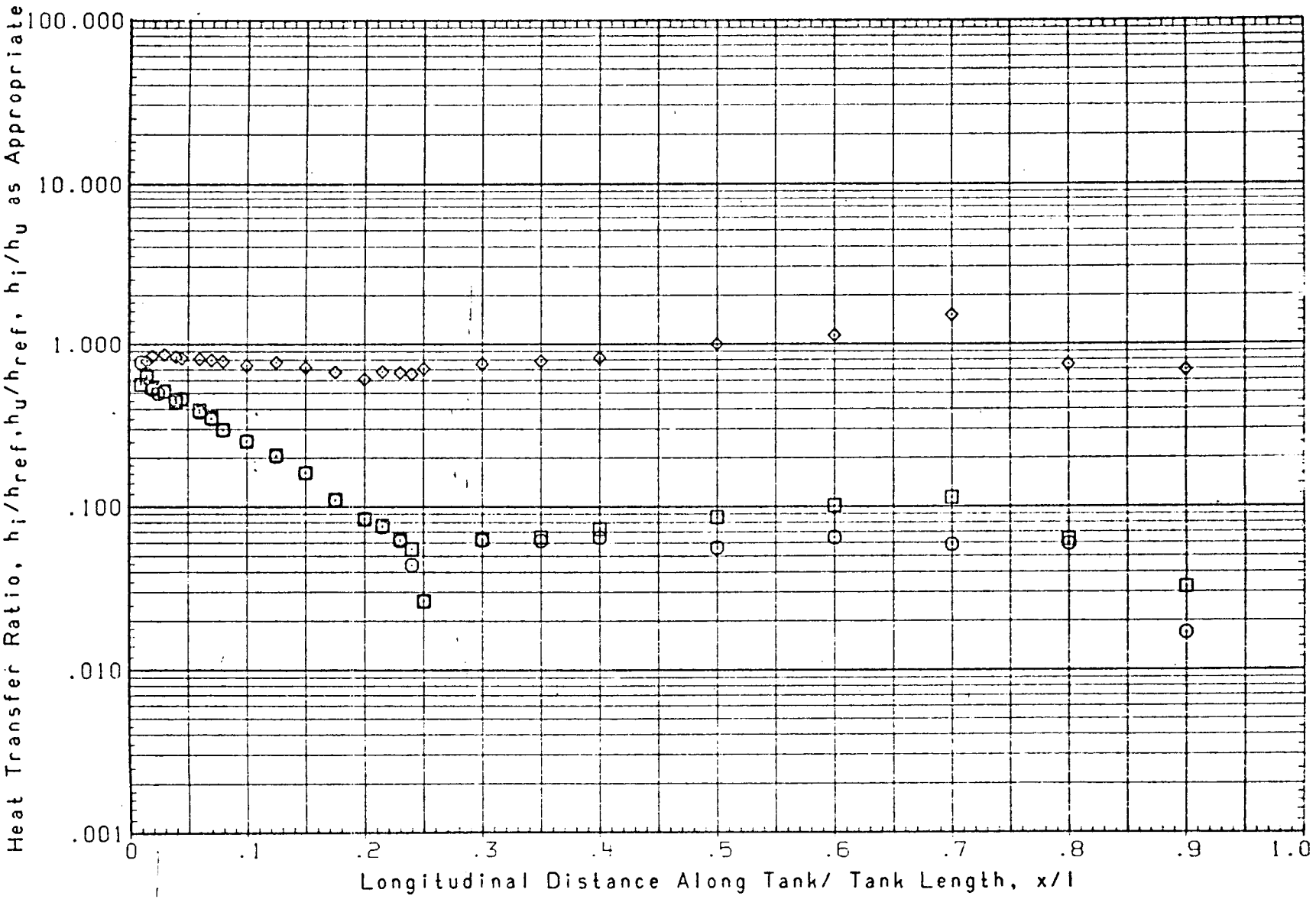


FIG. 26 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = -5, BETA = 6

MACH = 3.010 ALPHA = -4.995 PHI = 180.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	6.000
(LVFT31)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	6.000
(CVFT31)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	6.000

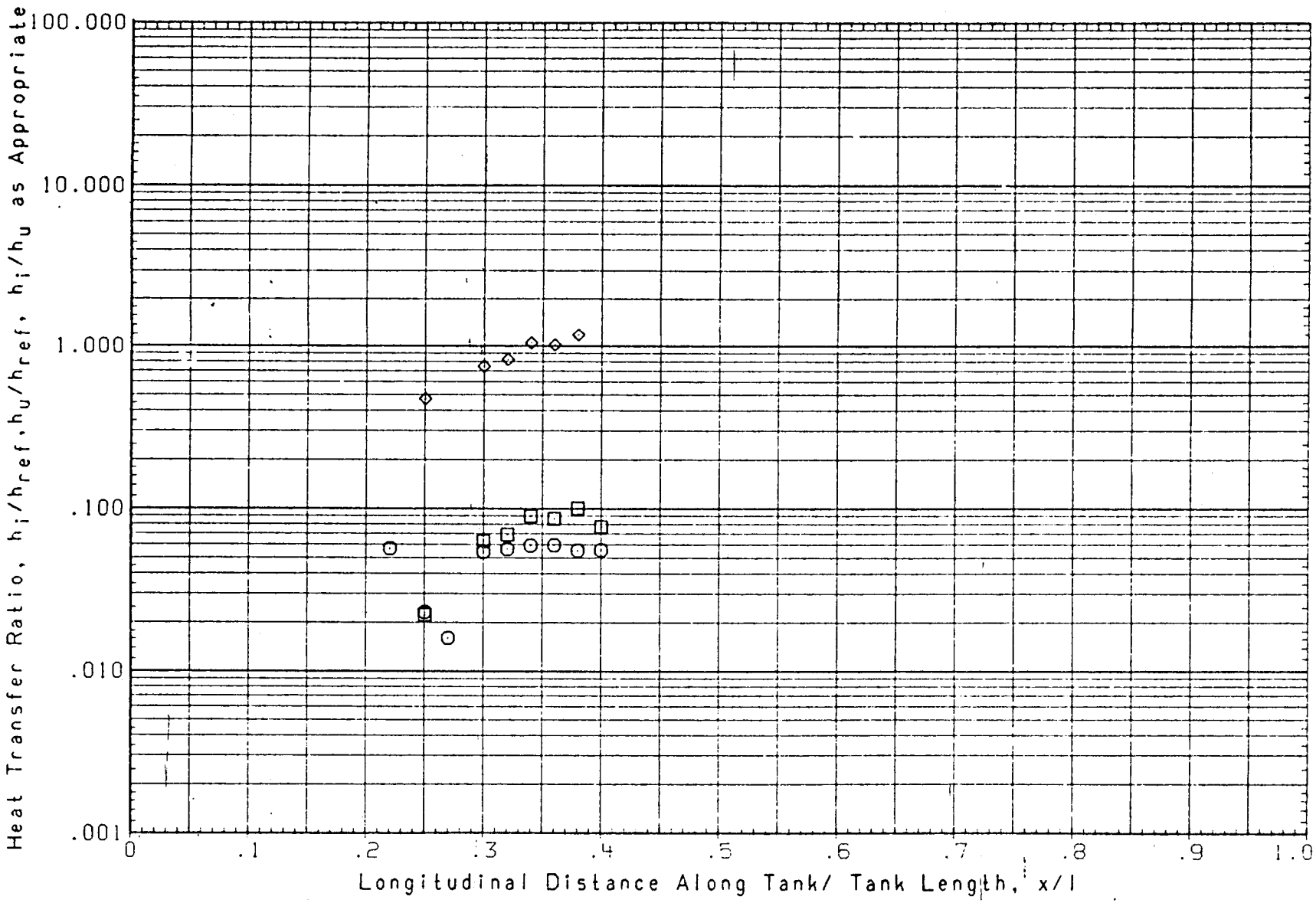


FIG. 26 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = -5, BETA = 6

MACH = 3.010 ALPHA = -4.995 PHI = 235.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	6.000
(LVFT31)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	6.000
(CVFT31)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	6.000

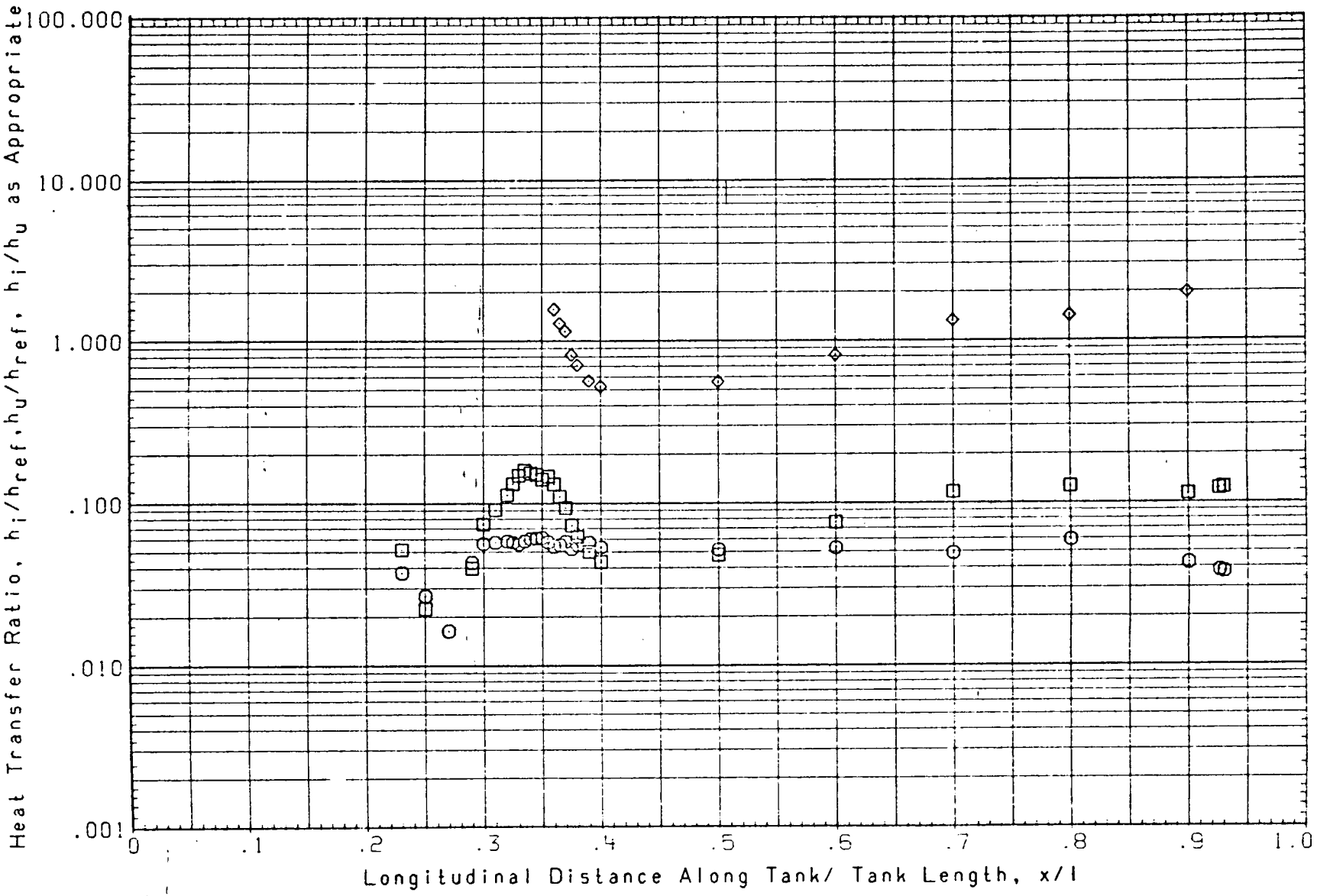


FIG. 26 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = -5, BETA = 6

MACH = 3.010 ALPHA = -4.995 PHI = 247.500

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	6.000
(LVFT31)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	6.000
(CVFT31)	◇	DATA NOT AVAILABLE	-5.000	6.000

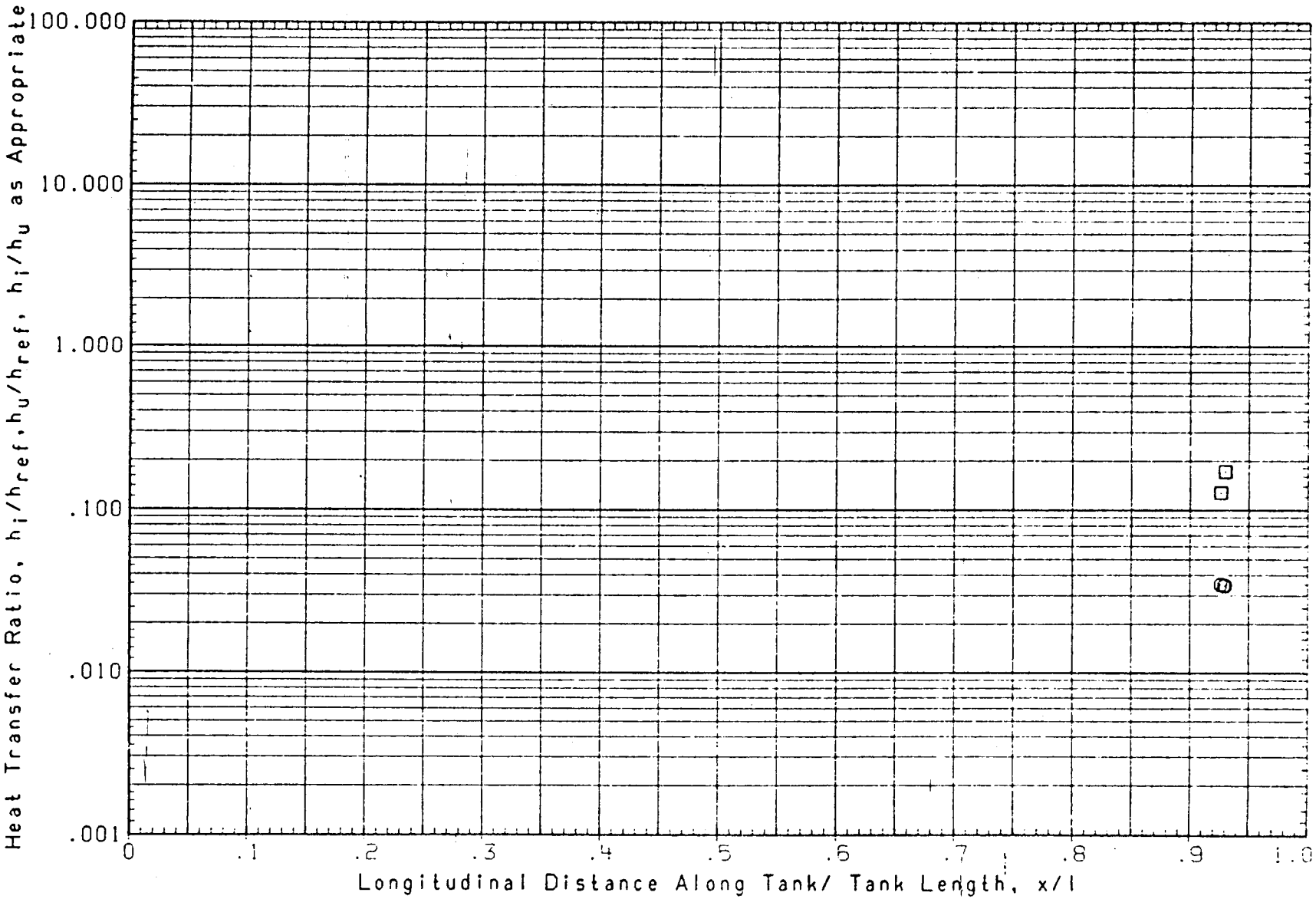


FIG. 26 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = -5, BETA = 6

MACH = 3.010 ALPHA = -4.995 PHI = 250.570

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	6.000
(LVFT31)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	6.000
(CVFT31)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	6.000

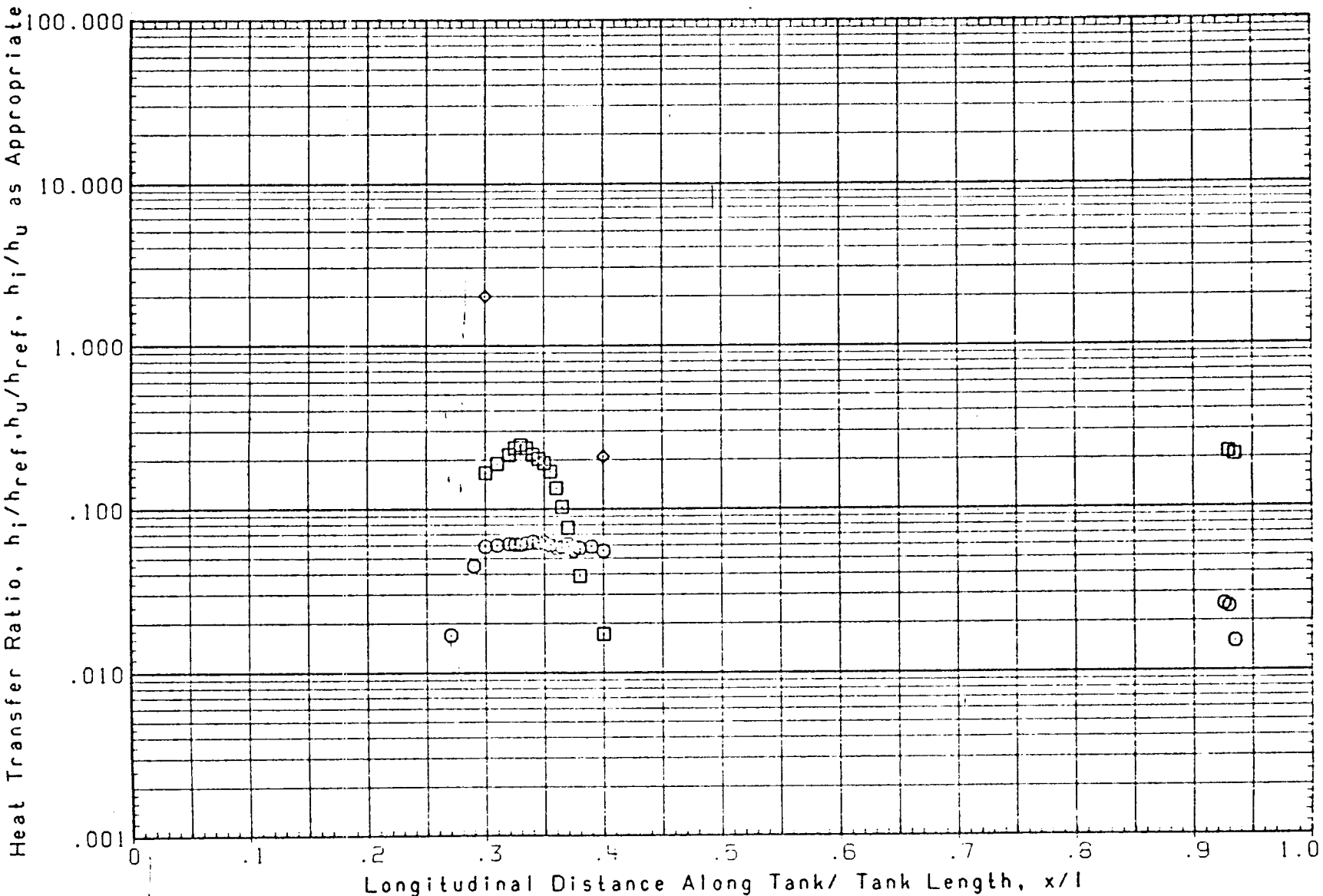


FIG. 26 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = -5, BETA = 6

MACH = 3.010 ALPHA = -4.995 PHI = 258.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	6.000
(LVFT31)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	6.000
(CVFT31)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	6.000

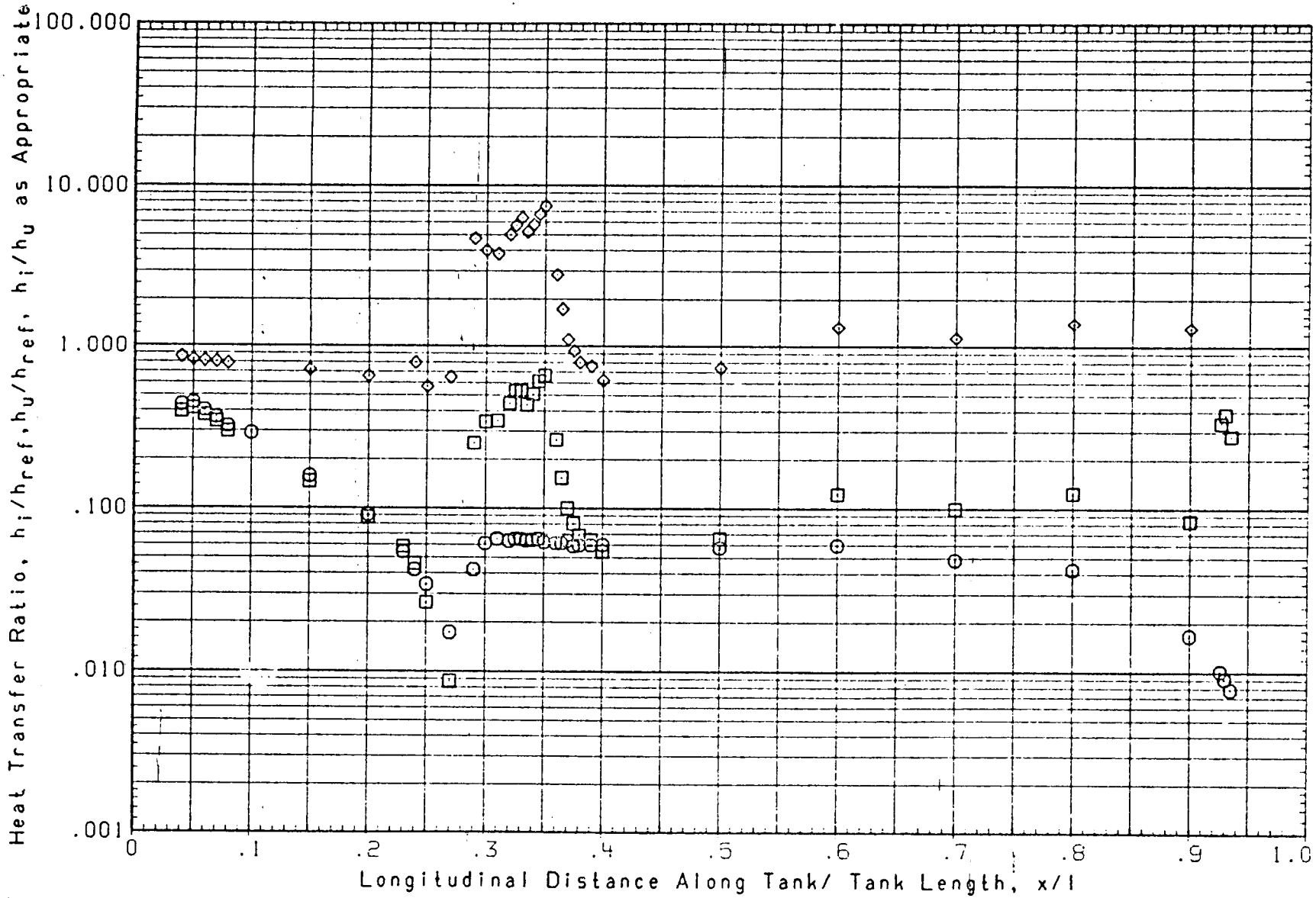


FIG. 26 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = -5, BETA = 6

MACH = 3.010 ALPHA = -4.995 PHI = 270.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	6.000
(LVFT31)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	6.000
(CVFT31)	◇	DATA NOT AVAILABLE	-5.000	6.000

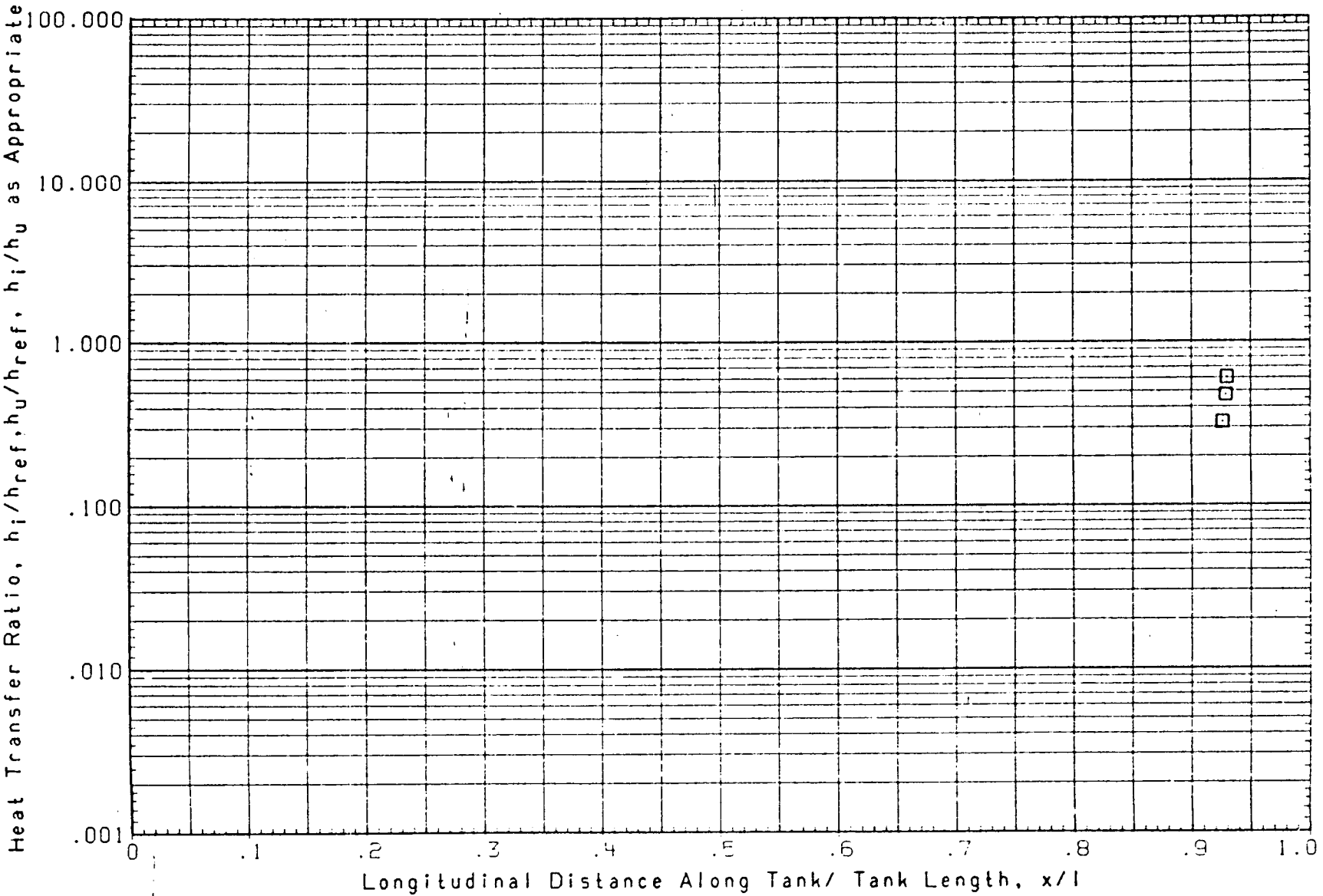


FIG. 26 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = -5, BETA = 6

MACH = 3.010 ALPHA = -4.995 PHI = 283.430

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	6.000
(LVFT31)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	6.000
(CVFT31)	◇	DATA NOT AVAILABLE	-5.000	6.000

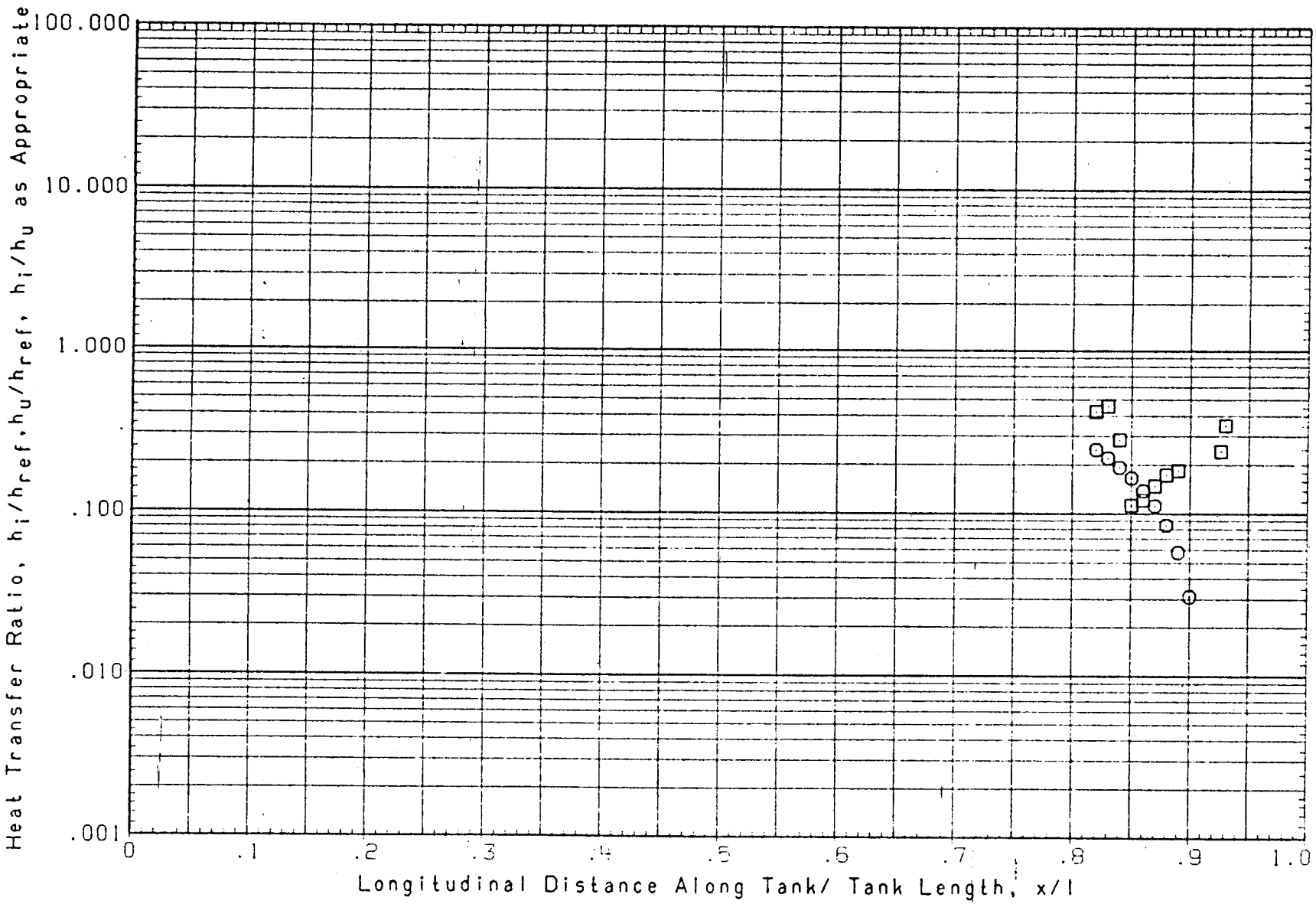


FIG. 26 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = -5, BETA = 6

MACH = 3.010 ALPHA = -4.995 PHI = 292.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	6.000
(LVFT31)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	6.000
(CVFT31)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	6.000

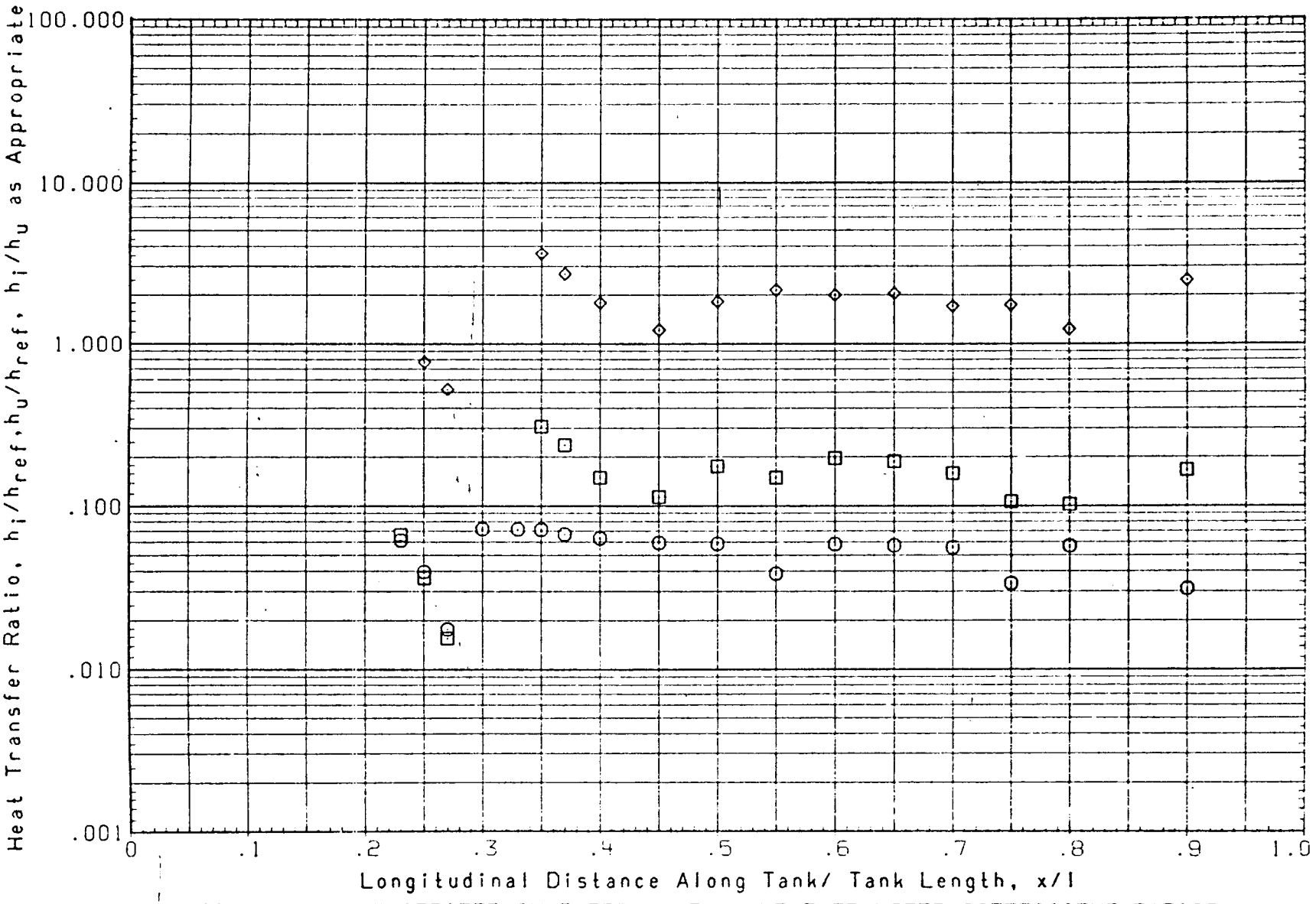


FIG. 26 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = -5, BETA = 6

MACH = 3.010 ALPHA = -4.995 PHI = 292.500

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	6.000
(LVFT31)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	6.000
(CVFT31)	◇	DATA NOT AVAILABLE	-5.000	6.000

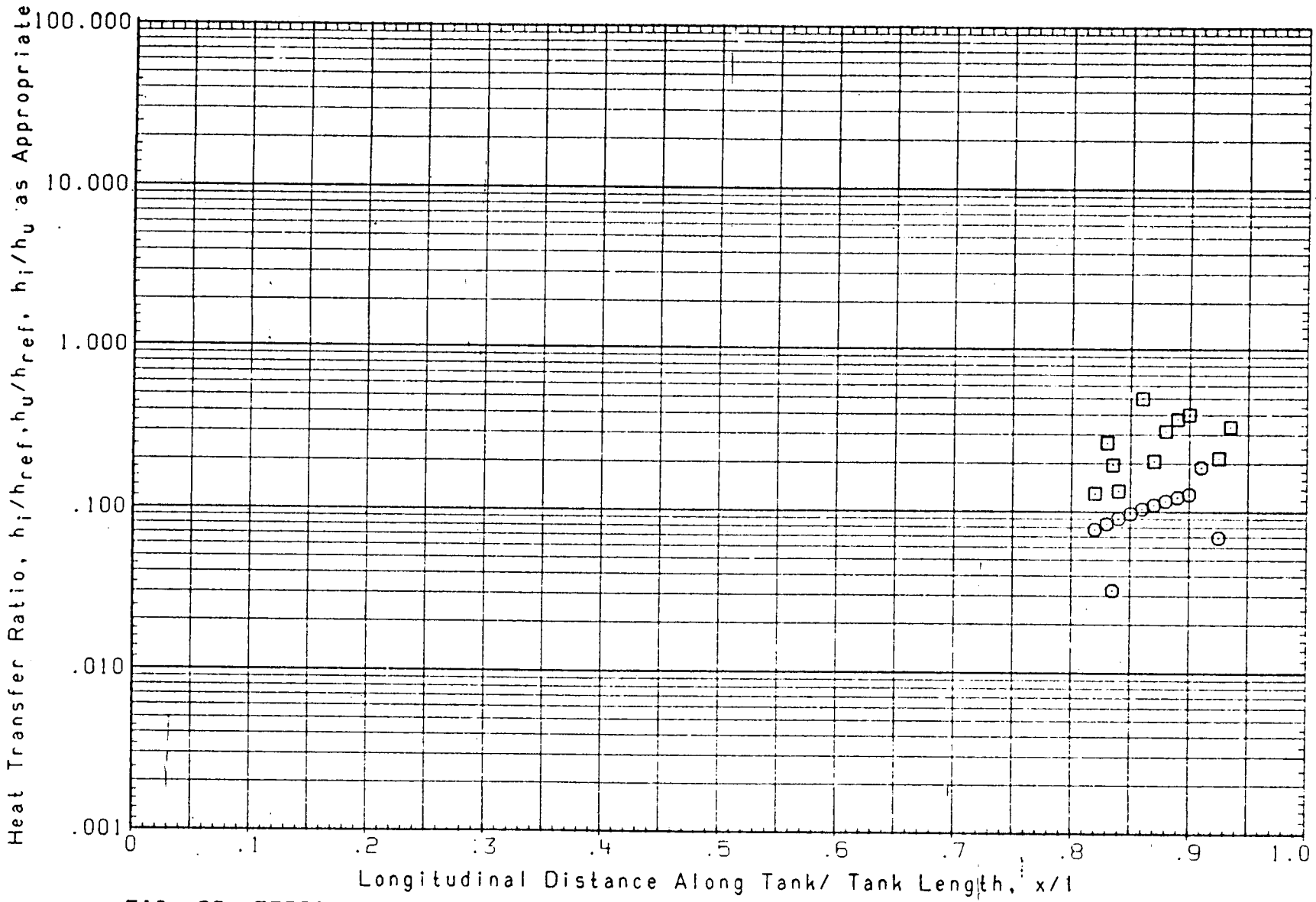


FIG. 26 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = -5, BETA = 6

MACH = 3.010 ALPHA = -4.995 PHI = 301.500

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	6.000
(LVFT31)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	6.000
(CVFT31)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	6.000

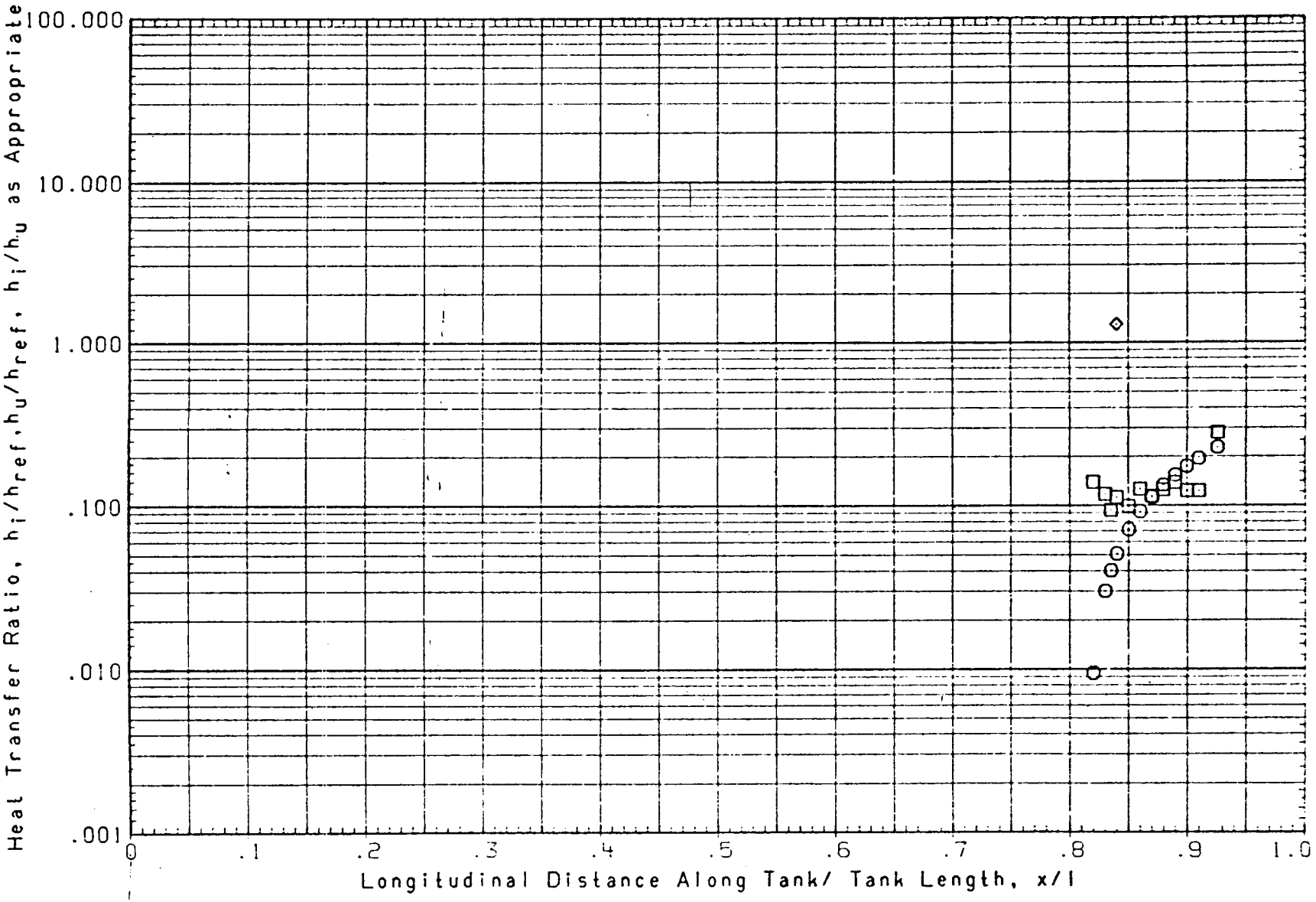


FIG. 26 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = -5, BETA = 6

MACH = 3.010 ALPHA = -4.995 PHI = 305.400

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	6.000
(LVFT31)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	6.000
(CVFT31)	◇	DATA NOT AVAILABLE	-5.000	6.000

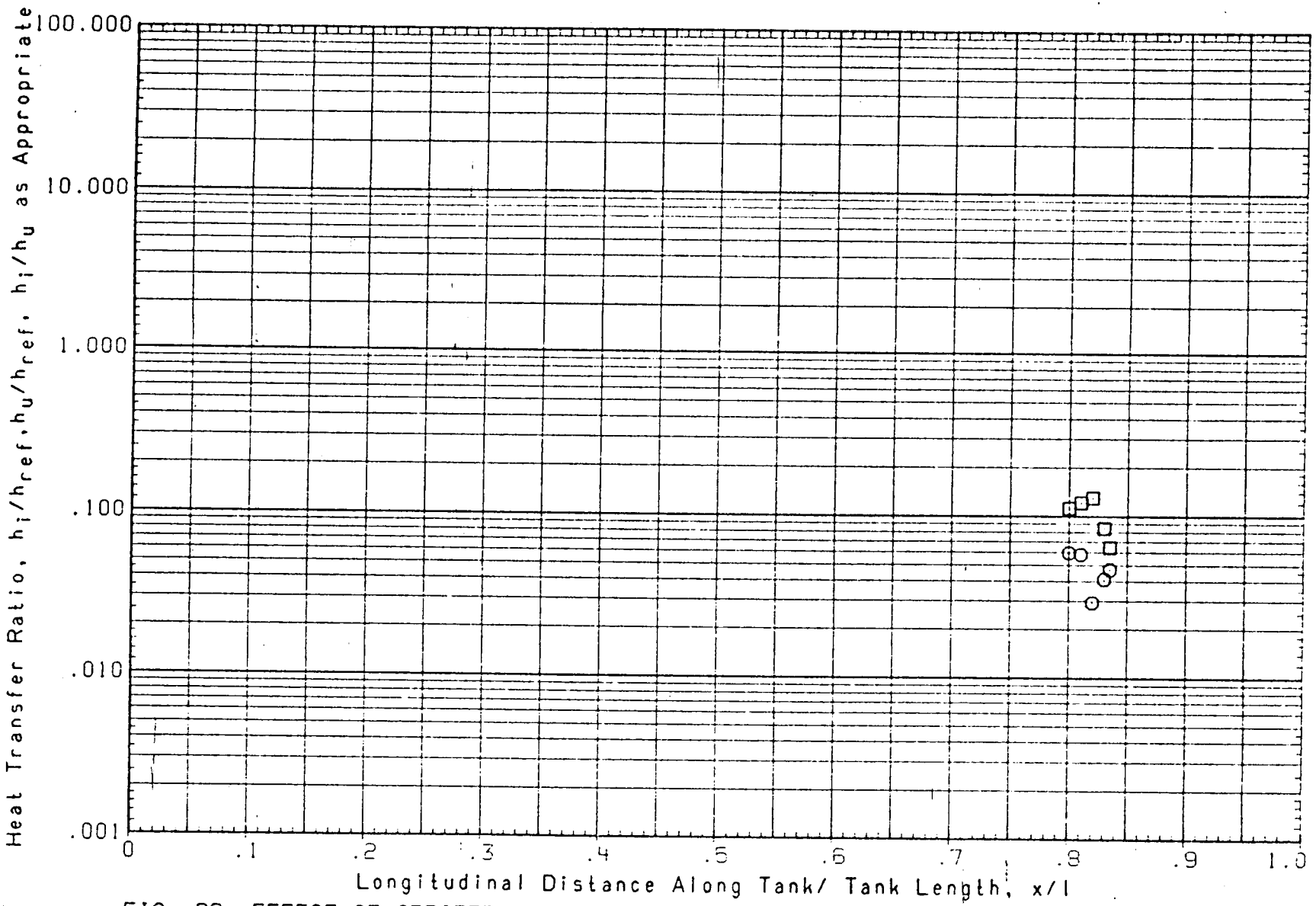


FIG. 26 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = -5, BETA = 6

MACH = 3.010 ALPHA = -4.935 PHI = 309.300

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	6.000
(LVFT31)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	6.000
(CVFT31)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	6.000

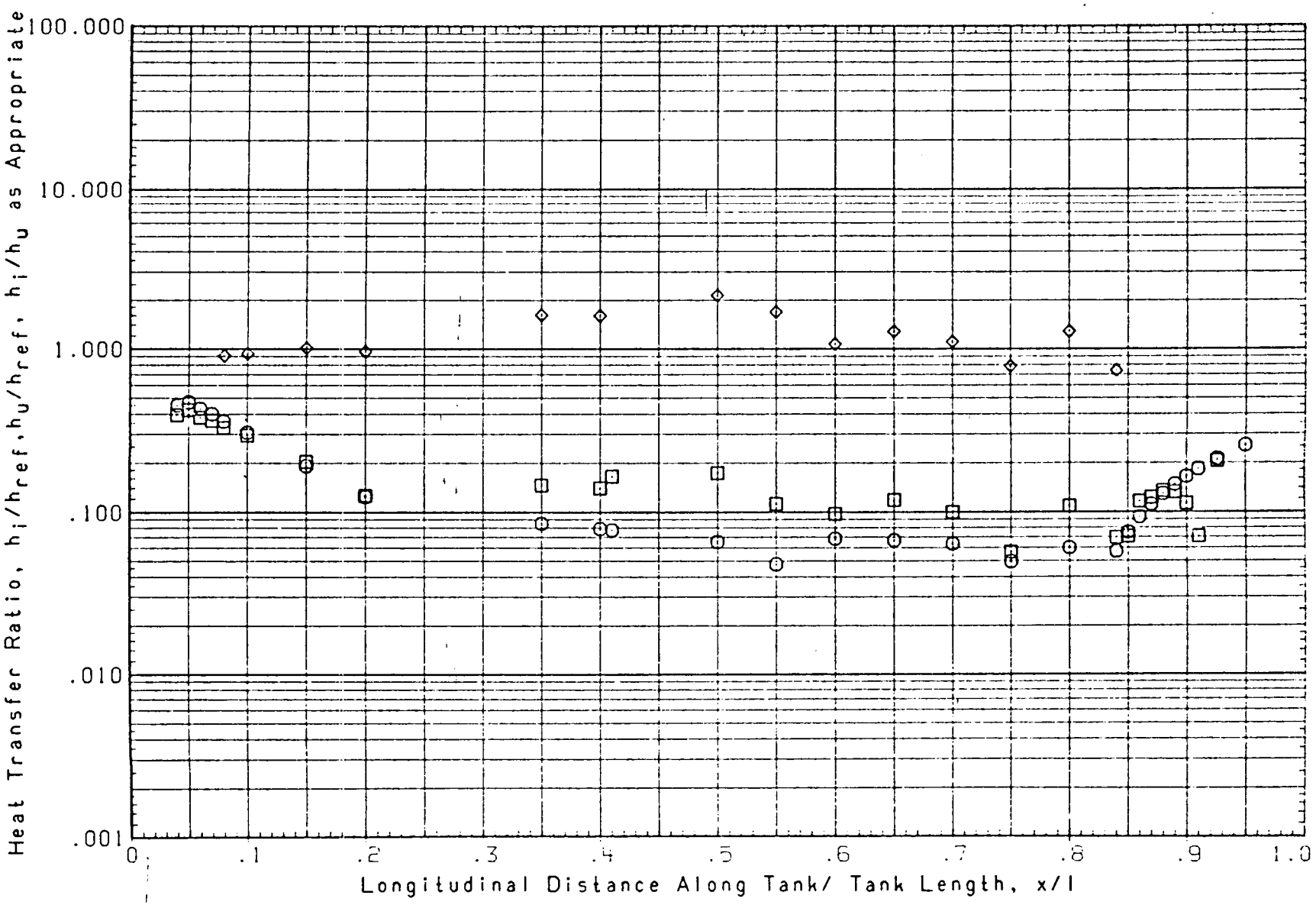


FIG. 26 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = -5, BETA = 6

MACH = 3.010 ALPHA = -4.995 PHI = 315.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	6.000
(LVFT31)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	6.000
(CVFT31)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	6.000

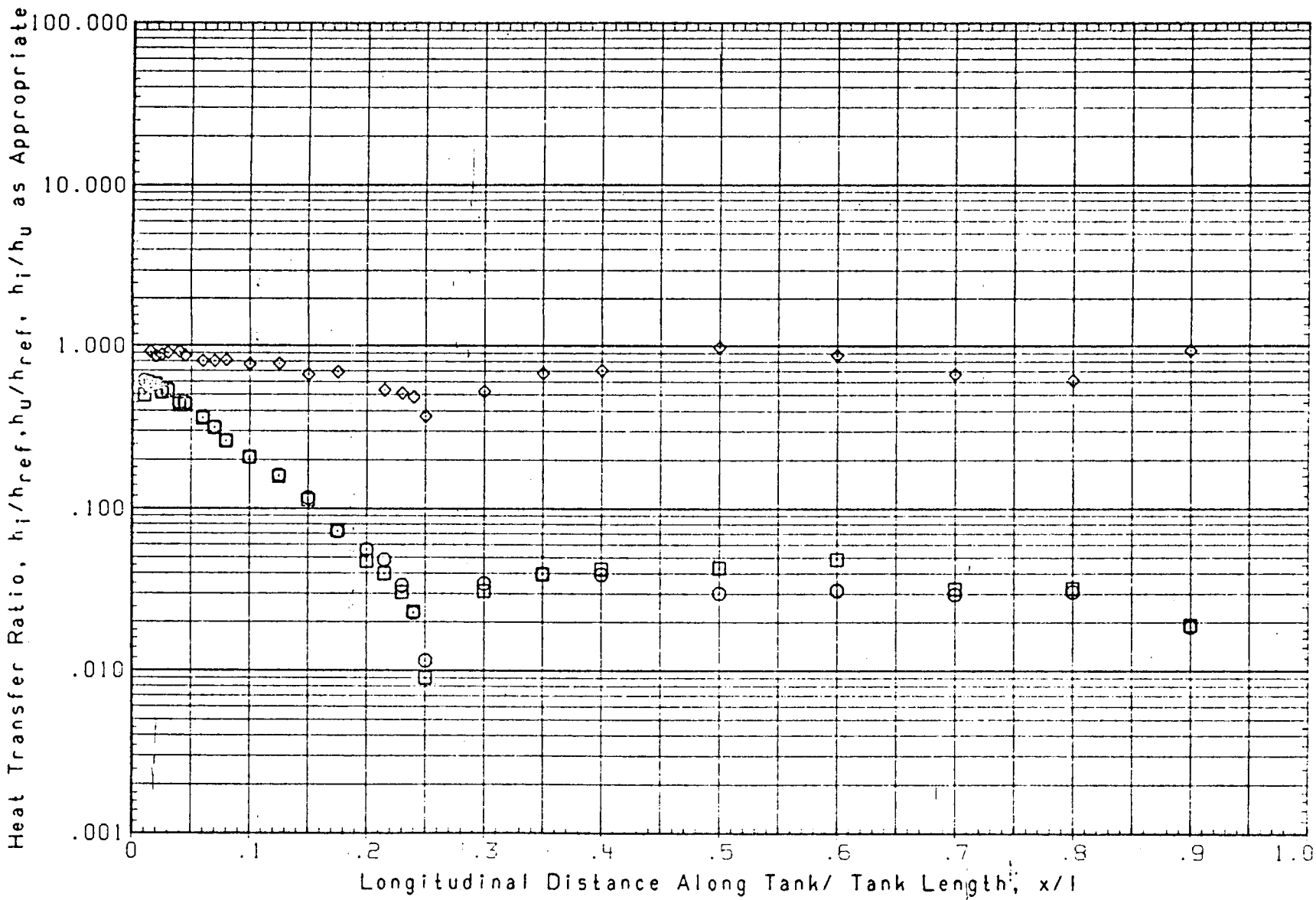


FIG. 26 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = -5, BETA = 6

MACH = 4.020 ALPHA = -4.995 PHI = 180.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	6.000
(LVFT31)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	6.000
(CVFT31)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	6.000

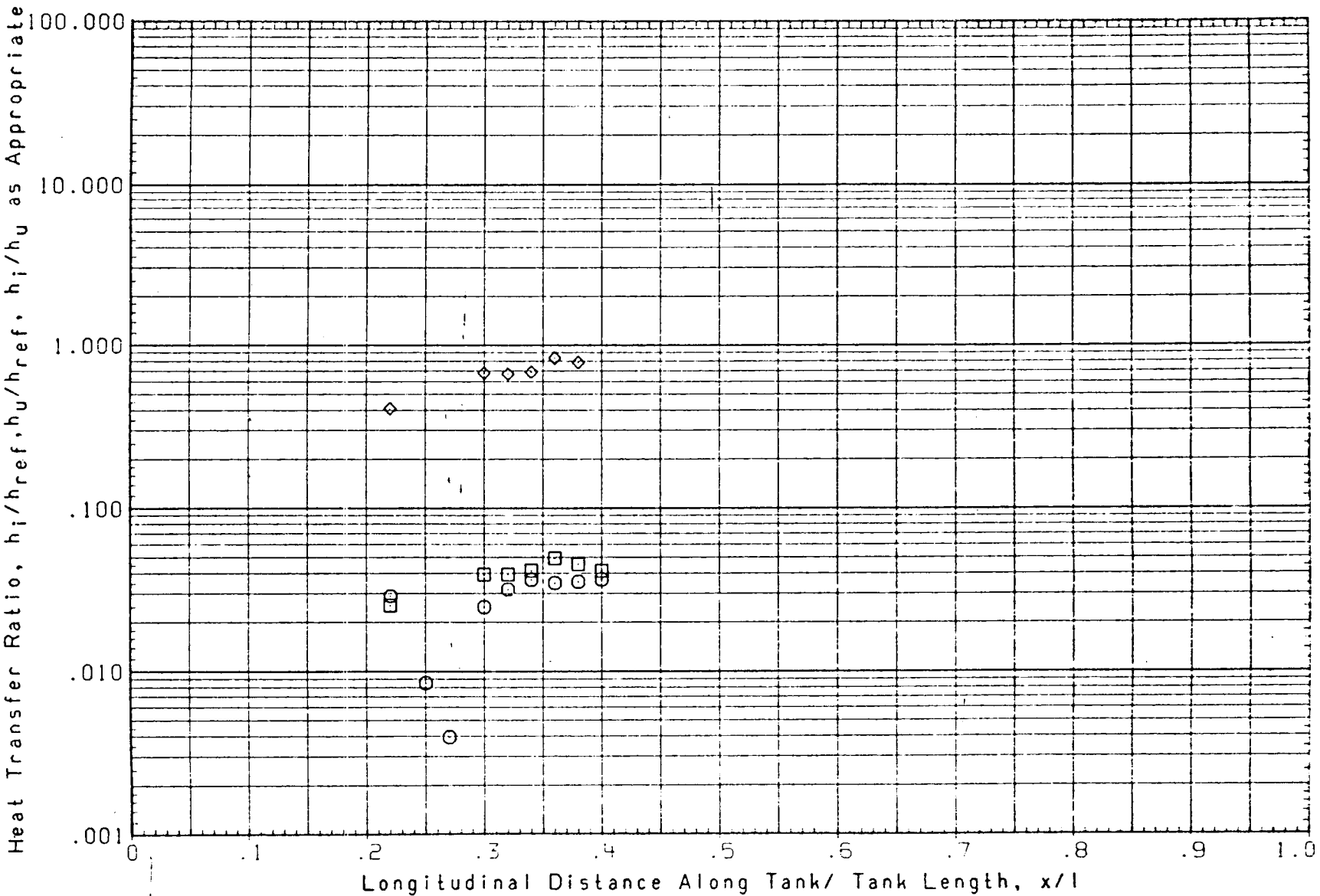


FIG. 26 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = -5, BETA = 6

MACH = 4.020 ALPHA = -4.995 PHI = 235.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	6.000
(LVFT31)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	6.000
(CVFT31)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	6.000

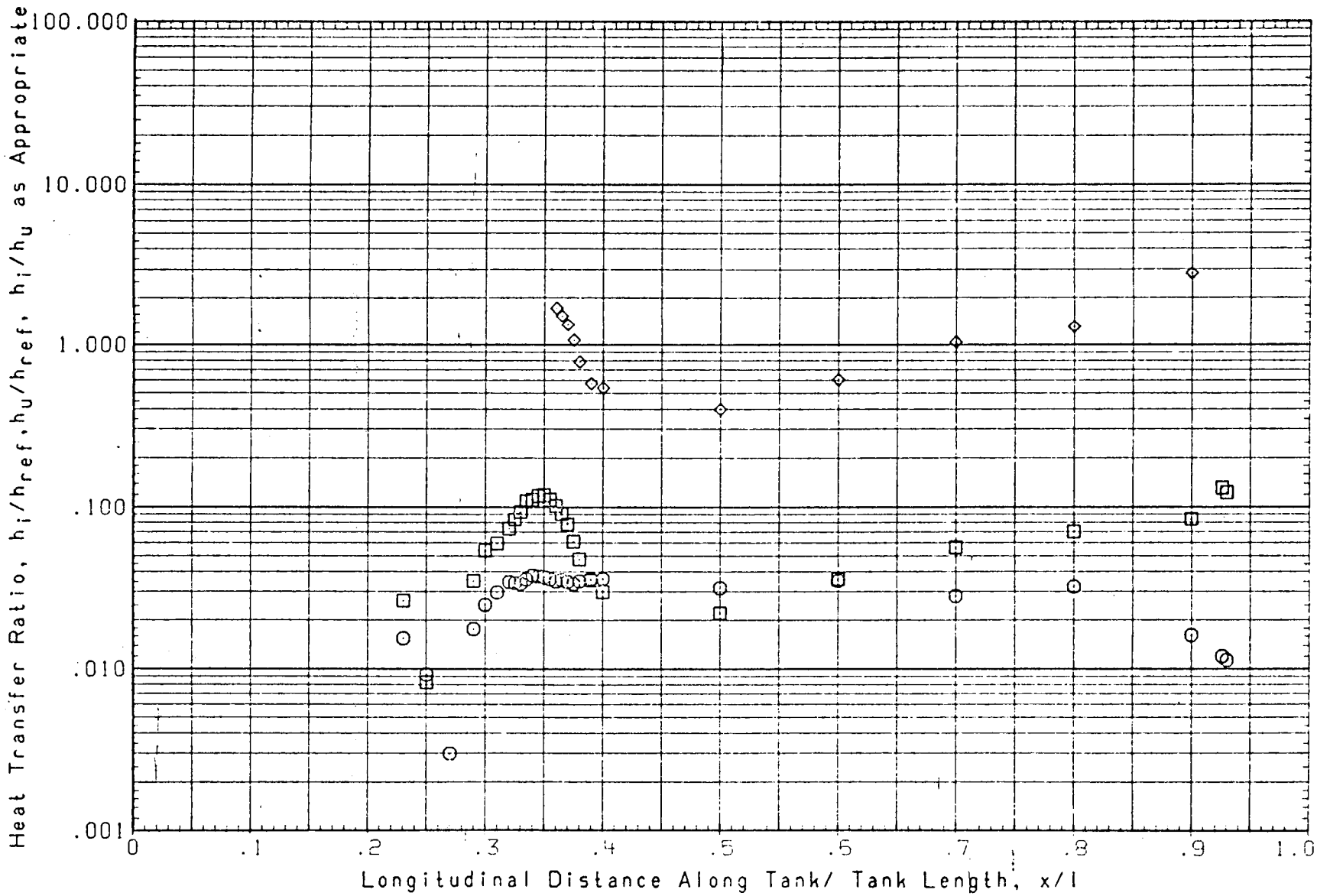


FIG. 26 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = -5, BETA = 6

MACH = 4.020 ALPHA = -4.995 PHI = 247.500

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	6.000
(LVFT31)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	6.000
(CVFT31)	◇	DATA NOT AVAILABLE	-5.000	6.000

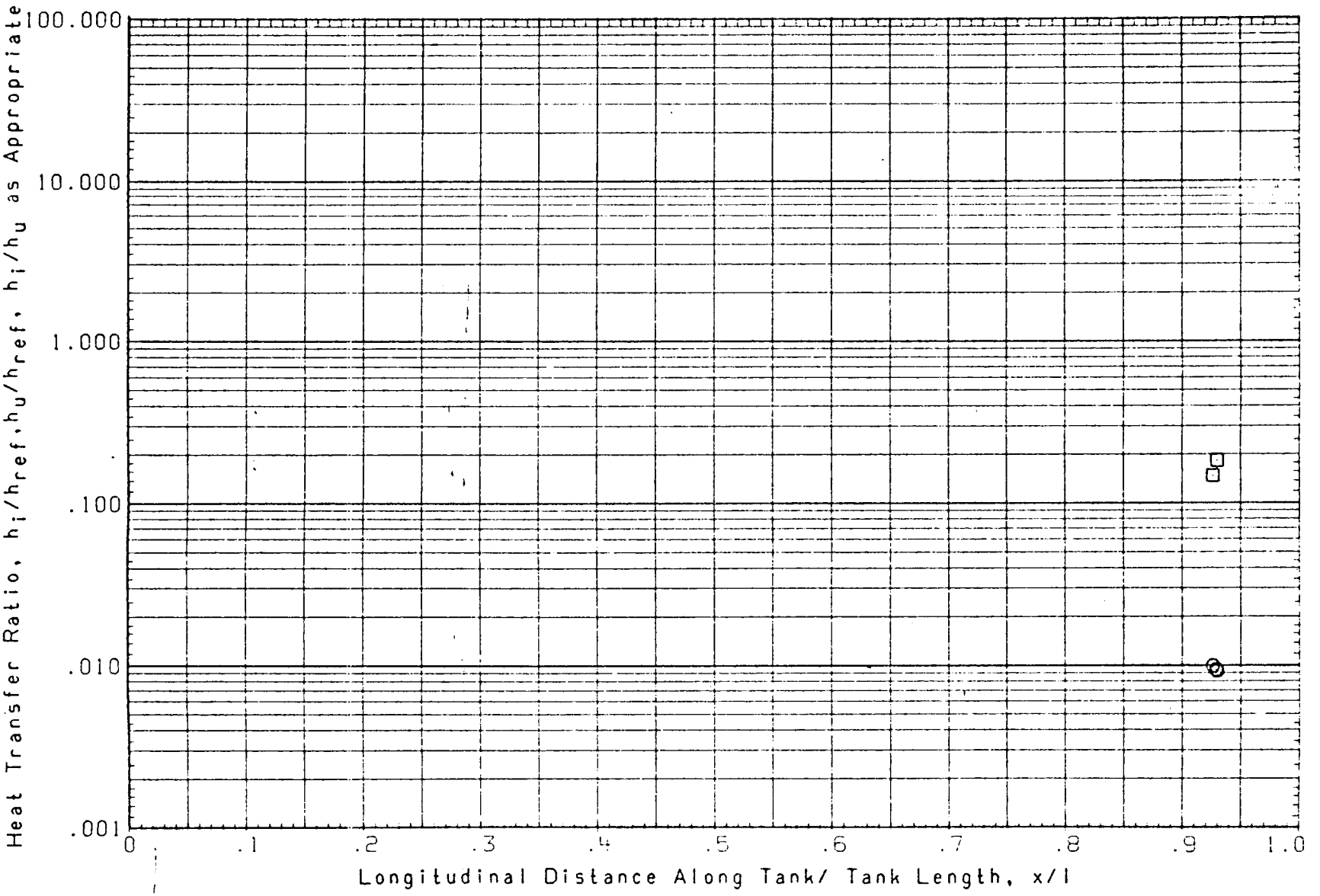


FIG. 26 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = -5, BETA = 6

MACH = 4.020 ALPHA = -4.995 PHI = 250.570

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	6.000
(LVFT31)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	6.000
(CVFT31)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	6.000

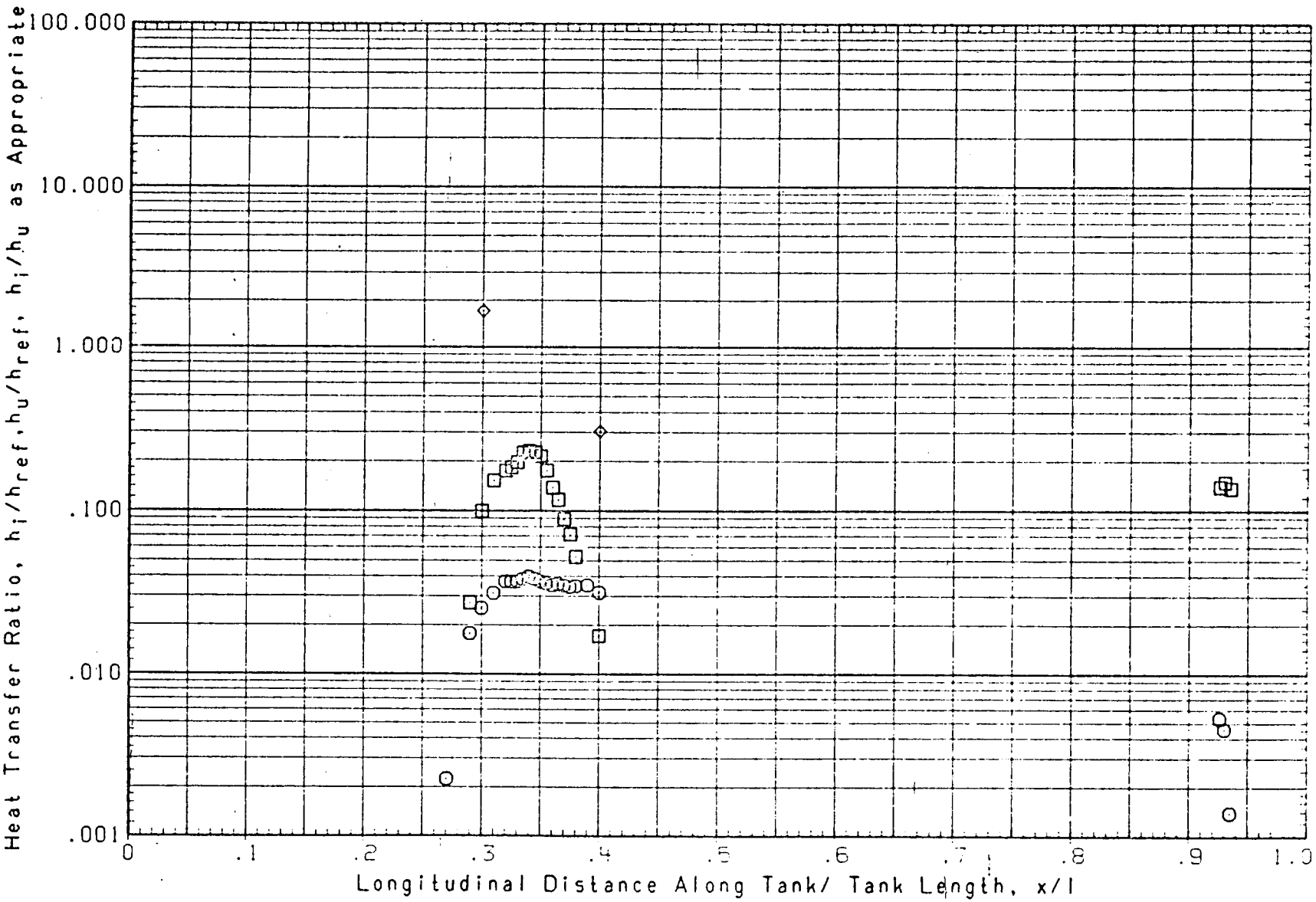


FIG. 26 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = -5, BETA = 6

MACH = 4.020 ALPHA = -4.995 PHI = 258.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	6.000
(LVFT31)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	6.000
(CVFT31)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	6.000

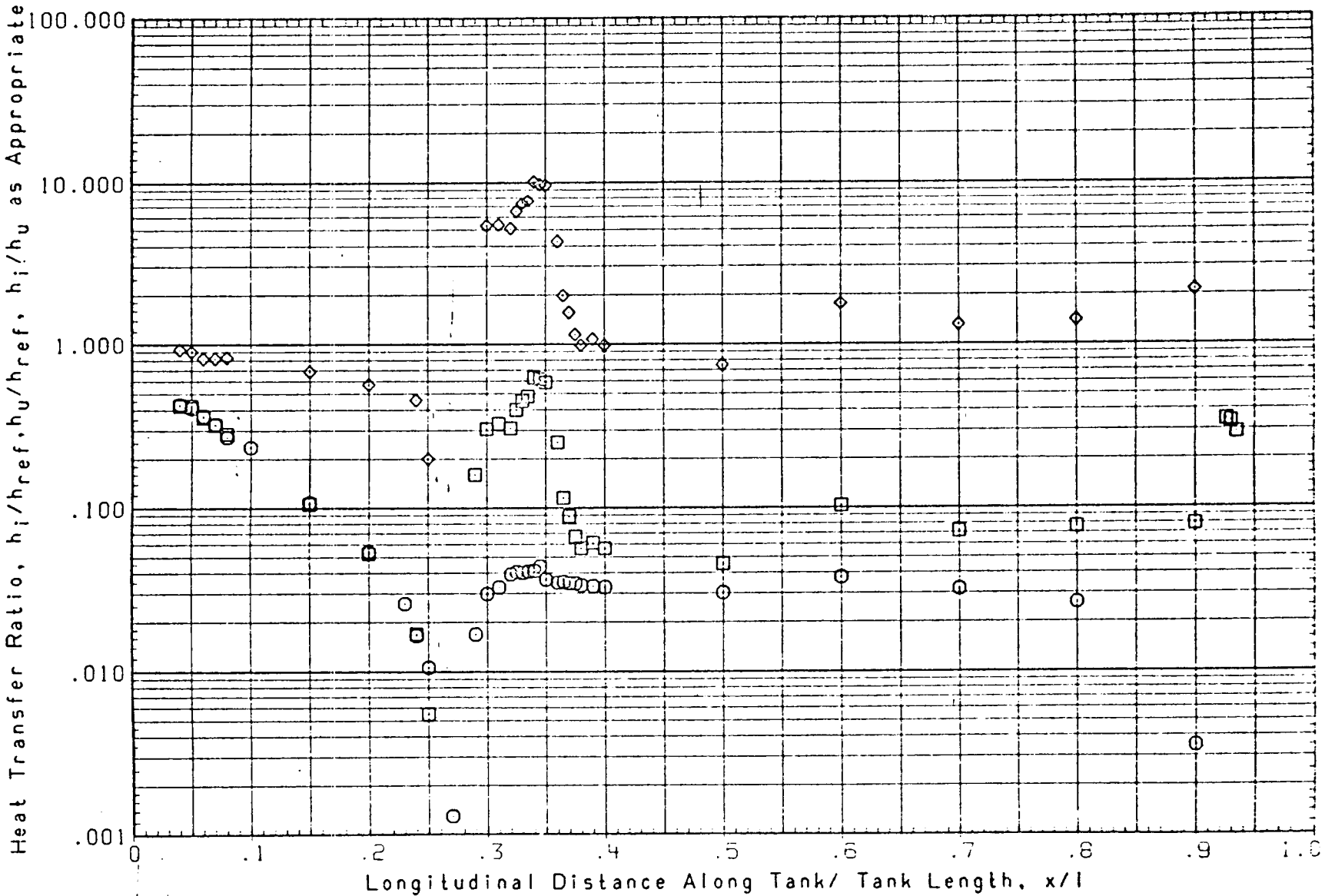


FIG. 26 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = -5, BETA = 6

MACH = 4.020 ALPHA = -4.995 PHI = 270.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	6.000
(LVFT31)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	6.000
(CVFT31)	◇	DATA NOT AVAILABLE	-5.000	6.000

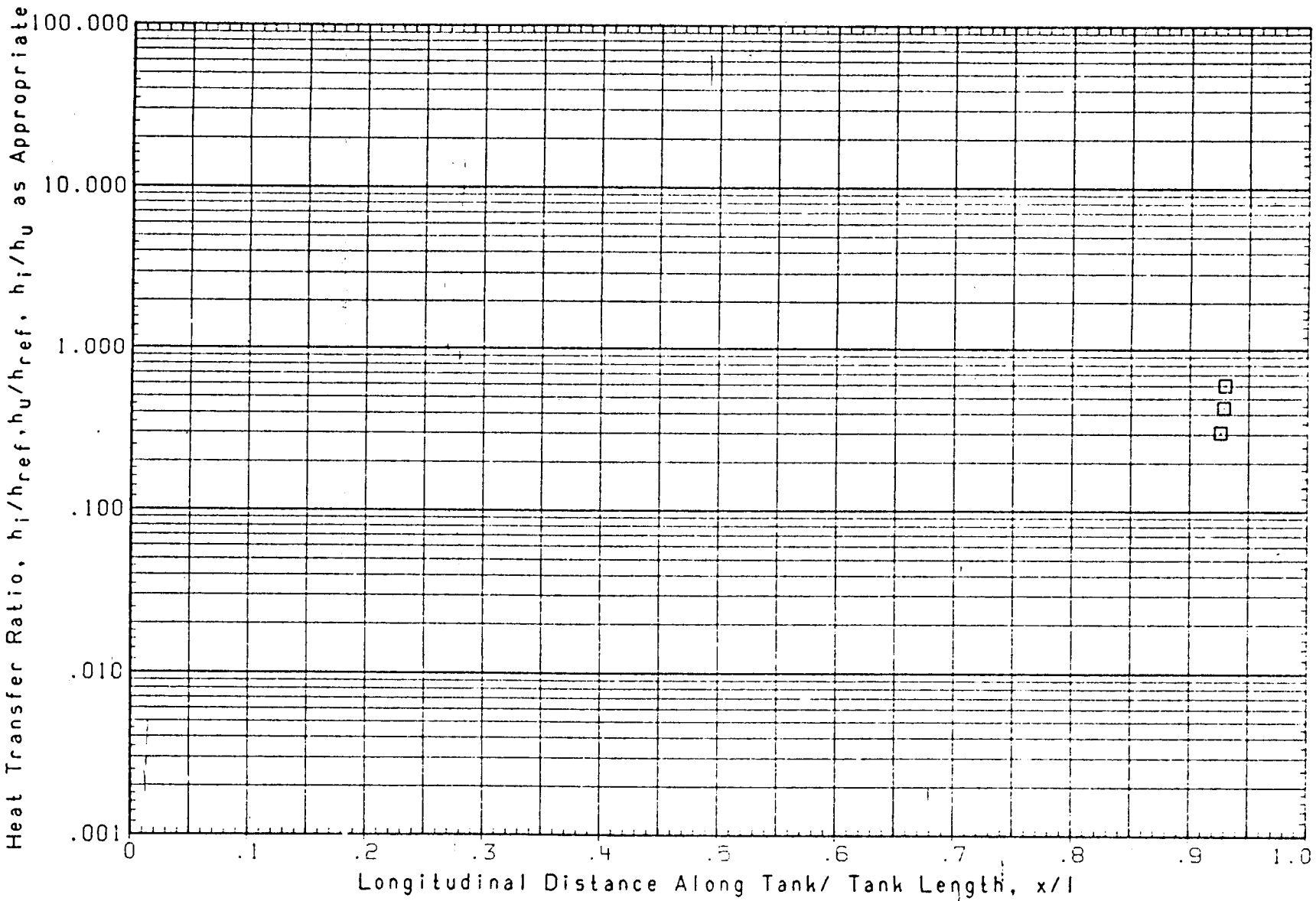


FIG. 26 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = -5, BETA = 6

MACH = 4.020 ALPHA = -4.995 PHI = 289.430

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	6.000
(LVFT31)	□	IH41B(V41A-A4A) O I S (SPIKED ET DATA) HI/HREF	-5.000	6.000
(CVFT31)	◇	DATA NOT AVAILABLE	-5.000	6.000

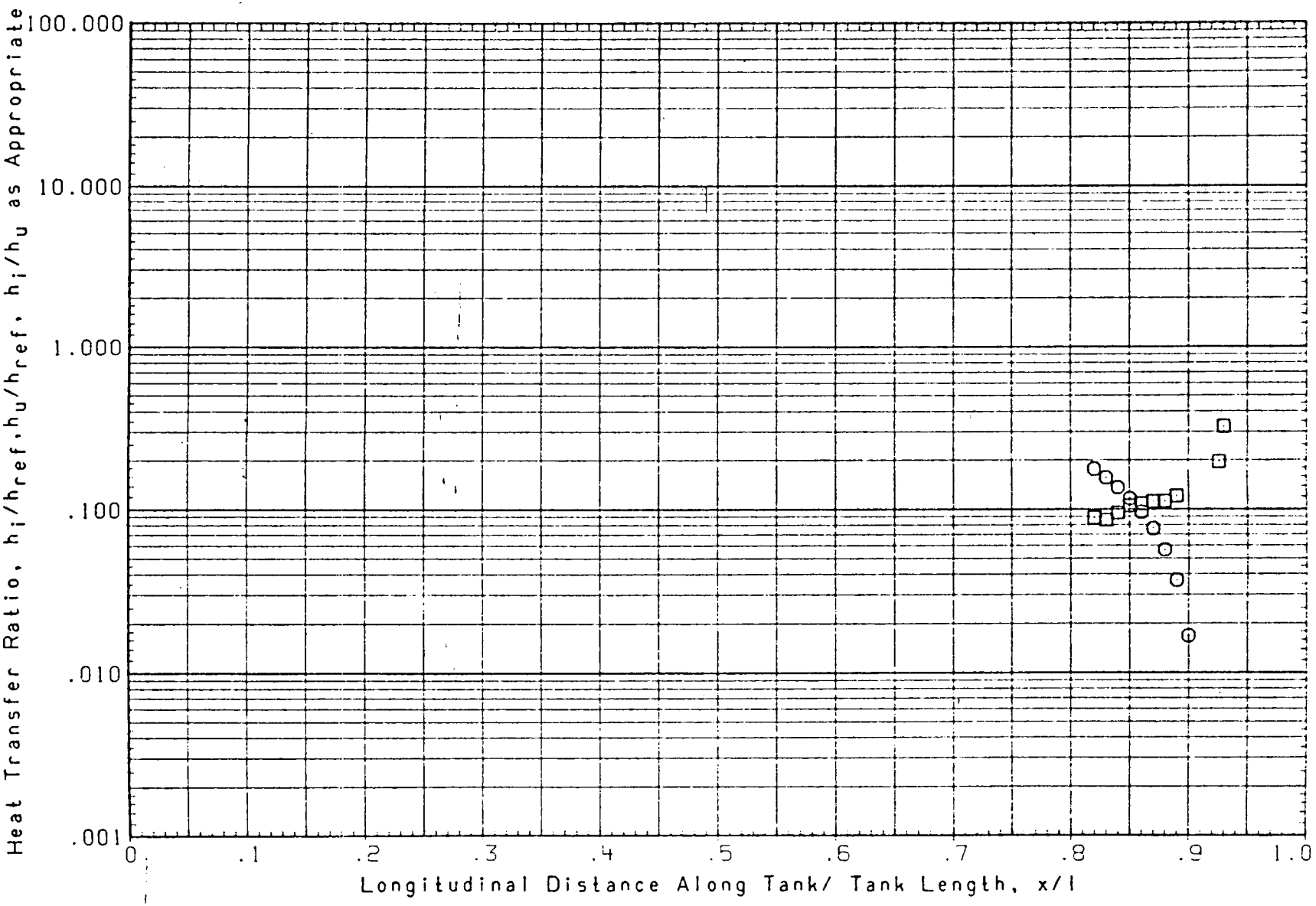


FIG. 26 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = -5, BETA = 6

MACH = 4.020 ALPHA = -4.995 PHI = 292.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	6.000
(LVFT31)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	6.000
(CVFT31)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	6.000

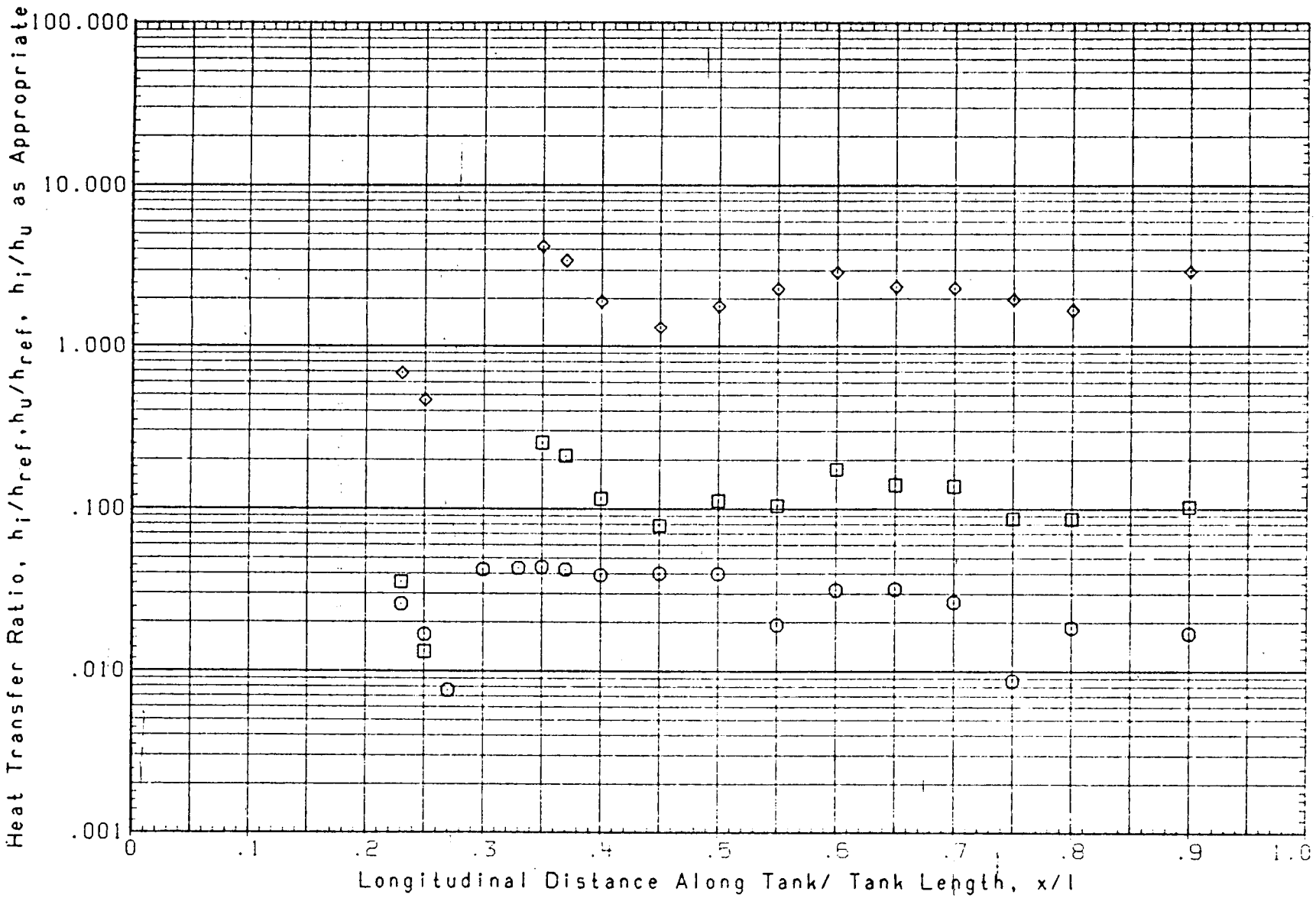


FIG. 26 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS LEEWARD SIDE, ALPHA = -5, BETA = 6

MACH = 4.020 ALPHA = -4.995 PHI = 292.500

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	6.000
(LVFT31)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	6.000
(CVFT31)	◇	DATA NOT AVAILABLE	-5.000	6.000

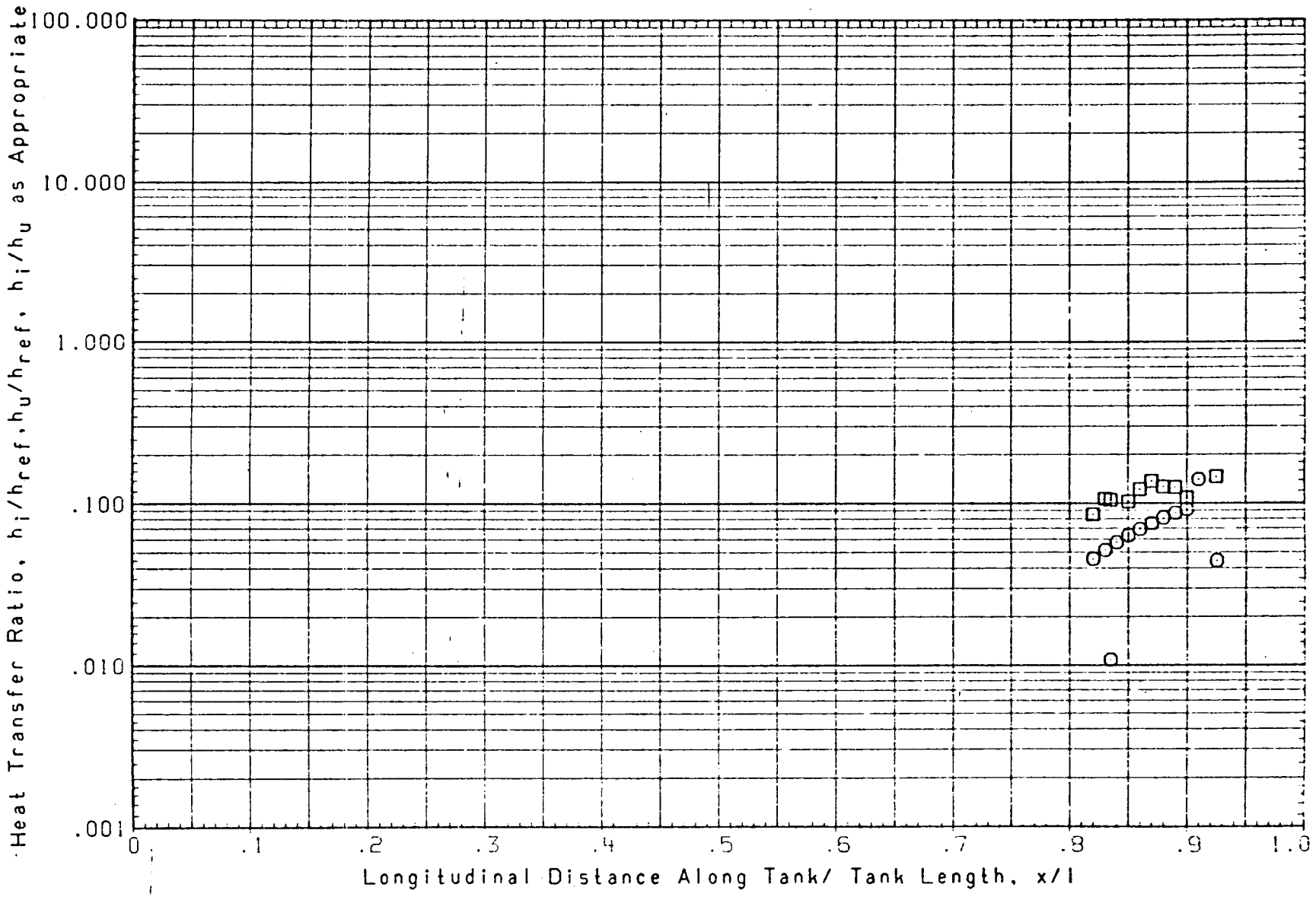


FIG. 26 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = -5, BETA = 6

MACH = 4.020 ALPHA = -4.995 PHI = 301.500

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	6.000
(LVFT31)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	6.000
(CVFT31)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	6.000

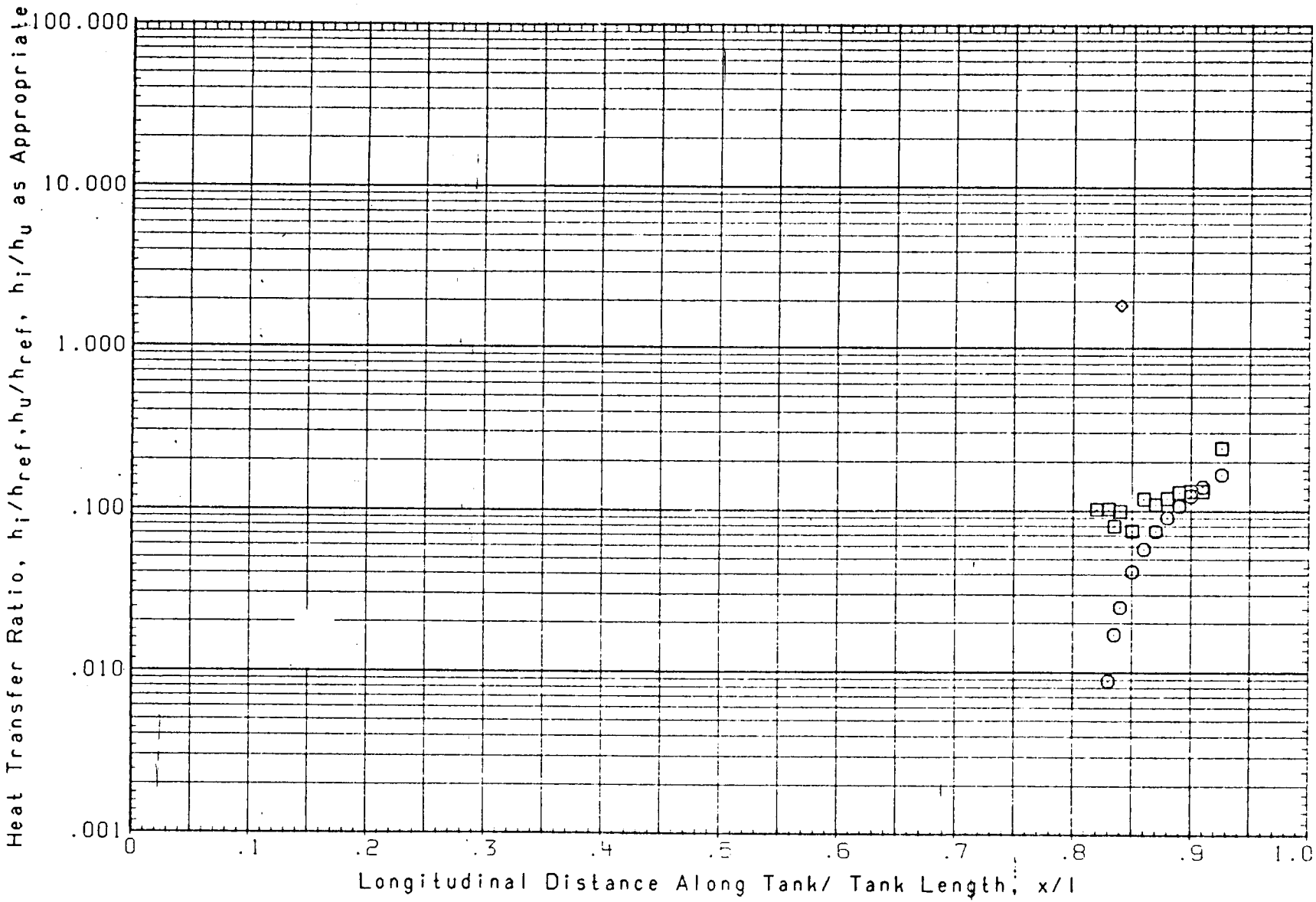


FIG. 26 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = -5, BETA = 6

MACH = 4.020 ALPHA = -4.995 PHI = 395.400

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	6.000
(LVFT31)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	6.000
(CVFT31)	◇	DATA NOT AVAILABLE	-5.000	6.000

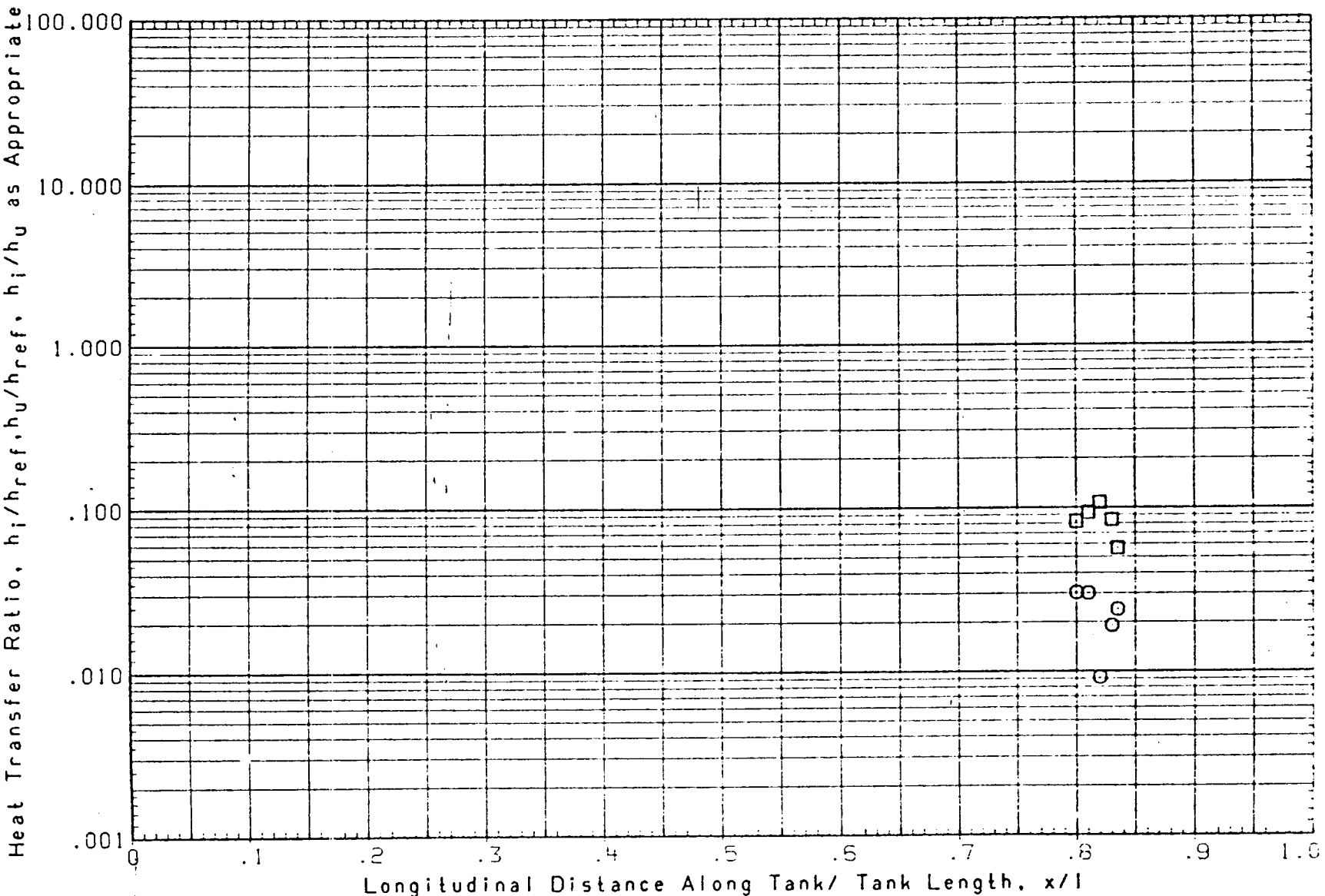


FIG. 26 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = -5, BETA = 6

MACH = 4.020 ALPHA = -4.995 PHI = 303.300

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(KVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	-5.000	6.000
(LVFT31)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	-5.000	6.000
(CVFT31)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	-5.000	6.000

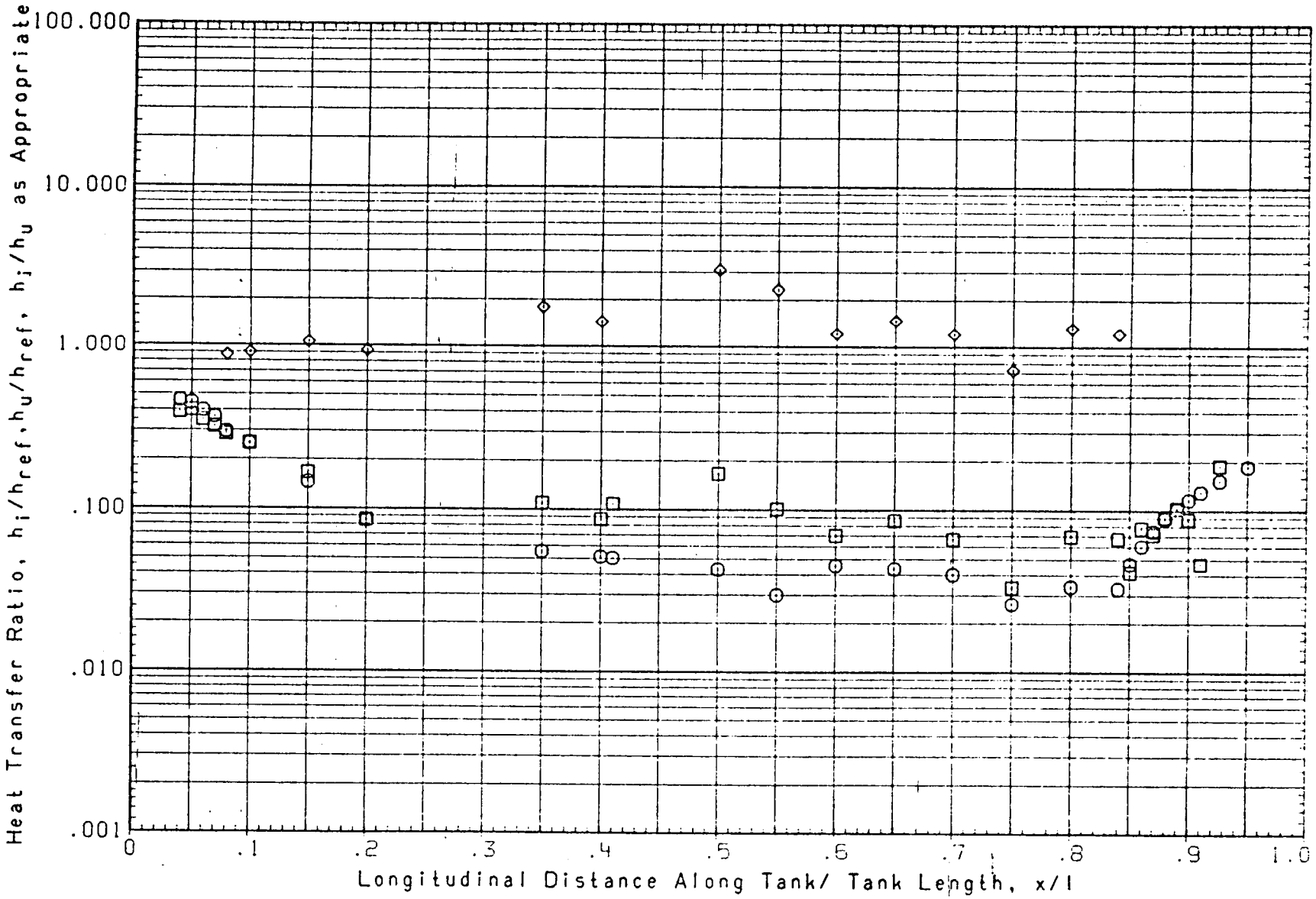


FIG. 26 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = -5, BETA = 6

MACH = 4.020 ALPHA = -4.995 PHI = 315.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(BVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	5.000	.000
(LVFT32)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	5.000	.000
(BVFT32)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	5.000	.000

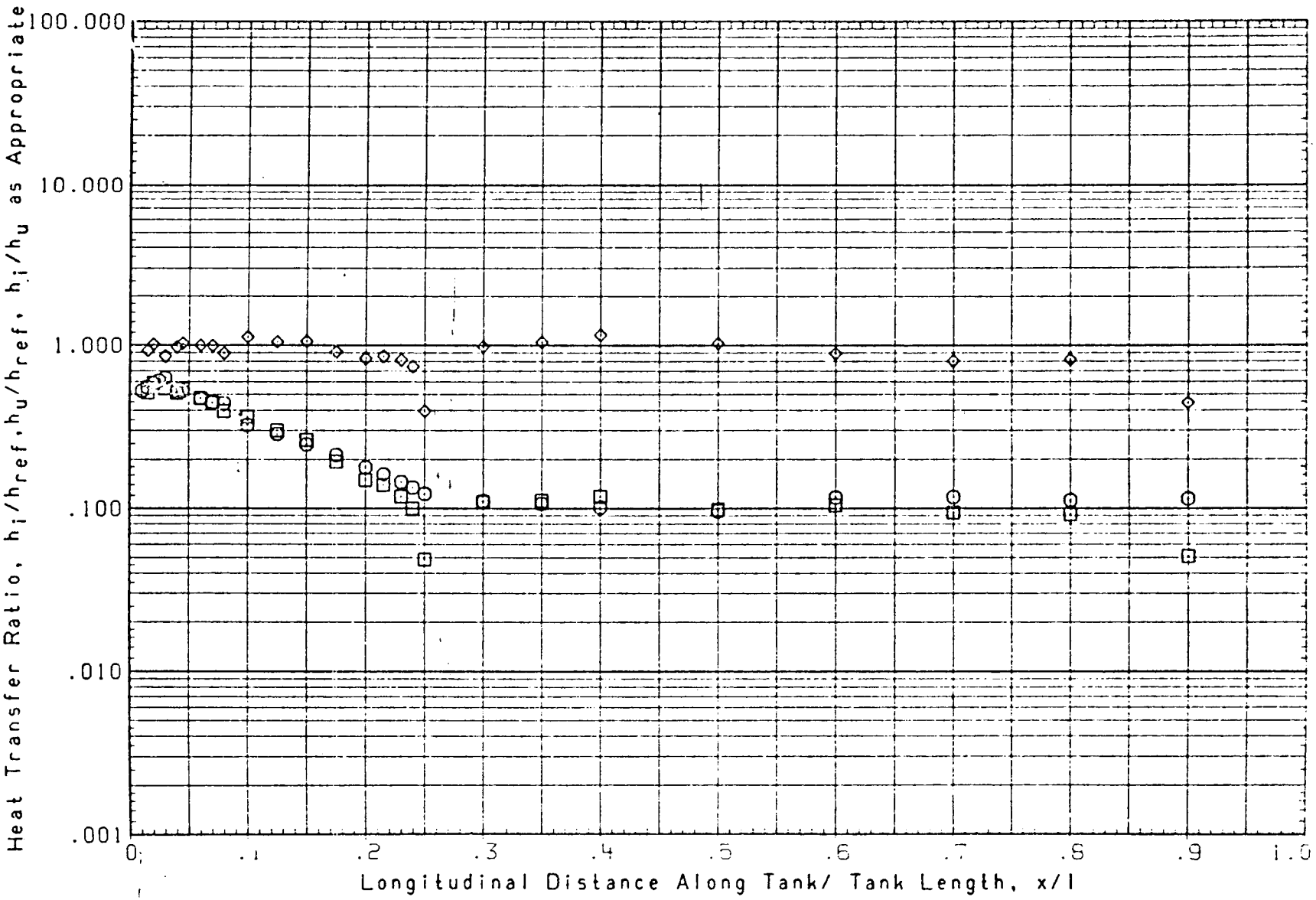


FIG. 27 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 5, BETA = 0

MACH = 3.010 ALPHA = 5.000 PHI = 180.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(BVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	5.000	.000
(LVFT32)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	5.000	.000
(BVFT32)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	5.000	.000

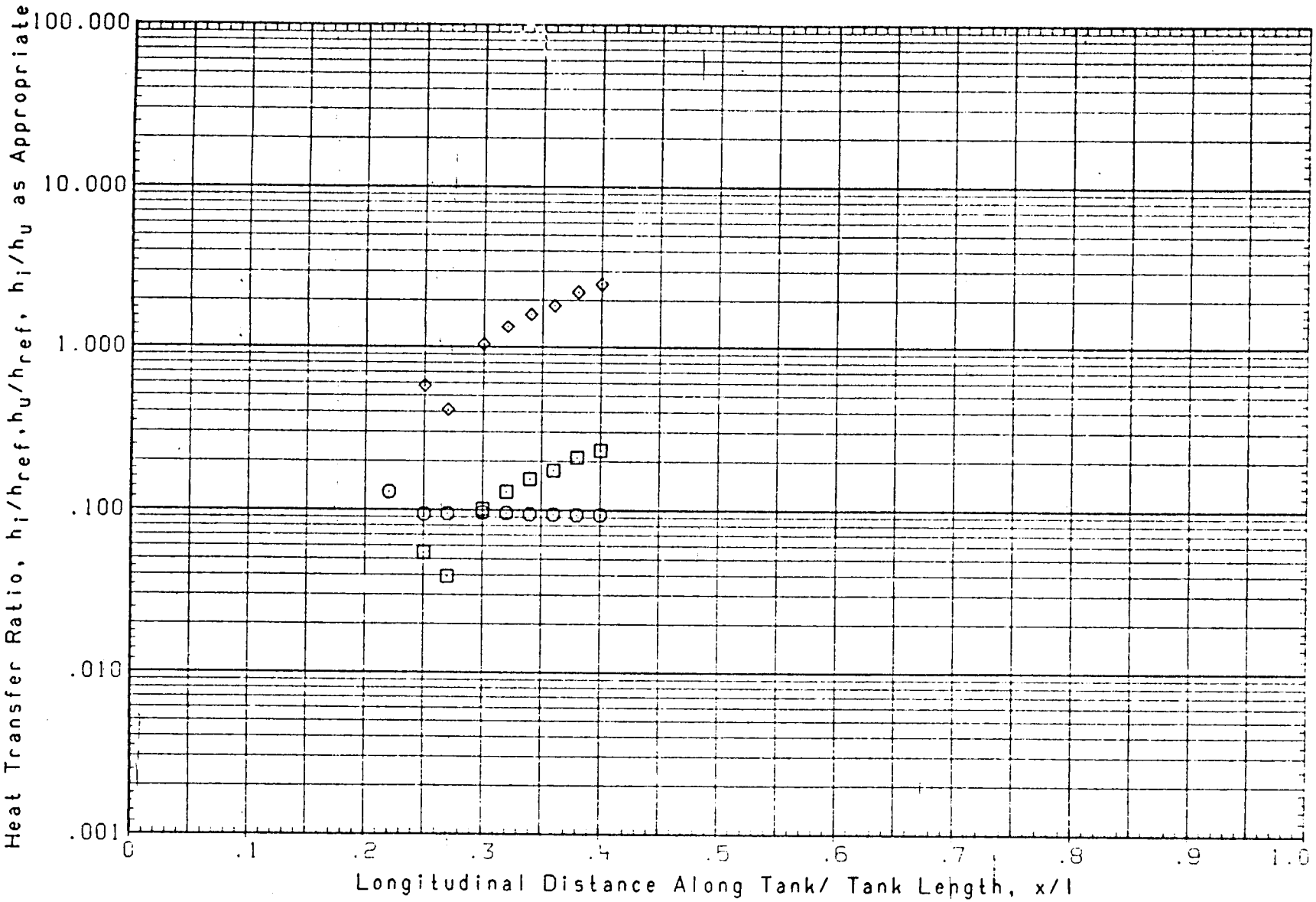


FIG. 27 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 5, BETA = 0

MACH = 3.010 ALPHA = 5.000 PHI = 285.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(BVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	5.000	.000
(LVFT32)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	5.000	.000
(BVFT32)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	5.000	.000

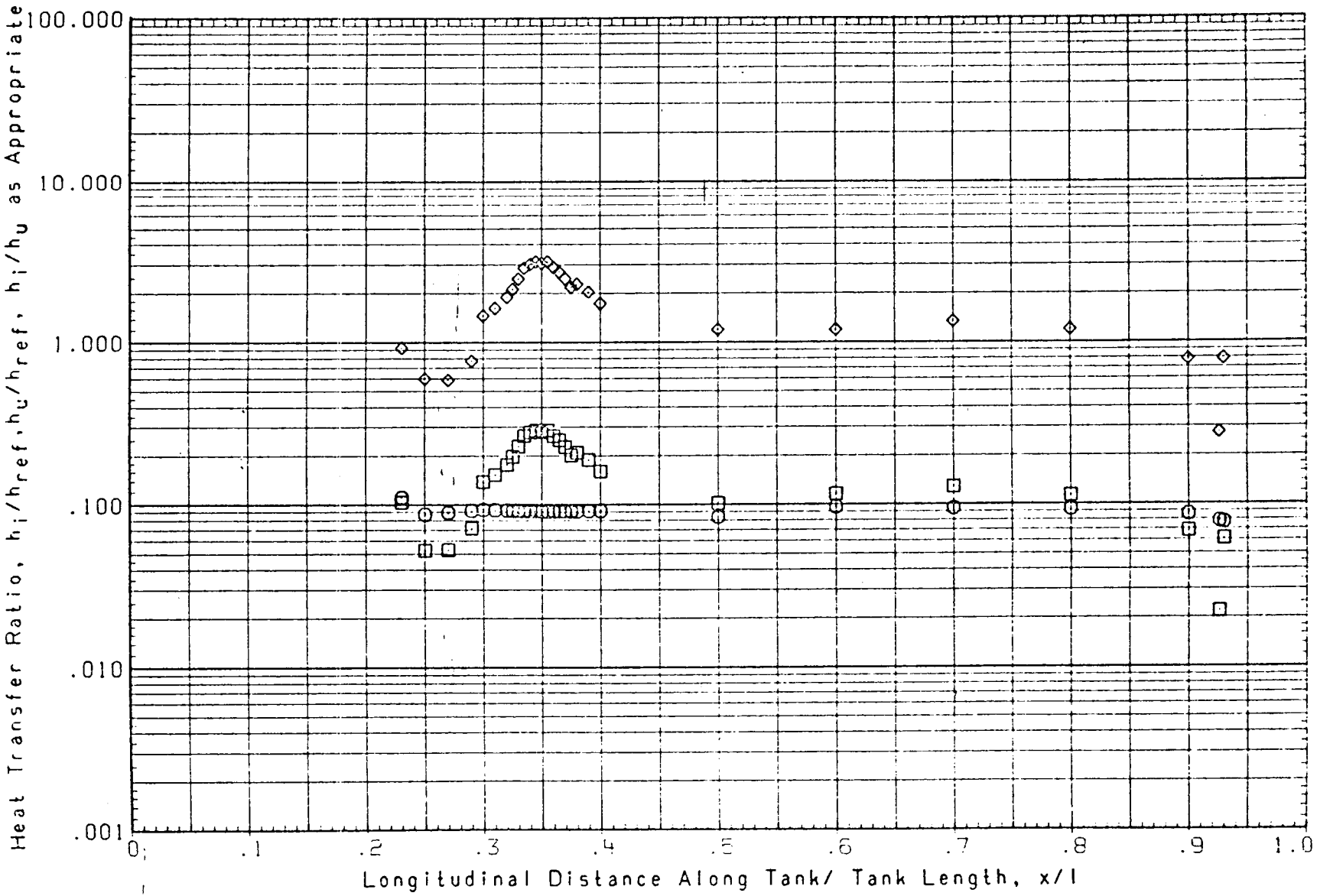


FIG. 27 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 5, BETA = 0

MACH = 3.010 ALPHA = 5.000 PHI = 247.500

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(BVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	5.000	.000
(LVFT32)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	5.000	.000
(BVFT32)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	5.000	.000

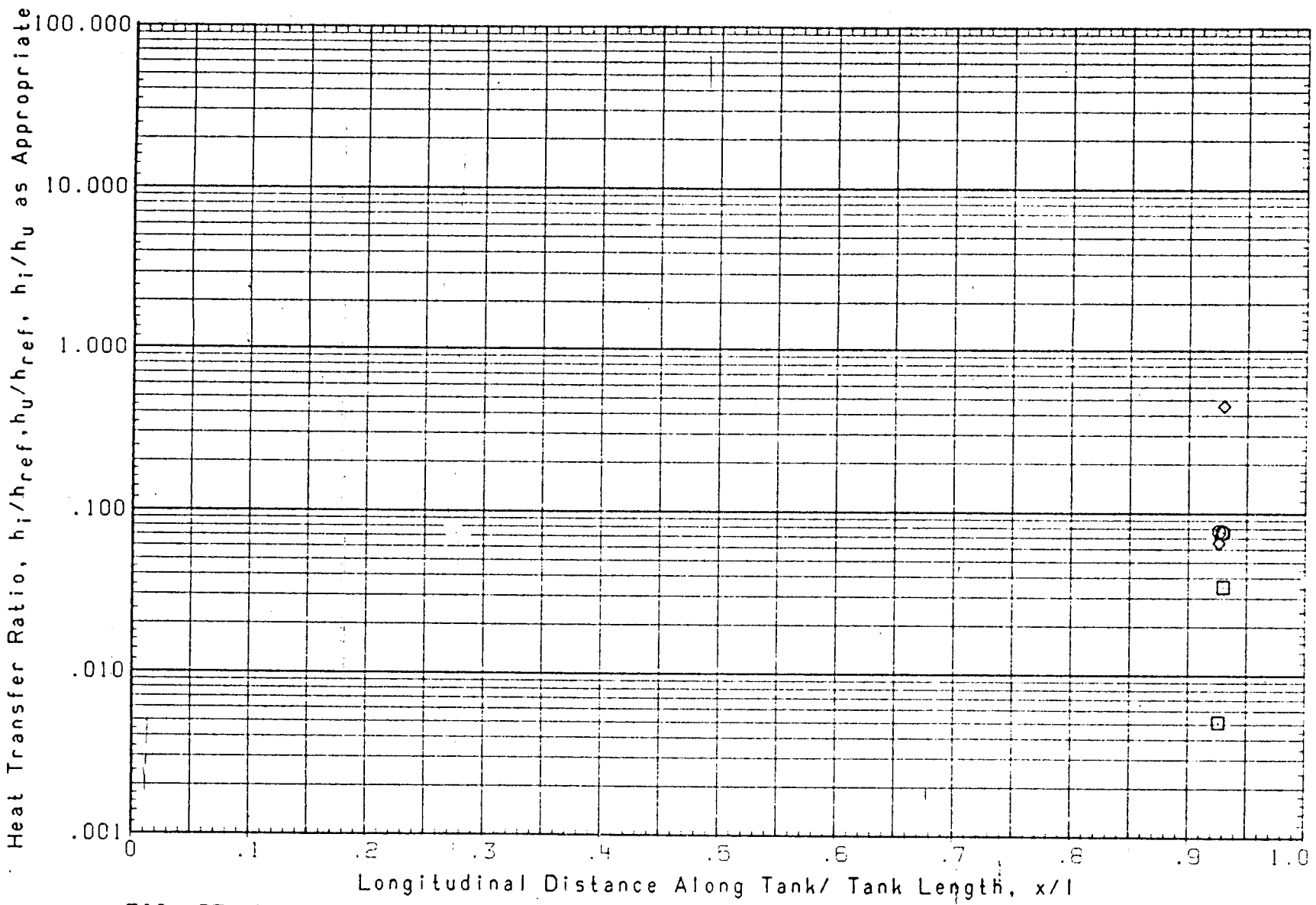


FIG. 27 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 5, BETA = 0

MACH = 3.010 ALPHA = 5.000 PHI = 250.570

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(BVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	5.000	.000
(LVFT32)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	5.000	.000
(BVFT32)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	5.000	.000

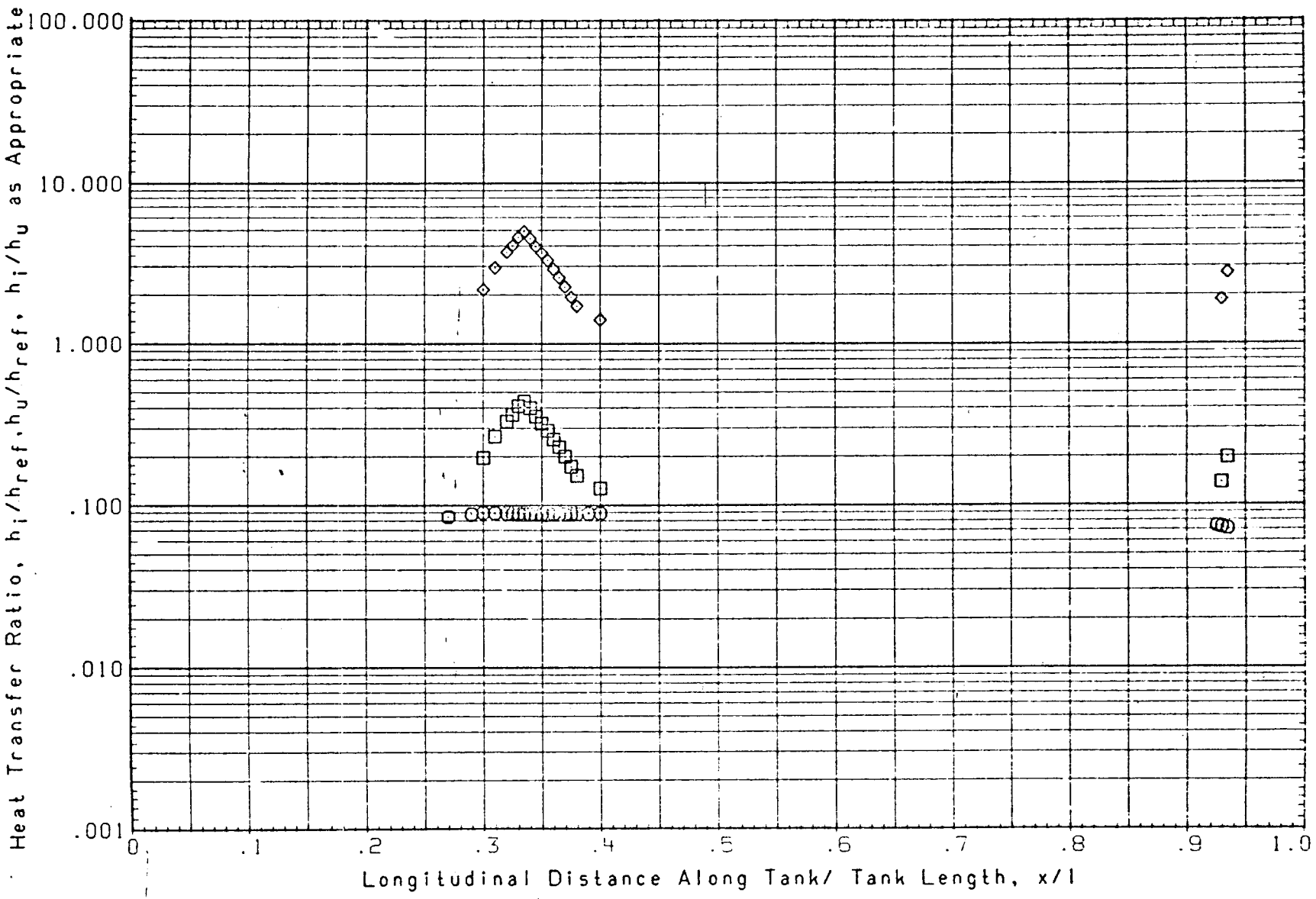


FIG. 27 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 5, BETA = 0

MACH = 3.010 ALPHA = 5.000 PHI = 258.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(BVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	5.000	.000
(LVFT32)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	5.000	.000
(BVFT32)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	5.000	.000

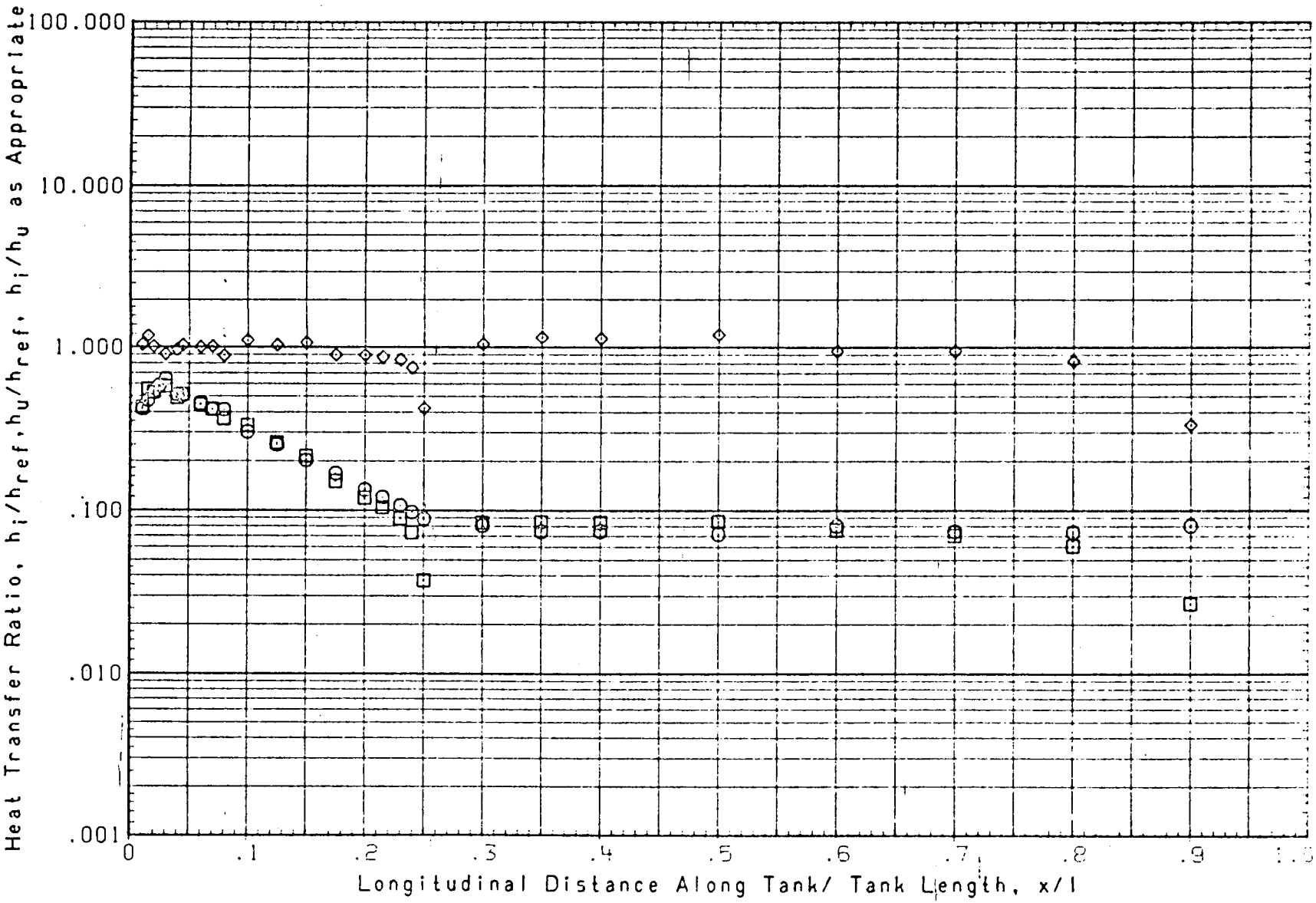


FIG. 27 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 5, BETA = 0

MACH = 4.020 ALPHA = 5.000 PHI = 180.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(BVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	5.000	.000
(LVFT32)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	5.000	.000
(BVFT32)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	5.000	.000

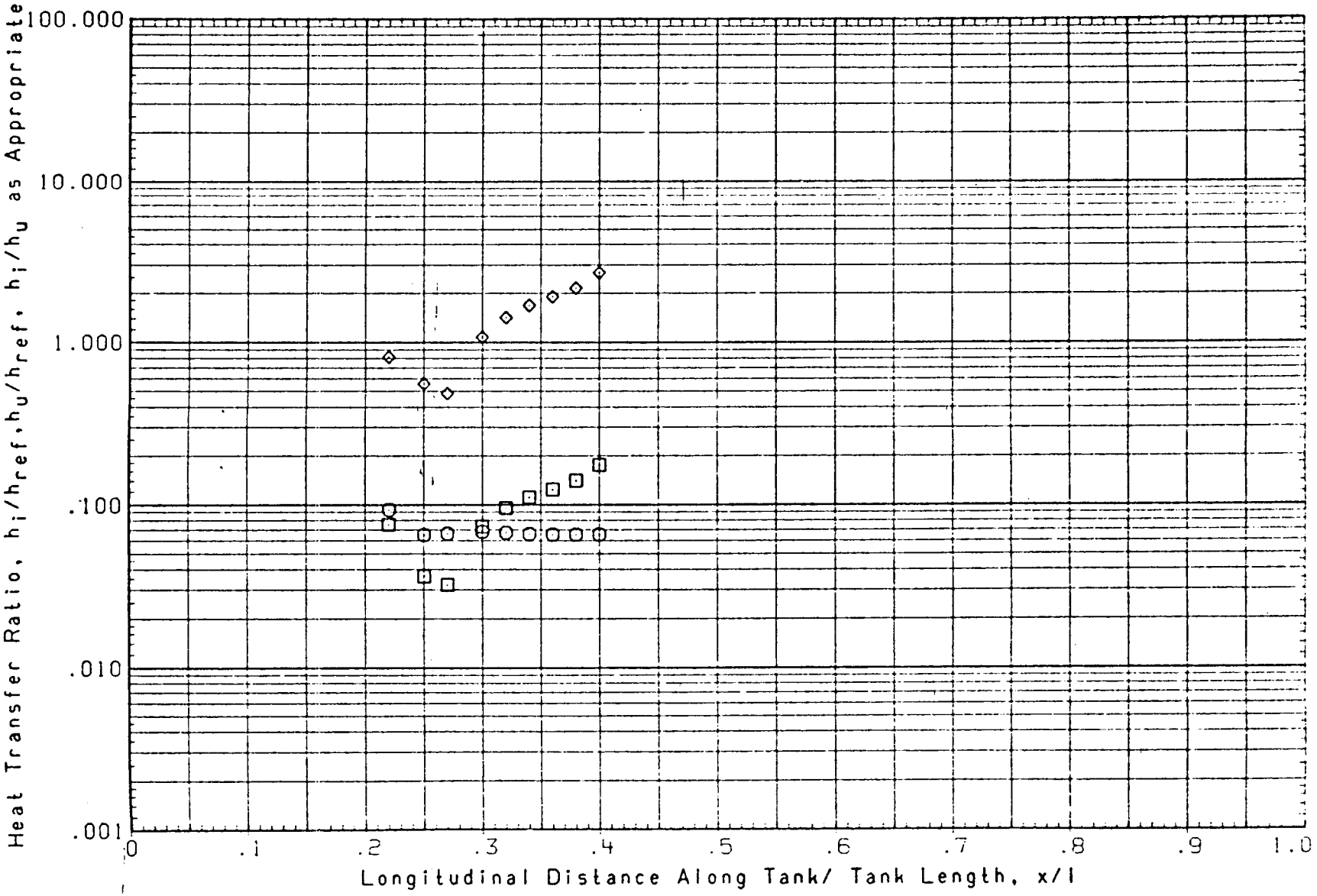


FIG. 27 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 5, BETA = 0

MACH = 4.020 ALPHA = 5.000 PHI = 235.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(BVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	5.000	.000
(LVFT32)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	5.000	.000
(BVFT32)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	5.000	.000

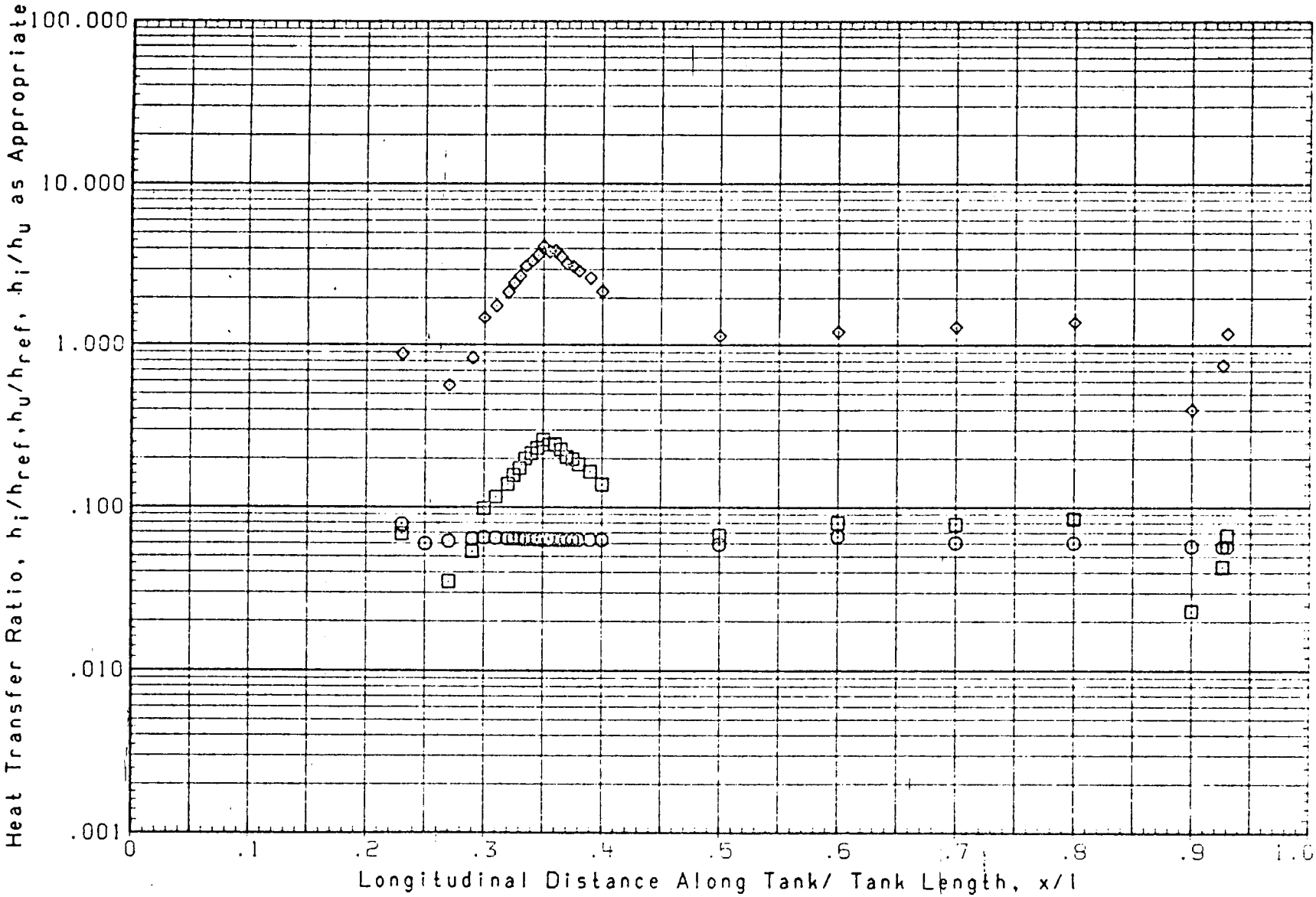


FIG. 27 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 5, BETA = 0

MACH = 4.020 ALPHA = 5.000 PHI = 247.500

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(BVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	5.000	.000
(LVFT32)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	5.000	.000
(BVFT32)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	5.000	.000

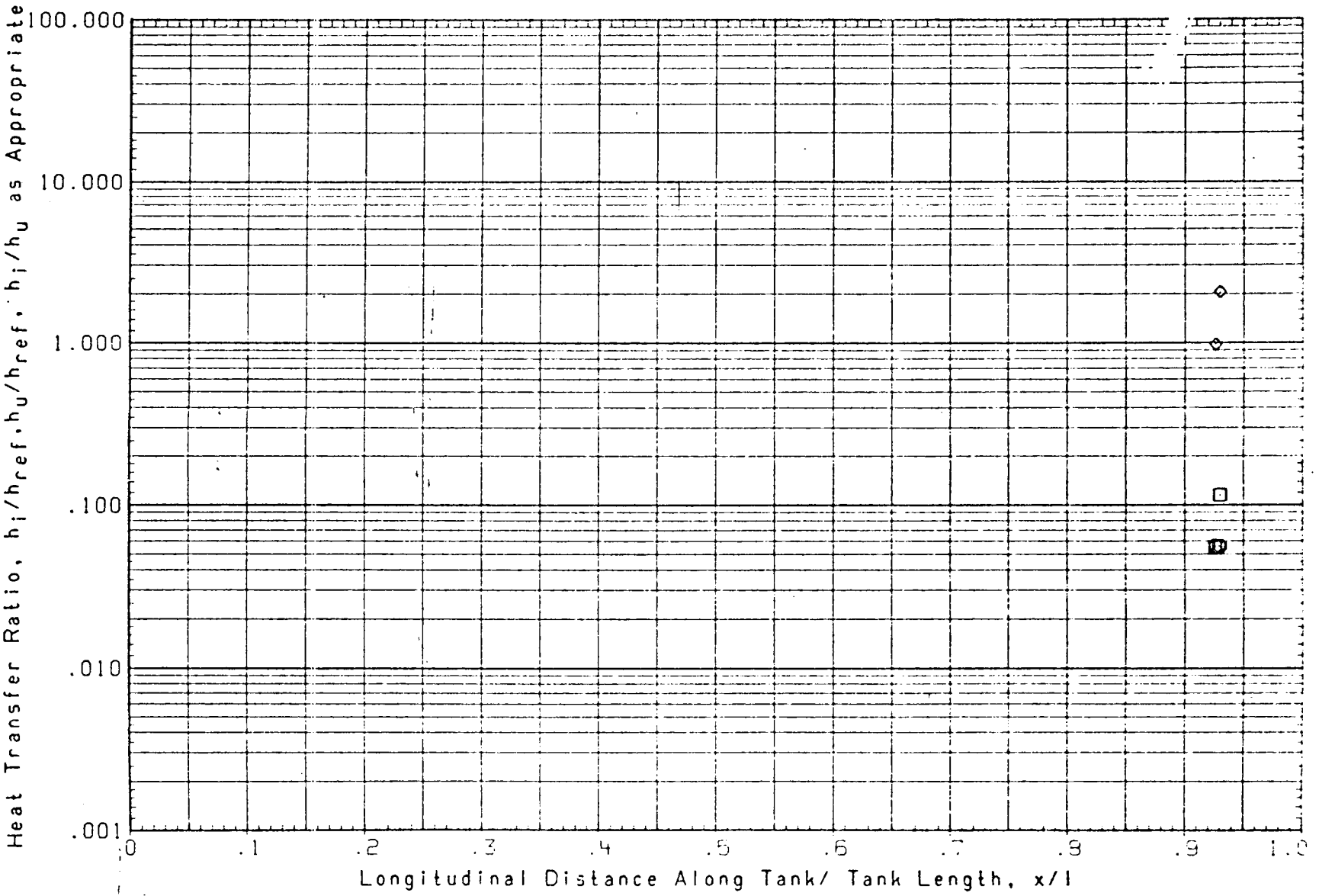


FIG. 27 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS WINDWARD SIDE, ALPHA = 5, BETA = 0

MACH = 4.020 ALPHA = 5.000 PHI = 250.570

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(BVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	5.000	.000
(LVFT32)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	5.000	.000
(BVFT32)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	5.000	.000

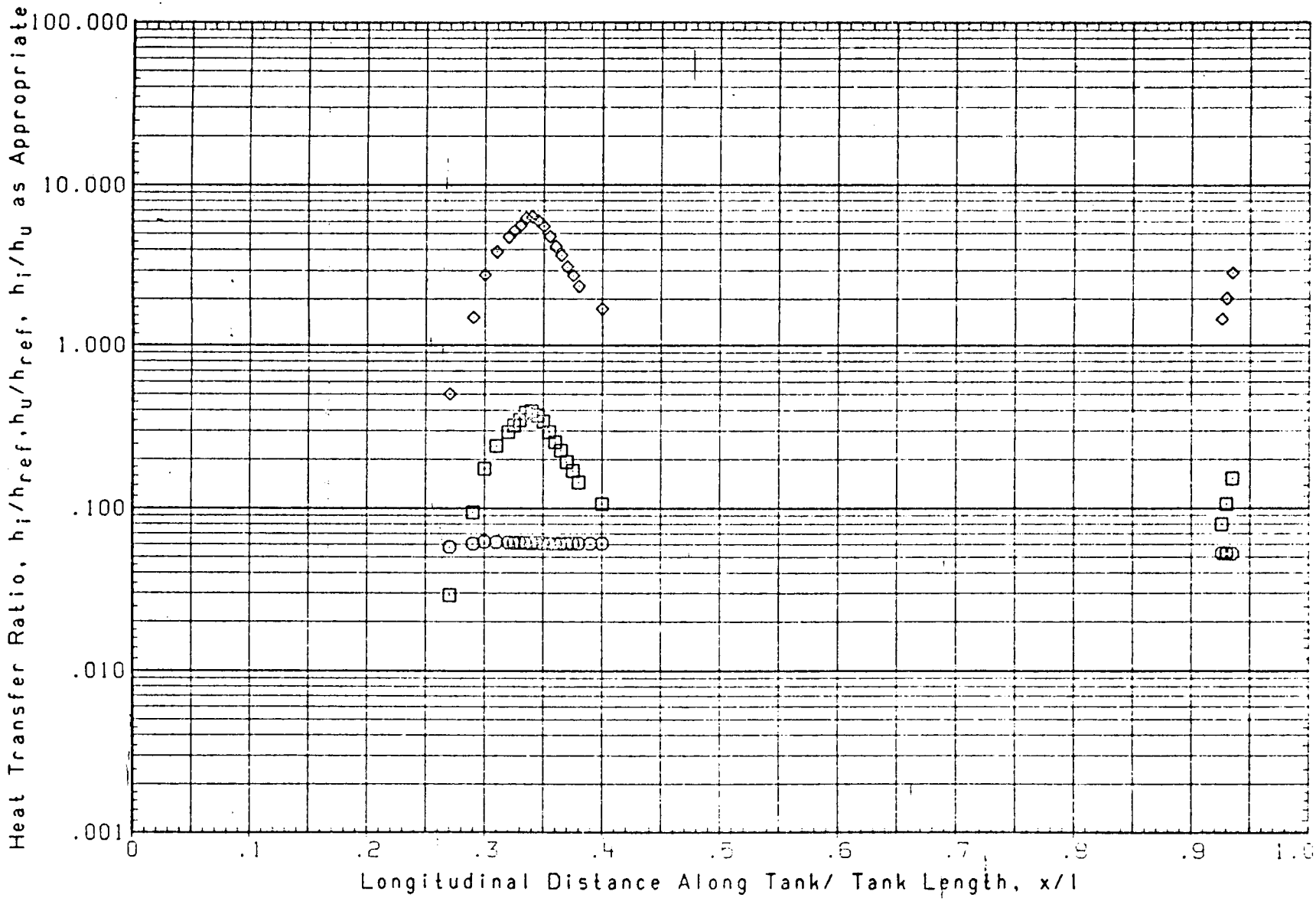


FIG. 27 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
WINDWARD SIDE, ALPHA = 5, BETA = 0

MACH = 4.020 ALPHA = 5.000 PHI = 255.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(BVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	5.000	.000
(LVFT32)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	5.000	.000
(CVFT32)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	5.000	.000

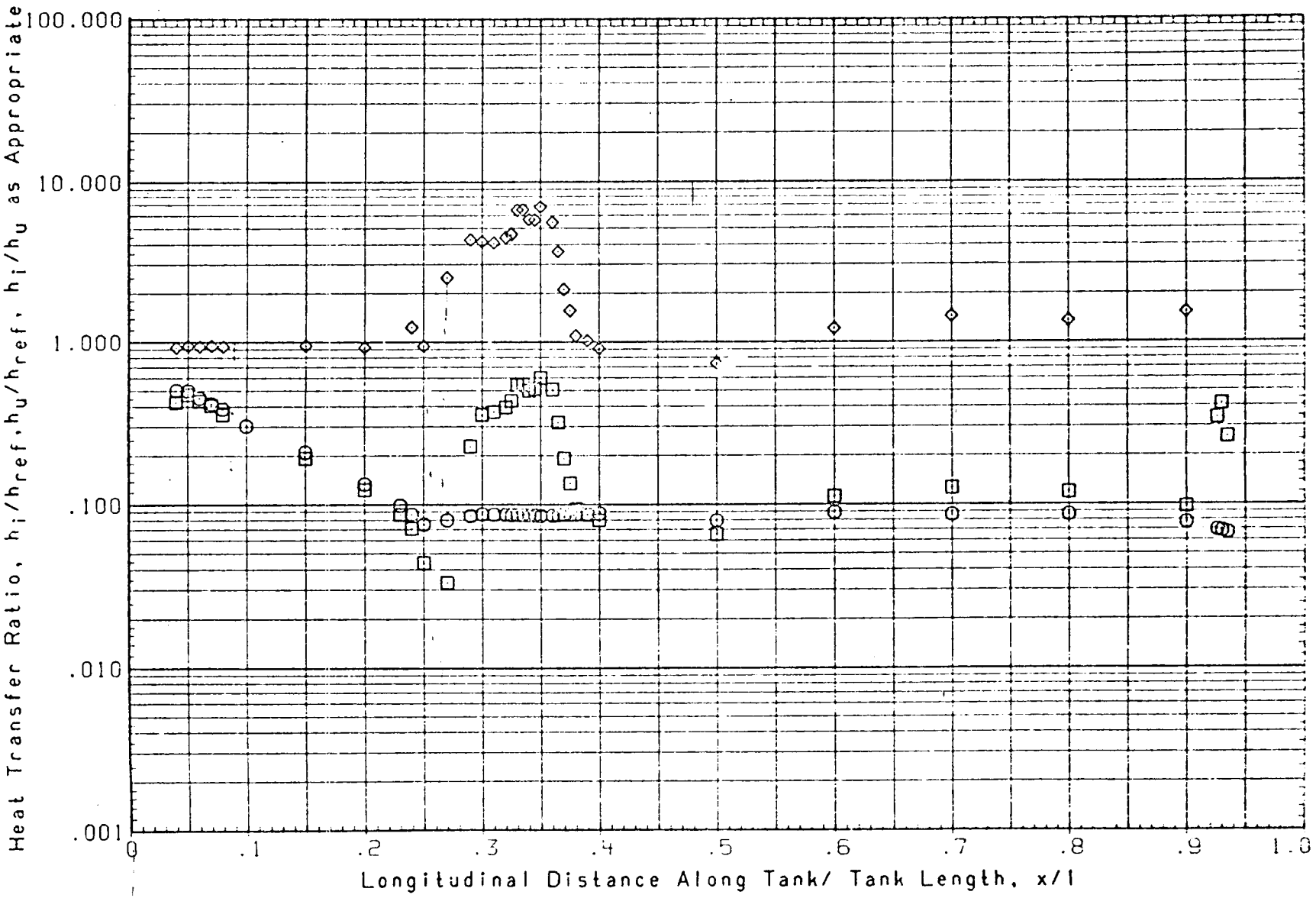


FIG. 28 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 5, BETA = 0

MACH = 3.010 ALPHA = 5.000 PHI = 270.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(BVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	5.000	.000
(LVFT32)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	5.000	.000
(CVFT32)	◇	DATA NOT AVAILABLE	5.000	.000

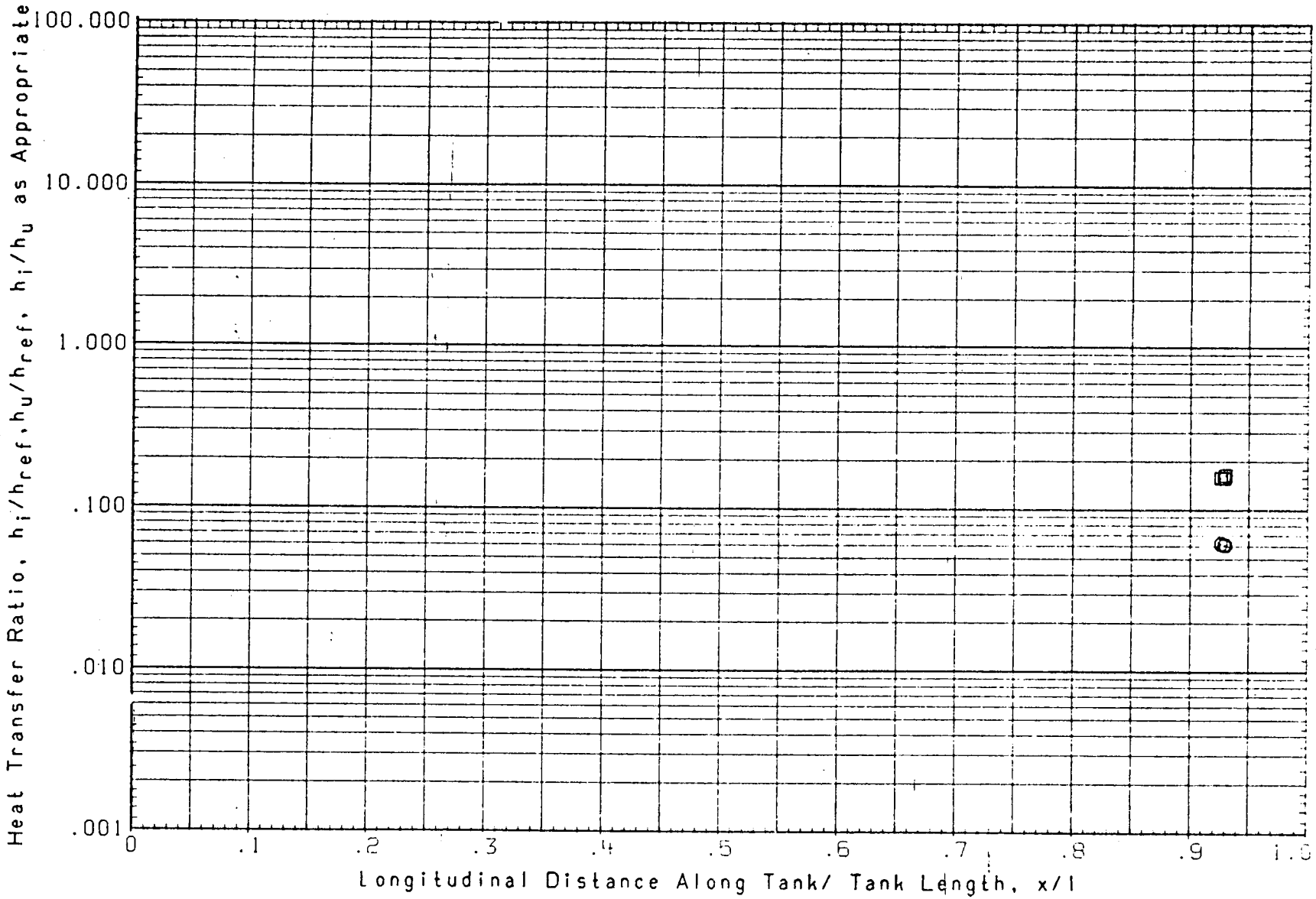


FIG. 28 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 5, BETA = 0

MACH = 3.010 ALPHA = 5.000 PHI = 289.430

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(BVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	5.000	.000
(LVFT32)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	5.000	.000
(CVFT32)	◇	DATA NOT AVAILABLE	5.000	.000

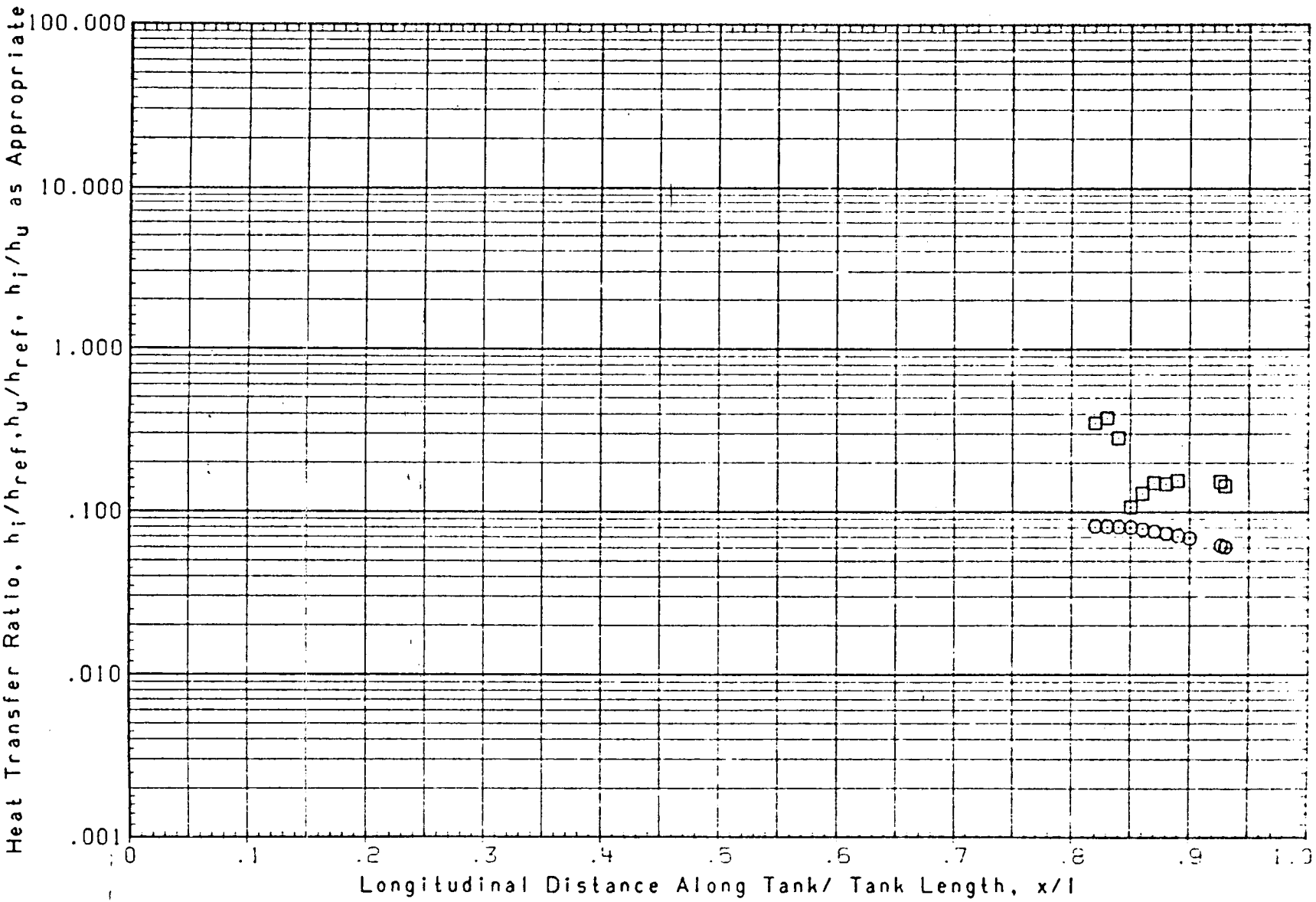


FIG. 28 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 5, BETA = 0

MACH = 3.010 ALPHA = 5.000 PHI = 292.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(BVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	5.000	.000
(LVFT32)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	5.000	.000
(CVFT32)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	5.000	.000

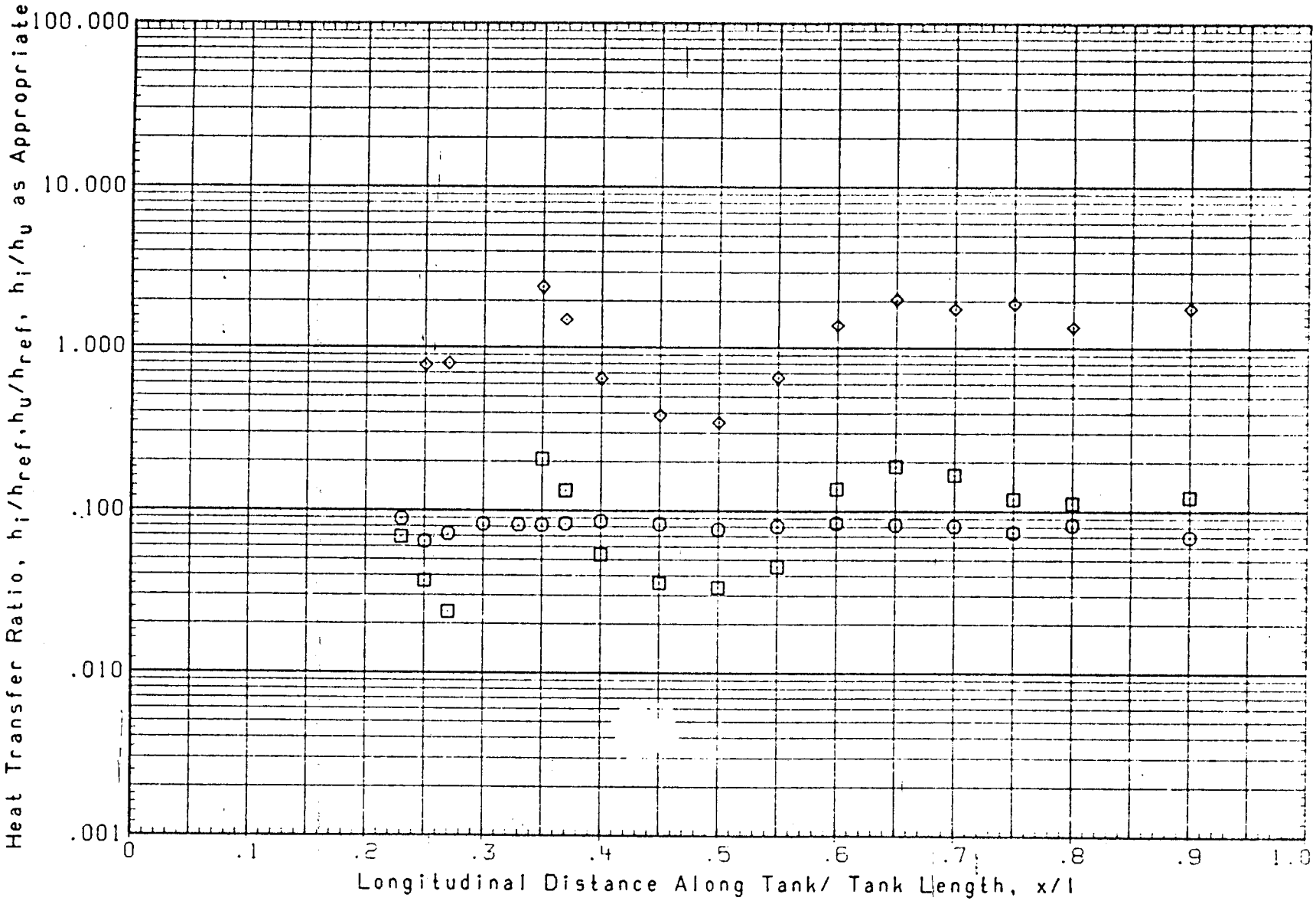


FIG. 28 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS LEEWARD SIDE, ALPHA = 5, BETA = 0

MACH = 3.010 ALPHA = 5.000 PHI = 232.500

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(BVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	5.000	.000
(LVFT32)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	5.000	.000
(CVFT32)	◇	DATA NOT AVAILABLE	5.000	.000

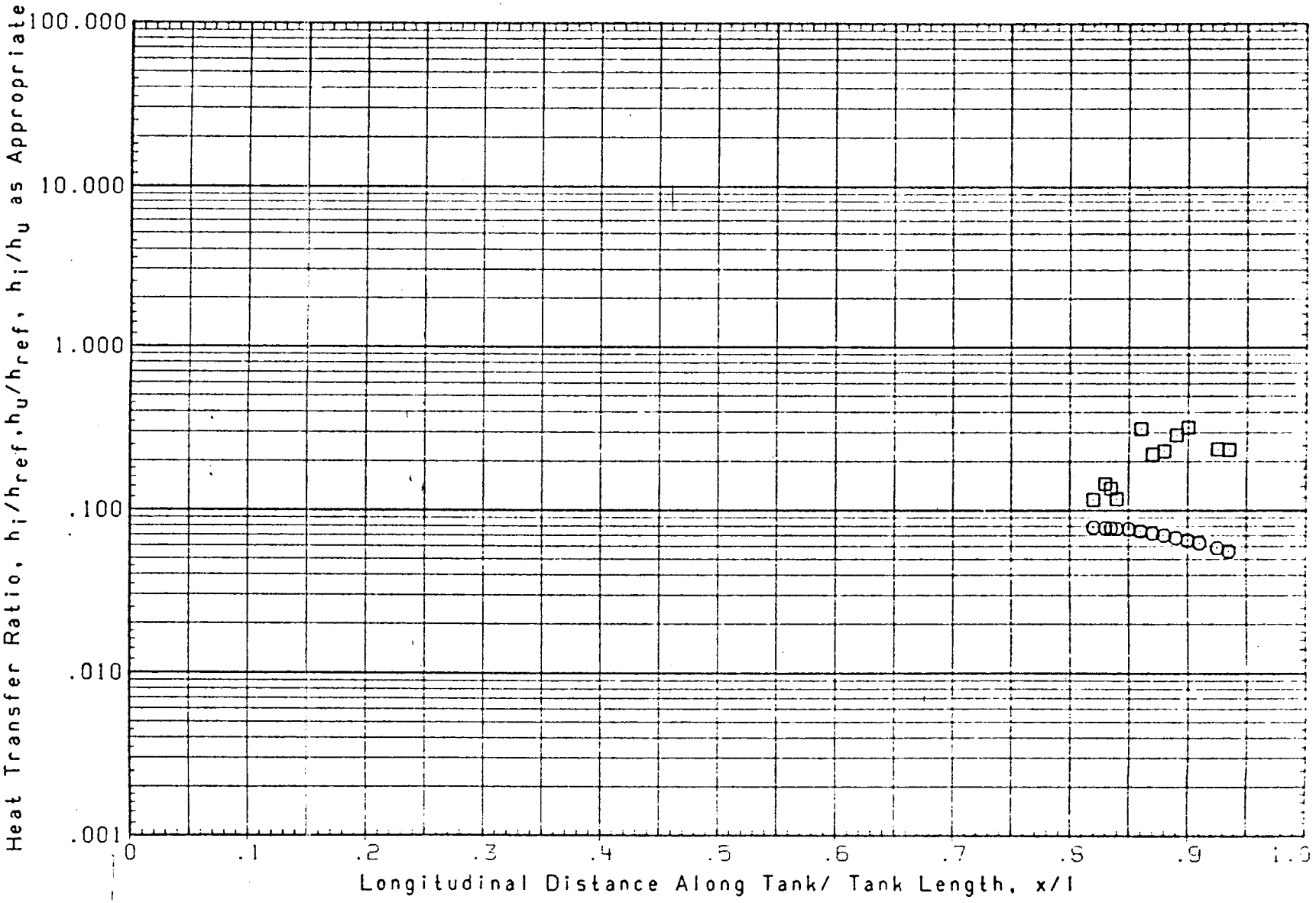


FIG. 28 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 5, BETA = 0

MACH = 3.010 ALPHA = 5.000 PHI = 301.500

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(BVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	5.000	.000
(LVFT32)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	5.000	.000
(CVFT32)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	5.000	.000

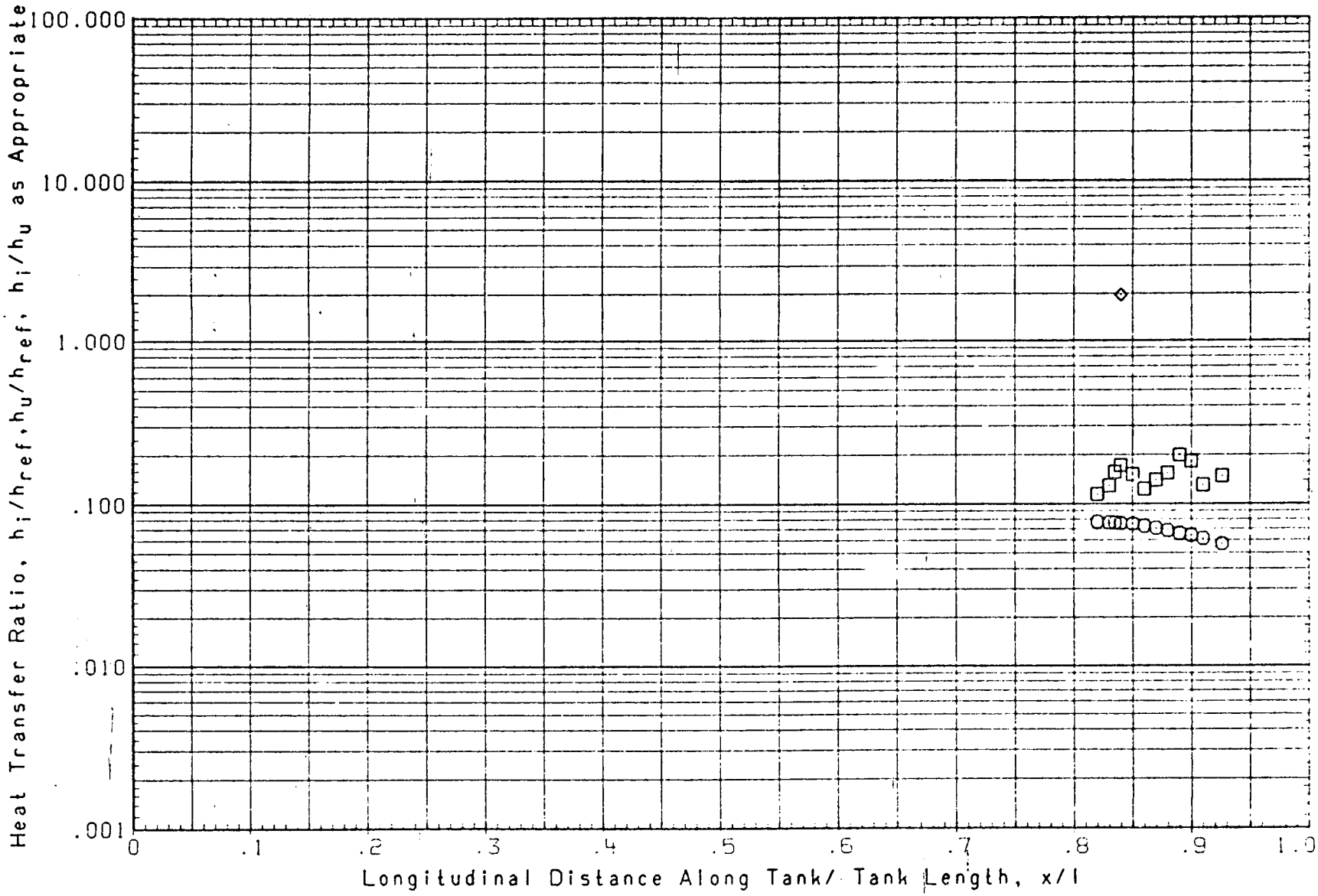


FIG. 28 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 5, BETA = 0

MACH = 3.010 ALPHA = 5.000 PHI = 305.400

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(BVFT11)	○	IH41B(AEDC V41A A4A) SPIKED EXTERNAL TANK ALONE	5.000	.000
(LVFT32)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	5.000	.000
(CVFT32)	◇	DATA NOT AVAILABLE	5.000	.000

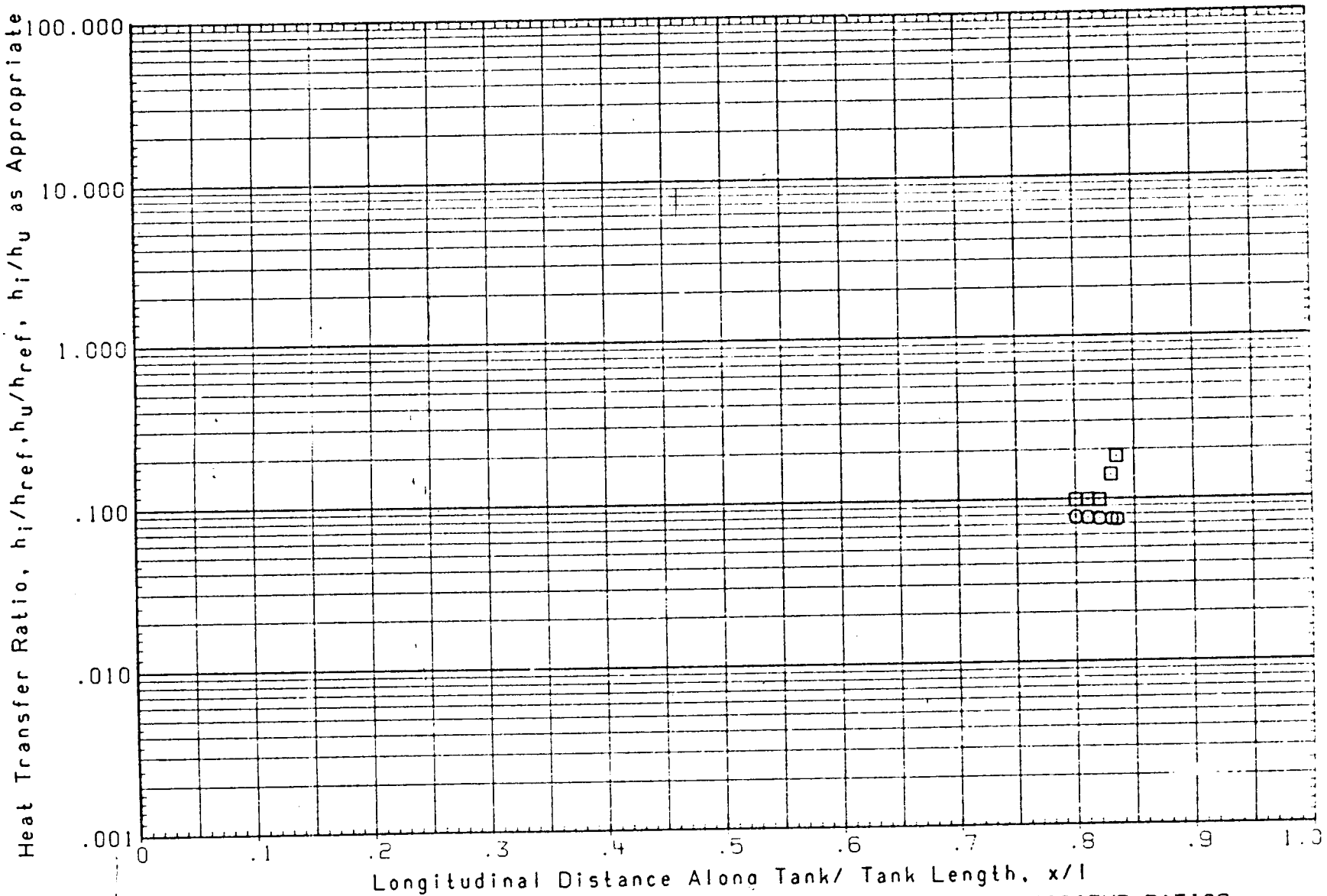


FIG. 28 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 5, BETA = 0

MACH = 3.010 ALPHA = 5.000 PHI = 309.300

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(BVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	5.000	.000
(LVFT32)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	5.000	.000
(CVFT32)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	5.000	.000

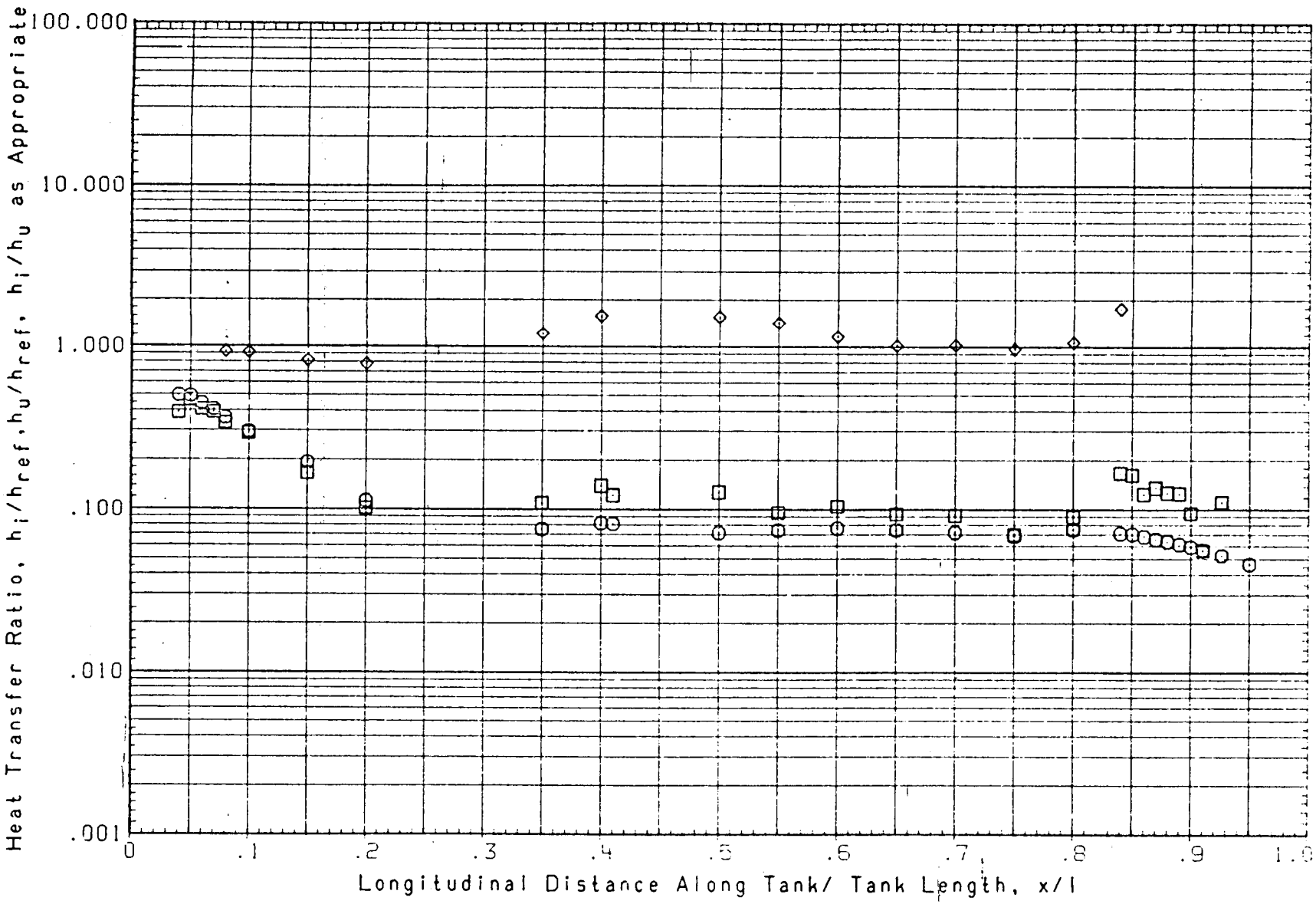


FIG. 28 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 5, BETA = 0

MACH = 3.010 ALPHA = 5.000 PHI = 315.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(BVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	5.000	.000
(LVFT32)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	5.000	.000
(CVFT32)	◇	DATA NOT AVAILABLE	5.000	.000

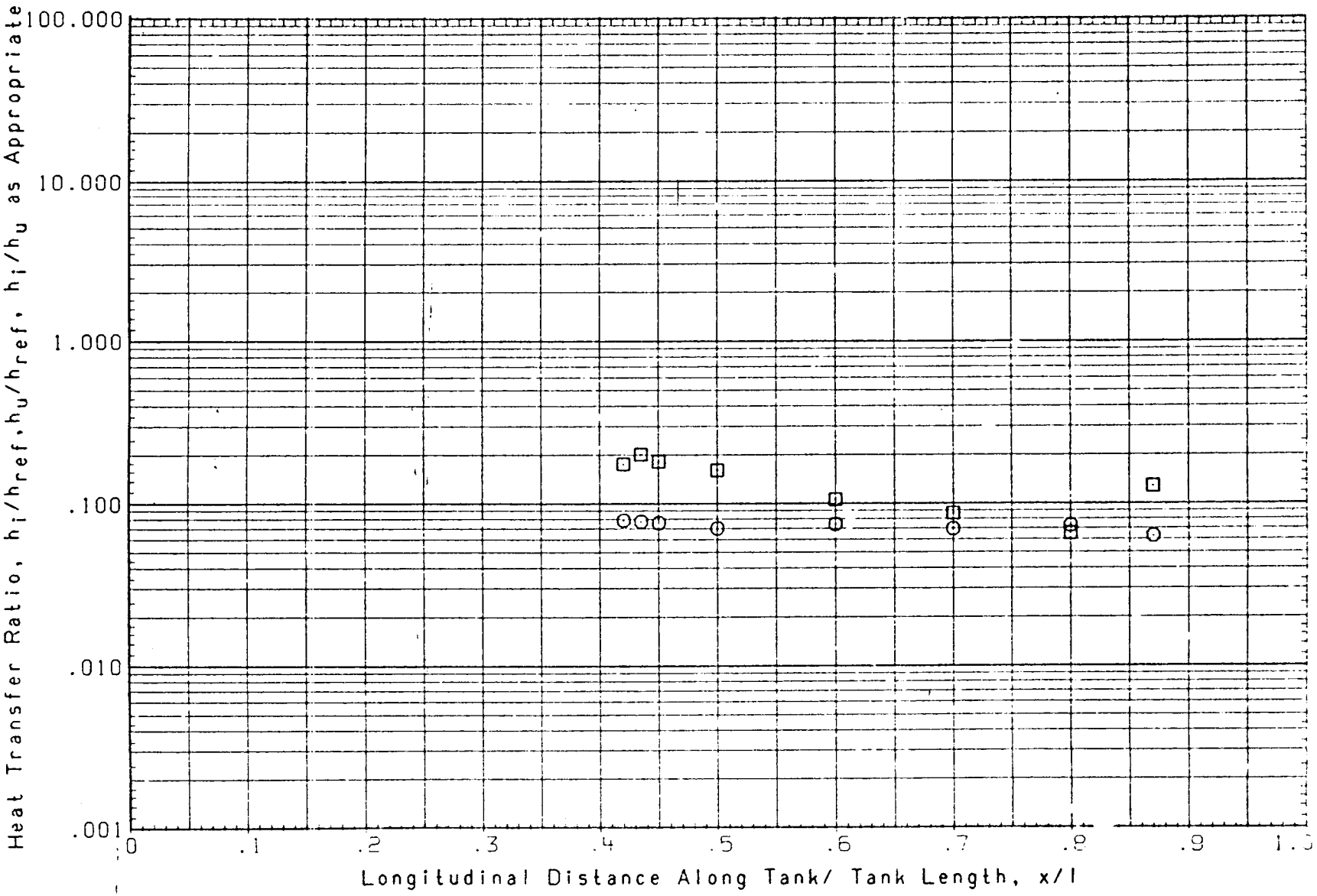


FIG. 28 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 5, BETA = 0

MACH = 3.010 ALPHA = 5.000 PHI = 322.300

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(BVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	5.000	.000
(LVFT32)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	5.000	.000
(CVFT32)	◇	DATA NOT AVAILABLE	5.000	.000

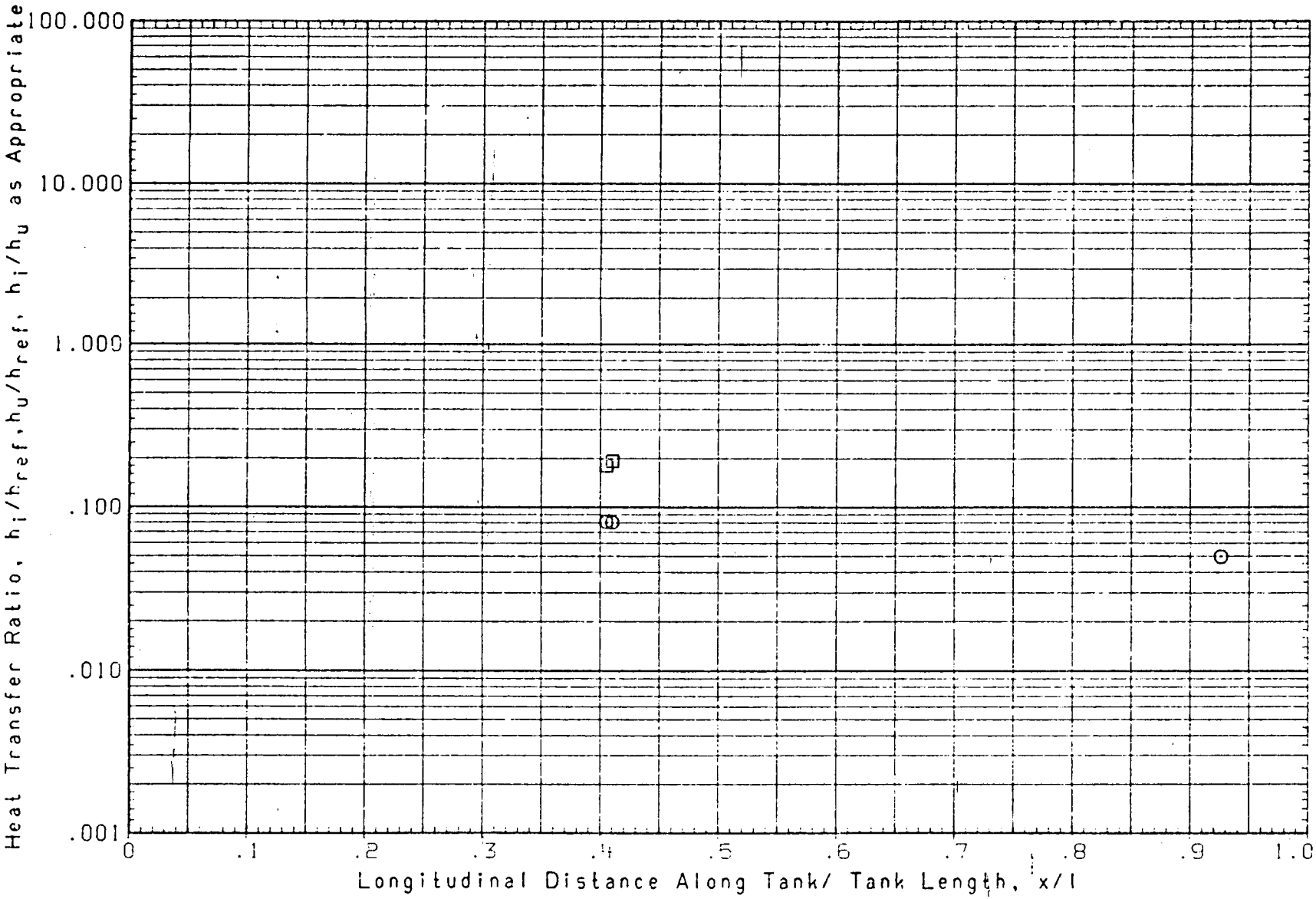


FIG. 28 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 5, BETA = 0

MACH = 3.010 ALPHA = 5.000 PHI = 324.450

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(BVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	5.000	.000
(LVFT32)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	5.000	.000
(CVFT32)	◇	DATA NOT AVAILABLE	5.000	.000

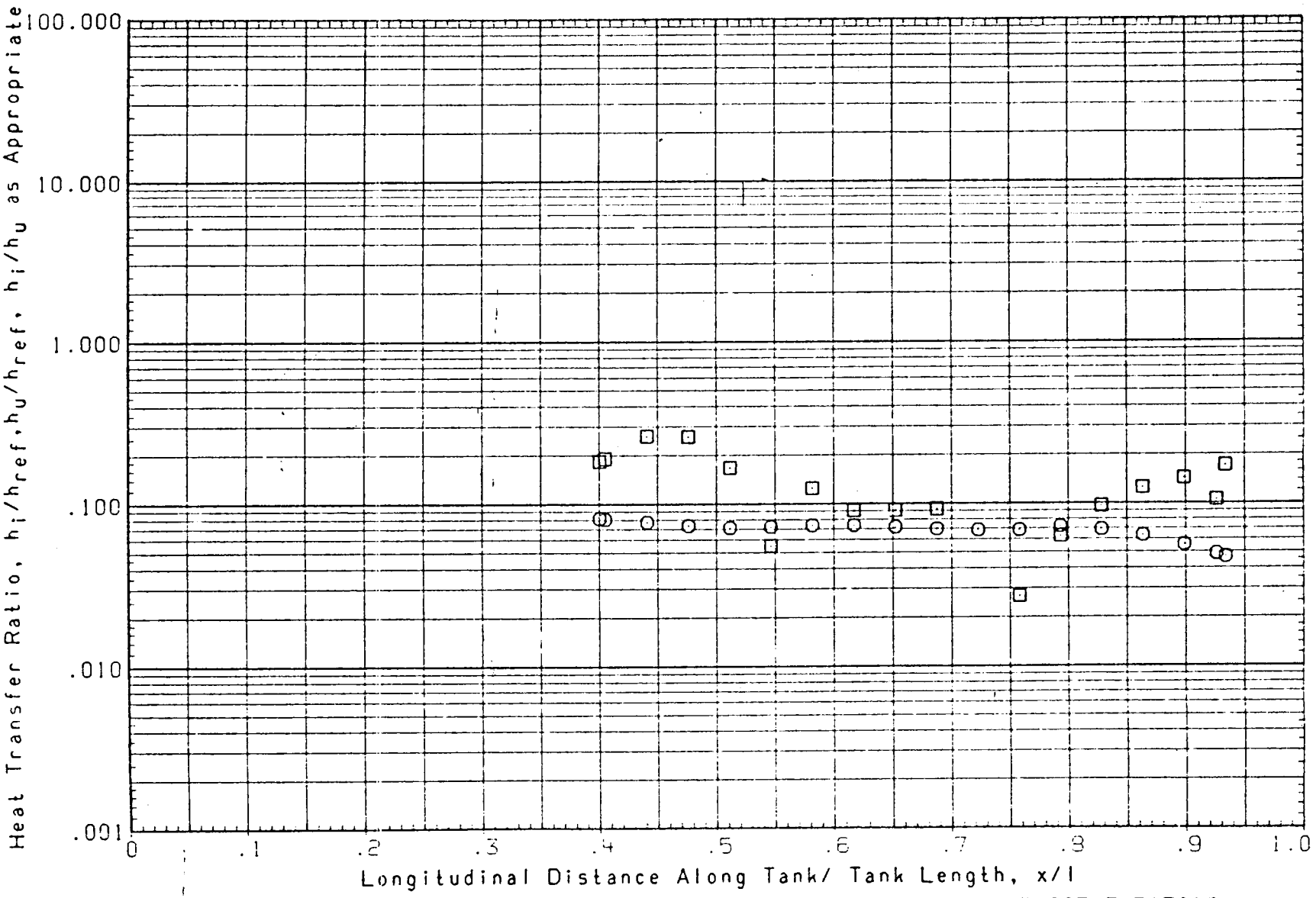


FIG. 28 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 5, BETA = 0

MACH = 3.010 ALPHA = 5.000 PHI = 326.850

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(BVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	5.000	.000
(LVFT32)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	5.000	.000
(CVFT32)	◇	DATA NOT AVAILABLE	5.000	.000

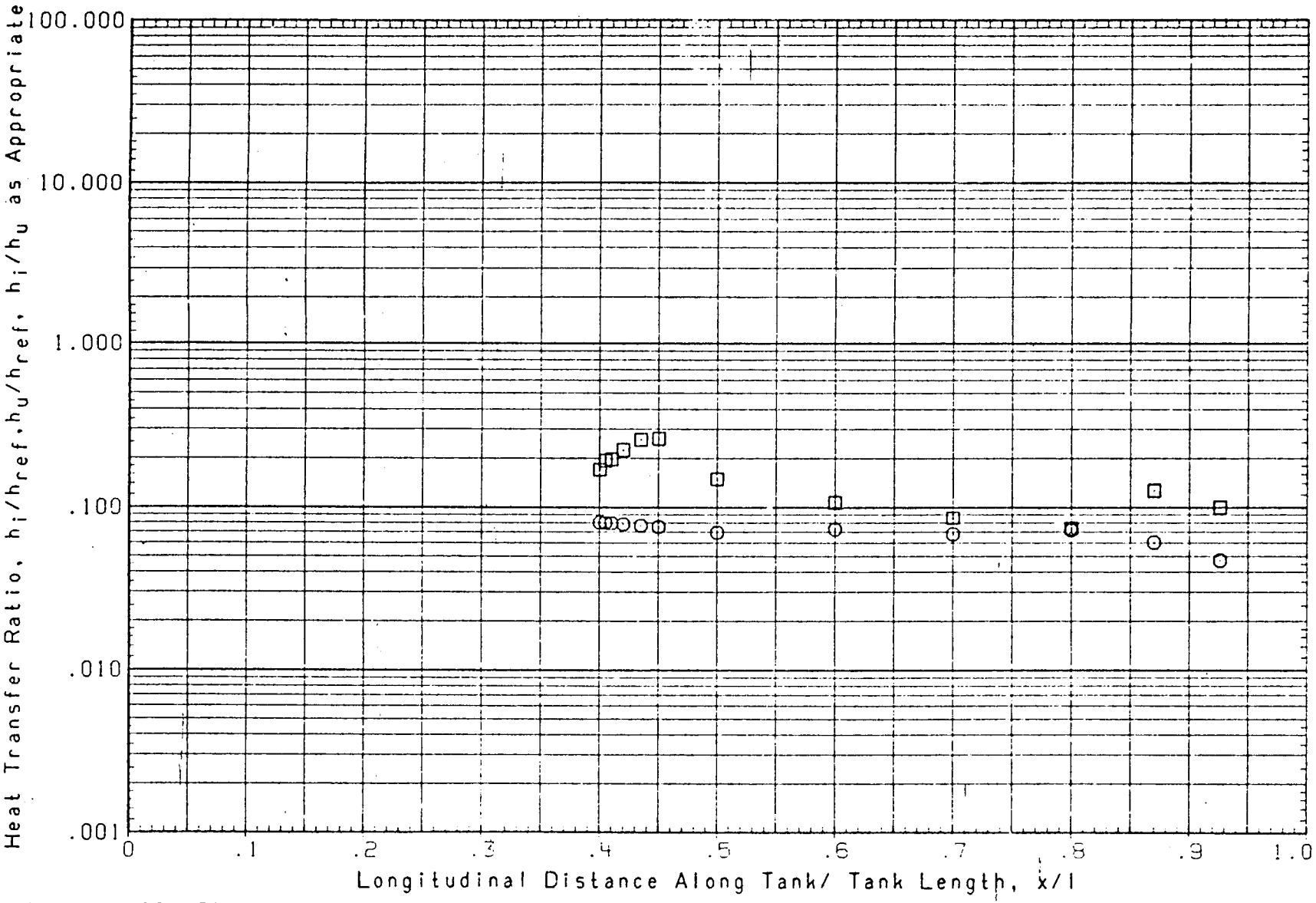


FIG. 28 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 5, BETA = 0

MACH = 3.010 ALPHA = 5.000 PHI = 330.200

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(BVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	5.000	.000
(LVFT32)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	5.000	.000
(CVFT32)	◇	DATA NOT AVAILABLE	5.000	.000

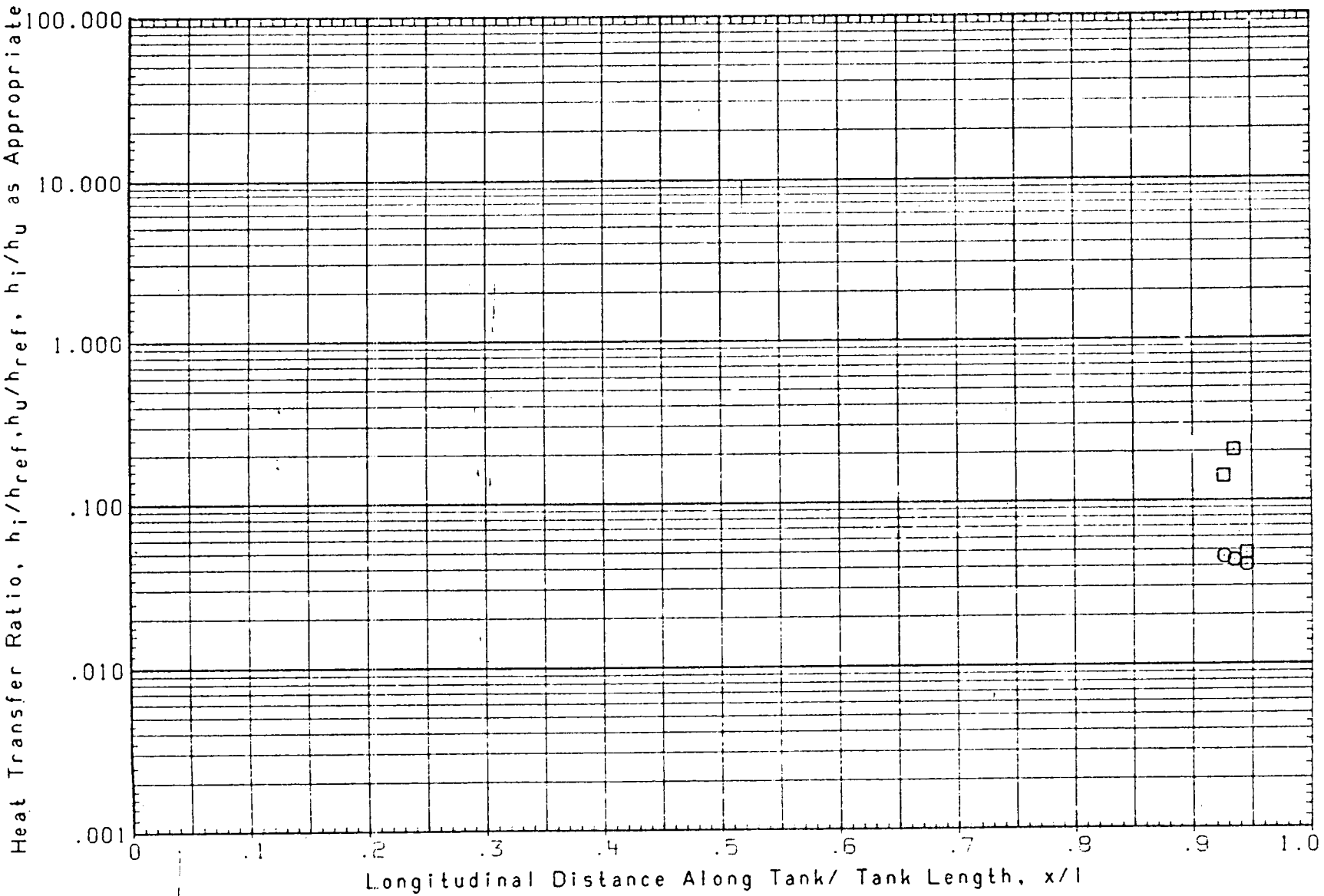


FIG. 28 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 5, BETA = 0

MACH = 3.010 ALPHA = 5.000 PHI = 334.980

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(BVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	5.000	.000
(LVFT32)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	5.000	.000
(CVFT32)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	5.000	.000

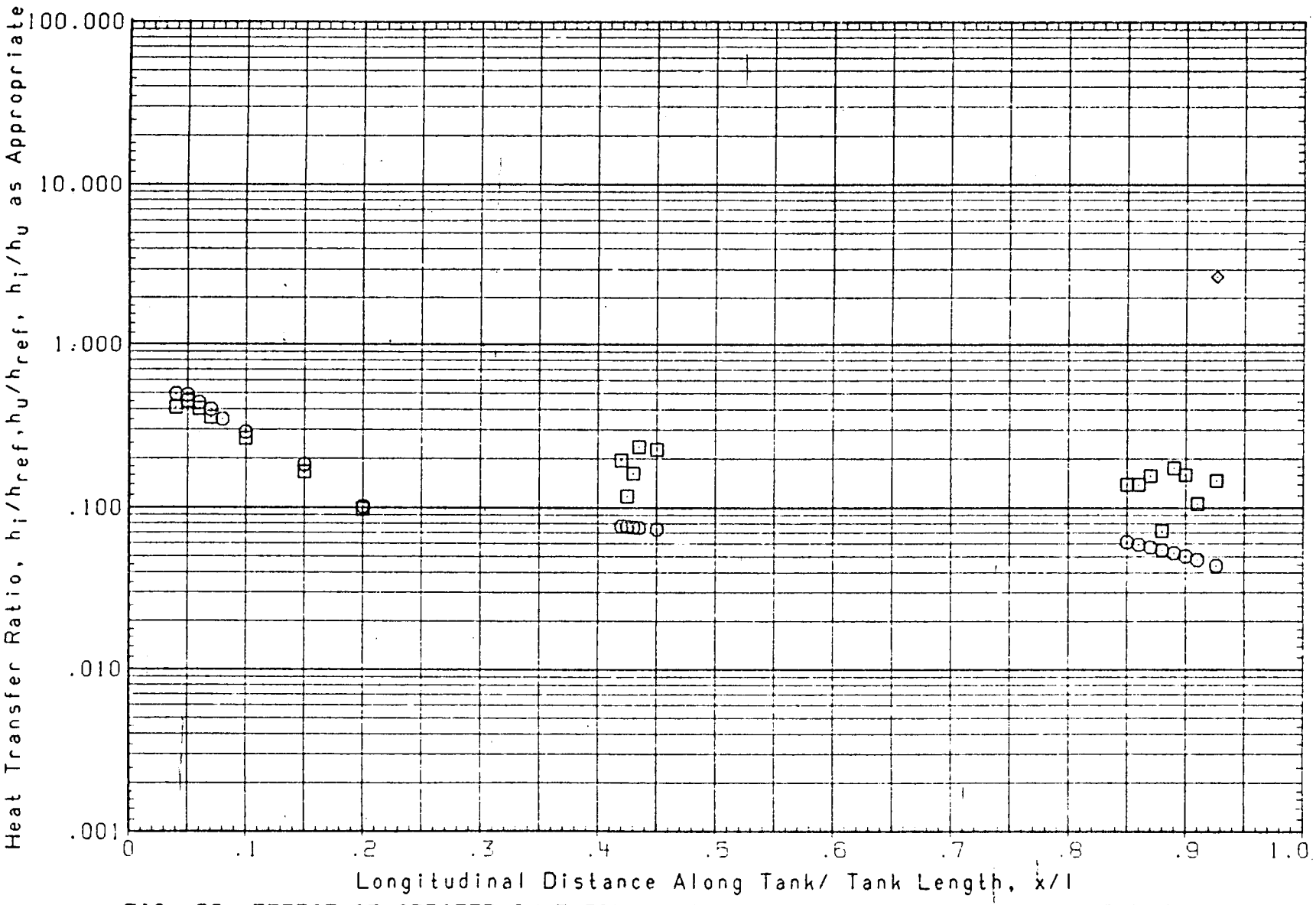


FIG. 28 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 5, BETA = 0

MACH = 3.010 ALPHA = 5.000 PHI = 337.500

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(BVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	5.000	.000
(LVFT32)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	5.000	.000
(CVFT32)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	5.000	.000

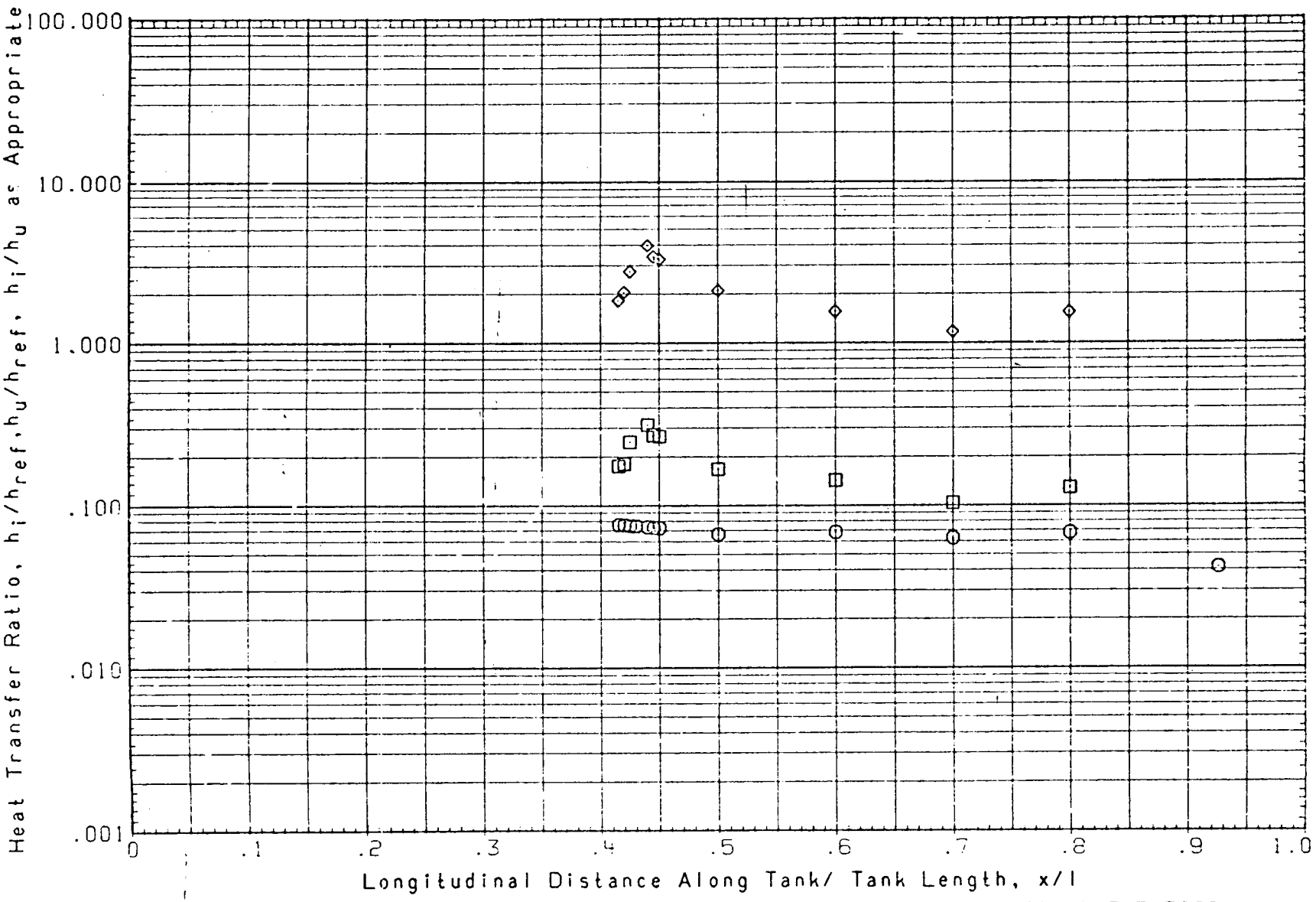


FIG. 28 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 5, BETA = 0

MACH = 3.010 ALPHA = 5.000 PHI = 343.120

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(BVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	5.000	.000
(LVFT32)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	5.000	.000
(CVFT32)	◇	DATA NOT AVAILABLE	5.000	.000

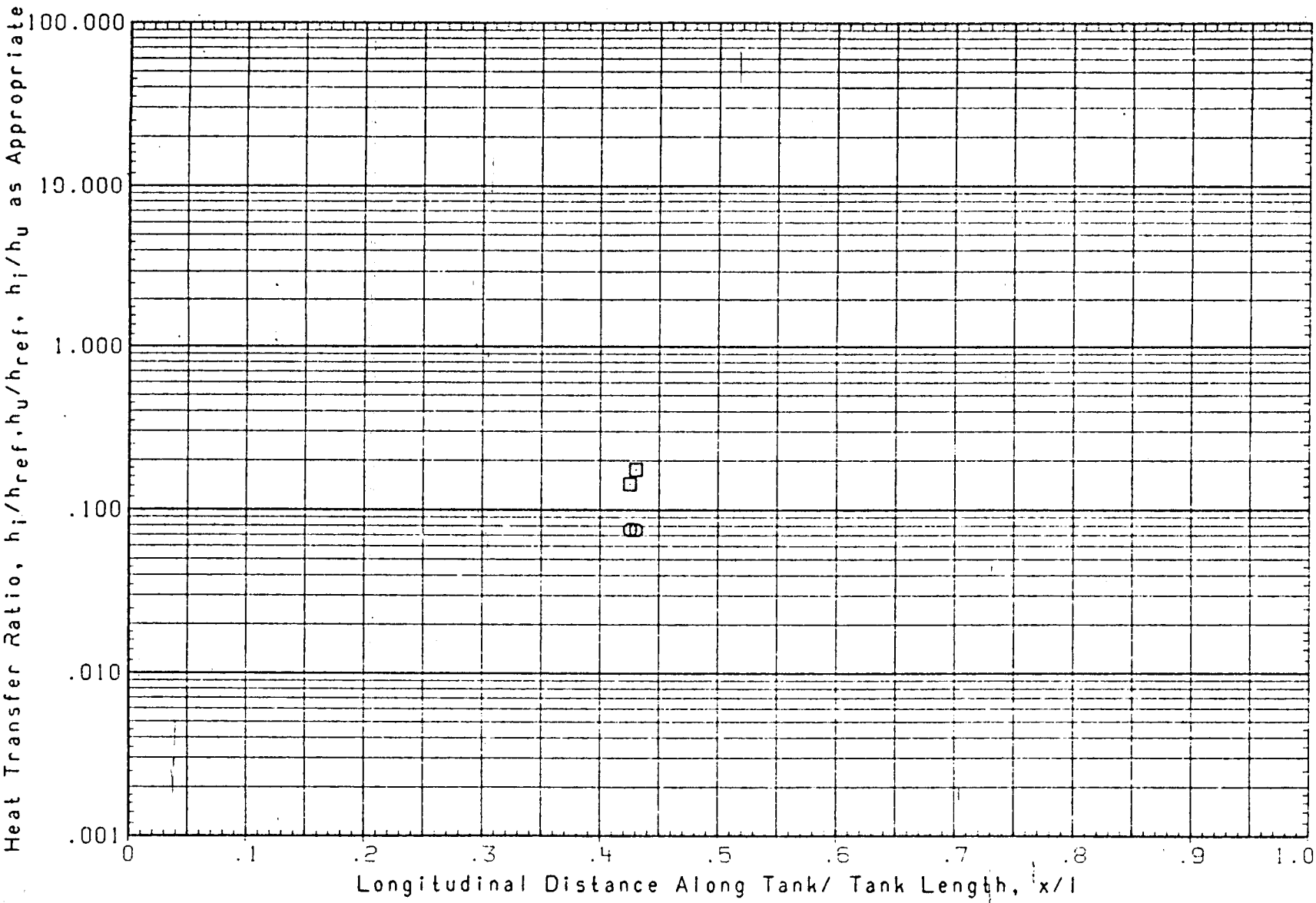


FIG. 28 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 5, BETA = 0

MACH = 3.010 ALPHA = 5.000 PHI = 345.560

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(BVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	5.000	.000
(LVFT32)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	5.000	.000
(CVFT32)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	5.000	.000

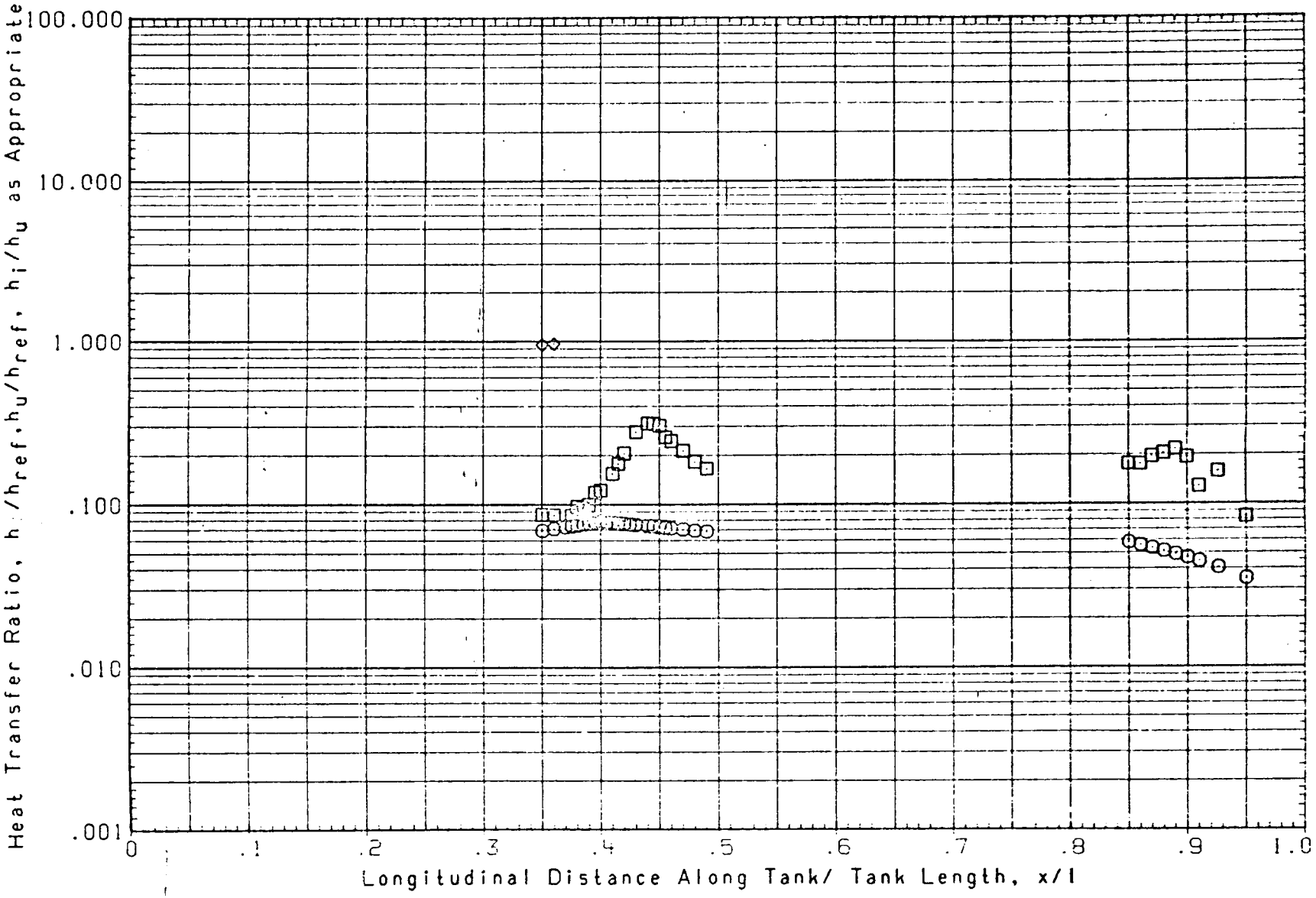


FIG. 28 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 5, BETA = 0

MACH = 3.010 ALPHA = 5.000 PHI = 348.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(BVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	5.000	.000
(LVFT32)	□	DATA NOT AVAILABLE	5.000	.000
(CVFT32)	◇	DATA NOT AVAILABLE	5.000	.000

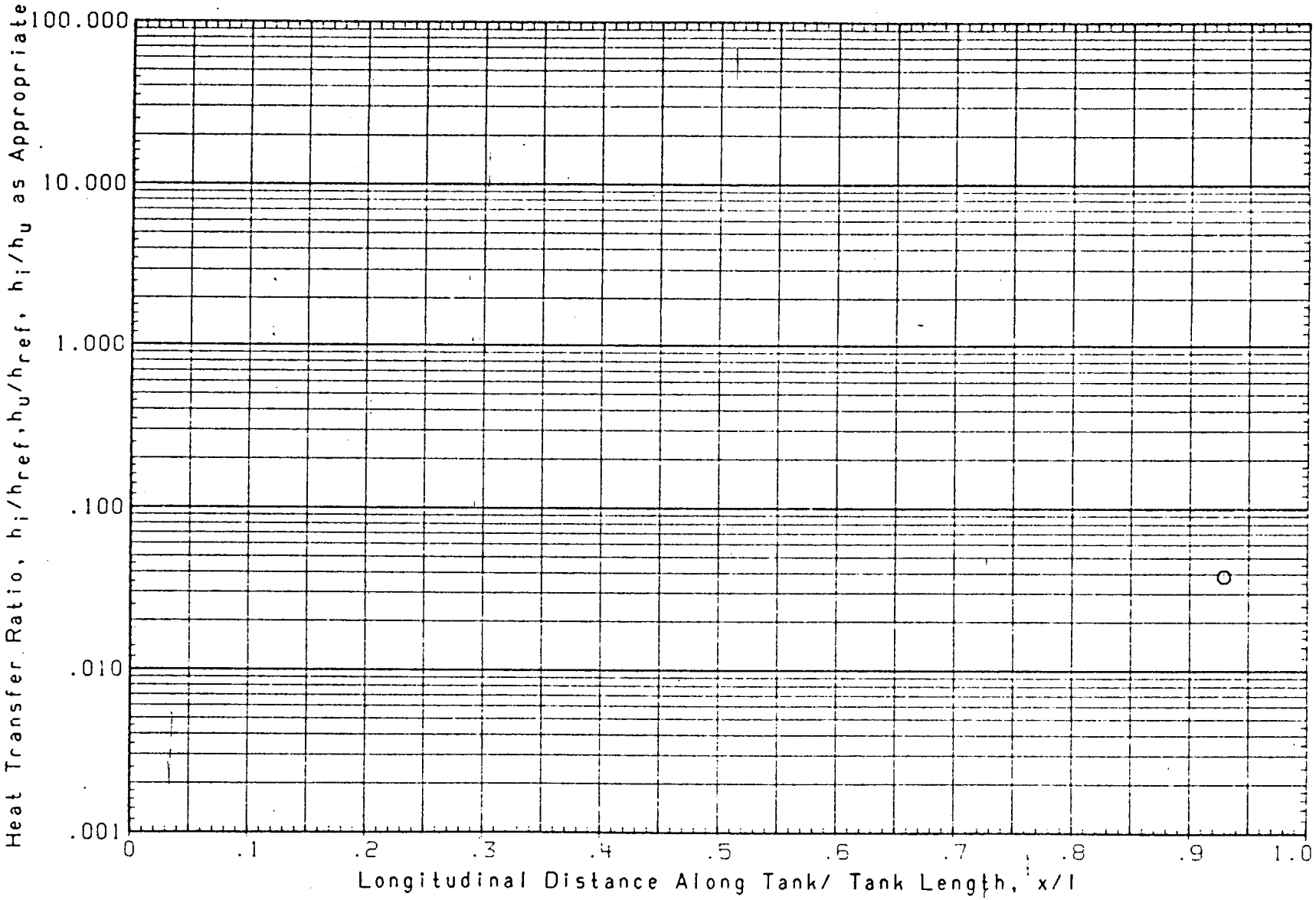


FIG. 28 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 5, BETA = 0

MACH = 3.010 ALPHA = 5.000 PHI = 352.200

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(BVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	5.000	.000
(LVFT32)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	5.000	.000
(CVFT32)	◇	DATA NOT AVAILABLE	5.000	.000

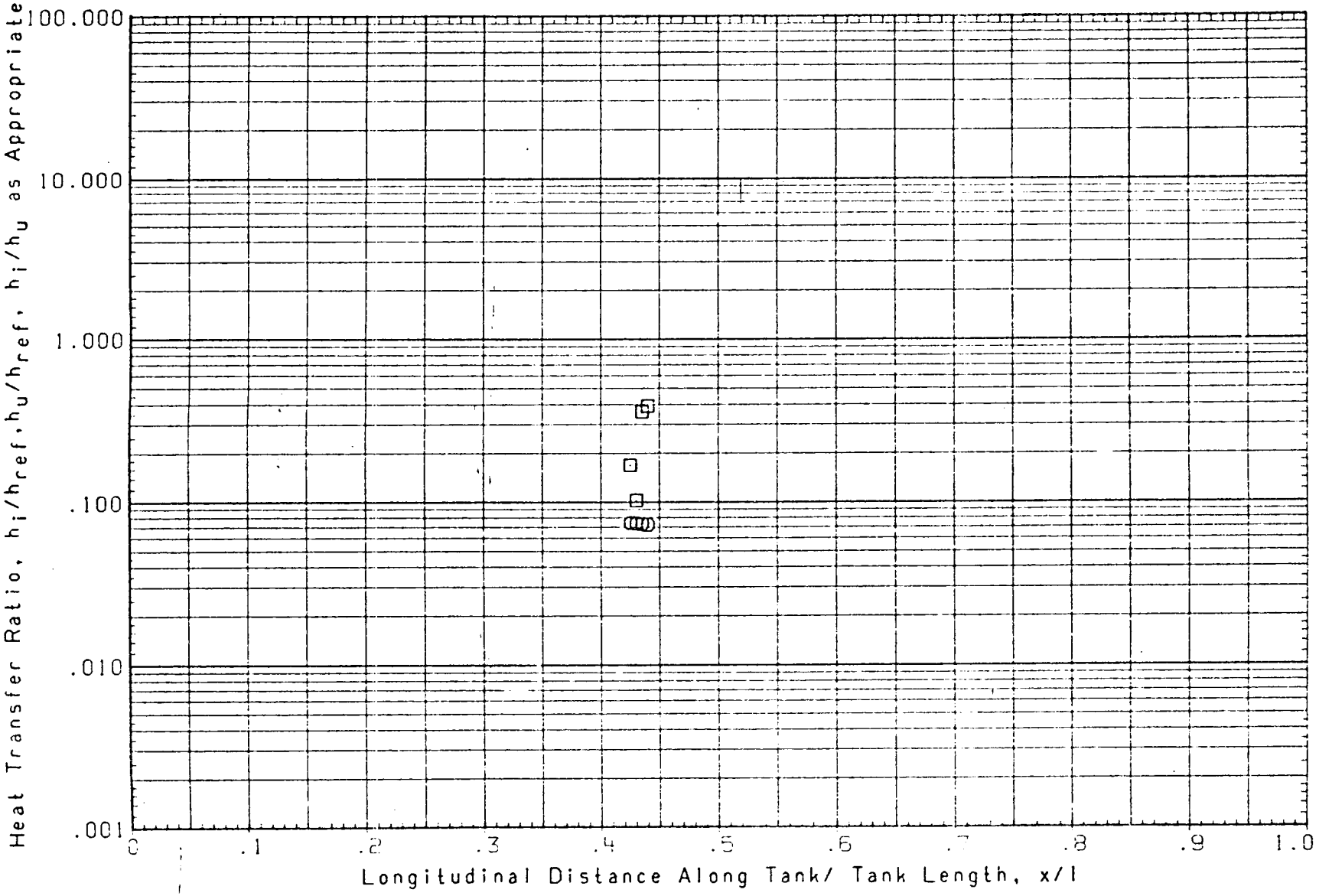


FIG. 28 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 5, BETA = 0

MACH = 3.010 ALPHA = 5.000 PHI = 354.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(BVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	5.000	.000
(LVFT32)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	5.000	.000
(CVFT32)	◇	DATA NOT AVAILABLE	5.000	.000

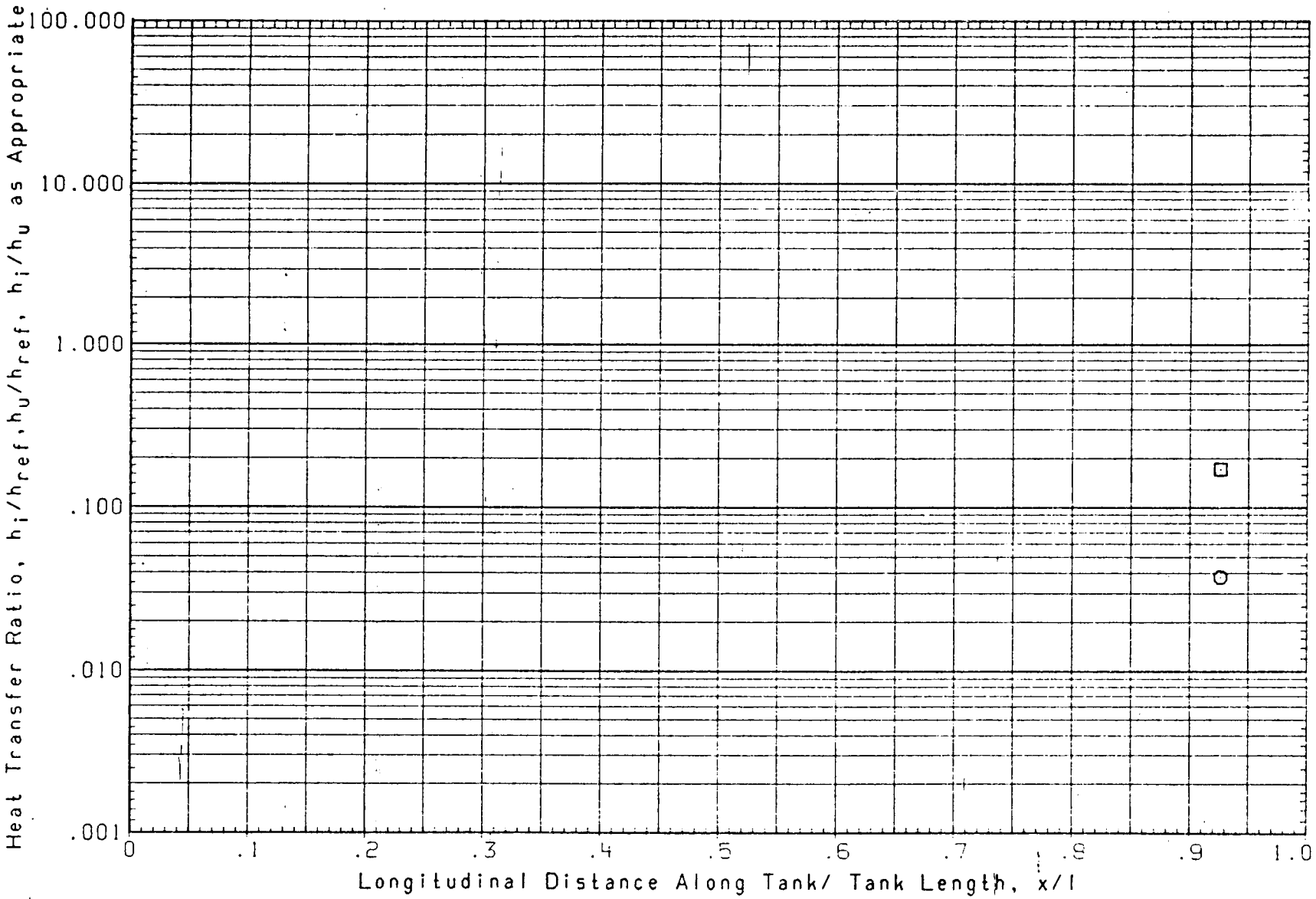


FIG. 28 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 5, BETA = 0

MACH = 3.010 ALPHA = 5.000 PHI = 355.160

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(BVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	5.000	.000
(LVFT32)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	5.000	.000
(CVFT32)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	5.000	.000

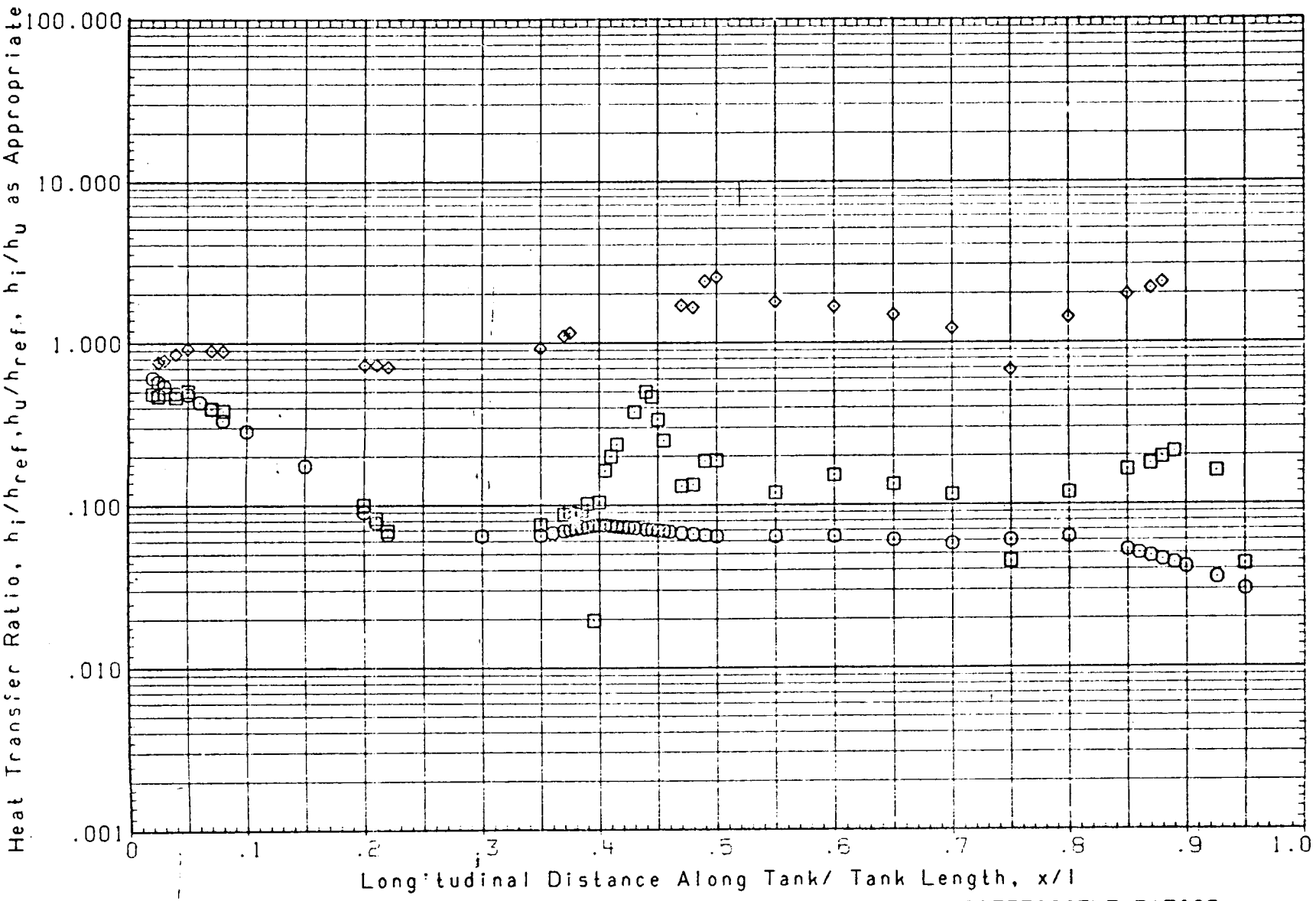


FIG. 28 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 5, BETA = 0

MACH = 3.010 ALPHA = 5.000 PHI = 360.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(BVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	5.000	.000
(LVFT32)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	5.000	.000
(CVFT32)	◇	DATA NOT AVAILABLE	5.000	.000

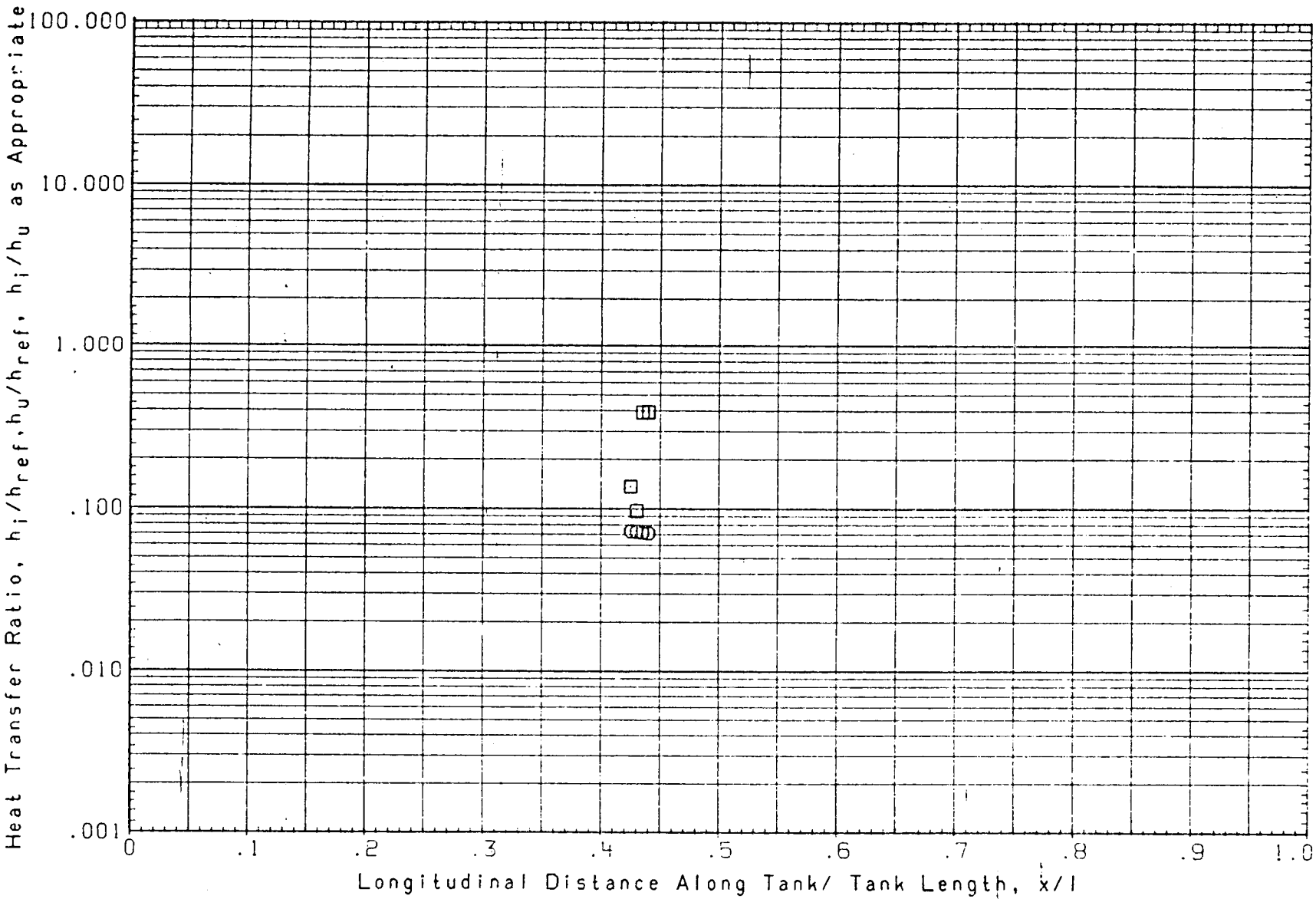


FIG. 28 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 5, BETA = 0

MACH = 3.010 ALPHA = 5.000 PHI = 5.630

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(BVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	5.000	.000
(LVFT32)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	5.000	.000
(CVFT32)	◇	DATA NOT AVAILABLE	5.000	.000

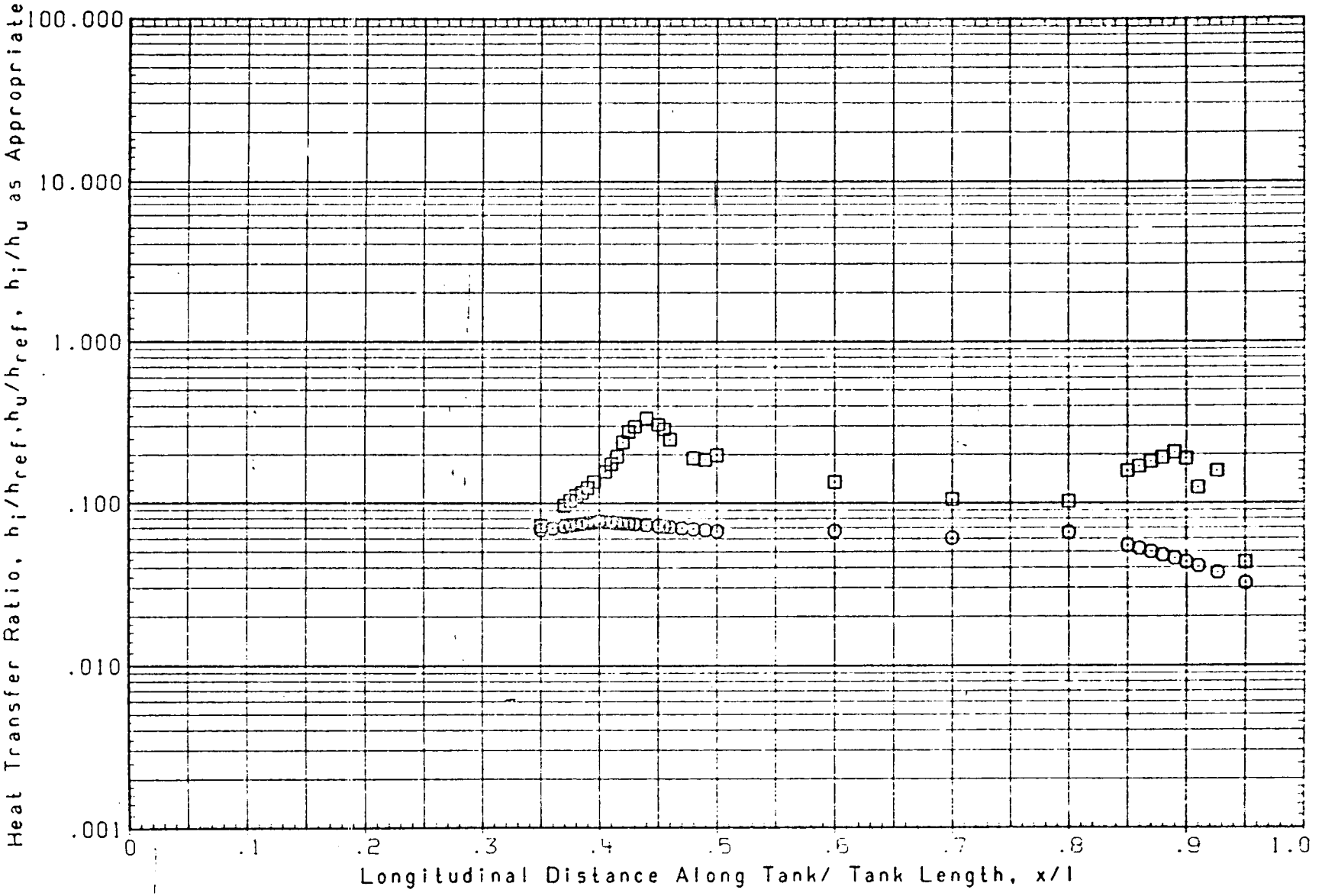


FIG. 28 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 5, BETA = 0

MACH = 3.010 ALPHA = 5.000 PHI = 11.250

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(BVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	5.000	.000
(LVFT32)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	5.000	.000
(CVFT32)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	5.000	.000

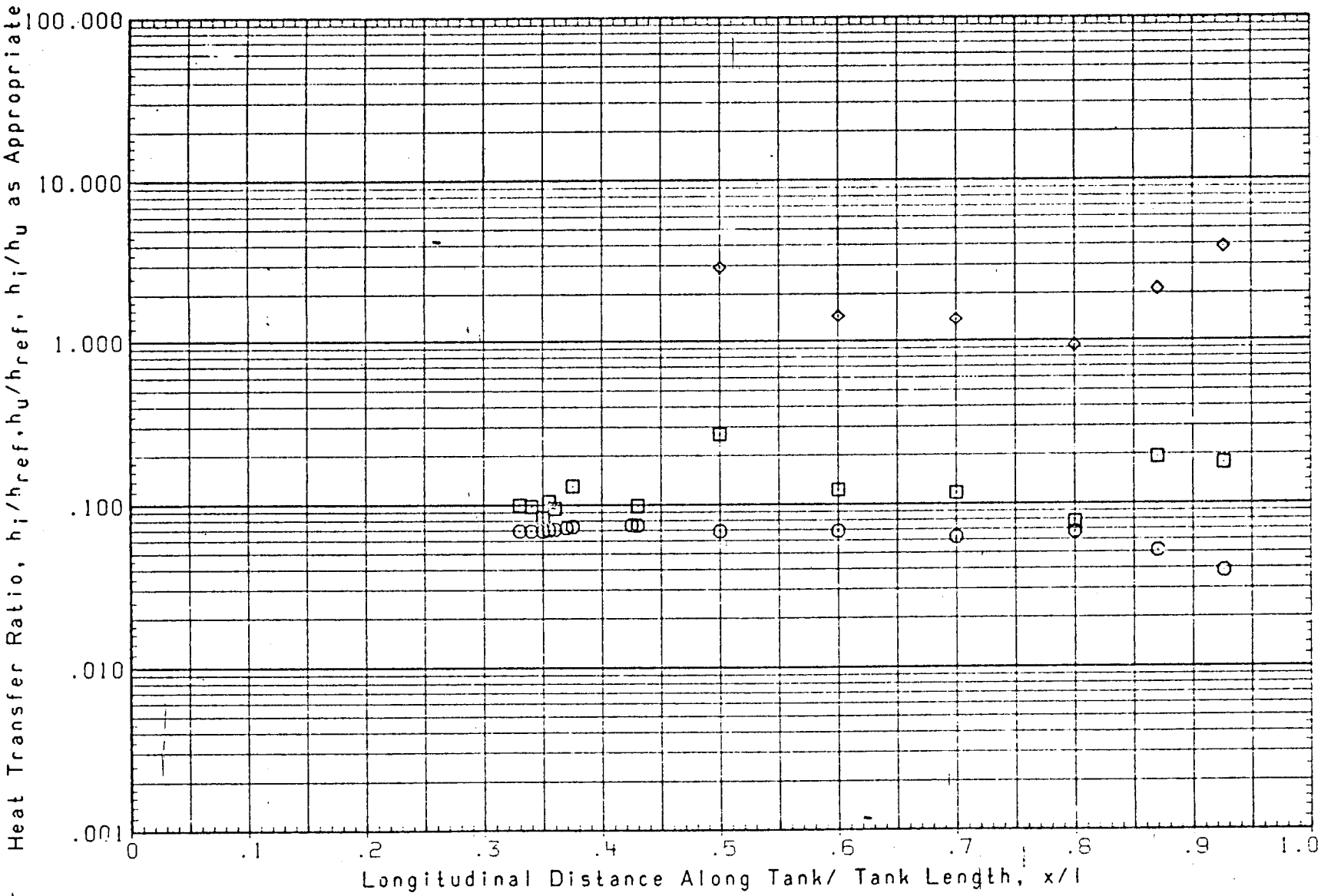


FIG. 28 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 5, BETA = 0

MACH = 3.010 ALPHA = 5.000 PHI = 17.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(BVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	5.000	.000
(LVFT32)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	5.000	.000
(CVFT32)	◇	DATA NOT AVAILABLE	5.000	.000

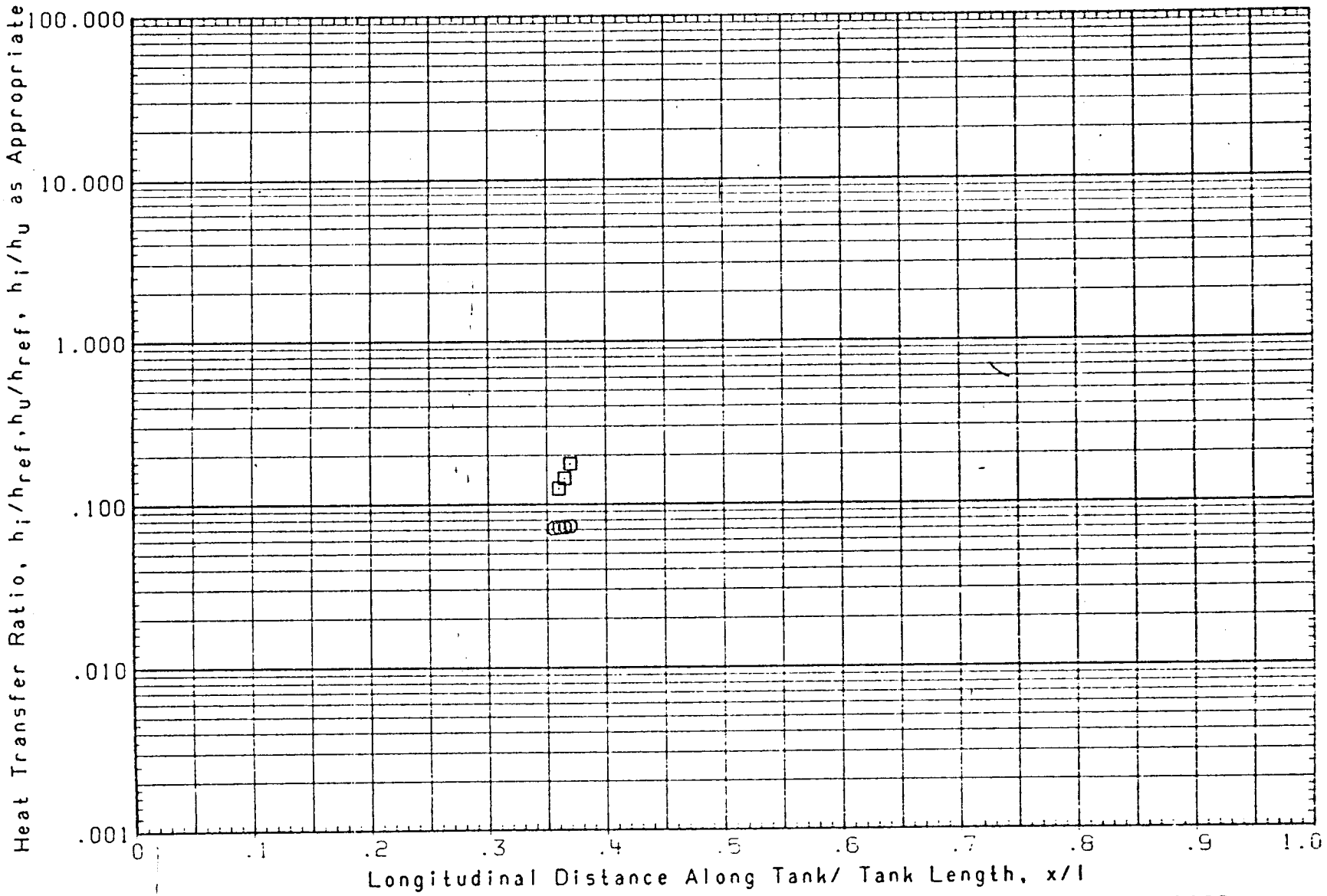


FIG. 28 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 5, BETA = 0

MACH = 3.010 ALPHA = 5.000 PHI = 20.980

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(BVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	5.000	.000
(LVFT32)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	5.000	.000
(CVFT32)	◇	DATA NOT AVAILABLE	5.000	.000

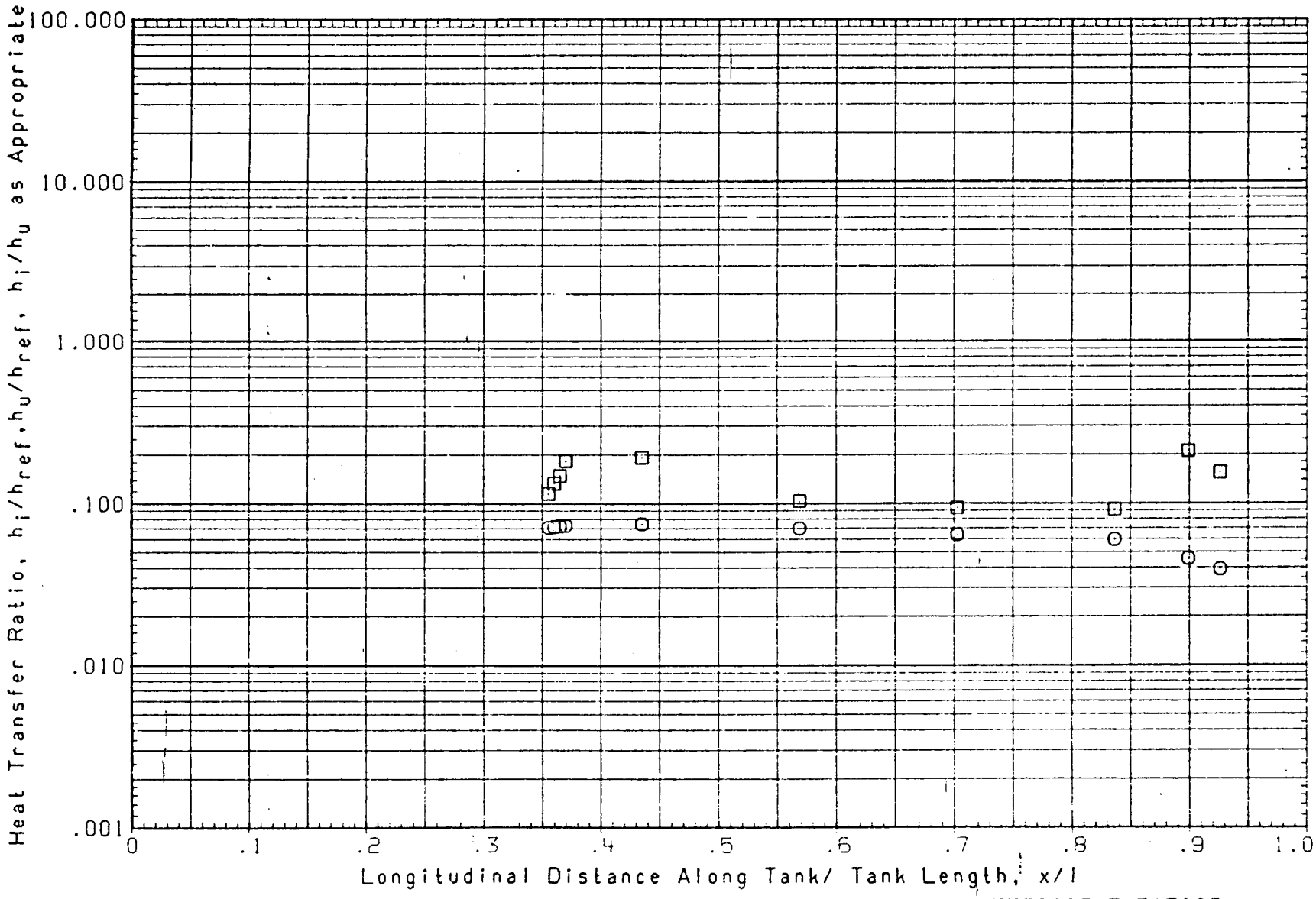


FIG. 28 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 5, BETA = 0

MACH = 3.010 ALPHA = 5.000 PHI = 23.075

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(BVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	5.000	.000
(LVFT32)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	5.000	.000
(CVFT32)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	5.000	.000

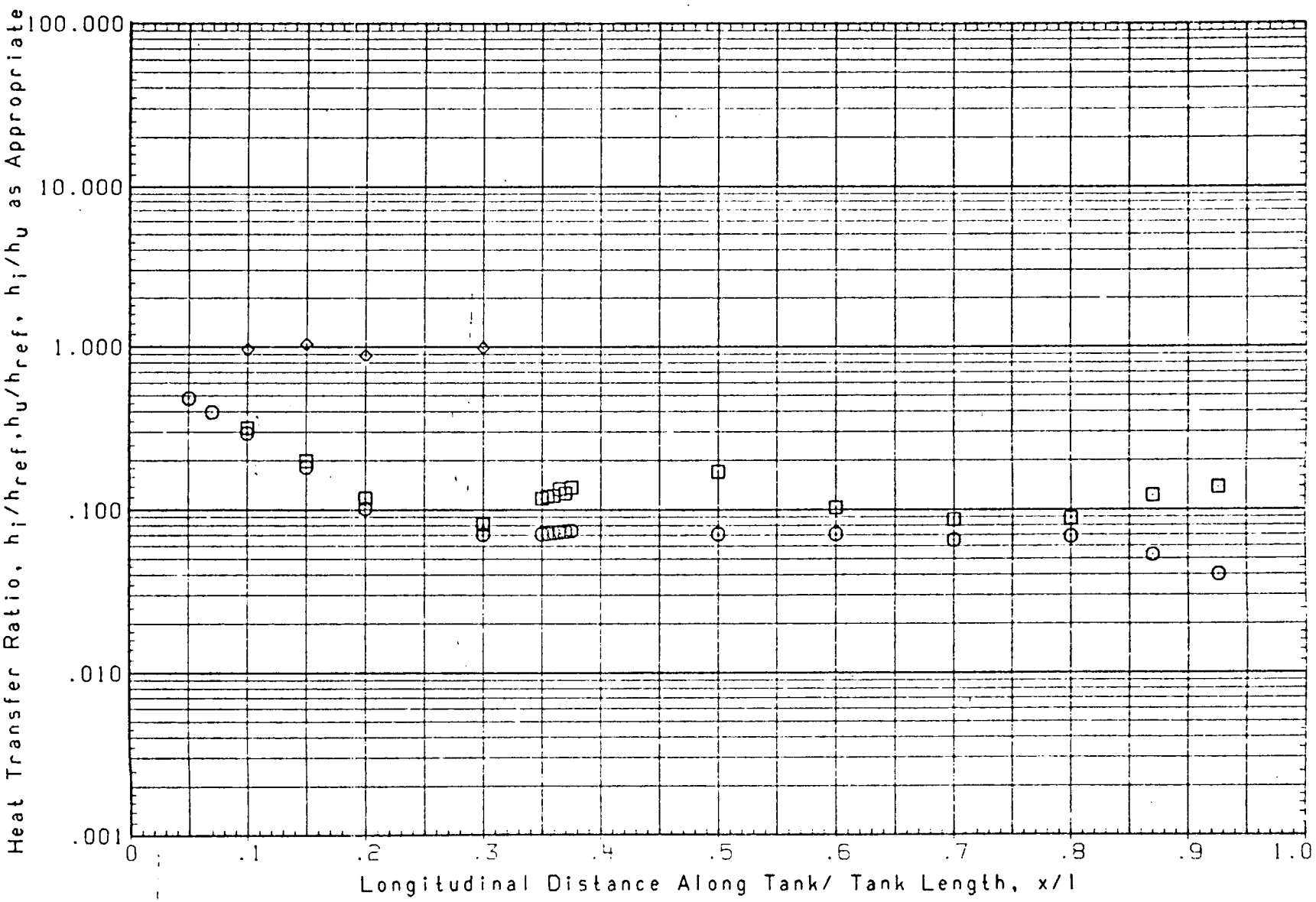


FIG. 28 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 5, BETA = 0

MACH = 3.010 ALPHA = 5.000 PHI = 29.800

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(BVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	5.000	.000
(LVFT32)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	5.000	.000
(CVFT32)	◇	DATA NOT AVAILABLE	5.000	.000

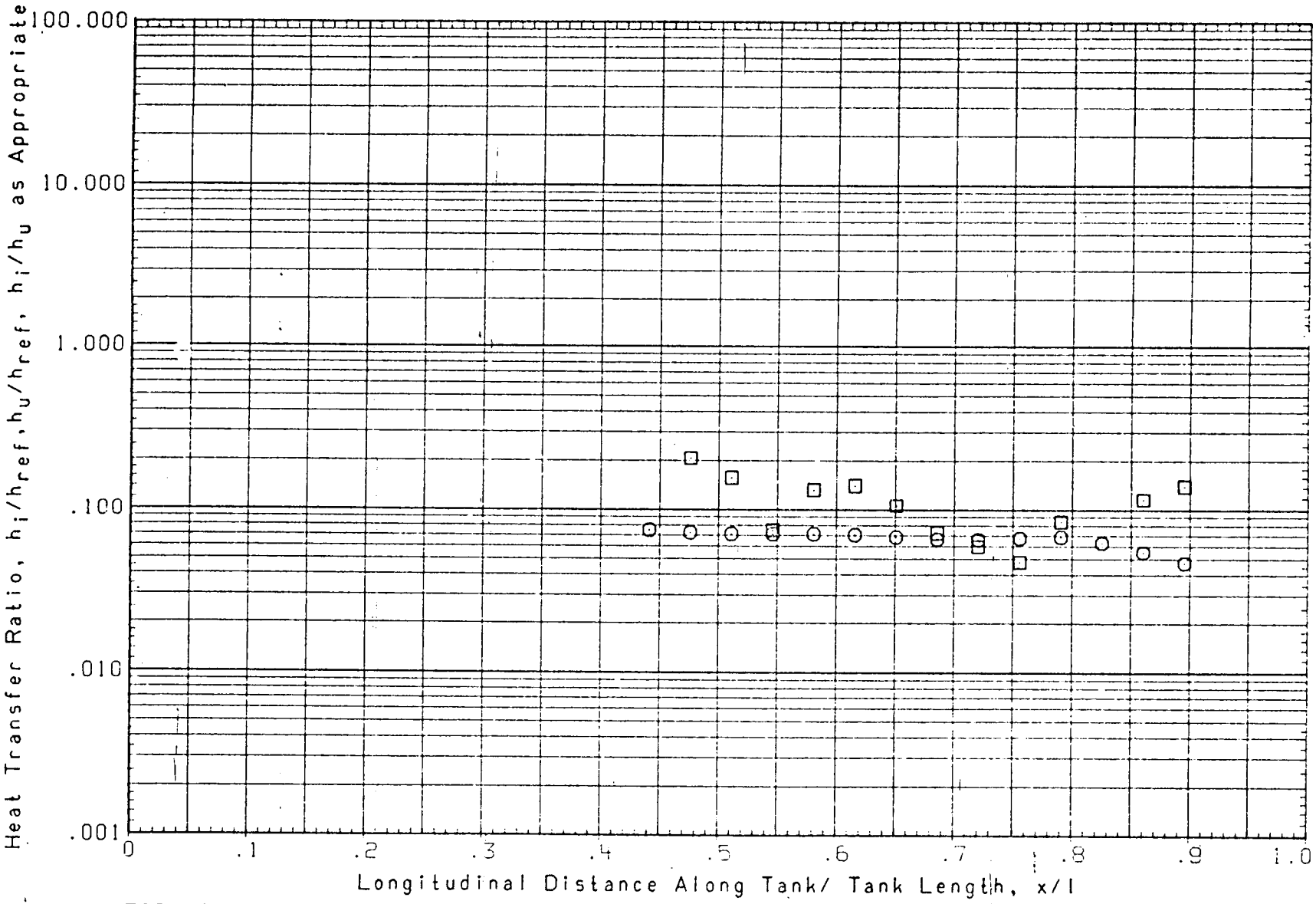


FIG. 28 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 5, BETA = 0

MACH = 3.010 ALPHA = 5.000 PHI = 31.430

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(BVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	5.000	.000
(LVFT32)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	5.000	.000
(CVFT32)	◇	DATA NOT AVAILABLE	5.000	.000

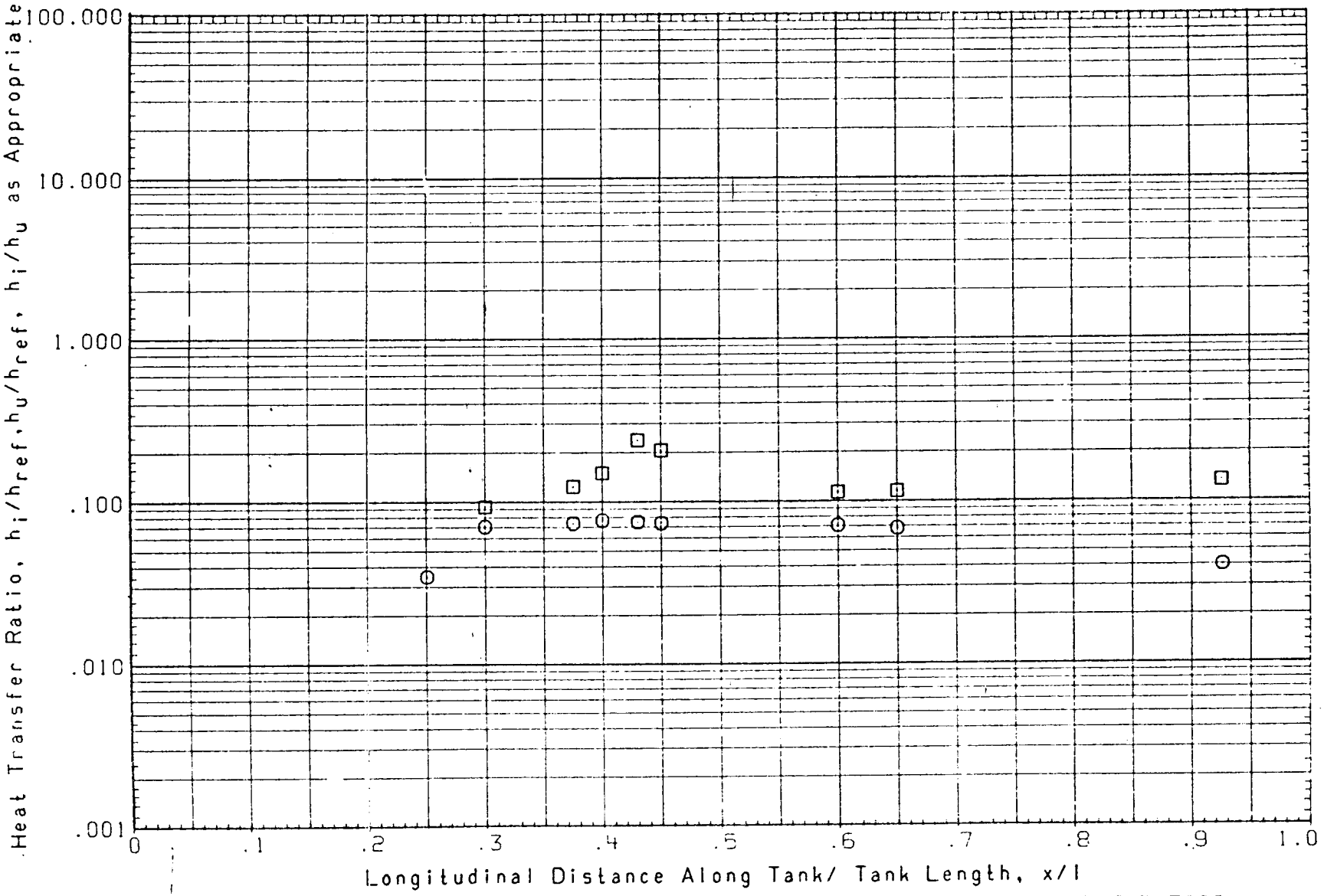


FIG. 28 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 5, BETA = 0

MACH = 3.010 ALPHA = 5.000 PHI = 33.750

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(BVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	5.000	.000
(LVFT32)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	5.000	.000
(CVFT32)	◇	DATA NOT AVAILABLE	5.000	.000

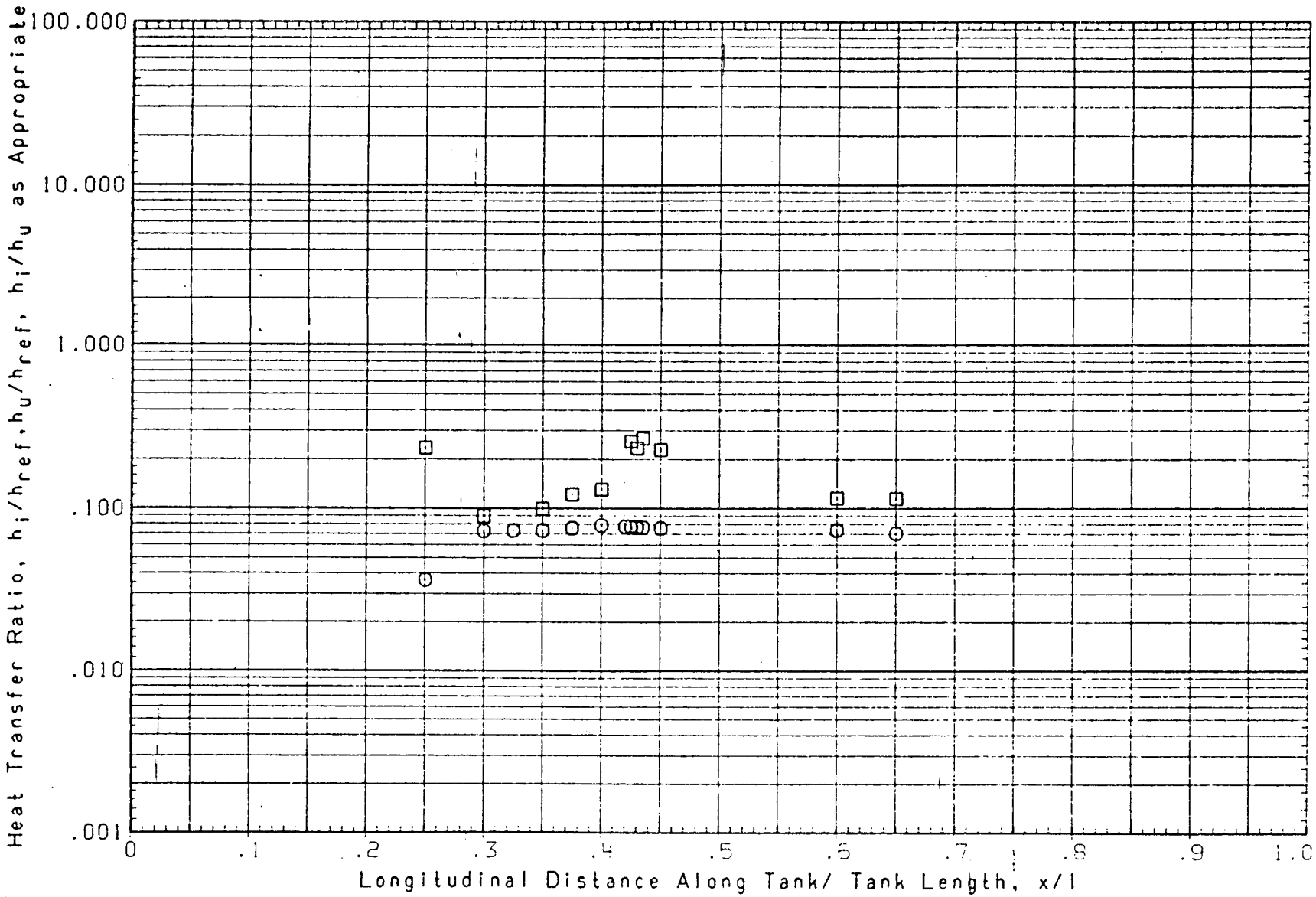


FIG. 28 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 5, BETA = 0

MACH = 3.010 ALPHA = 5.000 PHI = 35.320

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(BVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	5.000	.000
(LVFT32)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	5.000	.000
(CVFT32)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	5.000	.000

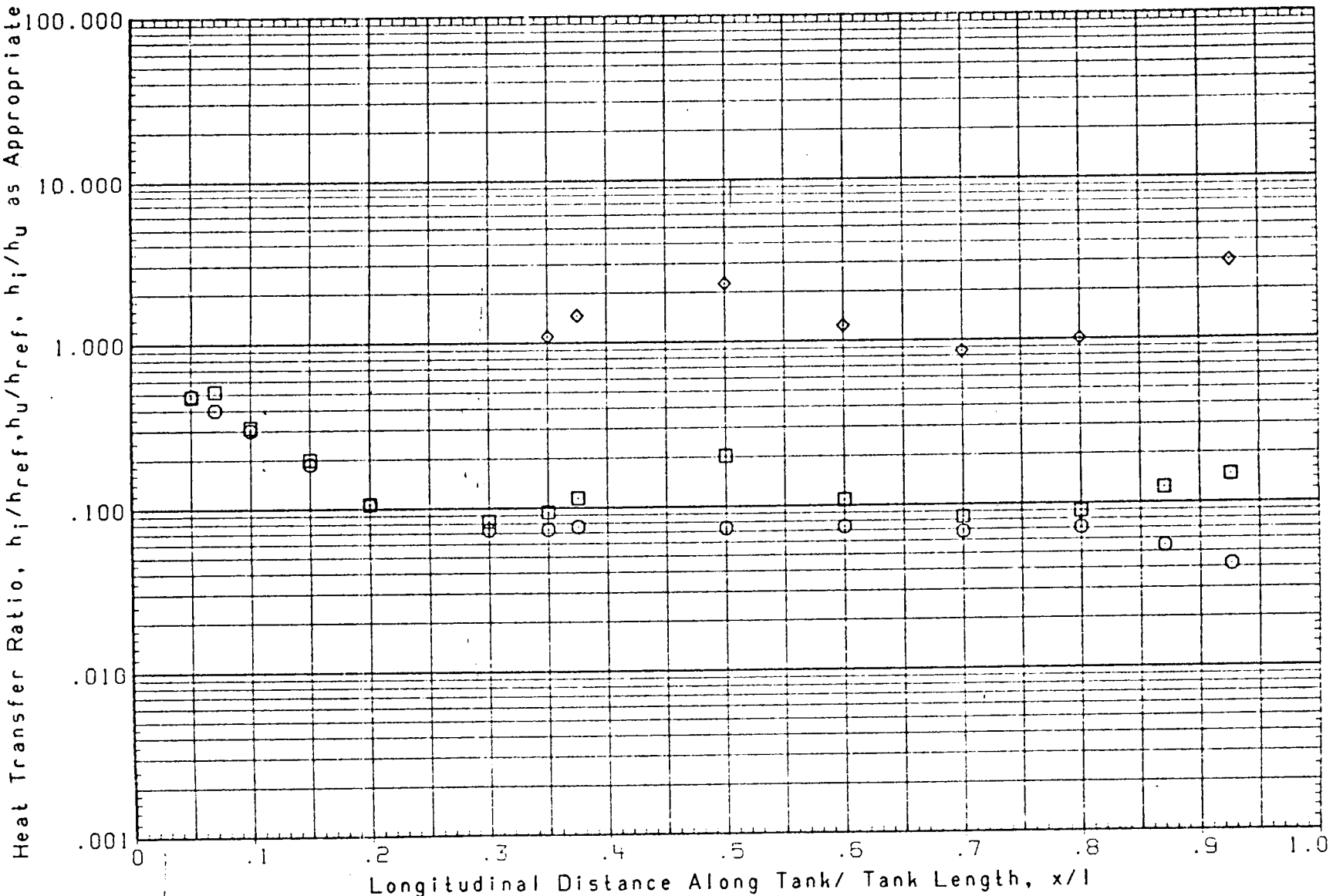


FIG. 28 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 5, BETA = 0

MACH = 3.010 ALPHA = 5.000 PHI = 37.700

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(BVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	5.000	.000
(LVFT32)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	5.000	.000
(CVFT32)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	5.000	.000

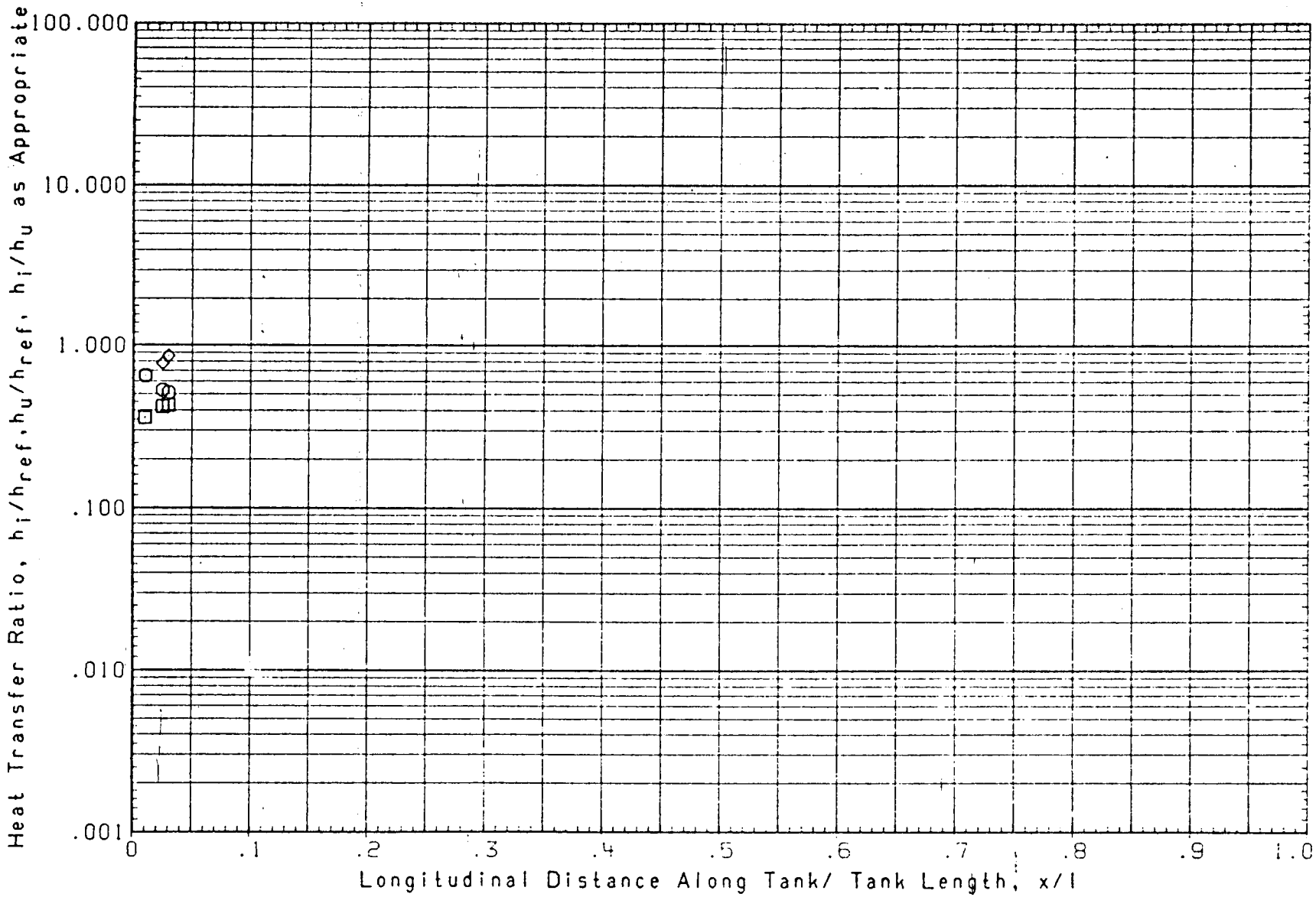


FIG. 28 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 5, BETA = 0

MACH = 3.010 ALPHA = 5.000 PHI = 39.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(BVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	5.000	.000
(LVFT32)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	5.000	.000
(CVFT32)	◇	DATA NOT AVAILABLE	5.000	.000

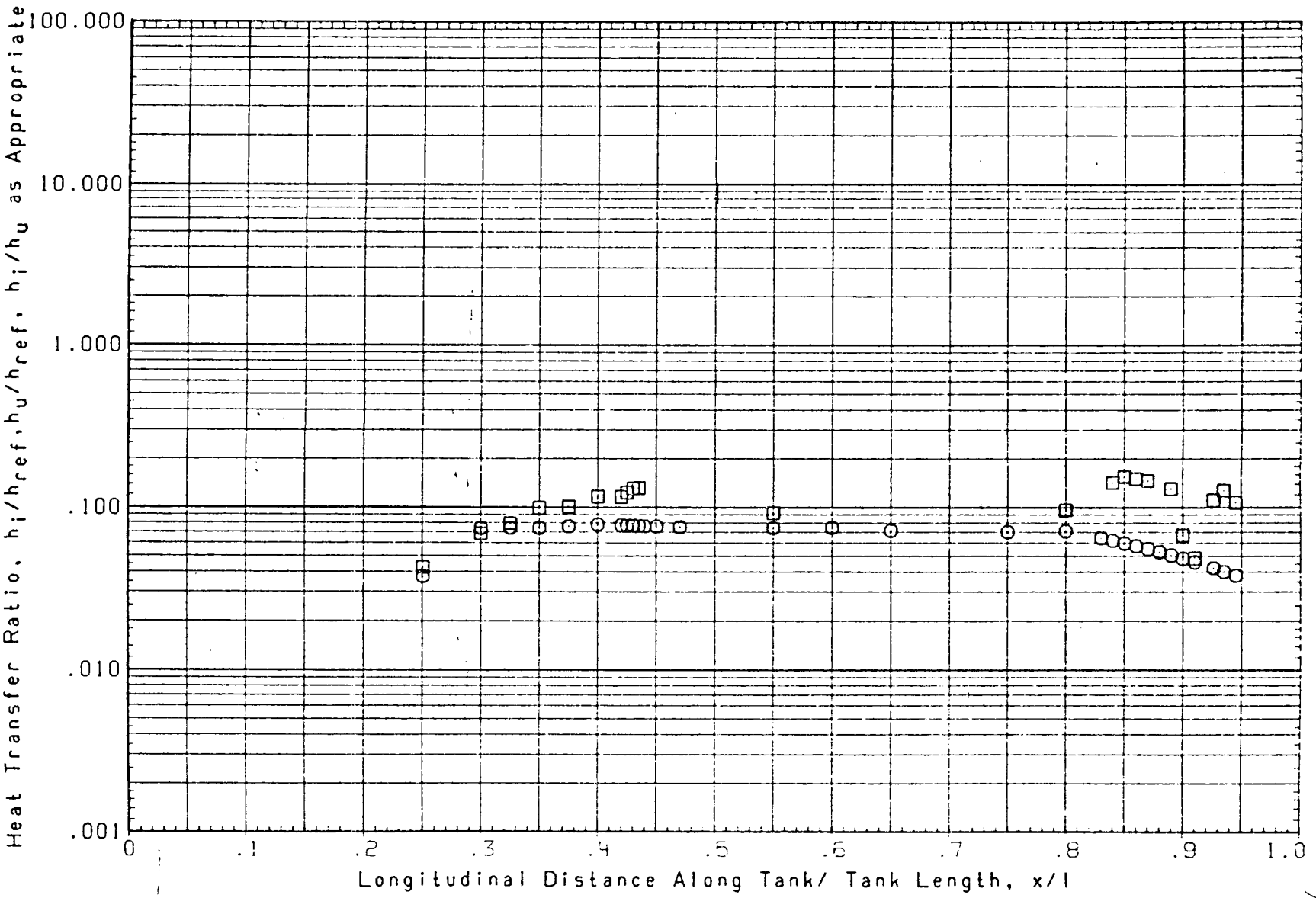


FIG. 28 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 5, BETA = 0

MACH = 3.010 ALPHA = 5.000 PHI = 45.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(BVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	5.000	.000
(LVFT32)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	5.000	.000
(CVFT32)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	5.000	.000

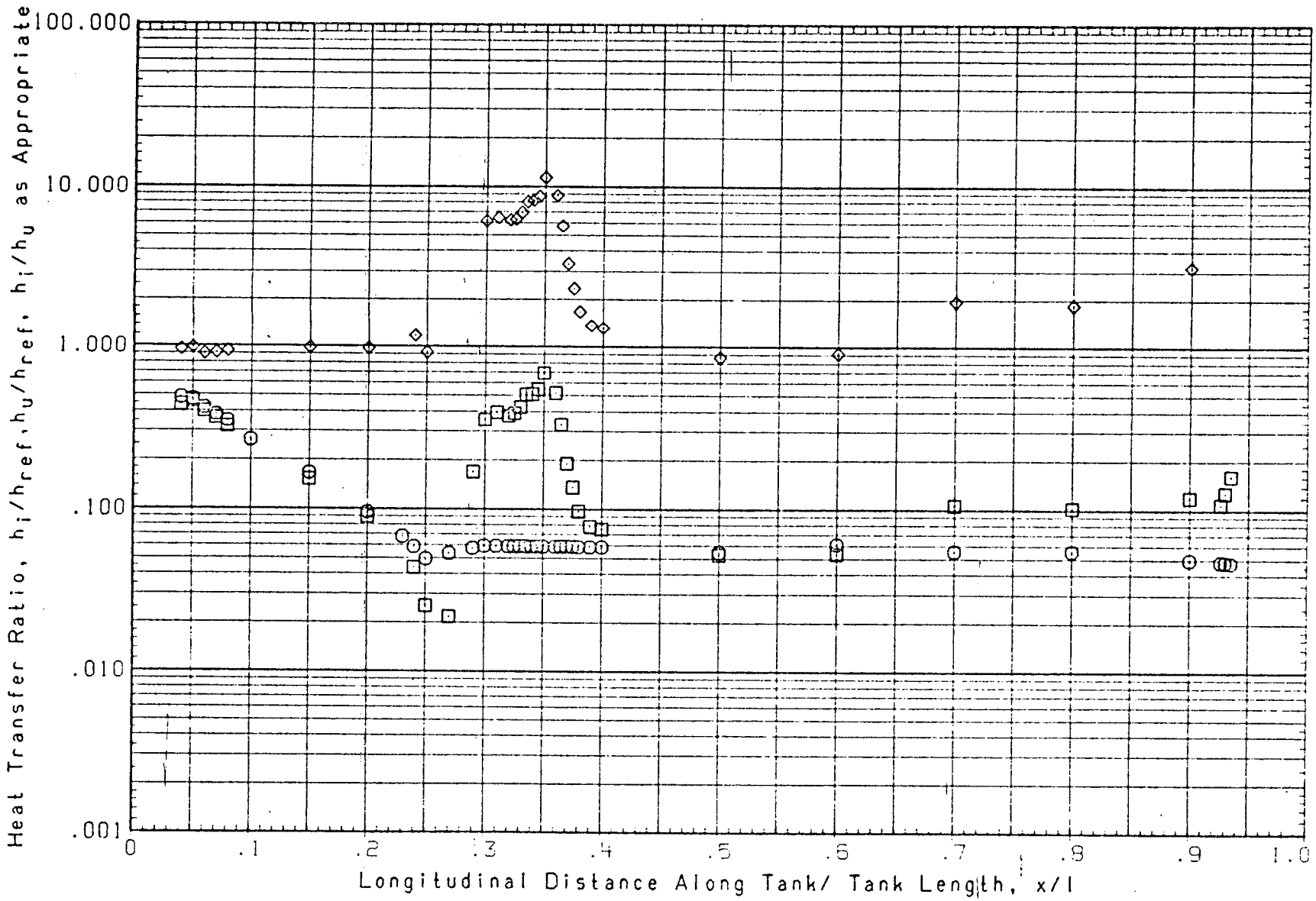


FIG. 28 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 5, BETA = 0

MACH = 4.020 ALPHA = 5.000 PHI = 270.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(BVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	5.000	.000
(LVFT32)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	5.000	.000
(CVFT32)	◇	DATA NOT AVAILABLE	5.000	.000

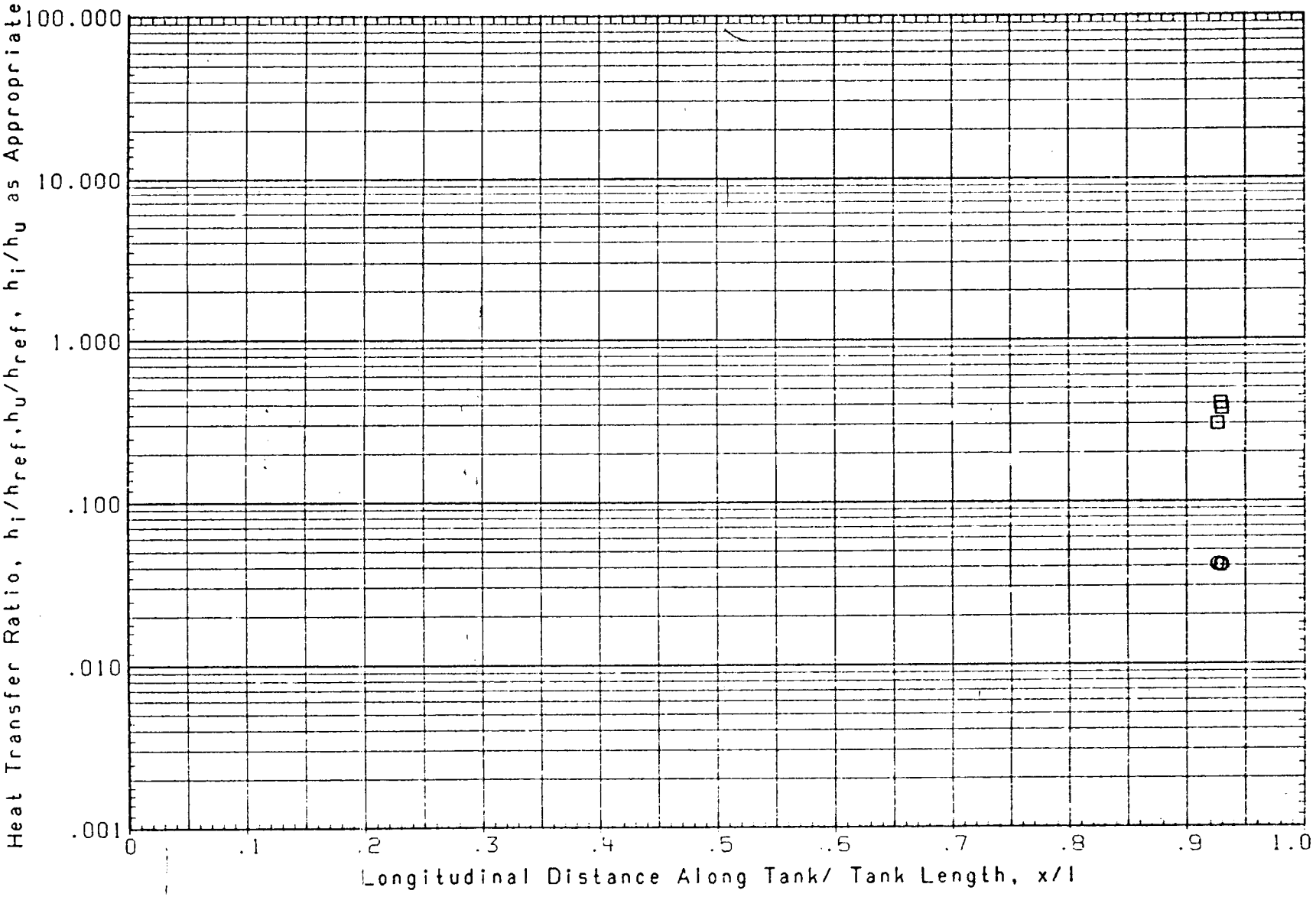


FIG. 28 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 5, BETA = 0

MACH = 4.020 ALPHA = 5.000 PHI = 289.430

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(BVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	5.000	.000
(LVFT32)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	5.000	.000
(CVFT32)	◇	DATA NOT AVAILABLE	5.000	.000

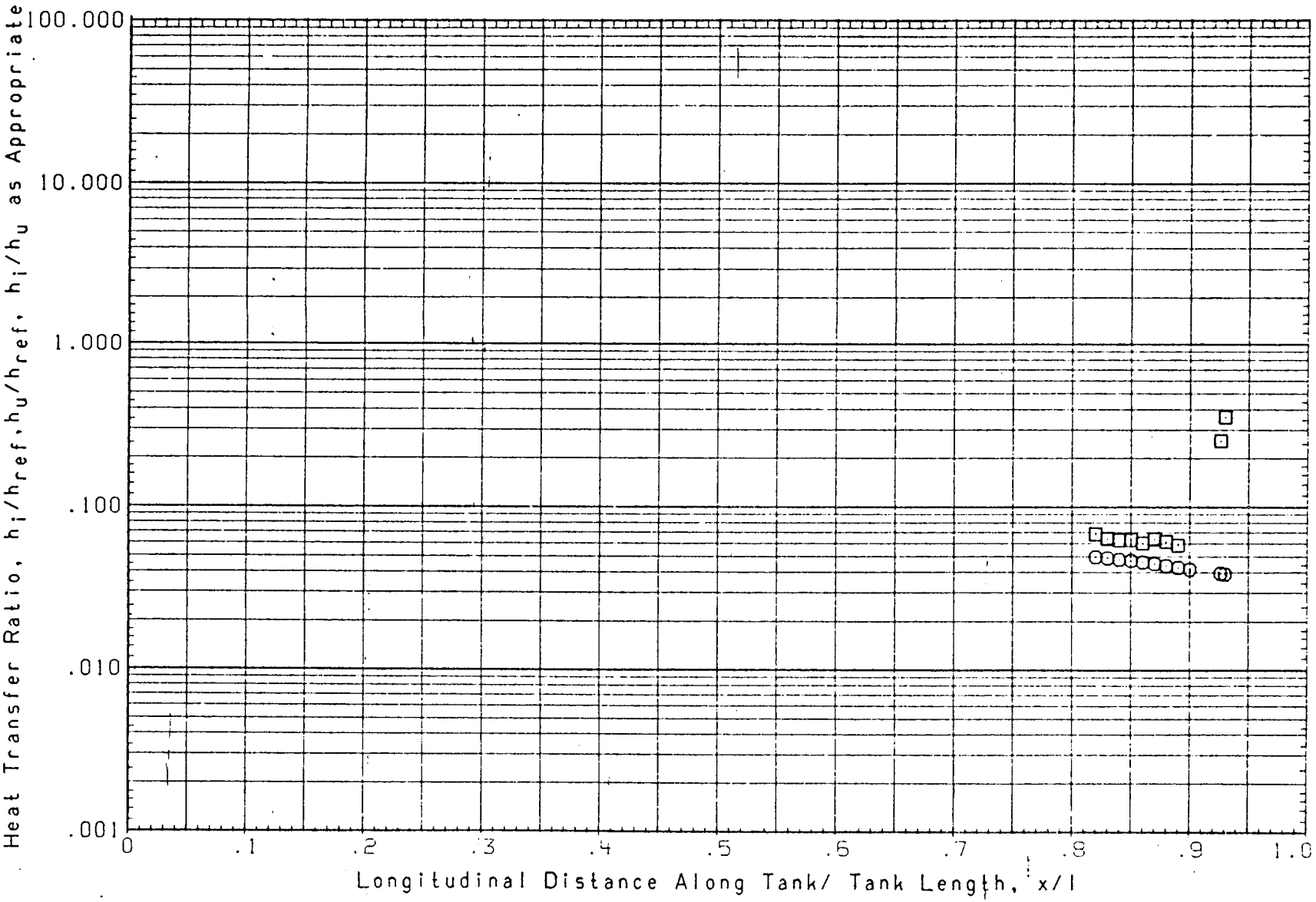


FIG. 28 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 5, BETA = 0

MACH = 4.020 ALPHA = 5.000 PHI = 292.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(BVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	5.000	.000
(LVFT32)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	5.000	.000
(CVFT32)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	5.000	.000

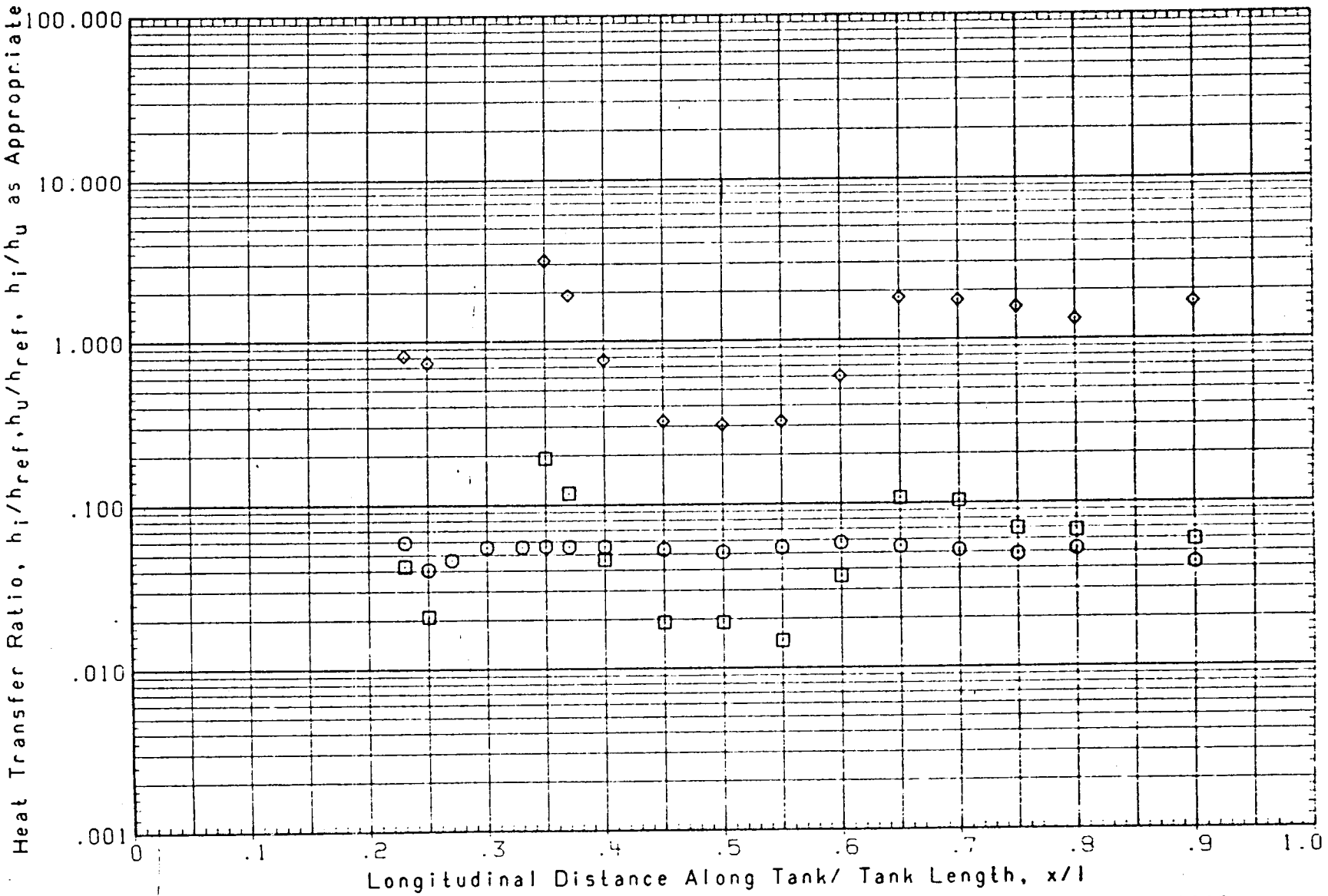


FIG. 28 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 5, BETA = 0

MACH = 4.020 ALPHA = 5.000 PHI = 292.500

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(BVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	5.000	.000
(LVFT32)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	5.000	.000
(CVFT32)	◇	DATA NOT AVAILABLE	5.000	.000

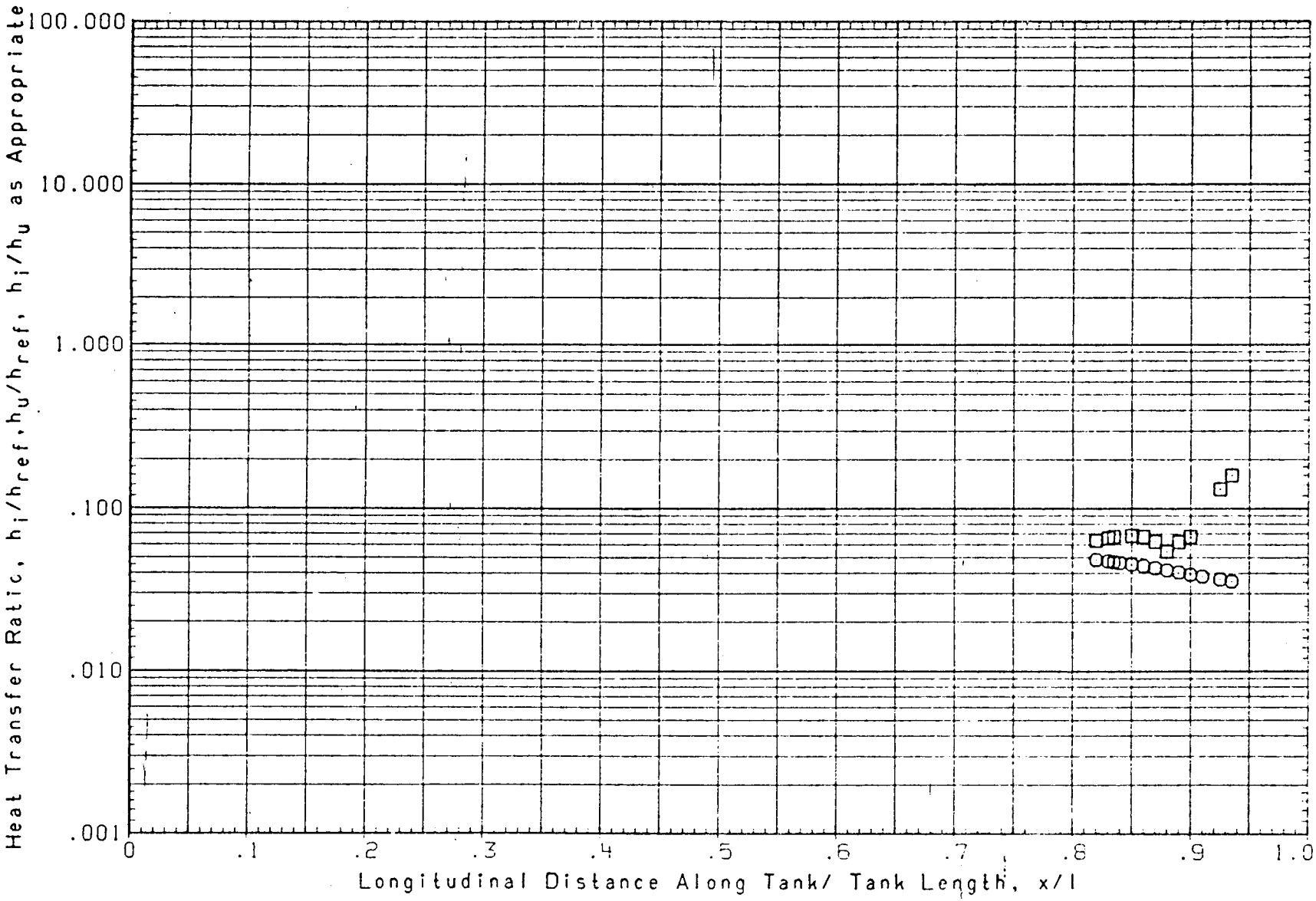


FIG. 28 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 5, BETA = 0

MACH = 4.020 ALPHA = 5.000 PHI = 301.500

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(BVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	5.000	.000
(LVFT32)	□	IH41B(V41A-A4A) 0 + 5 (SPIKED ET DATA) HI/HREF	5.000	.000
(CVFT32)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	5.000	.000

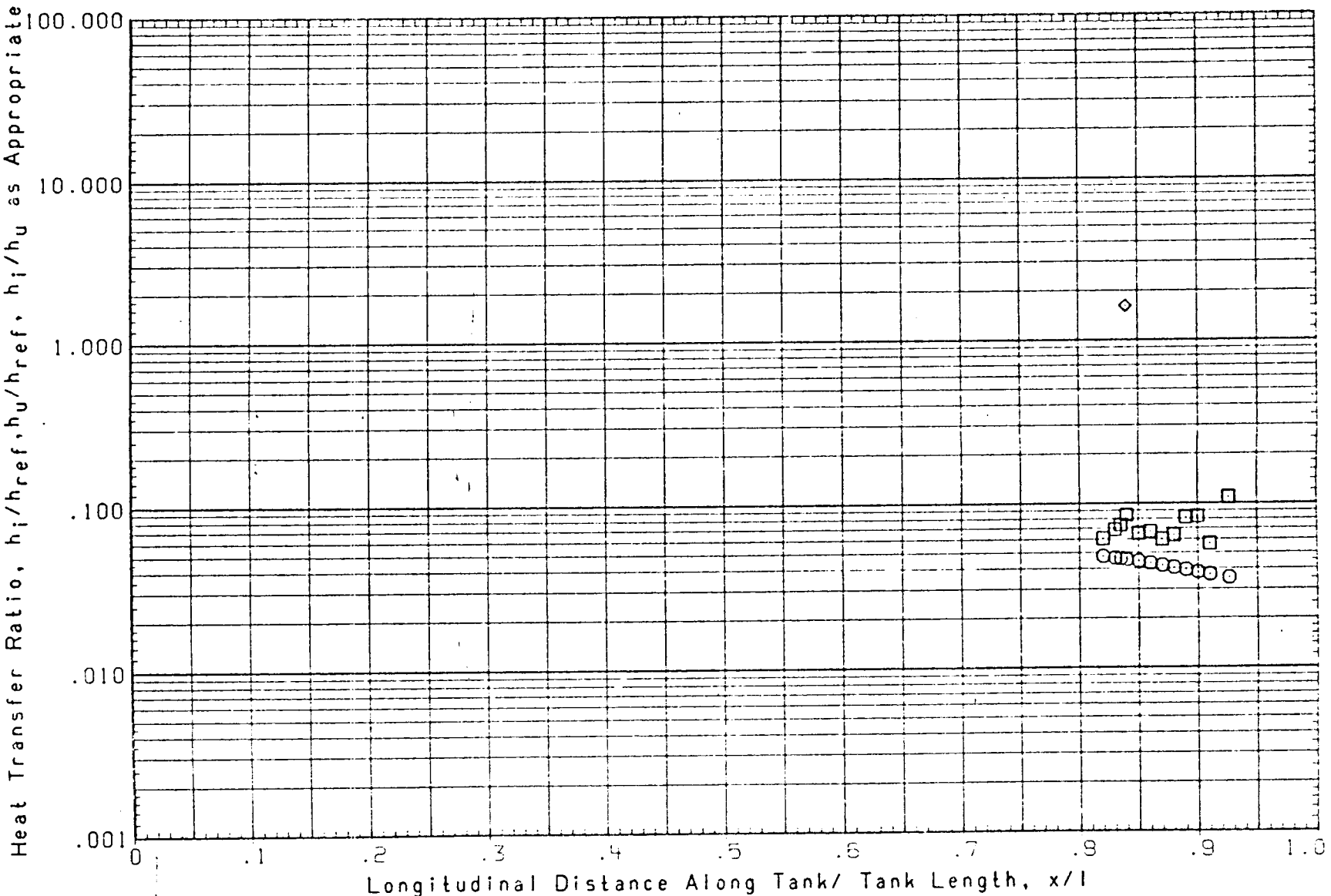


FIG. 28 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 5, BETA = 0

MACH = 4.020 ALPHA = 5.000 PHI = 305.400

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(BVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	5.000	.000
(LVFT32)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	5.000	.000
(CVFT32)	◇	DATA NOT AVAILABLE	5.000	.000

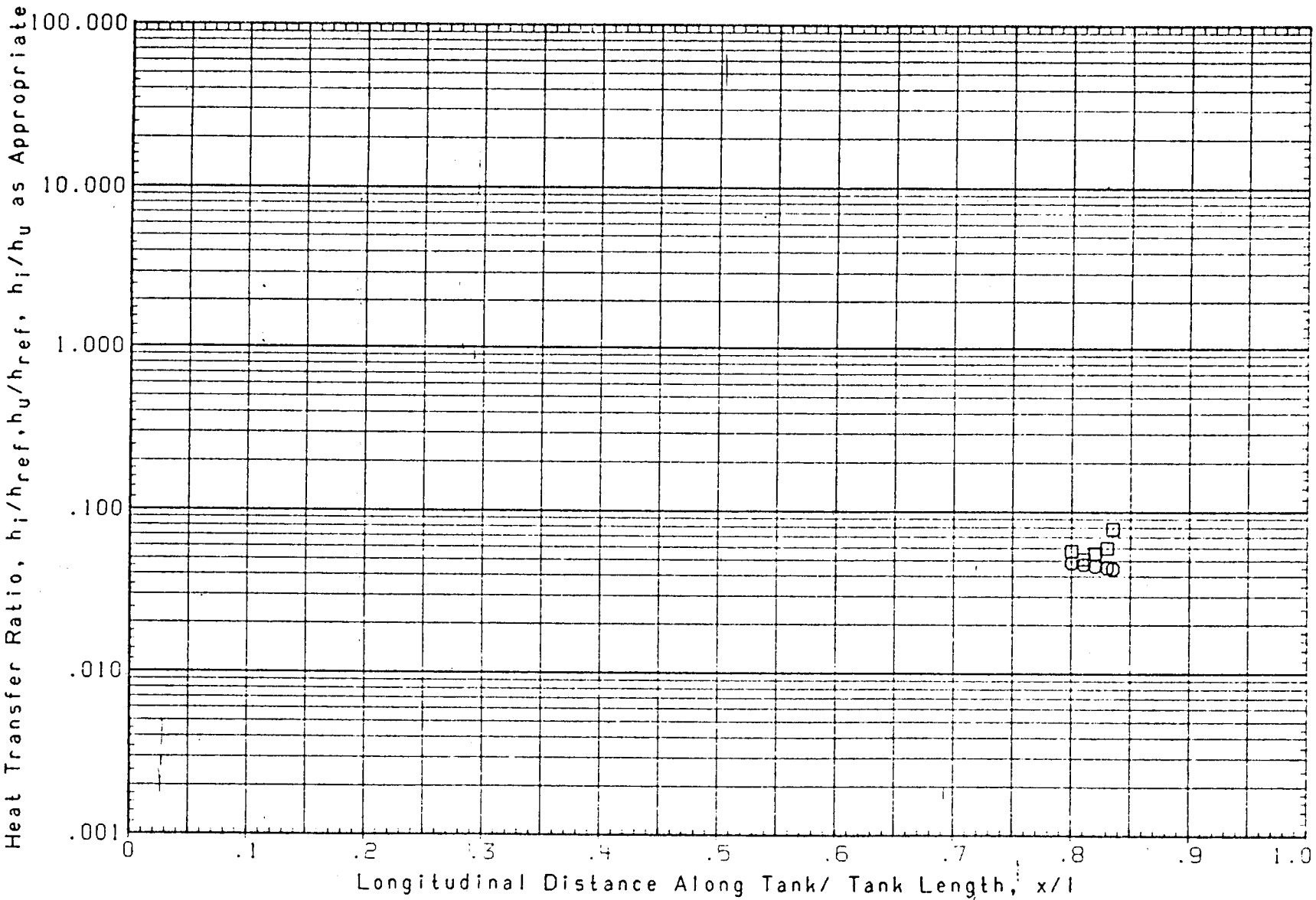


FIG. 28 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 5, BETA = 0

MACH = 4.020 ALPHA = 5.000 PHI = 303.300

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(BVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	5.000	.000
(LVFT32)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	5.000	.000
(CVFT32)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	5.000	.000

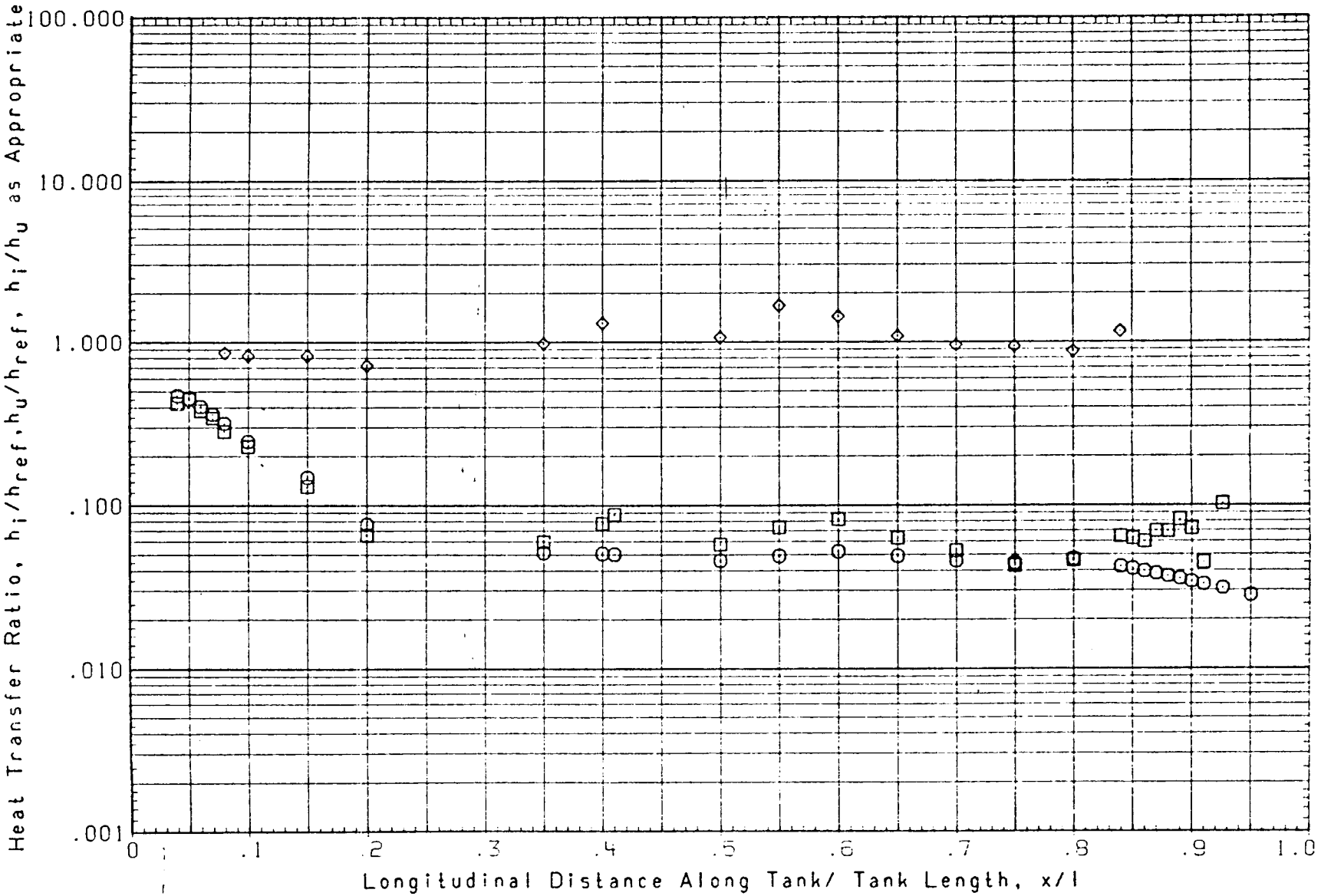


FIG. 28 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 5, BETA = 0

MACH = 4.020 ALPHA = 5.000 PHI = 315.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(BVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	5.000	.000
(LVFT32)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	5.000	.000
(CVFT32)	◇	DATA NOT AVAILABLE	5.000	.000

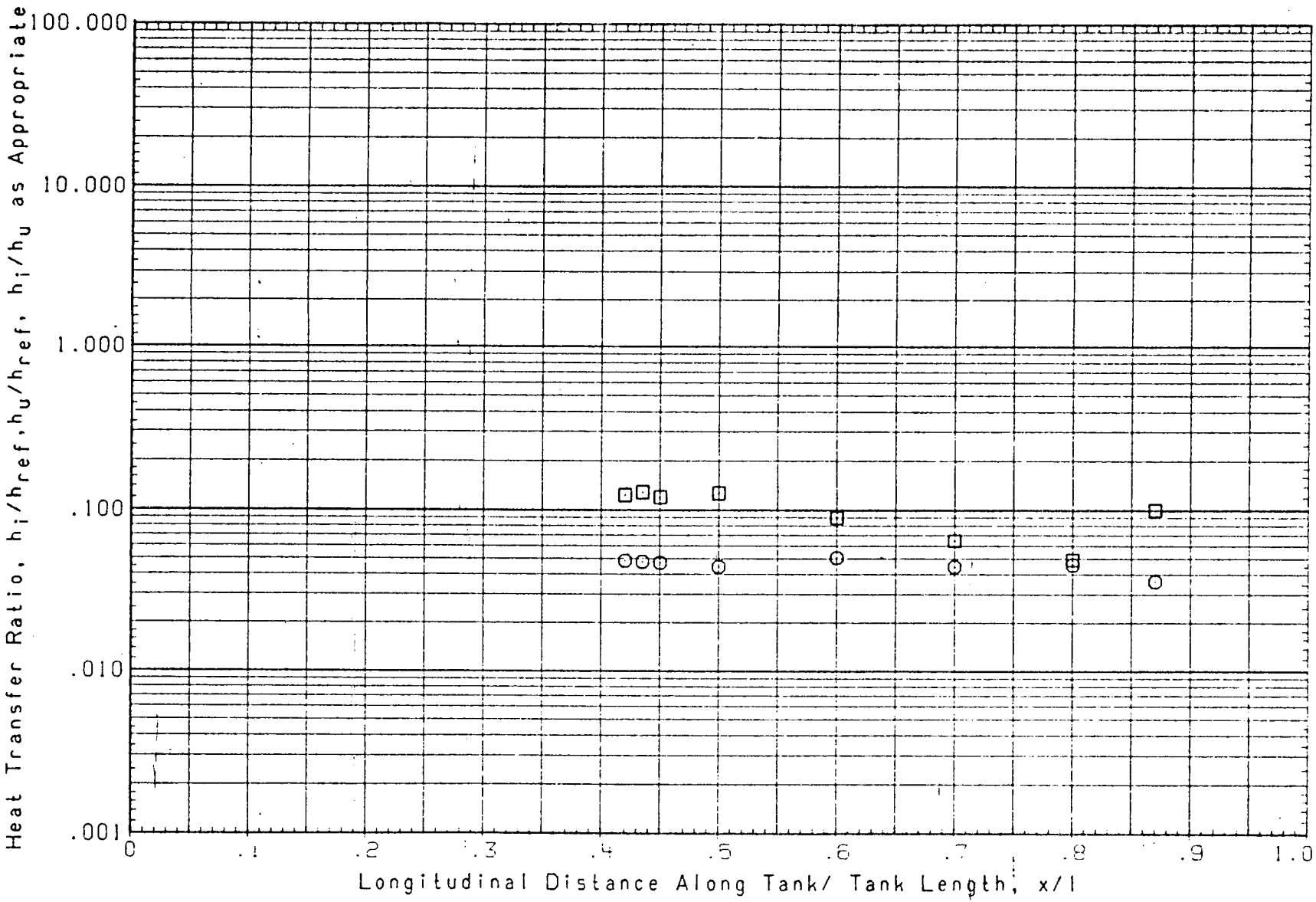


FIG. 28 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 5, BETA = 0

MACH = 4.020 ALPHA = 5.000 PHI = 322.300

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(BVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	5.000	.000
(LVFT32)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	5.000	.000
(CVFT32)	◇	DATA NOT AVAILABLE	5.000	.000

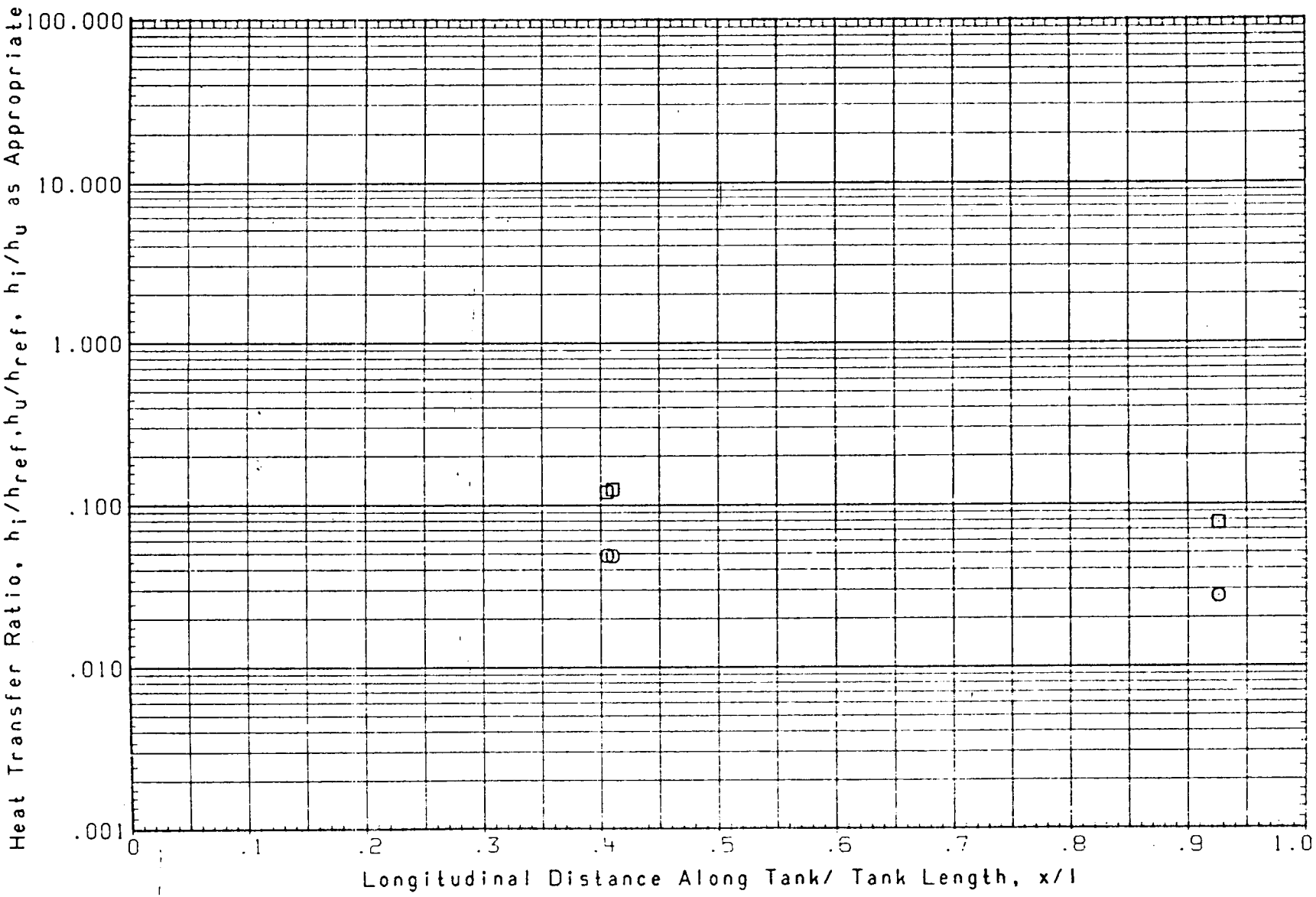


FIG. 28 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 5, BETA = 0

MACH = 4.020 ALPHA = 5.000 PHI = 324.450

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(BVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	5.000	.000
(LVFT32)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	5.000	.000
(CVFT32)	◇	DATA NOT AVAILABLE	5.000	.000

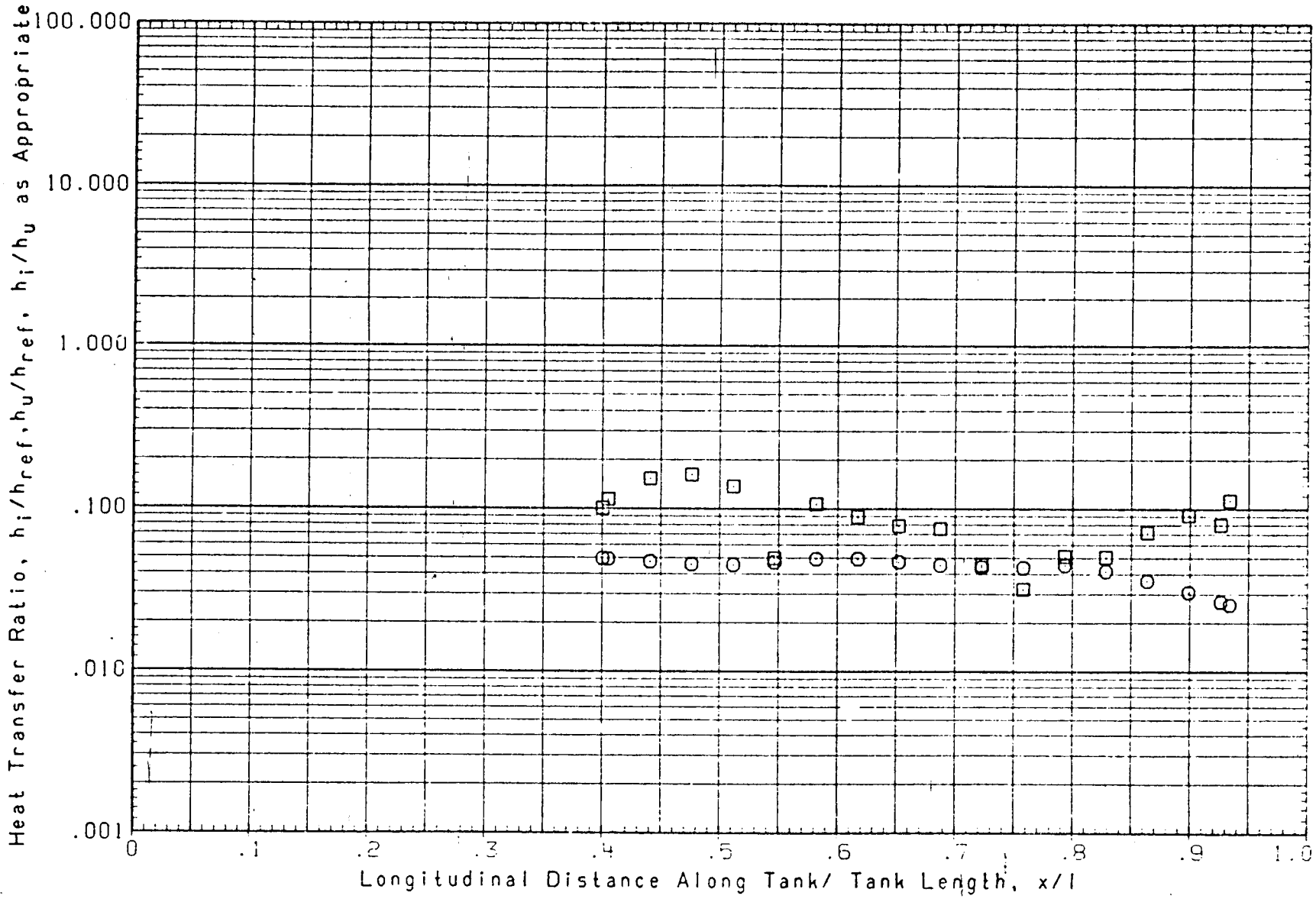


FIG. 28 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 5, BETA = 0

MACH = 4.020 ALPHA = 5.000 PHI = 325.850

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(BVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	5.000	.000
(LVFT32)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	5.000	.000
(CVFT32)	◇	DATA NOT AVAILABLE	5.000	.000

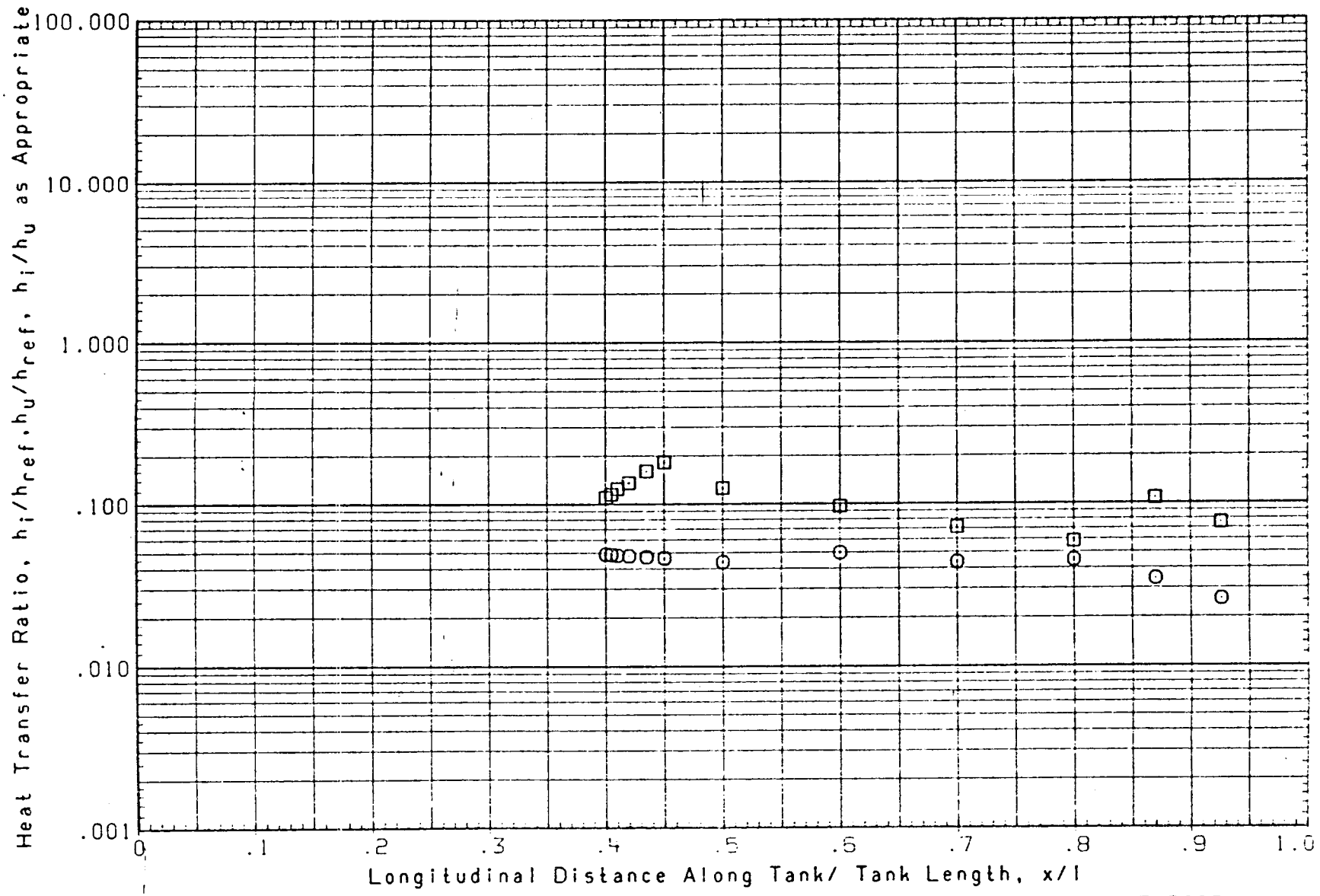


FIG. 28 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 5, BETA = 0

MACH = 4.020 ALPHA = 5.000 PHI = 330.200

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(BVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	5.000	.000
(LVFT32)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	5.000	.000
(CVFT32)	◇	DATA NOT AVAILABLE	5.000	.000

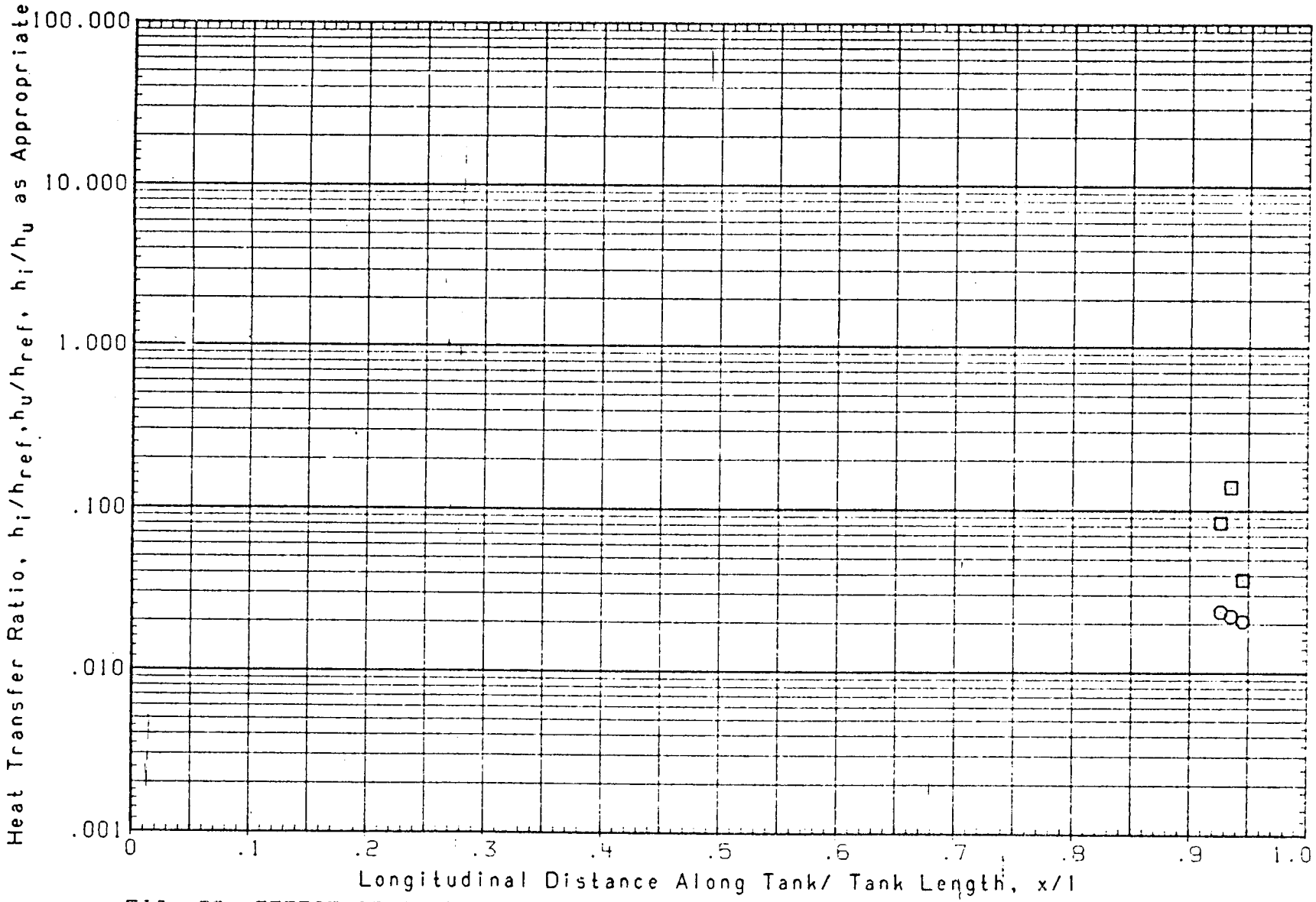


FIG. 28 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 5, BETA = 0

MACH = 4.020 ALPHA = 5.000 PHI = 334.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(BVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	5.000	.000
(LVFT32)	□	IH41B(V41A-A4A) O[illegible]S (SPIKED ET DATA) HI/HREF	5.000	.000
(CVFT32)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, [illegible]/HU	5.000	.000

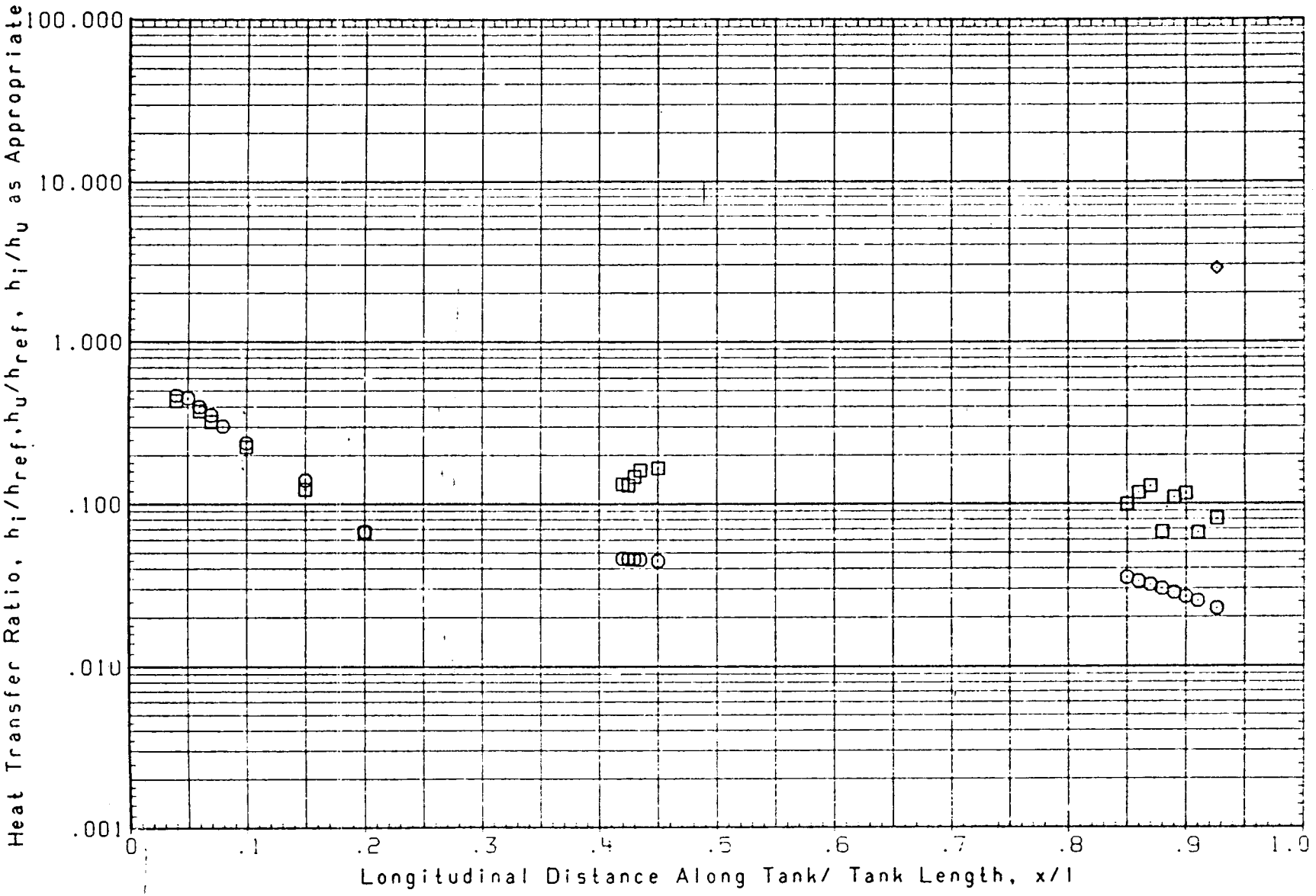


FIG. 28 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 5, BETA = 0

MACH = 4.020 ALPHA = 5.000 PHI = 337.500

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(BVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	5.000	.000
(LVFT32)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	5.000	.000
(CVFT32)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	5.000	.000

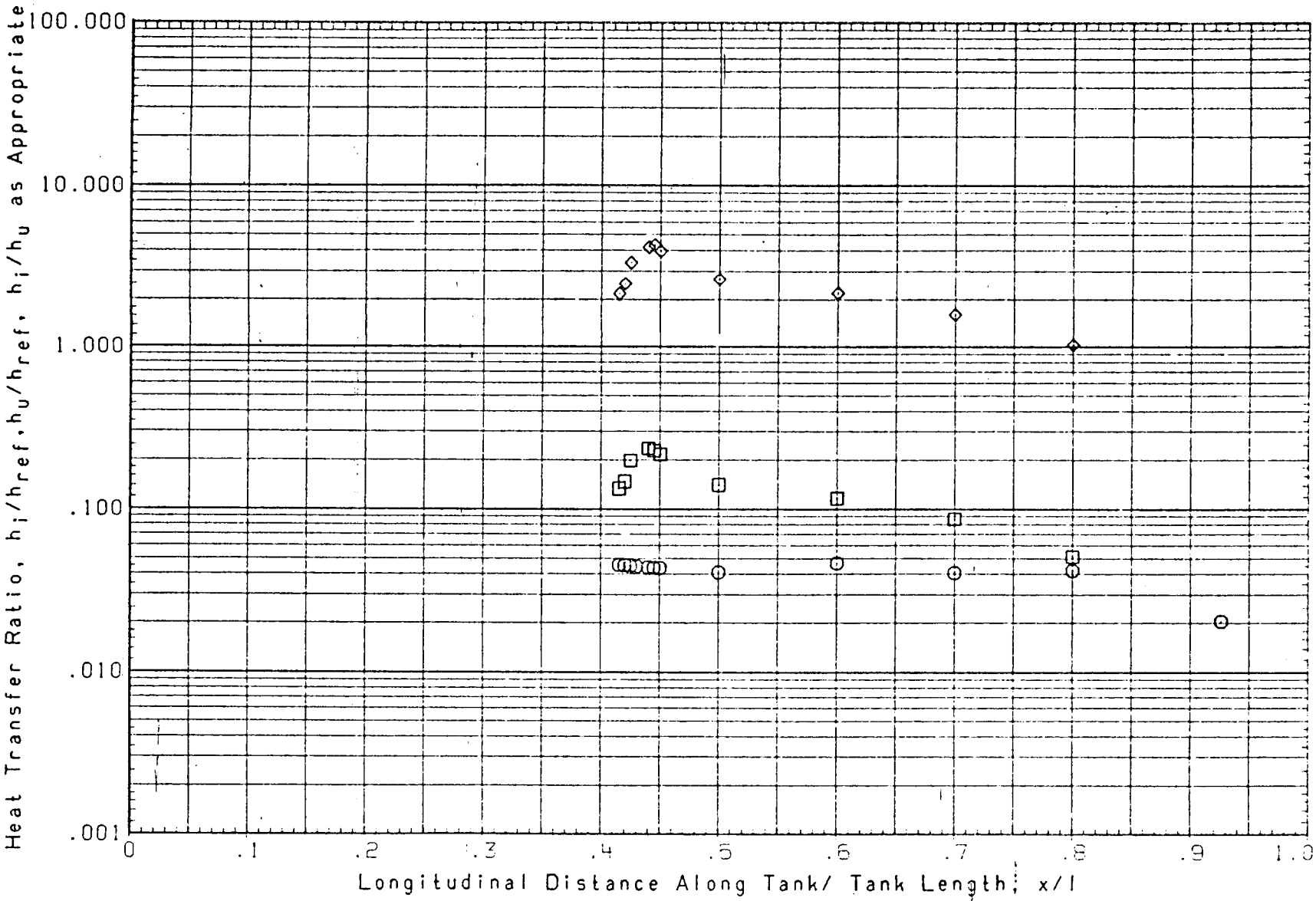


FIG. 28 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 5, BETA = 0

MACH = 4.020 ALPHA = 5.000 PHI = 343.120

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(BVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	5.000	.000
(LVFT32)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	5.000	.000
(CVFT32)	◇	DATA NOT AVAILABLE	5.000	.000

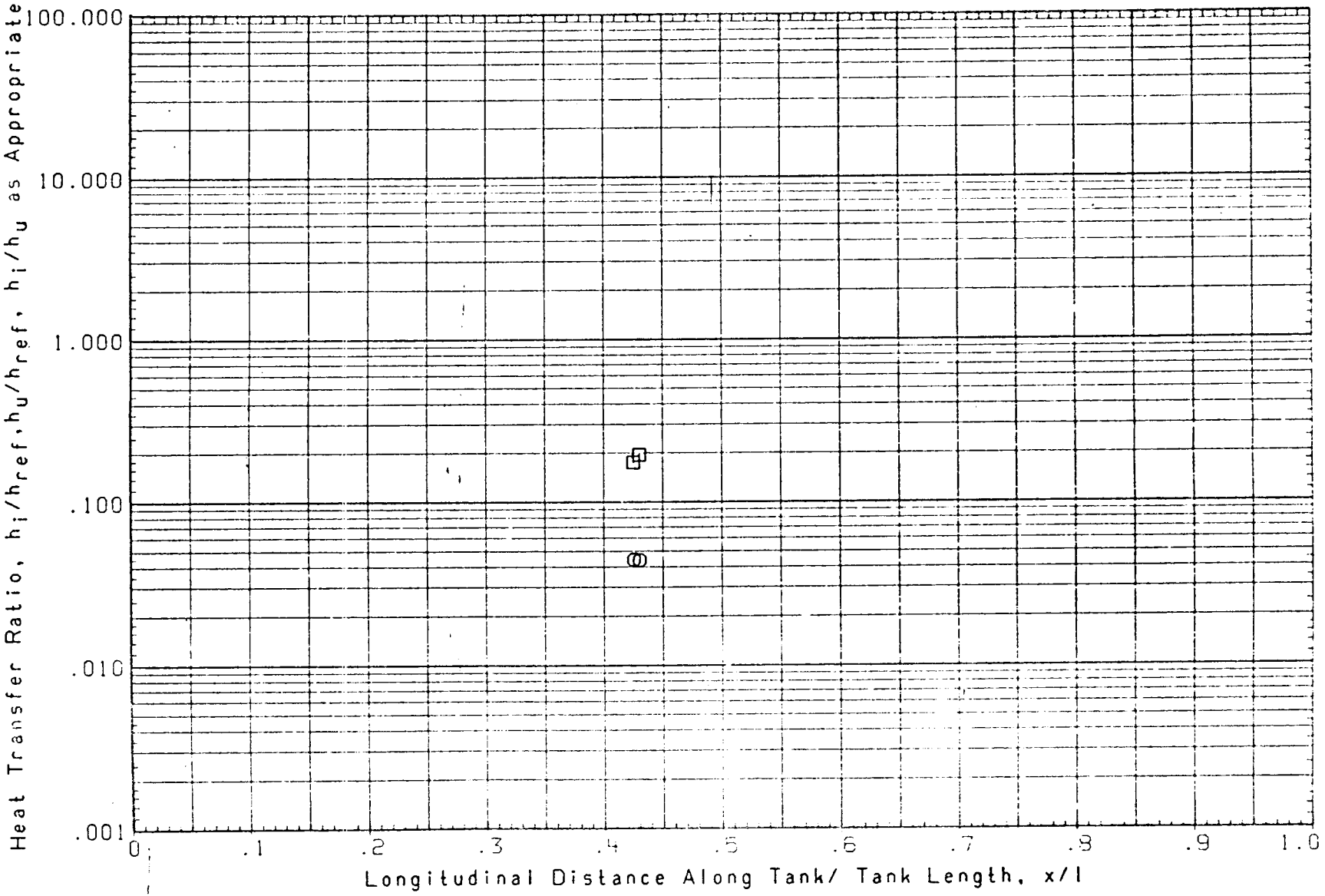


FIG. 28 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 5, BETA = 0

MACH = 4.020 ALPHA = 5.000 PHI = 345.560

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(BVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	5.000	.000
(LVFT32)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	5.000	.000
(CVFT32)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	5.000	.000

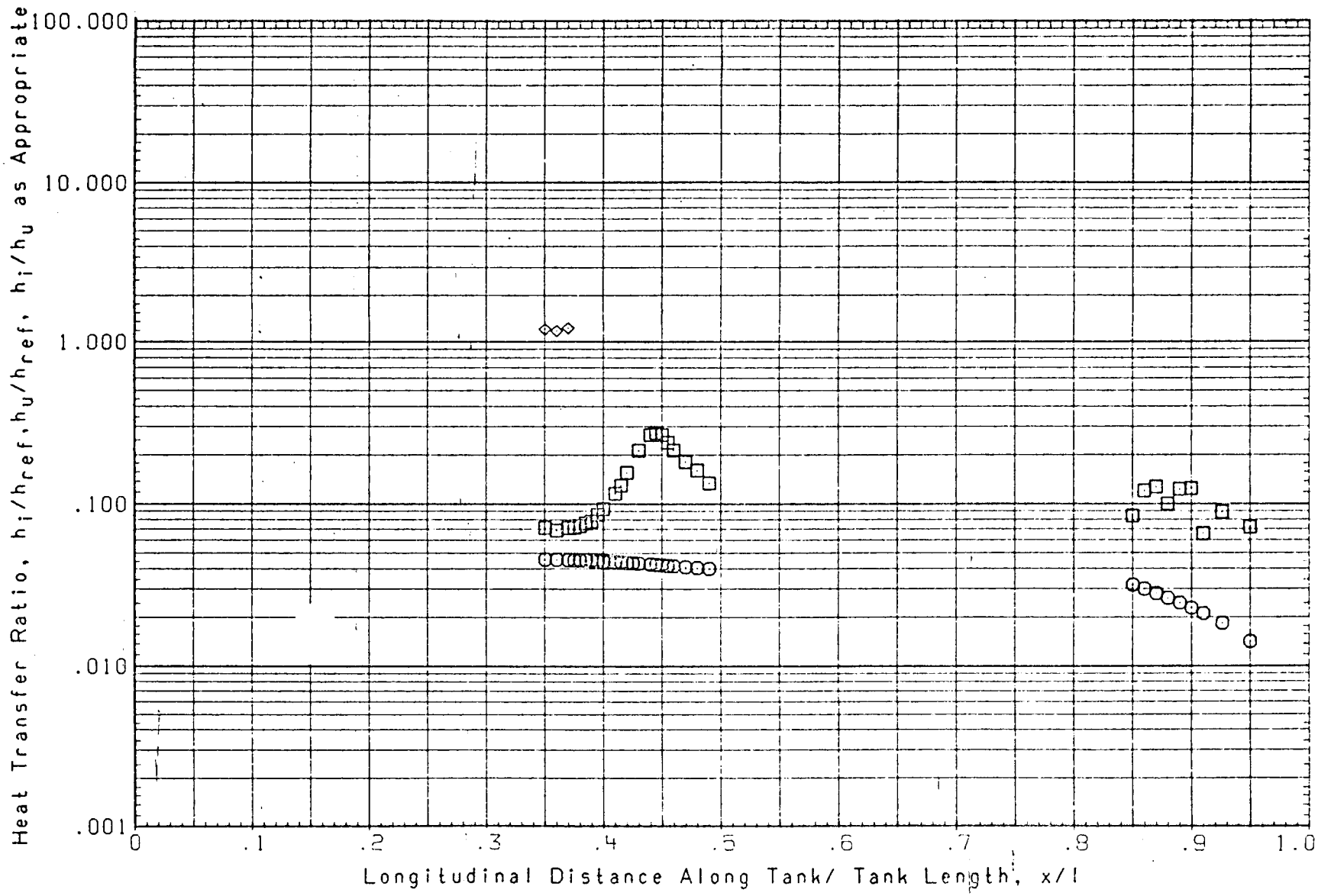


FIG. 28 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 5, BETA = 0

MACH = 4.020 ALPHA = 5.000 PHI = 348.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(BVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	5.000	.000
(LVFT32)	□	IH41B(V41A-A4A) 0 " S (SPIKED ET DATA) HI/HREF	5.000	.000
(CVFT32)	◇	DATA NOT AVAILABLE	5.000	.000

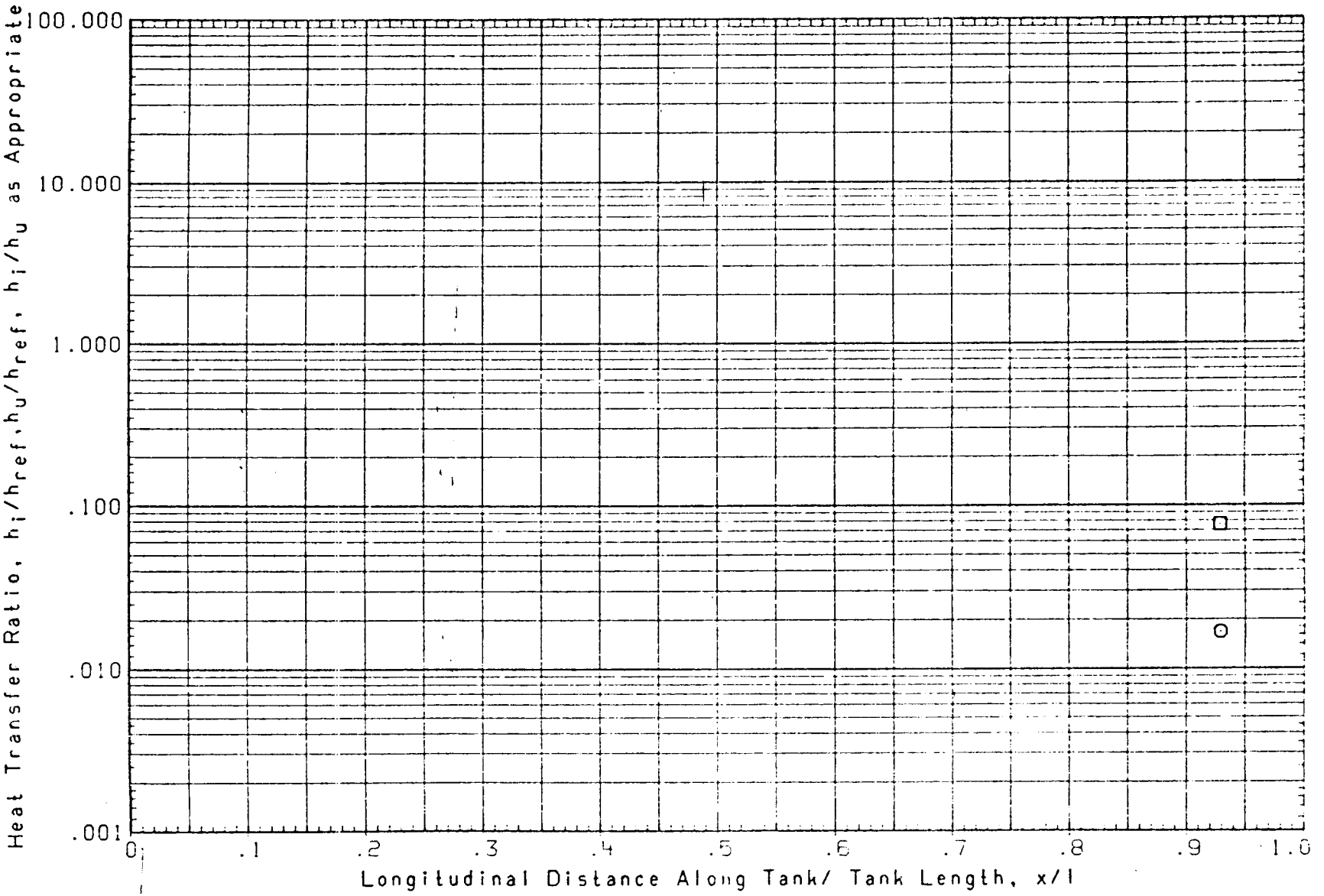


FIG. 28 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 5, BETA = 0

MACH = 4.020 ALPHA = 5.000 PHI = 352.200

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(BVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	5.000	.000
(LVFT32)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	5.000	.000
(CVFT32)	◇	DATA NOT AVAILABLE	5.000	.000

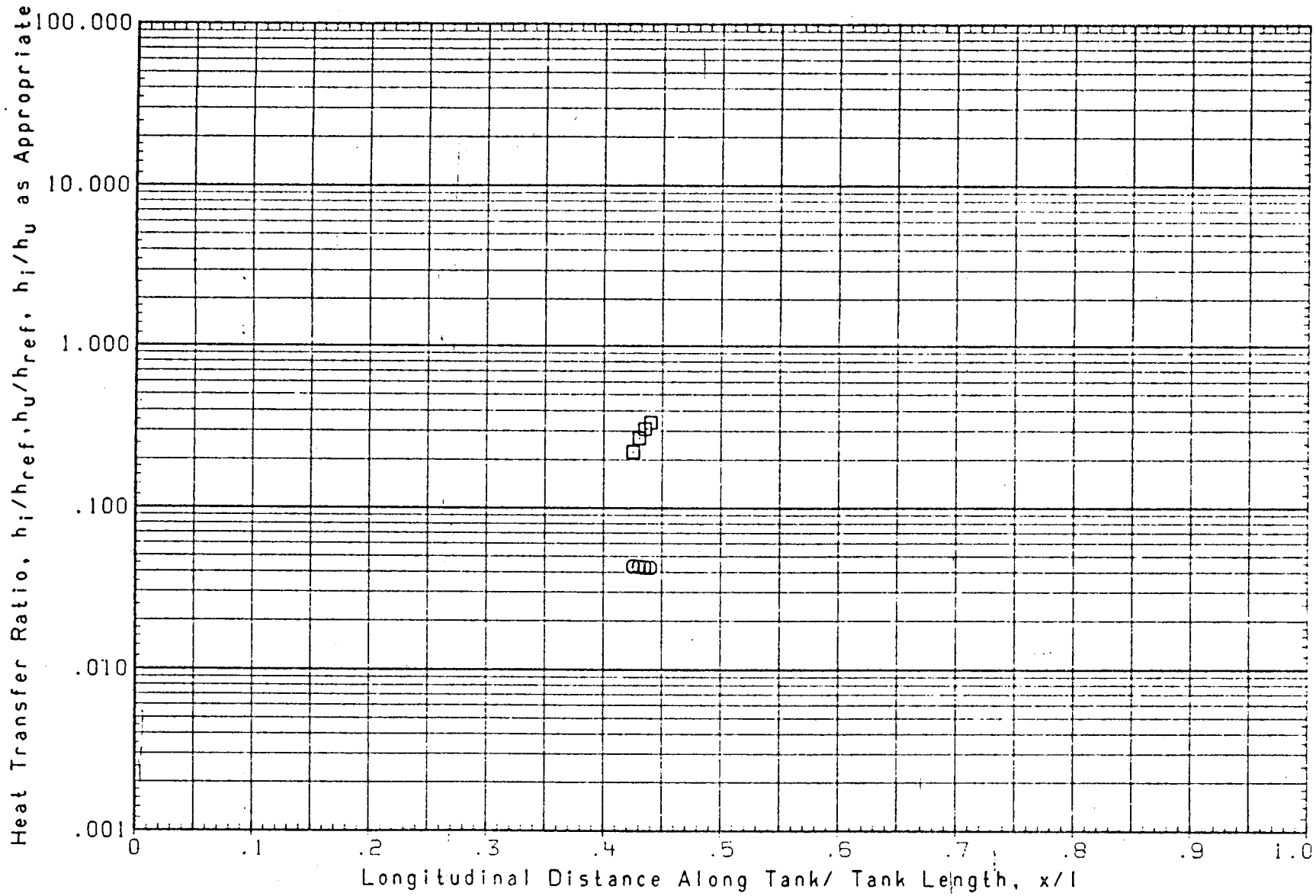


FIG. 28 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 5, BETA = 0

MACH = 4.020 ALPHA = 5.000 PHI = 354.000 PAGE 000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(BVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	5.000	.000
(LVFT32)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	5.000	.000
(CVFT32)	◇	DATA NOT AVAILABLE	5.000	.000

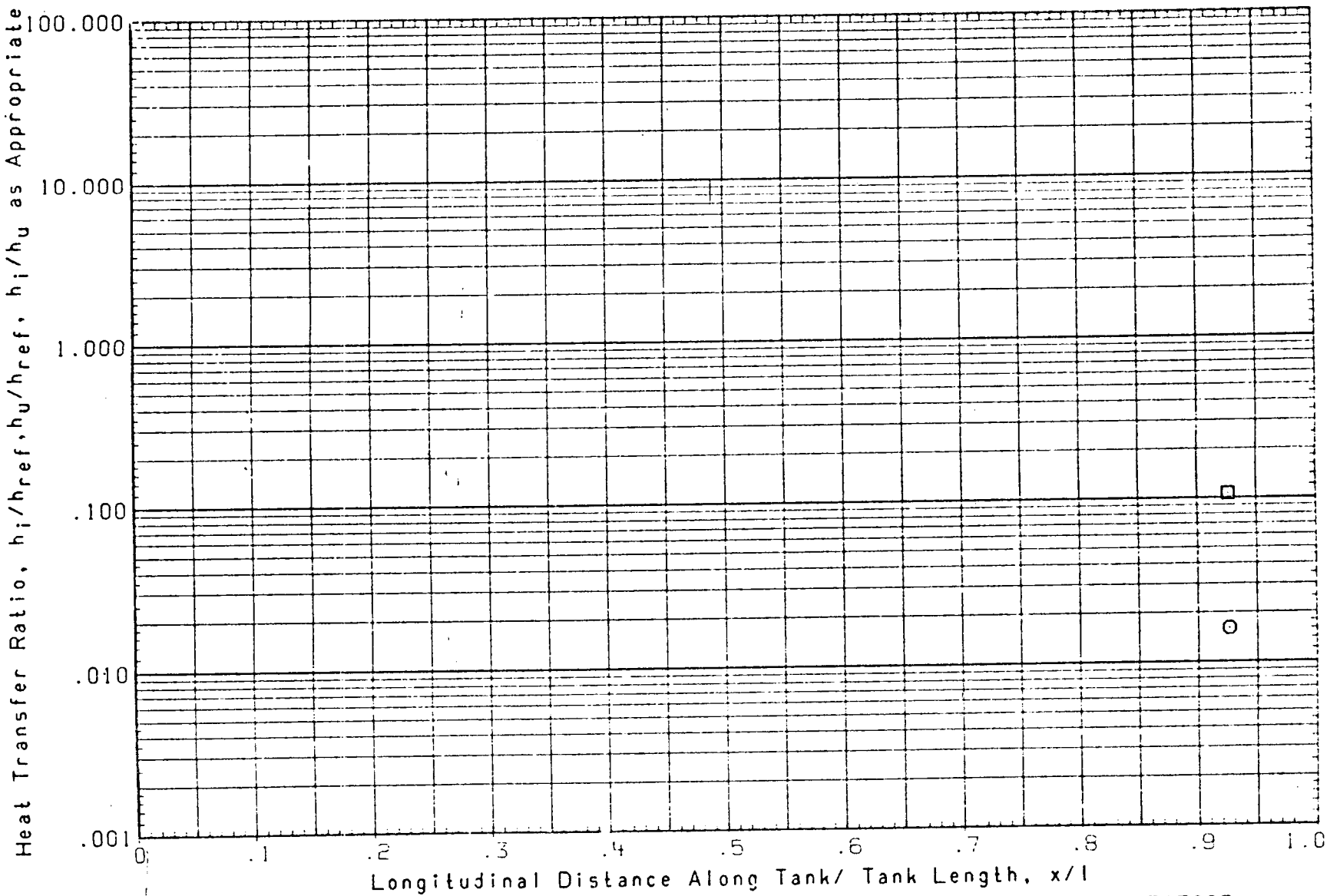


FIG. 28 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 5, BETA = 0

MACH = 4.020 ALPHA = 5.000 PHI = 355.180

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(BVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	5.000	.000
(LVFT32)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	5.000	.000
(CVFT32)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	5.000	.000

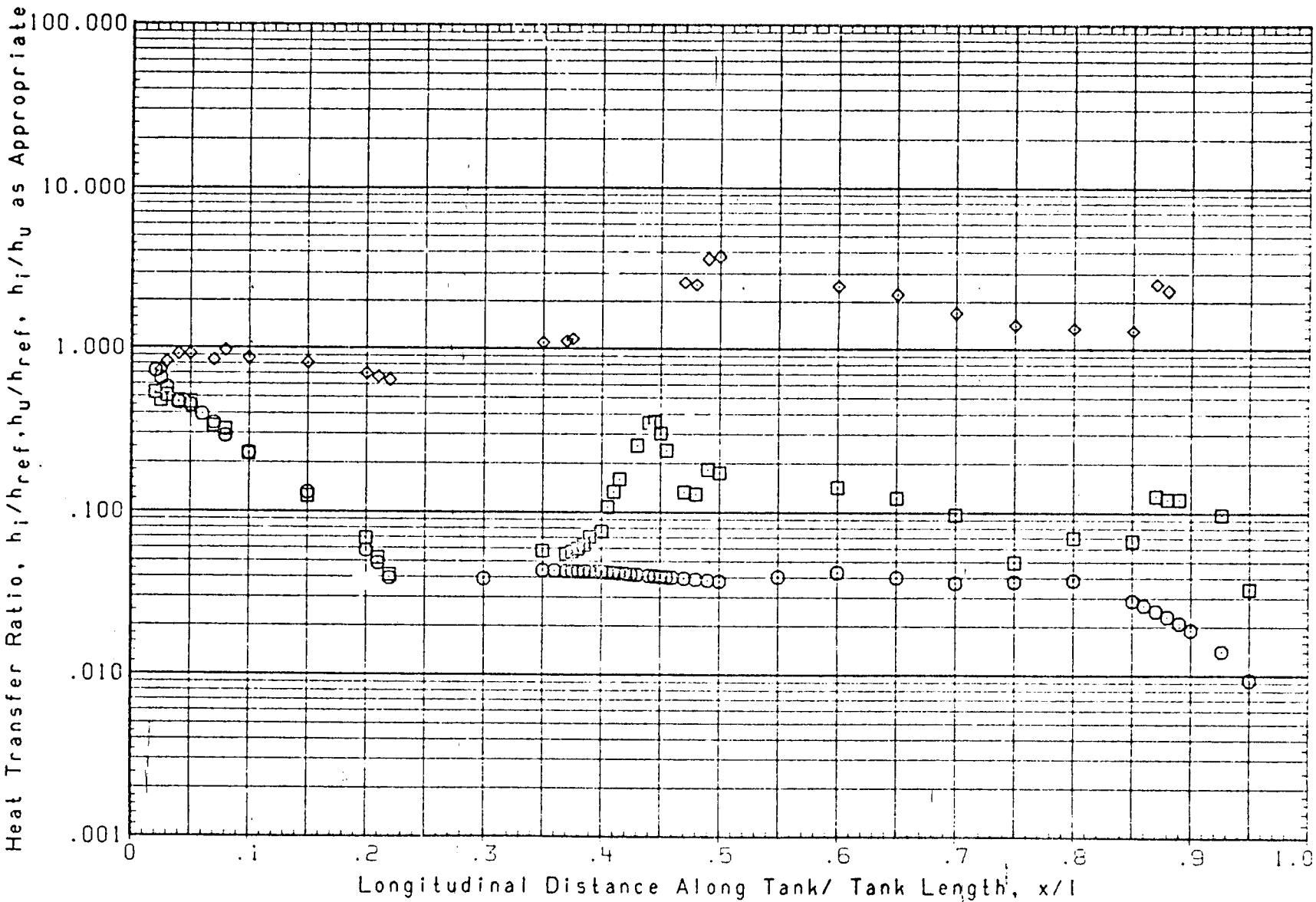


FIG. 28 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 5, BETA = 0

MACH = 4.020 ALPHA = 5.000 PHI = 360.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(BVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	5.000	.000
(LVFT32)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	5.000	.000
(CVFT32)	◇	DATA NOT AVAILABLE	5.000	.000

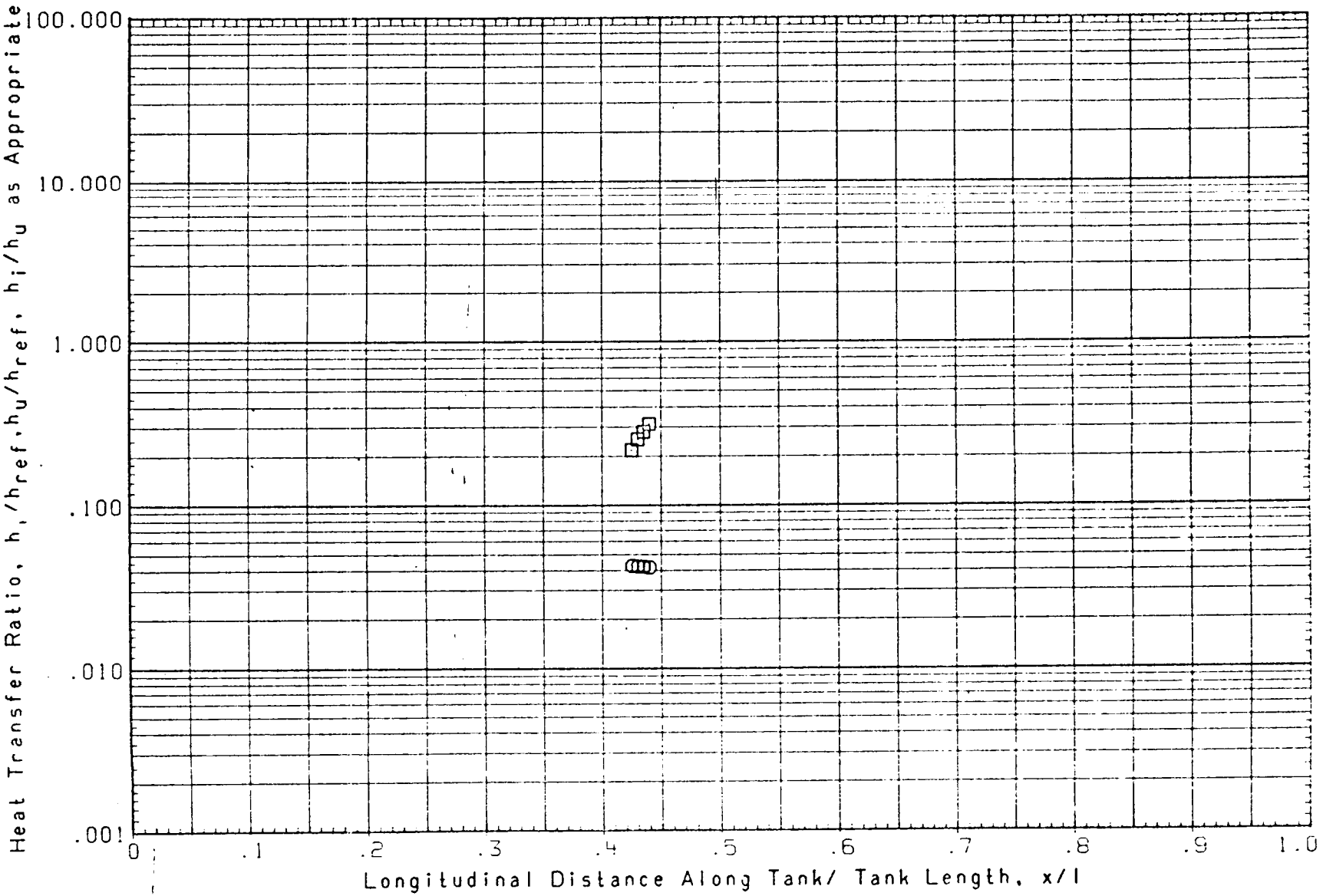


FIG. 28 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 5, BETA = 0

MACH = 4.020 ALPHA = 5.000 PHI = 5.630

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(BVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	5.000	.000
(LVFT32)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	5.000	.000
(CVFT32)	◇	DATA NOT AVAILABLE	5.000	.000

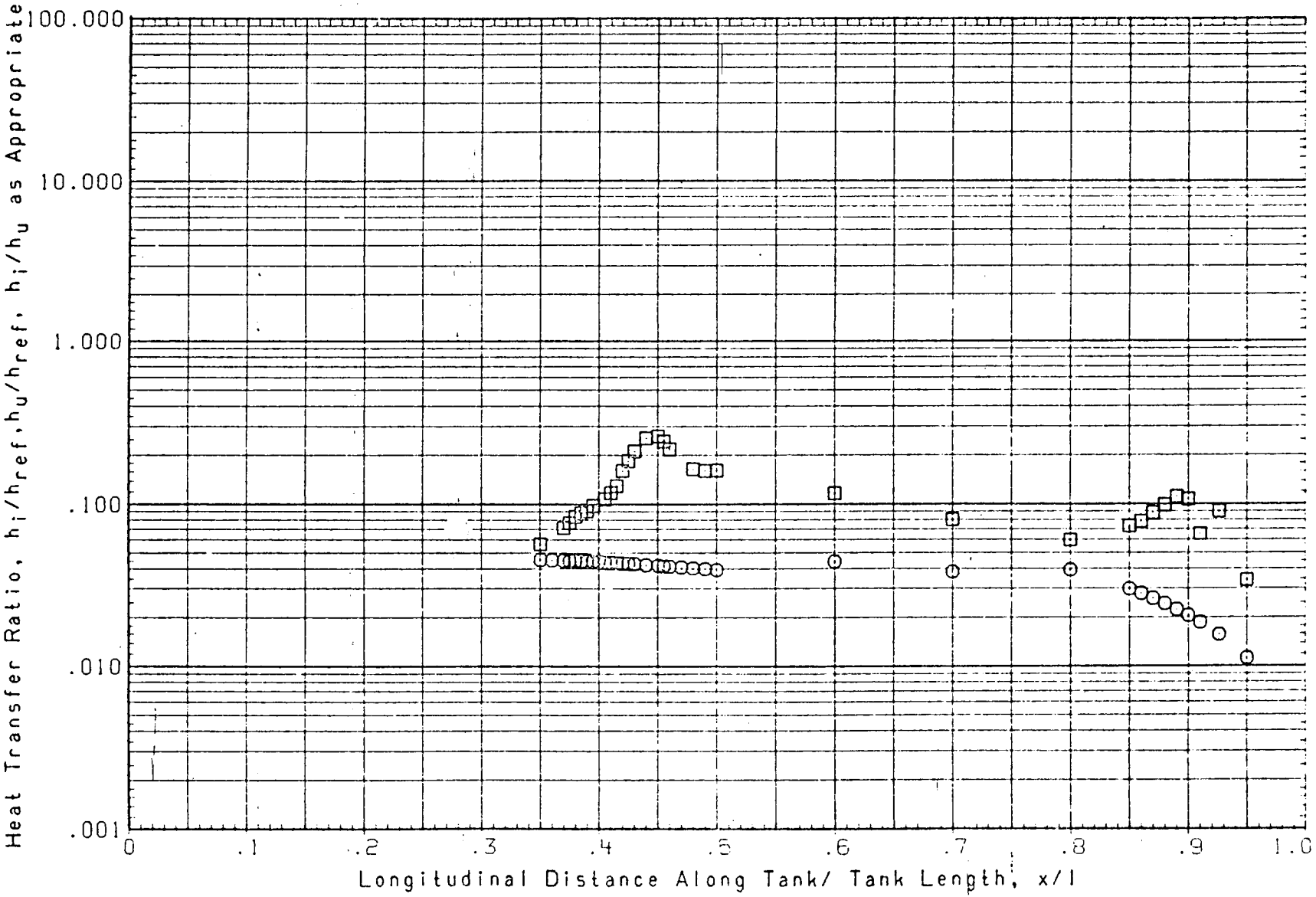


FIG. 28 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 5, BETA = 0

MACH = 4.020 ALPHA = 5.000 PHI = 11.250

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(BVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	5.000	.000
(LVFT32)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	5.000	.000
(CVFT32)	◇	IH41B.ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	5.000	.000

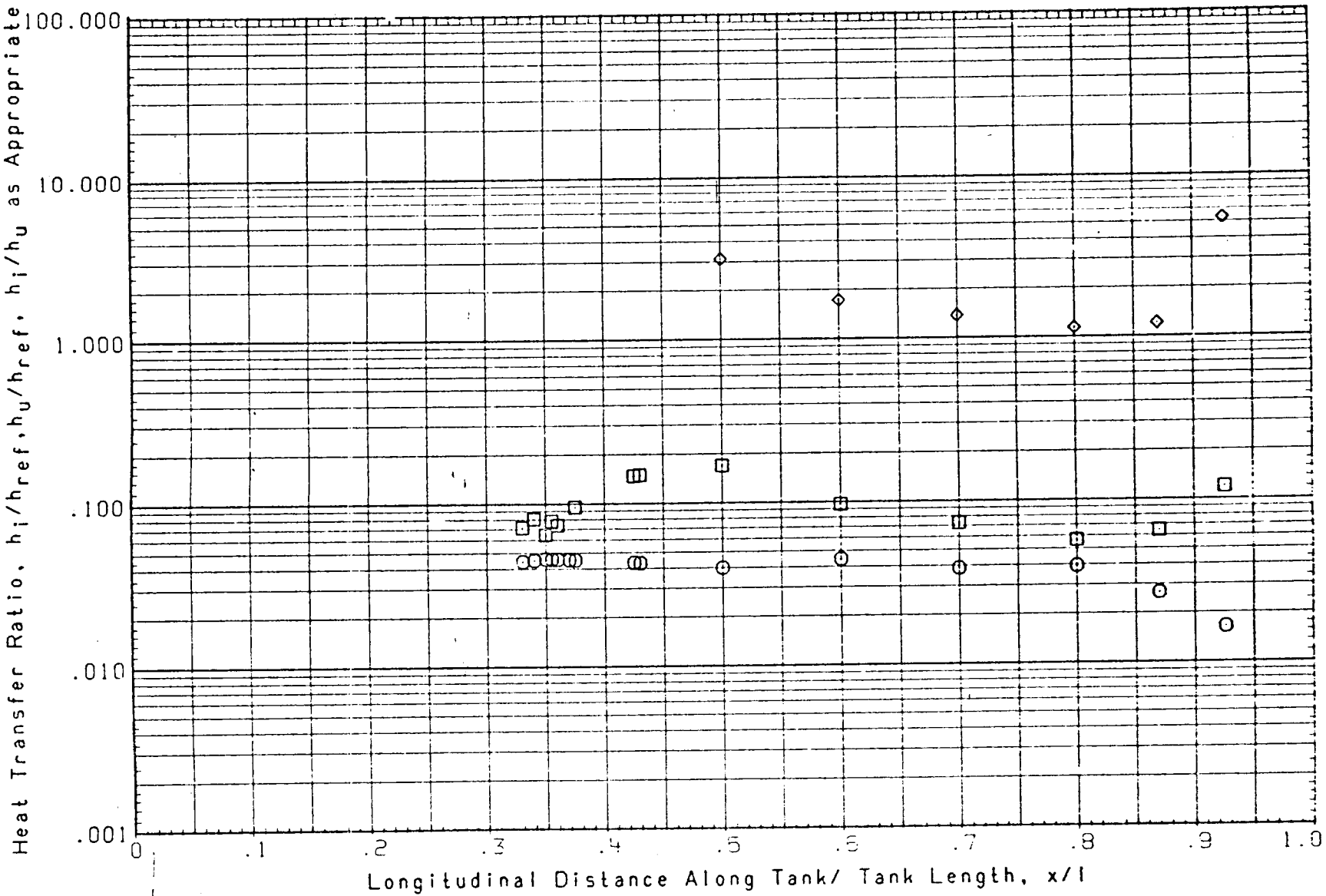


FIG. 28 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 5, BETA = 0

MACH = 4.020 ALPHA = 5.000 PHI = 17.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(BVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	5.000	.000
(LVFT32)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	5.000	.000
(CVFT32)	◇	DATA NOT AVAILABLE	5.000	.000

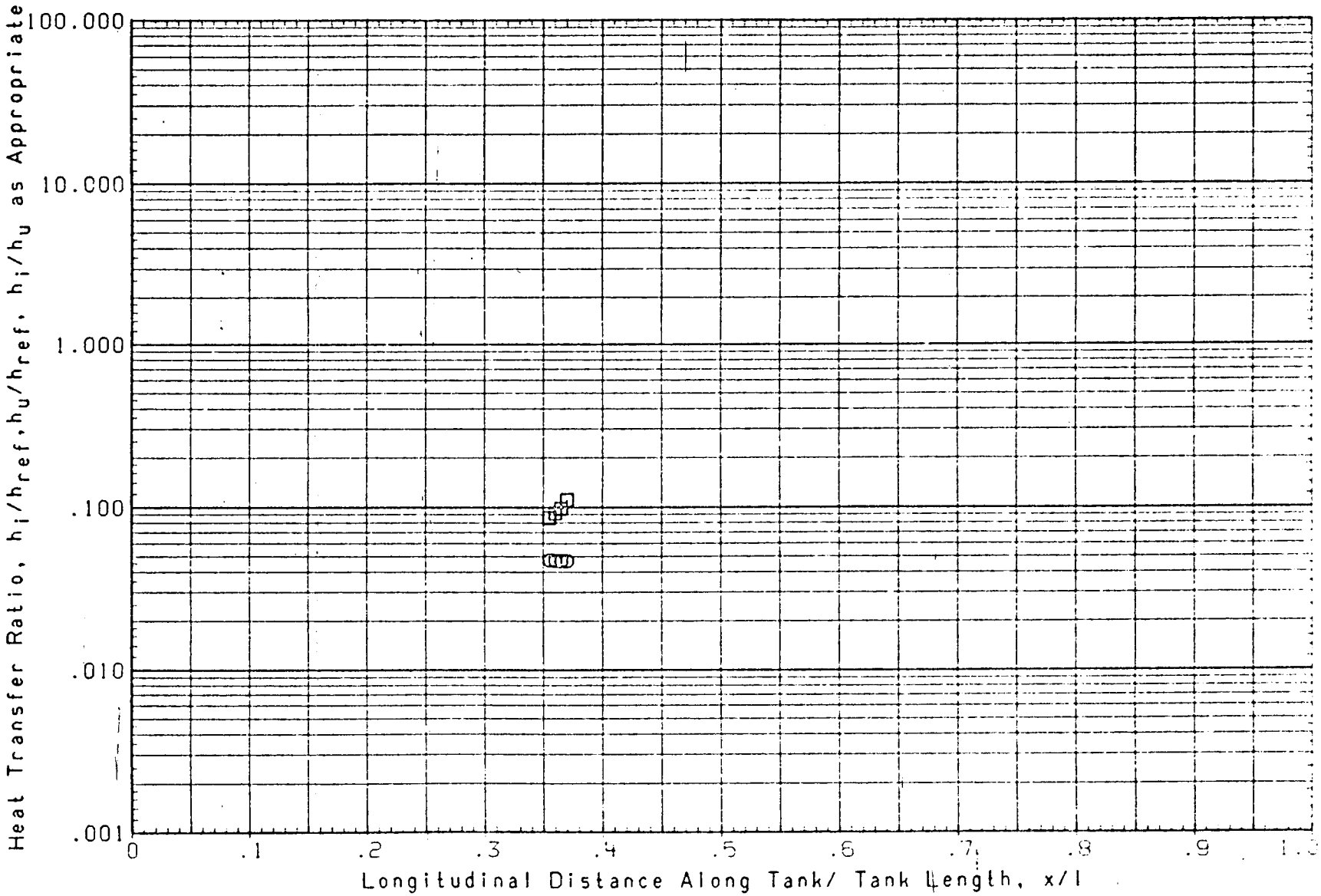


FIG. 28 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 5, BETA = 0

MACH = 4.020 ALPHA = 5.000 PHI = 20.980

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(BVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	5.000	.000
(LVFT32)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	5.000	.000
(CVFT32)	◇	DATA NOT AVAILABLE	5.000	.000

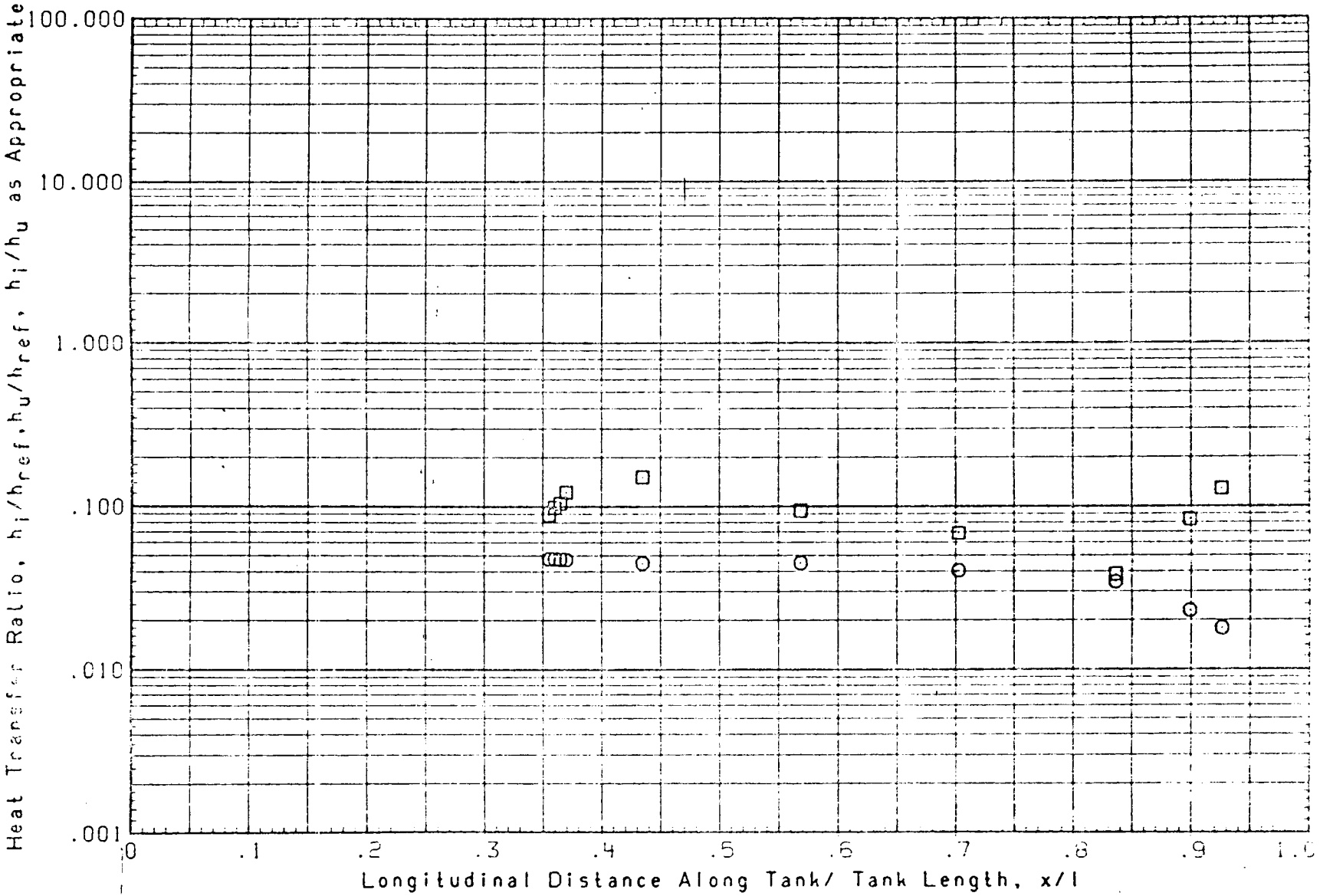


FIG. 28 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 5, BETA = 0

MACH = 4.020 ALPHA = 5.000 PHI = 23.075

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(BVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	5.000	.000
(LVFT32)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	5.000	.000
(CVFT32)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	5.000	.000

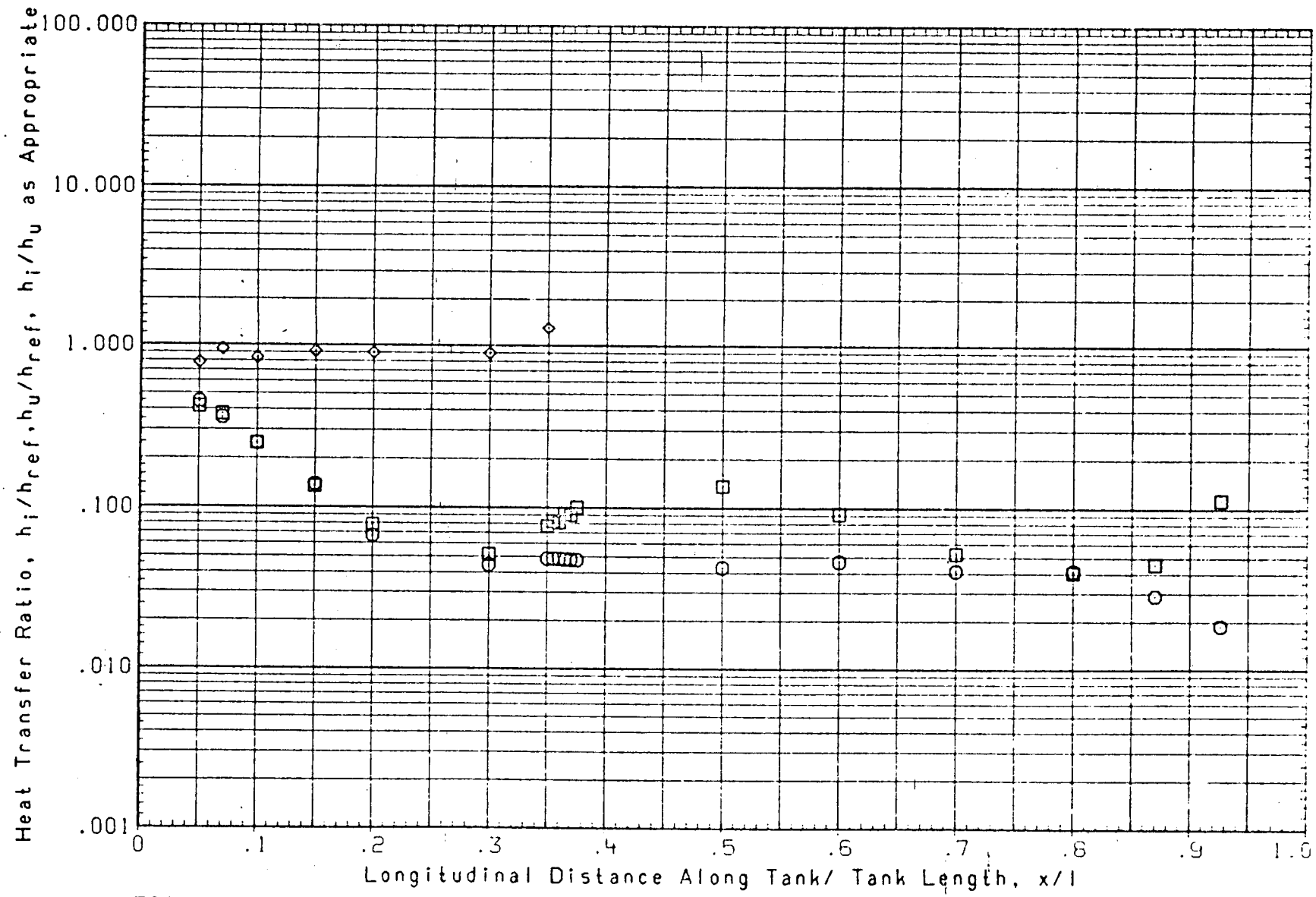


FIG. 28 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 5, BETA = 0

MACH = 4.020 ALPHA = 5.000 PHI = 29.900

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(BVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	5.000	.000
(LVFT32)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	5.000	.000
(CVFT32)	◇	DATA NOT AVAILABLE	5.000	.000

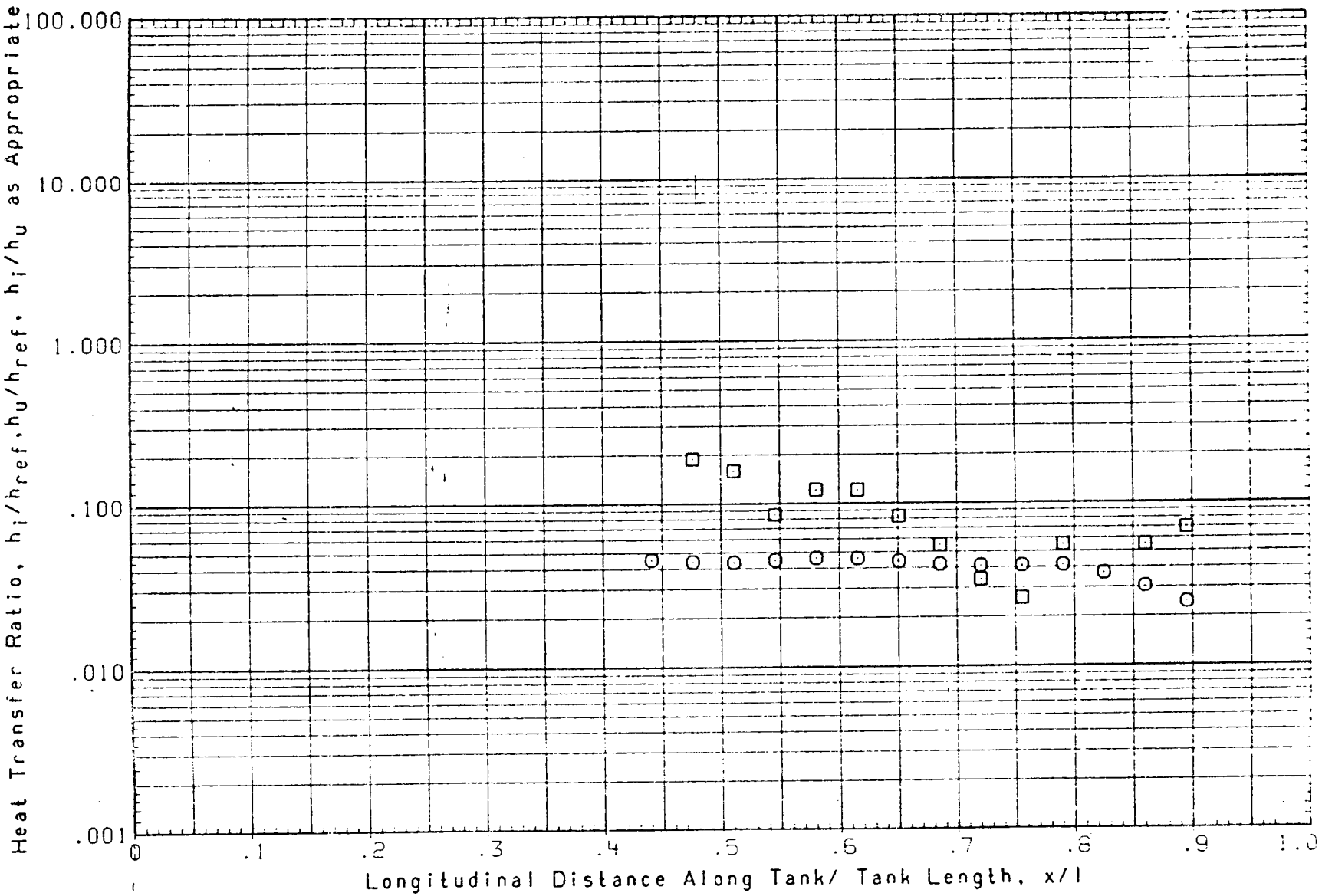


FIG. 28 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 5, BETA = 0

MACH = 4.020 ALPHA = 5.000 PHI = 31.430

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(BVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	5.000	.000
(LVFT32)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	5.000	.000
(CVFT32)	◇	DATA NOT AVAILABLE	5.000	.000

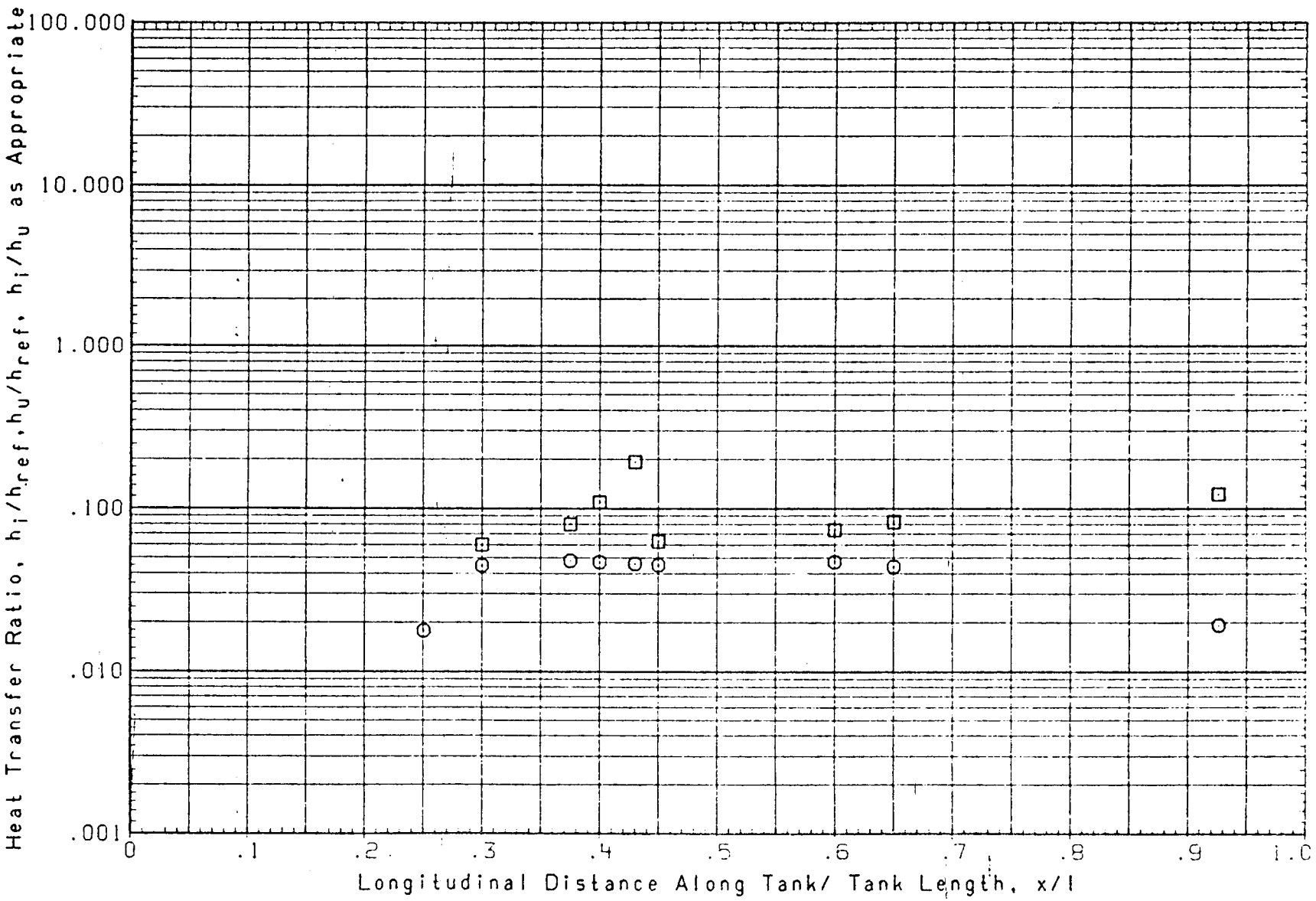


FIG. 28 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 5, BETA = 0

MACH = 4.020 ALPHA = 5.000 PHI = 33.750

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(BVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	5.000	.000
(LVFT32)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	5.000	.000
(CVFT32)	◇	DATA NOT AVAILABLE	5.000	.000

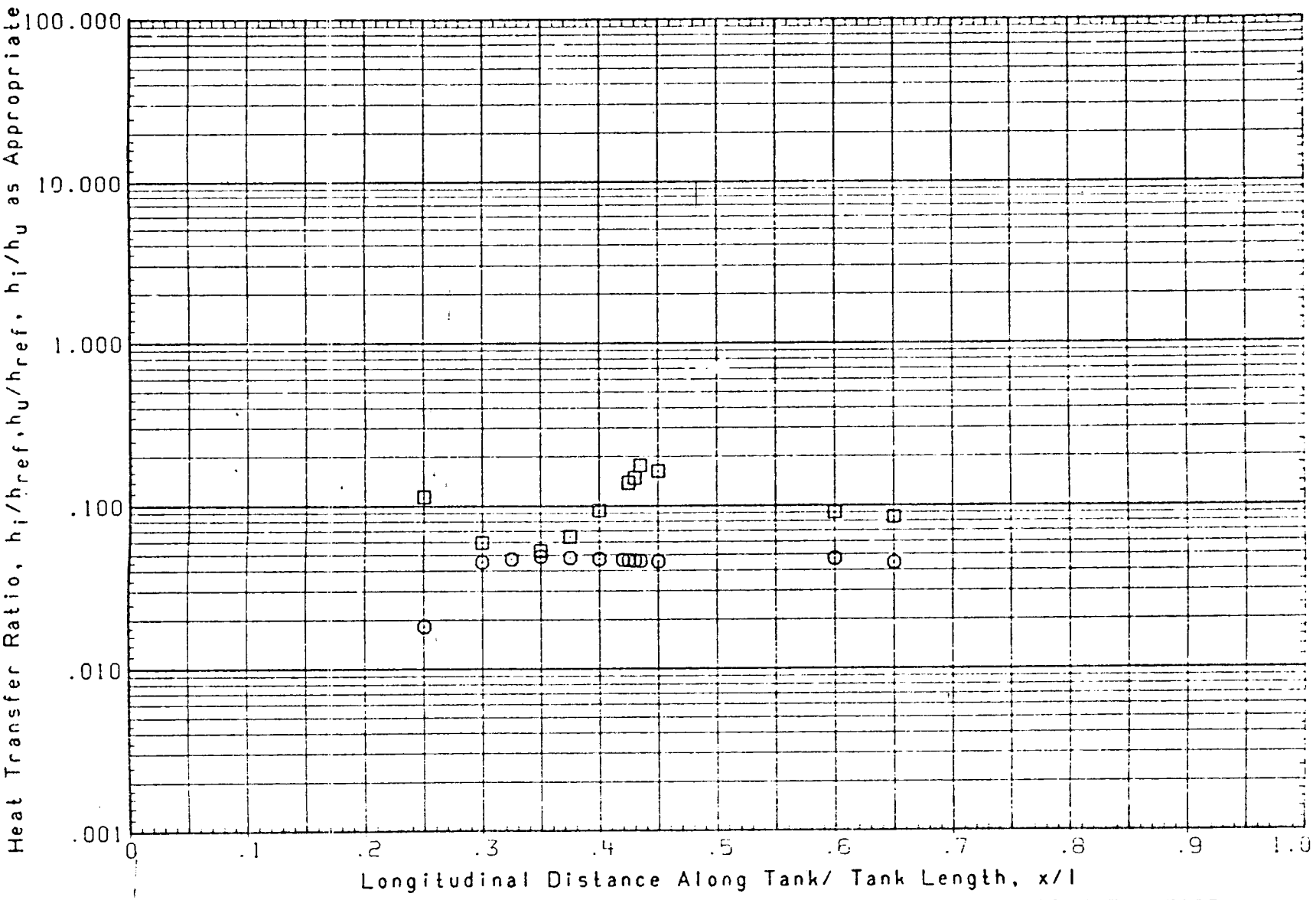


FIG. 28 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 5, BETA = 0

MACH = 4.020 ALPHA = 5.000 PHI = 35.320

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(BVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	5.000	.000
(LVFT32)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	5.000	.000
(CVFT32)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	5.000	.000

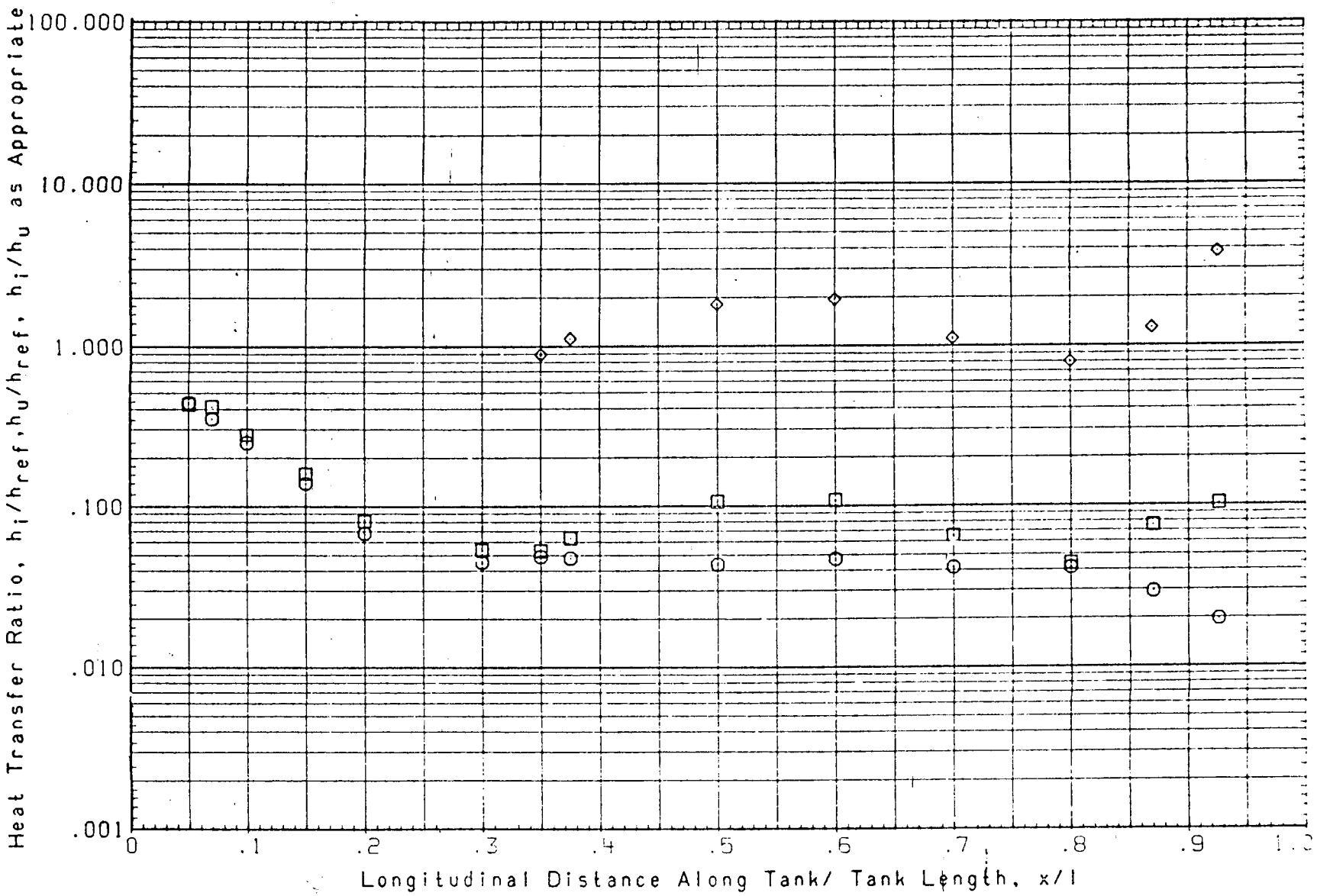


FIG. 28 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 5, BETA = 0

MACH = 4.020 ALPHA = 5.000 PHI = 37.700

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(BVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	5.000	.000
(LVFT32)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	5.000	.000
(CVFT32)	◇	IH41B,ET HEAT TRANSFER INTERFERENCE RATIO, HI/HU	5.000	.000

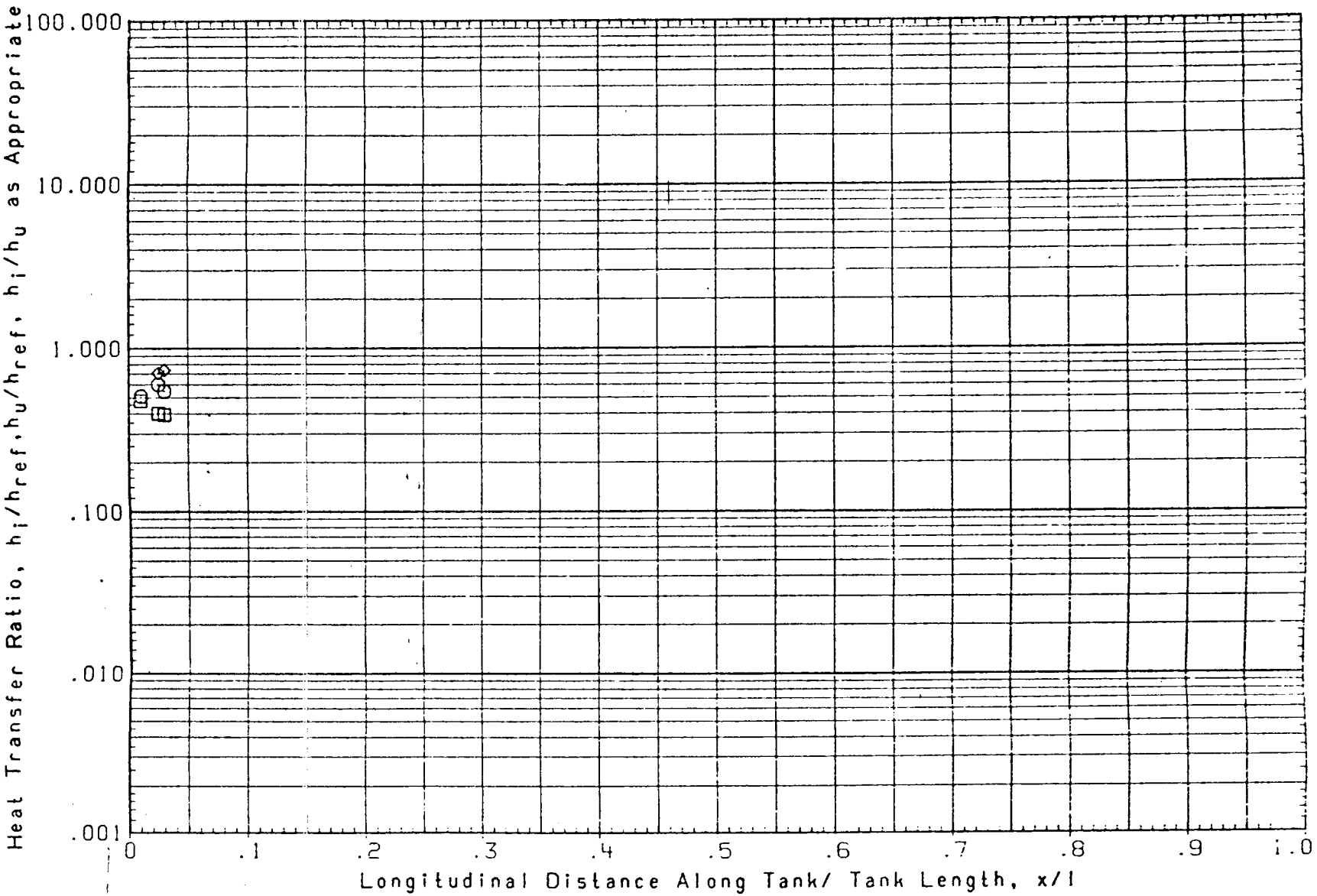


FIG. 28 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 5, BETA = 0

MACH = 4.020 ALPHA = 5.000 PHI = 39.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	BETA
(BVFT11)	○	IH41B(AEDC V41A-A4A) SPIKED EXTERNAL TANK ALONE	5.000	.000
(LVFT32)	□	IH41B(V41A-A4A) O T S (SPIKED ET DATA) HI/HREF	5.000	.000
(CVFT32)	◇	DATA NOT AVAILABLE	5.000	.000

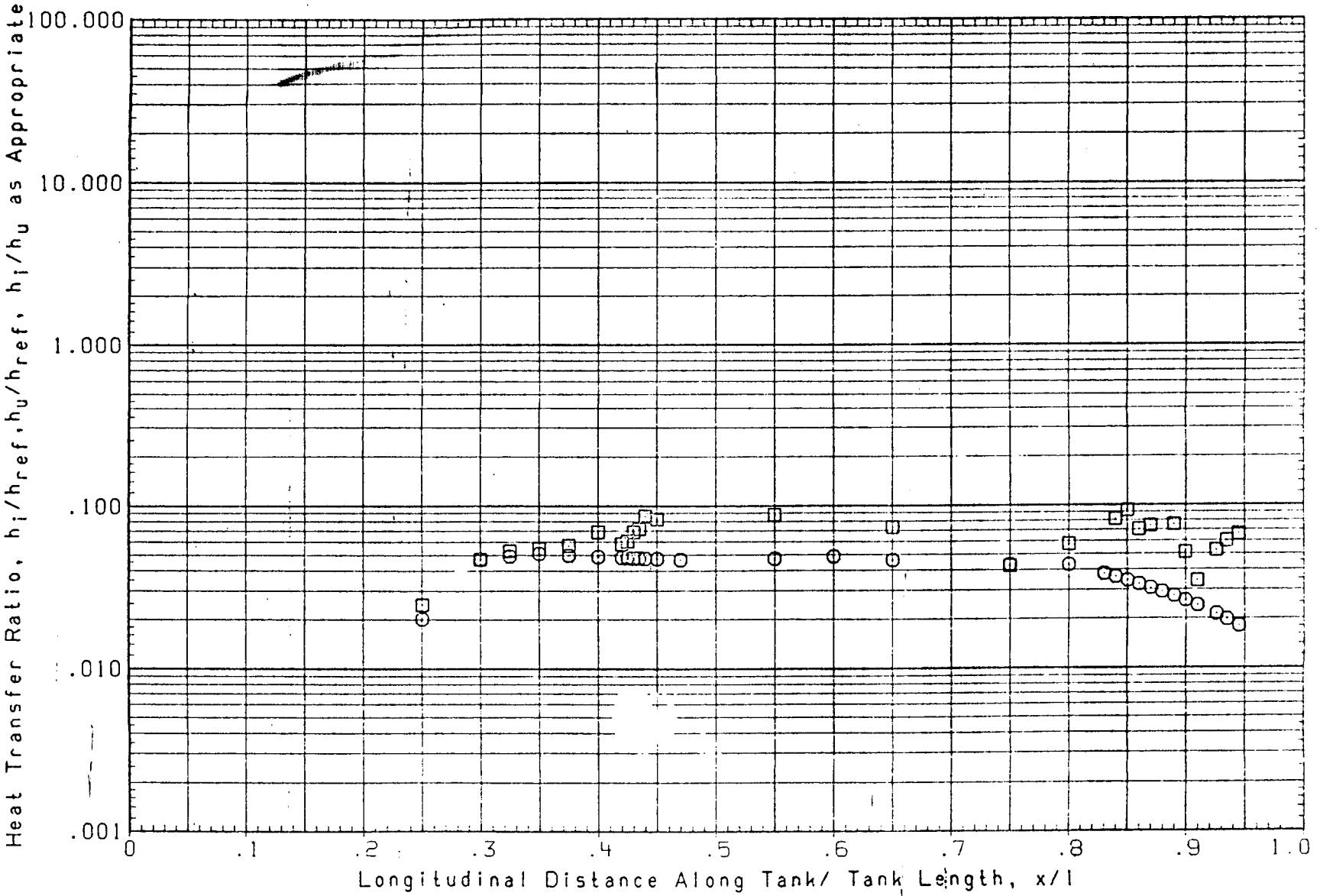


FIG. 28 EFFECT OF ORBITER ON EXTERNAL TANK HEAT TRANSFER COEFFICIENT RATIOS
LEEWARD SIDE, ALPHA = 5, BETA = 0

MACH = 4.020 ALPHA = 5.000 PHI = 45.000